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Cultural Landscape Report

File:
Dayton
Aviation



*The Height Measured
Dayton Ohio*

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Wright Brothers Hill
WRIGHT-PATTERSON
Air Force Base • Ohio

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Cultural Landscape Report

September 1997

Wright Brothers Hill
WRIGHT-PATTERSON
Air Force Base • Ohio

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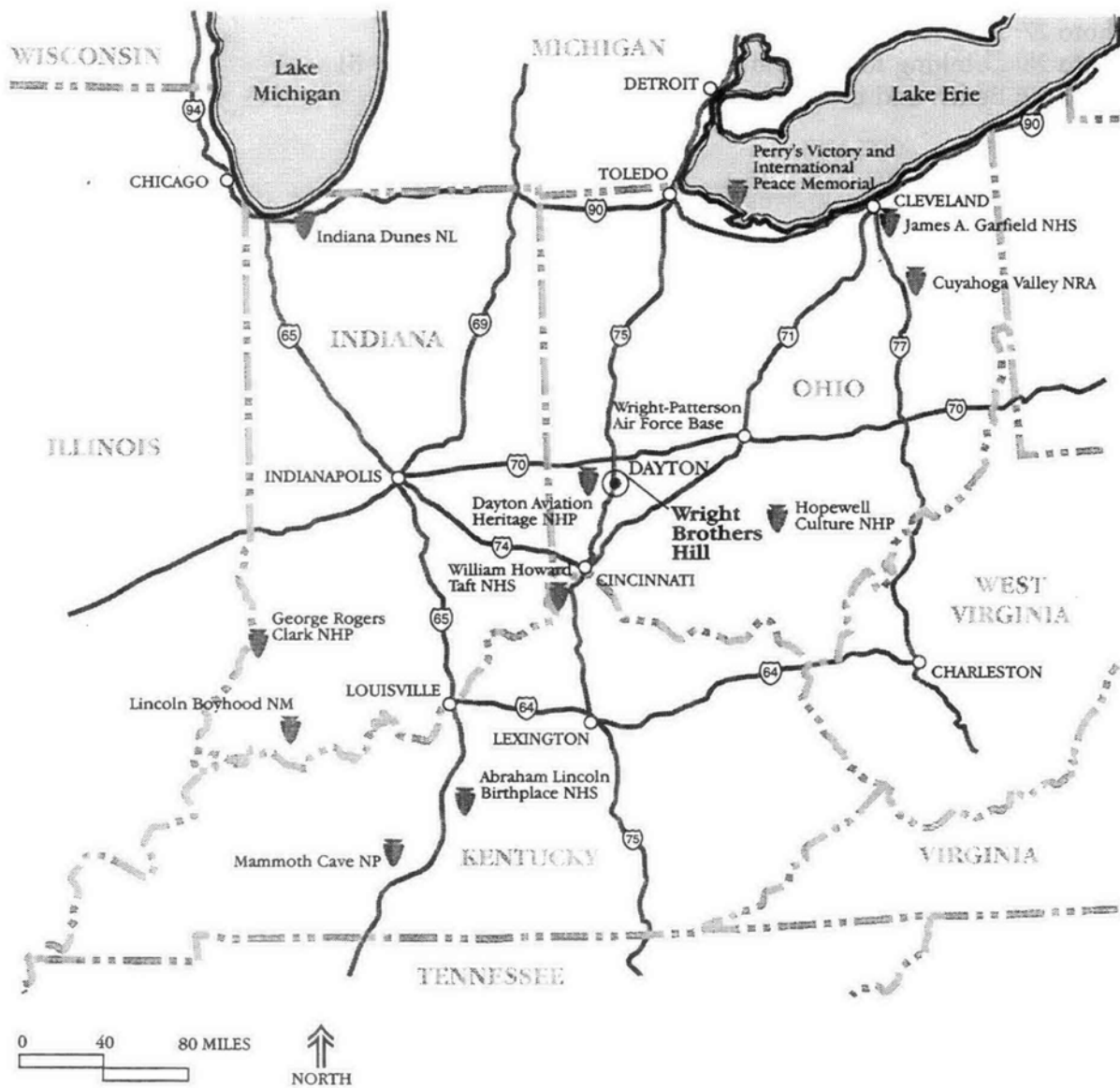
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REGION

Map 1: Region

MANAGEMENT SUMMARY

INTRODUCTION

Dayton Aviation Heritage National Historical Park was established in October of 1992, to commemorate the legacy of three exceptional men - Wilbur and Orville Wright and Paul Laurence Dunbar - and their work in the Miami Valley. Wright Brothers Hill is included in the congressional legislation creating the park because it is one of the sites associated with Dayton's aviation theme. Other sites include the Wright Flyer III and Wright Hall at Carillon Historical Park, the Wright Cycle Shop and the Paul Laurence Dunbar House, both in west Dayton, and Huffman Prairie Flying Field, located on Wright-Patterson Air Force Base. Wright Brothers Hill is not contiguous with the park, but is linked to it by virtue of its direct association with Huffman Prairie Flying Field and its commemoration of a critical facet of aviation history. The legislation authorizing Dayton Aviation Heritage National Historical Park allows the National Park Service to interpret Huffman Prairie Flying Field at Wright Brothers Hill (see map 3).

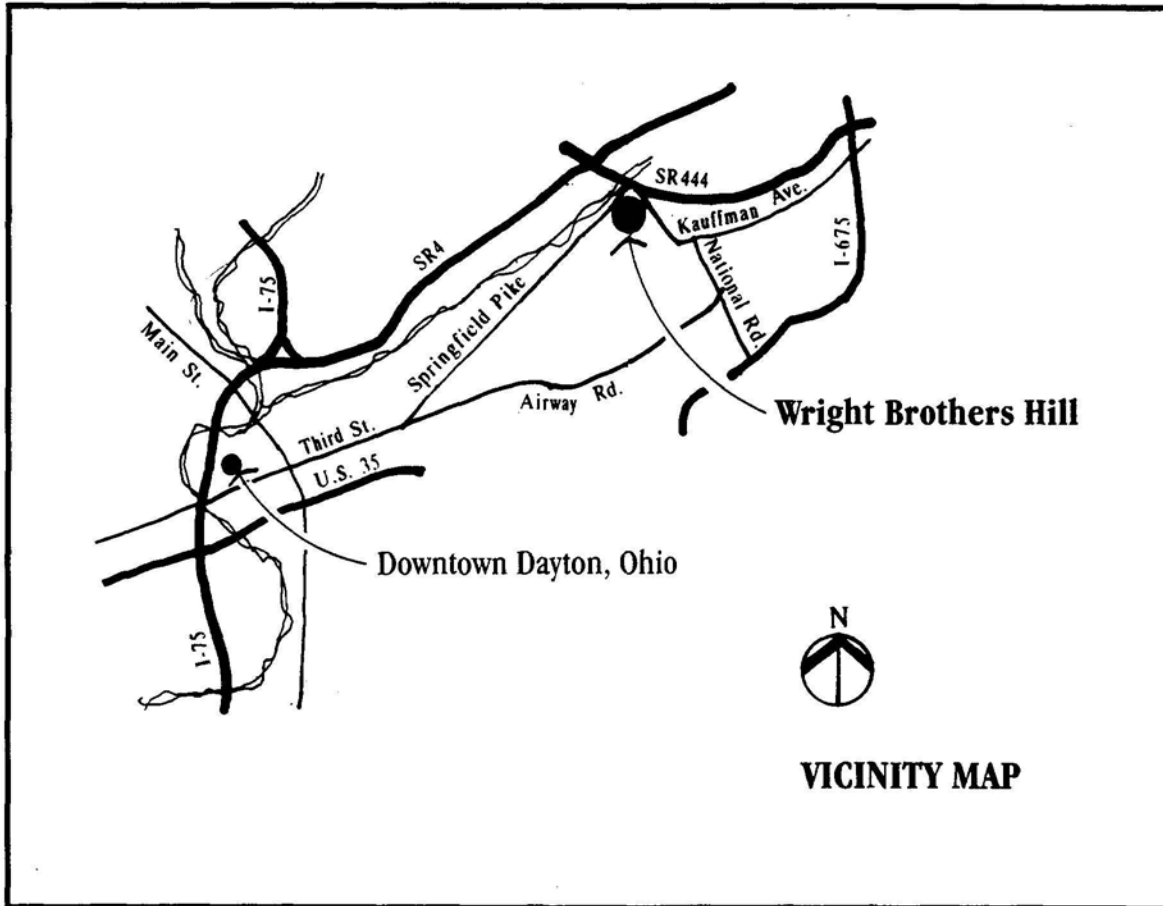
A Cultural Landscape Report, as defined in the National Park Service's NPS-28, *Cultural Resource Management Guideline*, is the primary document for guiding treatment of cultural landscape resources. The report documents the existing conditions, evaluates the resource's significance and integrity, and provides guidance for its treatment. This cultural landscape report was written to provide treatment direction for the ongoing management and maintenance of Wright Brothers Hill.

Much of the research for this document was conducted by a National Park Service intern for the preparation of National Register documentation for the site. Primary research was undertaken at the Frederick Law Olmsted National Historic Site in Brookline, Massachusetts, and at Wright State University in Dayton, Ohio. A substantial amount of historical data was drawn from Ann Deines' draft *Dayton Aviation Heritage National Historical Park, Historic Resources Study*. An on-site visit was made to assess, document, and photograph the resource's existing conditions. Wright-Patterson Air Force Base Natural Resources Manager Terri Lucas collaborated in the preparation of an inventory of existing plant material.

The site is located on the outskirts of the city of Dayton, Ohio. The study area is bounded by State Route 444 to the north, Kauffman Avenue to the east, and Skyline Drive to the south (see Vicinity map). Wright-Patterson Air Force Base currently owns and maintains Wright Brothers Hill.

STATEMENT OF SIGNIFICANCE

Wright Brothers Hill, built from 1938 to 1940, commemorates the exceptional achievements of the Wright brothers. Wright Brothers Hill is historically important as a representative work of the influential Olmsted Brothers landscape architecture firm. The Olmsted Brothers firm continued and expanded upon the commitment of their father, Frederick Law Olmsted, Sr., to improve the well being of society and promote a greater sense of community through landscape design. Spanning almost 100 years, Olmsted Brothers firm



Map 2: Vicinity

designs have played a major role in shaping the American landscape and an exceptionally high number of these designs can be found in Dayton.

Finally, Wright Brothers Hill is important because Orville Wright was personally involved with the development of the memorial. The site is closely linked to historical aviation sites associated with the lives of the Wright brothers. Wright Brothers Hill overlooks the Huffman Prairie Flying Field, where the Wright brothers mastered their flying skills and developed the first practical airplane, the Wright Flyer III.¹

Wright Brothers Hill is also locally significant due to its history of public access, the site's proximity to historical locations of aviation innovations, and as an outstanding example of the work of a design firm that has profoundly influenced Dayton's landscape. It is a designated stop on the city's Aviation Trail. The site's significance will be determined with the completion of documentation for its nomination to the National Register of Historic Places, but it is tentatively identified as significant under Criterion A, for its association with Dayton's contributions to the development of aviation. The design of Wright Brothers Hill also incorporates the design philosophies of Frederick Law Olmsted and its

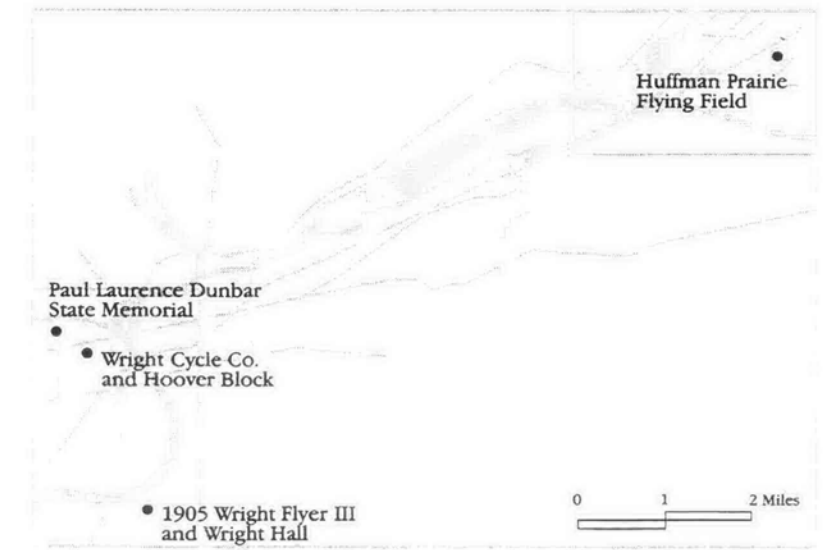
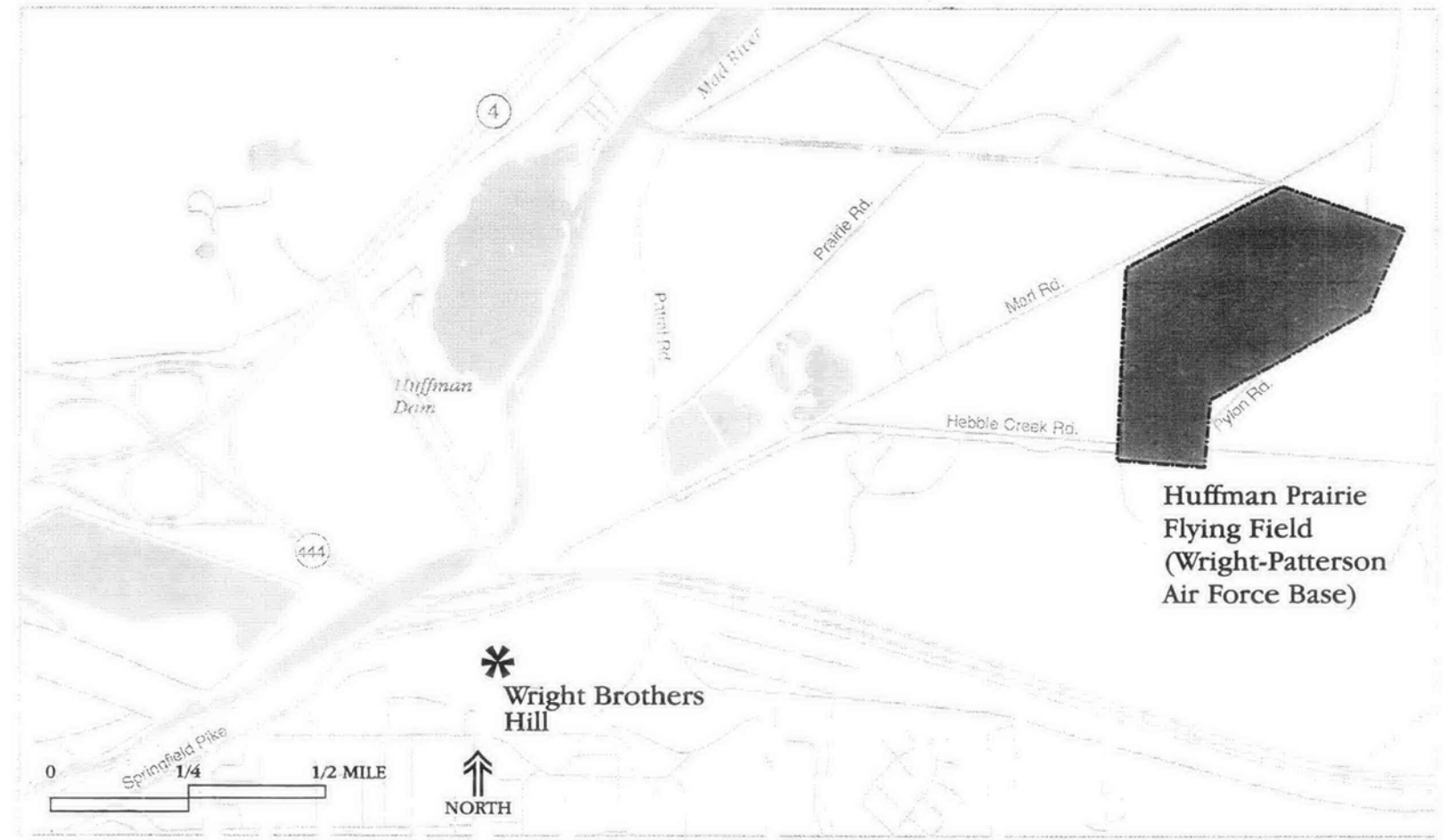
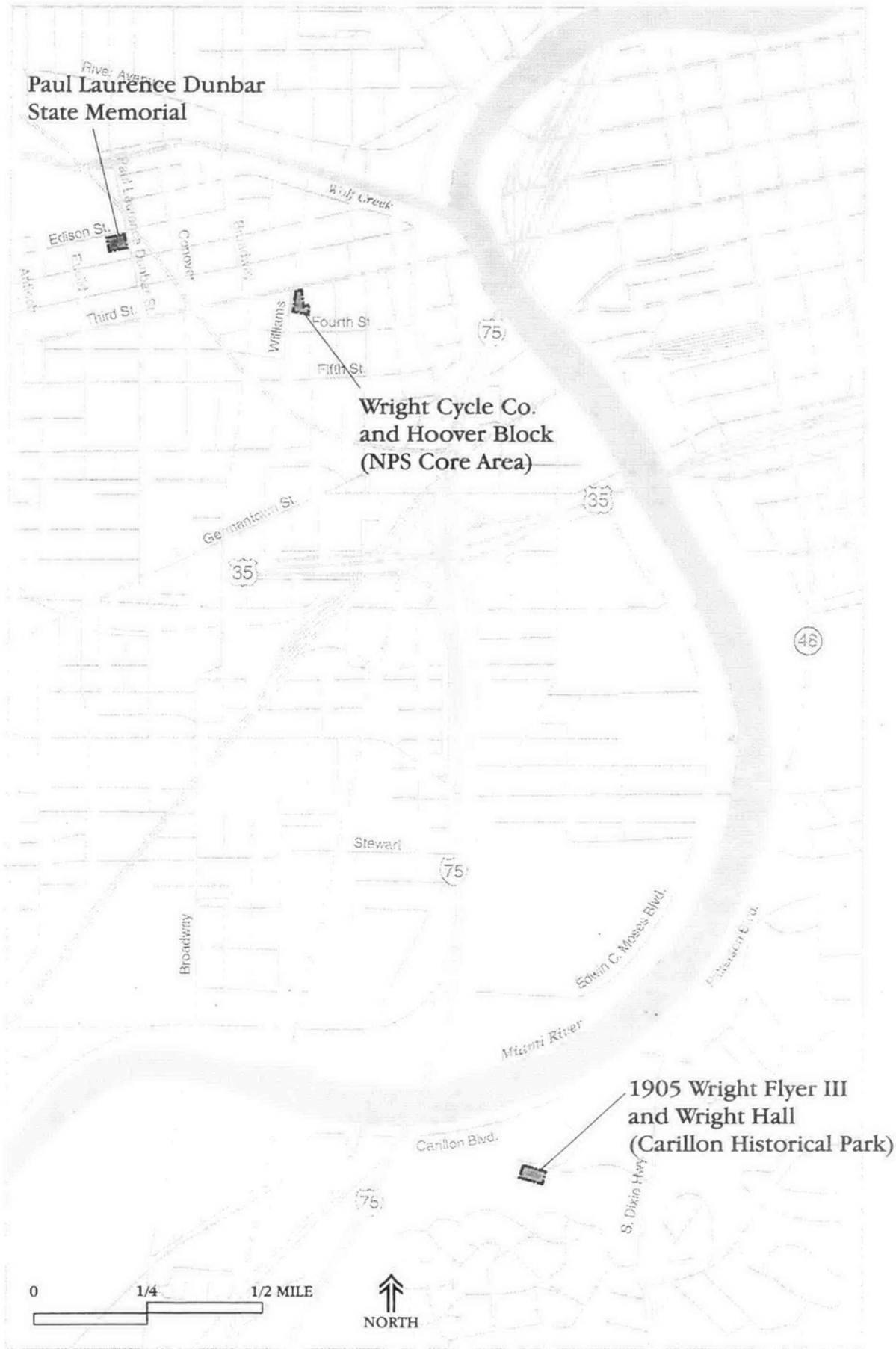
1. Carillon Park, *The Wright Brothers*, (Dayton, OH: Carillon Park, n.d.), 17.

importance as a designed landscape may also contribute to the determination of the site's significance.

The hill is currently listed on the National Register of Historic Places due to the cluster of Native American Early Woodland period burial mounds located on its summit.

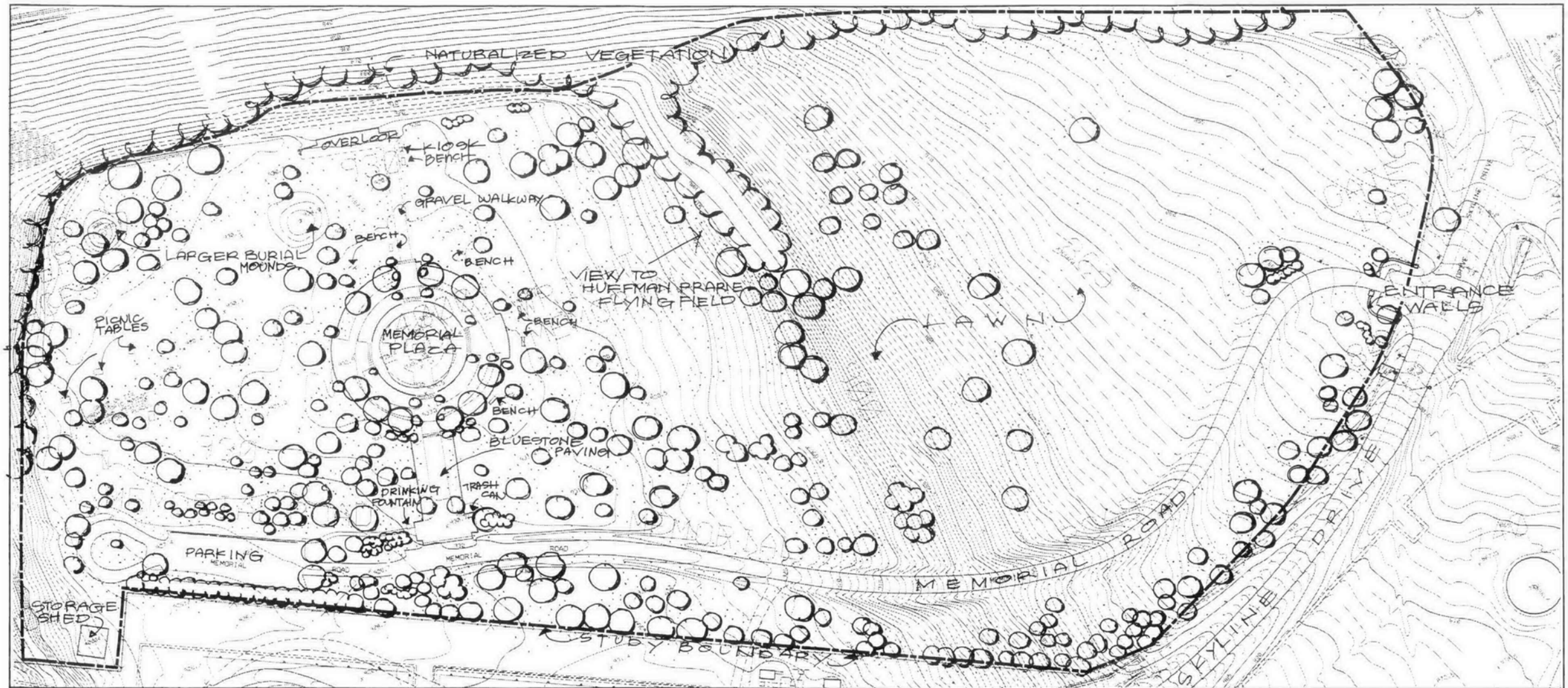


Photo 1: Wright Brothers Hill, no date. (Courtesy of U.S. Air Force.)

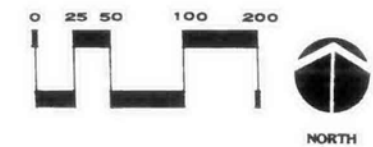


**DAYTON AVIATION HERITAGE
NATIONAL HISTORICAL PARK
COMPONENTS**

Map 3: Dayton Aviation Heritage NHP Components



OVERALL VIEW OF WRIGHT BROTHERS HILL



DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:			
TECH. REVIEW:			
DATE: / /		Wright Brothers Hill	PKG. NO. SHEET OF

HISTORICAL BACKGROUND

DESIGNED LANDSCAPES AND A CORPORATE SOCIAL CONSCIENCE IN DAYTON

Wright Brothers Hill represents the long association between Dayton's civic leaders and the Olmsted Brothers firm, preeminent American landscape architects, planners, and designers. Between 1857 and 1950, this firm participated in 5,000 projects in 45 states, the District of Columbia and Canada. Their ideas and designs had a tremendous influence on the character of open space in America. Except for Boston and New York, Dayton has the highest number of Olmsted designs in the nation. Of the 274 plans and designs attributed to the Olmsteds in Ohio, 151 are in the Dayton area.² Forty-seven of these designs were built.³

The large number of Olmsted Brothers firm projects in Dayton is due largely to the efforts of John H. Patterson, the founder of the National Cash Register Company, and Colonel Edward A. Deeds, who eventually succeeded Patterson as president of the National Cash Register Company in 1931. Patterson and Deeds were inextricably involved in the community planning and development of Dayton. Evidence of their commitment is exemplified by the leadership they provided for establishment and development of the Miami Conservancy District in 1915.

Patterson and Deeds instituted numerous innovations at National Cash Register, some of which helped define the structure of the modern American corporation. One of Patterson's innovative policies was what he referred to as "welfare work." As Patterson's successor, Deeds continued to apply and refine welfare work policies. Welfare work was predicated on the promotion of the physical and mental health and welfare of National Cash Register employees. Both Patterson and Deeds believed that the development of clean, healthy, and pleasant environments was fundamental to the health and welfare of their employees.⁴ This belief coincided with the principles of Olmsted's "...mission to utilize the skills of the landscape architect in providing a healthful, efficient, and aesthetically pleasing setting for the whole range of human activities."⁵

Patterson consulted with the Olmsted Brothers firm on matters involving landscape architecture as early as 1894. Deeds continued the relationship with the Olmsted Brothers firm through the construction of Wright Brothers Hill. Both Patterson and Deeds held the Olmsted brothers in such high regard that often they personally paid the design fees for Olmsted Brothers firm projects as incentives to encourage their employees to use the

2. National Park Service, Frederick Law Olmsted National Historic Site, "Olmsted Firm: Geographic Listing," (Brookline MA: U.S. Department of the Interior, 1985).

3. Interview with Noel Vernon, Olmsted scholar, Pomona, CA, July, 1994.

4. Judith Sealander, *Grand Plans: Business Progressivism and Social Change in Ohio's Miami Valley, 1890-1929*, (Lexington, KY: The University Press of Kentucky, 1988), 18-42.

5. National Park Service, Frederick Law Olmsted National Historic Site, Bulletin.

HISTORICAL BACKGROUND

services of the Olmsted Brothers.⁶ Colonel Deeds, a close friend of the Wright brothers, had a personal interest in aviation and headed the Dayton-Wright Airplane Company before World War I. He chaired the Wilbur and Orville Wright Commission responsible for building the memorial.

The associations between the Patterson, Deeds and the Olmsted Brothers, have imbued Dayton with an exceptionally rich history of Olmsted landscape designs. Wright Brothers Hill is a particularly noteworthy Olmsted design in Dayton because it represents the confluence of the ideas of such innovative and influential leaders of design and business with the commemoration of Dayton's enormous contributions to the development of aviation.

SITE HISTORY

Wright Brothers Hill is a 21.5 acre park developed between 1938 and 1940 by the Wilbur and Orville Wright Memorial Commission in cooperation with the Miami Conservancy District, the site's owner.⁷ Residents of Dayton had entertained the idea of commemorating Wilbur and Orville Wright's achievements as early as 1910. In that year a committee of forty individuals was appointed to look into the construction. Many members of the Dayton Aeroplane Club served on the committee, as did a number of Dayton's leading citizens, including Edward A. Deeds, John H. Patterson, P.D. Schenk, J.M. Cox, and Edward Philipps. A sub-committee of five, led by Judge C.W. Dustin, spearheaded the efforts. Their initial plans called for placing two large columns from Athens along Huffman Avenue where they would be visible from both the railroad trains and the traction cars.

The committee eventually decided as a first step to erect two columns at the Huffman Prairie Flying Field to memorialize the Wright Brothers. It was felt that the simplicity of this design would reflect the Wrights' modesty and unassuming natures. The committee's plans also called for the eventual construction of a larger and more elaborate monument within the city of Dayton. The committee consulted artists in both Europe and the United States in regards to the large monument and developed a concept of an arch of marble or granite reminiscent of Roman architecture.

Wilbur Wright's death in 1912 accelerated efforts to create a memorial to the Wright Brothers. On February 26, 1913, the committee was incorporated in the state of Ohio as the Wright Memorial Commission. The committee was dedicated to

...commemorating the achievements of Wilbur and Orville Wright in the science of aviation, by the construction and maintenance of a memorial park to contain an appropriate sculptural figure, in bronze, placed on the spot where man

6. Interview with Noel Vernon, Olmsted Scholar, Pomona, California, August, 1994.

7. The district is the flood control entity for Dayton and the surrounding Miami Valley.

conquered the air by the first flight in a complete circle in a heavier than air machine, made September 1904, by the Wright Brothers.⁸

The day after its incorporation, the committee signed an agreement with the sculptor Gutzon Borglum to create a heroic statue commemorating the "First Flight of Man." Borglum's creation was scheduled to be unveiled on September 20, 1913.⁹ Borglum was an excellent choice for the project. In addition to being a renowned sculptor in his own right, he was also an aviator and founding member of the New York Aero Club. Borglum chaired the committee that created the medal that the Aero Club presented to Wilbur. The committee also asked the Olmsted Brothers, the renowned landscape architecture firm, to submit a landscaping plan to complement the Borglum memorial.

The committee's efforts were put on hold indefinitely by the 1913 flood that devastated Dayton. Flood recovery and the development of flood control measures forced the postponement of the memorial. A.M. Kittredge, the chair of the committee, telegraphed Borglum on March 30 to inform him that all work on the memorial must cease. In 1920, the Wright Memorial Commission was dissolved.¹⁰

The idea was revived in 1922 and the Wilbur and Orville Wright Memorial Committee was re-established, with the same trustees and objectives as the original commission. About this same time the Dayton Air Services Incorporated Committee was formed. While the main objective of this committee was retaining the United States Army Aircraft Engineering Department at McCook Field in Dayton, it also was interested in creating a memorial to the Wrights. The Dayton Air Services Committee began to solicit funds to purchase a site and construct a memorial. The two committees began to work together to make a memorial to the brothers a reality. The Air Services Committee acquired the property for the memorial as part of the purchase of land for Wright Field, to replace McCook Field which had become too small. They donated ("sold" for \$1) to the U.S. government most of 4,500 acres, but reserved the one parcel of land for construction of the memorial.

While the citizens of Dayton focused on erecting a memorial to the Wrights, they took for granted the physical resources that symbolized the Wrights' achievements. In 1938, Henry Ford purchased the Wright brothers' home at 7 Hawthorne St. and the bicycle shop at 1127 W. Third St. for Greenfield Village, his museum of Americana at Dearborn, Michigan. Some residents of Dayton were shocked to learn that these pieces of the city's heritage were being relocated, and Daytonians again were motivated to commemorate Wilbur and Orville's accomplishments.¹¹

8. Record of the Proceedings of the Incorporators, Members and Trustees of the Wright Memorial Commission, 27 February 1913, MS-134, Wright State University. Quoted in Ann Deines, *Historic Resource Study, Dayton Aviation Heritage National Historic Park*, (draft), September, 1996, 338.

9. Ann Deines, *Dayton Aviation Heritage National Historical Park, Historic Resource Study, Draft*, (United States Department of the Interior, National Park Service: September, 1996), 338.

10. *Ibid.*, 340.

11. *Ibid.*, 343.

HISTORICAL BACKGROUND

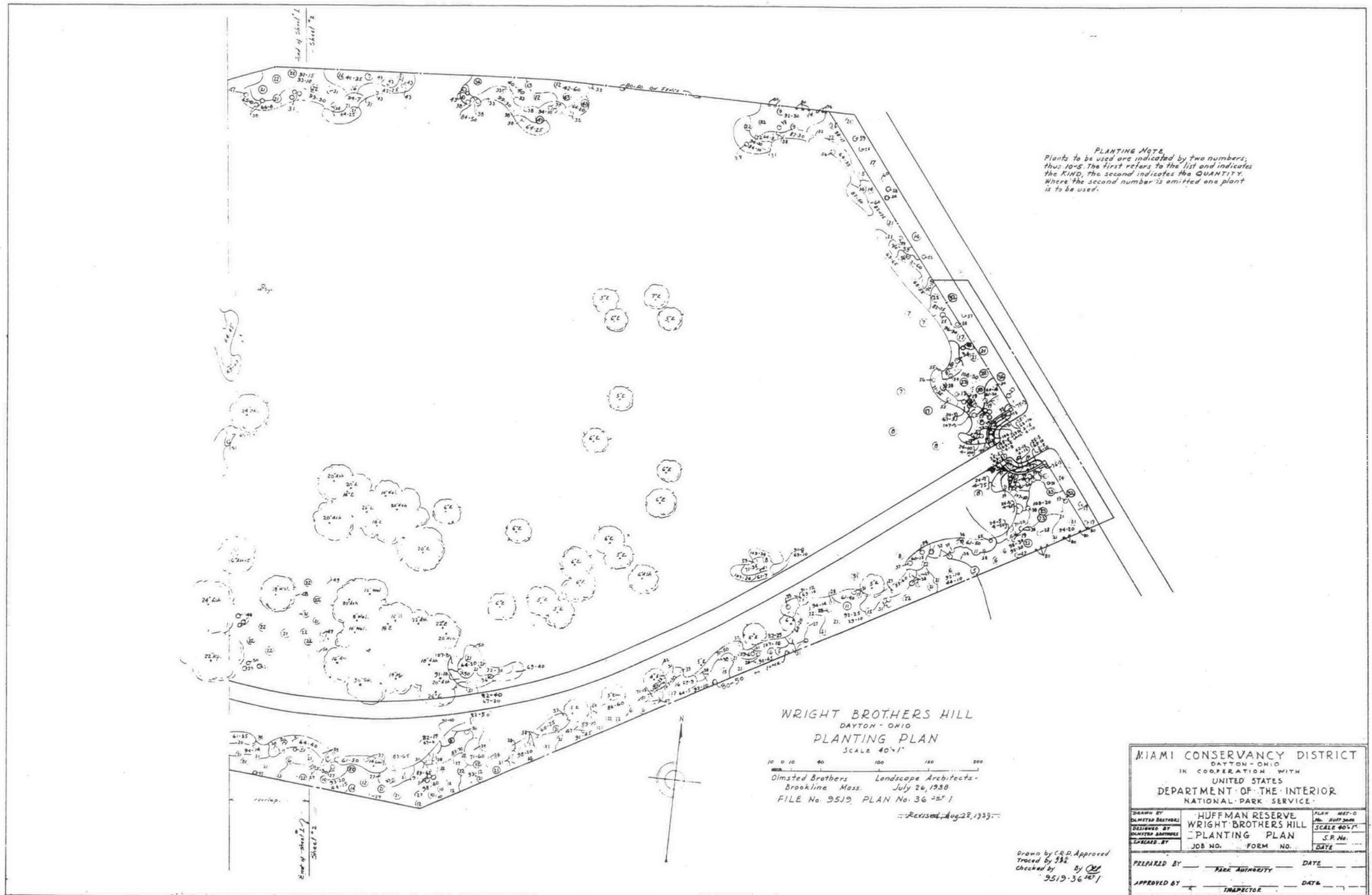
This renewed interest focused on the efforts of the Dayton Air Services Incorporated Committee. After sixteen years of fund raising, the groups had ample money to construct a memorial and also had acquired from the Miami Conservancy District twenty acres of land that overlooked the Huffman Prairie Flying Field. The site was particularly appropriate, since Huffman Prairie was the world's first flying field and the site of some of the Wrights' most important achievements.¹² Committee members realized that if they deeded the property to the Miami Conservancy District, a public corporation, the Civilian Conservation Corps (CCC), could assist in the memorial's construction. On June 1, 1938, the property was returned to the conservancy district. This site was a heavily forested high point in the landscape prior to construction (see photo 2). This prominent point provided an excellent view of the Huffman Prairie Flying Field. The memorial was placed on the hill's highest point to take full advantage of the view shed. Some of the existing trees on the summit were possibly incorporated in the original Olmsted Brothers planting plan (see drawings 2 and 3). Minimal grading took place during construction.

Even before the transfer of land, the Wilbur and Orville Wright Memorial Commission asked the Olmsted Brothers firm to submit a tentative plan and design for a memorial on the site. In 1937, the landscape architect at the local CCC camp had submitted a design for



Photo 2: Wright Brothers Hill prior to construction, no date. (Courtesy of U.S. Air Force.)

12. In 1904, Wilbur and Orville built a hangar on the site for the Wright Flyer II, their second airplane. Wilbur Wright flew the Wright Flyer II in a complete circle at Huffman Prairie in September, 1904, a pivotal moment in aviation history. Huffman Prairie was also the testing ground of the Wright Flyer III, the world's first practical airplane, and the site of the brothers' first permanent flying school.



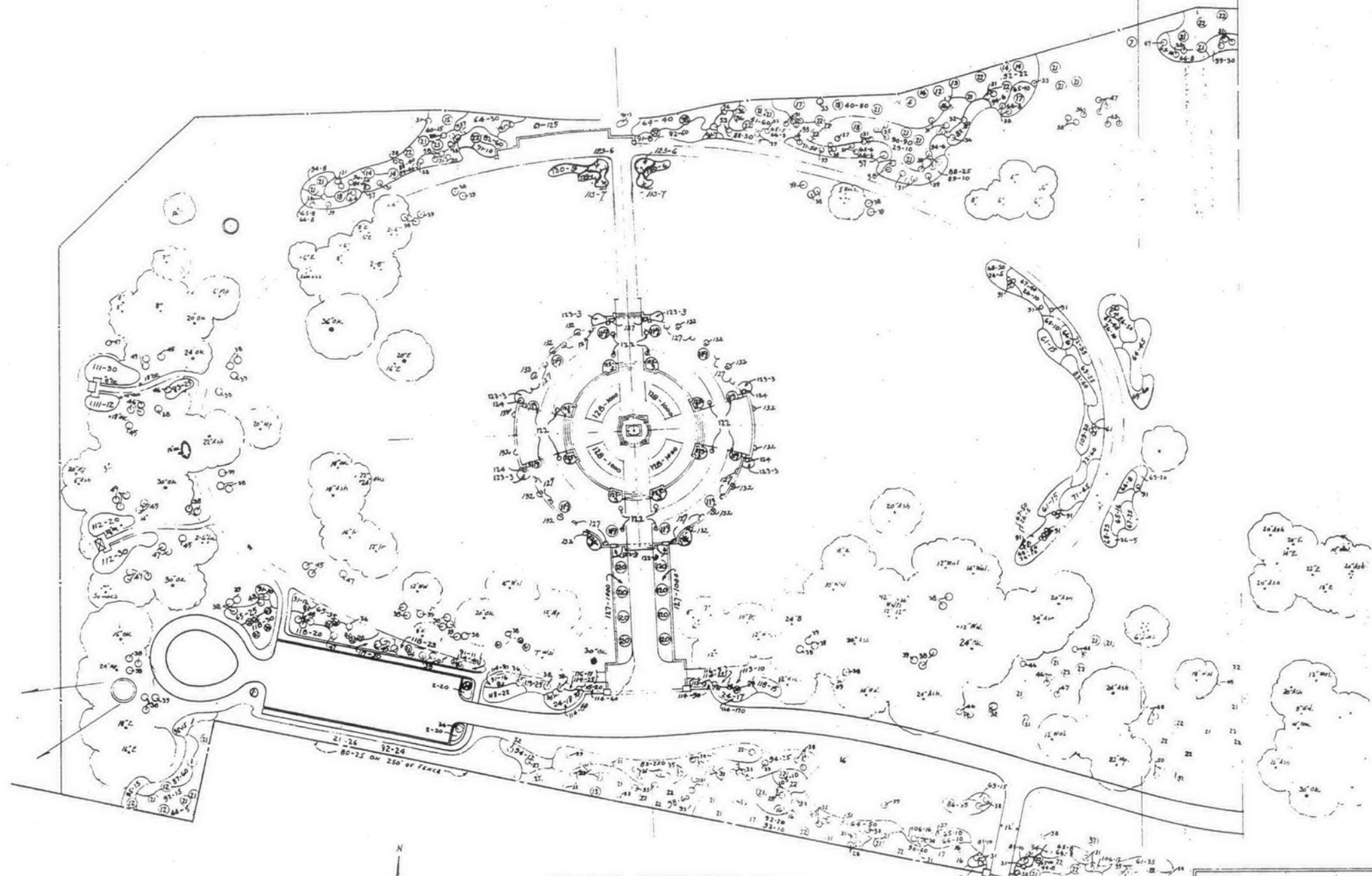
PLANTING NOTE.
 Plants to be used are indicated by two numbers; thus 10-5. The first refers to the list and indicates the KIND, the second indicates the QUANTITY. Where the second number is omitted one plant is to be used.

WRIGHT BROTHERS HILL
 DAYTON - OHIO
 PLANTING PLAN
 SCALE 40'-1"

Olmsted Brothers Landscape Architects -
 Brookline Mass. July 26, 1938
 FILE No. 9519 PLAN No. 36-221
 --Revised Aug. 28, 1939--

Drawn by C.R.D. Approved
 Traced by J.S.E. By O.B.
 Checked by 9519-36-221

MIAMI CONSERVANCY DISTRICT DAYTON - OHIO IN COOPERATION WITH UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE		
DRAWN BY OLMSTED BROTHERS	HUFFMAN RESERVE WRIGHT BROTHERS HILL PLANTING PLAN	PLAN 9519-0 No. 36-221 SCALE 40'-1" S.P. No. DATE
DESIGNED BY OLMSTED BROTHERS	JOB NO.	FORM NO.
CHECKED BY	PREPARED BY	DATE
	APPROVED BY	DATE



PLANTING NOTE.
 Plants to be used are indicated by two numbers, thus 10-5. The first refers to the list and indicates the KIND, the second indicates the QUANTITY. Where the second number is omitted one plant is to be used.



WRIGHT BROTHERS HILL
 DAYTON - OHIO
PLANTING PLAN
 SCALE 40'-1"

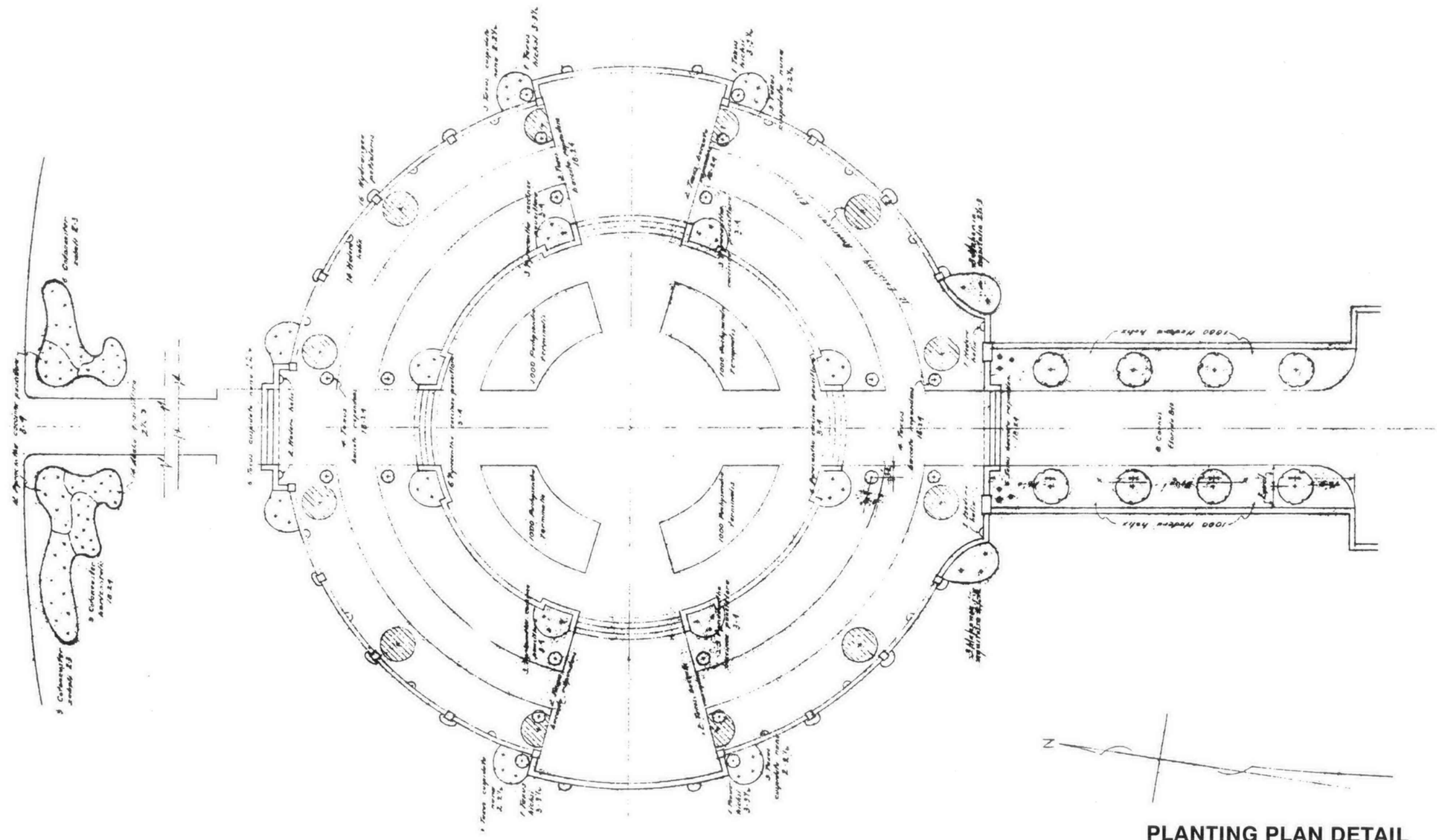
Olmsted Brothers Landscape Architects
 Brookline Mass. July 26, 1938
 FILE No 9519 PLAN No. 36 2nd 2

Do not work on this plan until you have received the approval of the Park Authority.

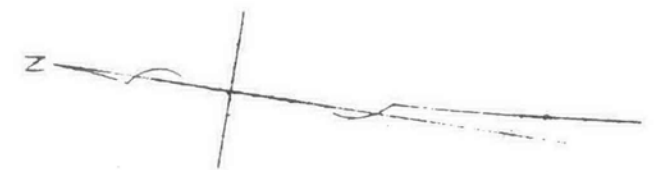
Drawn by C.R.P. Approved
 Traced by S.S. by J.W.
 Checked by J.W.
 9519-36 1072

MIAMI CONSERVANCY DISTRICT DAYTON - OHIO IN COOPERATION WITH UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE		
DRAWN BY QUANTITY SURVEYED CHECKED BY	HUFFMAN RESERVE WRIGHT BROTHERS HILL PLANTING PLAN JOB NO. FORM. No.	PLAN No. 36 SCALE 40'-1" S.P. No.
PREPARED BY APPROVED BY	PARK AUTHORITY INSPECTOR	DATE DATE

PLANTING PLAN, 1938



PLANTING PLAN
 WRIGHT BROS. HILL
 DARTON OHIO
 Designed by Olmsted Bros.



**PLANTING PLAN DETAIL
 OF MEMORIAL PLAZA,
 1940**



Photo 3: Entry road under construction, circa 1938. (Courtesy of Miami Conservancy District.)

the site,¹³ but when this design was rejected, the commission again turned to the Olmsted Brothers firm. C.H. Eiffert, the Chief Engineer of the Miami Conservancy District, submitted tentative plans and cost estimates for the memorial to the District's Board of Directors on April 26, 1938.

The construction plans for the memorial required the CCC to furnish the unskilled labor and much of the needed construction equipment while the Miami Conservancy District and the Wilbur and Orville Wright Memorial Commission would furnish the skilled labor. Since the CCC would carry out a portion of the construction of the memorial, the National Park Service, which oversaw the CCC forces, needed to approve the design. In early October, representatives of the Olmsted Brothers firm presented their final plan to the directors of the Wilbur and Orville Wright Memorial Commission, who approved it unanimously. On October 12, 1938, the board announced that "the design was made by Olmsted Brothers of Brookline, Mass., and has been approved by the National Park Service, under whose direction the CCC [Civilian Conservation Corps] forces are working

13. In most cases, CCC landscape architects were employees of the National Park Service. In this particular instance, the landscape architect is not described specifically as an NPS employee, although this is probably a safe assumption. None of the correspondence between the Olmsted firm and the Miami Conservancy District mentions this person by name.

HISTORICAL BACKGROUND

on the project (see photo 4)."¹⁴ The directors also approved a motion to name the memorial "Wright Brothers Hill."¹⁵

Once the National Park Service approved the design, CCC workers began construction at the site, grading, paving, digging drainage ditches, and setting the base of the memorial. Throughout the construction of the memorial, the Olmsted Brothers and the Conservancy district depended on the CCC to provide labor for the project (see photos 5 through 10).

The CCC was one of the most significant relief measures undertaken during the First New Deal initiated by President Franklin Roosevelt. Begun in 1933, the Corps provided work relief to young men between the ages of 18 and 25. In its 10-year existence, the CCC employed almost 3 million men in planting trees and building roads in state and national parks and forests, restoring beaches, and other efforts related to natural and cultural resource conservation.



Photo 4: CCC Company at work, circa 1938. Printed in *Dayton Journal*, October 13, 1938).
(Courtesy of Miami Conservancy District.)

14. C.H. Eiffert to the Board of Directors, the Miami Conservancy District, October 12, 1938. Post 1949 Correspondence, Folder No. 1, Olmsted Job #9519, Wright Brothers Hill, Dayton, Ohio, National Park Service, Frederick Law Olmsted National Historic Site.

15. It is possible that the shaft in the middle of the final design can be attributed to Gutzon Borglum. Early in 1913, Borglum met with Percy R. Jones, a representative of the Olmsted Brothers, to discuss Borglum's possible designs for the memorial. Jones and Borglum agreed that Borglum would design a monolith resting on a concrete foundation. After 1913, there is no record of further involvement in the project by Borglum. However, the monolith that ultimately became the focal point of the monument may in fact trace its roots to the 1913 meeting between Jones and Borglum. Ann Deines, *Historic Resource Study, Dayton Aviation Heritage National Historical Park*, (draft), September, 1996, 346.

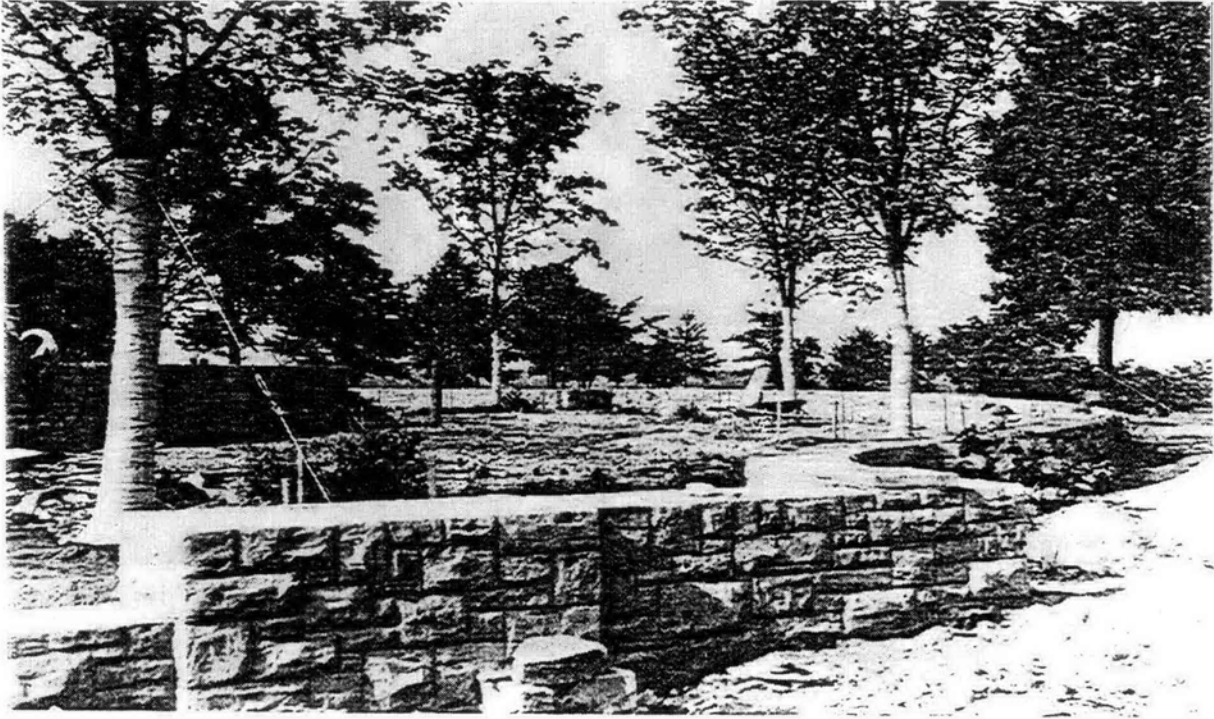


Photo 5: Memorial Plaza under construction, circa 1939-1940.
(Courtesy of Miami Conservancy District.)



Photo 6: Memorial Plaza under construction, circa 1939-40.
(Courtesy of Miami Conservancy District.)

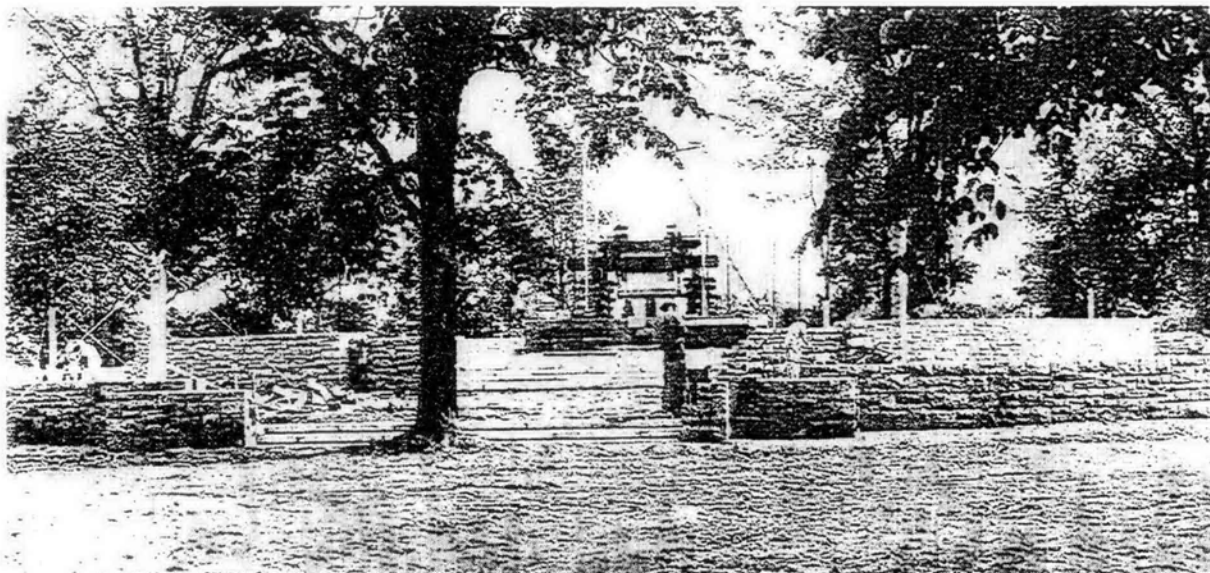


Photo 7: Plaza under construction, circa 1939-1940.
(Courtesy of Miami Conservancy District.)

The creation of the Civilian Conservation Corps proved to be of particular importance to the National Park Service. Under the Roosevelt administration, the National Park system grew significantly, adding dozens of new units. Using CCC labor, the National Park Service made enormous improvements in park infrastructures, improving visitor access and resource integrity in numerous units in the system.

In 1937 the CCC established a camp at Vandalia near Dayton. By 1938, the original CCC company stationed at Vandalia had given way to an African-American unit, which soon became involved in the development of Wright Brothers Hill.¹⁶ "Labor for grading, road work, land clearance, and landscaping is being contributed by the Civilian Conservation Corps from the camp near Vandalia at Taylorsville Dam."¹⁷ Ironically, a segregated

16. Although an undeniable success, the CCC had some unfortunate drawbacks, most notably its policy of discrimination against women and African-American men. None of the Corps 2.5 million employees were women. African-American men were organized in CCC units, but their segregated companies were relatively few in number and often poorly supplied. James West Davidson, et al. *Nation of Nations. A Narrative History of the American Republic*. Volume II: Since 1865. New York: McGraw-Hill Publishing Company, 1990, 981, and "The Civilian Conservation Corps," in *The Reader's Companion to American History*, Eric Foner and John A. Garraty, ed., Boston: Houghton-Mifflin Company, 1991, 177. As late as November of 1941, the CCC Advisory Council reported to the Corps Director that "all colored companies are notably deficient in leader and clerical personnel." Acting War Department Representative, CCC to Director, CCC, 21 November 1941, Box 163, Entry 115, CCC Camp Inspection Reports, RG 35, National Archives.

17. This company's official designation was SP-20. *The Dayton Daily News*, Sunday, December 18, 1938, 14.

African-American work force would now help build a memorial to two men who had looked beyond racial barriers in their friendship with the poet Paul Laurence Dunbar.¹⁸

Wright Brothers Hill brought together the Civilian Conservation Corps, the National Park Service, the Olmsted Brothers firm, and the Miami Conservancy District in a three-year partnership. The Olmsted Brothers firm designed the hill, the CCC provided the labor for portions of the project, and the Conservancy District and the National Park Service oversaw and approved the final designs and development of the site. The Siebenthaler Company, a local landscaping firm, oversaw all the planting on the site. The Gorham Company of Providence, Rhode Island, produced the bronze plaques for the memorial itself. The CCC laborers also contributed some elements outside the original scope of their assigned duties. "Mr. Eifert (sic) says that the CCC boys can build a simple oak bench during the winter without cost to the Wright committee. Will you be kind enough to have sent us at an early date a sketch of such a bench. Obviously it must be of simple design."¹⁹

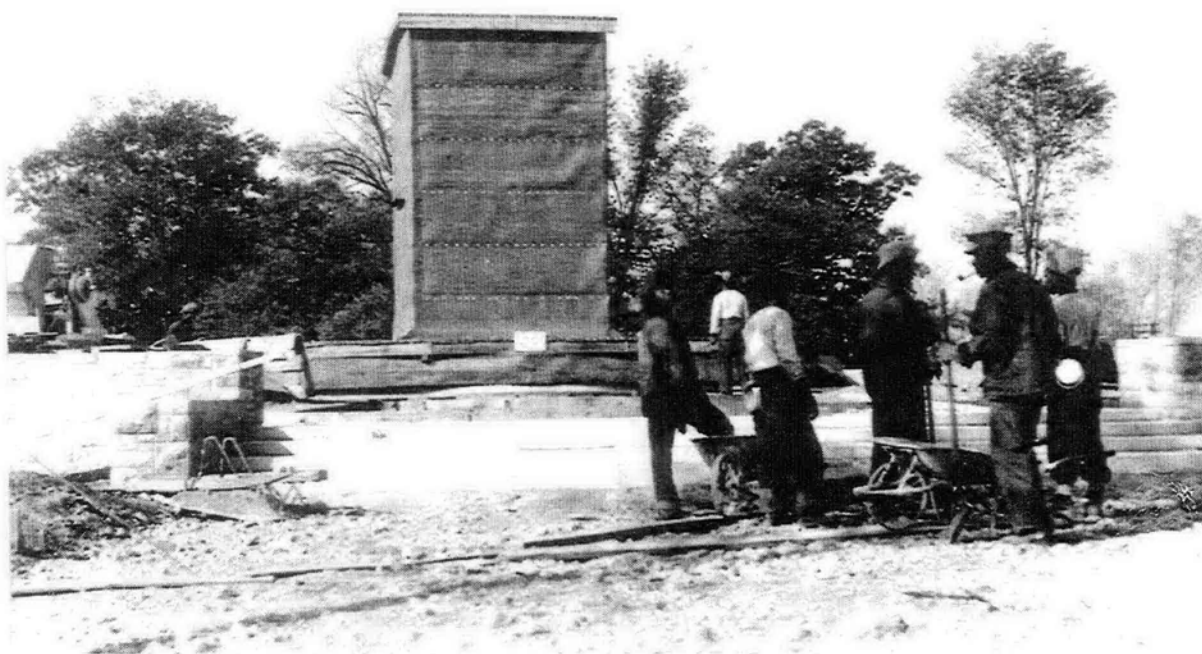


Photo 8: Looking towards monument from the north side between the inner and outer walls.
Courtesy of Frederick Law Olmsted National Historic Site archives, circa 1939-40 (#9519-1).

18. Paul Laurence Dunbar, who later won national and international acclaim as a writer and poet, attended high school with Orville Wright and was a friend of both brothers. The Wrights printed the newspaper that Dunbar created for Dayton's African-American neighborhood and later gave him his first bicycle. With the renowned literary figure William Dean Howells as a patron, Dunbar became a leading force in African-American literature before his death in 1906.

19. E.D. Smith, Plant Engineer, national Cash Register Company, to Carl Rust Parker, August 29, 1939. Olmsted Associates Papers: Job File 280, Folder 5, Manuscript Division, Library of Congress.



Photo 9: Looking from monument to the west. Courtesy of Frederick Law Olmsted National Historic Site archives, circa 1939-40 (#9519-116).



Photo 10: Main entrance path to the monument. Courtesy of Frederick Law Olmsted National Historic Site archives, circa 1939-40 (#9519-122).

The Olmsted Brothers firm wanted the unskilled CCC enrollees' tasks limited to basic landscaping duties. The landscaping contractor was to assume responsibility for more detailed jobs. The Olmsted Brothers firm informed C.H. Eiffert that they wanted the contractor to prune plants at the site. "The dead plants...will be picked up and carried off by the CCC boys...[we] did not want to entrust the pruning to any of the CCC crowd."²⁰ The Olmsted Brothers firm was willing to allow CCC workers to take on more complicated tasks,

"(i)f their foreman finds that there are competent men in the CCC organization to actually do the planting, it will not be necessary for him to use more than one additional laborer...We have given the nurserymen some leeway in this matter, however, as we want to provide for obtaining the best possible results. In any case, of course, the CCC boys will do the digging of the holes and much of the filling in and smoothing up of the areas after the plants are in the ground."²¹

Throughout much of the project, the firm found itself at odds with the landscape architect working with the CCC in Dayton. This individual at one time had voiced opposition to the Olmsted Brothers' design for the site. The firm turned to the National Park Service to resolve the long-standing conflict over design, asking that the National Park Service intercede to move the project ahead and not allow the CCC landscape architect to interfere with their progress. They argued that since the Conservancy District had approved the plans and was paying the bills, it should have the final word on the course of the project. The Olmsted Brothers firm counted on the National Park Service's long relationship with the Conservancy District to swing the decision in their favor:

"The National Park Service, through the Civilian Conservation Corps organizations, has already done a considerable amount of work on properties belonging to the Miami River Conservancy Commission....My object in writing to you is to inform you fully what the situation is and to express the hope that you will consider it desirable to expedite the project as much as possible...(and) that you will be willing to make it clear to the camp landscape architect that the design, as submitted by us, is not to be changed by him, under any circumstances."²²

However, the Olmsted Brothers firm made some concessions to their project partners, including the CCC. At the request of Colonel Deeds, the firm incorporated CCC designs in the construction of toilet buildings on the site. "As for the design of the buildings themselves...Colonel Deeds felt that he would like to have the CCC authorities feel that they had some part in the actual design of the project, and therefore he felt that it was

20. Olmsted Brothers to C.H. Eiffert, May 14, 1940. Post 1949 Correspondence. Folder No. 2, Olmsted Job 9519, Wright Brothers Hill, Dayton, Ohio. National Park Service, Frederick Law Olmsted National Historic Site.

21. Olmsted Brothers to C.H. Eiffert, March 3, 1939. Post 1949 Correspondence. Folder No. 3, Olmsted Job #9519, Wright Brothers Hill, Dayton, Ohio. National Park Service, Frederick Law Olmsted National Historic Site.

22. Olmsted Brothers to Arno B. Cammerer, Director, National Park Service, June 9, 1938. Folder 3, Olmsted Job #9519, National Park Service, Frederick Law Olmsted National Historic Site.

better policy to use their plans for these buildings."²³ (See "Character Defining Features," and "Evaluation of Integrity," for information regarding changes to the design during construction and in subsequent years.)

For the next two years, the Olmsted Brothers firm, the Miami Conservancy District, the National Park Service, and the CCC maintained their sometimes uneasy partnership and moved ahead on Wright Brothers Hill. Orville Wright was deeply interested in the memorial and was consulted on its conceptual design. Colonel Deeds told Carl Rust Parker, the Olmsted Brothers project manager for the memorial, that "he did not want any monument or elaborate memorial in the memorial park itself as Mr. Orville Wright, who alone survives, is decidedly against any such treatment."²⁴

Orville influenced the memorial's development in other ways, as well. A plaque listing the Wright brothers' early aviation students included Grover C. Bergdoll, an aviator who refused to serve in the military during World War I. Bergdoll remained a good friend of the Wrights, however.²⁵ Orville learned that memorial planners intended to omit Bergdoll's name from the plaque. Orville informed them that if they did not include Bergdoll's name, they could omit his name as well. Bergdoll's name was included on the plaque.

Wright Brothers Hill was officially dedicated on August 19, 1940, which was also Orville Wright's birthday. Wright and several of his former aviation students were present for the dedication. Army Air Corps commander General Henry "Hap" Arnold, an early student, spoke at the ceremony, as did Colonel Deeds, who in opening the ceremony said that "probably in no instance in the history of scientific achievement is there a more outstanding example of accomplishment based on original research and scientific development and made practical by inventive genius."²⁶

The Olmsted Brothers firm remained deeply involved in Dayton after the completion of the memorial. The firm appreciated the value of the CCC as a ready source of cheap labor and hoped to employ CCC workers in the construction of a landscaping project around the carillon at what is now Carillon Historical Park. The Olmsted Brothers firm petitioned the National Park Service to keep the camp open after the National Park Service had marked it for closure on the eve of World War II. The National Park Service rejected their request, however, informing the Olmsteds that it intended "...to go through with our original recommendation for the termination of this camp." The Olmsted Brothers firm continued working in Dayton, but without the assistance of the Civilian Conservation Corps.

23. Olmsted Brothers to C.H. Eiffert, October 25, 1938. Post 1949 Correspondence. Folder No. 1, Olmsted Job #9519, Wright Brothers Hill, Dayton, Ohio. National Park Service, Frederick Law Olmsted National Historic Site.

24. Correspondence, Carl Rust Parker to the Olmsted Brothers firm, February 17, 1938. Post 1949 Correspondence. Folder No. 1, Olmsted Job #9519, Wright Brothers Hill, Dayton, Ohio. National Park Service, Frederick Law Olmsted National Historic Site.

25. Interview with Wilkinson Wright, grand nephew of the Wright brothers, Dayton, Ohio, September 9, 1994.

26. "Dedicate Wright Memorial at Dayton," *The NCR News*, August 20, 1940.

The Miami Conservancy District held title to the Wright Brothers Hill until 1978, the 75th anniversary of powered flight. At that time, the Conservancy District decided the site to the United States Air Force. The deed transfer requires the Air Force to keep the memorial open to the public. The Air Force continued the tradition of conducting a ceremony on December 17 at the site honoring the Wright brothers' first flight at Kitty Hawk, North Carolina. At this event, a high ranking Air Force official gives a brief presentation, a wreath is laid at the base of the memorial, followed by a fly over (see photo 11). A relative from the Wright family is present at the ceremony.²⁷



Photo 11: Ceremony honoring Wright Brothers' 1st flight, no date.
(Courtesy of Miami Conservancy District.)

27. Interview with Wilkinson Wright, grand nephew of the Wright brothers, Dayton, Ohio, September 9, 1994.

LANDSCAPE DESIGN HISTORY

The Olmsted Brothers firm adapted and applied Frederick Law Olmsted, Sr.'s ideas in the memorial's design. Wright Brothers Hill exhibits several characteristics of the senior Olmsted's philosophies and practices. Olmsted believed that a park should be a "simple, broad, open space" with "a sufficient number of trees about it to supply a variety of light and shade."²⁸ Wright Brothers Hill mirrors this idea. The planting design and the 100 different species at the site reflect Olmsted's emphasis on the liberal use of plantings as a fundamental component of landscape design.²⁹

Expansive lawns, a large meadow in the eastern portion of the site, and the dense tree and shrub plantings along the periphery of the site represent classic Olmsted design standards. Plantings along the periphery and in specific locations articulate the meadow, define spatial organization of the site and frame vistas of the larger landscape beyond.³⁰ Minimal grading of the site and sensitive placement of the gently curving roadway along the southern perimeter attest to Olmsted's insistence that "the qualities inherent to the site" should not be compromised."³¹ Formal design was generally limited to...special gathering areas."³² The most intensive planting design at the site is around the memorial. The hillside in the middle of the site and vegetation massing along portions of it separates the formal, bi-axial symmetrical design at the top of the hill and the casual character of the meadow in the lower part of the site. Although this may not be readily discernible, this subtle design technique is in keeping with Olmsted's belief that potentially conflicting uses should be separated (see photo 12).

The extensions of the outside wall along the east-west axis of the memorial highlight the important views of the Huffman Prairie Flying Field and the Adena burial mounds. The view to the flying field is integral to the design of the memorial. The Wilbur and Orville Wright Memorial Commission, which commissioned the memorial, had a concrete pylon built in 1941 marking what was then thought to be the location of the Wright Brothers' first hangar on the field. The pylon serves as a visual marker for people viewing the field from the memorial.³³

Overall, Wright Brothers Hill is an excellent example of a "human made 'meadow and woods' found in the landscape of the rural countryside."³⁴ This design philosophy is appropriate for Wright Brothers Hill, given the rural quality of the surrounding area from the time of construction up to the present.

28. Robert E. Grese, *Jens Jensen: Maker of Natural Parks and Gardens*, (Baltimore: The Johns Hopkins University Press, 1922), 17.

29. A January 27, 1939 quotation of stock plants specifies 8,181 plants for the site.

30. Grese, 18.

31. *Ibid.*, 19.

32. *Ibid.*, 20.

33. Lois E Walker and Shelby E. Wickham, *From Huffman Prairie to the Moon: the History of Wright-Patterson Air Force Base*, (Washington DC: U.S. Government Printing Office, n.d.), 336.

34. Grese, 21.



Photo 12: Wright Brothers Hill, circa 1940s.
(Courtesy of Miami Conservancy District.)

EXISTING CONDITIONS

The landscape at Wright Brothers Hill is a park-like setting comprised of a plaza with walls, steps, walks, and informational plaques. Located at the northern terminus of a prominent ridge, the hill is the area's dominant topographical feature. The site is located on the outskirts of the city of Dayton in Greene County, Ohio. It is bounded by State Route 444 to the north, Kauffman Avenue to the east, and Skyline Drive to the south. Area "B" of Wright-Patterson Air Force Base is to the west of the memorial. Wright-Patterson Air Force Base currently owns and maintains the hill and the memorial (see drawing 5 and photos 13 through 21)).

The site is essentially level on the west, whereas the eastern half of the site is sloped. On the northern edge, a precipitous 65% slope embankment drops 110-feet. An eight-foot chain link fence topped by three strands of barbed wire marks the southern boundary between the memorial and the secured portion of Wright-Patterson Air Force Base. From the middle of the site to the east, the topography descends in a northeasterly direction. Beyond the eastern boundary the topography continues to descend in a northeasterly direction. The memorial, observation area, and the parking area are on level ground. None of the development required significant grading. The area immediately north of the site was graded for the Conrail Railroad tracks, which follow an east-west line below the site boundary.

Visitors enter via an asphalt roadway located along the southeastern side of the hill. The roadway follows the natural contours of the land, running the length of the southern perimeter, passing through a parking area, and ending in a turn-around. An asphalt path leads from the parking area to the southern end of the north-south axis of the memorial and a short auxiliary road leads from the roadway to a gate in the fence on the southern boundary.

Prominent north-south and east-west axes delineate the memorial, the center of which is dominated by a 17-foot shaft. The shaft's design (see photo 12) reflects an Art Moderne influence. Three shallow granite steps surround the plinth of the shaft, and two concentric paths encircle the steps. All of this area, with the exception of the granite steps, is paved in Pennsylvania Bluestone. Twelve arched sections of turf, arranged concentrically in groups of four, define four paths that radiate toward the cardinal directions.

Three concentric paths bisect the four main paths (see photo 12). A three-and-one-half foot limestone wall, sectioned into quarters, separates the two larger circular pathways. A bronze informational plaque is attached to each section of the wall along the east-west axis. One plaque addresses the Huffman Prairie Flying Field, to the east of the site. Another plaque lists the names of early aviators who trained at the Huffman Prairie Flying Field, while a third summarizes the contributions of Wright-Patterson Air Force Base to the development of aviation. The fourth explains the significance of the Native American Early Woodland (Adena) burial mounds on the site.

A four-foot limestone wall surrounds the outside path. The walls at the ends of the east-west axis extend two feet beyond the circumference of this outer wall. The twenty-foot bays articulate the east-west axis of the memorial. Exits from the circular area are located

EXISTING CONDITIONS

along the north-south axis. South of the circular area, the pathway is bordered by one-and-a-half foot high limestone walls. A five-foot strip of grass separates the walkway and the walls. A gravel path runs from the north side of the memorial to the observation area, which is bounded by a three-foot limestone wall.

Wright Brothers Hill commands attention from the north, east and west. At the entrance to the site, trees and rolling green lawns dominate the scene. Extensive vegetation masks the memorial. The vegetation along the bluff is kept below the observation area wall. The view from the memorial is one of the most extensive in the Dayton area, offering an excellent view of Huffman Dam, the Mad River, most of Wright-Patterson Air Force Base, and the surrounding countryside.

The east axis offers a good perspective of Huffman Prairie Flying Field, where the Wright brothers refined their flying skills and developed the first practical airplane. Until recently, the Air Force did not permit public access to the field. The view from Wright Brothers Hill is still important because it provides the opportunity to put the flying field in context with its surroundings.

The west axis focuses attention on six Adena burial mounds, which are northwest of the monument. The mounds have diameters up to 50-feet and heights up to 4.2-feet. The mounds are listed on the National Register of Historic Places.

PHOTO DOCUMENTATION, 1997



Photo 13: Looking south at Norway maples and utility lines, 1997 (viewed from the memorial).
(National Park Service)



TREES AND SHRUBS KEY (EXISTING)

COMMON NAME

1. American Beech
2. Amur Maple
3. Arrowwood Viburnum
4. Ash
5. Austrian Pine
6. Barberry
7. Birch
8. Black Cherry
9. Blackhaw Viburnum
10. Black Walnut
11. Black Oak
12. Blue Ash
13. Boxelder
14. Bradford Callery Pear
15. Bur Oak
16. Canadian Hemlock
17. Carolina silverbell
18. Cherry
19. Chinkapin Oak
20. Common Baldcypress
21. Common Hackberry
22. Common Pearlbush
23. Cornelian cherry Dogwood

SCIENTIFIC NAME

- Fagus grandifolia*
Acer ginnala
Viburnum dentatum
Fraxinus sp.
Pinus nigra
Berberis sp.
Betula sp.
Prunus serotina
Viburnum prunitifolium
Quercus velutina
Juglans nigra
Fraxinus quadrangulata
Acer negundo
Pyrus calleryana 'Bradford'
Quercus macrocarpa
Tsuga canadensis
Halesia carolina
Prunus sp.
Quercus muehlenbergii
Taxodium distichum
Celtis occidentalis
Exochorda racemosa
Cornus mas

COMMON NAME

24. Crabapple
25. Dogwood
26. Downy Hawthorn
27. Eastern Redbud
28. Eastern White Pine
29. Elm
30. European Beech
31. European Larch
32. Flowering Dogwood
33. Forsythia
34. Ginkgo
35. Hawthorn
36. Hedge Maple
37. Honeylocust
38. Honeysuckle
39. Hickory
40. Japanese Zelkova
41. Katsuratree
42. Kentucky Coffeetree
43. Korea Dogwood
44. Lacebark Elm
45. Linden
46. Mulberry
47. Muscledwood
48. Norway Maple
49. Oak

SCIENTIFIC NAME

- Malus sp.*
Cornus sp.
Crataegus mollis
Cercis canadensis
Pinus strobus
Ulmus sp.
Fagus sylvatica
Larix decidua
Cornus florida
Forsythia x intermedia
Ginkgo biloba
Crataegus sp.
Acer campestre
Gleditsia sp.
Lonicera sp.
Carya sp.
Zelkova serrata
Cercidiphyllum japonicum
Gymnocladus dioica
Cornus kousa
Ulmus parvifolia
Tilia sp.
Morus alba
Carpinus caroliniana
Acer platanoides
Quercus sp.

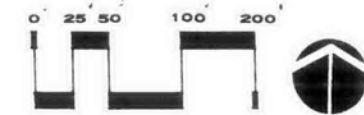
COMMON NAME

50. Oregongrape Holly
51. Paperbark Maple
52. Pin Oak
53. Planetree
54. Purple Plum
55. Red Maple
56. Red Oak
57. Scotch Pine
58. Serviceberry
59. Shagbark Hickory
60. Shellbark Hickory
61. Shingle Oak
62. Slippery Elm
63. Spreading Taxus
64. Sugar Maple
65. Sweetgum
66. Tuliptree
67. Umbrella Magnolia
68. Upright Taxus
69. Viburnum
70. White Fir
71. White fringetree
72. Yellowwood

SCIENTIFIC NAME

- Mahonia aquilifolium*
Acer griseum
Quercus palustris
Platanus hybrida 'Bloodgood'
Prunus cerasifera
Acer rubrum
Quercus rubra
Pinus sylvestris
Amelanchier sp.
Carya ovata
Carya laciniata
Quercus imbricaria
Ulmus rubra
Taxus sp.
Acer saccharum
Liquidambar styraciflua
Liriodendron tulipifera
Magnolia tripetala
Taxus x media 'Hicks'
Viburnum sp.
Abies concolor
Chionanthus virginicus
Cladrastris lutea

NOTE: Existing plants are indicated by two numbers ; such as 10(7). The first refers to the planting list . The second indicates the quantity. Where the second number is omitted , one plant is existing.



DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:		EXISTING CONDITIONS	
TECH. REVIEW:		Wright Brothers Hill	
DATE: / /			PKG. NO. SHEET OF

Drawing 5: Existing Conditions

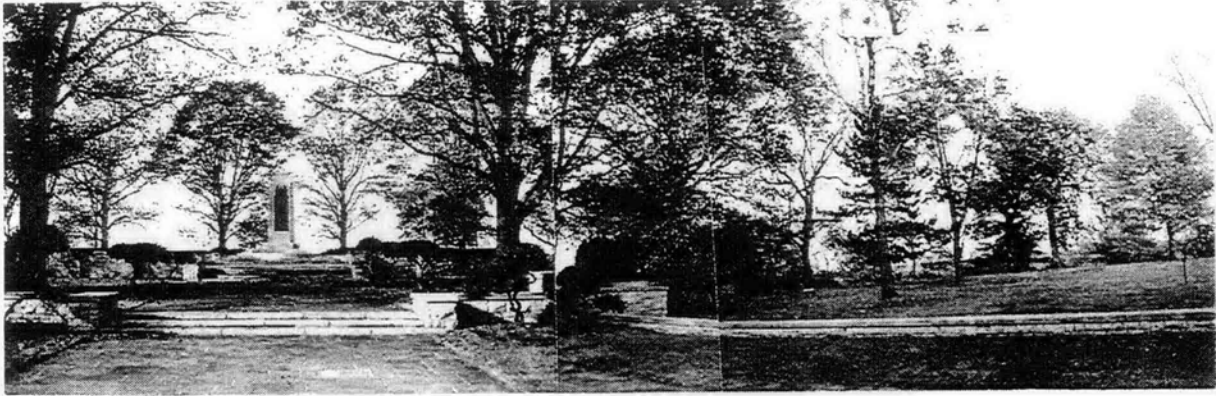


Photo 14: Looking north to the memorial from the entry road, 1997.
(National Park Service)



Photo 15: Looking at the plaza from the entry walk, 1997. Note different species of *Taxus*.
(Courtesy of Eliot Foulds, Olmstead Center for Landscape Preservation.)

EXISTING CONDITIONS

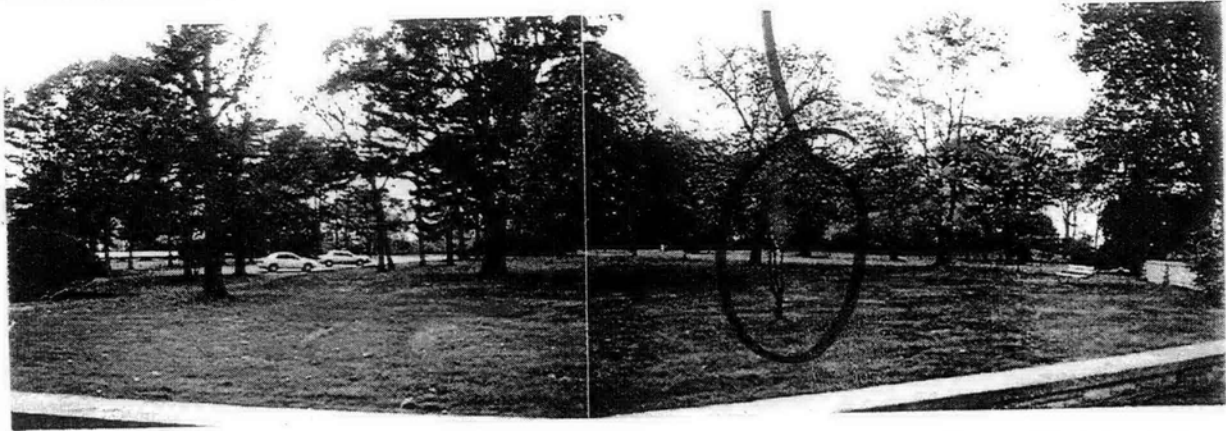


Photo 16: Looking west from the entry walk, 1997 (Paperbark maple is circled). (National Park Service)



Photo 17: Looking south from the entry road, 1997. Note the trash receptacle and utilities in the background, the declining pines, and no vegetative screen.
(Courtesy of Eliot Foulds, Olmstead Center for Landscape Preservation.)



Photo 18: Memorial outside edge, 1997. Note the *Taxus cuspidata*, *Taxus hicksi*, and red oak, 1997.
(Courtesy of Eliot Foulds, Olmstead Center for Landscape Preservation.)

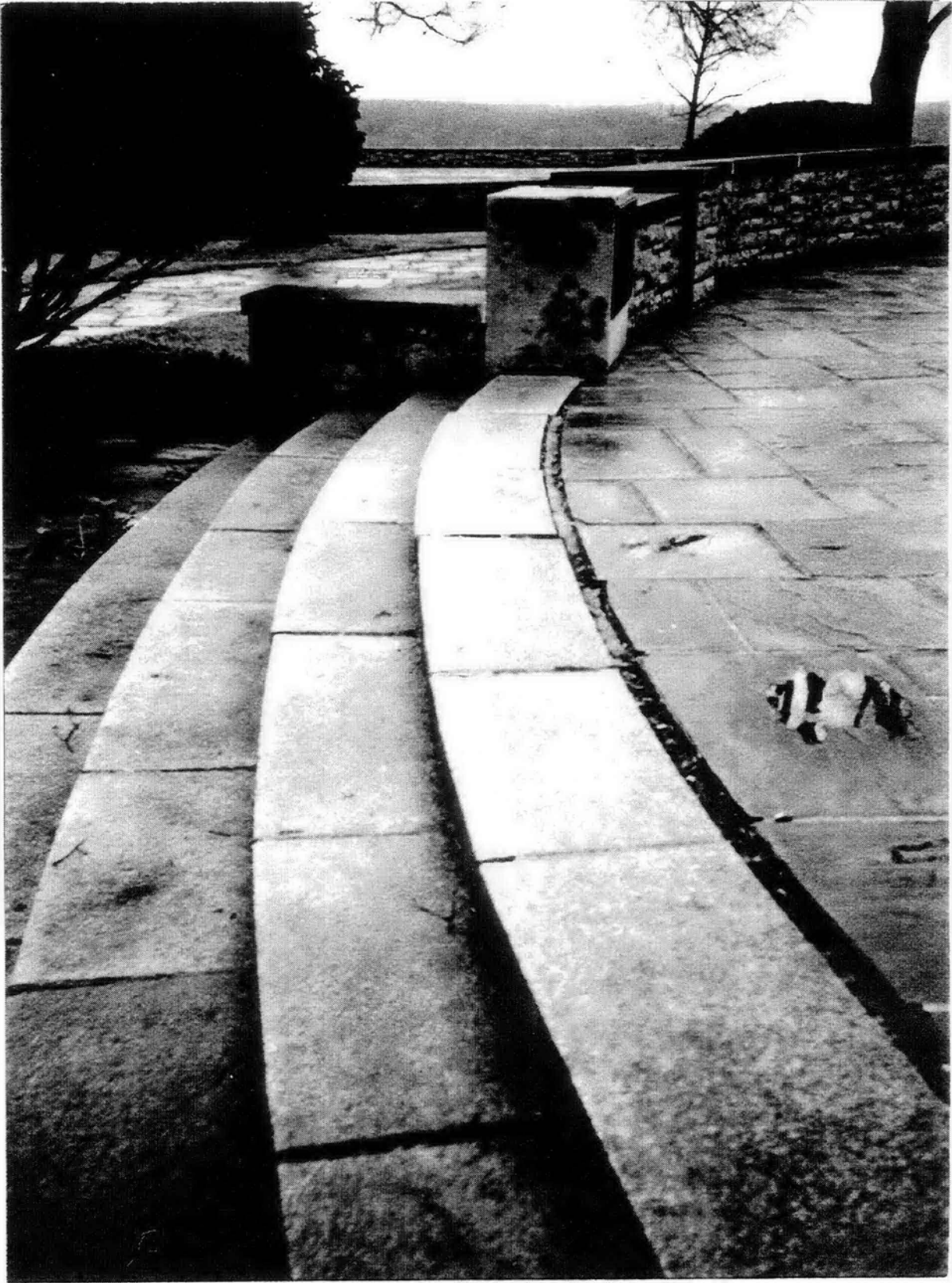


Photo 19: Plaza steps, 1997. Note the mortar condition.
(Courtesy of Eliot Foulds, Olmstead Center for Landscape Preservation.)



Photo 20: Looking north from the memorial, 1997. Note kiosk and bench.
(National Park Service)



Photo 21: Existing *Taxus* at the memorial, 1997.
(National Park Service)

ANALYSIS OF SIGNIFICANCE AND CHARACTER DEFINING FEATURES

PERIOD OF SIGNIFICANCE

Analysis of the landscape development at Wright Brothers Hill suggests that the appropriate period of significance is 1938-1944. In 1938, the Miami Conservancy District, which had earlier designated the site as suitable for a memorial to the Wright brothers, sold the land to the Dayton Air Service Committee, Inc., a group formed to develop the memorial. By 1944 the historic scene, which is the general character and feeling of the property associated with the period of significance, had been established. Site changes made prior to 1944 include the realignment of the entrance road and the entrance stone walls, and the probable removal and replacement of the twelve diseased American elm trees in the memorial's outer ring with twelve red oak trees (see "Evaluation of Integrity" section for further detail).

Wright Brothers Hill embodies the design philosophy and artistry of the highly influential Olmsted Brothers landscape architecture firm, and is significant for its association with Dayton's important contributions to the history of aviation. In addition, intimate links between the site and nearby historical aviation sites, most importantly the Huffman Prairie flying field, tie Wright Brothers Hill to specific events associated with the activities of the Wright brothers.

CHARACTER DEFINING FEATURES

For an assessment of significance, the features are discussed in relation to the period of significance for the property: 1938-1944. These features are classified as contributing or non-contributing. A contributing feature is one "...present during the period of significance, and [that] possesses historic integrity reflecting its character at that time or is capable of yielding important information about the period.³⁵ A non-contributing feature is one "not present during the significant period, or due to alterations, disturbances, additions, or other changes, it no longer possesses historic integrity reflecting its character at that time or is incapable of yielding important information about the period.³⁶ A few of the features are missing and are noted in text.

The Olmsted Brothers' planting plan of July 1938 is one of three points of reference upon which subsequent design concept changes were evaluated (see drawings 2 and 3). The other two were aerial photographs and ground photographs (see photos 13 through 21). As it appears on the aerial dated February 1942 (see photo 22), some of the tree groupings vary from the planting plan; possibly naturalized trees were not removed. Perhaps these variations were due to the conflict between the CCC and the Olmsted Brothers firm (see "Site History"). Also, there is no photo documentation that the two overlooks on the west edge of the planting plan were ever built (see drawings 2 and 3). These overlooks are

35. U.S. Department of the Interior, *National Register Bulletin 24, Guidelines for Local Surveys: A Basis for Preservation Planning*, prepared by Patricia L. Parker, (National Park Service, Interagency Resources Division: 1985).

36. Ibid.

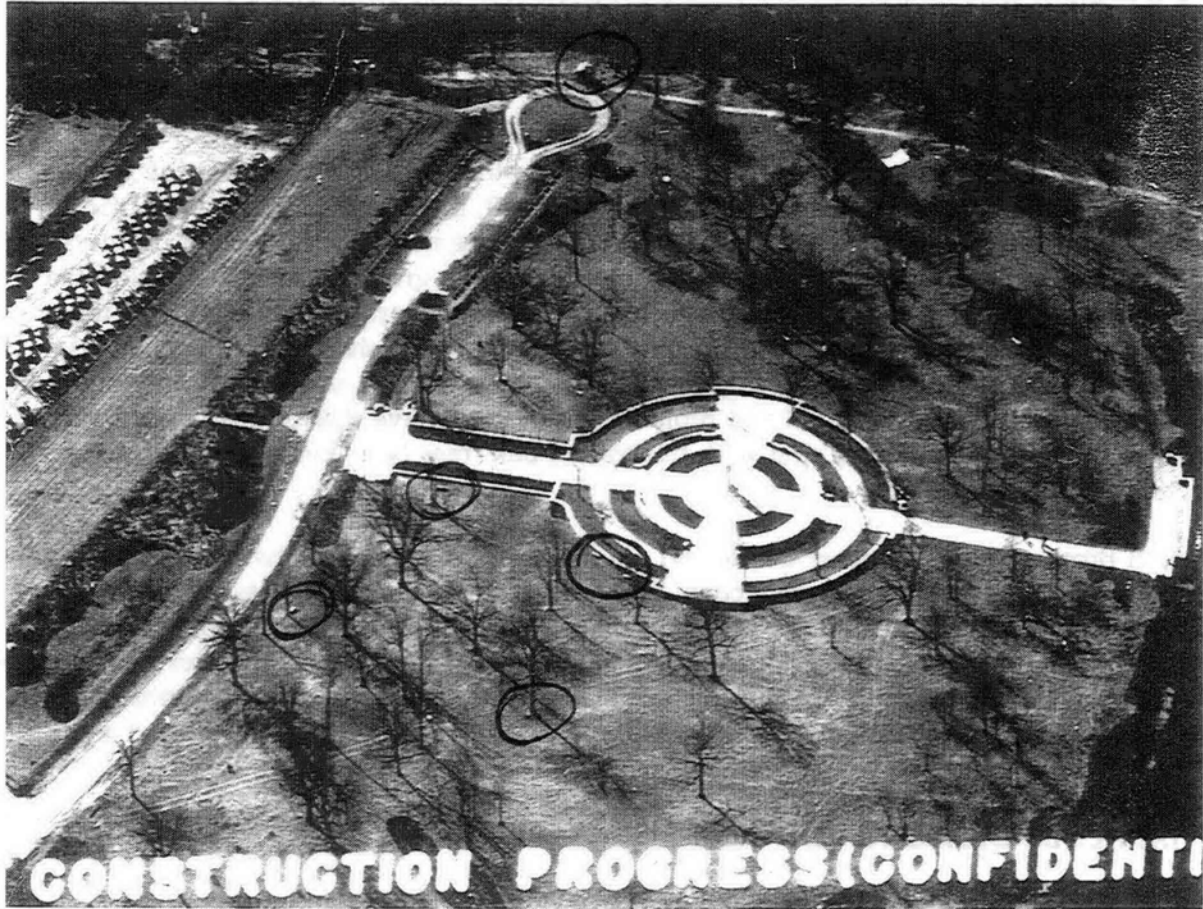


Photo 22: Aerial view of the benches and the service building, located at the end of the loop road, February 1942. (Courtesy of the U.S. Air Force.)

located west of the circular path. One is located west of the parking loop. The other is located just west of the Adena mounds. Both are designated with circles on the planting plans.

The analysis and evaluation of the site's character defining features is organized under the following topics: spatial organization, topography, circulation, vegetative features, structures, site amenities, and the character of adjoining properties, as per National Register Bulletin #18. The character defining features of Wright Brothers Hill during the period of significance (1938-1944) include:

- **The overall spatial organization of the landscape.** Plantings along the periphery articulate the meadow, frame views, and define the spatial organization of the site. Also, areas designed in different styles; i.e. the formality of the memorial plaza vs. the informality of the open spaces, are separated to prevent an incongruous mixture of formality and informality, which would dilute the intended effect of the designed landscapes. These are all contributing features.

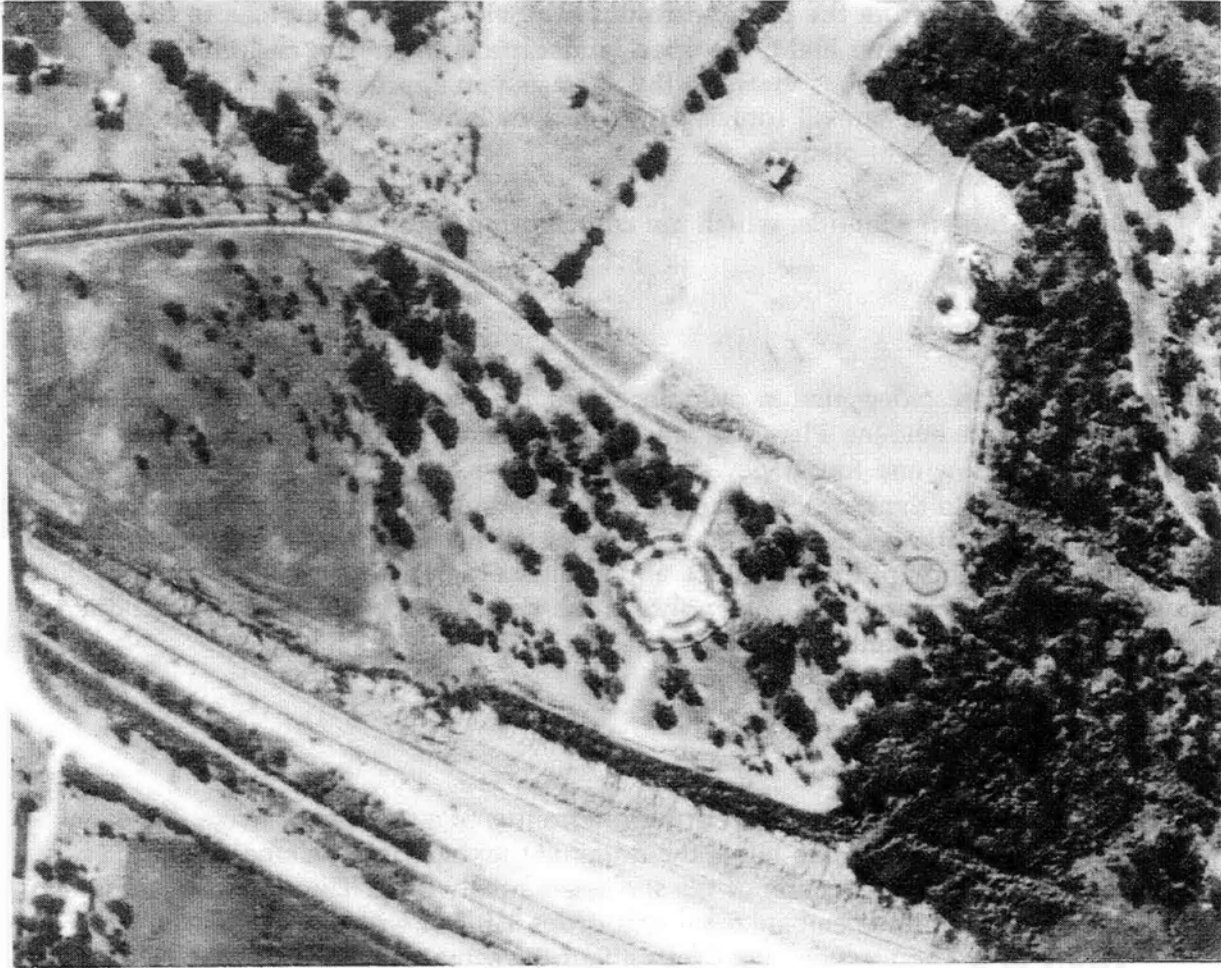


Photo 23: Original alignment of the entry road, 1941-1942.
(Courtesy of the U.S. Air Force.)

- **The layering of horizontal planes, which accentuates the vertical shaft of the plaza.** The horizontal planes are defined by the open lawns, the walkway to the plaza, the steps to the plaza, the plaza, the missing small flowering trees along the walkway from the south edge to the plaza, as well as the taller tree grouping surrounding the plaza. This layering of horizontal planes, however, is subordinate to the vertical focus of the site, which is the memorial shaft. All of these features are contributing.
- **The integration of the plaza into the landscape.** The formality of the plaza design is softened with vegetation massing along sections of the plaza's perimeter. The vegetation becomes less formal and opens up to an informal open space further away from the memorial. The topography assists with the integration of the formal plaza. The plaza is located on the highest point of the site, allowing the formality to soften as the tree masses descend to lower grades. These are all contributing features.

- **The views to and from the plaza, including the views from the plaza to the Huffman Prairie Flying Field, the open landscape to the north, and the Adena Indian mounds, as well as views to the shaft as you approach the plaza from the south.** These features are all contributing, but they have been compromised due to overgrowth and recent planting.
- **The Adena Indian Mounds, which are contributing features.**

Spatial Organization

The separation of areas designed in different styles, i.e. the formal plaza and the informal open spaces, is quite evident. Plantings along the periphery and in specific locations both articulate the meadow and frame views, including views of Huffman Prairie Flying Field, the open landscape to the north, the Indian Burial Mounds, and the shaft as you pass through the entry walkway from the south. The spatial framework of the design provided by the shaft and canopy of trees is intact, and retains a high degree of integrity. The features are all contributing, but as mentioned, the views have been compromised due to overgrowth and recent planting.

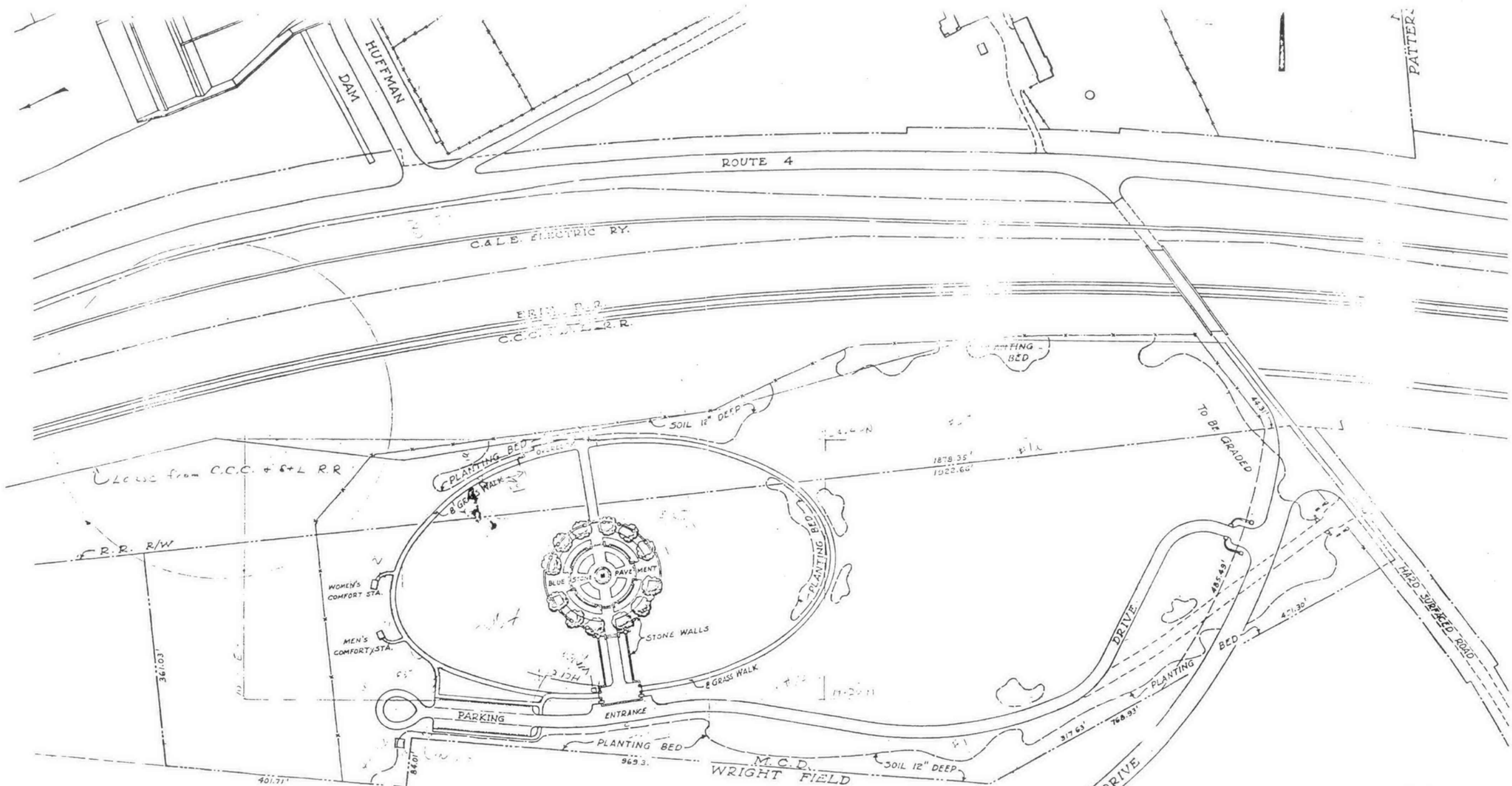
Topography

Wright Brothers Hill is located at the northern terminus of a prominent ridge. Viewed from the east, north, or west this hill is the dominant topographical element of the surrounding area. The west section of the site is essentially level. The site's northern edge is bounded by a precipitous embankment that drops 110 feet with a slope of approximately 65%. The western side drops about the same elevation, but not as rapidly as the north side. This slope is approximately 50%. The roadway follows the natural contours of the land. The memorial, overlook, and the parking area are on level ground. The plaza itself sits at the highest point of the site. All features of the topography are contributing elements.

Circulation

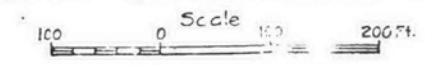
With the exception of an 8-foot wide elliptical shaped, pedestrian grass pathway, and a portion of the entrance road, all designed pedestrian paths and vehicular circulation are intact and composed of original materials. The grass pathway, which is evident in a 1944 aerial photograph of the site (see photo 24), once circled the memorial plaza, but no longer exists due to the loss of the shrub masses that defined the path's edge (see drawings 2, 3, and 6).

Although there are no records documenting the road change, aerial photographs confirm that the road was in its present location by 1944. It is probable that the entrance gates and road were moved as part of the construction of Skyline Drive. A drawing dated 1938 (see drawing 6), indicates that the current road location was the intended entry road alignment, but was not constructed that way initially (see photos 23 and 24). These are all contributing features.



- 1. SOIL 12" DEEP
- 2. GRASS WALK
- 3. PLANTING BED
- 4. BLUE STONE PAVEMENT

The Miami Conservancy District
 HUFFMAN RESERVE
 PLAN OF
 PROPOSED IMPROVEMENT
 FOR
 WRIGHT BROTHERS HILL



Approved Oct 12, 1938
 by *[Signature]*
 Chief Engineer

**ORIGINAL BOUNDARIES
 AND PROPOSED
 IMPROVEMENTS, 1938**

Acc. No. 5576

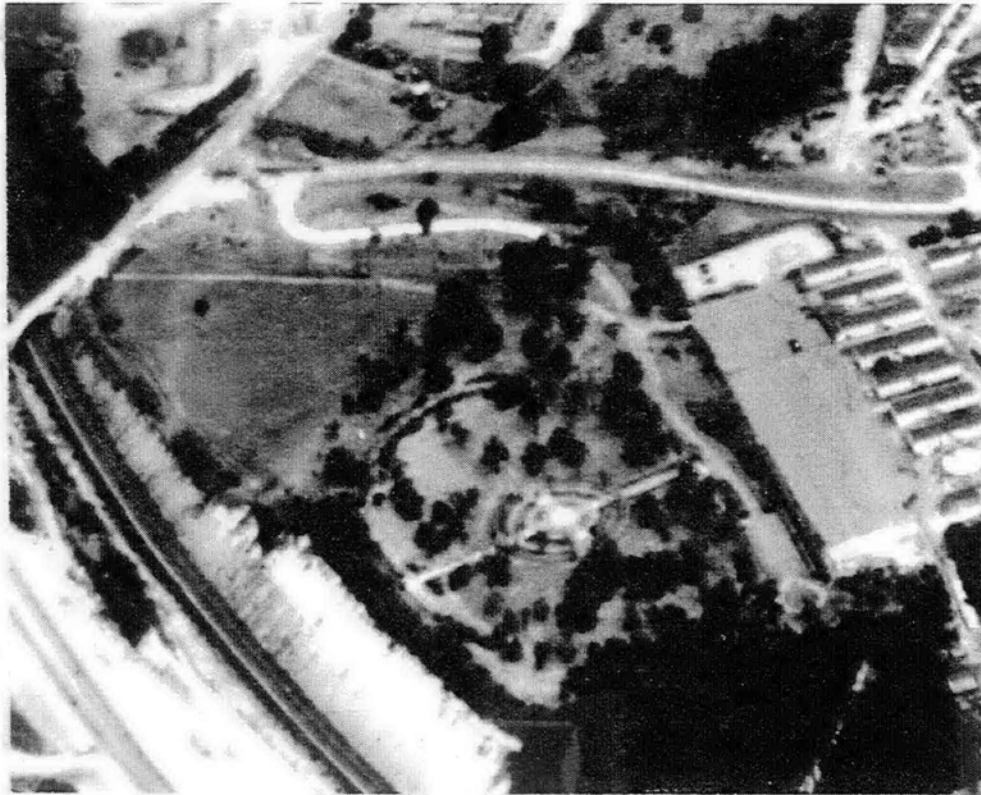


Photo 24: Relocated entry road and pedestrian grass path, July 1944.
(Courtesy of the U.S. Air Force.)

Vegetative Features

Changes in vegetation patterns are the most extensive alterations the site has undergone since 1940. Senescence, benign neglect, mower damage, competition with naturalized vegetation, and additional tree plantings have impacted the vegetation composition in recent years. Some of these recent plantings are located within historic view sheds, both to and from the memorial. Also, the understory layer of small flowering trees and shrubs have largely disappeared from the site. The plant palette of the original design consisted primarily of larger non-flowering deciduous trees and pines with smaller flowering trees and shrubs massed together for specific accents. On the south edge of the site, the evergreen plantings have matured and the smaller plantings are no longer present. The lack of a vegetation barrier permits utilities to the south to visually intrude upon the site. The existing yews, located within the inner and outer rings of the memorial plaza, are of the original design and planting. Some have been pruned heavily and are no longer compatible with the plaza's original design intent (see photo 25). Others have simply matured and now block viewsheds. Correspondence from 1943 indicates that 12 American elm trees planted in the outer ring of the memorial area were dying from 'Phloem Necrosis'. The diseased elms were replaced with 12 red oaks, 10 of which are present today. Photographs of the site when it was relatively new show the oaks in place. Considering the current size of the oaks, it is probable that they were planted early in the 1940s. T. Davis Sydnor, a horticultural and urban forestry consultant, was contracted by Wright-Patterson Air Force Base to provide technical assistance regarding the red oaks.



Photo 25: Existing yews, June 1996.
(National Park Service)

According to Sydnor's report, dated September 29, 1994, the life expectancy of a red oak is forty years and the red oaks were mature and starting to decline. Gandoderma crown rot was present in at least four existing trees, which would accelerate the continuing decline of these trees. Sydnor also anticipated that an additional two to four trees would be lost over the next decade from a variety of causes. With the exception of the recent plantings, all of these features are contributing.

Structures

On the west side of the site are six prehistoric Adena Indian mounds. The mounds are contributing features.

Two comfort stations and a service building located on the western fringe of the site were razed in the early 1980s. The service building was not part of the Olmsted Brothers' design. The building does not appear in an aerial photograph dated December 5, 1940 but it is evident in an aerial photograph dated February, 1942. To date, no correspondence has been found to document the history of the building (see photos 22 and 26). Currently, there is a storage shed located in the southeast corner of the site. The shed could possibly be the relocated service building. Although, the service building was not on the Olmsted Brothers' design, it was present during the period of significance, which makes it a contributing element. The comfort stations are contributing elements, but are not extant.



Photo 26: Three buildings on the site, circa 1942.
(Courtesy of Miami Conservancy District.)

Before 1944, the two stone walls that define the entrance to the site were moved from an eastward to a southeastward facing direction, approximately 200 feet to the west of their original location, due to the entrance road realignment (see photo 27). These stone walls are not the original ones, but are contributing because they were present during the period of significance.

The bluestone plaza and memorial shaft retain their original design and materials. However, the heaving of the stones in the plaza caused the limestone walls surrounding the plaza to settle in a few areas. These are all contributing features.

Two circular overlooks appear on the 1938 Olmsted Brothers' plan (see drawings 2 and 3), but there is no evidence that the overlooks were ever built. These overlooks are located west of the circular path. One is located west of the parking loop. The other is located just west of the Adena mounds. Both are designated with circles. Since there is no documentation that these existed during the period of significance, they are non-contributing features.

Site Amenities

The existing drinking fountain is evident in aerial photographs dated 1940, but it does not appear on the Olmsted Brothers' plan. The drinking fountain's design and workmanship is compatible with the stone used for construction and it appears as though the drinking fountain may have been built at the same time as the limestone walls of the plaza. The drinking fountain is a contributing feature (see photo 28).

The benches are not of original design or location. Drawing 7 illustrates the original design. A 1942 aerial photograph (see photo 22) shows the benches scattered under trees near the monuments. They were present during the period of significance and are

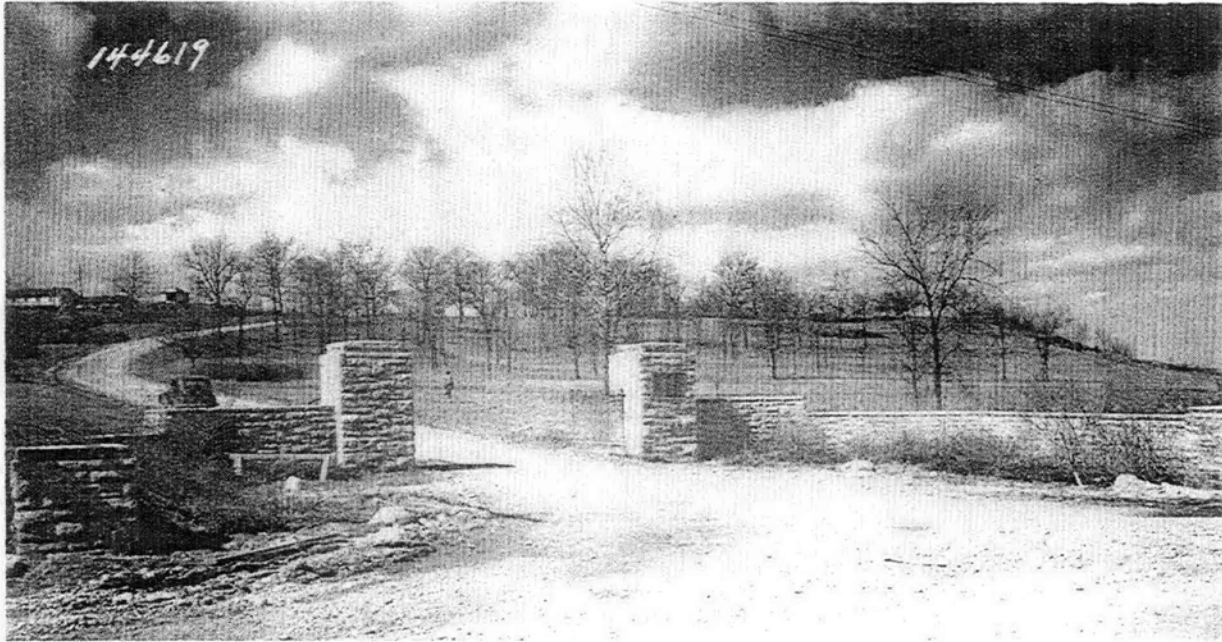
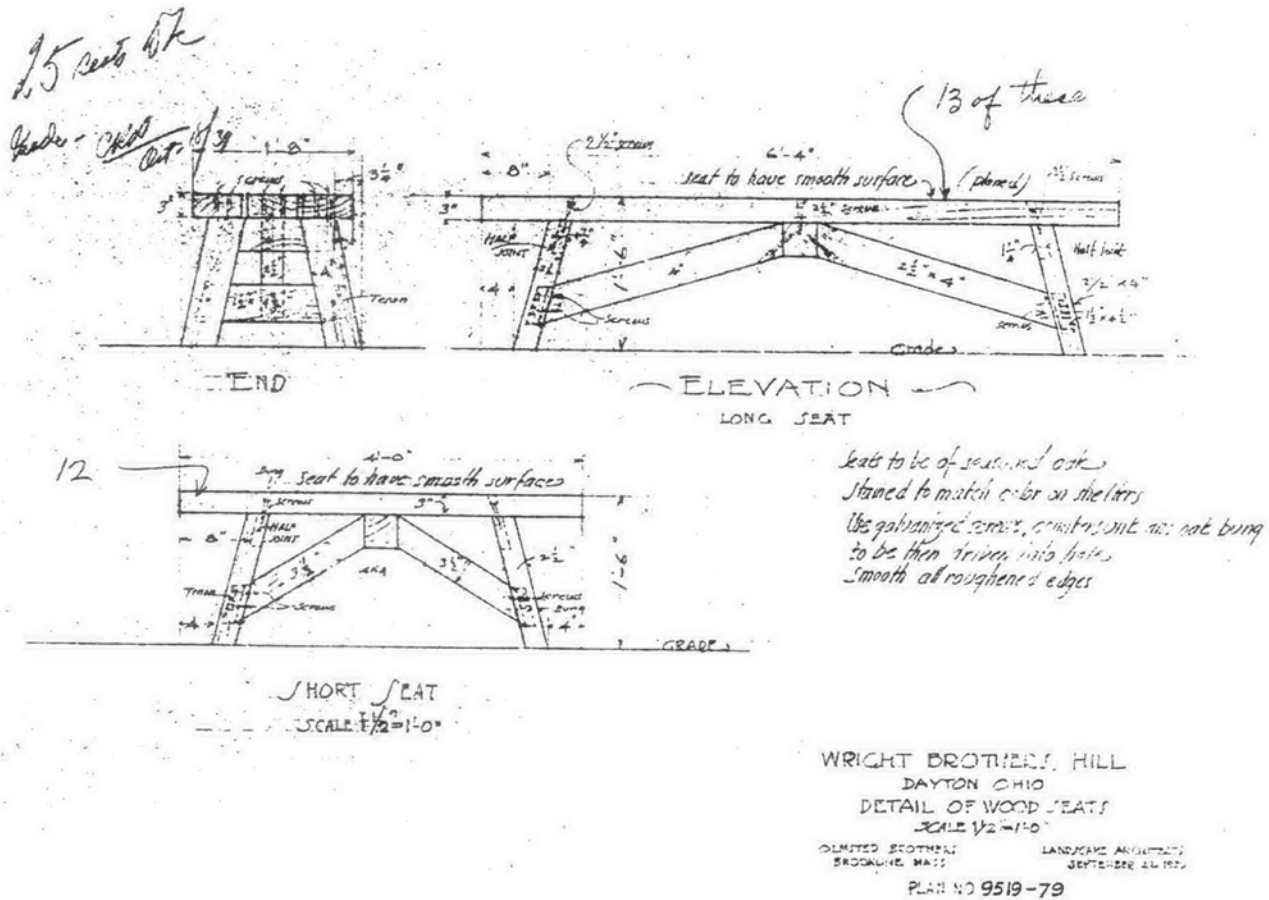


Photo 27: Exterior walls, March 3, 1944. (Courtesy of the U.S. Air Force.)



Drawing 7: Olmsted Brothers bench design, 1939.
 (Courtesy of Miami Conservancy District.)

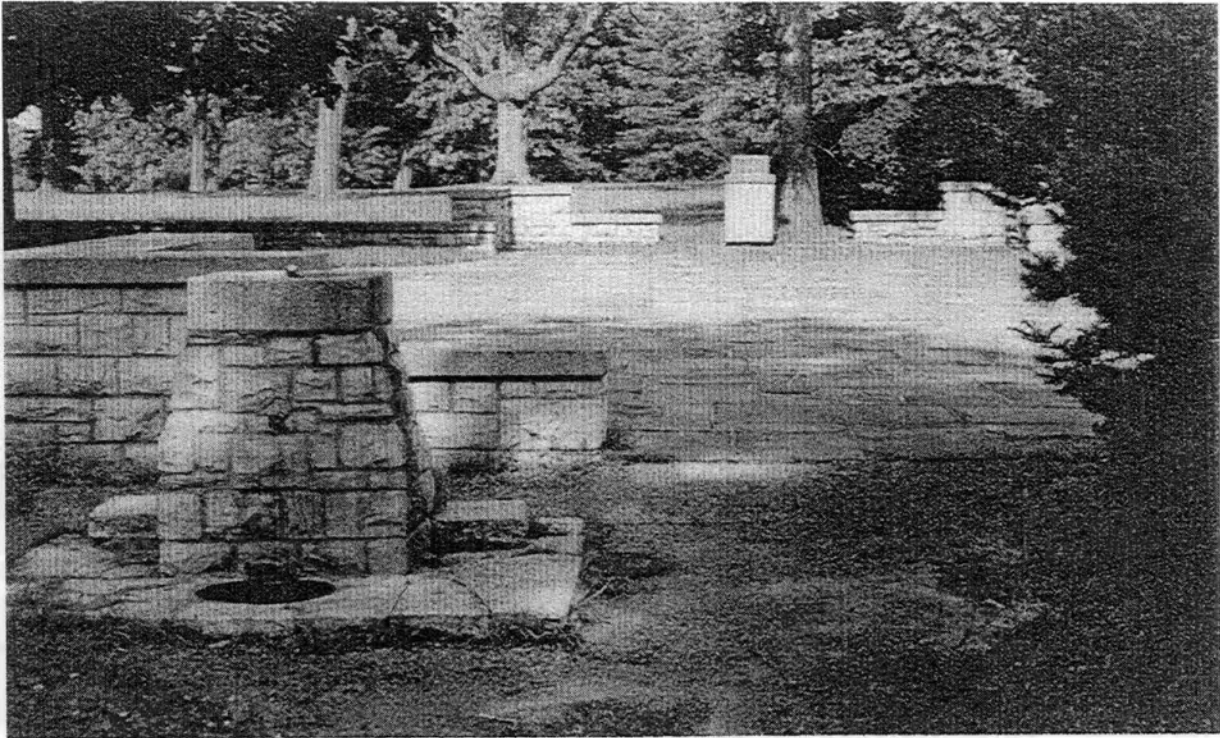


Photo 28: Drinking fountain and trash receptacle, June 1996.
(National Park Service)

contributing elements, but are no longer extant. It is unknown if the benches were removed or destroyed. The existing benches are non-contributing features, but are functionally important for operations (see photo 29).

The existing interpretive kiosk was also not part of the original plan. Neither the kiosk nor the recent addition of picnic tables contribute to the historic scene (see photo 29). They are non-contributing features.

The existing trash receptacle is a non-contributing feature (see photo 28), but is functionally important for operations.

Character of Adjoining Properties

The landscape surrounding the original site boundaries still possesses a rural quality and has not changed significantly since the 1940s. This is a contributing feature.

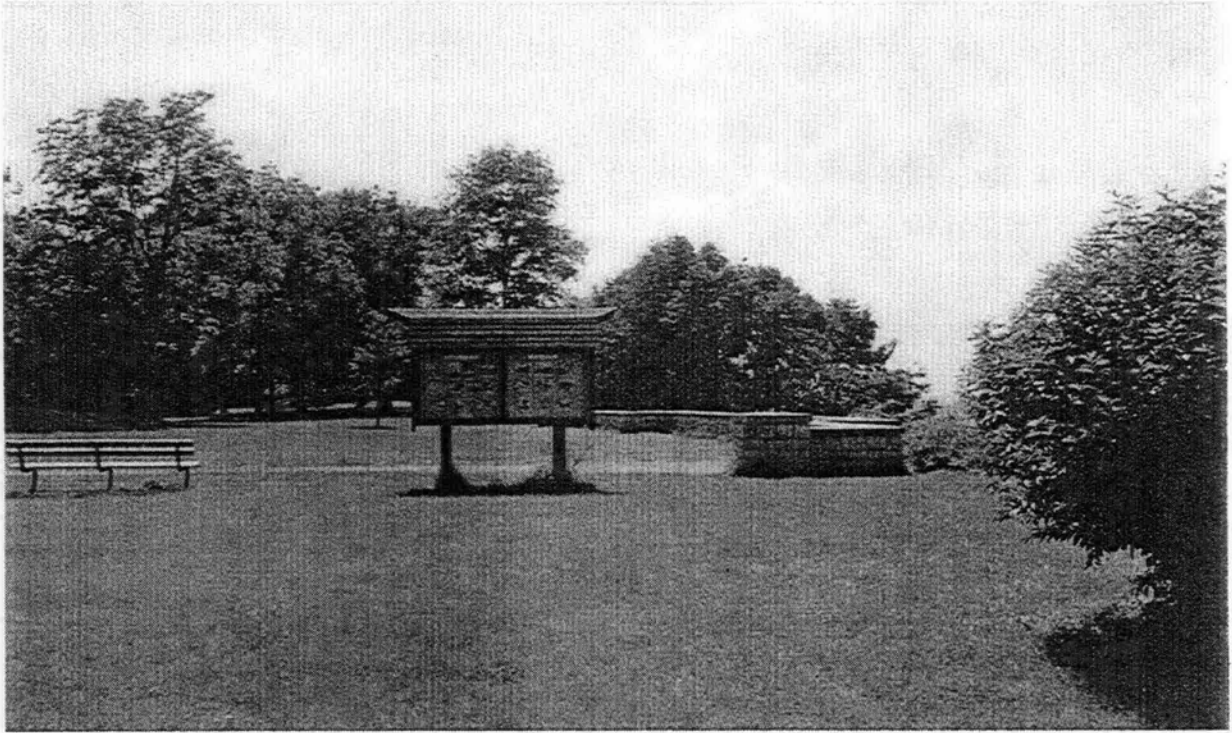


Photo 29: Bench and interpretive kiosk, June 1996.
(National Park Service)

EVALUATION OF INTEGRITY

An evaluation of integrity assesses the existing condition of a landscape's historic elements by documenting changes since the period of significance. The integrity of a historic landscape is a composite of seven qualities (location, design, setting, materials, workmanship, feeling, and association), and the seven qualities are part of the determination of whether or not a historic landscape meets the criteria of eligibility for listing on the National Register of Historic Places.³⁷ All seven qualities, however, do not need to be present, as long as the overall sense of time and place is evident:

Historic properties either retain integrity (this is, convey their significance) or they do not....To retain historic integrity a property will always possess several, and usually most, of the (seven qualities). The retention of specific aspects of integrity is paramount for a property to convey its significance. Determining *which* of these aspects are most important to a particular property requires knowing why, where, and when the property is significant....³⁸

The evaluation of integrity also leads to landscape management recommendations, which will provide the public with an understanding of the landscape's significance. Following is an analysis of the seven qualities and the degree to which they are present at Wright Brothers Hill.

LOCATION

The historic location of Wright Brothers Hill, as well as the location of major features within the designed landscape, have remained essentially the same. The boundaries of the original design have not been compromised.

DESIGN

Wright Brothers Hill has changed very little over the years. The few exceptions include the relocation of entrance walls and the partial realignment of the entrance road, as well as the removal of the two comfort stations. Changes in the vegetation patterns compared to existing vegetation patterns are the most extensive alterations the site has undergone since 1940. Senescence, benign neglect, mower damage, competition with naturalized vegetation, and additional plantings comprise the changes in vegetation composition. It is the understory of flowering trees and shrubs that have largely disappeared from the site. The replacement of the American elms with red oaks was also a change in design concept. Although, there is no precise date when the red oaks were planted, it is probable that they were replaced by 1944. The elms were diagnosed with 'Phloem Necrosis' by the

37. National Park Service, U.S. Department of the Interior, *National Register Bulletin 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes*, (Interagency Resources Division, 1992), 21.

38. National Park Service, U.S. Department of the Interior, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*, (Interagency Resources Division, 1992), 44.

Siebenthaler Landscape Service Company in August of 1943.³⁹ The Olmsted Brothers firm suggested the substitution of oaks for the original elms.⁴⁰ Presently, the visitor experiences the site in a similar manner as was experienced during the period of significance. Perhaps, the view sheds from the memorial plaza played a stronger role for the visitor in experiencing the story of the memorial than presently, because of overgrowth, etc. A missing presence of additional color from the flowering shrubs and the allée of flowering trees that existed during the period of significance, has changed the appearance of the site somewhat, especially during the flowering seasons. There is no indication of alteration to the topography. In essence, the foremost aspects of the Olmsted Brothers' design are intact. The integrity of the site is very good, since the current condition aptly represents the design intent.

SETTING

The integrity of the setting within the designed landscape of Wright Brothers Hill is very good, although the viewsheds are somewhat obstructed by mature tree canopies and overgrown vegetation. The view of Huffman Prairie Flying Field is integral to the design of the hill. Currently, however, it can not be seen from the memorial. The landscape surrounding the original site boundaries has not changed significantly, as there is still a rural feeling to the landscape.

MATERIALS AND WORKMANSHIP

The existing features that appear on the Olmsted Brothers' plan of 1938 are essentially intact. These features include the memorial area, the overlook, walls, the parking area, and a portion of the entrance road. The new entrance walls, retain the same characteristics and workmanship as the originals.

The benches presently on site are not of the original design. Drawing 7 illustrates the Olmsted Brothers' design.

Both the design and use of construction materials on the kiosk, located near the overlook, are not aesthetically compatible with the original design intent. Neither the kiosk nor the picnic tables and trash receptacle are part of the historic scene.

FEELING

The cumulative effect of the setting, design, materials, and workmanship reflect the historic scene. The changes to Wright Brothers Hill do not alter significantly the integrity of feeling.

39. Eiffert to Parker, 11 August 1943. Correspondence, Folder 2, Job # 9519, Frederick Law Olmsted National Historic Site.

40. Siebenthaler Co. to Olmsted Brothers, 25 August 1943. Correspondence, Folder 4, Job #9519. Frederick Law Olmsted National Historic Site.

ASSOCIATION

Wright Brothers Hill retains a direct association with the history of aviation in Dayton, particularly in its visual relationship with the Huffman Prairie Flying Field.

TREATMENT APPROACH

Treatment options for cultural landscapes may involve one of four approaches: reconstruction, preservation, rehabilitation, or restoration. The definitions of the four treatment options are found in *The Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes* (1996). Any treatment, however, must be based upon thorough historical documentation and an analysis of the character defining features of the landscape. The historical significance and the physical condition of the character defining features have been analyzed and the integrity has been determined. This together with an understanding of the programmatic and management needs of the park listed below, are the basis for the treatment recommendations.

PROGRAMMATIC ISSUES AND MANAGEMENT NEEDS

1. Accommodating universal accessibility. This issue is currently being addressed with the rehabilitation of the plaza itself.
2. The impact of trees within site boundaries on the glide slope for aircraft at Wright-Patterson Air Force Base.
3. Maintenance resources are continually being stretched.
4. Protection of archeological features.
5. Historic viewsheds to and from memorial plaza area.
6. Contemporary site furnishings; i.e. kiosk, trash receptacles, benches and picnic tables.
7. Deteriorating flagstone paving in plaza.
8. Declining condition of existing vegetation, as well as missing vegetation.
9. Current picnic table locations immediately adjacent to Adena mound area.

TREATMENT OPTIONS

Brief descriptions of the four treatment options and their applicability to Wright Brothers Hill follow, but recommendations and a treatment plan are presented only for the preferred treatment option.

Rehabilitation

Rehabilitation retains the significant historic character of the landscape, while permitting alterations that are necessary both for the efficient management and contemporary use of the property, including the accommodation of life safety issues and legal code requirements. Referencing the programmatic issues identified, rehabilitation would permit flexibility in accommodating universal access, as well as replacement of missing vegetation that are character defining features.

Preservation

Preservation resembles a "no action" alternative, but emphasizes retaining the historic landscape's existing integrity and character. Though the preservation treatment involves minimal intervention to existing conditions, preservation requires both ongoing maintenance and stabilization. Preservation, however, would not satisfactorily resolve the programmatic issues regarding either life safety or recently enacted legal codes associated with the use of the property, i.e. ADA standards and would not allow for any substitution for declining and missing plant material. As a result, the preservation treatment was rejected from any further consideration.

Restoration

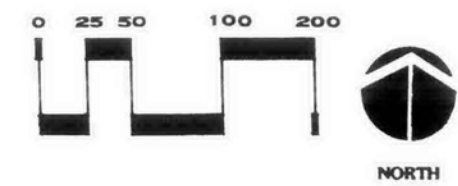
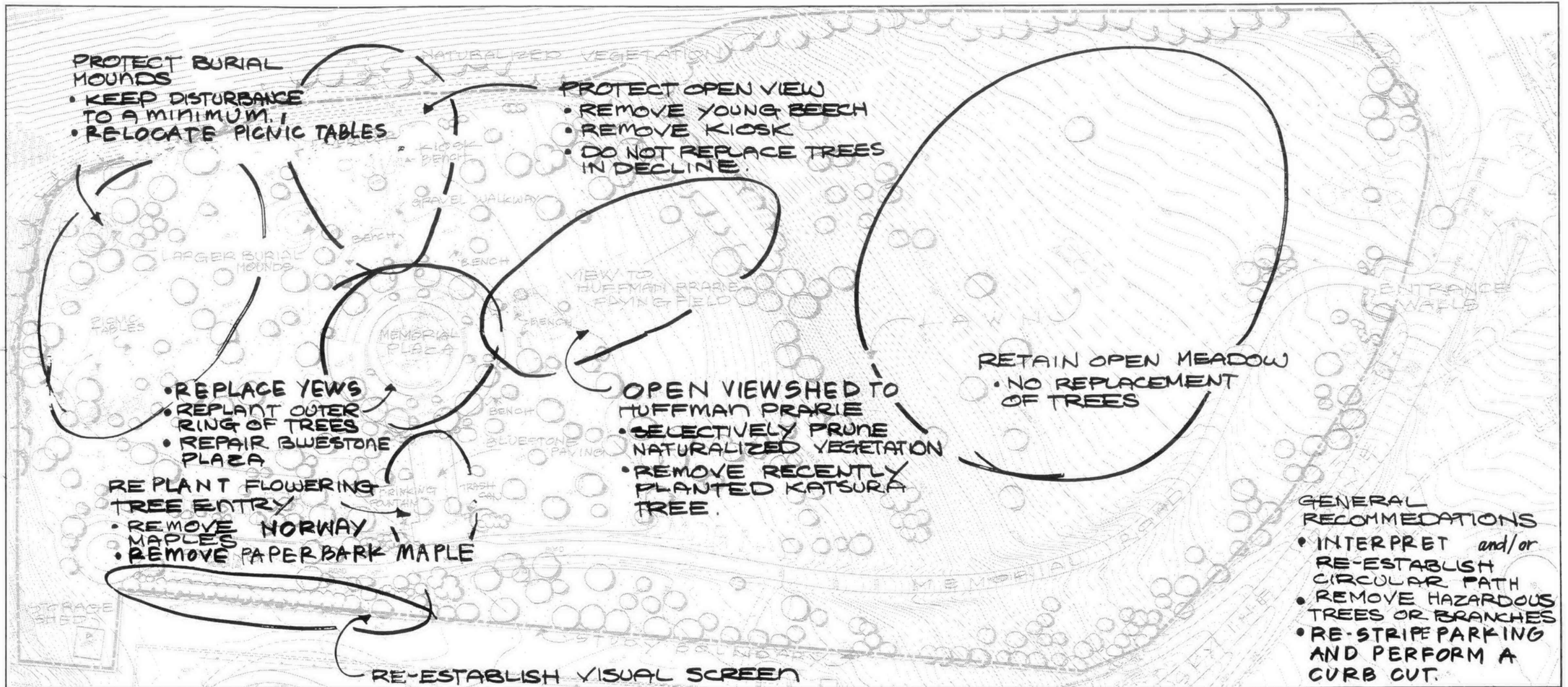
Restoration accurately depicts the form, features, and character of a landscape as it appeared at a specific period or was intended by its original design. Restoration illustrates a narrow period in the landscape's history, not its history as it evolved. The restoration treatment may involve either the removal of later historic features or the replacement of missing historic features, in order to depict the appearance of the landscape at a specific earlier period. As a result, materials or features that relate to a later period of the landscape's development may be removed or substantially altered. Therefore, restoration is a treatment that should only be considered when the landscape's earlier history is so significant that it justifies removal or alteration of features or materials that would ordinarily be retained. Restoration of the Wright Brothers Hill landscape to its period of significance (1938-1944) would be possible, since the landscape is fairly well intact and well-documented. However, because restoration would not satisfactorily address contemporary uses, life safety issues, i.e. ADA standards and legal code requirements, restoration was rejected as a viable treatment alternative.

Reconstruction

Reconstruction involves depicting the form, features, and details of a non-surviving historic landscape, either as it appeared at a specific period or was intended by its original design. Such a treatment is appropriate only for a landscape that has lost most, if not all, of its integrity. The landscape of Wright Brothers Hill still retains a high degree of integrity; hence, reconstruction would not be appropriate treatment option. *After discussions with the staff of the Wright-Patterson Air Force Base, rehabilitation was the treatment strategy recommended for the Wright Brothers Hill landscape.*

REHABILITATION — THE PREFERRED TREATMENT APPROACH

The following series of treatment recommendations are organized by grouping of features under the topics of spatial organization, topography, circulation, vegetative features, structures, site amenities, and the character of adjoining properties. Recommendations are listed in priority of implementation under each topic (see drawing 8). The existing conditions of the site are documented with photos in "Photo Documentation, 1997.



DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:		REHABILITATION TREATMENT	
TECH. REVIEW:		Wright Brothers Hill	PKG. NO. SHEET
DATE: / /			OF

Drawing 8: Rehabilitation Treatment

Spatial Organization

Remove recent plantings and selectively prune naturalized trees to open viewsheds. The view of Huffman Prairie Flying Field from the memorial plaza is a significant design feature, as are views of the memorial shaft, the view northward, and the view of the burial mounds. A few of the more recent plantings should be removed. They include the Katsura, the small beech on the north side, and the paperbark maple. The paperbark maple is located in an area that has historically been open (see photo 22 and drawings 2 and 3). Relatively few trees are located in close proximity to the entrance allée. This allows the entrance to be the primary focal point. The beech and maple trees could easily be replanted along the south edge of site, which has many deciduous tree massings. The addition of the beech and maple trees to the area would only supplement the screening that is needed here. Selective pruning needs to be performed on some of the trees within the Flying Field's viewshed, as well as the viewshed to the burial mounds. The viewshed to the north and the open meadow should also be preserved. No additional tree planting or tree replacement should be undertaken within these viewsheds or the open meadow.

Topography

Retain the existing drainage and grades of the site.

Circulation

Interpret or reestablish the elliptical pedestrian path. The elliptical grass path surrounding the memorial, which was defined primarily by shrub massing at different locations along the path, has lost its definition over time. The elliptical path can be re-defined to provide universal access to other areas of the site other than the memorial, which are presently not accessible. A bituminous concrete, seeded with a brown colored stone, or a resin modified emulsion trail, such as Road Oyl, would blend easily into the landscape, with low maintenance as well.

Another option would be to simply interpret it using a brochure or incorporating historic photos into a wayside exhibit.

If at some point, the commitment to expend adequate funding for maintenance becomes available, it is recommended that the shrub massing be re-established. The color of the mass planting is one character-defining feature that is currently missing. There is enough of a grade change from the memorial to the path that the shrubs would not block the viewshed. With the rehabilitation alternative, it is not necessary to follow the planting plan exactly. The use of the lower maintenance shrubs is encouraged. The concept is to use flowering shrubs in the areas illustrated on the Olmsted Brothers Planting Plans-1938 (see drawings 2 and 3). Much of the shrub planting on both sides of the north overlook are at grades below the overlook. Again, if you feel a shrub is too tall, substitute it for another variety or genus.

Re-stripe the parking area and perform a curb cut. The parking area would need to be re-striped and undergo a curb cut to accommodate handicap parking.

Vegetative Features

Remove the Norway maples and replant with eight flowering trees. The original planting of eight small, flowering trees along the entrance walkway no longer exists. In their place are two Norway maples. The maples are obstructing the view of the memorial and are not compatible with the Olmsted Brothers' original design intent. Re-establishing the original concept would require the removal of the two maples and planting eight flowering trees. Pruning the trees, so they would not obstruct the view of the memorial would be severe. This practice would not show respect to the growth habit of the tree. The trees are also young and have not met their mature growth, which may in time show damage to the walls and pavement of the memorial with their surface rooting.

The Olmsted Brothers' planting plan specifies the use of flowering dogwoods. After consulting with the Siebenthaler Company, the landscape nursery that supplied the original plant materials, it appears that there are more appropriate choices for this location, which has full exposure to sun and wind. Newer varieties of crabapple have been developed that both are disease resistant and produce small, hard, persistent fruit which make little or no mess. The Ohio Agriculture Research and Development Center has an on-going crabapple evaluation program. The August, 1996 issue of *The American Nurseryman* lists these cultivars. A few of these cultivars would meet the design intent and adapt more appropriately to the site than the dogwoods. These cultivars include Malus 8 "Jewelcole" and Malus "Sentinel." Of course, the planting of flowering dogwoods is obviously very appropriate, but the success rate is unpredictable. The Olmsted Center for Landscape Preservation suggested an improved dogwood species, *Cornus* x "Constellation."

Supplement the south-edge planting with additional plant material. On the south edge of the site, the plant material has matured and the smaller plantings are no longer present. The lack of visual screening permits utilities to the south to visually intrude upon the site. The original planting plan specified the use of both *Viburnum molle* and *Viburnum prunifolium* interspersed under the pines. This vegetation would be excellent choices for screening. The intricate branch structure would also provide screening during the winter months. Evergreen, broad-leaf shrubs were researched, but a genus could not be found that would withstand the wind and cold at this site. With the *Viburnum* providing screening, the pines provide the vertical element, which continues along the fence line to the entry gate. If at all possible, young pines should be planted amongst the *Viburnums* to continue this element. They do not need to be planted in the exact location as their predecessor. If it is not possible to phase in the pines, chinkapin oaks or another suitable deciduous tree would provide the vertical elements along the south edge, as well as needed shade to the parking area. The original planting plan also includes the planting of Virginia Creeper along the fence line, which would also assist with screening.

Replace the yews. The existing yews, located at the corners of the walkway, probably date from the original planting, but they have been so heavily pruned that they have lost their structure. A few have become so overgrown that they are intruding upon the viewsheds from the memorial. Since these are an important element to the plaza design, they should all be replaced at the same time with the same size plant material to maintain like growth patterns. The exception to this would be the yews located at the entry closest to the parking area. It may be possible to use selective pruning to keep them in a manageable state.

It is recommended that the yews be replaced with *Taxus baccata* "repandens." This is a dwarf species, with growth from 2 to 4 feet. It is the species which is currently located within the plaza area. The yews, which are located on the outer edge of the plaza, are *Taxus cuspidata* 'Nana' and *Taxus hicksi*. They both obtain heights which are blocking viewsheds. For the above reason and maintenance, it is recommended that they all be replaced with *Taxus baccata* 'repandens'.

Maintain turf in the inner ring of the memorial plaza. An Evergreen groundcover, *Pachysandra terminalis*, was originally chosen for the inner ring. There is no evidence this was ever planted. Currently, turf is occupying this location. It is low maintenance and unobtrusive.

Remove the red oaks in the outer ring of the memorial plaza and replace with twelve disease resistant American elms. After much consideration and discussion with the USDA Agricultural Center, local nursery staff, as well as T. Davis Syndor, a horticulturalist contracted by Wright-Patterson Air Force Base, the replacement of the outer ring of red oaks with 12 disease-resistant American elms is desirable. The cultivar 'Princeton' is highly recommended because of its appealing structure. A 5-inch caliper tree, with a 55-inch rootball, is recommended. The USDA Agricultural Center is currently developing new cultivars of the American elm which are disease-resistant. Depending on the planting date, it would be wise to contact them to see what current cultivars are available. A contact at USDA is Denny Townson at (301) 344-4175.

The red oaks are historically significant because the trees replaced the American elms at an early date; yet, the oaks are susceptible to *Gandoderma* crown rot. Replanting from another plant family would reduce replant problems, such as the crown rot. Zelkova was considered as a replacement tree, because it resembles the American elm, but the tree shape when full grown is not as similar as expected. T. Davis Syndor, a horticulturalist and urban forestry consultant, believes the Zelkova is not as cold-hardy as either the elm or oak, especially within the microclimate at Wright Brothers Hill. The Zelkova is also susceptible to limb breakage and nectar canker. In summary, the elms were replaced because of "Phloem Necrosis."⁴¹ Presently, there are disease-resistant American elm that would be a good choice and, in addition, would be sympathetic to the Olmsted Brothers original design concept, which is using the formal growth habit of the elm.

All 12 trees should be replaced at the same time, due to the need of height uniformity to produce the layering effect of plant material around the memorial. A head space of from 15 to 20-feet between the first branch and ground level should be maintained. Periodic pruning would be required as the trees mature, due to the minimum clearances needed for flight patterns at Wright-Patterson Air Force Base.

The trees are currently in decline, and will eventually need to be replaced, if not for safety reasons alone. The rehabilitation of the plaza may or may not accelerate the decline. A suggestion is to wait until after the construction is finished around the trees and assess how the 10 trees survived. If the 10 trees survive the construction and are

41. Eiffert to Parker, 11 August 1943. Correspondence, Folder 2, Job # 9519, Frederick Law Olmsted National Historic Site.

TREATMENT APPROACH

still doing well for the 2003 event, leave them in for the event. It is recommended to replace them all after the 2003 event, if not before.

Structures

Repair the memorial plaza. Heaving of the pavers is presenting a safety concern, which should be addressed as soon as possible. There is a stone quarry - Rummings Bluestone, Jersey Shore, Pennsylvania, (717) 398-1691 - near the site of the original quarry. Representatives of the quarry suggested that a stone sample be sent to them to match the color.

Protect the Indian mounds. There should be no additional planting in this area, with the exception of tree replacement. In addition, the picnic tables should be removed from the area to discourage additional foot traffic. As noted earlier, the tables are not a part of the historic landscape.

Site Amenities

Remove the kiosk, relocate the picnic tables, replace the trash receptacle with one more sympathetic to the historic site and replace benches with those built according to the original plan. The picnic tables, benches, kiosk, and trash receptacle are not historically significant. Since picnicking is a contemporary use, it would be possible to relocate them. Moving them to the lower meadow, however, would probably require an additional parking area, which would not be compatible with the original design intent. As noted earlier, a bench of simpler design was scattered throughout the site. It is recommended to replace existing benches with those built according to the original plan (see drawing 7). The design of the trash receptacle needs to be more sympathetic to the character of the site, though its current location serves well. The kiosk should be removed and a low profile interpretive panel placed near the south entrance to the site. The drinking fountain should be adapted or replaced, to meet accessibility standards, using existing materials as much as possible.

Character of Adjoining Properties

Preserve the rural feeling of adjoining properties. The integrity of the adjoining properties is very good and the feeling of a rural setting still exists. This should be preserved as much as possible. Computerized Geographic Information Systems (GIS) is a very helpful tool to assist with viewshed analyses. Zoning, as well as leasing or acquiring scenic easements, have also been successful tools for management of this type.

APPENDIX A: OLMSTED BROTHERS PLANTING LISTS — 1939-1940

WRIGHT BROTHERS HILL
Dayton, Ohio

PLANTING LIST FOR BALANCE OF PLANTING: FOR FALL 1939

TO ACCOMPANY PLAN NO. 36
File No. 9519

Olmsted Brothers,
Landscape Architects.

Brookline, Mass.
August 28, 1939

1. *Acer saccharum*, 1 plant
Sugar Maple
2. *Rosa nitida*, 100 plants, 2½' apart
Bristly Rose
3. *Eringium amethystinum*, 10 plants, 18" apart
Amethyst Eryngo
4. *Helianthemum mutabile*, 310 plants, 21" apart
Fickle Sunrose
5. *Fraxinus americana*, 2 plants
White Ash
6. *Fagus americana*, 2 plants
American Beech
7. *Tilia americana*, 5 plants
American Linden
8. *Ulmus americana*, 5 plants
American Elm
9. *Hicoria ovata*, 2 plants
Shagbark Hickory
12. *Carpinus caroliniana*, 3 plants
American Hornbeam
13. *Ostrya virginica*, 2 plants,
American Hophornbeam

Planting Lists. Olmsted job #9519 Wright Brothers Hill Dayton, OH
Please Credit: Courtesy: National Park Service
Frederick Law Olmsted National Historic Site.

APPENDIX A

14. *Quercus rubra*, 9 plants
Red Oak
15. *Quercus palustris*, 1 plant
Pin Oak
16. *Quercus alba*, 4 plants
White Oak
17. *Quercus coccinea*, 5 plants
Scarlet Oak
18. *Quercus prinus*, 3 plants
Chestnut Oak
19. *Exochorda grandiflora*, 26 plants
Pearlbush
21. *Pinus nigra*, 57 plants
Austrian Pine
22. *Pinus sylvestris*, 24 plants
Scotch Pine
23. *Pinus strobus*, 6 plants
White Pine
24. *Taxus cuspidata nana (brevifolia)*, 63 plants, 5' apart
Dwarf Japanese Yew
25. *Juniperus sabina tamariscifolia*, 22 plants, 3' apart
Savin Juniper
26. *Juniperus communis depressa*, 45 plants, 3' apart
Prostrate Juniper
27. *Amelanchier oblongifolia*, 5 plants
Thicket Shadblow
28. *Amelanchier laevis*, 4 plants
Allegheny Shadblow
29. *Amelanchier sanguinea*, 10 plants, 5' apart
Roundleaf Shadblow

Wright Brothers Hill - 2
Plan 36

31. *Cercis canadensis*, 30 plants
American Redbud
32. *Halesia tetraptera*, 8 plants
Great Silverbell
33. *Cornus mas*, 7 plants
Cornelian Cherry
34. *Magnolia glauca* (virginiana), 5 plants
Sweetbay
35. *Oxydendron arboreum*, 3 plants
Sourwood
36. *Sorbus americana*, 11 plants
American Mountain-ash
38. *Cornus florida*, 70 plants
Flowering Dogwood
39. *Cornus florida rubra*, 21 plants
Redflowering Dogwood
40. *Rhus typhina*, 170 plants, 6' apart
Staghorn Sumac
41. *Rhus glabra*, 60 plants, 4 1/2' apart
Smooth Sumac
42. *Rhus copallina*, 85 plants, 4 1/2' apart
Shining Sumac
43. *Rhus cotinus*, 11 plants
Common Smoketree
44. *Hamamelis virginiana*, 47 plants
Common Witch-hazel
45. *Crataegus arnoldiana*, 7 plants
Arnold Hawthorn
46. *Crataegus carrierei*, 6 plants
Carriere Hawthorn
47. *Crataegus cordata*, 8 plants
Washington Hawthorn

Wright Brothers Hill - 3
Plan 36

48. *Crataegus punctata*, 11 plants
Dotted Hawthorn
49. *Crataegus crus-galli*, 5 plants
Cockspur Thorn
50. *Crataegus oxyacantha alba plena*, 5 plants
Double White English Hawthorn
51. *Crataegus oxyacantha paulii*, 4 plants
Paul English Hawthorn
53. *Malus arnoldiana*, 6 plants
Arnold Crab
54. *Malus floribunda atrosanguinea*, 2 plants
Carmine Crab
55. *Malus spectabilis*, 5 plants
Chinese Flowering Crab
56. *Malus prunifolia rinki*, 4 plants
Chinese Apple
57. *Malus theifera*, 5 plants
Tea Crab
58. *Malus floribunda*, 7 plants
Japanese Flowering Crab
59. *Cotoneaster zabeli*, 2 plants, 6' apart
Cotoneaster
60. *Cotoneaster applanata*, 20 plants, 5' apart
Cotoneaster
61. *Cotoneaster divaricata*, 80 plants, 4½' apart
Cotoneaster
62. *Cotoneaster horizontalis perpusilla*, 24 plants, 3' apart
Cotoneaster
63. *Lavandula officinalis*, 30 plants, 18" apart
True Lavender
64. *Rosa setigera*, 248 plants, 4 1/2' apart
Prairie Rose
65. *Rosa multiflora*, 125 plants, 5' apart
Japanese Rose
66. *Rosa multiflora cathayensis*, 47 plants, 5' apart
Cathay Rose

67. *Rosa wichuriana*, 180 plants, 3' apart
Wichuriana Rose
68. 5 Beds, 240 Plants, 3' apart. Use in groups of 5 to 10
of one variety
Rosa wichuriana Evergreen Gem, 80 plants
Hybrid Wichuriana Rose
Rosa wichuriana Sweetheart, 80 plants
Hybrid Wichuriana Rose
Rosa wichuriana Jersey Beauty, 80 plants
Hybrid Wichuriana Rose
If necessary substitute other wichuriana varieties.
69. Beds, 375 Plants, 3' apart
Rosa rugosa Max Graf, 185 plants
Trailing Rugosa Rose - pink
Rosa rugosa repens alba, 190 plants
Trailing Rugosa Rose - white
71. *Rosa rubrifolia*, 215 plants, 3 1/2' apart
Redleaf Rose
72. *Rosa spinosissima hispida*, 125 plants, 3' apart
Scotch Rose
73. Rose Mary Wallace, 3 plants
Climbing Rose - bright pink
74. Rose Dr. Van Fleet, 2 plants
Climbing Rose - flesh pink
75. Rose Mme. Gregoire Staechelin, 3 plants
Climbing Rose - pink
76. Rose Dorothy Perkins, 6 plants
Climbing Rose - bright pink
77. Rose American Pillar, 1 plant
Climbing Rose - scarlet-rose
78. Rose Jacotte, 2 plants
Climbing Rose - salmon-orange

Wright Brothers Hill - 5
Plan 36

APPENDIX A

79. Rose Albertine, 1 plant
Climbing Rose - coppery-salmon
80. Ampelopsis quinquefolia, 62 plants, 5' apart
Virginia Creeper
82. Several Beds, 485 Plants, 2 1/2' apart
Use in groups of 5 to 25 of one kind.
Comptonia asplenifolia, 220 plants
Sweetfern
Rosa lucida, 265 plants
Virginia Rose
83. Several Beds, 40 Plants, 3' apart
Use in groups of 5 to 25 of one kind
Myrica carolinensis, 20 plants
Northern Bayberry
Rosa lucida, 20 plants
Virginia Rose
84. Zanthorhiza apiifolia, 70 plants, 2' apart
Yellowroot
86. Rosa spinosissima varieties, 55 plants, 3' apart
Use in groups of 5 to 15 of one variety.
Scotch Rose
Double blush, 25 plants
Double White, 15 plants
Double pink, 15 plants
87. Diervilla trifida, 130 plants, 3' apart
Dwarf Bush-honeysuckle
88. 3 Beds, 95 Plants, 4' apart
Aronia arbutifolia, 50 plants
Red Chokeberry
Aronia melanocarpa, 25 plants
Black Chokeberry
Amelanchier stolonifera, 20 plants
Running Shadblow

Wright Brothers Hill - 6
Plan 36

89. *Myrica carolinensis*, 50 plants, 3' apart
Northern Bayberry
90. Several Beds, 110 Plants, 5' apart
Use 1 to 5 of a kind together
- Clethra alnifolia*, 40 plants
Summersweet
- Viburnum dilatatum*, 30 plants
Linden Viburnum
- Viburnum dentatum*, 40 plants
Arrowwood
91. *Pyracantha coccinea*, 126 plants, 4' apart
Scarlet Firethorn
92. Beds, 87 Plants, 8' apart
- Viburnum molle*, 50 plants
Kentucky Viburnum
- Viburnum prunifolium*, 37 plants
Blackhaw
93. *Viburnum lentago*, 10 plants, 8' apart
Keep 8 feet from other trees.
Nannyberry
94. *Berberis verna*, 77 plants, 6' apart
Verna Barberry
96. *Hypericum kalmianum*, 140 plants, 2 1/2' apart
Kalm Hypericum
98. Beds, 45 Plants, 7' apart
Keep 7 feet away from all other plants in bed.
- Viburnum sieboldi*, 20 plants
Siebold Viburnum
- Viburnum lantana*, 15 plants
Wayfaring-tree
- Viburnum dilatatum*, 10 plants
Linden Viburnum

Wright Brothers Hill - 7
Plan 36

APPENDIX A

99. Beds, 90 Plants, 5' apart
 Viburnum americanum, 45 plants
 American Cranberrybush
 Viburnum dentatum, 45 plants
 Arrow-wood
104. *Princepia sinensis*, 1 plant
 Cherry Prinsepia
107. *Viburnum carlesii*, 45 plants
 Fragrant Viburnum
108. Lilacs in variety, 50 plants, 7' apart
 Belle de Nancy, 10 plants
 Double, rose
 Marie Le Graye, 10 plants
 Single, white
 President Grevy, 10 plants
 Double, blue
 Madame Casimir Perier, 10 plants
 Double, creamy white
 Charles Joly, 10 plants
 Dark purplish red
109. *Rosa spinosissima altaica*, 50 plants, 3 1/2' apart
 Altai Rose
113. *Abelia grandiflora*, 35 plants, 3 1/2' apart
 Glossy Abelia
114. *Hedera helix*, 500 plants, 18" apart
 English Ivy
115. *Berberis verruculosa*, 35 plants, 2 1/2' apart
 Warty Barberry

Wright Brothers Hill - 8
Plan 36

116. *Berberis julianae*, 20 plants, 3' apart
Wintergreen Barberry
117. 1 Bed, 50 Plants, 3 1/2' apart
Use in groups of 2 to 5 of one kind
- Rosa spinosissima altaica*, 15 plants
Altai Rose
- Rose Lady Penzance, 10 plants
Sweetbriar Rose - pink
- Berberis thunbergi*, 25 plants
Japanese Barberry
118. *Berberis verna*, 110 plants, 4' apart
Verna Barberry

Wright Brothers Hill - 9
Plan 36

WRIGHT BROTHERS HILL
Dayton, Ohio

PLANTING FOR BEDS ADJACENT TO CIRCULAR WALLS

TO ACCOMPANY PLAN NO. 36
File No. 9519

Olmsted Brothers,
Landscape Architects.

Brookline, Mass.,
Revised January 27, 1940

113. *Abelia grandiflora*, 14 plants
Glossy Abelia
119. *Ulmus americana*, 12 plants (planted)
American Elm
120. *Cornus florida*, 8 plants
Flowering Dogwood
121. *Crataegus oxyacantha*, 10 plants (omit)
English Hawthorn
122. *Taxus baccata repandens*, 22 plants, 3' apart, 18-24"
Spreading English Yew
123. *Taxus cuspidata nana*, 18 plants, 3 1/2" apart, 2 - 2 1/2'
Dwarf Japanese Yew spread
124. *Taxus hicksi*, 4 plants, 3 - 3 1/2'
Hicks Yew
125. *Pyracantha coccinea pauciflora*, 36 plants, 4' apart, 3-4'
Firethorn 2 1/2' - 3'
126. *Mahonia aquifolia*, 6 plants, 4' apart, 2 1/2 - 3'
Oregon Hollygrape
127. *Hedera helix*, 2,018 plants, 12" apart
English Ivy
128. *Pachysandra terminalis*, 4,000 plants, 8" apart
Japanese Pachysandra
129. *Cotoneaster horizontalis*, 9 plants, 3' apart
Rock Cotoneaster

Planting Lists. Olmsted job #9519 Wright Brothers Hill Dayton, OH
Please Credit: Courtesy: National Park Service
Frederick Law Olmsted National Historic Site.

- 130. **Cotoneaster zabeli, 15 plants, 4' apart**
Cotoneaster
- 131. **Not used.**
- 132. **Hydrangea petiolaris, 14 plants**
Climbing Hydrangea

Wright Brothers Hill - 2
Revised Circular Walls

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