

Skyland's Massanutten Lodge, built in 1911 by Addie Nairn Hunter, reflects the resort's rustic architecture. Hunter later married George Freeman Pollock, who played a critical role in the establishment of Shenandoah National Park in the early 1920s.

Bill Faust, HAER, 1996.

Program initiated a major rehabilitation of Skyline Drive, replacing original guard walls and failed culverts. The new, and substantially higher, guard walls are constructed of a concrete core faced with cut stone from the historic walls, laid in a random pattern with prominent mortar joints. Estimated rehabilitation costs exceeded \$326,000 a mile. The cost of original stone guard walls averaged one dollar per linear foot.

Lying Lightly on the Land

NPS landscape architects drew upon the naturalistic landscape gardening practices of the 1920s, and their own previous experience in western parks as they designed Skyline Drive to lie lightly along the crest of the Blue Ridge Mountains. This was accomplished through an extensive program of landscape naturalization

"Last Wednesday, for the first time, I completed the final length of that glorious new drive of yours along the crest of the Blue Ridge ... The President and I extend our heartiest congratulations to you and your department in so workman-like a job and so splendid a work of natural art."

Mrs. Lou Henry Hoover to NPS Director Horace Albright, Dec. 6, 1932

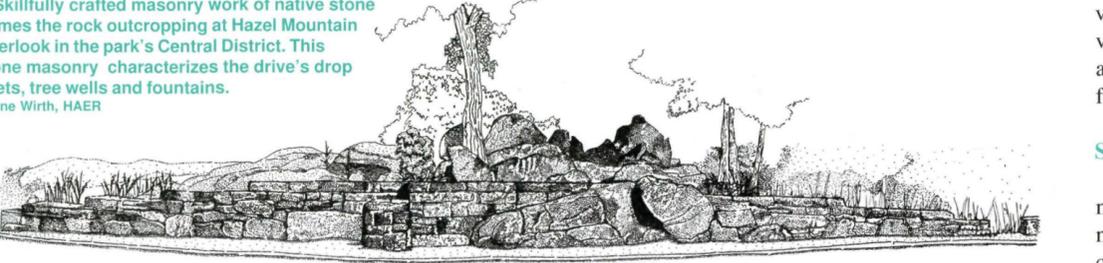
and road beautification that blended the drive into its surroundings and prevented roadside soil erosion. Banks and cut crests were rounded, slopes flattened, and the ends of cuts and fills warped to thoroughly integrate the new surfaces with the old. The CCC performed much of the road bank blending along the drive using power shovels to cut back the slopes, then rounding them with hand labor. Topsoil that had been stripped away and stored during road construction was reapplied to the shoulders and banks. The slopes were revegetated with native plants in naturalistic planting patterns.

"We worked and we felt like men."

Torrey Best, Civilian Conservation Corps enrollee, NP-2, Big Meadows

► Skillfully crafted masonry work of native stone frames the rock outcropping at Hazel Mountain Overlook in the park's Central District. This stone masonry characterizes the drive's drop inlets, tree wells and fountains.

Shane Wirth, HAER



Many of the trees and shrubs were salvaged and transplanted from construction areas or abandoned farmsteads within the park. Vines, such as Virginia creeper, wild grape, American bittersweet, and clematis were rooted in rock cuts and along guard walls. Road banks and overlooks were planted in mountain laurel and other small shrubs, or seeded with grasses, ferns, annual and perennial wild flowers. In developed areas, the addition of trees and shrubs provided proper

► This 1934 photograph of excavation and grading operations in the North District is typical of the drive's construction. Controlled blasting techniques minimized unsightly landscape scars and conserved stone for construction uses.

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visual aesthetics. Planted meadows and open bays varied the forest outline along the roadside, while artificially trimmed vistas opened spectacular views from the drive and overlooks.

Skyline Drive Today

While technically not a parkway, the 105.5 mile, paved, two lane Skyline Drive displays elements standard to that road type (limited access, non-commercial recreational traffic, access to adjoining recreational facilities, and exclusion of commercial development along the right-of-way).

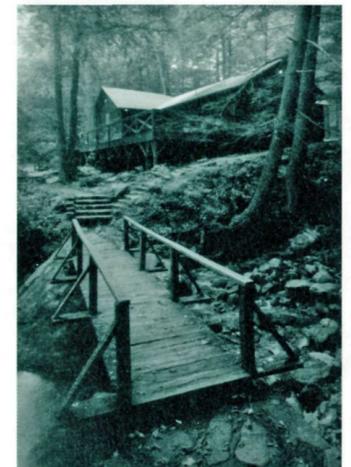


1887
George Freeman Pollock establishes Camp Stony Man (known today as Skyland), a resort in the Blue Ridge Mountains of Virginia.

1924
The Southern Appalachian National Park Committee recommends Shenandoah and the Great Smoky Mountains as future eastern national park sites.

1926
Congress authorizes the establishment of Shenandoah and Great Smoky Mountains National Parks if sufficient land is donated at the state level.

A cooperative agreement between NPS and BPR is signed, giving landscape engineers primary responsibility for landscape protection and design review of park road projects.



◀ In 1929, President Herbert Hoover purchased land on the Rapidan River below Big Meadows for a private fishing camp and retreat known today as Camp Hoover.

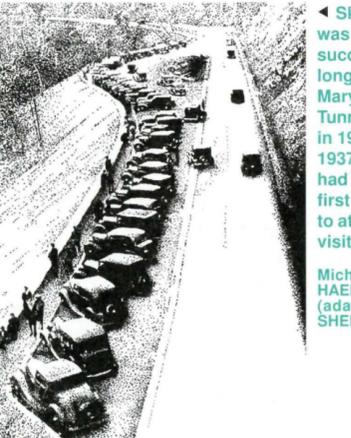
Bill Faust, HAER, 1996.

1930
Both President and Mrs. Hoover are advocates for the new park. In late 1930, while horseback riding in Big Meadows Hoover tells NPS Director Albright to begin planning a scenic mountain drive.

1931
Construction begins on Skyline Drive, as excavation and grading operations begin on the Rapidan Road from Camp Hoover to Big Meadows, later extending on the entire section from Thornton Gap to Swift Run Gap.

◀ Skyline Drive was an immediate success, as this long line of cars at Marys Rock Tunnel Overlook in 1935 attests. By 1937, Shenandoah had become the first national park to attract 1 million visitors a year.

Michael Lanning, HAER, 1996. (adapted from SHEN photograph)



1933
The Emergency Conservation Work Program, later called the CCC) establishes camps at Shenandoah. NPS landscape architect Harvey Benson supervises landscape work.

Aug 12: President Roosevelt visits CCC camps and projects along the drive.

NPS designers plan the junction of the proposed Blue Ridge Parkway in North Carolina.



1934
Virginia acquires the minimum amount of land necessary to establish the park and delivers deeds to the U.S. Government.

Work begins on the northern section of the drive between Front Royal and Thornton Gap.

Construction also begins on the Blue Ridge Parkway in North Carolina.

Sept. 15: Skyline Drive opens between Thornton and Swift Run gaps.

1935
The Secretary of the Interior accepts donation of 176,429 acres from the Commonwealth of Virginia, thus establishing Shenandoah National Park.



► CCC crews built original guard rails of chestnut logs along the drives between 1936 and 1942, as part of the Emergency Conservation Work program in Shenandoah.

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► Picnic areas adjacent to the drive opened at Pinnacles (mile 36.7) and South River (mile 62.6) in 1935. Pinnacles' distinctive log shelter was built by the CCC.

Bill Faust, HAER, 1996.

1938
Developed areas open at Dickey Ridge, Elkwallow, and Big Meadows.

Construction begins on the final section between Black Rock and Jarman gaps and by year end the

road base is in place from Brown to Jarman gaps.

November: Paving operations are complete between Brown Gap and Jarman Gap, and from Jarman Gap to Rockfish Gap on the Blue Ridge Parkway.

1939
Between May and August: Pavement work from Brown to Jarman gaps is finished.

An unusually harsh winter necessitates repaving the Drive's north section and portions of the Blue Ridge Parkway between Jarman and Rockfish Gaps.

August 29: The Skyline Drive is fully open for 97 miles from Front Royal to Jarman Gap.

A park entrance fee is inaugurated amid vigorous protest. Big Meadows Lodge, a concessioner, opens.

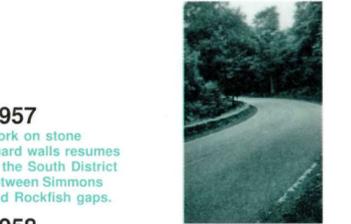
1940
Park headquarters moves to new stone buildings on Rt. 211 at the park's edge outside Luray.

The Lewis Mountain developed area opens as a segregated facility.

Surfacing work on parking overlooks and developed areas is completed.

1955
Visitation to Shenandoah and Skyline Drive exceeds 1.5 million a year.

Mission 66 planning foreshadows future development to a "modern" design standard.



► Strict NPS design standards extended to details motorists seldom see, like the random-rubble masonry headwall for this double culvert near Meadow Spring Trail Parking Area, mile 33.6.

Bill Faust, HAER, 1996.

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1957
Work on stone guard walls resumes in the South District between Simmons and Rockfish gaps.

1958
The abandoned dining hall at Dickey Ridge is converted into a visitor's center.

Repair work includes addition of a concrete liner to Marys Rock Tunnel begins.

Bill Faust, HAER, 1996

► The curvilinear alignment of Skyline Drive and its flanking guard walls gracefully follow the mountainous topography, enhancing the park experience along the road.

Bill Faust, HAER, 1996

1961
The portion of the Blue Ridge Parkway between Jarman and Rockfish Gaps is transferred to Shenandoah, increasing the length of Skyline Drive from 97 to 105.5 miles.

A new highway interchange and entrance station are constructed at Thornton Gap, and the Panorama area is redeveloped.

1961
The portion of the Blue Ridge Parkway between Jarman and Rockfish Gaps is transferred to Shenandoah, increasing the length of Skyline Drive from 97 to 105.5 miles.

Bill Faust, HAER, 1996.

► Scenic overlooks and vistas at frequent intervals are integral and essential aspects of Skyline Drives design, offering visitors to Shenandoah a sequential panorama of scenery.

Bill Faust, HAER, 1996.

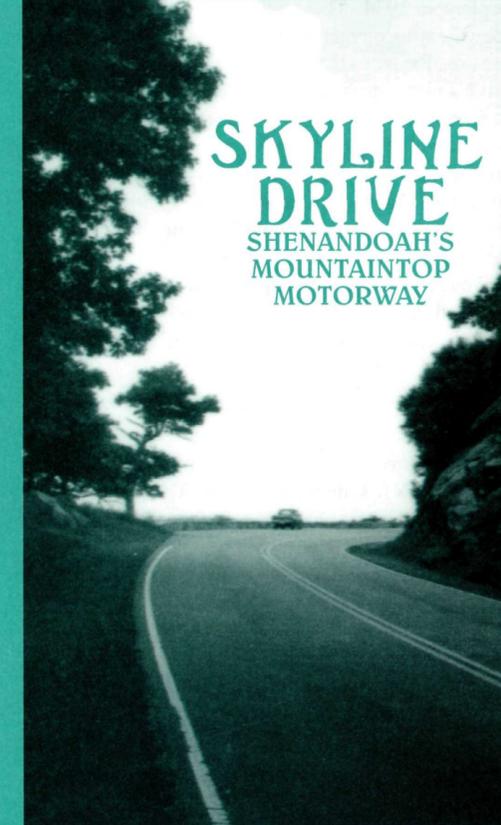
1983
The Federal Lands Highway Program initiates a major rehabilitation of Skyline Drive, including the replacement of unsafe original guard walls and failed culverts.

1996-97
The Historic American Engineering Record (HAER) documents Skyline Drive. 1996 Skyline Drive listed on the National Register of Historic Places.

Highways in Harmony

Shenandoah National Park

Virginia



SKYLINE DRIVE SHENANDOAH'S MOUNTAIN TOP MOTORWAY

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Creating Skyline Drive: Shenandoah's Mountaintop Roadway

Skyline Drive has afforded motorists in Shenandoah National Park sweeping views of Virginia's Blue Ridge Mountains, Shenandoah Valley and eastern Piedmont since its first section opened to the public in September 1934. These panoramas are a defining element of the graceful park road's naturalistic design. The drive's function as the backbone of the park's circulation system provides automobile access to the park's campgrounds, picnic areas, back-country and Appalachian Trail heads. One of the most popular recreational roads in the eastern United States, Skyline Drive is an excellent example of the National Park Service's (NPS) naturalistic road building program of the 1920s and 1930s.

It is a wonder way over which the tourist will ride comfortably in his car while he is stirred by a view as exhilarating as the aviator may see from the plane."

U.S. Senator Harry F. Byrd (Virginia)

Establishing an Eastern National Park

Between the establishment of Yellowstone as the country's first national park in 1872, and the creation of the National Park service in 1916, national parks remained a phenomenon of the American West. Carved out of land in the public domain, the parks were located west of the Mississippi River, far from the country's eastern population centers. Recognizing this imbalance, the Park Service's first director, Stephen T. Mather, pushed for the creation of parks in the east. In 1919 Acadia National Park became the first eastern national park.

► The BPR supervised construction of the Skyline Drive for the NPS between 1931 and 1939. Designed with wide, sweeping, and banked curves and an easy gradient (less than 8 per-cent), the road featured a naturally compacted crushed stone base covered with a light weight mixed-in-place asphalt pavement.

Shane Wirth, HAER, 1996.

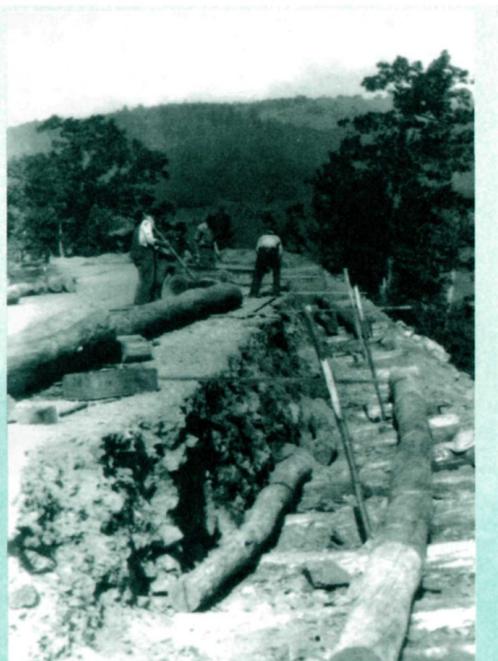
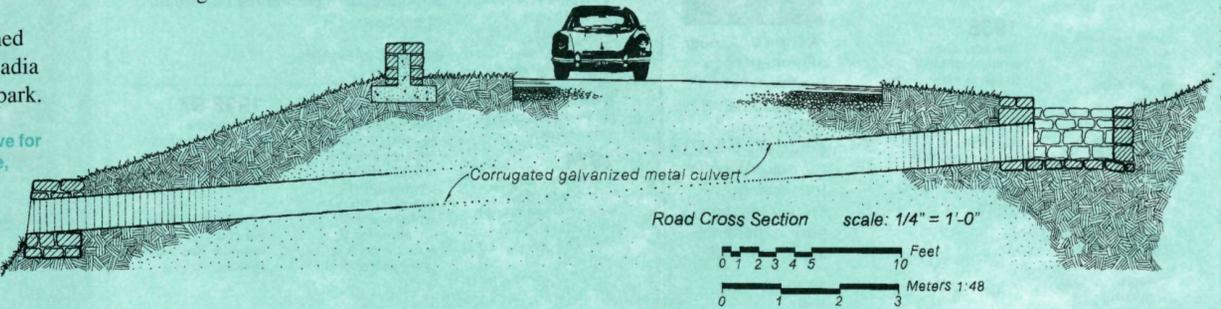
Its remote location on the coast of Maine, however, placed it beyond the reach of most Americans.

At Mather's urging, the Secretary of the Interior appointed a committee to investigate park locations in the Southern Appalachian mountains. In December 1924, the Southern Appalachian National Park Committee recommended the Virginia Blue Ridge as its first choice for a park site, noting that it lay within a 3-hour drive of the nation's capital and within a day's drive of 40 million Americans. In 1926 Congress authorized the establishment of Shenandoah National Park (along with two sister parks, Great Smoky Mountains and Mammoth Cave).

Unlike the western national parks which were created from federal lands, Shenandoah was assembled from numerous tracts of private property. Since Congress did not appropriate funds for the acquisition of national park land, the Commonwealth of Virginia spent a decade acquiring the park's original 176,429 acres, mostly through blanket condemnation. Virginia presented the property as a gift to the U.S. Government, which approved the park in December 1935.

A Park for the Automobile Tourist

Skyline Drive was among the first mountain road building projects undertaken by the NPS in the East. The concept of a scenic ridge drive was suggested by the Southern Appalachian National Park Committee in 1924, when it noted that "the greatest single feature [of the proposed park] ... is a possible sky-line drive along the mountain top, following a continuous



▲ This earth fill on the roadway near Panorama utilized a cribbing of American chestnut logs to support the road shoulder and masonry guard walls. The deteriorated cribbing was removed during the drive's rehabilitation begun in 1983.
 Len Harris, Shenandoah National Park, 1933

ridge and looking down westerly on the Shenandoah Valley ... and also commanding a view of the Piedmont Plain stretching easterly to the Washington Monument."

The committee recognized the proliferation of the automobile and its increasing use as a recreational vehicle. By 1929, over 23 million passenger cars were registered in the U.S., making the automobile one of the most significant social and technological changes of the period. Federal, state and local officials realized that the proposed Shenandoah National Park would, by necessity, be a park for the automobile tourist. As Charles E. Peterson, head of the NPS Eastern Division, Branch of Plans and Design in the 1930s, recalled, "[t]he overall idea was that motorists should be able to drive out of Washington for a Sunday's mountain experience and get back home by night."

Construction of Skyline Drive predated the dedication of the park by five years. Work began in 1931, when President Hoover (a staunch advocate of the road) authorized drought relief funds to finance the task. From 1933 until its completion in 1939, the job continued as a Depression Era work relief project under the Roosevelt Administration's New Deal. President Roosevelt followed the progress in Shenandoah as avidly as his predecessor had, ensuring that the Public Works Administration (PWA), Works Progress Administration (WPA), and Civilian Conservation Corps (CCC) allocated funds and manpower for construction, beautification, and development of the road and park.

Skyline Drive was an instant success. Each of the road's three sections opened—in 1934 (Central District), 1936 (North District) and 1939 (South District)—to enormous numbers of motorists.

"The wall being built now is the best that has been turned out by the Bureau of Public Roads so far. Drills, compressed air, and a crane are on the job as the wall is put up. As a result, the cost is less, larger rock are placed in the wall, and less waste of time and stone is encountered."

Harvey Benson, Resident Landscape Architect, Shenandoah National Park

► The Dickey Ridge Visitor Center is typical of the rustic "parkitecture" built in Shenandoah and other national parks in the 1930s. Erected by the park concessionaire in 1938, it served as a dining hall for a tourist cabin development. Closed during WWII and never reopened, it was converted into a visitor's center in 1958.
 -Robert Harvey, HAER, 1996.



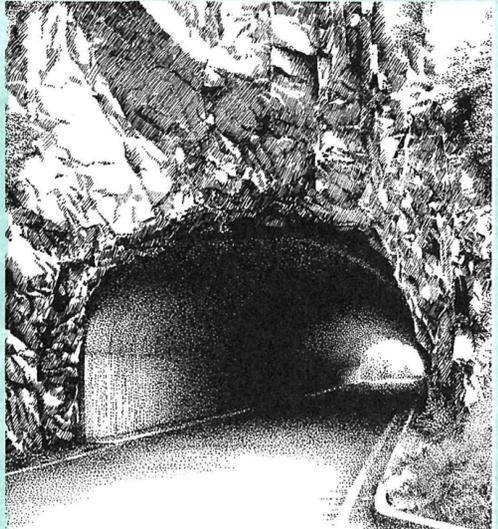
As a result of the drive's popularity, newly established Shenandoah led all National Park units in yearly visitation by 1937, becoming the first national park to attract one million visitors.

A Joint Agreement Creates Partnership

Skyline Drive was built under an interagency agreement between the National Park Service and the Bureau of Public Roads (BPR). This partnership, formalized in 1926, had been forged and perfected on western park road building projects. BPR engineers provided the technical expertise and construction management, while NPS landscape architects provided naturalistic design knowledge and exercised final review. NPS designers and engineers adapted mountain drive standards from western parks to the gentler topography of the east, coupling this

with the design principles established on the suburban parkways of New York's Westchester County earlier in the century. The BPR contracted private construction firms to build the road, according to detailed plans and specifications prepared by BPR engineers and NPS landscape architects.

► Popular Marys Rock Tunnel (mile 32.4) demonstrated one of the more spectacular elements of NPS and BPR mountain road building design, and prevented an unsightly scar on the mountainside.
 Michael Lanning, HAER, 1996.



Charles E. Peterson, NPS landscape architect

"But it is for the far-reaching views from the Skyline Drive that the park is most widely known. Macadamized and smooth, with an easy gradient and wide sweeping curves, the Drive unfolds to view innumerable panoramas of lofty peaks, forested ravines and the patchwork of patterns of valley and farms."

Harvey Benson, Resident Landscape Architect, Shenandoah National Park.

part of the Blue Ridge Parkway and transferred to Shenandoah National Park in 1961. Roadway excavation and grading began after the Skyline planners surveyed the route, prepared plans, and acquired the right-of-way. Constructed by a method of side-hill cut and fill, the roadway lay on a shelf carved out of, or built onto the mountain-side. This technique was mastered in western mountain parks like Yellowstone, and became a standard procedure for building National Park roads. Rock and soil excavated in cuts were used to build up fill areas. Controlled blasting techniques minimized unsightly landscape scars and conserved stone for other uses in construction.

Built in the midst of the Great Depression, the project was largely funded by the PWA. By 1940, the estimated cost of the drive's original 97 miles between Front Royal and Jarman Gap was over 4.5 million dollars; approximately \$47,000 per mile.

Road Construction

The road was built in three sections during the 1930s. Work first began on the central section, from Thornton Gap to Swift Run Gap, in July 1931. This stretch opened to long lines of motorists on Sept 15, 1934. The north section (Thornton Gap to Front Royal) opened two years later on Oct 1, 1936. The south section (Swift Run Gap to Jarman Gap), opened on Sept 29, 1939. A fourth segment (Jarman Gap to Rockfish Gap) was originally constructed as

The roadway was constructed with a base of six to eight inches of crushed stone, supporting an asphalt surface, coated with a waterproof seal. Parking overlooks and entrance roads to the park's developed areas were treated in similar ways.

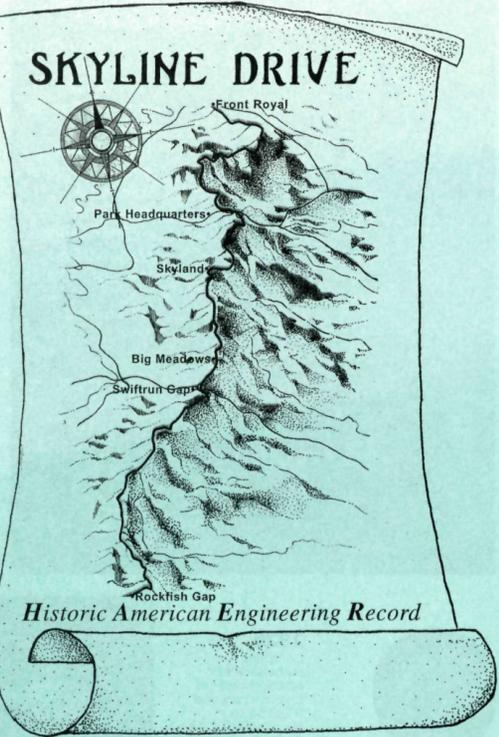
Native stone was used in all the masonry work along the drive, such as retaining walls, hand laid rock embankments, drop inlets, culvert head walls, gutters, tree wells, drinking fountains, and guard walls. The rock came from roadway excavations or carefully selected quarry sites within the park or just outside its boundaries.

Skyline Drive originally featured 18 inch high, stone guard walls along steep stretches of the roadway. In 1983, the Federal Lands Highway (continue on other side)



◀ These mountains were just made for a highway."
 NPS Director Horace Albright recalled President Herbert Hoover telling him in the fall of 1930.

▼ Bird's-eye map of Skyline Drive. halren d. groe, HAER, 1996.



◀ Tree branches form a natural arbor over the road between mile 58.6 and 58.8, creating a "Green Tunnel" in summer. As the park's forest vegetation matures, views from Skyline Drive change too; some distant vistas have been replaced by intimate woodland scenes.
 Bill Faust, HAER, 1996.