SCOTTS BLUFF SUMMIT ROAD
Scotts Bluff National Monument
Gering
Scotts Bluff County
Nebraska

HAER No. NE-11

HAER
NE-11

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HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
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HISTORIC AMERICAN ENGINEERING RECORD

SCOTTS BLUFF SUMMIT ROAD
HAER No. NE-11

LOCATION:	Scotts Bluff National Monument is located two miles west of the town of Gering, in Scotts Bluff County, Nebraska. The Summit Road extends 1.582 miles from its intersection with Highway 92 to the summit of Scotts Bluff.
DATES OF CONSTRUCTION:	1933-1939. Additional tunnel portal construction, 1989.
STRUCTURE TYPE:	Scenic vehicular park road.
DESIGN:	National Park Service Branch of Plans & Design and U.S. Bureau of Public Roads. Howard W. Baker, National Park Service, primary landscape architect.
CONTRACTORS:	E.W. Nichols; Gunite Corporation; Gross & Stevens (Scotts Bluff, NE); Northwestern Engineering Co. (Rapid City, SD); Orshek and Christensen (Fremont, NE).
OWNER:	National Park Service, Scotts Bluff National Monument.
SIGNIFICANCE:	The Summit Road provides access to the summit of Scotts Bluff while preserving the natural beauty and historical integrity of the site. Built primarily by relief labor during the Depression, the road features concrete slab paving and three short tunnels. The highly erosive nature of the sandstone formation and the rugged topography of the site posed significant challenges to designers and construction forces.
PROJECT INFORMATION:	The Scotts Bluff Summit Road Recording Project was undertaken during the summer of 2000 and is part of the Historic American Engineering Record (HAER), a long-range program to document historically significant engineering and industrial works in the United States. HAER (Eric DeLony, Chief) is administered by the Historic American Buildings Survey/Historic American Engineering Record (E. Blaine Cliver, Chief), a division of the National Park Service, U.S. Department of the Interior. The project was funded by the U.S. Department of Transportation's Federal Lands Highway Program

(Art Hamilton, Administrator) through the NPS Park Roads and Parkways Program (Lou DeLorme, Manager) and cosponsored by Scotts Bluff National Monument (Valerie Naylor, Superintendent) and the NPS Cooperative Program at Montana State University (Barry Sulam, Manager).

The field work, measured drawings, historical reports, and photography were completed under the direction of Christopher Marston, Project Leader; Tim Davis, Program Historian; and Todd A. Croteau, Program Manager. The recording team, consisted of Field Supervisor Chris Gray (Texas A&M University); Architects Todd Delyea (University of Idaho), Tim Grinstead and Stacey Heckaman (Montana State University), and Roger Michel (US/ICOMOS, Haiti); and Landscape Architect Christine Magdalenos (Ball State University). The report was written by Alicia Barber (University of Texas at Austin) and edited by NPS historian Tim Davis. Large format photography was produced by David Haas.

PROJECT HISTORIAN: Alicia Barber, HAER 2000.

Table of Contents

Scotts Bluff Summit Road	4
Summit Road Description	5
Background of Site	8
Early Monument Development	11
NPS Road and Trail Development and Scotts Bluff National Monument	17
The New Deal Era of Monument Development	20
Initial Road Planning and Design	24
Summit Road Construction	27
Presentation and Reception	59
Evolution and Current Condition/Issues	63
Conclusion	69
Sources Consulted	71

Scotts Bluff Summit Road

Rising high above the surrounding prairie, Scotts Bluff served as a major landmark for those traveling the historic Oregon Trail in the mid-to-late nineteenth century. Deep ruts worn by the wheels of thousands of pioneer wagons are still visible near Mitchell Pass, just west of the monument's visitor center. The summit of the bluff offers a panoramic view of the North Platte Valley, including the North Platte River, the surrounding badlands, the site of the Mormon Trail on the north bank of the river, and the towns of Scottsbluff and Gering. Chimney Rock and other prominent geological formations can also be seen from the summit.

Scotts Bluff National Monument was created in 1919 to commemorate the bluff's historical significance and to preserve the scenic views from the summit. Construction of the Summit Road began in 1933. By providing automobile access to the summit of Scotts Bluff, this road was intended to enable visitors to understand the broader context of the site and better appreciate its role in the historical process of westward migration. Both the visitor center and summit interpretative markers share this instructive purpose, making the Summit Road an important component of the monument's educational mission.

The road was carefully located to minimize its impact on the bluff's historically significant appearance. The road winds for 1.582 miles through three tunnels up the southwest slope of Scotts Bluff, culminating at the summit parking lot, which is located 425' above the visitor center. After entering the first of three tunnels, the road curves around the west side of the bluff and is no longer visible from the main approach to the monument. Careful landscaping measures including construction of earthen berms and re-sodding of excavated slopes further hide the road from view. During construction, the color of the concrete tunnel portals was carefully matched to the natural shades of the bluff.

The National Park Service (NPS) began building the Summit Road in 1933. It was opened to the public in 1937, although work on the tunnel portals continued through 1939. All original construction was supervised by the Bureau of Public Roads (BPR), as part of the 1926 interbureau agreement between the BPR and the NPS. The work was accomplished primarily by local relief labor, with federal funding provided by the New Deal agencies of the Roosevelt administration.

The pace and methods of construction were largely dictated by the availability of federal funding and by the nature of the environment. Progress was slowed by the rugged terrain that constrained workers throughout most of the process and by the unstable sandstone of the bluff, which was highly prone to erosion and rockslides. These factors necessitated many innovative construction practices, including the use of a man-powered mining-style railway to haul excavated material, lengthy waste chutes to cast debris out of sight of the roadway, and a manual truck turntable so that large vehicles could reverse direction on the narrow road bed that was

being carved out of the bluff. Since the road was completed, the gunite used to stabilize surrounding slopes has been periodically repaired, and the removal of detritus from rockslides has been a routine maintenance chore. The majority of the original paved surface remains intact, with only a few subsequent replacements of individual concrete slabs. Three additional tunnel portals were constructed in 1989 to help protect the roadway and stabilize the original excavations.

With the exception of the stretch of Highway 92 that passes through the boundaries of the monument, the Summit Road is the only public road on monument grounds. Visitors typically stop at the monument's visitor center, and either drive their own vehicles or ride the shuttle bus up the Summit Road to the parking lot, where short footpaths lead to two additional observation points to the north and south. Visitors may also hike the Saddle Rock Trail to the summit, or hike down on the trail after taking the bus to the top.

Summit Road Description

The Summit Road is a two-lane, two-way reinforced Portland cement concrete road that extends 1.582 miles from the intersection with Highway 92 to the parking area at the summit of Scotts Bluff. The road follows the bluff's natural contours on its western side, winding through three excavated tunnels at a maximum grade of 7 percent. A significant superelevation of up to .083 ft./ft. is employed throughout the roadway due to its tightly curved alignment. The road has a usable surface width of 20', widening at the tunnel approaches to match the inside diameter of the tunnels. These widths vary from approximately 23.5' at Tunnel No. 3 to 25' at Tunnel No. 1. The road features concrete curbing, frequent stretches of sidewalk, and a consistent gutter measuring 9" wide on the high side and 1'-3" on the low side. A reinforced concrete guardrail designed to evoke a castellated parapet frames the outer edge of the road on stretches above Tunnel No. 2.

The light buff color of the concrete paving was originally intended to harmonize with the natural earth tones of the bluff. This effect has been compromised somewhat by the numerous tar patches that have been used to repair cracks in the driving surface, which have left black snake-like traces along much of the roadway. When the road was constructed, 2' wide cleats were installed at curves to warn motorists against crossing the centerline by producing an effect similar to modern "rumble strips."[1] These were later removed and a standard double yellow line was painted between the lanes, but their traces can still be seen. The constant curves demand a driver's full attention, so the road has no pullouts and offers few direct views on the way up.

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[1] "Road to Top of Bluff is Open for Autoists Today," *Scottsbluff Daily Star-Herald*, 19 September 1937.

Drainage is accomplished by sixteen rectangular drop inlets that funnel water into 18" diameter corrugated metal pipes. These drain pipes extend a significant distance away from the road surface so that the discharge does not undermine the road base or create unsightly erosion problems. Since the curbed concrete roadway acts as gigantic gutter, unusually large drop inlets were required to accommodate the high volumes of water that occasionally course down the road. The drop inlet grates were fashioned from old railroad rails. (It is likely that this steel was recycled from the mining-style railway employed in the road's construction). At the tunnels, corrugated metal pipes funnel water from drains located inside the tunnels to outlets below the roadway. Two additional drop inlets are found at the summit parking lot, a one-way loop with parking spaces surrounding a barbell-shaped center island. In 1940 this parking lot was enlarged to three times its original size.[2]

The three tunnels are semicircular and have a minimum clearance of 11'-7". They feature adobe-colored, reinforced concrete portals with flat tops and sides that curve to match the arc of the tunnel openings. Inside each tunnel, a 3' sidewalk extends along the outside wall, with another sidewalk of approximately 1'-6" on the inside wall.

From the visitor center, the road runs northward at a very gradual slope directly toward Scotts Bluff, offering a direct view of the bluff's entire south side. The contrasting strata of sandstone and ash are sharply defined here, as the lower vegetated layer gives way to several layers of rock. Dark green Rocky Mountain juniper and ponderosa pine provide a contrasting accent at the summit. To the west of the road, the ground slopes upward, toward the bluff; on the east, the prairie stretches to the monument's eastern border with occasional hills and gullies. On the valley floor, the open landscape of prairie plants, including threadleaf sedge (*Carex filifolia*), western wheatgrass (*Agropyron smithii*), blue grama (*Bouteloua gracilis*), and prairie sandreed (*Calamovilfa longifolia*), is punctuated by occasional stands of juniper, along with yucca and plains sunflowers. Small stands of pine and juniper also dot the sides of the slopes.

The road soon curves to the west and then sharply southward to nestle alongside the edge of the bluff on the approach to Tunnel No. 1, which passes through a formation known as Eagle Rock. A sign warns of falling rock, and a sidewalk of approximately 3' wide on the right is partially covered with dirt, vegetation, and fallen rubble. The road begins to curve to the right upon entering the large tunnel portal, creating a blind entrance where the exit is not visible. While in the tunnel, the road curves slightly to the north, and emerges on the west side of the bluff, with an immediate view of the open sky, as the road continues to curve to the right, following the bluff's contours. Upon exiting, the portal of Tunnel No. 2 is visible 500' ahead. On the right, small piles of rubble on the ground indicate the continuing instability of the rock wall. A 3'

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[2] National Register of Historic Places, Determination of Eligibility for Scotts Bluff National Monument, 17 March 1995.

grass-covered bank of earth on the left functions as a natural guardrail and helps to conceal the road from below. Beyond it is a panoramic view of Mitchell Valley, with a sharp dividing line distinguishing the brownish hues of the monument grounds from the vivid green of the irrigated farmland and interspersed farms to the west. These farms stretch off into the distance toward the Wyoming border.

The road continues to Tunnel No. 2, which also curves to the right, creating another blind entry. Inside the tunnel, a noticeable superelevation slopes inward toward the bluff. Upon exiting, the immediate view is of a natural rock wall, as the road immediately curves to the left. On the right, the sidewalk is covered with fallen rubble from the high rock cliff, and on the left, beginning approximately 25' from the tunnel exit, the parapet guardrail begins, supporting a bank of earth behind it. Tunnel No. 3, 500' up the road, can be seen from here, as can a lengthy shotcrete patch that begins about 10' above the road and supports the middle section of this rock wall, extending from the top of the Brule layer to a point above the layer of ash. The patch, a few shades darker than the bluff's stone, remains level as the road rises, becoming even with the road by the time it reaches the portal of Tunnel No. 3. At the tunnel entrance, the sidewalk on the right widens into a large grassy space and a sign cautions, "No Parking Anytime." On the left, the curb opens into a sidewalk approximately 6' wide.

The exit of Tunnel No. 3 can be seen from its entrance, framing a view of the rock wall, as the road turns immediately to the left. Sidewalks are found on both sides of the road, with a left guardrail extending directly from the tunnel portal. The bank is lower here, and the slope descends steeply behind the guardrail. Heading into a sharp turn to the right to hug the bluff, the driver's view of the valley is completely blocked by an approximately 20' high rock cut that was retained when the roadway was blasted out. This wall, combined with the even higher wall on the right side, creates the feeling of a protected roofless tunnel for approximately 30'. Afterwards, a brief straightaway leads into another sharp curve to the right, where the view is dominated by the bluff ahead as the road approaches the summit. The slopes here are dotted with more frequent stands of juniper and ponderosa pine. After a few more curves, another high rock cut on the left, also approximately 20' high, blocks the view. It soon gives way to a lower bank with some taller evergreens. The sky and the bluff ahead comprise the main view here, as the topography begins to flatten out near the summit. At the entrance to the summit parking area, a "One Way" sign directs traffic counterclockwise around a central island dominated by a large juniper bush, which is accompanied by stands of yucca, plains pricklypear (*Opuntia polyacantha*), and short grasses. The guardrail ends upon reaching the parking area. The overlook area features a sidewalk, an observation telescope, a granite bench, and garbage and recycling cans. A total of twenty-nine parking spaces, including two handicapped-accessible spaces, are designated with painted lines, although many additional vehicles could fit if necessary. On the outside edge of the lot, a line of newer pavement indicates where the parking lot was expanded in 1940.

This primary overlook from the parking area offers an impressive view of the North Platte Valley, including the town of Scottsbluff to the north, fields of alfalfa, sugar beets, beans, and corn, and the North Platte River. From the parking lot, short foot trails lead to the north and south observation points. From the north observation point can be seen the badlands, the river, Scottsbluff, and on a clear day, Laramie Peak, 125 miles to the west. The south observation point offers a view of the monument visitor center and the initial stretch of the Summit Road, the town of Gering, the Wildcat Hills, and the other bluffs on monument grounds. The historic landmarks central to the monument's historical and commemorative mission are identified by interpretive signs, historical markers, and arrows set in the stone of the lookout points. These important historical features include the river, which drew Native American populations since prehistoric times and continues to support today's irrigated farmlands, the historic Mormon and Oregon Trail routes, the site of Fort Mitchell and the Pony Express stations, the two railroads (Burlington Northern and Union Pacific), Chimney Rock, Castle Rock, and other prominent geological formations that serve as important landmarks.

As the road exits the summit parking lot, a sign cautions against hiking on the roadway. Another sign warns of the steep curve and establishes a speed limit of 20 m.p.h. On the descent of the Summit Road, the expanded viewing horizon provides a sweeping view of the entire western valley. Above Tunnel No. 3 this panoramic view is visible directly ahead, allowing motorists to safely enjoy the scenery while continuing their descent. A clear view of the bluff itself is provided between Tunnels No. 2 and No. 3. Before Tunnel No. 1, a sign warns of a sharp turn to the left inside the tunnel. Immediately below Tunnel No. 1 another sign reads "No Parking Anytime." At the very bottom of the road, signs indicate the 15 m.p.h. speed limit, pedestrian crossing, and the speed bump at the entrance to the visitor center parking lot.

Background of Site

Scotts Bluff National Monument is located in Scotts Bluff County, approximately twenty miles east of the Wyoming state line, in the so-called "Panhandle of Nebraska," which is the westernmost section of the state that lies north of Colorado. The monument's visitor center is located on Highway 92, which bisects the monument from east to west and leads to the nearest town, Gering (pop. 7946), three miles to the east. Residential development in the town of Gering is gradually advancing toward the monument's eastern boundary. Gering is the county seat, but the county's largest city, Scottsbluff (pop. 13,711) is located five miles to the northeast at the intersection of Highways 71 and 26. Ten miles to the northwest along Highway 26 is the town of

Mitchell (pop. 1743).[3] The surrounding private lands to the east, south, and west are devoted primarily to cattle grazing and agriculture.

Rising dramatically above the plains, Scotts Bluff is a striking natural landmark. The Scotts Bluff formation is a remnant of ancient high plains that existed approximately sixty million years ago, before erosion wore the surrounding terrain down to the level of the current valley floor. Like famed Chimney Rock, located just to the east, Scotts Bluff is topped by a layer of cap rock that resists erosion. The upper third of the bluff is composed of a sandstone layer known as the Arikaree formation. Hard tubular concretions within this layer have helped the bluff to resist erosion through the years while the surrounding valley descended. The lower two thirds of the bluff are composed principally of highly erosive Brule clay interlayered with volcanic ash and very soft sandstone.[4] Although originally all the bluffs in the area were collectively known as "Scotts Bluffs," the name Scotts Bluff, in singular form, now refers solely to the bluff (el. 4649) located directly behind the visitor center, between the river badlands and Mitchell Pass. Other prominent natural features on monument grounds include South Bluff (el. 4692), Dome Rock (el. 4546), and the badlands, gullies carved by wind and water erosion, located between Scotts Bluff and the river.

The North Platte River, which runs in a southeasterly direction, borders the monument on the north side. This river route to the western mountains marks a historic human migration corridor that has endured for centuries in various forms. Indian tribes including Sioux, Pawnee, Arapahoe, and Cheyenne, long frequented the area. The bluff was reportedly known by some plains tribes as "Me-a-pa-te" or "the hill that is hard to go around."[5] This area was at one time the heart of bison country, but today mule deer are the only large animals left. Fur traders of various nationalities traversed the area, with many fur companies establishing an active presence by the 1820s. The first known men of European background to have seen Scotts Bluff were traders for John Jacob Astor's Pacific Fur Company, who journeyed through the area in 1812 on their way back from the rich beaver valleys of the central Rocky Mountains.[6]

The bluff itself is named for Hiram Scott, a fur trader with the Rocky Mountain Fur Company who is said to have died in the vicinity around 1828. Although he was undeniably a real person,

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[3] U.S. Census Bureau website, 1990 Census of Population and Housing figures, available from www.tier2.census.gov/CGI-WIN/p194-171/PL94DATA.EXE, accessed 16 November 2000.

[4] Merrill J. Mattes, *Scotts Bluff* (U.S. Department of the Interior: Washington, D.C., 1958, revised 1992), 56.

[5] National Register of Historic Places, Inventory-Nomination form, Scotts Bluff National Monument, 29 March 1976.

[6] Mattes, *Scotts Bluff*, 3-4.

conflicting reports exist of his experiences in the area, elevating the story to the level of myth. Washington Irving wrote one of these accounts in *The Adventures of Captain Bonneville*, published in 1837.[7] The most prominent version of the legend states that Scott, wounded and abandoned by his fur trading companions, crawled to a spring at the foot of the bluff and died. The site, now on monument grounds, was subsequently named Scotts Spring and the bluffs labeled Scotts Bluffs.

With the collapse of the international fur trade by the late 1830s, fur traders gave way to missionaries, who traveled the route west on their way to "civilize" western tribes. The missionaries Elizabeth Spalding and Narcissa Whitman, traveling with their missionary husbands Henry Spalding and Marcus Whitman in 1836 are believed to have been the first Anglo women to have seen Scotts Bluff.[8] By 1841, the first large covered wagon train embarked upon the route to Oregon Territory, thereby establishing the Oregon Trail, which originated in Independence, Missouri, and followed the Platte River past Scotts Bluff and westward toward Fort Laramie and beyond. Mass migration began in 1843 with the passage of an emigrant group numbering over 1000 men, women, and children.[9]

The current highway location through Mitchell Pass was not the original route of the Oregon Trail. When pioneers first encountered Scotts Bluff, they found it necessary to detour further south in order to avoid both the impassable crevasses of the badlands between the river and the bluff and the rugged terrain of Mitchell Pass. The original Oregon Trail ran through Robidoux Pass, nine miles southwest of the monument. Around 1851, Mitchell Pass was excavated for wagon trains and became the preferred route as it required less of a detour from the river. The current highway roughly follows the roadbed of this Mitchell Pass route, diverging from it at the pass, where the highway continues westward through the Mitchell Valley, and the visible trail ruts turn abruptly northward toward the North Platte River. From its intersection with the river, the trail continued toward Fort Laramie, a major supply stop fifty-five miles west. Fort Mitchell, an eastern outpost of Fort Laramie, was built 2.5 miles west of Scotts Bluff in 1864 to guard stage and telegraph lines from Indian threats. It was abandoned in 1867 when the region began to appear more secure.

Other prominent groups migrating through the area included members of the Church of Jesus Christ of Latter-Day Saints, also known as "Mormons." Beginning in 1846, these pioneers, led by Brigham Young, migrated westward from Illinois, taking an alternate route along the north side of the North Platte River toward what would become Utah Territory. In 1849, gold seekers

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[7] Mattes, *Scotts Bluff*, 8.

[8] Earl H. Harris, *History of Scotts Bluff National Monument* (Gering: Oregon Trail Museum Association, 1962), 8.

[9] Mattes, *Scotts Bluff*, 17.

began rushing to California following the discovery of gold at Sutter's Fort, near present-day Sacramento. Three Pony Express stations were located in this area during the legendary service's sixteen month period of operation from April 1860 to October 1861. The closest station was 2.5 miles northwest of Mitchell Pass. The overland stagecoach route followed the traditional Oregon Trail route from 1861-1862, until it was relocated southward due to Indian conflicts. The transcontinental telegraph line was established through this route by October 1861, running roughly parallel to the current highway.

With the completion of the transcontinental railroad in 1869, which ran fifty miles south of Scotts Bluff, the Oregon Trail was displaced by a faster and more reliable method of transportation. The trail continued to be used by the military traveling between Forts Kearny and Laramie, as well as for cattle drives, and by freighters, ranchers, farmers, and local travelers. Lured by the open prairie land and river access, ranchers began moving into the North Platte Valley around 1870. The region became central to the open-range cattle industry in the late 1870s and early 1880s. Homesteaders arrived in 1885 to begin year-round residence. The town of Gering was platted in 1888 as a farming and ranching community, and Scottsbluff was founded in 1900 when the Burlington Railroad was extended up the north side of the river. In 1910, the Union Pacific Railroad arrived along the south bank of the river.[10] The area's irrigated farmlands proved effective for growing sugar beets, beans, potatoes, alfalfa, corn, and more. The local economy is currently dependent on livestock and farming, with Scottsbluff's towering Western Sugar factory dominating the physical and economic horizon.

Early Monument Development

Local citizens of the Scotts Bluff region had long been proud of their unique pioneer heritage and were eager to gain national recognition for it. The earliest documented appeal to establish a national monument at Scotts Bluff dates from 1914, when Nebraska Senator G.M. Hitchcock inquired about the feasibility of the idea in a letter to Adolph C. Miller, Assistant Secretary of the Interior in charge of National Parks.[11] Soon thereafter, a similar letter from Scottsbluff Mayor F.S. McCaffree was referred to the Commissioner of the General Land Office to determine if the lands were available, reservable, and of "sufficient historical interest" to justify invocation of the 1906 Antiquities Act, which enabled the President of the United States to establish national monuments.[12] Many local congressmen, mayors, business owners, and community organizations sent letters of support for the idea to Washington from 1916 through 1918.

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[10] Harris, *History*, 10-12

[11] Harris, *History*, 12.

[12] Stephen T. Mather, Assistant to the Secretary of the Interior to M. P. Kinkaid of the House of Representatives, 18 February 1916.

Interest mounted after the National Park Service (NPS) was established in August 1916. The first director of the NPS, Stephen T. Mather, was an early booster of the idea of a monument at Scotts Bluff, citing the area's significance as a landmark and rendezvous for early pioneers and extolling its potential for tourist development.[13] Other government officials, including Mather's assistant and eventual successor Horace Albright, were initially more skeptical, but Albright would later become one of the monument's most ardent supporters.

Thanks largely to Mather's active support, Scotts Bluff National Monument was created on December 12, 1919. Expounding on the commemorative value of preserving the historic site, the accompanying proclamation by President Woodrow Wilson underscored the Oregon Trail's importance in the course of westward expansion and observed that "said bluff was used as a landmark and rendezvous by thousands of immigrants and frontiersmen travelling said trail en route for new homes in the Northwest...."[14] The surge of patriotic feeling accompanying the end of World War I gave added impetus to the celebration of sites and stories related to the settling of the American West. This association of the pioneer movement with broader American themes was both popular and longstanding. In his 1893 "frontier thesis," historian Frederick Jackson Turner had famously asserted that "the existence of an area of free land, its continuous recession, and the advance of American settlement westward, explain American development."[15] A development outline for the monument would later describe Scotts Bluff's "significant theme" in similarly grandiose terms, claiming that as a landmark on the historic Oregon Trail, Scotts Bluff "symbolizes the westward expansion of the American frontier, and the march of Democracy across a continent."[16] As an icon of western expansion and a symbol of the fortitude, optimism, and sacrifice of earlier generations, Scotts Bluff was envisioned as a monument not just to the Oregon Trail, but to America itself.

In their desire to commemorate and perpetuate the memory of the pioneer past, Scotts Bluff boosters echoed a number of larger American cultural trends. Historian John Bodnar has traced the longstanding significance of the pioneer heritage to Americans in general and Midwesterners in particular, noting that in the 1930s, "the promotion of patriotism by cultural leaders remained alive and government continued to support commemorative activities that infused the pioneer symbol with patriotic messages." This patriotic impulse venerated the pioneers as "nation

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[13] Harris, *History*, 13.

[14] Quoted in Ron Cockrell, *Scotts Bluff National Monument, Nebraska: An Administrative History* (Omaha: NPS Midwest Regional Office, 1983), 160.

[15] Frederick Jackson Turner, "The Significance of the Frontier in American History," *Annual Report of the American Historical Association for the Year 1893* (Washington D.C., 1894).

[16] Development Outline for Scotts Bluff National Monument, D.O. NM-SB-3002-E, 1942.

builders, conservators of tradition, and models of survival during difficult times."[17] The celebration of Scotts Bluff's pioneer past corresponded with a national movement towards heritage tourism. Popular since the nineteenth century, the marketing and promotion of America's unique history and scenery represented an attempt by Americans to cast their country's cultural heritage as equivalent, or even superior, to the more storied legacies of Europe. The burgeoning heritage tourism industry played an important role in the development of the national parks and monuments, and Scotts Bluff was no exception.

The monument grounds initially consisted of 2053.83 acres of natural prairie, badlands, and bluffs, as well as a number of manmade features that predated the monument.[18] The Union Pacific Railroad, which acquired its railroad grant lands in 1911, ran just south of the North Platte River. The Ft. Laramie Canal was under construction in 1918 by the Reclamation Service.[19] The Gering Canal also traversed the proposed monument grounds, cutting across the badlands in an east-west direction. Between the bluff and the river, the Central Canal adjoined the south bank of the North Platte and ran along the entire length of the monument's northern boundary. And the Mitchell Pass Road, later State Highway 86 and then 92, ran east to west through the historic pass.

Due to the lack of any official buildings on the grounds, the earliest monument officials did not live or work on the site. As was typical for many national monuments at this time, the designated managers, or "Custodians," were not park professionals but leading citizens from the local community. Will Major Maupin, the monument's first custodian, was editor of the local newspaper, the *Gering Midwest*. The second custodian, Albert N. Mathers, was president of the Gering National Bank. In the early years, the monument was neither guarded nor fenced, and locals regularly climbed a rough foot trail to the summit for picnics. Maupin estimated that in 1920, the first year of operation, approximately 2500 people used the foot trail, and another 5000 picnicked on the slopes.[20]

The earliest recreational developments occurred on the east side of the monument, where the bluff was most directly accessible to the town of Gering. Maupin personally funded many improvements to the original picnic area and foot trail to the summit. By 1921, the Scottsbluff Commercial Club had financed the installment of several picnic tables at the foot of this trail.[21]

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[17] John Bodnar, *Remaking America: Public Memory, Commemoration, and Patriotism in the Twentieth Century* (Princeton: Princeton University Press, 1992), 126, 136.

[18] Master Plan for Preservation and Use, Scotts Bluff National Monument, July 1964.

[19] Andrew Weiss, Project Manager, Reclamation Service, in Mitchell, to C.D. Avery, Carey Act Inspector, General Land Office, Cheyenne, Wyoming, 26 February 1918.

[20] Harris, *History*, 14, 18, 19.

[21] Harris, *History*, 18.

In 1923, the NPS allotted $50 from the appropriation for "Protection of National Monuments" to Scotts Bluff for the construction of tables, benches, and fireplaces.[22] By summer 1926, there were two wooden picnic tables and two concrete stove fireplaces at the site.[23]

The first trail slanted up the eastern slope and ended with a wooden ladder, which was installed before the monument was dedicated. In 1923, Maupin supervised a small group of local citizens and Boy Scouts in repairing and improving the trail to the summit.[24] Money was scarce, however, not just at Scotts Bluff, but throughout the National Park system. In July 1923 only $12,500 was available for maintenance of all twenty-eight National Monuments, for salaries, protection, road improvement, and all other expenses. Scotts Bluff was not a priority for the NPS, as many of the other monuments, such as Muir Woods and Casa Grande, required much more for upkeep and protection from vandalism.[25] Most of the funds appropriated for monuments at this time were directed toward sites that contained prehistoric ruins or historic structures in the desert southwest.[26] In 1926, Scotts Bluff received an allotment of only $162 for sanitation, garbage disposal, and "improvement of camp grounds."[27] Although there was great desire for a summit road, the funds were simply not available.[28]

Another factor delaying the development of a summit road was that vehicular access to the base of the bluff had not yet been secured. NPS officials focused first on improving the main road that crossed through the monument grounds from Gering toward Mitchell. In June 1920, custodian Will Maupin advised NPS Director Stephen Mather that the county commissioners would be willing to improve the road to the monument up to the boundary on either side, if the NPS would "make a real road through the reserve," a length of approximately 1.5 miles. Providing an expansive vision of the potential results of this investment, Maupin maintained, "With the rapid settlement of the surrounding country and with constantly increasing facilities for travel, Scotts Bluff National Monument is becoming more and more a scenic resort, and with proper development and advertising will in a comparatively short time become one of the most popular scenic resorts in the entire West." Noting that the new monument was on the direct route of national east-west travel, Maupin continued, "I would further recommend that the short stretch of road through Mitchell Pass…which has been a public road for more than 50 years, be improved in keeping with its historic value and made to conform to the roads now provided in

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[22] Arno Cammerer to Will Maupin, 2 April 1923.
[23] Albert N. Mathers to Arthur E. Demaray, 25 June 1926.
[24] Will Maupin to NPS Director, 30 June 1923.
[25] Arno Cammerer to Will Maupin, 3 July 1923.
[26] Arno Cammerer, to Rep. Robert G. Simmons, House of Representatives, 11 June 1924.
[27] Arthur E. Demaray to Albert N. Mathers, 5 June 1926.
[28] Arthur E. Demaray to Hester Ruckman, Secretary, Scottsbluff Chamber of Commerce, 26 May 1925.

other national parks and monuments." Constructing this roadway would be no easy task, Maupin warned, observing: "[It] is the most difficult bit of road approaching and through Mitchell Pass, and is the most expensive piece of road, being largely through a rock formation that will necessitate some blasting."[29]

The NPS had long been fighting for federal appropriations to fund road improvements. Congress had not included funding for park roads in two important Federal Highway Acts that granted $75 million to state highway authorities in 1916 and 1921. Finally in 1924, Park Service officials succeeded in convincing Congress to authorize the apportionment of $7.5 million over a three-year period for park road and trail construction.[30] Praising Scotts Bluff National Monument as "a place of considerable historical interest to the west" and proclaiming that it was "visited by a great many people," Albright finally secured the long-awaiting funding. After years of concerted lobbying, the Department of the Interior's park roads program received a significant increase in funding in 1924. The budget for road improvements in the National Monuments was boosted with a $50,000 allotment earmarked for expenditures over a three-year period. Of this amount, Scotts Bluff was tentatively allotted $3600, which NPS and monumental officials agreed would cover the total estimated cost of improving the road.[31]

Concurrent with the initiative to improve the cross-monument highway, Maupin was energetically pursuing the idea of a road to the summit. Keenly aware of the limited financial resources of the Park Service, he recommended as early as 1921 that a corporation be formed that would be granted a concession "for the construction of an automobile toll road from Mitchell Pass to the summit of Scotts Bluff Mountain." Maupin proposed that the concessionaire would be responsible for "the erection on the summit of a pavilion, café, etc., the whole to be conducted in a most orderly manner and complying in every respect with the rules of the Park Service and the instructions of the custodian." These facilities and the road providing access to them would be designed in manner that was both "permanent and artistic." A fee of 25 cents would be charged for use of the toll road, and the corporation would be responsible for all improvements and maintenance. Maupin believed this was the only way the road would be built, since the federal government seemed unwilling or unable to contribute sufficient funds. After the toll fees

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[29] Will Maupin to NPS Director, 12 June 1920, included in *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year ended June 30, 1920 and the Travel Season 1920*, (Washington D.C.: Government Printing Office, 1920).

[30] Ethan Carr, *Wilderness by Design: Landscape Architecture & The National Park Service* (Lincoln: University of Nebraska Press, 1998), 148-151.

[31] "Road Projects, 1923: National Monuments," included in Horace J. Albright to Mr. Frank Pinkley, Superintendent of Southwestern Monuments, Blackwater, Arizona, 26 February 1924.

had repaid the cost of construction, Maupin advised, the road could revert to government ownership and be available free of charge for public use.[32]

Maupin acknowledged that the improvement of the highway through Mitchell Pass was important, but he believed that the Summit Road would play an even greater role in popularizing the monument and attracting tourists to the region. This belief that the construction of a motor road to the summit was essential to the monument's success was prompted by the rapid rise in automobile ownership throughout the country. In 1910, 458,000 private automobiles were registered nationwide. Ten years later, that number had skyrocketed to eight million. The proliferation of private automobiles radically reshaped the tourist landscape. According to historian Hal Rothman, "Wheels gave choices that even the most affluent railroad tourists could not purchase. They allowed travelers to move beyond the corridor the steel rails created, to leave behind a world that catered to the whims of industrial society."[33] Maupin asserted that a road to the summit would make Scotts Bluff National Monument the greatest tourist attraction in the plains region by enabling motorists to experience a site of supreme historic interest while enjoying magnificent views.[34] Echoing Maupin's sentiments as the roadway neared completion sixteen years later, a writer for the local Civilian Conservation Corps newspaper proclaimed, "What will make the summit road unique is the fact that it will serve to emphasize the importance and significance of Scotts Bluff national monument, by focusing public attention upon its historic value as a great landmark on the old Oregon Trail."[35]

Acting Park Service Director Arno B. Cammerer responded positively to Maupin's suggestions, promising that if Maupin could demonstrate there were enough public interest to make "certain conveniences on the top of the Bluffs" economically practical, then he would approve their development. Cammerer advised that a toll road was out of the question, however, as it was against NPS policy to restrict travel in the national parks and monuments. Cammerer did state, however, that a private shuttle bus service could charge fees for a trip to the top.[36] He also clarified that any road to the summit would have to be built by the NPS, a move he thought might be possible within the next few years. Once the road was built, Cammerer suggested, and

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[32] Will Maupin to NPS Director, 10 January 1921.

[33] Hal K. Rothman, *Devil's Bargains: Tourism in the Twentieth-Century American West* (Lawrence: University of Kansas, 1998), 143, 146. The automobile's impact on American tourist practices is also traced in Warren Belasco, *Americans on the Road: From Autocamp to Motel, 1910-1945* (Cambridge: MIT Press, 1979) and John Jakle, *The Tourist in Twentieth-Century North America* (Lincoln: University of Nebraska Press, 1985).

[34] Maupin to NPS Director, 4 October 1921.

[35] "The Scotts Bluff Summit Road is Near Completion," *Adobe Echo*, August 1937, included in Superintendent's Narrative Report, August 1937.

[36] Arno Cammerer to Will Maupin, 23 September 1920.

if tourist travel demanded it, the Park Service could arrange for the construction of "proper concessions and conveniences" at the summit.[37] Private concessions including hotels and livery services had long existed at parks such as Yellowstone and Yosemite.[38]

Many private citizens besides Maupin were interested in the construction of a road to the summit of Scotts Bluff. In the spring of 1924, Cammerer had to reiterate to an enterprising citizen from Gering that private companies would not be allowed to construct a toll road to the top.[39] That same year, the Scottsbluff Chamber of Commerce decided to take on the task and asked the NPS for an appropriation for the construction of a road to the summit, together with additional land for a right of way for the road, trees for planting, and enough gravel to cover the entire system.[40] Seven years later, local representatives were repeating these same requests, arguing that the construction of a summit road would be an "excellent move in perpetuating [the] memory of Oregon Trail pioneers."[41] With the support of the federal government, their campaign would soon become successful.

NPS Road and Trail Development and Scotts Bluff National Monument

Once federal funding became available in the mid 1920s, the NPS began a massive initiative to improve roads and trails throughout the country's national park system. In this effort, aesthetic concerns were considered as critical as effective engineering, as dictated in a pivotal 1918 policy letter penned primarily by then-acting NPS director Horace Albright. This directive stated that "In the construction of roads, trails, buildings, and other improvements, particular attention must be devoted always to the harmonizing of these improvements with the landscape." Such attention to preserving environmental aesthetics made it necessary to employ engineers with an understanding and appreciation of landscape architecture.[42] This would be especially critical at Scotts Bluff, where the preservation of the environment was essential for both aesthetic and historical reasons.

NPS engineers and landscape architects had been building roads with Bureau of Public Roads (BPR) engineers for several years when the collaboration between the two agencies was formalized in a 1926 interbureau agreement. The development of the Summit Road at Scotts Bluff exemplified the collaborative design process that provided many national parks and

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[37] Arno Cammerer to Will Maupin, 17 January 1921.

[38] Carr, *Wilderness*, 6.

[39] Arno Cammerer to George Bevans of Gering, 22 March 1924.

[40] Scottsbluff Chamber of Commerce to Stephen Mather, Telegram, 28 May 1924.

[41] H.J. Dollinger, Executive Secretary, Scottsbluff Chamber of Commerce to Horace Albright, Telegram, 30 January 1931.

[42] Carr, *Wilderness by Design*, 81.

monuments with roads that combined high levels of engineering achievement with careful attention to aesthetic and historical concerns. High-ranking officials from both the BPR and NPS were involved with critical decisions regarding roads and trails at Scotts Bluff. Thomas C. Vint, chief landscape architect for the NPS beginning in 1927, made a number of visits to the monument from the NPS field headquarters in San Francisco. NPS chief engineer Frank A. Kittredge, formerly of the BPR, would also personally oversee a number of design issues at the monument.[43] On a closer supervisory level, Howard Baker, resident landscape architect at Rocky Mountain National Park, served as the primary architect of the Summit Road. Personally trained by Vint in San Francisco, Baker would later head one of the seven geographical districts that were carved out of the larger Western Division in 1934. Clifford Shoemaker, BPR's Chief Engineer of District Five, consisting of Nebraska, Missouri, and Kansas, acted as supervising engineer for the initial road construction.[44]

Six years before work commenced on the Summit Road, however, community members and federal officials collaborated to construct a safer foot trail to the top of the bluff. In May 1927, the Park Service agreed to provide the monument with $500 from its Road and Trails appropriation for this purpose under the condition that matching funds be raised from the local community.[45] Once sufficient money was raised, the Civil Engineering Division of the NPS borrowed explosives from the Gering and Fort Laramie Irrigation District of Gering.[46] Bert H. Burrell, civil engineer from Yellowstone, completed the initial surveying and staked out the route of the trail, with Arthur W. Burney acting as supervisor. Local Boy Scouts assisted in trail construction, leading many to refer to the new path as the "Scout Trail."[47] The trail employed a number of switchbacks to maintain a steady, gentle grade and culminated in a series of wooden steps leading to the top. The pronounced switchbacks were highly visible in the open terrain, giving the new footpath another popular nickname: "the zigzag trail."

This trail was unusual for Park Service projects in that it left such an unattractive scar, which can still be seen on the eastern slope of the bluff seventy years after its construction and almost fifty years after its official abandonment. Burney explained to Kittredge in 1932 that the trail had been constructed in this manner for purely financial reasons. The engineers were aware that such a design would create a prominent scar on the hillside, but had felt that there was no alternative at the time. Utilizing the other potential location, on the south side of the bluff, would have cost

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[43] Carr, *Wilderness by Design*, 146, 175.

[44] Carr, *Wilderness by Design*, 264; Linda Flint McClelland, *Building the National Parks* (Baltimore: Johns Hopkins University Press, 1998), 352; Francis LaNoue, Monthly Report, CWA Project F68, December 1933.

[45] Hill, Acting Superintendent of Yellowstone, to NPS Director, 16 May 1927.

[46] Bert H. Burrell, Acting Chief Civil Engineer, to NPS Director, 18 June 1927.

[47] Albert N. Mathers to Stephen T. Mather, 31 March 1928.

too much. Said Burney, "At the time the present trail was constructed the controlling factor in Park Service road and trail work was principally funds rather than landscape and other requirements." Acknowledging the shortsightedness of this approach, Burney continued, "There are many evidences in the various parks of the fallacy of such a procedure, the Scott's Bluff Trail being only one of them."[48] The trail would officially be closed to public use in 1953.

Demands for automobile access and increased safety after daylight prompted additional improvements to the monument grounds in this period. The county contributed to the effort by grading a road to the picnic area.[49] Drivers would occasionally press the bounds of this new access by attempting to drive their cars up the foot trail, much to the consternation of monument officials.[50] In 1928, the towns of Scottsbluff and Gering collaborated in funding the extension of a power line into the monument so that lights could be erected at the picnic grounds and at the summit. Local residents also requested funding for a shelter at the summit, but this never occurred.[51] The Daughters of the American Revolution paid for the construction of a stone and stucco commemorative arch for the base of the foot trail in 1928. Roger Toll, the superintendent of Rocky Mountain National Park, reported to Mather that the access road needed a great deal of upkeep, but advised that any further construction work first be approved by Thomas Vint.[52]

In the spring of 1932, Vint recommended that the zigzag trail be obliterated and a new foot trail constructed at an alternate site, which would be determined after the question of the road was finalized. He acknowledged that, although the Park Service would no longer build a trail like it, the Scout trail was in keeping with general practice of its time.[53] Vint was also concerned about the visual impact and general propriety of the Gering Golf Course, a public course built by local citizens around 1927 on monument property on the south side of the Mitchell Pass road, across from the current visitor center. While such recreational facilities were present in several national parks, Vint believed that "if the Scotts Bluff National Monument is to progress as a national monument, the Gering Golf Course is bound to become an objection." He advised that it be granted a lease for a maximum of five more years, after which it would be removed from the monument grounds. In Vint's opinion, resolving this situation was even more important than constructing the Summit Road.[54]

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[48] Arthur Burney to Frank Kittredge, 14 January 1932.
[49] Albert N. Mathers to Arthur E. Demaray, 23 July 1929.
[50] Harris, *History*, 21.
[51] E.O. Daggett, Secretary, Cosmopolitan Club, to Stephen Mather, 1 September 1928.
[52] Roger Toll to NPS Director, 23 July 1928.
[53] Thomas Vint to Arthur E. Demaray, 20 April 1932.
[54] Thomas Vint to NPS Director, 4 May 1932.

NPS Associate Director Arthur E. Demaray managed to eliminate the clubhouse and reduce the course to nine holes by 1935, but the facility would not be completely obliterated until 1951.[55] In May 1936 the course was still receiving improvements that were being greeted with enthusiasm by the public.[56] An adobe and frame shelter house with a flagstone floor, seats and fireplaces, was constructed there by Civilian Conservation Corps (CCC) workers in June 1936 to bring the course into conformity with NPS landscape standards. This concession was granted in return for the agreement to reduce the size and eliminate the clubhouse.[57] Another longstanding presence on monument grounds was a rifle range that had opened in 1925 for use by the National Guard. This range was issued a temporary permit by Albright in the fall of 1931, and finally removed in 1949.[58]

A 1933 survey of monument boundaries by the General Land Office revealed that all the development on the east slope of the bluff, including the picnic grounds at the foot of the zigzag trail, had actually been undertaken on privately owned land.[59] This area was therefore abandoned to park development and allowed to deteriorate, to great public dismay. The monument custodian submitted a letter to the editor of the local paper to explain the situation after a citizen wrote in a complaint about the Park Service's neglect.[60]

The New Deal Era of Monument Development

The years from 1933 to 1939 comprised the peak era of development for Scotts Bluff National Monument.[61] Funding from New Deal programs helped the NPS develop and improve parks and monuments throughout the country, including construction of trails and roads, like the Summit Road.[62] The establishment of these labor relief programs was the primary factor enabling the construction of the Summit Road. While associated primarily with straightforward economic recovery and conservation efforts, the New Deal programs carried a highly nationalistic message. According to historian John Bodnar, these programs "sought to revive public loyalty to and enthusiasm for American culture and traditional American historic symbols," continuing a national trend that had gained in strength since the end of World War I. In this light, the Summit Road can be seen as one component of a larger commemoration of pioneer fortitude and

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[55] Harris, *History*, 55.

[56] Charles Randels, Superintendent's Narrative Report, May 1936.

[57] Charles Randels, Superintendent's Narrative Report, June 1936; Master Plan, Scotts Bluff National Monument, 1939; Master Plan, Scotts Bluff National Monument, 1942.

[58] Horace Albright to Rep. Robert G. Simmons, 23 October 1931; Harris, *History*, 55.

[59] Harris, *History*, 31.

[60] "Custodian Gives Explanation," *Scottsbluff Daily Star-Herald*, 22 July 1933.

[61] Harris, *History*, 27.

[62] McClelland, *Building*, 327.

functioned symbolically as a reaffirmation of the American ability to survive difficult times. In celebrating a supposedly communal pioneer past, such historic commemorations were intended to provide strength to overcome the obstacles of the present.[63]

The first of the New Deal programs to fund road construction at Scotts Bluff was the Federal Civil Works Administration (CWA), created by President Franklin D. Roosevelt on November 7, 1933, "to provide regular work on public works at regular wages for unemployed persons able and willing to work." The Board of the Federal Emergency Administration of Public Works allocated $400 million for this program to the Federal Emergency Relief Administration.[64] It used existing work divisions of the federal, state, and local Emergency Relief Administrations. A key aspect of the program in regard to national park road construction was that it advocated utilizing the maximum amount of human labor in lieu of machinery wherever practicable and economically feasible.[65] The Civil Works Administration was a short-lived program, but created many jobs for workers in the winter of 1933-34 and had an important impact on the development of many parks and monuments.[66]

Scotts Bluff County applied for and received a number of CWA projects during this period. Support for the project was presented as even more urgent than before. No longer just a means of stimulating tourist travel, the Summit Road project was cast as an essential component of efforts to ameliorate the devastating effect of the economy on local farmers. By December 1933 in Scotts Bluff County, 596 men were working on CWA projects, including the construction of several public parks, with 170 working at the national monument.[67] J.E. Woods, a representative of the state supervisor of the reemployment service, expressed a common opinion in observing that, "The people in this county should be tickled to death to get this road....When you see the National parks in California and [the] vast amount of money being spent in other places, you will realize that Nebraska should have lots of this work....There are two hundred men working on the monument." He concluded, "It is a lot better to have these men out there earning their way than to have them on charity."[68]

On November 24, 1933, the Scotts Bluff CWA project was authorized as Federal Project F 68 and allotted $61,977 to continue the work through February 15, 1934. Funding was approved for 213 men, including an engineer and a landscape architect, as well as a six-member Historical-

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[63] Bodnar, *Remaking America*, 127, 204.

[64] Federal Civil Works Administrator Rules and Regulations No.1, 1.

[65] Federal Civil Works Administrator Rules and Regulations No.1, 4.

[66] McClelland, *Building*, 352.

[67] "596 County Citizens on Civil Works Jobs," *Gering Courier*, 22 December 1933.

[68] Quoted in "CWA Cares for Needy, Says Woods: Vast Federal Program Gets Quick Result Over Nation," *Scottsbluff Tribune*, 18 January 1934.

Archeological Reconnaissance team, to be headed by respected geologist and paleontologist Professor Harold Cook.[69] Additional funding for the road was provided by other FERA and PWA allotments. On March 31, 1933, President Roosevelt signed the Federal Unemployment Relief Act, calling for Emergency Conservation Work (ECW) on public lands.[70] This would lead to the formation of the Civilian Conservation Corps (CCC), a program that had a wide-ranging influence throughout the country and lead to the establishment of a temporary camp on monument grounds to provide labor for several projects, including the construction of the Summit Road.

New Deal programs funded numerous developments at the monument. The majority of the current foot trail, known as the "Saddle Rock Trail," was engineered and constructed by CWA workers in 1933. Thomas Vint believed that the excavation of a new foot tunnel for this trail would provide a good precedent to estimate the costs of the projected road tunnels.[71] In April 1933, Albright approved the trail project with the understanding that it would proceed under BPR supervision with workers hired directly by the Park Service using surplus funds from the road allotment.[72] Workers blasted a foot tunnel through the rock to complete the trail, which intersected with the old zigzag trail and eliminated the hazardous wooden steps near the summit. The low-standard Gering Canal Road was reconstructed during the summer of 1935 by members of the CCC camp.[73] Developed as a part of a contemplated circuit route around the base of Scotts Bluff, the road provided access to the badlands. It also served a practical function, connecting the service road to the pumping plant and monument property between the railroad and the river. Monument officials considered opening this road to the public but decided against it in order to preserve the environmental conditions in that area as much as possible.[74] A low-standard road and a parking area for about forty cars were constructed in the Mitchell Pass picnic area by relief labor in the summer of 1935.[75]

No official buildings existed at the monument until construction of the Oregon Trail Museum (later designated simply the Visitor Center) began in 1935. The first unit of the museum was completed on June 21, 1935. It opened to the public on July 16, 1936. Permanent exhibits for the historical wing were completed and installed by October 1936. The Oregon Trail museum

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[69] Francis LaNoue, Final Report, CWA Project F68, 27 April 1934.
[70] McClelland, *Building*, 336.
[71] Thomas Vint to NPS Director, 5 April 1933.
[72] Horace Albright to Howard Baker, 11 April 1933.
[73] Charles Randels, Narrative Report for Fifth Enrollment ECW Period, 1935.
[74] Master Plan, Scotts Bluff National Monument, 1935.
[75] Master Plan, Scotts Bluff National Monument, 1939.

was said to be the first museum in the country to focus on the history of the American west.[76] It remained the only building at the site for years, as options for a superintendent's residence were considered. Monument officials governed the development of buildings at the site by the same philosophy that was applied to the Summit Road, insisting that buildings harmonize with their surroundings, or "lie lightly on the land." They therefore deemed it of the utmost importance to not build too quickly, and to carefully consider the environmental and aesthetic impact of all construction. These concerns were summarized by early custodian Harold Cook as follows: "In addition from the standpoint of maintaining the vista of old Mitchell Pass on the old Oregon trail as free from buildings as possible not to clutter up the view of the old pass, it seems most fortunate if we can locate all extraneous buildings other than the Museum at a convenient point where they will be concealed as much as possible and at close enough range to be thoroughly useful." The final site was approved by the NPS Branch of Plans and Design and BPR engineers.[77]

The ground at the site was not considered favorable for drainage. The museum was prone to flooding and the custodian believed the other buildings should be constructed on higher ground. This did not happen, however, and they are all clustered around the museum, which was renamed the visitor center in 1956.[78] The monument's historical-archeological research team looked for fossils and relics from the Oregon Trail and helped prepare exhibits for the museum in conjunction with the NPS office in San Francisco. Exhibits on history, geology and paleontology, and archeology and ethnology were prepared by the Field Division of Education of the NPS in Berkeley, California.[79] An additional museum wing, comfort station, and ranger's residence were built by ECW labor in 1937.[80]

Most of the existing trail system at the summit was also created by relief labor in the 1930s, with a north observation point and overlooks. An observation parapet on the North Overlook was built in 1938. In 1939, bronze arrows highlighting significant views were embedded in the parapet and other historical indicators were added.[81] Summit foot trails would be paved in 1953.[82] CCC labor completed much of this work, as well as the construction of a picnic area on the side of the highway south of the visitor center, a half mile west of Mitchell Pass. They built

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[76] Charles Randels, Superintendent's Narrative Report, October 1936; Harold Cook, Custodian's Narrative Report, 1 July 1935.

[77] Harold Cook, Custodian's Narrative Report, July 1935.

[78] Harris, *History*, 36.

[79] Merrill Mattes to Leila Hallock, 14 April 1936.

[80] Charles Randels, Superintendent's Narrative Report, July 1937.

[81] Master Plan, Scotts Bluff National Monument, 1939.

[82] Harris, *History*, 53

rustic-style fireplaces of natural stone in addition to numerous picnic tables.[83] This popular site was abandoned and obliterated by the Park Service in 1939 because of environmental deterioration and the impossibility of patrolling it sufficiently.[84] The CCC also helped to construct a ranger's residence and comfort stations adjacent to the visitor center. All this development occurred in conjunction with the construction of the Summit Road, a project that took most of the decade to complete.

Initial Road Planning and Design

By 1931, funds were finally available to commence formal planning of the Summit Road. Horace Albright, who had become the second director of the NPS in January 1929, visited Scotts Bluff in June 1931, along with Frank Kittredge and BPR engineer Clifford Shoemaker.[85] A general survey of the proposed site had been going on for several weeks. By the end of the visit, Albright was very impressed and verbally approved the construction of a road to the summit.[86] Shoemaker had established the location of the road's alignment by September of 1931. The BPR soon completed their survey of the bluff and developed a topographic map of the area.[87]

Thomas Vint visited Scotts Bluff in the fall of 1931. He conferred with Clifford Shoemaker as well as with U.S. Representative Robert Simmons and several newspaper reporters. In December, he wrote to the NPS Director that the future development of the monument rested entirely on the Summit Road decision. "If the road is built," he wrote, "the development scheme of the park would be designed on that premise, and if the road is not built, the development scheme would be on an altogether different basis." In his opinion, the most important building would be a museum and administration building like those at Casa Grande and Petrified Forest. The possibility of building a shelter cabin at the top was also being discussed, but Vint argued that it should not be constructed until the road site was confirmed. If the road question could not be decided right away, Vint advised, he would produce two development plans for the monument: one with a road and one without.[88]

By spring 1932, Albright had become an enthusiastic supporter of the Summit Road concept. His endorsement of the road construction project was predicated on one condition, however: "that it is feasible both from the standpoint of engineering and of preservation of the landscape

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[83] C.W. Nichols, "Monument Picnic Grounds Popular," included in Superintendent's Narrative Report, April 1936.

[84] Harris, *History*, 44-45.

[85] "Nebraska Ready for His Visit," *Denver Post*, 14 June 1931.

[86] Harris, *History*, 25-26.

[87] Horace Albright to Thomas Vint, 7 September 1931.

[88] Thomas Vint to NPS Director, 12 December 1931.

features of the Bluff."[89] Albright wrote to Albert Mathers about his personal interest in the monument and road, noting that his grandmother had journeyed to California over the Oregon Trail. After his visit the previous year, Albright had determined that "if it is possible to build a road to the top of the Bluff without in any way impairing its landscape values the highway should be built in order that all western travelers following the historic Oregon Trail may enjoy the view from the summit." He also stated his intention that the road construction proceed as soon as funds became available. Appropriations for the Park Service had recently been cut to balance the budget. Albright expressed his hopes that the proposed new trail could be built, along with other improvements, to bring the facilities up to the quality of the national parks.[90]

Government engineers reported that the most desirable route would not exceed a 7 percent grade and would require the excavation of three tunnels. The west side of the bluff was chosen for the road site since it was less steep and the location would render the road less visible to those traveling the North Platte Valley highway.[91] The site would also allow the most favorable alignment of the road in its approach to the first tunnel and was sufficiently removed from the actual location of Mitchell Pass to maintain its historical integrity.[92] The parking area on the summit would have a capacity for 200 cars, with room for expansion to hold 300 more. It was estimated that the construction project could employ most of the idle men in Scotts Bluff County, thereby contributing significantly to local Depression recovery. Only natural vegetation would be used in the landscaping.[93]

Plans for development of the summit had changed substantially since Cammerer's tentative 1921 endorsement of a resort or concession on the top. In May 1932, an article published in the *Scottsbluff Republican* erroneously claimed that plans were underway for a museum to be constructed at the summit.[94] To correct the record and keep the public informed, Horace Albright wrote a firm letter to the editor, expressing the Park Service's intention that the summit be kept relatively undeveloped and the natural landscape maintained. "Right along our main guiding policy has been to keep the summit clear of all man-made structures," Albright asserted. "If the road proves to be feasible, and I think it will, then of course at the terminus of the road on top there will have to be a parking space and possibly comfort stations, but aside from this very limited development I hope we can keep the summit area in its natural condition."[95]

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[89] Horace Albright to H.J. Wisner, The Star-Herald Printing Company, 21 March 1932.

[90] Horace Albright to Albert N. Mathers, 21 March 1932.

[91] "Three Tunnels Will Be Necessary in Construction of Road to the Top of Scotts Bluff National Monument," *Scottsbluff Republican*, 12 May 1932.

[92] Master Plan for Preservation and Use, Scotts Bluff National Monument, July 1964.

[93] "Three Tunnels," *Scottsbluff Republican*, 12 May 1932.

[94] "Three Tunnels," *Scottsbluff Republican*, 12 May 1932.

[95] Horace Albright to A.B. Wood, 17 May 1932.

Plans would later be developed to construct an observation station and shelter on the summit to relate the story of western migration or at least locate the "points of interest along the Oregon Trail."[96] A lookout house was proposed for the north bluff, as an "enclosed observation point to be used in connection with the monument's educational program." Engineer Sam Serrano would later question the necessity of a building to serve this purpose, believing that a smaller structure or other means of pointing out the historic sites would be preferable "because it will eliminate the need of administration, and because a building in itself cannot help but add an undesirable artificial touch to an area which now is still much the same as the pioneers knew it."[97] The proposed shelter was constructed, as monument officials decided to keep the summit clear of buildings. Historical markers at the observation points would provide the necessary historical and geological information.

From the initial planning stages, it was considered critical that the road be made as inconspicuous as possible so as not to detract from the natural beauty and historical integrity of the bluff. This was in keeping with NPS policy, as expressed in a 1935 report by Cammerer on modifications of the natural landscape on National Park Service property. Those in charge of such development, he argued, must "hold these intrusions to a minimum and …design them that, besides being attractive to look upon, they appear to belong to and be a part of their settings."[98] The early custodians at Scotts Bluff had many suggestions, but Chief Landscape Architect Thomas Vint was the ultimate authority on all landscape matters at National Parks and Monuments. Custodian Mathers, for instance, acting on advice from the superintendent of the Nebraska National Forest, voiced a desire to plant pines and cedars on the slopes of the bluff in the spring of 1932. Albright instructed him to abandon this plan and defer to Vint's recommendations.[99] Vint suggested that the slopes be allowed to reforest naturally so as not to appear artificial, especially with the lack of appropriate supervision for new plantings.[100] Vint would eventually endorse a carefully controlled planting policy. Revegetating the slopes with native plantings became a critical component of the road development process, both for purposes of erosion control and for camouflaging the road from view. This camouflaging process would be accomplished through a combination of careful site location, revegetation, the construction of earth berms to hide the road, and the addition of a coloring agent to the road surface and tunnel portals so as to harmonize them with the natural shades of the bluff. Harold Cook, who would

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[96] Howard W. Baker, Report to the Chief Architect through the Custodian of Scotts Bluff National Monument, 16 March 1935.

[97] Sam Serrano, Monthly Narrative Report to Chief Architect on Scotts Bluff National Monument, May 20-June 20, 1937.

[98] McClelland, *Building*, 327

[99] Horace Albright to Albert N. Mathers, 11 May 1932.

[100] Thomas Vint to NPS Director, 4 May 1932.

become the monument's third custodian in 1934, later boasted that "This highway is being built in such a manner that it does not disfigure the hill and will make it possible for countless people to drive to the top of that hill and get one of the finest views, not only of the North Platte Valley, but of a very historic section of the old Oregon Trail, that is to be had anywhere in the west."[101] Just as local sentiment in favor of the Summit Road's construction helped influence Park Service policy, the environmental considerations promoted by the NPS had become a source of pride for the local community, who maintained great interest in developments at the monument.

To the community's great delight, Scotts Bluff finally appeared to have become a priority for the NPS. In the summer of 1932, BPR engineers staked out a more precise route for the road.[102] The tunnels were sited as follows: Tunnel No. 1, from station 33+80 to station 36+20, Tunnel No. 2 from station 41+30 to station 43+12, and Tunnel No. 3 from station 49+85 to station 52+00.[103] Albright returned to Scotts Bluff that September, and in a public appearance, assured the crowd of 2000 that government funds to help fight the Depression would finally be available to build the road. On September 11, the NPS Director was feted with a public reception and picnic on monument grounds, complete with a municipal band. This event was sponsored by the Associated Chambers of Commerce of the North Platte Valley. BPR engineer Clifford Shoemaker attended, along with Albright, landscape architect Howard Baker, and the superintendents of Rocky Mountain and Wind Cave National Parks.[104] On December 5, Albright informed U.S. Representative Robert Simmons that the BPR had received the final plans for the road to Scotts Bluff, and that he expected work to begin soon.[105] Construction would finally commence the following spring.

Summit Road Construction

The first step would be the rough grading of the lowest section of the road. Under the supervision of BPR Junior Highway Engineer David L. Froerer, the E.W. Nichols Construction company was given a ninety day contract to grade this section in March 1933. The project was designated project number 1-A and given an estimated cost of $10,000. The termini were stations 0+00 and 33+80, with a total length of .64 miles and width of 32'. All labor and equipment was secured locally, and the average daily force consisted of a superintendent, a foreman, eight unskilled laborers, one plow team and one four-up fresno, a horse-drawn scraper, with driver.[106] This contract included the grading and laying of a concrete curb for the parking

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[101] Harold Cook to J.B. Winstanley, 16 January 1934.
[102] Clifford Shoemaker to Thomas MacDonald, 9 January 1932.
[103] Francis LaNoue, Monthly CWA report, December 1933.
[104] Harris, *History*, 26.
[105] Horace Albright to Rep. Robert G. Simmons, 5 December 1932.
[106] David Froerer, Monthly Narrative Report, April 1933.

area around which the administrative developments were to be located.[107]

BPR Chief Thomas MacDonald forwarded tracings of the road plans to Shoemaker for BPR approval in August.[108] In November, Frank Kittredge informed monument custodian Albert Mathers that the Park Service might be requested to organize and supervise an additional force of up to half a million men for a Civil Works Program in addition to ECW and Public Works programs. This was to be work for the public benefit, with workers to be "obtained through local relief agencies and government reemployment service."[109] Mathers responded that 200 men could be employed full time at Scotts Bluff, and that hand construction of roads and trails could begin immediately, since all preliminary engineering and surveys had been completed.[110] This CWA program was specifically designed to give relief to the unemployed living in the vicinity of the national parks and monuments, and was limited to only men who could live at home or in existing park facilities.[111]

BPR engineer David L. Froerer returned to the monument to supervise this phase of construction. He arrived on December 9 and established his headquarters in the Wooldridge building in Gering, since there were no buildings on monument grounds. Work began on December 12 with sixty-four men engaged through the Scotts Bluff County Re-employment office. Most were beet farmers or other agricultural workers who had no construction experience. Shoemaker reported with evident dismay that many of these raw recruits were "not used to working with tools or other men."[112] Most of their injuries, including numerous broken toes, bruised feet, and sprained wrists, were attributed to this inexperience. Francis LaNoue, Assistant Chief Ranger at Yellowstone, arrived on December 13 and conducted an inspection trip of the site on December 19 and 20 along with Froerer and landscape architect Howard Baker. Baker would remain in Estes Park for the majority of the project, with occasional visits to Scotts Bluff to inspect the progress on the road. LaNoue remained in Gering as the Park Service supervisor for the project.

Due to the dire economic situation, the primary objective at the early stages was to employ as many workers as possible, while expending a minimal amount of money on supplies in order to make the funding last as long as possible. For this reason, the heavy equipment normally utilized for this type of construction was not employed. Instead, the laborers worked entirely by hand, using picks, shovels, and wheelbarrows to transport the excavated material. All carts, wheelbarrows, picks, sledge hammers, and other tools, were either borrowed or rented, with the

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[107] Master Plan, Scotts Bluff National Monument, 1935.
[108] Thomas MacDonald to Clifford Shoemaker, 30 August 1933.
[109] Frank Kittredge to A.N. Mathers, 8 November 1933.
[110] A.N. Mathers to Frank Kittredge, 9 November 1933.
[111] Frank Kittredge to A.N. Mathers, 15 November 1933.
[112] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.

exception of several purchased shovels.[113] All of this equipment, including extended lengths of pipe for culverts, had to be carried over a mile up the foot trail, the only route of access to the summit. By December 1933, the payroll listed 190 names, filling all allotments for unskilled labor, with a shortage of skilled and semi-skilled workers.[114] The men began by excavating the summit area for the parking lot, since this was the best site to utilize a large number of men in a relatively confined area where they could easily be supervised. Workers were divided into two shifts, with one shift working from 7 a.m. to 12 noon and a second from 12 noon to 5 p.m. The men were only authorized to work a total of thirty hours per week each in accordance with CWA regulations. The dual shifts enabled the employment of more men and ensured a more steady pace of construction.[115]

Due to the uneven terrain at the summit, workers first needed to construct an earthen fill to create an even platform for the future parking area. Using wheelbarrows to relocate material around the summit area was initially effective, since the distances were short. As the work progressed, it soon became necessary to transport additional fill from a location further downhill, where workers were beginning to excavate the road cut. The use of heavy equipment remained impossible due to the absence of a roadway to the site. As an innovative solution, workers carried lengths of industrial track and three dump cars, of the type used in mining, up the foot trail to the summit. They used this equipment to constructed a man-powered railway to haul material from the cut at approximately station 76+00 to the fill near the parking area. They laid approximately 500' of track for this railway. Workers filled the dump cars at the roadway site, then five or six men manually pushed the heavy cars along the track uphill toward the summit, where the material was dumped out and added to the fill. According to Shoemaker, these working methods were both slow and expensive. Shoemaker noted that it would have been more economical if the crews could have worked full-time rather than in shifts, and if they had been able to use horses to help haul and grade the fill and excavated material.
Nevertheless, these procedures enabled the NPS to make significant progress on the road project while serving the broader purpose of putting the unemployed to work.[116]

In mid-December, the CWA men were busy building the fill at the summit parking area, where there was very little rock and the available material consisted primarily of "blow sand." The wind blew constantly, so wherever the fills were completed, workers placed sod or rock riprap to hold the fill in place. Shoemaker estimated that as much as 10 percent of the sand blew away with the high winds.[117] Construction on the east, or lower, portal of Tunnel No. 1 began on

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[113] Francis LaNoue to J.R. Carnahan, 13 March 1934.
[114] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.
[115] Francis LaNoue, Monthly CWA report, December 1933.
[116] Francis LaNoue, Monthly CWA report, December 1933.
[117] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.

December 16. On December 18, actual tunnel excavation began. Initially, four men per shift were assigned to tunnel work. This increased to fourteen men per shift by December 26.[118] Crews began excavating Tunnel No. 1 from the west, or upper, portal on January 9. The use of hand-loaded dump trucks speeded the crew's progress on this tunnel. On the same day, the bench between stations 35+00 and 40+00, between Tunnel No. 1 and the site of Tunnel No. 2, was started.[119]

By December 29, the parking area fill was complete and sodding of the slope was in progress.[120] In December, besides the excavation and moving of dirt, workers under the direction of landscape foreman Claude E. Moreland were already transplanting sod, shrubs and trees.[121] By January 18, the sodding of parking area was completed.[122] On January 19 a gasoline-powered truck was pulled on to the bench to haul the excavated material. All fuel and supplies for it were carried up by hand. Workers used waste material from the tunnel and roadway to construct a large fill along the bench, north of the west portal of Tunnel No. 1. When this was finished, a dump chute was located to the east of this tunnel so that excavated material could be disposed of inconspicuously in draw about 1500' from the roadway. By April 26, approximately 1500 cubic yards of excavated material were disposed of there. The plan was to get rid of approximately 25,000 cubic yards of excavated dirt and fill the draw completely, thereby solving the disposal problem while stopping erosion.[123]

Occasional rockslides reminded workers of the dangers of excavating the soft stone of the bluff. At one point during excavation, 800 cubic yards of solid Brule clay fell into the roadway, leaving a considerable overhang at the top of the south portal of Tunnel No. 2. The slide occurred because the seam, a relatively thin stratum of rock, was practically parallel to the roadway. Shoemaker expressed concern that since this was a natural condition, it could present danger to the workers in the future. Under his supervision, crews blasted off the overhang and began to remove the muck, or loose rock and earth. The north portal posed a lesser threat of slippage since the seams were cut closer to right angles. The composition of the rock was very different from that at Tunnel No. 1, which did not feature the extensive seams found at the second tunnel site.[124]

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[118] Francis LaNoue, Monthly CWA report, December 1933.
[119] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.
[120] Francis LaNoue, CWA Summary Progress Report, 25 January 1934.
[121] Francis LaNoue, Monthly CWA report, December 1933.
[122] Francis LaNoue, CWA Summary Progress Report, 25 January 1934.
[123] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.
[124] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.

There was great concern that the project would not be completed by the end of the funding period. Since the weather was mild, work continued through the winter. Monument officials repeatedly appealed for an extension of federal support. To their dismay, a new directive stipulated that as of January 19, 1934, all Civil Works and Civil Works Service employees would have to reduce their work hours to a maximum of twenty-four hours per week in cities over 2500, and a maximum of fifteen hours per week in cities under 2500, in order to keep the programs within available funding allotments.[125] Although the population of Gering was over 2500, Scotts Bluff National Monument was categorized as having a population of less than 2500, since it was outside of town limits. The new limitation on work hours immediately decreased the efficiency of the crews.[126]

With the shortage of labor and approaching termination of funding, Froerer worked toward Tunnel No. 2 as fast as possible. Out of concern for the landscape, Baker would not permit the crews to dump excavated material on the slope near the portal, so the material had to be hauled south to the waste dump using a single dump truck. When the bench was widened sufficiently for greater access, Froerer planned to use an additional truck.[127] In late January he asked state authorities for authorization for an expenditure of $4480, hoping to purchase the dynamite and electric blasting caps needed to continue the work on the road cut and tunnels.[128]

Despite the best efforts of Froerer and his labor force, Mathers could see that the rough grading and tunnels would not be completed when the CWA program was scheduled to shut down on February 15. Mathers was particularly concerned that hours not be cut for the workers in the winter, when the unemployment situation was particularly serious. He pleaded with Demaray not to penalize Scotts Bluff for the fact that other parks and monuments had exceeded their allotments, as his crew would have spent less than $40,000 out of their allotment of $48,000 by February 15.[129] Nevertheless, all CWA projects were prohibited from buying any additional materials or committing to purchases without direct approval.[130]

Mathers wrote to NPS officials in Washington that Scotts Bluff was in dire need of an additional allotment. He suggested that it might be possible to secure the extra money from Public Works Administration (PWA) funds. To justify the need for such support, he explained that "Unless such an allotment is made the time and money thus far invested will be practically a total loss

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[125] Rowland Haynes to David Froerer, Telegram, 18 January 1934.
[126] Francis LaNoue, CWA Summary Progress Report, 25 January 1934.
[127] David Froerer to Clifford Shoemaker, 22 January 1934.
[128] David Froerer to Marshall Jones, 22 January 1934.
[129] Albert N. Mathers to Arthur E. Demaray, 19 January 1934.
[130] Arthur E. Demaray to Albert N. Mathers, 19 January 1934.

because the CWA program under the present allotment will not make this a desirable road."[131] Terminating the project at this stage would endanger the government's considerable investment in the summit road. To clarify this point, Mathers describe the work needed to complete and stabilize the project: "After the rough grading is completed, the road and parking area should be paved, the tunnels lined and the six tunnel portals constructed, this to make the road safe and attractive for the traveling public and to retard the rapid wind erosion that is now taking place." Mathers believed that receipt of these funds was a strong possibility. Under the PWA, created by President Roosevelt in June 1933 and headed by Harold L. Ickes, projects were funded "based on their value to national planning and their role in fulfilling comprehensive plans prepared in advance."[132] The NPS was a major beneficiary of these funds, to be used for capital improvements in parks and monuments.

NPS officials began to campaign for additional funding. On January 23, LaNoue submitted an estimate for a proposed continuation of the CWA program for a ten-week period beginning February 16. He estimated that $63,127 would cover the costs of labor and expenditures, employing 235 men to accomplish the necessary drainage, shoulder sloping, and erosion control work .[133] For the moment, the state director of the CWA authorized Froerer to continue leasing teams and trucks, but instructed him to wire the CWA office for approval of any other expenditures.[134]

Work was abandoned on the summit on February 5 as a result of the reduced hours and the shift of the entire work force to the lower section of the road.[135] A major goal was achieved on February 15, when Tunnel No. 1 was fully excavated to a width sufficient for a truck to pass through. The total length of tunnel was 136'. The slow and laborious manual excavation process had proven advantageous to the archeological team assigned to the monument. As the local newspaper reported, "While the slower hand labor work of the CWA staff has cut the speed of the work on the bluff, the archeological survey has been able to procure valuable fossil specimens from the first tunnel excavations, which would have been impossible to procure had modern machinery been used to make the tunnel." The fossil specimens unearthed through the tunnel excavation included remains of hyena, rhinoceros, deer, and oredons, a lamb-sized prehistoric animal resembling a hog.[136]

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[131] Albert Mathers to NPS Director, 23 January 1934.

[132] McClelland, *Building*, 329

[133] Francis LaNoue to NPS Director, Spreadsheet based on 10-week period beginning 16 February 1934.

[134] Marshall B. Jones to D.L. Froerer, Telegram, 29 January 1934.

[135] Francis LaNoue, Final CWA report, CWA Project F68, 27 April 1934.

[136] "Fossil Remains 30 Million Years Old Are Uncovered in Bluff Tunnel Work," *Scottsbluff Daily Star-Herald*, 1 March 1934.

As the tunnel excavation was overseen very closely and conducted very precisely, there were few cave-ins so excellent results were obtained. Shoemaker had been initially concerned about the stability of the Brule clay formation, but the good results were attributed largely to the careful use of dynamite.[137] The way that the tunnel was situated created a strong draft, however, which dried and bleached the tunnel's clay walls and posed additional problems. LaNoue reiterated his concern about the threat of swift wind erosion if the tunnel walls were left unprotected.[138] Protecting the completed work from deterioration became a heightened concern when the CWA program was severely scaled back on February 16. From a force of 196 men, the number of workers was reduced by a factor of 11 percent per week, with the project scheduled to terminate completely in ten weeks.[139]

As workers continued to grade the roadway between Tunnels No. 1 and No. 2, the disposal of excess waste material continued to be a challenge. Baker returned to the monument in mid-February and recommended to Shoemaker that waste material from the cut be hauled to a wash below the entrance to Tunnel No. 1, instead of being deposited where it would widen the shoulder between the first two tunnels. He suggested that willow branches be woven among stakes to create a series of dams 25' apart along the entire length of a proposed wash, which would be filled with Brule clay. He also recommended the construction of a temporary "tote road" to this site, which would be obliterated once the wash was filled. [140]

As winter turned to spring, officials expressed their concern about the effect of thawing on the unstable clay. The State Directory of Safety sent a telegram to Froerer warning him of the possibility of cave-ins and instructing him to be especially cautious and avoid "any more unnecessary accidents." This unexplained reference suggested that some potentially avoidable accidents had already occurred at the site.[141] A part-time safety inspector had been employed since January 19, but Froerer evidently did not consider this sufficient and requested a full-time safety inspector, "preferably a graduate mining engineer," to replace him.[142] On March 14, a dynamite blast set off a landslide that sent about 600 cubic yards of clay crashing onto the roadway between Tunnels No. 1 and No. 2, covering the roadbed from stations 40+30 to 41+00. Workers were trimming down the cliff at the south end of second tunnel site in preparation for driving the tunnel, and had reached a point about 35' above the roadway grade when they moved

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[137] Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.

[138] Francis LaNoue to NPS Director, 15 February 1934.

[139] Arthur E. Demaray to Francis LaNoue, Telegram, 14 February 1934; Clifford Shoemaker, Final Report, CWA Project F68, 26 April 1934.

[140] Howard Baker to Clifford Shoemaker, 20 February 1934.

[141] Quoted in LaNoue to NPS Director, 3 March 1934.

[142] David Froerer to C.T. Bailey, 3 March 1934.

back to blast the section. The slide was judged to have been caused by irregular fractures in the Brule clay. It left an overhang of about 20' deep, resting at a precarious 45 degree angle. The next day, workers blasted off the overhang and kept working. Apparently the only casualty was the loss of a few small tools.[143] On April 2, workers were removed from the site of Tunnel No. 2, due to more falling material. Shoemaker reported that there seemed to be a breccia formation, made of angular fragments of older rocks melded together, in the clay there. A formation such as that made it dangerous to continue operations without further support.[144]

Effective March 31, 1934, the Civil Works Administrations were to be suspended and work divisions organized by the Emergency Relief Administration (ERA).[145] When CWA work was shut off, the laborers, who had formerly been hired as federal workers, became employees of state and local relief organizations. Only those deemed to be in dire need, and only one person per family, were given work.[146] Federal funding for the CWA program was evidently extended through April 28, however.[147] At this point, funds were needed to cover the employment of approximately fifty men, the purchase of dynamite, and rental of trucks to carry excavated material from the tunnels and transport workers to and from the monument.[148]

No federal funding was available through the rest of 1934. On April 11, the state committee of the ERA approved funding for fifty men to work at the monument, but did not want to assume the accident risk.[149] Observing that local FERA reps had been instructed to prioritize state and county projects, LaNoue decided not to pursue employing local FERA men for the project.[150] Demaray agreed that it would be impractical to continue at this time.[151] By the end of the CWA project, Tunnel No. 1 was fully excavated to a length of 136', 500' of completed road work was in place between Tunnels No. 1 and No. 2, and the two portals of Tunnel No. 2 were partially excavated.[152] The material excavated for Tunnel No. 1 amounted to 2670 cubic yards of rock, clay, and gravel. The total cost of the project was $34,143.87[153]

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[143] Francis LaNoue to NPS Director, 15 March 1934.
[144] Clifford Shoemaker to Thomas MacDonald, 7 April 1934.
[145] Harry Hopkins to all State CWA and ERA, Memorandum, 6 March 1934.
[146] "Civil Works Roll Will Be Scrapped by End of Month," *Scottsbluff Daily Star-Herald*, 6 March 1934.
[147] J.E. Woods to Francis LaNoue, 7 April 1934.
[148] Clifford Shoemaker to Thomas MacDonald, 7 April 1934.
[149] R.J. Carnahan to R.L. Boyce, Telegram, 11 April 1934.
[150] Francis LaNoue to NPS Director, 15 April 1934.
[151] Arthur E. Demaray to Francis LaNoue, 17 April 1934.
[152] Francis LaNoue, Final CWA report, CWA Project F68, 27 April 1934.
[153] Scotts Bluff National Monument, Federal Project F 68 Spreadsheet, April 1934.

As would become customary for construction of the Summit Road, work halted until additional funds could be accessed from the federal government. With the Emergency Appropriation Act for fiscal year 1935, $5 million was made available to the NPS for the construction of roads and trails.[154] In October 1934, an allotment of $22,380 was approved for Scotts Bluff National Monument for the grading and excavation of the two remaining tunnels, using FERA labor. Of this amount, $157 was for Park Service supervision.[155] This FERA Direct Labor project (No. 79-B1-38) was set up quickly. The Relief Administration furnished the laborers; the Park Service Roads and Trails Force Account Fund supplied $20,003 for supervision, materials, and equipment; and the BPR provided engineering and technical supervision, under the direction of Project Engineer E.E. Buell.[156]

Once the money became available, local officials were anxious for work to begin. In collaboration with Thomas Vint, Howard Baker made some modifications to the previous plans. He recommended that the second tunnel be bored directly into the natural face of the cliff instead of reducing the angle. This would allow the portal to be constructed at right angles to the centerline of the road.[157] There was also a delay over the matter of insurance liability. Eventually these fees were paid from the allotted fund, which took approximately $8000-$10,000 out of the total. Work began December 18, 1934.[158] Priorities were lining the tunnels with concrete or gunnite and paving of the surface of the summit parking area. These projected were estimated to cost $165,000. It was considered critical that funding be allotted for lining the tunnels as soon as the weather was warm enough, in order to protect the road from erosion damage.[159] Compensation insurance caused another problem in January, but a solution was found in February, when the road was temporarily classified as part of the State-National Highway system, with the state paying the compensation insurance required on FERA laborers.[160]

This period of construction employed an average of forty-three workers per day, working for a wage of 30 cents per hour, for eight hours per day. They were paid weekly by the Relief Administration.[161] Buell remained in charge. On February 8 and 9, 1935, Clifford Shoemaker visited the site and examined the problems with the third tunnel, where the sandstone formation

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[154] Arno Cammerer to E. K. Burlow, Memorandum, 6 October 1934.

[155] Hillory Tolson to Harold Cook, Telegram, 15 October 1934.

[156] Clifford Shoemaker, Report of FERA Accomplishments During 1935, 9 January 1936.

[157] Howard Baker to Clifford Shoemaker, 26 November 1934.

[158] Harold Cook to Arthur E. Demaray, 22 December 1934; Harold Cook to Arno Cammerer, January 1935.

[159] Scotts Bluff National Monument Physical Improvements, 22 December 1934.

[160] Harold Cook, Report of FERA or SERA Accomplishments for 1934, undated.

[161] Clifford Shoemaker, Report of 1935 FERA accomplishments, 9 January 1936.

of the roof was not standing up as well as in the other two tunnels. Shoemaker decided to install light temporary timbering to prevent falls that might endanger the workers. For the time being, they decided to keep the entrance openings narrow to provide greater stability. The tunnel had been driven in about 40', and the park custodian, Harold Cook, recommended that the Branch of Plans and Design wait to submit their plans for the portal of the third tunnel until one of the designers could visit the site and examine its unusual condition.[162]

By the end of February, several serious cave-ins had occurred at the third tunnel, and deeper cracks had started running along the walls and roof. According to Cook, Baker and Buell decided that the tunnel should be lined and braced simultaneously with excavation. The entrance was timbered off and a "Keep Out" sign installed. PWA funds were requested for the concrete work to line the tunnels, especially No. 3, as soon after excavation as possible. A few options were considered, the first being to brace and concrete each section as soon as it was excavated. The other was to support the entire tunnel with heavy temporary timbering, to be removed later. In either case, a decision needed to be made soon, since it was critical to hole the tunnel through in order for equipment and trucks to pass through it to work on the long heavy rock cut above the third tunnel.[163] For the time being, there was still plenty of work to be accomplished on Tunnel No. 2 and the cut above it.

A few months later, it became clear that funding for the concrete work would not be available as early as hoped, preventing the workers from lining Tunnel No. 3 as they excavated it. Thinking creatively, Cook and Shoemaker decided to bore two parallel smaller tunnels rather than one larger one, leaving a center pillar in the middle to support the roof, which would otherwise have fallen in. The result resembled a double-barreled shotgun with a flat base, and Shoemaker initially believed that it might be possible to retain the double-tunnel formation permanently, saving the costs of construction as well as concrete lining.[164]

In May, two dirt slides, one between Tunnels No. 1 and No. 2, and the other at the east end of Tunnel No. 3, prompted park officials to warn the public that anyone visiting the road during the construction period did so at their own risk. [165] Engineers were called off in May by orders from Washington, delaying the surveying that was necessary for ECW projects to continue. Without the engineers, the monument soon began to run out of work projects for the ECW men. FERA men were taken off road construction and relocated to other projects. Cook requested permission to use the ECW men on the road above the tunnels, and Demaray granted permission for this

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[162] Harold Cook to W.G. Carnes, 9 February 1935.
[163] Harold Cook to NPS Director, 26 February 1935.
[164] Harold Cook to NPS Director, 26 April 1935
[165] R.E. Sherman to Harold Cook, 26 May 1935.

temporary emergency redirection.[166] The FERA work at Scotts Bluff was discontinued early in June because of the scarcity of relief labor.[167]

Additional help with hauling of material, bank sloping, and other low-skilled tasks was provided by enrollees from the new CCC camp #NM-1, Co. #762 (also sometimes referred to as "the ECW camp"), which was manned at Scotts Bluff on May 30, 1935.[168] Part of the Fifth Enrollment ECW Period, the camp had been approved on February 7, 1935.[169] Company 762, one of the first established in the CCC, was transferred to Scotts Bluff National Monument from Red Cloud, Nebraska. Enrollees lived in tents for the first three months and moved into their new barracks on August 10.[170] The camp's enrollees constructed the adobe buildings themselves, manufacturing thousands of adobe bricks by hand. They built the camp near the northern boundary of the monument, close to the railroad tracks, where it could be accessed via the ditch rider's road that was being improved by county officials in February 1935.[171] These workers contributed a great deal of work to the monument, including construction of administration buildings, erosion control, truck and foot trail construction, seed collection, and obliteration of waste dumps.[172]

In June, two extra CCC camp teams, Company #4723 and a part of Company #759, were temporarily housed at Scotts Bluff when the projects they were assigned to in nearby Wildcat Hills State Park ran into difficulties. These reinforcements brought the total of CCC workers at the monument up to nearly 600 men. Believing it necessary for purposes of morale to keep all enrollees working, and having no ECW projects approved at the time, Cook gained authorization from Washington for the extra CCC labor to work on trail construction. They were also put to work on the road, even though it was technically a BPR project.[173] The enrollees hauled material with wheelbarrows to designated disposal areas. They also shoveled sand to help set the concrete

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[166] Harold Cook, Custodian's Narrative Report, July 1935.

[167] Clifford Shoemaker, Report of FERA accomplishments during 1935, 9 January 1936.

[168] Sam Serrano, Report to the Chief Architect through Howard W. Baker, May 25-June 25, 1935.

[169] Harold Cook to Frank Kittredge, 7 February 1935.

[170] Charles Randels, Narrative Report for Fifth Enrollment ECW Period, 1935, 10 December 1935.

[171] Howard Baker, Report to the Chief Architect through the Custodian of Scotts Bluff National Monument, 16 March 1935.

[172] Charles Randels, Superintendent's Narrative Report, October 1935.

[173] Sam Serrano, Report to the Chief Architect through Howard W. Baker, May 25-June 25, 1935.

mixer.[174] Approximately 450 CCC enrollees were working on the Summit Road in July when Demaray, Randels, and Buell came to the monument for an inspection.[175]

The CCC crews worked primarily on grading and excavating the side hills. They pushed wheelbarrows, and carried picks and shovels about a mile up the hill, most of which consisted of a narrow foot path "with barely room for one man to walk at a time."[176] This work was very precarious. In fact, the sole fatality associated with construction of the Summit Road occurred in this period, when a 17-year old CCC enrollee lost his balance while working near the first tunnel on June 30, 1935 and fell to his death over the edge of the bluff onto the rocks 25' below.[177]

As reported by Randels, the majority of the material that needed to be removed from the road cut and tunnel areas was composed of Brule clay. This material was so hard that only drilling, blasting, or the slow process of digging with picks could remove it. Adding to the difficulty, landscape consultants from the San Francisco office would only allow five waste dumps, a restriction that forced workers to haul dirt and rock distances of 300' to 700' on uphill grades that could be as steep as 15 percent. Workers were occupied on a wide sweep of the roadway, from just above Tunnel No. 2 to within 500' of the summit. According to a report written by Randels, "The first objective was to excavate a trail from eight to ten feet wide all the way up, which would make it possible to use trucks, and so speed up the work." The project was ordered to end on July 24. The laborers made considerable progress, moving an average of 1-3/4 yards of earth and rock a day per man. They also built dump platforms that made it easier to push wheelbarrows of waste material to the edge and dump it over.[178]

In June 1935, Tunnels No. 1 and No. 2 were lined using wire mesh, galvanized spikes, and gunite, which was applied at 70-pound pressure.[179] The lining was approximately 4" thick. The work was finished by the Gunite Corporation on June 30, with the tunnels lined to the point of contact with the yet-to-be-constructed portals.[180] By the end of this project, Tunnels No. 2 and No. 3 were holed through, but the excavation of No. 3 was only about 60 percent completed when work was discontinued early in June due to scarcity of relief labor. Approximately 10,000

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[174] Howard W. Baker, Report to the Chief Architect, 4 July 1935; Superintendent's Narrative Report, 1 July 1935.

[175] Howard W. Baker, Report to the Chief Architect, 4 July 1935.

[176] Charles Randels, Narrative Report for Fifth Enrollment ECW Period, 1935, 10 December 1935.

[177] Cockrell, *Scotts Bluff National Monument*, 35.

[178] Charles Randels, Narrative Report for Fifth Enrollment ECW Period, 1935, 10 December 1935.

[179] Harold Cook to E.B. Rogers, 29 June 1935.

[180] Superintendent's Narrative Report, 1 July 1935.

cubic yards of material had been moved.[181] The FERA workers did not complete the gunite application, which was handled by Park Service temporary employees aided by the ECW men on the project.[182]

The design of the lower portal of the first tunnel was completed in July 1935; work was still being completed on plans for the second portal, as well as the lower portal of the second tunnel. According to Howard Baker, the road alignment near the entrance to Tunnel No. 2 had to be changed, throwing the road away from the bank, due to a "bad sloughing condition of the material." Kittredge objected to the distance that the "boys"-- meaning the CCC enrollees -- had to haul the material to the designated disposal areas. He requested that they be allowed to deposit the material at will over the side of the road. Baker replied that the dump sites were appropriate, but suggested that the "boys" should be given equipment other than wheelbarrows to move the material, therefore lessening the manual exertion required.[183]

The road had become so dusty by August that work was discontinued, ostensibly until the fall rains began. In September, Thomas Vint arrived for an inspection along with W.G. Carnes, NPS Deputy Chief Architect, Sam Serrano, Baker, and Shoemaker. When asked about a possible enlargement of the summit parking lot, Vint recommended that the lot be kept its current size until the amount of traffic justified an expansion. Vint approved the construction of a comfort station and observation house on the summit, believing a water system there to be desirable. He recommended that the construction of these facilities be delayed until the road was completed. Baker had prepared the final plans for the approach and portals for the lower portal of Tunnel No. 1, the upper portal of Tunnel No. 2, and the upper and lower portals of Tunnel No. 3. He submitted them to Shoemaker to help him prepare his final plans. Baker was also working on final plans for the portals and approaches for the upper entrance to Tunnel No. 1 and the lower entrance to Tunnel No. 2, as well as plans for the realignment of the road between Tunnels No. 1 and No. 2.[184]

Work had still not resumed by December. The locals were again becoming anxious, since the unemployment situation was still desperate. All of the local sugar factories in the valley had shut down, putting large numbers of men out of work.[185] In this interval, ECW workers were employed in other projects at the monument, including building truck trails, planting shrubs, obliterating roads, collecting conifer seeds, sloping banks, and fencing boundaries. Public

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[181] Clifford Shoemaker, Report of FERA accomplishments during 1935, 9 January 1936.

[182] Clifford Shoemaker to Charles Randels, 9 January 1936.

[183] Howard Baker, Report to the Chief Architect, 4 July 1935.

[184] Howard Baker, Report to the Chief Architect through the Acting Custodian, 5 September 1935.

[185] Charles Randels to NPS Director, 3 December 1935.

opinion was very critical of the delay, since it was known that a sum of $150,000 had been available for six months.[186] The delay in work on the road was due to considerable revisions of the road plans, which were sent to BPR headquarters in Washington for review and then returned to Shoemaker in January for further revision.[187]

Bids for the grading of the road from Tunnel No. 2 to the summit and excavation and lining of Tunnel No. 3, designated as project R.T.E.C. 1-AB-4, were opened on March 26, but very few local contractors were interested.[188] Finally, the contract was awarded on May 2, 1936 to Gross & Stevens of Scottsbluff.[189] An expenditure of $150,000 had been allotted for this project in July 1935.[190] The amount as awarded was $63,930 and the final contract amount was $63,972.88. The cost of engineering supervision, $5415, was considered creditable with an amount of $500 for liquidated damages assessed to the contractor for twenty-five days overrun of the contract time. Overall, engineering amounted to 8 1/2 percent of total costs.[191] The work extended from Station 25+27 to 83+56. The third tunnel was to receive a 12" reinforced concrete lining, a testament to the instability of that surrounding rock.[192] The work was expected to involve 55,000 yards of grading, the installation of 450 yards of concrete in one tunnel and 1800 yards of excavation in another, and the reinforcement of the concrete lining of Tunnel No. 3 with 25,000 pounds of steel.[193] The preliminary engineering work was conducted by the resident engineer and two Civil Service assistants, who were supplemented with laborers hired intermittently when necessary as "axmen" or stakemen in connection with survey work.[194]

On May 23, Sam Serrano and BPR associate highway engineer O.D. Breuning reviewed the road plans and inspected the site, tentatively determining the location of proposed dumping areas. They were particularly concerned with protecting trees and other existing vegetation. In the matter of grading, they discussed the necessity of flattening the cut slopes in through cuts. On the inside cut slopes, the plans showed the slope to which cut banks were to be flattened. There

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[186] Charles Randels, Superintendent's Narrative Report, December 1935.

[187] Clifford Shoemaker to Charles Randels, 2 January 1936.

[188] Charles Randels, Superintendent's Narrative Report, March 1936.

[189] Sam Serrano, Report to Howard W. Baker, Resident Landscape Architect, April 25-May 25, 1936; O.D. Breuning, Final Narrative Report, Project R.T.E.C. 1-AB-4, 5 December 1936.

[190] Hillory Tolson to Acting Custodian, Scotts Bluff National Monument, 3 July 1935.

[191] O.D. Breuning, Final Narrative Report, Project R.T.E.C. 1-AB-4, 5 December 1936.

[192] Sam Serrano, Monthly Narrative Report to Chief Architect on Major Road Construction other than E.C.W. for Scotts Bluff National Monument, July 25-August 25, 1936.

[193] "Contract Given For Bluff Road: Gross-Stevens Firm is Low Bidder for Project," [*Scottsbluff Daily Star-Herald*], 12 May 1936.

[194] O.D. Breuning, Final Narrative Report, Project R.T.E.C. 1-AB-4, 5 December 1936.

were some questions about what was intended in other areas, Serrano noted, observing that "in some instances rounded shoulders and other refinements are indicated for the outside road edge." Serrano suggested that the cut slopes be "left at a minimum steepness" and that the CCC men be assigned to this work to cut costs. They could do most of the necessary flattening of cut and fill slopes along the road. "If cut sections are allowed to remain on the outside edge during the grading activities, whenever possible," he wrote to Baker, "it will serve as a barrier and aid in preventing material from rolling to the valley floor."[195]

O.D. Breuning was stationed in Scotts Bluff at this time to supervise the excavation and tunneling work. Serrano, who had been an ECW landscape architect, praised Breuning for his "unusual understanding and appreciation for highway beautification features."[196] In a report to the NPS Chief Architect, Serrano wrote that the Omaha branch of BPR "and Mr. Bruening in particular should be thanked for the co-operation and assistance rendered us in our effort to construct a highway which will embody esthetic values as well as structural perfection."[197] Breuning set up his office alongside that of the NPS officers in the Courier Building in the town of Gering. On July 15, Shoemaker, Bruening, Associate Landscape Architect Frank Cully, Resident Landscape Architect Sam Serrano, and Howard Baker, who at this point was based in Denver as the District Landscape Architect, met at Scotts Bluff to inspect the work in progress.

Breuning supervised the preliminary engineering work. His workers retraced the centerline and set slope stakes to guide the contractor's drilling operations before excavation. Because the lining of Tunnel No. 3 was delayed by the contractor, the engineers set the final roadway finishing grades at the same time they were supervising the lining of this tunnel and re-measuring the contractor's final excavation quantities.[198]

In a subsequent letter to Vint, Baker explained the changes that had been necessitated by the instability of the rock. The contractor was excavating a section of the roadway between Tunnels No. 1 and No. 2, using the fill to construct the approach to the second tunnel. This approach had been realigned in order to maintain a safer distance from the unstable cliff face. Baker also authorized a slight change in the alignment between Tunnels No. 2 and No. 3 in order to "eliminate the extensive concrete wall construction." Plans for all six concrete tunnel portals had already been completed, but some needed slight modifications in location and approach grading

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[195] Sam Serrano, Report to Howard W. Baker, Resident Landscape Architect, April 25-May 25, 1936.

[196] Howard W. Baker, Report to the Chief Architect through the Custodian of Scotts Bluff National Monument, March 16, 1935.

[197] Sam Serrano, Monthly Narrative Report to Chief Architect on Major Road Construction other than E.C.W. for Scotts Bluff National Monument, July 25-Aug 25, 1936.

[198] O.D. Breuning, Monthly Narrative Report, December 1936.

due to these road re-alignments. Serrano was assigned the task of preparing revised portal plans.[199]

Serrano proposed a number of changes in a new series of plans he completed in cooperation with Breuning. They included the shift in the location of the upper portal of Tunnel No. 1 from Station 34+35 to Station 34+27. Moving the tunnel portal back closer to the cliff would reduce by 8' the amount of visible concrete tunnel barrel. It would also shorten the length of the tunnel by 8'. Serrano changed the approach to the upper portal of Tunnel No. 1 to correspond with the new portal location. In doing this, he altered the alignment of the concrete guardrail that bordered the approach, "to eliminate a reverse curve which was not considered desirable." Serrano also shifted the alignment of the approach to the lower portal of Tunnel No. 2 a total of 10'. This made the portal more parallel to the bluff, reduced tunnel length by approximately 60', and reduced by two-thirds the amount of visible concrete barrel there.[200] All of these developments contributed to the goal of minimizing the tunnel's impact on the aesthetics of the site.

Serrano also made significant changes to road alignment and guardrails, changing the "flare" of the approach to the lower portal of Tunnel No. 2 and modifying the guardrail location to conform with the new road alignment and portal location. The alignment of the approach to the upper portal of Tunnel No. 2 was shifted into the hill "in order to obtain support for the outside guard rail and eliminate need of [a] high retaining wall." The same was true for the lower portal of Tunnel No. 3, which received a maximum line shift of approximately 5-1/2'. The lower portal of Tunnel No. 3 was shifted back from the face of the bluff from Station 50+10 to 50+25, reducing the length of the tunnel and exposed concrete barrel by 25'. This would place the portal on a more solid foundation while minimizing the amount of visible concrete barrel. The upper portal to Tunnel No. 3 was also to be changed, reducing the length of exposed concrete barrel a total of 8.5'. Serrano also was contemplating extending a 6" lip curb on the left side of the highway from Station 33+70 to Station 10+00, primarily for drainage control. This curb would be backed by a "low, well-molded earth berm."[201]

In a monthly narrative report written in August 1936, Serrano expressed concern that a number of the road fills constructed during the CWA period of 1933 "have not compacted sufficiently through natural settling to serve as support for the proposed concrete road slab and guard rail." Three of these fills, located between stations 35+50 to 41+25, 64+50 to 66, and 70+50 to 83+50 had been "shifted and recompacted" in approximately 6" layers. Much of the existing fill and the

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[199] Howard Baker to Thomas Vint, 28 July 1936.
[200] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.
[201] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.

new fill, he observed, had been "dampened and recompacted in the process of widening the road and constructing new alignment between tunnel No. 1 and 2."[202]

Serrano was particularly concerned that the "customary cement finish" on the concrete construction not appear overly obtrusive. Noting that the natural slopes bordering the roadway were primarily composed of Gering formation rock in shades of buff and gray, he wanted to try to match the coloring and texture as much as possible. Serrano and Breuning prepared plans that would permit a degree of experimentation with color preparation for tunnels and portals. The application of gunite would enable this affixation of color and "the desirable rough texture." Breuning collected color samples of cement to aid in the decision-making process. Serrano felt that if the costs were feasible, the roadway could also be colored to match the natural formations and tunnel coating. Serrano did not think it as critical to infuse the roadway concrete with color, but he felt that with the variation in natural concrete colors, some care should be taken to choose the most suitable tone[203]

Further efforts to camouflage the roadway were shown in Serrano's strategic placement of banks and guardrails on the outside edge of the road. Describing these efforts Serrano reported: "Wherever ground conditions have permitted, the road fill sections have been widened sufficiently to permit filling and rounding behind and to the top of the two foot concrete guard rail. In affect [sic] the roadway will then be placed in [a] through cut. The fill slope thus made behind the guard rail when vegetated will screen the concrete railing and will present a more natural affect [sic] than would the exposed railing." Serrano and Breuning tentatively decided "to eliminate the guard rail in through cut sections wherever the remaining outside bank is sufficiently high and stable enough, to withstand excessive erosion and provide adequate safety."[204]

Reconciling practical drainage issues with aesthetic concerns, Serrano suggested that drop inlet and grills be located wholly on the driving surface with no inset into the curb to "avoid the necessity of breaking the curb line." He also recommended that the culvert outlets located in fill slopes be buried underground, and that the construction of headwalls at the outlets be eliminated. According to Serrano, all "necessary" culverts would be installed before winter, although he believed that many of the drainage structures would not be constructed until the surfacing contract was let. In the interim, drainage water could be controlled temporarily through the use of earth berms.[205]

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[202] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.
[203] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.
[204] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.
[205] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.

Since the new fills were composed of a "soft friable material" that needed to be compacted for stability, Serrano recommended a "considerable amount of rounding of fill slopes." He suggested that the CCC enrollees could be assigned to this task. Serrano also recommended that the workers perform "some type of wattling" to stabilize the new slopes before resodding or seeding them. Serrano, Randels (who was now the Acting Custodian), and Breuning itemized the types of jobs that the CCC enrollees could perform on the road to demonstrate that there was enough work to justify the continued presence of the camp at Scotts Bluff. These tasks included the finishing, sodding, and seeding of fill slopes, and the installation of erosion control structures and earth berms. There was some question about whether or not to cut down a particularly high bank on the outside of the through cut between Stations 70+ and 78+. The bank obscured a view of Laramie Peak and the North Platte River and valley, but it contributed to the NPS's efforts to minimize the Summit Road's visual impact by screening the road cut from the highways below. "In any event," Serrano wrote, "the outside slope should be flattened and rounded to permit resodding or seeding. It stands high above the roadway. It is void of vegetation and the wind constantly sweeps the soft, friable, sandy material across the roadway."[206] The bank was ultimately not scaled down, reflecting the emphasis on hiding the road from view.

In order to minimize the artificial appearance of the road cut, Serrano stressed that "practically no flattening and rounding of cut slopes should be done along this roadway." Because the natural formations of the bluffs were "strikingly perpendicular and horizontal," he wrote, the typical "flattened and rounded slopes would appear out of place and not at all in keeping with the character of the natural formations." Leaving the banks in their natural state had practical benefits as well. Serrano observed, "In most instances the tops of the cuts are carpeted with a mat of strong vigorous sod which will act as an erosion control covering. In their present steepness the cut faces are protected against rain. If they be flattened it will merely expose them to rainfall and make them more susceptible to erosion."[207]

Laborers for the next phase of construction were secured through the National Reemployment Office at Scottsbluff, with a daily crew averaging twenty-three workers. The days of unadulterated hand labor were long past. Instead, workers used a 3/4-yard power shovel, a 1-1/2 yard power shovel, three 5-yard trucks, caterpillar tractors, a blade grader, a sheepsfoot roller, a rotary scraper for excavating the tunnel, an air compressor and jack hammer, electric drills, and six dump trucks. The process of tunnel lining required a three-bag mixer, one Pumpcrete

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[206] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.
[207] Sam Serrano, Monthly Narrative Report to Chief Architect, July 25-August 25, 1936.

machine, and a boiler for heating mixing water.[208] The contractors were instructed to protect existing vegetation and paid extra to install shielding barriers for the trees.[209]

The depth and position of all drill holes for roadway blasting were approved by the engineer before explosive could be loaded. Through careful experimentation, workers determined the correct amount and type of dynamite to use and the most effective method of loading and firing the holes. Breuning reported that "As a gratifying result, late observation of the project after severe freezing weather reveals no slides and less than twenty-five cubic yards of 'sluff' from cut slopes ranging from five to eighty feet in height." Workers used about one third of a pound of powder per cubic yard of excavation for the entire project.[210]

The concrete lining for Tunnel No. 3 was poured in 12'-6" sections using movable forms. Test beams were obtained from each pour to ascertain when the steel forms could be moved, a slow process that required daily inspection. By the end of September, the concrete lining of Tunnel No. 3 was 25 percent completed; excavation of the roadway 97 percent completed; and work on tunnel lining and grading was expected to be completed by November 1. The ECW workers, entering the Eighth Enrollment Period, were preparing to work on obliteration of waste dumps along the road.[211] In November, the lining of Tunnel No. 3, along with a mud fill, was completed. The ECW laborers were busy removing the waste banks above the third tunnel, landscaping and sloping the banks between the first and second tunnels, and constructing guardrails at the picnic area, among other projects.[212]

The work by Gross and Stevens was completed on December 5, 1936, seventy-eight days later than the initial allotted time and twenty-five days later than an authorized extension. The contract had been extended because portal construction had taken longer than expected and unforeseen conditions delayed the construction of Tunnel No. 3 and the fill at the lower approach to Tunnel No. 2. The additional delay of twenty-five days, which caused the contractor to forfeit liquidated damages, was attributed to bad weather and underestimated progress for excavation with a 3/4-yard shovel. Once work was completed, the contractor finished the graded roadway with a blade and cleaned up the debris from blasting and shovel work. This project involved the excavation of 2090 yards of earth for tunnels and the use of 440.38 cubic yards of class "A" concrete and 26,652 pounds of reinforcing steel .[213]

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[208] O.D. Breuning, Monthly Narrative Report, December 1936.

[209] Sam Serrano, Report to Howard W. Baker, Resident Landscape Architect, April 25-May 25, 1936.

[210] O.D. Breuning, Monthly Narrative Report, December 1936.

[211] Charles Randels, Superintendent's Narrative Report, September 1936.

[212] Charles Randels, Superintendent's Narrative Report, November 1936.

[213] O.D. Breuning, Monthly Narrative Report, December 1936.

When Serrano inspected the cleanup on December 15, he noticed that some of the waste material had been allowed to fall in places other than the designated waste dumps. He recommended that the contractor be required to dispose of the waste material properly before being given final approval.[214] Due to the steepness of the site, the cleanup was quite expensive, since a large percentage of the debris from blasting and shovel work fell all the way down to the base of the bluff, 200' below. The contractor then bladed the roadbed to the grade stakes in order to best secure the road the winter. All vehicle traffic was barred until paving could be completed.[215]

Breuning then readied the "next and final contract" (Project 1-AB-5), which would consist of the construction of tunnel portals, retaining walls, pipe culverts with inlet structures, concrete roadway and parking area pavement with integral curbs, and the application of gunite to the exposed faces of tunnel structures. By December 5, 1936, preliminary field engineering for this contract was about 90 percent complete and the preliminary design, computation of bid quantities and preparation of specification was about 70 percent complete. They would be completed by the district office at Omaha over the winter.[216] Baker had recommended that the construction of the six portals be made a separate, and earlier, contract from the concrete paving and construction of gutters and guardrails, feeling that dividing the project would result in better workmanship.[217]

In January 1937, Shoemaker advised that the headwalls for the inlet of pipe culverts under the roadway fills should be made of cement rubble masonry rather than concrete. He suggested that stones be gathered from the stockpile at the summit parking area. Randels disagreed, asserting that the use of concrete should be kept consistent for the road surface, portals, guardrail, and headwalls.[218]

The Omaha office of the BPR spent February working on plans for paving and tunnel portal construction. Bids were expected to be let around April 1.[219] Work began again with the coming of spring. In April 1937, CCC enrollees were hard at work on the bank-sloping job.[220]

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[214] Sam Serrano to Howard Baker, 16 December 1936.

[215] O.D. Breuning, Monthly Narrative Report, December 1936.

[216] O.D. Breuning, Monthly Narrative Report, December 1936.

[217] Howard Baker to Thomas Vint, 28 July 1936.

[218] Clifford Shoemaker to Charles Randels, 18 January 1937; Charles Randels to Clifford Shoemaker, 21 January 1937.

[219] Charles Randels, Superintendent's Narrative Report, February 1937.

[220] Merrill Mattes, submitted for Charles Randels, Superintendent's Narrative Report, April 1937.

Breuning submitted portal designs to the NPS Branch of Plans and Design at the end of April. In May, landscape architect Thomas E. Carpenter from the San Francisco office sent Baker his recommendations for the portals. In accordance with Breuning's suggestions, Carpenter recommended that 8" x 12" collars be built on the upper and lower entrances of Tunnel No. 1. On Tunnel No. 2, Carpenter suggested that the portal on the upper entrance could be eliminated if the existing face of the cliff were cut back further than the current 6' depth, and a 12" collar installed. He suggested that the collar could be 2' wide at the face. According to Carpenter, this collar would be constructed on a skew. Breuning's sketch had shown a 9" reinforced concrete wall above the tunnel ring here, but Carpenter did not believe that this would support the material above the tunnel. Cutting back the face of the cliff would eliminate the need for much of a retaining wall and could also help the portal to remain fairly inconspicuous with the application of gunite and stain on both the wall and the collar.[221]
Carpenter recommended simplifying Breuning's submitted design for the lower portal of Tunnel No. 2, objecting that his plan "would give a very forced effect." He suggested that a collar similar to that planned for the upper portal should be implemented on the lower one. He advised that the centerline profile face above the tunnel could be cut back to keep the collar from projecting beyond the face of the cliff. He also believed it would be necessary to remove the overhang that existed over this portal in order to "get away from a skewed face."[222]

Carpenter objected to the large face exposed in Breuning's sketch of the proposed lower portal for Tunnel No. 3. His team had considered two alternatives. One possibility was to move the portal face a little further out, but not so far that it would project beyond the face of the cliff, below the tunnel ring. They could then construct a collar of not more than 2' wide on the face and build a reinforced concrete curtain wall directly in front of the wooden bulkhead. They could then apply gunite to the surface of the wall and stain it to simulate the texture and color of the cliff. Trimming the overhang back would make it possible to move the curtain wall in closer to the bulkhead. According to Carpenter, the portal face could be moved forward a little without exposing the outside of the collar on the downhill side. The collar would also have to be snug on the uphill side.[223] The second alternative for the lower portal of Tunnel No. 3 would be to bring the whole face of the portal far enough out "so that even though the concrete curtain wall were placed in front of the wooden bulkhead, it would be possible to place loose material in front so as to hide most of the concrete 'patch.'"[224]

For the upper portal of Tunnel No. 3, Carpenter recommended constructing a collar at the face of the tunnel lining and then trimming back the face of the slope of the tunnel. He suggested that

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[221] Thomas E. Carpenter to Howard Baker, 4 May 1937.
[222] Thomas E. Carpenter to Howard Baker, 4 May 1937.
[223] Thomas E. Carpenter to Howard Baker, 4 May 1937.
[224] Thomas E. Carpenter to Howard Baker, 4 May 1937.

the curtain wall be set back near the existing bulkhead and the hole between the collar and curtain wall filled in as much as possible. He believed it might be necessary to use a collar approximately 2' wide in order for it to fit snugly and cover up all or most of the opening on either side of the lining below the soffit face, or underside, of the tunnel. If this was deemed unfeasible, he suggested that the Branch of Plans and Design's original design be followed.[225]

Carpenter recommended that if it seemed necessary for the Tunnel No. 3's portal to project beyond the cliff face, it should be massive, and therefore bigger than proposed 4-1/2'. From the sketch from which he was working, it seemed to him that it would be possible to construct the portal face 4-1/2' wide for the upper portal of Tunnel No. 3, since it could be set squarely into the face of the cliff. He would prefer, however, to use a smaller collar: "If it were possible in the construction of 4-1/2 foot wide collars to so Gunnite and stain them that they would match the texture and color of the cliff rather closely, they might not be objectionable. They would have to be used in places where they would be set in flush with the face of the cliff, however, and if this is not possible, then a more massive type of portal should be used, as explained in the foregoing."[226]

On May 12, Breuning responded to Carpenter's recommendations for the portals in a letter to Shoemaker. He wanted to discuss the collars that would be recessed into the face of the surrounding earth entrances by careful excavation and blended into the entrance by applying gunite to the point of contact between collar and earth. A similar gunite mixture would be applied to all the exposed construction. To fill the exposed openings from caving above the adopted collar width, he suggested that the entire opening behind and above the collar could be filled with a "combined hand-placed mortared structure, to consist of either substantial Brule clay lumps, or some of the rock at the summit, using for mortar a mixture of cement and either pulverized Brule clay or Gering sand (depending upon surrounding formation) – say in a proportion of 1 to 3 or 1 to 4, to form a solid stable mass." This, he thought, would simulate the surrounding color and texture, blending the fill into the surrounding slope.[227]

Breuning believed that this procedure should be implemented above the lower portal of Tunnel No. 3. The front of the wooden bulkhead could be screened in place of constructing the concrete "patch" wall, which under any treatment, he believed, would still look "too artificial." In his opinion, the "cemented hand-placed backfill" from the top of the "collar" back to its intersection with the existing earth face at a point above the timber bulkhead would permit "a slope of fully ½:1." The surrounding earth face and overhang could first be trimmed to suit, and the backfill could, if necessary, be further stabilized by covering it with a coat of 2" or 3" reinforced gunite

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[225] Thomas E. Carpenter to Howard Baker, 4 May 1937.
[226] Thomas E. Carpenter to Howard Baker, 4 May 1937.
[227] O.D. Breuning to Clifford Shoemaker, 12 May 1937.

over the rough slope. It could then be tinted with the proposed camouflaging color. Breuning suggested that it might not be feasible to lengthen the existing tunnel ring several feet and then add a collar, believing that the surrounding earth would not support additional recessing of the collar. A final field study would be required to determine the practicality of that option.[228]

For the lower portal of Tunnel No. 2, Breuning advocated the construction of a section of reinforced concrete lining "cut off on a somewhat less skew to go with the Park thought on the skew feature as much as possible, with the adopted collar on the skew face, and then backfilling above the protruding portion of the ring as much as possible, using the collar as front 'catch' for screening effect." If this could not be worked out satisfactorily, he advised, then the original portal design was the only acceptable alternative.[229]

Breuning deemed the suggestion of lengthening the lining of Tunnel No. 3 impractical, if the intent was merely to overcome the protruding earth ring and permit blending the collar into the surrounding earth. He preferred the idea of trimming back the overhanging or protruding earth face to a point flush with the face of the proposed collar. "The trimming in this case would not be excessive or ungraceful as compared to such a procedure at the upper end of tunnel two as mentioned in the late correspondence," he wrote. His proposed "adoptable" collar would nearly hide the caved opening above the lining. In this plan, the cement backfilling process described above would fill the opening above the lining crown and efface the apparent opening above the collar.[230]

Breuning did not want monument officials to fall back on the original massive portal designs and insisted the BPR could submit a final solution that would prevent this undesirable course of action. He also wanted a BPR perspective on the best order for proceeding: whether the portals should be completed before the road paving or after. In contemplating this question, he reasoned "the public use of the road would probably be contingent upon completion of this tunnel work from the standpoint of safety to all concerned." Breuning determined that the concreting and interior gunite lining of the tunnels would best be completed before paving, since this would allow the workers to more easily link together curbs, sidewalks, guardrails, and concrete ring foundations. This sequence would also mean that the slab paving would not be required to carry the weight of the falsework loading for the sections of tunnel ring.[231]

Breuning further reasoned that a contractor could be preparing for paving while completing this "supplemental" work for the application of gunite, which included trimming the tunnel ends and

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[228] O.D. Breuning to Clifford Shoemaker, 12 May 1937.
[229] O.D. Breuning to Clifford Shoemaker, 12 May 1937.
[230] O.D. Breuning to Clifford Shoemaker, 12 May 1937.
[231] O.D. Breuning to Clifford Shoemaker, 12 May 1937.

placing drainage structures. The subgrade would have to be made, aggregate obtained, and a water plant set up. He believed that this preliminary work could be completed in thirty to forty days.[232]

Fifty days were allowed for the paving contract, which would include paving the entire Summit Road as well as stabilizing the parking area with an oil mat and the construction of guardrails.[233] Four companies submitted bids. The winner, Northwestern Engineering Company of Rapid City, South Dakota, began work on June 8, 1937, starting with the construction of half bridge sections and headwalls.[234] Their successful bid had totaled $80,504.91.[235] NPS architect Serrano instructed BPR engineer Buell to stockpile the surplus material from widening the tunnel approaches for use in completing the grading around the parking area and flattening and rounding some of the roadside fills.[236] The three engineers assigned to inspect and oversee the project were BPR engineer P.C. Hammelef, and state highway department engineers E.D. Clements and George A. Hofferber. Clements was assigned to slab inspection and Hofferber to plant inspection.[237]

The contractor began with eighteen men who made primary excavations for the guardrails and built concrete piers to support the highway over fills and the road bed. Two concrete mixers were taken to the top of the bluff, where work was to begin. These smaller mixers were to be used only in preliminary work. A carload of lumber arrived on June 9, and a crew of carpenters began building forms for the pouring of concrete.[238] By the end of June, the preliminary work was almost finished. This included the laying of guardrails, culverts and "bridges" to strengthen earthen fills, the construction of the wooden forms, and the grading of the road bed. A temporary 12,000' pipeline ran from an irrigation ditch at the foot of the bluff to the summit. Several 2-ton gasoline pumps were installed at the bottom of the bluff to force water through the 3" pipe. This water was used for mixing concrete in a larger mixer as it traveled down the highway. The

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[232] O.D. Breuning to Clifford Shoemaker, 12 May 1937.

[233] Merrill Mattes, submitted for Charles Randels, Superintendent's Narrative Report, June 1937.

[234] H.G. Hutchins to Charles Randels, Telegram, 8 June 1937.

[235] "Rapid City Firm is to Get Contract for Bluff Road Project," *Scottsbluff Daily Star-Herald*, 20 May 1937.

[236] Sam Serrano, Monthly Narrative Report to Chief Architect on Scotts Bluff National Monument, May 20-June 20, 1937.

[237] "First Paving is Laid at Bluff; to Speed up on Construction Activity," *Scottsbluff Daily Star-Herald*, 9 July 1937.

[238] "Work is Begun on Monument Paving," *Scottsbluff Daily Star-Herald*, 9 June 1937.

summit parking area was sprinkled and rolled with a 10-ton roller after the grade was leveled by workers using picks and shovels.[239]

An additional large rolling cement mixer was set up at Simmons gravel pit. This operation was supervised by Oscar Loberg and located on the North Platte River near the Scottsbluff-Gering highway. By July 8, it was turning out concrete that was hauled in wet batches six miles to the bluff by a fleet that eventually numbered fourteen trucks. Having been given fifteen days to complete the project before penalties would be assessed, crews headed by W.L. Lee for Northwestern Engineering worked from dawn to dusk in two seven-hour shifts.[240] More than 180 men were reported to be working fourteen hours a day.[241] The massive project was recorded by the local newspaper. The community's interest in the project can be sensed by the manner in which the paper breathlessly reported details such as: "Five carloads of cement, about 125 tons of it, were on railroad tracks here yesterday. Thirty tons of steel has been trucked up the bluff to be used in reinforcing the concrete pavement, gutters and guard rails .... A second powerful pump has been added to the water system carrying water through a 12,000-foot pipe line from a ditch at the foot of the bluff to the summit." This piped water was used to settle the dusty road bed and to prevent too rapid drying of the pavement.[242]

Workers laid approximately 500' of concrete pavement per day, beginning at the summit parking area. The spatial constrictions of the site necessitated some innovative methods, since it was impossible for a concrete mixer to turn itself around on the narrow roadway. To solve this problem, a large turntable was set up directly below the concrete crews, and moved by hand daily as they advanced down the hill. As the local newspaper explained, "Trucks carrying concrete from the mixing plant ... drive on the turn table, are reversed and back to the work scene to dump their loads."[243]

By the end of July, paving of the summit road was 90 percent complete. The wet concrete was shovel-sprayed with a sandy composite called Johnsonite to hasten evaporation and hardening.[244] Once brushed, the road bed was covered with moistened strips of burlap for seventy-two hours in order to prevent the fresh concrete from "curing" too rapidly. After seventy-two hours, the

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[239] "Machinery Arrives to Start on Paving Project at Bluff," *Scottsbluff Daily Star-Herald*, 30 June 1937.

[240] "First Paving is Laid at Bluff; to Speed up on Construction Activity," *Scottsbluff Daily Star-Herald*, 9 July 1937.

[241] "The Scotts Bluff Summit Road is Near Completion," *Adobe Echo*, August 1937, included in Superintendent's Report, August 1937.

[242] "First Paving is Laid at Bluff," 9 July 1937.

[243] "500 Feet Per Day of Paving Poured," *Scottsbluff Daily Star-Herald*, 21 July 1937.

[244] Superintendent's Narrative Report, July 1937.

burlap was removed and used again at the next section of road.[245] A reinforcing steel arrangement was set in place before the pouring of half-bridge sections on the upper portion of the road. These structures were used to span minor gullies and crevices. Two-foot-high guardrails were constructed in exposed areas. On all curves, 2' wide cleats, or center line guides, were installed to prevent traffic from passing into the oncoming lane. The maximum grade of the road was maintained at 7 percent.[246]

By the end of August, the road and the summit parking area were paved and the bituminous walks surrounding the parking lot were being laid. The headquarters parking area was paved with a bituminous-like surfacing, due to the prohibitive cost of concrete paving.[247] The road surface flanking the concrete slab on both sides was covered with oil mat to prevent erosion, and oil mat was also laid around the summit parking area and the parking area at the visitor center.[248] The construction of the sections of guardrails intended to connect with the proposed tunnel portals was suspended until the exact treatment of those portals was decided.[249]

There was some confusion about the location of these guardrails. Baker clarified to Shoemaker that in case no portals were used, he had intended for the guardrails to be constructed so that the inside of the rail would be flush with the inside of the tunnel. While inspecting the site, Baker found that the reinforcing steel at both ends of Tunnel No. 3 had been set up to construct the guardrail flush with the curb line of the sidewalk. To fix the situation, he recommended that the guardrail be eliminated, starting at the points where he had recommended that the rail be flared, and that the reinforcing steel be used for additional tie-ins if necessary. Baker believed that they might still construct a portal that would require a guardrail along the lines of the original design. He had not yet reached a decision on the exact treatment on the lower entrances to Tunnels No. 2 and No. 3, and concluded that until the matter was settled, they should not build the guardrail through those sections.[250]

Randels weighed in on this issue by bringing up the potential for motorist hazards if the rail were moved to the edge of the tunnel portal, resulting in no division between the sidewalk and road section. He cautioned Shoemaker against this arrangement, writing, "I can visualize some wreckless [sic] driver hitting this sidewalk at a high rate of speed coming down the hill and

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[245] "500 Feet Per Day of Paving Poured," *Scottsbluff Daily Star-Herald*, 21 July 1937.

[246] Charles Randels, Superintendent's Narrative Report, July 1937

[247] Sam Serrano, Monthly Narrative Report to Chief Architect on Scotts Bluff National Monument, July 20-August 20, 1937.

[248] "Concrete Laid on Bluff Road Work," *Scottsbluff Daily Star-Herald*, 8 August 1937.

[249] Sam Serrano, Monthly Narrative Report to Chief Architect on Scotts Bluff National Monument, July 20-August 20, 1937.

[250] Howard Baker to Clifford Shoemaker, 26 July 1937.

mowing down several pedestrians, which would mean a very serious catastrophe."[251] Randels wrote to Vint about the guardrail later in the month. There had evidently been considerable difference of opinion between NPS and BPR representatives regarding this issue. Randels stated, "Unless otherwise instructed by the Director, I should like to request that the plan as outlined by District Engineer Shoemaker be followed as it seems a very practical one and would certainly make a much less hazardous road than the elimination of the guard rail for 100 feet back of a sidewalk."[252] Shoemaker had explained to Randels earlier that "Our only reason for carrying the raised curb to the sidewalk section at the portals was for the protection of the pedestrians who may have occasion to use the tunnels. It would not only serve as a protection for the pedestrians but likewise for those in the motor vehicles as contact with the sidewalks would probably result disastrously to the occupants of the motor vehicle." He concluded that the curb and sidewalk should meet at the tunnel portal.[253] Guardrails were ultimately located on the outside edge of the sidewalk, and the paving was completed.

The road was opened to the public on September 19, 1937, with 550 cars driving on it the first day.[254] Even at the opening, there was still concern that the unsupported overhead material at Tunnels No. 2 and No. 3 posed a threat to drivers.[255] Portal construction would solve this, but plans were still being formulated. Serrano recommended to Baker that the surfacing of the road and the headquarters parking area be given landscape clearance on September 29.[256] On October 18, Serrano met with Randels and Shoemaker at Scotts Bluff to discuss the proposed tunnel portals. Together they came up with alternate schemes for the two instances that were not unanimous to submit to Baker for his consideration.

The first regarded the lower portal of Tunnel No. 3. The previous May, Carpenter had recommended a 2' wide collar and the placement of a concrete curtain wall to fill the overhead cavity, followed by the application of gunite to simulate the natural rock. Shoemaker and Serrano questioned the permanence of this method. They thought that the overhead material might be removed back enough to permit the placement of a fill above the tunnel opening from the collar back, which would cover the existing cavity. Serrano believed that the collar width could be increased from 2' to 3' if additional fill was necessary to cover the cavity "as the additional foot in width will not materially alter the appearance of the finished tunnel entrance." According to Serrano, it would be possible to determine whether or not a "curtain wall" would be necessary to

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[251] Charles Randels to Clifford Shoemaker, 4 August 1937.

[252] Charles Randels to Thomas C. Vint, 24 August 1937.

[253] Charles Randels to Thomas C. Vint, 24 August 1937.

[254] Superintendent's Monthly Report, September 1937.

[255] Sam Serrano, Monthly Narrative Report to Chief Architect on Scotts Bluff National Monument, August 20-September 20, 1937.

[256] Sam Serrano to Howard Baker, 29 September 1937.

fill the cavity and support the overhead material after the removal of the existing wooden bulkhead. If a curtain wall did prove necessary, he believed it could be concealed by fill. "Such a treatment," he wrote to Baker, "will eliminate the danger of a visible parting of the curtain wall and formation. The effect will be as natural as possible under the circumstances, and we shall be spared the difficult task of making the concrete curtain wall match the formation."[257]

Serrano proposed two possible treatments for the lower portal of Tunnel No. 2. The first was to excavate the overhead material back, making it possible to build a 2' concrete collar at the tunnel opening at right angles to the road center line and flush with the rock formation. He favored this option on aesthetic grounds. Knowing that heavy rock material was constantly falling onto the roadway, however, he considered it advisable to extend the portal out from the cliff face, thereby avoiding any potential rock overhang.[258]

The second possible treatment would follow along these lines, extending the tunnel ring out sufficiently to provide the "necessary margin of safety" and facing it with a 2' collar at right angles to the center line of the road. As Serrano explained, "Since the cliff extends diagonally across the highway the right side of the collar will key into the formation and on the left the tunnel ring and collar will extend out a considerable distance from the face of the present excavation." In order to lessen the visual presence of the portal, he suggested that the road fill be continued at a slope to cover all but the face of the portal barrel and collar. "A fill thus made," he wrote, "would soon naturally revegetate sufficiently to simulate a talus slope." He believed that the collar and wing wall could then be coated with gunite to match the color of the natural rock formation. Serrano concurred that the first plan was preferable "from a landscape standpoint." The second option would be suitable if the former were considered too hazardous.[259]

Randels did not agree with the NPR Landscape Department regarding the portals at the lower entrances to Tunnels No. 2 and 3. He preferred Carpenter's recommendations from the previous spring rather than the "massive portals" that Shoemaker had proposed to Randels. Serrano had evidently agreed with Carpenter on this issue.[260]

On December 30, a Change in Authorization for the 1935 and 1936 Road and Trails program for Scotts Bluff National Monument was approved. A total of $3006.04 was subsequently moved from the accounts for grading and excavating the two remaining tunnels and for paving, parking areas, portals and tunnel lining, to a new project entitled, "1-A, B-5," which would consist of

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[257] Sam Serrano to Howard Baker, 20 October 1937.
[258] Sam Serrano to Howard Baker, 20 October 1937.
[259] Sam Serrano to Howard Baker, 20 October 1937.
[260] Charles Randels to Clifford Shoemaker, 9 November 1937.

"concrete paving, guard rail, slab bridging, drop inlets, and incidental construction."[261] By the end of January 1938, bank sloping, performed by CCC labor, was complete from the summit to the second tunnel.[262]

In February, Associate NPS Director Demaray approved the use of the balance of funds from the construction account for the removal of the overhanging material at the tunnel openings. Randels hoped the BPR could begin the work immediately, since the CCC camp was scheduled to be removed by June 1, and its enrollees could help with hauling dirt for the portal excavation while they were still there.[263]

On March 1, Thomas J. Allen, Jr., Director of NPS Region Two, sent the revised designs for the lower portals of Tunnels No. 2 and No. 3 to Randels, Vint, and Shoemaker for final comments. The Branch of Plans and Design had prepared a new study, which ultimately changed the base measurements of the portals from 11' to 8', reducing their visual impact as Randels had requested.[264] Shoemaker changed the dimensions on the BPR's detailed drawings to conform with the revised designs, and gave his approval.[265]

BPR engineer P.C. Hammelef determined that the construction of the lower portal for Tunnel No. 2 would require at least 240 cubic yards of Class "A" concrete. This amounted to 142 cubic yards for the arch ring, 76 cubic yards for the outer ring and counterforts, and 22 cubic yards for the portal face. Randels was concerned that there were not enough funds available to complete the portals as designed, so Hammelef suggested that the amount of concrete for the outer ring, counterforts, and portal face might be reduced through redesign. He determined that the lower portal for Tunnel No. 3 would require "an extension of about six feet in order not to involve heavy excavation at the sides for the portal face." As designed, the arch ring on this tunnel would require approximately 45 cubic yards of concrete, and the portal face approximately 22 cubic yards. The upper portal of Tunnel No. 3 required only 8 cubic yards for the construction of a ring. Hammelef also discussed the guardrails, writing that "The guard rail below tunnel number 3 is shown to meet the outside edge of the portal face. This will necessitate the construction of a slab bridge or retaining wall for a distance of approximately fifty feet."[266] An accompanying spreadsheet estimated a cost of $13,709 for the construction of the portals on Tunnels No. 2 and No. 3, projecting approximately $3687.50 that could be saved on various stages of the work.

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[261] Hillory A. Tolson to Charles Randels, 30 December 1937.
[262] Superintendent's Report, January 1938.
[263] Charles Randels to Clifford Shoemaker, 8 February 1938.
[264] Thomas J. Allen to Charles Randels, 1 March 1938.
[265] Clifford Shoemaker to Charles Randels, 4 March 1938.
[266] P.C. Hammelef to Clifford Shoemaker, 10 March 1938.

During March, all preparatory excavation for the tunnel portals was completed by day labor. The monument was just waiting for plans to be finalized and money to become available.[267] A small ERA crew was assigned to the monument from April 1938 through June 1939. In that fifteen-month period, they completed the parking area for the picnic grounds at Mitchell Pass, constructed chain barriers at the headquarters entranceway, realigned the state highway through Mitchell Pass, obliterated the CCC camp, which was abandoned on June 1, constructed museum cases, developed an observation point at the summit, and installed an "educational sign" at Mitchell Pass, among other projects.[268]

Plans for tunnel portal construction were approved in July and returned to Clifford Shoemaker. The Park Service asked the new custodian Merrill Mattes to provide them with the color of the stucco used on the headquarters buildings, in order to match the portals to that shade. The official color was described as "Oriental—Exterior Finish ½ #45 and ½ #60."[269] Heavy rains in September 1938 prompted Mattes to recommend that the road be closed to traffic until the portals were constructed. Several tons of rock had recently dropped onto the roadway from overhanging rocks and ledges, particularly at tunnel entrances. Fortunately, these landslides had occurred at times when no cars were underneath. Estimating that 25,000 cars had traveled the road safely since its opening one year earlier, Mattes decided to close the road in order to preserve the perfect safety record.[270] In September, Demaray approved of closing the road during portal construction, if such action seemed necessary for public safety.[271]

On October 21, the BPR published invitations to bid on the construction of the portals for the Summit Road tunnels.[272] Two days before bids opened, a Change in Authorization transferred $18,200 from the accounts for other completed projects at the monument to Project 1-AB-6, the account for construction of the guard rail, tunnel lining, and portals, and gutter paving.[273] On December 5, the contract was awarded to Orshek and Christensen of Fremont, Nebraska, to begin

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[267] Charles Randels, Superintendent's Report, March 1938.

[268] Howard Baker, Field Trip to Scotts Bluff National Monument, June 10-11, 1938; Merrill Mattes, Custodian's Narrative Report, June 1939.

[269] Donald B. Alexander to Merrill Mattes, 6 July 1938; Merrill Mattes to Regional Director, Region II, 8 July 1938.

[270] Merrill Mattes to NPS Director, Memorandum, 7 September 1938.

[271] Arthur E. Demaray to Merrill Mattes, 19 September 1938.

[272] David de Lancey Condon, Custodian's Report, October 1938.

[273] Hillory Tolson to Merrill Mattes, Memorandum, 19 October 1938.

constructing the concrete tunnel portals the following spring. The amount of the bid was $12,827.[274]

Construction started in late March 1939, under BPR supervision.[275] In April, work on tunnel portals consisted of form building and preparations for the pouring of concrete.[276] In order to maintain public access as long as possible, the contract specified that "the road shall not be closed by the contractor to the traveling public except by express permission of the engineer during placing of concrete in forms of the tunnel portals." The contractor was authorized to close the road during pouring and for a period of at least forty-eight hours thereafter, in order to avoid the danger of a car hitting the supporting forms before the concrete had set.[277] During a visit by Rocky Mountain National Park resident landscape architect Lloyd Fletcher, on May 10-11, the concrete was poured for Tunnel No. 3 and forms were nearing completion on Tunnel No. 2.[278] Fletcher had apparently replaced Howard Baker as the supervising landscape architect for the Summit Road.

The concrete tunnel portals, rings, and approach guardrails were completed in June by contractors Orshek and Christensen.[279] In July, a small force account crew supervised by Associate BPR engineer P.C. Hammelef laid wire mesh on the clay and sandblasted the concrete tunnel linings, preparatory to application of gunite, which continued into August. Great care was taken to match the concrete work to the natural color and rough texture of the bluff in order to make the portals as inconspicuous as possible.[280] Hammelef prepared color samples to try to match the Brule clay of most of the formation. It was more difficult to replicate the natural backdrop at the lower portal of Tunnel No. 2, which cut through a formation of volcanic ash about 16" thick. Above this grayish white ash and brownish sandstone, the purplish Brule clay created a color-matching challenge. Fletcher suggested that the portals be tinted a uniform color despite this natural variation, letting the colors "die out in the angle formed by the portal and the cut-bank."[281]

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[274] Chief, Budget Section, Branch of Operations, NPS, to Acting Superintendent, Rocky Mountain National Park, Memorandum, 8 December 1938.

[275] Charley Humberger, Acting Custodian, Custodian's Report, March 1939.

[276] Charley Humberger, Acting Custodian, Custodian's Report, April 1939.

[277] Clifford Shoemaker to Orshek and Christensen, Fremont, Nebraska, 26 April 1939.

[278] Lloyd Fletcher, Monthly Narrative Report to Chief of Planning, April 20 to May 20, 1939.

[279] Custodian's Narrative Report, June 1939.

[280] Custodian's Narrative Report, August 1939.

[281] Lloyd Fletcher to the Regional Director, Memorandum, 12 July 1939.

To complete the gunite work, a compressor was shipped to Scotts Bluff from Rocky Mountain National Park. The mixture of the color desired was dropped into the gunite machine, and then air from the compressor sprayed the mixture through the hose line to the gunite nozzle, where it mixed with water from a separate hose line. Concrete mixing and application was simultaneous. The color coating was sprayed to a maximum depth of a 1/4" on the wire mesh surface of the tunnel linings. The men operating the sprayers wore goggles and respirators to protect their eyes and lungs from the liquid concrete. No traffic was permitted on the road during working hours, 4 p.m. to sundown.[282]

In August, the BPR proposed a drainage structure between Tunnels No. 2 and No. 3 that would carry drainage away from the road fill to the bottom of the talus slope. It would be constructed of corrugated metal pipe and leave the road at a 45-degree angle, then enter the ground and be covered for the remaining distance to the head wall. After seeing the plans, Lloyd Fletcher commented that the angle "from the vertical bank of the road to the point of entry into the fill below would be particularly unsightly and difficult to cover or otherwise obscure." He suggested that the angle be eliminated and that a catch basin be constructed in its place to catch the spill of the culvert above, letting the runoff be carried through a pipe to the point below the talus.[283]

In reviewing the efforts to harmonize the colors of the portals with the surrounding rock, Fletcher found that the matching had been quite successful at Tunnel No. 1, but that it seemed difficult to cover the overlapping streaks caused by moving the equipment across the face of the portal for continuous color application. The portals were first sandblasted and an undercoat applied to even out the surface. Fletcher determined that the streaks were caused by "dry material being blown onto the completed work and leaving a fog of dust." Through experimentation, he found that mixing more water with the dry material at the nozzle would result in a more complete saturation of the dry material. He recommended that the surfaces of all portals be coated with this wet material and "applied more like paint than gunite, in order to produce an even coloring." Since the pockets caused by excessive excavation above the upper and lower portals of Tunnel No. 3 had been left unfilled, Fletcher recommended that they be packed with rammed earth, using pneumatic equipment. The surface could then be modeled to match the existing cut above, and gunite applied in the same shade as the tunnel portals, reducing the visibility of the contour above the portals.[284]

Workers were soon putting the finishing touches on the Summit Road. The Public Roads

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[282] Custodian's Narrative Report, August 1939.

[283] Resident Landscape Architect's Comment, 23 August 1939.

[284] Lloyd J. Fletcher, Monthly Narrative Report to Regional Landscape Architect, August 20-September 20, 1939.

Administration (PRA) cleaned out and then re-filled the expansion joints along the roadway. [285] A small crew supervised by PRA engineer Lowell Mathers completed the color-guniting of tunnel linings, portals and guardrails. They then applied a wash coat over the entire job, filled remaining apertures at the lower entrance to Tunnel No. 2, and the lower and upper entrances to No. 3, and repaired a drainage structure between the two tunnels. The road was closed to traffic from 7 a.m. to 3:30 p.m. on weekdays for this final construction. The job was finished on September 29. As a result of this additional excavation, a cavity "of imposing dimensions" was soon discovered directly above Tunnel No. 2, which the custodian had presumed had been packed at the same time as the tunnel lining in 1937. The aperture was filled in with gunite. Custodian Mattes reported that the color guniting had greatly improved the appearance of the concrete work, both from a distance and when viewed close up.[286] "From a distance the portals blend quite successfully with the bluff," Mattes observed, noting that they also blended in well from the motorist's perspective, whether ascending or descending the road. During an inspection on August 22, 1939, Associate Engineer Willard P. Lindauer inspected the work and noted that the concrete pavement of the Summit Road was "in good condition except for the expansion joints," which had evidently not received the proper maintenance. He recommended that "the expansion joint material, which extends above the pavement, be cut flush with the adjacent surface" and advised that the remaining expansion joints should be thoroughly cleaned, removing all the old concrete, loose debris, and dirt. He instructed that the "joints should then be filled with some suitable material that would permit the expansion joint to operate as designed. The best time to treat the expansion joints is in cold weather."[287] On July 2, 1940, Shoemaker made a final inspection of the Summit Road, and expansion joints were repaired in October.[288]

Presentation and Reception

The Summit Road was notable for the high level of community interest in its construction. In the 1930s, locals were impatient to gain automobile access to the summit. They often expressed their frustration at the frequent delays in work, especially since the road construction was a significant source of relief employment for the county. Monument officials often spoke at local

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[285] On July 1, 1939, the BPR was transferred from the Department of Agriculture to the Federal Works Agency and renamed the Public Roads Administration. On August 1, 1949 the agency was transferred to the Department of Commerce and the earlier name was restored.

[286] Merrill Mattes, Custodian's Narrative Report, September 1939.

[287] Willard P. Lindauer to the Regional Director, Region II, Memorandum, 9 September 1939.

[288] Merrill Mattes, Custodian's Report, July 1940; Merrill Mattes, Custodian's Report, October 1940.

Chamber of Commerce meetings and other gatherings.[289] In January 1934, Francis LaNoue wrote that "The most striking part of the C.W.A. work as it pertains to Scotts Bluff National Monument is the interest that local people are taking in both parts of the project," referring to the road construction and archeological survey.[290]

The opening of the road dramatically transformed Scotts Bluff National Monument. Anticipating this development, junior historian Merrill Mattes wrote a lengthy memo to Charles Randels before the opening, outlining his concerns and questions. Mattes thought it important to articulate a number of assumptions that would help them deal with the sudden onrush of motor traffic. First, he assumed that there would be a heavy volume of traffic up and down the road in fair weather, especially on Sundays. Second, he assumed there would be a high number of "repeaters," who would most likely be locals, including "young people who will find in the summit road an outlet for their pleasure and energies." Third, he assumed that there would be a large volume of traffic late in the evening, especially among local youth. Fourth, he anticipated the danger of speeding motorists. Fifth, he could foresee that visitors would want to picnic on the summit, "resulting in accumulation of debris, building of fires, molesting of trees, etc."[291]

Mattes wanted to know whether a degree of regulation should be imposed at the outset, or if they should wait until experience demonstrated what types of regulation were necessary. He suggested a number of initiatives that could be implemented immediately. He recommended speedy elimination of the "short-cut" road, used during the construction process, which extended from behind the headquarters area to the Summit Road. He also suggested a uniform toll, possibly of 25 cents, for the Summit Road. This was intended more for regulatory purposes than for revenue. He felt this would limit the number of repeaters and "irresponsible types." Exceptions for the toll could be made, he noted, for school groups, clergymen, and the like.[292]

Mattes suggested that the hours of the Summit Road be restricted. "For instance," he wrote, "it would seem unnecessary to allow anyone on top after 9 PM, when nothing can be seen anyway, and the only possible object could be joy-riding." He also felt that the custodian should determine when the road needed to be closed during hazardous winter conditions. He recommended that the road be patrolled in order to prevent speeding motorists and vandalism, and to provide assistance in parking cars and guidance on the summit. Mattes believed that it might eventually be wise to patrol the road by motorcycle or truck. In addition, Mattes suggested the implementation of "at least one large readable sign" at the bottom of the road,

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[289] "Museum and Road at Monument are Discussion Topics," *Gering Courier*, 22 December 1933.

[290] Francis LaNoue, CWA Summary Progress Report, 25 January 1934.

[291] Merrill Mattes to Charles Randels, Memorandum, 9 August 1937.

[292] Merrill Mattes to Charles Randels, Memorandum, 9 August 1937.

indicating a 30 m.p.h. speed limit and warning against passing other cars. Lastly, he thought it might be necessary to install signs such as "Slow" and "Keep Moving" at "certain ticklish curves."[293]

Publicity in the local papers brought record crowds of at least 850 visitors to the official opening on Sunday, September 19, 1937. Approximately 600 automobiles made the ascent that day. The local newspaper noted with approval that "cars with motors in good condition will easily pull up to the top in high gear." The reporter especially approved of the center cleats on the roadway, which help guide motorists around the sharp curves.[294] A few days later, the newspaper repeated the claims of monument officials that "the bluff will now become a scenic point of wide interest and win fame as a recreational area."[295]

Another writer asserted that with the completion of the summit road, the year 1937 marked "the entrance of Scotts Bluff national monument into the class of major historical park areas." These claims were supported by visitation figures from before and after the road's opening. A total of 55,921 visitors were reported for the year 1937.[296] During the 1938 travel season, 96,450 visitors entered the monument, an increase of 72 percent over 1937.[297]

The road was used frequently by locals. It was especially popular for Sunday drives, as well as for special events such as Easter morning sunrise services. An article in the *Gering Courier* in early 1938 advised that a trip to the monument afforded "a pleasant Sunday's outing." The writer described the experience of driving to the summit, assuring his readers that "You are not confronted with the blood-curdling sensations you get on some mountain roads. You appreciate and realize that the road is safe, with ample guard-railing where needed." He continued, "On your descent you can still marvel at God's handiwork on this palisade. You drift down in high gear with scarcely touching your brakes." In June 1940, the monument custodian reported that the number of motorists driving the Summit Road had practically doubled since the previous June. He attributed this to the "skyrocketing reputation of the Scotts Bluff summit road," writing "We have never yet encountered a visitor who was not enthusiastic about the view from the summit, including case-hardened, calloused 'natives' who come back again and again to view the sunset, or the kaleidiscopic [sic] pattern of clouds and distant ridges, and the checkerboard of

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[293] Merrill Mattes to Charles Randels, Memorandum, 9 August 1937.

[294] "Road to Top of Bluff is Open for Autoists Today," *Scottsbluff Daily Star-Herald*, 19 September 1937.

[295] "600 Cars Climb to Summit of Bluff as Highway is Opened," *Scottsbluff Daily Star-Herald*, 21 September 1937.

[296] Quoted in Superintendent's Report, October 1937.

[297] "National Park Service Makes Plans Report," *Scottsbluff Daily Star-Herald*, date unknown, 1938.

cultivated fields on the valley floor."[298] In May 1941, an article attributed the recent influx of tourists to the North Platte valley to the completion of the Summit Road and the Scotts Bluff National Monument museum. The author lauded the area's historic and scenic interest, which, he claimed, "exceed anything the state has to offer."[299]

One of the most popular early uses of the road was the annual regional running of the All-American Soap Box Derby on the lowest stretch of the road. The derby was held from 1939 through the 1950s, with a short hiatus during World War II. Approximately 10,000 people attended the first annual derby on Sunday, July 30, 1939.[300] The derby always received a great deal of publicity. It was not popular among monument officials, however, who viewed the derby as a questionable use of monument property. After the running of the derby in 1939, NPS resident landscape architect Lloyd Fletcher expressed his concern for the environmental damage caused by the crowd of approximately 5000 cars attending the event, which resulted in permanent scars on the landscape. He argued that this activity should be discontinued in the future.[301] Nevertheless, the soapbox derby continued to be an annual affair and remained immensely popular. Monument attendance records were shattered in July 1940, when 24,510 people visited the monument, 12,000 of them during the second annual running of the Soap Box Derby on July 21. In 1941, custodian Merrill Mattes observed, "Aside from the fact that we lose some revenue by closing the Summit Road, and rather unsightly scars on the terrain are caused by the overflow parking, this event does not exactly fit into the scheme of things here, and it is fondly hoped that interest in it will dwindle to zero in 1942. If not, it will probably have to be tolerated gain as a good-will gesture."[302] It would be tolerated many times again.

Other state and local groups often used the summit for official gatherings. On June 12, 1940, a caravan of 182 cars containing 900 delegates to the Nebraska Council of Women's Demonstration Project Clubs drove to the summit where they were given a lecture over a loudspeaker by State Geologist G.E. Condra. The next day, a caravan of the Veterans of Foreign Wars of Nebraska and Wyoming ascended the road, a testament to its frequent use.[303]

Access to the Summit Road became even easier with improvements to State Highway 86, the road that extended through monument grounds from Gering. Designated the "Oregon Trail Highway" in 1936, the road was reconstructed the following year by a contractor with the

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[298] Merrill Mattes, Custodian's Narrative Report, June 1940.

[299] "Western Nebraska Has Plenty to Offer," *Gering Courier*, May 1941.

[300] Merrill Mattes, Custodian's Narrative Report, July 1939.

[301] Lloyd J. Fletcher, Monthly Narrative Report to Regional Landscape Architect, August 20-September 20, 1939.

[302] Merrill Mattes, Custodian's Narrative Report, August 1941.

[303] Merrill Mattes, Custodian's Narrative Report, June 1940.

assistance of CCC enrollees. They accomplished its realignment, grading, and filling and sodding of the shoulders, and construction of drainage structures.[304] The shift in alignment created a slightly more direct approach to the monument area.[305] The stretch of highway from Gering to the monument entrance was relocated and oil-surfaced by June 1938, providing a smooth hard surface for visitors to travel on from Gering to the summit of the bluff.[306] Improvement of the highway from the west boundary of the monument to the old North Platte River bridge, site of old Fort Mitchell, would begin in August 1939.[307] In early 1961, the highway's designation changed from 86 to 92.[308]

Beginning in June 1938, all cars were required to stop at the gate marking the entrance to the Summit Road. The make of the car, license number, number of occupants and time of entrance were documented, and visitors were given information bulletins and told about the site. The new system was believed to provide accurate travel figures and control traffic on the Summit Road. This more formal entrance procedure was also intended to impress visitors with Scotts Bluff's significance as a National Monument.[309]

Evolution and Current Condition/Issues

Soon after the road opened it became clear that the parking facilities at the summit were not being used to best advantage. In July 1938, Custodian Mattes complained that the parking area, which was designed to accommodate eighty cars, often appeared full with only fifty or so vehicles. Mattes attributed this problem to "a congenital inability of visitors to read a large sign which states 'Park Diagonally on Outer Curb.'"[310] He also complained that the parking area was not sufficiently large for the size of crowds attending special events. This comment followed an Easter sunrise service that was attended by more than 1000 people in approximately 250 cars.[311] In order to deal with the overcrowding issue, the summit parking lot was enlarged to almost triple its original size in 1940. Enlarging the parking lot was both a practical matter and a means of fostering good will with monument visitors. Before the lot was enlarged, Custodian Mattes recalled, "We had some terrible traffic jams. You'd have cars waiting to get up there and

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[304] Superintendent's Narrative Report, July 1936; Harris, 39; Charles Randels, Superintendent's Monthly Report, September 1937.

[305] Sam Serrano, Monthly Narrative Report to Chief Architect on Scotts Bluff National Monument, August 20-September 20, 1937.

[306] Merrill Mattes, Custodian's Narrative Report, June 1938.

[307] Merrill Mattes, Custodian's Narrative Report, August 1939.

[308] Harris, *History*, 39.

[309] Merrill Mattes, Custodian's Monthly Report, June 1938.

[310] Merrill Mattes, Custodian's Monthly Report, July 1938.

[311] Charley Humberger, Custodian's Narrative Report, April 1939.

Rangers trying to encourage people to get on out of there. People didn't want to. They'd spend the day."[312]

Mattes was concerned that the main objective of commemorating the Oregon Trail was being disregarded in the rush to marvel at the expansive views. He worried that the Summit Road was treated "as a mere scenic diversion," when it was intended to function as a central component of the monument's commemorative and educational mission. He attributed the problem to a "lack of controls," meaning that visitors were generally free to bring their own interpretations to the site without any guidance or prodding from the monument staff. Mattes suggested that a ranger should be located on the summit whenever possible to give impromptu lectures underscoring the site's historic significance and patriotic implications. He also advocated improving the sign and trail system to attract a larger number of visitors to the north observation point, where a new orientation map could outline the historical significance of the Oregon Trail. Mattes believed the patriotic theme could be better expounded once tolls were collected at a central entrance station.[313]

An automobile permit fee of 25 cents per year was introduced on March 21, 1941. This replaced an earlier museum fee, which seemed to have the unintended effect of keeping people from visiting the museum, where they would have received the desired introduction to the monument's history and significance.[314] A new fee collection station was constructed in 1977 at the entrance to the road.[315] In 1990 an even newer booth was constructed at the entrance to the monument. In 2000, the entrance fee stood at $5.00 per passenger car, to be charged whether or not visitors used the Summit Road. There was a reduced fee for hikers, bicyclists, and senior citizens. Shuttle bus service was later introduced to provide free rides to and from the summit.

Rockslides continue to pose a significant threat, prompting constant fears that a major slide might injure or kill someone traveling along the road. A number of particularly heavy rock slides occurred between 1949 and 1952. In March 1949, one slide sent 309.4 tons of rock crashing into the roadbed. After another major slide in the summer of 1952, the road was closed for two months for removal of dangerous overhangs.[316] By the mid-1950s, it was clear that something needed to be done to remedy the situation. As always, the greatest challenge lay in finding funding for the project. Fortunately, a major new development program was about to be initiated that would eventually provide over one billion dollars for improvements throughout the National Park System. Designated Mission 66, this ten-year program commenced in February

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[312] Cockrell, *Scotts Bluff National Monument,* 21.
[313] Merrill Mattes to Regional Director, Region II, Memorandum, 16 November 1940.
[314] Custodian's Narrative Report, March 1941.
[315] Cockrell, *Scotts Bluff National Monument*, 64.
[316] Cockrell, *Scotts Bluff National Monument*, 23.

1955 and was intended to significantly upgrade visitor facilities in time for the Park Service's fiftieth anniversary in 1966.[317]

Mission 66 provided an $87,000 allotment from the Department of the Interior to improve the visitor experience at Scotts Bluff. Improvements included the paving of the foot trails, the establishment of a new south summit trail, the construction of a new ranger residence and an outdoor amphitheater behind the visitor center, and the installation of air conditioning and other improvements for the museum.[318] In late 1965 and early 1966, the BPR supervised the stabilization of the rock slopes above the Summit Road, focusing on the section between the second and third tunnels. A local contractor's bid of $29,831.50 to scale loose overhanging material from the bluff walls was accepted in the fall of 1965. A tinted gunite, or shotcrete, layer was applied to a portion of the wall between the second and third tunnels. After it dried, this layer failed to maintain a uniform color or blend in with the natural rock. In the words of one reviewer, "Although the shot-crete [sic] treatment is holding well, its appearance is much less satisfactory since the coloring agent left an effect similar to a pinto horse."[319]

In August 1967, there were two separate rockslides between Tunnels No. 2 and No. 3, starting from a region above the previous stabilization. The slides trapped visitors' cars for several hours until the road could be cleared with hand shovels. By noon the next day, contractors had completely cleared the road with the use of heavy equipment. Superintendent Richard Holder commented that "These occasional slides will continue to occur, and it appears to be impossible to pin-point the potential trouble spots. Nothing short of back sloping and guniting the entire wall will solve the problem, and this would no doubt be prohibitively expensive."[320]

A few months later, architect Vance L. Kaminski from the Midwest General Office surveyed the problem and concluded that previous attempts to stabilize the slopes had been only marginally successful. He also noted that the gunite patch with its poor color match, "appears as a scar on the hillside." Kaminski broached the possibility of closing the road altogether and installing an aerial tramway to reach the summit, a step that was never seriously considered.[321]

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[317] Alfred Runte, *National Parks: The American Experience* (Lincoln: University of Nebraska Press, 1987), 173. Linda McClelland provides additional information on Mission 66's impact on NPS developments in *Building the National Parks*, 462-73

[318] "'Mission 66' Aid at Monument—Black Top is Laid for Scotts Bluff Trail Hikers," *Omaha World-Herald*, 6 April 1958.

[319] Cockrell, *Scotts Bluff National Monument*, 56-57.

[320] Cockrell, *Scotts Bluff National Monument*, 57.

[321] Cockrell, *Scotts Bluff National Monument*, 58.

In June 1969, a dangerous overhang above the gunite patch was scaled back by the A.C. Smith Company of Scottsbluff for $885.75. By 1970, it was clear that the patch itself was deteriorating. D.C. Harrington, Chief of the Federal Highway Projects Division of the Federal Highway Administration, informed the Park Service that the patch needed to be removed and replaced. He recommended removal of the failing shotcrete, followed by sealing of the surface walls with a waterproofing substance and the application of a thin membrane solution. He also suggested that "cable drapes" of chain link fence be suspended on cables over the bluff above the road to control any future rockslides. Believing this last suggestion would disfigure the bluff too much, the Midwest Director authorized only the gunite removal and the scaling of any loose material, leaving the bluff exposed.[322] Before the scheduled removal could begin, the center quarter section of the gunite collapsed, crashing into the road below, which was fortunately free of cars at the time. The entire road was closed for two days while the A.C. Smith Company removed the debris, at a cost of $768.62. Removal of the remaining gunite was estimated to cost as much as $30,000.[323]

The endless cycles of rockslides and debris removal caused many to doubt the efficacy of piecemeal stabilization efforts. In 1975, an operations evaluation team, commenting on the latest $2000 scaling project, wrote: "It would seem to us that any legitimate effort to increase the safety of visitors along the bluffs [sic] road by scaling these rocks would require a much more concentrated and expensive effort than this. In addition, we would doubt that even the most massive effort to clean the cliffs of falling rock hazards would be absolute. Consequently, we wonder if minimum efforts such as the proposal for the $2000 scaling job aren't just 'window dressing' or just a show of good faith to protect us from tort claims."[324]

Slides were often caused by freezing and thawing in the cracks of sandstone formations. Two massive rockslides in February 1976 reportedly dropped several hundred tons of rock on the road, blocking a 35-yard stretch and trapping two rangers at the summit.[325] Within the next two weeks, a crane was brought in to "chip away" at loose sandstone at the site.[326] In August 1980, a major rockslide, consisting of an estimated 5000 tons of debris, blocked 150' of the roadway, to a depth of up to 30'. The NPS provided an emergency appropriation of $5000 to clean up the slide, which damaged 20' of curbing and sidewalk, although the concrete road itself was not badly damaged. It was, however, closed to visitors for eight days. After a significant slide in the

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[322] Cockrell, *Scotts Bluff National Monument*, 58-59.

[323] Cockrell, *Scotts Bluff National Monument*, 59.

[324] Cockrell, *Scotts Bluff National Monument*, 59.

[325] "Scotts Bluff Landslide Shuts Monument Road," *Omaha World Herald*, 13 February 1976.

[326] "Chipping Away at Monument," *Scottsbluff Daily Star-Herald*, 24 February 1976.

summer of 1982, the park adopted a policy of temporarily closing the road after extremely heavy rainfall.[327]

A number of studies were commenced in this period to research the condition of the road and tunnels. In 1986, ESA Geotechnical Consultants of Fort Collins, Colorado, was hired to evaluate hazards above the road and recommend options for rockfall abatement. The firm observed that moderate-sized rockfalls were occurring every one to three years, with major falls occurring every five to fifteen years. In addition to springtime thawing, ESA identified "hydrostatic pressure exerted by infiltrated water," which was most common after dry-season thunderstorms, as one of the most significance causes of rock failure.[328] The study suggested several possible solutions, including anchoring steel mesh on the cliff face, installing catch walls below the cliff, creating shaped ditches and berms, and constructing rock sheds.[329] In a 1987 discussion of the firm's findings, NPS officials agreed that complete control of rockfalls at Scotts Bluff would be prohibitively expensive if not impossible. The NPS ruled that a "balanced approach," involving the removal of overhanging rock slabs, would be most practical. Aesthetic considerations remained important, with the Denver project manager reiterating that whatever solution was adopted, "careful consideration needs to be given to…materials selection, color, and texture of finished exposed surfaces to mitigate visual impacts."[330]

The road surface required minimal maintenance for a period of close to forty years. By 1972, the original concrete surface was beginning to show its age and 75 percent of the road received crack and joint sealing.[331] A 1985 NPS study of the Summit found the road to be in "remarkably good" condition considering its average daily traffic of 133 vehicles. Citing a 1981 Federal Highway Administration (FHWA) inspection, the study estimated that between 10 and 25 percent of the paved road surface could use some degree of rehabilitation. FWHA estimates showed that approximately $9000 per year was currently spent on cyclic maintenance of the Summit Road. The study's authors recommended a major rehabilitation project that would increase the life expectancy of the road an additional fifteen to twenty years.[332]

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[327] Cockrell, *Scotts Bluff National Monument*, 60.

[328] ESA Geotechnical Consultants, Fort Collins, Colorado. Rockfall Abatement—Summit Road, Scotts Bluff National Monument. Submitted to U.S. Department of the Interior, National Park Service, Midwest Region, February 1986, 33.

[329] ESA Geotechnical Consultants, 44.

[330] Howard Wagner to Assistant Manager, Central Team, Denver Service Center, Memorandum, 21 July 1987.

[331] Cockrell, *Scotts Bluff National Monument*, 63.

[332] Patricia M. Pusey, Chief, Division of Maintenance and Energy, Midwest Region, NPS, to Operations Evaluation Director, Midwest Region, Memorandum, 19 December 1985.

Another 1985 study determined that the three tunnels were in need of lining repair, for a projected cost of $170,000.[333] In April 1988, Golder Associates, a geotechnical consulting firm subcontracted by the FHWA, presented its findings from a study of the slope and tunnel stability problems on the Summit Road. This comprehensive report included recommendations for tunnel lining repair, rockfall mitigation, shotcrete application and other measures. The three tunnel portals constructed in 1939, on the lower entrance to Tunnel No. 2 and both entrances to Tunnel No. 3, appeared to be successfully protecting the roadway beneath from rockfalls. The remaining tunnel entrances, lacking such protective structure, were judged hazardous.[334]

In 1989, with these studies and recommendations in mind, Scotts Bluff initiated the largest rehabilitation project on the Summit Road since its original construction. Project NE PRA-SCBL 10(1) included the construction of portals at the upper entrances to Tunnels No. 2 and No. 3 and the lower entrance to Tunnel No.1; construction of two parking areas; rehabilitation of the existing two parking areas; excavation of the overhanging sandstone between Tunnels No. 2 and No. 3; shotcrete stabilization of the resulting slopes; and other miscellaneous repairs.[335]

Work by the contractor, the James E. Simon Company of North Platte, Nebraska, began October 2, 1989 and was completed on August 28, 1990. The contractor first removed the existing surfacing on the Summit Road near the Visitor Center and the lining of Tunnel No. 1. Tunnel portals were then constructed and the cliffside excavated between Tunnels No. 2 and No. 3. All concrete in the tunnels was coated with an inch of shotcrete and stained with a masonry stain.[336]

Environmental considerations were given special attention on all projects. In respect for the road's historical significance, the contractor repaired rather than replaced the concrete road. The FHWA stated all construction and repair was "performed in a fashion that would be compatible with the existing 50-year old work." The construction was conducted in accordance with the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, F-85, with specialty items constructed in the parking areas governed by NPS Standard

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[333] Randall R. Pope, Acting Regional Director, Midwest Region, to Associate Director, Park Operations, WASO, 1 December 1986.

[334] Golder Associates, Golden Colorado, Mitigation of Slope and Tunnel Stability Problems, Scotts Bluff National Monument, Submitted to Federal Highway Administration, Denver, Colorado, April 1988.

[335] U.S. Department of Transportation, Federal Highway Administration, Central Federal Lands Highway Division, Region 16, Final Construction Report on Nebraska PRA-SCBL 10(1), Summit Road, Scotts Bluff National Monument: Construction of Tunnel Portals and Parking Areas, Rehabilitation, and Site Repairs, 18 November 1990, 2.

[336] U.S. Department of Transportation, Final Construction Report on Nebraska PRA-SCBL 10(1), 18 November 1990, 4-5.

Specifications. Portland cement concrete for the pavement, as well as the structural concrete, were constructed to Nebraska Department of Roads Specifications.[337]

Slope stabilization between Tunnels No. 2 and No. 3 began with the scaling of the cliffside by a gravity knife installed in 90' leads and handled by a 90-ton Lima crane. This was followed by the installation of 20' anchors and 35' ground anchors and a welded-wire and drainage mat. The shotcrete applied to the cliffside was changed to an uncolored product and stained to match the other concrete.[338] In 2000, the shotcrete patch on the cliffside between the second and third tunnels appeared darker than the surrounding rock, but experts believed it would gradually fade to match the bluff's natural color.

Besides routine maintenance, no further changes or renovations to the Summit Road were being considered when this report was written in summer 2000. The road was closed to motor traffic before sunset and opened after sunrise to allow access to bicyclists and hikers. An annual bicycle race was conducted on the road during the town of Gering's Oregon Trail Days every August, and locals continued to gather on the summit regularly for religious services and other purposes. Like the monument itself, the Summit Road was treasured by the local community, many members of whom personally knew someone who contributed to the construction or maintenance of the road since it was first begun in 1933. With the exception of three additional tunnel portals, cliffside stabilization, and several concrete patches on the roadway, the Summit Road had changed very little in appearance since that time, a testament to the effective engineering and design capabilities of the original NPS/BPR team.

Conclusion

Scotts Bluff National Monument was added to the National Register of Historic Places in 1966, a move that gave the property increased legal protection.[339] At that time, the Summit Road, its three tunnels, and the parking area were classified as non-historic structures, with only the monument as a whole recognized for its national significance to exploration and settlement in the nineteenth century.[340] In a 1995 National Register eligibility report, the Summit Road and parking lots (listed together as Structure Number HS-07) and the three tunnels (jointly listed as Structure Number HS-08) were re-evaluated and determined to be of national significance. They

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[337] U.S. Department of Transportation, Final Construction Report, 4-5.

[338] U.S. Department of Transportation, Final Construction Report, 5-6.

[339] Cockrell, *Scotts Bluff National Monument*, 163.

[340] National Register of Historic Places, Inventory-Nomination Form, Scotts Bluff National Monument, 29 March 1976.

were added to the National Register on March 17, 1995.[341] At this time, the Summit Road was noted for being the "first major construction effort…during depression-era development" at the monument."[342]

The Summit Road and the views it provided remained perhaps the most popular features of Scotts Bluff National Monument. The views may have changed as the surrounding communities evolved and expanded, but the processes of westward migration that the monument commemorates remained central to its overall mission. The Summit Road plays an important role in supporting the educational goals of the site while providing visitors with a memorable driving experience and impressive panoramas of the surrounding plains landscape. For residents of the surrounding region, the Summit Road also provides a link to a significant episode in the community's history.

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[341] National Register of Historic Places, Determination of Eligibility for Scotts Bluff National Monument, 17 March 1995.

[342] National Register of Historic Places, Single Entry Reports-LCS, "Summit Road and Parking Lot" and "Summit Road Tunnels."

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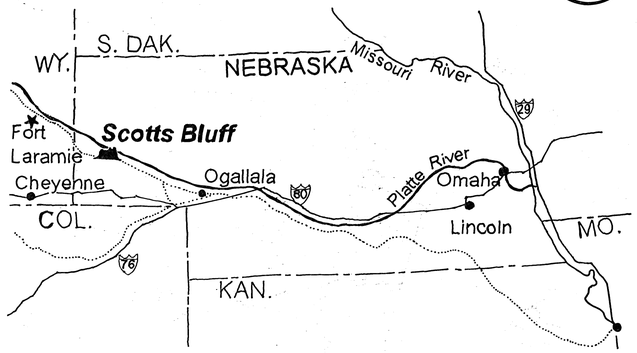
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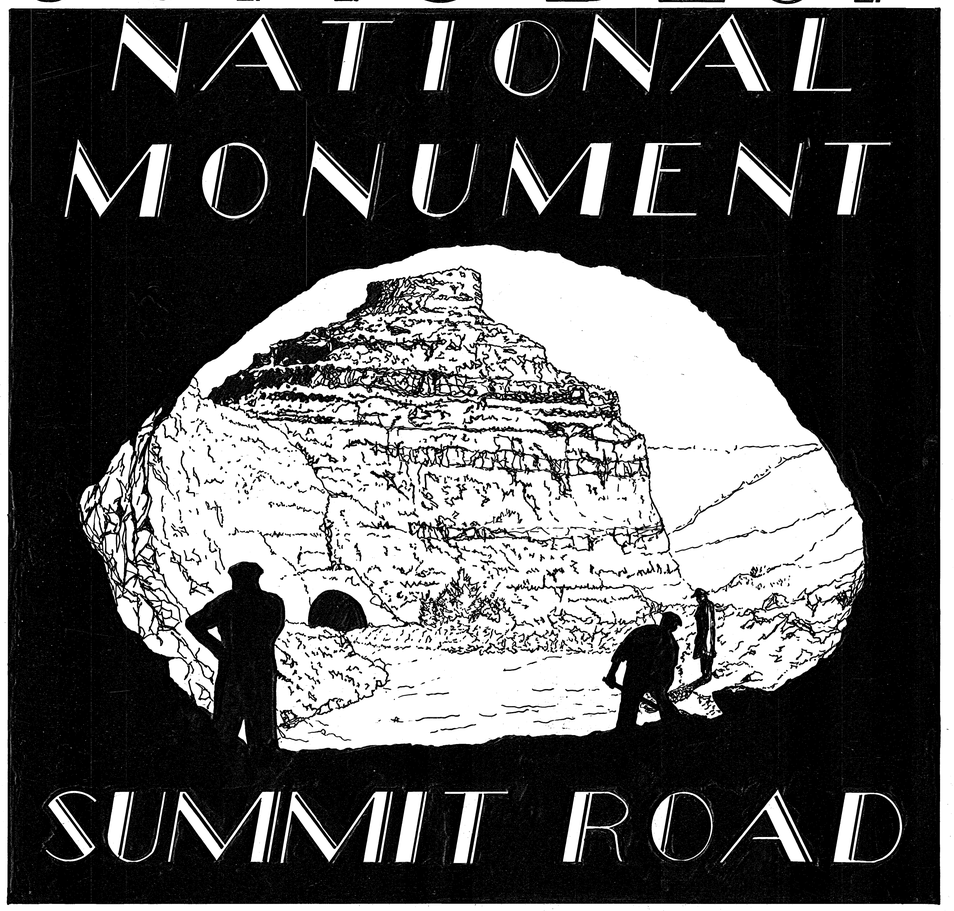
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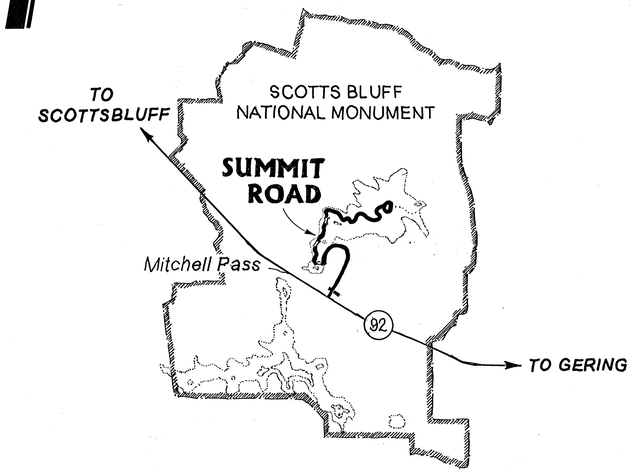
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TRIM LINE

SCOTTS BLUFF NATIONAL MONUMENT







Rising high above the grasslands of western Nebraska, Scotts Bluff was one of the most widely recognized landmarks on the Oregon Trail. From approximately 1841 through 1869, this historic wagon route, stretching from the Missouri River to the Pacific Ocean, was followed by thousands of emigrants including missionaries, gold seekers, and families in search of better prospects. Scotts Bluff National Monument was created in 1919 to preserve and commemorate this important landmark and to educate the public about the historic process of westward migration. Early monument boosters believed that the panoramic views from the summit would inspire visitors with an appreciation for the struggles of the early pioneers and reinforce their faith in traditional American values and institutions.

Early access to the summit was limited to a steep foot trail that stretched straight up the eastern side of the bluff. In 1927, the National Park Service (NPS), backed by a combination of federal and local funding, designed a less treacherous "zigzag" or switchback trail at the same location. With the rising popularity of motor travel and auto tourism in the 1920s, local government officials and community leaders began to petition NPS officials in Washington for an automobile road to the summit. Their calls were answered with the advent of Franklin D. Roosevelt's New Deal relief programs in 1933. Construction of the Summit Road began that year, providing needed relief work for unemployed sugar beet farmers and other local workers hit hard by the Great Depression. Over the next six years, the pace of construction was largely dictated by the availability of federal funding, through programs including the Civil Works Administration (CWA), Public Works Administration (PWA) and Civilian Conservation Corps (CCC).

Summit Road construction also benefited from the 1925 interbureau agreement between the National Park Service and the Bureau of Public Roads (BPR), an arrangement that facilitated the survey, construction, and improvement of roads throughout the National Park System. In planning the Summit Road, NPS landscape architects and BPR engineers were primarily concerned with preserving the beauty and historical integrity of the natural landscape. Maintaining the original appearance of the bluff was considered integral to the monument's commemorative goals. The western side of Scotts Bluff was chosen as the most inconspicuous site for the road, which featured three tunnels and continuous reinforced-concrete slab paving. The highly erosive nature of the sandstone formation as well as the relative inaccessibility of the site posed a number of challenges throughout the construction years.

Rough grading for the first section of road was completed in the spring of 1933. Work continued the following November with more than 200 men working on the summit parking area. Excavation of the first of three tunnels began in December of 1933, and the third tunnel was finally completed in 1936. Paving of the road commenced the following June, with the Summit Road opening to the public on September 19, 1937. Portals for three of the tunnel entrances were constructed in 1939. Over the next 50 years, improvements were minimal, confined primarily to periodic rockslide cleanup, and road patching. In 1989, the Federal Highway Administration constructed new portals on both entrances of Tunnel No. 1 and the upper entrance of Tunnel No. 2, excavated the overhanging sandstone cliffs between Tunnels No. 2 and No. 3, and stabilized the resulting slopes with shotcrete. Also at this time, the road was repaired by patching rather than complete resurfacing, in recognition of its historic significance as the oldest known concrete-paved road in Nebraska. Totaling 1.582 miles in length, the Summit Road constitutes the primary motorist experience in Scotts Bluff National Monument.

The Scotts Bluff Summit Road Recording Project was undertaken during the summer of 2000 and is part of the Historic American Engineering Record (HAER), a long-range program to document historically significant engineering and industrial works in the United States. HAER (Eric DeLony, Chief) is administered by the Historic American Buildings Survey/Historic American Engineering Record (E. Blaine Cliver, Chief) a division of the National Park Service, U.S. Department of the Interior. The project was funded by the U.S. Department of Transportation's Federal Lands Highway Program (Art Hamilton, Administrator) through the NPS Park Roads and Parkways Program (Lou DeLorme, Manager) and cosponsored by Scotts Bluff National Monument (Valerie Naylor, Superintendent) and the NPS Cooperative Program at Montana State University (Barry Sulam, Manager). The field work, measured drawings, historical reports, and photography were completed under the direction of Christopher Marston, Project Leader; Tim Davis, Program Historian; and Todd A. Croteau, Program Manager. The recording team consisted of Field Supervisor Chris Gray (Texas A & M University); Architects Todd Delyea (University of Idaho), Tim Grinstead and Stacey Heckaman (Montana State University), and Roger Michel (US/ICOMOS, Haiti); Landscape Architect Christine Magdalenos (Ball State University); and Historian Alicia Barber (University of Texas at Austin). Large-format photography was produced by David Haas.

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NE-11

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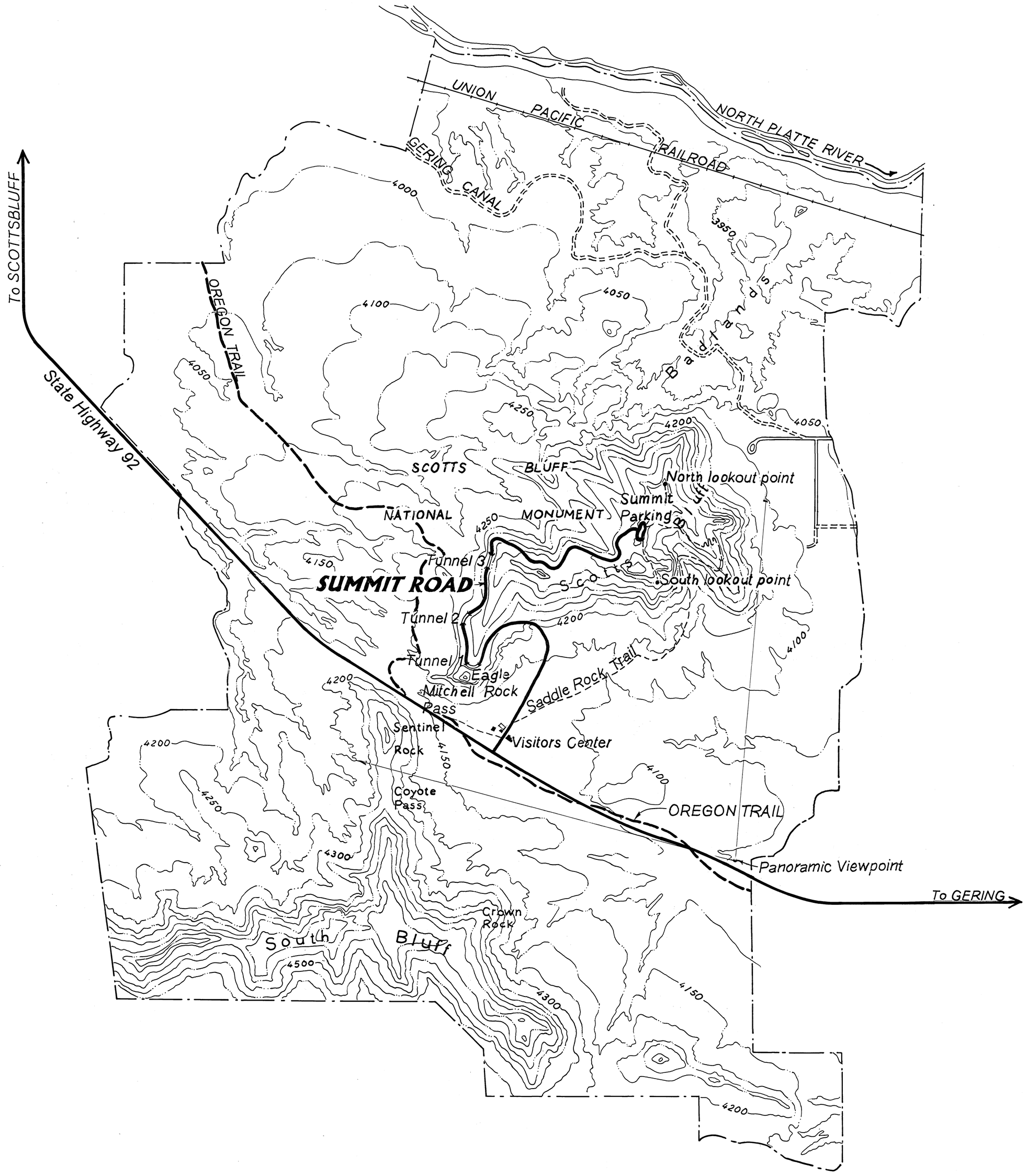
SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY
NEBRASKA
GERING

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SCOTTS BLUFF SITE MAP

Scotts Bluff National Monument comprises 3003 acres of grassland prairie, towering sandstone bluffs, and badlands: rugged ridges and deep gullies carved by wind and erosion. The North Platte River serves as the northern boundary of the monument, with the Union Pacific Railroad tracks running directly south of its banks. Three irrigation canals traverse portions of the grounds. State Highway 92 bisects the monument from east to west, running through historic Mitchell Pass. From its intersection with the highway, the Summit Road winds for 1.582 miles up the western side of Scotts Bluff to a parking area on the summit. There, two foot trails lead to the North and South scenic overlooks. Two additional foot trails begin at the Visitor Center, one leading to the wagon wheel ruts of the historic Oregon Trail, and the other, the Saddle Rock Trail, ascending to the summit of the bluff.

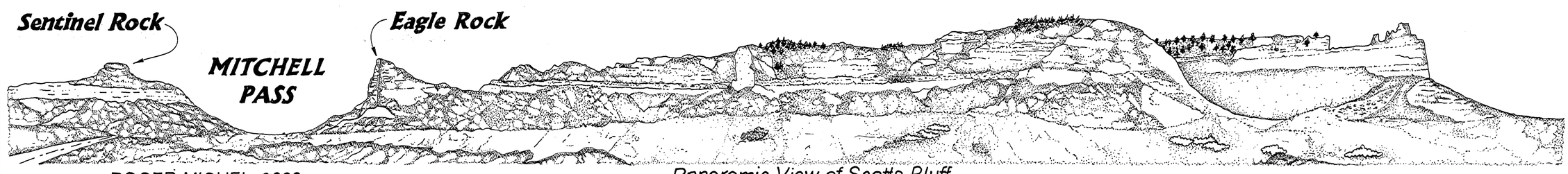
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Kilometers

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Panoramic View of Scotts Bluff

DELINEATED BY: *ROGER MICHEL, 2000*

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TRIM LINE

HISTORIC MIGRATION CORRIDOR

SENTINEL ROCK

EAGLE ROCK

RED CLOUD INDIAN AGENCY 1871-73

MORMON TRAIL NORTH 1847

OREGON TRAIL 1850-1869

FT. MITCHELL 1864-67
PONY EXPRESS STATION - STAGE STATIONS & ROAD RANCH

MITCHELL PASS

SCOTTS BLUFF

ROBIDOUX PASS

DOME ROCK

ROBIDOUX TRADING POST 1840-51

OREGON TRAIL 1841-50

PLATTE RIVER

FICKLING SPRING PONY EXPRESS STATION 1860-61

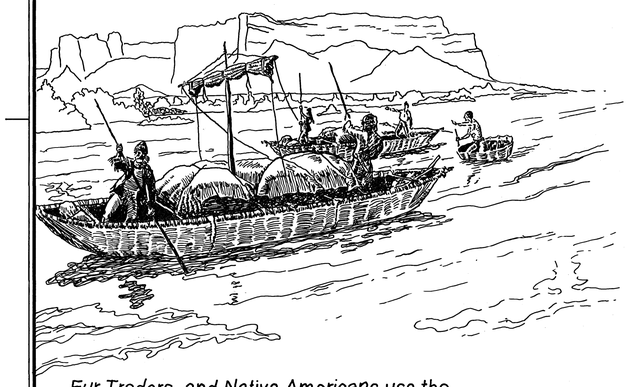
Union Pacific Railroad

PONY EXPRESS STATION 1860-61

CHIMNEY ROCK

86

OREGON TRAIL
NATIONAL HISTORIC TRAIL

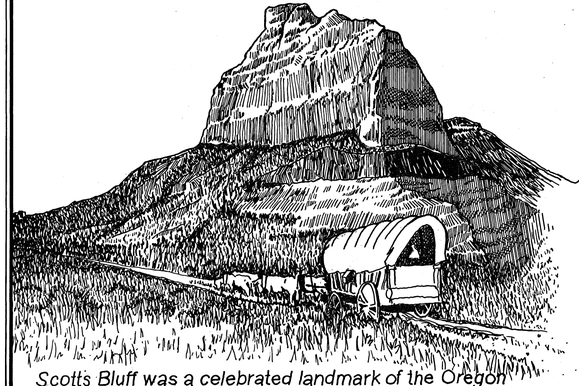


Fur Traders, and Native Americans use the North Platte River as a route for migration to the Buffalo grounds, and beaver territory.

The area now comprising Scotts Bluff National Monument has served as a migration corridor for centuries. Native American tribes including the Sioux, Pawnee, and Cheyenne followed the route of the North Platte River, as did early fur traders of various nationalities. From the 1840s through the 1860s, thousands of emigrants passed by Scotts Bluff on their way to Oregon Territory, the California gold fields and other western destinations. Following approximately the same route, the Pony Express, established in 1860, carried mail overland until being rendered obsolete less than two years later by the installation of the transcontinental telegraph line. Railroads arrived in the North Platte Valley in the first decade of the 20th century, with the competing Chicago, Burlington and Quincy, and Union Pacific lines. Soon afterward, the old Mitchell Pass road was upgraded and designated State Highway 86 (now 92). Completion of the Summit Road in 1937 encouraged the influx of a new population of transients: tourists. At the end of the 20th century, Scotts Bluff National Monument was welcoming nearly 150,000 visitors per year.



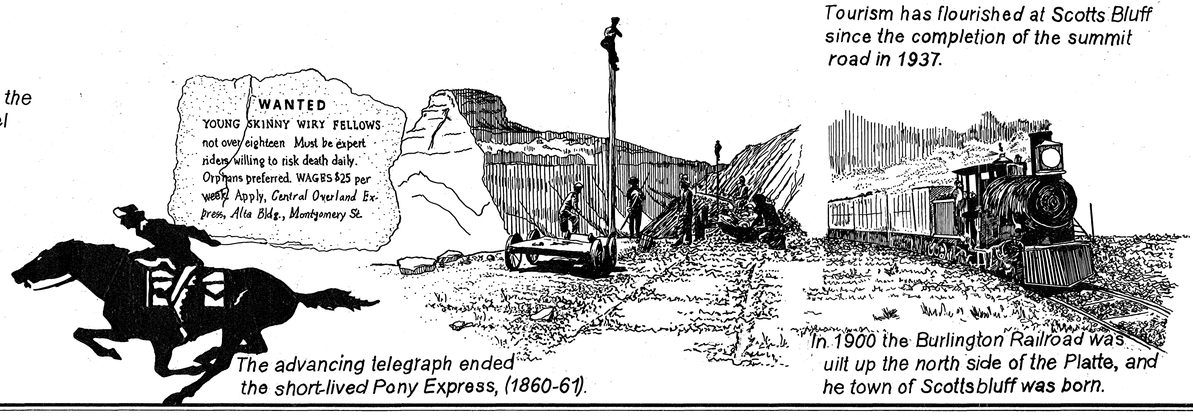
Tourism has flourished at Scotts Bluff since the completion of the summit road in 1937.



Scotts Bluff was a celebrated landmark of the Oregon Trail. The traditional route of overland migration to Oregon, California, and Utah.



From 1846-69 Mormon pioneers traveled the north bank of the Platte on a route parallel to the Oregon trail.



The advancing telegraph ended the short-lived Pony Express, (1860-61).

In 1900 the Burlington Railroad was uilt up the north side of the Platte, and he town of Scottsbluff was born.

HISTORIC AMERICAN ENGINEERING RECORD
NE-11

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SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY

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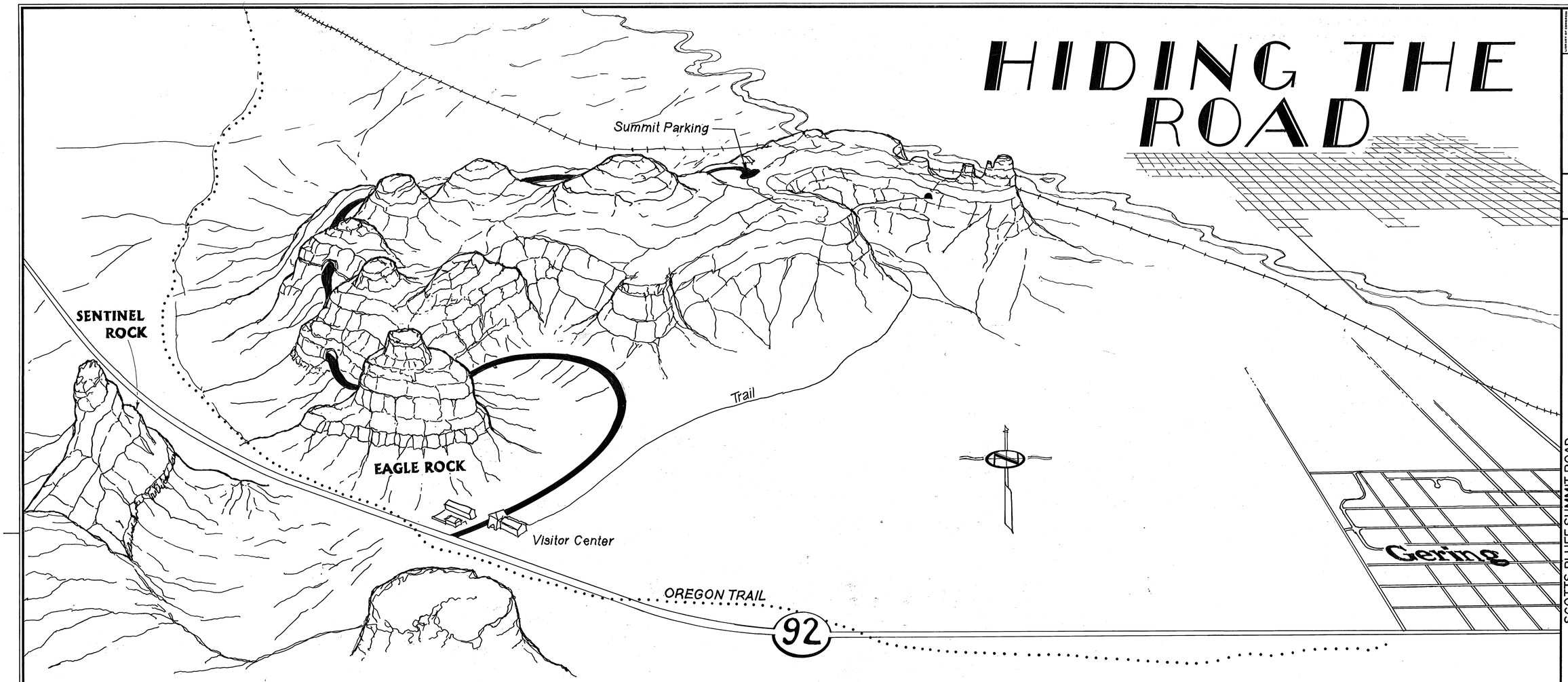
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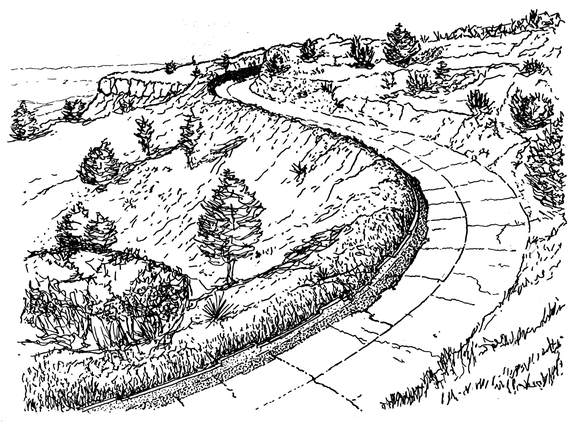
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TRIM LINE

TRIM LINE

HIDING THE ROAD





A continuous berm along the outer edge of the Summit Road made it hard to detect from below.

"This highway is being built in such a manner that it does not disfigure the hill and will make it possible for countless people to drive to the top of that hill and get one of the finest views...to be had anywhere in the west." –Harold Cook, Custodian, Scotts Bluff National Monument, 1934.

Planners intended to make the road as inconspicuous as possible, thereby providing access to the summit without marring the natural beauty and historical integrity of the landscape. Located on the western side of Scotts Bluff, the majority of the Summit Road is not visible from the Visitor Center or the eastern entrance, the primary approach to the monument. The roadbed was nestled into the rock in order to ensure safe motorist travel while further hiding the road from view. The original gunite used to line and support the tunnel portals and rock face was carefully tinted to match the natural color and rough texture of the bluff.



The Summit Road is *inconspicuous* as visitors approach Scotts Bluff from the east along U.S. highway 92, allowing the splendor of this magnificent earthen formation to be seen in all of its historical glory.

HISTORIC AMERICAN ENGINEERING RECORD
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4 OF 10

NEBRASKA

SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY

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DELINEATED BY: *Tim Grinstead*

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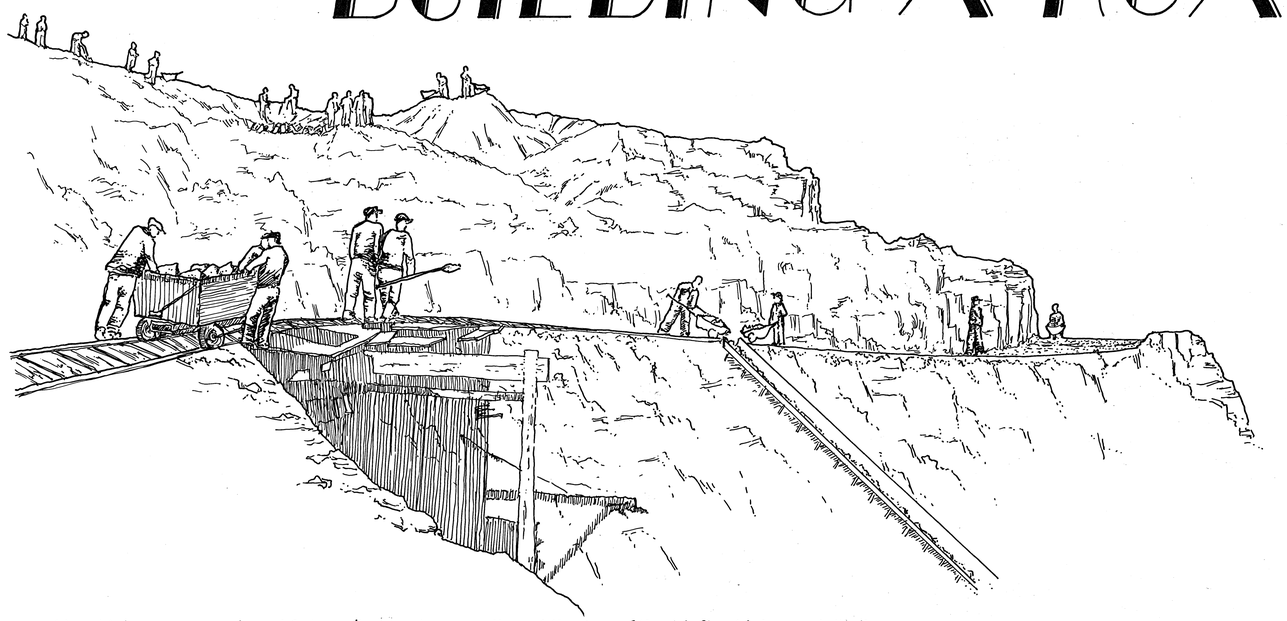
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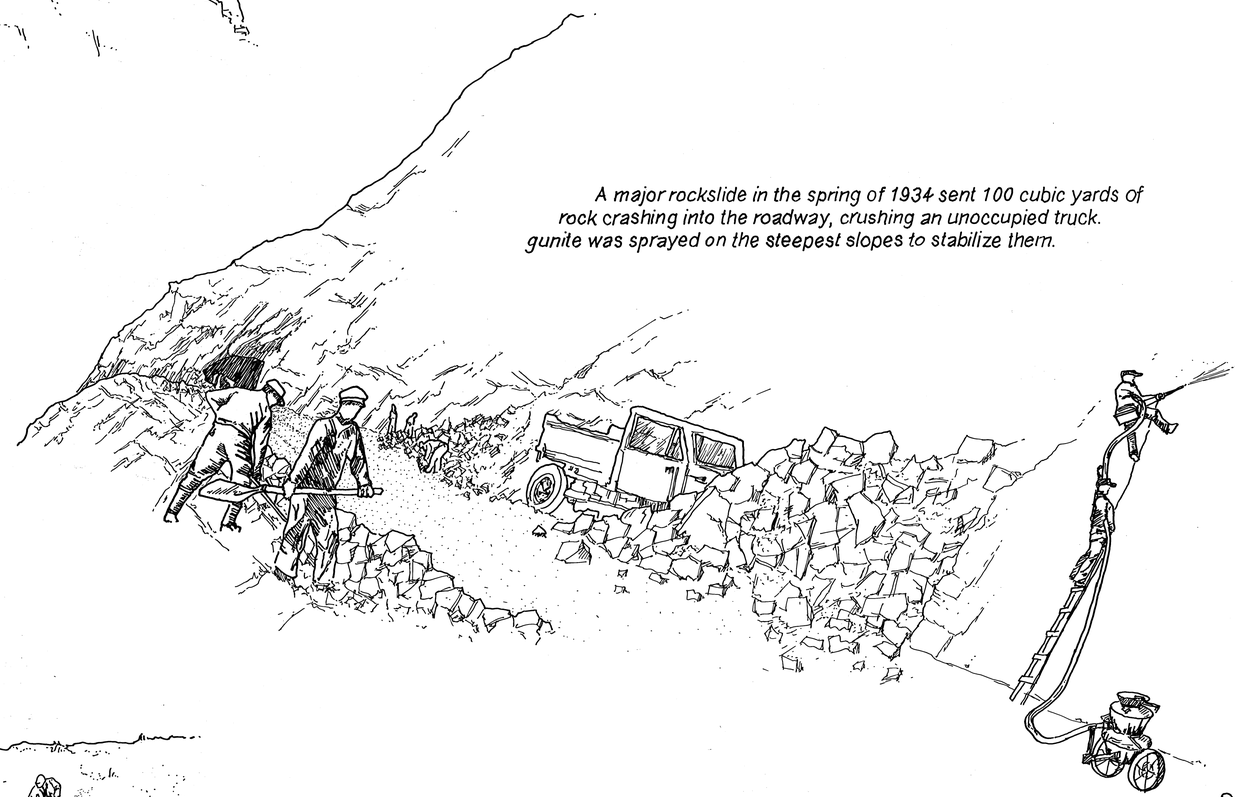
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BUILDING A ROAD UP A ROCK

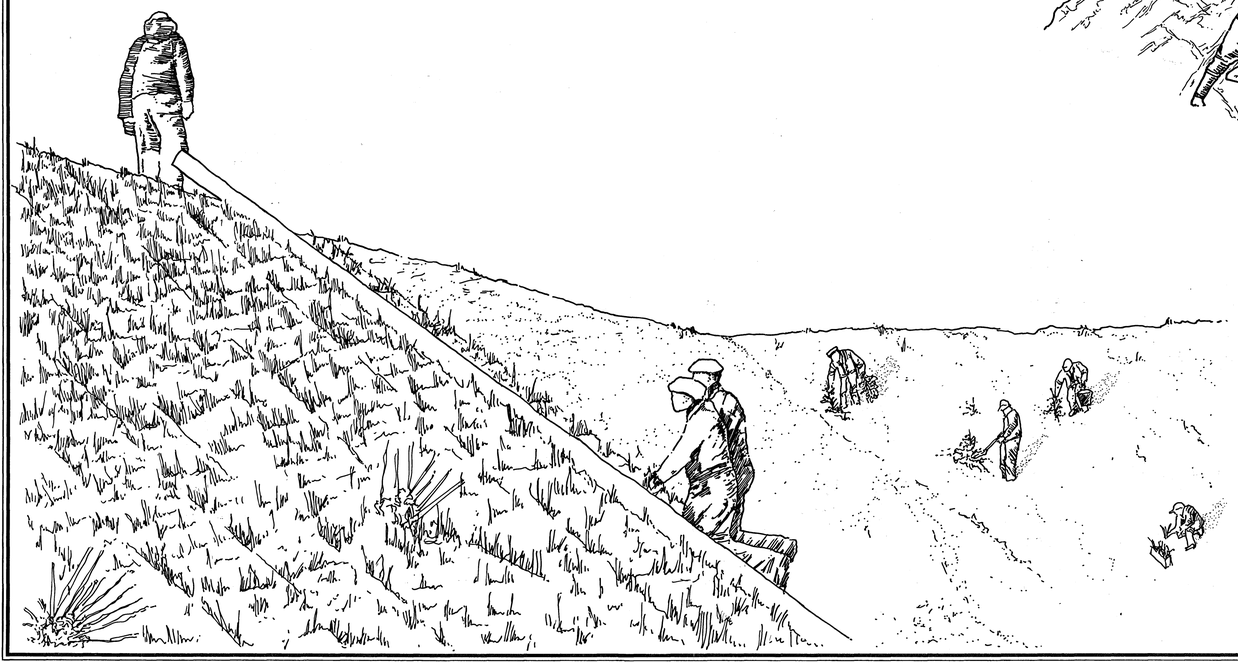


Hand-labor was employed for grading and excavation at the top of the bluff, which was initially inaccessible to power machinery. A hand-operated mining-style railway was used to haul rocks and fill. Long chutes were constructed to dump excess material out of sight well below the road.

The steep and highly erosive sandstone bluff presented significant challenges for road builders. The severe terrain limited the amount of equipment and labor that could be used at one time and made it difficult to employ conventional power machinery. The steep slopes and constant threat of rock slides necessitated a variety of stabilizing techniques, ranging from gunite patches to prevent cave-ins and rockfall to extensive plantings and other measures designed to minimize erosion.



A major rockslide in the spring of 1934 sent 100 cubic yards of rock crashing into the roadway, crushing an unoccupied truck. gunite was sprayed on the steepest slopes to stabilize them.



Newly graded areas were gently sloped and then sodded to resist erosion. Planting seedlings for trees and bushes helped anchor the sod, retain moisture, and promote soil stabilization.

DELINEATED BY: *Brandy Dubs, 2000*

NPS ROADS & BRIDGES RECORDING PROGRAM
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GERING

SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY
NEBRASKA

SHEET 5 of 10

HISTORIC AMERICAN ENGINEERING RECORD
NE-11

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TRIM LINE

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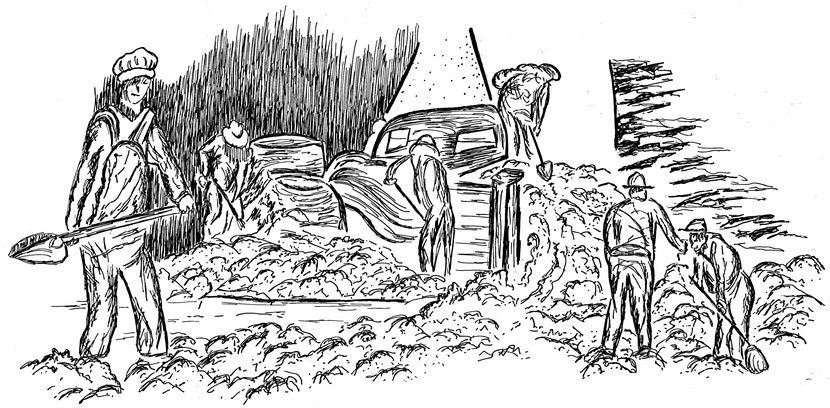
PUTTING MEN TO WORK



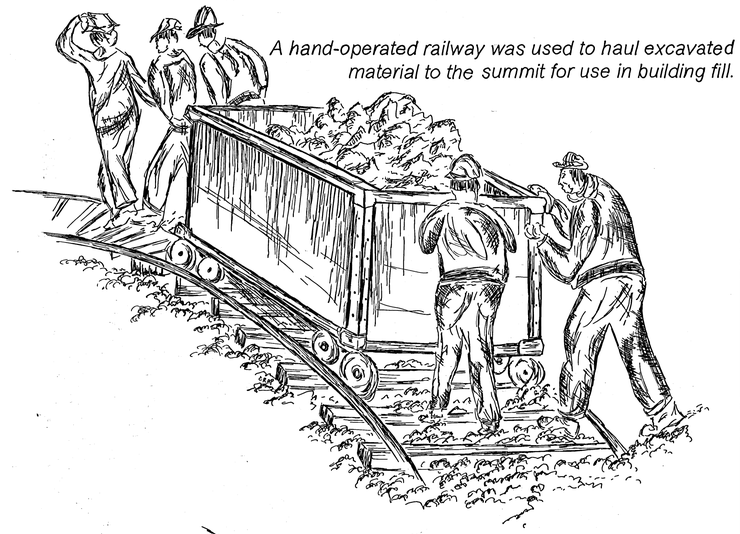
Shift change at summit parking area.

Workers carried culverts and all other materials and tools by hand to the summit.

Men loading dump trucks by hand during the excavation of Tunnel No.1.



A hand-operated railway was used to haul excavated material to the summit for use in building fill.



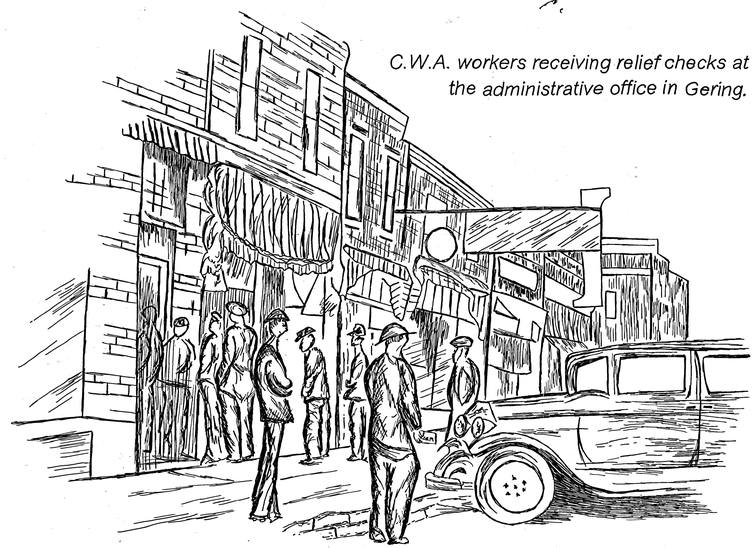
"CCC work...achieves the double purpose of building parks and building men." -1937 CCC Handbook



CCC enrollees used picks and shovels to slope the banks beneath the roadway.



C.W.A. workers receiving relief checks at the administrative office in Gering.



Putting Men to Work

The Great Depression devastated western Nebraska's agricultural economy, creating a desperate need for relief employment. Local politicians and park administrators found mutual benefit in the federal relief projects that funded road construction while providing needed jobs for local workers. Beginning in 1933, construction of the Summit Road employed hundreds of men, with federal funding provided by New Deal programs including the Civil Works Administration (CWA), Public Works Administration (PWA), and Civilian Conservation Corps (CCC). In order to employ as many workers as possible, labor-intensive processes supplanted the use of heavy equipment wherever practicable. This extensive use of hand labor enabled those unskilled in construction work to participate in the project. For both the Park Service and public works agencies, the objective was not simply to construct a roadway but to rebuild the economic and physical health of the community by giving work to the unemployed and teaching them new skills.

SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY
NEBRASKA
SHEET 6 OF 10
HISTORIC AMERICAN ENGINEERING RECORD NE-11

DELINEATED BY: *Christine Magdalenos, 2000*

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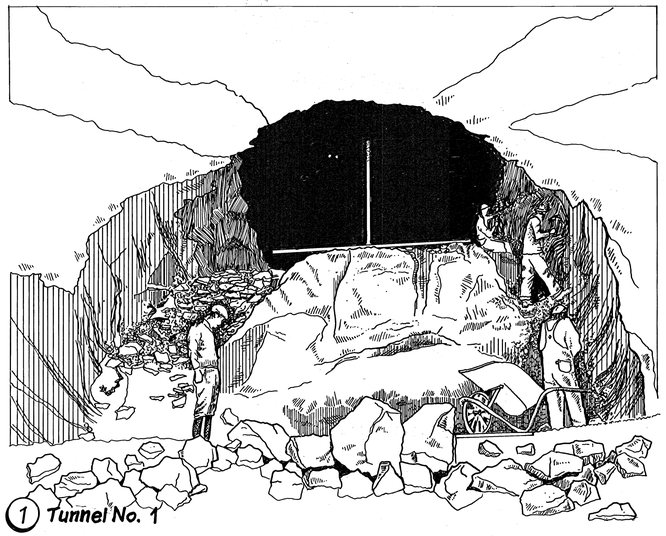
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TUNNEL CONSTRUCTION

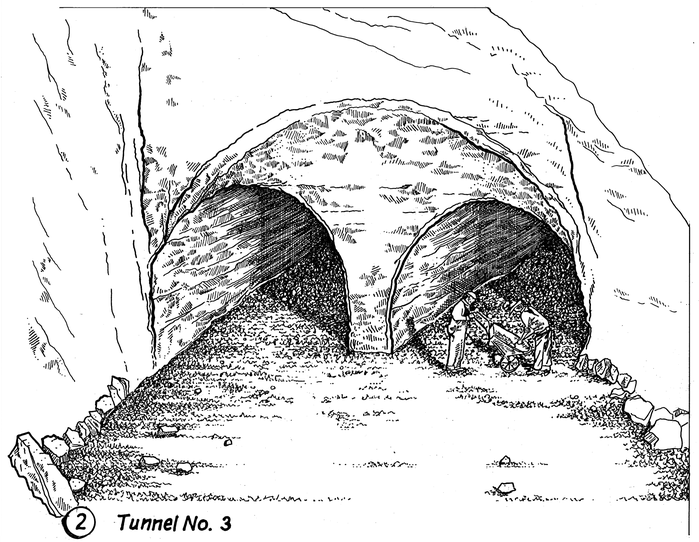


(1) Tunnel No. 1

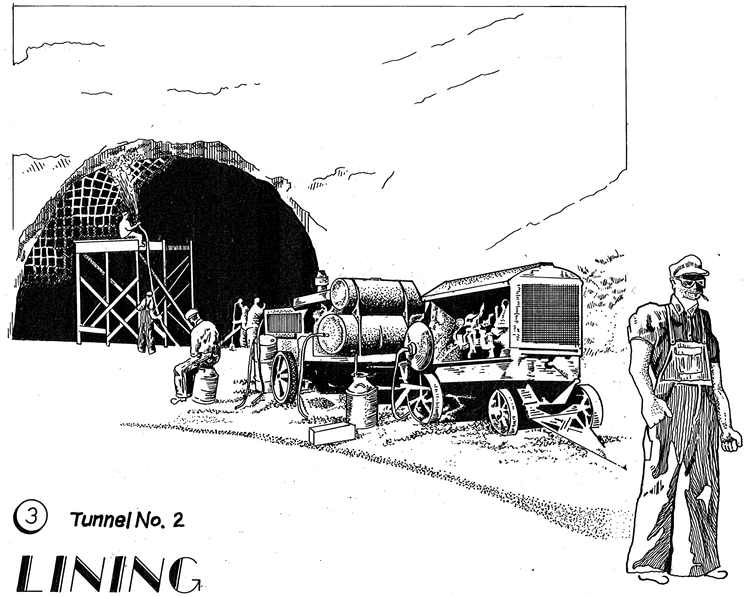
EXCAVATION

1. Excavation began in the fall of 1933 with a four-man crew working on the lower entrance to Tunnel No. 1. Workers initially used only manual tools such as picks and shovels, but the Brule clay of the first two tunnels proved stable enough to accommodate careful dynamite blasting.

2. The ashy composition of Tunnel No. 3 was found to be less stable than that of the others. In order to support the roof of this tunnel during the excavation process, engineers initially bored two smaller tunnels into the rock, leaving a center wall between them. The unique appearance of this double-barreled structure led planners to consider retaining this configuration, but the tunnel was later excavated to match the others.



(2) Tunnel No. 3

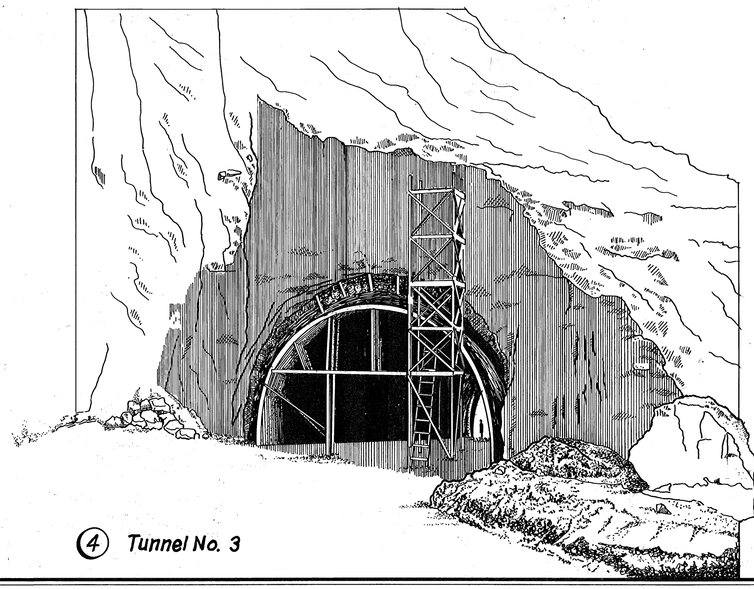


(3) Tunnel No. 2

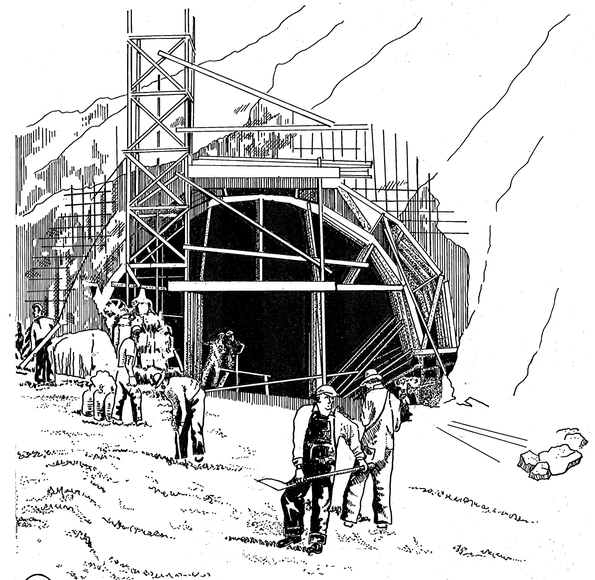
LINING

3. In the spring of 1934, concern was expressed that the constant high prairie wind would rapidly erode the newly exposed rock surfaces. In June 1935, the first two tunnels were lined with a metal mesh attached with galvanized spikes to the tunnel walls. Gunite, a highly liquid form of concrete, was then applied to a thickness of about 4 inches.

4. The instability of the rock at the third tunnel site necessitated a 12" reinforced concrete lining. Concrete was poured in 12'6" sections using movable forms. Test beams were obtained from each pour to ascertain when the steel forms could be moved.



(4) Tunnel No. 3

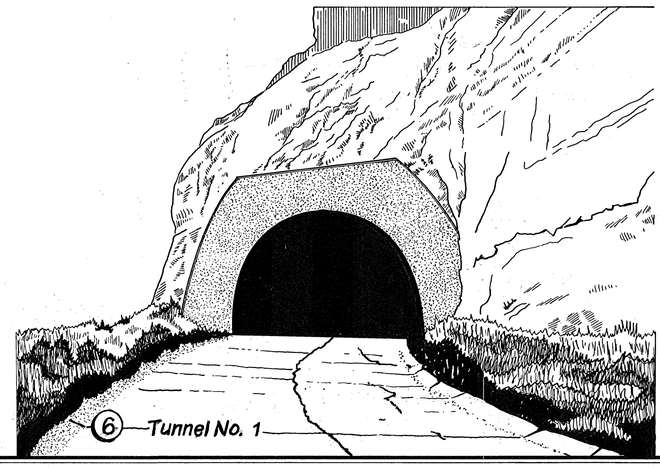


(5) Tunnel No. 3

PORTALS

5. In March 1939, portals were constructed at the lower entrances to Tunnels No. 2 and 3. These reinforced concrete portals stabilized the ends of the bore, acted as rockfall catches, and provided pleasing entrances for motorists. Once construction was finished, the portal walls were sandblasted and then coated with a colored gunite wash in an attempt to blend the construction features with the bluff. The shade was carefully matched to the rock surface as well as to the stucco of the headquarters buildings below.

6. Concerned about the continuing threat of rockslides, the Federal Highway Administration designed and built additional portals at both entrances to Tunnel No. 1 and the upper entrance to Tunnel No. 2. On the upper entrance to Tunnel No. 3, concrete was pumped to fill the area behind the existing tunnel liner, which had originally extended several feet from the rock face. This work was undertaken in 1989.



(6) Tunnel No. 1

DELINEATED BY: Todd Delyea 2000

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SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY NEBRASKA

SHEET 7 OF 10

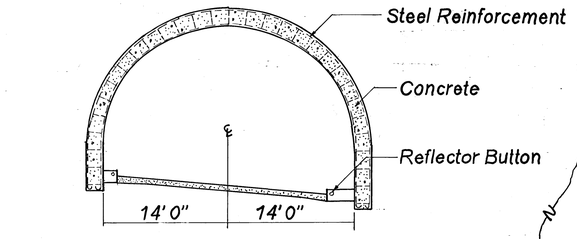
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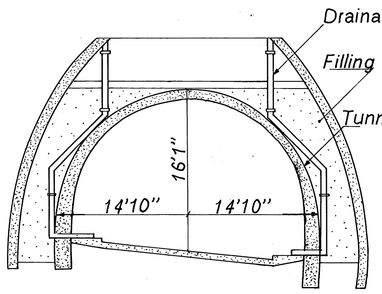
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SCOTTS BLUFF TUNNEL DESIGN

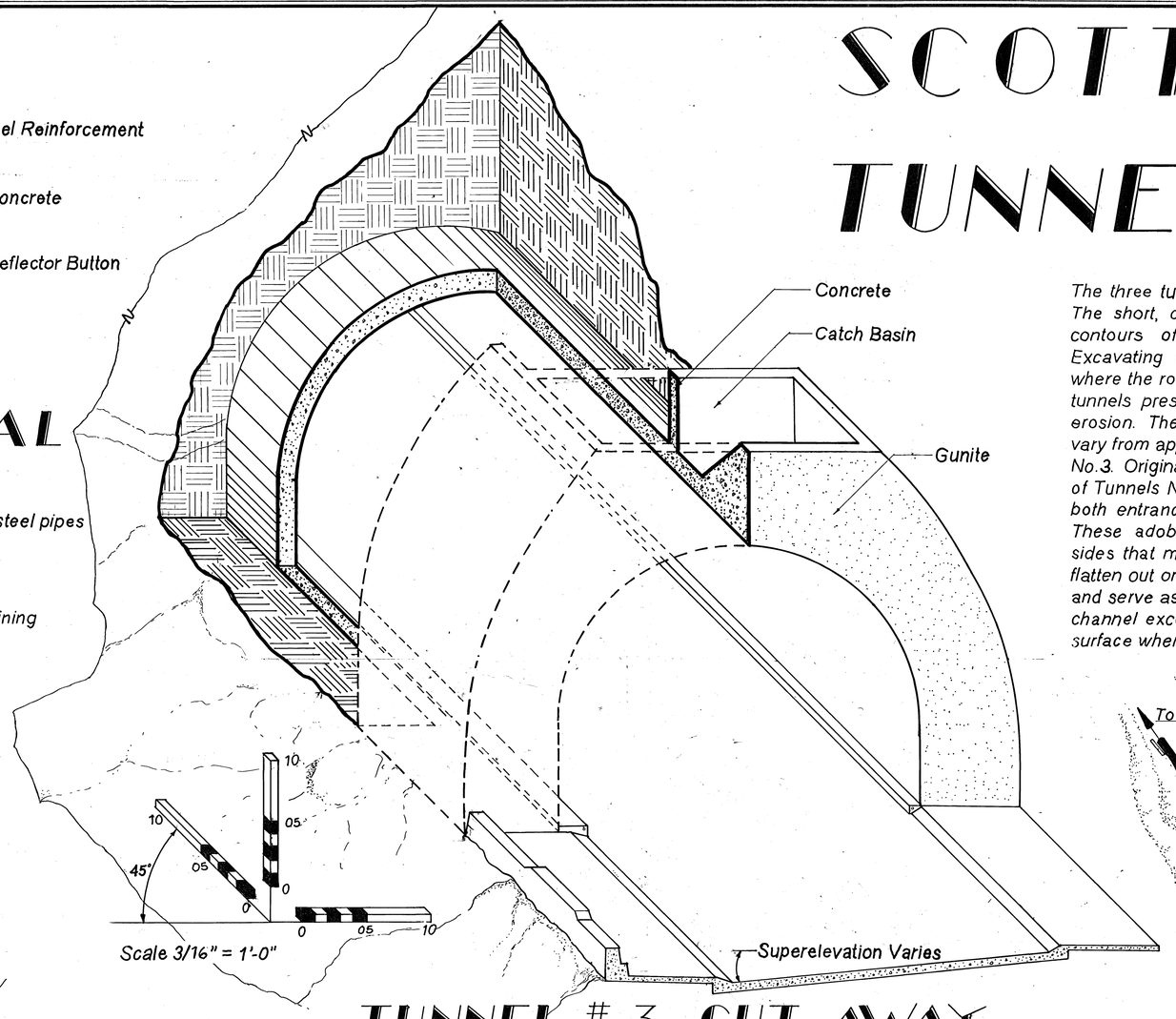


UPHILL PORTAL

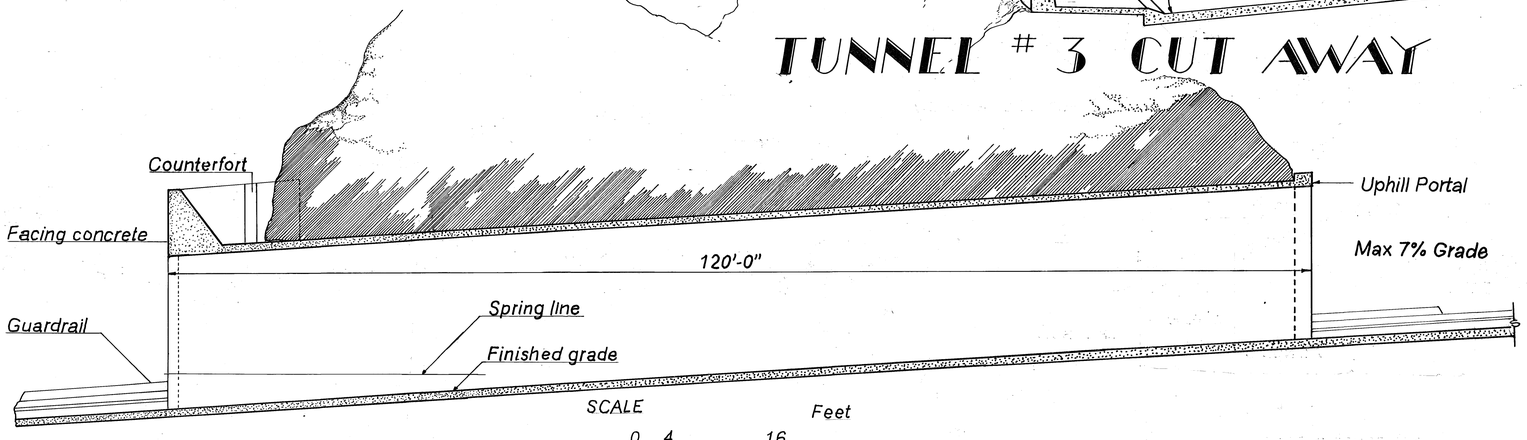


Portal typical drainage system

SECTION

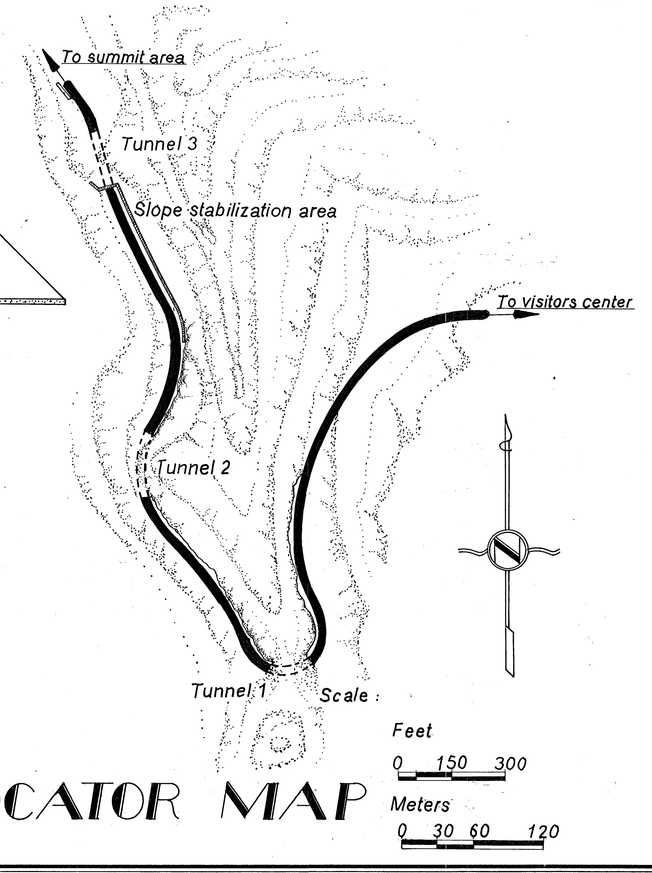


TUNNEL # 3 CUT AWAY



LONGITUDINAL SECTION

The three tunnels are an integral component of the design scheme. The short, curving tunnels enabled the road to closely follow the contours of the bluff while minimizing unsightly excavation. Excavating the road completely would have left unsightly scars where the road crossed prominent ridges. Placing the roadway in tunnels preserved the view while protecting the construction from erosion. The tunnels range in length from 120 to 200 feet. Widths vary from approximately 29.5 feet at Tunnel No. 1 to 28 feet at Tunnel No. 3. Originally, portals were designed only for the lower entrances of Tunnels No. 2 and No. 3. In 1989, new portals were designed for both entrances of Tunnel No. 1, and the upper entrance of No. 2. These adobe-colored, reinforced concrete portals feature curving sides that match the semicircular arcs of the tunnel openings, and flatten out on top. The portals extend 12 to 40 feet from the rock face and serve as catch basins for water and falling rock. Drainage outlets channel excess water through the portal walls and onto the road's surface where it runs off into the integrated drop inlets.



LOCATOR MAP

HISTORIC AMERICAN ENGINEERING RECORD NE-11

SHEET 8 OF 10

NEBRASKA

SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY

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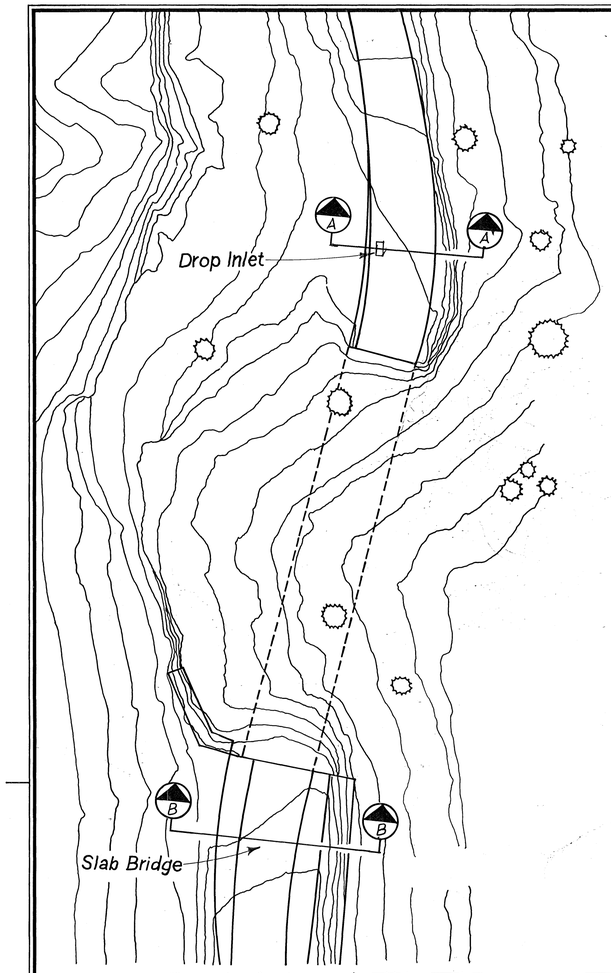
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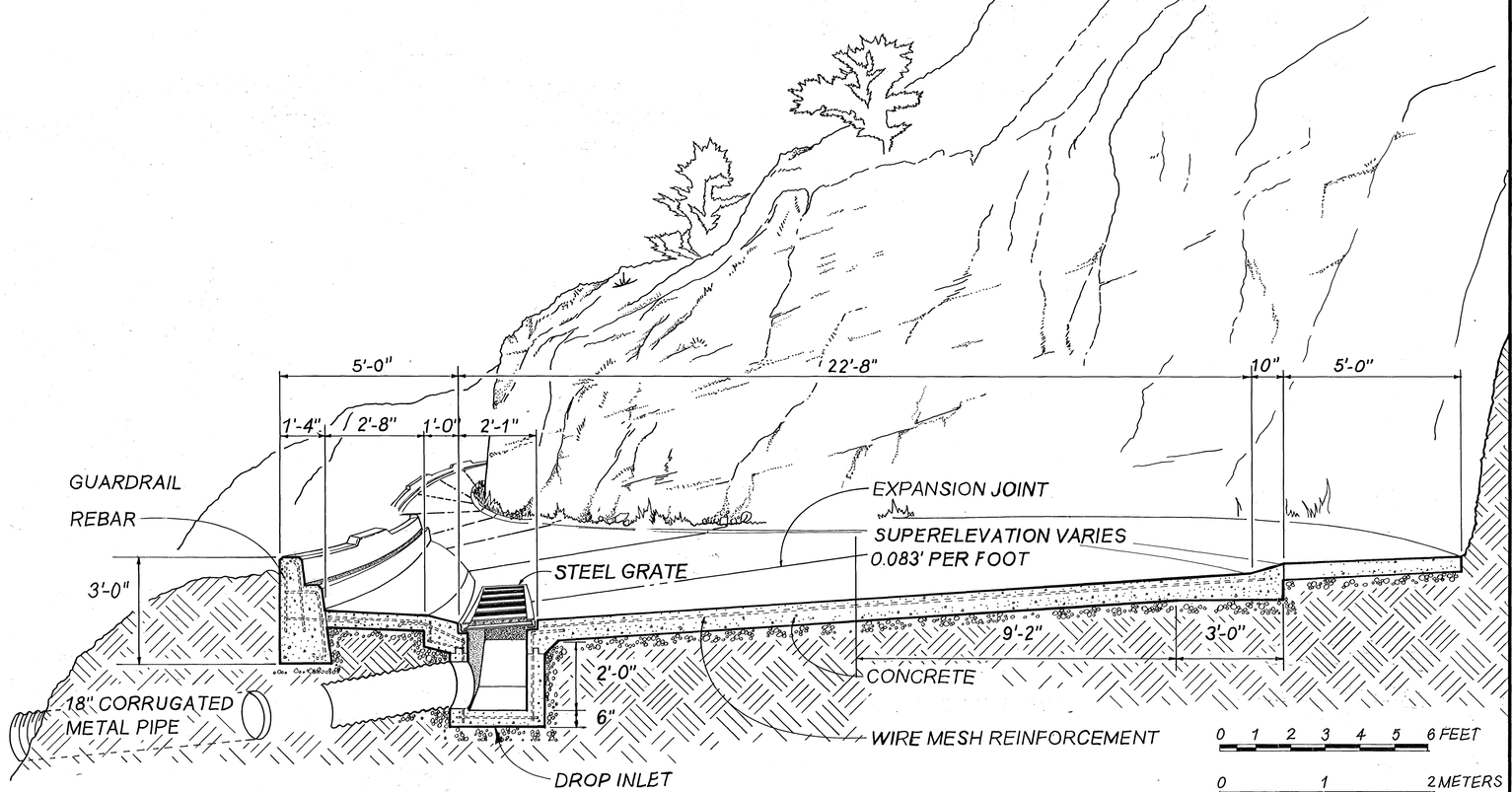
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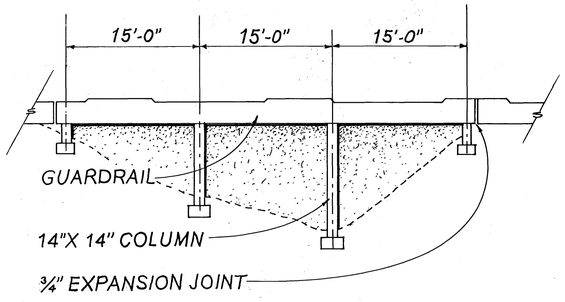
SUMMIT ROAD DESIGN



PLAN AT TUNNEL #3

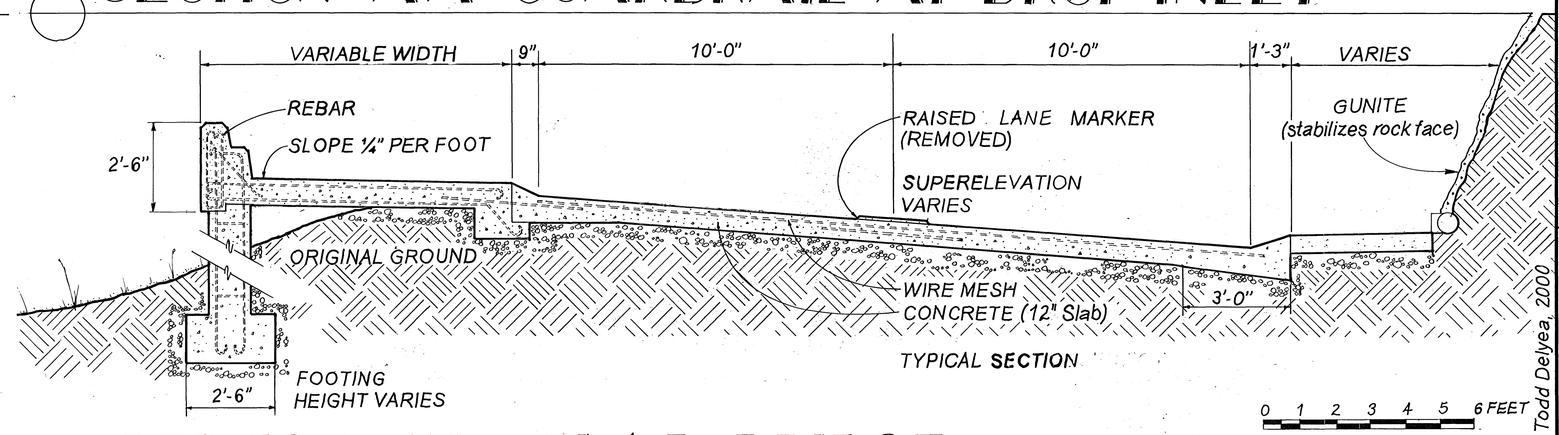


SECTION AA GUARDRAIL AT DROP INLET



SLAB BRIDGE

ELEVATION



SECTION BB SLAB BRIDGE

SCALE: ½" = 1'-0"

DELINEATED BY: Todd Delyea, 2000

SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY
NEBRASKA

SHEET 9 OF 10

HISTORIC AMERICAN ENGINEERING RECORD NE-11

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TRIM LINE

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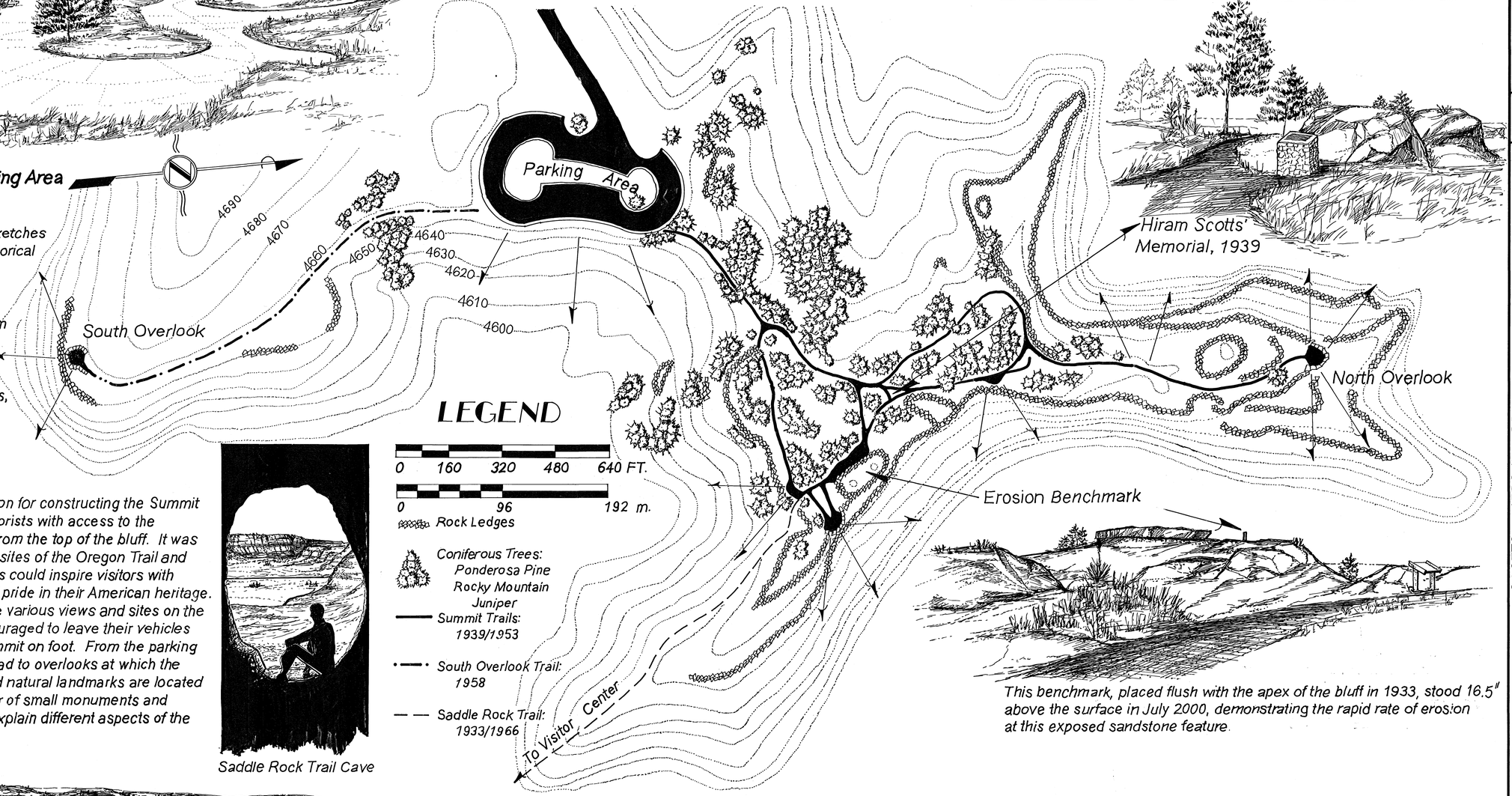
SUMMIT DEVELOPMENT



View of Summit Parking Area

Drawing based on field sketches and photographs and historical photographs.

Summit Map adapted from USGS 7.5 Minute Series, Scottsbluff South Quad., Nebraska, 1963 and original design documents, 1948.



LEGEND

0 160 320 480 640 FT.

0 96 192 m.

Rock Ledges

Coniferous Trees:
Ponderosa Pine
Rocky Mountain Juniper

Summit Trails: 1939/1953

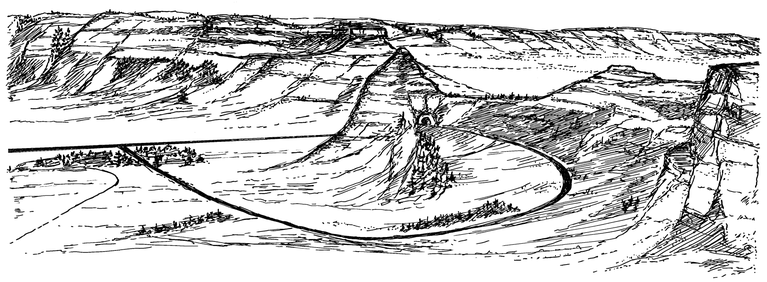
South Overlook Trail: 1958

Saddle Rock Trail: 1933/1966

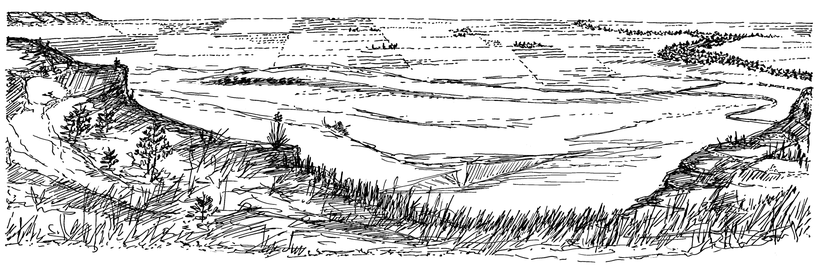
The primary motivation for constructing the Summit Road was to provide motorists with access to the panoramic views visible from the top of the bluff. It was believed that viewing the sites of the Oregon Trail and other important landmarks could inspire visitors with feelings of patriotism and pride in their American heritage. In order to experience the various views and sites on the summit, visitors are encouraged to leave their vehicles behind to explore the summit on foot. From the parking lot, two short foot trails lead to overlooks at which the surrounding historical and natural landmarks are located and described. A number of small monuments and plaques along the trails explain different aspects of the site.

Saddle Rock Trail Cave

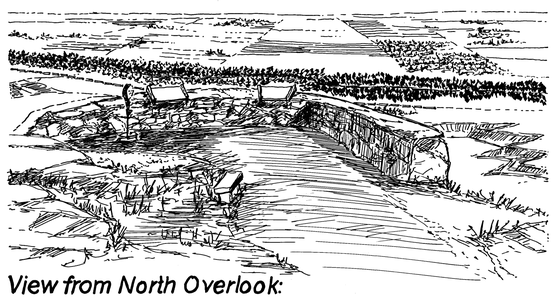
This benchmark, placed flush with the apex of the bluff in 1933, stood 16.5" above the surface in July 2000, demonstrating the rapid rate of erosion at this exposed sandstone feature.



View from South Overlook:
Opening stretch of Summit Road and Saddle Rock Trail; Tunnel No. 1; Visitor Center; and Mitchell Pass, framed by Eagle Rock and Sentinel Rock.



View Westward:
North Platte River; Oregon Trail Route; Nebraska farm and ranch land.



View from North Overlook:
North Platte River; Union Pacific Railroad; badlands, and the towns of Gering and Scottsbluff.

HISTORIC AMERICAN ENGINEERING RECORD NE-11

SHEET 10 OF 10

NEBRASKA

SCOTTS BLUFF SUMMIT ROAD
SCOTTS BLUFF NATIONAL MONUMENT
SCOTTS BLUFF COUNTY

GERING

DELINEATED BY: Stacey Heckaman, 2000

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INDEX TO PHOTOGRAPHS

SCOTTS BLUFF SUMMIT ROAD
Scotts Bluff National Monument
Gering
Scotts Bluff County
Nebraska

HAER No. NE-11

INDEX TO BLACK AND WHITE PHOTOGRAPHS

David W. Haas, Photographer, May 2000

NE-11-1 ROUTE 92, EAST ENTRANCE SIGN WITH VIEW TO MITCHELL PASS. VIEW NW.

NE-11-2 ROUTE 92, MUSEUM AND IIEADQUARTERS SIGN. VIEW NW.

NE-11-3 ENTRANCE TO MONUMENT AND VISITOR CENTER. VIEW NE.

NE-11-4 VISITOR CENTER PARKING LOT. VIEW NW.

NE-11-5 VISITOR CENTER AMPHITHEATER. VIEW NW.

NE-11-6 COVERED WAGONS AT VISITOR CENTER. VIEW NW.

NE-11-7 OREGON TRAIL, NEBRASKA STATE MARKER. VIEW S.

NE-11-8 OREGON TRAIL, ORIGINAL CUT AND MARKER POST. VIEW E.

NE-11-9 OREGON TRAIL FOOTPATH WITH VIEW OF SUMMIT ROAD TUNNELS. VIEW NE.

NE-11-10 OREGON TRAIL VIEW TOWARD MITCHELL PASS. VIEW S.

NE-11-11 SUMMIT ROAD, LOWER TUNNEL, LOWER ENTRANCE. VIEW SW.

NE-11-12 SUMMIT ROAD, LOWER TUNNEL, UPPER ENTRANCE. VIEW S.

NE-11-13 SUMMIT ROAD, LOWER TUNNEL, GUNITE DETAIL AND VIEW TO MIDDLE TUNNEL. VIEW N.

NE-11-14 SUMMIT ROAD, MIDDLE TUNNEL, INTERIOR VIEW. VIEW S.

NE-11-15 SUMMIT ROAD, MIDDLE TUNNEL, UPPER ENTRANCE. VIEW SW.

NE-11-16 SUMMIT ROAD, DRAIN GRATE BETWEEN MIDDLE AND UPPER TUNNELS. VIEW N.

NE-11-17 SUMMIT ROAD, UPPER TUNNEL, LOWER ENTRANCE. VIEW N.

NE-11-18 SUMMIT ROAD, UPPER TUNNEL, VIEW FROM INSIDE OUT TO GUNITE WALL. VIEW SE.

NE-11-19 SUMMIT ROAD, UPPER TUNNEL, UPPER ENTRANCE. VIEW S.

NE-11-20 SUMMIT ROAD, VIEW OF CUT THROUGH ROCK. VIEW SW.

NE-11-21 SUMMIT ROAD, ROAD ALIGNMENT VIEW JUST BEFORE THE SUMMIT. VIEW N.

NE-11-22 SUMMIT ROAD, PARKING LOT AT THE SUMMIT. VIEW S.

NE-11-23 RETAINING WALL ALONG NORTH OVERLOOK TRAIL. VIEW W.

NE-11-24 SCOTT MEMORIAL ALONG NORTH OVERLOOK TRAIL. VIEW N.

NE-11-25 VIEW FROM ABOVE NORTH OVERLOOK. VIEW NW.

NE-11-26 VIEW FROM ABOVE SOUTH OVERLOOK WITH SUMMIT ROAD AND VISITOR CENTER. VIEW SW.

NE-11-27 FOOTPATH TO THE SUMMIT, VIEW TO VISITOR CENTER. VIEW SW.

NE-11-28 SADDLE ROCK TRAIL, VIEW FROM TUNNEL TOWARD VISITOR CENTER. VIEW SW.

NE-11-29 INTERIOR OF SADDLE ROCK TRAIL TUNNEL. VIEW SW.

NE-11-30 NORTH ENTRANCE OF SADDLE ROCK TRAIL TUNNEL AND RETAINING WALL. VIEW S.

NE-11-31 IRRIGATION CANAL WITHIN MONUMENT BOUNDARY. VIEW SE.

NE-11-32 BIKE PATH AT BOUNDARY WITH TOWN OF GERING. VIEW SW.

NE-11-33 BIKE PATH AND ELECTRIC POWER LINES WITHIN MONUMENT BOUNDARY. VIEW W.

NE-11-34 HOUSING DEVELOPMENT JUST OUTSIDE MONUMENT BOUNDARY, BLUFF IN BACKGROUND. VIEW SW.

NE-11-35 WEST WALL OF BLUFF, SHOWING SUMMIT ROAD DRAINAGE EROSION. VIEW E.

NE-11-36 CONCRETE SLAB BRIDGE ON OLD ROAD TO PICNIC SITE. VIEW SE.

NE-11-37 ROUTE 92, VIEW OF MITCHELL PASS FROM THE WEST. VIEW E.

INDEX TO HISTORIC PHOTOGRAPHS

All of these images are photographic copies of historic photographs located in the archives at Scotts Bluff National Monument, Gering, Nebraska. Unless otherwise noted, the photographer is unknown.

NE-11-38 circa 1933
C.W.A., CHANGING SHIFTS ON THE SCOTTS BLUFF PARKING AREA WORK, CLOSE UP ON THE HILL AT THE BEGINNING OF WORK. VIEW SW.

NE-11-39 December 20, 1933
C.W.A., PARKING AREA WORK, SHORTLY BEFORE WORK STARTED ON SCOTTS BLUFF NATIONAL MONUMENT ROAD. VIEW N.

NE-11-40 December 20, 1933
VIEW OF PORTAL SITE, TUNNEL NO. 1, CWA MEN FACING THE PORTAL. "STRIPPING THE HILLSIDE GRULE [sic] FORMATION BETWEEN TUNNELS 1 AND 2."

NE-11-41 December 29, 1933

VIEW SHOWING THE METHOD OF SODDING THE SLOPE OF UPPER SCOTTS BLUFF PARKING AREA.

NE-11-42 January 5, 1934
MAN-POWERED RAILWAY ON THE CREST OF SCOTTS BLUFF, C.W.A. LABOR. ALL EQUIPMENT WAS CARRIED BY THESE MEN, MORE THAN A MILE FROM THE BASE TO THE CREST OF THE BLUFF, BEFORE IT WAS SET UP FOR OPERATION.

NE-11-43 January 27, 1934
C.W.A. MEN LINED UP TO RECEIVE THEIR CHECKS AT THE SCOTTS BLUFF NATIONAL MONUMENT PROJECT OFFICE.

NE-11-44 February 20, 1935
Frank H. Shoemaker, photographer
"SUMMIT ROAD CONSTRUCTION, C.W.A., 1935 - VIEW FROM SUMMIT TO FIRST TUNNEL."

NE-11-45 March 26, 1935
VIEW OF THE BIG SLIDE OF SEVERAL HUNDRED CUBIC YARDS OF ROCK, SPRING OF 1934. ANOTHER SLIDE OCCURRED AT THIS SAME LOCATION ON MAY 26, 1935.

NE-11-46 Date unknown.
EARLY STAGE OF ROAD TUNNEL CONSTRUCTION.

NE-11-47 Spring 1935
Harold J. Cook, photographer
"SUMMIT ROAD CONSTRUCTION. EARLY STAGE OF ROAD TUNNEL CONSTRUCTION, WHILE TUNNEL WAS BEING DRIVEN ON SUMMIT ROAD, SCOTTS BLUFF NATIONAL MONUMENT."

NE-11-48 September 1936
"SUMMIT ROAD CONSTRUCTION - GRADING, CONTRACT - OVERHANG BELOW SECOND TUNNEL."

NE-11-49 May 1937
"SUMMIT ROAD CONSTRUCTION - PAVING, CONTRACT - BELOW THIRD TUNNEL."

NE-11-50 July 1937
"SUMMIT ROAD CONSTRUCTION - PAVING, CONTRACT - TURNSTILE FOR DUMP TRUCKS."

NE-11-51 May 1939
"SUMMIT ROAD CONSTRUCTION - TUNNEL PORTALS - BELOW SECOND TUNNEL."

NE-11-52 June 1939
"SUMMIT ROAD CONSTRUCTION - TUNNEL PORTALS - COMPLETION OF PORTAL AT SECOND TUNNEL."

NE-11-53 August 1939
"SUMMIT ROAD CONSTRUCTION - TUNNEL GUNNITING - FIRST TUNNEL."

INDEX TO COLOR TRANSPARENCIES

All color xerographic copies were made from a duplicate color transparency.

David W. Haas, Photographer, May 2000

NE-11-54 (CT) COVERED WAGONS AT VISITOR CENTER. VIEW NW.

NE-11-55 (CT) SUMMIT ROAD, LOWER TUNNEL, UPPER ENTRANCE. VIEW S.

NE-11-56 (CT) FOOTPATH TO THE SUMMIT, VIEW FROM TUNNEL TOWARD VISITOR CENTER. VIEW SW

NE-11-57 (CT) SUMMIT ROAD, VIEW OF CUT THROUGH ROCK WITH GUIDERAIL. VIEW NE.

FUJIFILM RDPIII 00155 AE EHFA


FUJIFILM RDPIII 00353 CB CFHB


FUJIFILM RDPIII 00155 AE EHFG


FUJIFILM RDPIII 00353 CB CFH I


UNITED STATES
DEPARTMENT OF THE INTERIOR
SCOTTS BLUFF
NATIONAL MONUMENT


NATIONAL PARK SERVICE
MUSEUM AND
HEADQUARTERS
SCOTTS BLUFF NATIONAL MONUMENT


STOP
SPEED LIMIT 15
ENTRANCE STATION








OREGON
TRAIL
MARKED BY
THE STATE OF
NEBRASKA
1912
TRAIL PASSED
37 FEET NORTH
OF THIS POINT
MITCHELL
PASS











HAER NO. NM-11-13



HAER NO. NJ-11-15

HAER NO. NB-33-116












HAER NO. NM-1-23

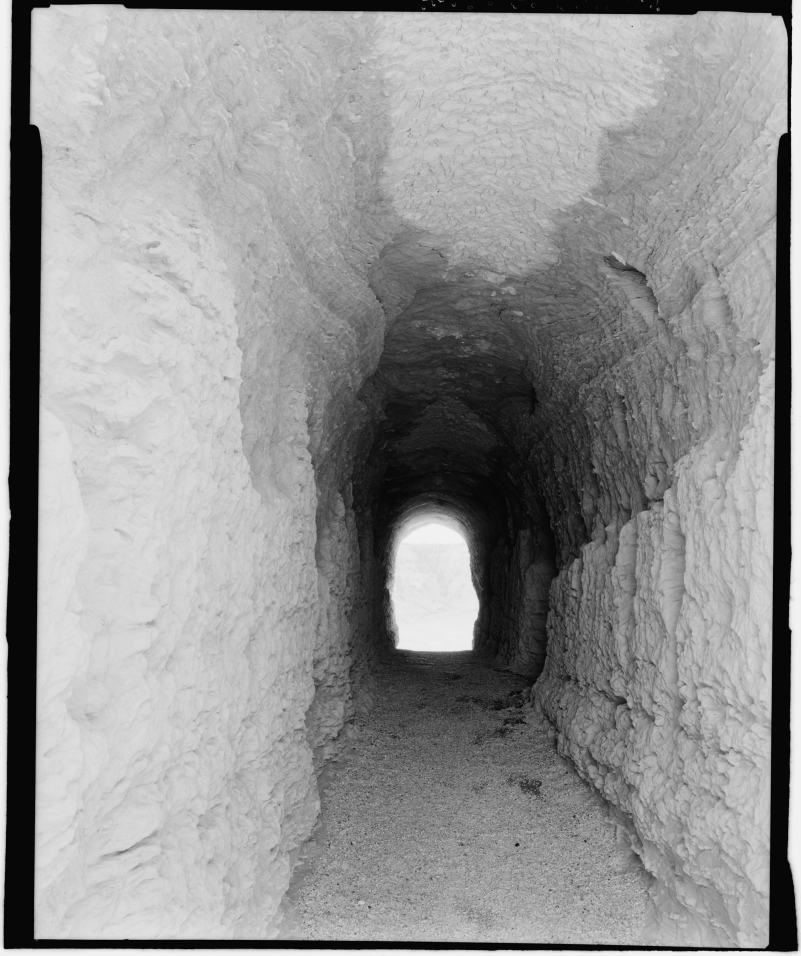

HAER NO. NE-11-24


REBECCA WINTERS
MEMORIAL
1812 — 1852

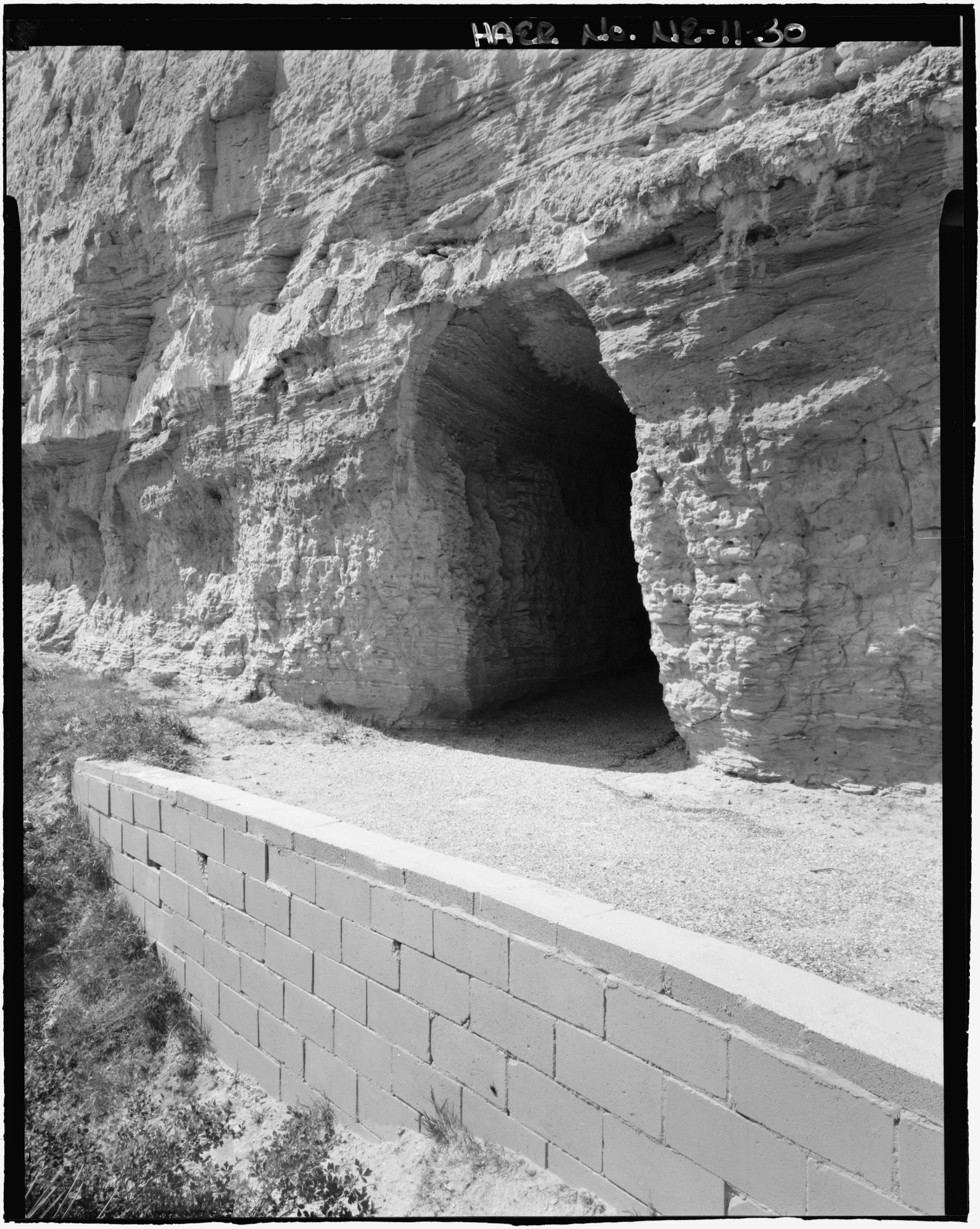




HABS N.M.-1-57



HAER NO. NE-11-30






SOUTH BLUFF
NATIONAL MONUMENT



MONUMENT DR
MONUMENT
HGTS

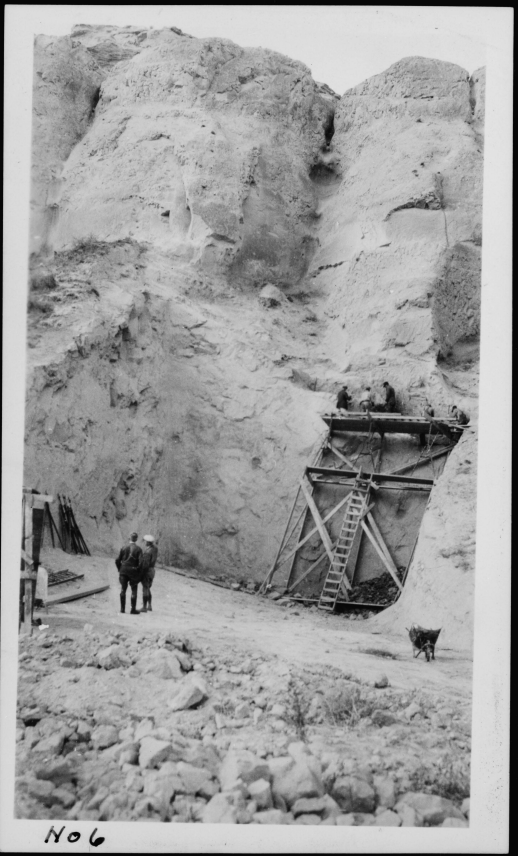
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HAER NO. NE-11-3



HAZE No. 45-11-3

H.R.2. No. 11-27-34



No 6

11-SN-2 Dec 42

HPOZ No. NC-11-42



67

Hase No. 11-27-43

HABS No. NE-11-44

SUMMIT ROAD
CONSTRUCTION, CWA, 1935 - view from summit to first tunnel



photo by
2/20/35

no negat



98

HAER No. NEB-11-45

HABE No. 13-11-46

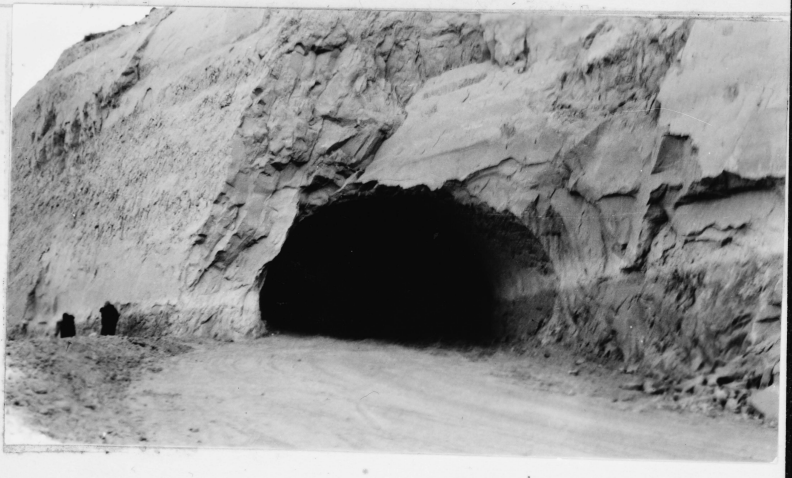


21974

44-11-3N-No. 2821

SENM

hang below second tunnel



sbl37 - MJM - 9/36

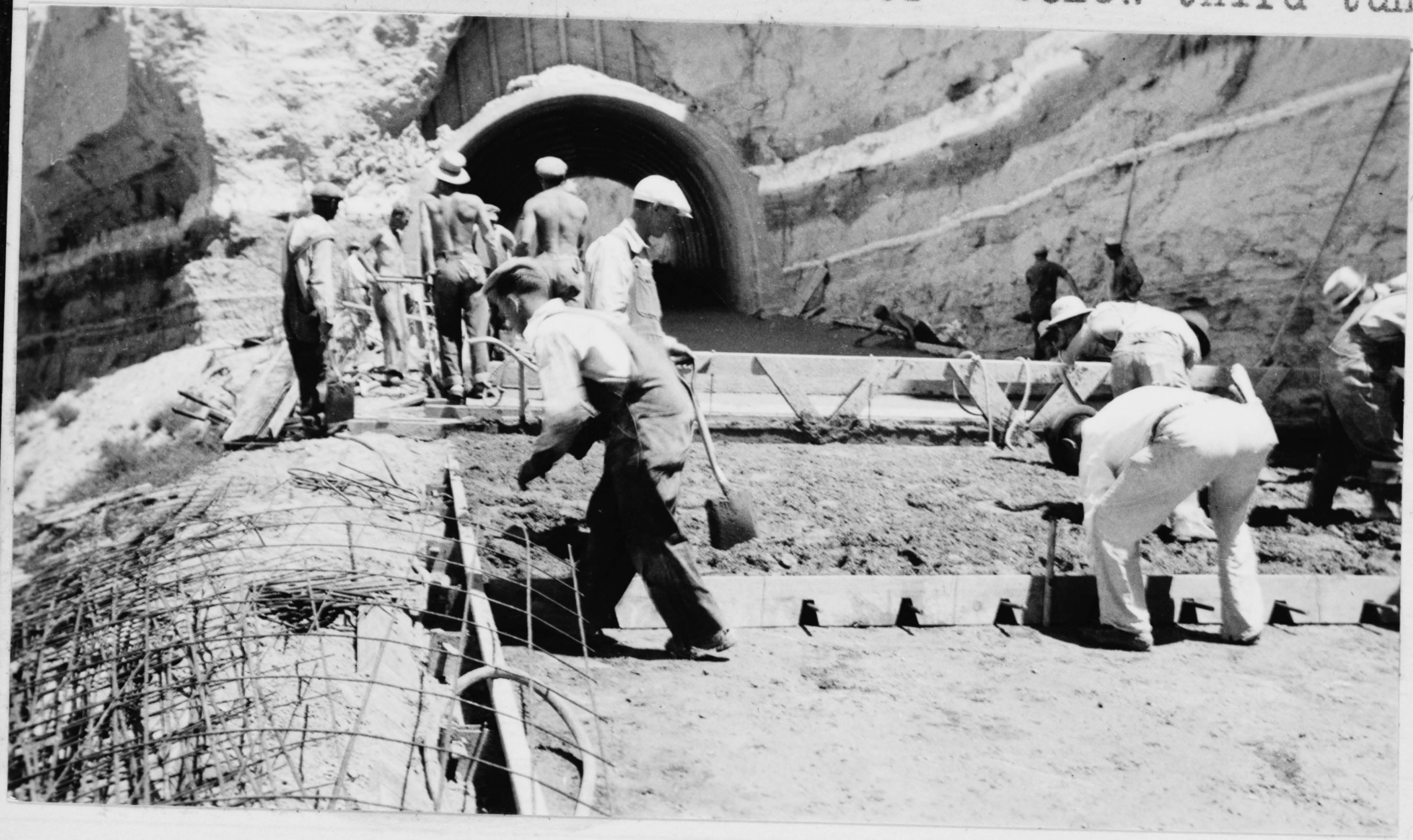
9/36

rhang

HAER No. NE-11-49

SUMMIT ROAD
CONSTRUCTION - PAVING, CONTRACT - below third tunnel

sb2



SBNM

nstile for dump trucks

37



HAER No. NB-11-52

HAER No. NE-11-51

SUMMIT ROAD
CONSTRUCTION - TUNNEL PORTALS - below second tunnel

sb7



HAER No. NE-11-52

SUMMIT ROAD
CONSTRUCTION - TUNNEL PORTALS - completion of portal

sb8



SUMMIT ROAD

CONSTRUCTION - TUNNEL GUNNITING - first



sb845

HAER No. NJ-11-53