The Adobe Tower
by Jerry Hall and Loretta Hall

Grandfather of the Interstate System

Dwight Eisenhower is known as the Father of the Interstate System because he moved the system from concept to pavement. Similarly, the title of Grandfather of the Interstate System should belong to none other than Thomas Jefferson. It was Jefferson who, in 1806, signed the legislation authorizing construction of the nation's first federally funded interstate highway.

When Jefferson assumed the Presidency in 1801, the fledgling United States faced a significant geographical challenge. The future states of Ohio, Indiana, Illinois, Michigan, and Wisconsin were being formed out of the 260,000-square-mile Northwest Territory, which was separated from the eastern states by the Appalachian Mountains. Easterners wanted easier access to plentiful western land, including both the Northwest Territory and, after 1803, the Louisiana Purchase. On the other hand, recalcitrant westerners distrusted the federal government and disdained its authority. Jefferson agreed, especially in the wake of the Whiskey Rebellion, with George Washington's opinion that improved transportation would decrease the isolation of the westerners and improve national unity.

Jefferson's Treasury Secretary, a surveyor named Albert Gallatin, devised a plan to unite the two disparate parts of the nation. At Gallatin's urging, the Ohio statehood act passed by Congress in 1802 provided for construction of a road connecting the new state with the Eastern seaboard. The act authorized the federal government to pay for the road from a fund created by reserving 2 percent of the proceeds from selling public land located in Ohio. Four years later, Congress passed legislation that furthered Gallatin's plan by authorizing construction of a "National Road" that would reach from the Ohio River to Cumberland, Maryland, where it would connect with an existing road leading to Baltimore. By signing this legislation, Jefferson paved the way for federal involvement in the construction of interstate roads.

This project was a monumental undertaking for the young republic. Construction of the 131-mile road from Cumberland to Wheeling, West Virginia, took seven years to complete. It cost $1.75 million — more than double the original estimate of $6,000 per mile. The cost would have been even higher, but much of the right-of-way was donated by landowners anxious to have their property served by the new road.

The National Road, also known as the Cumberland Road, used the best technology available and was designed for efficient travel. Although the road crossed the Appalachian Mountain range, the grade was limited to a maximum of 5 degrees (8.75 percent). The roadway consisted of a traffic-bearing structure with what amounted to 6-foot-wide shoulders with a finished surface.

Construction began by clearing the 66-foot-wide right-of-way of obstacles such as trees and rocks. To prepare the travel "lanes," workers then hand dug a 20-foot-wide trench down the center of the right-of-way. Using round-headed iron hammers, workers broke rocks and sorted them by passing them through 7-inch and 3-inch rings. A layer of the larger stones was placed first and then topped with a layer of the smaller ones. Together, the two layers filled the 12-inch-

deep trench, and a crown was created by piling the stones to a depth of 18 inches at the roadway center. The rock base was covered with gravel or sand and compacted with a 3-ton roller.

By the time the road reached Wheeling in 1818, plans called for extension of the route through Ohio, Indiana, and Illinois — all the way to St. Louis. That would bring its overall length to 812 miles. Even as preparations for the extension proceeded, repair work began on the original road, as heavy use by horses, herds, covered wagons, and stagecoaches had caused deterioration. By the late 1820s, the McAdam process was being used for repairs and construction.

During the original construction, stone mile markers were placed along the south side of the road at 5-mile intervals. In 1835, the stone markers were replaced with cast iron obelisks placed 1 mile apart. With a level of detail unlikely to be seen today, each marker displayed the distances to Wheeling, Cumberland, and the nearest town. At that same time, the federal government chose to turn over responsibility for the road to the states through which it passed, allowing them to finance repairs by collecting tolls (giving rise to the route being called the National or Cumberland Pike).

The National Road became the primary corridor for interstate travel, commerce, and mail delivery (including the Pony Express). Inns and taverns sprouted along its route, and nearby towns thrived because of the access. Its occasional title of the “Road that Built the Nation” attests to its success in unifying the established East and the developing West. When the Federal-Aid Highway System was defined in the 1920s, the road was absorbed as part of US 40. After the modern Interstate system was launched in 1956, I-68 and I-70 offered limited-access, high-speed alternatives to long-distance travelers.

Jerry Hall, a professor of Civil Engineering at the University of New Mexico, has served District 6 as president and international director. Loretta Hall, a member of the Society for Technical Communication and the Construction Writers Association, is a freelance writer concentrating on engineering and construction. They can be contacted at jerome@unm.edu and lorettahall@constructionwriters.org, respectively.

This is the first in a series of articles tracing the development of the Interstate Highway System.