

*In October 2008, the Society of American Foresters will hold its convention in Reno, Nevada. Attendees can visit nearby Virginia City, the home of America's first major "silver rush," the Comstock Lode. Virginia City was built over one of North America's largest silver deposits and a "forest of underground timbers." Demand for timber was satisfied by the large forest at the upper elevations of the Sierra Nevada, especially around Lake Tahoe. After discussing historical background, this article offers a short forest history tour based on Nevada historical markers and highlighting Lake Tahoe logging history.*

# TIMBER FOR THE COMSTOCK

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**G**old was discovered in western Nevada around 1850 by prospectors on their way to California. In early 1859, James Finney and a small group of prospectors discovered the first indications of silver ore near present-day Virginia City. Later that year other prospectors located the ledge of a major

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gold lode. Fellow prospector Henry Comstock claimed the ledge as being on his property and soon gained an interest in the area, and the strike became known as the Comstock Lode. Finney, nicknamed "Old Virginny" after his birthplace, reportedly named the collection of mining tents in honor of himself during a drunken celebration. As he watched precious whiskey seep from a broken bottle into the desert sand, he christened the new settlement "Old Virginny Town." In time, it became Virginia City and is now one of the best-preserved mining boom towns in the West.<sup>1</sup> Part of its enduring fame can be attributed to the long-running television series, *Bonanza*, which situated the Cartwright family's Ponderosa ranch near Virginia City.

Over the next twenty years, the 2½-mile deposit of high-grade ore would produce nearly \$400 million in silver and gold, create several fortunes, and lead to Nevada's early admission to the Union during the Civil War, even though it lacked the population required by the Constitution to become a state.<sup>2</sup> In 1873, a huge ore body of vast richness named the Big Bonanza was opened, and it made its four investors into tycoons.<sup>3</sup> Virginia City quickly became one of the most important cities between Chicago and San Francisco. But when the mines, which went into decline after 1874, closed in 1898, Virginia City just as quickly became a ghost town.

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**BY THOMAS J. STRAKA**

## SQUARE-SET TIMBERING AND THE V-FLUME

After the initial gold strike in 1850, as prospectors dug for gold in Gold Canyon, bluish mud clung to their shovels and picks. In the summer of 1859, someone had the “blue stuff” assayed in California. It turned out to be silver, worth \$3,876 to the ton at a time when anything over \$100 a ton was a good mining prospect, the value being one-fourth gold and three-fourths silver. To the prospectors’ surprise, the silver was worth more than the gold they had been panning for the last decade. This area became the Ophir mine, part of the Comstock Lode.<sup>4</sup> The silver rush was on.

The Ophir mine was the first to encounter problems with the loose, crumbly ore body. At a depth of 50 feet, the tunnel was 10 to 12 feet wide, but by the time it reached the 180-foot level, it was 40 to 50 feet wide.<sup>5</sup> Local pine was limited, and timber from the short, scrubby trees, spliced together with iron bolts and bars, could not withstand the pressure of the constantly shifting earth. Soon the mine was too unsafe to operate: though it contained vast treasure, the superincumbent “blue stuff” had rendered the mine shafts unstable and dangerous.<sup>6</sup> In 1860 a German engineer, Philip Deidesheimer, was brought in to solve the problem. Inspired by the honeybee’s comb, he invented square-set timbering, a framing system that used interlocking rectangular timber sets to support the unstable rocks. These cubes could be filled with waste rock to form support pillars, and the finished structure resembled a honeycomb. So much wood was used in its construction that it was said “a forest of underground timbers of enormous dimensions” lay under Virginia City. Eventually, the constant pressure of moving earth would compress even the strongest timbers. Wood that was originally fourteen inches thick was squeezed to a thickness of two to three inches. The tremendous pressure made it “as easy to cut as if it were so

much iron,” and locals call it petrified wood.<sup>7</sup>

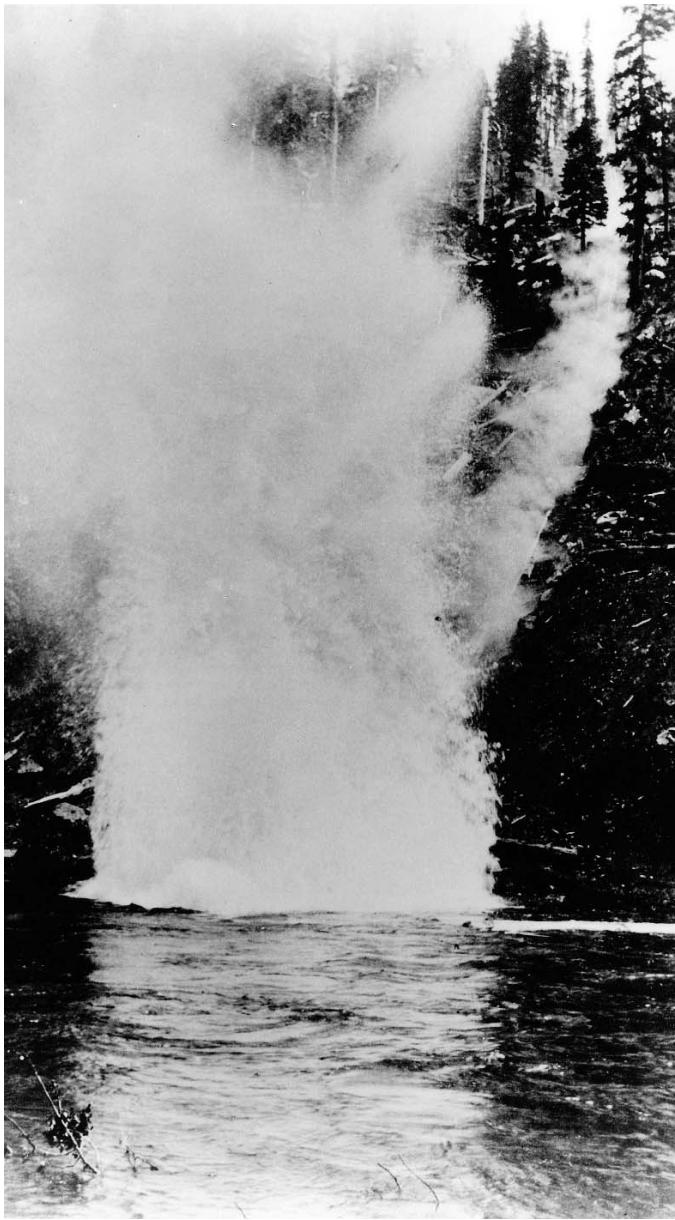
Though stable, square-set timbering required huge amounts of timber.<sup>8</sup> Over the next twenty years, the Comstock Lode consumed 600 million board feet of lumber for the mines and 2 million cords of firewood for running the steam engines in the mines and mills.<sup>9</sup> William Wright’s firsthand account of the timber situation on the Comstock in 1876 painted a bleak picture:

*The Comstock Lode may truthfully be said to be the tomb of*



Pernell Roberts as “Adam Cartwright” and Dan Blocker as “Hoss” examine a model of square-set timbering, in a scene from “The Phillip Diedesheimer Story,” a critically acclaimed episode of the television series Bonanza. Writer Thomas Thompson based this 1959 episode on historical fact.

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Timber hits Lake Tahoe after its long ride down a log flume.

the forest of the Sierra. Millions upon millions of feet of lumber are annually buried in the mines, nevermore to be resurrected....The pine forests of the Sierra Nevada Mountains are drawn upon for everything in the shape of wood or lumber, and have been upon for many years. For a distance of 50 or 60 miles all the hills of the eastern slope of the Sierra have been to a great extent denuded of trees of every kind—those suitable only for wood as well as those fit for the manufacture of lumber for use in the mines.<sup>10</sup>

With little timber near Virginia City, miners quickly turned to the “unlimited” timber resources of the nearby Sierra Nevada. Trees on the lower slopes of the Sierra Nevada were harvested first. Deidesheimer’s square-set timbering could make the mines safe, but it would take a second major invention to get the wood out of the mountains.

Loggers constructed gravitation flumes that operated with-

out the aid of water in some very steep places. The logs slid down straight chutes faster than speeding trains, sometimes leaving a trail of fire and smoke. These flumes ended at a lake so that the logs would not be “shivered to pieces.” On occasion a daring logger would ride a log down the chute, ending with a “wild leap of twenty or thirty feet into the lake”—if the logger was lucky.<sup>11</sup> When operations moved deeper into the Sierra Nevada, however, transportation became a major problem. As early as 1854 on the Sierra Nevada, U-shaped flumes carrying a stream of water had been used to transport lumber downhill. U-flumes, typically four feet wide at the bottom, five feet wide at the top, and thirty-two inches in depth, did not work well: the lumber often became lodged, causing overflows and washouts.<sup>12</sup>

James W. Haines is commonly credited with constructing the first successful V-shaped flume on the Sierra, in 1867. “There were often sawmills at the staging areas,” sending large volumes of logs down the flumes. Overflows and washouts slowed down productions. The V-flume avoided those and other problems with its simple construction: two boards joined at a ninety-degree angle, supported by a trestle that ensures downward slope, and partway filled with flowing water. It could carry sawn timber sixteen inches square and up to forty feet long rapidly and economically down the mountain. The V-flume had a great advantage over the U-flume: if lumber or timber got caught, water would back up, elevate the wood, and release it. The U-flume, by contrast, did not allow for the water to be restricted.<sup>13</sup>

The V-flume is considered a Nevada institution, but Haines lost a court battle defending his 1870 patent on the invention. The first V-flume associated with Haines ran 32.5 miles from Alpine County, California, to Empire City, Nevada, and connected there via rail to the Comstock. The new technology was quickly adopted by firms profiting from the Comstock Lode market for timber. In his 1879–1880 report, the surveyor general for Nevada reported ten major flumes with a length of 80 miles transporting 33.3 million board feet of lumber and 171,000 cords of wood.<sup>14</sup>

A mine engineering report from 1947 described the tree species that supplied the Comstock and their size, without the apparent exaggeration found in some accounts:

*The Western White Pine or Silver Pine makes a sparse growth throughout the region in elevations from 8,000 to 9,500 feet. It was worthless for lumber or wood. Sugar Pine is found between elevations 4,000 to 8,000 feet. It grows to heights from 160 to 180 feet, and in diameter from 4 to 7 feet. It is valuable for building purposes, as being soft it is easily worked and produces a greater percentage of clear lumber. Western Yellow Pine [ponderosa pine] was abundant, ranging from 4,000 to 8,000 feet elevation. The trees grew to heights from 125 to 140 feet, and in diameters 3 to 4 feet, but in some instances up to 6 feet. Yellow Pine was best for general purposes, having a good percentage of clear lumber and being stronger than Sugar Pine. The Jeffrey Pine, which differs somewhat from Yellow Pine, grows in the region in similar sizes and general characteristics. Generally, the two trees are both called Yellow Pine. White or Silver Fir was abundant in the Tahoe region. It was cut mostly into firewood, together with the pine tops left in logging. It takes a long time to dry, and as it warps badly, it was not used for building. The extreme diameter reached 5 feet and the range was from 4,000 to 7,500 feet. The Douglas Fir, or Douglas Spruce, is found around Lake Tahoe, but not on the eastern slope of the mountains. It reaches heights of 100 to*



COURTESY OF THE NEVADA HISTORICAL SOCIETY

The flume near Carson City as it comes off the mountain. This is where Nevada Historical Marker #11 may be found.

150 feet, and diameters from 3 to 6 feet. On account of the strength of the wood, it is one of the most valuable of forest trees. Red Fir grows over the entire range, but was not very abundant or accessible, being found between elevations 7,000 to 8,500 feet, and in diameters up to 5 feet. Red Cedar [incense cedar] was used principally in structures in contact with the ground, the heart wood only being resistant to decay. There is no hemlock or spruce in the Tahoe region and the only tamarack is the useless Lodgepole Pine, so called.<sup>15</sup>

### NEVADA'S "SEAPORT" AND THE V&T RAILROAD

The Comstock was also supplied with fuelwood and lumber via large wood drives on the Carson River. Trees were harvested at the headwaters of the Carson River, high in the Sierra Nevada, processed into fuelwood and timber at staging areas, and collected on the banks of the river for seasonal transport down the mountain to the sawmills at Empire City. Up to 100,000 cords came down the river each spring, just after the seasonal floods that would have scattered the wood over the desert. It was collected with booms at Empire City, and teams of horses pulled it from the river. So much wood came down the river that Empire City was called the Seaport of Nevada.<sup>16</sup> Thanks to its ample water supply, Empire City soon became an industrial hub, with

large stamp (ore-crushing) mills located both up and down the Carson River, the terminus of the early V-flumes from the Sierra Nevada, and the rail line that connected the Comstock to the Central Pacific Railroad.<sup>17</sup>

In the late 1860s, it became apparent that a rail line was needed to connect the Comstock to the mills on the Carson River, and to get wood and lumber to the Comstock. The owners of the Bank of California, who had made their money in Virginia City, financed the Virginia and Truckee Railroad to become this connection. By 1870, Virginia City and Carson City were connected by rail, and by 1872 the line was extended to Reno and the Central Pacific transcontinental railroad. Once Virginia City and Carson City were served by rail, the price of wood dropped from \$15 to \$11.50 per cord.<sup>18</sup>

### THE THREE GREAT LUMBER AND FLUMING COMPANIES

Control of the Comstock meant more than controlling the mines. Transportation, water, and wood were also at stake. There was plenty of capital available from the Comstock to develop large lumber and fluming companies, of which three in particular stand out.

The oldest and most important was the Carson and Tahoe Lumber and Fluming Company. As early as 1861, sawmills were



A typical wood drive down the Carson River to Empire City in the late 1800s. Nevada Historical Marker #6 is located near this spot.

built at Glenbrook on Lake Tahoe. Ox teams hauled wood and timber over the Spooner Summit down to Carson City and on to Virginia City. By the late 1860s, “timber ranches” existed in the Spooner’s Summit area, and V-flumes that would run all the way to Empire City were being constructed along Clear Creek.<sup>19</sup>

To extend their monopoly of the Comstock to the wood supply coming into the mines and surrounding towns, the Bank of California owners acquired mills and land at Glenbrook and land around Lake Tahoe and its southern end. They operated a barge system that floated timber to the mills at Glenbrook and built an 8¾-mile narrow-gauge railroad to transport the timber to Spooner’s Summit. There, it was deposited into a twelve-mile-long V-flume that ran into a large wood yard just south of Carson City, where a connection was made with the V&T. The flume and rail connected at Summit Camp, which also was the end for feeder flumes that brought wood and water to the site.<sup>20</sup>

The second major firm, the Sierra Nevada Wood and Lumber Company, operated out of what is now Incline City on Mill Creek. Formed in 1878, it controlled timber it had purchased for \$2.50 to \$12.50 per acre on the far northeastern side of Lake Tahoe and on its southeastern shore. The company used rafts to float its timber nearly twenty miles from across the lake and laid a railroad to Sand Harbor, where the wood came ashore. A narrow-gauge track continued another two miles around the lake.<sup>21</sup>

This company was best known for the “Great Tramway of Tahoe.” From the mill, the wood and lumber were hoisted up a very steep incline to the summit and then loaded into a V-flume; the flume passed through a tunnel into a wood yard at Lakeview Hill on a spur track of the V&T. This was the same company

that built the “Great Incline of the Sierra Nevada,” a double-track narrow-gauge tramline, eighteen feet in overall width,

*engineered by Captain Overton to run straight up the side of the mountain east of the mill. Cross ties spiked to a solid long bed carried the rails on which the lumber and cordwood cars were to operate, with the cars canted at an angle so that a near level inclination could be maintained on the steep grade. From the staging yard adjoining the mill, a spur track feeder line ran southeast one-eighth of a mile to join the tramline near its base. Here the carriers were loaded for the trip up the 4,000-foot-long, 1,400-foot vertical lift to the V-flume running below the granite outcropping that anchored the top of the structure. Three-quarters of the way up the mountain, an eight-foot rise in every twelve was encountered, giving a near 67 per cent track gradient.<sup>22</sup>*

The company used a dozen combination cordwood-lumber cars. Each car held 1½ cords of wood or a comparable amount of lumber. The system could deliver 300 cords of wood or its equivalent per day to the V-flume. The trip up the mountain took twenty minutes.<sup>23</sup>

A vivid description of the rafting operations on Lake Tahoe was published in 1876 in *The Big Bonanza*:

*The rafts of logs are towed across the lake by small steamboats. This rafting is of a novel character. The logs forming the raft are not pinned or in any way fastened together. The steamboat runs up to a bay or other place where logs are lying and casts anchor. A boat is then sent out that carries a cable strung full of large buoys. This cable is carried round a proper fleet of logs as a seine is carried round a school of fish. The steamer then weighs*



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The Carson and Tahoe Lumber and Fluming Company Spooner Summit flume, looking west, 1890. Nevada Historical Marker #10 is located near this spot.

*anchor and starts across the lake, towing along all the logs about which the cable has been cast. No matter how rough the lake may be, the logs remain in a bunch, being attracted one to another and clinging together as bits of stick and chips are often seen to do when floating on a lake or stream.<sup>24</sup>*

In 1875, the Consolidated Virginia Silver Mine, better known as the Bonanza firm, established a fluming company in its effort to oust the Bank of California owners from their Comstock Lode monopoly. Its timber came from a 12,000-acre tract on the eastern slope of the Sierra Nevada, above Reno. The company constructed a fifteen-mile V-flume that extended from Hunter's Creek on Mount Rose—between Lake Tahoe and Reno—to Huffaker's Station on the V&T. With two sawmills and about 200 miles of

logging roads, the first complete season produced a run of about 15 million board feet of lumber and 75,000 cords of wood.<sup>25</sup>

This particular flume is associated with a harrowing story involving the two principals of the Bonanza firm. James C. Flood and James G. Fair decided to baptize their flume with a ride down the mountain. H. J. Ramsdell, a reporter for the *New York Tribune*, was "lucky" enough to get invited along. Ramsdell found himself at the top of the fifteen-mile run in a flume boat—little more than a "pig trough with one end knocked out," sixteen feet long and V-shaped like the flume. The men embarked in two boats: Fair, Ramsdell, and a "volunteered" carpenter in the front boat, and Flood in the rear boat with the flume's construction superintendent. Ramsdell was reluctant but reasoned that "if men worth twenty-five or thirty million apiece could afford to risk

their lives, I could also afford to risk mine which isn't worth half as much." The boats took off, no one thinking that the lighter second boat might travel faster than the first.

Riding down trestles as high as 70 feet, Ramsdell was terrified: "You cannot stop and you cannot lessen your speed; you have nothing to hold onto; you have only to sit still, take all the water that comes—drenching you like a plunge through the surf—and wait for eternity." At one point the first boat hit a submerged object and the carpenter was hurled out the front of the boat and into the flume. Fair managed to yank him back in. Near the end of the trip, however, the second boat caught up and rammed the first. Both boats were flattened, but their occupants managed to hang on, with water rushing over them. When the wreckage finally slowed at the bottom of the mountain, they jumped clear of the flume.

"Fair said that he would never again place himself on equality with timber and wood," Ramsdell wrote, and the construction superintendent "said he was sorry he had ever built the flume. Fair said we had traveled down the flume at a mile a minute.... My belief is that we annihilated both time and space."<sup>26</sup>

Other flume riders were less fortunate; death and serious injury were frequent outcomes. Some flume companies forbade flume riding, but at the end of a six-day workweek, Saturday night rides down the flume to the pleasures waiting in the valley were not uncommon. Sunday evening brought a weary hike back up the mountain to the logging job, but in six long days the loggers would be back on the "river in a box."

## A LUMBERING AND FLUMING ROAD TRIP

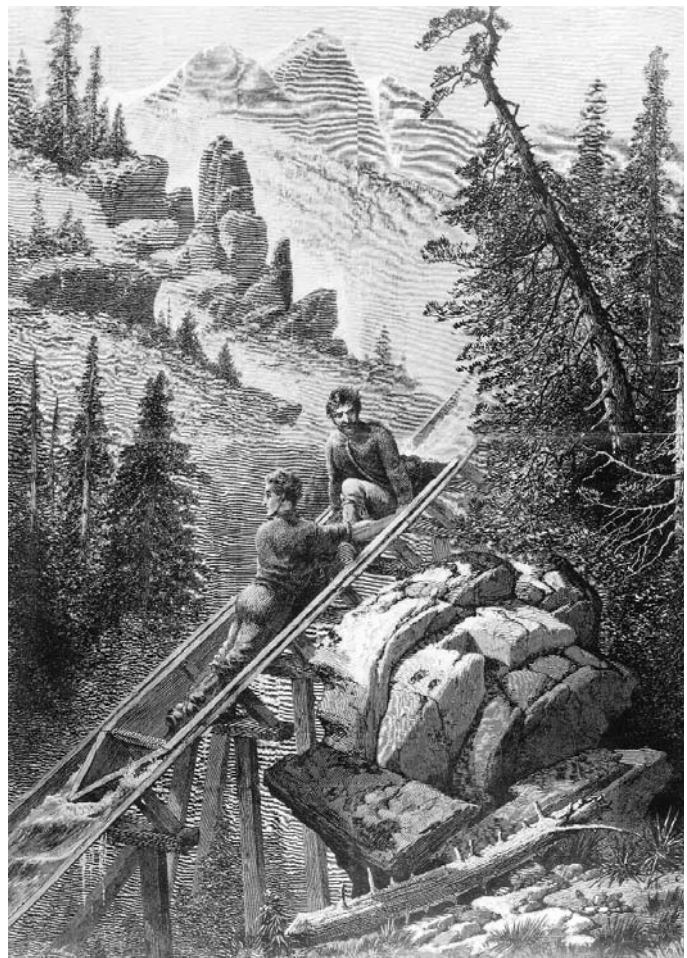
Eight Nevada historical markers describe the mining and associated timber boom along a 90-mile loop from Reno to Lake Tahoe and back. From downtown Reno, proceed south on U.S. 395 to U.S. 50 west in Carson City, then take U.S. 50 to State Route 28 along Lake Tahoe to State Route 431, which connects with U.S. 395 just south of Reno. Traveling south from Reno on Virginia Street (U.S. 395), you pass through the Truckee Meadows and Washoe Valley on the way to Carson City. The Sierra Nevada will dominate your western view, but you can only imagine the long flumes and the great timber piles and lumberyards on the valley floor. Three historical markers designate the terminuses of the major flumes. Marker locations are approximate; however, all three are near major landmarks. The excerpts below come directly from the markers, with the exception of the proposed Mark Twain marker.<sup>27</sup>

Nevada Historical Marker (NHM) 238 is located on the west side of South Virginia Street, about 1,000 feet south of Huffaker Lane, in South Reno. At press time, this marker was being replaced because of road construction. Huffaker's was an active stage stop in 1862 and later a station on the V&T Railroad.

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**NHM 238:** In 1875 the 'Bonanza Kings' completed their Pacific Lumber and Flume operation from the Lake Tahoe Basin. For fifteen miles trestled logs were propelled 'by waters rushing faster than any train.' At the terminus of the flume, the Virginia and Truckee Railroad opened a depot and telegraph office and constructed a spur where workers transferred timbers.

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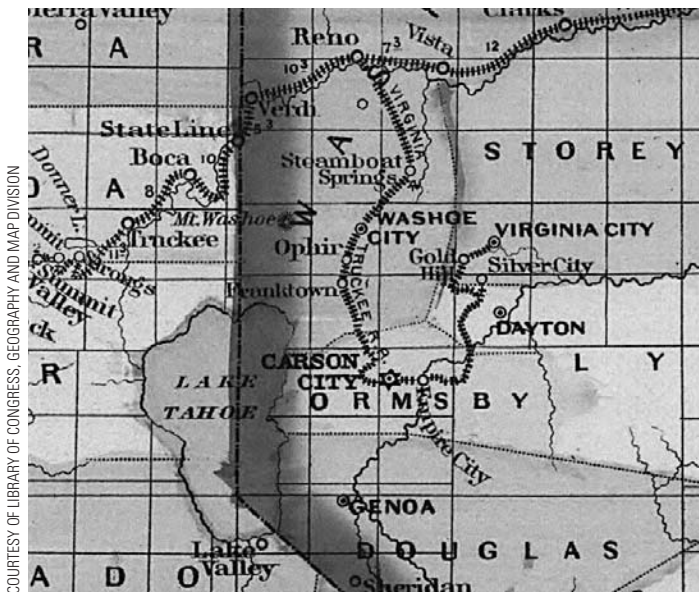
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*An illustration from H. J. Ramsdell's article about his "wild ride" down the fifteen-mile V-flume with James Fair and James Flood. The original caption identified the two men as Flood and Fair when, in fact, they rode in separate boats. The artist did get details about the flume and boat correct.*

From here, proceed south on U.S. 395 toward Carson City. When you get to the junction of State Route 341, you can turn off toward Virginia City or continue on U.S. 395, where you will come to NHM 213 just south of Washoe Lake. You can also access NHM 213 after you loop around through Virginia City by turning north on U.S. 395 as you come off of U.S. 50.

In Virginia City is the Chollar Mine, one of the major Comstock gold and silver mines which opened in 1859, and the only mine open to the public today in Virginia City. A thirty-minute guided walking tour that begins at 615 South F Street is available seasonally. Visitors can descend four hundred feet into the mine to view original square-timber support structures and mining equipment. Rail buffs may want to take a short narrated trip of about three miles, or thirty-five minutes, round trip on a modern version of the V&T from Virginia City to nearby Gold Hill. It begins at Washington and F Streets in Virginia City. Efforts are underway to rebuild the route all the way to Carson City, mostly on the original rail bed.

From Virginia City, pick up State Route 342 on the southern end and take that to U.S. 50 and turn west. Just over three miles from that junction (or about four miles west of Carson City on U.S. 50) is NHM 1. Empire City was about half a mile south of



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An 1874 map showing the Virginia and Truckee Railroad. Modern roads (right) closely follow the old routes.

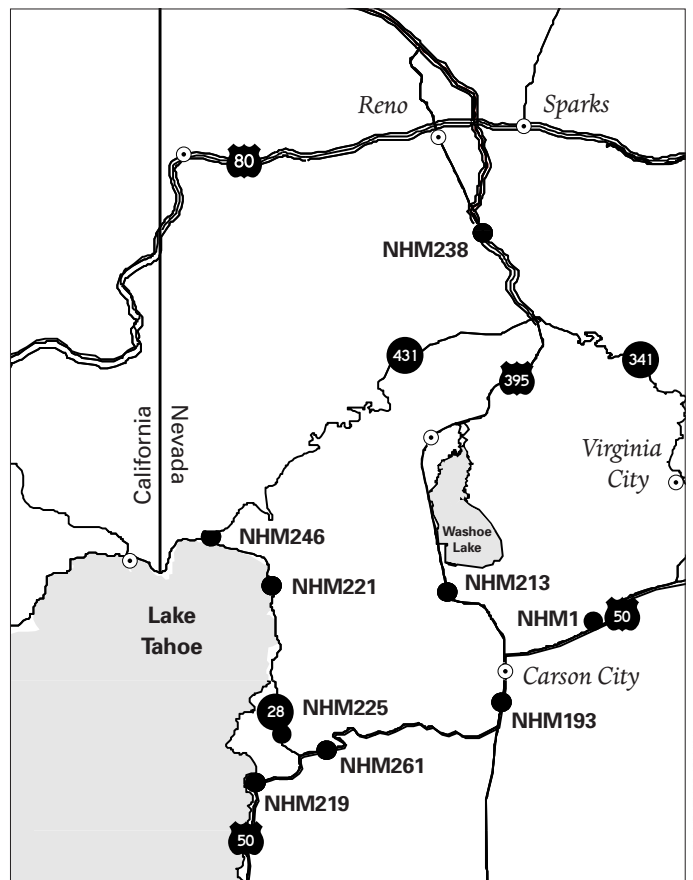
NHM 1 on the south side of U.S. 50 (between mileposts 14 and 15). Once considered the Seaport of Nevada, Empire City does not appear on any modern map. Near the NHM is Deer Run Road, which runs south a short distance to the river. The dirt road to the left at the bridge goes past the mill foundations. All that is left of Empire City is a cemetery and some old ore-processing mill foundations.<sup>28</sup>

From NHM 1, follow U.S. 50 west into Carson City, and then head north on U.S. 395 to see NHM 213. NHM 213, Lakeview, is at the top of the Lakeview Grade of U.S. 395 at the boundary of Washoe County and Carson City. It is on the east side of the highway, and the Lakeview interchange provides northbound access only. Lakeview was also a station on the V&T.

**NHM 213:** As early as 1881, Lakeview became a lumber storage area for timber cut in the Lake Tahoe Basin. In 1887, shipping activity was accelerated as lumber was fed to the yard by a V-flume originating above the present Incline Village. From here timber products were shipped to Comstock mines and other points via V.&T.R.R. cars. Activity ceased in 1896.

In downtown Carson City, two museums bear mentioning. The Nevada State Museum, at 600 North Carson Street, has a 300-foot tunnel illustrating a typical Nevada mine, with the various kinds of timbering and support systems used by the mining industry. Working models and full-scale exhibits illustrate the different kinds of mining operations. The exhibit on square-set timbering clearly shows how the system worked. The Nevada State Railroad Museum, at 2180 South Carson Street, features an exhibit on the Virginia and Truckee Railroad.

NHM 193, Historic Flume and Lumberyard, is just north of the State Railroad Museum in a small park on the west side of U.S. 395 at its intersection with Stewart Street.



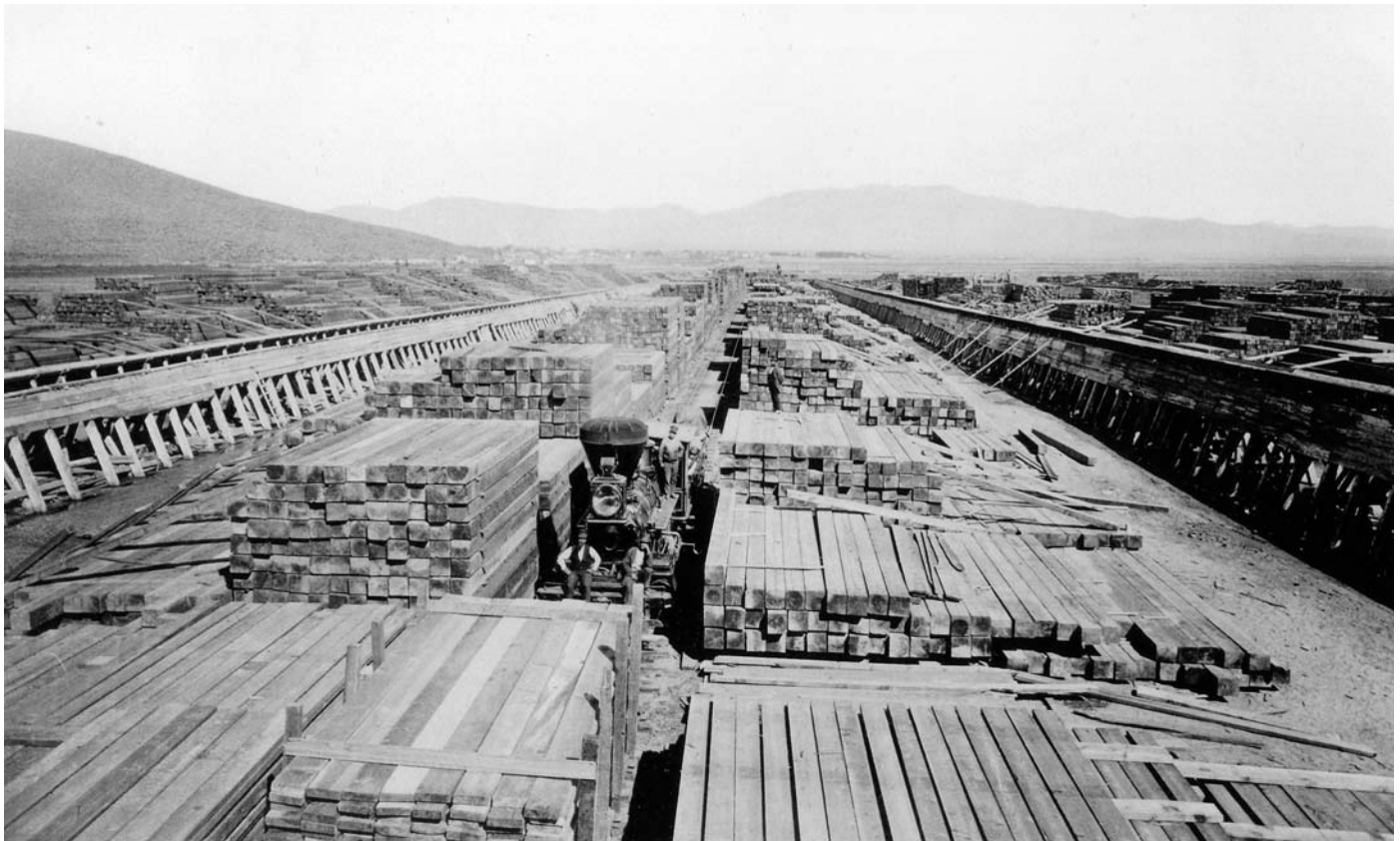
MAP BY HEATHER IRWIN

**NHM 193:** Approximately one-half mile south of this point and west of the present highway lay the immense lumberyard of the Carson-Tahoe Lumber and Fluming Company, the greatest of the Comstock lumbering combines operating in the Lake Tahoe Basin during 1870–1898. Situated at the terminus of the 12-mile ‘V’ flume from Spooner Summit in the Sierra Nevada, the lumberyard was approximately one mile long and one-half mile wide. A spur line of the Virginia and Truckee Railroad served the lumberyard. The spur ran adjacent to this site and carried rough lumber to the company’s planing mill and box factory, one-half mile north on Stewart Street. It also carried timber and cordwood to the Carson Yards to be hauled to the Comstock mines and mills.

The flume from Spooner Summit ran down Clear Creek Canyon. The first right off of U.S. 395 just past the intersection where U.S. 50 heads west to Glenbrook is Clear Creek Road, which goes partway up this canyon and ends at a government facility. The sign for Clear Creek Road is visible from the stoplight at the intersection. The road hugs Clear Creek and you can get a good feeling for the terrain that supported the flume. It goes only a few miles up the canyon and is paved all the way, but the drive is worth it. You must backtrack to get back on U.S. 50.

Once you turn right on U.S. 50, follow Clear Creek Canyon up to Spooner Summit. At the summit, about 12 miles west of Carson City, is NHM 261, on the left. The display includes photographs and additional history on toll roads, early motoring, and the road’s





The Carson City lumber yard, facing north, ca. 1876. Engine I.E. James is in the foreground. The area is now the site of the State Railroad Museum.

status as part of the Lincoln Highway. Photographs include Spooner's Station in the 1860s and 1870s, Swift's Station, the locomotive *Tahoe* unloading wood, and Summit Camp in 1876.

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**NHM 261:** Massive amounts of wood were sent to the Comstock Lode from the Carson Range and the Tahoe Basin. Initially wood was hauled by wagon, but soon the transport system included trains, steamboats, and water flumes. Spooner Summit is in the midst of a former logging landscape. In 1873, logging in the area was consolidated by the formation of the Carson and Tahoe Lumber and Fluming Company. Workers were housed at a small settlement called Summit Camp, built along one side of the toll road. From 1875 to 1898 the company operated the Lake Tahoe Railroad along 8.75 miles of line from Glenbrook to this spot. The difficult route included switchbacks and a 487-foot tunnel just west of the summit. The narrow-gauge railroad's sole purpose was to haul timber and lumber for building purposes and cordwood for fuel. This wood was transferred to an 11-mile long V-flume that extended from Spooner Summit down Clear Creek to Carson Valley. There the wood was loaded on the Virginia and Truckee Railroad for the rest of its trip to the Comstock. At its peak the Comstock consumed about 80 million board feet of lumber and 2 million cords of firewood each year. About 300,000 board feet of wood passed over Spooner Summit each day.

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A short distance up U.S. 50, past the junction with State Route 28, is NHM 219, Glenbrook, on the right as you approach Lake Tahoe. This marker mentions King's Canyon Road, the other major route to the summit. It begins in downtown Carson City (where West King Street becomes King's Canyon Road) and runs to the north of U.S. 50. The road is currently washed out and is not passable on the upper reaches.

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**NHM 219:** Lumbering operations in the Glenbrook area of Lake Tahoe began in 1861. Consolidation of V-flume systems in and near Clear Creek Canyon by 1872 made it possible to float lumber, cordwood, and sawed material from Spooner's Summit to Carson City and to eliminate wagon hauling over the 9-year old Lake Bigler Toll Road (King's Canyon Road). In 1873, the new Carson & Tahoe Lumber and Fluming Company, under Duane Bliss, assumed all operations, becoming the largest Comstock wood and lumber combine. It controlled over 50,000 acres of timberland, operating 2 to 4 sawmills, 2 Lake Tahoe steam tugs to tow logs, 2 logging railroads, the logging camps employing 500 men, and a planing mill and box factory in Carson City. Timber depletion and reduced Comstock mining closed the company in 1898; it had taken 750,000,000 board feet of lumber and 500,000 cords from Tahoe Basin forests during its lifetime.

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Backtrack to State Route 28 for NHM 225, Spooner Area, which addresses logging and lumbering from 1868 to 1895. It is



The Carson and Tahoe Lumber and Fluming Company's flume in Clear Creek Canyon. Clear Creek Road follows the old flume route.

located inside Spooner Park, just past the guardhouse, on the right as you exit the park. (If you are going just to read the historical marker, you can likely talk the guard into forgoing the entrance fee.)

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**NHM 225:** This area bears the name of Michele E. Spooner, a French Canadian entrepreneur, who, along with others, was instrumental in establishing the wood and lumber industry which supplied the needs of the Comstock mines and mills. In 1868 Spooner became a partner with Oliver and John Lonkey, the Elliot Brothers, Henry M. Yerington, William Fairburn and Simon Dubois in the Summit Fluming Company and operated a shingle mill and sawmill. In 1870 Yerington, Bliss & Company took over the Summit Fluming Company. In 1873 another sawmill was erected at Spooner Meadows. Later in 1873, all the mills were taken over by the Carson & Tahoe Lumber and Fluming Company. This company, headquartered in Glenbrook, went on to become the largest of the three huge combines supplying wood and lumber to the Comstock.

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Using his real name, Samuel Clemens, Mark Twain once worked as a reporter on the Virginia City newspaper, the *Territorial Enterprise*; a historical marker there notes his time in the city and that there he adopted his *nom de plume*. Before that, he tried and failed as a miner and then as a "timber rancher." This unsuccessful venture took place near Glenbrook, and while it has no historical marker, what happened there is worthy of one. In 1861 the Comstock's demand drove up the price of wood, and many thought they could become wealthy by meeting it. Clemens and

a friend decided this was a wonderful opportunity to see "the marvelous beauty of Lake Tahoe" and "to take up a wood ranch or so ourselves and become wealthy." If there were a historical marker it would read:

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In 1861, Samuel Clemens ("Mark Twain") visited Lake Tahoe to seek riches by establishing a timber ranch. He and a friend set out on foot from Carson City and first crossed a mountain "about a thousand miles high" and then another "three or four thousand miles high" and eventually burst upon Lake Tahoe. He described it as "a noble sheet of blue water lifted six thousand three hundred feet above the level of the sea, and walled in by a rim of snow-clad mountain peaks that towered aloft full three thousand feet higher still!" They claimed a 300-acre timber ranch. A few days later, Mark Twain's campfire is credited with starting a major wildfire on the shores of Lake Tahoe that devoured much more than his timber ranch and burned for four hours before it left his range of vision. Mark Twain later described it in his book, *Roughing It*: "The ground was deeply carpeted with dry pine needles and the fire touched them off as if they were gunpowder. It was wonderful to see with what fierce speed the tall sheet of flame traveled! My coffeepot was gone, and everything with it. In a minute and a half the fire seized upon a dense growth of dry manzanita chaparral six or eight feet high, and then the roaring and popping and crackling was terrific.... Within a half an hour all before us was a tossing, blinding tempest of flame!...till as far as the eyes could reach the lofty mountain fronts were webbed as it were with a tangled network of red lava streams."<sup>29</sup>

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*“The Great Incline of the Sierra Nevada,” around 1885. The incline rose 1,400 feet up the mountainside. From there, lumber was transferred to water flumes and transported to Lakeview just north of Carson City. It is now the location of Nevada Historical Marker #17.*

NHM 221, Sand Harbor, is on the left at Lake Tahoe State Park, at the Sand Harbor boat ramp.

**NHM 221:** History records Sand Harbor as playing an important role in the operations of the Sierra Nevada Wood and Lumber Company, one of three large combines supplying lumber and cordwood to the Comstock mines during the late 19th century. Walter Scott Hobart organized the company and John Bear Overton was its general manager. The steamer ‘Niagara’ towed log rafts from company land at the south end of Lake Tahoe to Sand Harbor. Here the logs were loaded on narrow-gauge railway cars and taken two miles north to a sawmill on Mill Creek. Lumber and cordwood were started on the way to Virginia City via an incline tramway 4,000 feet long, and rising 1,400 feet up the mountainside where the material was transferred to water flumes and transported to Lakeview just north of Carson City. The tramway has been described as ‘the Great Incline of the Sierra Nevada.’

NHM 246, “The Great Incline of the Sierra Nevada,” is located on the right side of State Route 28 in Incline Village.<sup>30</sup>

**NHM 246:** The scars on the mountain above are the remnants of the ‘Great Incline of the Sierra Nevada.’ Completed in 1880, this 4,000-foot-long lift was constructed by the Sierra Nevada Wood and Lumber Company. A unique steam-powered cable railway carried cordwood and lumber up 1,800 feet to a V-flume which carried the lumber down to Washoe Valley where it was loaded on wagons for use in the mines of the Comstock. Driven by an engine on the summit, 8,000 continuous feet of wire cable, wrapped around massive bull wheels pulled canted cars up a double track tramline. This engineering feat would transport up to 300 cords a day from the mill located on what is now Mill Creek.

From Incline Village, take State Route 431 back toward U.S. 395 and stop at the vista area, where a metal plaque locates all the Lake Tahoe Basin sites you have just visited. It gives great perspective to the geography of the lumbering operations and

the opportunity to take in a great view of Lake Tahoe from the Nevada side. From there, take U.S. 395 north back to Reno.

Once you understand how the markers are connected, the picture of Lake Tahoe Basin logging becomes clearer. Having seen the mountains down which the flumes delivered timber, you will better understand what it was like to get timber out of the basin and see the connection between one of the biggest mining operations in American history and a large piece of forest history. □

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## NOTES

1. William Wright (Dan De Quille), *The Big Bonanza* (1876; repr., New York: Alfred A. Knopf, 1947), 24–29. This is likely the most-cited “authentic account of the discovery, history, and working of the world-renowned Comstock Lode of Nevada,” written by a reporter for Virginia City’s *Territorial Enterprise*. Finney, Comstock, and the other early prospectors did not make much money off the Comstock Lode, and many of them died penniless.
2. Russell R. Elliott, *History of Nevada* (Lincoln: University of Nebraska Press, 1987), 83–84. Nevada’s early admission stemmed from President Abraham Lincoln’s need for the electoral votes in the 1864 election and congressional votes for his Reconstruction package.
3. Oscar Lewis, *Silver Kings: The Lives and Times of Mackay, Fair, Flood, and O’Brien, Lords of the Nevada Comstock Lode* (New York: Alfred A. Knopf, 1947). Early financial control of the Comstock Lode was by the “Bank Crowd,” primarily the Bank of California, represented by William Sharon. By 1875 control shifted to the Bonanza firm, and the “lords” of the Comstock Lode became John W. Mackay, James G. Fair, James C. Flood, and William S. O’Brien.
4. Grant H. Smith, *The History of the Comstock Lode: 1850–1997* (Reno: University of Nevada Press, 1998) 7–11.
5. Elliott, *History of Nevada*, 96–97.
6. Wright, *Big Bonanza*, 89–92.
7. Sam P. Davis, ed., *The History of Nevada*, vol. 1 (Reno, NV: Elms Publishing Co., 1913), 410.
8. Wright, *Big Bonanza*, 174–180.
9. Eliot Lord, *Comstock Mining and Miners* (Washington, DC: Government Printing Office, 1883), 351. Mines used lots of fuelwood: Ore was hoisted up with steam engines, pumps constantly cleared the mines of water, and lots of mines had stamp mills onsite, which used lots of steam. They even had power drills that ran on steam.
10. Wright, *The Big Bonanza*, 174.
11. *Ibid.*, 175.
12. Myron Angel, ed., *History of Nevada* (Oakland, CA: Thompson and West, 1881), 188.
13. Smith, *History of the Comstock Lode*, 247–248.
14. Angel, *History of Nevada*, 188–191.
15. John D. Galloway, *Early Engineering Works Contributing to the Comstock* (University of Nevada Bulletin No. 5, Geology and Mining Series No. 45. Nevada State Bureau of Mines and the Mackay School of Mines, Reno, 1947), quoted in: Dennis D. Murphy and Christopher M. Knopp, eds., *Lake Tahoe Watershed Assessment*, vol. I (USDA Forest Service General Technical Report PSW-GTR-175, Albany, CA: Pacific Southwest Research Station, 2000), 51.
16. Wright, *Big Bonanza*, 178–79.
17. Stanley W. Paher, *Nevada Ghost Towns and Mining Camps* (Berkeley, CA: Howell-North Books, 1970), 47–51. This book contains a wonderful set of five photographs of Carson River wood drives.
18. Elliott, *History of Nevada*, 126–28.
19. Angel, *History of Nevada*, 188–90.
20. Edward B. Scott, *The Saga of Lake Tahoe* (Lake Tahoe, NV: Sierra-Tahoe Publishing Co., 1957), 263–74, 291–97. See also Elliott, *History of Nevada*, 139–40.
21. Scott, *Saga of Lake Tahoe*, 305–12. See also Elliott, *History of Nevada*, 140.
22. Scott, *Saga of Lake Tahoe*, 306.
23. *Ibid.*
24. Wright, *Big Bonanza*, 176–77.
25. Elliott, *History of Nevada*, 140–41. Nevada State Route 431 is also called Mount Rose Highway.
26. The story ended up in the paper and eventually as an amusing magazine article: Bert Goldrath, “River in a Box,” *Argosy* 352 (March 1961): 34–39, 104–105.
27. Dave Basso, *Nevada Historical Marker Guidebook* (Las Vegas: Nevada Publications, 1986). The Nevada State Historic Preservation Office maintains an up-to-date list of markers at <http://dmla.clan.lib.nv.us/docs/shpo/markers>. Ronald M. James and Mara Thiessen Jones from that office provided valuable background used in this article.
28. Mary E. and Al Glass, *Touring Nevada: A Historic and Scenic Guide* (Reno: University of Nevada Press, 1983), 32–33. This book contains fascinating road tours of Nevada. On pages 31–34 is the Comstock Lode tour, which includes Virginia City.
29. Samuel Clemens (Mark Twain), *Roughing It* (1872; repr., New York: Penguin Group, 1962), 133–41.
30. The marker incorrectly states that the incline was 1,800 feet in length. It was 1,400 feet, as is stated on NHM 221.