

BIG OAK FLAT ROAD

Yosemite National Park Roads and Bridges
Between Big Oak Flat Entrance and Merced River
Yosemite National Park
Mariposa County
California

HAER NO. CA-147

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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HISTORIC AMERICAN ENGINEERING RECORD

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BIG OAK FLAT ROAD
Yosemite National Park
HAER No. CA-147

I. INTRODUCTION

Location: Big Oak Flat Road (California Highway 120),
between Big Oak Flat Entrance and Merced River,
Yosemite National Park, Mariposa and Tuolumne
counties, California.

UTM: Old Big Oak Flat Road
East end: Northside Drive at base of El Capitan
El Capitan quadrangle
11/266985/7178250
West end: Tuolumne Grove of Giant Sequoias
Ackerson Mountain quadrangle
11/252335/4185000 (approximate)

New Big Oak Flat Road
East end: Junction with All-Year Highway
El Capitan quadrangle
11/263661/4177840
West end: One mile N of Big Oak Flat Entrance
Ackerson Mountain quadrangle
11/247800/4188450

Quads: El Capitan, CA
El Portal, CA
Ackerson Mountain, CA

Date of Construction: Old road: Completed 1874
New road: 1935-40; 1959-61

Designer and Builder: Old road: Chinese Camp & Yosemite Turnpike
Company
New road: Bureau of Public Roads

Original and Present Owner: Yosemite National Park, National Park Service

Present Use: Park highway

Significance: The second road to reach Yosemite Valley, the
Big Oak Flat Road is significant for
associations with early Yosemite transportation.

Project Information: This document was prepared as part of Yosemite
Roads and Bridges Recording Project, conducted
by the Historic American Engineering Record in
summer 1991.

Richard H. Quin, Historian

II. HISTORY

This is one in a series of reports prepared for the Yosemite National Park Roads and Bridges Recording Project. HAER No. CA-117, YOSEMITE NATIONAL PARK ROADS AND BRIDGES, contains an overview history of the park roads.

History of the Big Oak Flat Road

The Big Oak Flat Road was the second wagon road to enter Yosemite Valley. Although relocated for most of its distance through the park, the route (now California Highway 120) remains the most important entrance to Yosemite from the north. Built as a toll road in a race to provide the first road to the Valley, the route carried the majority of park traffic from central and northern California before the completion of the Yosemite Valley Rail Road and the All Year Highway [HAER No. CA-150]. Most of the original route has been abandoned, although several short stretches remain open as scenic drives or service roads. The New Big Oak Flat Road is a modern, "high-gear" motor road affording users splendid views of the Crane Creek watershed and more distant views of the San Joaquin Valley.

The route had its origins in a pack trail, called the "Big Oak Flat Trail," after the early California mining community of Big Oak Flat in Tuolumne County through which it passed. About 1857, Tom McGee, a pack operator and saloon-keeper in that community, reopened the western portion of the old trans-Sierran Mono Indian trail which crossed the Sierra divide to the east. McGee's portion connected Big Oak Flat via the South Fork of the Tuolumne River with the Coulterville route at Crane Flat. This route received less use than a roughly-parallel free trail from Coulterville which opened at about the same time. The Big Oak Flat Trail did, however, draw a number of visitors from Stockton, to which it was conveniently situated. Yosemite-bound tourists took the Coulterville Trail on to the Valley from Crane Flat. McGee's trail continued on towards the mines to the east, leaving the shared route at Tamarack Flat.¹

In September 1868, a cartel of businessmen in Tuolumne County organized the "Chinese Camp and Yo Semite Turnpike Company" to construct a road from the mining labor settlement of Chinese Camp (30 miles west of Big Oak Flat) to Yosemite Valley. The group filed a Declaration of Intention which stated that the road was to extend from Chinese Camp "south easterly to Jacksonville Hill, thence to the Tuolumne River south of Woods Creek to a point known as the canyon, thence by Bridge to south side of said river thence up said river to Moccasin Creek, thence up Moccasin Creek to Newhall and Culbertson's Ranch, thence up Big Oak Flat Hill through Big Oak Flat, First Garrote and Second Garrote to Big Gap. Thence up the ridge to Pilot Peak Ridge, thence through Hazel Green to Crain [sic] Flat, thence on south side of the ridge to Tamarac [sic] Flat, thence to head of the Yo Semite Trail." The road would follow in part the route of the Big Oak Flat Trail. By the end of 1868, the wagon road had been built across part of Tuolumne County from Elwells' (now Colfax Springs) to Hardin's Ranch, largely by the latter's proprietor, Johnny Hardin.

Another section, between Big Oak Flat and Priest's, was already in use.²

The Chinese Camp and Yo Semite Turnpike Company estimated their cost for a road as far as the Valley rim at \$10,000; it would be supplemented by a wire suspension bridge across the Tuolumne River at Deering's Ferry at an additional \$10,000 cost. The investors hoped to have the road opened by 1 June 1869, and hoped to attract users of the Central Pacific Railroad's "short line" from Stockton to Milton in Calaveras County, near the western end of the road. (The branch line was completed in 1870.) George W. Coulter was company president, and Charles Cutting was secretary. The company obtained a state franchise on 20 February 1869. In September, company directors George E. Sprague, Leo E. Stuart and John B. Smith persuaded the Board of Commissioners of the Yosemite Grant to award them an exclusive franchise to construct a wagon road entering the Yosemite Grant from the north side of the Merced River. The franchise carried a stipulation that the road was to open by 1 July 1871.³

A "great army of workers," including many Chinese, began the main phase of construction in the spring of 1869. By June 1870, the construction crews had pushed the road from Big Oak Flat through the two Garrottes and on to "Cuneo," or Hodgdon's Ranch, once known as 'Bronson's'.⁴ The company reorganized as the "Yosemite Turnpike Road Company," a joint stock concern, on 20 January 1871. However, the project was running out of money and the time for completion was rapidly approaching. By the July deadline, the road had been built only as far as Gentry's Station, located at the top of the cliff on the edge of the Yosemite Grant.* The state gave the company an extension to the end of the year, but the road was built no further, as the remaining 3 miles would require an extraordinarily expensive drop down the cliffs to the valley floor. On 1 January 1872 the company forfeited its exclusive rights to construct a road into the Valley.⁵

The Yosemite Turnpike Road Company had no real incentive to incur the costs of extending their road down the steep grade below Gentry's, as they could collect tolls on the section already completed. From Gentry's, travelers could take saddle trains down a rough trail into the valley. Early Yosemite pioneer and entrepreneur James M. Hutchings ran the first pack trains down this route to his holdings, eventually maintaining 100 pack animals for the route. By May 1873, Simon Shoup, Johnny Hardin and Jerry Hodgdon were running stages on the road, carrying passengers as far as Gentry's Station; they were followed in business by the Nevada Stage Line.⁶

Mariposa Countians, who had their own schemes for wagon roads to the Valley, derided the Tuolumne County group's incomplete road and the tolls charged:

* Col. E.S. Gentry had a small stand atop the cliff where he entertained Yosemite-bound travelers. Gentry had planned to construct a hotel here, but found the site "too windy." (Paul Morris, "The Big Oak Flat Road," Typed MSS, n.d., 4.)

The Chinese Camp Turnpike to the Yo Semite valley is a road unequalled in this state for the amount of toll collected thereon from any passenger passing over it. In this particular, by its side, the Appian Way dwindles into insignificance.

. . . You see, it is a road to the Yo Semite valley. That is, it leads toward the valley. Something has pegged out however, and the Chinese Camp Yo Semite Turnpike does not reach the valley. For the last twenty-five or thirty miles of the road, where a road is most needed, there is no road, only a trail, toll for horse and rider, one dollar. . .

The Chinese Camp and Yo Semite Turnpike reflects great credit on its originator. Two or three shovels have been worn out in its construction. Some of the bridges must have so taxed in their plumbing and construction the brains of the builders as to leave no comprehension for anything else save toll. Fare to the Yo Semite over the Chinese Camp Turnpike, leading to within thirty miles of the valley, one dollar. No trust. Pay as you go. . .

The Chinese Camp and Yo Semite Turnpike where it is level is a good road. You cannot expect a level road in the mountains. Do you think that men from Chinese Camp can construct a track as level as a bowling alley over three mile hills? Do you imagine that ravines with sides inclined at angles of 45, 55, 65, 75 and 95 degrees may be made as smooth as the road to ruin by shovels from Chinese Camp, and only an insignificant toll of one dollar charged each passenger? God forbid!

There are dirt cuttings on the Chinese Camp and Yo Semite Turnpike, three of four inches in thickness: They will last for years, unless another rain comes. Fare for each stage passenger over the road to within twenty-five miles of the valley one dollar in gold. A branch mint will soon be established at the gate.⁷

By this point, the Mariposa County interests were pushing a road forward from Coulterville [see HAER No. CA-146] to Yosemite Valley. By August 1872, this rival road had reached Crane Flat as well. For a while, the Coulterville groups intended to share with the Chinese Camp Turnpike a common horse trail to the valley floor; however, the Coulterville Road was rerouted via the Merced Big Tree Grove towards the valley, bypassing Crane Flat. The new owner of the Coulterville Road, Dr. John T. McLean, intended to complete his toll road on to the Valley and thereby capture the tourist trade.

In July 1872, after the Yosemite Turnpike Road Company had missed its deadline, Dr. McLean received an exclusive franchise from the Yosemite Board of Commissioners to extend his toll road from Coulterville to Yosemite Valley. The proposed new road alarmed the Tuolumne County interests, who saw that the competing road would decimate their tourist trade at a time at which their

mines, the basis of the county's economy, were declining. No traveler would want to take a road that ended at the top of a cliff when an alternate route existed, and their lucrative tolls would be lost. Accordingly, they rededicated their efforts at construction of their own turnpike. By the summer of 1873, the company had survey parties at work on the section between Gentry's and the Valley floor. The surveyors estimated that the costs for the steep remaining section would not exceed \$15,000.⁸

On 29 August 1872, the Yosemite Turnpike Road Company asked the Yosemite Commissioners for new rights to extend their road to the valley floor. However, they were refused, as the commissioners had since given exclusive rights to Dr. McLean for the construction of his Coulterville Road. The commissioners justified their action, claiming that the exclusivity clause was essential for Dr. McLean to recoup his substantial investment. On 17 November 1873, company president Charles Cutting again asked for road rights. The Board again rejected the request, stating "as the Commissioners have already granted a privilege to the Coulterville Turnpike Company to build a wagon road into the Yosemite Valley, under which that Company have expended money and acquired vested rights, this Commission cannot comply with the petition of the Yosemite Turnpike Road Company." An appeal was submitted to the Commission's executive committee, with the proviso that the road down the grade would be "forever free of tolls," but McLean's rights were upheld and the Yosemite Turnpike Road Company was again rebuffed. The cartel did, however, receive the support of two of the Commissioners, Galen Clark and Edgar Mills.⁹

The investors in the Yosemite Turnpike Road Company now realized that their only hope was to have the State legislature overturn the Commissioners' rulings, but the legislature would not convene again until 1874. As an interim measure, they turned to Yosemite Guardian Galen Clark, requesting permission to "improve" their horse trail down the grade. Clark, who sympathized with the Tuolumne County group, granted the request.¹⁰

Work crews under the direction of George E. Sprague, company Secretary and a surveyor by trade, fashioned a new trail down the cliff-side from Gentry's. The route was so steep that Sprague sometimes had to lower his chainman on a windlass in order to take his readings.¹¹ Road foreman Dan Newhall had twenty men at work on construction by fall. The new right-of-way was constructed suspiciously like a road, with wide turns and switchbacks. The *Sonora Union Democrat* commented on the deceptive tactic:

Dan is merely building a horse trail but the picks may slip and widen it out to a wagon road. It will at least be a starter for a wagon road when we get the privilege.¹²

The state legislature reconvened in 1874, and the Tuolumne County representatives introduced a bill that would allow the Yosemite Turnpike Road Company to extend its road to the Valley. The argument was made that the Commissioners had no right to grant exclusive rights to any company. Despite objections

from Dr. McLean and his backers, the Yosemite Turnpike Road Company won approval on 17 February 1874. The act stated in part:

C. B. Cutting, D. B. Newhall, L. D. Gobin, A. Halsey, and George E. Sprague, residents of Tuolumne County, State of California, for themselves and their successors, directors of the Yosemite Turnpike Road Company, are hereby granted the right and privilege, for ten years, from the first day of March, eighteen hundred and seventy-four, for the use, behoof and benefit of the Yosemite Turnpike Road Company, and their assigns, to enter upon, and to construct and maintain a turnpike or wagon road over the Yosemite Grant, from the northerly line of said grant to the level of the Yosemite Valley. . .¹³

The Yosemite Turnpike Road Company immediately began plans to extend the wagon road down from Gentry's, following the "improved" trail. The construction workers were housed at "Camp Andross," 2 miles below Gentry's and the mid-point of the final section. The company engaged five Italian wall-builders, who had offered to construct the cliff-side stretch for \$16,000 plus \$5,000 worth of materials. The \$16,000 was loaned by Andrew Rocca of Big Oak Flat, and the new phase of work began. The skilled Italians built the required stone retaining walls without mortar, wedging some stones into place, and using anchor and tie stones to bind the walls together. Good chinking and equal distribution of fill behind the face helped the walls bear the considerable weight of the road. The final part segment, which utilized a number of sharp switchbacks, had a grade of 16 percent. This troublesome 3-mile stretch, known as "the Zigzag," was constructed in five months.¹⁴

The final section below Gentry's was surveyed by John Conway, a former mining engineer who had built the Four-Mile and other Yosemite trails, and who laid out the first circuit road in Yosemite Valley. He also oversaw the final phase of the work, which began in late 1873, and was half-completed when heavy snows prevented further efforts. The construction work resumed in March 1874. Conway declared that the "Anti-Monopoly Road of the Tuolumnites" would be finished by the time the snow could be removed from the upper section above Gentry's. Conway stated that as "cultivated science has pronounced the Yosemite region impracticable for road building," he was relying on uncultivated science. His crews were working 11-hour days in an effort to beat the "Monopoly (Coulterville) Road" to completion.¹⁵

This final phase of construction brought on a race to completion with the Coulterville Road, as Dr. McLean simultaneously forwarded more men and supplies to finish his route. In the end, the Chinese Camp and Yosemite Turnpike missed being the first road into the Valley by less than one month. The road was completed on 17 July 1874, only 29 days behind the rival Coulterville Road. A "grand jollification" was held, consisting of a procession with 600 participants, addresses by James M. Hutchings [who, incidentally, had greeted the Coulterville Road group a few weeks earlier] and other VIPs, and music by the Sonora Band. The *Sonora Union Democrat* recorded

details of the triumphal procession: "They marched up the valley without a stop until they reached Leidig's Hotel [for a] tremendous welcome, flags flying, cheering etc etc. Then they drove to the Sentinel Hotel where Mr. Black [the proprietor] opened a fusillade with the popular sounds that corks make upon leaving champagne bottles."¹⁶

The horses had been decorated with flags, rosettes and ribbons at Gentry's. C. H. Burden, a passenger in the procession, later described the entry to the valley: "As we reached the floor of the great wonderland we were met by a procession of campers and residents of the valley. Such cheering, shouting and singing!" Charles Leidig, son of early Valley residents, later recalled that a number of the region's Indians took part in the festivities, riding horses and dancing while garbed in their native clothes.¹⁷

The route proper began at the rail terminus at Milton, then passed through Copperopolis, Byrne's Ferry (on the Calaveras-Tuolumne county line), around Table Mountain to the Goodwin Road and over Lava Ridge to Chinese Camp; from there it passed through Salvado and Shipley Flat en route to Jacksonville, then along the Tuolumne River to a crossing at Haswell's Ferry (now Steven's Bar), up the steep Priest's Grade, then to Big Oak Flat, Groveland (as Garrotte had been renamed in 1875) and Second Garrote to Alva Hamilton's. The toll section of the turnpike ran for another 34 miles from the Tuolumne-Mariposa County line near Hamilton's Station (now Buck Meadows) to Hodgdon Meadow, Hardin's Ranch, Crane Flat, Gin Flat and Tamarack Flat and on to Gentry's Station. After taking a first glance at Yosemite Valley from Oh My! Point (named for a visitor's reaction, this view is now blocked by trees), passengers dropped down the steep grade to the base of El Capitan in the Yosemite Valley. The \$56,000 turnpike had a maximum grade of 16 percent and averaged 13' in width. The road was open year round from Big Oak Flat as far as Crockers' Station, just outside the park's present northwest boundary, and for seven months from Crockers' to the Valley floor. The tollgate on the Yosemite end was located at the covered bridge over the South Fork of the Tuolumne River. In 1875, Harlow Stuart of Sonora ran a telegraph line along the road.¹⁸

The toll rates for use of the Valley section were set by the state legislature in the act that allowed the road to enter the Valley; these were:

Freight vehicle pulled by one animal	50¢
Passenger vehicle, per passenger	50¢
Horse and rider	50¢
Loose stock	12 1/2¢
Foot passengers	free ¹⁹

The road was widely heralded for its stunning scenery. About a quarter mile above "the Zigzag," the approaching traveler came suddenly upon a spectacular vista of Bridalveil Fall and the Yosemite Valley. In early years, the road owners called this place "New Inspiration Point," appropriating the name from the promontory on the south rim of the Valley, and for a while a metal sign

marked the spot with this name. However, this name was reappropriated with better justification by the Washburn group to identify the major viewpoint on their Wawona Road [HAER No. CA-148] in 1875, and the vista on the Big Oak Flat Road is now known as "Rainbow View" after the rainbow sometimes formed in the mists of Bridalveil Fall directly across the Valley.²⁰

As an added inducement to travelers, the backers of the turnpike in 1878 induced David and James Lumsden to bore a hole through a massive dead tree in the Tuolumne Big Tree Grove. A large part of the slab, said to weigh one-half ton, was taken to Priest's Hotel west of the park as an attraction.²¹ Other chips from the tree can be seen in the ravine below the road. The "Dead Giant" is the only one of the park's tunnel trees which may still be driven through and remains one of Yosemite's more popular semi-natural curiosities.

Title to the Yosemite Turnpike Road Company was acquired by James M. Hutchings in 1878, who on 3 June 1879 conveyed it to the "Big Oak Flat and Yosemite Turnpike Company." By this point, the road was outstripping the Coulterville Road, and carried twice as many passengers. (However, the Wawona Road, which opened in 1875, soon began carrying more passengers than either of the routes north of the Merced). Unlike the Coulterville Road, the Big Oak Flat Road provided a modest return on its owners' investments. Many of the stockholders also had interests in the Yosemite Transportation Company, the stage company which utilized the line. The road company devoted considerable resources to maintenance. In early years, the unemployed of Big Oak Flat, Groveland and Coulterville were hired to clear the road of snow in the spring.²²

In 1880, the Yosemite Board of Commissioners asked the state legislature to purchase the roads within the boundaries of the Yosemite Grant, thereby freeing visitors from the onerous tolls. An appropriation was made 3 March 1885, and the following year the cliff-side section of the Big Oak Flat Road, the only portion lying within the Grant, was purchased for \$3,500.²³ [This, incidentally, was probably the most costly section of road to maintain in the entire Yosemite area.] However, when Yosemite National Park was created five years later, only the lower 4.37 miles of the route was a free road; the Big Oak Flat and Yosemite Turnpike Company retained ownership of the section between Gentry's and the park boundary and continued to collect tolls.

Traffic over the Big Oak Flat Road was boosted in 1897 when the Sierra Railway built a new line from Oakdale to Chinese Camp Station, reducing the stagecoach portion of the road to 60 miles.²⁴

In 1899, Secretary of War Russell A. Alger appointed a commission to investigate the park road situation. The commission took depositions from the various owners of the roads. W. C. Priest, president of the Big Oak Flat and Yosemite Turnpike Company, reported on the Big Oak Flat Road. He listed the length of the Big Oak Flat Road within the park as 19.03 miles; an additional 4.37-mile section within the boundaries of the Yosemite Grant had been built but had since been purchased by the state. The route was open from about 15 May till 1 November, and stage traffic was conducted over the road from

1 June to 15 August. Annual tolls collected were about \$1,780, against which were set annual maintenance costs of about \$350. Priest estimated the value of the road at \$45,000. The commission, however, was of the opinion that such a road could be built for only \$30,000, with better grades and alignments.²⁵ Although many hoped that the commission's report would lead to the purchase of the toll roads, it would be another sixteen years before the Big Oak Flat Road was purchased and freed from tolls.

The first automobiles to enter Yosemite over the Big Oak Flat Road were Locomobile steam cars driven in July 1901 by a Mr. and Mrs. Baird and a Mr. and Mrs. Aiken. They were followed the same month by Dr. and Mrs. W. A. Clark of San Leandro, who wrote of an arduous journey over granite dust "inches thick." Few other cars made it up and down the Big Oak Flat Road in the next few years; indeed, the *Yosemite Tourist* stated that cars could be "bought for a song at the foot of Priest's Hill," a long steep grade west of Big Oak Flat. When Dr. Clark returned in 1905, he called the grades "almost insurmountable," and his trip "an adventure of some magnitude." He urged other drivers to carry extra parts such as drive shafts and springs.²⁶

James M. Hutchings, Yosemite entrepreneur and early promoter, was killed on the road in November 1902 when his carriage horses bolted at "the Zigzag," throwing him to his death. Hutchings had greeted the first carriages to travel over the road, and had briefly owned the road in 1878 and 1879.

Automobiles were banned from Yosemite National Park in 1907 by Acting Superintendent H. C. Benson, and it was not until 16 September 1914 that they were readmitted on the Big Oak Flat Road. The first checking station was erected at Crane Flat, and in 1915 was supplemented by new ones at Gentry's and at the foot of El Capitan. Cars were permitted to run uphill or downhill only at stated intervals. The speed limit was at first 10 miles an hour, but this proved too great for "the Zigzag," and the speed was soon reduced to 6 miles per hour over this section. Charlie Baird, who had operated stage-coaches over the road, introduced motor stages on the run in 1914.²⁷

The completion in 1907 of the Yosemite Valley Rail Road and its accompanying wagon road from the rail terminus at El Portal to the Valley caused an immediate and significant reduction in usage of the Big Oak Flat Road. The new railway charged less than half the stage fare, and the turnpike company found itself with a liability. On 19 July 1915, the Big Oak Flat and Yosemite Turnpike Company sold the route to Tuolumne County for \$10,000. (One of the county's viewers, C. H. Burden, had been a passenger on the first stage over the road in 1874.) The county soon deeded over the portion within Yosemite National Park to the National Park Service. Tolls were eliminated and better maintenance ensued. The Park Service did institute an eight-dollar charge for automobiles (later reduced to five dollars), in addition to the existing entry fee. Farther west, the state rebuilt the section of the road between Chinese Camp and Knight's Ferry, and Tuolumne County rebuilt the severe Priest Grade between Moccasin Creek and Groveland. The county also replaced the old covered bridge over the South Fork of the Tuolumne River with an open deck

structure. Between Groveland and the Yosemite boundary, the road grades were rectified by the City of San Francisco to improve access for its Hetch Hetchy water supply project.²⁸

Motorists were subjected to the "control" system. Checking stations were established at Gentry's and El Capitan. Cars were allowed to proceed northbound on even hours and inbound on odd hours. A ranger at the station would note the car's license number and time of departure (to check speed limits) on the permit, then would telephone the next station. Despite the precautions, accidents occurred. A Packard went over the edge in the early 1930s, killing a passenger. In July 1937, a woman was killed when the Lincoln in which she was riding went off the "Zig-zag." Not long afterwards, the Secret Service forbade President Franklin Roosevelt from taking the road due to safety concerns, fearing there was inadequate room to turn around the long presidential touring car in the event of an emergency.²⁹

During the 1920s, the Big Oak Flat Road was advertised by the Yosemite Transportation System as a part of the "Bret Harte Line, Route of Romance," after the author who had written numerous stories about Tuolumne County. From South Fork (on the Tuolumne River), the route visited Hetch Hetchy, then went by Carl Inn to the Tuolumne Big Tree Grove and Crane Flat before making the descent to the Valley.³⁰

Thomas D. Murphy, a motoring enthusiast, recounted a trip out of the Valley on the Big Oak Flat Road in 1921:

. . . About two miles from the hotel, following the main valley road, we came to a sign, Big Oak Flat Route, and turned sharply to the right, crossing the Merced River. Immediately we began a sharp ascent over a dusty trail through thickly standing pines.

Coming out of the cliff we find ourselves on a narrow road cut in the side of the almost perpendicular cliff. It is fair at first, screened from the precipitous drop alongside by a row of massive boulders which have the psychological effect of making us feel much more at ease, though I doubt if they would be of much use in stopping a runaway car. Nevertheless, they are a decided factor in enabling us to enjoy the wonderful views of mountain and valley that present themselves to our eager eyes as we slowly climb the steep ascent. We are sure that we see many vistas quite equal to the view from the much-vaunted Inspiration Point, but they are not so famous because they are less accessible.

The road grows rougher and dustier as we climb upward; the boulder balustrade disappears and we find ourselves on a narrow shelf, with infrequent passing places, running along the edge of a cliff that falls almost sheer beneath us. We pause occasionally to contemplate the marvelous scene beneath. The whole floor of the valley is now visible; its giant trees seem

mere shrubs and the Merced dwindles to a silver thread; across the narrow chasm we now look down on the Cathedral Spires, the Three Sisters, and Sentinel Rock; we see Bridal Veil Fall swaying like a gossamer against the mighty cliff, and beyond we have an endless vista of forest-clad mountains. . .

Crane Flat is nothing more than a ranger station on the road and the official took up our time card--we came by a safe margin of two or three hours--and removed the seals from our game-getter. . . Two or three miles from Crane Flat we came to the Tuolumne Grove of Big Trees, where there are numerous giant redwoods, though not so many or so huge as those of Mariposa.³¹

Over the ensuing years, the Big Oak Flat Road was subject to considerable realignment, reconstruction and maintenance. Sections of retaining wall were frequently taken out by rock falls and required rebuilding. A 75' section was rebuilt in August 1924. Three timber bridges, over Lily, Coyote and Squaw creeks, were replaced by corrugated metal culverts in October, and the road grade was reduced to a maximum of 10 percent west of Tamarack Flat. Severe rains in November washed out the road at Rainbow View, closing it until January.³²

The road was resurfaced between Rainbow View and the Tuolumne Big Tree Grove near Crane Flat in August 1926. A new bridge was constructed over Cascade Creek in 1928. In September 1929, the half-mile section between Gentry's and Coyote Creek was graded, and the segment between Crane Flat and the park line was widened. The 1929 improvement work cost \$27,675. Three switchbacks were taken out by a severe rockslide on 29 September 1930, but the grade was reconstructed. In 1931, the section of the road between Gentry's and the park boundary was widened to 18'-20'; the construction camp for this phase of work was established at Crane Flat. Cattle guards were placed across the road at the park boundaries in July 1932. In August 1934, a 250' section of retaining wall, up to 50' in height, had to be replaced on account of further rockslides; another section, 40' long by 10' high, was replaced in May 1937 after another slide. After the new road was completed in 1940, the bridge over Cascade Creek on the old road was replaced again in 1941 to enable the route to continue in use as a scenic downhill drive.³³

With the completion of the New Big Oak Flat Road between the Valley and Crane Flat in 1940, most traffic ceased to use the old road. A rockslide in May 1945 swept away the "Zigzag" switchback, and the road was closed. The Park Service considered clearing the road, estimating the costs of repairs at \$15,000. The agency took bids on the work, but never awarded the contract.³⁴ More rockslides have since covered other parts of the road between Rainbow View and the Valley floor, and the route now passes through a designated wilderness area.

Today, the Old Big Oak Flat Road is an exciting walk. The hiker climbs steeply up from the base of El Capitan, then must clamber across three series

of unstable rockslides before reaching Rainbow View (called "New Inspiration Point" in 1900). From there, the road winds around the side of the bluff to cross Fireplace and Cascade Creek. The Cascade Creek footbridge dates from about 1965, and rests on twentieth century abutments; the old road crossing was over a wooden truss in a slightly different location.³⁵ From there, the road ambles gently up over rolling country to a crossing of Tamarack Creek at the Tamarack Flat Campground. This section of the road was built by Chinese laborers, and is of cruder construction than the section built by the Italians. From Tamarack Creek, a 3-mile section of the road north to Tioga Road is open as an access road for the campground.

From the Tioga Road, the old road is closed again to motor vehicles, but can be followed as foot trail northwest to Crane Flat. Near Crane Flat, the road is open to northbound traffic for 5.8 miles through the Tuolumne Grove of Giant Sequoias to Hodgdon Meadow and the Big Oak Flat Entrance. Many other traces of the old road can be followed outside the park, including the vertiginous Old Priest Grade above Moccasin Creek.

Most of the old roadway is in fair condition, though abandoned sections have been eroded severely at crossings of streams and their branches. At the rockslides, several sections have been ripped out; in other stretches, stone lies on and over the old roadway. The section between El Capitan and Tamarack Flat passes through designated wilderness and is no longer maintained.

B. History of the New Big Oak Flat Road

As early as 1916, consideration was given to relocating parts of the Big Oak Flat Road. That year, a survey of a new route was from Crane Flat to the park boundary was made by E. E. Newell and W. O. Tufts. However, no construction ensued from this project. In May 1924, Yosemite National Park Superintendent Washington B. Lewis reported that planning for the relocation of the road was again underway. He warned that part of the route passed through patented land holdings, and urged that buffer through the commercial timber tracts be acquired to protect the scenery. He soon began negotiating for a 60' right-of-way for the new road.³⁶

In 1925, a preliminary agreement was made between the National Park Service and the Bureau of Public Roads (U.S. Department of Agriculture) for construction and maintenance of park roads. National Park Service Director Stephen T. Mather announced major changes to the Yosemite National Park road network, promising to build the best mountain road system possible. In 1926, the Park Service and the Bureau of Public Roads signed a Memorandum of Agreement for reconstruction of park roads to modern standards. In Yosemite, plans were made to relocate the Big Oak Flat Road between the Valley floor and Crane Flat. The road would be moved to the sunny south slope, allowing the road to open earlier in the spring, and shortening the distance between the two points. Frank A. Kittredge, engineer for the Bureau of Public Roads, was in Yosemite in August to oversee the survey for the new route.³⁷

The "Big Oak Flat Highway Association" was formed in Merced in 1927 with the purpose of encouraging construction of the new road. G. E. Reynolds was chosen as the first president, and Director Mather, a charter member, told the group at its first meeting, "The most important work to be done now is the relocation of the Big Oak Flat Road." He hinted that the road might be rebuilt towards Carl Inn, west of the park boundary. A land and timber exchange with the Yosemite Lumber Company would be necessary in order to secure a protected right-of-way. The forest interests wanted to reduce the protected timber lands, but Mather adamantly declared that the Park Service "had no desire to route a highway through a desert." State Senator Dan Williams introduced a bill in February 1929 to relocate the Big Oak Flat Road between Buck Meadows and Crane Flat. The work was tied to the NPS reconstruction plans.³⁸

The State Highway Commission was slow to give assurances that it was ready to begin reconstruction of the route outside the park. Director Mather told road supporters, "The Park Service has taken the position that until a definite agreement is reached with the State for the reconstruction of the Buck Meadows-Crane Flat link, it would not be justified in going ahead with the park section. That link is not now on the State highway program." The state soon began purchasing land for a new right-of-way along Pilot Peak, but the National Park Service decided to delay the project until the California legislature agreed to fully fund its share of the project. Mather also wanted the work to be coordinated with the construction of the new Hetch Hetchy Reservoir Road, which was to be built by the City of San Francisco under terms

of the Raker Act. More time was also required for careful landscape planning.³⁹ Work on the New Big Oak Flat Road did not commence until 1935. In the meantime, reconstruction work began on the Wawona Road.

As with the new Wawona Road, completed in 1933, the design of the new Big Oak Flat Road invoked serious study by the National Park Service's landscape division. Park Service Director Horace Albright, who replaced Mather in 1929, was personally involved in the planning process. The overwhelming concern was to integrate the new road into the landscape without scarring the exposed cliffs above the Merced River and Crane Creek valleys. To lessen the impact of the road, tunnels, stone retaining walls, and new bridges were utilized.

The new route was planned and designed in 1933 and 1934. The road would leave the All-Weather Highway at the Power House Dam on the Merced River, then climb up the north side of the valley above the Cascades to reach Meyer Pass in 4 miles. In this section, it would cross three creeks (Cascade, Tamarack and Wildcat) on open spandrel arch concrete bridges, and pass through three tunnels in order to preserve the granite cliffs. The extensive road cuts that would be required would be hidden by long stretches of rock retaining walls. Boring the three tunnels would actually require less excavation than road cuts. Excavated materials would be used for the roadbed or would be back-hauled to side canyons and dumped behind forest screens. Project planning was done by the San Francisco district office of the Bureau of Public Roads, and was reviewed and approved by the National Park Service landscape architecture division. Thomas M. Roach, engineer for the Bureau of Public Roads arrived in Yosemite in April 1934 to oversee the location survey.⁴⁰

Construction of the new road began on 23 January 1935 under the supervision of the Bureau of Public Roads, assisted by the park landscape architecture division. Some \$300,000 was allotted for the first phase of work, clearing from the Valley floor to Meyer Pass. By the end of March, the first mile had been cleared by thirty day laborers working with drills, a compressor and six jackhammers. Four masonry crews were placing the hand-laid stone embankments which would bear a pioneer road over much of the stretch. Stone for the retaining walls came largely from materials excavated for the right-of-way.⁴¹

Morrison-Knudsen, principal contractor for the upper section between Crane Flat and Meyer Pass, established its construction camp on the Coulterville Road at Big Meadows in April 1935, and immediately began clearing operations with 65 men. The firm first built the connector between Foresta and the new Big Oak Flat Road. By the end of the month, the work force on the lower section of the main road had cleared all the way from the Valley to the construction site for the first tunnel.⁴²

By midsummer, clearing was complete on the section between Meyer Pass and Crane Flat, and rough grading was underway. Morrison-Knudsen had increased its work force to 87 men. Equipment in use included a power shovel, trucks and tractors. Progress was behind schedule due to breakdowns, and a second shovel was ordered for the job. On the Valley floor-Meyer Pass section, the

hand-laid embankments for the pioneer road were complete, and footings for the cement rubble retaining walls were being excavated. The BPR was supervising 77 men working as day laborers.⁴³

Morrison-Knudsen completed the clearing for the Meyer Pass-Crane Flat section in November. Grading work took place the following summer, and by the end of October the road preparation work was complete and accepted.⁴⁴ Unlike the Old Big Oak Flat Road and other early Yosemite roads, the new road was rarely built up on fill sections and retaining walls, but rather "cut in" to the cliffs with explosives. Although care was taken to "minimize" the scarring of the Valley cliffs, this marked a departure from the use of local rock features and slopes to carry the road. Some work was done using earlier techniques, such as the building up of major sections on retaining walls, but the roadway design standards were clearly changing.

Surveys for the three new bridges over Cascade, Tamarack and Wildcat creeks were conducted from 1936 to 1938, and the structures were designed in 1937 and 1938; construction began in October of the latter year. Unlike the "rustic style" bridges recently employed in the Valley, the new spans [HAER Nos. CA-83, CA-84 & CA-85] were striking open-spandrel arch bridges, of reinforced concrete poured in place. The bridges ranged from 91' to 106' 6" in length. Each had two lanes for traffic and sidewalks, and soared across the creeks on graceful single-span arches. The bridges were completed in October 1939.⁴⁵

The two short tunnels were built in 1936 and 1937. They were constructed by first driving a 6' x 7' foot pilot tunnel, then drilling out the extra dimension. The excavation of 367' long tunnel #1 [HAER No. CA-86] was completed 21 August 1936, and 224' tunnel #2 [HAER No. CA-87] on 14 November. The concrete lining of the two tunnels was not completed until May of the following year. Pouring of the lining for tunnel #1 began in February 1937. By the end of April, the lining was completed, and crews were cutting the arch rings for the east portal. Preparatory work for the lining of tunnel #2 was underway. On the road itself, retaining wall work, sloping and rock cutting continued. Some work on the lower section had to be redone in February 1937 after heavy rains in December had washed out a large section of new fill, blocking the All-Year Highway below with 12' of debris.⁴⁶

B. H. McCain of the Bureau of Public Roads arrived in Yosemite in January 1937 to serve as resident engineer for the construction of the 2,083' tunnel #3 [HAER No. CA-88]. Preparations for boring began in March. Walter Champion, electrical engineer for the Bureau of Public Roads, arrived that month to supervise the construction of a transmission line to power the drilling equipment. The contractor's camp was established in April at Big Meadow, and construction work began in mid-May. Unlike the two smaller tunnels, this structure was bored by the full-face method, with the entire cross-section of the tunnel being drilled and blasted at the same time. All boring was done from the west side. The BPR engineer suggested that this may have been the largest tunnel yet attempted by this method. The actual boring of the tunnel began on 10 June 1937, with 150' driven the first month. At the end of July,

the bore had reached 347'; excavated material was being stockpiled to be ground for surfacing. In August, the tunnel advanced to 620', but the following month witnessed delays as soft rock was encountered, requiring timbering and guniting for safety measures. A 180' adit was to be driven to the cliff face to provide for ventilation. Construction of the long tunnel employed a drilling "jumbo," a device built specifically for use on the project. The large machine, mounted on a 5-ton Liberty truck, had six separate drills that were used to bore holes for the blasting.⁴⁷

Considerable progress was made at the same time on the construction of the road itself, but not without human cost; Ernest Messien, a construction worker fell on the job and died a little later from complications. By this point, the stone retaining walls from Wildcat Creek to the Valley were complete, and stone was being cut for the guard walls which would border the road. Sample sections of the guard wall were built in November.⁴⁸

Work crews on the long tunnel passed the soft rock area in October 1937 and began to make much better progress. The half-way point was passed in November. Severe rainstorms filled the lower end of the tunnel up with 10' of water in December, and operations were hampered again; nevertheless, by the end of the year, the bore was in 1,160'. In January 1938, the tunnel bore reached 1,420', and drilling began on the ventilation adit, which was completed in February. The long tunnel was holed through on 22 April 1938, and the final work, including the laying of curbs and drains and preparation of the road surface was completed on 10 September.⁴⁹

A large part of the road between Meyer Pass and the Valley floor was built on fill or benchwork, requiring heavy stone retaining walls. These walls were constructed of irregularly sized granite stone, placed by hand-operated mast-and-boom derricks; these derricks were moved ahead by mule train. Cut stone blocks were also placed on the arch rings of the two lower tunnels. This stone was taken from a large boulder on the Coulterville Road by the contractor, the Union Granite Company of Rocklin, California.⁵⁰ The final construction report gives some details of their construction:

Full size wooden templates were built for the required arch ring stones before cutting stone for the tunnels was started. . . in general the stones were blasted into slabs and cut, with plugs and feathers, roughly to the desired size. Contact faces were then trued up and smoothed on a finishing machine constructed on the job. A hand derrick, mounted on top of the concrete lining just back of the portal, was used to hoist and set the ring stones and the rocks used in the portal wall.⁵¹

Original plans called for the walls to be constructed of smooth-faced quarried stone blocks. However, the finished work did not successfully blend with the rugged terrain, and following consultations with the National Park Service landscape architecture division, the BPR decided to construct the faces of the walls from rougher, irregularly-sized stones.⁵²

With the grading and clearing work now complete, the Bureau of Public Roads awarded a contract for the paving of the 10.5-miles of the road (including the spur to the Coulterville Road at Foresta) in July 1938. The contract went to the Union Paving Company of San Francisco. Crushed rock was laid on the road in October, along with a short section of the Tioga Road between Crane Flat and Gin Flat, the junction with the Old Big Oak Flat Road. The final surfacing work was completed on 2 November. Except for the construction of the three bridges, the new Big Oak Flat Road was nearly complete.⁵³ Landscaping work along the road was done in part by crews from the Civilian Conservation Corps.

While the work was underway, the National Park Service negotiated to acquire additional forest lands beyond the western boundary of the park in an effort to protect significant timber resources, especially the Merced and Tuolumne groves of giant sequoias. In November, survey crews began locating an extension of the Big Oak Flat Road through the new section, which was known as the "Carl Inn" tract.⁵⁴ However, construction over this section would not take place until the 1950s.

The new 10.2-mile section of the Big Oak Flat Road opened in May 1940, after \$1,342,600 had been spent on construction. The work, particularly the section between the Valley floor and Meyer Pass, was considered the most difficult work yet undertaken in the park. A formal dedication ceremony took place on 23 June at Crane Flat. William E. Colby, president of the Sierra Club, delivered the keynote address. The new road was formally opened in an unusual variant of the traditional ribbon-cutting." Teams of Civilian Conservation Corps workers from the two road construction camps competed in sawing apart a large log that had been placed across the highway. The Crane Flat "home" team beat the challenging team from the Cascades. The five automobile checking stations on the old road were closed. A new checking station was established at Carl Inn about 1941, but was relocated to Crane Flat a few years later.⁵⁵

The old route between Crane Flat and the Valley floor was maintained as a one-way downhill scenic road until a large rockfall in May 1945 took out the "Zigzag."⁵⁶ The Park Service secured estimates for the rebuilding of the section, but the work was never done; the road remains abandoned and is now a part of the designated wilderness area. The old roadway is a hiking trail.

While work on the lower section was underway, the National Park Service in 1939 asked the Bureau of Public Roads to begin surveying a new road alignment between Crane Flat and the South Fork of the Tuolumne River. The accompanying study by E. E. Erhart, which was extended west as far as Buck Meadows, favored a route along the South Fork instead of over Pilot Peak, which had been surveyed in 1926 and had initially been the Park Service's choice as well as that of the Tuolumne County interests. A forest screen along this route was purchased for \$30,000. However, the U.S. Forest Service [which administered the Stanislaus National Forest, through which the projected route passed] and the Bureau of Public Roads supported the lower, South Fork route, as it would

provide easy access to Forest Service recreation areas and the developments at Mather. Another route, along the Middle Fork of the Tuolumne River between Mather and Crane Flat, was also surveyed. In April 1940, the three federal agencies agreed to work together to push the South Fork route. At the same time, they asked the state to begin work on a new route up the steep Priest's Grade west of Big Oak Flat.⁵⁷

The selection of the South Fork Route over Pilot Peak was hotly debated, and Tuolumne County Supervisor M. C. Merrell demanded an explanation for its choice. State highway engineer George T. McCoy gave several reasons as to why the new alignment was chosen. The reasons he advanced were changes in the pattern of usage of the Big Oak Flat Road, and to provide access to new recreation sites in the Stanislaus National Forest. The Pilot Peak route had shown insufficient traffic density to warrant construction along that line. Statistics showed that of traffic continuing east from Buck Meadows, 46.5 percent was destined for Mather or points in the national forest, and 53.5 percent was headed to Crane Flat.⁵⁸ These figures demonstrated a strong need for better access in the South Fork area.

In the 1950s, the National Park Service began final planning the new road alignment from Crane Flat to the park's realigned northwest boundary. Improvements to the old route were studied but rejected because of likely damage to sugar pines and giant sequoias in the Tuolumne Big Tree Grove. However, the old road would be maintained as a one-way scenic drive through the big trees.⁵⁹ The final section of the New Big Oak Flat Road was a major part of the National Park Service's ten-year "Mission 66" project in Yosemite.

There was considerable debate over the route of the new connecting California Highway 120 outside the western boundary of the park. Some of the Tuolumne County interests still pushed for the Pilot Peak route. However, the National Park Service continued to support the South Fork route, which was ultimately adopted. Yosemite Park superintendent John C. Preston stated that the chosen route was "the most advantageous for everyone concerned."⁶⁰

Clearing for the new section began in the fall of 1961. At the same time, a site was cleared for a new entrance station at the northwest boundary. This part of the project was done under a \$369,067 contract awarded to the A. J. Diani Company of Santa Maria, California, which subcontracted most of the work to Wallace E. Reiswig of Chicago. Merchantable timber in the right-of-way, including Christmas trees, was sold off.

The new road opened to traffic in April 1962, coinciding with the opening of the reconstructed California Highway 120 outside the park boundaries. The Crane Flat ranger station remained open some time longer.⁶¹

The Big Oak Flat Road now carries heavy loads of traffic. Most traffic from Manteca, San Francisco, and northern and north-central California enters via the Big Oak Flat entrance. From Crane Flat southeast to the junction with the All Year Highway, the Big Oak Flat Road also carries traffic between the Tioga

Road and Yosemite Valley. The two-lane road is provided with occasional passing turnouts and parking areas, but the road is frequently congested during the main summer season, especially on the section below Crane Flat. Most visitors appear to use the road as a high-speed highway to park attractions, and few seem to take notice of the striking spandrel arch bridges or the excellent rock work along the road. The road's historical significance is recognized, however, by its 1989 nomination to the National Register of Historic Places.

III. ENDNOTES

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4. This place was once known as Bronson Meadow, and was named for an early pack operator. Bronson was succeeded by Jeremiah "Jerry" Hodgdon, for whom the meadow is now named.
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8. (Virginia City, NV) *Territorial Enterprise*, 29 July 1873, 3.
9. Johnston, II:41; (Sonora) *Union Democrat*, 29 November 1873; "Yosemite: Meeting of the Commission...Action in Relation to Wagon Road," 15 November 1873, 2; *Laws and Decisions*, 4.
10. Johnston, II:41. Clark had recently abandoned construction of his own toll road from present Wawona to Yosemite Valley. Forced to sell off his properties on the South Fork of the Merced and to surrender his interest in the Wawona Road to the Washburn cartel, he may have welcomed the prospect of a competitor for his successors.
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12. (Sonora) *Union Democrat*, 13 September 1873, 2.
13. "An Act granting the right of way to the Yosemite Turnpike Road Company to construct a toll road over the Yosemite Grant," Acts [California] Chapter XCIV, 17 February 1874, Sec. 1, 106.
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