

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

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August 23, 2004

Dr. Stephanie Toothman
National Park Service
Pacific West Region
909 First Street
Seattle, Washington 98104-4159

Dear Dr. Toothman:

Thank you for the opportunity to comment on the National Register Multiple Property nomination for Yosemite National Park. I concur that the properties identified and evaluated in the nomination do constitute a coherent group of geographically dispersed resources that are eligible for listing in the National Register. The nomination does an excellent job of defining separate, but related contexts that make clear the significance of the individual resources, as well as the reasons that they collectively constitute a multiple property. The inclusion of a number of the park's less elaborate, high altitude resources is particularly noteworthy. The context statements synthesize a large amount of historic documentation in a clear and concise manner and the descriptive material that is provided for the individual resources or resource groupings is excellent.

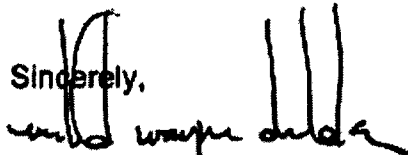
We concur in all of your findings regarding the resources enumerated in the multiple property nomination. We agree that the following properties are eligible for the National Register as a part of a multiple property.

Lake Vernon Cabin Building #2450
May Lake High Sierra Camp Historic District
Hetch Hetchy Comfort Station Building #2104
Henness Ridge Fire Lookout Building #5300
The Golden Crown Mine
Glen Aulin Sierra Camp Historic District
Chinquapin Historic District
Buck Creek Cabin Building #4800
Snow Flat Cabin Building #3501
Snow Creek Cabin Building #3450
Sachse Springs Cabin Building #2452
Ostrander Ski Hut Building #5110
Old Big Oak Flat Road
New Big Oak Flat Road
Merced Lake Ranger Station Building #3400
Merced Lake High Sierra Camp Historic District

Wawona Tunnel
Vogelsang High Sierra Camp Historic District
Tuolumne Meadows High Sierra Camp Historic District

I have signed the application as commenting authority. If you have any questions, please call
Gene Itogawa of my staff (916) 653-8936.

Sincerely,

A handwritten signature in black ink, appearing to read "Milford Wayne Donaldson". The signature is written in a cursive style with some vertical strokes.

Milford Wayne Donaldson
State Historic Preservation Officer

Cc: Kimball Koch

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of
Property

historic name New Big Oak Flat Road

other names/site number

2.
Location

street & number N/A not for publication

city or town Yosemite National Park (YOSE) vicinity

state California code CA county Mariposa code 043 zip code 95389

3. State /Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Signature of certifying official

Date

State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of commenting or other official

Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:
entered in the National Register
See continuation sheet.
determined eligible for the
National Register
See continuation sheet.
determined not eligible for the
National Register

Signature of Keeper

Date of Action

New Big Oak Flat Road
Name of Property
_____ removed from the National Register
_____ other (explain): _____

Mariposa, CA
County and State

5. Classification

Ownership of Property (Check as many as apply)	Category of Property (Check only one)	Number of Resources within Property (Do not include previously listed resources in the count)	
☐ private	☐ building(s)	Contributing	Noncontributing
☐ public-local	☐ district	_____ buildings	
☐ public-State	☐ site	_____ sites	
☒ public-Federal	☒ structure	_____ 8 _____	_____ structures
	☐ object	_____ objects	
		_____ 8 _____	_____ 0 _____ Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)
Historic Resources of Yosemite National Park, California

Number of contributing resources previously listed in the National Register
0

6.Function or Use

Historic Functions (Enter categories from instructions)	Current Functions (Enter categories from instructions)
<u>TRANSPORTATION/road-related (vehicular)</u>	<u>TRANSPORTATION/road-related (vehicular)</u>

7. Description

Architectural Classification (Enter categories from instructions)	Materials (Enter categories from instructions)
Other: NPS Rustic	foundation <u>N/A</u>
	walls <u>N/A</u>
	roof <u>N/A</u>
	other <u>Asphalt, Concrete, Stone</u>

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

New Big Oak Flat Road
Name of Property

Mariposa, CA
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- ☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ **B** Property is associated with the lives of persons significant in our past.
- ☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☒ **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Areas of Significance

(Enter categories from instructions)

Transportation
Architecture
Landscape Architecture

Period of Significance

1935-1938

Criteria Considerations

(Mark "X" in all the boxes that apply.)

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or a grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years.

Significant Dates

N/A

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

National Park Service

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS)

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register

Primary location of additional data

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University

New Big Oak Flat Road

Name of Property

Mariposa, CA

County and State

☐ designated a National Historic Landmark

☒ Other

☐ recorded by Historic American Buildings Survey

Name of repository:

Yosemite National Park, California

☒ recorded by Historic American Engineering

Record # CA-147

10. Geographical Data

Acreage of Property 26

UTM References

(Place additional UTM references on a continuation sheet)

1	<u>11</u>	<u>259825</u>	<u>4177750</u>	4	<u>11</u>	<u>262350</u>	<u>4178150</u>
	Zone	Easting	Northing		Zone	Easting	Northing
2	<u>11</u>	<u>260800</u>	<u>4179150</u>	5	<u>11</u>	<u>261050</u>	<u>4178750</u>
3	<u>11</u>	<u>262500</u>	<u>4178400</u>	6	<u>11</u>	<u>260150</u>	<u>4177550</u>

____ See continuation sheet.

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

The National Registry Boundary includes the stretch of New Big Oak Flat Road containing three reinforced-concrete, open-spandrel-arch bridges over Cascade, Tamarack, and Wildcat creeks and the three tunnels with hand-laid rockwork portals, plus the rubble masonry retaining walls and rock embankments associated with the tunnel entrances and roadway between.

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

The boundary includes the architecturally and historically significant bridges and tunnels associated with the New Big Oak Flat Road as well as the masonry retaining walls and tunnel portals illustrative of landscape design and rustic architecture principles.

11. Form Prepared By

name/title Andy Kirk, Richard Coop, Charles Palmer

organization UNLV Public History date 3/8/04

street & number 4505 Maryland Parkway Box 455020 telephone (702)895-3544

city or town Las Vegas state NV zip code 89135-5020

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name _____

New Big Oak Flat Road

Name of Property

street & number

city or town

Mariposa, CA

County and State

telephone

state

zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

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National Park Service

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Summary

The new Big Oak Flat road project, including the construction of three tunnels with masonry portals; three reinforced concrete, open spandrel, arch bridges; and stretches of masonry guard walls began in 1935 and ended in 1940. The stones in the tunnel portals and retaining walls were individually shaped by stone cutters and exhibit a type of workmanship prevalent during the CCC/WPA period in the parks, but later superseded by quicker, cheaper, and less aesthetically pleasing modes of construction. The three bridges are beautifully styled and represent a departure from the log and stone rustic style to more functional, maintenance-free materials.

General Description

The masonry parapet wall along the new Big Oak Flat road is comprised of slab cut granite with mortar resting on a large slab cut stone base. The asphalt paved road itself is in excellent condition. Three bridges of poured-in-place concrete with a single arch cross Cascade, Tamarack, and Wildcat creeks. All are in good condition with small amounts of efflorescence evident. The three tunnels on the road have partial concrete barrel linings with some unlined areas. Portals are of rough-cut granite with mortar. Some advanced efflorescence exists on the interior concrete barrel lining and should be monitored closely for further deterioration.

Bridges

The new Big Oak Flat road bridges appear to have been designed to harmonize in style with the Yosemite Valley granite-faced, concrete arch ones built from 1921 to 1933:

Cascade Creek Bridge – 101’ span, reinforced concrete, open spandrel arch, 24’ clear roadway, two 4’ sidewalks, length 0.037 miles.

Tamarack Creek Bridge – 91’ span, reinforced concrete, open spandrel arch, 26’ clear roadway, two 4’ sidewalks, length 0.036 miles.

Wildcat Creek Bridge – 106’6” span, reinforced concrete, open spandrel arch, 24’ clear roadway, two 3’ sidewalks, length 0.044 miles.

Tunnels

Construction work consisted of placing an eighteen-inch ring of reinforced concrete throughout tunnels #1-2 with a concrete curb along one side and a curb and three-foot, steel-topped sidewalk on the other. Cut stone portals were constructed at both ends of each tunnel and the portals were backfilled with a mixture of rock and earth to support the loose rock faces through which the tunnels were driven. The concrete lining of both tunnels was completed the end of May 1937; the portals were completed in November 1937. The project design for tunnel #3, the longest, included cement rubble masonry retaining walls and a hand-laid rock embankment on the roadway approach to the east portal.

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Significance

Property Type: Resources Associated with Settlement and Industry (1851-1951)
 Subtype: Transportation
Property Type: Resources Associated with State and Federal Administration of Yosemite (1864-1966)
 Subtype: National Park Service Administration
Property Type: National Park Service Landscape Architecture in Yosemite (1916-1940)
Period of Significance: 1935-1938

The new Big Oak Flat road tunnels, bridges, and retaining walls are considered significant in transportation as well as landscape architecture and architecture. Relocation of this road section was studied seriously by the National Park Service, including the landscape division and Director Horace Albright himself. Specific concerns related to possible desecration of the granite cliffs of the Merced River canyon during road construction and the creation of scars that would be visible from the new Wawona road. Boring tunnels, building retaining walls to hide scars, and constructing beautifully-styled, functional concrete bridges are some of the design solutions established in the 1930s to disguise roads and their associated structures, while upgrading them, in natural areas of the National Park Service. The portals on Highway 120 are considered some of the finest rock work in the park.

Historical Context

In 1925 the National Park Service and the Bureau of Public Roads began discussing ways in which major park roads could be built and maintained. A new road program had become necessary, based on the Park Service’s belief that roads within the parks should be of the same standard as those leading into them built by the various state highway commissions. In 1925 Director Stephen Mather announced a radical change in the Yosemite road-building program, including relocation of the Big Oak Flat roadbed to provide a gentler grade. Mather stated that the Park Service intended to build the best mountain roads that money and the science of highway engineering could devise.

Around 1926 the Park Service and Bureau of Public Roads signed a Memorandum of Agreement for the construction of major roads within the national parks. In addition to other work in Yosemite, the Park Service determined to relocate the Big Oak Flat road between Crane Flat and Yosemite Valley farther south, shortening the distance between the two points and enabling the road to be opened earlier in the spring. The Big Oak Flat work was postponed, however, until 1935.

In that year the park planned a new route for the Big Oak Flat Road, leaving the Merced Canyon near the powerhouse diversion dam and climbing the north wall of the canyon just above The Cascades. In the four miles to Meyer Pass, where the road would cross the rim of the canyon, the construction of two short tunnels and the boring of one long one would avoid defacement of the outstanding granite cliffs. The work was done by day labor under the close supervision of landscape engineers to safeguard the natural appearance of that section of the park. Long sections of rock wall hid

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unsightly scars from the deep cuts. The Big Oak Flat road from Crane Flat to the Yosemite Valley floor was completed in 1940. The first two miles up from the canyon comprised the most difficult stretch of highway construction ever undertaken in the park.

The Big Oak Flat road project included construction of three reinforced concrete, open spandrel arch bridges over watercourses. Surveys and foundation explorations at the individual bridge sites lasted from 1936 to 1938. The design and plans were prepared during 1937 and 1938. Construction began in October 1938 and was completed the end of October 1939. The subcontractor for quarrying and shaping the arch ring and face stones for the masonry portals was the Union Granite Co. of Rocklin, California. Stones for the portal masonry were secured from a large granite boulder two miles from the west portal of tunnel #3, on the Coulterville road. All arch ring and face stone shapes and sizes were sketched out full size on a platform. Full size wooden patterns were used by the stone cutters in shaping the individual stones. The subcontractors for that work were experienced quarry men and stone cutters. The large, five-sided rocks were designed carefully; all the angles fit closely together to provide the desired strength.

After completion of sections of the cement rubble masonry walls of smooth-faced stone in the tunnels as designed, it became apparent that that type of construction would not blend well with the adjacent slopes. With the approval of the park's landscape division, it was decided to construct the faces of the walls of massive and irregularly faced stone. On account of the steep side slopes, extensive masonry walls were necessary. Hand-operated mast-and-boom derricks handled the stone for the walls. They were moved ahead by mule train.

The method of construction used on tunnels #1 and #2 was to first bore a 6' x 7' pioneer tunnel at approximately spring line, 5 feet above roadway grade. A "jumbo" was then used in driving the full-sized bore, the holes being drilled parallel to the center line. Excavation of tunnel #1 was completed August 21, 1936; driving of tunnel #2 was completed on November 14, 1936. The two tunnels were lined with concrete during the period March to December 1937. Tunnels #1 and #2 were 367 and 224 feet long, respectively.

Tunnel #3 was 2,083 feet in length. The project design for the latter included cement rubble masonry retaining walls and a hand-laid rock embankment on the roadway approach section to the east portal. On August 12, 1937, the construction of a large cement rubble masonry retaining wall adjacent to the east portal of the tunnel was started. The rock wall was completed during the first week of November. Equipment and supplies were hauled from the west portal to the work site at the east portal via tractor and mule packtrain. The tunnel plans provided for the driving of a 6' x 7' adit at a right angle to the centerline, approximately halfway through the bore. The first 11 feet of the adit were increased in size to 9' x 9' to provide space to install the large exhaustor-blower in use at the west portal. The adit was holed through the cliff face on January 29, 1938, and was 180 feet long. The tunnel was driven by the full face method. The heading drilled and blasted each 24 hours comprised the full cross section of the bore, which was 31' x 21.5'. From data available, it was believed that this was the largest bore ever driven by that method. The drilling was

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accomplished by means of a drill carriage, or “jumbo,” mounted on the chassis of a five-ton Liberty truck. The project was completed September 10, 1938, having begun March 22, 1937.

The significance of the new Big Oak Flat road lies in the fact that it was built under the supervision of landscape architects who ensured that neither the construction activities nor the final product irreparably scarred the granite cliffs of the Merced River canyon. The stone portals on each of the tunnels are outstanding examples of hand-cut and hand-laid rockwork of a type not used in parks today because of the expense. They are illustrative of the kind of handcrafted stonework accomplished in the national parks during the 1930s in an attempt to naturalize engineering projects. The three arch bridges are a deviation from the more traditional log and stone rustic style used in Yosemite Valley. They were, however, designed to be aesthetically pleasing as well as functional and durable, necessitating a minimum of upkeep. The new Big Oak Flat road displays the best architectural and engineering talents of the National Park Service in the 1930s as it attempted to upgrade its road systems. The Big Oak Flat road was a particularly difficult engineering project because of the mountainous terrain and the tremendous amount of work involved in bringing in machinery, boring tunnels through granite, and pouring large concrete bridges.

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Bibliography

Finley, Michael V., Superintendent, Yosemite National Park to Regional Director, Western Region “Review of National Register forms for factual data,” September 7, 1989.

Historic American Engineering Record, “Big Oak Flat Road, Yosemite National Park” HAER No. CA-147 (Washington: Department of the Interior, 1991)

McClelland, Linda Flint. *Building the National Parks: Historic Landscape Design and Construction*. Baltimore: Johns Hopkins Univesity Press, 1998

Paden, Irene D. and Margaret E. Schlichtmann, *The Big Oak Flat Road*.(San Francisco: Lawton Kennedy, 1955).