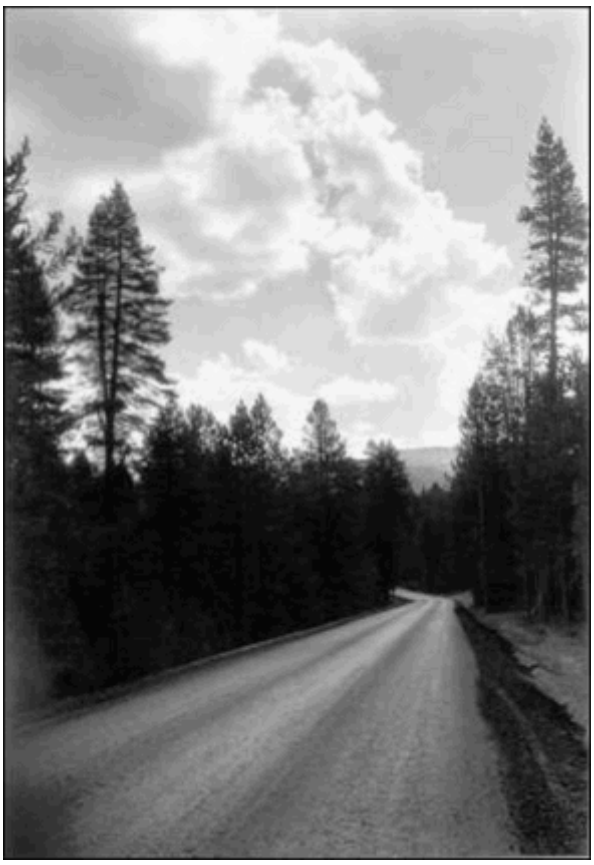
National Park Service
Cultural Landscapes Inventory
2007



Glacier Point Road
Yosemite National Park

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Programs

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CULTURAL LANDSCAPES INVENTORY (CLI)
2007

Glacier Point Road
Yosemite National Park

Yosemite National Park concurs with the findings of the CLI, including the management category and condition assessment as identified below:

MANAGEMENT CATEGORY: **B: Should be preserved and maintained**

CONDITION ASSESSMENT: **Fair**

9/4/07

Superintendent, Yosemite National Park — Date

Please return to:

John Hammond
Historical Landscape Architect
National Park Service
Pacific West Regional Office-Oakland
1111 Jackson St. Suite 700
Oakland, CA, 94607

GLACIER POINT ROAD
YOSEMITE NATIONAL PARK

California SHPO Consensus Determination of Eligibility

Actions Requested:

1) SHPO concurrence with the eligibility of Glacier Point Road for the National Register of Historic Places:

I concur __X__, I do not concur _____ that Glacier Point Road **is eligible** for listing on the National Register of Historic Places.

2) SHPO concurrence that the landscape characteristics as identified in the CLI contribute to the historic character of the site (see the following landscape characteristics within the CLI: Natural Systems and Features, Spatial Organization, Topography, Vegetation, Land Use, Circulation, Buildings and Structures, Views and Vistas, Small-Scale Features, and Archeology):

I concur __X__, I do not concur _____ that the **landscape characteristics** as described in the CLI contribute to the historic character of Glacier Point Road.

3) SHPO concurrence with the lists of contributing and non-contributing structures to Glacier Point Road (see tables below).

Based on the information provided in the CLI, the following **structures** have been identified as **contributing** features of Glacier Point Road:

LCS number	Structure Name	Date Built	Concur	Do not Concur
056019	Glacier Point Road	1932-1936	✓	
NA	Designed Historic Turnouts (11)	1932-1936	✓	
NA	Fill Slope Turnouts	1932-1936	✓	
NA	Badger Pass Ski Area Intersection	1935	✓	
NA	Sentinel Dome Access Road Intersection	ca. 1935	✓	
NA	Water Tank Access Road Intersection	ca. 1929	✓	
056024	Bridalveil Creek Bridge	1933	✓	
056020	Guardwalls with rock embankments at El Portal view	1932-1933	✓	
056021	Rock embankments at Clark Range View	1935	✓	
056023	18-24" pipe culverts with mortared stone headwalls (96)	1932-1935	✓	
056023	30-36" pipe culverts with mortared stone headwalls (3)	1932-1935	✓	

LCS number	Structure Name	Date Built	Concur	Do not Concur
056022	Double 24-36" pipe culverts with mortared stone headwalls (3)	1932-1933, 1935	✓	
056022	Double 36" pipe culvert with large mortared stone headwall (1)	1932-1933	✓	
634471	12-18" pipe culverts with dry laid headwalls (6)	1933-1935	✓	
634472	Pipe culvert with square rockwork drop inlet (1)	1933-1935	✓	
634473	Pipe culverts with carved stone inlet (2)	1932-1935	✓	
634474	Pipe culverts with concrete slab drop inlet (6)	1934-1935	✓	
634475	Concrete box culvert (1)	1932	✓	

Based on the information provided in the CLI, the following structures are **not contributing** to the Glacier Point Road:

LCS number	Structure Name	Date	Concur	Do not Concur
NA	Road Realignment Turnouts (2)	1934-1936	✓	
NA	Modern Turnouts (12)	ca. 1960	✓	
NA	Casual Use Turnouts (17)	Post-1936	✓	
NA	Sentinel Dome/Taft Point Parking Lot	Post-1936	✓	
NA	Washburn Point Parking Lot	1958	✓	
NA	Unpaved Trailhead Parking Lots (2)	Post-1936	✓	
NA	Bridalveil Creek Campground Intersection	ca. 1958-1960	✓	
NA	Trailheads (4)	1934-1935	✓	
NA	Rock walls at Washburn Point	1963; 1993-1995	✓	
NA	Vault Toilets (3)	1990s	✓	
NA	Pipe culvert with metal grate drop inlet (1)	ca. 1958	✓	
NA	Metal Gates (3)	Post-1936	✓	
NA	Signs	Post-1936	✓	
NA	Snow stakes	Post-1936	✓	
NA	Garbage cans	Post-1936	✓	
NA	Bear-proof lockers	Post-1936	✓	
NA	Picnic table	Post-1936	✓	

Reasons/comments why any 'Do Not Concur' blocks were checked:

Stephen D. Mikesell DSHPO 9/27/07

California State Historic Preservation Officer Date

Please return forms to the attention of:
John Hammond
Cultural Landscapes Inventory Coordinator-Oakland
National Park Service
Pacific West Regional Office-Oakland
1111 Jackson St. Suite 700
Oakland, CA, 94607
(510) 817-1407
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Inventory Unit Summary & Site Plan

Inventory Summary

The Cultural Landscapes Inventory Overview:

CLI General Information:

Cultural Landscapes Inventory – General Information

The Cultural Landscapes Inventory (CLI) is a database containing information on the historically significant landscapes within the National Park System. This evaluated inventory identifies and documents each landscape's location, size, physical development, condition, landscape characteristics, character-defining features, as well as other valuable information useful to park management. Cultural landscapes become approved inventory records when all required data fields are entered, the park superintendent concurs with the information, and the landscape is determined eligible for the National Register of Historic Places through a consultation process or is otherwise managed as a cultural resource through a public planning process.

The CLI, like the List of Classified Structures (LCS), assists the National Park Service (NPS) in its efforts to fulfill the identification and management requirements associated with Section 110(a) of the National Historic Preservation Act, National Park Service Management Policies (2001), and Director's Order #28: Cultural Resource Management. Since launching the CLI nationwide, the NPS, in response to the Government Performance and Results Act (GPRA), is required to report information that respond to NPS strategic plan accomplishments. Two goals are associated with the CLI: 1) increasing the number of certified cultural landscapes (1b2B); and 2) bringing certified cultural landscapes into good condition (1a7). The CLI maintained by Park Historic Structures and Cultural Landscapes Program, WASO, is the official source of cultural landscape information.

Implementation of the CLI is coordinated and approved at the regional level. Each region annually updates a strategic plan that prioritizes work based on a variety of park and regional needs that include planning and construction projects or associated compliance requirements that lack cultural landscape documentation. When the inventory unit record is complete and concurrence with the findings is obtained from the superintendent and the State Historic Preservation Office, the regional CLI coordinator certifies the record and transmits it to the national CLI Coordinator for approval. Only records approved by the national CLI coordinator are included on the CLI for official reporting purposes.

Relationship between the CLI and a Cultural Landscape Report (CLR)

The CLI and the CLR are related efforts in the sense that both document the history,

significance, and integrity of park cultural landscapes. However, the scope of the CLI is limited by the need to achieve concurrence with the park superintendent resolve eligibility questions when a National Register nomination does not exist or the nomination inadequately addresses the eligibility of the landscape characteristics. Ideally, a park's CLI work (which many include multiple inventory units) precedes a CLR because the baseline information in the CLI not only assists with priority setting when more than one CLR is needed it also assists with determining more accurate scopes of work.

In contrast, the CLR is the primary treatment document for significant park landscapes. It, therefore, requires an additional level of research and documentation both to evaluate the historic and the existing condition of the landscape in order to recommend preservation treatment that meets the Secretary of Interior's Standards for the treatment of historic properties.

The scope of work for a CLR, when the CLI has not been done, should include production of the CLI record. Depending on its age and scope, existing CLR's are considered the primary source for the history, statement of significance, and descriptions of contributing resources that are necessary to complete a CLI record.

Inventory Unit Description:

Glacier Point Road (CLI ID 725341), located south of Yosemite Valley in Yosemite National Park (Figure 1), is a 16-mile stub road, beginning at Wawona Road at¬¬ Chinquapin and ending at Glacier Point. The road is the primary visitor access to the spectacular views of the domes, pinnacles, and waterfalls in and around Yosemite Valley available from Glacier Point.

National Park Service (NPS) evaluations identified Glacier Point Road as a potential historic resource that included cultural landscape components. The current project provides an inventory of the landscape characteristics and features, and determines whether it is significant as a cultural landscape. This document updates and supplements the information provided in Unrau's historical overview and assessment (1990), assesses the significance and integrity of the cultural resources associated with Glacier Point Road, and evaluates the eligibility of these resources as a historic district eligible for listing on the NRHP. All references cited are listed at the end of the document. See Appendix A for a list of additional documentation relating to the cultural landscape.

As a historic district associated with early park transportation, naturalistic landscape design, and national park master planning, the Glacier Point Road historic district includes the 16-mile current road alignment as it was designed and built in the 1930s; remnant portions of the original Glacier Point Road alignment that help convey early road character and route characteristics; and the developed areas that the road accessed. The developed areas, including Glacier Point, Bridalveil Creek Campground, and Badger Pass Ski Area are identified as sites within the district whose contribution will be determined at a future point.

Glacier Point Road exemplifies the naturalistic landscape design aesthetic of the NPS in the 1930s, and represents the initial burst of development of automobile roads in the national parks. The Glacier Point Road system embodies the ideas developed during the early history of the park regarding preserving

natural and scenic beauty while providing access so that people could enjoy it. The old and new Glacier Point Roads, along with the sites they access, represent a system of park destinations and the means to reach them. The period of significance spans the years 1882-1936, reflecting the period when the first road to Glacier Point was built to the period when the NPS coordinated the design and construction of the “new” Glacier Point Road still in use today. The historic character of the road is evident in remaining landscape characteristics and features, including natural systems and features, spatial organization, topography, vegetation, land use, circulation, buildings and structures, views and vistas, small-scale features, and archeology. These patterns and their surviving features retain integrity of location, design, setting, materials, workmanship, feeling, and association, and continue to convey the historic significance of Glacier Point Road.

Site Plan

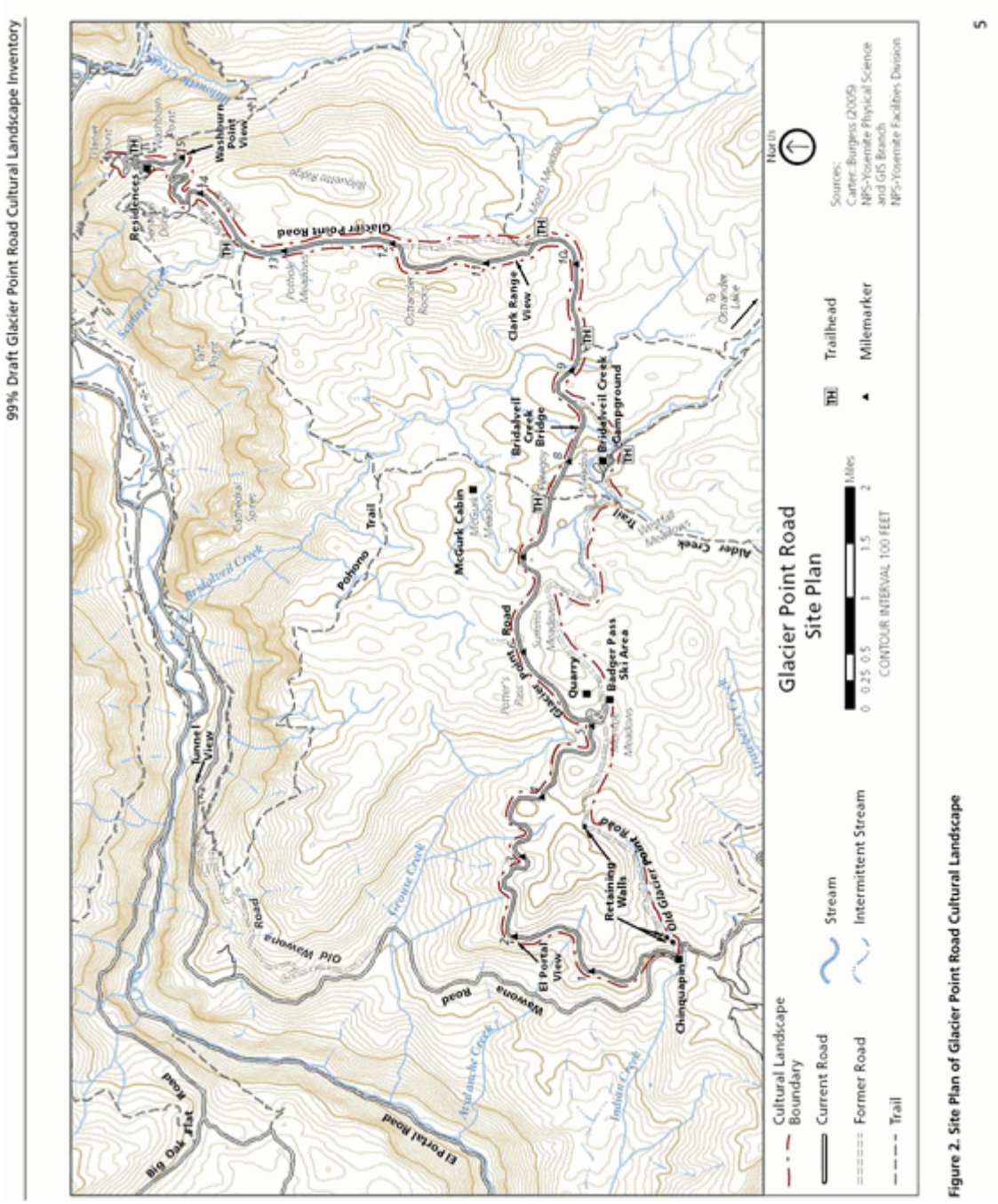


Figure 2. Site Plan of Glacier Point Road Cultural Landscape

Site Plan of Glacier Point Road Cultural Landscape

Property Level and CLI Numbers

Inventory Unit Name:	Glacier Point Road
Property Level:	Landscape
CLI Identification Number:	725341
Parent Landscape:	725341

Park Information

Park Name and Alpha Code:	Yosemite National Park -YOSE
Park Organization Code:	8800
Park Administrative Unit:	Yosemite National Park

CLI Hierarchy Description

Glacier Point Road is a historic district with three component sites: Badger Pass Ski Area, Bridalveil Creek Campground, and Glacier Point. These three sites will be analyzed and evaluated later, under separate documentation efforts.

Concurrence Status

Inventory Status: Complete

Completion Status Explanatory Narrative:

Glacier Point Road CLI documentation was prepared by Clare Sandy and Anne DuBarton of Newfields, Las Vegas, NV. Data was entered by Daniel Schaible of Yosemite NP and John Hammond of PWRO - Oakland.

Concurrence Status:

Park Superintendent Concurrence:	Yes
Park Superintendent Date of Concurrence:	09/04/2007
National Register Concurrence:	Eligible -- SHPO Consensus Determination
Date of Concurrence Determination:	09/27/2007

Geographic Information & Location Map

Inventory Unit Boundary Description:

The boundary of the Glacier Point Road historic district begins where Glacier Point Road intersects with the parking areas at Chinquapin, and ends at Glacier Point. The boundary is 100 feet on either side of the center line of the current alignment to encompass the road and all of its associated features. Where the alignments of Glacier Point Road and Old Glacier Point Road differ, the boundary is 100 feet north and west of the center line of the current alignment and 100 feet south and east of the alignment of Old Glacier Point Road such that the boundary encompasses both roads and the land between them. The boundary expands as needed to include all of the developed areas of Glacier Point, Bridalveil Creek Campground, and Badger Pass Ski Area, component sites of the district that will be assessed for their contribution at a future time. Refer to Figure 2 (Site Plan) below for a map depicting the cultural landscape boundary. The district is approximately 2,260 acres in area. UTM coordinates of the landscape boundary are presented in Management Information, below.

Boundary Justification

The boundary of the Glacier Point Road historic district encompasses the current alignment of the road and all of its associated structures, features, and topographical manipulations, including the road prism, shoulders, turnouts, rock cuts, vegetation, bridges, ditches, culverts, retaining walls, and guardrails. The boundary also encompasses the alignment of Old Glacier Point Road where it differs from the current alignment. The width of 100 feet on either side of the center line is intended to include all features and areas of cut and fill associated with the construction of the road.

Developed areas included within the boundary are Badger Pass Ski Area (CLI ID 725351), Bridalveil Creek Campground (no CLI ID), and Glacier Point (CLI ID 725340). These areas were destinations along a spur road whose only function was access to the destinations, and they were planned, designed, and developed in concert with the development of the travel corridor. As elements of the master planning effort and as representations of the naturalistic landscape design principles that guided the development of Glacier Point Road, these areas are included within the boundary of the historic district. Yet while the development of these areas was integral to the development of Glacier Point Road, each is distinct and complex enough to merit analysis as a separate landscape. So although these areas are within the boundary of the Glacier Point Road historic district, they should be considered individual sites whose features will be documented and assessed and whose contribution to the larger district will be determined at a future time.

Chinquapin Developed Area is being evaluated under a separate document, and should be considered a component site of the Wawona Road landscape (CLI ID 725328). Chinquapin Developed Area is not within the boundary of the Glacier Point Road historic district.

State and County:

State: CA

County: Mariposa County

Size (Acres): 2,260.00

Boundary UTMS:

Source	Type of Point	Datum	UTM Zone	UTM Easting	UTM Northing
GPS-Differentially Corrected	Area	NAD 27	11	261,472	4,171,813
GPS-Differentially Corrected	Area	NAD 27	11	261,970	4,172,934
GPS-Differentially Corrected	Area	NAD 27	11	262,677	4,172,984
GPS-Differentially Corrected	Area	NAD 27	11	263,663	4,172,875
GPS-Differentially Corrected	Area	NAD 27	11	264,607	4,172,125
GPS-Differentially Corrected	Area	NAD 27	11	264,918	4,171,720
GPS-Differentially Corrected	Area	NAD 27	11	266,460	4,172,782
GPS-Differentially Corrected	Area	NAD 27	11	267,437	4,172,706
GPS-Differentially Corrected	Area	NAD 27	11	269,459	4,171,813
GPS-Differentially Corrected	Area	NAD 27	11	269,931	4,172,184
GPS-Differentially Corrected	Area	NAD 27	11	270,251	4,171,923
GPS-Differentially Corrected	Area	NAD 27	11	272,054	4,172,116
GPS-Differentially Corrected	Area	NAD 27	11	272,012	4,172,504
GPS-Differentially Corrected	Area	NAD 27	11	271,726	4,173,254
GPS-Differentially Corrected	Area	NAD 27	11	271,683	4,174,391
GPS-Differentially Corrected	Area	NAD 27	11	271,987	4,174,517
GPS-Differentially Corrected	Area	NAD 27	11	272,762	4,177,534

GPS-Differentially Corrected	Area	NAD 27	11	272,613	4,177,630
GPS-Differentially Corrected	Area	NAD 27	11	272,762	4,177,779
GPS-Differentially Corrected	Area	NAD 27	11	272,997	4,177,580
GPS-Differentially Corrected	Area	NAD 27	11	272,942	4,177,821
GPS-Differentially Corrected	Area	NAD 27	11	273,294	4,177,692
GPS-Differentially Corrected	Area	NAD 27	11	273,276	4,178,325
GPS-Differentially Corrected	Area	NAD 27	11	273,107	4,178,317
GPS-Differentially Corrected	Area	NAD 27	11	273,225	4,178,384
GPS-Differentially Corrected	Area	NAD 27	11	269,645	4,171,754
GPS-Differentially Corrected	Area	NAD 27	11	268,992	4,171,356
GPS-Differentially Corrected	Area	NAD 27	11	266,857	4,171,670
GPS-Differentially Corrected	Area	NAD 27	11	267,028	4,172,316
GPS-Differentially Corrected	Area	NAD 27	11	265,264	4,171,468
GPS-Differentially Corrected	Area	NAD 27	11	263,520	4,171,777
GPS-Differentially Corrected	Area	NAD 27	11	261,591	4,170,471

Location Map:

Map of Yosemite National Park and Surrounding Region Showing Location of Glacier Point Road within the Park

Regional Context:

Type of Context: Cultural

Description:

Development of Yosemite roads began in the 1860s as entrepreneurs realized money could be made through development of hotels and construction of toll roads (Greene 1987:44, 91-92, 103-110, 114-151). The early history of Yosemite is full of oppositions between those who wished to develop the region so they could make a profit and those who wished to preserve the natural and scenic wonders in as pure a state as possible. The earliest developments focused on making Yosemite Valley as attractive to visitors as possible and included blasting away a glacial moraine to lower the water table, developing footpaths and trails, landscaping, and reseeding meadows to produce fodder for horses (Greene 1987:262-288). At the same time, men such as Frederick Law Olmsted and John Muir promoted the preservation of the park resources (Greene 1987:51-55, 260-262). These sometimes opposing views continue to pose management challenges for the NPS who strives to both preserve and provide access.

During the 1920s, as automobile use across the United States was increasing greatly, the NPS began constructing or reconstructing park roads to make the park resources more accessible to visitors using this new form of transportation. During this period, the NPS created national design standards for road building that incorporated naturalistic landscape architecture principles. Curving roadways that respond to the topography and scenery of the natural landscape have been a goal of designers and landscape engineers for a long time, even prior to the creation of the NPS. Therefore, it wasn't unusual for early park road designers to seek to preserve both public safety and natural beauty. The road from Chinquapin to Glacier Point is representative of the NPS's naturalistic design philosophy. It is designed to lie gently on the landscape, following contours to avoid large cuts and fills. It is curving and relatively narrow, in response to the landscape, and travel speeds must be slow to negotiate the road safely.

Glacier Point Road is a transportation corridor with areas along the roadway where additional circulation features and visitor services are provided. These areas vary in size and type from small turnouts and trailheads to viewpoints along the road. The road provides access to visitor destinations such as Badger Pass Ski Area, Bridalveil Creek Campground, the Glacier Point interpretive area and overlook, and spectacular views of the lower Merced River Canyon, the distant San Joaquin Valley, the Clark Range, Yosemite Valley, and the Sierra Crest. Visitors to this part of the park enjoy unique opportunities for scenic viewing and downhill skiing. In addition, this road provides access to most of the backcountry in the southern half of the park, making it a popular entry point of hikers, backpackers, campers, horseback riders, and cross-country skiers.

Type of Context: Physiographic

Description:

Granitic rocks and remnants of older rock characterize the geology of Yosemite. About 10 million years ago, the Sierra Nevada mountain range was uplifted and then tilted to form its

relatively gentle western slopes and the more dramatic eastern slopes. The uplift increased the steepness of stream and river beds, resulting in formation of deep, narrow canyons. About 1 million years ago, snow and ice accumulated, forming glaciers at the higher alpine meadows that moved down the river valleys. Ice thickness in Yosemite Valley may have reached 4,000 feet during the early glacial episode. The downslope movement of the ice masses cut and sculpted the U-shaped valley that attracts so many visitors to its scenic vistas today (Huber 1989). Glacier Point Road is located in the mid-to-high elevations of the park, in the hilly region south of Yosemite Valley and the Merced River Canyon. Elevations along Glacier Point Road range from 6,000 to 8,000 feet. Streams and rivers are abundant throughout Yosemite. The major creeks in the project area are Avalanche Creek, Bridalveil Creek, Grouse Creek, and Sentinel Creek.

Type of Context: Political

Description:

Glacier Point Road is located entirely on federal land within Yosemite National Park in Mariposa County, part of California's Nineteenth Congressional District.

Management Information

General Management Information

Management Category: Should be Preserved and Maintained

Management Category Date: 09/04/2007

Management Category Explanatory Narrative:

The Glacier Point Road cultural landscape meets the criteria to include it within the category "Should be Preserved and Maintained." The landscape meets NRHP Criteria A and C for eligibility, preservation of the landscape is consistent with the park's legislated significance, and the landscape has a continuing and potential purpose that is consistent with its traditional use and function (NPS 2001:67).

Adjacent Lands Information

Do Adjacent Lands Contribute? No

National Register Information

Existing National Register Status

National Register Landscape Documentation:

Undocumented

National Register Explanatory Narrative:

Glacier Point Road has not previously been evaluated for the NRHP and is not listed in the National Register Information System. While many of Glacier Point Road's historic features have previously been recorded or evaluated in some way, few have been considered in terms of the entire landscape or NRHP eligibility. The road's structures and small-scale features were previously evaluated by Unrau in a 1990 document, Historical Overview and Assessment of Significance of Stone Walls and Rock Work Along Glacier Point Road in Yosemite National Park, in which he recommended them ineligible for the NRHP on their own. This document was never sent to SHPO for concurrence. A portion of Old Glacier Point Road was evaluated and thought to be eligible for the NRHP under Criteria A, B and C by Nave (2000), and was recommended to be placed on the NRHP as part of the Old Glacier Point Road Historic District. This recommendation was never submitted to SHPO for concurrence, either.

A draft NRHP Multiple Property Documentation has been prepared for the historic resources of Yosemite National Park (NPS 2004a). This document provides the context for all National Register evaluations and nominations within the park.

During the current evaluation, the road system was found to be eligible for the NRHP as an individual historic district under Criteria A and C with a local level of significance. The Glacier Point Road Historic District includes three component sites, Badger Pass Ski Area, Bridalveil Creek Campground, and Glacier Point, which will be analyzed under separate documentation efforts.

National Register Eligibility

National Register Concurrence:	Eligible -- SHPO Consensus Determination
Contributing/Individual:	Individual
National Register Classification:	District
Significance Level:	Local
Significance Criteria:	A - Associated with events significant to broad patterns of our history C - Embodies distinctive construction, work of master, or high artistic values

Period of Significance:

Time Period:	AD 1882 - 1936
Historic Context Theme:	Creating Social Institutions and Movements
Subtheme:	Recreation
Facet:	Tourism
Time Period:	AD 1882 - 1936
Historic Context Theme:	Creating Social Institutions and Movements
Subtheme:	Recreation
Facet:	General Recreation
Time Period:	AD 1882 - 1936
Historic Context Theme:	Transforming the Environment
Subtheme:	Conservation of Natural Resources
Facet:	Scenic Preservation

Area of Significance:

Area of Significance Category	Area of Significance Subcategory
Transportation	None
Landscape Architecture	None

Statement of Significance:

Summary

The Glacier Point Road system is a cultural landscape located within Yosemite National Park. The landscape encompasses both the currently used Glacier Point Road and Old Glacier Point Road. The landscape is significant for its association with the development of tourism and scenic preservation and the development of transportation in Yosemite National Park (Criterion A). It is also significant for its association with the design style of naturalistic landscape architecture put forth by the NPS during the 1930s (Criterion C). It is recommended eligible for the NRHP under Criteria A and C as a historic district with local significance. The property includes 140 contributing features, at least 50 non-contributing features, and 12 unknown features.

Today, Glacier Point Road is an intact example of an early park scenic road constructed using the first national NPS standards for road building. Glacier Point Road retains integrity of location, design, setting, materials, workmanship, feeling, and association. The road's naturalistic character is apparent in the extant landscape characteristics and features, namely the road's response to natural systems and features, spatial organization, topography, vegetation, land use, circulation, structures, views and vistas, small-scale features, and associated archeological resources, such as an example of the earliest type of park roads. For these reasons, Glacier Point Road is an excellent example of the type of road designed

during the pinnacle of NPS rustic landscape design in the 1930s.
Historic Context

The NPS has delineated broad themes of significance that are important in the history of the United States such as agriculture, architecture, and engineering (NPS 2001). Within these guidelines it is possible to define relevant and specific areas of significance for a project area. The following section describes the development of some of the events, movements, and ideas that were important to the landscape that exists in the Glacier Point Road area today. These fall into four main categories as defined in a Historic Context developed by the NPS titled “Pre-history and History in the National Park and Landmark System” (NPS 2001:Appendix H).

Some of these themes diagram the development of ideas that evolved concurrently and yet were theoretically opposed. Some are not easily separated. For instance, tourism was spurred by the desire to experience the natural wonders of Yosemite, and transportation necessarily developed to bring people to them.

- The first general category is titled Creating Social Institutions and Movements. Relevant themes include: the Historic Preservation Movement, and Tourism.

- The second general category is Expressing Cultural Values. Important themes include: Rustic Architecture, and Protection of Natural and Cultural Resources.

- A third general category is Developing the American Economy. The relevant theme is Transportation by Land and Air. Sub-themes include Wagons and Wagon Roads and Automobiles, Buses and Other Vehicles.

- The fourth general category is termed Transforming the Environment. The relevant theme is Conservation of Natural Resources, and sub-themes include Scenic Preservation and the Conservation Movement Matures 1908-1941.

These contexts are similar to those presented in the Yosemite Multiple Property Document (NPS 2004a), but are not identical. Applicable historic contexts developed as part of the Yosemite Multiple Property Document combine some of the topics into a single context and include:

- Settlement and Industry in Yosemite (1851-1951), subtheme Surveying for Transportation in Yosemite.

- Tourism, Recreation, and the Preservation Ethic in Yosemite (1864-1973); subthemes include Early Trails and Roads; and Technological Tourism: Railroads and Automobiles at Yosemite.

- Architecture, Landscape Design, and the Construction of the Visitor Experience in Yosemite (1856-1964); subthemes Rustic Architecture in Yosemite National Park, 1870-1940; and National Park Service Landscape Architecture in Yosemite National Park, 1916-1940.

Settlement and Industry in Yosemite

Development of routes into the remote Yosemite Valley region is a key theme during the period of significance. Pioneers had developed horse trails to access grazing and timber areas, along the foot trails of native peoples. As commercial exploitation developed, so did tourism. Both of these competing interests desired roads that wagons and carriages could use to carry raw materials out and bring tourists in. Eventually, automobiles came to the park and improved roads were necessary. Both the old carriage road and the current Glacier Point Road are associated with the development of transportation routes in the Glacier Point and wider Yosemite regions.

Tourism, Recreation, and the Preservation Ethic in Yosemite

Glacier Point Road is significant because it is associated with the development of tourism in the national parks. Beginning in the 1860s, hearty visitors endured long train and carriage rides to partake of Yosemite's scenic and natural wonders. After long trips to get to the region, they then braved saddle trails to view the scenery of Yosemite from the Glacier Point trail. While saddle trails and wagon roads came first, the automobile allowed more people to access remote natural areas. In 1910, fewer than 50,000 autos were registered in the U.S., but by 1920 nearly 10 million were on the nation's record books. This mode of transportation opened remote areas to the "common man" and sped the rate at which people could travel across the landscape.

Less tangible, but equally important elements contributing to the significance of Glacier Point Road are the views and other natural aspects of the area. Visitors to Yosemite enjoy the spectacular scenery, the magnificent trees, and the animals living on the landscape. Prominent men such as Frederick Law Olmsted and John Muir first expressed the value of such resources in the 1860s, long before the NPS was created. Land that would later become part of Yosemite National Park was withdrawn from exploitative use in 1864 as it became obvious that without such actions the resources would be quickly depleted and the scenic values lost (Greene 1987:54-57). A board of eight commissioners led originally by Olmsted managed the Yosemite Grant. Olmsted believed the main duty of the commissioners entailed enabling the masses to benefit from the major attribute for which the valley and groves had been set aside--their natural scenery:

The first point to be kept in mind then is the preservation and maintenance as exactly as is possible of the natural scenery; the restriction, that is to say, within the narrowest limits consistent with the necessary accommodation of visitors, of all artificial constructions and the prevention of all constructions markedly inharmonious with the scenery or which would unnecessarily obscure, distort or detract from the dignity of the scenery (Olmsted 1865).

Olmsted warned the state of California to use care to protect the values of the area as a museum of natural science and not permit the sacrifice of anything of value to future visitors. These beliefs were well ahead of their time. Some have proposed that the Yosemite Grant marked the beginning of the national park movement in America and in the world and should be regarded as the first unit of the later

National Park System (Greene 1987:59).

Architecture, Landscape Design, and the Construction of the Visitor Experience in Yosemite

From the mid-1920s to the early 1940s the NPS developed and employed a rustic style for many rural mountain locations. The style, commonly referred to as the Rustic Style or NPS Rustic, influenced state park systems and national forests throughout the country. In western mountain parks, buildings and other structures were constructed of native materials and incorporated local colors, shapes, and textures. Structural forms were designed to suit local conditions and environments, and were sited to blend into the surrounding landscape. The rustic style played an important role in road design as well. NPS road design that developed during this time period built on the philosophy of Major Hiram Chittenden, who

"…advocated building roads only when absolutely necessary, but then to the highest possible standards. He argued that modern, high-quality roads would be less likely to distract visitors' attention from the scenery than those that were too rough or winding. Andrew Jackson Downing's principles of creating the sequential experience were central to the landscape engineers' proposals for road construction. He recommended laying out the road so that significant views to the side would be arranged alternately, insuring that the visitor did not miss anything. Frank Waugh continued these ideas, and considered roads and trails to be the framework for the overall design of a recreational area. A principle that found great favor at Yosemite was the use of pull-offs or parking areas to direct visitors to the best views" (NPS 2004a:E-64).

In 1929 Director Horace Albright approved a new set of provisions for the protection of the landscape during road construction. These included the prohibition of large-scale blasting, or the clearing of land beyond the immediate margins of the roadway. The Field Office expended considerable effort on the matter of banks and road cuts, to ensure that they blended with the local topography. The ideal was to disguise any evidence of human activity on the landscape, beyond the existence of the road itself (NPS 2004a:E-64).

At Yosemite, the NPS experimented with different types of plantings to stabilize banks and conceal the worked surfaces. The NPS became a pioneering force in the area of roadside beautification, using principles of landscape gardening and development of scenic overlooks (NPS 2004a:E-64).

The Western Field Office developed standards for guardrails and curbs, in order to protect the safety of visitors without sacrificing the ethic of rustic design. …stonework featured the use of weathered, irregularly shaped stones laid in patterns to avoid straight lines or right angles in the mortar joints, suggesting the appearance of natural stone outcroppings... In more forested areas the guardrails were made of roughly shaped log posts and crossrails. Naturalistic curbs and sidewalks were an integral part of roads, trails, and scenic overlooks, and complementary, unified design practices were developed for these as well. Curbing made of unfinished boulders set in the earth was installed at Yosemite Village in the mid-1920s, but partially embedded log curbs subsequently replaced this in the 1930s, to be less conspicuous.

The road design, culverts, bridges, and rock walls along Glacier Point Road represent this rustic and naturalistic design attitude. Structures and small-scale features were constructed of locally available stone and other materials, and were made to blend into the natural surroundings they are part of. The road was sited to cause as little scarring of the surrounding terrain as possible and naturalization techniques were used to blend the necessary construction scars into the natural environment. The road was designed to provide a sequential experience where the road siting within a landscape allowed visitors to experience intended views and the various natural vegetation and character zones along the route.

The Civilian Conservation Corps (CCC) participated in roadside naturalization and other rustic landscape construction projects in many national parks, including on Wawona Road in Yosemite. However, no evidence was found that they worked on the construction or post-construction projects on Glacier Point Road.

Period of Significance

The period of significance for Glacier Point Road is from 1882 to 1936, reflecting the period from when the first road to Glacier Point was built to when the NPS coordinated the design and construction of the "new" Glacier Point Road still in use today. During the earlier portion of this period, saddle trails were being developed as carriage roads to bring visitors to Yosemite so they could view the scenic wonders. Also during this time, the first proponents of natural resource preservation voiced the idea that the natural and scenic resources of Yosemite should be preserved with as little human scarring as possible. Before this time, tourism in the area was limited to the rugged few who could brave the dangerous saddle trails from Wawona to Glacier Point. The development of carriage roads opened up the scenic delights to common people who could travel in more comfort.

It was during the latter part of the period of the significance that the road took on many of the characteristics that made it so important to the development of motor tourism in Yosemite. The first motor powered vehicle toured park roads in 1900, although such vehicles were outlawed to protect horse drawn wagons from 1907 to 1913. After 1914, the NPS recognized the importance of good roads and began working to improve access to the various regions of Yosemite. Through the 1910s and 1920s automobile use grew, although road maintenance didn't keep pace. During the 1930s road maintenance and rebuilding became a priority. Rerouting, paving, and bridge building along Glacier Point Road, Wawona Road, and others accelerated (NPS 1991b) as the NPS struggled to facilitate access while preserving natural values. Glacier Point Road was completed in 1936.

Alterations to Glacier Point Road that occurred during the Mission 66 period of the 1950s and 1960s are minimal (mainly at Washburn Point). The overwhelming character of the road dates to the 1930s construction. The changes that took place during the 1950s and 1960s to the facilities at Bridalveil Creek Campground would be reasonable to include in the period of significance for the campground landscape. However, since Bridalveil Creek Campground is not being included in the road landscape and historic district, these modifications do not factor into the determination of the period of significance

for the road.

National Register Criteria

A property can be found eligible for nomination to the NRHP under one or more of the criteria defined in NHPA (36 CFR 800.4 (c) (1)). The cultural and historical resources that compose Glacier Point Road were examined according to each of the criteria to determine if they were eligible for inclusion in the NRHP (NPS 1997b). The Glacier Point Road system with its associated circulation features, stuctures, and small-scale features is significant at a local level according to Criteria A and C as established by the NRHP in the following ways:

CRITERION A. — Resources that are associated with events that have made a significant contribution to the broad patterns of our history.

The Glacier Point Road system is significant at a local level in the area of transportation for its association with the development of roads in Yosemite National Park. The development of the Glacier Point Road system in Yosemite National Park is significant in relation to the idea of giving people access to the “scenic splendors” of the country. The Glacier Point Road system embodies the ideas developed during the early history of the park regarding preserving natural and scenic beauty while providing access so that people could enjoy them. Both the old road and the new were part of the pattern of Yosemite’s development that balanced preservation and tourism so that the resources of national parks would be preserved for future generations, and represent the views of visionaries such as John Muir and Frederick Law Olmsted. The Glacier Point Road system was important to the development of tourism in Yosemite and the surrounding regions. Tourism developed in the Glacier Point Road region as early as the 1860s and continues to the present. The main reasons that visitors travel the road are to access some of the most popular views in Yosemite National Park, access trails into the backcountry, or participate in winter sports at the Badger Pass Ski Area.

The Old Glacier Point Road is significant as an example of the early development of resorts and transportation in Yosemite, typified by the work of the Washburn interests and John Conway. Henry, John and Edward Washburn were responsible for developing numerous tourist facilities in the park and the Glacier Point Road region including the Wawona Hotel and Resort and the Glacier Point Hotel. They started the Yosemite Stage and Turnpike Company to develop the commercial aspects of road building. They constructed roads and then charged fees or tolls to use them. The company hired Conway, described as “one of the most notable early trail builders in Yosemite” (Unrau 1990:3), to construct the Old Glacier Point Road. Yosemite Stage and Turnpike Company operated it until tolls were eliminated as the NPS took over roads in the park. After this change, the company continued to develop tourism in the park.

The construction of the new Glacier Point Road represents the importance of the collaboration between the NPS and the BPR in the development of the park. The techniques devised for building a road through a sensitive area such as a park were the result of the cooperative efforts of the BPR engineers and the landscape architects of the NPS. Their techniques and philosophy were adopted not only in

other parks, but in some state highway departments.

CRITERION C. — Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The Glacier Point Road system is significant at a local level in the area of landscape architecture for its association with the application of the NPS rustic style to roads in Yosemite National Park. While its components may lack individual distinction, the old Glacier Point Road represents the use of primitive cut and fill techniques and is excellent example of early wagon roads in Yosemite National Park and the Sierra Nevada. Nave recommended that the old road is eligible for NRHP inclusion under Criterion C because it represents a type of road construction diagnostic of the period in which it was designed and built (2000).

The 1930s road represents the continuing design philosophy of NPS landscape architects and BPR engineers, as well as the vision of 1930s park superintendents. BPR Engineer Frank A. Kittredge drew up new road standards and a master plan for reconstruction of inadequate Yosemite roads in 1926. Charles Goff Thomson was the Park Superintendent who recognized the importance of Glacier Point Road and other park roads and worked diligently to develop them, while John C. Vint of the Division of Landscape Architecture developed designs for guardrails, culvert headwalls and other road aspects that made sure the new development would not detract from the natural environment it aimed to make accessible. The 1930s road and the structures associated with it are representative of the “rustic” style of architecture developed within the NPS as an appropriate way to design buildings, roads, bridges and small-scale features so that they were appropriate to their setting. In addition to the rustic style of the structures and small-scale features along the road, the road is sited to cause little disturbance to the natural landscape and to provide a sequential experience that allows visitors to experience intended views and varied vegetation types and character zones along the route. Naturalization principles guided the manipulation of topography and revegetation along the roadway. The natural features and designed vegetation patterns along the road creates a naturalistic setting in keeping with the rustic design aesthetic.

The use of the road has remained the same, however some minor changes have occurred to meet the needs of visitors, to improve with advancing technology, and to meet weather, natural and geologic concerns, and as a result of natural vegetation growth and fire regimes. What one sees today does not exist exactly as it was first constructed. However, the road alignments, width of the road, the culverts, and traffic patterns remain basically the same. Despite the fact that the road has been modified somewhat as a result of upkeep and maintenance, it is the continuation of the philosophy of design that is most important. In addition to the road alignment, grades, and width, the designed features such as the culverts, embankments, and designed viewpoints are considered as part of the system and impart to the visitor a feeling of “blending with nature.” The continuation of the earlier design philosophy in most cases has produced a modern road system with a high degree of historic feeling. Most historic components of the road are extant, e.g., the Bridalveil Creek Bridge, the culverts, guardwalls and views.

Integrity

Glacier Point Road retains a high level of integrity within all of the seven aspects for defining integrity, location, design, setting, materials, workmanship, feeling, and association. The location of both the old and the new roads in the mountainous terrain south of Yosemite Valley, from Wawona Road to Glacier Point, has not changed since the period of significance. The natural design philosophy of the NPS in the 1930s is represented by the design and engineering of the road and its constituent parts. The intended relationship of the road to the natural setting surrounding it has had few changes since the period of significance. The materials characteristic of the road's construction have been little altered since it was built. The high level of workmanship produced by construction crews contracted by the BPR is evident in many aspects of the road landscape, in particular the mortared stone features. The naturalistic and rustic feeling of the road is expressed in the many remaining historic features and the setting of the road. The road's association with the early development of tourism, the development of transportation routes in the area and park roads in particular, and later development of automobile tourism and the incorporation of landscape architecture into road design are still important today.

National Historic Landmark Information

National Historic Landmark Status: No

World Heritage Site Information

World Heritage Site Status: No

Chronology & Physical History

Cultural Landscape Type and Use

Cultural Landscape Type: Designed

Current and Historic Use/Function:

Primary Historic Function: Automobile

Primary Current Use: Automobile

Current and Historic Names:

Name	Type of Name
Glacier Point Road	Both Current And Historic
Chincapin	Historic

Ethnographic Study Conducted: No Survey Conducted

Associated Group:

Name of Group: Southern Sierra Miwok

Type of Association: Historic

Ethnographic Significance Description:

According to ethnographic evidence, the Southern Sierra Miwok territory generally included the Merced River drainage up to and including Yosemite Valley and Wawona at the eastern boundary, extended west to near La Grange and Raymond, and was bounded on the north by the Tuolumne River and on the south by Fresno Creek (Bibby 2002:22). Chinquapin was claimed by the Miwok, along with Eight Mile, Wawona and Cold Spring (Barrett, in Bibby 2002:22). The exact number of groups that comprised the Southern Sierra Miwok language area is unclear, but at least five groups can be identified that had main villages in the foothills and seasonally accessed portions of what is now Yosemite National Park: those at El Portal, Bull Creek, Owwal (Pleasant Valley), the Nutchu, and the Pohonichi (Bibby 2002:26). Bunnell (in Bibby 2002:24) describes the Pohonichi territory as bounded by the ‘Yosemites’ territory on the north and the South Fork of the Merced on the south. They lived in the ‘Pohono Meadows’ and ‘Pohono Lake’ area during the summer, and the on the South Fork of the Merced during the winter. Bibby (2002:24) believes ‘Pohono Lake’ and ‘Pohono Meadows’ refer to Ostrander Lake and the chain of meadows from Ostrander Lake to Bridalveil Falls, including Peregoy Meadow and McGurk Meadow. Bunnell and others clearly associate the Pohonichi with the headwaters of Bridalveil (i.e., Pohono) Creek (Bibby 2002:25).

No specific ethnographic survey of the Glacier Point Road landscape has been conducted. It is expected that the area surrounding Glacier Point Road, including prehistoric archeological sites, has ethnographic value. However, ethnographic resources in the area are not likely to be related to or to contribute to the significance of the historic road landscape.

Chronology:

Year	Event	Annotation
2000 BC - AD 1850	Inhabited	The area was inhabited and utilized by Native Americans.
AD 1855 - 1856	Built	The Mann brothers built a toll trail from Clark's Station (in present Wawona) to Yosemite Valley along the route of the present Alder Creek and Pohono trails (Greene 1987:lxxi).
AD 1859	Purchased/Sold	The Mann brothers were forced to sell their toll trail to Mariposa County, which made it a free route (Greene 1987:42).
AD 1860	Built	Camps were established in meadows along the Mann brothers trail. Westfall and Ostrander cabins in Westfall Meadows, and Mono Meadow Cabin were built.
AD 1860 - 1940	Ranched/Grazed	Meadows along the present Glacier Point Road were used for grazing stock, first by private parties, and later by the Curry Company.
AD 1869	Built	Charles F. Peregoy constructed the Mountain View House in present Peregoy Meadow as a hotel for visitors who were traveling the Wawona to Yosemite Valley saddle trail, and who would often visit Glacier Point on the way. The hotel operated until 1878 (Greene 1987:lxxi).
AD 1874 - 1875	Built	In 1874, the Yosemite commissioners granted the A.H. Washburn, E.W. Chapman, and W.F. Coffman and Company of Mariposa the right to extend their stage toll road from Wawona to Yosemite Valley. The Wawona Road was completed in 1875, bypassing the earlier Wawona to Yosemite Valley saddle trail (and the Mountain View House) several miles to the west via Chinquapin. Around this time, a saddle trail from Chinquapin to Glacier Point was constructed.
AD 1878	Built	In 1872, Peregoy began to build a hotel at Glacier Point, but sold the property to James McCauley before it was complete. McCauley built a two-story hotel named the Mountain House in 1878.

AD 1882	Built	The Washburn interests reconstructed the saddle trail from Chinquapin Flat to Glacier Point as a wagon road. This 14 mile road was complete by 1882 (NPS 1991a).
AD 1885 - 1888	Built	Eleven Mile, Four Mile, and Pohono trails to Glacier Point were constructed (Roach 1936:4).
AD 1890	Established	A patent was granted to Thomas M. Again for a claim for 160 acres. Again intended to claim land around what is now known as McGurk Meadow, north of Glacier Point Road. However, the description of the location of the claim entered into the records did not match the location he intended to claim.
AD 1895	Purchased/Sold	The mistaken title for the McGurk Meadow land was sold to Jack McGurk by Hugh Davanay, who had acquired the land from Again (Greene 1987:232).
AD 1895 - 1897	Built	A log cabin was built in McGurk Meadow, probably by Davanay or McGurk (Greene 1987:232, 1139), which became known as McGurk Cabin.
AD 1897	Land Transfer	McGurk was evicted from McGurk Cabin by the U.S. Army during a title dispute due to the error in the original land claim description (Greene 1987:232)
AD 1917	Built	In 1917, the Desmond Park Service Company completed an imposing hotel at Glacier Point. The old Mountain House Hotel was joined to the new Glacier Point Hotel as an annex.
	Land Transfer	The federal government gained control of the Wawona toll road system, including the lateral to Glacier Point, in exchange for certain transportation concessions granted to the Washburns (Greene 1987:543). The last toll charges in the park were thus eliminated.
AD 1918	Built	Ledge Trail from Curry Village in Yosemite Valley to Glacier Point was built, replacing an earlier, more hazardous trail (Greene 1987:547). The Ledge Trail is no longer in use.

AD 1920 - 1921	Built	A road house and barn were built on Glacier Point Road at Bridalveil Creek (Greene 1987:581), known as the “Bridal Veil Road Station” on park maps, located near present Bridalveil Creek Campground. It is no longer shown on maps after 1936, and is thought not to be extant after that time.
AD 1925	Built	A road house and barn were built on Glacier Point Road at Bridalveil Creek (Greene 1987:581), known as the “Bridal Veil Road Station” on park maps, located near present Bridalveil Creek Campground. It is no longer shown on maps after 1936, and is thought not to be extant after that time.
AD 1925 - 1926	Planned	The NPS signed a Memorandum of Agreement with the Bureau of Public Roads (BPR) for construction and reconstruction of major roads in all the national parks. Bureau Engineer Frank A. Kittredge drew up new road standards and a master plan for reconstruction of inadequate roads in 1926. Plans called for the reconstruction of Wawona Road and Glacier Point Road.
AD 1925 - 1930	Maintained	Glacier Point Road received more maintenance attention than previously; turnouts were replaced, some culverts were replaced, and some grading and resurfacing work was conducted. The road was also oiled as a dust preventative.
AD 1929	Built	Glacier Point Campground was built near Glacier Point in the present residential area.
AD 1929 - 1933	Reconstructed	New Wawona Road from Wawona to Yosemite Valley was constructed (Greene 1987:lxxi).
AD 1930	Built	A comfort station was built at Glacier Point Campground.
AD 1930 - 1931	Planned	Planning for the new Glacier Point Road began in 1930. Several routes were investigated. A fire destroyed the survey records and the survey crews had to resurvey all the previous routes, completed in 1931 (Nissi 1931).
AD 1931	Built	Ranger station and naturalist’s cabin were built at Glacier Point Campground.

	Designed	A route for the first section of the new Glacier Point Road between Chinquapin Flat and Bridalveil Creek was laid out, following a generally east to northeasterly route via Grouse Creek (Nissi 1931:4).
AD 1932 - 1933	Graded	The Chinquapin to Bridalveil Creek section of Glacier Point Road was cleared, graded, and drainage structures were installed.
AD 1933	Designed	As part of the Glacier Point Road construction, the BPR designed a new bridge for the crossing of Bridalveil Creek. The bridge was completed by October.
	Planned	The route from Bridalveil Creek to Glacier Point was planned; a survey was completed from Bridalveil Creek to Sentinel Dome Saddle (Sentinel Saddle) (Potter 1933; Roach 1933).
AD 1933 - 1934	Built	The Chinquapin to Bridalveil Creek section of Glacier Point Road was surfaced.
AD 1933 - 1935	Graded	The Sentinel Saddle to Glacier Point section of Glacier Point Road was graded, drainage structures were built, and parking areas created.
AD 1934	Built	A comfort station was built at Glacier Point.
AD 1934 - 1935	Graded	The section of Glacier Point Road stretching from Bridalveil Creek to Sentinel Saddle was graded and constructed.
	Reconstructed	The Bridalveil Creek to Glacier Point sections of Glacier Point Road were surfaced.
AD 1934 - 1936	Paved	Bituminous surfacing of the new Glacier Point Road was completed in 1936 (Roach 1936).
AD 1935	Built	Trails connecting Sentinel Dome with Glacier Point, the Four Mile trail, and the Pohono trail were built.
	Abandoned	The Old Glacier Point Road was abandoned in place.

AD 1935 - 1936	Built	Badger Pass Ski Lodge and ski lift power house were constructed at Badger Pass Ski Area; a parking lot and access road were built.
AD 1936 - 1958	Developed	The NPS developed a campground at Bridalveil Creek around the location of the current Bridalveil Creek Campground horse camp site.
AD 1940	Established	Maintenance of Glacier Point Road was relinquished to the NPS by the Public Roads Administration (PRA, previously the BPR).
	Altered	The Bridalveil Creek to Sentinel Saddle section of Glacier Point Road was resurfaced.
AD 1957	Altered	Parking at Glacier Point was expanded and access roadways were modified.
AD 1958	Expanded	Parking lots at Badger Pass Ski Area, Washburn Point, and Glacier Point were enlarged; concrete curbing was added. The existing turnout at Washburn Point was removed and 725 cubic yards of soil were excavated to create the new parking area (NPS 1958).
	Altered	Chinquapin Fire Crew cleared the Chinquapin to Badger Pass stretch of Old Glacier Point Road to use as fire suppression access (Warren 2005).
AD 1960	Expanded	The Bridalveil Creek Campground was enlarged and upgraded. The access road was given a new base course and bituminous surfacing (Unrau 1990:37).
	Altered	Glacier Point Road between Chinquapin and Badger Pass Ski Area was resurfaced. Turnouts were paved and curbed with asphalt curbs (NPS 1961).
AD 1963	Built	Washburn Point parking area was developed into a formal scenic overlook with a wall and footpaths (NPS 1963).
AD 1969	Destroyed	Glacier Point Hotel, Mountain House, and the comfort station at Glacier Point were all destroyed by fire.
AD 1972	Altered	Glacier Point Campground was closed.

AD 1974	Altered	Removal of downed trees and minor reconstruction along 10.82 miles of Glacier Point Road took place.
AD 1979	Altered	The comfort station at Glacier Point Campground was converted into a residence.
AD 1980	Altered	1.3 miles of Glacier Point Road, from the Badger Pass Ski Area entrance east, was resurfaced.
AD 1981	Altered	The Switchbacks segment of Glacier Point Road was resurfaced. Switchbacks were improved by widening curves. Rock outcrops on the sides of the road were removed and a new asphalt shoulder was provided.
AD 1982 - 1983	Altered	The Federal Highway Administration (previously the BPR and the PRA) resurfaced a 2.5 mile section of Glacier Point Road in the vicinity of Bridalveil Creek Bridge.
AD 1983	Built	A two room residence was built at the former Glacier Point Campground area.
AD 1984	Altered	Modifications and additions to trails, the overlook, guardwalls, and exhibits at Glacier Point were completed (NPS 1984).
AD 1986	Altered	Glacier Point Fire burned the eastern slope of the Glacier Point area.
AD 1987	Altered	Lost Bear Fire burned along Glacier Point Road east of Bridalveil Creek.
AD 1990	Altered	Modifications to parking area, driveways, and overlooks at Glacier Point were completed. Part of the old parking area was demolished and revegetated; a walk, stairway, and retaining walls were added (NPS 1990).
	Altered	Steamboat Fire burned north of Glacier Point Road between Chinquapin and Badger Pass Ski Area.
AD 1991	Demolished	Asphalt was crushed, topography was recontoured and vegetation restoration was carried out on 0.5 mile of Old Glacier Point Road from Bridalveil Creek Campground east to Glacier Point Road (NPS 1992).

AD 1993	Altered	A non-historic toilet at Summit Meadow was replaced with a handicap accessible vault toilet.
AD 1993 - 1995	Altered	The overlook at Washburn Point was altered; stone walls, a staircase and railing were constructed.
AD 1994	Built	A vault toilet was installed at Sentinel Dome/Taft Point trailhead.
AD 1997	Built	A vault toilet was installed at Ostrander Lake trailhead.
AD 1997 - 1998	Built	At Glacier Point, restroom facilities were replaced, an amphitheatre was built, educational exhibits were installed, and habitat restoration was carried out.

Physical History:

Prehistory, Circa 2000 B.C.-1850 A.D.

Archeological evidence indicates the earliest prehistoric use of the Yosemite area dates from approximately 3,000 to 4,000 years ago when hunting bands used the area on a seasonal basis. Early cultures used the area for hunting, fishing and plant gathering. Permanent villages were clustered on the floor of Yosemite Valley and other low elevation areas. Seasonal camps were located throughout the park. During the historical period, Miwok, Paiute, Mono, and Chukchansi Indians were permanent, seasonal, or intermittent inhabitants of the park.

Early Road and Trail Development, 1860s–1920s

Despite the remoteness and inaccessibility of Yosemite, tourism developed in the area almost as soon as it was discovered by Euro-Americans. Glacier Point was a popular stop for Yosemite tourists as early as the 1860s. Initially the Glacier Point Road region was crossed on trails with a very different orientation than the current roadways. Typically these were Native American foot trails later used by early visitors riding horseback. Most of these trails continue to exist today, with little realignment, and are used as hiking routes. Many of these trails are indicated on historic maps and were probably developed in the 1860s and 1870s.

The Alder Creek Trail, one of the oldest in the region and a main early route to Yosemite Valley, led from Wawona through Empire Meadow, across the headwaters of Alder Creek, and along the relatively level ground to Westfall and Peregoy Meadows, and eventually struck the Pohono Trail (see Figure 3). From there travelers could turn left to the valley via Old Inspiration Point, roughly along the route of the original Pohono Trail, or turn right toward Glacier Point. The Mann brothers built a toll trail to the Valley from Wawona in the 1850s along this route (Greene 1987:83-84).

In 1869 Charles F. Peregoy constructed the Mountain View House as a hotel for visitors traveling the Wawona to Yosemite Valley saddle trail. The hotel was located in present Peregoy Meadow and provided overnight accommodations for visitors who traveled to Glacier Point the next day. The rugged trail was the only access to the majestic views afforded by Glacier Point (Unrau 1990:1) until James McCauley contracted with the Yosemite commissioners in 1871to build a toll trail from the south side of the Yosemite Valley floor up to Glacier Point. John Conway, one of the most notable early trail builders in Yosemite surveyed and constructed the trail, known as the Four-Mile Trail (Greene 1987:80).

Washburn and McCready built the original section of Panorama Trail from Glacier Point to near Nevada Fall in 1872, which followed Illilouette Ridge and descended to join the Mono Trail at the bridge in Little Yosemite Valley. In 1872, Peregoy began to build a hotel at Glacier Point, but sold it before it was complete. When James McCauley completed the hotel in 1878, it was named the Mountain House.

In 1874, the Yosemite commissioners granted the A.H. Washburn, E.W. Chapman, and W.F. Coffman and Company of Mariposa the right to extend their stage toll road from Wawona to

Yosemite Valley. When the Wawona Road was completed in 1875, it bypassed the earlier Wawona to Yosemite Valley trail several miles to the west via Chinquapin and significantly changed the circulation pattern in the area. This road became the most successful of the Yosemite toll roads, becoming the primary entrance road from southern California (NPS 1991c). The Washburn-controlled road developed further as the company sought to draw more visitors through expansion of facilities and attractions. A primitive hotel at the South Fork Merced River was upgraded as “Big Tree Station” and eventually became the Wawona Hotel. The company constructed a spur road into the Mariposa Grove of Giant Sequoias in 1878. The success of these ventures and increased visitation encouraged the company to open up a wagon road to Glacier Point.

By the late 1870s, a saddle route was in operation from Elevenmile Station on Wawona Road via Glacier Point to Yosemite Valley. This route became very popular and the Washburn interests decided to reconstruct this saddle trail as a wagon road from Chinquapin Flat to Glacier Point. The 14 mile road was complete by 1882 (Figures 3 and 4). The road had grades that were as steep as 20 percent along its route and featured extreme switchbacks (NPS 1991a). No information is available regarding the first crossing at Bridalveil Creek. By the early 20th century, a bridge was in place on the old road (NPS 1991d).

In 1885 the Echo Wall Trail section of the Panorama Trail was built, directly connecting Glacier Point and Nevada Fall. It later became the Eleven-Mile or Long Trail. In 1893, commissioners' reports stated that the Panorama Trail and the bridge over Illilouette Creek had been rebuilt after long disuse (Greene 1987:88-89).

During the summer of 1900, a steam powered “Locomobile” became the first automobile to enter Yosemite National Park. A day or two later, Oliver Lippincott drove the car over Glacier Point Road to the very end. The car was pushed out on the overhanging rock and a publicity photograph taken (Lippincott 1900). Other cars probably made the trip to the point for a short period, but in 1907 the park banned all automobiles. In 1913, Secretary of the Interior Franklin K. Lane lifted the ban on automobiles, although cars were allowed only on the Coulterville Road until August of 1914. After that date, cars were permitted on all of the park roads, including the route to Glacier Point. Motorists were subject to a special use fee to travel over Glacier Point Road, but this was only in effect until July 1915. In 1917, the Desmond Park Service Company completed an imposing hotel near the overlook. The old Mountain House Hotel was joined to the new structure as an annex. Once the luxurious Glacier Point Hotel was complete, visitors flocked to the scenic spot (Bell 1915; Greene 1987:139, 618).

In 1917, the federal government gained control of the roads in exchange for certain transportation concessions granted to the Washburns. The last toll charges in the park were eliminated. It wasn’t long after that the NPS realized many of the roads in the park needed repair and upgrading. In 1925, the NPS signed a Memorandum of Agreement with the BPR for construction and reconstruction of major roads in all the national parks. Bureau Engineer Frank A. Kittredge drew up new road standards and a master plan for reconstruction of inadequate roads in 1926. Plans called for the reconstruction of Wawona Road and Glacier Point Road. In the meantime, Glacier Point Road was given more maintenance attention than previously;

turnouts were replaced, some culverts were replaced, and some resurfacing work was conducted. The bridge over Bridalveil Creek was replaced by four culverts in October 1930 (NPS 1991d). The road was also oiled as a dust preventive. The park Superintendent reported great satisfaction with the oiling because it cut down on the "…intolerable dust previously encountered" (Thomson 1929).

At the same time, visitor facilities at Glacier Point were being developed. The Ledge Trail from the Valley to Glacier Point was reopened in 1919 (Roach 1936:4). A simple stone building at Glacier Point was completed in 1925 that was used as an observation station. In 1929 a campground was built southwest of the point on Glacier Point Road.

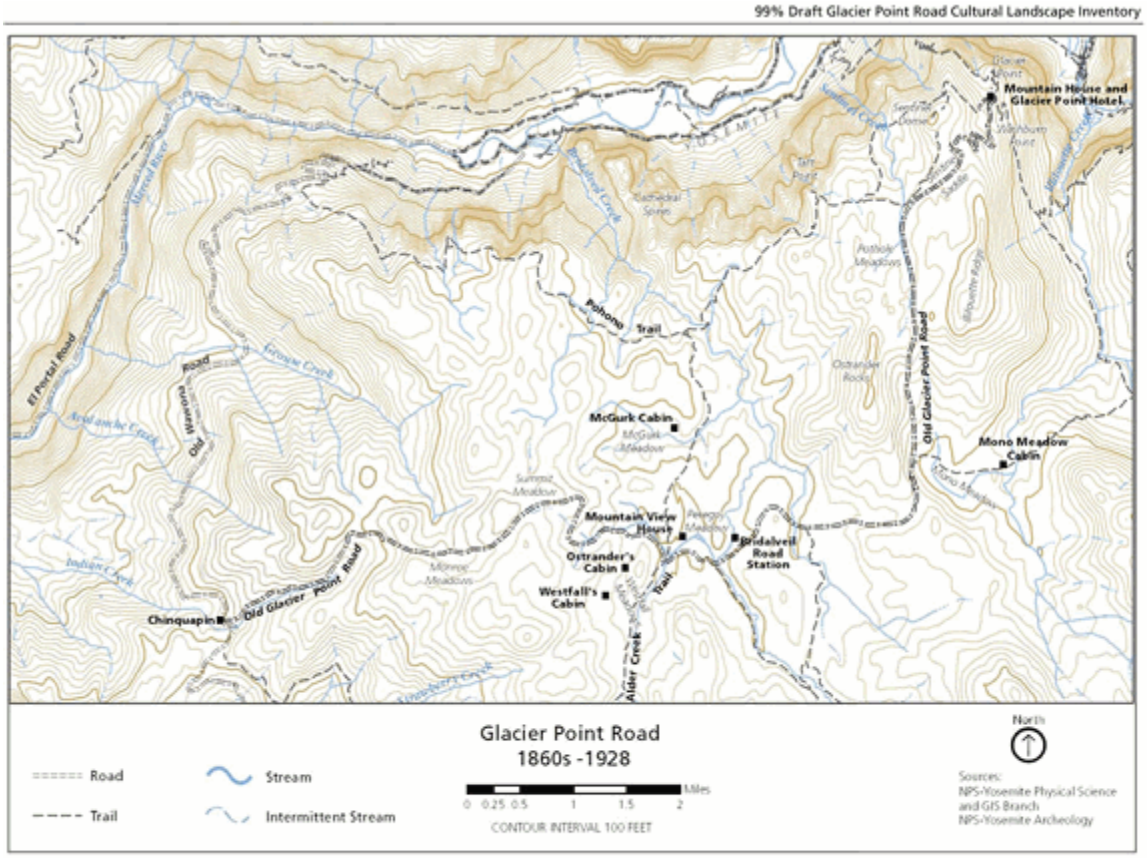
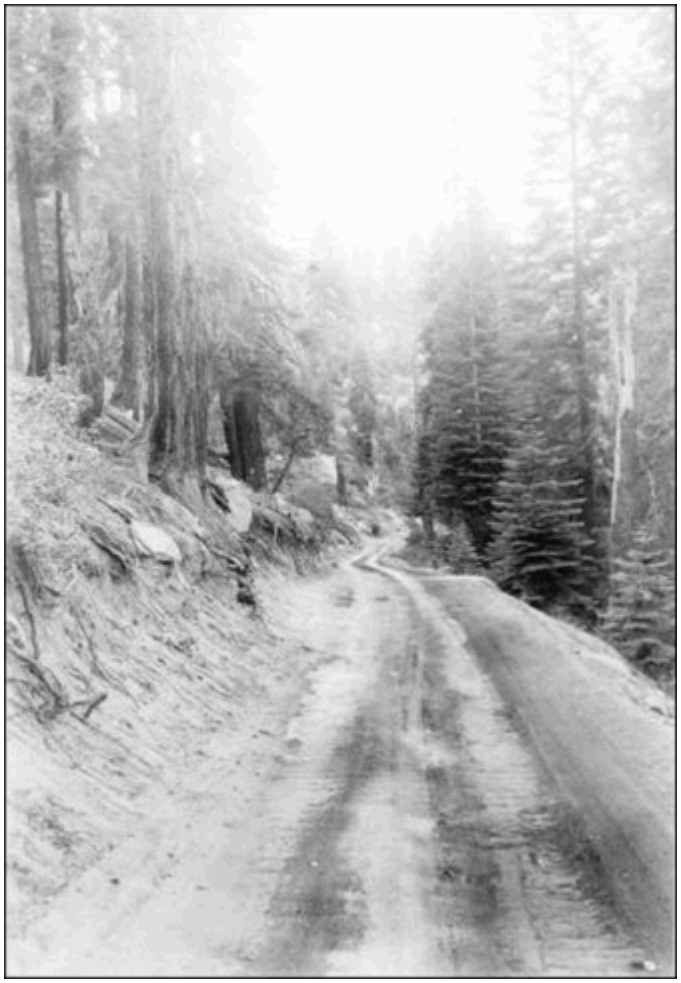


Figure 3. Map of Glacier Point Road Landscape, 1860s-1928

23

History Figure 1. Map of Glacier Point Road Landscape, 1860s-1928.



Historic Photo of Old Glacier Point Road
Photo courtesy Yosemite Research Library, Negative No. RL-8147

Glacier Point Road Design and Construction, 1930–1936

Under the supervision of Thomas Chalmers Vint, the landscape architects of the NPS Landscape Division had become experienced in the principles of harmonious design by the early 1930s. As a result of years of experimentation in the 1920s, Vint's office had made substantial advances in the road building program and the BPR work in the national parks (McClelland 1998:196-201). Detailed designs for intersections, parking areas, bridges, guardrails and the treatment of road banks were provided to road engineers and contractors. Standardized techniques to protect rocks, trees and scenery included locating work camps in the right-of-way to limit disturbance of roadside scenery, limiting blasting and burning, naturalistic treatment of earth cuts and filled slopes, minimization of tree removal, and naturalization of road banks (McClelland 1998:202-207).

Planning for the new Glacier Point Road began in 1930. Several routes were investigated, with

two options for the Bridalveil Creek to Glacier Point section: a loop road for one-way traffic, and a single two-way road. The location survey was halted by heavy snows in November 1930, and the records were transferred to the BPR field office located in a hotel in Oakhurst. A fire consumed the hotel and all the records were destroyed. The survey crews had to resurvey all the previous routes (Nissi 1931:2-3). When the NPS began planning the redesign of Glacier Point Road, improving the road by making it wider and with lesser grades and wider radius curves was important to the designers. Routing the road to provide excellent views to motorists, and to prevent the road from marring the landscape as viewed by other vantage points, were also important considerations weighed by the designers. The loop road design was ultimately rejected by the NPS, in favor of a single high standard road all the way from Chinquapin to Sentinel Saddle and a secondary, slow-speed road from Sentinel Saddle to Glacier Point (Roach 1933:2). A line around the north side of Sentinel Dome would have created a scar visible from Yosemite Valley unless a tunnel were utilized, and the entire loop would have been a lower standard road (Nissi 1931:6; Potter 1933).

A route for the first section between Chinquapin Flat and Bridalveil Creek (BPR “Section A1”) was laid out in 1931. This section was extensively rerouted and followed a generally east to northeasterly route via Grouse Creek (Figure 5). The route featured easier grades and a wider track than the carriage road and would be a full 22 feet wide (NPS 1931). Road designers used the standard 1929 Forest Highway designs for typical cross-sections. Design drawings from this section are reproduced in Appendix B1. By early fall the bids were out and by May of 1932 the chosen contractor began work. The contractor set up a camp at Chinquapin and began clearing and grading, which moved along well. Clearing of the first part of this section, which contained the bulk of the heavy rock excavation, was complete by October, despite a fire that destroyed the contractor’s camp. By the end of November, rough grading was complete and the crew closed down work for the winter. Work resumed the next summer with the rest of this section, and was complete by the end of October. The old road was utilized to access the construction area from multiple points. Access points were located at Mile 4.7 and Mile 6.7 (Thomson 1932; Roach 1934a). Surfacing was completed in 1934 (Hughes 1936). The only bridge on the road was built over Bridalveil Creek in 1933.

The route from Bridalveil Creek to Glacier Point was planned in 1933. The Bridalveil Creek to Glacier Point section of Glacier Point Road follows the course of the original road much more closely than the first section, although it deviates slightly in the Mono Meadow to Ostrander Rocks area. A survey was made of the Bridalveil Creek to Sentinel Saddle section (BPR “Section A2”) in 1933 (Roach 1933). Design drawings for this section are reproduced in Appendix B2. No survey or design drawings were made of the Sentinel Saddle to Glacier Point section (BPR “Section A3”), but a reconnaissance investigation was made in 1933 to determine the most practical location for this section of road (Potter 1933). The improved road was to follow the old road for the most part, with minor adjustments to eliminate the worst switchbacks (Roach 1936; Hughes 1936).

The middle section of the road stretching from Bridalveil Creek to Sentinel Saddle was graded and constructed in 1934 and 1935, although bituminous surfacing was not complete until 1936 (Roach 1936). Most of this section was completed in 1934 except the extremely rocky segment

from Mono Meadow to Ostrander Rocks, which caused a great deal of difficulty in construction (Hughes 1936).

The Sentinel Saddle to Glacier Point section of Glacier Point Road was built in 1933 and 1934. The section was not considered as “modern” as the western stretch because it was built with a narrower width and steeper grades, but was an improvement over the existing standard. The BPR supervising engineer lamented that the road was built “far below standards,” but indicated it would be adequate for several years (Roach 1936).

In general, Glacier Point Road is winding in response to the natural contours of the landscape as the road ascends and then descends to Glacier Point. In many places the road hugs rock faces that were blasted away to clear the road corridor. The 1930s construction methods used to construct the road combined modern technology with hand work. Grading was accomplished with heavy machinery and trucks, as was surfacing. Dynamite was used to “daylight” some areas. Slopes were limited to a 3:1 ratio and were treated by rounding and flattening. This limited erosion and blended the cuts into adjacent forests or meadows. Native plants were used to revegetate disturbed areas. This naturalization of roadsides after construction was just one part of the program that also included screening undesirable views, opening up scenic vistas, clearing dead and decaying timber from the roadside, and placing telephone lines underground.

Traffic increased significantly with the widening and surfacing of the road. During the period of road construction, in anticipation of increased numbers of visitors to the area, the NPS made several additions to facilities around Glacier Point. A comfort station was built at the hotel parking area, and a comfort station, ranger station, and naturalist’s cabin were constructed at the campground. Trail connections were made between the Sentinel Dome trail, Glacier Point, and the Pohono trail. Downhill ski facilities at Badger Pass Ski Area were also constructed during this period.

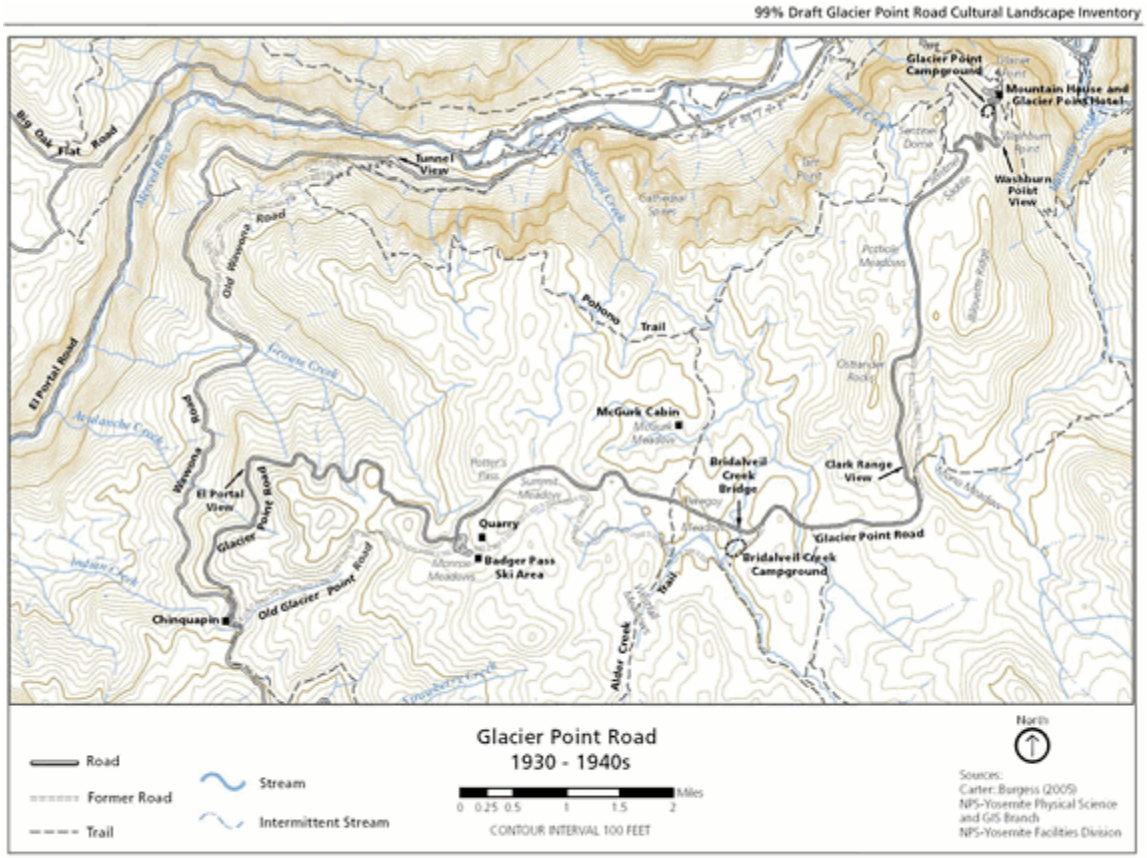


Figure 5. Map of Glacier Point Road Landscape, 1930-1940s

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History Figure 3. Map of Glacier Point Road Landscape, 1930-present.

Maintenance of Glacier Point Road, 1937-present

In October 1940, the Wawona and Glacier Point Roads were formally relinquished to the NPS. They had been under construction or post-construction administration by the Public Roads Administration (PRA, previously BPR) since 1928 (Unrau 1990). That same year, facilities at Badger Pass Ski Area were expanded and a 4-mile section of road east of Bridalveil Creek Bridge to Sentinel Saddle was resurfaced.

A wave of improvements began in 1957-1958 during the Mission 66 era, including the expansion of parking areas at Badger Pass Ski Area, Washburn Point, and Glacier Point. A stretch of Old Glacier Point Road was cleared by the Chinquapin Fire Crew to allow access for fire suppression efforts. A growing visitor population necessitated enlargement of Bridalveil Creek Campground in 1960. The campground access road was given a new base course and bituminous surfacing at this time. That same year, Glacier Point Road from Chinquapin to Badger Pass Ski Area was resurfaced by Harm Brothers Construction Company, including

paving and curbing of turnouts in this segment. In 1963, a formal scenic overlook with a stone wall and footpaths was developed at the expanded Washburn Point parking area (Figure 6).

On August 9, 1969 a devastating fire engulfed facilities at Glacier Point, destroying the Glacier Point Hotel, the Mountain House, and a comfort station. In 1980, the portion of Glacier Point Road between Badger Pass Ski Area and a point 1.3 miles to the east was resurfaced. One year later, the portion of road between Sentinel Saddle and Glacier Point parking area was also resurfaced. At this time, curves in this section were widened to enhance safety at switchbacks, roadside rock outcrops were removed, and a new asphalt shoulder was provided. Further resurfacing efforts were completed in 1983 along a 2.5 mile section of the road in the vicinity of Bridalveil Creek Bridge. Since that time, only spotty repairs have been made, usually in the form of patching, crack sealing and repairs associated with rockfall or storm damage.

Several fires during the late 1980s and early 1990s affected the landscape along Glacier Point Road by opening up the forest in some areas and altering views. In 1991, a vegetation restoration project removed asphalt and revegetated a segment of Old Glacier Point Road east of Bridalveil Creek Campground. During the mid-1980s improvements and changes were made at Glacier Point. The parking area was reconfigured; paths, trails, the overlook, retaining walls, and exhibits were modified or constructed, and revegetation took place. During the mid-1990s, further changes were made to the Washburn Point overlook, including construction of new guardwalls, railing, and steps. The most recent changes at Glacier Point took place in the late 1990s, when a new comfort station and an amphitheatre were constructed, exhibits were installed, and habitat restoration took place.

Analysis & Evaluation of Integrity

Analysis and Evaluation of Integrity Narrative Summary:

The Glacier Point Road system embodies the ideas developed during the early history of the park regarding preserving natural and scenic beauty while providing access so that people could enjoy it. The period of significance spans the years 1882-1936, reflecting the period when the first road to Glacier Point was built to the period when the NPS coordinated the design and construction of the “new” Glacier Point Road still in use today. The roads represent the development of transportation, particularly auto roads, in the parks. The road built in the 1930s is also an example of the NPS rustic design aesthetic. The historic character of the road is evident in many remaining landscape characteristics and features, including natural systems and features, spatial organization, topography, vegetation, land use, circulation, buildings and structures, views and vistas, small-scale features, and archeology. The present appearance of the landscape along Glacier Point Road has not changed significantly from its historic appearance; the road is narrow and winding as it was originally built, and has not had major changes since its construction. A great number of landscape characteristics remain much as they were originally designed and implemented, and continue to convey the historic significance of the road. Parts of the Old Glacier Point Road have been altered or abandoned, but remaining traces of it contribute to the historic character of the landscape.

Natural Systems and Features

Natural features and systems are important landscape characteristics because they provide the general setting for viewing the spectacular scenery of Yosemite Valley and the surrounding region. Glacier Point Road was constructed so that visitors could appreciate its views toward Yosemite Valley. In addition, natural systems and features are the primary influence on the design and engineering of the road and its component features, and to a large extent, dictate how and where the road was constructed. The various elements of design of Glacier Point Road are all responses to the natural systems and features in the area it traverses. Park landscape architects also used natural features as the inspiration and materials for the built elements of the landscape, which are designed to blend with the natural features of the land. The intact pattern of natural systems and features contributes to the setting of the historic road landscape.

Spatial Organization

The spatial organization of the various elements and features associated with Glacier Point Road relates directly to the natural landforms, vegetation, and scenery along the road, which form the sequential experience of the linear scenic drive. The road is winding, in response to the landforms, alternating sections of long, tangential curves, and tighter radial curves. The curvilinear alignment of the road reflects the natural topography of the area, and displays the natural features as it progresses through the landscape. The character and use of Glacier Point Road have changed very little since it was first built, and its alignment is the same.

Topography

The construction of Glacier Point Road required considerable human manipulation of the natural topography which is apparent along the entire road, and is evidenced by rock cuts, cut and fill, through cuts, causeways and water conveyance features. The pattern of manipulation of the natural topography demonstrates the design aesthetic and construction methods used to build the road.

Vegetation

The naturalistic style of landscape architecture placed great importance on integrating built features into the natural environment around them, with the use of vegetation playing a predominant role in the execution of this ideal. Vegetation was preserved during the construction of the road or restored after construction to achieve a desired effect. Unregulated growth of vegetation along Glacier Point Road over many years has allowed much of the intended character of vegetation along the roadway to become obscured. Nonetheless, the overall pattern of species and types of vegetation, as well as individual specimens, are intact today along the road, and contribute to the historic setting of the Glacier Point Road landscape.

Land Use

Glacier Point Road is a transportation corridor with the primary land use being vehicular circulation for the purpose of sightseeing and recreation. The land use patterns associated with this function are intact and reinforce the historic character of the road as a scenic transportation corridor.

Circulation

The circulation patterns and many circulation features have changed little since the road was completed. The circulation features of Glacier Point Road include the 16-mile road itself, with its travel lanes and shoulders, its cross-sections and design speed, as well as parking areas, trailheads, and intersections. Despite some changes due to natural processes, repaving and repair, the road retains its historic character on the whole. Circulation features that contribute to the significance of the road include historic turnouts and intersections. Non-contributing circulation features include turnouts, parking lots, and trailheads at which no historic features remain.

Buildings and Structures

Very few structures were built along the road, and where structures were needed, the visual impact of the human-made structures was minimized in order to accentuate the natural surroundings. These few structures exist today, and continue to contribute to the significance of the cultural landscape, by representing the rustic design intent of the road and the fine craftsmanship of the time. Contributing structures include a bridge, two guardwalls with rock embankments, and a rock embankment wall. Non-contributing structures include two modern rock walls and three modern vault toilets.

Views and Vistas

Glacier Point Road was designed as a scenic drive, with views and vistas playing an important role in the planning of the road alignment. The majority of Glacier Point Road is forested, with a limited range of view, interspersed with open meadow areas and occasional panoramic views located at overlooks. Three major panoramic views and several other character-defining views and vistas from the road still exist, and contribute to the setting of the landscape, although some of the views have been compromised by vegetation growth.

Small-scale Features

Small-scale features along Glacier Point Road were designed to harmonize both architecturally and visually with guardrails, bridges, and other stonework along the road, as well as blend in with the natural surroundings. The only remaining small-scale features dating to the period of significance are culverts. A total of 119 contributing culverts are located along the road. Only one non-contributing culvert, with a metal grate drop inlet, was found. Other non-contributing small-scale features along the road include gates, signs, snow stakes, garbage cans, bear-proof lockers, and a picnic table.

Archeology

It is likely that some intact features of Glacier Point Road, such as culvert headwalls, are buried. If discovered, these features should be considered contributing. Old Glacier Point Road has been identified as an archeological site. The road trace and alignment of Old Glacier Point Road and its associated features are important elements of the setting of the Glacier Point Road landscape because of its close association with the development of the Glacier Point Road travel corridor. Several other archeological sites have been documented within the Glacier Point Road corridor that may be significant on their own but do not contribute to the historic significance of Glacier Point Road.

Note: In the landscape characteristics descriptions, locations of features are referenced using milemarker numbers. Numbers start at Mile 0.02 at the western end of the road at Chinquapin intersection on Wawona Road, and end at Mile 16.03 at Glacier Point. Whole miles are marker on Figure 2 for reference. Locations are accurate to ±40 feet for the recently surveyed section of the road from Chinquapin to Badger Pass, accurate to ±100 feet for the Badger Pass to Sentinel Saddle section, and accurate to ±200 feet for the unsurveyed Sentinel Saddle to Glacier Point section.

Integrity

Integrity is the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the National Register criteria, but it also must have integrity. Within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity. These are location, design, setting, materials, workmanship, feeling, and association (NPS 1997b). Glacier Point Road retains a high level of integrity within all of the seven aspects for defining integrity.

Location

The location of both the old and the new roads in the mountainous terrain south of Yosemite Valley, from Wawona Road to Glacier Point, has not changed since the period of significance.

Design

The natural design philosophy of the NPS in the 1930s is represented by the design and engineering of the road and its constituent parts. Construction methods such as minimal use of blasting, minimal disturbance to adjacent areas, and naturalization following construction epitomize the design philosophy of the San Francisco Landscape Division. The road follows the natural contours of the landscape and features such as bridges, walls and drainage structures are constructed of natural materials that blend with the trees and forest of the region. Minimal maintenance has not affected their integrity.

Setting

The physical environment surrounding the road has had few changes since the period of significance. The road was designed to access the spectacular views and scenery along its route and this continues to be its main function today. The intended relationship of the road to the natural topography and vegetation of the forested region remains basically unchanged.

Materials

The materials characteristic of the road's construction have been little altered since it was built. Materials such as native stone and wood were used during the period of significance, in keeping with the rustic design aesthetic. While maintenance and resurfacing have resulted in some changes to the road, these are minimal. Patching of stonework, addition of rock walls, and replacement of log stringers on Bridalveil Creek Bridge have occurred using compatible materials. Some features that use materials that are incompatible with the historic character of the road have been added, such as contemporary road signs and asphalt curbing at turnouts. Overall, materials along the road retain integrity.

Workmanship

The high level of workmanship produced by construction crews contracted by the BPR is evident in many aspects of the road landscape, in particular the mortared stone features. Maintenance has resulted in some patching and replacement of stones. Most of the rockwork dating to the period of significance is in good condition, although loose stones are evident in places.

Feeling

The feeling of Glacier Point Road is conveyed through the retention of many of the historic features and the setting of the road. From the time first Euro-Americans arrived at Glacier Point, visitors have come to this area to experience the extraordinary scenery and enjoy the natural world. The streams, the

meadows, the trees, animals and plants, and the spectacular views of the valley below resulted in the development of the saddle trail, the wagon road, and finally the automobile road that visitors traverse today. Preservation of the natural environment and construction of “rustic” style structures, small-scale features, and the design of the winding road are representative of the development and execution of these ideals as developed at Yosemite. The naturalistic and rustic feeling of the road is expressed in the many remaining historic landscape characteristics.

Association

The road’s association with the early development of tourism, the development of transportation routes in the area and park roads in particular, and later development of automobile tourism and the incorporation of landscape architecture into road design are still important today.

Aspects of Integrity: Location

Design

Setting

Materials

Workmanship

Feeling

Association

Landscape Characteristic:

Natural Systems and Features

Introduction

The natural topography in the area of Glacier Point Road is very hilly and divided by many small streams and ephemeral drainages. Significant rock outcrops exist at intervals throughout the area, and vegetation ranges from forest to meadow. The various elements of design of Glacier Point Road are all responses to the natural systems and features in the area it traverses.

Geomorphology and Hydrology

The alignment of the road was determined by two major factors: the large-scale topography of the landscape that limited the locations that were appropriate for building the type of road planned, and the particularly scenic natural features near which designers wanted to align the road. The difficulty of determining the best route through the area resulted in delays of design of the entire road. The specific engineering and alignment of the road was further determined by natural factors such as the small-scale topography of the area, the composition of rocks and soils along the roadway, and the drainages to be crossed by the road. Minor changes to the line, placement of drainage structures, and fill composition had to be made in the field in response to

varying natural conditions. Practically every historic feature along the route is a response in some way to a natural feature encountered along the route. For example, culverts were placed in response to the numerous drainages in the mountainous terrain. The design of the structures along the road, such as Bridalveil Creek Bridge and rock embankment walls, were in response to major natural features such as Bridalveil Creek and steep rocky outcrops. The road was aligned and turnouts were built to take advantage of overlooks and scenic views.

Climate

The high Sierra Nevada creates a rain shadow effect, with the western slope being wetter and the eastern slope drier. Weather on the west side is characterized by a Mediterranean climate with cool, moist winters and warm, dry summers with occasional thunderstorms. Snow level in winter is generally above 3,500 feet. Being on the west side of the Sierra at mid- to high elevations, Glacier Point Road experiences generally warm, dry summers, snowy winters, and a good deal of spring runoff. While seasonal drainages are dry much of the year, numerous drainage structures were required on Glacier Point Road to accommodate the spring snowmelt and storm runoff at these locations.

The road is closed from Badger Pass to Glacier Point during the winter due to snow, generally from November to May. When Badger Pass Ski Area is open (December to April), the road is plowed and sanded as far as Badger Pass Ski Area (approximately five miles); at other times during the winter, the road is closed at Chinquapin intersection. Tire chain restrictions are in effect on the road when conditions require. Parking areas at Chinquapin and turnouts between Chinquapin and Badger Pass Ski Area are used for tire chain installation and removal.

Native Vegetation

Glacier Point Road traverses three distinct vegetation zones: the mixed conifer, the red fir, and the lodgepole pine zones. The mixed conifer vegetation occurs for three miles from Chinquapin towards Badger Pass. Common tree species are yellow pine (Jeffrey pine and ponderosa pine), sugar pine, Douglas fir, incense cedar, and white fir. The understory includes manzanita, deerbrush, and coffeeberry. California black oak occurs at Chinquapin and for about a mile up Glacier Point Road past Chinquapin. As the road climbs, the mixed conifer vegetation transitions to the red fir zone. Red fir predominates around Badger Pass and Glacier Point, with mixed stands of Jeffrey and lodgepole pine along the middle section of the road. Shrubs in these sections include huckleberry, oak, chinquapin, manzanita, and ceanothus. In the vicinity of McGurk Meadow trail, Peregoy Meadow, Bridalveil Creek, and Ostrander Lake trailhead, the road runs for about four miles through the lodgepole pine vegetation zone. The lodgepole pine zone is too low to be considered subalpine but it is distinctly different from the red fir zone. The length of the road through the red fir zone is about eight miles; through the mixed conifer zone, about three miles, and approximately four miles within the lodgepole pine zone (NPS 1991e:8-9).

Bridalveil Creek and the surrounding small drainages are lined with willows. There are numerous meadows along the middle section of Glacier Point Road. The meadows bloom with spectacular summer wildflower displays. The middle section of the road crosses or runs adjacent to Summit, Peregoy, and Pothole Meadows, plus several unnamed meadows (NPS 1991e:9).

Road Design

The placement of the road facilitated visitor access to various natural systems and features. The drive through the area gave visitors a chance to view some of the park's natural resources. Features such as trailheads, access roads, turnouts, rest areas and overlooks were designed to allow visitors to come into closer contact with these resources and the recreational opportunities they offer. The rustic design aesthetic evident in the character of the road is itself a response to natural features. Park landscape architects used natural features as the inspiration and materials for the built elements of the landscape, which are designed to blend with the natural features of the land.

Conclusion

Natural systems and features are important landscape characteristics because they provide the general setting for viewing the spectacular scenery of Yosemite Valley and the surrounding region. Glacier Point Road was constructed so that visitors could appreciate its views toward Yosemite Valley. In addition, natural systems and features are the primary influence on the design and engineering of the road and its component features, and to a large extent, dictate how and where the road was constructed. Some minor localized changes due to rockfall, seasonal flooding, vegetation growth, debris accumulation, and erosion have occurred. The lack of culvert and ditch maintenance in recent years has caused some changes to the natural hydrologic patterns in the area. In many locations, water accumulates on the upstream side of the road where it was designed to run under the roadway, and washes over the road where it was designed to run into ditches, due to clogging. Overall, however, the response to natural systems and features along the road are essentially unchanged since the road was first constructed. The intact pattern of natural systems and features contributes to the setting of the historic road landscape.

Spatial Organization

Introduction

The spatial organization of the various elements and features associated with Glacier Point Road relates directly to the natural landforms, vegetation, and scenery along the road, in order to form the sequential experience of the linear scenic drive. The features along the road are organized to facilitate scenic and recreational opportunities. The road accesses the area from the west and travels east and then north to the rim of Yosemite Valley at Glacier Point. The road is winding, in response to the landforms. Sections of long, tangential curves alternate with tighter radial curves. The curvilinear alignment of the road reflects the natural topography of the area, and displays the natural features as it progresses through the landscape. The

horizontal alignment of the road, heading towards Glacier Point, is characterized by a section of moderately steep uphill grades followed by a rolling middle section, and a sharp descent from the highest point on the road to Glacier Point. Both the natural and built landscapes were essential considerations in the design and construction of the road. John Wosky, NPS resident landscape architect, assisted the BPR during construction of the road. The construction report for the last part of construction on Glacier Point Road states that while the road was constructed primarily to make Glacier Point easily accessible, in addition,

"…it provides a scenic drive comparable to any in the Park, traversing as it does at an elevation of between 6,000 and 7,000 feet, magnificent stands of fir and pine, with occasional glimpses of verdant meadows, granite domes, and toward the northerly end, vistas of the rugged mountain peaks that form the summit of the Sierra" (Hughes 1936:2).

Five distinct character segments of Glacier Point Road can be defined in terms of the progression of experiences and patterns of road alignment encountered along the road.

Chinquapin to Potter's Pass Segment (Mile 0-5.7)

This segment of Glacier Point Road begins at Chinquapin intersection on Wawona Road and extends to Potter's Pass, a summit just east of Badger Pass Ski Area. This segment was designed to have a maximum grade of 6%, and a minimum radius of 200 feet for open curves and 300 feet for blind curves (Roach 1934a:10). The road climbs through fairly steep terrain along the entire segment at grades of 2-6%. To achieve the moderate grade, the road was designed to follow the contours of the natural topography and is consequently very winding, with several radial curves. This alignment significantly changed the original alignment of the Old Glacier Point Road, following a longer route with a lesser grade. This segment is the lowest elevation section of the road, starting at an elevation of 6,100 feet and ending at 7,500 feet. The forest in this segment is made up of lower elevation Sierra mixed conifer vegetation that transitions into red fir forest as the road climbs.

In this segment, heading toward Glacier Point, the upslope side of the road is on the right, and the downslope is on the left. This segment is characterized by dense forest in the foreground, with intermittent views out to the left. From Mile 0 to Mile 2, the road travels generally north, with an aspect to the west. Sugar pine, ponderosa pine, various firs and incense cedar are common. The overlook known as El Portal View is located at Mile 2, at the northeasternmost point of the road. This viewpoint was created to showcase "one of the best known views of the foothills and the Merced River Canyon" (Roach 1934a:2). After this point, the road turns east, with the aspect to the north. During the winter, this north-facing part of the road tends to have more snow and ice than the lower, west-facing portion. The few larger drainages in this segment are crossed with large culverts. Badger Pass Ski Area is located at Monroe Meadows and the surrounding hills, south of the road. Around Badger Pass Ski Area the forest becomes predominantly red fir. West and east of Badger Pass, steep topography and breaks in the forest height provide brief views to the north.

Currently, most of this segment is managed differently from the rest of the road. The segment of road from Chinquapin to Badger Pass Ski Area is opened during the winter, to allow access to the ski area. This segment of the road sees a great deal more winter use and maintenance than the rest of the road. Several “modern” paved turnouts are located in this segment that are plowed and can serve as tire chain installation areas. Where applicable in this document, the “Chinquapin to Badger Pass” segment is discussed instead of the “Chinquapin to Potter’s Pass” segment.

Potter’s Pass to Mono Meadow Segment (Mile 5.7-10.4)
After Potter’s Pass, the road descends slightly and comes to Summit Meadow. This change in the pattern of vertical alignment and opening of middle-ground views creates a sense of arrival at the middle section of the road. Through this segment, the road runs east to west with a gentle undulating up and down pattern over hills, along meadows, and crossing numerous small drainages. At the lowest point in this segment, Glacier Point Road crosses Bridalveil Creek, which feeds Bridalveil Falls. The creek is spanned with a steel girder bridge. A public campground is located at the natural flat area around Bridalveil Creek, and several trails converge in this area. In this segment, the road moves into forest dominated by lodgepole pines, interspersed with meadow and riparian vegetation. As in the previous segment, this segment was designed to have a maximum grade of 6%. Grades in this segment range from 0-6 %, and the elevation ranges from 6,900-7,500 feet. The road follows a curvilinear alignment, though curves are not as tight as in the previous segment, and brief straightaways are present. The part of this segment west of Bridalveil Creek was constructed under the same contract as the previous segment, and had the same minimum radius curvature of 200 feet as that segment. East of Bridalveil Creek, the minimum curvature was 400 feet (Hughes 1936:5). From Bridalveil Creek east, the road follows the old Glacier Point Road alignment fairly closely, and traces of the old road are visible in places along the road. Some pieces of the old road are currently utilized as turnouts, including Mono Meadow trailhead parking.

This segment is characterized by the experience of driving through a lodgepole corridor, with intermittent framed views of distant mountains in the background. In the middle ground are intermittent views of meadows. Some of the meadows are currently screened from the road by immature lodgepole pines. Around Bridalveil Creek, views of the distant Clark Range and Horse Ridge become visible ahead, framed by the road and corridor vegetation. Many young lodgepoles have grown up along the road, often screening the historic views of meadows from the road. Parts of this area have recently burned, opening intermittent views in the forested road corridor, and creating varied levels of mature, immature, and dead and down vegetation.

Ostrander Rocks Segment (Mile 10.4-12.0)

There is a distinct change in road character in this segment. The road turns north and for the first time the aspect changes to the east. The road runs along steep rocks, which rise above the roadway to the left to Ostrander Rocks and drop off steeply to the right. Expansive views of

the Clark Range open to the east, blocked in some areas by natural vegetation, and in others naturally open due to rock faces and steep topography. This segment was designed to have a maximum grade of 6% and a minimum radius of 400 feet for curves (Hughes 1936:5). The road ascends steeply in this segment, with grades of 4-6%, climbing from 7,400 feet to 7,800 feet. This segment was a particular design and construction challenge, and required different considerations than other sections of the road. The road was realigned to follow a higher route than the previous road, requiring significant rock cuts and retaining walls. The roughness and steepness of the terrain, the large amount of rock encountered, and the necessity of protecting traffic on the old road directly below the work, all factored into the difficulty of grading the roadbed in this segment. Extensive and difficult drilling and blasting was necessary, and had to be carried out lightly to avoid damage to the adjacent landscape (Hughes 1936:9). Several drop inlets were installed in this segment, rather than the headwalls used elsewhere on the road, to accommodate the hydrology of this steep segment. This segment passes through mixed Jeffrey and lodgepole pine forest.

Pothole Meadows Segment (Mile 12.0-13.8)

After passing east of Ostrander Rocks, the road continues north and passes west of Illilouette Ridge. In this segment, the road returns to a similar alignment as the Old Glacier Point Road. This segment of road is characterized by gradual, tangential curves, passing through mixed Jeffrey and lodgepole pine forest, and by Pothole Meadows. The meadows are currently screened from the road by immature lodgepole pines. This segment was designed to have a maximum grade of 6% and a minimum radius of 400 feet for curves (Hughes 1936:5). This segment follows a more gentle, undulating grade than the previous segment, generally 0-3%, with a couple of 4-6% stretches. The road climbs slightly to its summit of 7,900 feet at Sentinel Saddle, a short distance northeast of Sentinel Dome/Taft Point trailhead. Around the trailhead, the road passes through granite rockcuts.

Switchbacks Segment (Mile 13.8-16.0)

From Sentinel Saddle, the road descends sharply to Glacier Point, from an elevation of 7,900 feet to 7,200 feet, with an average grade of approximately 6%. This segment of road is distinct from the other segments, in that it utilizes smaller radial curves with much slower design speeds and narrower road widths than the rest of the road. No survey was made for this segment, and no plans were ever drawn up, although landscape architect John Wosky drew a sketch map for this segment of the road (Roach 1936:4). After completion of the construction of this segment, the completion report finds that “The road and parking areas are nicely finished, fit the country well and cause little scar. (Roach 1936:11)” The road was designed to have a maximum grade of 9%, and curves with a minimum radius of 50 feet, replacing the most extreme switchbacks. The roadway has been widened slightly since it was built originally, but the sharp curves are intact. The road winds down a northeast-facing hill slope, alternating between closed-in forested views and open, panoramic views over the Valley rim. The slower, narrower road segment shielded from long range views creates a sense of anticipation while coming down to the very edge of the landform, which is rewarded by the panoramic views at Washburn Point,

just before Glacier Point, and at Glacier Point itself. Corresponding with the drop in elevation, the predominant forest type shifts from lodgepole pine to red fir.

Conclusion

The alignment, character, and use of Glacier Point Road have changed very little since it was first built. While the new road followed a different alignment than the old road in places, it remained a single road that dead-ended at Glacier Point, and did not, in the end, significantly change the circulation pattern in the area. The road still allows visitors to experience a similar scenic drive to the one that was intentionally designed by the construction of the road, although the growth of immature trees has changed and limited several of the historic views. Overall, the pattern of spatial organization continues to contribute to the significance of the landscape.

Topography

Introduction

The construction of Glacier Point Road required considerable human manipulation of the natural topography which is evident along the entire road. Construction of Glacier Point Road included rock cuts, through cuts, and areas of cut and fill. Flatter portions of the road also required alteration by the use of causeways. Stormwater conveyance was achieved with ditches and culverts. Stone retaining walls at iconic turnouts maximized the views along Glacier Point Road. These features contribute to the historic character of Glacier Point Road. The pattern of the various human-made topographic features used along Glacier Point Road is characterized, and examples are given here.

Rock Cuts

Rock cuts are sculpted rock faces created through the construction of a road bed through steep, rocky or exposed terrain. Rock cuts along Glacier Point Road consist of vertical blasts on the interior upslope side of the road. Blasting left the exposed face battered and uneven which gives these cuts a natural appearance. The blasted pieces of rock were used to construct the road bed and, in some cases, embankment walls (Figures 7 and 8). The drilling holes for the placement of dynamite are visible to the trained eye in both the blasted rock and on some pieces of the rock used to build retaining walls. However, care was given to mask these drill holes and maintain a natural broken look. The majority of the rock cuts along the road are found in the Chinquapin to Potter’s Pass segment and the Ostrander Rocks segment where the road climbs the most steeply through rocky outcrops, for example at El Portal View (Mile 1.9) and Clark Range View (Mile 10.7). The Potter’s Pass to Mono Meadow and Pothole Meadows segments traverse rolling terrain which required some small cuts, but less major rock cuts than on the steep segments, for example at Sentinel Dome/Taft Point trailhead parking area (Mile 13.4). The Switchbacks segment, while steep, is not in particularly rocky terrain and did not require major rock cuts.

Cut and Fill

Cuts and fills, integral to the geometry of an engineered road, are found along the entire length of Glacier Point Road. A typical cut and fill construction consists of one travel lane carved into a slope. The material that was cut from the slope is then used to fill the adjacent, downslope travel lane. The ratio of the amount of cut to fill is equal throughout most of the roadway. Cut and fill is predominant in the Chinquapin to Potter's Pass segment, where the road traverses a fairly steep slope and dramatically climbs in elevation (Mile 5.5, Figure 9, for example). While traveling east in this segment, the road traverses a right-to-left side slope with the cut side of the road on the right and the fill on the left at a fairly equal ratio. Examples of cut and fill are also found in the Potter's Pass to Mono Meadow segment (at Mile 6.8 and 7.4), and the Ostrander Rocks segment (Mile 10.5). Significant examples of cut and fill are found as Glacier Point Road descends to Glacier Point through a series of steep winding curves cut into the hillside in the Switchbacks segment. In some areas of significant uphill cuts into earth or rock, the fill is used to construct a turnout on the fill slope as well as the roadbed, for example, at Mile 7.0. For this reason, there are many more turnouts on the left side of the road than the right from Chinquapin to Badger Pass. NPS standards were used for cut and fill slope ratios and rounding (Roach 1933: 4-7).

Through Cuts

To maintain a steady grade along the entire length of Glacier Point Road, some through cuts were required. Through cuts allow a roadway to pass through a landscape with earth or rock occurring on each side of a roadway (Figure 10). In most cases along Glacier Point Road through cuts required that the road be cut through a rocky outcrop in which rock is present on at least one or both sides. These are found in many locations in the Potter's Pass to Mono Meadow segment (Miles 6.5, 7.0, 7.5, and 8.9), and in the Pothole Meadows segment (Mile 13.2).

Causeways

There are several instances along Glacier Point in which the road bed was constructed on stretches of fill, creating an earthen bridge or causeway. Along Glacier Point Road, causeways are typically found in areas with less rugged natural topography such as where the road skirts around a meadow and when the road traverses flat forested areas (Figure 11). This type of construction is found on most segments of the road, with the higher sections of causeway being located on the steeper Chinquapin to Potter's Pass segment (Miles 0.3, 1.4, and 5.0), and the shallower sections typically located in the rolling Bridalveil Creek to Mono Meadow (Miles 6.8 and 7.3) and Pothole Meadows segments. A causeway is generally no more than a few feet taller that the adjacent ground and culverts were constructed regularly along these stretches to allow for hydrologic movement. In many locations where the road crosses small creeks, a causeway was utilized instead of building a bridge. In these locations, the road can be much higher than the culverts, built up on a great deal of fill. Today many culverts are partially clogged and it appears that in some locations the size or number of culverts was not adequate, or are inadequately maintained, because along some causeways, wetland type vegetation is

growing on the upstream side of the road where water collects.

Ditches

Ditches work in conjunction with culverts and are intended to direct stormwater run-off. Culverts are discussed in Small-scale Features. Typically, ditching is located on the interior, cut side of the roadway (Figure 12). Exceptions occasionally occur at through-cut sections of the road; however there is often an absence of ditching on the through cuts on Glacier Point Road because they are not long. Simple ditches occur predominantly along the Chinquapin to Potter's Pass segment and the Switchbacks segment of Glacier Point Road where there are several named and unnamed drainages. These ditches were constructed by grading the earth between the edge of the road shoulder and the cut slope. Ditches follow the edge of the roadway before directing water through a culvert. Simple in nature, these ditches are not typically reinforced by concrete or stonework, and are no more than a foot deep. They appear to be part of the original design of the road because they direct water to historical culverts. Many of the ditches have been accumulating sediment and debris from seasonal runoff (as well as from road sanding, particularly in the Chinquapin to Badger Pass segment) for many years and are in need of re-grading to restore their proper function. Some disintegrating concrete lining was located in one ditch in the Switchbacks segment (Mile 15.0). It is unclear if this dates to the period of significance, and it is in poor condition.

Conclusion

The manipulation of topography along Glacier Point Road is evidenced by the constructed features of rock cuts, cut and fill, through cuts, causeways, and stormwater conveyance features. These features and the overall pattern of manipulation of the landscape demonstrate the design aesthetic and construction methods used to build the road. They are largely unchanged today and contribute to the historical significance of Glacier Point Road.

Landscape Characteristic Graphics:

Guardwall and Embankment at Mile 1.9, Showing Rock Cut and Steep Fill Slope
Photo by Clare Sandy, NewFields, 2005

Example of Cut and Fill at Mile 5.5
Photo by Clare Sandy, NewFields, 2006

Vegetation

Introduction

The naturalistic style of NPS landscape architecture placed great importance on integrating built features into the natural environment around them, with the use of vegetation playing a predominant role in the execution of this ideal. Vegetation was preserved during the construction of the road or restored after construction to achieve a desired effect. Vegetation is a character defining feature of the road landscape.

Design

Vegetation associated with Glacier Point Road consists of two categories: vegetation communities and specimen trees. The vegetation lining the road corridor affects the lighting, sight line, atmosphere and the overall character of the road. The species composition, age, color, texture, density, and form of the vegetation are all important in defining the character of the road. The road designers responded to the forest and meadow vegetation communities in distinct ways. Much of the road meanders through mixed conifer forest which defines the road corridor and prolongs the approach to iconic views. Glimpses of the views are either framed by or reluctantly revealed through these expanses of forest. Likewise, road designers took the presence of montane meadows into account when designing the road by skirting the edges of these vegetation communities.

Characteristic of NPS development efforts in Yosemite, the vegetation along Glacier Point Road was “naturalized” after construction was complete. NPS naturalization criteria are outlined in a 1929 document (see McClelland 1993). These criteria were adopted by the Western Field Office of the NPS Landscape Division to aid in the process of naturalization or blending of the human-made features into the natural landscape. They specify that newly cut, filled, or obliterated slopes be graded to a slope that is less than 3:1. Also, the criteria specify that the rounding on the toe and head of each slope should be adopted to blend new slopes into the surrounding landscape. These criteria result in disturbance to the natural landscape, but they allow accelerated stabilization and revegetation of barren slopes, reduce soil erosion and sedimentation, and promote road naturalization. Informal plantings of native species on these slopes controlled erosion and contributed to the desired naturalistic character of the landscape (McClelland 1998:206-207). Another method to blend the line between the natural woodland or meadow and the cut and fill slopes was to clear trees and other vegetation along an irregular uphill or downhill line and likewise replant with appropriate native species. Care was taken to minimize the impact of road construction on the natural vegetation communities and to naturalize the Glacier Point Road landscape:

Where the roadway crossed meadows, the sod within the roadway area was stripped before the fills were constructed and later placed as a covering on the slopes. On all rock fills where such sod was not available for cover, as was the case over most of the project, selected material from cuts, or borrow, was used to cover the rock slopes. This procedure leaves a neat appearing slope and undoubtedly will do much to eliminate landscape scar by giving vegetation an opportunity to grow (Hughes 1936:15).

The design of road naturalization took into consideration the fact that revegetation of areas disturbed by the road construction would take many years to mature and achieve its intended effect.

Specimen trees are specific individual plants or groups of plants that were planted or preserved during the construction of the road and still survive today. The presence of large trees that are clearly older than the road, directly adjacent to the roadway or turnouts, provide an excellent example of the naturalistic design aesthetic of the road builders. Examples of specimen trees on Glacier Point Road are the large red firs around the Summit Meadow turnout (Figure 13). The mature trees lend the roadway a sense of being immersed in the natural world, and their size influences the scale of the landscape by towering over the human-constructed features around them, and giving a sense of permanence and solidity to the natural features. The fact that they were preserved during road construction demonstrates that the preservation of a rustic atmosphere along the road was of great importance, despite any difficulty it may have caused during construction. For example, a line change in the Bridalveil Creek to Sentinel Saddle section was made specifically to save a large tree at the request of the NPS, even though this made a smaller radius curve necessary (Roach 1933:13). Elimination of a switchback from the top part of the Switchbacks segment was decided against, since it would have involved sacrificing a significant amount of timber (Potter 1933:5). The continued presence of these trees along the roadway today contributes to the road's historic character.

Management

Removal of select trees or other vegetation created or enhanced some of the scenic views along Glacier Point Road when the NPS engineers first designed the road. At the request of the park landscape architect, estimates were included in the design for the Bridalveil Creek to Sentinel Saddle section for selective clearing outside of the right of way to improve views from the road (Roach 1933:14). These scenic views are one of the major reasons that people travel the route. The current state of the vegetation along much of Glacier Point Road appears to be overgrown in comparison with the intended landscape design. Many of the classic views and vistas along the road have become encroached upon or blocked entirely by vegetation, especially immature conifers, often lodgepole pines (Figure 14). The edges of the roadway have also become filled with small trees or brush, which changes the character of the road. Tree clearing for viewshed management was documented in Yosemite Valley and on Wawona Road during the 1950s and 1960s. It is likely that it occurred on Glacier Point Road as well during this time period. Current management of vegetation along Glacier Point Road is limited to the removal of trees that pose a hazard to the roadway or turnouts. For instance, after the Glacier Point Fire in 1986, many dead trees to the east and south of Washburn Point that posed safety hazards were cleared (L. Castro, pers. comm.), but no viewshed clearing per se takes place. The Yosemite Fire Management Plan calls for mechanical thinning of mixed conifer forest around Badger Pass and Glacier Point only to reduce fuels for fire hazard (NPS 2004b).

Conclusion

Unregulated growth of vegetation along Glacier Point Road over many years has allowed some of the intended character of vegetation along the roadway to become obscured. The intended vegetation scheme along the road was not one of unlimited natural growth, but a carefully planned naturalistic atmosphere that emphasizes the road corridor and viewpoints, and was manipulated to blend in with the surrounding environment. Nonetheless, the overall pattern of species and types of vegetation, as well as individual specimens, are intact today along the road, and contribute to the historic setting of the Glacier Point Road landscape. The changes to the vegetation patterns and design along the road could be reversed through careful vegetation management, and historic patterns could be restored.

Landscape Characteristic Graphics:

Specimen Trees around Historic Turnout at Summit Meadow at Mile 6.1
Photo by Devon Rothell, NewFields, 2006

Example of Immature Trees Grown Up Along Roadway at Pothole Meadow
Photo by Devon Rothell, NewFields, 2006

Feature: Glacier Point Road

Feature Identification Number: 121873

Type of Feature Contribution: Contributing

Feature: Bridalveil Creek Bridge

Feature Identification Number: 121875

Type of Feature Contribution: Contributing

Feature: Guardwalls at El Portal View

Feature Identification Number: 121877

Type of Feature Contribution: Contributing

Feature: Rock embankment at Clark Range View

Feature Identification Number: 121881

Type of Feature Contribution: Contributing

Land Use

Introduction

Glacier Point Road is a transportation corridor with the primary land use being vehicular

circulation for the purpose of sightseeing and recreation. Over time, some of the other land uses in the road corridor supported by the road have changed, but the primary historic use remains the same.

Transportation Corridor

Glacier Point Road has always been used chiefly as a tourist access route for sightseeing and recreation. The road was built as an access road to the scenic overlook at Glacier Point, as well as other views along the way. As a scenic park road, it provided a pleasurable driving experience for motorists. It also served as an access point for both summer recreation such as hiking and camping, and winter recreation such as cross-country and downhill skiing, and snowshoeing. Glacier Point Road retains these uses today, which continue to contribute to the cultural landscape.

The primary land uses within the road corridor today are related to vehicular circulation. In addition to access to Glacier Point, the road provides access to Badger Pass Ski Area, Bridalveil Creek Campground, and several trailheads to Yosemite's vast wilderness. Parking areas at trailheads provide parking for day hikers and backpackers. Turnouts along the road provide places for visitors to pause and view the scenery and rest. These extant land-use patterns evident in the road corridor today reflect a continuation of uses in place during the historic period when the road was built, and therefore reinforce the historic character of the road.

Other Historic Uses

One type of land use that has changed over the years is the use of the roadway to access overnight accommodations that were available in the corridor for a century, from the 1860s when the Mountain View House was built in Peregoy Meadow, to the 1960s when the hotel at Glacier Point was destroyed by fire. The use of the road is now limited to accessing day use recreation and overnight camping, as lodging in the park has moved out of backcountry areas. The tradition of informal accommodations provided by cabins continues today with the Ostrander Ski Hut, located at Ostrander Lake south of the Glacier Point Road Historic District, which can be accessed by cross-country skiers in the winter.

Homesteads were claimed in the area in the late 1800s, but were removed as the park took control of its lands. Grazing took place in the corridor from the earliest times of stock travel through the area until the 1940s. The trails and roads through the area started out as money-generating ventures for the companies that constructed them, but also shifted to public property as the park took control of them and eliminated toll charges.

A quarry near Badger Pass was used in the building of Glacier Point Road. Rock from this quarry was utilized in the surfacing of much of the road. The park no longer allows this type of resource extraction on its land and imports materials from outside the park for road and other

construction.

These lodging, extractive and money-generating land uses are not extant in the road corridor.

Conclusion

Glacier Point Road retains its primary historic land use as a transportation corridor. The land use patterns associated with this function are intact and reinforce the historic character of the road. While other uses supported by the road have changed through time, these were secondary uses that were not essential to the character of the road. The land use patterns that reinforce the historic character of the road as a scenic transportation corridor still contribute to the cultural landscape.

Circulation

Introduction

Circulation has always been the primary function of Glacier Point Road. Because the road ends at Glacier Point, it was used only by people heading to destinations along the road corridor, and not as a thoroughfare to other locations. Trailheads provided facilities for day hikers and backpackers. Turnouts along the road provided places for visitors to pause and view the scenery and rest. These intact circulation patterns contribute to the significance of the landscape.
The circulation features of Glacier Point Road include the 16-mile road itself, with its travel lanes and shoulders, its cross-sections and design speed, as well as parking areas, trailheads, and intersections. The horizontal and vertical road alignments are discussed in Spatial Organization. The remaining circulation features are discussed in this section. See Table 1 for details on the circulation features of the landscape. See Appendix C1 and C2 for locations and types of all identified circulation features.

Cross Sections

The design of Glacier Point Road called for construction based on the 16-foot 1929 Forest Highway Standards, with standard curve widening on all curves of 1000-foot radius or less. Glacier Point Road was constructed with a set of two standard cross sections developed for the project and which were adapted for different conditions found along the route.

The first cross section is representative for Glacier Point Road from Chinquapin to Sentinel Saddle. The second typical cross section design was applied to Glacier Point Road from Sentinel Saddle to Glacier Point (Switchbacks segment). In both cases, the road traverses varied topographic terrain which results in a cross section that is variable both within the travel lanes and beyond the road shoulder. Each individual segment required a different design response, which is reflected in the different applications of the typical cross sections.

Despite variations of the topography, the cross section of the road is defined by common elements that remain consistent within each type. In some areas, the road was constructed

across steep cliff or hill sections, which required near vertical rock cuts on the cut side of the roadway. In other areas, such as through expansive meadows and ridgelines, the road was constructed on elevated sections, or causeways, in which the cross section falls away on either side of the roadway. The last 2.2 miles of roadway are further defined by a steep descent to Glacier Point in which a cross section would reveal a narrower travel lane and shoulder; sometimes no shoulder at all.

Chinquapin to Sentinel Saddle Segments

Essentially the same cross section was used for the construction of Sections A1 and A2, although the 1929 standard drawings were used for Section A1, while typical cross sections were drawn up specifically for Section A2 in 1932. In addition to the standard sections, typical cross sections for Section A2 included special sections showing slope rounding and hand laid rock embankment. The typical cross section for the majority of Glacier Point Road featured a 22-foot roadway, consisting of two 9-foot travel lanes and two paved 2-foot shoulders. Today, up to the entire 11-foot paved width is used as a travel lane in many locations along the road, with the shoulder width reduced accordingly. Beyond the paved roadway, the typical fill side shoulder was variable depending on the topography and had a slope that ranged 1.5 to 4 inches per foot. The typical cut side shoulder and ditch beyond the paved shoulder has a 2- to 3-foot width, depending on the topography, with a typical slope of 2 inches per foot. Areas of moderate topography are typically wider than areas of steep topography. In general, lane width changes have been effected through striping (or lack of striping); the physical cross-section of the road retains its historic character (Figures 15 and 16). In some locations along the road, the paved shoulder is in poor condition due to erosion. The Chinquapin to Badger Pass segment was repaved in 1960 using a standard typical section of approximately 10-foot travel lanes with variable-width unpaved shoulders.

Switchbacks Segment

A typical cross section was drawn specifically for Section A3 in 1932. For the last 2.2 miles of Glacier Point Road, the typical cross section narrows to accommodate the steep winding descent to Glacier Point. This section features a typical 18-foot roadway, consisting of two 9-foot travel lanes with a slope of ¼ inch per foot. Shoulders could be present or absent, as topography allowed. Where possible, the typical fill side shoulder was no more than 2 feet wide and had a slope that varied depending on the topography. The typical cut side shoulder was not specified in the standard designs and varied depending on the topography. In the final 0.2 mile leading into the parking areas at Glacier Point, the road was as narrow as 12 to 14 feet, but these sections have since been modified with subsequent changes at the parking areas at Glacier Point. When this segment was repaved in 1981, switchbacks were improved by widening curves. Rock outcrops on the sides of the road were removed and a new asphalt shoulder was provided. The changes made to this segment were relatively minor and it still retains its historic character (Figure 17).

Design Speed

Because the road ends at Glacier Point it is used only by people heading to destinations along the road corridor, and not as a thoroughfare to other locations. This limits the type and amount of use of the road. In keeping with this type of use, the road is scenic and winding; high speeds are not possible.

The design speed of the road typically ranges from 15 to 35 miles per hour (mph). The 15 mph limit applies to the last 2.2 miles of road where it steeply descends to Glacier Point through a series of tight winding curves, and where the road is more exposed to steep cliff. Thirty-five mph is the standard speed for the majority of Glacier Point Road which is characterized by meandering curves and short to medium straight stretches. Curves with lower design speeds of 25-30 mph are marked. The various design speeds induced by road alignment, varying sight line distances, and elevation changes have not been significantly altered since the period of significance and are considered a contributing feature to the historical significance of Glacier Point Road.

Parking Areas

Numerous parking areas are located along Glacier Point Road that provide locations where visitors access trailheads, use comfort stations, allow other cars to pass, and enjoy the views. These range from features that can be termed “casual use” turnouts to highly developed scenic overlooks. Several different types of parking areas found along Glacier Point Road have been identified. Attempts were made during the 2006 field season to document as many individual turnouts as possible. All turnouts between Chinquapin and Badger Pass were documented. However, due to wintry field conditions, some of these turnouts could not be fully evaluated, and some turnouts between Badger Pass and Glacier Point could not be documented. It is expected that all the turnouts along the road will fall under one of the following categories.

Designed Historic Turnouts

Designed historic turnouts are lens-shaped parking areas along the roadway that were specifically built as turnouts during the period of significance, especially in areas where visitors would stop to enjoy the view. Designed historic turnouts are typically associated with other natural and designed features of the road, such as Bridalveil Creek Bridge, trailheads, and views. These types of turnouts are also evidenced by built topographic features that are not otherwise explained by fill slope or remnants of the old Glacier Point Road (see below). Some of these turnouts are unpaved; others have been paved but maintain their historic shape and location. Some show evidence of having been paved in the past, but are now covered with gravel or dirt (Figure 18).

Only a few parking areas are documented as being part of the design for Glacier Point Road. These were located at the major overlooks on the road: El Portal View, Clark Range View, and

Washburn Point. No description could be found of the original design for the turnouts at El Portal View, but it is assumed that the three turnouts currently located there are historic features, because they are separated by intact historic guardwalls and are built on fill from the steep cut slopes opposite. The initial location survey report for the road notes that the park landscape architect recommended widening the road to provide parking for the excellent view obtained at this location (Nissi 1931:4). During the initial construction of the road in the location of Clark Range View, a 9-foot wide by 300-foot long parking area was built at this location at the request of the NPS (Hughes 1936:14). The parking area remains today with no changes. A second parking area adjacent to the first was also planned at Clark Range View, which still remains (Roach 1933:5). A small parking area was planned at Mile 13.4, “from which, with a small amount of selective clearing, an excellent view of Sentinel Dome will be obtained” (Roach 1933:5). This parking area seems to have been altered during more recent times and is now the Sentinel Dome/Taft Point trailhead parking lot. A small parking area was also designed at Washburn Point, but after the parking area was greatly expanded in 1958, none of the original parking area remains (NPS 1958). Designed historic turnouts are character-defining features of the Glacier Point Road landscape.

Fill Slope Turnouts

Many of the historic turnouts along Glacier Point Road were built in locations of major cut and fill or rock cuts. The excess rock or fill from the cut slope on the uphill side of the road widened the roadway on the fill slope side enough to create a turnout. The placement of these turnouts is incidental; they are not necessarily good viewing or passing locations. However, these turnouts are contributing circulation features because they demonstrate the design and construction techniques used to build the road.

Road Realignment Turnouts

In the Bridalveil Creek to Mono Meadow and the Pothole Meadows sections of the road, Glacier Point Road follows the alignment of the older road fairly closely. The old road was obliterated where the new road follows its alignment exactly, but in many locations, traces of the old alignment are intact, often crossing from one side of the new road to the other. Several of these old road traces that are directly adjacent to the current road bed have been reused as turnouts, because they are convenient flat locations. These turnouts are unpaved and can be fairly large. While these turnouts may have been in use since the time the road was constructed, they were not designed and their location is arbitrary, therefore, they are not contributing features to the road’s historic character.

Modern Turnouts

Modern turnouts are typically paved, one lane wide turnouts (Figure 19). They are relatively long and narrow, with longer, more angled entries and exits than a typical historic turnout. Many of these turnouts were constructed on the Chinquapin to Badger Pass segment of the road in

1960. This project included placing asphalt curbs around the turnouts, which were designed to be 14 feet wide (NPS 1961). It is unclear whether any new turnouts were created during this project, or whether all the turnouts paved were previously existing. Some existing turnouts were not paved at the time and remain unpaved today. In any case, no historic features exist at any of these modern turnouts. These turnouts do not contribute to the historic character of the road.

Casual Use Turnouts

Casual use turnouts are places where visitors have found a place to pull off the paved roadway onto an unpaved shoulder. These turnouts are not intentionally developed, are often are not large enough to safely accommodate vehicles, and are often not flat. These are not historic features of the road.

Designed Modern Parking Lots

The Sentinel Dome/Taft Point trailhead has a modern paved, striped parking lot surrounded by boulders. A view of Sentinel Dome historically existed in this location, although vegetation has since grown up to block it. There was undoubtedly a historic turnout here, but no historic features remain. The current paved, striped parking lot with concrete curbs located at Washburn Point was constructed in 1958 and does not retain any features dating to the period of significance. These parking areas do not contribute to the historic character of the road landscape.

Unpaved Trailhead Parking Lots

The Ostrander Lake and Mono Meadow trailheads include unpaved parking areas that are partially shielded from the road by trees. Parking is non-directed. The Mono Meadow trailhead utilizes an extant portion of the Old Glacier Point Road. While these parking areas are associated with historic trailheads, they do not retain any features that can be identified as designed or historic, and no information regarding their original configuration could be located. As such, they are not considered contributing elements to the historic character of the road.

Intersections

The designed intersection between Wawona Road and Glacier Point Road is being evaluated as part of the Chinquapin Developed Area landscape, rather than as part of Glacier Point Road. The intersections found along Glacier Point Road are two simple tee intersections, at Badger Pass Ski Area and Bridalveil Creek Campground, and two smaller wye intersections with single-lane utility roads at the top of the Switchbacks segment and at the residences just above Glacier Point.

The Badger Pass Ski Area access road was designed and built in 1935 when the ski area was developed, and the intersection is a historic feature of the road landscape. The shoulder on the

eastbound lane of Glacier Point road turning onto the access road has been widened slightly to accommodate a turnout, but the configuration of the intersection is the same. A 0.5-mile segment of the old road leading from Bridalveil Creek Campground east to rejoin the new road was depicted as the main access road to the campground on 1958 base maps. The current access road was likely built in the late 1950s or early 1960s in conjunction with the expansion of the campground, and is not a historic feature of the road. The road at the top of the Switchbacks segment was originally a public road leading to a parking area at Sentinel Dome. This road was in place at least by 1935. It is currently closed to public access and is used to access radio, telephone, and TV repeaters and antennas located northeast of Sentinel Dome. The road and its intersection have been maintained in the same location and are unchanged. The road through the residential area above Glacier Point was probably the original access road to the campground at that location, built by 1929 (NPS 1929), and is currently used as an access to the residences as well for a water tank and high voltage line tower, located southeast of Glacier Point. The narrow road and its intersection with Glacier Point Road retain their historic character.

Trailheads

Initially the Glacier Point Road region was accessed by trails with a very different orientation than the current roadways. Typically these were Native American foot trails later used by early visitors and park managers riding horseback. These were the only routes connecting the southern part of the park with Yosemite Valley until wagon roads were constructed. Most of these trails continue to exist today, with little realignment, and are used as hiking routes. The Alder Creek, Pohono, Four Mile, and Panorama Trails either cross Glacier Point Road or can be accessed from it. The Sentinel Dome, Taft Point, Ostrander Lake, McGurk Meadow, and Mono Meadow trailheads are also located on Glacier Point Road (Figure 2). The trail between Sentinel Dome and Glacier Point crosses Glacier Point Road twice with crosswalks in the final section of switchbacks descending to Glacier Point. These trails are maintained by NPS and are popular recreational hiking trails for visitors, for both day and overnight use. Glacier Point Road provides important access points to these trails in the form of minimalistic trailheads. The trails themselves are part of a different travel corridor than Glacier Point Road and should be documented and evaluated as part of a separate assessment. However, the points at which these trails intersect with Glacier Point Road can be considered circulation features of the road.

Trailheads are marked by road signs, and include minimal visitor facilities such as a small parking area, vault toilets, bear lockers, or trash cans. Signs displaying trail distances are located at the start of the trails. The McGurk Meadow trailhead is accessed by turnouts located to the west of the intersection of the trail and the road. The Ostrander Lake and Mono Meadow trailheads include unpaved parking areas that are shielded from the road by trees. The Sentinel Dome/Taft Point trailhead, in contrast, is open to the road and has a paved, striped parking area. While these trailheads access historic trails, they do not retain any features that can be identified as historic, and no information regarding their original configuration could be located. As such, they are not considered contributing elements to the historic character of the

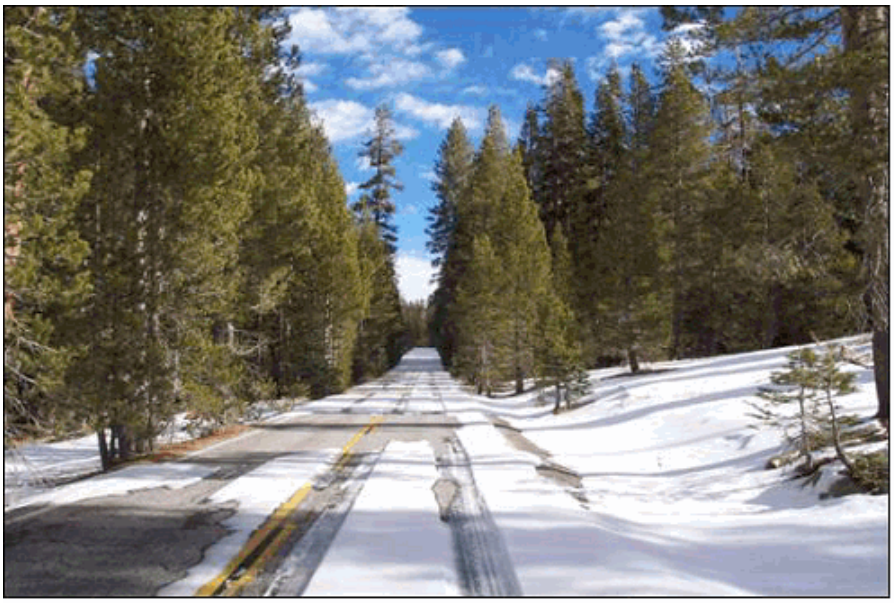
road. Bridalveil Creek Campground serves as a trailhead for other trails to the south of Glacier Point Road, and additional trailheads are located at Glacier Point.

Conclusion

Despite some changes, the road retains its historic character on the whole. The road has been repaved and repaired since its construction. Paving and repairs have been required more often in the Chinquapin to Badger Pass segment. Because this segment is open during the winter, it receives more use than the rest of the road and is subject to damage from plowing and tire chains. Road width has been altered slightly by natural processes eroding away the road bed in some locations and accumulation of materials in other locations. Historic intersections retain their character, and several important historic turnouts are intact, although some have been paved. The intact circulation features of Glacier Point Road contribute to its historic significance.

Landscape Characteristic Graphics:

Example of Typical Curving Roadway, Chinquapin to Potter's Pass Segment, No Shoulder Striping
Photo by Devon Rothell, NewFields, 2006



Example of Typical Roadway in Area of Moderate Topography, Note Lack of Shoulder
Photo by Devon Rothell, NewFields, 2006

Previously Paved Historic Turnout, Eroding Road Shoulder, at Mile 10.9
Photo by Devon Rothell, NewFields, 2006

Buildings and Structures

Introduction

Built structures along Glacier Point Road dating to the historic period of construction of the road are an integral part of the cultural landscape. Their naturalistic "rustic" style represents the NPS desire to subsume human-made features within the natural environment (NPS 1977). Very few structures were built along the road, and topography was used as much as possible to form the roadway. Where structures were needed, the visual impact of the built structures was minimized in order to accentuate the natural surroundings. This was achieved by the use of native materials that would blend in with the surrounding rocks and forest, and an adherence to landscape design principles that ensured the structures would blend into the natural scenery. In addition, similar materials and styles were used for various structures along the length of the road, which creates a visual unity that helps create the character of the road landscape. These few structures exist today, and continue to contribute to the significance of the cultural landscape, by representing the rustic design intent of the road. Details regarding each of the structures within the landscape can be found in Table 2. See Appendix C3 for locations of structures.

While a few buildings exist adjacent to the road corridor, none are directly associated with the construction and use of the road, so are not considered here.

Bridalveil Creek Bridge

As part of the new Glacier Point Road construction, the BPR designed a new bridge (HAER No. CA-103) for the crossing of Bridalveil Creek in 1933 (Roach 1934b). The 32-foot bridge is of steel I beam construction, and rests on rubble masonry abutments. The naturalistic treatment of the bridge is characteristic of the NPS "rustic style" because large logs of yellow pine and lodgepole pine hide the steel and concrete beneath (NPS 1991d) (Figure 20). The bridge is one of two "fake log" rustic style bridges in the park. The El Capitan Bridge (HAER No. CA-101) is a larger span of the same general design. Bridalveil Creek Bridge was originally fitted with a timber guardrail of yellow and lodgepole pine supported by six squat log pylons on each side of the bridge. These have been replaced with large logs bolted to the sides. The changes made to the bridge are in keeping with the visual style of the original design, and the bridge continues to be an important element expressing the character of the Glacier Point Road cultural landscape.

Guardwalls with Rock Embankments at El Portal View

Two low rock walls separate the turnouts at El Portal View. These walls were constructed when this section of road was built, from 1932-1933, and are depicted on the designs for the road with construction revisions shown (Appendix B1). The guardwalls represent an example of the standard NPS stone guardrail, Type No. 1, cross section "A" (Vint 1929). The 1929 standard designs for guardrails are reproduced in Appendix D. The two guardwalls are identical in construction. Wall No. 1 (Mile 1.88-1.90) is separated from Wall No. 2 (Mile 1.93-1.96) by a paved turnout approximately 140 feet in length. Dry laid rock embankments were constructed below the downslope side of the walls. These embankments are non-standard features for this

type of guardwall, and appear to be some combination of the standard stone guardwall and an adaptation of the standard “cement rubble masonry walls” illustrated in the standard design drawings included in Appendix B1. They were built at the same time as the guardwalls (depicted on design drawings as “hand-laid rock embankment”), and are consistent in materials and design with the upper portion of the walls.

The guardwalls are constructed of roughly shaped, mortared cobbles two to three courses thick on the road side and three to four courses high on the bank side, with no crenellations (Figures 21 and 22). The rough appearance of the cobbles retains a rustic style. Each wall is approximately 130 feet in length, and curves back from the road at either end. The walls are approximately 25 inches in height above the road surface and include a stone curb extending from the base of the wall. The curbs are approximately 3- to 7-inches high, varying due to the thickness of the adjacent asphalt. The downslope sides of the walls are about 3 to 4 feet in vertical height above the sloping stone embankment wall.

On the downslope side of the guardwalls, dry laid rock embankments support the roadway and guardwalls for almost the entire length of both walls, a total of approximately 250 feet of embankment (Figures 23 and 24). The embankment supporting Wall No. 1 is approximately 10 to 25 feet in height, and the embankment supporting Wall No. 2 is approximately 6 to 15 feet in height (Unrau 1990:39, 46). The rocks that make up the embankments are generally larger and rougher in appearance than the rocks that form the upper walls, but they are carefully laid to form a smooth face.

Both walls are intact, although some rocks have come loose from the parapet and there are cracks in the masonry. The southern end of Wall No. 1 has partially dislodged stones. Wall No. 2 shows some evidence of patching. The rock embankments at El Portal View are largely intact, although some stones are loose and some are missing from the embankment below Wall No. 2. A great deal of attention was paid to design of the outer (downslope) side of these walls and embankments, likely because they are clearly visible from the adjacent parking areas. The guardwalls and rock embankments are character-defining features of the road.

Rock Embankment at Clark Range View

Stone embankment or retaining walls in the steep, rocky section of road in the vicinity of Clark Range View were constructed of uncut, dry laid boulders and cobbles (Figures 25 and 26). They were constructed on the downslope side of the roadway from Mile 10.61 to 10.63 and from Mile 10.65 to 10.79, a total of approximately 810 linear feet. These embankments were built as this section of the road was constructed from 1933-1935 (they are depicted on design drawings as “hand-laid rock embankment”). During the initial construction of the road through this location, the NPS requested a 300-foot long parking area be built at this location. In response, the contractor widened the roadway by 9 feet between Miles 10.6 and 10.7, greatly increasing the amount of rock embankment built when compared to the quantity designed (Hughes 1936:14).

The rock embankment wall supporting the parking area (Figure 25) is much more massive than the surrounding low embankment (Figure 26). It is 10 to 30 feet in height and approximately 280 feet in length. The wall supports the road and a 10-foot wide unpaved shoulder or turnout. There is no guardwall or revetment at this viewpoint. This retaining wall is an excellent example of blending the engineered structures into the natural landscape. There is no guardwall to intrude upon the view; the road edge leads directly into an expansive view of the Clark Range. The wall is built primarily of material removed from the rock cut on the upslope side of the roadway, appearing natural in color and texture, but placed in a more informal fashion than walls built to be viewed directly.

The embankments at Clark Range View are intact, especially the large embankment supporting the turnout. The smaller rock embankments show some signs of dislodged rocks and erosion. These embankment walls contribute to the historic significance of the landscape by demonstrating design and construction considerations of the roadway.

Washburn Point Guardwalls

Washburn Point is a highly developed viewing area with two sets of guardwalls forming an overlook. The guardwalls date to the 1960s and the 1990s, respectively. During the road reconstruction in 1934, a parking area 200 feet long by 36 feet wide was constructed at Washburn Point. Log guardrails were installed around the parking area. None of the log rails or the original parking area remain today; it is assumed they were destroyed when the parking area was expanded in 1958 as part of Mission 66 projects (NPS 1958).

The low, semi-circular guardwall below the parking area made of reddish stone dates to 1963, when the area was first developed as a formal scenic overlook. The stone was obtained from the quarry at Badger Pass, as was much of the stone used on the original road construction. This wall is in disrepair and shows several inappropriately executed repairs. The gray stone walls extending from this older wall and surrounding the parking area were a later addition, dating to 1993-1995. While both walls attempt to follow the rustic design aesthetic of the historic road, they are clearly added after the period of significance and do not contribute to the road’s historic character.

Vault Toilets

Three vault toilets are located at turnouts and trailhead parking areas along the road: at Summit Meadow, Ostrander Lake trailhead, and Sentinel Dome/Taft Point trailhead. These toilets are contained within small brown wood structures. The toilets were installed in the 1990s and do not contribute to the historic character of the landscape.

Conclusion

Bridalveil Creek Bridge and the guardwalls at El Portal View and are the most visible historic

built structures along the road, and are important contributing elements to the landscape. Intentionally designed retaining walls (as opposed to informally built up fill) were constructed at only two locations along Glacier Point Road: at El Portal View and Clark Range View. These retaining walls are very different in design, but both date to the original construction of the road and are contributing elements to the landscape. The guardwalls at Washburn Point are not contributing elements to the landscape. These walls were constructed during two different periods, both after the period of significance of the landscape.

Landscape Characteristic Graphics:

Bridalveil Creek Bridge
Photo by Clare Sandy, NewFields, 2005

Views and Vistas

Introduction

A view is defined as "the expansive and/or panoramic prospect of a broad range of vision which may be naturally occurring or deliberately contrived." A vista is defined as "the controlled prospect of a discrete, linear range of vision, which is deliberately contrived" (NPS 2001:85).

The development of scenic views or overlooks on national park roads grew out of nineteenth-century romantic notions on viewpoints and vistas. Overlooks were an important feature of park roads, providing a stopping and resting place and affording visitors spectacular, and often panoramic, views. They ranged from simple widened areas along the road to large terraces accommodating parking areas, sidewalks, and protective guardrails. Overlooks on park roads were derivatives of the terrace form used by landscape architects. They could be built on existing plateau-like promontories or on a terrace constructed for the purpose. Terraces offered

endless possibilities for presenting views to the best advantage (McClelland 1998:211-212). Often, the designer drew attention to the retaining wall or bank that created a boundary between the structure and its surroundings and allowed a rise in elevation which could command a view over the surrounding area.

The majority of Glacier Point Road is forested, with a limited range of view. Even when the road passes through open meadow areas, the backdrop is usually forested. Due to this closed-in character of the road, the few panoramic views along the road are especially striking. Three viewpoints were specifically noted in construction reports for Glacier Point Road: El Portal View, Clark Range View, and Washburn Point. Aside from these, the scenic character of the entire road and the intermittent views along the drive were designed for and contribute to the significance of the landscape as well.

El Portal View

This viewpoint is located when the road rounds a northeastern point, and it gives a unique view down the Merced River Canyon to the community of El Portal, approximately five miles east of, and several thousand feet below, the overlook. Additionally, the point affords a panoramic view towards California's Central Valley, with a long range of view depending on the atmospheric conditions. This view is unusual because most of the road along this area is heavily forested, and a long view is not possible. The view has likely been maintained by selective tree removal in the past. Built features of the overlook include three turnouts, two natural stone guardwalls along the road between these turnouts, and natural stone embankment walls to retain the slope below the guardwalls. These features are described in Circulation, and Buildings and Structures, respectively.

Views from Turnout No. 1

The view towards El Portal and the Central Valley from the first turnout at El Portal View (Mile 1.8) is partially blocked by mature and immature Sierra mixed conifers (Figure 27). The view to the northwest, partially blocked by immature Sierra mixed conifer forest, shows Big Oak Flat Road on the opposite side of the Merced River Canyon (Figure 28).

Views from Turnout No. 2

Views from the second turnout at El Portal View (Mile 1.9) are almost completely blocked by mixed Sierra conifer forest. This turnout is marked by an auto tour marker ("G1"), so the view is assumed to have been clear at this location in the past. The self-guiding auto tour from 1956 has a photograph of an unblocked view of the Merced River Canyon and notes that a sugar pine is located in front of the viewer (Ditton and McHenry 1956:85-88).

Views from Turnout No. 3

Currently, the best view of El Portal and the Central Valley is visible from the third turnout at El Portal View (Mile 2.0). This view is framed by Sierra mixed conifer forest and oaks (Figure 29).

Clark Range View

This overlook is located in the steep Ostrander Rocks segment. It consists of a panoramic overlook of Mount Starr King and the Clark Range in the distance to the east. This is another unusual view in that it doesn't look down into Yosemite Valley, but focuses on another direction entirely. This and the other views along the road are character defining features that have not changed even as the physical characteristics of the road may. The view will continue to have integrity as long as it is maintained through selective tree removal.

Views from Turnout No. 1

The view from the first turnout at Clark Range View (Mile 10.7) gives the panoramic view described above (Figure 30). This overlook is located at a narrow turnout supported by a boulder and cobblestone embankment wall. The view from this location is not framed or blocked by vegetation, except for some conifers in the lower foreground.

Views from Turnout No. 2

The view towards the Clark Range and Mount Starr King from the next turnout (Mile 10.9) is almost completely blocked by mixed Sierra conifer forest. This wide, formerly paved turnout is marked by an auto tour marker ("G6"), and this location is mentioned in the original location and design report for this section of the road as providing "an excellent view of the high Sierras" (Roach 1933:5), so the view of the Clark Range must have been clear at this location in the past. A view to the south of Horse Ridge is still open at this location (Figure 18).

Washburn Point

Washburn Point has a highly developed viewpoint with a parking area, overlooking Half Dome, Tenaya Canyon, and Vernal and Nevada Falls. It affords a similar view to that of Glacier Point, but from a different vantage point (Figure 31). A small parking area was built at Washburn Point when the road was built. Trees were intentionally left in the original parking area "to enhance the beauty" (Roach 1936:9). The parking and physical viewing area has been modified significantly since the period of significance, and so no longer contributes to the historic character of the landscape. When the overlook was developed in 1963, a boulder was blasted to "improve the view" before the wall was built (NPS 1963).

However, the view is the same as it has been since the first person came to the point and looked out, and while the parking area has been greatly expanded, trees still remain in the area and frame views. Therefore, the view still contributes to the setting of the historic district.

Vistas

Vistas that contribute to the character of the road are views of distant mountains framed by the road corridor ahead, that come and go as one drives along the road. In particular, there is a vista of the Clark Range around Mile 7.4 (Figure 32) and of Horse Ridge around Mile 8.9 (Figure 33). These vistas are character-defining features of the road. They are noted in the first records of the road construction, and remain largely unchanged today, although trees have grown up along the road shoulders since the road was first built, tightening the range of view.

Other Views

Most other views along Glacier Point Road consist of wooded areas interspersed with meadows. These views are close in to the traveler and do not offer the expansive panoramas previously described. They provide a general impression of the setting along the road; the plants and animals seen while driving the road are part of the cultural landscape.
In the Chinquapin to Potter's Pass and Potter's Pass to Mono Meadow segments, one passes several brief, intermittent breaks in the thick forest cover along the side of the road, generally providing views to the north. These views are the result of fires that have lowered the vegetation, and are not designed characteristics of the roadway. The views are not iconic and viewing locations are not developed at these places. These views do not contribute to the historic character of the road.

There are several locations along the road that had much wider views when the road was first built, that have since become largely obscured by vegetation. These include Peregoy Meadow, Sentinel Dome, and Pothole Meadows (Figures 34 and 35). These views are mentioned in the self-guiding auto tour created in 1956, so were still intact at that point (Ditton and McHenry 1956). The location and design report notes that a line change was made to improve the view of Sentinel Dome from approximately Mile 13.4, at the request of the NPS, and that an excellent view of Sentinel Dome would be obtained from a parking area at this location with a small amount of selective clearing (Roach 1933:5, 13).

Conclusion

The major views along Glacier Point Road are located at overlooks, created by the placement of the road within the surrounding topography. It is likely that some selective clearing to manage these viewsheds took place, as was the case in other parts of the park. View clearing occurred in Yosemite Valley and on Wawona Road during the 1950s and 1960s, but no direct evidence of the history of clearing on Glacier Point Road beyond initial selective clearing that took place with the construction of the road could be found. Vegetation management for the sake of views does not currently take place on Glacier Point Road, although a parkwide vista management plan is expected to be undertaken in 2008. Several character-defining views from the road still exist, and contribute to the setting of the landscape, but some of the views have been compromised by natural processes and a lack of upkeep of the viewshed.

Landscape Characteristic Graphics:

View to the West from El Portal View Turnout No. 3 at Mile 2.0
Photo by Clare Sandy, NewFields 2005

Washburn Point View at Mile 15.0
Photo by Clare Sandy, NewFields 2005

Small Scale Features

Introduction

Small-scale features along Glacier Point Road were designed to harmonize both architecturally and visually with guardrails, bridges, and other stonework along the road, as well as blend in with the natural surroundings. These features are character defining elements of the Glacier Point Road cultural landscape. The only remaining small-scale features dating to the period of significance are culverts. The project completion report on the Section A3 (Switchbacks segment) of the road states that "guard rail, consisting of peeled logs from ten to sixteen inches in diameter, was set on all of the sharper curves and parking areas" (Roach 1936:8). Red reflector buttons were placed on the guardrails on the sharp curves. None of this guardrail remains today. Aside from the guardwalls discussed above under Buildings and Structures, there are no guardrails on Glacier Point Road. Original signs have also disappeared. Monuments used to complete the original road survey would also be contributing elements to the road landscape if found. None were encountered during the current project. See Table 3 for a list of all extant small-scale features along Glacier Point Road. See Appendix C4 for specific culvert locations and characteristics.

Culverts

Culverts are utilitarian in function, but also served an aesthetic purpose in the design of the road landscape. In 1928, the Landscape Division issued "Standard Architectural Details for the Headwalls of Culverts." The versions of these standard designs used for the construction of Glacier Point Road are included with the road design drawings in Appendix B1. Construction of culverts required specialized labor. Rock headworks at many of the culverts were placed by skilled masons who cut pieces to fit around the corrugated metal or concrete culverts and divert water into the drains. A 1938 NPS publication, Park and Recreation Structures, describes the way culverts were designed to be subordinate to the natural surroundings:
The culvert proper is sometimes of local stone when this is abundant and workable, but if it must be of concrete or of galvanized iron, reasonable concealment of the fact is to be striven for. The head wall, by extending well into the culvert opening, should avoid disclosing that it is a mere veneer. Natural rock is certainly the preferred material for the head wall, laid either dry or in mortar.

Along Glacier Point Road, culvert installation took place all at once as the road was constructed, and they are therefore very similar in terms of design and construction. Practically all the culverts present along the road appear to be original culverts, dating to the period of significance.

The vast majority of culverts along Glacier Point Road consist of corrugated metal pipes with one or two mortared stone headwalls . The angular stone used for the headwalls was quarried locally, giving a natural look to the rockwork. Their rough appearance is misleading as the rocks are shaped to fit together well and have stood the test of time. Many of the culverts are in good condition, although some rocks have come loose from the headwalls and there are cracks in the masonry at some locations. Few of the headwalls show significant deterioration. The greatest

condition problem is that many culverts have become clogged with sediment, vegetation or woody debris. A few of the culverts are totally or partially buried in sediment, and could not be fully evaluated. The various different types of culverts located on Glacier Point Road are detailed below.

Attempts were made to identify as many of these features as possible along the road. In the Chinquapin to Badger Pass segment, culverts were ground-truthed utilizing recent engineering drawings (Carter::Burgess 2005). Along the segments from Badger Pass to Sentinel Saddle, most of the information comes from historic as-built design drawings (NPS 1931, 1934). Ten culverts from these segments were ground-truthed, and it is assumed that the majority of the culverts in these segments are intact. Of the 41 documented culverts that were ground-truthed in the Chinquapin to Badger Pass segment, six were either buried or no longer present. This suggests that several of the culverts in the following segments may likewise not be present. All documented culverts in these segments have been included in counts of contributing features below despite some being unevaluated. When all culvert locations can be inspected, if any of the documented culverts do not retain integrity they should be removed from the totals of contributing features. If buried culvert headwalls are uncovered, they should be considered contributing features. No survey or design drawings have ever been made for the final segment from Sentinel Saddle to Glacier Point (Switchbacks segment), however, field visits located most if not all of the culverts in this segment. It is assumed that all culverts in this segment (except possibly one non-contributing feature listed below) date to the period of significance.

Chinquapin to Sentinel Saddle Segments

Culverts along most of Glacier Point Road consist of standard mortared stone headwalls on pipes of 18 to 36 inches in diameter, described below. A few unusual culvert types are located in the Chinquapin to Potter’s Pass segment, also described below. The Ostrander Rocks segment contains several concrete drop inlets, which are not found anywhere else on the road.

Switchbacks Segment

This segment of the road is characterized by adaptation of the older road, rather than a uniform design of a new road. Unlike the planned drainage structures throughout the rest of the road, culverts and drains were installed on an as-needed basis during work on the Switchbacks section (Roach 1936:7). Culverts in this segment are generally consistent in material and construction to the other historic culverts, but while several standard 18- to 24-inch pipe culverts with mortared headwalls are found, other non-standard designs are also found there.

A higher proportion of culverts in this segment have outlet headwalls than on other parts of the road. Because of the topography, the slower vehicle speed, and more pedestrians crossing the area, the outlets were more likely to be seen than those on the steep cut and fill slope sections of the road. Unlike the rest of the road, smaller 12-inch diameter pipes are used in this segment. No culverts larger than 24-inches are found in this segment. Several unmortared headwalls that

display less fine craftsmanship than the mortared stonework along the road are located in this segment. Other unusual structures found in this segment are a carved stone inlet and a square rockwork drop inlet (see below). A couple of inlets utilize large rough-cut stone blocks to channel water towards the inlet, as makeshift “wingwalls” One culvert has a small retaining wall of dry laid cobbles behind the inlet.

18- to 24-inch pipe culverts with mortared stone headwalls

Typical headwall construction of the smaller 18- and 24-inch pipe culverts that drain ephemeral waters consists of rough shaped, mortared cobbles that extend for one to three courses above the pipe and extend to each side for 2 or 3 feet (Figures 36 and 37). This is the most common type of culvert construction in the Chinquapin to Sentinel Saddle sections of the road. Some of these culverts feature rock work at both the inlet and the outlet, while most are only finished at the inlet. According to NPS design criteria, some of the drains have no rock work at the outlet end because these are not visible from the road and would not detract from the natural character of the landscape (Roach 1933:11). A report on the construction of the road explains, “masonry headwalls were to be constructed on the inlet end of all culverts but on the outlet ends only if the end of the culvert could be seen from the roadway” (Hughes 1936:5). Some of the outlets appear to have rubble stacked around the outlet, but no formed headwall. Some of the culvert headwalls have more than two or three courses of rock (Figure 38), although these are not common. Presumably, more courses were needed where the culvert was situated at a greater depth below the road.

30- to 36-inch pipe culverts

At a few locations where perennial water streams cross the roadway, such as at Summit Meadow and the East Fork of Sentinel Creek, a single large diameter pipe culvert was used (Figure 39). The headwalls are the same style as those used with smaller standard pipes, but tend to be more massive in construction. These larger culverts have mortared stone headwalls at both the inlet and outlet.

Double 24- to 36-inch pipe culverts

In some instances two larger pipes (up to 36-inches) set into a single mortared stone headwall are used to channel streams or larger drainages, such as at Avalanche Creek. Larger boulders tend to be used at these locations, but the character of the headwalls is the same as at the smaller culverts (Figure 40). A single 36-inch culvert was initially installed at the East Fork of Bridalveil Creek but a second pipe had to be added in 1935 when spring runoff indicated that the first culvert would be insufficient in times of high water (Hughes 1936). The reconstructed headwall at this large culvert is fairly simple, with only a single course of rock above the pipes (Figure 41).

Double 36-inch pipe culvert with large headwall

At Grouse Creek, in the Chinquapin to Potter’s Pass segment, two 36-inch pipes are set at a

point well below the road in an extensive mortared stone headwall and wingwalls (Figure 42). The headwall also acts as a retaining wall, lending structural support to the roadbed. Although the design drawings with construction revisions shown depict an outlet headwall for the Grouse Creek culvert, none was apparent in the field. The outlet is located in a rocky fill slope. It is possible an outlet headwall was never constructed. It is not shown on a design drawing for the Badger Pass access road (NPS 1935).

12- to 18-inch pipe culverts with dry laid headwalls

Simple dry laid headwalls are found in the Switchbacks segment only. This type of headwall construction is used on small, 12- and 18-inch diameter pipes, often on both the inlet and outlet. They typically consist of small, roughly shaped native stone cobbles stacked around the pipe, extending 1 to 2 feet on either side and one to three courses above the pipe. However, the form of the headwall varies depending on the topography and conditions encountered in the field. Two of the smaller dry laid culvert headwalls in have a single wingwall-like structure, forming an “el” shape to direct water into the culvert (Figure 43). One of these utilizes mixed concrete and granite blocks.

Pipe culvert with square rockwork drop inlet

A unique inlet type found in the Switchbacks segment is a square enclosure formed with roughly shaped rocks such as those used for headwalls (Figure 44). A stone headwall is built around the culvert pipe, with many courses of dry laid rough angular blocks to bring it up to the proper roadbed height. On one side, a large boulder forms the wall of the drop inlet. On the other side and the back of the square, rough dry laid blocks form retaining walls. This type of inlet probably represents an “on-the-spot” adaptation to encourage proper collection and drainage coming from the steep slope above. A standard stone headwall is located at the culvert outlet.

Pipe culverts with carved stone inlet

An unusual type of inlet found in two locations along Glacier Point Road combines a masonry headwall with a carved stone inlet. This construction appears to be an adaptation to solid bedrock at the intended culvert location. A trough is carved out of the rock into which the culvert is set, to channel the water into the mouth of the pipe. In one case, the pipe is cut away on the bottom where it meets the carved stone trough (Figure 45). In the other case, water is directed to the mouth of the culvert by makeshift “wingwalls.” The pipe is set deep inside the stonework around the headwall, and the stone is carved out where the water enters the culvert headworks (Figure 46).

Pipe culverts with concrete slab drop inlet

Several concrete slab drop inlet culverts are found in the Ostrander Rocks segment only. In this segment, concrete drop inlets were used where the culvert is located in a cut and handled only

roadside drainage, whereas masonry headwalls were used wherever there was a channel or gully leading in from the side (Roach 1933:11). These inlets are termed “drop inlets”, but they are different from modern drop inlets typically covered with a metal grate. They consist of a shallow ditch that diverts roadside water to a trapezoidal opening formed by concrete slabs fitted together (Figure 47). The opening is at the side of the inlet, rather than on the top as for typical modern drop inlets. This forms a small “cave” where the water accumulates and then flows out the side into the culvert. The drop inlets found are slightly different from those depicted in the standard design drawings for Section A1 reproduced in Appendix B1. Presumably, this type was included in the park-specific drop inlet designs listed on the coversheet of the design drawings for Section A2 (Appendix B2), however this sheet could not be located.

Concrete box culvert

Another type of culvert is a 3- by 4-foot concrete box culvert with mortared stone headwalls and wingwalls (Figure 48). The headwalls and wingwalls display similar characteristics to the other major culverts on the road. The standard designs for reinforced concrete box culverts used for Glacier Point Road are reproduced in Appendix B1. This culvert was poured in place during road construction in the summer of 1932. Only one drainage on Glacier Point Road features this type of construction, located in the Chinquapin to Potter’s Pass segment. Unrau (1990) incorrectly identified this drainage as Avalanche Creek, but examination of topographic maps indicates this is an unnamed intermittent drainage. When visited in October 2005, a significant stream of constantly flowing water was moving through the box culvert, which suggests the stream is more permanent than depicted on maps and may explain how Unrau mistook it for the named creek.

Non-contributing drop inlet

Finally, one drop inlet with a metal grate was located in the Switchbacks segment. The metal grate resembles those on design drawings for the expanded parking area at Glacier Point built in 1958, and is thought to date from that era. This feature is not considered a contributing element to the landscape. However, there may be a stone headwall dating to the period of significance hidden beneath the metal grate. If it is intact, it should be considered contributing.

Non-contributing Features

Three contemporary metal double leaf gates are located on Glacier Point Road: just beyond Chinquapin intersection, at the entrance road to Bridalveil Creek Campground, and at the utility road at the top of the switchbacks. These utilitarian objects do not contribute to the historic character of the landscape.

No historic signs remain along Glacier Point Road. Current signs along the road consist of contemporary metal traffic signs and informational signs such as trailhead signs and the

Bridalveil Creek Campground entrance sign. Metal trail distance signs are found at trailheads. Interpretive plaques are located at El Portal View and Washburn Point. Snow stakes are located along the road shoulder at regular intervals. These small-scale features do not share the historic character of the road, and therefore are not contributing elements to the Glacier Point Road cultural landscape.

Garbage cans and bear-proof food lockers located at a few trailheads and turnouts, and a picnic table located next to Bridalveil Creek (north side of the road, west of the creek) are modern features that do not contribute to the historic significance of the road landscape.

Conclusion

Small-scale features were constructed with the naturalistic design philosophy that is apparent in the design of the entire Glacier Point Road. Together, the large intact collection of original culverts dating to the period of significance contributes to the significance of the landscape.

Landscape Characteristic Graphics:

Example of Double 36-inch Pipe Culvert Headwall (at East Fork Bridalveil Creek, Mile 9.05)
Photo by Clare Sandy, NewFields, 2006

Example of Concrete Slab Drop Inlet (at Mile 10.69)
Photo by Schuyler Greenleaf, NewFields, 2006

Archeological Sites

Introduction

In the mid 1980s, most of Glacier Point Road was subject to a series of archeological investigations, including survey and excavation (Hull and Mundy 1985; Hull 1990). Additional work in 2005 covered three miles not investigated previously because heavy brush and steep terrain limited access (Norum 2005). Hull and Mundy (1985) located a total of 16 sites along the road; the highest densities of both prehistoric and historic sites are found along Bridalveil Creek and in the Sentinel Dome region. Some of these sites have been highly impacted as a result of visitor use and NPS projects. Norum did not locate any sites, but recorded 12 isolated historic finds. These probably represent debris from passing vehicles and road building and maintenance activities. Prehistoric sites and several archeological districts are found throughout the park. While the prehistoric sites along Glacier Point Road may be eligible for the NRHP on their own right, or as part of a larger archeological district, their presence in the road corridor is incidental to the location of the road and they do not date to the period of significance. As such, the prehistoric archeological sites in the road corridor do not contribute to the significance of Glacier Point Road.

Archeological resources, such as ruins, traces, or artifacts, that exist within the landscape and are associated with the period of the significance are documented as part of a CLI. The remains of Old Glacier Point Road, which was in use prior to the completion of the currently used road, has been identified as an archeological site. Other historic archeological features along the road corridor may exist that contribute to the cultural landscape of Glacier Point Road.

Culvert Headwalls on Glacier Point Road

Several culvert headwalls have been buried, apparently due to sediment washing into the ditches during times of high runoff, and not being cleaned out regularly. The process is apparent in several of the extant culverts described in Small-scale Features, where only a small opening in the pipe remains. Once this aperture fills in, it is easy to imagine the entire headwall being buried soon after. At one documented culvert location visited in 2005 (Mile 1.765), the headwall seemed to have only recently been buried: while no sign of any headwall, inlet, or ditch remains at the upstream side, a very distinct runoff channel was intact on the downstream side.

It is also possible that more examples of the carved stone type of inlet exist along Glacier Point Road that are obscured beneath accumulated sediment. In the extant examples of this unusual inlet type, the carving is at the very base of the inlet, which is buried in numerous cases. This type of inlet is most likely to exist where a headwall is located directly facing a rock cut. Documented locations of historic culvert headwalls that are obviously buried or could not be located can be found in Appendix C4.

Drains on Glacier Point Road

On the original 1930s design drawings for Glacier Point Road, several drains, underdrains, and cross drains are depicted. The drains were made of 6-inch tile, perforated corrugated metal pipe, or rock, and directed water along the road, across the road, or towards culvert inlets. According to completion reports, they were installed as needed when springs or subsurface water was encountered along the roadway during construction. None of these drains could be located in the field. They have likely been destroyed or buried over the years of seasonal freeze-thaw and runoff cycles. If any of these features are discovered subsurface, they should be evaluated as contributing small-scale engineering features of the road.

Old Glacier Point Road (CA-MRP-1525H)

The westernmost portion of Old Glacier Point road was surveyed and recorded as a linear archeological site (archeological site number CA-MRP-1525H) in 1999 (Nave 2000). The road trace is currently managed by the NPS as an archeological resource.
When a stage road was built from Wawona to Yosemite Valley in 1875, it followed a new alignment, bypassing the earlier trail routes by several miles to the west via Chinquapin, and significantly changed the circulation pattern in the area. As visitation increased, more efficient transportation was necessary to get people to Glacier Point. In 1882 the Washburn interests, who had developed and owned the resort in Wawona, employed Conway to reconstruct the saddle trail from Chinquapin to Glacier Point as a 16-foot wide, 14-mile long wagon road, allowing vehicle traffic to access Glacier Point. At least parts of the old roadbed were paved at some point. This road became known as the Old Glacier Point Road when the modern road was constructed in the 1930s. It was described in 1936 in the final report on the construction of

the new road as follows:

This road though slightly improved for automobile traffic was little better than the original wagon road, until some four years ago. Grades were as steep as 20 percent necessitating low gear on most cars and the sharp switchback curves further prevented an enjoyable trip for either the driver or the nervous back seat drivers (Hughes 1936:3).

The first section of the road from Chinquapin to Badger Pass followed the Indian Creek drainage and was extremely steep. This section was most significantly realigned by the construction of the new road, and since it was left untouched when the modern road was constructed, it can still be located. In the late 1950s, the Chinquapin Fire Crew cleared this stretch of Old Glacier Point Road to use as fire suppression access. It could only be accessed from the Badger Pass direction, due to the large cut slope at Chinquapin that removed the connection between the old road and the intersection during the construction of the plaza (Warren 2005). This 2.5-mile segment has been recorded as an archeological site (archeological site number CA-MRP-1525H) and was recommended eligible for the NRHP under Criteria A, B, and C during a historic resources survey in the Chinquapin area (Nave 2000:8).

In his evaluation, Nave recommended that the remaining portions of the Old Glacier Point Road be recorded and that the entire route be nominated to the NRHP as the Old Glacier Point Road Historic District (Nave 2000:8). This recommendation was never submitted to the State Historic Preservation Office (SHPO) for concurrence. Portions of Old Glacier Point Road are still intact beyond Badger Pass as well, but have not been recorded.

The section of the road from Badger Pass to Bridalveil Creek, and the Ostrander Rocks segment were also realigned significantly when the new road was constructed, so traces of the old road in these sections are expected to be relatively intact. The Old Glacier Point Road alignment was reused as part of the access roads at Badger Pass Ski Area and Bridalveil Creek Campground, so has been modified in these areas. The stretch from Badger Pass to Bridalveil Creek Campground remained useable until at least the mid-1970s (Warren 2005).

In the Bridalveil Creek to Mono Meadow segment and the Pothole Meadow segment, the new road alignment follows the old road much more closely, crossing it at numerous points (Figure 49). In these areas, some of the old road is intact, some of it has been destroyed, and some of it has been reused as turnouts or the like. A 0.5-mile segment of the old road leading from Bridalveil Creek Campground east to rejoin the new road was the main access road to the campground until a new access road was built in the late 1950s or early 1960s in conjunction with the expansion of the campground. During a 1991 vegetation restoration project, this segment of road was removed by asphalt crushing, recontouring of cut and fill slopes, and vegetation planting (NPS 1992).

The final segment of the road from Sentinel Saddle to Glacier Point “consisted of a roadway

averaging little better than 12 feet in width, grades up to about 15 per cent and containing six switchbacks, some of which were curves of less than a 20 foot radius" (Roach 1936:4). The new road improved this segment by widening curves and eliminating one of the switchbacks, but it basically followed the same path as the old road, reusing 1.7 miles or 75% of the existing roadway (Potter 1933:3). For this reason, few if any traces of the old road remain in the Switchbacks segment. The currently used road in this segment, however, retains more of the historic character of a wagon road than any of the rest of the road.

Because of their close association with the development of the Glacier Point Road travel corridor, the remnants of Old Glacier Point Road contribute to the significance of Glacier Point Road. The old road trace demonstrates the reasoning for realigning the road to its current state, and as such it helps to convey the significance of the landscape.

Rock Features along Old Glacier Point Road

Nave (2000) identified three dry laid stone retaining wall features along Old Glacier Point Road (Figure 2). The first is a small dry laid stone retaining wall extending beneath the Chinquapin Water Tank. The second is a shallow, 26-foot long dry laid stone retaining wall located about 130 feet east of the Chinquapin Water Tank. The third wall is a dry laid feature that is approximately 0.75 mile long near the trail from the Badger Pass Ski Area. The wall curves approximately 50 feet along the downslope side of the road as it passes through an inside curve. The wall near the center of the curve extends downward about 4 feet and tapers toward each end to a thickness of about 1 foot (Nave 2000). Nave considered these wall remnants contributing elements of his proposed Old Glacier Point Road Historic District. It is expected that similar features exist along the length of the road, and all contribute to the road landscape.

Mountain View House Site (CA-MRP-1506H)

A historic site, archeological site number CA-MRP-1506H, is located in the Bridalveil Creek Campground area. The site consists of the remains of the old Mountain View House which stood on the location from 1869 to 1878 (Figure 4). It was built by Charles E. Peregoy and his wife Mary to provide accommodations to visitors that entered Yosemite from Clark's Station via the saddle trail. Little remains of the site beyond a collapsed chimney, a well, and 13 blazed trees. For this reason, and due to the fact that the site was primarily associated with trail routes to Yosemite Valley, rather than Glacier Point Road, site CA-MRP-1506H is determined to not be a contributing element to the cultural landscape.

Conclusion

It is likely that at least some original culvert headwalls associated with the construction of Glacier Point Road are buried intact beneath sediment along the road. Probing is recommended to determine their existence. If they are located, they should be considered contributing small-scale features to the cultural landscape and should be restored to their intended function if

possible. It is also possible that additional examples of carved inlets are located beneath sediment at culvert headwalls. If found, these contributing features should be preserved and documented.

Rock, tile, or pipe drains may also exist, but their condition is likely to be poor. If any of these features are located, they should be evaluated to determine they still contribute to the historic significance of the cultural landscape. The road trace and alignment of Old Glacier Point Road and its associated features are important elements of the setting of the Glacier Point Road landscape because of its close association with the development of the Glacier Point Road travel corridor. The current recommendation is that the remaining unrecorded portions of the archeological site be recorded, but that it be included with Glacier Point Road as part of the Glacier Point Road Historic District, rather than considered a separate district. Other historic or prehistoric sites in the road corridor may be significant on their own but do not contribute to the historic significance of Glacier Point Road.

Landscape Characteristic Graphics:

Photograph Showing Old Glacier Point Road Trace (at center) and Glacier Point Road (at right), View to Southwest, near Mile 9.5
Photo by Devon Rothell, NewFields, 2006

Condition

Condition Assessment and Impacts

Condition Assessment: Fair

Assessment Date: 09/04/2007

Stabilization Measures:

Vegetation Removal

The removal of large woody vegetation is necessary to stabilize the features and views that are being negatively impacted by the incursion of vegetation. Vegetation that has been allowed to grow within road shoulders, blocking historic views and vistas, or elsewhere within the footprint of the roadway should be cut to restore the areas to intended levels of vegetation. The vegetation that is growing adjacent to historic features should be cut by hand and root wads should be left in place, so as not to damage the historic features. Vegetation management should occur on a regular annual or semi-annual basis to prevent excessive regrowth.

Ditch Restoration

Many of the ditches along the road have acquired a large amount of soil and debris and need to be re-established to permit proper road drainage and to prevent deterioration of the road. Care should be taken to avoid damage to historic culvert headwalls during ditching. Culvert headwalls and known locations of buried headwalls should be marked before ditching begins. Ditches should be restored to historic specifications for depth and width.

Culvert Cleaning

The cleaning and repair of culverts is also necessary to permit proper drainage along the roadway and to prevent deterioration of the road. Vegetation growing adjacent to culvert headwalls should be removed by hand. This process will also include the excavation of the headwalls, many of which have been partially or totally obscured by built up sediment and debris. The stone headwalls are important for the proper functioning and protection of the culvert. For this reason, and to protect the historic integrity of these historic small-scale features, damaged headwalls should be repaired to their historic design. Culvert pipes should be cleaned using appropriate methods, taking care not to damage the historic components.

Wall Maintenance and Repair

The historic stone walls and embankments along Glacier Point Road, including culvert headwalls, are in need of basic maintenance, and in some locations, repair. Basic maintenance that is needed on mortared walls includes re-pointing the mortar joints that have significantly deteriorated over time. Care should be taken to be sure that the proper color, texture, sizing and finishing techniques are maintained in order to preserve the historic character of the features. Stone features should be cleaned of materials such as

sediment, moss, and lichen that may have built up over time. This process should occur on a regular annual or semi-annual basis to prevent unnecessary deterioration of stone features.

Walls that have loose or missing stones should be repaired. Care should be taken when replacing missing stones to use the appropriate stone type to match the color, texture, and proportions of the historic stone. Any deconstruction of historic stone walls or headwalls should be avoided where possible. When it is necessary to dismantle a historic wall in order to repair it, the proper procedure for dismantling and reconstructing a historic stone wall should be followed. This process includes photo-documenting the wall and numbering and recording the location of each individual stone in the wall prior to dismantlement, and reconstructing the wall in the exact historic configuration following the repair of the foundation or whatever actions are necessary to stabilize the feature.

Road Repaving and Repair

The road is in need of repaving along much of its length. The road width should be limited to its original specifications, which provide for an 18-foot travel surface with 2-foot shoulders resulting in a 22-foot roadway from Chinquapin to Sentinel Saddle, and an 18-foot roadway in the Switchbacks segment. Ditches and fill slope shoulders beyond the paved roadway should be kept within historic specifications as well. Asphalt curbs at turnouts should be removed. Road repair projects should ensure that historic features are not adversely affected by the construction, and that no features incompatible with the historic character of the road are added.

Impacts

Type of Impact:	Deferred Maintenance
External or Internal:	Internal
Impact Description:	The deferral of regular, cyclical maintenance activities on the road has had, and continues to have a moderate negative impact on the condition of the road and its associated features. The absence of regular maintenance activities such as the brushing of roadside vegetation, cleaning of ditches and culverts, and repaving, has resulted in the loss of views, impaired drainage, and disrepair of the paved roadbed. Some stone features are in need of having their mortar joints re-pointed.
Type of Impact:	Erosion
External or Internal:	Internal
Impact Description:	Erosion has caused the disintegration of the edges of the asphalt roadway in some locations.
Type of Impact:	Exposure To Elements

External or Internal: Internal

Impact Description: Exposure to the elements is a natural condition for features located in a natural setting, but in the absence of regular maintenance activities, it can lead to deterioration of historic features. The stone features of Glacier Point Road are being negatively impacted by exposure to the elements. The mortar on many of the stone features has deteriorated and is in need of repointing. Many of the dry laid stone features are in need of cleaning and resetting of some of the rocks. The deterioration has led to some stones being dislodged and separating from the features.

Type of Impact: Impending Development

External or Internal: Internal

Impact Description: Future rehabilitation the roadway has the potential to negatively affect historic features and the historic character of the road. Potential negative impacts include widening of the roadway beyond historic specifications, inappropriate repairs to historic walls and culvert headwalls, removal of historic walls and culvert headwalls, and addition of incompatible features to the landscape, such as metal drop inlets, obtrusive rip rap, or asphalt curbing. Road repair projects should ensure that historic features are not adversely affected by the construction, and that no features incompatible with the historic character of the road are added.

Type of Impact: Improper Drainage

External or Internal: Internal

Impact Description: The lack of maintenance activities over several years has led to a buildup of sediment and debris in and around the culverts and ditches along Glacier Point Road, in some cases entirely filling in ditches or burying culverts. Due to failure of the primary drainage system, runoff pools along the upstream side of the road, causing altered vegetation patterns, or crosses the roadbed, causing erosion.

Type of Impact: Structural Deterioration

External or Internal: Internal

Impact Description: The stone walls, including culvert headwalls, are the primary features impacted by structural deterioration. The mortar in the mortared features has been deteriorating and their joints are in

need of re-pointing. The deterioration of mortar joints allows moisture to enter the interior of the features, causing further structural deterioration. The joints should be repointed and maintained in order to prevent further deterioration. Some dry laid features are also in need of resetting of stones. In addition, the roadbed is suffering structural deterioration where the edges are being eroded by natural processes, or by vehicles entering and exiting the roadway. These areas of the roadway are in need of repaving to the historic specifications of road and shoulder width.

Type of Impact: Vegetation/Invasive Plants

External or Internal: Internal

Impact Description: The unmanaged growth of vegetation has had, and continues to have, a moderate negative impact on the historic integrity of the road, in particular, to the historic viewsheds associated with the road corridor. The absence of regular maintenance activities such as brushing and grading has allowed the incursion of vegetation, such as immature conifers, to encroach upon the road shoulders along much of the road corridor, negatively affecting the views and vistas one sees while driving along the road. Large woody vegetation has also grown up at historic viewpoints to the point that no view is visible any longer, such as at parts of El Portal View, Sentinel Dome trailhead parking, and part of Clark Range View. In addition, vegetation growth is blocking some of the culverts and negatively affecting drainage conditions along the road. Vegetation removal should be undertaken to restore historic viewsheds and to prevent further incursion into the roadway and drainage structures. When removing vegetation, care should be taken to prevent damage to historic features.

Treatment

Treatment

Approved Treatment: Undetermined

Approved Treatment Document Explanatory Narrative:

No treatment has been prescribed for the Glacier Point Road landscape. The 1980 General Management Plan for Yosemite outlines planned changes at Glacier Point, Badger Pass, Bridalveil Creek Campground, and Summit Meadow (NPS 1980). Some of these proposed changes would have effects on the road landscape, however, no prescribed treatment for the road as a cultural landscape was included in the planning process. Current planning efforts are revisiting the 26-year old plan and may address an approved treatment for the landscape.

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Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Plans for Proposed Project NR-5-A2, Grading and Base Course, -A3, Base Course, Route No. 5 - Wawona Road-Glacier Point, Yosemite National Park Highway System, California
Year of Publication: 1934
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Badger Pass Parking Area Entry Road off Glacier Point Road
Year of Publication: 1935

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Park and Recreation Structures
Year of Publication: 1938
Citation Publisher: Government Printing Office, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Project Completion Report: Badger Pass Parking Area, Washburn Point Parking Area, Glacier Point Parking Area
Year of Publication: 1958
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Completion Report of Construction Project: Four Comfort Stations, Yosemite National Park
Year of Publication: 1959
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Yosemite National Park, California, Project Completion Report, Resurface Glacier Point and Wawona Roads
Year of Publication: 1961
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Project Completion Report: Footpaths and Overlook, Washburn Point
Year of Publication: 1963
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Rustic Architecture
Year of Publication: 1977
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: General Management Plan
Year of Publication: 1980
Citation Publisher: U.S. Department of the Interior

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Railing and Trail Modifications, Glacier Point
Year of Publication: 1984
Citation Publisher: U.S. Department of the Interior

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Parking Area Modifications, Glacier Point
Year of Publication: 1990
Citation Publisher: U.S. Department of the Interior

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Historic American Engineering Record: Glacier Point Road, Yosemite National Park
Year of Publication: 1991
Citation Publisher: U.S. Department of the Interior

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Historic American Engineering Record: Yosemite Roads and Bridges, Yosemite National Park
Year of Publication: 1991
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Historic American Engineering Record: Wawona Road, Yosemite National Park Roads and Bridges Between South Entrance and Yosemite Valley
Year of Publication: 1991
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Historic American Engineering Record: Bridalveil Creek Bridge, Yosemite National Park Roads and Bridges Spanning Bridalveil Creek on Glacier Point Road
Year of Publication: 1991
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Environmental Assessment, Rehabilitation of Glacier Point Road
Year of Publication: 1991
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Old Glacier Point Road Restoration Project, Final Report.
Year of Publication: 1992
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: How to Complete the National Register Registration Form
Year of Publication: 1997
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: How To Apply the National Register Criteria for Evaluation
Year of Publication: 1997
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Cultural Landscapes Inventory Professional Procedure Guide
Year of Publication: 2001
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Multiple Property Document: Historic Resources of Yosemite National Park
Year of Publication: 2004
Citation Publisher: UNLV History Department, Las Vegas, Nevada

Citation Author: NPS (National Park Service, U.S. Department of the Interior)
Citation Title: Final Yosemite Fire Management Plan and Environmental Impact Statement
Year of Publication: 2004
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: Nissi, Karl E.
Citation Title: Location Survey Report (August 1931) on Yosemite National Park - Route No. 5, Wawona Road-Glacier Point, Mariposa County, California
Year of Publication: 1931
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads, District Two

Citation Author: Norum, Cindy Erica
Citation Title: Glacier Point Road Archeological Survey Between Chinquapin and Badger Pass, Yosemite National Park, California
Year of Publication: 2005
Citation Publisher: U.S. Department of the Interior, Washington D.C.

Citation Author: Olmsted, Frederick Law
Citation Title: The Yosemite Valley and the Mariposa Big Trees: A Preliminary Report, with an introductory note by Laura Wood Roper
Year of Publication: 1865
Citation Publisher: Landscape Architecture

Citation Author: Potter, M. H.
Citation Title: Reconnaissance Report, Glacier Point Project, Yosemite National Park, California
Year of Publication: 1933
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads, District Two

Citation Author: Roach, T. M.
Citation Title: Location and Design Report, Bridalveil Creek-Sentinel Dome Saddle Section, Glacier Point Road-Yosemite 5-A2, Yosemite National Park, Mariposa County, California
Year of Publication: 1933
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads, District Two

Citation Author: Roach, T. M.
Citation Title: Final Construction Report on the Chinquapin-Bridalveil Creek Section of the Glacier Point Road, Yosemite Park Project No. 5-A1-GR, Yosemite National Park, Mariposa County, California
Year of Publication: 1934
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads, District Two

Citation Author: Roach, T. M.
Citation Title: Final Construction Report, Bridal Veil Creek Bridge on Section A-1 of the Glacier Point Road, Yosemite Park Project E 5-A1, Bridge, Yosemite National Park, Mariposa, California
Year of Publication: 1934
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads, District Two

Citation Author: Roach, T. M.
Citation Title: Final Construction Report on the Day Labor Construction, Section A3, Route 5, Glacier Point Road, Yosemite National Park, Mariposa County, California
Year of Publication: 1936
Citation Publisher: U.S. Department of Agriculture, Bureau of Public Roads, District Two

Citation Author: Thomson, Charles Goff
Citation Title: Annual Report of the Director of the National Park Service, 1929
Year of Publication: 1929
Citation Publisher: Yosemite National Park

Citation Author: Thomson, Charles Goff
Citation Title: Superintendent's Monthly Report, November 1932
Year of Publication: 1932
Citation Publisher: Yosemite National Park

Citation Author: Unrau, Harlan D.
Citation Title: Historical Overview and Assessment of Significance of Stone Walls and Rock Work Along Glacier Point Road in Yosemite National Park
Year of Publication: 1990
Citation Publisher: U.S. Department of the Interior

Citation Author:	Vint, John C.
Citation Title:	Standard Guardrail Types. Architectural Details, 3 Sheets
Year of Publication:	1929
Citation Publisher:	U.S. Department of the Interior

Citation Author:	Warren, Ray
Citation Title:	Back Roads of Yosemite, Part II
Year of Publication:	2005
Citation Publisher:	Yosemite Collector and Historical Quarterly

Supplemental Information

Title: Design Drawings (attached)

Description: 1. Plans for Proposed Project 5-A1, Grading, Chinquapin-Bridalveil Creek Section A, Wawona Road-Glacier Point, Route No. 5, Yosemite National Park Highway System, California

2. Plans for Proposed Project NR-5-A2, Grading and Base Course, -A3, Base Course, Route No. 5 - Wawona Road-Glacier Point, Yosemite National Park Highway System, California

Title: Existing Documentation Pertaining to the Glacier Point Road Landscape (attached)

Title: Features Lists (attached)

Description: 1. Parking Areas along Glacier Point Road

2. Other Circulation Features along Glacier Point Road

3. Structures along Glacier Point Road

4. Culverts along Glacier Point Road

Title: Guard Rail Types, National Park Road Projects (attached)