National Park Service
Cultural Landscapes Inventory
2011

Rim Drive Historic District
Crater Lake National Park

Rim Drive Historic District
Crater Lake National Park

Crater Lake 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**

Superintendent, Crater Lake National Park — Date: 6/29/2011

Please return to:

Vida Germano
Cultural Landscapes Inventory Coordinator
National Park Service
Pacific West Regional Office
1111 Jackson St., Suite 700
Oakland, CA 94607-4807

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

National Register of Historic P[redacted]
Date listed 1/30/2008
NRIS No. 08000041
Oregon SHPO

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

1. Name of Property

Historic name Rim Drive Historic District

Other names/site number

2. Location

street & number Crater Lake National Park, PO Box 7 ___ not for publication

city or town Crater Lake ___ vicinity

State Oregon code OR county Klamath code 35 zip code 97604

3. State/Federal Agency Certification

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

Signature of certifying official/Title Date

State or Federal agency and bureau

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

12.13.07

Signature of certifying official/ - Deputy SHPO Date

Oregon State Historic Preservation Office
State or Federal agency and bureau

4. National Park Service Certification

I, hereby, certify that this property is: Signature of the Keeper Date of Action

___ entered in the National Register.
___ See continuation sheet

___ determined eligible for the National Register.
___ See continuation sheet

___ determined not eligible for the National Register.

___ removed from the National Register.

___ other (explain:) _____

Table of Contents

Inventory Unit Summary & Site Plan

Inventory Summary

The Cultural Landscapes Inventory Overview:

CLI General Information

Purpose and Goals of the CLI

The Cultural Landscapes Inventory (CLI), a comprehensive inventory of all cultural landscapes in the national park system, is one of the most ambitious initiatives of the National Park Service (NPS) Park Cultural Landscapes Program. The CLI is an evaluated inventory of all landscapes having historical significance that are listed on or eligible for listing on the National Register of Historic Places, or are otherwise managed as cultural resources through a public planning process and in which the NPS has or plans to acquire any legal interest. The CLI 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 CLIs when concurrence with the findings is obtained from the park superintendent and all required data fields are entered into a national database. In addition, for landscapes that are not currently listed on the National Register and/or do not have adequate documentation; concurrence is required from the State Historic Preservation Officer or the Keeper of the National Register.

The CLI, like the List of Classified Structures, assists the 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 (2006), 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 GPRA goals are associated with the CLI: bringing certified cultural landscapes into good condition (Goal 1a7) and increasing the number of CLI records that have complete, accurate, and reliable information (Goal 1b2B).

Scope of the CLI

The information contained within the CLI is gathered from existing secondary sources found in park libraries and archives and at NPS regional offices and centers, as well as through on-site reconnaissance of the existing landscape. The baseline information collected provides a comprehensive look at the historical development and significance of the landscape, placing it in context of the site's overall significance. Documentation and analysis of the existing landscape identifies character-defining characteristics and features, and allows for an evaluation of the landscape's overall integrity and an assessment of the landscape's overall condition. The CLI also provides an illustrative site plan that indicates major features within the inventory unit. Unlike cultural landscape reports, the CLI does not provide management recommendations or treatment guidelines for the cultural landscape.

Inventory Unit Description:

Summary

Rim Drive is located in Crater Lake National Park in southwestern Oregon. Built by the Bureau of Public Roads (BPR) and the National Park Service (NPS) with work relief funding from the federal government, the 31.6-mile National Register-listed Rim Drive Historic District and its associated 4.9-miles of hiking trails are at the center of the park's vehicular and pedestrian circulation system during the busy summer season. Constructed to primarily provide vehicular access to scenic features, the road provides numerous observation stations, substations and parking areas that provide views and constructed vistas of Crater Lake, its geological formations, and surrounding environs. The road is circuitous, aligned around the caldera, starting from the junction at Rim Village, traversing clockwise to Park Headquarters in Munson Valley. Designed to highlight the natural beauty of the lake, Rim Drive was sited to avoid impinging on the splendor of the setting where the rugged surroundings are still shaped by the cataclysmic eruption of Mount Mazama, which occurred more than 7,700 years ago. From the rim most visitors are struck by the intense color of the lake and associated setting where caldera walls tower from 550 feet to 1,900 feet above the surface. Much of the area around the lake and its immediate surroundings is heavily forested, yet distant peaks and other topographic features characteristic of this portion of the Cascade Range can be seen from Rim Drive.

The approximately 250-acre historic district was listed on the National Register of Historic Places in 2008 and is significant under Criterion A for its association with the history and development of Crater Lake National Park. Rim Drive is also significant under Criterion C for its association with landscape architects and engineers who produced an outstanding example of blending naturalistic and functional design elements. As a linear designed landscape, the period of significance for the Rim Drive Historic District extends from 1926 to 1941, reflecting the period of development when planning and design efforts were undertaken by the NPS in conjunction with the BPR. The historic district includes the 31.6-mile Rim Drive partial road circuit, the Cloudcap spur road, Vidae Falls fill area and service road and 1 contributing trail that provides visitor access to features along the road corridor. A total of four trails are located within the National Register district; however, only the Discovery Point Trail contributes to the Rim Drive CLI. The boundary also encompasses slope treatments, cuts, fills, planting beds, as well as road-related structures such as retaining walls, culverts, spillways and curbing.

While Rim Drive is considered one structure, the circuit can be divided into five segments (7-A through 7-E), which correspond to the chronological order that the road was constructed. Three of the segments contain a hierarchy of intended stopping places (7-A, 7-B and 7-C) that were originally aimed to provide information while highlighting natural features visible from the stop. The observation stations were intended as formal stops on a ranger-led caravan of vehicles. Contributing observation stations include: Skell Head, Cloudcap, Kerr Notch, Discovery Point, Merriam Point and Pumice Point. Below the observation stations in the hierarchy are the substations. The substations consist of stops designed for motorists to make on their own, which are directly related to educating park visitors. The 15 contributing substations are accessible as existing pullouts and are paved in all but two cases. Seven "parking overlooks" designed by Landscape Architect Francis Lange also play an important role in the historical development of the road corridor. These seven parking overlooks include three of the observation stations described above (Skell Head, Cloudcap and Kerr Notch) as well as four substations (Grotto Cove, Cottage Rocks, Victor View and Reflection Point) all located in road segment 7-C. While included as part of the road hierarchy, these parking overlooks held special distinction because they were designed by Lange. Below the substations in the hierarchy came parking areas where motorists might stop to enjoy the view, but better illustrations of geological processes and other natural features were thought to be available elsewhere. All of the 13 contributing parking areas are paved, with most delineated by masonry

guardrail or formal barriers such as boulders. Two of the segments (7-D and 7-E) contain only parking areas since the caravan made its last stop at Kerr Notch, which is located at the end of segment 7-C.

Today, the character of the Rim Drive Historic District continues to be conveyed through the following landscape characteristics: Natural Systems and Features, Spatial Organization, Land Use, Vegetation, Circulation, Buildings and Structures and Views and Vistas. Rim Drive remains in fair condition, exhibiting many of the features that were designed and constructed during the period of significance, 1926-1941.

Nomenclature

The first road circuit route constructed around the caldera by the Army Corps of Engineers (1913-1918) was called "Rim Road." After the planning and reconstruction of the road by the BPR was initiated in 1926, the NPS designated the improved circuit "Rim Drive" by 1937. This designation differentiated the early Rim Road from the reconstructed Rim Drive. There is no state highway number associated with Rim Drive because Crater Lake National Park is exclusively within federal jurisdiction and no part of the road reaches beyond park boundaries. The 31.6-mile road circuit between Rim Village and Park Headquarters has carried the number 7 (so that its five segments are thus referenced as 7-A, 7-B, etc. in construction documents and reports) for many years, with the dead end spur road to Cloudcap designated by the NPS as route 9. Also, the three-mile approach road (the northern portion of the Munson Valley Road), which connects Park Headquarters to Rim Village, is noted as route 4. See site plan in appendix for additional information.

Several observation stations and substations have multiple names based on historic and contemporary references. See list below for more information:

Kerr Notch
Contemporary Name: Kerr Notch
Historic Names: Phantom Ship Overlook, Kerr Notch

Union Peak Overlook
Contemporary Name: Union Peak Overlook
Historic Names: Lightning Springs Overlook, Union Peak Overlook

Pumice Castle Overlook
Contemporary Name: Pumice Castle Overlook
Historic Names: Cottage Rocks, Castle Rock, Pumice Castle Overlook

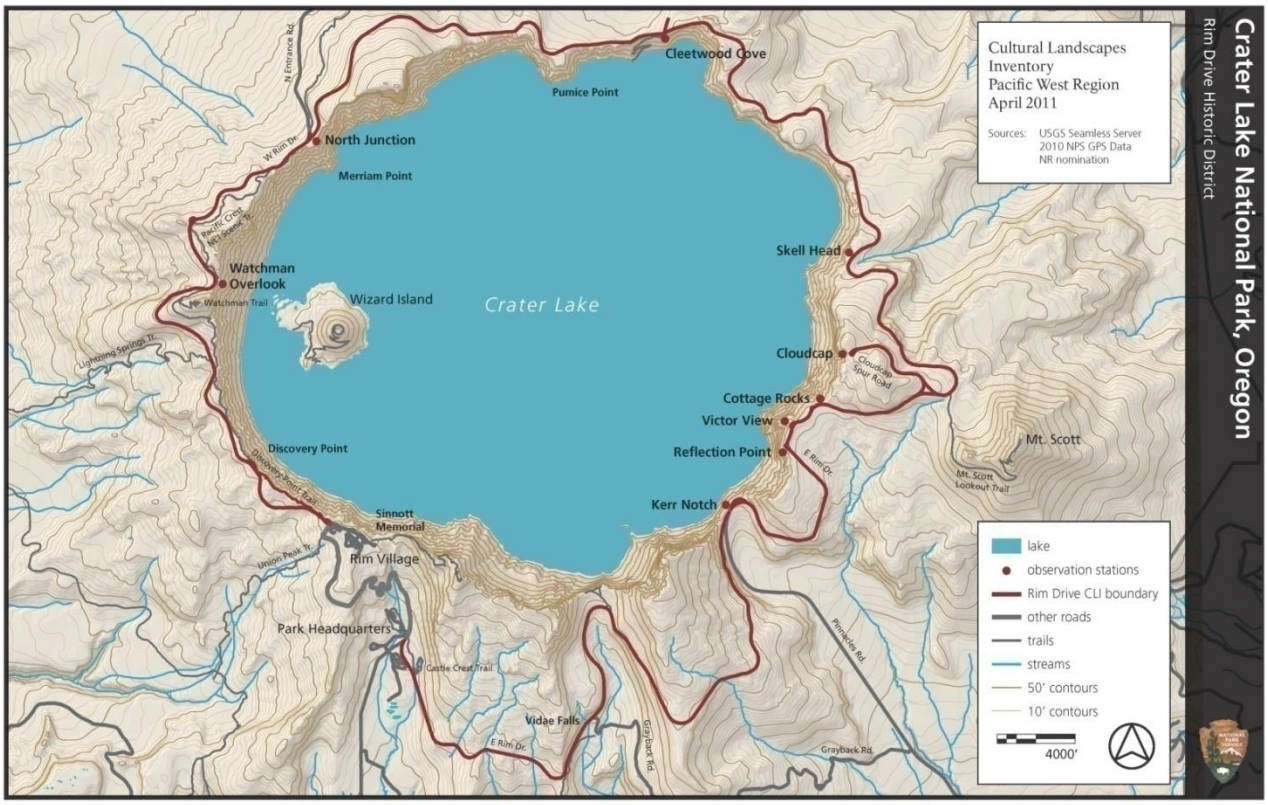
Sentinel Rock
Contemporary Name: Sentinel Rock
Historic Names: Sentinel Point, Sentinel Rock, Victor View

North Junction
Contemporary Name: North Junction
Historic Name: Diamond Lake Junction

Notes

Information included within this CLI was adapted from the following sources: Rim Drive Cultural Landscape Report (2009), draft Rim Drive CLI (2007), Rim Drive National Register of Historic Places nomination form (2008) and Crater Lake National Park Roads HAER No. OR-107 (2003).

Site Plan



Site plan showing Rim Drive and contributing observation stations and substations (Sherraden/Germano, PWR, 2011). See the supplemental information section for a full 8.5 x 11 inch version of site plan.

Property Level and CLI Numbers

Inventory Unit Name:	Rim Drive Historic District
Property Level:	Landscape
CLI Identification Number:	400186
Parent Landscape:	400186

Park Information

Park Name and Alpha Code:	Crater Lake National Park --CRLA
Park Organization Code:	9319
Park Administrative Unit:	Crater Lake National Park

CLI Hierarchy Description

The Rim Drive Historic District serves as a parent landscape, encompassing all development associated with Rim Drive. The Discovery Point Trail is included in this assessment as part of the larger Rim Drive parent landscape because it does not meet the requirements for individual documentation. In 2003, the Watchman was certified as a component landscape under the Rim Drive parent landscape. The Castle Crest Wildflower Trail was certified as an individual landscape in 2002. The Mount Scott Trail should be documented as a component landscape of Rim Drive in the future.

Concurrence Status

Inventory Status: Complete

Completion Status Explanatory Narrative:

Initial fieldwork for the draft Rim Road Cultural Landscape Inventory (CLI) was completed by Rene Senos and Rebecca Dietz in 1997. Additional documentation and analysis and evaluation of Rim Drive was undertaken by Cathy Gilbert, Steve Mark and Jerry Watson. Steve Mark completed the Rim Drive Historic District National Register of Historic Places nomination form (2008) and the Rim Drive Cultural Landscape Report (2009) with Jerry Watson. In the summer of 2010, Cortney Cain Gjesfjeld and Vida Germano performed fieldwork in support of the completion of the Rim Drive Historic District Cultural Landscape Inventory.

Concurrence Status:

Park Superintendent Concurrence:	Yes
Park Superintendent Date of Concurrence:	06/29/2011
National Register Concurrence:	Eligible--Keeper
Date of Concurrence Determination:	01/30/2008

Geographic Information & Location Map

Inventory Unit Boundary Description:

Boundary Justification

The Rim Drive Historic District boundary is a narrow, linear district that includes the road and associated features along the rim of the crater as defined in the Rim Drive Historic District National Register of Historic Places nomination form (2008). The historic district includes the 31.6-mile Rim Drive partial road circuit, which includes the Cloudcap spur road and Vidae Falls fill area and service road, which leads to the Vidae Falls picnic area. The Cloudcap spur road is located at milepost 18.2 and extends from Rim Drive approximately 1.17 miles to Cloudcap before terminating at the Cloudcap overlook. The Vidae Falls Fill Area and service road is located at approximately milepost 28.7 of Rim Drive and extends .23 miles to the Vidae Falls picnic area. The National Register-listed Rim Drive Historic District also includes four trails (Discovery Point, Watchman, Mount Scott, and Castle Crest Wildflower Trail), totaling 4.9 miles in length; however only the Discover Point Trail contributes to the CLI.

Engineered road features associated with each of these roads includes slopes, cuts, fills, road prism, road base, shoulders, surfacing, retaining walls, masonry guardrail, culverts and headwalls, spillways, drop inlets, paved ditches, bankslopes, devices to protect trees, planting beds, walkways, and overlooks. The historic district boundary is limited to the road corridor, which is defined by the clearing limits established for Rim Drive during the initial phase of road construction. The clearing limits vary depending on the topography (one NPS official calculated their average in 1973 as being around 85 feet wide), but do not encompass remnants of temporary "tote" roads, planting associated with old road obliteration, borrow pits outside this roadway, or the sites of construction camps used by contractors. As part of the inventory and documentation of the road, emphasis was placed on the structures intended to help visitors experience Crater Lake from the rim, and as a result the study boundaries are necessarily long (some 31.6 miles) and narrow (85 feet or less).

A three-mile segment of the road circuit, sometimes referred to as route 4, (the Munson Valley Road connecting Rim Village with Park Headquarters) is considered an approach route and is not a contributing component of the historic district. According to the Rim Drive CLR, the approach road (route 4) was excluded from the road circuit because "…Rim Drive proper possesses an entirely different function of presenting the park's central feature in different ways as part of a loop." Regardless of its non-contributing status, this segment of road plays an important role providing a connection between Rim Village and Park Headquarters so that motorists can drive a full circuit during the summer and early fall months.

The Rim Drive National Register Historic District also includes four trails (Discovery Point, Watchman, Mount Scott, and Castle Crest Wildflower Trail), totaling 4.9 miles in length. While all four trails were listed in the National Register nomination, the Rim Drive CLI boundary only includes the Discovery Point Trail, which is not complex enough to be inventoried in a separate CLI. The CLI boundary for Rim Drive does not include the Watchman Trail and Castle Crest Wildflower Trail because they have been documented in separate CLIs. In the future, the Mount Scott Trail may be individually documented in a separate CLI as a component of Rim Drive.

Verbal Boundary Description

Beginning at the three way intersection of west Rim Drive, the Munson Valley Road, and the roadway to Rim Village, proceed northwest and continue clockwise to Discovery Point, encompassing both Rim Drive and the Discovery Point Trail that runs parallel with the road. From Discovery Point go north/northwest around the Watchman to a point where the trailhead linking Rim Drive to the lookout is located. In addition to the Watchman Trail, the district also includes the remainder of Rim Drive, which continues from the Watchman overlook and trailhead, past the North (Diamond Lake) Junction and the beginning of east Rim Drive to another trailhead for Mount Scott, thence up the trail leading to the summit of this peak. Continuing clockwise from the Mount Scott trailhead, the district includes a wye intersection and spur road to the Cloudcap parking area, thence back to the wye, following Rim Drive past another intersection with the East Entrance Road (Pinnacles) at Kerr Notch toward Park Headquarters. The district also encompasses a paved service road below Vidae Falls and a short loop trail through the Castle Crest Wildflower Trail before terminating at the intersection of east Rim Drive and the Munson Valley Road, located 400 feet south of where vehicles can enter Park Headquarters (the Munson Valley Historic District).

The width of the district over the entire length of Rim Drive varies, but the average is 85 feet. This includes the original roadway, 22 to 24 feet from shoulder to shoulder, with the travel lanes within the larger "right of way," which is the clearing limit where trees were removed and grubbed. The 85-foot width also includes locations where cuts had to be angled beyond 90 degrees and pullouts. This includes pullouts situated adjacent to travel lanes as well as parking overlooks that are intentionally separated from Rim Drive by islands of trees or planting beds.

The four trails included in the National Register Historic District (Discovery Point, Watchman, Mount Scott, and Castle Crest Wildflower Trail) total 4.9 miles in length and are engineered structures meant to facilitate pedestrian circulation at the time when Rim Drive was constructed. They were located, designed, and built according to NPS standards between 1931 and 1938. The district includes trails where the base, tread, cross-drainage, dry laid stone retaining walls, steps and parapet (at Watchman Lookout) are still intact and possess integrity. Width of tread on these four trails averages four feet, though the "right of way" is a corridor of about ten feet that can include slope and drainage treatments (Rim Drive Historic District National Register of Historic Places nomination form, 2008).

State and County:

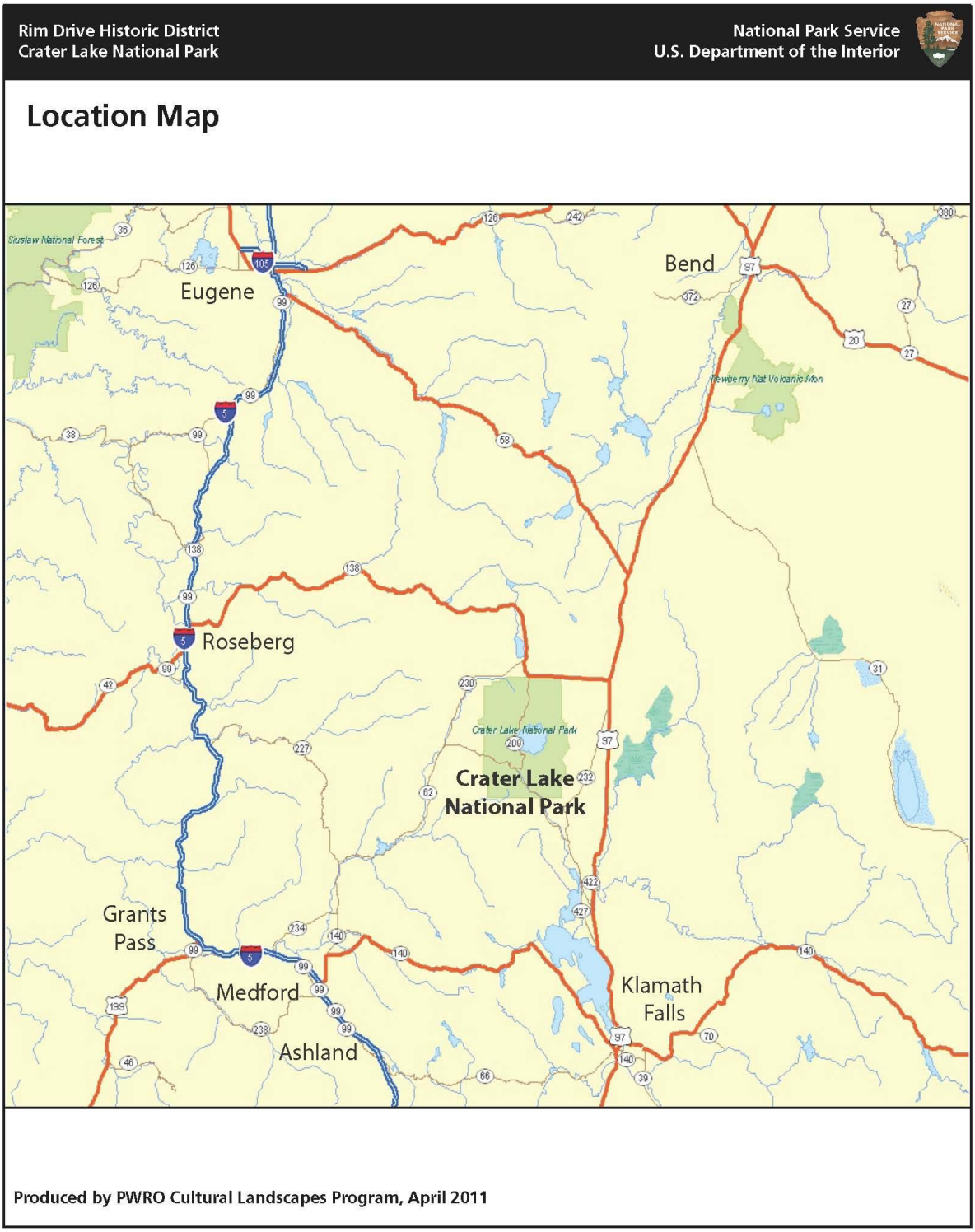
State: Oregon
County: Klamath

Size (Acres): 250.00

Boundary UTMS:

Source	Type	Datum	Zone	Easting	Northing
GPS–Differentially Corrected	Line	NAD 83	10N	566796	4758916
GPS–Differentially Corrected	Line	NAD 83	10N	579563	4759290
GPS–Differentially Corrected	Line	NAD 83	10N	579205	4747451
GPS–Differentially Corrected	Line	NAD 83	10N	567153	474078

UTM information from Rim Drive Historic District National Register of Historic Places nomination form (2008).



Rim Drive Historic District is located in Crater Lake National Park in southwestern Oregon (Gjesfjeld, PWR, 2011).

Management Information

General Management Information

Management Category: B: Should be Preserved and Maintained

Management Category Date: 08/11/2010

Management Category Explanatory Narrative:

Landscape features associated with the Rim Drive Historic District, located within the boundaries of Crater Lake National Park, meet management criteria under Category B – Should Be Preserved and Maintained. Rim Drive meets the necessary requirements for management under this category, meeting the following criteria: the property meets National Register criteria and is significant at a state level, serving as excellent example of a road circuit constructed and designed by engineers and landscape architects in a naturalistic style. Furthermore, the landscape is compatible with the park's legislated significance. The National Park Service is committed to "…forever preserve the beauty of Crater Lake National Park, its unique ecological and cultural heritage; and to foster understanding and appreciation through enjoyment, education and inspiration."[Crater Lake National Park General Management Plan, Newsletter 2, July 2001.] Meeting the last criteria, Rim Drive has a continuing or potential purpose that is appropriate to its traditional use or function as a circulation route around the caldera.

NPS Legal Interest:

Type of Interest: Fee Simple

Management Agreement:

Explanatory Narrative: Rim Drive and its associated features are owned by the National Park Service.

Public Access:

Type of Access: Unrestricted

Explanatory Narrative: During periods of peak park visitation, public access to Rim Drive is unrestricted; although the road is closed by snow from mid-October to early July. During this time, vehicle access to Rim Village is available via Oregon route 62.

Adjacent Lands Information

Do Adjacent Lands Contribute? No

Adjacent Lands Description:

Rim Drive and its associated features are owned by the National Park Service.

National Register Information

Existing National Register Status

National Register Landscape Documentation: Keeper - Documented

National Register Explanatory Narrative:

The Rim Drive Historic District is a linear property located between two previously listed districts: Rim Village (1997) and Munson Valley (1988). The Sinnott Memorial was also individually listed on the National Register in 1988 as part of the Munson Valley Multiple Property Documentation effort. Rim Drive is a virtually complete road circuit that begins at Rim Village and terminates at Park Headquarters, across from the Munson Valley Historic District. Also, several trails that contribute to the overall design of the road system were determined individually eligible for the National Register of Historic Places through two separate Cultural Landscape Inventories: The Watchman (2003) and the Castle Crest Wildflower Trail (2002). The Rim Drive Historic District was listed in the National Register of Historic Places in 2008. In 2009, the National Park Service (NPS) completed a Cultural Landscape Report for Rim Drive and its associated pedestrian circulation system. The report served as an inventory and analysis of features created through the planning and design efforts by the NPS in conjunction with the BPR between 1926 and 1941. The purpose of the Rim Drive Historic District National Register nomination was to describe those features and relate them to the historic contexts of park development and naturalistic landscape design. As a result of these efforts, the Rim Drive National Register of Historic Places nomination adequately described the landscape features associated with the historic district.

National Register Eligibility

National Register Concurrence:	Eligible -- Keeper
Contributing/Individual:	Individual
National Register Classification:	District
Significance Level:	State
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:	1926-1941
Historic Context Theme: **Subtheme:** **Facet:**	Expressing Cultural Values Landscape Architecture The 1930's: Era of Public Works
Historic Context Theme: **Subtheme:**	Developing the American Economy Transportation by Land and Air

Facet:	Carriage Roads, Touring Roads and Parkways

Area of Significance:

Area of Significance Category:	Landscape Architecture
Area of Significance Category:	Transportation
Area of Significance Category:	Engineering
Area of Significance Category:	Entertainment/Recreation
Area of Significance Category:	Conservation (Development of Crater Lake National Park)

Statement of Significance:

The following information was adapted from the Rim Drive Historic District National Register of Historic Places nomination form (2008) and Rim Drive Cultural Landscape Report (2009).

In 2008, Rim Drive and its associated landscape features were listed on the National Register of Historic Places at a state level of significance under Criterion A for their association with the history and development of Crater Lake National Park as well as statewide themes associated with transportation, outdoor recreation, and conservation. Rim Drive is also listed on the National Register under Criterion C at a state level of significance in the areas of engineering and landscape architecture as a result of its exceptional naturalistic and functional design elements. The period of significance for the historic district extends from 1926 to 1941, reflecting the period of development in which planning and design efforts were undertaken by the NPS in conjunction with BPR.

The construction of Rim Drive played a central role in the efforts of the NPS and BPR to develop and manage one of the oldest national parks in the United States and is a good example of "designing with nature" in Crater Lake National Park. In addition to its significance as it relates to the historical development of Crater Lake National Park and naturalistic design, Rim Drive also serves as an outstanding example of scenic highway development in Oregon, especially among those roads designed and built during the Great Depression. The design of Rim Drive adhered to the contemporary standards set for grade, curvature, drainage, and slope ratios, and was also among one of the best roads in Oregon for utilizing advanced engineering and landscape practice.

Rim Drive is a linear district that includes the 31.6-mile roadway, slope treatments, cuts, fills, planting beds, as well as road-related structures intended for cross-drainage, safety barriers, retaining walls, and use by pedestrians. These landscape features are located within the clearing limits established for Rim Drive during the initial phase of road construction. Clearing limits on this road, however, vary depending on the topography, although it averages approximately 85 feet wide. Rim Drive was constructed in five phased segments. Three of these segments contain a hierarchy of intended observation stations (Segments 7-A, 7-B, 7-C), originally aimed at aiding interpretation of what visitors could see from them. The observation stations were intended as formal stops on a ranger-led caravan of vehicles. Totaling eight in number, four of the observation stations are accessible by trail (Sinnott Memorial, Discovery Point, the Watchman and Merriam Point), which extend from where visitors are intended to park their vehicles nearby. The remaining four (Pumice Point, Skell Head, Cloudcap, and Kerr Notch) are existing pullouts delineated by masonry guardrail. Today, six of the eight original observation stations serve as contributing features in the CLI. In addition to these observation stations there are substations, which consist of pullouts designed for motorists to stop at on their own. The 15 contributing substations are accessible as existing pullouts and are paved in all but two cases. In addition to the observation stations and pullouts, the route contains parking areas where motorists might stop to take in a view, but better

illustrations of geological processes and other natural features were thought to be available elsewhere. There are 13 contributing parking areas, all of which are paved and are typically delineated by masonry guardrail or formal barriers such as boulders. Two of the road segments (7-D and 7-E) contain only parking areas since the caravan made its last stop at Kerr Notch, the end of segment 7-C.

The historic district also includes trails originally designed to encourage pedestrian circulation from Rim Drive, by allowing motorists to leave their vehicles at designated parking areas and reach the intended viewpoints on foot. The total length of all trails associated with the construction of Rim Drive is 4.9 miles, with each trail averaging ten feet wide. Of the four trails built in conjunction with the road, only the Discover Point Trail contributes to the Rim Drive CLI.

Criterion A

Rim Drive is significant at a state level of significance under Criterion A for its association with the history and development of Crater Lake National Park as well as statewide themes associated with transportation, outdoor recreation, and conservation. Rim Drive is the result of efforts by the NPS and BPR to develop and manage one of the oldest national parks in the United States. One of the primary goals of park design during this period (1926-1941) was creating a visual unity with the park setting through use of rustic architecture and naturalistic planting so that increasing visitor use could harmonize with its sub-alpine environment. As part of this effort, the NPS wanted the new Rim Drive at Crater Lake to be a more pleasant visitor experience than that which was offered by the previous Rim Road, but also wanted to avoid creating a super-highway where motorists "would speed around the lake and pass by scenes of beauty in their rush to make the lake circuit." As a result, BPR engineers aimed for a constant average design speed of 35 miles per hour, instead of the switchbacks and short radial curves evident in places along the old road. A curvilinear alignment would encourage constantly changing views, which reduced the need for cuts and fills that would be both unsightly and expensive. Ultimately, these features would contribute to the naturalistic character of the historic district.

In addition to the importance that was placed on the naturalistic design of the road, increased visitor interpretation played an important role in the development of the road circuit. John C. Merriam, who probably served as the leading figure in creating a formalized interpretive program at Crater Lake, remained adamant that the road should serve the purpose of "showing the great features" of the lake and its caldera. With Crater Lake showing "the most extreme elements of beauty and power in contrast," the plan included the development of "stations" where certain views helped visitors appreciate "elements derived from the geological story of Crater Lake and those arising from elements of pictorial beauty." Merriam cautioned, however, that the "hand of the schoolmaster" not be overly evident at these particular places. The most overt attempt to educate visitors would instead be made at the Sinnott Memorial in Rim Village, a place Merriam referred to as "Observation Station No. 1." He saw it as the "main project," though "minor projects" of building the road, some trails, as well as additional observation stations had to be closely coordinated with developing the Sinnott Memorial for visitor orientation.

Rim Drive is also emblematic of federal aid for scenic roads that came through Depression-era work relief funds—in this case mostly channeled through the Public Works Administration to the BPR and the NPS. Public works projects in places like Crater Lake possessed the advantage of being a conspicuous manifestation that presidents from both political parties (in this case Herbert Hoover and Franklin Roosevelt) could point to as part of their commitment to relieving unemployment at a time when up to a quarter of the entire American workforce lacked a job. While it can be said that most of the design precedents and even a good deal of construction at Crater Lake took place during the Hoover Administration, the vast majority of work on Rim Drive occurred with Roosevelt was in office. In contrast to developed areas like Rim Village and Park Headquarters, very little of the work on Rim Drive

aside from fabrication and placement of signs can be attributed to the Civilian Conservation Corps (Stephen R. Mark, "Transcending the Ordinary: Discerning a CCC Legacy at Crater Lake," *Journal of the Shaw Historical Library* 20 (2006), 85-98). The profusion of projects during this period shaped the built environment and visitor experience at Crater Lake National Park like no other has before or since, and Rim Drive is by far the largest of these undertakings. Work relief funds supported the location, design, and construction of a linear corridor so subordinate to the landscape that few (if any) park visitors could be entirely aware of how nature was presented to them. In this respect there are few roads in Oregon that exhibit an equal mix of spectacular scenery, design with nature, and so much original material still intact.

Criterion C

The Rim Drive designed landscape is significant at a state level as an expression of design with nature that was adapted to individual national parks by the NPS between 1916 and 1942. This "style" (actually a long-held tradition in developing park landscapes for visitor use) influenced state parks throughout the country and recreational sites in Pacific Northwest national forests. In western national parks like Crater Lake, structural forms were designed to fit local needs or conditions, but were also sited to blend with their setting by incorporating native shapes and textures, most conspicuously in masonry features. Principal features of the Rim Drive designed landscape include its alignment and the visual unity provided by designed components built from the historic period. These are sited against a rugged backdrop, and are so carefully constructed that Rim Drive seems to barely disturb the rim of Crater Lake. The resulting "picture" was enhanced by the judicious use of native soil and plant materials that contribute to the road's highly naturalistic appearance.

Designing with nature, especially in parks, has a pedigree that stretches back at least to the eighteenth century. More recently, landscape architects working for the National Park Service sought ways to blend necessary facilities with landscapes set aside for preservation in their natural state. Their work reflected a philosophy described by Albert H. Good in his preface to a NPS catalog of the agency considered to be its best "rustic architecture" of the 1920s and 30s. Good did not offer specifics about how to best landscape scenic roads and highways, but engineers working for the Bureau of Public Roads saw it as part of improved design. Utility, economy, and safety increased when roads fit their setting, so it made sense for engineers and landscape architects to collaborate, especially in the high profile national parks. Natural rounded slopes, protection of native roadside vegetation, wide shoulders, various cross drainage systems, and open sight distance became hallmarks of this effort. Several examples from Crater Lake National Park were featured in the standard reference for state and federal roads of the time, *American Highway Practice* (1942).

Some local materials are evident throughout the entire length of Rim Drive. Engineers aimed at equating cuts and fills during the grading phase of road construction, a goal that both lessens the costs associated with moving earth and the resulting scars on the landscape. Where crews needed to "borrow" additional base material for fills or landscape treatments like bankslopes or warping, they hid pits and quarries from view. Broken rock (or "aggregate") used for surfacing material originated from various places in the park, as contractors processed the material with machinery on site, but also made finer gravel that was bound together with oil for bituminous paving, ditches, and walkways. The conspicuous andesite is a volcanic rock used in roughly seven miles of crenulated guardrail, as well as for numerous retaining walls, spillways (a masonry feature used for drainage), curbs, and culvert headwalls. (The source of the andesite is primarily from a quarry below the Watchman on West Rim Drive.) Mortar used to join the masonry features is from off site as is the concrete for culverts placed to allow cross drainage at regular intervals along the road. Wood for treated and partially buried log barriers (non extant) came from commercial sources, though posts and boards for signs (of which one still exists) were milled by the Civilian Conservation Corps (CCC) near Cave Junction, Oregon.

Rim Drive is also an outstanding example of scenic highway development in the state of Oregon, especially among those roads designed and built during the Great Depression. Not only did it adhere to the contemporary standards set for grade, curvature, drainage, and slope ratios, it is among the best roads in the state for utilizing advanced engineering and landscape practice. Curvature and grade are relatively easy, given the otherwise rough terrain, with the posted speed of 35 miles per hour consistent with a road design aimed at providing a leisurely and scenic driving experience. Visitors travel on Rim Drive without encountering a single switchback—silent testimony to how designers achieved their goals, yet the location work is so good that the road cannot be seen from key viewpoints like the Sinnott Memorial, Discovery Point, Merriam Point, and Kerr Notch.

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: Historic Designed Landscape

Current and Historic Use/Function:

Primary Historic Function: Automobile

Primary Current Function: Automobile

Other Use/Function	Other Type of Use or Function
Parkway (Landscape)	Both Current and Historic
Overlook	Both Current and Historic
Outdoor Recreation – Other	Both Current and Historic

Current and Historic Names:

Name	Type of Name
Rim Road	Historic
Route 7	Historic
Rim Drive	Both Current and Historic

Ethnographic Information

Ethnographic Study Conducted: Yes-Unrestricted Information

Ethnographic Associated Groups: The Klamath Tribes
Cow Creek Band of Umpqua Tribe of Indians

Association: Both Current and Historic

Ethnographic Significance Description:

See Douglas Deur's "In the Footprints of Gmukamps: A Traditional Use Study of Crater Lake National Park and Lava Beds National Monument," National Park Service, Pacific West Region Social Science Series, 2008.

Chronology:

Year Begin	Event	Annotation
7700 B.P.	Established	The 12,000-foot Mount Mazama erupted. As a result of the explosion, the magma chamber was emptied and the volcano collapsed, leaving a large bowl-shaped caldera on the landscape.
1853	Established	A party of miners arrived at Crater Lake on June 12, 1853, while attempting to locate a gold mine.
1865	Established	A wagon road was established near Annie Creek to connect Jacksonville with an army outpost at the upper end of the Klamath Basin.
1869	Established	Crater Lake got its name from James Sutton, editor of the *Oregon Sentinel* of Jacksonville, Oregon. Sutton named the area after the small crater on Wizard Island, which is a small cinder cone that rises 760 feet above the water.
1885	Established	William Gladstone Steel first visited Crater Lake. Steel lobbied Congress for the next 17 years to establish the area as a National Park.
1902	Established	President Theodore Roosevelt signed the bill creating Crater Lake National Park into law on May 22.
1902	Altered	Under the direction of Superintendent W.F. Arant, initial changes were made to the alignment of the Fort Klamath-Jacksonville wagon road through the park.
1909	Established	Superintendent Arant received funds from Congress for the Army Corps of Engineers to conduct a preliminary road survey at the park.
1910	Established	Under the command of Major J.J. Morrow, three teams of engineers surveyed the road system at Crater Lake.
1911	Planned	Major Morrow submitted the survey report for the road. The central feature of the survey included a plan to construct a road on the rim around the lake.
1913-1919	Built	The Army Corps of Engineers constructed the first Rim Road. At the time of its completion, the road was 35.4 miles long. It measured 16 feet wide from shoulder to shoulder; however, the surfaced portion of the road was only 12 feet wide.

1916	Established	The National Park Service (NPS) was established.
1917	Established	NPS operations began at Crater Lake in April, 1917.
1919	Established	After the Army Corps of Engineers left, the NPS assumed control of all roads in Crater Lake
1926	Established	In partnership with the NPS, the Bureau of Public Roads (BPR) became responsible for all road construction contracts and surveys.
1926	Established	The BPR completed a reconnaissance survey of the park's road system.
1926	Reconstructed	In the summer, the NPS and BPR realigned three miles of approach road between Park Headquarters and Rim Village (route 4).
1928-1935	Established	Additional surveys were undertaken by the NPS and BPR to determine the appropriate location of Rim Drive.
1930-1938	Built	The Sinnott Memorial building was constructed in Rim Village. While the building was operational by 1931, park officials did not consider the building to be complete until 1938.
1931	Built	Construction of Rim Drive was initiated.
1931-1935	Built	Construction efforts on the first segment of Rim Drive (7-A) began. The road extended from Rim Village to Diamond Lake Junction. Subsequent grading continued into 1932. Surfacing was undertaken on segment 7-A between 1933 and 1934, while paving was completed in 1935.
1932	Built	The Discovery Point Trail was constructed, linking the western end of Rim Village to Discovery Point.
1932	Built	The trail to the Watchman Lookout was reconstructed. The trail extended from the Watchman overlook on Rim Drive to the summit and incorporated a segment of the old Rim Road in its alignment.
1933	Built	The Watchman Lookout was completed.

1933-1938	Built	Construction of the second segment of Rim Drive (7-B) was initiated. The road segment extended from the Diamond Lake Junction to Grotto Cove. Road grading was completed throughout 1933 and 1934. Road widening was also undertaken in 1934. In 1935, crews focused on obliterating the old road bed, "special planting," construction of masonry guardrails and production of surfacing material. Surfacing and the installation of log barriers occurred in 1936 and the road segment was paved in 1938.
1934-1940	Built	Construction of the third segment of Rim Drive (7-C and 7-C1) was initiated. The road segment extended from Grotto Cove to Kerr Notch. Road widening was started in 1934 and grading was started in 1935. By 1936, development of several parking overlooks had been undertaken as part of surfacing contracts. Work continued from 1937-1939 on the parking overlooks and associated road construction, which was terminated in 1940.
1936-1941	Graded	Construction of the fourth segment of Rim Drive (7-D) was initiated. The road segment extended from Kerr Notch to Sun Notch. Clearing operations began in 1936, although the majority of the finish grading was undertaken in 1937 and 1938. In 1939, construction of masonry guardrails was started and special plantings were completed. The production of surfacing material began in 1940 and by 1941 paving was put on an indefinite hold due to U.S. involvement in World War II.
1936-1940	Built	CCC enrollees produced and installed hand-carved wood signs around the park.
1937-1941	Built	Construction of the fifth segment of Rim Drive (7-E) was initiated. After lengthy debate, Rim Drive was constructed along the middle or combination-line route, which extended from Sun Notch to Park Headquarters. Construction of the road in this location required use of fill, rather than a bridge at Vidae Falls. Furthermore, along this segment of road, grading and associated landscape projects were undertaken, which extended through the 1937-1939 construction seasons. Surfacing was completed in 1940, while paving was put on an indefinite hold due to U.S. involvement in World War II.
1940	Altered	CCC enrollees improved a path linking Sentinel Rock with the parking overlook at substation 7-B.

1941	Built	The 31.6-mile long Rim Drive was opened to the public.
1952	Stabilized	Slopes adjacent to the road were stabilized at Anderson Point in segment 7-C1. Also at this time, approximately 100 linear feet of masonry guardrail was built to replace an earlier guardrail along the road.
1957-1966	Built	As part of Mission 66 planning efforts, numerous interpretive panels (wayside exhibits) were added at various locations along the road.
1957	Built	Day laborers leveled and surfaced six picnic areas around the rim.
1958	Built	Pit toilets and picnic tables were built at the Discovery Point Picnic area located in segment 7-A. Later, the parking area was paved and boulders were installed to delineate its edges.
1958-1962	Built	Construction of a new trail from Cleetwood Cove to the lakeshore was initiated. The project was not completed until September 1962.
1959	Built	Five freestanding wayside exhibits were installed at the Diamond Lake Overlook.
1959	Altered	Portions of the Discovery Point Trail were repaired with Mission 66 funds. Work included the construction of a masonry wall near the parking area.
1960	Paved	Road segments 7-C1, 7-D and 7-E were paved, which completed construction efforts that began almost three decades earlier.
1961	Graded	The parking lot above Cleetwood Cove was graded in an effort to provide additional parking at the site.
1963	Rehabilitation	The Sinnott Memorial underwent rehabilitation.
1966	Damaged	Due to repeated damage associated with rock falls, the masonry guardrail and retaining wall along Dutton Cliff in road segment 7-D1 were repaired. Additional cross drainage was also installed in the area.
1966	Built	Five picnic tables were installed down slope from the Cleetwood Cove parking lot.

1971	Altered	Much of Rim Drive became a one-way system oriented clockwise in response to concerns of some officials in the NPS that the road between Rim Village and the Diamond Lake (North) Junction had become too congested.
1972-1973	Built	The Watchman overlook was redesigned.
1976	Altered	A portion of Rim Drive (segment 7-A) was opened to two-way traffic.
1978	Altered	As a result of the resumption of two-way traffic along segment 7-A, widening efforts were initiated. Park officials wanted to widen the paved surface of Rim Drive from 18 feet to 22 feet, and then to 24 feet. After two summers of work, 2.5 miles of the road was widened.
1982	Altered	A second phase of road widening commenced near the Union Peak Overlook, extending for 3.4 miles to the Diamond Lake Junction. (The work excluded the newly built section near the Watchman overlook.)
1985-1987	Rehabilitated	Realignment of the Diamond Lake Junction occurred as part of the rehabilitation of the North Entrance Road.
1985	Rehabilitated	Due to repeated damage associated with rock falls along the "Sun Grade" section, the masonry guardrail along the 7-D2 segment of Rim Drive was repaired.
1987	Altered	Rim Drive in its entirety returned to a two-way circulation system.
1994	Built	Trail improvement work was undertaken on the west side of Rim Drive. In an effort to provide an alternative route for hikers on the Pacific Crest Trail, 2.5 miles of new trail was built, connecting the Discovery Point Trail with remaining segments of the old Rim Road. Ultimately, the new trail construction provided a route for hikers to reach the Diamond Lake Junction.
1998	Built	The gasoline transfer building was built adjacent to Rim Drive, near the Cleetwood Cove Parking Area.
1998	Established	Portions of the Crater Lake road system, including Rim Drive (route 7) became part of the Volcanic Legacy Scenic Byway, which later received All-American Road status in 1998.

1999	Restored	Efforts were undertaken to restore the Watchman Lookout to its original appearance; however, funding constraints put the partially completed project on an indefinite hold.
2001	Built	Four prefabricated concrete vault toilets were built along Rim Drive at the Watchman overlook, Pumice Point Picnic Area, Whitebark Pine Picnic Area, and Vidae Falls Picnic Area.
2001	Rehabilitated	The Sinnott Memorial underwent rehabilitation in an effort to reopen the museum that had been closed since the late 1980s.
2001	Rehabilitated	The picnic area near Vidae Falls was rehabilitated. Work included placement of new picnic tables at the site.

Physical History:

The physical history narrative was drawn from the Crater Lake National Park Roads HAER No. OR-107 (2003), Rim Drive National Register of Historic Places Nomination form (2008) and the Rim Drive Cultural Landscape Report (2009), authored by Steve Mark.

Early Exploration and the Development of Crater Lake National Park: 1853-1909

The first recorded attempt of reaching the rim came from a party of miners who were trying to locate a "lost" gold mine. They discovered what later came to be called Crater Lake on June 12, 1853, but failed to publicize the find from their home base at Jacksonville, located approximately 60 miles southwest of the lake. Another group of miners reported seeing Crater Lake in the fall of 1862, though it hardly set off a barrage of publicity in the region's newspapers.

What made the lake a destination for the comparatively few tourists of the nineteenth century willing to make the trip lasting two weeks or more was a wagon road built in 1865 to connect Jacksonville with an army outpost (established in 1863) at the upper end of the Klamath Basin. Another road, located across the Cascade Range near Mount McLoughlin, became a tortuous second choice to the wagon route, which followed Annie Creek to a fairly gentle divide leading down from the upper reaches of the Rogue River toward Jacksonville. As soldiers built the wagon road two hunters hired to supply the company with meat found Crater Lake and reported it to their commanding officer, Captain Franklin B. Sprague. He wrote to the Jacksonville newspaper about the find as part of publicizing construction of the new road to Fort Klamath.

A group led by the editor of the Jacksonville newspaper visited Crater Lake in 1869 and gave the lake its name after having used a canvas boat as the means to reach Wizard Island. The resulting publicity spurred subsequent visits by other tourists, though in numbers that rarely exceeded several hundred per season until the mid 1890s. An epic campaign to establish Crater Lake as a national park started when a resident of Portland, Oregon, William Gladstone Steel, first visited the lake in 1885. Steel, who had come to Oregon in the early 1870s, lobbied Congress for the next 17 years. This effort culminated when President Theodore Roosevelt signed the bill creating Crater Lake National Park into law on May 22, 1902, making it the seventh national park established in the United States. (Steel also served as superintendent at Crater Lake under the direct supervision of the Secretary of the Interior between establishment of the park in 1902 and creation of the National Park Service fourteen years later in 1916.)

Only one road ran through Crater Lake National Park when Congress established it on May 22, 1902. The Fort Klamath – Jacksonville wagon road served as an approach route for visitors within three miles of the rim. After reaching this point, many visitors followed another road that had been blazed by the Sutton party up Dutton creek to the site later known as Rim Village. A better road on the other side of the Cascade Divide (one going through Munson Valley) reached the site later called Rim Village in 1905, but those desiring to do a circuit around Crater Lake were faced with a cross-country pack trip lasting several days.

The first clamor for a circuit road came from Steel, but only after he started a concession company to provide visitor services at Crater Lake in 1907. Steel reported to one newspaper that the road's construction was imminent that September, an announcement that largely stemmed from his optimism about public and private investment at Crater Lake, as fueled by visits from Secretary the Interior James R. Garfield and railroad magnate Edward H. Harriman, president of the Southern Pacific. Garfield left

office after the presidential election of 1908, while Harriman died soon thereafter, but Steel continued his pursuit of funding for roads both to and within the park through the Oregon congressional delegation.

Development of the First Rim Road: 1910-1919

As a result of Steel's efforts, Congress appropriated $10,000 for the Army Corps of Engineers to undertake a survey and provide estimates for future road construction at Crater Lake in June 1910. By August, a party of 26 men began work to prepare plans, specifications, and estimates for a park road system. The engineer in charge came to Crater Lake after having studied a topographic map, quickly became convinced that a "main highway" or "boulevard" following the rim was feasible, with roads and trails to points of interest radiating from it. Surveyors considered a road encircling the lake to be of "first importance," in that it should follow the "ridges and high points along the crater rim on account of the view." Approach roads to Crater Lake, by contrast, were to possess little in the way of scenic features.

Estimates for construction of a complete road system in Crater Lake National Park also reflected the emphasis on a circuit of the rim. Roughly, two-thirds of the $627,000 needed to complete the grading for this system in 1911 would go to building the "main highway," one that the Army Corps of Engineers wanted to locate as "near to the edge of the crater as can be done at as many points as possible." They figured an average cost of building each mile of road to be $13,000, with the construction estimates based on a sub-grade 16 feet wide and an eventual surfaced width of 12 feet. This figure did not include paving at another $5,000 per mile, nor the need for guard wall as a safety barrier. The engineer in charge of the survey, however, believed that the latter could be hand laid with "dry rubble" without increasing the total estimated cost.

Road building started during the summer of 1913, with work supervised by the Army Corps of Engineers continuing over the next six years. Construction proceeded from the park's east entrance to Lost Creek, where the Rim Road was to commence. Crews hired on a day labor basis created a circuit from there, with some working west to Rim Village via Munson Valley, while the others went north to Kerr Notch and then along the eastern rim of Crater Lake. Much of the construction was accomplished either through hand labor or equipment like horse-drawn road plows and graders. The likelihood of continuing appropriations from Congress allowed for multi-year commitment by the Army Corps of Engineers at Crater Lake, so Assistant Engineer George E. Goodwin reported on experiments with various kinds of road surfacing in 1913. Despite having a small rock crushing plant and a wood fueled steam roller available during the surfacing experiments, lack of funds for surfacing prevented the engineers from completing anything more than a rough graded road around the rim over the next five seasons. Appropriations for the work dropped in 1915, so the grading of Rim Road was limited to a section of 3.5 miles between Rim Village and the foot of the Watchman. The heavy winter followed by a cold spring and a labor shortage limited the 1916 season to just 3 miles between Watchman and Devil's Backbone. At that point, about two-thirds of a projected 35.6 miles of Rim Road had been rough graded. Without surfacing material, however, the Rim Road was bound to become so badly rutted and dusty that automobile travel on it was described as "slow, disagreeable, and in some places dangerous."

Closing the loop took two more seasons as work continued on both ends in 1917. In 1918 virtually the entire $50,000 appropriation for road building in Crater Lake went to Rim Road. Several cars traversed the roughly graded Rim Road circuit in the fall of 1918, but the reluctance of Congress to provide funds for surfacing meant that the engineers could not finish. They left the park in July 1919, having expended approximately $417,000 for equipment, supplies, and labor for grading a system of roads and trails in the park. Well over half that amount was spent on the Rim Road, a project that that remained unfinished throughout the following decade.

History #1: Grading the old Rim Road, 1913 (NARA, RG 77, DC).

History #2: Automobile on newly graded section of the old Rim Road, 1913 (NARA, RG 77, DC).

Planning, Development and Construction of Rim Drive: 1919-1941

The Need for Reconstruction

The National Park Service assumed control of the roads in Crater Lake National Park once the Army Corps of Engineers departed in 1919**.** By 1923, Park Superintendent C.G. Thomson lamented to NPS director Stephen T. Mather that a rising number of vehicles made maintenance difficult in the absence of surfacing material, since the annual re-grading each fall could not adequately alleviate the problems associated with a rough dirt road. Publicly, however, Thomson extolled the numerous wonders seen from the Rim Road in promoting the park to visitors. According to him, the circuit should be seen as "not a joy ride, but a pilgrimage for the devotees of Nature." It was where "a hundred views of the magic blue lake and its huge shattered frame" highlighted the "thirty four miles of amazing beauty, three hours of vivid and changeful panorama." He knew what 200 cars per day over the course of nine weeks each summer could do to such an earth graded road, but Thomson counseled prospective visitors to "approach the experience [of driving around the rim] in a leisurely and appreciative mood, and great will be your reward."

No matter how reverent the motorist, few considered the Rim Road to be adequately constructed as passenger cars became heavier and faster during the 1920s. Within a decade of the circuit's "completion" by steam shovel and horse-drawn grading equipment, the narrow roadway made passage of vehicles headed in opposite directions difficult. Even though the average radius of curves "greatly exceeded" 100 feet, with none being less than 50 feet, they seemed tight by the highway standards of 1926. Curves needed to be lengthened so drivers could better sustain the posted speed throughout their journey around the rim. Grades varied from two to eight percent (with some stretches of road at 10 percent for short distances), representing another design problem at a time when engineers agreed that a five percent grade should be the maximum allowed.

NPS Collaboration with Bureau of Public Roads (BPR)

The NPS gained a measure of control over its need to continually upgrade park roads in the face of increased vehicle speeds and a massive increase in automobile ownership with passage of legislation in 1924 authorizing annual appropriations specifically for this purpose. After working to solidify a working relationship with BPR over the next year or so, NPS director Stephen T. Mather signed an inter-bureau agreement on January 18, 1926. Under its terms, the NPS and BPR were to use "every effort to harmonize the standards of construction" they employed with those of the Federal Aid Highway system located outside the parks, while at the same time securing the "best modern practice" in locating, designing, constructing, and improving park roads. The inter-bureau agreement stipulated that the NPS reimburse BPR for overhead expenses from the annual appropriations for park roads. This included various levels of investigation and survey, the preparation of bid documents (derived from the plans, specifications, and estimates, known as PS&E), as well as salaries for engineers to supervise and inspect contracted work.

Once initiated, projects followed a familiar sequence that began with road location. After reconnaissance, engineers did a preliminary survey (or P-line) of the road location to obtain topography for representative cross sections. The P-line allowed for curvature and connecting tangents to be placed by "projection" back in the office, a step resulting in the semi-final location (or L-line). Final road location necessitated the establishment of benchmarks on the ground, as well as any adjustments to grade or positioning of cross-drainage devices. All stages of road location were subject to NPS approval, with most of the changes instigated by landscape architects.

The process of road design along Rim Drive was shared between the BPR and NPS. At a landscape scale, BPR designed three basic elements of the road: horizontal alignment, vertical alignment, and cross-section. At the scale of individual features, the NPS worked to provide the BPR with standard guidance for the design of road margins (shoulder, ditch, bank sloping), drainage structures (culvert headwalls, drop inlets, and masonry "spillways"), and safety barriers (masonry and log guardrails) along Rim Drive. As the lead NPS landscape architect for much of the project, Francis Lange produced planting plans in conjunction with a number of site plans for areas along the road corridor that needed individualized treatment beyond the standard measures described in the contract specifications.

Road construction consisted of three types of contracts, beginning with the grading phase. During this phase, vegetation was cleared and rough grading was completed. Rough grading also included items such as moving excavated material based on estimated volumes needed for cuts and fills, placement of concrete or metal culverts as cross-drainage, as well as the flattening of slopes at prescribed ratios to control erosion. Subsequent fine grading included completion of the sub-base and shoulders, as well as bank sloping. After the grading phase was completed, a separate contract for preliminary surfacing could be let. This phase of construction involved laying a base course of crushed rock on the roadway, followed by a top course of finer material to provide a definite thickness and protection for the earthen road underneath. This type of contract might include items, usually subcontracted, such as building masonry structures like guardrails (often on fills created during rough grading that had to settle over the winter) or special landscaping provisions to be completed as part of executing site plans or working drawings provided by the NPS. Bituminous surfacing, or paving with asphalt, was done through another contract. This phase of road construction started with laying aggregate (crushed stone and sand) along a specified width of roadway as base, followed by placing a bituminous "mat" as binder. The thin surfacing of bitumens known as a "seal coat" served as the final step. Completion of the paving contract generally signified the end of BPR involvement with construction. Road maintenance and post construction items thus became NPS responsibility.

Reconstruction of three miles of approach road (route 4) between Park Headquarters and Rim Village set the NPS/BPR collaboration in motion at Crater Lake. With the location survey completed several months prior to formal approval of the inter-bureau agreement, the grading contract commenced during the summer of 1926. The project reduced the maximum grade (from 10.9 percent to 6.5 percent) of this approach and produced a new roadway 20 feet in width. As a precursor to reconstructing Rim Road, this realignment became known for how visitors obtained their first view of Crater Lake as a spectacular and sudden scenic encounter. Landscape architects with the NPS chose the point of "emergence," which allowed visitors to enter a new "plaza" developed on the western edge of Rim Village or begin a circuit around the lake.

Designing a New "Rim Drive"

On the most basic, functional level, there are several main reasons why the NPS and BPR undertook reconstruction of Rim Road. The reasons addressed ameliorating a narrow, rough, dusty road with sharp curves and steep grades. Significant increases in visitation during the 1920s brought more traffic to the park, though at least one observer noticed that the existing road was so difficult to traverse that only a small proportion of motorists attempted to go around the lake. As a result of these reasons, the NPS wanted the new Rim Drive to be a more pleasant visitor experience, but also wanted to avoid creating a super-highway on which motorists "would speed around the lake and pass by scenes of beauty in their rush to make the lake circuit." BPR engineers thereby aimed for a constant average design speed of 35 miles per hour that would avoid gear-shifting on ascent or braking on descent. Instead of the switchbacks and short radial curves evident in places along the old road, designers preferred curvilinear alignment that allowed vehicles to maintain the design speed despite curves and changes in grade. These alignments allowed for constantly changing views by making use of lengthened, but continuous, curves instead of

long straight sections (called "tangents"), and reduced the need for cuts and fills that would be both unsightly and expensive.

Another rationale behind reconstructing the Rim Road lay in providing an intended, rather than incidental, link between a road circuit presenting scenic features and its interpretation to visitors. John C. Merriam, who probably served as the leading figure in creating a formalized interpretive program at Crater Lake, remained adamant that the road primarily serve the purpose of "showing the great features" of the lake and its caldera. With Crater Lake showing "the most extreme elements of beauty and power in contrast," the plan included the development of "stations" where certain views helped visitors appreciate "elements derived from the geological story of Crater Lake and those arising from elements of pictorial beauty." Merriam cautioned, however, that the "hand of the schoolmaster" not be overly evident at these particular places. The most overt attempt to educate visitors would instead be made at the Sinnott Memorial in Rim Village, a place Merriam referred to as "Observation Station No. 1." He saw it as the "main project," though "minor projects" of building the road, some trails, as well as additional observation stations had to be closely coordinated with developing the Sinnott Memorial for visitor orientation.

Each of the original eight observation stations built as part of Rim Drive were intended to serve as stops on the naturalist-led caravan that traversed the road in a clockwise fashion, from Rim Village to Kerr Notch. All were chosen for their part in displaying a different aspect of the lake's beauty. To be spaced proportionately around the lake, designers intended for each substation to have hard-surfaced parking for a minimum of fifty cars. Plans for each observation station were to match the "unique beauty of the lake itself," since Merriam thought the lake represented "a supreme opportunity to teach the significance of beauty through offering to the visitors the experience of beauty." The points chosen by Merriam and his associates on the western side of the rim were accessible by trail so that the road would not come near enough to the station to create "a disturbing element to one who wishes to observe the lake in quiet." This was something of a contrast with the four stations located on the northern or eastern side of the lake, which became part of the planning and design of the road. NPS landscape architect Francis G. Lange designated three of the four eastern stations (Skell Head, Cloudcap, and Kerr Notch) as "parking overlooks."

Beneath the observation stations in a hierarchy of developed viewpoints along Rim Drive lay the substations, numbering 13 in 1934, but increased (at least in plans) to 17 a year later.[1] Substations shared many similarities with the observation stations in that they were chosen for aesthetic or educational reasons, but differed in that they did not function as stops on the caravan trip, nor were all of them formally developed with paved parking areas, signs, or masonry guardrail. Unlike the stations, they sometimes highlighted points of interest situated away from Crater Lake and often focused on specific geological features.

Developed pullouts or "parking areas" served as the next level below the substations in the hierarchy. Although not chosen at random, these stopping points lacked the aesthetic values attributed to the observation stations and substations. Lange commented in 1938 about an effort to restrict the number of such points. Where "an interesting view of the Lake can be obtained," he wrote, an effort "has been made to provide accommodations." He also noted in the same report that where "excellent" views of the hinterland existed, several small parking areas were provided.

Rim Drive followed the old Rim Road wherever possible to minimize impact. Landscape architects and the foremen under contract also paid special attention to planting on the noticeable cuts in new sections and trying to disguise (or "obliterate") abandoned stretches of old road when funding allowed. Contract

[1] The 13 original parking areas were: 1-A, 2-A, 2-B, 2-C, 3-A, 3-B, 5-A, 5-B, 6-A, 7-B, 7-C and ?
[2] The non-contributing three-mile approach road (route 4), which connects Park Headquarters to Rim Village is in its basic alignment; however, some changes have been made.

provisions called for protecting all trees not within the clearing limits (or "right of way"), placing dark soil and trees on conspicuous cuts and covering fills to diminish the ragged appearance of large rocks. Another dimension to the work involved "bank sloping," where flattening and rounding was aimed at stabilizing cut and fill slopes to permit establishment of vegetation, while warping aided the transition between the bank and roadway. All of these measures reflected the standard practice of using landscape treatments to contribute to the utility, simplicity, economy, and safety of scenic highways built primarily for the enjoyment of motorists. The national parks received special attention in this regard, partly because the NPS pioneered many of the standardized landscape treatments in road design.

Construction of Rim Drive

In preparation for the construction of Rim Drive, a BPR reconnaissance survey designated the Rim Road as route 7 and divided the circuit into five segments, labeling them as A, B, C, D, and E. While planning and survey of Rim Drive began in the late 1920s, there were numerous conflicts associated with the location and siting of the route. As a result, development of the road was delayed until 1931 when construction of Segment 7-A commenced. (See Appendix A for more information regarding the discussion related to the siting of Rim Drive.)

Segment 7-A (Rim Village to Diamond Lake Junction)

Construction of Segment 7-A began in June and proceeded quickly from Rim Village, with roughly one quarter of the job completed in only three weeks. Approximately 60 percent of the new route followed the old road, which allowed construction activities to progress quickly. The workforce soon, however, began to encounter rougher terrain where blasting and other means were needed to move more than 50,000 cubic yards of rock per mile. The first four rock cuts consumed over half of the estimated 150,000 pounds of powder as needed for the entire job. The remaining seven cuts were less difficult, with the exception of one near the Watchman overlook. By November 1, the job was approximately 75 percent complete and two of the heaviest cuts still remained for the 1932 season. By this time, only 250 yards of retaining wall and guardrail were built. The need for additional masonry wall along the road margins commanded sufficient attention, so that the NPS referred to the next contract as "Surfacing and Guardrail" when BPR advertised for bidders in the summer of 1932. Aside from some finish grading, most of the work for 1933 season related to landscape items, although a surfacing contract was awarded that fall, the successful bidder (Homer Johnson Company of Portland) did not begin work until August 1933 due to a record snow year. Barely two months elapsed before the onset of winter suspended the job, but unusually dry conditions allowed work to resume in April 1934. Construction of the guardrails in segment 7-A resumed in the late spring or early summer of 1934 and was completed by October. In 1935, the contract for paving 7-A with a bituminous surface treatment was awarded by the BPR. Road striping did not come until 1938, but was in accordance with earlier advice from Lange, who advised a yellow, "or similar colored line" could serve the purpose. Despite the work that had been completed, several features associated with the road had not been completed. These features included viewpoints like the Watchman overlook and Merriam Point, for example, which went completely undeveloped, while a few of the cuts remained ragged and banksloping was frequently nonexistent. NPS landscape architects responded with an array of measures to be incorporated into subsequent contracts on other segments of Rim Drive in an effort to avoid these deficiencies.

Segment 7-B (Diamond Lake Junction to Grotto Cove)

Pre-advertising for bids on grading the stretch of road from the Diamond Lake (North) Junction to the point half a mile past Wineglass took place in the fall of 1932. Insufficient funding prevented letting a contract until September of the following year. The contractors began work in October 1933, but BPR suspended the job upon the first snowfall several weeks later. In contrast to what NPS crews

accomplished prior to the contract award in segment 7-A, the clearing and grubbing of 7-B became the contractor's responsibility. They moved ahead on the basis of plans that called for a roadway of 22 feet with a ditch three feet wide. In 1934, another contract was let in order to widen the roadway an additional two feet. This change was the result of a visit to the park by Secretary of the Interior Harold Ickes in July 1934. Widening of the roadway began in September 1934, but the contractors found it impossible to take the same protective measures. In many places crews brought the rock back upslope by hand after it damaged trees. This meant that the other contractors could disregard some of the required bank sloping and shoulder rounding. Similar to the previous grading contract for 7-A, however, these contractors still had responsibility for other kinds of landscape work. Apparently, by 1934, the masonry retaining walls and culvert headwalls in 7-B displayed good workmanship, though completion of these items did not come until the following summer. Grading and widening the roadway also necessitated what Lange called "special planting" aimed at large slopes exposed by construction. The foreman and his crew treated two sections of 7-B in 1935. In 1936, the road segment was surfaced with crushed rock. With the paving of the road segment not due until 1938, BPR advised the NPS that maintenance crews should apply a light oil treatment in the interim to prevent loss of the soft rock quarried and processed for surfacing material at the road camp.

The NPS pioneered many of the landscape treatments later incorporated into a wide range of highway construction contracts, so this road segment included additional measures specified in the grading phase that were not evident in 7-A because three years had passed and more potent funding through the Public Works Administration was available. More evident was the bank sloping (which often included flattening and rounding the roadway's margins in order to minimize unfinished edges that could lead to increased erosion), old road obliteration, and the planting on fills, but also newer innovations like paved ditches or "gutters" and drop inlets for cross drainage. With these precedents in place, the landscape treatments worked in combination to maximize the utility, economy, and safety of scenic highways built primarily for the enjoyment of park visitors and other motorists.

Segments 7-C and 7-C1 (Grotto Cove to Kerr Notch)

Available funds allowed for letting a grading contract aimed at the portion of Rim Drive between Grotto Cove and the summit of Cloudcap in September 1933. Short-term uncertainty over the L-line from Mount Scott to Kerr Notch resulted in splitting segment 7-C away from what was now called 7-C1. Contractors began work during the summer of 1935, grading the 7-C and 7-C1 segments of road.

The largest landscape problem on this part of Rim Drive stemmed from daylighting prominent viewpoints in 7-C for fill material, thereby compounding the challenge of having to obliterate the old road on soils that tested virtually sterile. NPS landscape architect Francis Lange began making an argument for extensive landscape treatment of what he began to call "parking overlooks" in 7-C and 7-C1 as part of his season ending report for 1935. He pointed to certain examples, such as the excessive daylighting at Skell Head, in identifying five localities for special landscape treatment as part of a future surfacing contract. Rejection of bids for the 7-C1 surfacing contract in the fall of 1936 proved to be an eventual boon to the development of the parking overlooks, since BPR subsequently doubled the amount available for landscaping these viewpoints. The move reflected the need to transport and place weathered boulders, as well as the use of topsoil, peat, and fertilizers as soil amendments prior to planting some 400 trees and 600 shrubs at the parking overlooks. Lange produced site plans for seven overlooks located between the Wineglass and Kerr Notch that were formally approved in December 1936 and then incorporated in the revised set of plans, specifications, and engineering estimates used to solicit bids at the end of June 1937.

BPR awarded the surfacing contract for 7-C1 in July, with the job getting underway in late August. The contractors made relatively quick work of spreading a base course over the four miles of this road segment, completing it in the fall of 1937. The landscape component was only half finished by the end of

the season. Planting required hauling topsoil and peat from "pits" located near Park Headquarters, in addition to using three tons of fertilizer obtained in Klamath Falls. Lange described preparation of the planting beds as a base of peat, to be followed by placing shrubs or trees, with topsoil and fertilizer put "around but not too close to the root system." Duff was then scattered throughout the immediate vicinity of the planting. Crews followed the same procedure when planting at the parking overlooks during the 1938 season, eventually planting a total of 625 trees, but also 2,300 shrubs and plants as well at the viewpoints over two summers.

The additional touch of paving walks at four parking overlooks in 7-C came as part of the paving contract awarded in June 1938. In contrast to the work completed in 1936 along the six miles of segment 7-A, this contract included paving "gutters," which were intended to work in concert with catch basins and drop inlets connected to culverts placed underneath the road at regular intervals. With the paving contract essentially completed, Lange used a number of photos in his season-ending report for 1938 to show how landscape treatments improved typical road sections in 7-B and 7-C. In contrast to the numerous landscape items left unfinished in 7-A, both of the latter segments exhibited good examples of old road obliteration, bank sloping, and special landscape treatments such as adding dark soil to reduce scars. Paving and placement of catch basins in conjunction with the placement of backfill for gutters seemed to signify that the new Rim Drive was "rapidly becoming a reality," with all work projected to be finished in the fall of 1940. Lange made a point of depicting the finished parking overlooks in 7-C and 7-C1 since they demonstrated how to rehabilitate damaged areas while properly developing the observation stations and substations.

Segment 7-D (Kerr Notch to Sun Notch)

Formal adoption of the so-called "combination line" in December 1935 pushed BPR to finalize plans to locate Rim Drive between Kerr Notch and Sun Notch. Instead of "skirting" Dutton Ridge as the official press release had claimed, the road location required major cuts on both sides. The large amount of excavation anticipated caused BPR to split 7-D into two grading contracts, with 7-D1 projected to encompass about three miles from Kerr Notch to a point on the south side of Dutton Ridge where the road would crest. The lowest bid on this first contract, one that required a staggering 176,000 cubic yards of excavation, was rejected in July 1936 since it was considerably above the engineer's estimate. The need to make an award within existing allotments led to another advertisement for bids a month later, this time with the distance of 7-D1 reduced to just over two miles. The contract went to Orino Construction of Spokane, who then set up camp on Sand Creek in Kerr Valley and began its clearing operations.

The contractor faced many difficulties in grading 7-D1, which included problems associated with cuts and the disturbance of adjacent vegetation. The south and west sides of Dutton Ridge and the area above Sun Meadow required about 50 percent rock work, but the contractors found it easier than what engineers had estimated. Progress on grading 7-D2, which ran from the Dutton Ridge proximity over to Sun Notch for a distance of 2.9 miles stood at almost full completion by October 1937, with only finish grading and some landscape details expected for the following season. Lange identified very little damage to trees, either in burning those cleared from the roadway or during grading operations. He seemed particularly pleased with the masonry features along 7-D2, making special reference to what later became known as "spillways" to be connected with culverts as part of cross drainage. The masonry component of this grading contract was otherwise limited to building culvert headwalls, most of which appeared along the south side of Dutton Ridge, where snowmelt brought seasonal drainage.

Most of the rough grading in 7-D1 was completed during the 1938 season, but the time allotted for the contract had long since elapsed. A somewhat sympathetic Lange explained that the number and size of the retaining walls needed along the eastern side of Dutton Ridge justified a contract extension. The hand

placed walls begun in 1937, for example, were placed on each end of a masonry wall to span one of the fills. Other fills required masonry walls roughly 25 feet in height.

After inviting bids for surfacing 7-D along with segment 7-E in August 1939, BPR awarded the contract several weeks later. Although largely devoid of landscape items, this job included a provision for building more than 300 cubic yards of masonry guardrail in segment 7-D2. The contract also focused on producing aggregate for both surfacing and paving, so the contractor set up a rock crushing plant in June 1940 not far from the camp he occupied along Sand Creek during the grading contract. The nearby quarry yielded enough rock for a base and top course of surfacing material and some 27,000 tons of aggregate to be stockpiled for future paving of the remaining segments of Rim Drive. This "leg up" approach to paving left a mere $70,000 needed for plant mix, labor, and equipment to place a bituminous surface on segments 7-C1, 7-D, and 7-E. The paving job represented the final piece after the government had spent a little more than $2 million in contracts for building Rim Drive since 1931. Difficulties with obtaining equipment for the rock crusher, however, hindered progress on the surfacing contract so that production of aggregate was not completed until September 1941. American involvement in World War II allowed for only enough funding to remove slides that resulted during the winter of 1941-1942.

Segment 7-E (Sun Notch to Park Headquarters)

The initial P-line run by BPR in 1926 assigned segment 7-E to a route linking Sun Notch with Rim Village, but the subsequent adoption of a "combination line" led to dividing the segment into two pieces for contracting purposes. A sort of "middle line" connected Sun Notch with Vidae Falls and became 7-E1, while 7-E2 roughly corresponded to the old "low line" (or Rim Road alignment) running from Vidae Falls to Park Headquarters. The contractor completed all of the rough grading and most of the finish portion of the contract in 7-E1 during the 1937 season. Just over one mile in length, 7-E1 turned out to be relatively easy work. In running above the western margin of Sun Meadow and along the bottom of a slide on the flank of Applegate Peak, the new road provided Lange with an opportunity to show a particularly good example of a "warped" slope for transition through a heavy rock slide. BPR awarded the contract for grading 7-E2 in October 1937, so that work on the final 3.3 miles of Rim Drive began the following spring.

The grading contract for segment 7-E2 included a road connection below Vidae Falls to the proposed Sun Creek Campground. Also, plans for a stopping point beneath the waterfall called for widening the road fill on the upstream (or northern) side of Rim Drive, so as to allow for parallel parking. Installation of a stone drinking fountain at this parking area came in July 1939, but construction of additional landscape features had to wait until the subsequent surfacing contract was let. These measures included building a raised walk four feet wide in front of Vidae Falls, which was separated from the roadway by a stone curb. Introduction of the fill spanning Vidae Creek constituted what Lange termed as the "major landscape problem" in 7-E2. He reported that it required more than 1,000 yards of topsoil in preparation for planting the entire slope. As part of making the fill conform to surrounding terrain, this effort required more than 5,000 plants, shrubs, and trees. Al Lathrop, formerly one of Lange's assistants for CCC work, had charge of a crew numbering ten men paid by the contractor. They needed 16 days to plant a mix of species that included willows, mountain hemlock, huckleberry, purple-flower honeysuckle (twinberry), and spirea.

Superintendent Leavitt expressed some satisfaction in writing to NPS director Cammerer that all grading contracts let in conjunction with building Rim Drive were finally complete as of September 1939. Lange mentioned this milestone in his season-ending report for the year and optimistically projected the surfacing phase to be finished in 1940, with the paving to follow in 1941. The surfacing of 7-E did indeed come about over the following season, but the funding request for paving this road segment languished throughout World War II and for more than a decade afterward.

History #3: Construction of a stone masonry retaining wall at Scott Bluffs, 1934 (Doerner, NARA, RG 79, SB).

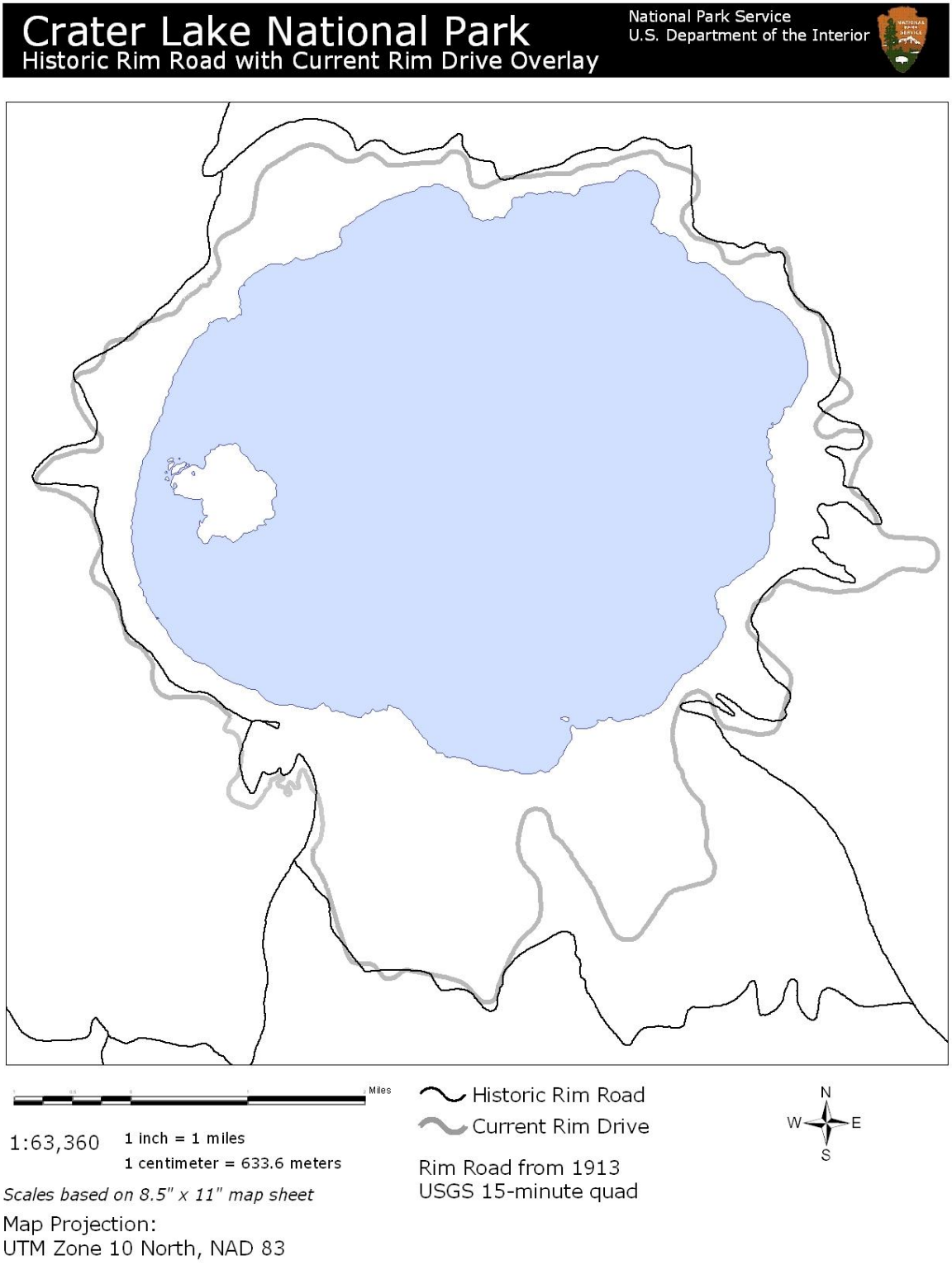
History #4: Parking area and associated guard wall near Cleetwood Cove in segment 7-B, 1936. Note the merlons and curvilinear form of the guard wall (Lange, NARA, RG 79, SB).

History #6: Parking area associated with the Kerr Notch observation station. Note curbing, guard walls and planting beds visible in photo, 1938 (Lange, CLNPMAC).

History #5: Parking area near Discovery Point. Note masonry guard wall with merlons, 1935 (Lange, NARA, RG 79, SB).

History #7: Rim Drive road construction east of the Castle Crest Wildflower Trail, 1939 (Struble, BPR).

History #8: Stone masonry spillway located along segment 7-D2 (Lange, NARA, RG 79, SB).



History #9: Map showing the historic location of the original Rim Road and the current alignment of Rim Drive that reflects NPS and BPR planning and construction efforts (Chris Wayne, NPS).

Postwar Development of Rim Drive

World War II delayed the final few pieces needed to fully complete Rim Drive until the Mission 66 years of park development, largely because budgets at Crater Lake and elsewhere in the National Park System remained at barely custodial levels until 1957. At that point, an infusion of project funding began to come as part of preparing for the 50th anniversary of the NPS (to be celebrated in 1966) that also corresponded to greater annual visitation that drove the need for new facilities as well as the redesign of existing ones at Crater Lake National Park. NPS officials cited Rim Drive as an outstanding example of past collaboration with BPR at the beginning of "Mission 66," and they even singled out the park's road system as illustrating the type of ideal control exerted by the NPS planning process. Master plans (which originally were a response to provisions in the aforementioned Employment Stabilization Act of 1931) and related documents supposedly guarded against "whims of opinion or varying methods of development" brought by changes in personnel.

The "progression of work and revision" guided by the park's master plan for the most part centered on building new employee housing at Park Headquarters and developing a campground near Annie Spring, though a number of smaller projects were also funded by Mission 66. As for changes along Rim Drive during this period, only the parking and trail to the lake at Cleetwood Cove merited attention through revision of the master plan. By the end of Mission 66, however, the master plans once prepared by resident landscape architects and then approved by the superintendent and personnel in central offices had largely given way to sporadic site plans and other assistance supplied by professional staff stationed away from the park.

Most ubiquitous among all the accretions associated with the Mission 66 Period on Rim Drive were the interpretive panels mounted on bases composed of stone masonry to match the guardrails. Intended to help make the road a self-guided tour, they served the dual purpose of enhancing visitor understanding and dispersing use over a wider area away from Rim Village. Six of the 13 locations on Rim Drive initially chosen for these devices were located in segment 7-A, including the most elaborate development associated with these "wayside exhibits," a cluster of five panels installed during the summer of 1959 at the Diamond Lake Overlook. More typical were the single panels on bases incorporated into the masonry guardrails at the Discovery Point parking area, the Union Peak Overlook, and the near Diamond Lake Junction where glacial scratches are evident.

Initial discussions about adding picnic areas along Rim Drive took place before the war, during the season of 1939, when park visitation reached a new high of 225,100. With attendance steadily increasing, especially during the summer season (to 360,000 by 1956), the onset of Mission 66 represented an opportunity to proceed with one of the secondary park priorities listed in the master plan. In 1957, day labor leveled and surfaced six picnic areas around the rim. After pit toilets and tables (built with concrete supports and redwood lumber for tops) had been installed during the summer of 1958, the site located in segment 7-A became known as the Discovery Point Picnic Area. Subsequent development in the picnic area included paving the parking lot and delineating it with boulders, which served as a traffic control device. In contrast to development utilizing a rectangular parking lot with a short stem road, both picnic areas in segment 7-B made use of the more common short loop and were situated just over a mile apart. Funding from Mission 66 also brought about construction of two picnic areas in segment 7-C. One of them, the site near Skell Head, appeared largely as an afterthought in a dense thicket of lodgepole pine and thus received little use in comparison to the other five sites on Rim Drive. Some visitors chose to pause for an impressive view of Mount Scott and the landscape beyond it from the second picnic area in 7-C. Located just one-tenth of a mile from the Mount Scott trailhead, this site featured a short road loop and whitebark pine stands that provided shade for three tables. The final picnic area developed during Mission 66 needed the addition of a short road loop in order to utilize the campground access road built two decades earlier below Vidae Falls in segment 7-E.

The Mission 66 prospectus drafted in 1956 critiqued the parking overlooks and turnouts, particularly those along segment 7-A, as being too few in number and insufficient in size. As a means to draw people away from Rim Village, these stopping places needed more parking spaces, especially where views had been enhanced through the addition of wayside exhibits. This enthusiasm for altering the size and number of viewpoints along Rim Drive eventually waned, as the master plan approved in April 1965 restricted its call for additional parking in segment 7-A. Nevertheless, planners from the NPS service center for design and construction in San Francisco proposed a site study for the largely undeveloped Watchman overlook after one of them observed its "hazardous condition" in August 1966. They recommended more formalized parking and extension of the masonry guardrail from the road margin to provide a measure of safety for visitors who walked to an adjacent ledge for a view of the lake. A site plan produced several months later called for slight realignment of the road on additional fill to accommodate thirty-nine cars.

With construction funds in relatively short supply when compared to the Mission 66 program of just a few years earlier, the project at Watchman overlook remained on hold until the early months of 1971. At that point another site plan suggested dropping the realignment and reworked the design to yield parking for thirty cars that could be oriented diagonally. The revised site plan also included new features for Rim Drive, such as the bituminous curb, contrived rock "outcrops," and even masonry piers linked by pressure treated wood peeler cores as a safety barrier. Construction at the Watchman overlook began in 1972, although completion of all items in the contract took another two summers to complete. The separated parking and conspicuous design features at the Watchman overlook prompted the nickname "Corrals," but the site quickly became the most popular stopping place on Rim Drive. As a result of the substantial changes associated with the 1971 redesign, Watchman overlook no longer reflects the rustic or naturalistic design qualities that serve as character defining features of Rim Drive.

Beginning in 1971, much of Rim Drive became a one-way system oriented in a clockwise direction in response to concerns of some NPS officials that the road between Rim Village and the Diamond Lake Junction had become too congested. As the greatest change to circulation around the rim since adoption of the "combination line" between Kerr Notch and Park Headquarters, the one-way system seemed to create more problems than it solved. NPS planners stationed in Denver subsequently observed that it generated a greater number of traffic accidents (due to higher vehicle speeds in the absence of opposing traffic) and many complaints over the sixteen summers that it remained in force. The supposedly problematic segment 7-A opened for two-way traffic again in 1976 (the entire circuit returned to two-way circulation in 1987), but development at the Watchman overlook and subsequent reconfiguration of the Diamond Lake Junction had greater impact on Rim Drive as originally designed and built.

Realignment of the Diamond Lake Junction occurred as part of rehabilitating the North Entrance Road from 1985 to 1987. A new "T" intersection replaced the original road wye and the new alignment gave precedence to a through route over continuation of the circuit. It also came with a new parking area, one intended to relieve pressure on the parking areas further south, which now consistently ranked second in popularity among all of the viewpoints on Rim Drive. According to the NPS justification for this project, the new parking area was to serve as part of a development that included hard surfaced walkways allowing for handicapped access to a pair of overlooks. These did not materialize, so the site quickly showed how foot traffic during the summer could negatively impact vegetation.

Parking at the Cleetwood Cove trailhead initially consisted of simply widening the road shoulders, but this solution quickly became inadequate. A site plan completed in 1961 called for an elongated parking area across Rim Drive from the trailhead, oriented perpendicular to the road instead of parallel. With an adequate entranceway, the parking lot site would also be large enough to allow development of a picnic area with some thirty tables or even a campground. Grading the lot above Cleetwood Cove began in the

fall of 1961, but lack of water effectively limited development of other amenities to portable toilets and a few picnic tables. The only additional development at the site resulted from a spillage problem associated with fuel delivery to the tour boats. Consequently, construction of a gasoline transfer building situated between the parking lot and Rim Drive was undertaken in 1998.

In some respects, paving segments 7-C1, 7-D, and 7-E in 1960 represented the last act of road construction that had begun almost three decades earlier. In the interim, the BPR supervised laborers hired by the NPS in 1952 to address active slides at Anderson Point in segment 7-C1. Laborers stabilized slopes in 7-C1, while engineers oversaw the construction of roughly 100 linear feet of masonry guardrail to replace an earlier safety barrier situated along this section. The NPS also wanted to counteract the rock fall that repeatedly damaged, and in some cases, destroyed masonry guardrail on a section of road located along Dutton Cliff in 7-D1. As a result, the NPS let a contract in 1966 to repair some of the guardrail and retaining wall, in conjunction with establishing some additional cross drainage in this section of road. On the other side of Dutton Cliff, in segment 7-D2, continual slides and rock fall also led to the repair and reconstruction of some masonry guardrail along the so-called "Sun Grade" section in 1985. Cuts made as part of the original grading contract remained subject to erosion and raveling; however, this was particularly evident where the slope face remained wet.

History # 10: The Diamond Lake substation with wayside exhibits located between log guardrails, 1959 (CLNPMAC).

Analysis & Evaluation of Integrity

Analysis and Evaluation of Integrity Narrative Summary:

Rim Drive was constructed to provide vehicular access to scenic features, while offering access to numerous observation stations, substations and parking areas that afford views and constructed vistas of Crater Lake, its geological formations, and surrounding environs. The road is circuitous, aligned around the caldera, starting from the junction at Rim Village, traversing clockwise to Park Headquarters in Munson Valley. Designed to highlight the natural beauty of the lake, the road was sited to avoid impinging on the splendor of this setting, where the rugged surroundings are still shaped by the cataclysmic eruption of Mount Mazama, which occurred more than 7,700 years ago. From the rim most visitors are struck by the intense color of the lake and a setting where walls tower from 550 feet to 1,900 feet above the surface. Much of the area around the lake and its immediate surroundings is heavily forested, yet distant peaks and other topographic features characteristic of this portion of the Cascade Range can be seen from Rim Drive.

The historic district is a narrow, linear designed landscape that is primarily circular in its orientation. The Rim Drive Historic District includes the 31.6-mile Rim Drive roadway and associated Cloudcap spur road and the Vidae Falls service road. Additionally, the district includes the road base, shoulders, surfacing, pavement, retaining walls, masonry guardrail, culverts and headwalls, spillways, drop inlets, paved ditches, bankslopes, devices to protect trees, planting beds, walkways, overlooks, cuts, and fills; although not all of these features contribute to the significance of the district. The district also includes trails originally designed to encourage pedestrian circulation from Rim Drive, by allowing motorists to leave their vehicles at designated parking areas and reach the intended viewpoints on foot.

Natural systems and features significantly influenced the siting and subsequent planning, construction and development of Rim Drive. The geologic history, soils, hydrology and natural vegetation patterns remain important features that characterize the setting, feeling and association of Rim Drive. The character of the vegetation associated with the naturalization of Rim Drive continues to reflect the original design intent that was implemented during the period of significance, while the views and vistas continue to leave an indelible impression on visitors. The primary land use patterns and activities associated with Rim Drive continue to focus on vehicular and pedestrian access to park features while providing stunning views of natural features such as the caldera.

The spatial organization of Rim Drive remains relatively intact and continues to exemplify the design elements developed during the period of significance. While there have been a few changes to the road circuit, which include the slight adjustment of the road at the North (Diamond Lake) Junction in 1985 and the addition of small access roads and paved loops to access picnic areas, these accretions are compatible with the original design intent and remain relatively few in number. In addition, much of the associated circulation-related developments such as observation stations, substations and parking areas also remain providing the opportunity for the contemporary motorist to experience the road, views, and interpretive messages originally envisioned in early plans. Today, eight observation stations remain; however, only six contribute to the Rim Drive CLI. In addition, 15 substations and 13 parking areas contribute to the circulation system, conveying the historic character of the designed road circuit. Also, many of the character defining structures that delineate the Rim Drive corridor such as curbing, guard walls and retaining walls also remain intact allowing the road to function in its original capacity, while providing visitors with a naturalistic design aesthetic.

The character of the Rim Drive Historic District continues to be conveyed through the following landscape characteristics: natural systems and features, spatial organization, land use, vegetation, circulation, buildings and structures and views and vistas. Although altered (widened and realigned) in some areas to accommodate contemporary use, Rim Drive retains the overall design character and function as the primary circulation route around Crater Lake. The historic district remains in fair condition.

Integrity

Overall, the Rim Drive Historic District possesses exceptional integrity. With the exception of the final quarter mile where Rim Drive intersects with the Munson Valley Road at Park Headquarters, the entire contributing road circuit is in its original alignment.[2] The roadway has been maintained at its original width, although a portion of the route's original configuration (which measured 18 feet wide with two, three-foot shoulders) was modified in the 1970s when the paved surface was extended on the existing bench to the full 24 feet in segment 7-A (which links Rim Village with the North (Diamond Lake) Junction) in an effort to accommodate larger vehicles. It should be noted that as a result of this work, no masonry guardrails were relocated and no cross drainage devices modified to provide additional roadway width beyond the original 24 feet. Despite these slight changes, the integrity of the road circuit remains intact, demonstrating the workmanship, materials, design, location, setting, feeling and association that were established during the period of significance, 1926-1941.

For additional information regarding the seven aspects on integrity, see below:

Location: Rim Drive and its associated landscape features (parking areas, cuts, fills, slope treatments, drainage structures, planted vegetation, trails, and detail elements like guardrail, steps, and walkways) all remain in their original location. The original spatial organization for the road corridor also remains intact. Between the two terminal points (Rim Village and Park Headquarters) there is a hierarchical arrangement of overlooks (observation stations, substations, and parking areas) that are expressed as nodes along the road's curvilinear alignment. These were intended to enhance the functional and aesthetic experience of making a circuit around Crater Lake. Special significance can be applied to "parking overlooks" which included three observation stations and four substations that were designed by Lange during the period of significance. Within the corridor, there are two non-contributing nodes, the Watchman overlook and the North (Diamond Lake) Junction, where non-historic site design interferes with the visual unity of Rim Drive. One accretion, the Cleetwood Cove parking area, is also a non-contributing site because contemporary circulation and design are currently at odds with the original design intent and historic precepts governing design with nature.

Design: Today, Rim Drive retains the overall design character and function as the primary circulation route around Crater Lake. With few exceptions, most of the historic road alignment, profile, and cross-section survive from the original design. Rim Drive is a two-lane road that sits on a 24-foot wide bench and is paved with asphalt over an eight-inch gravel sub-grade. The road crown was 1/8 inch to 1 inch. When Rim Drive was opened to the public in 1941, approximately two-thirds of the road was paved with asphalt. Today, the asphalt-paved roadbed measures from 18 to 24 feet wide and shoulders are typically unpaved and measure from two to six feet wide. The route begins at the junction with Rim Village, and circumnavigates the caldera rim and terminates at Park Headquarters. Minimal cut slopes were used for Rim Drive. When cut slopes were necessary, the slope was typically cut at 2:1 or 1 ½: 1. The maximum grade utilized on the road is eight percent, except on a small section near Mount Scott where a ten percent

[2] The non-contributing three-mile approach road (route 4), which connects Park Headquarters to Rim Village is in its basic alignment; however, some changes have been made.

grade was used. Curves were designed with spiral transitions and super elevations based on a 35 miles per hour speed limit.

Setting: Other than a few clear-cuts visible beyond the park's western boundary it is virtually impossible to detect changes in the vistas seen from Rim Drive. Nor have views of the more proximate park landscape visible from the road changed perceptibly, so that the lake and surrounding peaks seem almost to have been frozen in time. There are several non-contributing sites along Rim Drive and some small accretions like picnic areas and vault toilets, but none of these facilities significantly disrupt the "presentation" of nature along the circuit.

Materials: Extant plant materials are compatible with historic design intent, though the rather severe climatic conditions have reduced the number of species remaining. Some original plantings survive intact, mostly in the form of transplanted trees (whitebark pine, mountain hemlock), shrubs (manzanita, Pacific red elder, mountain ash), and sedge ground cover. Sites such as Skell Head have proved to be so sterile or windswept that it if difficult for many plants to survive, apart from the sedges. Other places, such as the Vidae Falls fill, display a smaller range of plantings than intended because the natural process of seeding of trees from surrounding forest won out over the transplanted shrubs and forbs. The historic road structure of Rim Drive remains virtually intact, with only minute changes (such as the imperfectly executed widening on segment 7-A) evident to a discerning eye. More obvious from the standpoint of divergence from traditional materials is the wooden fencing at the Watchman overlook and above the North Junction. These contrast so markedly from the masonry guardrail used everywhere else that they constitute a visual intrusion into the landscape. All masonry, whether original or of more modern vintage, utilizes the same native rock and mortar combination. Execution of stone masonry construction varies, though a basis for comparison is often present in the original work, especially where it has remained undisturbed.

Workmanship: Rim Drive and its associated features are a superlative expression of how to use naturalistic design for the purpose of a circulation system. Construction took more than a decade and involved numerous contractors, subcontractors, and day laborers, yet virtually all parts of the project possess an overall cohesion. In almost all cases, it embodies a craft tradition frequently evident in naturalistic design during the interwar period. Materials related to stone masonry features like retaining walls and guardrail are classed as contributing when the feature almost wholly retains its historic appearance and contributes to the period of significance. The feature is compatible if it has changed since the period of significance, but retains an overall appearance that is compatible with historic elements of the period. A feature is considered non-contributing when it has lost any association with the period of significance even if some historic materials are present.

Feeling: The historic district evokes an earlier time when great thought went into the design and development of a linear landscape that is integrated into the surrounding environment. Rim Drive's materials and structures present nature in a dignified, yet varied, way to national park visitors. This linear expression of naturalistic design succeeds in providing a foreground that is so well integrated into the landscape as to be almost unnoticed, focusing attention not on itself but on beauty within its volcanic setting.

Association: Rim Drive continues to function as it did historically, with the circuit road open to vehicle traffic during the summer months and to skiers during the winter. The historic district continues to reflect its associations with highway design of the 1930s through Rim Drive's vertical and horizontal alignment, curvature, grade, material features, pedestrian circulation system (trails and walkways), and spatial organization.

Natural Systems and Features

Natural systems and features are defined as natural aspects that have influenced the development and physical form of the landscape. The effect of natural systems and features in Crater Lake National Park is best described through geology, soils, hydrology (cross drainage), and native vegetation.

Geology

Crater Lake National Park lies on the crest of the Cascade Range in southern Oregon, in the heart of the Pacific Northwest's volcanic belt. The volcanic belt known as the High Cascades runs north to south, and is 20 to 25 miles wide. It is a chain of Pliocene (2 to 5 million years ago) and younger volcanic cones, extending 500 miles from Lassen Peak in the south to Mount Baker in the north. Among its high peaks is Mount Shasta (14,162 feet) in northern California, Mount McLoughlin (9,495 feet), Mount Thielsen (9,182 feet) and Diamond Peak (8,744 feet) in southern Oregon, as well as the Three Sisters (consisting of North, Middle, and South Sister) in central Oregon, all of which can be seen from high points in the park. Mount Mazama also lies within this chain, ostensibly rising from a base of between 5,000 to 6,000 feet. When Mazama reached its maximum height, the summit could have been anywhere between 10,000 and 12,000 feet, and it supported many glaciers that advanced and retreated several times. Approximately 7,700 years ago Mount Mazama erupted and spewed pumice and tephra over more than 5,000 square miles to a depth greater than six inches. When the climactic eruption was over, Mount Mazama's summit had collapsed and disappeared. It left in its place a caldera that measured between five and six miles wide and 4,000 feet deep, which has filled with water to create Crater Lake. Precipitous, barren walls rise 2,000 feet above the lake providing a dramatic and geologically important setting. To the west of Crater Lake, the headwaters of the Rogue and Umpqua Rivers have cut deep canyons through the rocks of the older Western Cascades and their tributaries have carved north-south trending valleys.

Mount Mazama's formation closely resembles that of Rainier and Shasta, in that it grew almost entirely by eruption of andesitic lavas and ashes from closely spaced vents. Glaciers advanced and retreated several times while the mountain grew, as evidenced by glacial moraines and tills interbedded among lava flows. Glaciation is visible on some caldera walls especially on the north wall near Red Cloud Cliff, where layers of volcanic rock alternate with glacial debris. The last glaciers advanced down the slopes around the caldera forming the basis of the valleys drained by the Sun, Sand, and Munson creeks. The caldera walls display the geologic layering of lava flows accumulated during the volcano-building phase, sometimes in cross-section. Hillman Peak, Garfield Peak, and Sentinel Rock are, for example, the remains of stratovolcanoes and domes that made up Mount Mazama and whose "plumbing" can be seen as part of the caldera.

Geologists have determined that the collapse was a relatively quick event of perhaps a few hours or days. The caldera was partly filled with pyroclastic materials and rock debris from its unstable walls and all the surrounding valleys were partially filled with hot pyroclastic flows. The initial explosions sent gas-impregnated pumice and scoria down the slopes that destroyed the forests. Carbonized logs buried in the pumice deposits indicate the presence of western white pine, (*Pinus monticola),* white fir, (*Abies concolor*), lodgepole pine (*Pinus contorta*), sugar pine (*Pinus lambertiana*), western yellow pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menziesii).* Renewed volcanism after the mountain's collapse covered part of the caldera floor with andesite lava and built Merriam Cone, Wizard Island, and other volcanoes now hidden beneath the lake's surface. All volcanic activity subsequent to the climactic eruption has occurred within the caldera itself. These flows largely sealed the caldera floor, allowing the closed basin to eventually accumulate approximately 4.6 trillion gallons of water from hydrothermal input, rainfall, and snowmelt.

The natural grandeur of Crater Lake is derived from this violent geologic past. Today, Crater Lake National Park's relief varies from just under 4,000 feet at its southwest corner to the 8,929-foot summit of Mount Scott. Visitors continue to use Rim Drive as a means to optimize views of Garfield Peak, Wizard Island, Hillman Peak, Llao Rock, Cloudcap, Kerr Notch, Phantom Ship, and Dutton Cliff.

Soils

The volcanic activity of Mount Mazama has profoundly influenced regional soils and vegetation. Pleistocene and more recent volcanic activity has blanketed the area contiguous to Crater Lake National Park with large deposits of pumice and volcanic ash, which show relatively little development in profile. Soils along Rim Drive, and throughout Crater Lake National Park, are predominately post-Mazama age pumice, alluvium, and glacial debris. These are well-drained soils, exceedingly poor in composition, and virtually sterile in several locations. Till or morainal soils occur in areas glaciated, such as in Munson Valley to the rim, and at the heads of Sun and Kerr valleys. Forest duff is thin and patchy throughout the park, but is thicker and more developed at some distance from the rim, in the lower elevations. Soils formed in scoria, pumice, and ash that predominate in the park, occur both on plateaus and in canyons at elevations from 4,400 to 7,000 feet. Pumice deposits are capable of absorbing significant volumes of snow melt, so surface streams are relatively few—even with prodigious amounts of snow.

Surface morphology is also critical, since gradient and drainage directly influence soil quality. Wind exposure is important, as soils formed on the windy ridges are very different from those in the sheltered areas adjacent to Rim Drive. There is also continual transfer of mass down slope; thus slope gradients along the road corridor have important implications: upper slopes are susceptible to erosion, while lower slopes are recipients of deposition. As subject to continual disturbance, soils on the slopes are generally well drained as permeability is very rapid, and as such, periodic runoff from rain or snow tends to move through the landscape at a diminished rate.

Unlike most soils that are subject to erosion by water, the primary cause of soil erosion in the park is wind deflation. Pumice deposits have an extremely high water holding capacity (up to thirty percent of their total volume); as a result, runoff channels in park pumice soils are rounded and poorly defined. As such, there is little trace of soil erosion even on the precipitous slopes along Rim Drive. Channeling moisture during periods of increased precipitation or the annual spring snow melt (70 percent of the park's annual precipitation occurs as snow), is the job of the road's cross drainage devices and these minimize damage to soil margins during the run-off. The primary soil limitation along Rim Drive is infertility due to poor soil development, and this is the key factor determining plant composition, succession, and distribution. Soil improvement was a major management concern during road construction and necessitated the slew of amendments to facilitate planting schemes. In some locations, more than a thousand yards of topsoil were used to prepare slopes and denuded areas for planting and to make fills conform to the surrounding terrain.

Topography of Rim Drive

The rim's topography has in large part determined the alignment of Rim Drive. Constraints imposed by the design requirements for curvilinear forms, minimal grades on the road and the goal of providing varied overlooks for motorists, resulted in an alignment the majority of which cannot be seem from virtually all of the observation stations and many of the substations. This is an overarching design achievement and thus an important part of the road's significance. The design of Rim Drive also exemplifies visual unity in its integration of the road into the challenging surrounding topography, especially given its location in a sub-alpine environment, which is characterized by open meadows, scattered conifer groves, steep slopes, rock outcroppings and rocky scree laden slopes. Despite the engineering challenges of the site, Rim Drive's alignment and designed features blend unusually well

with its dramatic surroundings. This is due in part to the use of native stone for components like masonry guardrail, but also to the wearing course or pavement which is predominately grey in color to match dominant parts of the landscape like Llao Rock.

Landscape features at the rim of Crater Lake also played an important role in the alignment of Rim Drive. Its curvilinear form, minimal grade, and inclusion of varied overlooks that respond to the setting are designed so that large sections of Rim Drive literally cannot be seen from any of the observation stations and many of the substations. There are no switchbacks and very few scars from cut slopes that detract from the goal of visual unity between the road and its setting. Rim Drive lies lightly on the land for the most part, but is also integrated with the surroundings through the use of stone masonry (for safety barriers, retaining walls, curbs, and funneling cross drainage), banksloping (to minimize erosion and hide sections of the old Rim Road), and planting fills or areas disturbed by construction. Challenges posed by the topography include the relatively steep gradient required for Rim Drive to get around the Watchman, having to skirt the backside of Llao Rock in lieu of defacing it with a line built across the front overlooking Crater Lake, the need to pass between Cloudcap and Mount Scott, and the cuts required on Dutton Ridge in order to connect Kerr Notch with Sun Notch.

Hydrology

Crater Lake, the deepest water body in the United States, is a closed-basin lake formed after the eruption of Mount Mazama approximately 7,700 years ago. This lake is isolated from surrounding streams and rivers and has no visible inflow from outside. The caldera's steep walls result in a very small watershed, thus external flows of nutrients to the lake from the watershed are low. These conditions contribute to the lake's low nutrient level and exceptional clarity. The surface elevation of Crater Lake is 6,178 feet above sea level. It is estimated that 30 percent of the lake's annual water loss is through evaporation and 70 percent through seepage. Lake level has varied within a range of 16 feet over the past century, perhaps because some extruded lavas of the caldera rest on glacial debris. In many areas of the park at altitudes below 6,500 feet, the occurrence of perched ground water is shown by numerous springs. The depth of the water table is unknown in most locations, so the existence of productive perched ground-water bodies cannot be predicted. The few permanent watercourses along Rim Drive occur along Dutton Ridge, Vidae Falls, and near the Castle Crest Wildflower Trail.

Precipitation amounts vary considerably even along Rim Drive, with the southwest-facing road segments near the Watchman receiving considerably more than Cloudcap and much of the eastern part of the road circuit. Average annual precipitation in Crater Lake National Park is 66 inches, with an annual average snowfall of 522 inches. Snow depths are typically 10 to 12 feet by midwinter. Most precipitation comes in winter and spring, while summer and early autumn are characterized by drought-like conditions. The tourist season is severely limited by the long winter season that can extend into May. Plowing of Rim Drive begins in April, on the southwest side of the lake, and is not completed until the winter snows begin to melt in June. Consequently, the highest volume of visitor use is on the road section that extends from the park headquarters to the north junction.

Impervious surfaces on Rim Drive increase the volume and velocity of surface runoff and reduce infiltration. This affects the hydrology of areas adjacent to the road, particularly the quantity and timing of flows. Larger peak flows increase the energy available for erosion and can affect roadbed stability. The biggest environmental concern associated with the road system is increased sediment in Crater Lake from disturbed areas that drain to it. These include drains and pullouts with insufficient buffer strip between them and the lake. Road ditches can also create runoff channels in previously non-channelized locations. The drainage systems on Rim Drive, however, generally intercept surface flow from the road, channel it to culverts and discharge it to surface flow away from the lake basin. Reduced infiltration

increases surface flow since water is not stored in the soil. Although difficult to quantify, Rim Drive thus directly and indirectly alters the surface and subsurface flow rates, as well as volumes affecting the adjacent landscape. Increases in peak flows make more water available for sub-surface erosion, which can affect road stability. Surface erosion is dependent on many factors, including rainfall and snow runoff, soil conditions, road surfacing, gradients and cross slopes, traffic volumes and the effectiveness and spacing of drainage structures. The properly located and sized drainage structures are keys to regulating volumes of surface flow and resulting erosion.

Vegetation Patterns

Crater Lake's distinct vegetation types, both naturally occurring and planted, greatly contribute to the character of Rim Drive. The circumferential route occurs generally between the elevations of 6,700 to 7,200 feet. The rim of Crater Lake is an area of high winter snowfall, but has relatively difficult conditions for plant growth. The almost sterile pumice soils quickly absorb snowmelt and what little moisture that summer weather conditions produce. With drought in summer a regular occurrence, plants have only a short time to flower and dispense their seeds. These limitations serve to restrict the number of plant species in the park (an area of 183,224 acres) to only 640, with far fewer than that number able to tolerate conditions at the rim. These lava-based soils support specialized plant communities. Higher elevation species commonly found on Rim Drive include Lodgepole Pine, Subalpine Fir, Shasta Red Fir, and Mountain Hemlock. Wind and snow loads have bent the trees closest to the rim, particularly on the east and west sides, into fascinating, bleached-white, misshapen forms. The Mountain Hemlock forest is the largest habitat in this zone; Whitebark k pine occurs at the highest elevation zone. Rim Drive traverses across sharply contrasting vegetation zones, passing from open subalpine meadows with long views to the Cascade Mountains to closed-canopy forests, as illustrated by the transition from the west rim to the north side of the lake. Vegetation on the rim side of the road alternatively conceals and reveals views to the lake, as well as framing a particular viewpoint.

Conifer forests dominate mountain slopes in the Crater Lake region, with their overstory species an indicator of what shapes the composition of forest ecosystems. As a way to simplify vegetation dynamics, the older concept of life zones is utilized to indicate the control exerted by altitude on overall patterns. Rim Drive passes through several life zones, which combined with seasonal changes, present an ever-changing vegetative landscape mosaic of open sub-alpine meadows, coniferous forests, and low shrubs. At Crater Lake, the park's vegetation can be grouped into three life zones that are more or less distinct from each other, even with allowances made for differences in slope, aspect, and microclimatic differences. They are summarized below for contrast, though the life zones also provide some indication of trends over the larger landscape.

Transition Zone
The Transition Zone is dominated by mixed conifer forest and occurs at elevations between 4,400 and 5,500 feet. For the most part, it is located well below Rim Drive, near the park's south entrance, covering 31.4 square miles or 12 percent of the park. Certain southwest slopes near Rim Drive (particularly in road segments 7-B and 7-E) nevertheless display affinities to mixed conifer forest near the South Entrance. Transition zone soils in the park reach depths of 200 to 300 feet and consist of fine, well-drained volcanic dust over ash and cinders. The dominant tree species are western yellow pine (*Pinus ponderosa*), western white pine (*Pinus monticola*), sugar Pine (*Pinus lambertiana*), white fir (*Abies concolor*), and Douglas fir (*Pseudotsuga menziesii*). Ponderosa pine typifies the transition zone, typically occurring in warmer locations such as open meadows and along the road. A small area of ponderosa pine is, however, established on the north rim of the caldera between Cleetwood Cove and Wineglass. It is somewhat of an oddity because ponderosa pine in the park is usually found in areas at elevations from 4,500 to 5,500 feet.

Canadian Zone

The Canadian (or true fir) Zone roughly extends from an elevation of 5,500 to 6,500 feet and covers 102.7 square miles of the park. Elevational control varies widely, however, since this zone is largely defined by moisture, exposure, drainage, and humidity. A prevalent species is lodgepole pine (*Pinus contorta)*; such that the valleys and lower open slopes that radiate from the caldera support dense stands of this species. Lodgepole pine also forms mixed stands with other tree species, notably mountain hemlock (*Tsuga mertensiana*), subalpine fir (*Abies lasiocarpa*) and Shasta red fir (*Abies magnifica shastensis*). The majority of lodgepole pine forests are seral, usually developing after fire or major disturbance. Lodgepole pine thrives on dry, well-drained sites that have coarse textured pumice soils. Prolific seeding follows fires and allows it to quickly establish dominance especially on sites where competition from other species is limited. Lodgepole pine owes its wide distribution to frequent fires and resistance to lower temperatures occurring during the early growing season. Fire suppression policies within and outside the park is resulting in lodgepole pine being supplanted by other species, notably Shasta red fir that intergrades with noble fir (*Abies procera)* in this part of the Cascade Range.

Shasta red fir are scattered throughout the upper reaches of the park and are most common in hemlock forests up to the rim, and on the caldera's inner walls. This forest type is well developed on west-facing slopes of the Cascade Range, where two climatic features are prevalent. The first is in places where much of the annual precipitation falls as snow and accumulates to depths of two or more meters. Secondly, at sites where plant moisture stresses are minimal or do not generally occur during the short summer growing season.

Forests of mountain hemlock are also widely distributed in this zone, being characterized by a mosaic of forest patches and tree groups interspersed with shrubby or herbaceous sub-alpine plant communities. Subalpine fir is typically mixed with other conifers in forest meadows and open parklands. Cool summers, cold winters and deep snow packs are more important to the viability of subalpine fir than total precipitation. Shrubs common to this life zone are several species of currant (*Ribes* spp.), broom and dwarf huckleberry (*Vaccinium caespitosum and V. scoparium*), various willows (*Salix* spp.*)* and woodrush (*Luzula glabrata*).

Hudsonian Zone

The Hudsonian (or subalpine) Zone extends from an elevation of 6,500 to 9,000 feet, and includes the park's sub-alpine areas that are characterized by sparse vegetation and dry summer conditions. In sub-alpine meadows and parklands, "tree dominance" gives way to shrubs and herbaceous plants under harsh conditions, like those on Cloudcap and Mount Scott. Soil moisture in this high elevation zone is quickly lost to the evaporation that limits species diversity and plant numbers. Pumice fields and outwash flats are exceedingly difficult settings for plant dispersal and development. Rates of decomposition and incorporation of organic matter into the soil are generally slow, owing to low temperatures and heavy snow packs. Mountain hemlock, the dominant tree in this zone, is found in open meadows, pumice, talus slopes, and along streams. Whitebark pine (*Pinus albicaulis*) occupies pumice slopes, rocky crests, exposed areas on the rim and the tops of dormant volcanic cinder cones. This pine often serves as a pioneer tree species in the park's open sub-alpine meadows. Bitterbrush (*Purshia tridentata*), and Shasta red fir occur in both the Canadian and the Hudsonian zones, as does lodgepole pine. At the park's highest elevations on Mount Scott and Cloudcap, whitebark pine grows in pure stands. Montane meadows are interspersed throughout these forest zones, though they are usually confined to wet areas along streams or springs.

Natural systems and features significantly influenced the siting and subsequent planning, construction and development of Rim Drive. The road circuit was built to blend with the natural environment and highlight the stunning setting of Crater Lake and associated views to distant geologic features. Furthermore, the road was constructed to respond to the unique topography, hydrology, vegetation

patterns and soils characteristic of the area. Today, these features continue to characterize the setting, feeling and association of Rim Drive, and as a result, natural systems and features as a landscape characteristic contribute to the historic district.

Landscape Characteristic Graphics:

Natural Systems and Features #1: Birdseye view of Rim Drive and Cloudcap spur road from Mount Scott. From this vantage the landscape is open with expansive views of the sub-alpine environment, which is characterized by open meadows and scattered conifer groves (Hartzler, PWR, 2008).

Natural Systems and Features #2: Rim Drive near Castle Crest Wildflower Trail. Note relatively dense subalpine forest along this segment of road (Gjesfjeld, PWR, 2010).

Natural Systems and Features 3: Trail to the Watchman overlook adjacent to Rim Drive. Along this road segment the environment is characterized by steep slopes, rock outcroppings and rocky scree laden slopes (Gjesfjeld, PWR, 2010).

Spatial Organization

Spatial organization is defined as the three-dimensional organization of physical forms and visual associations in the landscape, including the articulation of ground, vertical, and overhead planes that define and create spaces. Important aspects of spatial organization include the road's alignment, and the location of observation stations, substations and pullouts along its route. The following information is directly from Crater Lake National Park Roads HAER No. OR-107, 2003, pages 3-5:

Rim Drive (Route 7)

Encircling much of the caldera is a scenic, two-lane road extending approximately 31.6 miles from the main visitor use area at Rim Village to Park Headquarters in Munson Valley. Linking the two developed nodes is an approach road (route 4) that extends for approximately three miles so motorists can drive a full circuit during much of the summer season. The loop avoids repetition by offering different views of Crater Lake from parking areas developed for that purpose and alternating them with glimpses of the surrounding mountains.

Beginning at its junction with the main roadway through Rim Village, where signs notify motorists of the 35 miles per hour speed limit, Rim Drive heads west on elongated curves for just over a mile before the first large parking area is encountered near Discovery Point. Masonry guardrails, whose otherwise monotonous line is punctuated by crenulations at regular intervals, provide a safety barrier at most of the developed viewpoints and in many places along the roadway where there is danger of vehicles falling down steep banks. It is almost 5 miles from the parking area associated with Discovery Point to the next junction with an approach road, and motorists pass over a 7,350-foot summit between these points. The parking areas along the western portion of Rim Drive are more heavily used during the summer months than elsewhere on the circuit, largely because this road segment serves as a through route for visitors who use the north entrance.

Commencing at the junction with the North Entrance Road is the eastern portion of Rim Drive, which extends for 23.18 miles before terminating at Park Headquarters. Motorists begin by climbing to traverse the back of Llao Rock, going more than two miles beyond the road junction for their next glimpse of Crater Lake. Viewpoints along this northern section are not generally crowded, though traffic congestion is often acute in the vicinity of Cleetwood Cove. This is where motorists leave their vehicles, and pedestrians try to cross the roadway so they can access a trail leading to the lakeshore.

A hierarchy of stopping places, which included observation stations, substations and parking areas encircle the rim. Within this context, seven parking overlooks designed by Lange begin roughly midway between North (Diamond Lake) Junction and Cloudcap. These retain almost all of their stone masonry and a good deal of the planting that was done in the 1930s to "naturalize" what in essence serves as a foreground to the visual spectacle of Crater Lake. The first overlook is located above Grotto Cove, about halfway around the lake from Rim Village. It, like the other overlooks, features masonry guardrail, stone curbs, and planting islands used as a traffic separation device. The next parking overlook is less than a half mile from Grotto Cove, at Skell Head, and is followed by five more overlooks (Cloudcap, Cottage Rocks, Sentinel Rock, Reflection Point, and Kerr Notch) over the next seven miles. Each provides distinctly different views of Crater Lake, while the intervening roadway also allows for impressive vistas that include Mount Scott and Klamath Marsh.

Visitors catch their last look at the lake from Rim Drive at Kerr Notch, located some 21 miles from where they began their circuit at Rim Village. The remaining stretch of road; however, cuts across the precipitous face of Dutton Ridge before it offers an expansive view of the Klamath Basin from near the

road summit. Rim Drive then descends toward Sun Notch, where a short trail goes to another viewpoint where the lake can be seen, before following along the outer edge of Sun Meadow to a parking area in front of Vidae Falls. The falls are a cascade about 100 feet high, but motorists pause at a parking area built as part of a large fill that covers the lower part of the cascade. A few visitors take the short access road below the falls to a picnic area, which also contains a trailhead to a cinder cone called Crater Peak. The remaining 2.5 miles of Rim Drive from Vidae Falls do not allow for motorists to pull over and examine an impressive subalpine forest of large trees, but some stop at the parking area for Castle Crest Wildflower Trail. Rim Drive terminates less than a half mile from the parking area, at its junction with the Munson Valley Road near Park Headquarters.

Today, the spatial organization of Rim Drive remains relatively intact and continues to exemplify the design elements developed during the period of significance. Significantly, the hierarchical system of stopping places along the road, which include the observation stations, substations and parking areas, remain as primary components of the visitor experience while navigating the road circuit. While there have been a few changes to the road circuit, including the addition of small access roads and paved loops to access picnic areas, these accretions are in keeping with original design intent and remain relatively few in number.

Land Use

Land use is defined as the principal activities in the landscape that have formed, shaped, or organized the landscape as a result of human activity.

Since the establishment of Crater Lake National Park in 1902, the development of recreational tourism has spurred the design and construction of the park circulation system. With the creation of the National Park Service in 1916, the process of making the rim accessible to visitors as a means to enhance their sightseeing experience was further accelerated. During the period of significance, 1926-1941, land use values associated with recreation, education and tourism further influenced the improvement of Rim Drive.

The first Rim Road, constructed between the years 1913 and 1919 by the Army Corps of Engineers, followed the basic principle of encircling the caldera as close to the rim as topography would allow, so that the lake could be viewed from all possible locations. Newly-developed automotive travel was a strong impetus for scenic road construction. Construction of Rim Drive between 1926 and 1941 was an outgrowth of road improvement efforts nationwide, reflected by the National Park Service's own extensive road and trail improvement program. Significantly, the design and construction standards of Rim Drive reflected anticipated future visitor use of the park. While the idea of an encircling road was similarly predicated on providing spectacular views of Crater Lake and its surrounding landscape to automotive tourists, critically, Rim Drive differed from its predecessor (Rim Road) in its incorporation of key landscape design principles. The new road's objective was not only to improve public access and to express scenic values by providing a 360-degree view of the caldera, but to do so while preserving landscape values and educating the public about the geologic context of Crater Lake. Despite the highly designed route, winter weather conditions confined automobile travel on Rim Drive to the period between July and October.

In addition to the preservation of scenic landscape values, public education and interpretation of the natural features and processes associated with Crater Lake were also integral components of Rim Drive's design, as first proposed by the prominent geologist John C. Merriam in the late 1920s. The historical design intent of Rim Drive prescribed that visitors would proceed sequentially by car on either a park-guided or self-guided tour of the lake, stopping at points to survey a particular view and to learn about a specific feature or process involved in the caldera's formation. The iconographic progression was ultimately expressed in the overall layout of the road, its route along the rim, and the development of stopping points in the form of observation stations or overlooks. During the period of significance, eight major observation stations and several substations with adjoined parking areas were strategically located at the most impressive viewpoints. These stops were key interpretive points that were integrated into the experience of either a park-guided motorcade or a self-guided tour. Lange proposed interpretive signage and binoculars at these points, while other key design elements included stone walls, curbs, fountains, and planting beds. He also considered Rim Drive's connection with intersecting trail and road junctions, noting for example that the road junction areas "are of such importance to the final appearance of the natural surroundings." Ultimately, Rim Drive and its features were designed to harmonize with the landscape as well as to showcase and elucidate the landscape, thereby creating a complete visitor experience of the park by car.

The country's entry into World War II heralded the exit of the Civilian Conservation Corps, one of the park's primary workforces in the 1930s (along with the Public Works Administration), and major park development ceased in the 1940s. Some of Lange's proposals were implemented during Mission 66 with the addition of permanent interpretative signage on the rock walls at key promontory points, as well as the establishment of picnic areas spaced along the Rim Road. By this time, however, the government

motorcade as a means to experience Crater Lake was defunct, and visitors embarked on the Rim Drive solely on a self-guided tour.

Today, Rim Drive exemplifies its original design intent, displaying tremendous integrity in regard to function, aesthetics, and early park design. Heralded as one of the "top ten scenic drives in America," the carefully-designed route is the primary means by which visitors experience the wonders of Crater Lake. Auto touring, while the primary vehicle of travel, is today joined by bicycle touring, cross-country skiing, and hiking. The naturalistic design that incorporated native planting beds, historic guardrails, parapet walls, overlooks, trailheads, and small scale features, contributes to the overall experience of the navigating the road circuit. Furthermore, the effort to establish the road without marring the landscape, to "preserve the primitive picture" is clearly evidenced as the road facilitates an optimal viewing experience without intruding upon it. Despite the minor changes that have been made to the road and its associated interpretive features throughout the years, the primary land use patterns and activities associated with Rim Drive continue to focus on vehicular and pedestrian access to park features while providing stunning views of natural features such as the caldera.

Vegetation

The vegetation section consists of human manipulated vegetation: deciduous and evergreen trees, shrubs, vines, ground covers and herbaceous plants, and plant communities, whether indigenous or introduced in the landscape.

Vegetation was an integral component of the design features associated with the development of Rim Drive. As the 31.6-mile linear road circuit encircles Crater Lake, Rim Drive traverses two types of vegetation. One includes naturally occurring sub-alpine trees, shrubs and ground cover plants (forbs and sedges), while the second is comprised of native trees, shrubs, and ground cover plants that were planted or transplanted to "naturalize" areas disturbed by construction. In addition, naturalization activities also included activities such as obliterating the first Rim Road where it impinged on views of the new road, screening facilities from the view of visitors and controlling erosion by planting to stabilize fills and daylighted (sloped) areas.

For more information regarding naturally occurring trees, shrubs and ground cover plants in the historic district, see the Natural Systems and Features section of this document. For a summary list of commonly found trees, shrubs and ground cover along Rim Drive, see "Plant species associated with Rim Drive" in Appendix B of the Supplemental Information section.

Naturalized Design and Planting

Frances Lange, resident landscape architect from 1934-1941, viewed planting design as a key strategy for achieving the naturalistic scenic preservation-oriented aesthetic that was desired. The emphasis on preserving the natural features during the Rim Drive construction clearly extended to vegetation. Lange advocated for a strong landscape focus and his detailed reports convey the monumental effort undertaken to protect existing trees adjacent to the immediate right-of-way, to plant out barren areas resulting from cut and fill operations, to revegetate the abandoned road bed, and to install new planting beds at overlooks. Sloped or daylighted areas associated with the road were heavily planted to stabilize soils, hide construction scars, and blend the disturbed area with natural surroundings. Extensive work was also directed at obliterating the old road bed by revegetating it with hundreds of trees, while planting beds and elliptically shaped islands were used in the seven parking overlooks, which included 3 observation stations and 4 substations in road segment 7-C to define and articulate space. Furthermore, areas limited by sterile, lava-based soils were dressed with several loads of topsoil and other soil amendments such as peat and topsoil from bogs in the park, as well as commercial fertilizers. After the soil was laid, local, native vegetation, including trees, shrubs and herbaceous plants were transplanted on-site.

Ultimately, this naturalistic design and planting provided a foundation for the largely unchanged appearance of road shoulders, bank slopes, fills, and some parking areas along Rim Drive. In almost all locations, the designers and construction crews (landscape architects and supervisors, contract crews, and CCC enrollees) succeeded in erasing any distinction between what could be perceived as "formal" planting design and the preexisting native vegetation. Such was the success of its integration that it is often difficult to differentiate between areas that were planted and the native vegetation.

Obliteration of Existing Road Traces

Most of the planting done as part of "old road obliteration" consisted of small trees chosen to match the composition of surrounding forests. They were to provide screening from the view of motorists and pedestrians who might otherwise easily discern the old Rim Road's alignment from Rim Drive. Most of this work occurred in four of the five road segments (7-B, 7-C, 7-D, and 7-E) and involved mountain

hemlock, Shasta red fir, and Whitebark pine, depending on what was already thriving at the site that required screening. Most of the planted specimens are extant, and seven decades later are part of an indecipherable native forest holding segments of the old Rim Road. Much of the west Rim Drive (segment 7-A) was not planted, so the old Rim Road has remained visible, especially where the alignment occurred above the newer circuit. These visible sections were converted to a hiking trail in 1994, following something of a precedent set by the NPS in 1932 when it incorporated a short (0.3 mile) section of the old road into the Watchman Trail.

Daylighting

Fills and daylighted slopes were generally stabilized with trees planted (or in some cases seeded) to match the surrounding forests, though some remained exposed where the surrounding country was largely barren. This is the case near the Watchman overlook in road segment 7-A, and the section of segment 7-C that is south of where the Cloudcap spur road intersects Rim Drive at a wye. In most other cases, however, the planting is naturalistic—in that lodgepole pine, mountain hemlock, or Shasta red fir stabilize cut and fill slopes where ratios might vary from 1.5:1 to 2:1. Shrubs and herbaceous cover was planted in certain places, most notably on the massive Vidae Creek fill in 1939, a structure which has since been covered mostly by hemlock and red fir trees resulting from natural seeding by the adjoining forest.

Planting Beds at Overlooks

Planting beds in the parking overlooks vary in size and composition. Generally, the plantings in overlooks exhibit a wider variety of plants than in locations where remnants of the old road was obliterated or where fills and slopes were stabilized with native trees. At station 953-956 overlooking Grotto Cove, the planting bed is dominated by manzanita, whereas the bed at Skell Head includes sedges and knotweed amidst the dominant cover of popcorn pumice. Through time, trampling by visitors has denuded the small planting bed at Kerr Notch, while planting beds at Cloudcap, Victor View, and Reflection Point are largely characterized by islands of trees, shrubs and sedges. None of the planting beds retain their original edging of treated and partially buried logs with chamfered ends.

Today, the character of the vegetation associated with the naturalization of Rim Drive continues to reflect the original naturalistic design intent that was implemented during the period of significance. While some of the small planting beds have been negatively impacted by visitation, the planting beds associated with Cloudcap, Victor View, and Reflection Point continue to function in their original capacity. As a result, vegetation as a landscape characteristic contributes to the setting and feeling of Rim Drive Historic District.

Vegetation #1: Example of daylighting along Rim Drive (Gjesfjeld, PWR, 2010).

Vegetation #2: Small planting bed denuded of vegetation at Kerr Notch (Phantom Ship) (Gjesfjeld, PWR, 2010).

Vegetation #3: Island of vegetation separating Rim Drive from the Sentinel Rock) (Victor View) substation (Gjesfjeld, PWR, 2010).

Circulation

For the purposes of the CLI, circulation is defined as spaces and features which constitute systems of movement within a landscape. Important aspects of the circulation of Rim Drive include the two-lane-road's vertical and horizontal profile, 24-foot-wide bench, maximum ten percent grade, and associated hierarchy of intended stopping places. In addition, the Cloudcap spur road and Vidae Falls service road are important spur roads. There are four trails associated with Rim Drive, including Discovery Point, Watchman, Mount Scott, and Castle Crest Wildflower trails. Only the Discovery Point Trail contributes to the CLI. Combined, these circulation features are an important system that facilitates visitor use within the park. The following narrative is based on the National Register of Historic Places nomination (2008) and the Rim Drive Cultural Landscape Report (2009):

Rim Drive is the primary circulation system around Crater Lake that serves park visitors as a scenic drive. Additional spur roads and pedestrian trails off of Rim Drive allow visitors to access specific natural features and/or views along the rim of the crater. Construction of Rim Drive was carried out in phases beginning in 1933 and ending in 1936. Each of the five segments of Rim Drive was surveyed and designed sequentially, beginning with Segment 1 (7-A) between Rim Village and the North Junction, and ending with Segment 5 (7-E) between Sun Notch and Park Headquarters. Ascertaining the best location for the road alignment and associated features was also a phased process. Field reconnaissance and preliminary surveys were undertaken to site the road as close to the rim as feasible while using the existing topography and vegetation to the highest advantage. The total mileage of the five segments and spur roads is 31.6 miles.

Rim Drive has a variety of components that are considered part of the circulation corridor, such as observation stations, substations, and parking areas that were historically designed as part of the road system along the rim. The road corridor is blended into the surrounding natural landscape by the use of naturalistic design details, including planting beds that delineated traffic movement, placement of boulders to prevent cars from driving onto planted areas, and rock-lined-drainage channels and spillways. Collectively, these features comprise the overall circulation corridor around Crater Lake and contribute to the historic district. Rim Drive also incorporates trails to allow motorists to leave their vehicles and travel by foot to several observation stations. There are 4.9 miles of trail that contribute to the historic district.

Rim Drive (LCS #: 740794) (Contributing)
Rim Drive is a two-lane road that sits on a 24-foot-wide bench and is paved with asphalt over an eight-inch gravel sub-grade. The road crown was 1/8" to 1". When Rim Drive was opened to the public in 1941, approximately two-thirds of the road was paved with asphalt. Today, the asphalt-paved roadbed measures from 18 to 24 feet wide and shoulders are typically unpaved and measure from two to six feet wide. The route begins at the junction with Rim Village, and circumnavigates the caldera rim and terminates at Park Headquarters. Minimal cut slopes were used for Rim Drive. When cut slopes were necessary, the slope was typically cut at 2:1 or 1 ½: 1. The maximum grade utilized on the road is eight percent, except on a small section near Mount Scott where a ten percent grade was used. Curves were designed with spiral transitions and super elevations based on a 35 miles per hour speed limit.

Additional information regarding the individual road segments (7-A through 7-E) is provided below, based on the National Register nomination and Cultural Landscape Report prepared by Steve Mark:

Segment 7-A: Rim Village to Diamond Lake Junction (0.0 to 5.9)
Segment 7-A extends from Rim Village to Diamond Lake Junction along the western rim of the caldera and includes two observation stations (Discovery Point and Watchman Lookout), nine substations, and several additional parking areas. Segment 7-A is characterized by open and expansive views to the lake,

geological features along the caldera, and to the views of the surrounding landscape south towards Union Peak and north towards Pumice Desert. This section of the road was the first segment along the rim to be constructed in 1931. Segment 7-A maintains its original vertical and horizontal alignment, cross drainage, masonry retaining and guardwalls, and masonry tree wells. The masonry has been repointed. The pavement associated with this segment of road was extended out to the edges of the road bench after the period of significance in the 1960s. Also, masonry guardrail was constructed in place of log barriers after the period of significance and a picnic area was added to the segment at milepost 2.5 in 1958.

Segment 7-B: Diamond Lake Junction to Grotto Cove (5.9 to 13.8)
Segment 7-B extends from the Diamond Lake Junction to Grotto Cove along the northwest rim of the caldera and includes two observation stations, four substations, numerous parking areas, and two picnic areas. At the north junction, Rim Drive climbs in elevation as it follows the northwest slope around Llao Rock. The landscape changes from an open to a closed canopy of mature hemlock forest. The road segment crosses through two distinct landscape areas on the northeast portion of the rim. A closed canopy hemlock forest dominates the corridor between Cleetwood Cove and Wineglass. From Wineglass, the canopy opens and allows views to the north and east of the road. Paved ditches and drop inlets are incorporated into this segment of the road. This section of the road utilizes bank sloping and warping of cut slopes to allow for the blending of slopes into the natural landscape. Additionally, the old segments of the road were obliterated through grading and vegetation seeding. The picnic areas were added in 1958. North (Diamond Lake) Junction was modified in 1986-87.

Segment 7- C: Grotto Cove to Kerr Notch (13.8 to 23.2, includes Cloudcap Overlook spur road)
Segment 7-C extends from Grotto Cove and extends to the Kerr Notch observation station. From Cloudcap to Kerr Notch, the landscape is open with expansive views of the Klamath Valley. At Kerr Notch, the road winds around narrow glacial valleys and tucks into the hillside. There is a wye junction with Cloudcap spur road. Parts of Segment 7-C are paved to 18 feet wide and minimal repairs have been made to the masonry guardwalls and retaining walls. The majority of this segment is composed of elongated, daylighted curves and short tangents and maintains a grade of six percent. The old segments of abandoned road were obliterated through grading and re-vegetated. Two picnic areas were added in the 1950s, only one of which is in use today. In 1952 the curve at Anderson Point was reconstructed.

Segment 7-D: Kerr Notch to Sun Notch (23.2 to 27.2)
Segment 7-D extends from Kerr Notch to the Sun Notch parking area. There are no observation stations or substations associated with this road segment. Significantly, this segment has been damaged by rock falls since it was completed in 1941. Segment 7-D is characterized by steep rock cuts, and sheer cliffs, some of which incorporate masonry retaining walls in order to stabilize the road bench. Some of the masonry guardwalls in this segment has been reconstructed due to rock fall and sections above the retaining wall have been removed in the 1960s. Cross drainage, rather than paved ditches, is utilized along this segment of the road. Several masonry spillways are also located along this section of Rim Drive.

Segment 7-E: Sun Notch to Park Headquarters (27.2 to 31.6)
Segment 7-E spans from the Sun Notch parking area to Park Headquarters, and is aligned away from the rim of the caldera. From Sun Notch the road follows the west edge of Sun Meadows to Vidae Falls. It then climbs around the south slope of Applegate Peak before finally descending into the park headquarters at Munson Valley. This section includes the parking area at Vidae Falls, the service road to the picnic area at Vidae Falls, and the Castle Crest Wildflower Trail (which is documented in a separate CLI). Most of the paved road is 18 feet wide through this segment.

It should be noted that the 2.8 miles from park headquarters in Munson Valley to the junction of Rim Village (route 4) is used as a north/south connector between state highways 62 and 138, which is the most

heavily used part of the park's vehicular circulation system over the summer travel season and does not contribute to the historic district.

Other Contributing Roads

Cloudcap Spur Road
The Cloudcap spur road is located at milepost 18.2 and extends from Rim Drive approximately 1.17 miles before terminating at the Cloudcap overlook. Near the road terminus the road splits into end loop directing traffic toward a parking area. Adjacent to the parking area there is a pedestrian overlook with a raised walkway that is bordered by a masonry guardwall. In the center of the end loop there is a vegetated island with a stand of whitebark pine and other plantings, which were incorporated into the overlook's design during the period of significance.

Vidae Falls Parking Area and Fill/Service Road
The Vidae Falls parking area and fill and associated service road is located at milepost 28.7 of Rim Drive. The construction of the Vidae Falls parking area was a response to the problem of Rim Drive crossing the lower part of Vidae Falls. There are two masonry culverts and spillways at Vidae Falls that were constructed during the period of significance to allow water to pass under the road. There is one parking area parallel to the road at the base of the waterfall, which includes a stone masonry curb and surfaced walkway to separate pedestrian and vehicular traffic. The approximately 16 to 18-foot wide asphalt surfaced service road extends for approximately .23 miles from Rim Drive to the Vidae Falls picnic area where it terminates. The road includes one culvert, located at milepost .065. The original segment of the road, which extended from Rim Drive to the intersection with the Grayback Road, was constructed in 1939 as part of the contract for the road. The loop which extends through the picnic area was built in 1958.

Hierarchy of Intended Stopping Places

Today, six of the original eight observation stations contribute to the Rim Drive Historic District. Contributing observation stations include: Skell Head, Cloudcap, Discovery Point, Merriam Point, and Pumice Point. The two non-contributing observation stations are the Sinnott Memorial and the Watchman. The Sinnott Memorial observation station was individually listed in the National Register in 1988 as part of Multiple Property Documentation efforts for resources located in Munson Valley and as a result has already been included in another district. As a result of development, the Watchman observation station has lost integrity and no longer contributes to the district. Beyond observation stations, 15 substations and 13 parking areas contribute to the Rim Drive Historic District. All of these features contribute to the circulation system, conveying the historic character of the designed road circuit. Non-contributing sites include North (Diamond Lake) Junction where the integrity of the site was compromised as a result of the demolition of several buildings in 1958 that was followed by removal of small-scale features and reconfiguration of the site. Additional non-contributing sites include the Watchman overlook and Cleetwood Cove, which were developed after the period of significance with little regard for visual unity with the rest of road. (It should be noted that the Watchman overlook includes the pedestrian viewpoint and associated parking along Rim Drive. It does not include the Watchman Observation Station (fire lookout) and Watchman Trail that were documented in a 2003 CLI).

Lange-Designed Parking Overlooks

The Rim Drive National Register of Historic Places nomination highlights seven "parking overlooks" that Francis Lange designed during the period of significance. These parking overlooks are all located in

segment 7-C and include 3 observation stations (Skell Head, Cloudcap and Kerr Notch) and 4 substations (Grotto Cove, Pumice Castle, Sentinel Point and Reflection Point).

Most often the Lange-designed historic observation stations and substations are characterized by semi-elliptical spaces located adjacent to the road. Often they are substantial in size, averaging 400-500 feet in length and 150-160 feet in width at their widest point. Typically, the bituminous surface of the parking area was separated from the road by a planting bed, often triangular in shape with an approximate length of 200 feet and a width of 90 feet. Some stations were large enough to hold 50 cars. Within the paved area of the observation station, pedestrian and vehicular circulation was separated by a raised promenade or walkway, approximately four feet in width, located along the edge of rim. The walk often had a raised stone curb on one side, and a masonry guardrail along the edge of the caldera providing viewpoints and interpretive information. At a promontory point of each observation station, the path widened into a larger gathering area, with a width of 10 feet.[3] These broader pedestrian areas were labeled "observation platforms" on construction drawings, and were sometimes elevated above the parking area. Parking bays were typically excluded from the area in front of the observation platform, in order to allow safe pedestrian access to the promontory point.

Today, the seven parking overlooks designed by Lange have stone masonry features and remnant plantings that contribute to the integrity of the historic district. A description of these observation stations and substations is below. It should be noted that the descriptions of the observation stations, substations and parking areas have been separated in the narrative.

Observation Stations (6) (LCS #: 100274)[4] (Contributing)

Historically, there were in 8 observation stations that were planned in association with the construction of Rim Drive. Today, vestiges of all eight of these remain extant; however, only six observation stations contribute to the Rim Drive Historic District. Four of the observation stations are accessible by trail (Sinnott Memorial, Discovery Point, the Watchman, and Merriam Point), which extend from where visitors are intended to park their vehicles nearby. The remaining four (Pumice Point, Skell Head, Cloudcap and Kerr Notch) are existing pullouts delineated by masonry guardrail. Contributing observation stations include: Skell Head, Cloudcap, Kerr Notch, Discovery Point, Merriam Point, and Pumice Point. The Sinnott Memorial observation station is extant, but was individually listed in the National Register as part of Multiple Property Documentation efforts for resources located in Munson Valley. Also, the Watchman observation station has lost integrity and as a result no longer contributes to the district.

Each of the observation stations built as part of Rim Drive were intended to serve as formal stops on a ranger-led caravan of vehicles that traversed the road in a clockwise fashion, from Rim Village to Sun Notch. All were chosen for their part in displaying a different aspect of the lake's beauty. Plans for each observation station were to match the "unique beauty of the lake itself". The points chosen by Merriam and his associates on the western side of the rim were accessible by trail so that the road would not come near enough to the station to create "a disturbing element to one who wishes to observe the lake in quiet." This was something in contrast with the four stations located on the northern or eastern side of the lake, which became part of the planning and design of the road. Lange designated three of the four stations (Skell Head, Cloudcap, and Kerr Notch) as "parking overlooks".

See description of the observation stations that were designed by Lange below:

[3] Observation platforms were only built on five of the observation stations.
[4] List of Classified (LCS) #100274 includes pullouts, stone retaining walls and guardwalls.

Skell Head (mile 15.3)
Skell Head is the largest of all parking overlooks, since Lange had to design for rehabilitation of the site, which had been denuded by contractors for fill material. Plant diversity in the large bed separating the parking for this observation station is low due to almost sterile soil. The raised walkway follows the masonry guardrail to delineate the site and extends for more than 400 feet, thus creating the longest parapet on Rim Drive. Like Grotto Cove, all stonework is original and untouched, though the logs that once delineated the planting bed as edge features are missing—as they are at other sites.

Cloudcap (mile 18.9)
Cloudcap is the highest point on Rim Drive, the observation station being reached at the terminus of a spur road that diverges from the main circuit. The culmination comes in a one-way end loop that passes by a parapet with masonry guardrail delineating a raised walk like the other parking overlooks. This one differs from others in having an oval shaped area, much of it a bank slope, intended to facilitate the vehicular circulation pattern, but the bank slope also protects a preexisting stand of whitebark pine and a small amount of remnant plantings. This development also erased traces of the old Rim Road that once ran across the site; the nearby remnants are now cleverly screened from view of motorists and pedestrians.

Kerr Notch (mile 23.2)
Kerr Notch has a greater sense of separation from Rim Drive than other parking overlooks, largely due to the dense subalpine forest which screens vehicles parked there from the main circuit. It is designed as an observation station, but like Victor View, the Kerr Notch design is intended to hide the old Rim Road by largely overtopping it. Along the parapet wall, next to where a view of Phantom Ship is framed by surrounding trees, is planting bed adjacent to a boulder that was once a drinking fountain but no longer operates.

List of Contributing Observation Stations:

7-A
Mile 1.1 Discovery Point Observation Station (Road Stations 56-60)

7-B
Mile 6.1 Merriam Point Observation Station (Road Stations 1403-1400)
Mile 9.3 Pumice Point Observation Station (Road Stations 1230-1222)

7-C
Mile 15.3 Skell Head Observation Station (Road Stations 920-910)
Mile 18.9 Cloudcap Observation Station (Road Stations 726-724)
Mile 23.4 Kerr Notch Observation Station (Road Stations 477-475)

Rim Drive Substations (15) (Contributing)

Beneath the observation stations in the hierarchy of developed viewpoints along Rim Drive lay the substations. Substations shared many similarities with the observation stations in that they were chosen for aesthetic or educational reasons, but differed in that they did not function as stops on the caravan trip, nor were all of them formally developed with paved parking areas, signs, or masonry guardrail. Unlike the stations they sometimes highlighted points of interest away from Crater Lake and often focused on specific geological features. Many of the substations convey the historic character of the circulation

system that was originally conceived by park planners during the period of significance. As a result, these features contribute to the historic district.

Four of the substations, which serve as parking overlooks designed by Lange have been highlighted below:

Grotto Cove (mile 13.8)
Grotto Cove has defined planting beds in two locations (stations 946-949 and stations 953-955) that separate those who stop at either from passing motorists on Rim Drive. The substation has stone curb to separate pedestrians from cars, as well as bituminous paving on walkways situated between the curb and masonry guardrails. One of the walkways is extended beyond the vehicle parking to provide a short, but level trail intended to facilitate viewing dwarf wildflowers blooming on adjacent slopes in midsummer. All stonework is original and untouched, though the logs that once delineated the planting bed as edge features are missing—as they are at other sites.

Cottage Rocks (Pumice Castle Overlook) (mile 21.0)
Cottage Rocks sits below the north end of Cloudcap on Rim Drive. This substation lacks a planting bed for separating the circuit road from parking at this viewpoint, yet otherwise resembles the other six sites by having the original masonry guardrail, a raised walk, and stone curbing. The intended view is both Crater Lake and a picturesque formation called Pumice Castle (formerly "Cottage Rocks") affixed to Red Cloud Cliff.

Victor View (Sentinel Rock Overlook) (mile 21.2)
Victor View hides traces of the old Rim Road by overtopping it through use of a short loop from Rim Drive. This substation is also known as Sentinel Point Overlook, though a short trail leads from the other side of this parapet to Sentinel Rock.[5] The original opening in the masonry guardrail and some log steps below have been blocked up and regraded, but this site otherwise contains all its original features with the exception of the rustic sign that once identified it on Rim Drive.

Reflection Point (mile 21.4)
Reflection Point is the second largest parking overlook, though built as a substation. The planting bed separating Rim Drive and parking for vehicles is smaller than at Victor View because the old Rim Road did not infringe on this overlook. The raised walk and parapet wall are curvilinear, measuring some 300 feet in extent.

List of all Contributing Substations:

7-A
Mile 1.0 Unnamed #1-A east of Discovery Point (Road Station 52)
Mile 1.7 Unnamed #2-A (Road Station 86)
Mile 2.3 Wizard Island Overlook #2-B (Road Station 116-118)
Mile 3.0 Union Peak Overlook #2-C (Road Stations 154-157)
Mile 3.4 Substation #2-D (Road Stations 179-182)
Mile 4.5 Diamond Lake Overlook #3A (Road Stations 233-235)
Mile 5.4 Devils Backbone #3B (Road Station 273)
Mile 5.7 Glacial Scratches #3-C (Road Stations 299-301)

[5] Use of this trail is not currently encouraged.

7-B

Mile 11.8 Mazama Rock (Road Stations 1124-1125)
Mile 12.8 Palisade Point #5-B (Road Stations 1068-1065)

7-C

Mile 14.6 Grove Cove #2 #5-C (Road Stations 949-946)
Mile 18.Substation near wye, Cloudcap Spur Rd #6- (Road Station 770)
Mile 20.0 Pumice Castle #7A (Road Station 604)
Mile 21.2 Sentinel Point #7-B (Road Stations 587-585)
Mile 21.5 Reflection Point #7-C (Road Stations 576-573)

7-D
None

7-E
None

Parking Areas (13) (Contributing)

Below the substations in the hierarchy came the parking areas where motorists might pause for a view, but better illustrations of geological processes and other natural features were thought to be available elsewhere. All of the 13 parking areas are paved, with most delineated by masonry guardrail or formal barriers such as boulders. Two of the segments (7-D and 7-E) contain only parking areas since the caravan made its last stop at Kerr Notch, the end of road segment 7-C. Like the substations, all 13 parking areas associated with Rim Drive contribute to the historic character of the of the circulation system and contribute to the historic district.

List of all Parking Areas:

7-A
Mile 5.5 Parking Area (Road Stations 290-293)
Mile-5.8 Parking Area (Road Stations 302-303)

7-B
Mile 9.6 #1 Parking Area (Road Stations 1209-1206)
Mile 9.6 #2 Parking Area (Road Stations 1203-1202)
Mile 9.9 Parking Area (Road Stations 1195-1194)
Mile 11.2 Cleetwood Backflow Parking Area (Road Stations 1162-1155)
Mile 11.3 Parking Area (Road Station 1149)
Mile 11.9 Parking Area (Road Stations 1091-1088)

7-C
Mile 16.7 Scott Bluffs Parking Area (Road Stations 837-831)

7-D
Mile 23.9 Dutton Cliff Parking Area #1 (Road Stations 453-450)

7-E
Mile 27.1 Sun Notch Parking Area (Road Stations 280-277)
Mile 28.6 Vidae Falls Parking Area (Road Stations 207-205)
Miles 31.0 Castle Crest Wildflower Trail Parking Area (Road Stations 37-36)

Non-Contributing Sites (3)

After the period of significance, two sites: the Watchman overlook (1972-1973) and North (Diamond Lake) Junction (1986-1987) were constructed to serve a similar purpose as the historic overlooks and observation stations. These areas contain formalized parking lots delineated with concrete curb and sidewalks, and do not contribute to the historic integrity of the district. Cleetwood Cove (1961-1963) was also built after the period of significance; however, it was constructed to support tour boat access. Construction of these sites demonstrates the changing needs of the park after Rim Drive was essentially completed in 1941. Unlike the six picnic areas added to the circuit by means of small connecting roads in 1958, the three sites represent marked departures from the collaborative design that characterized the construction of Rim Drive.

Watchman Overlook[6] (Non-Contributing) (mile 4.0)
Watchman overlook is the most heavily used of any viewpoint on the road circuit, having been developed in response to a perceived safety hazard. Construction of road segment 7-A in 1931-1932 allowed for parallel parking on the side of Rim Drive away from the lake, but there were few visitor facilities, aside from a trailhead for the Watchman Lookout. Subsequent development in the early 1970s moved the parking facilities across Rim Drive to a lot with parallel stalls. In this location pedestrians are separated from vehicles on a viewing platform delineated with pressure-treated wood peeler cores and masonry piers.

North (Diamond Lake) Junction (Non-Contributing) (mile 5.9)
North Junction Parking Area became the second most popular stopping place on Rim Drive after a rectangular lot was built over the original road wye in this location. It is the first place visitors can see Crater Lake when traveling from the park's north entrance, but pedestrian circulation at the site has not been formalized with respect to areas between vehicle parking and lake viewpoints. The lot was built as part of a project to reconstruct the North Entrance Road. Since its construction, the park has not received funding to mitigate the trampling of vegetation and social trails even though a site plan from 1984 showed hardened paths and masonry guardrail along the rim.

Cleetwood Cove (Non-Contributing) (mile 10.7)
Cleetwood Cove Parking Area/Trailhead was developed as a result of an initiative to move the main trail to Crater Lake from Rim Village to a site requiring 200 less vertical feet of climb with a better (southern) aspect. The Cleetwood Cove parking area is oriented perpendicular to the road instead of parallel (as was the case with original construction of stopping places on the road). Rim Drive separates the parking area from the trailhead. Like The Watchman overlook and North Junction sites, parking at Cleetwood Cove is defined by concrete and asphalt instead of stone masonry curbs. Randomly placed boulders at this site are attempts to control the overflow parking of vehicles from using an area adjacent to the trailhead, though cars frequently line the road away from the parking area.

[6] Some literature suggests that this site was an observation station; however, it is also possible that the Watchman lookout was the intended station.

Trails (1) (Contributing)

Numerous equestrian trails and hiking trails lead from observation stations and substations along Rim Drive. With only a few exceptions, most of the foot trails built during the 1930s and 1940s were intended to provide park visitors with distinctly different views of Crater Lake from points not reached by the road. Trailheads were frequently located at the promontory point of observation stations. Some of the trails that were constructed during this time were built to standards that required reconstructing earlier work, such as the Watchman and Castle Crest Wildflower Trails, while others such as the Mount Scott Trail near Cloudcap emanate from designated substations along the road.

Trails that contribute to the Rim Drive National Register Historic District include Discovery Point, Watchman, Mount Scott and Castle Crest Wildflower Trail. It should be noted that a slight modification was made to the trail system in 1994 when the Discovery Point Trail (Sunset Trail) was linked with pieces of the old Rim Road and some additional sections of trail. The latter was constructed by volunteers to form a continuous footpath along the western portion of the rim. Today, the trail system associated with Rim Drive continues to allow visitors to enjoy the lake by foot. In addition to hiking trails, horse trails and corrals were called for in the original park master plans. Horse riding is currently permitted on the Pacific Crest Trail and Bald Crater Loop.

While all four trails contribute to the National Register Historic District, the Rim Drive CLI boundary only includes the Discovery Point Trail, which is not complex enough to be inventoried in a separate CLI. The CLI boundary for Rim Drive does not include the Watchman Trail and Castle Crest Wildflower Trail because they have been documented in separate CLIs. In the future, the Mount Scott Trail may be individually documented in a separate CLI as a component of Rim Drive.

Discovery Point Trail (LCS #: 740861) (Contributing)
This trail is 1.2 miles long and utilizes portions of the old Rim Road alignment, serving to connect the Sinnott Memorial Observation Station in Rim Village to Discovery Point Observation Station. The trail is paved and edged by a masonry guardwall within Rim Village and changes into an unpaved dirt trail outside of Rim Village. The trail is approximately 4 feet wide and has benching to support level tread and stone edging in places. The trail contributes to the Rim Drive Historic District.

Watchman Trail (LCS #: 100253)
This trail contributes to the National Register Rim Drive Historic District, but will be documented separately as a component CLI. This trail totals 0.7 miles long and terminates at the Watchman Lookout.

Mount Scott Trail (LCS#: 740792)
This trail contributes to the National Register Rim Drive Historic District, but will be documented separately as a component CLI. This trail totals 2.5 miles long and terminates at the Mount Scott Lookout.

Castle Crest Wildflower Trail (LCS #: 740791)
This trail is documented separately as an individual CLI. The trailhead loop, which is 0.3 miles in length, contributes to the National Register Rim Drive Historic District.

Summary

Today, Rim Drive retains the overall design character and function as the primary circulation route around Crater Lake. With few exceptions, most of the historic road alignment, profile, and cross-section survive from the original design. In addition, much of the associated circulation-related developments such as observation stations, substations, and parking areas also remain providing the opportunity for the contemporary motorist to experience the road, views, and interpretive messages originally envisioned by early park planners. Six of the original eight observation stations, 15 substations and 13 parking areas contribute to the circulation system, conveying the historic character of the designed road circuit. The three other existing sites located between Rim Village and Grotto Cove (Watchman overlook, North Junction, and Cleetwood Cove) were modified after the period of significance and do not contribute to the integrity of the Rim Drive Historic District.

Character-defining Features:

Feature: Rim Drive
Feature Identification Number: 151569
Type of Feature Contribution: Contributing
IDLCS Number: 740794
LCS Structure Name: Rim Drive
LCS Structure Number: Rts. 013/014

Feature: Vidae Falls Parking Area/Fill/Service Rd
Feature Identification Number: 151571
Type of Feature Contribution: Contributing

Feature: Cloudcap Spur Road
Feature Identification Number: 151583
Type of Feature Contribution: Contributing

Feature: Rim Drive Observation Stations (6)
Feature Identification Number: 151577
Type of Feature Contribution: Contributing

Feature: Rim Drive Substation (15)
Feature Identification Number: 151579
Type of Feature Contribution: Contributing

Feature: Rim Drive Parking Areas (13)
Feature Identification Number: 151581
Type of Feature Contribution: Contributing

Feature: Discovery Point Trail
Feature Identification Number: 151591
Type of Feature Contribution: Contributing
IDLCS Number: 740861
LCS Structure Name: Discovery Point Trail
LCS Structure Number: tbd

Landscape Characteristic Graphics:

Circulation #1: View of Segment 7-A of Rim Drive from Wizard Island substation (Germano, PWR, 2010).

Circulation #2: Birdseye view of part of Segment 7-A of Rim Drive from Watchman Trail (Hartzler, PWR, 2008).

Circulation #3: View of Segment 7-B of Rim Drive at approximately mile 7.4 (Germano, PWR, 2010).

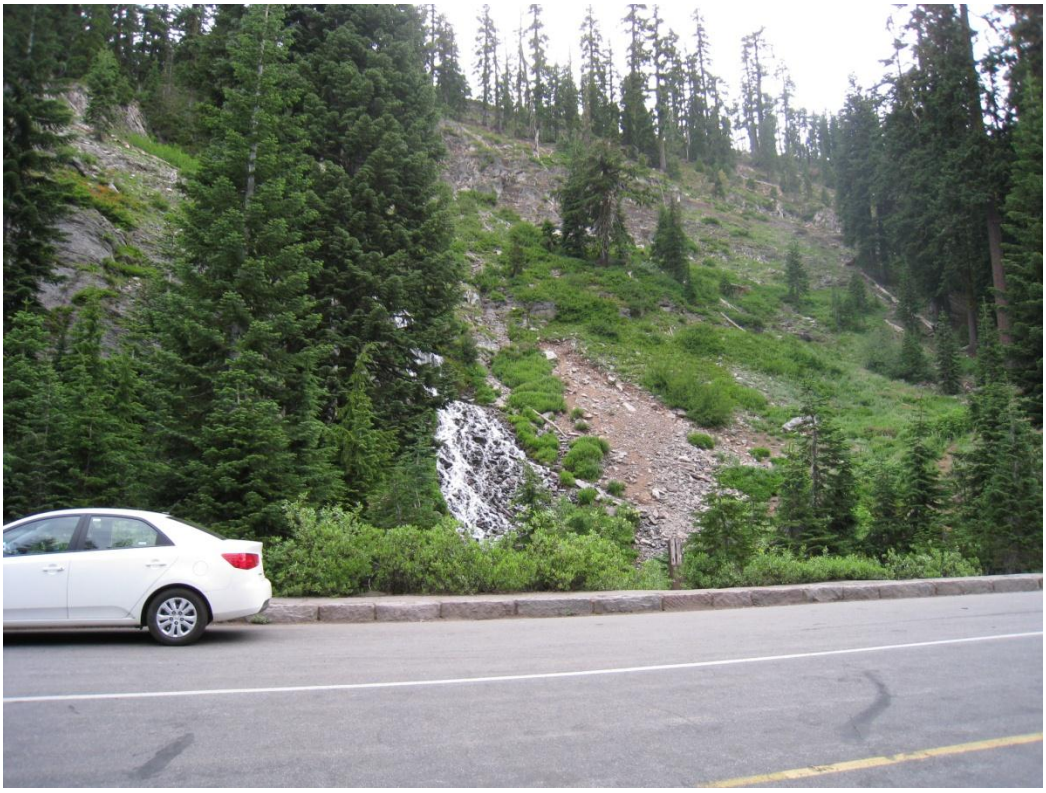
Circulation #4: View of Segment 7-B of Rim Drive at approximately mile 10.9 near Cleetwood Cove (Germano, PWR, 2010).

Circulation #5: View of Segment 7-C of Rim Drive at approximately mile 15.1 (Germano, PWR, 2010).

Circulation #6: View of Segment 7-D of Rim Drive at approximately mile 23.5 near Dutton Cliff (Germano, PWR, 2010).

Circulation #7: View of Segment 7-D of Rim Drive along Dutton Ridge (Germano, PWR, 2010).

Circulation #8: View of Cloudcap spur road (Germano, PWR, 2010).



Circulation #9: View of Vidae Falls parking area and fill (Gjesfjeld, PWR, 2010).

Circulation #10: View of Grotto Cove substation (Germano, PWR, 2010).

Circulation #11: View of Skell Head observation station (Germano, PWR, 2010).

Circulation #12: View of Cloudcap observation station (Germano, PWR, 2010).

Circulation #13: View of Pumice Castle (Cottage Rocks) substation (Germano, PWR, 2010).

Circulation #14: View of Sentinel Rock (Victor View) substation (Germano, PWR, 2010).

Circulation #15: View of Reflection Point substation (Germano, PWR, 2010).

Circulation #16: View of Kerr Notch (Phantom Ship) observation station (Germano, PWR, 2010).

Circulation #17: View of Watchman overlook toward Watchman Peak (Germano, PWR, 2010).

Circulation #18: View of North (Diamond Lake) Junction looking towards Rim Drive (Germano, PWR, 2010).

Circulation #19: View of parking area associated with Cleetwood Cove (Gjesfjeld, PWR, 2010).

Buildings and Structures

Buildings are defined as those features that are built primarily for sheltering any form of human activity. Structures are defined as features constructed for purposes other than sheltering human activities. A number of buildings, structures, and small-scale features contribute to the Rim Drive National Register Historic District, including: Sinnott Memorial Building, Watchman Observation Station (Lookout), Kerr Notch Drinking Fountain, Vidae Falls sign, and trail drainage systems. In addition, there are a number of stone masonry features associated with Rim Drive that contribute to its design, including the guardwalls, curbing, culverts and associated headwalls, drainage inlets, and spillways. These contributing buildings, structures, and small-scale features are described in detail below.

Buildings

Sinnott Memorial Building (LCS #: 241)

Situated in Rim Village (and thus previously listed on the National Register of Historic Places in 1988), Sinnott Memorial or "Observation Station No. 1" has functioned as the main orientation point for visitors who intend to traverse Rim Drive since its construction in 1931. The design of Sinnott Memorial was borrowed heavily from the slightly larger Yavapai Station erected on the south rim of the Grand Canyon in 1927. The Sinnott Memorial is an irregularly-shaped stone and concrete structure built into a rock outcrop on the slope of the caldera, about 50 feet below the rim. Access to the building is via a moderately steep walkway with steps. The building is entered through an elliptically-shaped "observation room" or parapet on the north side of the structure. A 30-inch tall stone parapet below a large opening offers unobstructed views to the lake. The exterior walls are load-bearing native stone, pierced on the east side by a square window opening and a door leading from the museum to the exterior stairs (shielded from view by a massive stone wall). Double-glazed, tongue-and-groove doors are located on the west end of the observation room. Originally built as a memorial to Oregon congressman Nicholas J. Sinnott, today the building serves as an interpretive center and exhibit building as well as an observation point for park visitors. It should be noted that while the Sinnott Memorial Building and its associated features are historically significant, they have already been documented as contributing resources (walls, stairs, etc.) within the Crater Lake Rim Village Cultural Landscape Inventory that was certified in 2004.[7] The Sinnott Memorial Building was individually listed in the National Register of Historic Places in 1988 as part of a Multiple Property Documentation effort for historic properties in Munson Valley.

Watchman Observation Station (Lookout) (LCS #: 12019)

The only extant building designed to be part of Rim Drive's circulation system during the period of road construction is the Watchman Observation Station (Lookout). Designed by Francis Lange in 1931 and constructed between 1931 and 1933, the lookout is situated at the terminus of the Watchman Trail and exemplifies the type of rustic architecture that developed at Crater Lake between 1926 and 1941. Rock and wood were used in the construction of the two-story rustic-style in an effort to harmoniously blend with the surrounding environment. Specific aspects of the style included use of native materials, simplicity in design, avoidance of overly perfect construction lines, use of exterior colors such as brown and gray to blend with the setting. A cut stone floor, foundation, and walls enclose the first floor, housing a museum, comfort station, and water supply. The second floor, which houses the fire lookout is enclosed with plate glass. It should be noted that while the Watchman Lookout and its associated features are historically significant, they have already been documented as contributing resources within The

[7] Rim Village Cultural Landscape Inventory, 2004, Part 3a, p. 21.

Watchman Cultural Landscape Inventory that was certified in 2003. Also, the Watchman Lookout was individually listed in the National Register of Historic Places in 1988 as part of a Multiple Property Documentation effort for historic properties in Munson Valley.

Wineglass Patrol Cabin (Non-Contributing)

The Wineglass Patrol Cabin, located in segment 7-B, is sited below the grade of Rim Drive. Screened from view by dense native vegetation, this patrol cabin is used sporadically by NPS staff during the winter months. The date of original construction is unknown; however, the small building is characterized by basic, but functional rustic features. Throughout the years the cabin has been significantly altered by numerous additions. The wood-frame structure is sheathed in board and batten siding with cedar shake roofing and a pier and pad foundation. It has a small porch with rough-hewn decking and an overhanging roof. Its central door is on the north side of the building, though there is a tower for winter entry and two ladders for access. A metal stovepipe with flashing and spark arrester penetrates the roof. Secondary buildings located adjacent to the cabin include a roughly framed wooden lean-to with a metal roof, and a fiberglass portable toilet. Because the cabin was not directly associated with the design or construction of the road and has been significantly modified, it is a non contributing building within the Rim Drive Historic District.

Fuel Transfer Building Cleetwood Cove Parking Area (Non-Contributing)

Located at the Cleetwood Cove Parking Area, the fuel transfer building was constructed in 1998. In contrast to the Watchman Lookout where stone masonry is structural, the fuel transfer building has a rock veneer over a concrete superstructure on the lower half of the structure. Above the native stone veneer, the building has board and batten siding, painted brown. The gabled roof has exposed rafter tails and is clad with shingle. This building was constructed after the period of significance and does not contribute to the Rim Drive Historic District.

Vault Toilets (4) (Non-Contributing)

Four prefabricated concrete vault toilets are located along Rim Drive, one located at each of the following locations: Watchman overlook, Pumice Point Picnic Area, Whitebark Pine Picnic Area, and Vidae Falls Picnic Area. Installed in 2001, the concrete structures are faced with native stone veneer in an attempt to mimic historic masonry structures associated with Rim Drive. Exhibiting some variability in design, they were intended to be compatible with the historic character of the road, but were introduced after the period of significance and do not contribute to the historic character of Rim Drive Historic District.

Structures

Rim Drive Structures

Numerous structures associated with the 31.6-mile road circuit and its observation stations contribute to the integrity and character of Rim Drive. Many of these features are intact and continue to function in the same manner as when they were first constructed during the period of significance. Contributing structures include stone drains and spillways, culverts with headwalls, retaining walls, curbing and guardwalls. The intended purpose of these design elements was to improve the stability and placement of the road with respect to natural processes, (e.g. drains, culverts, headwalls, and spillways) while enhancing the visitor's roadside Crater Lake experience (e.g. water fountains, signs, trailheads).

Engineered structures associated with Rim Drive include the entire road circuit, drainage features (culvert headwalls, paved ditches, drop inlets, and masonry spillways) and safety barriers (log and masonry

guardrails). A significant number of these features were skillfully constructed by CCC-workers in the 1930s under the direction of road contractors, landscape architects, and artisans such as stone masons. Great care was taken when siting these features so that they appeared as part of the landscape. The use of locally-quarried rock and indigenous vegetation illustrate the conscious effort to employ native building materials so that constructed elements blended in with the natural environment. Stone used in the construction of features associated with Rim Drive was primarily andesite taken from the Watchman flow and collected from other locations within the park such as at Garfield Peak, Dutton Cliff, and ditches along roadways (Glanville 2008, 9). While stone masonry features remain largely intact today, wooden structures susceptible to weathering, such as log barriers and hand-carved wooden signs are no longer present (with the exception of the contributing Vidae Falls sign designed by Francis Lange and likely carved by the CCC).

Stone Masonry Walls (LCS #: 100274) [8](Contributing)

The most visible structures along Rim Drive are the masonry walls that appear at every observation and sub-observation station. Masonry walls are also used as retaining walls and guardrails along Rim Drive. These walls, constructed of colorful native stone that was quarried from within the park, were designed and built during the 1930s. Significantly, at this time a great deal of attention was paid to the design and workmanship of the masonry walls during construction of Rim Drive. The high level of craftsmanship is still apparent as one examines the walls constructed on the Eastside of the road, which were built by subcontractors. Along this segment of the road, particular attention was paid to the blending of colors in the stone and to achieving a weathered surface look. This was sometimes difficult to accomplish as the stone came from the same quarry with a limited variety in the color palette.

The stone walls, which also serve as seatwalls at the observation stations, have a characteristic curvaceous shape that fits in with the terrain.[9] They range in height from two to fifty feet, and span distances along Rim Drive up to .1 miles. Today, out 14,570 linear feet of stone masonry guardrail associated with Rim Drive there are 10,810 linear feet of contributing stone masonry guardrail. Furthermore, out of a total of 4,802 feet of stone retaining fall, 3,047 linear feet contributes to the historic district. Finally, out of 1,724 feet of stone parapet wall, 1,681 linear feet of contributing stone parapet wall remains. See Appendix C "Inventory of Masonry Features on Rim Drive: Retaining Walls, Guard Rails, Curbs and Spillways" for more information.[10]

When considering all the masonry features associated with Rim Drive, the guardwalls are most prone to damage caused by weather and environmental factors due to their degree of exposure on the rim of the caldera, and also human error given their proximity to Rim Drive. According to Glanville (2008), the guard walls along Rim Drive on the east side of the lake retain the highest level of historic integrity, although some have undergone incompatible repair. Segments of walls located on the north side of the lake also demonstrate integrity; however, there are some non-contributing walls that exhibit a 'shark tooth' pattern, which is an incompatible repair. Also, many of the guard walls on the west side of the lake are historic, but have been incompatibly repaired. On the south side of the lake there are comparatively

[8] List of Classified (LCS) #100274 includes pullouts, stone retaining walls and guardwalls.
[9] In many of these locations where the stone walls also serve as seatwalls, the top portion of the wall is characterized by stone masonry guardrail and below it functions as a retaining wall.
[10] According to the Rim Drive Cultural Landscape Report, "In any assessment of integrity, it is necessary to define what terms mean. In the case of Rim Drive, materials related to stone masonry features like retaining walls and guardrail are classed as contributing (the feature almost wholly retains its historic appearance and contributes to the period of significance), compatible (the individual feature or features may have changed since the period of significance, but it retains an overall appearance that is compatible with historic elements of the period of significance), or non-contributing (the feature has lost any association with the period of significance even if some historic materials are present.) (Rim Drive CLR 2009, 138)

few guard walls (Glanville 2008, 9). It should be noted that there is a significant amount of deterioration of the guardwall along Dutton Cliff at mile 7.5-8.0.

Contributing stone masonry walls include:

10,810 linear feet of stone masonry guardrail
3,047 linear feet of stone retaining wall
1,681 linear feet of parapet wall

Rim Drive Curbing[11] *(2,128 linear feet) (Contributing)*

*S*tone curbing along Rim Drive serves multiple functions such as facilitating the drainage of water and the articulation of the boundaries between areas for vehicular traffic and pedestrian traffic, while augmenting the naturalistic aesthetic. Stone is the primary material used in the construction of curbs at Crater Lake National Park. Typically, curbing at Crater Lake consists of 9-inch dressed stone, although it is likely that there was variability in stone size according to location. Stone curbing is commonly found in association with observation stations such as Kerr Notch along Rim Drive and in parking areas. Historically, edging was also associated with planting beds, although, today none of the planting beds retain their original edging of treated and partially buried logs with chamfered ends. The only exceptions occur at North Junction, Watchman overlook, and the Cleetwood Cove parking area where concrete and/or bituminous curbing was installed at an unknown date (Glanville 2008, 28-29). Today, 2,128 linear feet of curbing associated with Rim Drive contributes to the historic character of the road circuit.

Drainage Devices

Rim Drive Culverts and Drop Inlets (100+) (Contributing)

As a heavily engineered structure, Rim Drive and its associated features need sufficient drainage to handle excess water that could damage these features. On Rim Drive, drainage is accomplished in two ways. The first is through unsurfaced ditches that feed culverts, which permits cross drainage. Typically, the culverts consist of concrete pipes, concrete box sections and corrugated metal to transport runoff across the roadway. A few culverts are used for permanent watercourses, but most convey spring runoff or runoff from major storms. Existing slopes, drainage patterns, and vegetative cover were considered when drainage courses were designed. Specifically, repose of slope, gracefulness of lines in the landscape, layout of stonework and joint separation were important design considerations.

Typically, headwalls are located on the upslope side of culverts to protect against backwash erosion, support a wider roadbed and articulate the rustic character of adjacent structures. Most headwalls are flat and rectangular but some are arched with covered cheek walls and mortared joints. Arched headwalls are faced with stone carefully detailed to keying patterns of the arch's ring stones. Inlets and outlets are a major component of the cross drainage system and are constructed of stone or galvanized metal. There are several locations where native stone is used to convey runoff or snow melt.

The other type of drainage utilizes paved ditches on one side of the roadway that lead to a drop inlet. They are effective because they resist abrasion by traffic and reduce water penetration. Open bituminous surfaced road drains or “gutters,” generally found along road margins in segments 7-B and 7-C, are easily inspected for blockages and can be constructed relatively quickly and inexpensively, but are also effective at draining road sub-grades—provided they flow to adequate outfalls. Water flows to these roadside

[11] The 2005 Crater Lake National Park Road Inventory noted 982 linear feet of curbing along East and West Rim Drive.

ditches or gutters, which are connected to drop inlets. The inlets then carry the water in a culvert down the slope to a discharge area below the roadbed. The quantities of water to be drained depend on rainfall intensity, duration, and frequency, along with the size and character of areas drained. Their design is normally predicated on short and intense summer storms, thus winter snowpack runoff can sometimes overload this type of drainage system.

Concrete catch basins and steel sloped culverts are examples of drop inlets found on the margins of Rim Drive in segments 7-D and 7-E. A drop inlet is normally used to drop low to medium volumes of water over a sharp incline of 30 percent or more. Drop inlets on Rim Drive usually consist of two components, a vertical pipe and a horizontal pipe. The drop pipe can be square or round in cross-section and is constructed of concrete or corrugated steel. Drop inlets on the margins of Rim Drive effect rapid removal of surface water with the entry point normally concentrating the flow to a small area. This point can plug with debris, or local scouring can occur due to the high velocity of the water. Protection of the bed and edges of what is a permanent watercourse was accomplished by means of rock armor, gabions, and headwalls at the point of entry in order to prevent erosion by water discharging from pipes during peak runoff.

Today, most of Rim Drive's culverts originate from original construction and are galvanized corrugated metal or concrete. There are over 100 culverts on Rim Drive, almost all having a stone masonry headwall on the upstream side of the culvert.[12] All of these features were built during the period of significance and contribute to the character of the historic district.

Rim Drive Spillways (4) (Contributing)

Stone masonry drainage features such as spillways are found in several locations along Rim Drive including along segments 7-D2, 7-E1 and in 7-E2. Constructed during the period of significance, today, spillways are an integral component of the road system, directing water from seasonal runoff away from or under Rim Drive through a culvert. This cross drainage system continues to support drainage along Rim Drive and as a result these features contribute to the historic district.

Spillways have been documented in the following locations:

1. near the top of lower wall section on Sun Grade (Mile 26.6). This feature measures 20 feet high by 7 feet wide.

2. between Sun Notch and Vidae Falls on 7-E1 (Mile 28.0). This measures 31 feet high by 5 feet wide.

3. between SN and VF on 7-E1 across from pumice field (Mile 28.2). This feature is 44 feet high and 3 feet wide (8 feet wide at its greatest). This particular spillway is steep.

[12] There is some discrepancy in the total number of culverts recorded along the Rim Drive corridor. The CLR reported that there are 113 culverts, but the numbers provided within the Rim Drive National Register nomination add up to 135. The nomination indicated that a total of 133 culverts exist along the road: "Their distribution is 30 culverts with stone inlet headwalls in segment 7-A, 28 in segment 7-B, 26 in segment 7-C and C-1, 22 in segment 7-D, and 27 in segment 7-E, which also has the only two culverts (at the Vidae Falls fill and at mile 29.1 near Park Headquarters) with stone headwalls on both its inlet and outlet." A 2005 CRLA Road inventory noted 116 culverts associated with East and West Rim Drive. Additional fieldwork needs to be completed to achieve an accurate number of culverts. As a result, the CLI noted that there are 100+ culverts along Rim Drive in recognition of the need for more data.

4. on curve of hill along 7-E2 (Mile 30.1). This feature is 24 feet high and 4 wide (6 feet wide at its greatest) and appears to have been constructed using dry laid stones.

Rim Drive Stone Work Components of Drainage Features (5) (Contributing)

In addition to the spillways described above, other stone work components of drainage features contribute to the historic district. These features are located:

1. on top of Sun Grade on 7-D2 (Mile 26.2). This small masonry feature located above a culvert headwall and measures 5 feet high and 4 feet wide.

2. between two wall sections on Sun Grade (Mile 26.4). This small masonry feature located above a culvert headwall and measures 8 feet high and 6 feet wide.

3. just east of the Sun Notch parking lot (Mile 27.1). This horizontal lined masonry drain is 66 feet long by 4 feet wide (5' wide at greatest).

4. east of Castle Crest Wildflower Trail (Mile 30.8). This lined masonry drain is 13 feet long by 5 feet wide.

5. just east of Castle Crest Wildflower Trail (Mile 30.9). This masonry feature above a culvert is 4 feet high by 5 feet wide.

Trail Drainage

Drainage for trails is largely supplied by "sheeting" where the tread is sloped so that water runs off uniformly. The unsurfaced condition and narrow width of the four trails connected with Rim Drive generally precludes drainage underneath the structure, so sheeting is a practical means of shedding water where there are no perennial streams or seasonal channels. In some locations there are places where logs or stone are included on one side of the trail to create the effect of check dams (the southwest facing section of the Watchman Trail is one example) or lined with rock, as at several places in the wetland of the Castle Crest Wildflower Trail. Footbridges associated with the trail represent another form of drainage over permanent streams forming the headwaters of Munson Creek, analogous in cross drainage to the much larger fill on Vidae Creek where road segment 7-E crosses it.

Small Scale Features

Small-scale features on Rim Drive include a variety of functional and aesthetic elements, many of which do not contribute to the historic character of the district. This includes signage (such as contemporary wood locational signs and fiberglass interpretive panels), stone bases for the interpretive panels which were typically added to older masonry guardrail, fencing (like the wood peelers lining walkways at the Watchman overlook or the more simple construction above the parking lot at the North Junction), in-kind replacements for picnic tables added in 1958 at five locations along Rim Drive and garbage cans at five picnic areas. Only one original sign located at Vidae Falls and the drinking fountain at Kerr Notch represent original small-scale features that were built in 1938 in association with the design and construction of Rim Drive.

Kerr Notch Drinking Fountain (Contributing)

Built in 1938, the Kerr Notch drinking fountain was prominently sited between two planting beds at the Kerr Notch (Phantom Ship) observation station, a popular visitor attraction along Rim Drive.

Constructed of local stone, most likely andesite from the Watchman flow or another location within the park, the drinking fountain sits approximately two feet high and has a simple, naturalistic form characterized by a single stone with the top hollowed out to form a small bowl shaped depression. A small drain with a plug inserted in the center of the bowl restricts rain water and other debris from entering the structure. Furthermore, a small steel pipe protrudes from the back of the fountain, which historically served as a water spigot. Today, the stone drinking fountain no longer functions; however, it contributes to the historic district as a small scale feature designed to artfully blend with its surrounding environment.

Vidae Falls Sign (LCS #: 740803) (Contributing)

Customized signage for Rim Drive evolved from a CCC project begun in 1936 at Park Headquarters that aimed to replace a range of types of metal signs posted throughout the park. Enrollees produced hand-carved wood signs of varying sizes with raised letters painted chrome orange (for visibility at night) against a dark brown background, based on Lange's drawings of entrance, location, directional, and building signs. CCC enrollees produced signs at Camp Oregon Caves over several winters and began installing them after returning to Crater Lake for the summer season. Lange provided "field sketch details" as drawings for the signmakers to follow, given the many distinct sizes and shapes that came in response to an emphasis on the individualization of signs for different points of interest located along Rim Drive. One of these is still in use, marking the location of Vidae Falls approximately 2.5 miles from Park Headquarters.

The importance of an original sign at Vidae Falls is symbolic in that it is a manifestation of the great lengths Lange went to as a designer to provide variety in the signs so that each one placed by the CCC reflected the individuality of sites identified along Rim Drive.

Road Signs (Non-Contributing)

Most of the original road signs were gone by 1970. As early as 1955, some of the original CCC wood signs were replaced by routed wood signs that had bright yellow or crème colored lettering. Some of the latter remain at picnic areas or trailheads, but just like their rustic predecessors, the vast majority of the routed signs have also disappeared. As a result, there are several sign typologies associated with Rim Drive, ranging from more traditional wooden signs (Lange's plans even have been used to replicate original signs in several places like the Mount Scott Trailhead) to contemporary metal signs suspended with two square wooden posts instead of shorter logs with larger diameters. Metal traffic control devices (stop signs, etc.) are in place and generally conform to standards listed in the Manual of Uniform Traffic Control Devices. Most traffic signs have a sheer metal signboard covered with a heat applied vinyl overlay and posts are either wood or steel.

Interpretive Panels (Non-Contributing)

Many of the interpretive display panels located along Rim Drive date from 1958, but the original plastic panels were replaced beginning in 1966 with metal photo plaques. A wayside exhibit plan from 1984 prompted park staff to replace most of the metal plaques with fiberglass embedded panels in 1987-1988. All of the panels were mounted on stone bases ostensibly constructed to match the character and integrity of the original stone guardrails and parapet walls. Some of the stone bases for the interpretive panels were added to older masonry guardrail. Also a few of the bases are free standing, while some of the panels at North Junction and Cleetwood Cove are mounted vertically using long steel posts.

Picnic Tables (Non-Contributing)

In 1957, picnic tables were built in five different locations along Rim Drive. The tabletops and benches were originally built with Port Orford cedar, while concrete was used in construction of the bases and supports. The tables were built using a standardized design dating from approximately 1957, but almost all of the wooden components of the tables were replaced in 1997. In close proximity to the picnic tables are metal garbage cans, usually painted brown, that date to 1965 or later. Like other small-scale features along Rim Drive, they rarely interfere with the overall character of the road circuit, but lack a unified theme.

The Watchman Overlook and North Junction Fence System (Non-Contributing)

A fenceline composed of peeled log posts and rails serves to define the character of the Watchman overlook. Nicknamed the "corrals," the fence helps to form the barrier between the asphalt parking area, while guiding visitors to the viewing platform. In addition, the fence also restricts visitor access beyond the established overlook to provide greater safety. The fence is characterized by two parallel posts connected by a small steel bar at the top with five smaller peeled log rails stacked between the posts with their ends overlapping. Several non contributing masonry piers are also associated with the fence system.

At the North (Diamond Lake) Junction, the fence system is less complex than the fence at the Watchman overlook. It is located at the terminus of several social trails that lead from the parking area to a viewing platform that provides a view of the lake and its surrounding environs. The fence is constructed of peeled log posts, which includes two peeled log rails that are attached to the posts with metal hardware. The features at both the Watchman and North Junction were constructed after the period of significance and do not contribute to the historic district.

Summary

Buildings and structures located along Rim Drive include numerous contributing stone masonry walls, culverts with stone headwalls and features associated with observation stations and substations that were built during the period of significance. Today, many of the character defining structures that delineate the Rim Drive corridor remain intact allowing the road to function in its original capacity, while providing visitors with a naturalistic design aesthetic.

Character-defining Features:

Feature: Wineglass Patrol Cabin
Feature Identification Number: 154323
Type of Feature Contribution: Non Contributing

Feature: Fuel Transfer Building Cleetwood Cove Parking Area
Feature Identification Number: 154325
Type of Feature Contribution: Non Contributing

Feature: Vault Toilets (4)
Feature Identification Number: 154327
Type of Feature Contribution: Non Contributing

Feature: Rim Drive Curbing (2,128 linear feet)
Feature Identification Number: 154329
Type of Feature Contribution: Contributing

Feature: Rim Drive Stone Masonry Guardrail (10,810 linear feet)
Feature Identification Number: 154331
Type of Feature Contribution: Contributing

Feature: Rim Drive Stone Masonry Retaining Walls (3,047 linear feet)
Feature Identification Number: 154333
Type of Feature Contribution: Contributing

Feature: Rim Drive Stone Masonry Parapet Walls (1,681 linear feet)
Feature Identification Number: 154335
Type of Feature Contribution: Contributing

Feature: Rim Drive Stone Work Components of Drainage Features (5)
Feature Identification Number: 154337
Type of Feature Contribution: Contributing

Feature: Rim Drive Culverts and Drop Inlets (100+)
Feature Identification Number: 154339
Type of Feature Contribution: Contributing

Feature: Rim Drive Spillways (4)
Feature Identification Number: 154341
Type of Feature Contribution: Contributing

Feature: Vidae Falls Sign
Feature Identification Number: 154343
Type of Feature Contribution: Contributing

Feature: Kerr Notch Drinking Fountain
Feature Identification Number: 154345
Type of Feature Contribution: Contributing

Feature: Road Signs
Feature Identification Number: 154347
Type of Feature Contribution: Non Contributing

Feature: Interpretive Panels
Feature Identification Number: 154349
Type of Feature Contribution: Non Contributing

Feature: Picnic Tables
Feature Identification Number: 154351
Type of Feature Contribution: Non Contributing

Feature: The Watchman Overlook and North Junction Fence System
Feature Identification Number: 154361
Type of Feature Contribution: Non Contributing

Buildings and Structures #1: View of Crater Lake from Cloudcap observation station. Note the interpretive sign, stone masonry wall and curbing in the foreground (Hartzler, PWR, 2008).

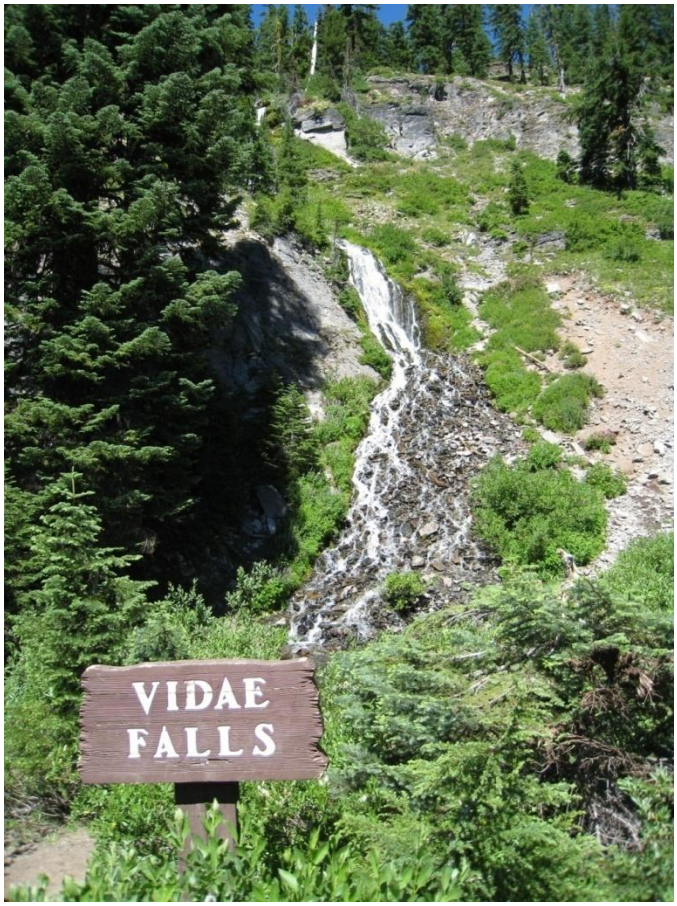
Buildings and Structures #2: Curvilinear stone masonry guard wall at Union Peak substation (Gjesfjeld, PWR, 2010).

Buildings and Structures #3: Stone masonry retaining wall and guardrail along Rim Drive (Hartzler, PWR, 2008).

Buildings and Structures #4: Stone masonry spillway overgrown with moss and grass along Rim Drive segment 7-D (Gjesfjeld, PWR, 2010).

Buildings and Structures #5: Naturalistic stone drinking fountain at Kerr Notch observation station (Gjesfjeld, PWR, 2010).

Buildings and Structures #6: Culvert with stone masonry headwall near Sun Creek Valley Vista (Gjesfjeld, PWR, 2010).



Buildings and Structures #6: View of historic hand-carved sign designed by Lange and produced by the CCC with Vidae Falls in the background (Hartzler, PWR, 2008).

Views and Vistas

Views are defined as the expansive or panoramic prospect of a broad range of vision, which may be naturally occurring or deliberately contrived. Vistas are the controlled prospect of a discrete, linear range of vision, which is deliberately contrived.

Views and vistas were of primary concern in the design, layout, and construction of Rim Drive, and contribute significantly to the overall character of the historic road. While the first Rim Road was established in relation to desired and available views of Crater Lake, the 1930s Rim Drive extended and expanded the concept of scenic values. Notably, the planners of Rim Drive considered not only desirable views toward the lake, and views out upon the surrounding landscape, but also considered undesirable views which would detract from the landscape aesthetic or impair landscape values. While the design of Rim Drive took advantage of the lake views afforded by its predecessor, new viewing opportunities were established and painstaking efforts were made to prevent or conceal undesirable views. The design imperative to establish a pleasant driving tour without marring the prospect or the natural environment was indicative of the natural design thrust of National Park planning during this time. Geologist John C. Merriam's correspondence to Horace Albright during the early planning period of Rim Road illustrates the prevailing design philosophy:

> "…it is extremely important that this road be located in such manner as to present the features of attraction in the best possible way. I do not believe that an ultimately satisfactory location of the road can be made without adding to the engineering study a careful examination of the features which the road should show to best advantage. It is also important to locate the first road in the most favorable place and thus save possibilities of disfiguring the landscape by moving the line of travel later. This is an age in which roads are being constantly changed, and always with the effect of scarring the landscape. It would be a great achievement if the Crater Lake road could be located in the best possible line for viewing the lake, so that its position might be maintained without essential subsequent modification."

Design intent included scenic preservation, so views focused on geologic and natural features, while scarred or "unpleasant" areas were carefully screened so as not to detract from the beauty of the site. Views of Rim Drive from the lake, or across it were considered unpleasant, as were glimpses of the original circuit road built by the Army Corps of Engineers. As a result, engineers and landscape architects wanted to make the road alignment part of the rim, yet remain invisible from the lake, or from any major viewpoint on the rim. During Rim Drive's construction in 1936, Superintendent Canfield noted that one of the major considerations of the road's development related to "preservation of the primitive picture of the rim road." Several strategies expressed this design intent in the construction of Rim Drive. First and foremost, the new road was aligned in relation to the lake so that is remained concealed in the landscape whether viewed from the lake or from the road itself. Despite the road's close proximity to the rim at several points, Rim Drive is almost invisible from nearly every overlook, so that the views across the caldera lake are uninterrupted. Secondly, the process of road-building was mitigated through the process of daylighting, which is the act of creating rounded slopes from cut and fill operations. Fills and daylighted slopes were generally stabilized with trees planted (or in some cases seeded) to match the surrounding forests, though some remained exposed where the surrounding country was largely barren. Planting these denuded areas with native vegetation was used in some cases to minimize road scarring along the scenic corridor. Finally, the obliteration of the abandoned 1913 Rim Road was accomplished by extensive revegetation, so that the former abandoned segments of road would not be visible from Rim Drive or from any of the observation stations.

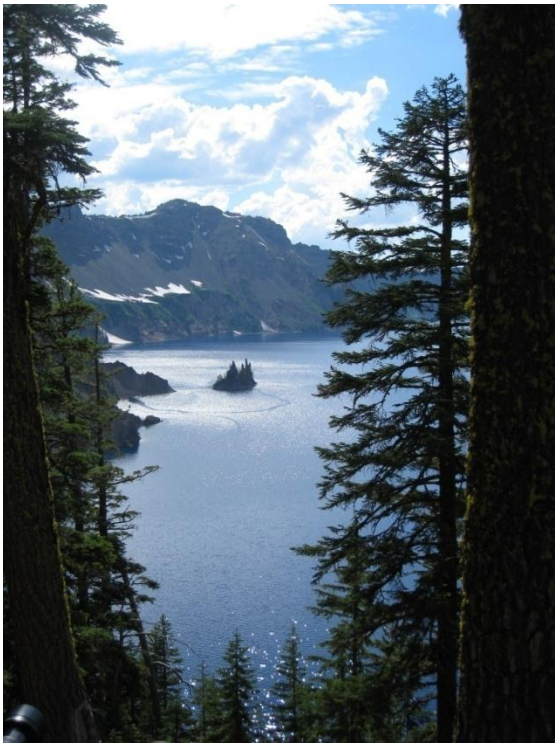
In many cases, the design of the road and its associated views and vistas were defined from the perspective of the car. Rim Drive designers considered the auto tourist's sequential progression on Rim Drive and choreographed a scenic route characterized by periods of movement and rest. Historically, eight major observation stations and many substations were spaced at intervals along the entire course of the 31.6-mile drive. Today, six of the original eight observation stations contribute to the historic district. These were sited with respect to a particular scenic feature and relevant interpretation, as initially envisioned by park planners. The stations' advantageous viewing positions at the edge of the caldera rim coupled with the ease of vehicle pull-off and parking were designed to entice motorists off the road to use these strategic overlooks. The straight forward design of the parking overlooks designed by Lange, including the promontory area, stone walls and curbs, planting beds, and small-scale features such as signs and fountains, all support the function of a short viewing period. In other words, the lack of extensive program elements; e.g. picnic areas, benches, reveals the expectation that tourists would pause briefly to absorb the impressive view and geological information, then move on to the next stop.

Views along Rim Drive were meant to capture the essence of the scene. Vistas, by contrast, tended to center on distant objects but employ framing devices such as trees. Examples of the distinction can be seen at two observation stations. At Merriam Point, Crater Lake and distant peaks can be seen in wide-angle view, whereas, trees frame the view of Phantom Ship from Kerr Notch. Significantly, Kerr Notch is one of the lowest points on the Crater Lake rim, and this vantage was considered to be one of the "most effective" in the entire park at the time of its construction.[13] Vistas occur on Rim Drive in the form of turning a bend in the road and having a framed scene suddenly come into view. The Sinnott Memorial Overlook, conceived as the first major observation point on the drive, the place of orientation, is the most dramatic example of structured vista, in that the building's circular window with a low ceiling forces a horizontal perspective onto the lake.

Expansive views outward to adjacent lands are also quite impressive, and lend to the character of Rim Drive. Views to the Cascade Range, to distant peaks such as Diamond and Shasta mountains, and to Klamath Basin contribute to the "primitive picture" of Crater Lake in its regional setting. While geological features were generally regarded as secondary to the lake, there are substations and parking areas situated away from Crater Lake that center on specific landscape features such as Union Peak, Mazama Rock, and Vidae Falls.

Today, views and vistas such as those from Merriam Point, Kerr Notch and Sinnott Memorial continue to leave an indelible impression on visitors. Highlighting views of Crater Lake as well adjacent mountains that are part of the rugged volcanic setting, Rim Drive provides a spectacular vantage from which to view the "primitive picture" just as designers envisioned in the 1930s.

[13] John R. Sargent, Final Construction Report (1931-1932) on East Entrance Highway, Crater Lake National Park Project 5-A2.B (Grad). United States Department of Agriculture, Bureau of Public Roads, District No. 1.



Views and Vistas #1: View from the Kerr Notch observation station to Phantom Ship with vegetation framing view. A 1939 construction report suggested that this parking area offered "one of the finest views of Crater Lake" (Gjesfjeld, PWR, 2010).

Views and Vistas #2: Wide-angle view from North Junction toward Crater Lake and the distant peaks beyond (Gjesfjeld, PWR, 2010).

Views and Vistas #3: View from the Sinnott Memorial Overlook to the caldera. This vantage provides the most dramatic example of structured vista, in that the building's circular window with a low ceiling forces a horizontal perspective onto the lake (Gjesfjeld, PWR, 2010).

Condition

Condition Assessment and Impacts

Condition Assessment: Fair

Assessment Date: 06/29/2011

Condition Assessment Explanatory Narrative:

Through the analysis and evaluation of landscape characteristics and features, it has been determined that the Rim Drive Historic District is in "fair" condition. The landscape shows clear evidence of minor disturbances and deterioration by natural and/or human forces, and some degree of corrective action is needed within 3-5 years to prevent further harm to its cultural and/or natural values. If left to continue without the appropriate corrective action, the cumulative effect of the deterioration of many of the landscape characteristics will cause the inventory unit to degrade to poor condition.

Impacts

Type of Impact: Exposure to Elements

External or Internal: Internal

Impact Description: Although stone masonry is one of the most durable building materials, it is susceptible to damage incurred by severe weather. Through time, exposure to elements such as heavy rain and snow has resulted in negative impacts to historic built features associated with Rim Drive. In some cases, snow can cause some guardrails and walls to lean.

Type of Impact: Structural Deterioration

External or Internal: Internal

Impact Description: Many stone masonry features associated with Rim Drive illustrate mortar joint deterioration, loss of structural stability, crumbling, cracking, spalling, or loose stones, and also undermining due to erosion (Glanville 2008, 16). This is especially evident on the guard walls along Rim Drive, which are prone to damage caused by weather and environmental factors due to their degree of exposure on the rim of the caldera.

Type of Impact: Erosion

External or Internal Internal

Impact Description:	On the Cleetwood "backflow" wind erosion on cut slopes created during rough grading has resulted in chronic raveling.
Type of Impact:	Improper Drainage
External or Internal:	Internal
Impact Description:	Several of the drains and spillways which are integral to maintaining Rim Drive are clogged with debris and can no longer function properly because erosion has caused them to shift (Glanville 2008, 16). Also, improper drainage was noted at Vidae Falls where blockage as a result of a beaver dam has caused the water levels to elevate, thereby inundating a stone headwall.
Type of Impact:	Inappropriate Maintenance
External or Internal:	Internal
Impact Description:	Stone masonry features, especially guard walls, found along Rim Drive are susceptible to damage and deterioration incurred by human error through improper maintenance and accidents (i.e. damage by snow plows) (Glanville 2008, 16).
Type of Impact:	Other
External or Internal:	Internal
Impact Description:	Falling rocks and boulders from adjacent hillsides are causing damage to stone guardrails as well as the road surface. In the most severe instances, segments of guardrail within the path of falling boulders are pushed off the paved edge onto the down slope side of the road.
Type of Impact:	Vegetation
External or Internal:	Internal
Impact Description:	In several locations, large trees and other woody vegetation are encroaching on the road corridor. Trees growing in ditches are hindering drainage patterns. Also, trees growing too close to guardrails and walls are causing root damage.

Treatment

Approved Treatment: Preservation

Approved Treatment Document Explanatory Narrative:

For information related to specific treatment recommendations, see Chapter 5 of the Rim Drive Cultural Landscape Report, pgs. 181-233. Also see Abby Glanville's 2008 "Preservation Guide for Stone Masonry and Dry-Laid Resources."

Bibliography and Supplemental Information

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Supplemental Information:

Appendix A: Rim Drive Road Survey and Location

The following information was adapted from the Rim Drive National Register of Historic Places nomination form (2008) authored by Steve Mark.

The 1926 BPR reconnaissance survey not only allowed Superintendent Thomson to reference the construction estimates in his priorities, but also allowed him to comment on proposed road locations. It designated the Rim Road as route 7 in the park and divided the circuit into five segments, labeling them as7- A, 7-B, 7-C, 7-D, and 7-E. Thomson took an immediate dislike to what BPR proposed as 7-E, a road segment 4 miles long and running from Sun Notch to Crater Lake Lodge by way of Garfield Peak. In addition to being very expensive, the proposed road location necessitated two tunnels and a "gash across the face" of Garfield Peak, which, as Thomson stated, was "altogether too beautiful to be subjected to the unconscious vandalism of ambitious engineers."

In urging that segment 7-A be given first priority for fiscal year 1929, Thomson stated that the stretch of road between Rim Village and the Diamond Lake (North) Junction constituted "practically a main stem for us." It not only carried traffic to and from Diamond Lake, but also was the most traveled section used by visitors who did not go all the way around the rim. He believed construction of this 6.7-mile segment might take only one season, to be followed by the other segments over the next four years. In response, BPR conducted a preliminary location survey as another step toward construction during the summer of 1928. Beginning from Park Headquarters in Munson Valley, they went over Thomson's preferred line for 7-E to Sun Notch in July and then pushed toward Kerr Notch on the reconnaissance line for 7-D. The location crew departed from Crater Lake at the end of September, having run a P-line for those two segments as well as the one connecting Rim Village with the Diamond Lake Junction. They left abruptly, after receiving word from NPS assistant director Horace Albright that there would be no funding for road construction at the park in 1929.

The postponement was greeting by Merriam as being fortuitous, since he welcomed the additional time needed for designing roads and trails "with special reference" to presenting park features and those in the surrounding region "which have been determined by experts to be of outstanding importance." The Laura Spelman Rockefeller Memorial supplied a grant for a study of the educational possibilities of the parks in 1928, one administered by a committee headed by Merriam. Most of the field visits associated with the study took place over the next summer, followed by recommendations to congressmen well positioned in the appropriations process. At Crater Lake the study effort translated into money for building the Sinnott Memorial below Rim Village with a special $10,000 appropriation as well as funds to hire a permanent park naturalist and an expanded summer staff of naturalists.

Merriam visited Crater Lake in August 1929, and paid special attention to the location of Rim Drive. He then wrote to Albright about the need for someone who understood the park's geological features to assist with locating segment 7-A. The recommendation brought about an on-site inspection of the P-line in October 1929, beginning at Rim Village and going clockwise on the old road to Kerr Notch. Arthur L. Day, volcanologist at the Carnegie Institution of Washington and head of its Geophysical Laboratory, served as Merriam's representative. Joining him at the meeting were the district and resident BPR engineers (J.A. Elliott and John R. Sargent, respectively), as well as NPS chief engineer Frank Kittredge, chief NPS landscape architect Thomas Vint, and Thomson's successor, E.C. Solinsky.

The group recommended keeping the road as close to the rim as possible over the first mile from Rim Village, but with additional easy curvature to the first volcanic dike visible at the Discovery Point

Overlook. They suggested elimination of a tight radial turn at the foot of the Watchman, and then chose a line that kept the road away from views of Crater Lake until the Watchman overlook. Kittredge noted how BPR appeared to have "solved" the snow problem around the Watchman, presumably by running a lower line than the one adopted by the old Rim Road.

BPR opted for a low line around Llao Rock, though the group favored a spectacular "ledge route" involving side hill excavation and a series of "window tunnels" on the lake side to obtain better views and reduce 2 miles of travel in reaching Steel Bay. Everyone came to agreement over leaving the Rock of Ages (Mazama Rock) undisturbed. All of the group members wanted the road to reach the top of Cloudcap, but no one thought of marring the fringe of whitebark pine overlooking the lake. This portion of the circuit required further study, the group advised, especially if it stayed close to the rim. The group endorsed the surveyed line between Cloudcap and Kerr Notch, with the stipulation that visitors should be able to reach the viewpoint for Cottage Rocks (Pumice Castle), as well as the Sentinel Rock and Kerr Notch localities.

Although the group did not review the P-line between Kerr Notch and Sun Notch, Kittredge characterized it as requiring heavy blasting to make a roadway across sheer cliffs. He saw no way around blasting, but thought damage could be limited if care was used in preventing material from "flowing" down slopes. Kittredge also mentioned two prospective routes beyond Sun Notch, with a decision needed about whether to bypass Park Headquarters and go to Rim Village by way of Garfield Peak instead. One route that did just that came to be known as the "high line." The other route, a "low line," largely utilized the existing road connecting Lost Creek to Vidae Falls.

With segment 7-A scheduled for bid in the fall of 1930, the next phase of location work focused on it. Resident BPR engineer John R. Sargent took charge of the L-line survey for the initial part of Rim Drive after NPS landscape architect Merle Sager found the P-line unsatisfactory in "numerous" places. Sager effected revision of the old line with advice from Merriam, Harold C. Bryant (assistant director of the NPS as head of the branch of research and education in the Washington Office), and Bryant's deputy, geologist Wallace W. Atwood. Sager and Vint went over the revised line with Sargent in August, with Sager returning in October to meet with Sargent about designating certain places along segment 7-A with Class B excavation. Clearing by NPS crews under BPR supervision commenced shortly thereafter as a way to allow the prospective grading contractor the benefit of a full working season in 1931.

L-line surveys continued over the following summer and proceeded quickly enough over segments 7-B and 7-C for the NPS to pre-advertise bidding on them in November 1931. The location work covered a new road of just over 13 miles, one now routed almost to the base of Mount Scott. This line avoided the 10 to 12 percent grades on the old Rim Road's ascent of Cloudcap through use of a dead-end spur road to the top. After some discussion, the NPS chose a line having a gentler grade routed away from the rim down to the Cottage Rocks viewpoint, instead of going down the south face of Cloudcap. Park Superintendent David Canfield could thus confidently assert by November 1934 that the award of two grading contracts in 7-C1 brought the Rim Drive three-quarters of the way around the caldera.

Albright intended to study the proposed high line around Dutton Ridge, as opposed to the low line favored by Sager and other landscape architects, in July 1931 as part of his stop to attend the dedication of the Sinnott Memorial. He eventually ordered that the road not be built into Sun Notch, but BPR engineers, and Sargent in particular, did not easily give up on the high line. Sargent persuaded Lange and the new superintendent, David Canfield, to walk the surveyed line of roughly three miles between Sun Notch and the lodge in July 1935. Lange went into considerable detail about the many construction and landscape problems posed by going through with the high line project in a memorandum to the NPS office of plans and design in San Francisco. He also pointed to the face of Dutton Cliff in segment 7-D as offering the "outstanding" problem, since the road location through large slides of loose rock would be

difficult to camouflage. To put a road into Sun Notch around Dutton Ridge struck him as contrary to the park idea of "preserving those areas which are worthy of protection and keeping out any possible development." Lange concluded the memorandum with a plea to keep any road at least several hundred feet below the rim at Sun Notch in the event that the higher line of segment 7-D won out over the low line.

Kittredge and the resident NPS engineer, William E. Robertson, also walked the high line within days of Lange's field trip. They did so in response to a news article appearing in a Portland paper that came in the wake of concessionaire Richard W. Price taking his case for the high line to the chamber of commerce in Klamath Falls. The local congressman contacted Secretary of the Interior Harold Ickes at roughly the same time, and Ickes then referred the query to NPS director Arno B. Cammerer. The director dispatched associate director Arthur Demaray to Crater Lake for an on-site inspection of the two road locations, and told Ickes that the matter would receive further consideration upon Demaray's return to Washington. Demaray then told Kittredge that further consideration should be given to the high line in 7-D, one that ran "from Kerr Notch around Dutton Ridge to Sun Meadows, then joining the present road [from Lost Creek] at the Vidae Falls. This amounted to a "combination line," one that Canfield strongly supported when he asked Cammerer to transfer funds originally programmed for the low line route and instead put them toward building segment 7-D.

Cammerer went ahead with recommending the "combination line" of a high 7-D and a low 7-E to Ickes on November 16, 1935. The secretary approved it several weeks later and his office issued a press release to that effect. Sargent confidently anticipated the decision by completing the fieldwork for what he called the "final located line" between Kerr Notch and Vidae Falls by late October, so that plans could be completed over the winter. Engineers estimated this stretch of 5.5 miles as the most time consuming portion of Rim Drive to build, so BPR divided it into three units (as 7-D1, 7-D2, and 7-E1) for the purposes of bids on future grading contracts. Sargent also ran a P-line of 4.3 miles for the last segment of Rim Drive, one connecting Vidae Falls with Park Headquarters, in the fall of 1935. His successor, Wendell C. Struble, revised the line over the following summer to eliminate about a mile of road construction, mainly because he and Lange agreed that the new line effectively reduced the scar width of 7-E2 as seen from Crater Lake Lodge.

Resolution to the problem of how to approach Vidae Falls from Sun Notch and then cross the creek did not come until January 1938, after Cammerer wrote to Canfield's successor, Ernest P. Leavitt. Not only did he want the new superintendent's views on the controversial location of segment 7-D, but also he took that opportunity to express a preference for a bridge at Vidae Falls. Leavitt responded with rather emphatic reasons for why the line from Kerr Notch to Vidae Falls constituted a serious mistake, but gave Cammerer a number of reasons why a fill made better sense than a bridge at the falls. Demaray informed Leavitt in January 1938 that a fill had been approved, largely due to the "depleted condition" of funds for roads and trails during the current fiscal year and the small allotment anticipated for 1939. At this point the associate director regarded any lingering questions over the location of Rim Drive as "closed," since a contract for grading 7-E2 had been awarded the previous fall.

Appendix B: Plant Species Associated with Rim Drive*

Trees		Notes*
1.	Lodgepole pine (*Pinus contorta var. murrayana)*	
2.	Mountain hemlock (*Tsuga mertensiana*)	
3.	Western white pine (P. *monticola*)	
4.	Whitebark pine (P. *albicaulus*)	
5.	Shasta red fir (*Abies magnifica/procera*)	
6.	Subalpine fir (A. *lasiocarpa*)	7-A?, 7-E
7.	Ponderosa pine (P. *ponderosa*)	7-B, 7-C, 7-E?
	Shrubs and groundcover	
1.	Antelope bitterbrush (*Purshia tridentate*)	7-B
2.	Applegate paintbrush (*Castilleja applegatei*)	7-C, 7-D, 7-E
3.	Bearberry Honeysuckle aka black twinberry (*Lonicera involucrata)*	7-A
4.	Blackened sedge (*Carex atrata var. erecta*)	
5.	Bloomer paintbrush (*Chrysothamnus bloomeri*)	
6.	Blue bunchgrass aka Idaho fescue (*Festuca idahoensis var. idahoensis*)	
7.	Bolander's bluegrass (*Poa bolanderi*)	7-E
8.	Brewer's sedge (*C. brewerii var. brewerii)*	
9.	California brome (*Bromus carinatus var. carinatus)*	
10.	Cascara (*Rhamnus alnifolia*)	7-A, 7-B
11.	Chinkapin (*Castariopisis chrysophylia*)	7-A, 7-B
12.	Chokecherry (*Prunus virginiana*)	7-A, 7-B
13.	Cliff pentstemon (Pentstemon rupicola*)*	
14.	Cobwebby paintbrush *(Castilleja arachnoidea)*	7-B
15.	Crater Lake current (*Ribes erythrocarpum*)	
16.	Crater Lake rockcress (*Arabis suffrutessens var. horizontalis*)	7-A, 7-C
17.	Cream mountainheath (*Phyllodoce glanduliflora*)	
18.	Creeping raspberry (*Rubus lasiococcus*)	7-A, 7-D, 7-E
19.	Davidson pentstemon (*Pentstemon menzieii davidsonii*)	
20.	Douglas Rocky Mountain maple (*Acer glabrum douglassii*)	
21.	Dwarf larkspur (*Delphinium depauperatum*)	
22.	Dwarf monkeyflower (*Mimulus nanus*)	7-C
23.	Eastwood willow (*Salix eastwoodiae*)	7-D, 7-E
24.	Frosted paintbrush (*Castelleja pruinosa*)	7-B
25.	Greenleaf manzanita (*Arctostaphylos patula*)	
26.	Grouse whortleberry aka broom huckleberry (*Vaccinium scoparium*)	
27.	Hood's sedge (*C. hoodii*)	
28.	Idaho bentgrass (*Agrostis idahoensis*)	
29.	Indian paintbrush (*Castilleja* spp.)	

30.	Large mountain monkeyflower (*Mimulus tilingii*)	7-C, 7-D, 7-E
31.	Lemmon's needlegrass (*Stipa lemmonii*)	
32.	Lewis monkeyflower (*Mimulus lewisii*)	7-A, 7-D, 7-E
33.	Lyall's rockcress (*Arabis lyallii*)	7-B
34.	Mountain bentgrass (*Agrostis humilis*)	
35.	Mountain wild oatgrass (*Danthonia intermedia*)	
36.	Mountain hairgrass (*Deschampsia atropurpurea*)	
37.	Newberry knotweed (*Polgonum newberryi*)	
38.	Oceanspray (*Holodiscus discolor*)	
39.	Pacific red elder (*Sambucus callicarpa*)	7-D, 7-E
40.	Parry's rush (*Juncus parryi*)	
41.	Partridgefoot (*Luetkea pectinata*)	
42.	Pearly everlasting (*Anaphalis margaritacea*)	
43.	Phlox (*Phlox* spp.)	
44.	Pinegrass (*Poa wheeleri var. wheeleri*)	
45.	Pinemat manzanita (*Arctostaphylos nevadensis*)	
46.	Purple flowered honeysuckle aka red twinberry (*Lonicera conjugialis*)	7-E
47.	Rabbitbrush goldenweed (*Haplopappus bloomeri*)	
48.	Red or Pacific elderberry (*Sambucus racemosa*)	7-D, 7-E
49.	Red fescue (*Festuca rubra var. rubra*)	
50.	Rock pentstemon (*Pentstemon rupicola*)	
51.	Ross sedge (C. *rossii*)	
52.	Rubber rabbitbrush (*Chrysothamnus nauseousus*)	7-B, 7-C
53.	Scarlet paintbrush (C. *minata*)	7-A, 7-D, 7-E
54.	Scouler willow (*Salix scouleriana*)	7-D, 7-E
55.	Shasta knotweed (*Polygonum shastense*)	
56.	Sitka mountain ash (*Sorbus sitchensis*)	7-A?
57.	Sitka alder (*Alnus sinuate*)	7-D, 7-E
58.	Snowberry (*Symphoricarpos albus*)	7-E
59.	Squirrelgrass (*Elymus elymoides*)	
60.	Sticky current (*R. viscosissimum*)	
61.	Sitka sedge (C. *aquatilis var. dives*)	
62.	Subalpine spirea (*Spirea densiflora*)	7-E
63.	Ticklegrass (*Agrostis hyemalis var. scabra*)	
64.	Wax current (R. *cereum*)	7-A, 7-B?
65.	Western laurel (*Klamia microphylla*)	7-A
66.	Whitney sedge (C. *whitneyi*)	

*Species list not verified in the field, particularly between the clearing limits of Rim Drive's five segments. Notes indicate probable locations among the segments; blank spaces indicate the possibility of representation along all of Rim Drive. This list is, in effect, not exclusive to these species, nor does listing necessarily indicate the presence of these plants.

Appendix C: Inventory of Masonry Features on Rim Drive: Retaining Walls, Guard Rails, Curbs and Spillways extracted from Appendix I of the Rim Drive Cultural Landscape Report, 2007

Segment 7-A: Mile 0.0-5.9
Rim Village to Diamond Lake Junction

Mile 0.2 (Road Stations 10-11)

	86 ft. Stone Masonry Guardrail
Historic Integrity:	Contributing 76 feet, Non-contributing 10 feet
Structural Stability:	19 ft. Good, 36 ft. fair, 31 ft. Poor
Footing:	Fair-Poor
Slope Stability:	Fair-Good
Wall Stability	Fair
Wall Height:	2 ft.

Mile: 0.2 (Road Station 13)

	57 ft. Stone Masonry Guardrail
Historic Integrity:	Non-contributing 57ft.
Structural Stability:	11 ft. Good, 32 ft. Fair, 14 ft. Poor
Footing:	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	2 ft.

Mile 1.1 Discovery Point, Observation Station #2 (Road Stations 56-60)

	173 ft. Stone Masonry Guardrail
Historic Integrity:	Compatible 173ft.
Structural Stability:	61 ft. Fair, 112 ft. Poor
Footing:	Poor
Slope Stability:	Poor
Wall Stability:	Fair-Poor
Wall Height:	4 ft.

Mile 2.3 Wizard Island Overlook, Substation 2-B (Road Stations 116-118)

	239 ft. Stone Masonry Guardrail
Historic Integrity:	49 ft. Contributing, 36 ft. Non-contributing, 144 ft. Compatible
Structural Stability:	43 ft. Good, 127 ft. Fair, 69 ft. Poor
Footing :	Fair
Slope Stability:	Fair
Wall Stability:	Fair
Wall Height:	2 ft.

Mile 2.9 (Road Stations 151-153)

	127 ft. Stone Retaining Wall and Stone Masonry Guardrail
Historic Integrity:	92 ft. Contributing, 5ft. Non-contributing, 30 ft. Compatible
Structural Stability:	51 ft. Good, 63 ft. Fair, 13 ft. Poor
Footing :	Good
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	5.6 -11 ft.

Mile 3.0 Union Peak Overlook, Substation #2-C (Road Stations 154-157)

	360 ft. Stone Masonry Guardrail and Retaining Wall
Historic Integrity:	315 ft. Contributing, 10 ft. Non-contributing, 35 ft. Compatible
Structural Stability:	225 ft. Good, 106 ft. Fair, 9 ft. Poor
Footing:	Fair to Good
Slope Stability:	Fair to Good
Wall Stability:	Fair
Wall Height:	3 ft-11 ft.

Mile 3.3 (Road Stations 176-178)

	202 ft. Stone Masonry Guardrail
Historic Integrity:	202 ft. Contributing
Structural Stability:	113 ft Good, 89 ft. Fair
Footing:	Fair to Good
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	2 ft.

Mile 3.4 Substation #2-D (Road Stations 179-182)

	425 ft. Stone Masonry Guardrail and Stone Retaining Wall
Historic Integrity:	240 ft. Contributing, 136 ft. Non-contributing, 49 ft. Compatible
Structural Stability:	139 ft. Good, 149 ft. Fair, 137 ft. Poor
Footing:	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	2 ft.-8 ft.

Mile 3.9 Watchman Overlook (Road Station 196-198)

328 ft. Stone Masonry Guardrail and Retaining Wall

Historic Integrity:	256 ft. Contributing, 32 Non-contributing, 40 ft Compatible
Structural Stability:	186 ft. Good, 118 ft. Fair, 24 ft. Poor
Footing:	Fair
Slope Stability:	Fair
Wall Height:	3 ft.-15 ft.

Mile 4.7 Diamond Lake Overlook, Substation #3-A (Road Stations 233-235)

	174 ft. Stone Masonry Guardrail
Historic Integrity:	174 ft. Non-contributing (constructed: 43 ft 1960s, 131ft. 1970s)
Structural Stability:	64ft. Good, 65ft. Fair, 45ft. Poor
Footing:	Fair-Good
Slope Stability:	Good
Wall Height:	2 ft.

Mile 5.5 Parking Area (Road Stations 290-293)

	324 ft. Stone Masonry Guardrail
Historic Integrity:	50 ft. Contributing, 278 ft. Compatible
Structural Stability:	250 ft. Good, 124 ft. Fair
Footing:	Fair
Slope Stability:	Fair
Wall Stability:	Fair
Wall Height:	2 ft.

Mile 5.7 Substation #3-C (Road Stations 299-301)

	146 ft. Stone Masonry Guardrail
Historic Integrity:	146 ft. Non-contributing
Structural Stability:	16 ft. Good, 71 ft. Fair, 59 ft. Poor
Footing:	Fair-Poor
Slope Stability:	Fair
Wall Stability:	Fair
Wall Height:	3 ft.

Mile-5.8 Parking Area (Road Stations 302-303)

	212 ft. Stone Masonry Guardrail
Historic Integrity:	212 ft. Non-contributing
Structural Stability:	159 ft. Fair, 63 ft. Poor
Footing:	Fair-Poor
Slope Stability:	Good
Wall Stability:	Fair

Wall Height:	3ft.		

Segment 7-ATotals

Total linear feet:	Stone Guardrail	3053 ft.	
	Stone Retaining Wall	1440 ft.	
Character and Integrity:			
Contributing:	Stone Guardrail	1184 ft	32%
	Stone Retaining Wall	803 ft.	56%
Non-contributing:	Stone Guardrail	918 ft.	30%
	Stone Retaining Wall	383 ft.	27%
Compatible:	Stone Guardrail	951ft.	38%
	Stone Retaining Wall	254 ft.	17%
Structural Stability:			
	Stone Guardrail	3053 ft.	
	Stone Retaining Wall	1440 ft.	
Stone Guardrail [1]	Poor	692 ft.	23%
	Fair	1249 ft.	41%
	Good	1112 ft.	37%
Stone Retaining Wall	Poor	203 ft.	14%
	Fair	731 ft.	51%
	Good	506 ft.	35%

Segment 7-B: Mile 5.9-14.5
Diamond Lake Junction to Grotto Cove

Mile 8.60 Steel Bay Overlook #1 (Road Stations 1264-1261)

	243 ft. Stone Masonry Guardrail
Historic Integrity:	243 ft. Contributing
Structural Stability:	48 ft. Good, 167 ft. Fair, 28 ft. Poor
Footing:	Fair
Slope Stability:	Fair

[1] Discrepancies in total percentage of stone guardrail are evident and are unable to be rectified without additional fieldwork. Total linear feet of stone guardrail adds up to 101%, rather than 100%.

Wall Stability:	Fair
Wall Height:	2 ft.-4.2 ft.

Mile 8.8 Steel Bay Overlook #2 (Road Stations 1256-1255)

	113 ft. Stone Masonry Guardrail
Historic Integrity:	113 ft. Contributing
Structural Stability:	113 ft. Good
Footing:	Fair-Good
Slope Stability:	Fair-Good
Wall Height:	2.1 ft.

Mile 9.5 Pumice Point, Observation Station #5 (Road Stations 1229-1223)

	452 ft. Stone Masonry Guardrail
Historic Integrity:	440 ft. Contributing, 12 ft. Compatible
Structural Stability:	452 ft. Good
Footing:	Good
Slope Stability:	Good
Wall Height:	2 ft.

Mile 9.6 Parking Area (Road Stations 1209-1206)

	323 ft. Stone Masonry Guardrail
Historic Integrity:	300 ft. Contributing, 23 ft. Compatible
Structural Stability:	323 ft. Good
Footing:	Fair-Good
Slope Stability:	Good
Wall Height:	2 ft.

Mile 9.6 Parking Area (Road Stations 1203-1202)

	150 ft. Stone Masonry Guardrail
Historic Integrity:	135 ft. Contributing, 15 ft. Compatible
Structural Stability:	150 ft. Good
Footing:	Fair-Good
Slope Stability:	Fair-Good
Wall Height:	2 ft.

Mile 9.9 Parking Area (Road Stations 1195-1194)

150 ft. Stone Masonry Guardrail

Historic Integrity:	137 ft. Contributing, 13 ft. Compatible
Structural Stability:	135 ft. Good, 15 ft. Fair
Footing:	Good
Slope Stability:	Good
Wall Height:	2ft.

Mile 10.2 Steel Point (Road Stations 1181-1178)

	258 ft. Stone Masonry Guardrail
Historic Integrity:	248 ft. Contributing, 10 ft. Compatible
Structural Stability:	238 ft. Good, 20 ft. Fair
Footing:	Good
Slope Stability:	Good
Wall Height:	2 ft.

Mile 11.2 Cleetwood Backflow Parking Area (Road Stations 1162-1155)

	353 ft. Stone Masonry Guardrail
Historic Integrity:	283 ft. Contributing, 22 ft. Non-contributing, 48 ft. Compatible
Structural Stability:	92 ft. Fair, 261 ft. Good
Footing:	Fair
Slope Stability:	Fair
Wall Height:	2 ft.

Mile 11.3 Parking Area (Road Station 1149)

	66 ft. Stone Retaining Wall and Stone Guardrail
Historic Integrity:	59 ft. Contributing, 6 ft. Compatible
Structural Stability:	66 ft. Fair
Footing:	Fair
Slope Stability:	Fair
Wall Height:	2 ft-14 ft.

Mile 11.9 Parking Area (Road Stations 1091-1088)

	209 ft. Guardrail, 88 ft. Retaining Wall
Historic Integrity:	264 ft. Contributing, 11 ft. Non-contributing, 22 ft. Compatible
Structural Stability:	265 ft. Good, 32 ft. Fair
Footing:	Fair
Slope Stability:	Fair-Good
Wall Height:	3 ft.-6 ft.

Mile 12.8 Palisade Point, Substation #5-B (Road Stations 1068-1065)

	378 ft. Stone Masonry Guardrail
Historic Integrity:	363 ft. Contributing, 15 ft. Compatible
Structural Stability:	250 ft. Fair, 128 ft. Poor
Footing:	Fair-Poor
Slope Stability:	Fair
Wall Height:	2 ft.

Mile 14.5 Grotto Cove #1, Substation #5-C (Road Stations 956-953)

	229 ft. Stone Masonry Guardrail with Stone Curbing
Historic Integrity:	229 ft. Contributing
Structural Stability:	229 ft. Good
Footing:	Good
Slope Stability:	Good
Wall Height:	2 ft.

Segment 7-B Totals

Total linear feet:	Stone Guardrail	3133 ft.	
	Stone Retaining Wall	363 ft.	
	Stone Parapet Wall	229 ft.	
	Stone Curbing	223 ft.	
Character and Integrity:			
Contributing:	Stone Guardrail	2855 ft.	91%
	Stone Retaining Wall	324 ft.	89%
	Stone Parapet Wall	229 ft.	100%
	Stone Curbing	223 ft.	100%
Non-contributing:	Stone Guardrail	33 ft.	1%
	Stone Retaining Wall	11 ft.	3%
Compatible:	Stone Guardrail	245ft.	8%
	Stone Retaining Wall	28 ft.	8%
Structural Stability:			
	Stone Guardrail	3133 ft.	
	Stone Retaining Wall	324 ft.	

	Stone Parapet Wall	229 ft.	
	Stone Curbing	223 ft.	
Stone Guardrail	Poor	264 ft.	8%
	Fair	842 ft.	27%
	Good	2027 ft.	65%
Stone Retaining Wall			
	Fair	98 ft.	31%
	Good	224 ft.	69%
Stone Parapet Wall	Good	229 ft.	100%
Stone Curbing	Good	223 ft.	100%

Segments 7-C and 7-C1: Mile 14.5-23.4
Grotto Cove to Kerr Notch

Mile 14.6 Grotto Cove #2, Substation #5-C (Road Stations 949-946)

	112 ft. Stone Curbing, 289 ft. Stone Guardrail[2]
Historic Integrity:	289 ft. Guardrail and Curbing Contributing
Structural Stability:	280 ft. Guardrail Good, 9 ft. Fair, 289 ft. Stone Curbing Good
Footing:	Good
Slope Stability:	Good
Wall Height:	2 ft.

Mile 15.3 Skell Head, Observation Station #6 (Road Stations 915-909)

	445 ft. Stone Guardrail, 144 ft. Parapet Wall, 557 ft. Stone Curbing
Historic Integrity:	445 ft. Stone Guardrail Contributing, 120 ft. Parapet Wall Contributing, 24 ft. Compatible, 557 ft. Curbing Contributing
Structural Stability:	445 ft. Stone Guardrail Fair 32 ft. Parapet Wall Fair, 112 ft. Parapet Wall Poor 500 ft. Stone Curbing Good, 57 ft. Stone Curbing Fair
Footing:	Poor
Slope Stability:	Fair-Poor
Wall Height:	4 ft-11 ft.

Mile 16.7 Scott Bluffs Parking Area (Road Stations 837-831)

559 ft. Stone-Retaining walls

[2]Discrepancies in total feet of stone curbing and stone guardrail are evident and are unable to be rectified without additional fieldwork.

Historic Integrity:	481 ft. Contributing, 64 ft. Non-contributing, 49 ft. Compatible, 67 ft. missing
Structural Stability:	380 ft. Fair-Good, 112 ft. Poor, 67 ft. missing
Footing:	Good
Slope Stability:	Good
Wall Height:	6 ft.-18 ft.

Mile-18.9 Cloudcap, Observation Station #7 (Road Stations 726-724)

	238 ft. Parapet Wall and Stone Guardrail, 200 ft. Stone Curbing
Historic Integrity:	238 ft. Parapet and Guardrail Contributing, 200 ft. Stone Curbing-Contributing
Structural Stability:	238 ft. Parapet Wall and Stone Guardrail Fair to Good
	185 ft. Stone Curbing Good, 15 ft. Fair
Footing:	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	4 ft.-6 ft.

Mile 21.0 Cottage Rocks (Pumice Castle) Substation #7A (Road Station 604)

	133 ft. Stone Masonry Guardrail, Parapet Wall and Curbing
Historic Integrity:	133 ft. Stone Guardrail, Parapet Wall and Curbing Contributing
Structural Stability:	133 ft. Parapet Wall Fair-Good, 130 ft Curbing Fair, 3ft Curbing Poor
Footing :	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	4 ft.

Mile 21.2 Sentinel Point, Substation #7-B (Road Stations 587-585)

	247 ft. Stone Masonry Guardrail and Parapet Wall and Curbing
Historic Integrity:	239 ft. Stone Guardrail and Parapet Wall Contributing, 9 ft. Stone Guardrail and Parapet Wall Non-contributing, 239 ft. Stone Curb-Contributing
Structural Stability:	239 ft. Stone Masonry Guardrail and Parapet Wall Fair-Good, 239 ft.-Curbing Fair
Footing:	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	4 ft.

Mile 21.5 Reflection Point, Substation #7-C (Road Stations 576-573)

	391 ft. Stone Masonry Guardrail, Parapet Wall and Stone Curbing
Historic Integrity:	386 ft. Contributing, 5 ft. Non-contributing
Structural Stability:	372 ft. Stone Masonry Guardrail Good, 13 ft. Stone Masonry Guardrail Fair, 377 ft. Curbing Good, 9 ft. Curbing Fair
Footing:	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	3.5 ft.

Mile 22.8 Anderson Point (Road Stations 517-515)

	223 ft. Stone Retaining Wall
Historic Integrity:	200 ft. Contributing, 23 ft. Non-contributing
Structural Stability:	187 ft. Fair, 36 ft. Poor (missing)
Footing :	Good
Slope Stability:	Good
Wall Stability:	Fair-Good
Wall Height:	6 ft-14.5 ft.

Mile 23.4 Kerr Notch, Observation Station #8 (Road Stations 477-475)

	168 ft Stone Parapet Wall, Guardrail and Curbing
Historic Integrity:	168 ft. Contributing
Structural Stability:	168 ft. Good
Footing:	Good
Slope Stability:	Good
Wall Height:	7 ft.

Segment 7-C and 7C-1 Totals

Total linear feet:	Stone Guardrail[3]	2011 ft.	
	Stone Parapet Wall	1495 ft.	
	Stone Retaining Wall	817 ft.	
	Stone Curbing	1905 ft.	
Character and integrity:			
Contributing:	Stone Guardrail [4]	1924 ft.	96%

[3] Discrepancies in total linear feet of stone guardrail are evident and are unable to be rectified without additional fieldwork. Total feet of stone guardrail is 2012 feet, which differs from the information provided in Appendix I of the Rim Drive Cultural Landscape Report, which suggests that 1211 linear feet of stone guardrail is present.
[4] Discrepancies in total percentage of stone guardrail are evident and are unable to be rectified without additional

	Stone Parapet Wall	1452 ft.	97%
	Stone Retaining Wall	681 ft.	83%
	Stone Curbing	1905 ft.	100%
Non-contributing:	Stone Guardrail	35 ft.	2%
	Stone Parapet Wall	29 ft.	2%
	Stone Retaining Wall	87 ft.	11%
	Stone Curbing	0 ft.	
Compatible:	Stone Guardrail	53 ft.	3%
	Stone Parapet Wall	14 ft.	1%
	Stone Retaining Wall	49 ft.	6%
Structural stability:			
	Stone Guardrail	2011 ft.	
	Stone Parapet Wall	1495 ft.	
	Stone Retaining Wall	817 ft.	
	Stone Curbing[5]	1905 ft.	
Stone Guardrail	Poor	125 ft.	6%
	Fair	394 ft.	20%
	Good	1492 ft.	74%
Stone Parapet Wall	Poor	153 ft.	10%
	Fair	502 ft.	34%
	Good	840 ft.	56%
Stone Retaining Wall	Poor	215 ft.	26%
	Fair	187 ft.	23%
	Good	415 ft.	51%
Stone Curbing	Poor	13 ft.	1%
	Fair	334 ft.	17%
	Good	1568 ft.	82%

Segment 7-D: Mile 23.4-27.1
Kerr Notch to Sun Notch

Mile 23.9 Dutton Cliff Parking Area #1 (Road Stations 466-459)

	966 ft. Stone Masonry Guardrail
Historic Integrity:	605 ft. Contributing, 346 Non-contributing, 15 ft. Compatible
Structural Stability:	107 ft. Fair, 859 ft. Poor
Footing:	Fair
Slope Stability:	Fair

fieldwork. Total linear feet of stone guardrail adds up to 101%, rather than 100%.

[5] Discrepancies in total feet of stone curbing are evident and are unable to be rectified without additional fieldwork. Total feet of stone curbing is 1915 feet, which differs from the information provided in Appendix I of the Rim Drive Cultural Landscape Report, which suggests that 1905 linear feet of stone curbing is present.

Wall Stability:	Poor
Wall Height:	3 ft.
Note:	Much guardrail missing: retaining wall dry laid except for Road Station 459.

Mile 24.0 (Road Stations 456-455)

	148 ft. Stone Retaining Wall, Guardrail (destroyed)
Historic Integrity:	148 ft. Retaining Wall Contributing, 148 ft. Stone Guardrail Non-contributing
Structural Stability:	148 ft. Retaining Wall Good, 148 ft. Poor Guardrail
Footing :	Good
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	11ft-13ft.

Mile 24.1 Dutton Cliff Parking Area #2 (Road Stations 453-450)

	258 ft. Stone Guardrail
Historic Integrity:	162 ft. Non-Contributing (destroyed), 96 ft. Contributing
Structural Stability:	162 ft. Poor, 96 ft.-Fair
Footing:	Fair
Slope Stability:	Fair
Wall Stability:	Fair
Wall Height:	3 ft.

Mile 24.2 (Road Stations 449-446)

	479 ft. Stone Retaining Wall and Guardrail
Historic Integrity:	184 ft. Contributing, 36 ft. Non-contributing, 23 ft. Compatible, 236 ft. Non-
	non-contributing (destroyed)
Structural Stability:	100 ft. Good, 107 ft. Fair, 272 ft. Poor
Footing:	Good
Slope Stability:	Good
Wall Stability:	Fair-Good
Wall Height:	4 ft–32 ft.

Mile 24.4 Dutton Cliff Parking Area #3 (Road Stations 444-443)

	178 ft. Stone Retaining Wall and Stone Guardrail
Historic Integrity:	129 ft. Contributing, 32 ft. Non-contributing, 18 ft. Compatible
Structural Stability:	141 ft. Fair, 37 ft. Poor
Footing:	Good

Slope Stability:	Good
Wall Stability:	Good
Wall Height:	6 ft.-20 ft.

Mile- 24.5 Dutton Ridge Parking Area #4 (Road stations 443-438)

	889 ft. Stone Guardrail
Historic Integrity:	23 ft. Non-contributing (destroyed), 25 ft. Compatible, 841 ft. Contributing
Structural Stability:	678 ft. Good, 194 ft. Fair, 37 ft. Poor
Footing:	Fair
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	3 ft.

Mile 26.2 Sun Grade (Road Stations 332-326)

	1058 ft. Stone Guardrail, 152 ft. Stone Retaining Wall
Historic Integrity:	1011 ft. Contributing, 26 ft. Non-contributing, 35 ft. Compatible
Structural Stability:	473 ft. Good, 518 ft. Fair, 67 ft. Poor (Stone Guardrail)
Footing:	Fair-Good
Slope Stability:	Good
Wall Stability:	Good
Wall Height:	4 ft.

Mile 26.7 Sun Grade (Road Stations 313-296)

	2365 ft. Stone Guardrail, 923 ft Retaining Wall
Historic Integrity:	1965 ft. Stone Guardrail Contributing, 336 ft. Retaining Wall Non-contributing,145 ft. Stone Guardrail Non-contributing, 255 ft. Compatible
Structural Stability:	703 ft. Good, 1339 ft. Fair, 323 ft. Poor
Footing:	Fair
Slope Stability:	Fair
Wall Stability:	Fair
Wall Height:	3ft.-6ft.

Segment 7-D Totals

Total linear feet:	Stone Guardrail [6]	6356 ft.	
	Stone Retaining Wall	2182 ft.	
Character and integrity:			
Contributing:	Stone Guardrail	4847 ft.	76%
	Stone Retaining Wall	1239 ft.	57%
Non-contributing:	Stone Guardrail	1054 ft.	17%
	Stone retaining wall	587 ft.	27%
Compatible:	Stone guardrail	471 ft.	7%
	Stone Retaining Wall	356 ft.	16%
Structural stability:			
	Stone Guardrail	6356 ft.	
	Stone Retaining Wall	2182 ft.	
Stone Guardrail	Poor	1905 ft.	30%
	Fair	2502 ft.	39%
	Good	1949 ft.	31%
Stone Retaining Wall[7]	Poor	681 ft.	31%
	Fair	358 ft.	16%
	Good	1113 ft.	51%

Segment 7-E

No retaining walls or guardrails are found in this road segment.

[6] Discrepancies in total linear feet of stone guardrail are evident and are unable to be rectified without additional fieldwork. Total linear feet of stone guardrail is 6372 feet, which differs from the information provided in Appendix I of the Rim Drive Cultural Landscape Report that suggests that 6356 linear feet of stone guardrail are present.
[7] Discrepancies in percentage totals of stone retaining walls are evident and are unable to be rectified without additional fieldwork. Percentage of stone retaining walls only totals 98%, rather than 100%.

Crater Lake National Park, Oregon

Appendix D: Rim Drive Historic District Site Plan

Cultural Landscapes Inventory
Pacific West Region
August 2011

Sources: USGS Seamless Server
2010 NPS GPS Data
NR nomination

Crater Lake

Mazama Rock (5-A)
Pumice Point
Cleetwood Cove (NC)
Palisade Point (5-B)
N Entrance Rd.
North Junction (NC)
Merriam Point
W Rim Dr.
Glacial Scratches (3-C)
Devil's Backbone (3-B)
BEGIN SEGMENT 7-B
Diamond Lake Overlook (3-A)
Watchman Overlook (NC)
Substation 2-D
Watchman Trail and Watchman (NC)
Union Peak Overlook (2-C)
Wizard Island
Lightning Springs Trail
Wizard Overlook (2-B)
Substation 2-A
Discovery Point
Substation 1-A
Discovery Point Trail
BEGIN SEGMENT 7-A
Sinnott Memorial (NC)
Rim Village
Pacific Crest National Scenic Trail
Dutton Creek
Park Headquarters
END SEGMENT 7-E
Castle Crest Wildflower Trail (NC)
Munson Valley Rd.
Vidae Falls
E Rim Dr.
Sun Notch
BEGIN SEGMENT 7-E
Sun Grade
Grayback Rd.
Grotto Cove (5-C)
BEGIN SEGMENT 7-C
Skell Head
Cloudcap
Cloudcap Spur Road
View of Mount Scott (6-A)
Pumice Castle Overlook (7-A)
Sentinel Rock Overlook (7-B)
Reflection Point (7-C)
E Rim Dr.
Mt. Scott
Mt. Scott Trail (NC)
Kerr Notch
BEGIN SEGMENT 7-D
Dutton Cliff
Pinnacles Rd. (East Entrance)
Grayback Rd.

lake
stations & substations
Rim Drive CLI boundary
other roads
trails
streams
50' contours
10' contours
(NC) Non-Contributing

4000'

CRLA Rim Drive Historic District CLI
Contributing and Non-contributing Feature List

Feature type	Current name	Historic Name	Contributing or Non Contributing in CLI boundary	Notes
8 Original Observation Stations (6 Contributing)				
Observation Station	Mile 15.3 Skell Head Observation Station (Road Stations 920-910)		C	7-C NR Contributing Lange Parking Overlook
Observation Station	Mile 18.9 Cloudcap Observation Station (Road Stations 726-724)		C	7-C NR Contributing Lange Parking Overlook
Observation Station	Mile 23.4 Kerr Notch Observation Station (Road Stations 477-475)	Phantom Ship Overlook	C	7-C NR Contributing Lange Parking Overlook
Observation Station	Mile 1.1 Discovery Point Observation Station (Road Stations 56-60)		C	reached by trail, mileage and RS are for parking area
Observation Station	Mile 6.1 Merriam Point Observation Station (Road Stations 1403-1400)		C	reached by short walk, mileage and RS are for road wye
Observation Station	Mile 9.3 Pumice Point Observation Station (Road Stations 1230-1222)		C	
Observation Station	Watchman Observation Station		NC	Non-contributing to CLI, but contributing to NR Historic District property. Watchman Lookout and portion of trail listed in 1988; the observation station and lookout reached by trail, .7 mi
Observation Station	Sinnott Memorial Observation Station		NC	Non-contributing to CLI, but contributing to NR Historic District property. Sinnott Memorial listed in 1988; station reached by paved Victor Rock Trail from Rim Village
15 NR Listed Contributing Substations				
Substation	Mile 1.0 Unnamed Substation #1-A east of Discovery Point (nr Road Station 52)		C	reached by trail, near Discovery Point Parking Area
Substation	Mile 1.7 Unnamed Substation #2-A (Road Station 86)		C	7-A
Substation	Mile 2.3 Wizard Island Overlook Substation #2-B (Road Station 116-118)		C	7-A
Substation	Mile 3.0 Union Peak Overlook Substation #2-C (Road Stations 154-157)		C	7-A
Substation	Mile 3.4 Substation #2-D (Road Stations 179-182)		C	7-A
Substation	Mile 4.5 Diamond Lake Overlook Substation #3A (Road Stations 233-235)		C	7-A
Substation	Mile 5.4 Devils Backbone Substation #3B (Road Station 281)		C	7-A
Substation	Mile 5.7 Glacial Scratches Substation #3-C (Road Stations 299-301)		C	7-A
Substation	Mile 11.8 Mazama Rock Substation #5-A(Road Stations 1125-1124)		C	7-B
Substation	Mile 12.8 Palisade Point Substation #5-B (Road Stations 1068-1065)		C	7-B
Substation	Mile 14.6 Grove Cove Substation #2 #5-C (Road Stations 949-946)		C	7-C NR Contributing Lange Parking Overlook
Substation	Mile 18.0 Substation nr wye, Cloudcap spur rd #6-A (Road Station 770)		C	7-C
Substation	Mile 21.0 Pumice Castle Substation #7-A (Road Station 604)	Cottage Rocks, Castle Rock	C	7-C NR Contributing Lange Parking Overlook
Substation	Mile 21.2 Sentinel Rock Substation #7-B (Road Stations 587-585)	Victor View, Sentinel Point	C	7-C NR Contributing Lange Parking Overlook
Substation	Mile 21.5 Reflection Point Substation #7-C (Road Stations 576-573)		C	7-C NR Contributing Lange Parking Overlook
13 NR Listed Contributing Parking Areas				
Parking Area	Mile 5.5 Parking Area (Road Stations 290-293)		C	7-A
Parking Area	Mile 5.8 Parking Area (Road Station 302-303)		C	7-A
Parking Area	Mile 9.6 Parking Area #1 (Road Station1209-1206)		C	7-B
Parking Area	Mile 9.6 Parking Area #2 (Road Station 1203-1202)		C	7-B
Parking Area	Mile 9.9 Parking Area (Road Stations 1195-1194)		C	7-B
Parking Area	Mile 11.2 Cleetwood Backflow Parking Area (Road Station 1162-1155)		C	7-B

CRLA Rim Drive Historic District CLI
Contributing and Non-contributing Feature List

Feature type	Current name	Historic Name	Contributing or Non Contributing in CLI boundary	Notes
Parking Area	Mile 11.3 Parking Area (Road Station 1149)		C	7-B
Parking Area	Mile 11.9 Parking Area (Road Stations 1091-1088)		C	7-B
Parking Area	Mile 16.7 Scott Bluffs Parking Area (Road Stations 837-831)		C	7-C
Parking Area	Mile 23.9 Dutton Cliff Parking Area #1 (Road Stations 453-450)		C	7-D
Parking Area	Mile 27.1 Sun Notch Parking Area (Road Stations 280-277)		C	7-E
Parking Area	Mile 28.6 Vidae Falls Parking Area (Road Stations 207-205)		NC	7-E Non-contributing to CLI, but contributing to NR Historic District property. Counted as part of the Vidae Falls Fill Area and Service Road.
Parking Area	Mile 31.0 Castle Crest Wildflower Trail Parking Area (Road Stations 37-36)		NC	7-E Non-contributing to CLI, but contributing to NR Historic District property. Counted as part of the Castle Crest Wildflower Trail CLI
4 NR Listed Trails (4 Contributing)				
Trail	Discovery Point Trail		C	
Trail	Watchman Trail		NC	Non-contributing to CLI, but contributing to NR Historic District property. Already documented in a separate CLI
Trail	Mount Scott Trail		NC	Non-contributing to CLI, but contributing to NR Historic District property. May warrant additional documentation and a separate CLI in the future
Trail	Castle Crest Wildflower Trail		NC	Non-contributing to CLI, but contributing to NR Historic District property. Already documented in a separate CLI
3 Non-Contributing Sites				
Site	Watchman Overlook		NC	
Site	North (Diamond Lake) Junction		NC	
Site	Cleetwood Cove		NC	