Exhibit Home

Overview

Welcome to the **Historic Columbia River Highway** — an exhibit celebrating the centennial of the dedication of the Columbia River Highway in June 1916. This exhibit explores the history and design of the highway along with showcasing some of the scenic beauty surrounding it.

A detail of a vintage postcard shows Latourell Bridge looking toward Crown Point. (Oregon State Archives, Private Donation Postcards)

Contents

Introduction and Context

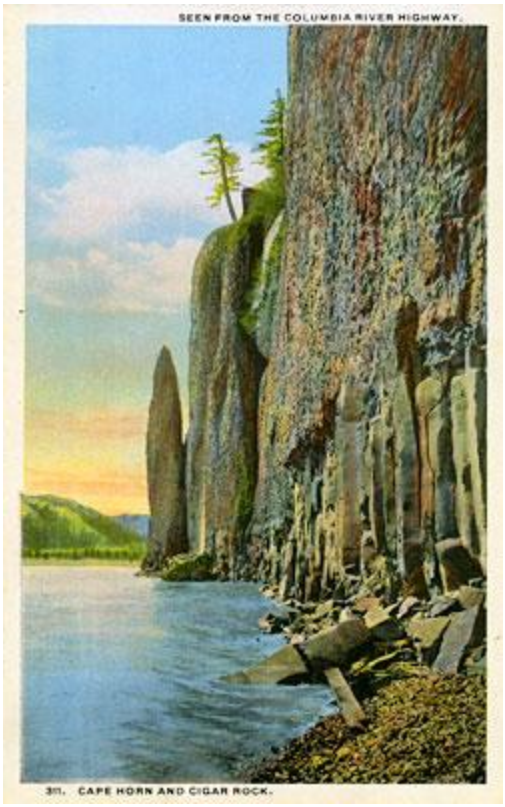
About the Exhibit

This exhibit celebrates the centennial of the dedication of the Columbia River Highway in June 1916. It combines vintage photographs and postcards with modern scenic photographs to give the viewer a taste of the history and beauty of the highway and the surrounding Columbia River Gorge. Most of the photographs are from the Oregon State Archives holdings. Maps, diagrams and descriptive text add to the story of the highway.

The iconic windows of Mitchell Point Tunnel west of Hood River. The tunnel was later destroyed after a road bypass. (**Image 0017 Historic Photograph Collection (https://www.salemhistory.net/digital/collection/orarc/id/198/rec/1)**)

About the Highway

The highway, later renamed the Historic Columbia River Highway, was built between 1913 and 1922. The historic route ran from Troutdale at the west end to The Dalles at the east end, about 75 miles in total. The oldest scenic highway in the country, its engineering excellence inspired the construction of other scenic roads nationwide. Among other recognitions, the highway has been designated as a National Historic Landmark.



A vintage postcard shows Cape Horn and Cigar Rock across the river from the Historic Columbia River Highway. (Oregon State Archives, Private Donation Postcards)

Context: An Explosion of Car Ownership

During the 1910s, Henry Ford refined the assembly line for producing his soon to be ubiquitous Model T Ford. By 1913, a new Model T rolled off the line every three minutes and into a dealer showroom where it could be purchased for a few hundred dollars. The plummeting price soon put more middle and working class Americans in the driver's seat.

The Push for Better Roads

Not surprisingly, these millions of new drivers demanded better paved roads and state and local governments responded to the clamor. Oregon created the State Highway Commission in 1913 to coordinate highway building policy statewide. There was much work to be done. At the time, most roads were dirt, leaving travelers choking in clouds of dust in the summer and wallowing in axle-deep mud in the winter.

The Ultimate Road Building Team

Entrepreneur Sam Hill wanted faster progress on the path to good roads. He dreamed of building a highway to rival the best scenic roads of Europe. And he saw the perfect route in the Columbia River Gorge, where the mighty river cuts through the Cascade Mountains, leaving a dramatic landscape punctuated by sweeping vistas, towering cliffs and lush waterfall canyons.

Hill enlisted his friend, engineer Sam Lancaster, to take the lead in what would become a county-state partnership backed by powerful Portland boosters. Lancaster didn't shrink from the daunting challenge of creating a road worthy of the natural beauty of the Gorge. Using the most advanced engineering available, he routed the highway near the most spectacular waterfalls and viewpoints. Both Hill and Lancaster saw the highway as a showcase for the integration of human ingenuity and nature, an artful marvel of modern times.

A Brief Golden Age and Then a Bypass

The highway was completed in 1922 to rave reviews. Tourism expanded along with new hotels, stores and campgrounds. But the growing size and number of cars and trucks traveling the route quickly overwhelmed the highway. It could not be both a serene scenic road and a major east-west transportation corridor.

Plans soon developed to build a new water-level route that would be wider and straighter than the existing highway to accommodate traffic needs. In the process, some sections of the historic highway were abandoned beginning in the 1930s. Others were destroyed during the construction of the new highway. Eventually, Interstate 84 was built to handle the demands of modern car and truck traffic.

A vintage postcard shows tourists taking in the view from near Vista House at Crown Point. (Oregon State Archives, Private Donation Postcards)

Renewed Interest and Restoration

While the route can never be fully returned to its glory of the 1920s, during the last two decades, the state has restored several significant sections of the historic highway, including some for pedestrian and bicycle traffic only. Further improvements are underway.

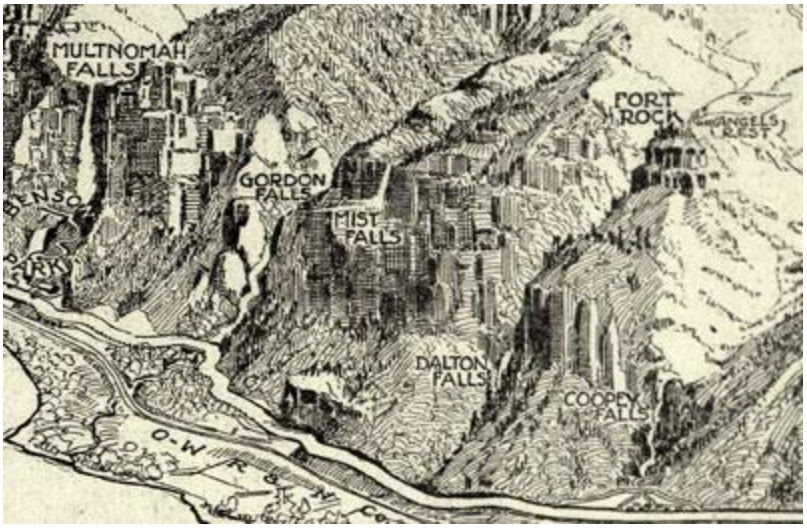
Explore the Exhibit

Learn more about this engineering gem, also known as the "King of Roads," in the exhibit that follows...

Current and Vintage Maps

Current Historic Columbia River Highway Map

The Columbia River Gorge's geography and climate vary significantly from Troutdale to The Dalles, ranging from lush green temperate rain forests to tan-colored savannas. This map provides context for the images displayed in this exhibit. It also shows major parks and other features as well as recreational opportunities along the Historic Columbia River Highway.



This detail is from a bird's-eye map of the Columbia River Highway printed in the Jan. 1, 1915 edition of the Portland *Morning Oregonian*.

(**Historic Oregon Newspapers (https://oregonnews.uoregon.edu/)**)

Vintage Historic Columbia River Highway Map

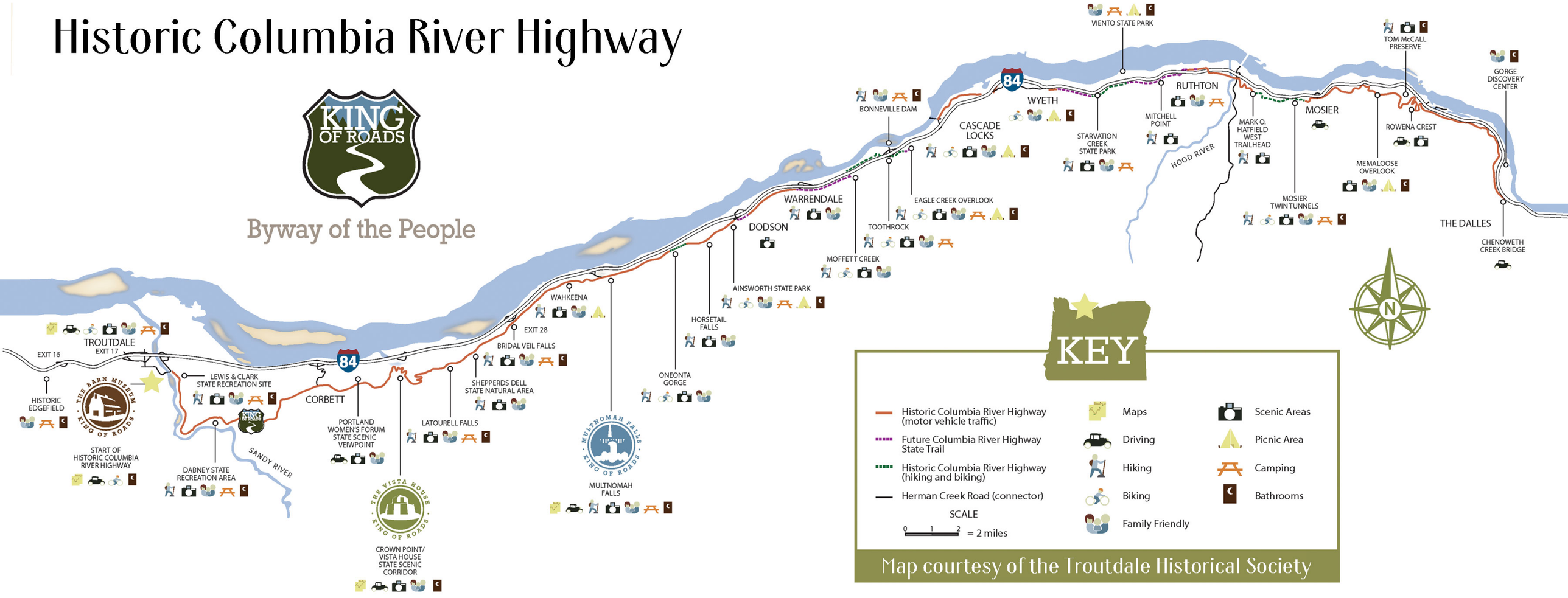
This two-page spread map in the Jan. 1, 1915 issue of the Portland *Morning Oregonian* newspaper displays a bird's-eye perspective of attractions on the Columbia River Highway from Astoria to Hood River. Because it was published in the midst of construction in 1915, the map offers a unique historical view of the highway. Newspapers and magazines in Oregon and nationally covered the construction of the highway, hailing it as an engineering feat and celebrating it as a glimpse of future possibilities elsewhere.

Vintage Map courtesy David Rumsey Map Collection at Stanford University Libraries (https://searchworks.stanford.edu/view/12375021).

Historic Columbia River Highway

KING OF ROADS

Byway of the People



KEY

- Historic Columbia River Highway (motor vehicle traffic)
- Future Columbia River Highway State Trail
- Historic Columbia River Highway (hiking and biking)
- Herman Creek Road (connector)

SCALE

0 1 2 = 2 miles

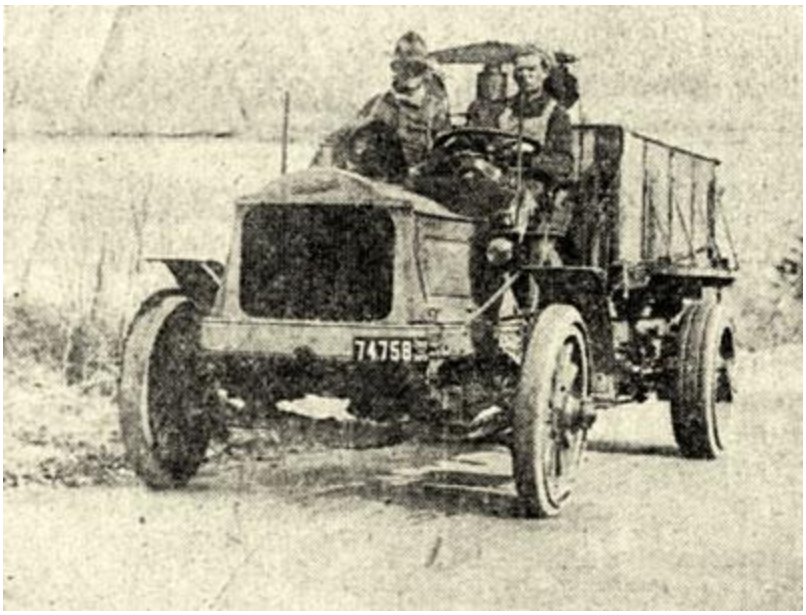
- Maps
- Driving
- Hiking
- Biking
- Family Friendly
- Scenic Areas
- Picnic Area
- Camping
- Bathrooms

Map courtesy of the Troutdale Historical Society

History

The Historic Columbia River Highway has been the subject of many highs and lows in its century of existence. Hailed as an engineering marvel in its early years, it soon fell victim to society's fixation on speed and efficiency and was largely bypassed by a more modern highway. The highway suffered the ultimate indignity in 1966 when the iconic Mitchell Point Tunnel was completely destroyed. But now many sections have been restored and the highway is again celebrated as a "poem in stone."

A Winding Road



A Packard five-ton dump truck carries paving mix for use on the Columbia River Highway near Wyeth circa 1920. The image is from the March 28, 1920 edition of the Portland *Sunday Oregonian*. (**Historic Oregon Newspapers (https://oregonnews.uoregon.edu/)**)

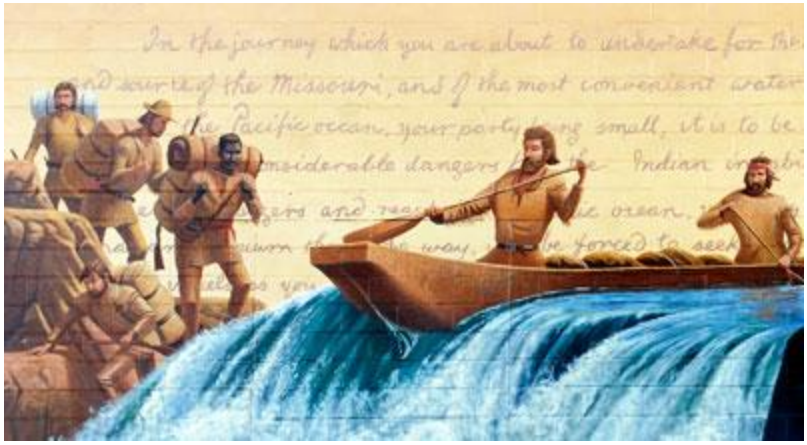
Before the Highway

The Columbia River Gorge had a rich transportation history before the highway was constructed in the early 1900s. A thriving Native American fishing and trading economy based near the falls at Celilo dated back countless generations. This mural in The Dalles by Robert Thomas shows Celilo Falls salmon fishing. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/20162#lg=1&slide=0)**)

The River Corridor

Nature destined the Columbia River Gorge to be a transportation corridor. The imposing Cascade Mountains to the north and south of the river create arduous travel conditions in the best of times.

Native Americans traveled the river in dugout canoes for thousands of years. In fact, the nearby trading village of Celilo on the banks of the river was the oldest continuously inhabited community on the North American continent before it and Celilo Falls were submerged by the construction of The Dalles Dam in 1957.



The Lewis and Clark Expedition used dugout canoes in 1805 to travel the Columbia River. Detail of mural in The Dalles by Gary Kerby. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/142681#lg=1&slide=0)**)

Many travelers on the Oregon Trail boarded rafts near The Dalles for the final leg of the journey to Oregon City. Detail of mural in The Dalles by Don Crook. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/57078#lg=1&slide=0)**)

Euro-Americans began traveling the Gorge in the 1800s when the Lewis and Clark Expedition traversed the area in 1805. The first major movement of Euro-Americans through the Gorge came in the 1840s when pioneers traveling to the Willamette Valley loaded their covered wagons on log rafts near The Dalles for the dangerous float west to the Sandy River where they would resume an overland route.

Carleton Watkins photographed this train at Tooth Bridge on the Columbia River in 1867. (Oregon State Archives, Scenic Image No. PICT14-1)

Carleton Watkins photographed these boats at Cape Horn along the Columbia River in 1867. (Oregon State Archives, Scenic Image No. PICT7-1)

Technology drove the next major transportation advances in the Gorge. Beginning in 1850, steamboats ferried passengers and cargo on both the Willamette and Columbia rivers, reaching The Dalles a year later. Meanwhile, construction of a rough wagon road on the Oregon bank began in 1856. Finally, the railroad extended the reach of technology in the 1880s with the laying of track on the Oregon bank running from Portland to The Dalles.

As often happens with new technology, the growth of the railroad led to the demise of the wagon road and severely diminished the role of river boats in the Gorge. This type of disruptive advance would replay later in the transportation history of the area.

Steamboats plied the waters of the Columbia River carrying cargo and passengers beginning in the second half of the 1800s. This mural in The Dalles by Robert Thomas and Debbi Lunz shows the Umatilla House hotel on the riverbank and steamboats on the Columbia River at The Dalles. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/20155#lg=1&slide=0)**)

(Source: Historic American Engineering Record (HAER) No. OR036-N)

A Visionary and a Builder

Sam Hill's vision and Sam Lancaster's engineering are reflected in the Historic Columbia River Highway. The design of loops drew on the lessons learned when Lancaster created the privately-built Maryhill Loops experimental road earlier at Sam Hill's Maryhill community on the Washington side of the river. Shown above are the Rowena Loops. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26633#lg=1&slide=0)**)

A Visionary: Sam Hill

Sam Hill (Oregon State Archives)

As with any large project, many people played key roles in moving the Columbia River Highway from a dream to a reality. Simon Benson, John B. Yeon and Henry L. Bowlby, among others, were indispensable to the effort, but Sam Hill drove the vision.

Hill, a tireless attorney and entrepreneur, promoted the better roads for decades. He was inspired by scenic roads in Europe, such as the Swiss Axenstrasse and the route along the Rhine River with its fairytale castles.

When the Washington State Legislature balked at funding his plan for a highway along the north bank of the Columbia River, Hill set his sights on Oregon. He invited the Oregon governor and the entire legislature in February 1913 to Maryhill, his community on the north bank of the river near present-day U.S. 97. There he impressed them with his fervor for good roads and with dramatic lantern slides of beautiful European roads. Hill closed the deal with a personal tour of his stunning privately-built good roads example, the Maryhill Loops experimental road.

The politicians responded in part by forming the Oregon State Highway Commission, but it still lacked power and money. Hill recognized that counties would need to pay much of the costs for building the

Horsetail Falls drops right next to the original alignment of the Columbia River Highway in this postcard depiction. (Oregon State Archives, Private Donation Postcards)

highway. In August 1913, he got the ball rolling by convincing the Multnomah County Commission to fund the start of construction.

Hill also orchestrated the all-important support from Portland's top civic leaders. He secured the backing of Portland's two largest newspapers and all of the attention that they could bring to the cause. And, Hill encouraged the private help of citizens such as lumber baron Simon Benson to donate land and money.

Without Sam Hill's vision and untiring promotion, the Columbia River Highway would not have been possible. The highway as constructed could not have been built earlier and would not have been built later. His timing was perfect.

A Builder: Sam Lancaster

One of Sam Hill's greatest feats was recognizing the talent of engineer Sam Lancaster. While Hill provided the original vision and the civic promotion for the highway, Lancaster oversaw the marriage of art and science in the design of much of the road.

Hill met Lancaster in 1906 and they soon became friends in the cause of good roads. In 1908, Hill invited Lancaster to the First International Road Congress in Paris, where they toured Western European roads with inspiring natural settings and engineering.

A postcard shows tourists enjoying the view from the Columbia River Highway in a vintage car. (Oregon State Archives, Private Donation Postcards)

Sam Lancaster (**Oregon State Archives Scenic Image**

Three years later, Hill hired Lancaster to engineer the construction of the seven-mile long Maryhill Loops Road, which climbed the steep hills from the Columbia River north toward Goldendale, Washington. Since this was envisioned as an experimental and demonstration road, Lancaster had great latitude in the techniques and material used.

(https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/41331#lg=1&slide=0))

This experience proved invaluable when he was called upon to lead the Columbia River Highway effort in 1913. Lancaster fearlessly mapped the alignment of the road while noting that “there is but one Columbia River Gorge [that] God put into this comparatively short space, [with] so many beautiful waterfalls, canyons, cliffs and mountain domes.” Because of this, he sought to bring the highway close to as many of these features as possible.

> **"If the road is completed according to plans, it will rival if not surpass anything found in the civilized world." —Sam Lancaster**

Lancaster developed advanced engineering standards to build the highway. For example, he insisted, in all but rare cases, on limiting the grade to no more than five percent and curves to no less than a 200-foot turning radius.

But beyond technical innovations and his knack for solving challenging engineering problems, Lancaster brought a spiritual and romantic appreciation of nature to the work. Humbled by his responsibility, he carefully studied the landscape before aligning the road. All the while he hoped that “we might have sense enough to do the thing in the right way…so as not to mar what God had put there…"

Construction Work

Workers use a steam shovel to help with the highway construction between Hood River and Mosier in 1915. (Oregon Department of Transportation)

Strong Backs Needed

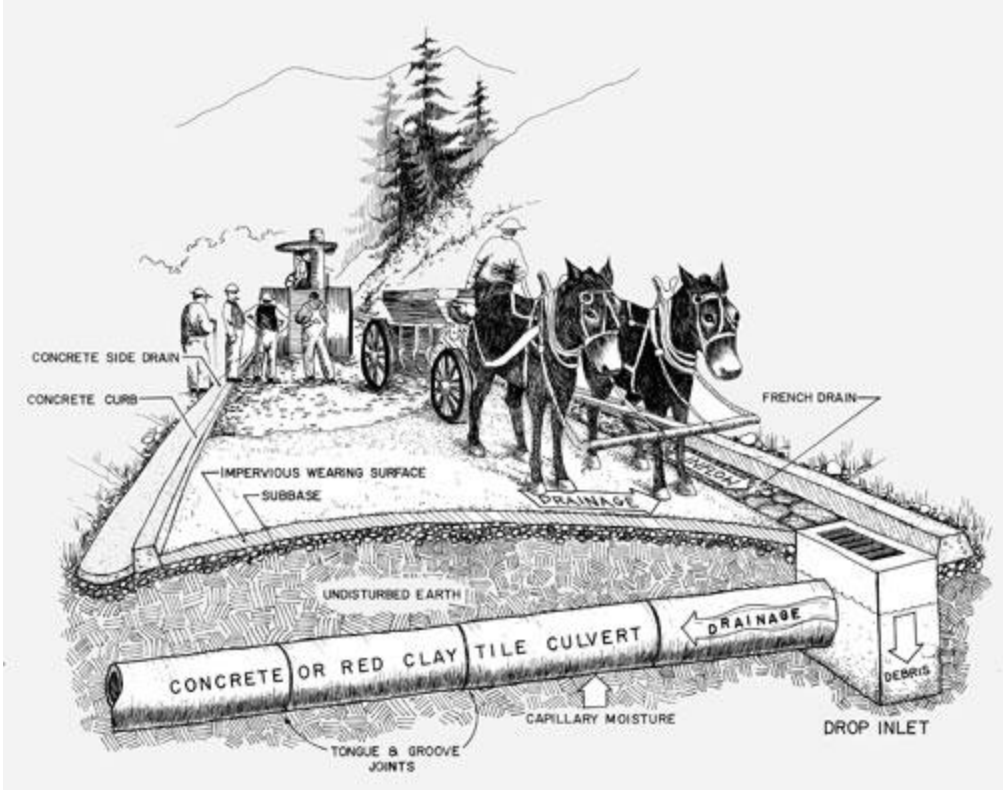
In these days of mammoth road building equipment with air-conditioned cabs and computer-aided operation, it may be difficult to imagine building the Columbia River Highway with the hand tools and primitive mechanical equipment of a century ago.

Men with strong backs built much of the highway, especially in the early years. They relied on picks, shovels, sledgehammers and wheelbarrows to slowly whittle away at the task. Local farmers added to the road crews as day laborers along with loggers who joined the effort after the logging season ended. Volunteers from Portland joined in weekend road crews to speed the progress.

Work camps sprang up during the early stages of construction in late 1913. These served many of the approximately 2,200 workers who toiled on the Multnomah County portion of the road. A man with a team of horses collected $5.00 a day; day laborers earned $2.25.

Gradually, builders employed more and larger powered equipment such as dump trucks and steam shovels. Equipment manufacturers saw rapid change during these pioneering years as designers learned from the weaknesses of equipment under heavy use in the field. And, of course, road builders relied on strategically placed explosives to do much of the heavy lifting.

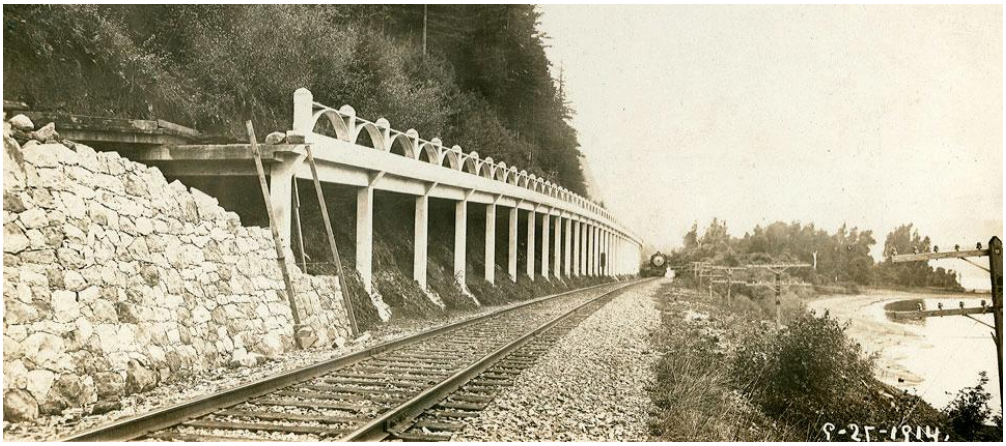
Italian stone masons occupied a unique position among workers on the highway. Samuel Lancaster hired these skilled craftsmen to build retaining walls, arched guard walls and other features along the highway. They also worked on Vista House. Reflecting the art that went into their work, each mason had his own distinct style.



A detail of a paving and drainage description of the historic highway. (Library of Congress, Prints & Photographs Division, **HAER ORE, 26-TROUT.V1- (sheet 10 of 27) (https://www.loc.gov/pictures/resource/hhh.or0386.sheet.00010a/)**)

Workers construct the deck of the McCord Creek Bridge in 1915. (Oregon Department of Transportation)

Workers prepare to pour concrete into forms with rebar during the construction of the Moffett Creek Bridge in 1915. (Oregon Department of Transportation)



A train passes by a viaduct under construction near Multnomah Falls in 1914. (Oregon State Archives, Oregon State Highway Department Photographs)

(Source: Willis, Peg. *Building the Columbia River Highway*. Charleston, SC: The History Press, 2014.)

Multnomah Falls

Multnomah Falls drops 635 feet in two major steps. (Oregon State Archives, Scenic Image No. 20130708-2014)

The Star of the Show

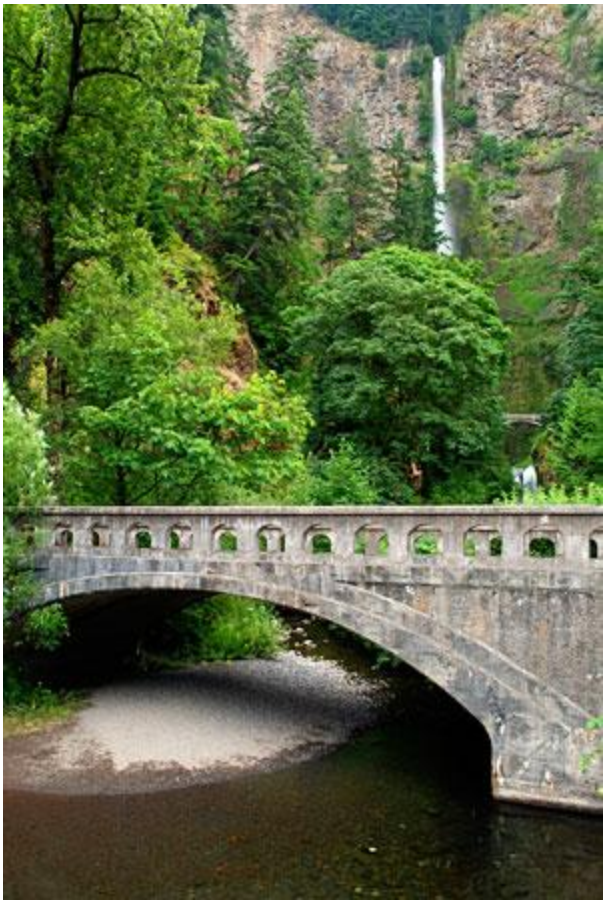
As Oregon's most celebrated waterfall, Multnomah Falls attracts nearly two million visitors from around the world every year. The adjacent Multnomah Falls Lodge adds architectural and historic interest to the site. An extensive hiking trail system in the area provides excellent recreational opportunities and a chance to find solitude in hidden fern-covered canyons away from the noise of Interstate 84.

Formed by the cataclysmic Missoula Floods beginning 15,000 years ago and fed mainly by underground springs, Multnomah Falls drops 635 feet in two major tiers down basalt cliffs. It ranks as the tallest waterfall in Oregon and is one of the most visited tourism sites in the state.

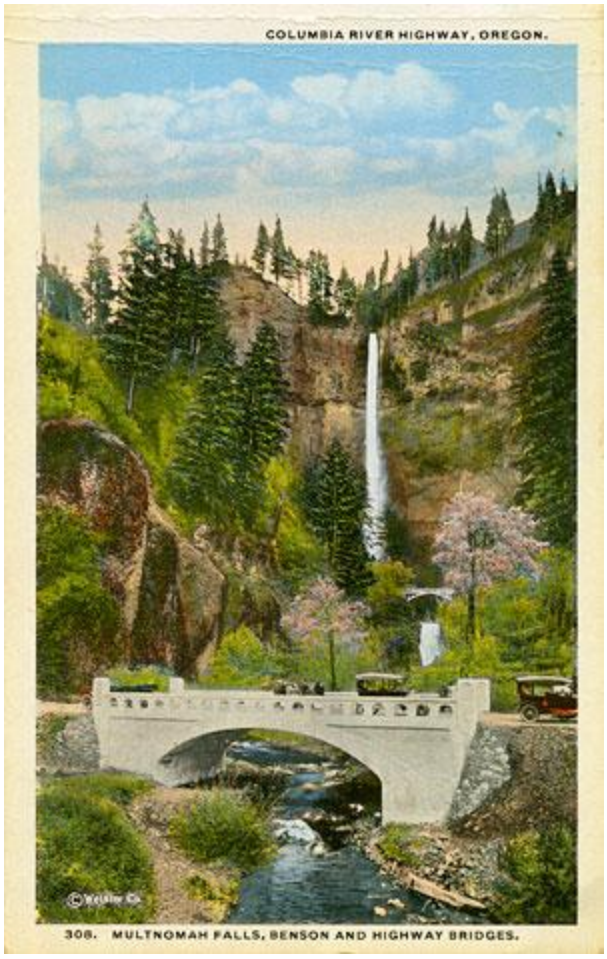
Much of the development around the falls began after Portland lumber baron Simon Benson deeded 300 acres of land around the falls to the City of Portland for a park. He also funded the 1914 construction of the graceful 45-foot Benson Bridge, a footbridge that crosses the falls over 100 feet above the lower pool.

In 1925, the city commissioned accomplished Portland architect, A. E. Doyle, to design Multnomah Falls Lodge near the base of the falls. Doyle built the lodge for $40,000 in the Cascadian style using timber and every type of rock found in the Gorge. Originally the lodge had dormitories and four rooms for overnight stays but the lodging is now a distant memory. Several significant remodels and additions have occurred over the decades. The building now offers tourists a restaurant, interpretive center, gift shop, restrooms and other services.

The U.S. Forest Service gained final ownership of the site and lodge in 1943 and currently contracts for visitor services.



The historic highway bridge over Multnomah Creek with Multnomah Falls in the background in 2010. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/65527#lg=1&slide=0)**)



A vintage postcard shows the historic highway bridge over Multnomah Creek with Multnomah Falls in the background. (Oregon State Archives, Private Donation Postcards)

Multnomah Falls Lodge in 2010. (**Oregon Scenic Images collection**

(https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/65530#lg=1&slide=0))

Multnomah Falls and Multnomah Falls Lodge in the late 1920s. (Oregon State Archives, Private Donation Postcards)

Vista House

Vista House on Crown Point in 2016. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26937#lg=1&slide=0)**)

An Expensive Restroom?

Perched atop Crown Point, one of the most majestic vantage points in the Gorge, Vista House offers tourists a combination of natural beauty, striking architecture and colorful history.

The octagonal building stands 733 feet above the river and serves mainly as a rest station, observatory and pioneer memorial. Designed by Edgar M. Lazarus and completed in 1918, Vista House consists of a basement with restrooms and a gift shop below a ground floor rotunda with stairs leading to an elevated viewing platform. The exterior is sandstone with a green tile roof over stained glass windows. The interior features marble, bronze and numerous architectural details.

Cannon fire highlights the highway dedication and Vista House groundbreaking event at Crown Point on June 7, 1916. (Oregon State Archives, Oregon Supreme Court Photos)

A crowd gathers for the dedication of Vista House on May 5, 1918. (Oregon State Archives, Oregon State Highway Department Photo No. 4525)

Originally budgeted at $12,000, expanding design goals caused costs to balloon to $100,000 by completion. Multnomah County picked up most of the expense. Legend has it that some critics, outraged by the bill, deemed the building the “$100,000 Outhouse.”

While the enthusiastic approval of millions of visitors from around the world proved the critics wrong, the building has cost a great deal of money to maintain over the decades. Winds of over 100 miles per hour are not that rare on the exposed Crown Point. The vagaries of freeze-thaw cycles also wreak havoc

on the structure. State officials tried several restoration projects over the decades, with some attempts causing further damage. In 2001, officials finally closed Vista House for almost five years to comprehensively restore the site and make it more accessible.

The ceiling of Vista House. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/12129#lg=1&slide=0)**)

A vintage postcard shows Vista House and Crown Point. (**Wikimedia Commons (https://commons.wikimedia.org/wiki/Category:Vista_House#/media/File:Crown_Point_and_Vista_House%2c_Columbia_River_Highway%2c_Oregon_%2869070%29.jpg)**)

Reinforcing the beauty of the site as built, a Vista House plaque notes 1915 plans for “a massive hotel to wrap around Crown Point.” This inspiring place could have been very different.

Tourism

A Columbia Gorge Motor Coach System bus in 1928. (Oregon State Archives, Oregon Supreme Court Case File 6664)

An Intoxicating Blend

A section of the new highway opened from Troutdale to Hood River in 1915 and Portlanders quickly embraced it. The next year, the highway gave people the novel pleasure of driving on a paved road through a natural wonderland. The completed route opened up attractions along the way such as Vista House, Multnomah Falls and Rowena Crest. Promoters advertised the road nationally and businesses quickly sprouted up on the highway.

The interior of the bus shown above featured wicker seats and large windows for a great view of the scenery. (Oregon State Archives, Oregon Supreme Court Case File 6664)

Sam Hill captured the mood: "Tourists want three things; a good road to drive on, something worthwhile to see, and something worthwhile to eat. We will cash in, year after year, on our crop of scenic beauty, without depleting it in any way." New hotels, such as Simon Benson's Columbia Gorge Hotel, offered lodging and food. Taverns and roadhouses served locally distilled spirits in spite of Prohibition.

The freedom that cars brought also intoxicated vacationers, many of whom soon preferred auto touring and staying at auto camps to following train schedules and sleeping in stuffy hotels. Other tourists hopped on tour buses. Gas stations, food stands and other businesses also capitalized on the new market. These energized the economies of Gorge towns such as Cascade Locks and Hood River.

The Oregon Parks and Recreation Department now plays a key role in offerings for tourists. Land donated by Simon Benson and others led to the creation of several state parks in the Gorge. Various additions and enhancements have led to the current network of numerous day-use parks, including Vista House, and several parks with camping. These have been designed in accordance with Stephen T. Mather's philosophy of "lying lightly on the land."

The Mitchell Point Auto Park and other businesses straddle the roadway in 1928. Auto campgrounds, roadhouses, service stations, and other services catered to tourists on the highway. (Oregon State Archives, Oregon Supreme Court Case File 6664)

The Columbia Gorge Hotel in Hood River was built in 1921 to capitalize on increased tourism from the new scenic highway. (**Oregon Scenic Images collection**

(https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/58139#lg=1&slide=0))

(Source: "Columbia River Highway, Options for Conservation and Reuse," 1981, Columbia River Highway Project.)

A Portland Chamber of Commerce advertisement for the highway invites tourism on the highway in a 1924 edition of the New York Times newspaper. (Public Domain)

A Water-Level Bypass

Barely a decade after the completion of the historic highway in 1922, the Oregon State Highway Commission produced this 1935 hand-colored drawing by Frank G. Hutchinson of the Proposed New Columbia River Highway at Tunnel Point looking east. (Oregon State Archives, ODOT Highway Division Records, Hutchinson & Spooner Graphic Art Drawings)

The Price of Progress

Progress is a fickle force. Most Oregonians saw the Columbia River Highway as the epitome of progress upon completion in 1922. Soon, it became part of U.S. Highway 30 and joined a modern route that would stretch from Astoria, Oregon to Atlantic City, New Jersey. Quite a change from the prevailing paradigm of dirt roads.

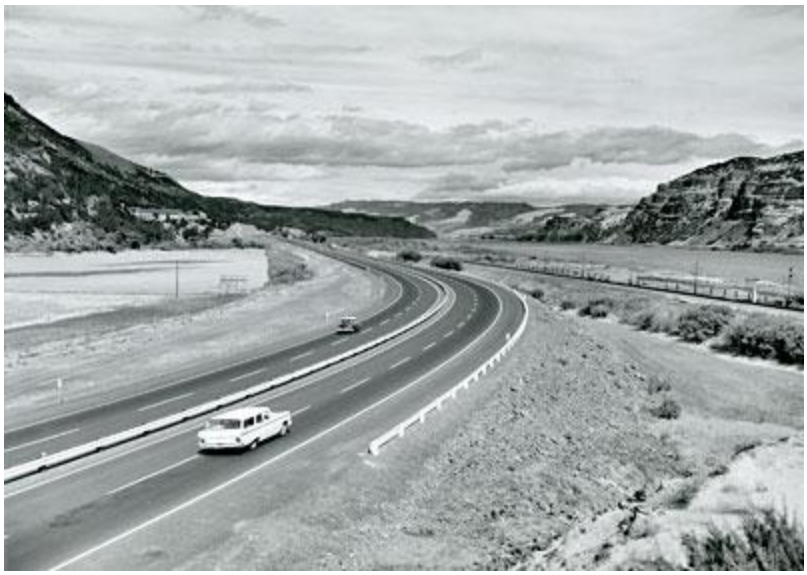
This is the same view as the drawing above. It shows work in 1939 to remove Tunnel Point and make way for the water-level bypass route. (Oregon State Archives, OHD0794)

This 1951 photo shows the abandoned Oneonta Tunnel to the right filled in with rubble as a vehicle drives on the bypass highway. (Oregon State Archives, OHD04906)

But progress kept moving. Cars and trucks grew much larger, faster and more numerous—they were overwhelming the design of the road. The expectations of drivers changed too. The pleasure of a leisurely drive through the Gorge diminished in the face of traffic jams, narrow clearances and frequent rockfall on the road. Sam Lancaster did not value speed when designing the highway, but by the 1930s most drivers would see speed and efficiency as paramount.

Other concrete signs of progress conspired against the highway. Construction of the Bonneville Dam in the 1930s caused officials to realign part of the road near Tooth Rock and Eagle Creek. By 1954, the entire route from Troutdale to The Dalles had been bypassed by the new highway built largely on fill material dredged from the Columbia River. Drivers marveled at the wider, straighter, flatter, safer and more modern roadway—which was, in a word, efficient.

The historic highway meets the shorter U.S. 30 bypass route in 1949 west of Warrendale near the location of the current Interstate 84 exit 35. (Oregon State Archives, OHD4364)



Cars speed by on divided U.S. 30 (later I-84) in 1963, five miles west of The Dalles. Much of this route was built on fill material dredged from the river. (Oregon State Archives, OHD7185)

In the process, some sections of the old highway were abandoned and others were destroyed. The Mitchell Point Tunnel, star of so many postcards, played a poignant role in the history of the highway. After it was bypassed, workers bricked up the five windows, filled the tunnel with rock, and blocked the viaducts leading to the entrances. The ultimate indignity came in 1966 when the tunnel was completely destroyed during the widening of what would become Interstate 84.

(Source: HAER No. OR036-N)

Highway Restoration

Restoration of the Mosier Twin Tunnels in 2000 marked a significant milestone in the effort to rebuild the historic highway from Troutdale to the Dalles. This view, from 2016, looks west and shows a window to the right. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26801#lg=1&slide=0)**)

Restoring the Dream

By 1954, a new bypass route left much of the middle 35 miles of the scenic highway between Dodson and Hood River destroyed or cut off. Still, 24 miles of the western end and 15 miles of the eastern end remained intact and accessible to tourists even after the bypass. And with most of the traffic moved to the new road, what was left of the old route could be refocused on its scenic purpose.

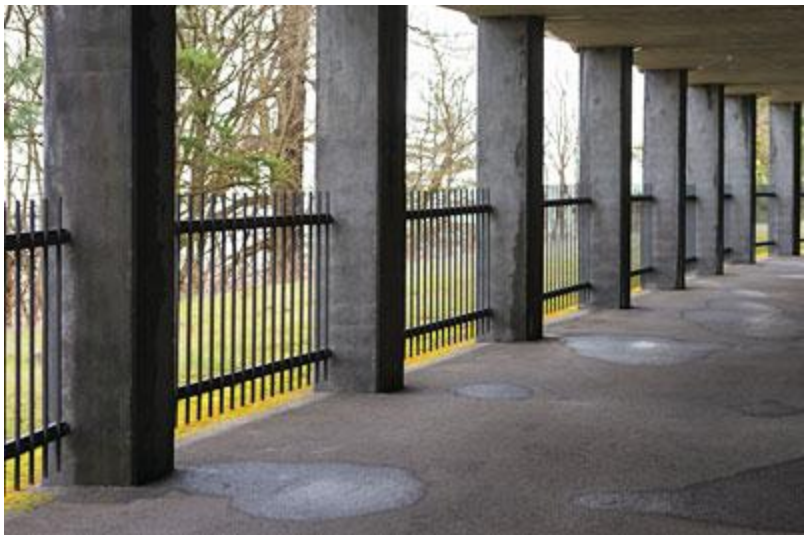
New masonry work at a dramatic viewpoint on a non-motorized part of the restored highway east of Hood River. (**Oregon State Archives, Scenic Image No. DSC66-8 (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/61194#lg=1&slide=0)**)

The restored Oneonta Tunnel, too narrow for modern traffic, sits right next to the current alignment of the highway. (**Oregon State Archives, Scenic Image No. 20160316-9554 (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26892#lg=1&slide=0)**)

In the last 20 years, restoration efforts have brought several sections of the highway to life after many decades of neglect or loss. This work has been bolstered by a number of recognitions related to much of

the route, including designation as a National Historic Landmark in 2000. By 2015, 63 of the original 74 miles of the Historic Columbia River Highway were open for travel. About 13 miles of that include what is now called the Historic Columbia River Highway State Trail, which is open only to foot and bicycle traffic.

Officials dedicated 6.5 miles of this trail west of Cascade Locks in 1999. A year later they opened the trail between Hood River and Mosier, including 5 miles of paved surface and a renovation of the Mosier Twin Tunnels. By 2012, a 1.5-mile addition made it possible to bicycle from Portland to Cascade Locks without traveling on Interstate 84. Work on a trail from Wyeth to Starvation Creek is now underway.



A long concrete catchment now protects pedestrians from falling rock just west of the Mosier Twin Tunnels. (**Oregon State Archives, Scenic Image No. 20160316-9475 (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26825#lg=1&slide=0)**)

Smooth pavement, great views and the absence of motorized traffic make the five-mile stretch of the historic trail between Hood River and Mosier a favorite for pedestrians and bicyclists. (**Oregon State Archives, Scenic Image No. 20160316-9415 (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26771#lg=1&slide=0)**)

The most challenging restoration will focus on the last five-mile section of trail that includes Mitchell Point, site of the iconic five-window tunnel that was destroyed in 1966. This presents the same problem that the original road builders faced: the point is too steep to go over and there is no place to go around. Officials are considering several options but believe that a tunnel is a likely solution again.

(Source: Historic Columbia River Highway 2015 Progress Report)

Design and Engineering

Many of the images and descriptions in this section are adapted from the Historic American Engineering Record (HAER) documentation of the Historic Columbia River Highway. Diagrams, maps, images and text explain key construction features such as highway alignment, bridges, viaducts, tunnels and the use of masonry. Vintage postcards as well as historic and scenic photographs further illustrate the descriptions.

Marrying Art and Science

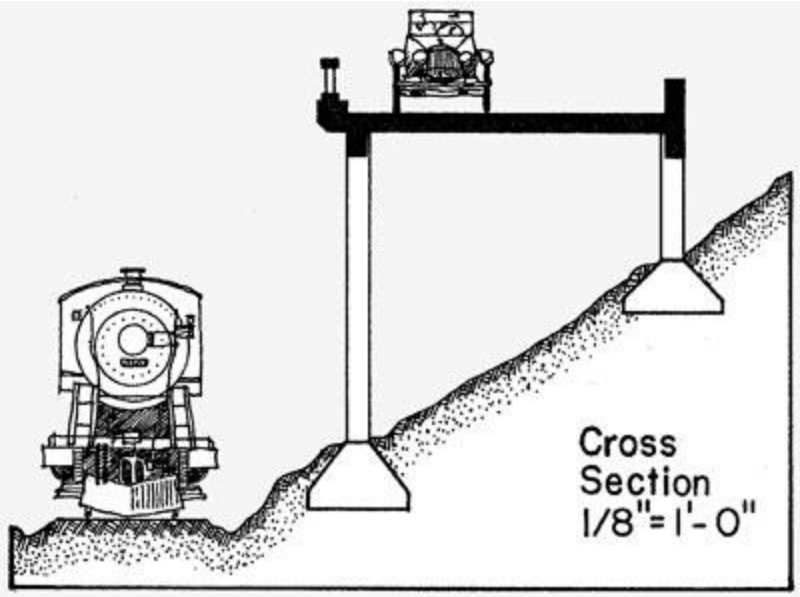
Grading and Alignment

Bridges

Masonry

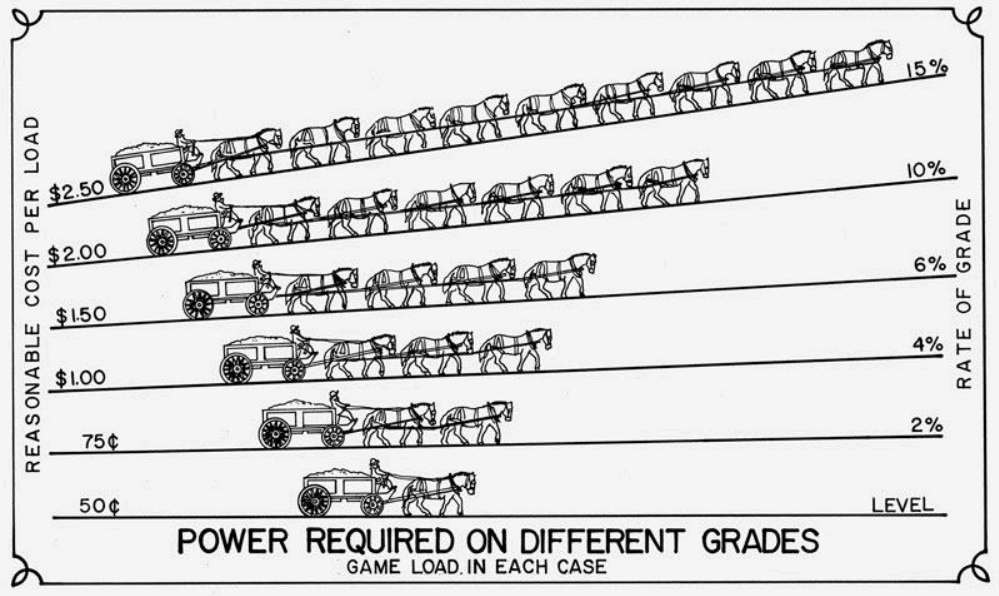
Viaducts

Tunnels



A detail of a description of viaducts on the historic highway. (Library of Congress, Prints & Photographs Division, **HAER ORE, 26-TROUT.V1- (sheet 13 of 27) (https://www.loc.gov/pictures/resource/hhh.or0386.sheet.00013a/)**)

Grading and Alignment

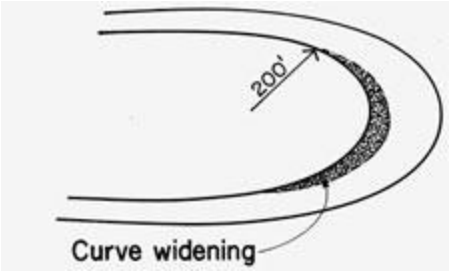


Maximum Grades

Sam Lancaster used the figure shown above to illustrate how more gradual slopes could lower the cost of transporting freight. At the time, wagon roads in the Columbia River Gorge typically used grades of 10 to 20 percent in order to negotiate the rugged terrain. Based on his experiments at Maryhill, Lancaster found that 5 percent grades created safer and more pleasant inclines. (Image: Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 9 of 27))

Minimum Radius and Curve Widening

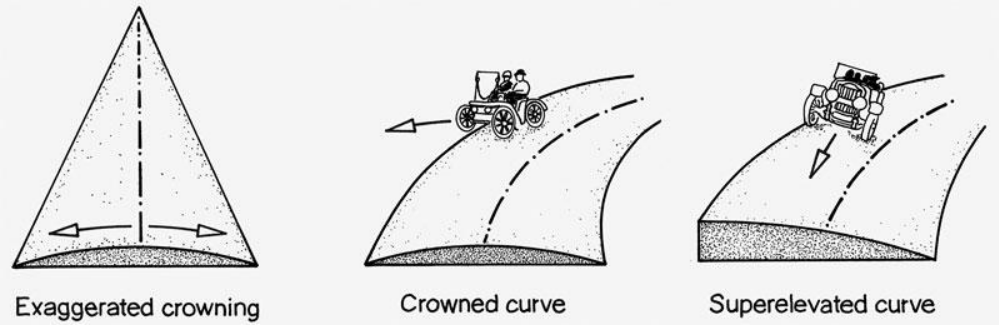
In order to eliminate dangerous hairpin turns often found on mountain roads of the period, designers followed standards that included a minimum turning radius of 200 feet. They allowed some exceptions, such as those related to loops described below, but never created a turning radius of less than 100 feet. The roadway was also gradually widened from 2 to 6 feet on the inside area of curves to increase safety for cars. (Image: Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 9 of 27))



Crowning and Superelevation

Highway designers have long relied on crowning, in which the road is sloped down from the middle to the shoulder, to drain water away from the driving surface. This avoids water collecting in pools that could cause tires to dangerously hydroplane or lose traction. However, these slopes, combined with the natural properties of curves, tend to pull vehicles off the road. Instead, designers developed curve banking, or sloping the road in the direction of the inside of the curve, to take advantage of the

centrifugal forces associated with curves. This "superelevation" allows drivers on today's modern roadways to maintain speeds in curves that would otherwise require them to slow down. In contrast, the designers of the Historic Columbia River Highway decided that "any curve necessitating a super-elevation was dangerous and speed should be slackened and in any case should be enough to prevent side-lash to passengers in a machine at 25 miles an hour; but that the general rule should be nearer a speed of 15 miles per hour." The historic highway does use superelevation, but it is mostly to enhance water drainage in curves. (Image: Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 9 of 27))

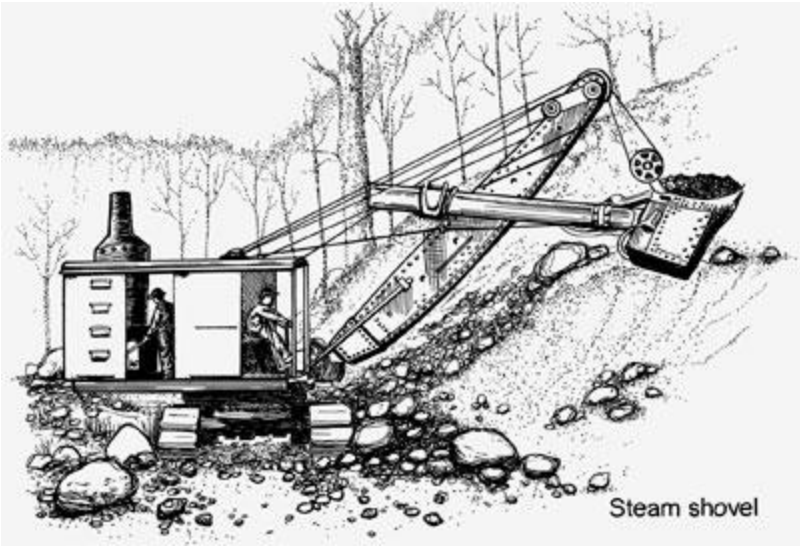


Continuous Curves

The Historic Columbia River Highway is known for its continuous curves, which offer great scenic views and enhance the aesthetic experience. But these reversing curves serve more practical purposes as well. The meandering route was longer in distance than straight stretches and this allowed designers to use shallower grades between the same points. Less cutting and filling of the terrain, such as is common along modern highways and freeways, was needed because the continuous curves could trace the natural terrain better than straight roads. Finally, according to the Historic American Engineering Record, connecting continuous curves also "eliminated potential flat spots between, where crowning might remain level until the next curve. Water collecting there could be potentially hazardous to drivers and also lead to pavement breakdown."

Equipment

Contractors excavated the roadbed of the Historic Columbia River Highway with a combination of men, horses and heavy machinery. In one case, 30 men, aided by a steam shovel with a 20-cubic-yard dipper, four large air drills, two 15-ton dinkeys (small locomotives) and 30 4-yard ore cars moved 1,600 cubic yards of overburden and rock during an 8-hour day.



An illustration of a steam shovel similar to those used on the historic highway. (Library of Congress, Prints & Photographs Division, **HAER ORE, 26-TROUT.V1-(sheet 9 of 27)** **(https://www.loc.gov/pictures/resource/hhh.or0386.sheet.00009a/)**)

Workers used horse-drawn scraping graders similar to this one at the Collier Logging Museum near Chiloquin. (**Oregon Scenic Images collection** **(https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/15815#lg=1&slide=0)**)

Loops

The steep and rugged terrain of the land available for building the highway in some locations along the route created challenges in maintaining the standard minimum radius and maximum grade. For

example, the road at Crown Point wound around a bluff to Latourell Falls, creating the need to drop 600 vertical feet within a 40-acre tract. Designers solved the problem by looping the road back and forth down the hill, thus developing distance between the starting and ending points and keeping the maximum grade at 5 percent. They did compromise by cutting the standard 200-foot curve radius to 100 feet, but compensated for this by reducing the grade by one percent for every 50-foot reduction in curve radius.

The Rowena Loops just east of Rowena Crest. (Oregon State Archives, Private Donation Postcards)

A view of the Rowena Loops in 2012. (Oregon State Archives, Scenic Image No. D7K-0106)

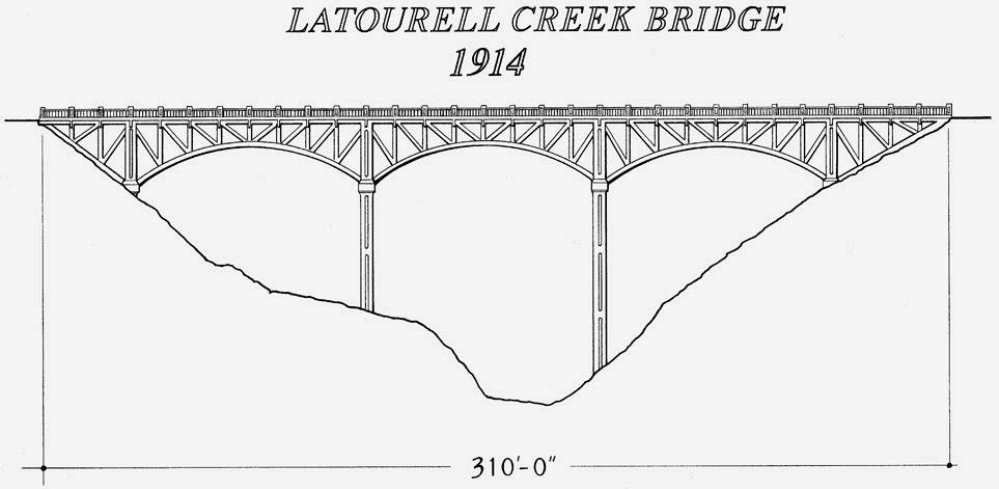
Credit

Most of the information on this page was adapted from the Historic American Engineering Record, National Park Service, Helen Selph & Elaine G. Pierce, 1995. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 9 of 27))

Official web site of

Oregon Secretary of State

Bridges

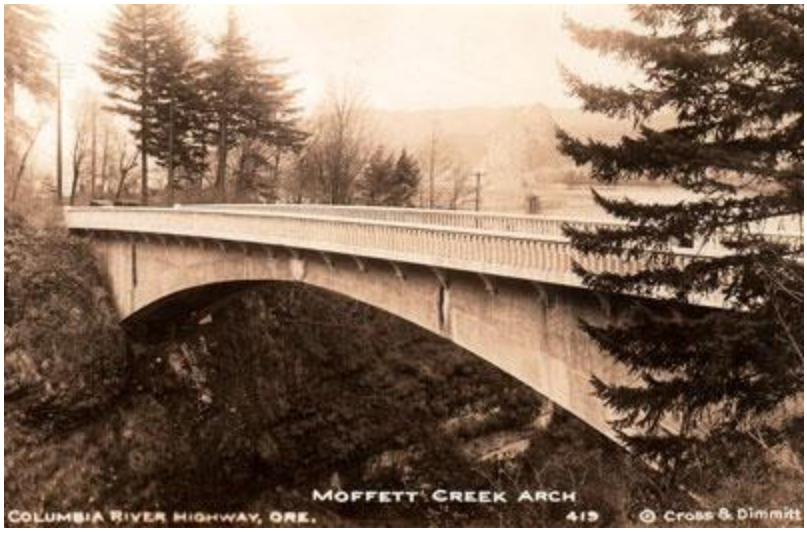


Functional and Artful Design

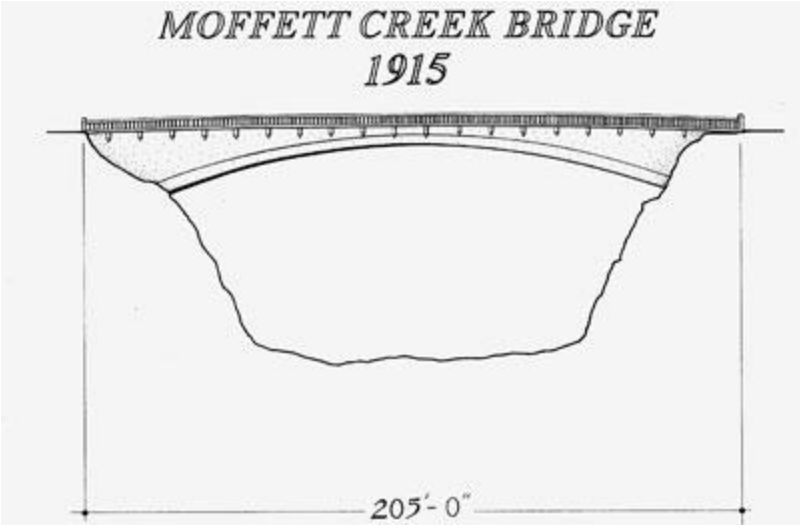
State Bridge Engineers C.H. Purcell, K.P. Billner and L.W. Metzger produced the innovative designs for the bridges built between Troutdale and Eagle Creek on the Columbia River Highway. Latourell Creek Bridge, shown in a drawing above, along with Shepperd's Dell Bridge and Moffett Creek Bridge, are worthy examples of their creativity. According to the Oregon Bridges Recording Project, "Latourell Bridge was the lightest reinforced concrete three-span deck arch on the highway. Shepperd's Dell is a deck arch design with a unique solid curtain wall above the center of the arch. Moffett Creek Bridge was the longest single span three-hinged deck arch in the United States in 1915." (Library of Congress, Prints & Photographs Division, HAER ORE,26-PORT,11- (sheet 1 of 1))

Shepperd’s Dell Bridge shown on a vintage postcard. (Oregon State Archives, Private Donation Postcards)

Shepperd's Dell Bridge in 2013. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/24513#lg=1&slide=0)**)

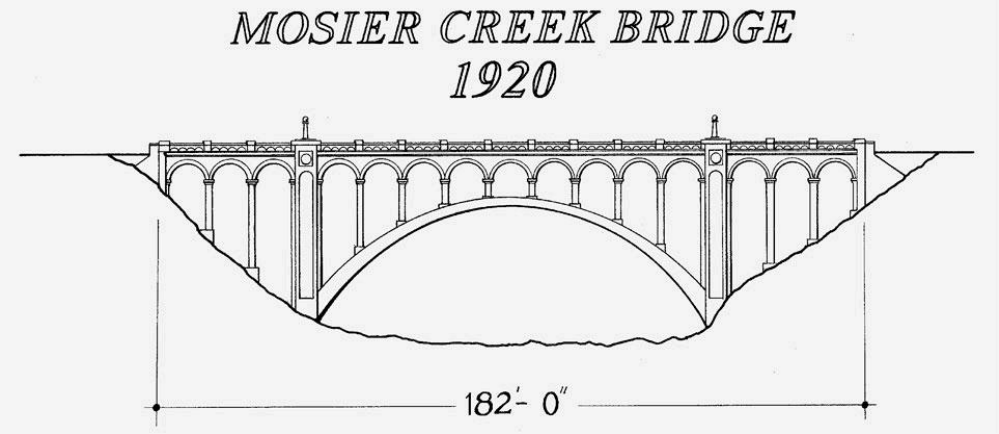


Moffett Creek Bridge shown on a postcard. (Oregon Department of Transportation)

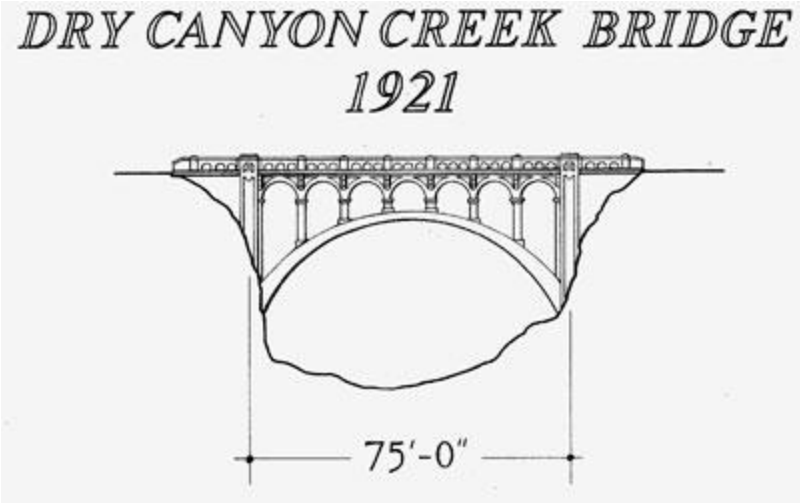


A drawing of Moffett Creek Bridge. (Library of Congress, Prints & Photographs Division, **HAER ORE,26-PORT,11- (sheet 1 of 1)** **(https://www.loc.gov/pictures/resource/hhh.or0317.sheet.00001a/)**)

The Conde McCullough Era



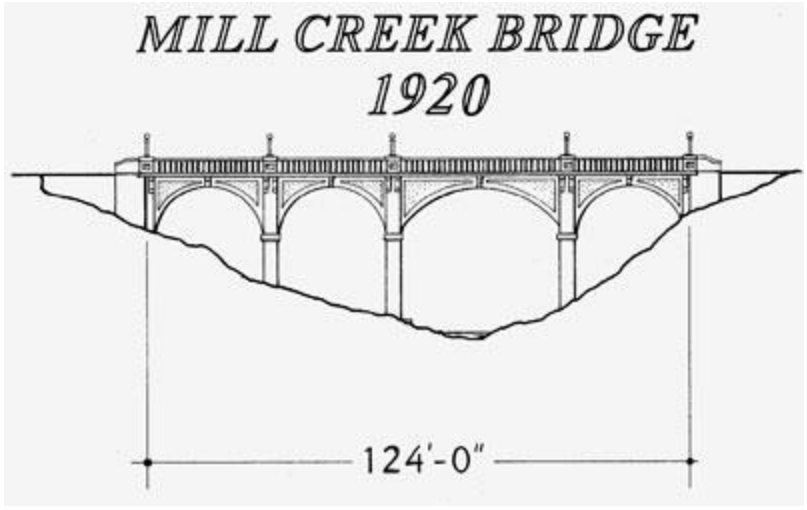
In 1919, the State Highway Commission hired Conde B. McCullough to serve as the state bridge engineer. McCullough assumed the work of Sam Lancaster and followed the same inspiration to design bridges along the highway to complement the stunning scenic beauty of the Columbia River Gorge. McCullough designed three bridges that connected the highway to The Dalles. According to the Oregon Bridges Recording Project, the designs of the Mosier Creek and Dry Canyon bridges were influenced by the rib arch form of K.P. Billner's Shepperd's Dell Bridge. McCullough went on to design some of Oregon's most iconic bridges, including the Yaquina Bay Bridge at Newport, Coos Bay Bridge at North Bend and the Alsea Bay Bridge at Waldport. (Library of Congress, Prints & Photographs Division, HAER ORE,26-PORT,11- (sheet 1 of 1))



A drawing of Dry Canyon Creek Bridge. (Library of Congress, Prints & Photographs Division, HAER ORE,26-PORT,11- (sheet 1 of 1))

Dry Canyon Creek Bridge. (**Library of Congress, HAER ORE,33-ROW,1-2 (https://www.loc.gov/pictures/resource/hhh.or0297.photos.131156p/)**)

Mosier Creek Bridge in 2016. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26751#lg=1&slide=0)**)



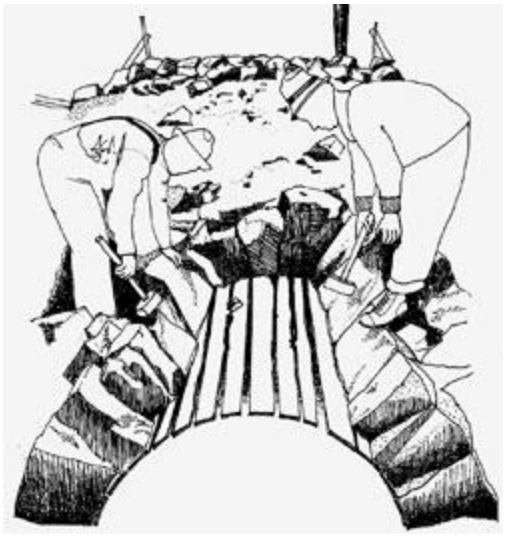
A drawing of Mill Creek Bridge. (Library of Congress, Prints & Photographs Division, HAER ORE,26-PORT,11- (sheet 1 of 1))

Credit

Most information on this page about Multnomah County and Wasco County bridges was adapted from the Oregon Bridges Recording Project, Historic American Engineering Record OR-56, National Park Service, Todd A. Croteau, Richard L. Koochagian, Gretchen Van Dusen, Rafael Villalobos, 1995.

Masonry

A masonry wall sits atop a moss-covered retaining wall along the highway near Shepperd's Dell. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/24498#lg=1&slide=0)**)



Masons build a culvert. Image provided by Maryhill Museum, Goldendale, Washington. (Library of Congress, Prints & Photographs Division, **HAER ORE, 26-TROUT.V1- (sheet 12 of 27) (https://www.loc.gov/pictures/resource/hhh.or0386.sheet.00012a/)**)

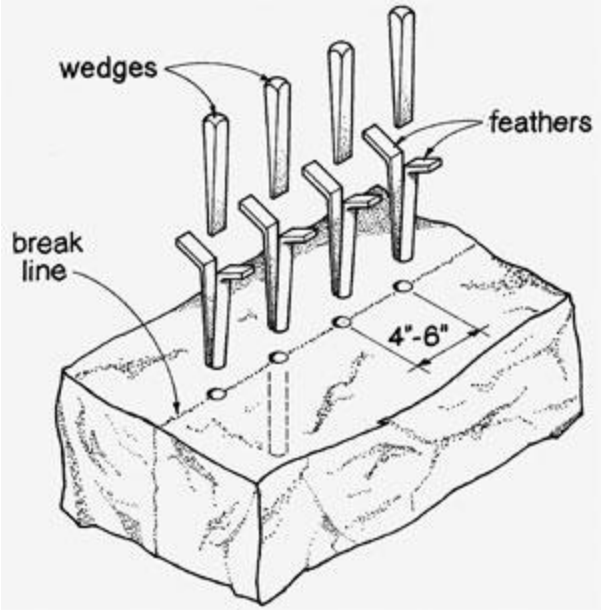
Note: Most information on this page is based on 1995 interviews with Richard Fix, master mason.

Italian Craftsmen

Visitors to the Historic Columbia River Highway marvel at the masonry along the road. Many of the arched guard walls, retaining walls, water stops and culverts were built by Italian craftsmen hired by Sam Lancaster to create functional and artful features along the highway.

Dressing

Rock used for masonry was brought in from as far away as a mile, but most of it was taken from the immediate vicinity of the work site. Moving larger rocks required a special technique that included the use of hand star drills. These tools, which work something like a jackhammer without the pneumatic assistance, made holes into which workers inserted pins. They then strung cables through the pins to move the rock to a work area where it could be broken into smaller pieces using feathers and wedges. Feathers were put into holes drilled along a desired break line about 4-6 inches apart. The masons would then gently tap each wedge into a feather along the break line. Tapping too hard could result in an undesired break. This painstaking sequence would then be repeated until the rock was split. Masons shaped smaller rocks using stone hammers and bushing hammers. This dressing process worked best when the rock was "green," within a month of being cut.



Dressing rock. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 12 of 27))

Patterns

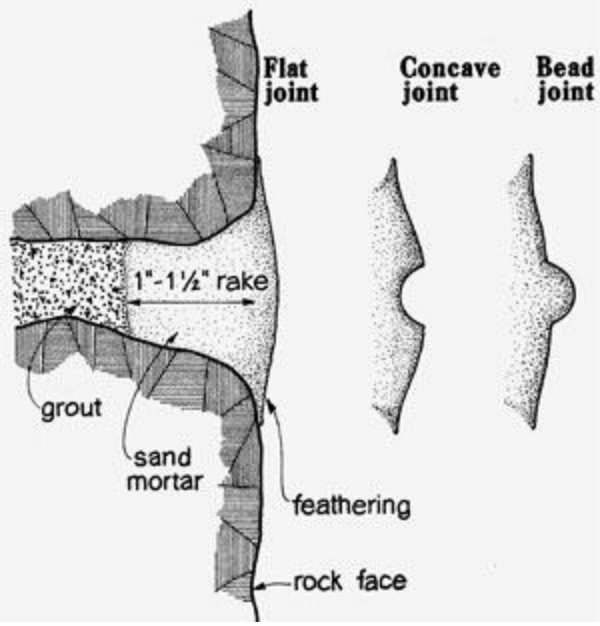
Random rubble, as shown in step 3 below, uses irregularly shaped rocks laid without a discernible pattern. Each mason developed his own individual style. This style was manifested in everything from the preferred size of rocks to the amount of time spent dressing the stones or tooling the joints.

Ashlar patterns, as shown in the retaining wall illustration below, display attention to uniformity of height in rock courses. Masons built many walls along the highway with ashlar facing on the front and random rubble on the back.

Arches

Visitors enjoy the picturesque appearance of masonry wall arches, but the arches also serve the more practical purpose of improving drainage. Both the wall itself and the road surface could be undermined by water pooling behind a solid wall. The arches provide a path for the water to leave the road.

Some of the arches built into masonry walls were semi-circular but most were semi-elliptical (a sort of elongated semi-circle) for several very practical reasons. Semi-elliptical arches could span greater distances under the same 30-inch rail height than semi-circular arches. This resulted in the use of less rock for a given length of wall. The semi-elliptical arches also used significantly less labor. Semi-circular arches required masons to dress the arch stones in a roughly identical shape to fit the curved pattern. Semi-elliptical arches, on the other hand, were flatter so that once the bottom of the arch was formed, the rest of the stones could be more easily dressed because of their straight lines.



Mortar joints. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 12 of 27))

Mortar Joints

Once a masonry wall was built, a mason would rake the concrete grout joints so that they were recessed about 1 to 1.5 inches from the face of the rock. He then filled the resulting channel with a finish mortar consisting mostly of fine sand applied with a small grout bag. Any excess mortar was then "feathered to the stone" or evenly spread to hide irregularities and make the joints appear uniform in width. Masons often used a bead joiner to tool the joint to curve inward gracefully.

For the best results, this finishing mortar was applied while the coarser wall grout was still wet in order to form a good bond. However, in practice on the Historic Columbia River Highway, the crew that finished the mortar joints often arrived days after the grout had set, resulting in "cold joints" that were prone to flaking off over time.

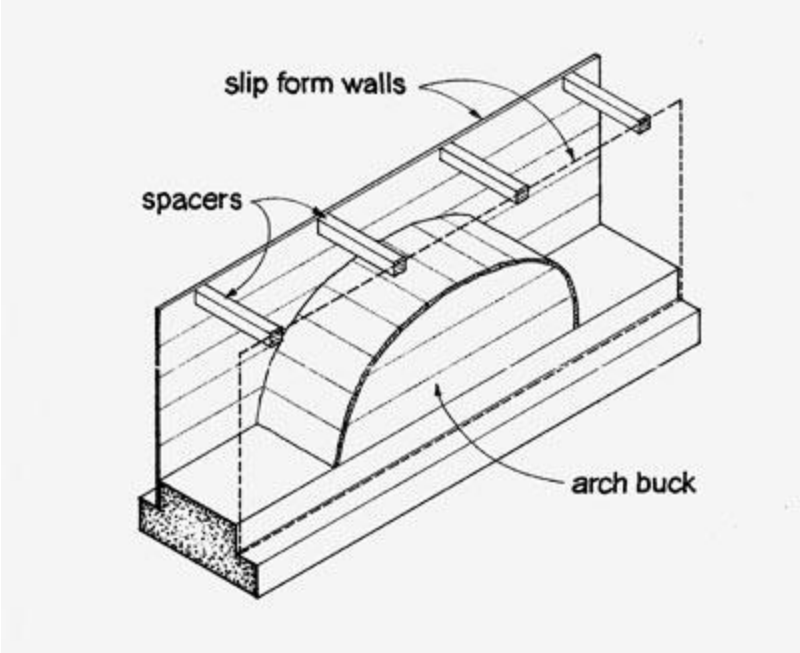
This image of a retaining wall with guard rocks shows ashlar patterns. Image provided by Oregon Historical Society (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 12 of 27))

Retaining Walls and Guard Rocks

In addition to the grout and mortar masonry walls, several miles of retaining walls were constructed along the highway. In contrast to the mortar sealed walls, these walls were "dry laid" without mortar to allow water to drain away from the bed of the road instead of undermining it. To keep the walls sloped consistently, masons used batter boards (temporary wooden frameworks) as well as jack lines (string guide lines). Many of the retaining walls were capped with guard rocks that continued the slope of the wall and kept traffic on the roadway. Masons shaped the semi-circular inside faces of these guard rocks with bush-hammers.

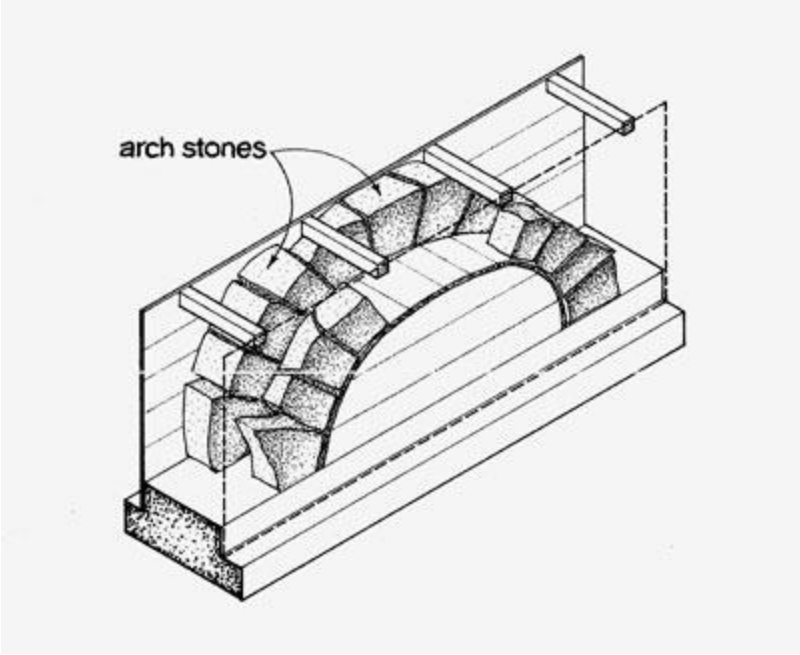
Process: Building a Slip-Form Grout-Lock Wall

(Images and text: Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT. V1-(sheet 12 of 27))



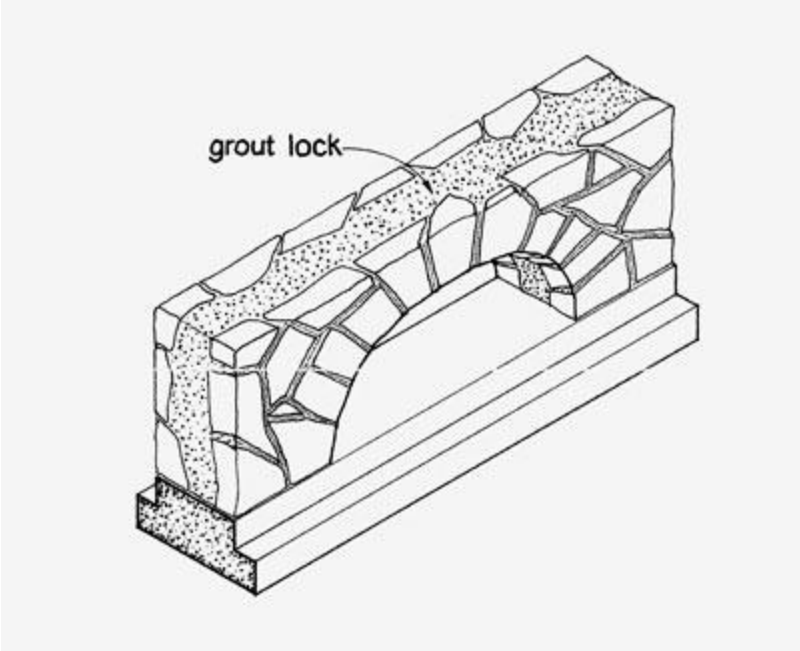
1. Set up the form

This is done on top of a stable surface, like a retaining wall or concrete foundation.



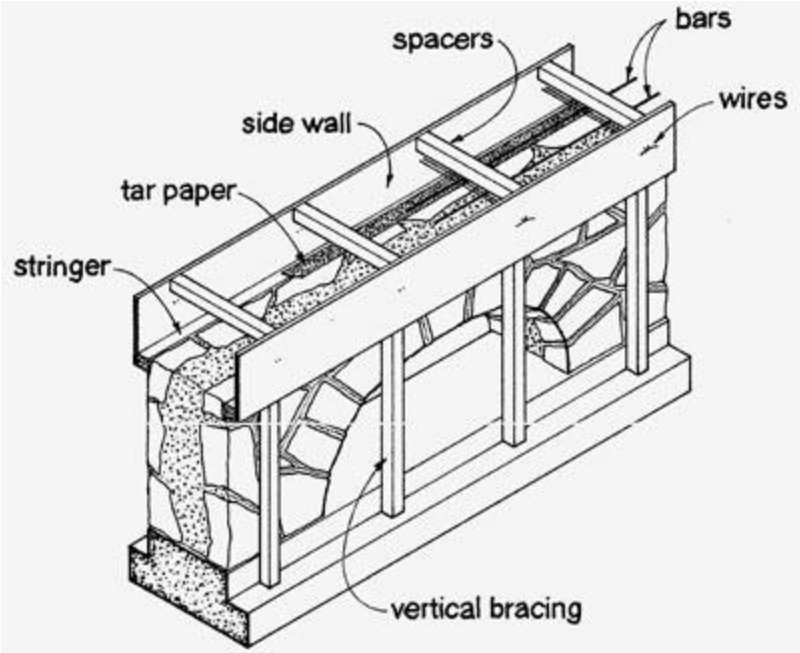
2. Lay the rock

Arch stones are grouted in first and then the remaining stones are laid and grouted until "laid up to height."



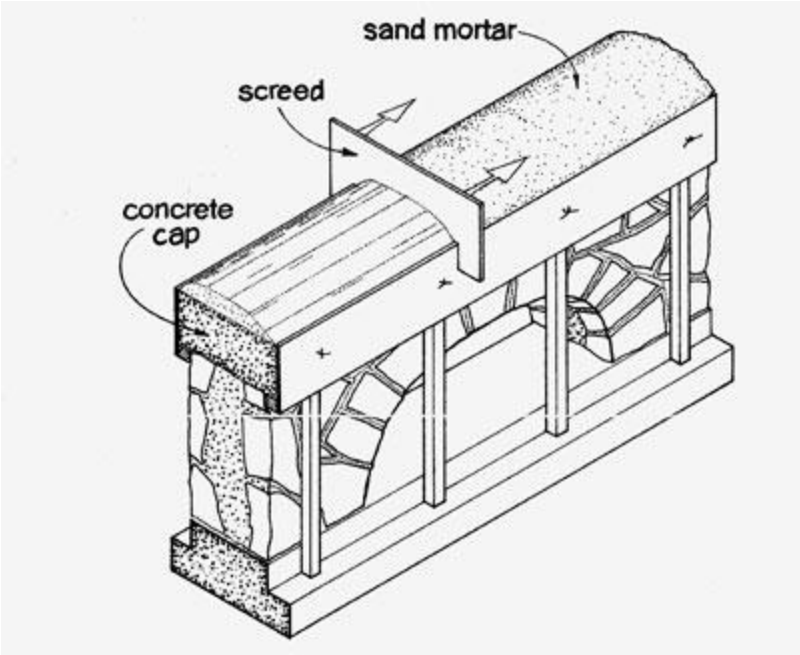
3. Strip the forms & finish the joints

See the Mortar Joints description above.



4. Build the cap form

Set up vertical bracing, stringers, side walls. Tie wires, lay bars and insert spacers. Line the bottom joints with tar paper.



5. Pour & finish the cap

Pour the concrete and screed flush. Apply sand mortar and screed to shape. Cut wires and remove forms when set.

Masonry Examples

These images are just a few examples of the lasting work of masons along the Historic Columbia River Highway.

A vintage postcard shows a masonry wall on the highway at Eagle Creek. (Oregon State Archives, Private Donation Postcards)

A rock wall along the Historic Columbia River Highway at the Gorge 400 trailhead. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26911#lg=1&slide=0)**)

A masonry wall on a viewpoint at Rowena Crest.
(**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/48992#lg=1&slide=0)**)

The view through a masonry wall arch at Crown Point.
(**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/59684#lg=1&slide=0)**)

Credit

Most of the information on this page was adapted from the Historic American Engineering Record, National Park Service, Elaine G. Pierce, 1995. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 12 of 27))

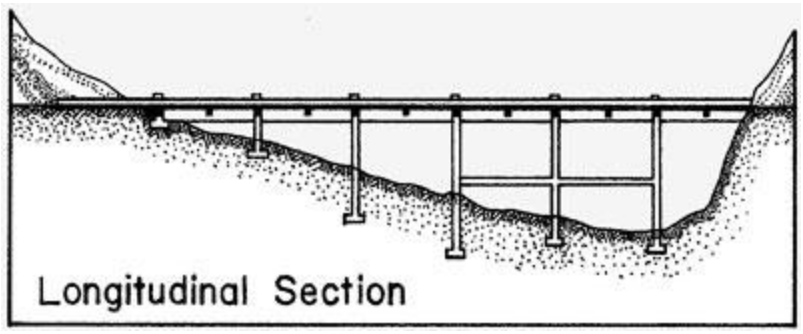
Viaducts

The Tooth Rock Viaduct solved the problem of carrying traffic around Tooth Rock, a towering basalt cliff. (Oregon Department of Transportation)

What is a Viaduct?

The Merriam-Webster Dictionary defines Viaduct as "a long elevated roadway usually consisting of a series of short spans supported on arches, piers, or columns."

Spanning a Cleft



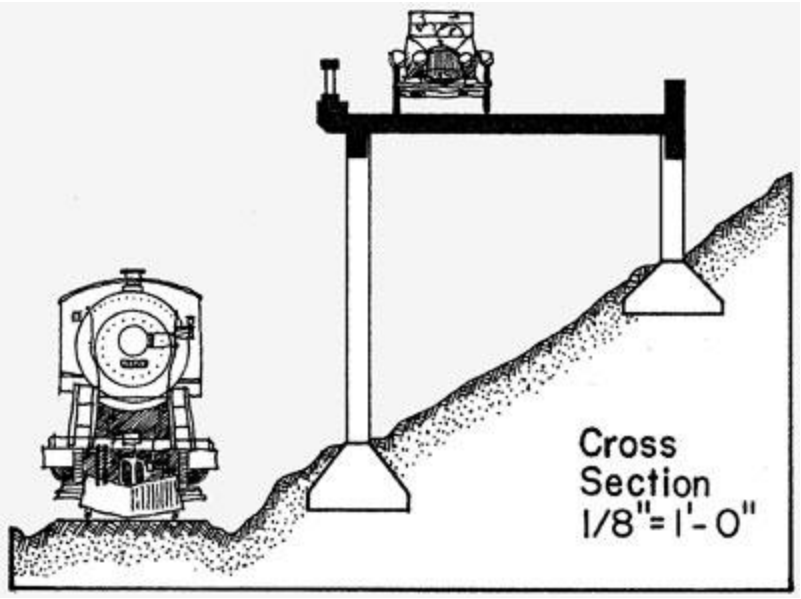
This drawing shows the Mitchell Point Viaduct spanning a cleft. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1-(sheet 13 of 27))

Designers met a significant engineering challenge at the west approach to the Mitchell Point Tunnel. They had to span a long gap from a rock ledge to the west portal of the tunnel. Between the two was a cleft, or split, in the rock of Mitchell Point that consisted of a steep slope of talus, or unstable rock fragments. Their solution was to construct a 192-foot viaduct made up of several short concrete slab bridges featuring piers at the ends of each separate span. A photograph of the Mitchell Point Viaduct below highlights this engineering feat.

Raising the Roadbed

A combination of geography and land ownership caused another engineering problem that designers solved with viaducts. The route of the road to the west and the east of Multnomah Falls followed a razor-thin path between the steep mountainside to the south, and the Oregon-Washington Railroad and Navigation Company (now Union Pacific Railroad) main track to the north along the edge of the Columbia River. Engineers considered building a typical retaining wall but even a small amount of

cutting and filling at the toe of these steep slopes, tenuously tied together with underbrush and timber, could have caused avalanches to fall on both the highway and the railroad tracks.



This drawing shows a viaduct that raises the roadbed. (Library of Congress, Prints & Photographs Division, **HAER ORE, 26-TROUT.V1-(sheet 13 of 27) (https://www.loc.gov/pictures/resource/hhh.or0386.sheet.00013a/)**)

Again, the solution was to construct viaducts, anchored to the slopes and resting on unequal length columns. The viaducts, rising slightly from the hillsides, loomed over the railroad tracks but averted disaster by maintaining vertical clearances for rail traffic. Slope stability proved to be a problem in 1921 when storm damage led to the need for support walls to be poured behind every other column along the East Viaduct.

Skirting Hillsides

Engineers used a relative of the viaduct to skirt hillsides in several locations along the highway. Half-viaducts were designed much like viaducts with columns of unequal length. However, instead of the inside part of the structure being elevated from the hillside, it consisted only of footings and the inside elevations were anchored into the hill or masonry wall. With the half-viaducts being inconspicuously anchored directly to the hillside, travelers on the highway often thought that they were driving on a normal surface road instead of on a partially elevated engineered structure.

Significant viaducts, according to the Historic American Engineering Record, include:

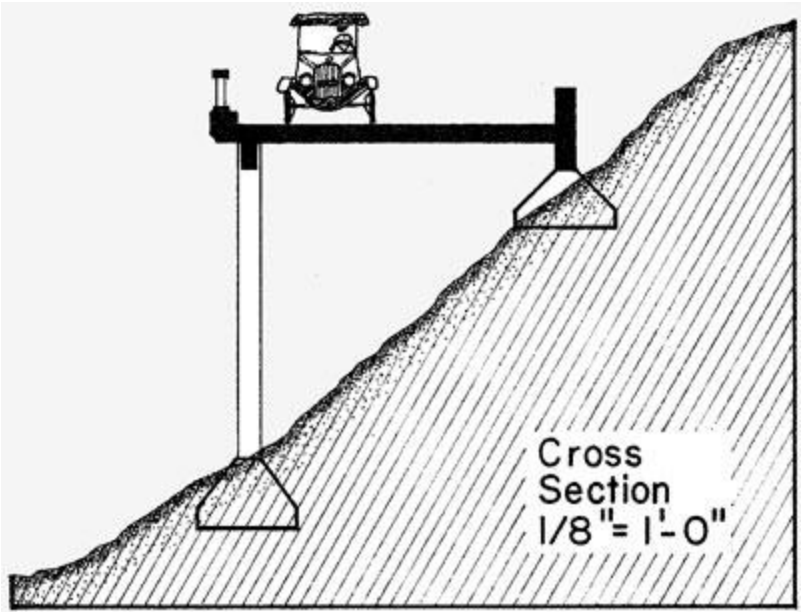
The West Multnomah Falls Viaduct is 400 feet in length and consists of twenty 20-foot reinforced-concrete slab spans. The deck is supported by two parallel rows of 16-inch square columns that stand 17 feet 6 inches apart.

The East Multnomah Falls Viaduct is identical to the West Multnomah Falls Viaduct, except that it is 860 feet long. Both structures were completed in 1914.

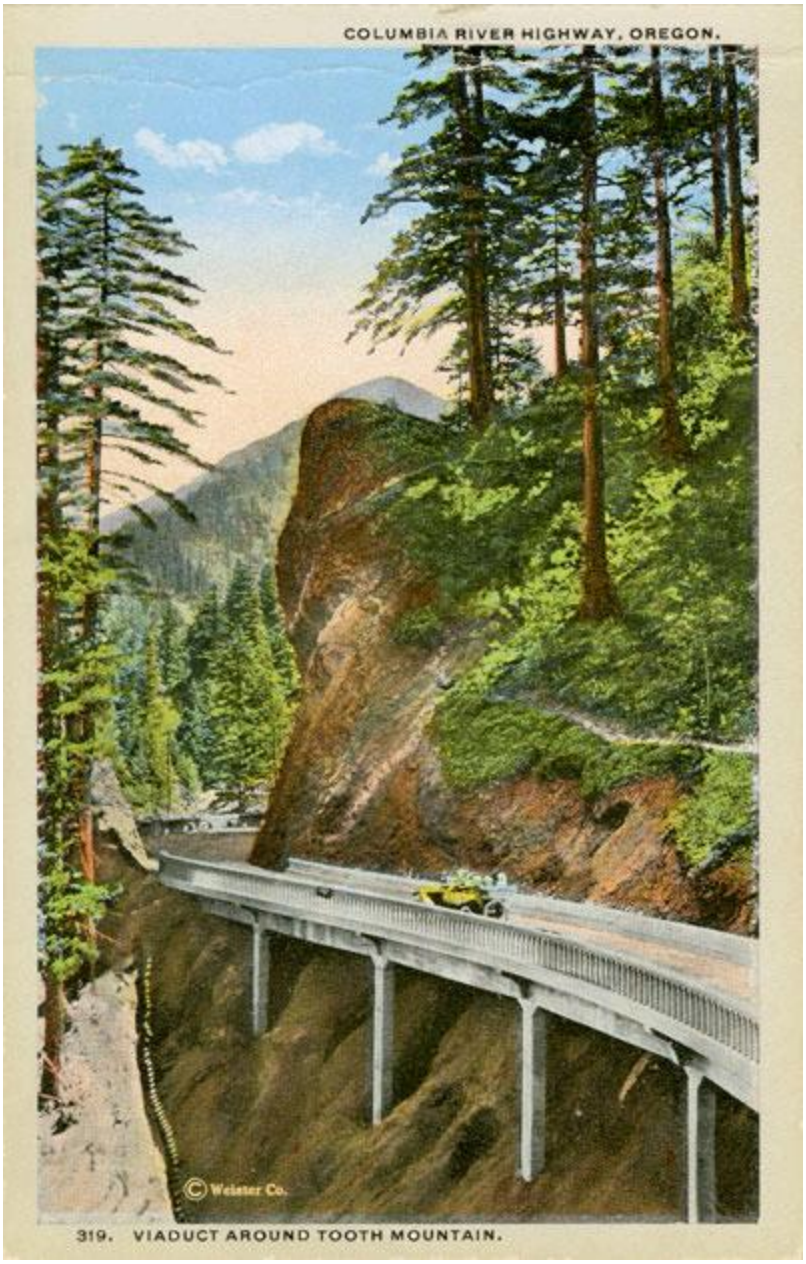
The 560-foot Crown Point Viaduct, which consists of 28 20-foot reinforced-concrete deck slabs, averted unnecessary excavation or fill to make room for a 7-foot sidewalk and curb. The design also included a 4-foot concrete outer railing and concrete light standards to illuminate Crown Point at night.

The Tooth Rock and Eagle Creek viaducts, at 224 feet in length, carry the highway around the towering basalt cliff called Tooth Rock before dropping down to Eagle Creek. Only the railing treatment differentiates their design. The Tooth Rock Viaduct uses a concrete spindle and cap design, while the Eagle Creek Viaduct uses a masonry rail and concrete cap design.

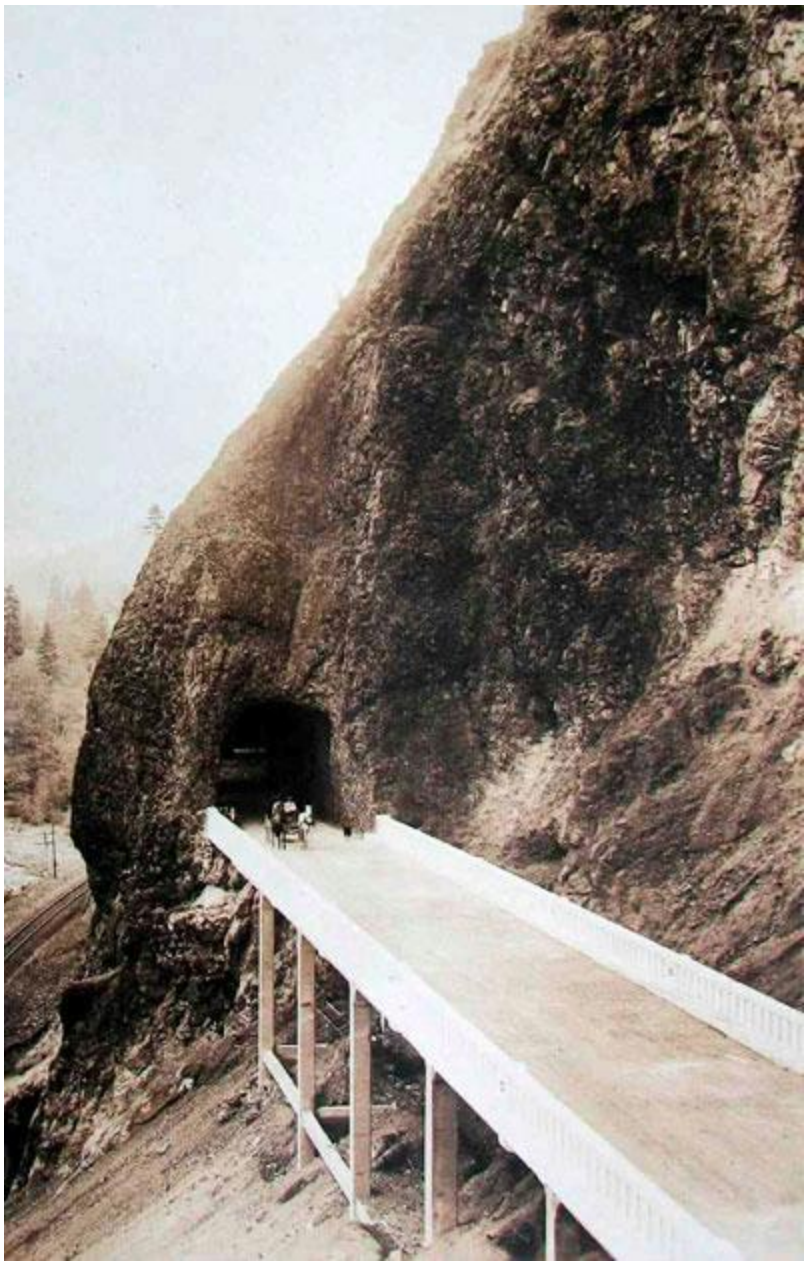
The 50-foot Ruthton Point Viaduct, consisted of three reinforced-concrete deck girder spans and carried the highway near a promontory west of Hood River. It used a simple standardized concrete railing panel and cap. The structure was reconstructed in recent years to be part of a pedestrian and bicycle accessible trail along once abandoned sections of the highway.



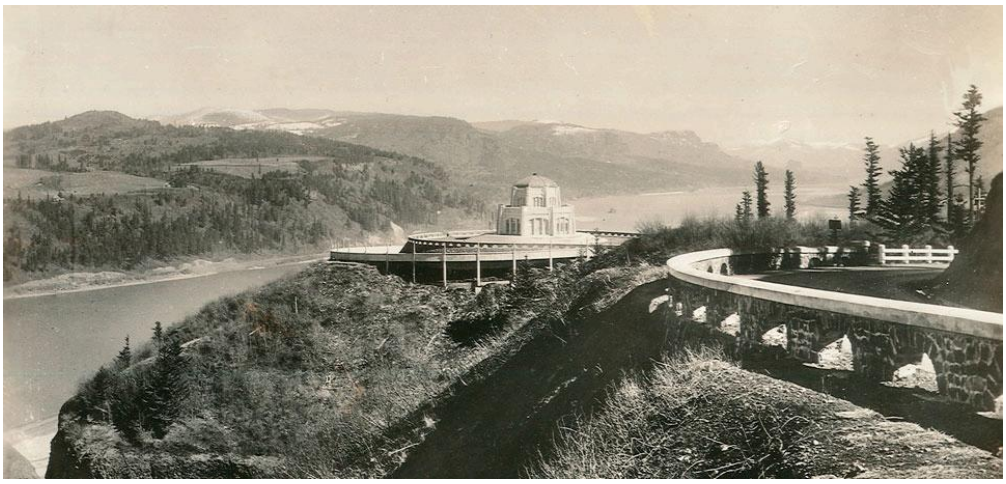
This drawing shows a half-viaduct that skirts a hillside. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 13 of 27))



A vintage postcard shows the viaduct at Tooth Rock. (Oregon State Archives, Private Donation Postcards)



A horse-drawn wagon crosses the Mitchell Point Viaduct heading west after exiting the Mitchell Point Tunnel. (Curious Gorge Blog)



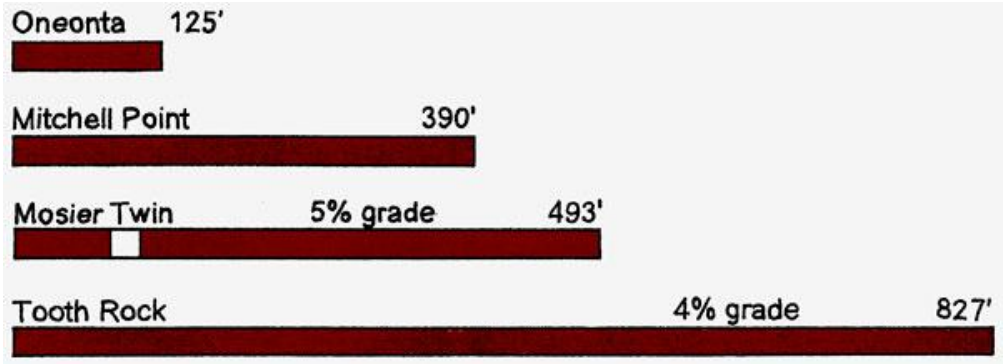
A viaduct carries the highway around Vista House at Crown Point. (Oregon State Archives, Private Donation Postcards)

Credit

Most of the information on this page was adapted from the Historic American Engineering Record, National Park Service, Elaine G. Pierce, 1995. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 13 of 27))

Tunnels

Looking west in the Mosier Twin Tunnels on the Historic Columbia River Highway State Trail in 2016. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26793#lg=1&slide=0)**)



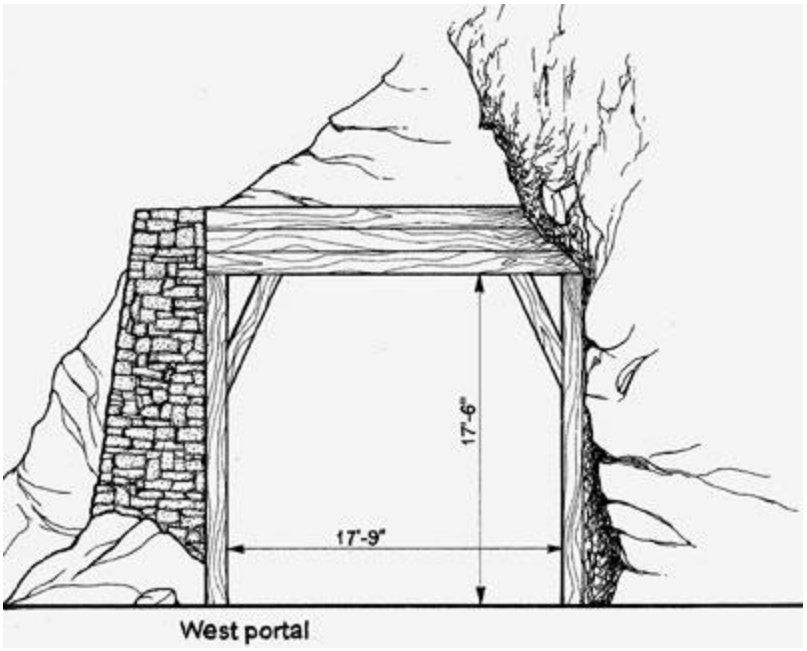
The length of Historic Columbia River Highway tunnels in feet. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 16 of 27))

With the Historic Columbia River Highway hemmed in by tall basalt cliffs to the south and the railroad to the north, tunnels often provided the only practical alternative to longer and more costly alignments of the road. Because of this imperative, three tunnels were built along the highway between 1914 and 1921. While hailed as engineering masterpieces when constructed, the tunnels soon had trouble handling larger vehicles. The narrow tunnel widths, along with the real threat of rockfall, made the highway something of a hazardous adventure for travelers.

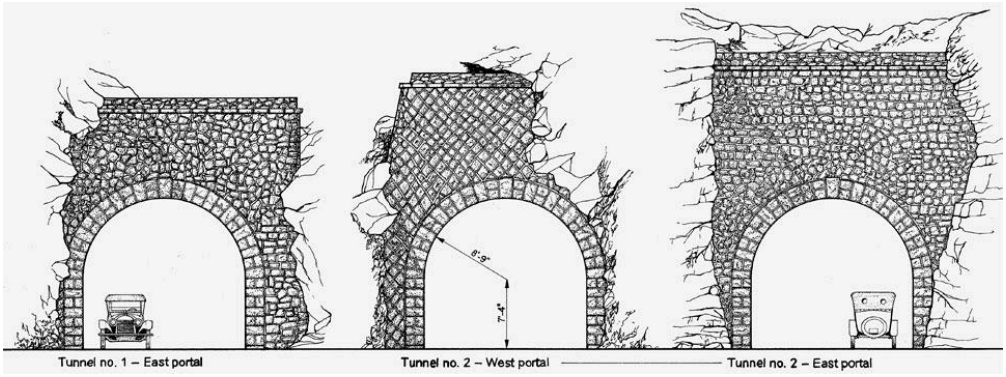
Oneonta Tunnel, constructed in 1914, was the first and shortest tunnel on the original highway. At the west approach, an 80-foot long slab bridge carried the road to the tunnel portal. Highway engineers saw an opportunity to realign the road to bypass the tunnel in 1948, after the railroad moved its right-of-way

to water level. A new 48-foot deck girder bridge was built parallel to the old bridge and the tunnel was backfilled. The restored Oneonta Tunnel was opened to non-motorized traffic in 2009.

Mitchell Point Tunnel, completed in 1915, and Mosier Twin Tunnels, dating to 1921, saw similar fates. The iconic Mitchell Point Tunnel provided spectacular views of the Gorge through its five famous windows until the highway was relocated in the 1950s. Ultimately, the tunnel was completely destroyed in 1966. Planning for a new Mitchell Point Tunnel is currently underway. The Mosier Twin Tunnels, featuring two adits (side passages leading to windows) and a cliff walk, was backfilled by 1958. Restoration of the Mosier Twin Tunnels was completed in 2000.



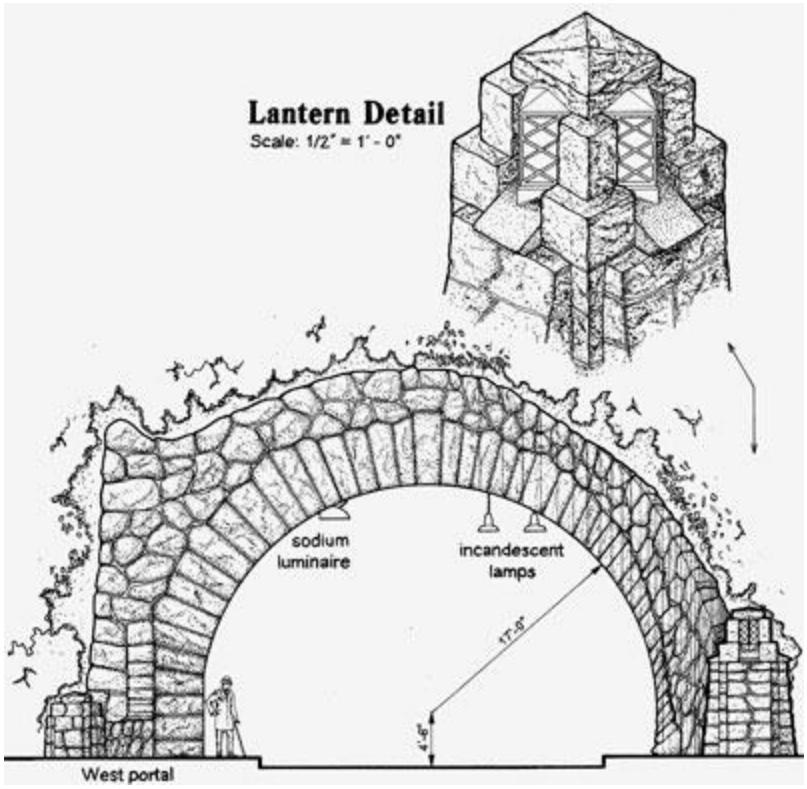
Oneonta Tunnel was built in 1914. (Library of Congress, Prints & Photographs Division, **HAER ORE, 26-TROUT.V1- (sheet 16 of 27) (https://www.loc.gov/pictures/resource/hhh.or0386.sheet.00016a/)**)



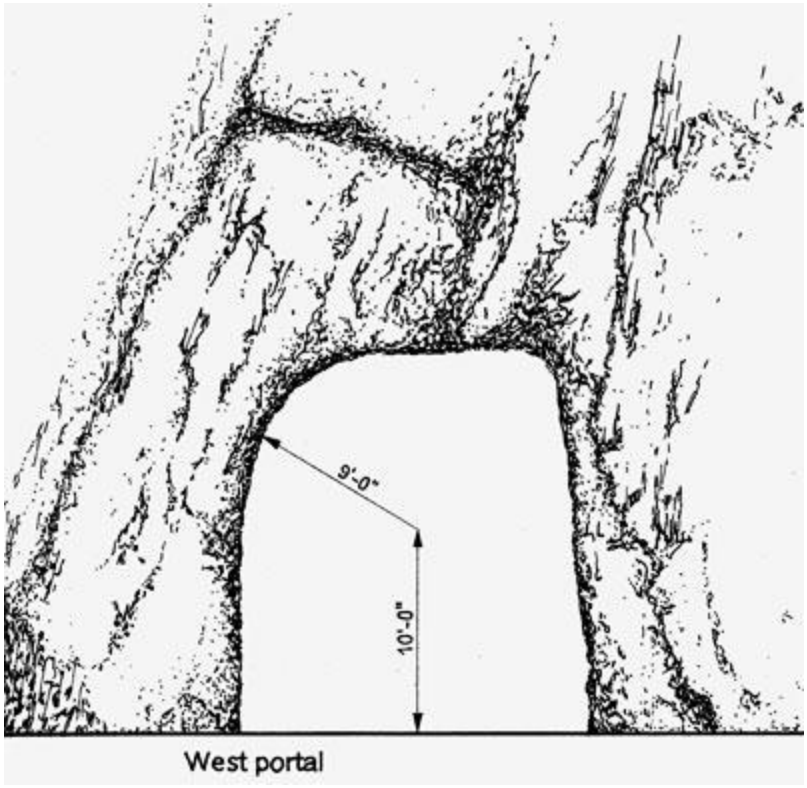
Portals of the Mosier Twin Tunnels, built in 1921. Drawings on this page were based on original design documents, historical photographs and field measurements. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 16 of 27))

Tooth Rock Tunnel

The construction of Bonneville Dam led to the realignment of the Historic Columbia River Highway with Tooth Rock Tunnel in 1937. Measuring 827 feet in length, it became the longest tunnel on the highway, and could safely handle larger vehicles with its 26-foot roadway. Other more modern engineering features, such as the lighting system and 4-foot wide sidewalks, served to set Tooth Rock Tunnel apart from the original tunnels on the highway. In order to allow the safe passage of even larger vehicles through the tunnel, its roadbed was lowered and its sidewalks were removed. The tunnel currently is used on the eastbound lanes of Interstate 84.



A drawing describing the west portal of the Tooth Rock Tunnel in 1937. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 16 of 27))

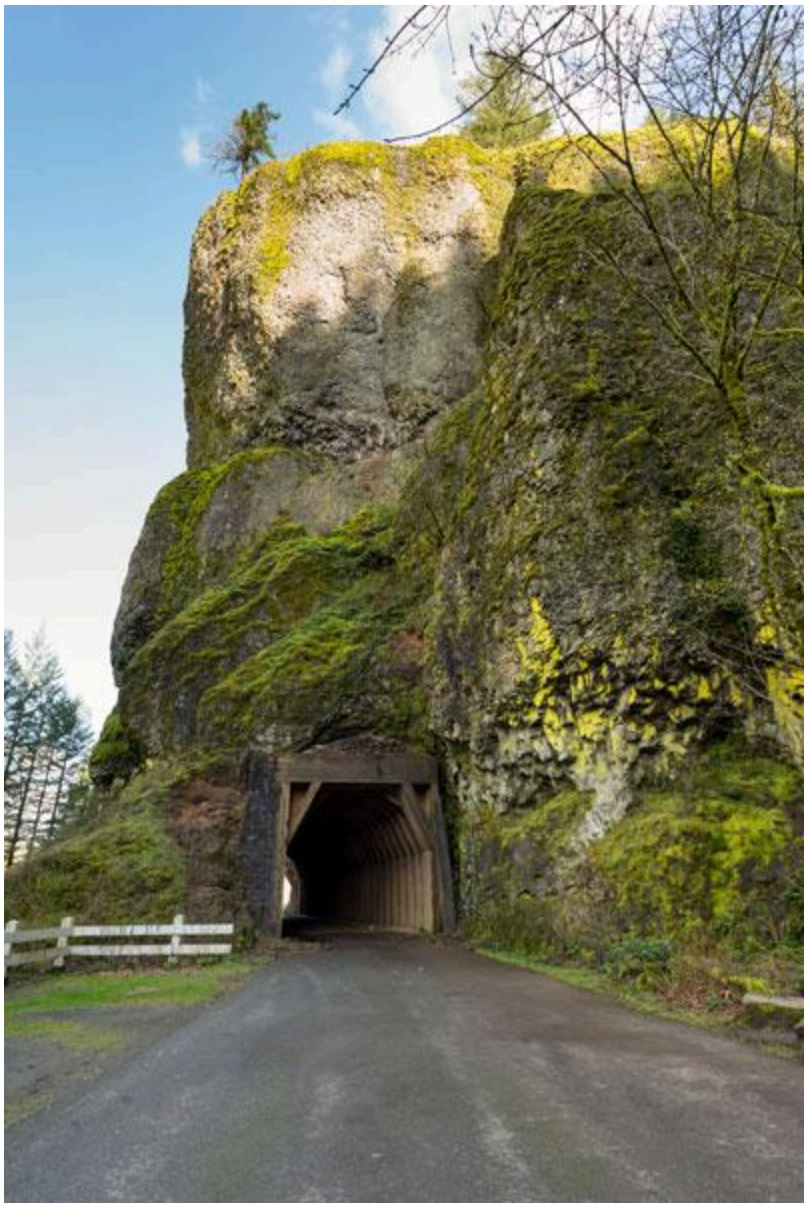


A drawing showing the 1915 Mitchell Point Tunnel. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 16 of 27))

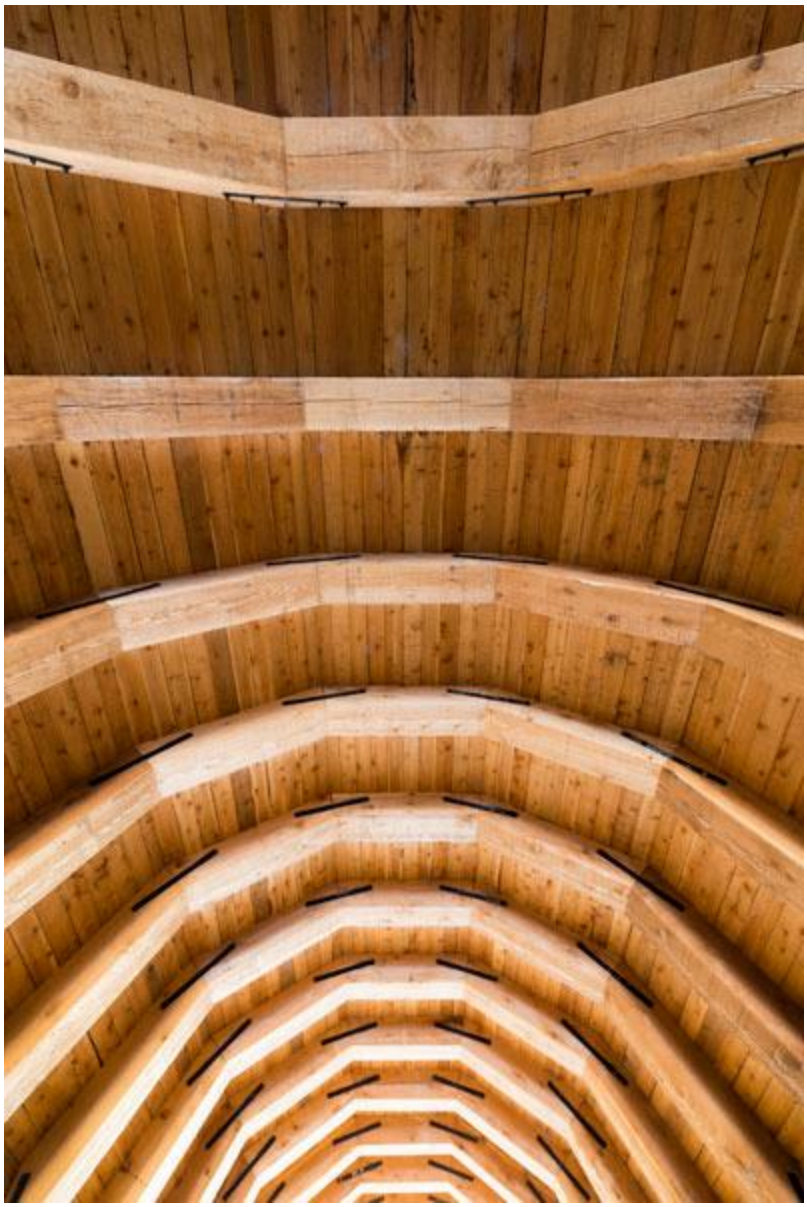
Historic and Current Tunnel Images

Cars travel west through the Mosier Twin Tunnels. (Oregon State Archives, Oregon State Highway Department Photographs)

A car passes another car as they leave the west end of the Oneonta Tunnel in 1916. (Oregon State Archives, Oregon State Highway Department Photographs)



The west portal of Oneonta Tunnel in 2016. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26893#lg=1&slide=0)**)



The ceiling of the restored Oneonta Tunnel in 2016.
(**Oregon Scenic Images collection**
(https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26890#lg=1&slide=0))

Credit

Most of the information on this page was adapted from the Historic American Engineering Record, National Park Service, Pete Brooks, 1995. (Library of Congress, Prints & Photographs Division, HAER ORE, 26-TROUT.V1- (sheet 16 of 27))

Scenic Views

The engineering innovations on the historic highway set new standards for road design while the striking natural setting has inspired millions of tourists to reach for their cameras. This section shows historic and current sights near the Historic Columbia River Highway, celebrated by many as the King of Roads.

Historic Images

Multnomah Falls 1903

Inspiration Point 1920

Eagle Creek 1867

West Multnomah Falls Viaduct 1920

Beacon Rock 1850 - 1930

Mitchell Point Tunnel Circa 1920

Upper Cascades 1867

Rowena Loops Circa 1920

Pillars of Hercules 1890

West Multnomah Falls Viaduct (2) Circa 1920

Oregon Steam Navigation Company Facility 1867

Current Images

Bridal Veil Falls

Highway Near Mosier

Crown Point View

Rock Outcroppings

Upper Horsetail Falls

Sunrise over Crown Point from the Portland Women's Forum State Scenic Viewpoint along the Historic Columbia River Highway. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/20076#lg=1&slide=0)**)

Note: The blue dots on maps in this section show the location of scenic features relative to Troutdale to the west and The Dalles to the east.

Masonry Guard Wall

Rowena Crest Wildflowers

Bridal Veil Creek

Tom McCall Point View

Rowena Crest View

Latourell Falls

Rowena Loops

Vista House

Punch Bowl Falls

Crown Point Sunrise

Multnomah Falls (1903)

This 1903 stereograph card view shows a person admiring Multnomah Falls. Stereographs are viewed on a stereoscope, which displays slightly offset left-eye and right-eye views of the same scene, thus creating the appearance of a single three-dimensional image. The affordable stereoscopes and stereograph cards were a very popular part of the culture in the late 1800s and early 1900s. Many people were avid stereograph card collectors and stereoscope shows were often a centerpiece of family and social gatherings.

Image source: The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, The New York Public Library. Multnomah Falls, Columbia River, Oregon. Retrieved from http://digitalcollections.nypl.org/items/510d47e0-9c84-a3d9-e040-e00a18064a99

Holmes stereoscopes were popular family pastimes. (Wikimedia)

Inspiration Point (Circa 1920)

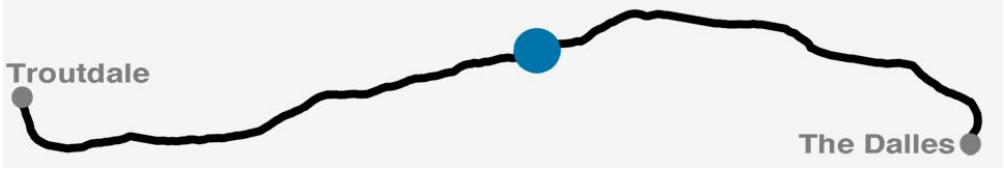
This hand colored photograph shows Inspiration Point between Hood River and Mosier. The image is from the 1920 Cross & Dimmitt book *Columbia River Highway, America's Greatest Scenic Drive*. Arthur B. Cross teamed up with Edward L. Dimmitt in 1916 to sell postcards from their Model T Ford at Crown Point before opening a studio in Portland. (Image courtesy Friends of the Historic Columbia River Highway)

Eagle Creek (1867)

This 1867 photograph by Carleton Watkins shows the railroad and buildings near the mouth of Eagle Creek at the Columbia River. Watkins (1829-1916) was a highly acclaimed early western photographer. Much of his work captured scenes of the Yosemite area, Sierra Nevada mining locations and early San Francisco. In 1867 he photographed the Columbia River Gorge and upper Willamette River areas. His subjects included views of the growing railroad and steamship industries as well as early settlements and beautiful landscapes. By the end of his Oregon work, he had created 60 large negatives and 136 stereographs.

Carleton Watkins (Wikimedia)

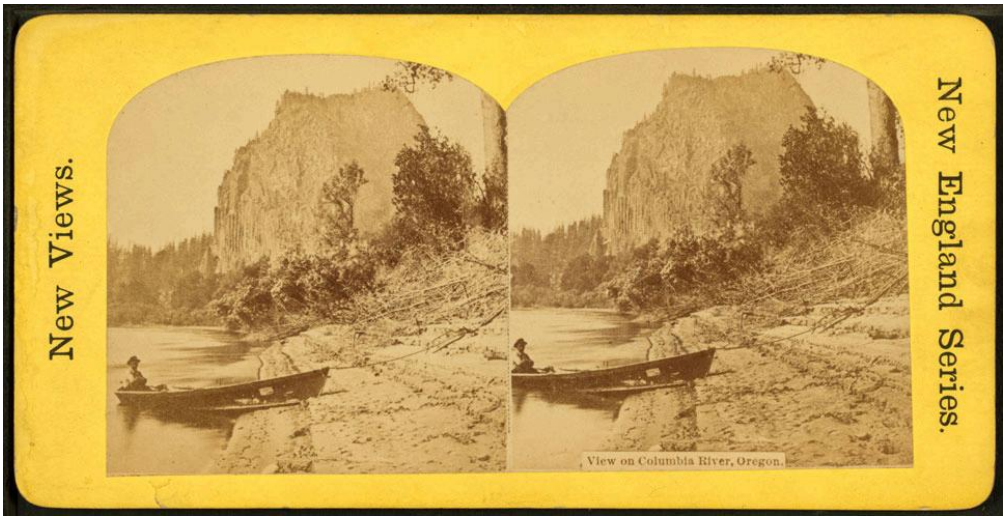
Watkins' life took a tragic turn in the 1890s when he began to lose his sight. His resulting inability to work left him and his family living in an abandoned railroad car for 18 months before he was given the deed to a California ranch. Most of his photographs and negatives were destroyed in the fires caused by the devastating 1906 San Francisco earthquake. Never fully recovering from the shock of the loss, he spent his last years in a California hospital for the insane. Watkins died in 1916 and was buried in an unmarked grave on the hospital grounds. (Eagle Creek Image: Oregon State Archives, Scenic Image No. PICT17)


Troutdale
The Dalles

West Multnomah Falls Viaduct (Circa 1920)

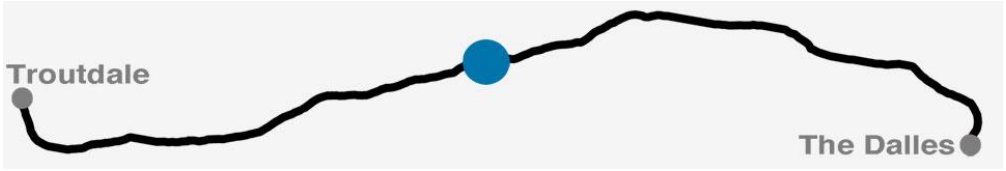
This hand painted glass slide shows the West Multnomah Falls Viaduct looking east. The circa 1920 image is by Cross & Dimmitt. (Image courtesy Friends of the Historic Columbia River Highway)

Beacon Rock (1850 – 1930)

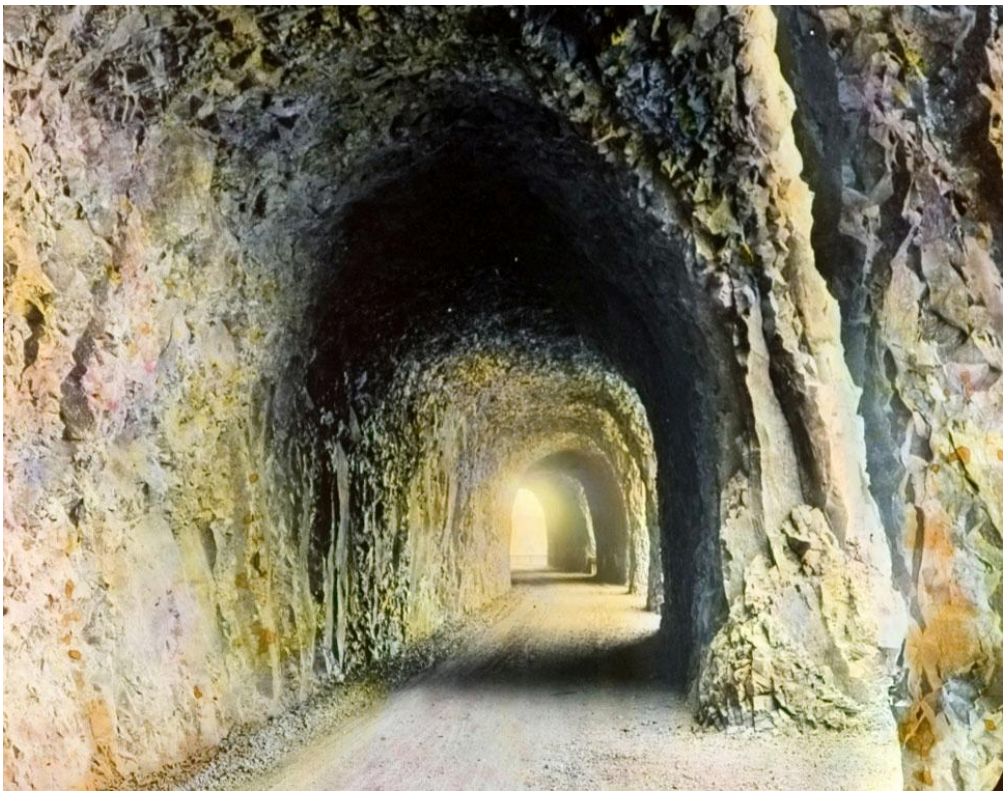


This undated stereograph card shows Beacon Rock along the Columbia River Gorge. It was known as Castle Rock for years. Then, in 1961 the U.S. Board of Geographic Names officially restored the name of Beacon Rock given to it by Lewis and Clark.

Image source: The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, The New York Public Library. *View on Columbia River, Oregon*. 1850 - 1930 Approximate.



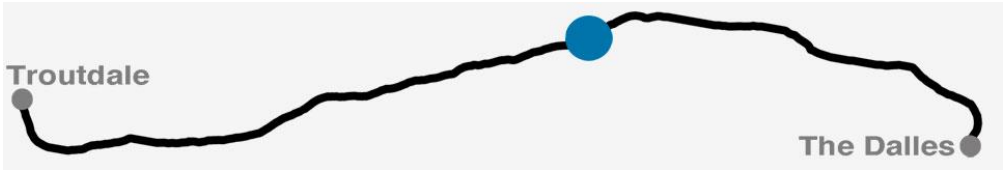
Mitchell Point Tunnel (Circa 1920)



This hand painted glass slide shows the Mitchell Point Tunnel. The circa 1920 image is by Cross & Dimmitt. (Image courtesy Friends of the Historic Columbia River Highway)

Upper Cascades (1867)

A train passes a settlement at Upper Cascades with a steamboat in the background in this 1867 Carleton Watkins photograph. The scene is near the present-day site of Cascade Locks. (Oregon State Archives, Scenic Image No. PICT19)



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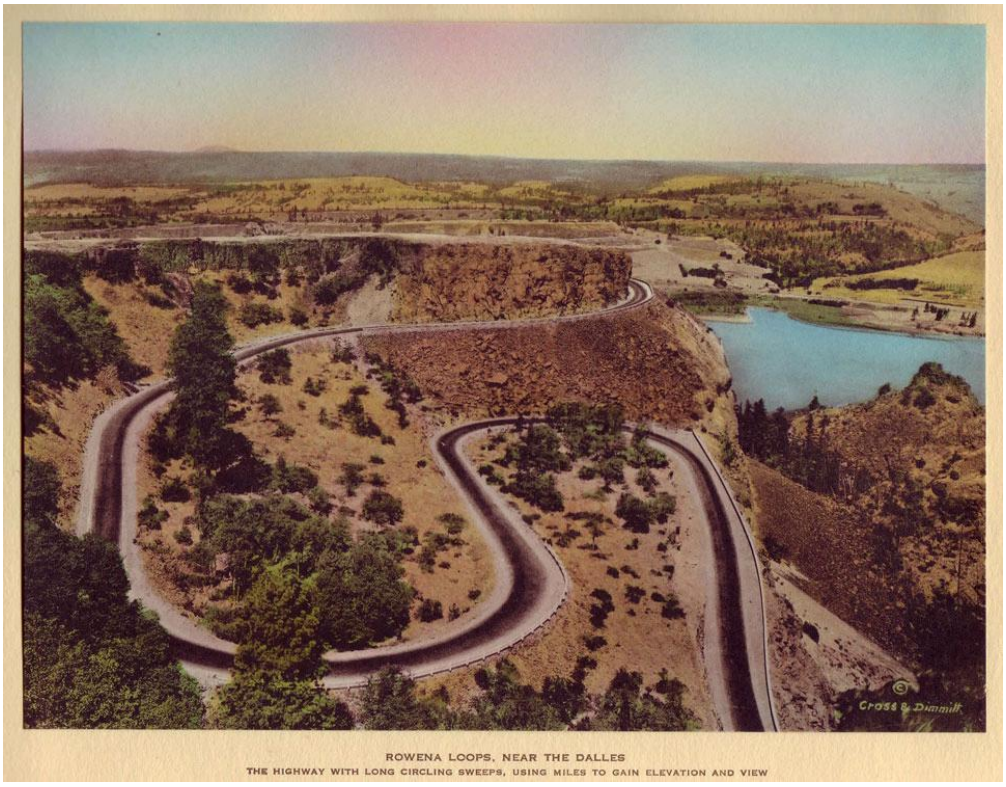
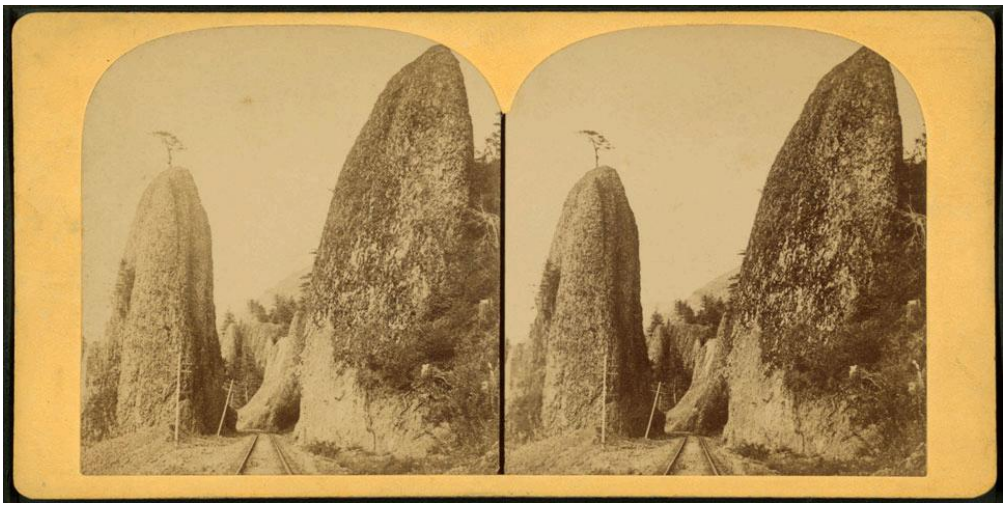
Rowena Loops (Circa 1920)



This hand colored photograph shows the Rowena Loops between Mosier and Rowena. The image is from the 1920 Cross & Dimmitt book entitled *Columbia River Highway, America's Greatest Scenic Drive*. (Image courtesy Friends of the Historic Columbia River Highway)

Pillars of Hercules (1890)



A stereograph card shows the basalt "Pillars of Hercules" near Bridal Veil in 1890. The railroad tracks now run to the north of the pillars rather than between them. The pillars can be viewed from the Bridal Veil Overlook.

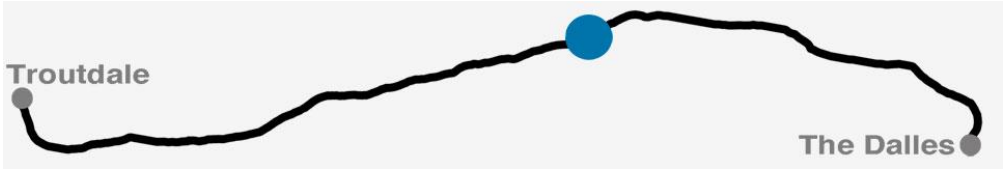
Image source: The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, The New York Public Library. (1890). Pillars of Hercules, Columbia River, Oregon. Retrieved from http://digitalcollections.nypl.org/items/510d47e0-9c6a-a3d9-e040-e00a18064a99

West Multnomah Falls Viaduct (Circa 1920)

This hand painted glass slide shows the West Multnomah Falls Viaduct looking west. The circa 1920 image is by Cross & Dimmitt. (Image courtesy Friends of the Historic Columbia River Highway)

Oregon Steam Navigation Facility (1867)

A train passes by the Oregon Steam Navigation Company facility at Lower Cascades west of present-day Cascade Locks. The photograph was taken by Carleton Watkins in 1867. Incorporated in 1860, the company bought the Oregon Portage Railroad running between Bonneville and Cascade in 1862 and soon purchased most of the steamboats operating on the Columbia River. In a sign of the times, it was acquired by the Oregon Railway and Navigation Company in 1879. (Oregon State Archives, Scenic Image No. PICT11)



Bridal Veil Falls

Bridal Veil Falls cascades in upper and lower parts with sharply different angles. The Bridal Veil Falls Bridge on the Historic Columbia River Highway is barely visible through the lush spring vegetation just above the upper part of the falls. Many people believe the waterfall does look something like a bride's veil. (**Oregon Scenic Images collection** (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/11361#lg=1&slide=0))

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Historic Highway Near Mosier

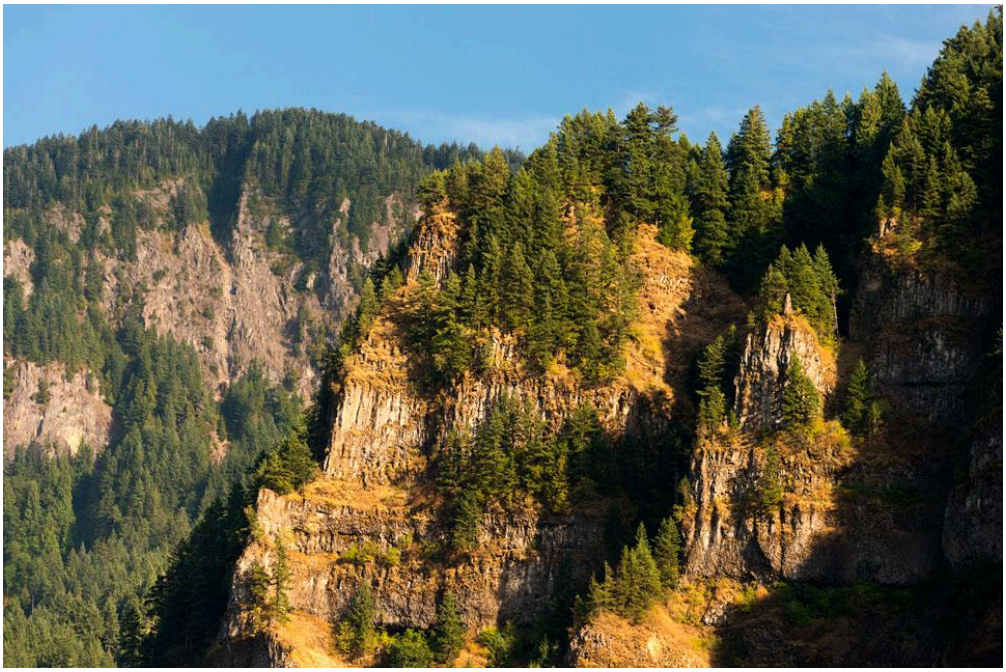
The Historic Columbia River Highway clings to a hillside near the river just east of Mosier. The more efficient and less evocative Interstate 84 is just below. To the west of Mosier, a five-mile stretch of the highway is closed to motorized traffic. To the east, the highway climbs to Rowena Crest and then drops again to The Dalles. (**Oregon Scenic Images collection)**

(https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/15551#lg=1&slide=0)

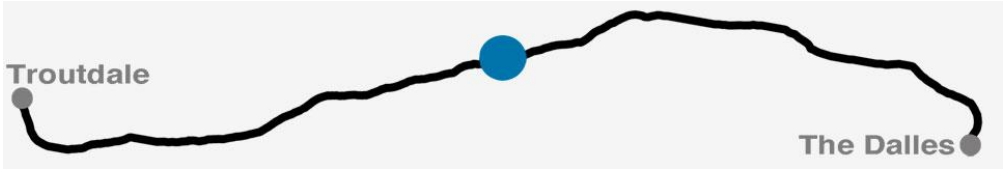
The View From Crown Point

About one million people a year visit Vista House on Crown Point and see this view looking east. Of course, the view can be dramatically different depending on the season, time of day and weather conditions. (**Oregon Scenic Images collection** (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/12124#lg=1&slide=0))

Rock Outcroppings



The evening sun highlights rugged rock outcroppings just east of St. Peters Dome near Dodson. The tiny relative size of conifer trees clinging to the near-vertical cliffs underscores the sheer immensity of the outcroppings that tower over the river and highway. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/14043#lg=1&slide=0)**)



Upper Horsetail Falls

Upper Horsetail (Ponytail) Falls is less well known than its downstream relative Horsetail Falls, which is more accessible right on the Historic Columbia River Highway. But it has its own charms. After a steep but scenic hike, visitors can walk behind the falls on the trail for an interesting perspective. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/24552#lg=1&slide=0)**)

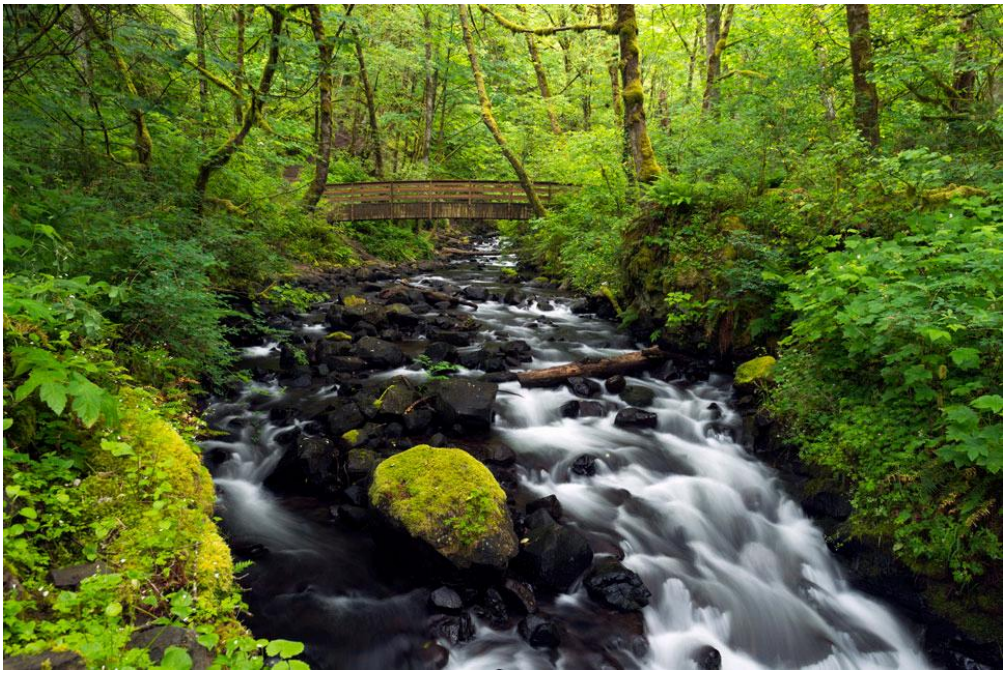
Masonry Guard Wall

Moss-covered masonry arched guard walls protect travelers from the steep drop-off along this stretch of the highway near Shepperd's Dell. The builders employed expert Italian stone masons to ensure pleasing and durable results. Many of the guard walls are built on top of rock retaining walls to prevent ground sliding. (**Oregon Scenic Images collection** (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/24531#lg=1&slide=0))

Rowena Crest Wildflowers

Balsamroot and lupine wildflowers cover the landscape of the Columbia River Gorge next to the highway near Rowena Crest. The area is a favorite for hikers and photographers during the spring and is one of several spots in the Gorge known for wildflowers. Hikers beware however, poison oak is also prolific in the eastern Gorge. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/20203#lg=1&slide=0)**)

Bridal Veil Creek



Bridal Veil Creek flows north to the Columbia River just below the more famous Bridal Veil Falls and the Historic Columbia River Highway. The footbridge allows hikers access to a viewing platform for the waterfall. The lush undergrowth shown is common in this part of the Gorge. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/11375#lg=1&slide=0)**)

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Tom McCall Point View

Mt. Adams to the north in Washington looms over the Columbia River Gorge from Tom McCall Point high above Rowena Crest. The lack of visible development in this view reinforces the goals of the Columbia River Gorge National Scenic Area. Congress created the area in 1986 to protect the scenic beauty of the Gorge. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/51313#lg=1&slide=0)**)

The View From Rowena Crest

Rowena Crest Overlook, at an elevation of 747 feet, offers visitors a commanding view of the river. This perspective looks east showing the bluffs on the Washington side across the river to the north and Interstate 84 tracing the south bank to the right. The geography flattens considerably looking to the distant east. (**Oregon Scenic Images collection** (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/15580))

Latourell Falls

Latourell Falls freefalls 224 feet from a basalt cliff before crashing onto the rocks below. This photograph focuses on the power of the slender but tall waterfall. The other distinguishing feature of Latourell Falls is a large patch of brilliant yellow lichen on the rock face just to the right of the waterfall. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/56094#lg=1&slide=0)**)

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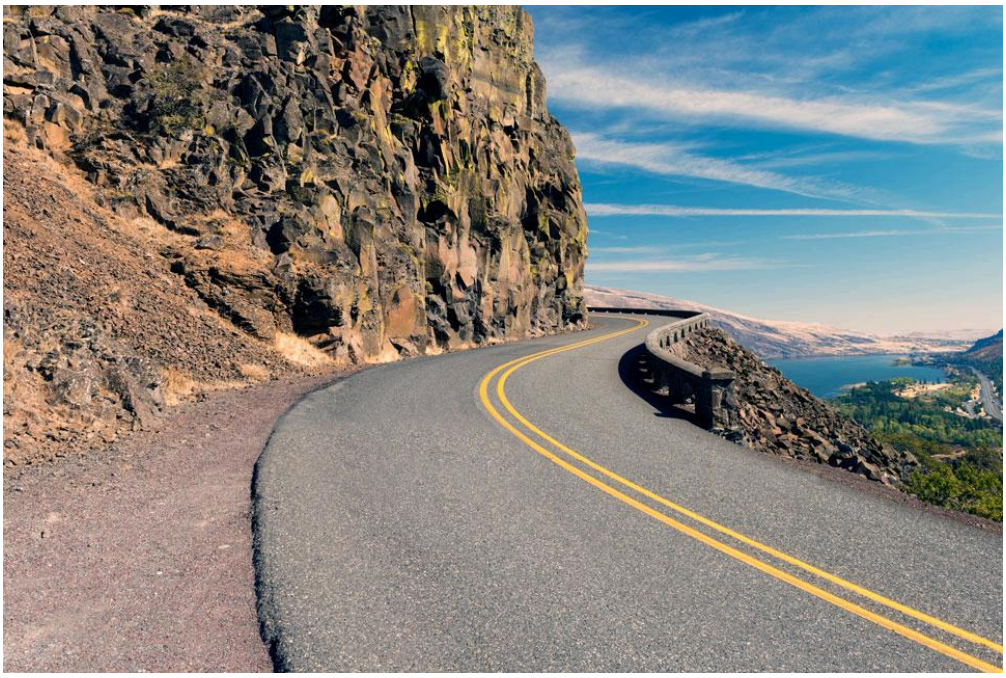
Rowena Loops



This upper stretch of the Rowena Loops hugs the rock cliff just below Rowena Crest Viewpoint. Engineers resorted to using loops where the terrain would otherwise require a very steep grade. The road loops back and forth on a gentle grade down from the crest instead of steeply dropping over a shorter distance. (**Oregon Scenic Images collection** (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/15584#lg=1&slide=0))

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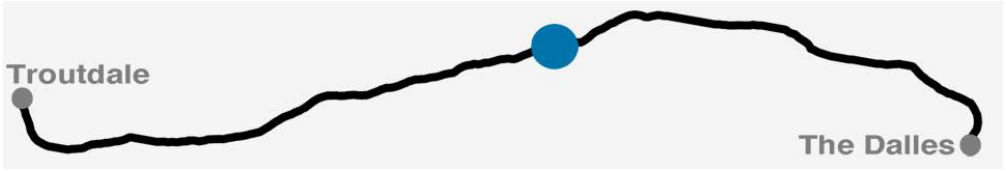
Vista House

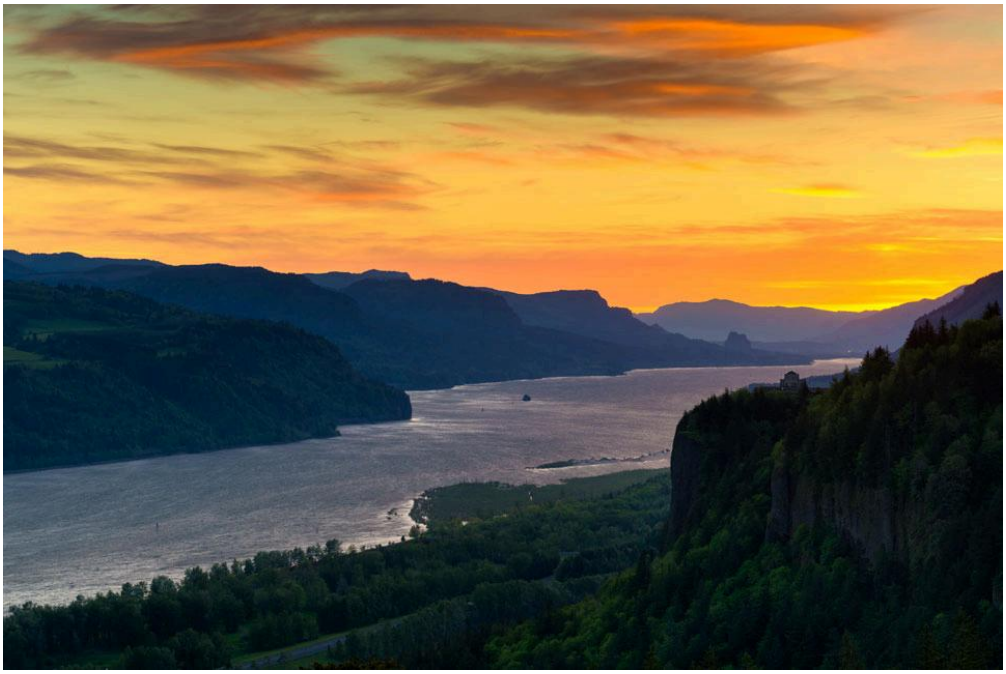
The evening sun hits the towering rocks of Crown Point, capped by Vista House. This view of Crown Point from the Portland Women's Forum State Scenic Viewpoint to the west is considered to be one the most iconic shots along the Historic Columbia River Highway. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/14048#lg=1&slide=0)**)

Punch Bowl Falls

Popular with hikers and photographers alike, Punch Bowl Falls sits on Eagle Creek about two miles south of the Columbia River. To many, the aptly named falls resembles a ladle dipping into a punchbowl. In fact, the use of punchbowl to describe a type of waterfall began with Punch Bowl Falls. It is one of many waterfalls along Eagle Creek Trail, which has a trailhead in Hood River County near the county line with Multnomah County. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/11767#lg=1&slide=0)**)



Crown Point Sunrise



The sun rises over Crown Point as seen from the Portland Women's Forum State Scenic Viewpoint on Chanticleer Point along the Historic Columbia River Highway. Chanticleer Point offers the first significant overlook traveling east from Troutdale and is a favorite spot for photographers. (**Oregon Scenic Images collection) (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/20076#lg=1&slide=0)**

Official web site of

Oregon Secretary of State

Learn More

Continue learning about the highway with these resources:

Selected Web Links

Oregon Department of Transportation (https://www.oregon.gov/odot/regions/pages/historic-columbia-river-highway.aspx)
Find resources related to the Historic Columbia River Highway. Keep up to date about current and planned projects related to the highway.

The Columbia River from a viewpoint along the Historic Columbia River Highway State Trail east of the Mosier Twin Tunnels. (**Oregon Scenic Images collection (https://www.northwestdigitalheritage.org/s/oregon-state-archives/item/26779#lg=1&slide=0)**)

Oregon Parks and Recreation Department (https://stateparks.oregon.gov/index.cfm?do=park.profile&parkId=113)
Learn about recreational opportunities along the highway and get a calendar of events for sites along the route.

Troutdale Historical Society (https://www.kingofroads.org/)
Learn about the King of Roads exhibit. Plan your highway itinerary with descriptions of essential sights that include family offerings as well as more adventurous outings.

Historic American Engineering Record (http://www.loc.gov/pictures/search/?q=columbia%20river%20highway%2Boregon&co=hh)
View search results from the Library of Congress and browse images related to the Historic Columbia River Highway. Study drawings detailing the major engineering and design aspects of the highway.

Selected Books

Gronowski, Nancy H. and Jeanette Kloos. ***A Study of the Columbia River Highway (https://digitalcollections.library.oregon.gov/nodes/view/203145)***. Salem OR: Oregon Department of Transportation, 1987.

Lancaster, Samuel C. *The Columbia: America's Great Highway through the Cascade Mountains to the Sea*. Atglen, PA: Schiffer Publishing Ltd., 2004. (**View the 1915 edition of the book online (https://books.google.com/books?id=t1tAAAAAYAAJ&printsec=frontcover&dq=The+Columbia+:+America%27s+great+highway+through+the+Cascade+Mountains+to+the+sea&hl=en&sa=X&ved=0ahUKEwjst_mAmP_LAhUNxWMKHVQ1BLcQ6AEIHDAA#v=onepage&q&f=false)** via Google Books)

Mershon, Clarence E. *The Columbia River Highway: From the Sea to the Wheat Fields of Eastern Oregon*. Portland OR: Guardian Peaks Enterprises, 2006.

Smith, Dwight A. ***Columbia River Highway District (https://digitalcollections.library.oregon.gov/nodes/view/202988)***. Salem OR: Oregon Department of Transportation, 1984.

This hand painted glass slide shows the Tanner Creek Bridge. The circa 1920 image is by Cross & Dimmitt. (Image courtesy Friends of the Historic Columbia River Highway)

Tuhy, John E. and Sam Hill. *The Prince of Castle Nowhere*. Portland, OR: Timber Press, 1983.

Willis, Peg. *Building the Columbia River Highway – They Said It Couldn't Be Done*. Place: The History Press, 2014. (**Preview the book online (https://books.google.com/books?id=iFmACQAAQBAJ&pg=PT38&dq=Willis%2c+Peg.+Building+the+Columbia+River+Highway+%E2%80%93+They+Said+It+Couldn%E2%80%99t+Be+Done&hl=en&sa=X&ved=0ahUKEwikoonKivvOAhUJKpQKHZqlCLEQuwUIITAA#v=onepage&q=Willis%2c%20Peg.%20Building%20the%20Columbia%20River%20Highway%20%e2%80%93%20They%20Said%20It%20Couldn%e2%80%99t%20Be%20Done&f=false)** via Google Books)

Credits

Exhibit design and current scenic photographs by Gary Halvorson, Oregon State Archives

Additional Assistance

Reviewers: Robert Hadlow - Oregon Department of Transportation; Mary Beth Herkert, Layne Sawyer, Austin Schulz, Julie Yamaka - Oregon State Archives. Technical Assistance: Kevin Courtney, Emma Snodgrass - Oregon Secretary of State's Office

A steam roller compresses crushed rock before paving west of Hood River in 1920. (Portland Sunday Oregonian, March 28, 1920, Section 6, Page 1)