United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items

✓ New Submission _____ Amended Submission

A. Name of Multiple Property Listing

Logging Railroad Resources of the Malheur National Forest, Oregon

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Railroad Logging on the Malheur National Forest, 1897 to 1946

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D. Certification

Prepared pursuant to the Memorandum of Agreement between the Bonneville Power Administration, Malheur National Forest, and the Oregon State Historic Preservation Officer Regarding the Dunstan and Camp Creek Restoration Projects, Grant County, Oregon. This National Register of Historic Places Multiple Property Documentation Form **has not** been submitted to the Keeper of the National Register for a formal determination or listing.

Logging Railroad Resources of the Malheur National Forest
Name of Multiple Property Listing

Oregon
State

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Provide the following information on continuation sheets. Cite the letter and title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Fill in page numbers for each section in the space below.

E. Statement of Historic Contexts

Introduction

The Malheur National Forest encompasses approximately 1.7 million acres in the southern Blue Mountains of Grant County, Oregon, a vast and rugged expanse of ponderosa pine, Douglas fir, and mixed conifer forest dissected by the drainages of the John Day, Malheur, and Silvies rivers (Figure 1). Since time immemorial, these forests sustained the lifeways of Indigenous peoples, including the Northern Paiute, Walla Walla, Cayuse, Umatilla, and peoples of the Confederated Tribes of the Warm Springs, as well as various Sahaptin-speaking groups, whose use of the land changed with the seasons and incorporated the region's diverse resources. European American settlement of the area accelerated in the 1860s following gold discoveries near the present-day sites of Canyon City and Auburn. By the close of the nineteenth century, cattle and sheep ranching, mining, and small-scale timber cutting had become the economic foundations of the upper John Day Valley and Harney Basin.

While the details of the region's development were unique, the broader patterns of its growth were visible in communities across the American West. From the coast ranges lining the Pacific Ocean to the Rocky Mountain cordillera, settlers founded innumerable small towns and villages around the use of the land and the extraction of its resources. Whether ranging livestock, digging for minerals, or harvesting timber, these communities continued to grow only so long as their local resources proved practicably accessible. While initially used only for local needs, in time, large and complex organizations developed to extract such resources at an industrial scale. While focused on the demands of their investors, these institutions contributed significantly to the growth and development of their remote locales.

On the lands that would become the Malheur National Forest, no company was more influential than the Oregon Lumber Company (OLC), which was the most important and enduring timber enterprise in the Blue Mountains. The OLC operated continuously from its incorporation in 1889 until its sale to the Edward Hines Lumber Company in 1956. Over the course of nearly seven decades, the company logged hundreds of thousands of acres of ponderosa pine and mixed conifer forest, operated sawmills at locations throughout Oregon, built and maintained two railroads, and sustained the livelihoods of hundreds of workers and their families.[1]

The Oregon Lumber Company, 1889 to 1956

The OLC's operations in the Malheur centered on the sawmill community of Bates and the OLC Railway. The railway—a twenty-five-mile non-common carrier mainline constructed into the Middle Fork of the John Day River drainage, with an additional forty miles of logging spurs radiating into the surrounding timber—would drive the most intensive and sustained period of industrial logging in the forest's history.[2] Its development was predicated on the construction of the related Sumpter Valley Railway (SVRy), which served as a common carrier to transport logs, lumber, passengers, and freight through the Blue Mountains between Baker and the timber country to the west (Figures 2–3). The OLC Railway interchanged with the SVRy at Austin, where rough-cut lumber was transferred for transport to Baker.

In addition to private lands it owned outright, the company operated within the Malheur as a purchaser of federal stumpage: the Forest Service administered the timber sales on which the OLC depended, and the company was in turn the principal harvester of National Forest timber in the upper Middle Fork drainage, so that the forest's most extractive logging era and the company's commercial fortunes were closely bound.

The OLC was also distinctive for the religious and cultural background of its founders and principal operators, who were members of the Church of Jesus Christ of Latter-day Saints. The company's corporate structure, labor practices, and community-building efforts bore the imprint of the Mormon cooperative tradition, and its interlocking directorate of Latter-day Saint families—the Eccles, Stoddards, Nibleys, and others—constituted a notable example of religiously affiliated corporate enterprise in the American West.

[1] For a description of the Mount Hood Railroad also operated by the Oregon Lumber Company, see Clem L. Pope, Switchback to the Timber (Hood River, OR: Old Forester Publishing Co., 1992).

[2] Note that between approximately 1914 and 1927, the line also operated under the name Grant County Railway.

David Eccles (1849–1912)

David Eccles, the founder of the OLC, was born in Glasgow, Scotland on May 12, 1849, the son of a blind woodworker who struggled to support a family of nine (Figure 4).[3] The Eccles family converted to the Church of Jesus Christ of Latter-day Saints and emigrated to the United States in the 1860s with the aid of the Perpetual Emigrating Fund, settling briefly in Utah before traveling the Oregon Trail to Oregon City, where the elder Eccles found employment at the woolen mill. After several years of unsuccessful ventures in Oregon, the family returned to rejoin the Latter-day Saint settlements in Utah.[4]

During his years in the Oregon Territory, Eccles had observed the vast stands of pine and Douglas-fir timber in the Inland Empire and the coastal region, and he returned to Utah determined to establish lumber manufacturing operations ahead of the expanding railroad network.[5] Having identified railroad construction as the surest path out of poverty, Eccles followed the progress of the Central Pacific and Union Pacific railroads as they raced across the continent. His first successful venture came at Beaver Canyon, near the Idaho-Montana border, where he and partner Howard Spencer established a mill and general store that supplied ties and lumber for the Utah and Northern Railroad, then under construction between Ogden and the Montana mines. In three years, the partners earned $27,000.[6]

Having established a pattern of following railroad construction activity, Eccles acquired timber tracts in Eastern Oregon at the time the Oregon Short Line was being completed from Pocatello, Idaho, to Portland. On the forks of the Powder River, he established a planing mill, shingle mill, box factory, and eventually a larger lumber mill, an electric plant, and other enterprises. He encouraged friends and acquaintances from the Weber, Ogden, and Cache Valleys in Utah and Idaho to homestead timber tracts in Oregon and work for him. As a result, a substantial community developed in Baker.[7] Lumber from Eccles's Oregon mills was shipped to Utah, where it contributed to a transformation in building practices: with the arrival of Oregon lumber in the 1880s, Utah construction shifted from adobe and rock to wooden frames.[8]

Eccles was a polygamist who maintained three families. His first wife, Bertha, resided in Ogden and bore twelve children. His second wife, Ellen Stoddard, the daughter of his business partner John Stoddard, lived in Baker and bore nine children. A third wife, Margaret Geddes, was the widow of one of his managers. This pattern of intertwining family and business relationships was characteristic of Eccles's enterprise and of the broader Latter-day Saint economic network in which he operated. By the time of his death from a heart attack on December 5, 1912, Eccles was president of twenty-three companies and banking institutions and was widely regarded as the wealthiest man in Utah. At his funeral, his companies observed a moment of silence.[9]

Early History: Incorporation through Reorganization (1889–1912)

In 1889, David Eccles, his brother William H. Eccles, Charles W. Nibley, Joseph West, and F. M. Shurtliff incorporated the OLC in Baker, Oregon, and began construction of a sawmill in South Baker. Recognizing the need for a rail connection into the Malheur's timber country, the following year, Eccles formed the SVRy as a common carrier, granting it rights to eminent domain. In August 1890, Union Pacific delivered a trainload of railroad supplies to Baker, and construction commenced on a dual-gauge yard adjacent to the mill site—a distinctive feature that allowed both the narrow-gauge Sumpter Valley and standard-gauge Union Pacific switch engines to share facilities.

The first trainload of logs arrived at the OLC headquarters from Dean's Siding within a week of the SVRy's first anniversary. Although the two companies shared several board members and maintained a close commercial relationship for the next 50 years, they remained separate corporate entities throughout their existence. The SVRy was a common carrier serving multiple shippers and communities along its eighty-mile mainline; the OLC Railway, built later into the Middle Fork drainage, was a non-common carrier that could only transport goods for the OLC. The two railroads were linked by an interchange agreement at Austin.[10] The capitalists behind both enterprises—Eccles, Nibley, William Eccles,

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[3] Leonard J. Arrington, "David Eccles: A Man for His Time," *Journal of Mormon History* 25, no. 1 (Spring 1999): 3–4. Arrington gives Eccles's birthplace as Glasgow. The Holter and Doncaster report (p. 14) follows Mullett and Merritt in giving Paisley. Arrington is the primary scholarly authority on Eccles and should be preferred. On the emigration, Arrington specifies that the family traveled to Oregon City at the invitation of Joseph Tracy, president of the Mormon group there, and found employment at the Oregon City woolen mill.

[4] Arrington, "David Eccles," 5.

[5] The Timberman, "Pioneer Eastern Oregon Lumber Firm," September 1933, 48.

[6] Arrington, "David Eccles," 6.

[7][36] Arrington, "David Eccles," 6.

[8] Arrington, "David Eccles," 6–7.

[9] Arrington, "David Eccles," 7.

[10] Holter and Doncaster, *Historical Context*, 13. "The Oregon Lumber Company Railway was an independent non-common carrier owned by the Oregon Lumber Company. Although the Oregon Lumber Company did share some board members and tracks between Austin and Bates, there was no other corporate relationship between these independent companies." See also 87001066 Delisting Document, Section 8, p. 5.

John Stoddard, H. H. Spencer, Thomas Dee, George Romney, and Hyrum Young—constituted a closely related group rooted in Latter-day Saint family and business networks.

The OLC grew steadily through the 1890s and 1900s, expanding its mill at South Baker to include a planing mill for finish lumber in 1893, and opening additional mills at locations throughout Oregon (Figure 5). By 1905, the SVRy had reached Austin, where the company built a sawmill and railroad facilities. The railway was extended to Prairie City by 1910, and Austin became a division point on the line.[11]

The legal difficulties surrounding the OLC's timber holdings cast a long shadow over the company's early history. David Eccles and his associates had acquired extensive tracts of timberland in the Blue Mountains, some of it through means that attracted federal scrutiny. Federal investigations revealed that the company had facilitated fraudulent homestead entries to acquire timberland, drawing up applications, providing and paying witnesses, and managing the mechanics of the claims while the nominal entry men supplied little more than their names. Although the criminal suit against the OLC was dismissed in 1912, some 6,000 fraudulently obtained acres were returned to the federal forests, and a subsequent civil action sought the return of an additional 6,700 acres. The company nevertheless retained title to approximately 100,000 acres of prime timberland in the Malheur National Forest, much of it along the Middle Fork of the John Day River.[12]

Early Management of the Forest

Coincident with the rise of the OLC, the unchecked exploitation of publicly held timber, mineral, and grazing lands in the Blue Mountains during the final decades of the nineteenth century provided the increasingly dire impetus for federal intervention on public land.[13] Miners, stockmen, and timber operators competed freely for the region's resources, often through fraudulent land claims, outright resource theft, and other wasteful practices. In response, Congress authorized the creation of Forest Reserves in 1891, empowering the President to set aside forested public lands from further disposal. By 1902, the majority of the Blue Mountains had been temporarily withdrawn from additional land claims for the proposed Blue Mountains Forest Reserve.[14]

The administration of these lands proved contentious from the outset. The General Land Office of the Department of the Interior held nominal responsibility for the Forest Reserves from 1897 to 1905, though the Department of Agriculture's Bureau of Forestry provided technical forestry expertise. Considerable tension existed between the two agencies over policy and jurisdiction, and the situation was not resolved until 1905, when President Theodore Roosevelt transferred the Forest Reserves to the Department of Agriculture under the direction of Chief Forester Gifford Pinchot.[15] In 1906, Roosevelt formally established the Blue Mountains Forest Reserve, and in 1908, the eastern portion was designated as the 1.47-million-acre Malheur National Forest. The name "Malheur" derives from the French for "misfortune" (literally translated to "bad hour"), a reference to fur trapper Peter Skene Ogden's loss of hidden goods to Indigenous people along the river that bears the name.[16]

The formation of the Malheur National Forest placed these lands under an agency specifically tasked with their management in perpetuity for the broader public good. Secretary of Agriculture James Wilson articulated the guiding philosophy in 1905, directing that all forest resources be devoted to their most productive use for the permanent good of the whole people, with restrictions only as necessary to ensure the permanence of those resources.[17] Initially, local residents greeted the idea of continued federal ownership with skepticism and outright resistance. Stockmen and settlers feared the reserves would be closed to their use, and petitions against the proposed Reserve circulated widely in Grant County.[18] However, the Forest Service administered the lands to accommodate existing uses—grazing, timber cutting, and mining—within a framework of regulation and sustained yield, gradually mitigating opposition.

In the earliest years of the National Forest, timber sales were few and small. In 1916, the Malheur National Forest contained over six and one-half billion board feet of mature merchantable timber—the largest stand of ponderosa pine in the Pacific Northwest—yet only approximately two million board feet were sold annually for local use, with an additional three-quarters of a million board feet distributed to settlers under free-use permits.[19] The revenue derived from timber

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[11] Mullett and Merritt, *Sumpter Valley Railway*, 8.

[12] Tonsfeldt, SVR Historic District, Section 8, p. 2; Holter and Doncaster, Historical Context, 14–16.

[13] Jerry L. Mosgrove, The Malheur National Forest: An Ethnographic History (Washington, DC: USDA Forest Service, 1980), 71–72.

[14] Mosgrove, The Malheur National Forest, 73.

[15] Cultural Resources Overview of the Malheur, Umatilla, and Wallowa-Whitman National Forests (Portland, OR: USDA Forest Service, Pacific Northwest Region, 1978), 58.

[16] Mosgrove, The Malheur National Forest, 76.

[17][5] Cultural Resources Overview, 51–52; Mosgrove, The Malheur National Forest, 73–75.

[18] Cultural Resources Overview, 58–59.

[19] Mosgrove, The Malheur National Forest, 117.

sales and grazing permits for the fiscal year 1914–1915 amounted to just $16,987.32, a figure reflecting the forest's remoteness and the still limited transportation infrastructure necessary for commercial-scale logging. That infrastructure would arrive in the form of the logging railroad (Figure 6).[20]

Railroad Logging Technology and Factors Affecting Its Rise and Decline

The evolution of logging technology in the Pacific Northwest followed a broadly consistent trajectory from manual methods and animal power through steam-powered mechanization and, ultimately, to the internal combustion engine. Prior to the 1880s, logging in the western woods was accomplished primarily by felling trees with axes and crosscut saws and yarding the resulting logs to waterways using oxen or horse teams over greased skid roads. This system was inherently limited in range—animal-powered yarding was practical only within about a mile of a watercourse or landing—and confined commercial logging to the immediate margins of navigable rivers and tidal waters.[21]

The introduction of two technologies in the 1880s transformed the scale and geography of western logging. The first was the logging railroad, which appeared in the Puget Sound region during that decade and spread rapidly throughout the coastal and interior forests of the Pacific Northwest.[22] The second was the steam "donkey" engine, patented by John Dolbeer of Eureka, California, in 1882. The donkey—so named because it was purportedly unworthy of being rated in horsepower—was a portable steam winch mounted on a wooden sled that could yard logs to a landing by means of wire rope.[23] Together, the railroad and the donkey engine freed the logger from dependence on waterways and animal power, opening vast new tracts of previously inaccessible timber to commercial exploitation.

The logging railroad system that evolved in the western woods can be likened to a tree: a collection of branch lines, called "spurs," that fed by gravity into a main stem, or "trunk." Spurs were considered temporary infrastructure, laid quickly and cheaply into stands of timber and abandoned or relocated once the surrounding trees had been cut. The mainline was the permanent portion of the system, serving as the primary route for logs moving between the woods and the mill. By the mid-1880s, all the essential elements for efficient removal of the West's timber had been assembled: transcontinental railroads had created new markets for lumber; the donkey engine provided mechanical handling of logs in the woods; and locomotive manufacturers had begun producing motive power suited to the steep grades and tight curves of forest railroads.[24]

In the pine forests east of the Cascades, where the timber was less dense and the terrain gentler than in the coastal ranges, logging operators favored different equipment from their counterparts to the west. Rather than the stationary donkey engines and high-lead cable systems used in Douglas fir country, Blue Mountain loggers relied on horse-drawn high wheels to bring logs to the track and rail-mounted loading machines to place them on cars. The most famous of these was the McGiffert self-propelled log loader, a mechanical apparatus that could pull empty cars from the rear, load them with logs while moving the cars beneath itself, and push the loaded cars back to the mainline.[25] Despite the availability of such machinery, the Blue Mountain lumber companies—including the OLC—generally clung to older and often improvised methods, using steam donkeys and A-frame loaders well into the 1920s.

The geared locomotive was the indispensable motive power of the logging railroad. Three principal designs—the Shay, the Climax, and the Heisler—were engineered specifically for the unique conditions of forest railroading: steep grades, tight curves, rough track, and enormous loads (Figures 7–9). Of these, the Shay was the most widely used in the western woods. Geared locomotives were employed on the spur lines, climbing out onto ridges to retrieve loaded cars, while conventional rod-driven locomotives handled the mainline haul from the woods to the mill.

The Great Depression of the 1930s dealt a near-fatal blow to the logging railroad. As lumber markets collapsed and per-capita consumption of wood fell to record lows, operators across the West shut down camps, abandoned rail lines, and sold equipment for scrap. In Oregon alone, more than two million acres of forest land became tax-delinquent.[26] Those operators who survived looked for economies wherever they could find them, and the logging railroad—which often represented forty percent of the total cost of logging—presented an obvious target.[27] The motor truck, which had been

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[20] Mosgrove, The Malheur National Forest, 178.

[21] Richard A. Rajala, "The Forest as Factory: Technological Change and Worker Control in the West Coast Logging Industry, 1880–1930," Labour/Le Travail 32 (Fall 1993): 77.

[22] Kramer A. Adams, Logging Railroads of the West (Seattle: Superior Publishing, 1961), 13–15.

[23] Rajala, "The Forest as Factory," 85.

[24] Adams, Logging Railroads of the West, 15.

[25] Ward Tonsfeldt, National Register of Historic Places Nomination of the Sumpter Valley Railway Historic District (Washington, DC: National Park Service, 1987), Section 8, p. 5.

[26] Adams, Logging Railroads of the West, 123–124.

[27] Adams, Logging Railroads of the West, 123–124.

used in the western woods since 1913, offered a less capital-intensive alternative. The first log truck in the OLC fleet [28] Though not instantaneous, the transition from locomotives to logging trucks proved relentless, and by the late 1940s, the era of the logging railroad in the Blue Mountains had effectively ended (Figure 10).

Post-World War I Increase in National Forest Logging

The period following World War I witnessed a dramatic expansion of timber harvesting on National Forest lands, driven by increased demand, improved access, and evolving Forest Service policy. Prior to the war, logging in the Malheur National Forest had been modest in scale, consisting primarily of small sales to local ranchers and settlers. The war itself stimulated demand for lumber and wood products, and the postwar construction boom extended that demand into the 1920s.[29]

The arrival of logging railroads in the Blue Mountains, including the OLC Railway, was the critical factor enabling commercial-scale timber extraction from the National Forest. The OLC Railway penetrated deep into the Malheur National Forest and gave the company access to an estimated three billion board feet of standing timber. The OLC Railway was an industrial non-common carrier—a railroad chartered solely to serve the OLC—and it operated independently of the SVRy, which served as its common carrier interchange partner.[30] Rough-cut lumber was moved from Bates to the interchange yard at Austin on the OLC Railway; there it was transferred to the SVRy for transport to the central processing plant at Baker City, where it was kiln-dried and finished (Figure 11).[31] Between approximately 1914 and 1927, the OLC Railway also operated under the name “Grant County Railway,” and was apparently chartered as a common carrier to enable the directors to pursue passenger fares and ore shipments from the mines at Galena and Susanville to the northwest—activities prohibited for non-common carriers.[32] The Edward Hines Lumber Company, operating from its mill and railroad at Burns and Seneca on the forest’s southern flank, similarly relied on rail access to harvest National Forest timber under large-scale sales negotiated with the Forest Service.

The relationship between the timber industry and the Forest Service was complex and sometimes contentious. Lumber companies depended on access to National Forest timber to sustain their operations, and the Forest Service, in turn, depended on the revenue generated by timber sales. Yet the agency’s mandate to ensure the permanence of the forest resource through sustained-yield management often put it at odds with operators seeking to maximize short-term production and profits. As timber prices collapsed during the Depression, the fixed fees that companies like the Edward Hines Lumber Company were required to pay for National Forest stumpage rendered many sales unprofitable, and several operations were forced to curtail or suspend cutting entirely.[33]

The broader Pacific Northwest lumber industry experienced cycles of boom and bust that shaped the trajectory of logging in the Malheur National Forest. The overproduction that characterized the 1920s, combined with the catastrophic market decline of the 1930s, prompted calls for federal regulation of the industry and for the Forest Service to limit its timber sales to stabilize prices. Trade leaders urged the Forest Service to withdraw public timber from the market, arguing that selling government stumpage when the industry was already suffering from overproduction only deepened the crisis.[34] These debates over sustained yield, community stability, and the proper role of federal timber in the national economy would continue to shape forest policy—and the communities of Grant and Harney Counties—for the remainder of the twentieth century.

Labor and Workforce

The labor force that built and operated the logging railroads and sawmills of the Blue Mountains reflected the broader social dynamics of the Pacific Northwest timber industry, with distinctive regional characteristics. Across the West, logging was overwhelmingly the domain of young, single men, many of them immigrants, willing to work in isolated camps deep in the woods. The emergence of this class of itinerant workers was accompanied by sharply negative cultural attitudes:

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[28] Oregon Lumber Company Archives, Emlaw fonds, Enterprise, OR.

[29] Cultural Resources Overview, 56–57.

[30] Holter and Doncaster, *Historical Context of Oregon Lumber Company and its Railway, Bates, OR* (2022), 33; 87001066 Delisting Document, Section 8, p. 5. The Oregon Lumber Company Railway was an industrial non-common carrier, meaning it could only transport goods for the OLC. The SVRy, a common carrier, served as its interchange partner.

[31] Holter and Doncaster, *Historical Context*, 6, 19. Rough-cut lumber moved from Bates to Austin on the OLC Railway, was interchanged to the SVRy at Austin, and was then transported to the central processing plant at Baker for kiln-drying and finishing.

[32] Holter and Doncaster, *Historical Context*, 33; 87001066 Delisting Document, Section 8, pp. 5–6. The Grant County Railway was chartered as a common carrier, apparently to circumvent federal restrictions on non-common carriers, enabling the directors to pursue passenger fares and ore shipments from mines at Galena and Susanville.

[3318] Mosgrove, The Malheur National Forest, 192.

[34] William G. Robbins, “Lumber Production and Community Stability: A View from the Pacific Northwest,” Journal of Forest History 31, no. 4 (October 1987): 187–190.

loggers were characterized as “timber beasts” and millworkers as “sawdust savages,” epithets indicative of an ideology that served to justify minimal wages and inferior working conditions.[35]

Working conditions in the early logging camps were notoriously poor. Crews of ten to fifteen men lived in crude shanties, sleeping on straw mattresses in bunkhouses permeated by the stench of drying clothing and unwashed bodies. Workers carried their own bedrolls and often worked ten-hour days, six days a week. Turnover rates in the industry skyrocketed to seven hundred percent annually, as dissatisfied workers moved from camp to camp in search of marginally better conditions.[36] Ironically, loggers were among the best-fed workers in the country. The enormous caloric demands of the work—combined with the loggers’ own insistence on quality provisions—produced a tradition of lavish cookhouse meals that stood in sharp contrast to the conditions of the bunkhouse.[37]

The mechanization of logging through steam-powered yarding and railroad transportation fundamentally altered the nature of the work and the relationship between labor and capital. The donkey engine and its associated rigging systems increased the pace and danger of logging operations while simultaneously reducing the autonomy of individual workers. Where an ox-team logger had exercised considerable personal judgment in selecting routes and managing his animals, the donkey-powered crew was subordinated to the rhythms of the machine and the commands transmitted by the whistle punk through signal wires.[38] This loss of autonomy, combined with the escalating danger of “highball” logging—the relentless drive for maximum production—contributed directly to the politicization of the logging workforce.

The Industrial Workers of the World (IWW), known as the “Wobblies,” found fertile ground among Pacific Northwest loggers beginning around 1907. Their tactics—free-speech fights, strikes, and acts of sabotage—escalated in response to lumber companies’ use of corrupt employment agencies, blacklists, and wage cuts. The conflict reached a crisis during World War I, when widespread IWW-organized work stoppages threatened wartime timber production. In response, the U.S. Army and timber companies collaborated to form the Loyal Legion of Loggers and Lumbermen, a quasi-military organization that employed patriotic fervor and military discipline to improve conditions in the camps while ensuring continued production.[39] The reforms instituted under the Loyal Legion—including cleaner bunkhouses, shorter hours, and improved sanitation—brought a degree of stability to the industry, though labor unrest continued into the early 1920s.

On the SVRy itself, these pressures culminated in the line’s longest strike. A wage dispute had been pending since before the Armistice; federal mediators had granted a ten-cent hourly raise for a sixty-day trial period beginning November 1, 1918, but when that period lapsed without a permanent settlement the railway’s employees resigned in a body on December 31, 1918. For roughly three weeks, some fifty men kept the snowbound mountain passes closed: no one could be found to run the mail train on January 2, freight piled up at Baker, and on January 12 a string of two-horse wagons hauled mail over the divide between Sumpter and Baker. The stoppage coincided with the 1919 influenza epidemic, which reached the isolated logging town of Austin—sixty miles from Baker—where doctors were scarce and the dead were buried in muslin for want of coffins. Pleading that it could not afford the wages its workers demanded, the company forced the first through train to Prairie City out on January 17 and resumed freight service on the twenty-second. The episode laid bare how completely Grant County’s communities depended on the single narrow-gauge line—and on the labor that built, ran, and maintained it.[40]

Ethnic Diversity in the Blue Mountains Workforce

The workforce that built and sustained the railroad and lumber enterprises of the Blue Mountains was far more ethnically diverse than the popular image of the white Scandinavian logger might suggest (Figure 12). Although the term “Swede power” was commonly applied to logging railroad construction crews across the West, the actual ethnic composition of these workforces included, at various times and places, Scandinavians, Japanese, Chinese, Bulgarians, South Asians, Italians, and Native Americans.[41] In Grant County, the 1910 federal census recorded fifty different birthplaces among the county’s 5,624 residents. The Austin precinct—which encompassed the OLC’s operations and the upper reaches of the SVRy—listed residents born in Canada, China, France, Germany, Ireland, Japan, the Netherlands, Norway, Sweden, and the United States.[42]

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[35]Barney Warf, “Regional Transformation, Everyday Life, and Pacific Northwest Lumber Production,” Annals of the Association of American Geographers 78, no. 2 (1988): 338.

[36] Warf, “Regional Transformation,” 338.

[37] Joseph R. Conlin, “‘Did You Get Enough of Pie?’ A Social History of Food in Logging Camps,” Journal of Forest History 23, no. 4 (October 1979).

[38] Rajala, “The Forest as Factory,” 90.

[39] Warf, “Regional Transformation,” 338–340.

[40] Harvey Elmer Tobie, “Oregon Labor Disputes, 1919–1923: II; Government and Wages,” Oregon Historical Quarterly 48, no. 3 (September 1947): 199–201; Rose et al., Railroad and Logging Camps, 18–19.

[41] Adams, Logging Railroads of the West, 51–52.

[42]Chelsea Rose, Katie Johnson, Eric Gleason, and Anna Sloan, Railroad and Logging Camps at the Baker White Pine Mill and Japanese Meadow, Archaeological Investigations 2022.16 (Ashland, OR: Southern Oregon University Laboratory of Anthropology, 2025), 38. The 1910 census for the

Chinese immigrants had constituted a major component of Grant County's population during the placer mining era that preceded the arrival of the timber industry. The 1870 census recorded 940 Chinese residents, accounting for forty-two percent of the county's total population and seventy-nine percent of its miners.[43] Chinese mining companies, organized as kongsi—cooperative partnerships in which members shared profits rather than earning wages—operated sophisticated placer operations on the John Day River and its tributaries, investing heavily in equipment and infrastructure and purchasing or leasing claims from Euro-American holders for sums as large as $6,000.[44] By 1890, however, as the placer deposits were exhausted and exclusionary laws enacted after the Chinese Exclusion Act of 1882 took hold, the Chinese population had dropped to 326, and it continued to decline into the twentieth century. Ing Hay and Lung On, proprietors of the Kam Wah Chung and Company mercantile in John Day, were among the last prominent Chinese residents, continuing to serve both Chinese and non-Chinese neighbors well into the twentieth century.[45] Although it has sometimes been asserted that Chinese laborers built the SVRy, historian Don Hann has specifically corrected this error, demonstrating that there is no documentary evidence for Chinese labor on the SVRy and that census records show Japanese, not Chinese, railroad workers.[46]

The most significant non-white ethnic presence in the Blue Mountains timber workforce was that of Japanese immigrants, whose arrival in the region was directly connected to the decline of Chinese labor. The Issei—first-generation Japanese immigrants—were drawn to the United States by the promise of higher incomes than they could earn at home, and upon arrival were connected to employers through labor contractors who received a percentage of their wages.[47] By 1906, there were 1,221 Japanese American men employed by railroads across Oregon, comprising approximately forty percent of the state's total railroad workforce.[48] Japanese American railroad workers first appeared in Grant County in connection with the construction and maintenance of the SVRy, which reached the county after cresting the summit at Tipton in 1904–1905. The thirty-three Japanese American SVRy workers listed in the 1910 census—all railroad laborers residing in a single household in the Austin precinct, likely a company bunkhouse—arrived on the crest of this wave of immigration just as the railway was completing its mainline.[49]

Employed primarily as construction and maintenance crews, known colloquially as "Gandy Dancers," these men performed the most physically demanding labor on the railroad for the lowest wages. Payroll records from 1914 show that a section foreman earned $72.50 per month while Japanese laborers earned approximately $42.00, with an additional dollar deducted monthly for hospitalization insurance.[50] This wage disparity was substantial: at roughly seventeen and one-half cents per hour for a ten-hour day, six days a week, the Japanese laborers earned less than half the foreman's rate.[51]

Over the following decades, Japanese employment in Grant County diversified beyond railroad maintenance into the adjacent forests and mills. The 1920 census documented fifty Japanese Americans living in twelve different households in the Austin precinct, with occupations that now included logging camp laborers, sawmill laborers, cooks, and railroad section hands as well as section bosses.

Among the mills that drew on this labor was the Baker White Pine Lumber Company, organized around 1910 by Frank Gardinier as a competitor to the OLC. Based at Baker City and—like the OLC—dependent on the SVRy, though frequently at odds with it over freight rates, the firm milled white pine at Austin and South Baker until the Stoddard Lumber Company absorbed it in 1929.[52] Japanese crews worked in its operations, and the logging camp at Japanese Meadow, documented together with the Baker White Pine Mill site in recent archaeological investigations on the Malheur National Forest, is associated with this workforce.[53]

Austin precinct of Grant County listed 218 residents with ten different birthplaces: five from Canada, two from China, one from France, four from Germany, one from Ireland, thirty-three from Japan, one from the Netherlands, three from Norway, two from Sweden, and 166 from the United States.

[43] Don Hann, "Chinese Mining Kongsi in Eastern Oregon: A Case Study of Cultural Amnesia," Oregon Historical Quarterly 122, no. 4 (2021): 346.

[44] Hann, "Chinese Mining Kongsi," 346–347.

[45] Hann, "Chinese Mining Kongsi," 347, 350.

[46] Hann, "Chinese Mining Kongsi," 353. Hann corrects the erroneous claim in Barlow and Richardson's China Doctor of John Day (1979) that Chinese laborers built the SVRy, noting that "there is no evidence of Chinese labor being employed during the construction of the Sumpter Valley Railroad [sic]" and that census records instead show approximately forty Japanese railroad workers.

[47] Rose et al., Railroad and Logging Camps, 38–39.

[48] Eiichiro Azuma (2017), cited in Rose et al., Railroad and Logging Camps, 40. By 1906, there were 1,221 Japanese American men employed by railroads across Oregon, comprising approximately forty percent of the total railroad workforce.

[49] Rose et al., Railroad and Logging Camps, 40–41; U.S. Bureau of the Census, Thirteenth Census of the United States, 1910, Grant County, Oregon, Austin Precinct.

[50] Sumpter Valley Railway Company, Roadway Department Time Book and Distribution of Labor, Section 4, September 1914, Sumpter Valley Railway Co. Archives; cited in Rose et al., Railroad and Logging Camps, 21.

[51] Rose et al., Railroad and Logging Camps, 21. By 1919, wages had increased to $120.00 per month for foremen and 37¢ per hour for laborers, representing a sixty percent increase for foremen and a forty-seven percent increase for laborers in five years.

[52] Rose et al., Railroad and Logging Camps, ~13–14, 26–27; Ferrell, *Rails, Sagebrush, and Pine*, 57–69.

[53] Rose et al., Railroad and Logging Camps (for the Japanese Meadow / Baker White Pine Mill sites).

Elsewhere at the Eccles Logging Camp and Logging Camp No. 2, Japanese men worked in the woods, and at least two women—identified as wives—served as cooks.[54] The Mayeda family of Prairie City exemplified the emerging pattern of more settled Japanese American life in the region: Titinyi Mayeda worked as a section boss on the SVRy, his brother and father served as section hands, and his wife and infant daughter lived with the family near the railroad tracks. Census records document a continuous Japanese American presence in the Austin precinct from 1900 through 1940, with the Rokui family—Tom and Takeno Rokui and their children, some born in Utah, others in Oregon and Idaho—among the last Japanese Americans recorded in the area before the upheavals of World War II.[55]

By the 1920s, the character of the logging workforce was beginning to change. The replacement of isolated camps by permanent company towns—such as Bates, on the Middle Fork of the John Day River—enabled a shift from the transient bachelor workforce of the earlier era to a more settled population of married men with families. The OLC's investment in worker housing at Bates, including twelve 5-room bungalows with modern plumbing, a 35-room hotel for single men, and community facilities such as a school and church, represented the industry-wide trend toward stabilizing labor through improved conditions and increasingly paternalistic management (Figure 13).[56] Roads and automobiles further reduced the isolation of logging communities, and by the 1940s the typical logger was more likely to commute from a permanent home in a nearby town than to live in a company camp.[57]

Logging on the Malheur National Forest after the Railroad

The transition from railroad to truck logging on the Malheur National Forest was neither sudden nor entirely voluntary. Technological, economic, and wartime factors converged in the early 1940s to render the logging railroad obsolete. The Depression had already weakened many operators' ability to maintain their rail infrastructure, and the wartime scrap drives of the early 1940s made idle rail and rolling stock more valuable as steel than as logging equipment. As early as 1940, a Japanese salvage crew removed temporary spurs and mainline track from the OLC's Camp Creek area for scrap.[58]

The motor truck offered compelling advantages over the railroad: lower capital costs, greater flexibility in routing, the ability to access timber on terrain unsuitable for rail, and freedom from the expense of maintaining miles of track, bridges, and rolling stock. Yet the early trucks were crude and sometimes dangerous machines. Elvin Endecott, a second-generation OLC employee, recalled harrowing trips down mountain grades in trucks with water-cooled braking systems that could fail catastrophically if the water evaporated. Rial Green, a second-generation employee, remembered that the first log trucks were only one-and-a-half-ton vehicles whose transmissions seemed ready to come through the floorboards on every descent.[59]

The final run of the SVRy took place on June 12, 1947, when Mallet engine 251 brought a train of four flatcars loaded with surplus mill equipment and a caboose down from Bates to Baker.[60] With it ended an era of railroad logging in the Blue Mountains that had shaped the landscape, economy, and communities of Eastern Oregon for more than half a century. The physical traces of that era—railroad grades, spur lines, trestle footings, sawmill foundations, and the remnants of logging camps and company towns—remain embedded in the forests of the Malheur National Forest, constituting a significant and largely unexamined cultural landscape.

Later History: Reorganization through Sale (1912–1956)

Following David Eccles's death in 1912, control of the OLC passed to his eldest son, David Christian Eccles, who oversaw the company's most ambitious expansion. In 1915, the younger Eccles took out construction bonds to build a new and larger sawmill near the headwaters of the Middle Fork of the John Day River. The new facility, located one mile west of Austin Junction at what would become Bates, began operations in September 1917. The mill was a modern electrically driven plant with two eight-foot band mills, a capacity of 130,000 to 150,000 board feet daily, and amenities for its workforce that the *Baker Morning Democrat* compared to those of a mountain resort.[61] The company town that grew up

[54] U.S. Bureau of the Census, Fourteenth Census of the United States, 1920, Grant County, Oregon, Austin Precinct; compiled in Rose et al., Railroad and Logging Camps, Appendix A.

[55] Rose et al., Railroad and Logging Camps, Appendix A. Census records compiled by Rose et al. document Japanese American residents in the Austin precinct in every decennial census from 1900 through 1940, with peak numbers in 1920.

[56] Norman S. Hayner, "Taming the Lumberjack," American Sociological Review 10, no. 2 (April 1945): 217–225, 220–222.

[57] Warf, "Regional Transformation," 340.

[58] Adams, Logging Railroads of the West, 124; Tonsfeldt, SVR Historic District, Section 8.

[59] Holter and Doncaster, Historical Context, 52.

[60] Alfred Mullett and Leonard Merritt, *Sumpter Valley Railway* (Charleston, SC: Arcadia Publishing, 2009), 9.

[61] Tonsfeldt, SVR Historic District, Section 8, pp. 11–12.

around the mill eventually included dozens of company houses, a hotel, a powerhouse, a store, a grade school, a community hall, and a church.[62]

Marriner Eccles took over operations of the OLC from his half-brother David Jr. in 1921.[63] Under Marriner's leadership, the company devoted significant resources to improving both the Sumpter Valley and the OLC railways and expanding production at Bates. By 1926, the Bates mill was generating 110,000 board feet per day, and the company was operating two logging camps in the woods to supply it. The company's product line included kiln-dried yard stock, door jams, luggage stock, Venetian blind stock, and pine trim moldings—high-quality goods made possible by the exceptionally tight grain of John Day ponderosa pine, whose growth was stunted by the harsh winters of the high plateau.

The prosperity of the 1920s proved short-lived. By 1928, the lumber business had contracted sharply, and the OLC was rumored to be for sale. The Great Depression that followed was devastating to the logging industry: by November 1932, western pine mills were operating at just 16% of capacity, with only 38 of 117 mills in production. The OLC's strategy for survival was to shut down the Bates mill first, then Baker, cutting off the extremities to preserve the core. During closures, the company permitted employees to live in company housing rent-free, and steam from the mill's boilers provided heat for the entire town during the winter months.

Despite these efforts, by 1935 the OLC could no longer service its mounting debts. In September of that year, citing the need for financial protection, the company filed for bankruptcy in Superior Court in Portland. At that time, the company was mired in $850,000 of bonded indebtedness.[64] In 1936, the company filed for formal reorganization and bankruptcy protection.[65]

Additional hardship came in 1939, when the Big Cow Burn—a devastating forest fire—swept through the John Day country, destroying vast areas of forest and much of the OLC's remaining unharvested timber holdings. The Forest Service granted the company salvage rights to harvest fire-killed timber, and the company negotiated land exchanges with the agency that provided standing resources sufficient to keep the mill solvent. The wartime demand for timber and boxes during World War II brought a further reprieve, keeping the mills busy for the duration of the conflict and through the postwar construction boom.

The OLC's railroad operations did not survive the war. President A. C. Lighthall decided in 1942 not to restart railroad operations at Bates, a decision that Lighthall soon regretted as the costs of truck hauling outstripped those of rail.[66] The final run of the SVRy occurred in June 1947 and in the years following the war, the OLC continued to operate the Bates mill under increasingly constrained circumstances. The Forest Service's perpetual-yield program limited the annual cut in the Middle Fork drainage to thirty-three million board feet, a fraction of the mill's capacity, and the decision to ship dry rather than green lumber further reduced tonnage. In 1955, the Edward Hines Lumber Company of Chicago began the process of acquiring the OLC, a transaction that was completed on December 30, 1960, when the Bates sawmill and its equipment were transferred for the nominal sum of one dollar. The South Baker facility followed in 1962. Hines operated the Bates mill until 1975, when it was closed and dismantled.[67]

Latter-day Saints and Logging in Oregon

The role of members of the Church of Jesus Christ of Latter-day Saints in the development of Oregon's timber industry constitutes a distinctive and underexamined chapter in the economic history of the American West. David Eccles and his associates—Nibley, the Stoddards, the Dees, the Romneys, the Wests, and others—were devout Latter-day Saints whose business activities were deeply intertwined with their religious community. Their operations in the Blue Mountains were popularly known as the "Mormon mills."[68]

The Latter-day Saints involvement in Oregon's timber industry grew from the distinctive economic culture of the nineteenth-century Mormon community. Church leaders had historically encouraged the Saints to develop self-sufficiency through cooperative industry, and the development of timber, construction, and transportation enterprises represented a natural extension of this tradition into the corporate age. By the end of the nineteenth century, as the process of "Americanization" encouraged Latter-day Saints to engage more fully with mainstream economic life, figures like Eccles

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[62] Gregg Smith, "Community of Bates," Oregon Encyclopedia, https://www.oregonencyclopedia.org/articles/bates_community_/.

[63] Mullett and Merritt, *Sumpter Valley Railway*, 8.

[64] Holter and Doncaster, *Historical Context*, 20.

[65] Holter and Doncaster, *Historical Context*, 20.

[66] Holter and Doncaster, *Historical Context*, 30; Smith, "Community of Bates."

[67] Smith, "Community of Bates," Holter and Doncaster, *Historical Context*, 61.

[68] Tonsfeldt, SVR Historic District, Sec. 8, p. 2; SOULA Report, 17.

emerged as sophisticated capitalists who invested widely outside of Utah while maintaining close ties to their religious community.[69]

Eccles's Oregon enterprises were staffed primarily by Utahns. As historian Leonard Arrington observed, Eccles recruited from the Latter-day Saint communities of Weber, Ogden, and Cache Valleys because he knew they needed good jobs and were considered to be imbued with the kind of work ethic that he and his Scottish-born partners expected.[70] This pattern of community-based recruitment produced a distinctive social character in the Blue Mountain logging towns, where Latter-day Saint families, kinship networks, and religious institutions formed the backbone of community life. The interlocking directorates of the OLC, the SVRy, the Stoddard Brothers Lumber Company, and the Nibley-Hilgard Lumber Company reflected a web of family and religious connections that had no direct parallel among the region's other timber operators.

The distinctiveness of the Latter-day Saint logging enterprise extended beyond corporate organization to patterns of community building. The OLC's investments in worker housing, community facilities, and social infrastructure at Bates and other mill towns reflected a paternalistic but genuine concern for the welfare of workers and their families that was consistent with Latter-day Saint social ideals, even as it also served the practical purpose of recruiting and retaining labor in remote locations.

These ideals are legible in the resources evaluated here. At Bates, the Oregon Lumber Company laid out a planned company town that housed roughly four hundred residents in company-built dwellings and supplied the full fabric of a permanent community—store, grade school, community hall, hotel, and church—alongside the mill complex itself.[71] The same investment in family-oriented settlement appears in the archaeological record of the company's logging camps: abundant artifacts associated with women and children at the Baker White Pine Mill site show that resident families, not only transient single men, were integral to the community, reflecting the era's broader shift from communal bunkhouses toward sponsored family housing and townsites zoned into distinct residential, dining, administrative (company store), and industrial areas; at the Japanese Meadow component, discrete living areas and Japanese ceramics preserve the camps' multiethnic structure.[72] The resulting character-defining features—planned, functionally zoned town and camp layouts, family housing and shared community buildings, domestic assemblages indicating resident families, and ethnically distinct living areas—are what allow these resources to convey the enterprise's community-building ethos as well as its industrial process.

In all, the legacy of the "Mormon mills" in the Blue Mountains represents not only a significant episode in the industrial history of the Pacific Northwest, but also an important chapter in the broader story of Latter-day Saint economic engagement with the wider American West.

[69] Richard F. Francaviglia, "Mining and Religion in the Intermountain West," John Whitmer Historical Association Journal (2004): 199–213.

[70][67] Arrington, "David Eccles," 6.

[71] Smith, "Community of Bates."

[72] Rose et al., *Railroad and Logging Camps*, 153.

F. Associated Property Types

(Provide description, significance, and registration requirements.)

General Registration Requirements – All Property Types

The National Historic Preservation Act of 1966, as amended, states that properties nominated for listing in the National Register of Historic Places are those that are "significant in American history, architecture, archaeology, engineering, and culture."[73] Nominated properties are those that have sufficient significance within a given context and that retain sufficient historic integrity to convey their significance to the viewer.

Note that this document may be used to evaluate the eligibility for listing of any cultural resources that are a) located within the Malheur National Forest, b) associated with the SVRy or the OLC, and c) delineated into one of the property types below. Per the National Historic Preservation Act, only cultural resources that are listed in or eligible for listing in the National Register of Historic Places are considered to be historic properties.[74]

Categories

All cultural resources considered for evaluation in the National Register of Historic Places may be grouped into one of five categories. These categories include buildings, sites, districts, structures, and objects.[75] Except for districts—often termed "historic districts"—resources may only be classified as one of the categories. While districts are their own resource type, they also contain cultural resources classified under one of the remaining four categories. Cultural resources within a district are divided into those that contribute to the significance of the district—"contributing resources"—and those that do not contribute to the district—"non-contributing resources."

Significance

All properties successfully nominated for listing in the National Register of Historic Places must demonstrate historical significance under one or more of the Criteria for Evaluation. These are:

- **Criterion A:** Association with events that have made a significant contribution to the broad patterns of our history.
- **Criterion B:** Association with the lives of persons significant in our past.
- **Criterion C:** Embodiment of the distinctive characteristics of a type, period, or method of construction; representative of the work of a master; possessive of high artistic values; representative of a significant and distinguishable entity whose components lack individual distinction.
- **Criterion D:** A source of, or likely source of, information important in prehistory or history.

Criteria Considerations

While some property types are ordinarily excluded *ipso facto* from eligibility for listing, under specific Criteria Considerations (a–g), these property types may possess eligibility. These are:

- **Criteria Consideration a:** A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- **Criteria Consideration b:** A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- **Criteria Consideration c:** A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.
- **Criteria Consideration d:** A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- **Criteria Consideration e:** A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- **Criteria Consideration f:** A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- **Criteria Consideration g:** A property achieving significance within the past 50 years if it is of exceptional importance.

[73] Code of Federal Regulations, Title 36 Chapter I Part 60. https://www.ecfr.gov/current/title-36/chapter-I/part-60.

[74] 54 U.S.C. § 300308.

[75] U.S. Department of the Interior. *How to Complete the National Register Multiple Property Documentation Form*. National Register Bulletin No. 16b. National Park Service, 1991. https://www.nps.gov/subjects/nationalregister/upload/NRB16B-Complete.pdf, 4–6.

While any of the Criteria Considerations may be relevant to the properties evaluated through this Multiple Property Documentation (MPD) Form, those most likely to apply to the types discussed here concern moved properties (b) and, less likely, graves and cemeteries associated with historic events (d).

Areas of Significance

All properties nominated for listing in the National Register of Historic Places must identify an area or areas of significance from among the categories established by the National Park Service.[76] Properties nominated under this MPD may have significance under Criterion A in the areas of Ethnic Heritage, Industry, and/or Transportation for the property's associations with the development of the logging industry, rail infrastructure, and the workers connected with them. Properties nominated under this MPD may also have significance under Criterion C in the areas of Engineering and/or Transportation, where they embody the distinctive characteristics of a type, period, or method of construction associated with narrow-gauge railroad logging in mountainous terrain. The engineering of the system represents a coherent body of technological practice that is potentially significant under this criterion. Properties nominated under this MPD may also have significance under Criterion D in the areas of Archaeology-Historic Non-Aboriginal, Ethnic Heritage, Industry, and Transportation, again for the property's associations with the development of the logging industry and rail infrastructure and the workers connected with them. Properties nominated under this MPD are not likely to have significance under Criterion B.

Level of Significance

All properties nominated for listing in the National Register of Historic Places must identify a level of significance corresponding to the geographic context within which the property is significant.[77] The majority of individual properties nominated under this MPD will be significant at a local level. Individual resources such as railroad grade segments, trestles, logging camps, sawmill sites, culturally modified trees, landings, and water management features derive their significance primarily from their role within the local railroad logging system of the Middle Fork drainage and the communities it sustained. Rolling stock, steam donkeys, and high wheels may also be significant at a local level where their associations are principally with the OLC Railway, the SVRy's freight operations, and the Malheur National Forest logging management. Historic districts and rural historic landscapes (sites) that encompass multiple contributing resources have the potential to be significant at either a local or state level. At the state level, a district anchored by the OLC Railway corridor could represent the broader patterns of railroad logging in Oregon's Blue Mountains, the development of the milling-in-transit model of lumber production, and the role of Latter-day Saint corporate enterprise in the state's timber industry—themes with significance beyond the immediate study area. It is not anticipated that any property nominated under this MPD will be significant at a national level.

Period of Significance

The period of significance defined by this MPD is 1897 to 1946. This marks the period within which the SVRy was constructed into the boundaries of the Malheur National Forest and served as a conduit for the OLC. The period concludes with the cessation of railroad operations and the end of its working activities. All properties nominated for listing in the National Register of Historic Places under this MPD must have attained significance within this period.

Integrity

To be listed in the National Register, a property must retain integrity—the ability to convey its significance. The National Register recognizes seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. A property does not need to retain all seven; it must possess enough of them, in the right combination, to convey the sense of time and place with which it is historically associated.[78]

This document defines both above-ground resources—those visible on the terrain—and archaeological resources that survive primarily as subsurface deposits, surface scatters, and remnant features. These two categories convey significance differently. Above-ground resources, such as intact railroad grades, trestles, and rolling stock, must retain sufficient physical presence to be recognizable as products of the railroad logging era. Archaeological resources such as logging camps and sawmill sites often convey significance through information potential—the data they contain about past activities, social organization, and material culture. Such resources may also be significant under Criterion A for their association with railroad logging and resource extraction in the Malheur National Forest, or under Criterion C where they embody distinctive methods of construction or engineering. Integrity for archaeological resources is therefore measured primarily by the degree to which remaining deposits can yield important data, rather than by visual recognizability to a historic-era observer.

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[76] U.S. Department of the Interior, *How to Complete the National Register Multiple Property Documentation Form*, 8. National Park Service. "Area of Significance, Legacy and Current." National Park Service, February 2025. https://irma.nps.gov/DataStore/DownloadFile/740952.

[77] U.S. Department of the Interior, *How to Complete the National Register Multiple Property Documentation Form*, 9.

[78] Linda F. McClelland, *Guidelines for Completing National Register Registration of Historic Places Forms, Part A* (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1997), 4; Elizabeth A. Lyon, *Guidelines for Evaluating and Registering Historical Archeological Sites and Districts*, National Register Bulletin 36 (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1993).

Archaeological resources should be evaluated under all four National Register criteria, not solely under Criterion D.[79] Archaeological properties can qualify under Criteria A, B, and C where sufficient evidence supports such findings.[80] Recent investigations at industrial archaeological sites on the Malheur National Forest have demonstrated this principle: work at the Baker White Pine Mill and Japanese Meadow sites found those properties significant under Criterion A for their association with the early lumber industry and regional economic development, in addition to their information potential under Criterion D.[81] Where an archaeological resource retains enough physical character to convey its historic associations—as may be the case with well-preserved camp sites, intact mill foundations, or grade segments with visible earthwork—evaluation under Criteria A and C is appropriate.

Location: Location is the place where a property was constructed or a historic event occurred. Most property types defined here—grades, trestles, landings, camps, sawmill sites, culturally modified trees, water management features, wyes and sidings, and skid roads—are fixed landscape features that inherently retain integrity of location. Rolling stock and high wheels are exceptions; for these movable objects, integrity of location is satisfied if the object remains within the Malheur National Forest or in an appropriate setting associated with the railroad logging context. Archaeological sites possess integrity of location by definition, as their significance derives from the spatial relationships among artifacts, features, and deposits in the positions where they were created or discarded; location is therefore not treated as a distinguishing registration requirement for archaeological resources.

Design: Design is the combination of elements that create the form, plan, space, structure, and style of a property. For above-ground resources, integrity of design means that original engineering and construction decisions remain legible. For railroad grades, this includes the profile of cuts and fills, curve geometry, drainage layout, and corridor alignment. For trestles, it is manifest in the arrangement of bents, stringers, and decking—whether vertical-bent frames on the mainline or horizontal crib structures on temporary spurs. For rolling stock, design encompasses the distinctive mechanical characteristics of geared locomotive types and the specialized forms of log flats and other cars adapted to mountain logging. For archaeological resources, design is expressed in site layout: the arrangement of structures, activity areas, and refuse deposits within a camp; the configuration of foundations and machinery pads at a mill; or the relationship between landings, spurs, and skid roads revealing the operational logic of a timber sale. Design integrity in archaeological sites is retained when spatial relationships among features and deposits have not been significantly rearranged by post-depositional disturbance.

Setting: Setting is the physical environment of a property. The Malheur National Forest occupies a mountainous, forested landscape along the Middle Fork of the John Day River and its tributaries, at elevations between approximately 3,500 and 5,500 feet. The valley corridors, forested ridgelines, and riparian areas that shaped the railroad logging system remain legible, and contributing resources are situated in ways that reflect historic relationships—grades threading through meadows and forested groves, camps near cutting areas, and mill facilities at the confluence of transportation corridors. The landscape retains a rural, sparsely settled character broadly reflective of the period of significance, though second-growth timber, road development, and post-logging land uses have introduced changes. For above-ground resources, the continued visibility of the surrounding forest and valley terrain is essential to conveying the context of the railroad logging system. For archaeological resources, setting is less critical as a registration requirement, though the undeveloped condition of much of the Malheur National Forest has contributed to deposit preservation by limiting the ground disturbance that typically destroys subsurface resources.

Materials: Materials are the physical elements combined or deposited during a particular period to form a property. For above-ground resources, this means that original construction elements—or a significant portion—survive in place. For railroad grades, relevant materials include earthwork, ballast, tie remains, rail hardware (spikes, fish plates, tie plates), and drainage elements. Rails were systematically removed following abandonment; their absence does not disqualify a grade, because rail salvage was a characteristic industry practice. For trestles, materials include structural timbers, bearing pads, and hardware; for rolling stock, the iron, steel, and wooden components of locomotives and cars. For archaeological resources, materials encompass artifacts, ecofacts (non-artifactual organic and environmental remains), and cultural deposits: structural hardware, milled lumber, tin cans, glass containers, ceramics, personal items, faunal and botanical remains, and industrial debris. The concepts of visibility and focus are useful for evaluating archaeological material integrity.[82] Visibility refers to the quantity of physical remains at a site; focus refers to their interpretability, a function of intactness. Good visibility and good focus indicate likely eligibility. Poor visibility but good focus may also support eligibility if the site can yield data relevant to a carefully framed research question. Good visibility with poor focus—abundant material significantly scrambled by post-depositional disturbance—will rarely support eligibility.

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[79] Oregon State Historic Preservation Office, *State of Oregon Guidelines for Reporting on Archaeological Investigations* (Salem: Oregon Parks and Recreation Department, 2015), 19–20.

[80] John H. Sprinkle Jr., "A Site Form for Important Sites: Converting Archeological Reports into National Register Nominations," *CRM* 18, no. 6, Supplement (1995): 13–16.

[81] Rose et al., Railroad and Logging Camps.

[82] Pat H. Stein, "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona," National Register of Historic Places Multiple Property Documentation Form (Flagstaff, AZ: SWCA, Inc., 1993), Section F, 6–7.

Workmanship: Workmanship is the physical evidence of the crafts of a particular culture or people during a given period. For above-ground resources, this means construction techniques and engineering practices remain visible. For railroad grades, workmanship appears in the quality of earthwork—the precision of cuts, shaping of fills, and construction of retaining features—and in tie-laying, ballasting, and rail-setting practices. The distinction between mainline standards (sawn ties, heavier rail, ballasted track bed, vertical-bent trestles) and temporary spur construction (hewn or log ties, lighter rail, unballasted grade, crib trestles) is itself a significant expression of workmanship reflecting deliberate choices driven by expected duration of use and operating economics. For trestles, workmanship is visible in joinery, timber sizing, and bent framing. For culturally modified trees, it appears in the form of springboard notches, the angle of axe-cut stumps, and blaze techniques. For archaeological resources, workmanship is embedded in artifacts and features: construction techniques in foundation remains, manufacturing characteristics of recovered goods, and methods of refuse disposal and site organization.

Feeling: Feeling is a property's expression of the aesthetic or historic sense of a particular period. For above-ground resources, integrity of feeling is conveyed when a property communicates its industrial origins. Railroad grades that retain feeling are perceptible as manmade features—their linear form, consistent width, and engineered profile contrast with natural topography and create a legible trace of the transportation corridor. Tie remains, hardware, and alignment continuity reinforce the sense that one is encountering the infrastructure of a historic railroad. For rural historic landscapes, feeling arises from the cumulative effect of component features: logged-over areas, high stumps, second-growth corridors, and the overall character of a valley shaped by industrial activity. For archaeological resources, feeling is generally less critical because these properties convey significance through informational content rather than visual character, though the remote, forested setting of many sites in the Malheur National Forest does contribute to a sense of the isolation that characterized the industry.

Association: Association is the direct link between an important historic event or person and a property. This is the most essential integrity aspect for all property types in this document, establishing the connection between a resource and the historic context of railroad logging in the Malheur National Forest. Every resource must be demonstrably associated with the OLC Railway, the SVRy, or logging operations that depended on these systems during the period of significance. Association may be established through documentary evidence (maps, timber sale records, corporate records, photographs), physical proximity to other contributing resources, diagnostic artifacts datable to the period of significance, or oral history. For above-ground resources, association is strengthened when a property retains enough physical character to be recognizable as part of the railroad logging system. For archaeological resources, association must be confirmed through research; isolated scatters or deposits lacking a demonstrable connection to the railroad logging context—through proximity to a grade, datable artifacts, or documentary evidence—do not possess integrity of association within this nomination.

Assessing Integrity Across Property Types: The integrity aspects most critical for eligibility vary by property type and criterion. Above-ground resources evaluated under Criterion A must retain sufficient integrity of location, setting, feeling, and association to convey their historic role. Resources evaluated under Criterion C must additionally retain integrity of design, materials, and workmanship sufficient to manifest the engineering or technological qualities for which they are significant. Archaeological resources evaluated under Criterion D must retain integrity of location, association, and materials sufficient to yield data relevant to identified research questions. The conditions documented during the delisting of the OLC Railway mainline within the 1987 nomination—where flooding, wildfire, road construction, scavenging, and decades of decay had diminished the property to a point where specialists had difficulty identifying the grade—illustrate the threshold below which integrity is insufficient to support eligibility.[83] The registration requirements for each property type below are designed to ensure that nominated resources retain enough physical substance and historical connection to convey their significance within the context of railroad logging on the Malheur National Forest.

Property Types

A note on terminology: Logging, like many widespread labor-intensive industries, developed an organic and colorful lexicon all its own. Terminology for different tools, roles, operations, or materials was highly specialized yet varied widely across geographic areas and time periods. This document has sought to use the definitions and phrases that would have been familiar to loggers in the Pacific Northwest and Eastern Oregon during the period of significance; however, no sources that definitively set out these phrases are known. Instead, words and phrases have been inferred from primary and secondary sources concerned with logging in and around the Malheur National Forest and supplemented with academic dictionaries.[84]

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[83] U.S. Department of the Interior, National Park Service, "Sumpter Valley Railway, Middle Fork (John Day River) Spur: Amendment for Removal," NRIS No. 87001066 (2021), 3–4.

[84] McCulloch, Walter. *Woods Words: A Comprehensive Dictionary of Loggers Terms*. 1st ed. Oregon Historical Society and the Champoeg Press, 1958. https://archive.org/details/woodswordscompre00mccu.

High Wheels

Description: High wheels, also known as big wheels, logging wheels, or katydids (archaic), are large-scale two-wheeled carts pulled by livestock generally used to skid felled logs between their fall site and the railroad landing site. High wheels were constructed of two oversized wagon wheels measuring between eight and twelve feet in diameter, which were placed on either side of a central wooden axle. A wooden tongue measuring around 16 feet was fixed perpendicular to the axle, and a log or "bunch" of logs would be suspended beneath it, lifting the logs' lead end off the ground and allowing them to be skidded over uneven terrain.[85]

High wheels were developed in Michigan, where the size of felled trees originally limited the logging season to winter, when logs could be easily dragged over snow and ice. To extend the logging season year-round, wheelwright Silas C. Overpack of Manistee, Michigan, invented the "Michigan Logging Wheel"—the high wheel—in 1875. Overpack exhibited the high wheel in the 1893 World's Columbian Exposition in Chicago and shipped it throughout the U.S. during the railroad logging era. Authentic Overpack high wheels were manufactured from 1875 to 1920 and were painted red with iron rings inside each wheel to protect the spokes from breakage. In the western United States, where logging often occurred in mountainous regions, standard high wheels were modified with a "slip tongue" consisting of a square hole in the axle through which the tongue could slide back and forth. If a high wheel began to move out of control, the slip tongue would engage, lowering the logs to the ground.[86]

High wheels were used widely throughout the western logging industry, as well as within the Malheur National Forest.[87] Photographic documentation shows their use during the first decades of the twentieth century, and they were likely used from the inception of large-scale logging in the area, through the 1920s. By the 1930s, the Baker White Pine Lumber Company and the Stoddard Lumber Company began to spearhead the use of gas-powered crawler tractors in place of animal teams.[88] While high wheels were adapted to use by tractors, in little time they were replaced by the metal log arches, variations on which remain in use to the present day.

Significance: High wheels are significant for their strong association with the regional lumber industry and are representative of the industry's technological development, which enabled widespread inland logging. There are few, if any, intact high wheels remaining that were conclusively used to log within the boundaries of the Malheur National Forest.[89] Fully intact examples are individually eligible for listing as objects under Criterion A at the local level of significance for their association with industry. Ruined or partial examples found as archaeological resources within the boundary of the Malheur National Forest are not individually eligible for listing but may be eligible as contributing resources to an eligible archaeological site or an eligible historic district.

Registration Requirements: For a High Wheel to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The object must have been used within the Malheur National Forest during the period of significance.
2. If intact, the object is comparable to rolling stock and may be individually eligible outside the boundaries of the Malheur National Forest only if it is in an appropriate setting, including a forested setting or logging-related facility. Generally, objects located in museum settings are not eligible for listing in the National Register as such status is redundant to the recognition and preservation that is inherent in a museum mission.[90]
3. If ruined or fragmented, the feature or features must still be located in the Malheur National Forest and are only eligible as contributing resources to potential archaeological sites or historic districts.

Culturally Modified Trees (Historic)

Description: Culturally modified trees are trees, living or dead, that have been physically altered by human interactions. While there are many types of culturally modified trees, those appropriate for evaluation under this MPD are only those trees that show alteration related to local logging activities. All other types, including trees altered by indigenous groups, livestock herders, or others, cannot be evaluated with this document.

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[85] Ralph Warren Andrews, *This Was Logging!* Schiffer Publishing, Ltd., 1984, 61.

[86] Michigan Historical Center, "The Big Wheels," Michigan Historical Museum System, January 9, 2002, https://web.archive.org/web/20020605231900/http://www.sos.state.mi.us/history/museum/explore/museums/hismus/prehist/lumber/bigwheel.html; Shelli Massek, "High Wheels: Preserving Logging Equipment History," with Doug Hansen, Farm Collector, May 1, 2007, https://www.farmcollector.com/equipment/high-wheels-logging-equipment-history/.

[87] Mullett and Merritt, *Sumpter Valley Railway*, 22.

[88] Alfred Mullett and Leonard Merritt, *Sumpter Valley Logging Railroads* (Charleston, SC: Arcadia Publishing, 2011), 13.

[89] Mullett and Merritt, *Sumpter Valley Logging Railroads*, 32.

[90] Wyatt, Barbara. *Integrity Requirements for Setting and Locations of Locomotives and Other Rolling Stock*. National Register Policy Clarification. National Park Service, 2009. https://www.nps.gov/subjects/nationalregister/upload/Policy_clarification_for_integrity_of_locomotive_settings_4-09.pdf, 3.

Culturally modified trees associated with logging activities may vary widely depending on the type of interaction affected on the tree. By far the most common type of modification found within the Malheur National Forest is the presence of tree stumps left behind after logging. During the period of significance, loggers generally felled trees by using an axe to form notches in the base of a tree into which they would insert a flat board or "springboard."[91]

The springboard provided footing for loggers to cut the tree trunk above the flared buttress roots of the trunk's base, which was unsuitable for processing into finished lumber at a sawmill. Once loggers had "boarded up a tree" by making several consecutively higher springboard notches to clear the buttress, an axe was used to cut a triangular "notch" or "undercut" in the trunk facing the planned direction of fall.[92] Thereafter, a "back cut" was made with a crosscut saw in the opposite face of the trunk until the trunk hinged where the two cuts met, and the tree fell to the forest floor. Skilled loggers could plan the fall of their trees with such precision that this ability was tested as a condition of employment for early United States Forest Service personnel. Depending upon the development of the buttress roots, the remaining stump could sometimes be as much as twenty feet tall and would show evidence of the springboard notches, as well as the jagged remains of the hinge that separated the undercut from the back cut.

In addition to stumps, other relevant types of culturally modified trees that may be covered under this MPD include those with blazes generally cut by axe into the bark of a living tree to indicate the boundary of a forest property, the presence of a seed tree ("windfirm"), recreational trails, or for any other wayfinding purpose.[93] These features may be evident due to cuts, marks, or removed bark strips at or above eye-level. Historical navigation blazes will generally include scars in the bark layer, sometimes in pairs or in threes on trailside trees to indicate instructions to continue straight, turn right or left, and to mark trail beginnings and endings. Modern blazes typically include metal or plastic placards attached directly to trees or spray-painted marks.

Finally, the least common type of culturally modified tree that may be covered under this MPD is arborglyphs (sometimes dendroglyphs), which are created by carving on the bark or trunks of living or dead trees. Although most famously found on the white bark of aspen trees in the Intermountain West, dendroglyphs may be found on any tree and could be as simple as a single character or number.

Significance: Culturally modified trees are significant because of their ability to directly communicate the presence of loggers and logging activities within the Malheur National Forest. Only those modifications that can be positively correlated with logging and logging activities may possess significance under this MPD. Prehistoric markings, blazes associated with historic recreational trails, or arborglyphs created by herders or other non-logging industries are not significant under this MPD. No culturally modified trees will be considered individually eligible for listing in the National Register. Instead, culturally modified trees may be eligible as contributing resources to an eligible archaeological site or an eligible historic district.

Registration Requirements:

For a culturally modified tree to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The feature must be located within the Malheur National Forest and created during the period of significance.
2. The feature must be shown to be tied directly to a site or district, for example, a springboard cut must be associated with a logging site in the area, not isolated from other logging or extraction activities.

Landings

Description: Landings, also known as landing areas or, more rarely, yards, were semi-temporary loading areas where felled logs were collected and transferred onto vehicles for transportation to a millsite. Generally, these areas were located on cleared, level ground adjacent to rail lines. Because of their importance in moving logs to market, landings were sometimes marked as "land shows" during initial surveys of timberlands, and the rail spurs were constructed to them, rather than vice versa.[94]
Various devices and processes were used at landings, depending on the immediate geography and the evolution of loading techniques. Among the simplest methods was "haulback" loading, where horses or, later, donkey engines pulled logs attached to cables up rudimentary ramps and onto waiting cars or trucks.[95] Later methods included the use of A-

[91] McCulloch, *Woods Words*, 178.
[92] McCulloch, *Woods Words*, 14.
[93] McCulloch, *Woods Words*, 13, 211
[94] McCulloch, *Woods Words*, 103.
[95] Mullett and Merritt, *Sumpter Valley Railway*, 22.

frame structures or a spar tree combined with cables to lift logs onto vehicles and, after 1904, various log loading machines attached to rail cars were used.[96]

Because of their ephemeral nature, few physical improvements were made at landings that were not moved to new sites when local timber stands were exhausted. As such, landings were defined by open clearings on level ground adjacent to rail alignments. These areas were characterized by heavy use and abandoned industrial debris, including broken cables and other abandoned equipment, may be present within them. As sites of intense activity, landings may also contain archaeological resources associated with the loggers who worked them during their periods of use.

Significance: Landings are significant as a major point of logging activity, connecting the transformation of standing timber into milled lumber. Due to the difficulty of loading heavy logs onto rail cars, these sites served as gateways, providing materials with access to transportation. As there are no standing structures associated with landings, they may only be considered as archaeological resources either as sites or as part of an eligible historic district. In addition to anticipated archaeological resources such as steel cables or other machine parts, they may also contain archaeological resources that provide insights into contemporary loggers who worked within the Malheur National Forest. Owing to the number of landings used historically throughout the National Forest, these sites are not individually eligible for listing under Criteria B or C. They may only be individually eligible under Criterion A for their association with logging and resource extraction in the MNF, and Criterion D if they are found to possess informational potential on the loggers who historically worked them.

Registration Requirements: For a landing to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The site must be located within the Malheur National Forest and created during the period of significance.
2. The site must be immediately adjacent to a known rail line or rail spur.
3. The site can be individually eligible if it possesses informational potential on logging activities and loggers who worked in the MNF within the period of significance.
4. The site can also be eligible as a contributing resource to a larger historic district if it is demonstrably associated with railroad logging operations within the Malheur National Forest. Association may be established through direct proximity to a known or documented railroad grade, spur, or logging camp. To convey that association, the site must also retain sufficient integrity of location, setting, feeling, and association to link it to the railroad logging era.
5. To be eligible under Criterion A, the site must be demonstrably associated with railroad logging operations within the Malheur National Forest. Association may be established through direct proximity to a known or documented railroad grade, spur, or logging camp. To convey that association, the site must also retain sufficient integrity of location, setting, feeling, and association to link it to the railroad logging era.
6. To be eligible for listing under Criterion D, the site must contain surface or subsurface remains capable of yielding significant information about the social history or material culture of the loggers in the Malheur National Forest. Sites that possess both good visibility (quantity of physical remains) and good focus (intactness and interpretability of those remains) are most likely to be eligible. Sites with poor visibility but intact subsurface deposits may also be eligible if they can be expected to yield data relevant to a well-defined research question.

Logging Camps

Description: Logging camps were the operational centers of railroad logging on the Malheur National Forest, providing shelter, sustenance, and maintenance support for the workers, animals, and machinery on which the industry depended. During the period of significance, the OLC and related operators maintained a network of such camps distributed throughout the Middle Fork of the John Day River drainage and its tributaries, relocating them as successive timber stands were exhausted and new areas opened
or cutting.

In their most common form, logging camps within the Malheur National Forest consisted of a collection of portable structures erected near active logging operations. The OLC operated two camps simultaneously in the woods at Bates during peak production years, each staffed by teams responsible for felling, skidding, and loading logs for transport to the mill.[97] Camp buildings were constructed so that they could be lifted directly onto waiting flatcars and relocated to a new site in a matter of days as operations advanced through the forest.[98] Camps were equipped to sustain a workforce engaged in heavy physical labor, including professional cooks and sit-down dining facilities. The OLC maintained a supervised dining hall at Bates where order was strictly enforced: employees were instructed that “no loud talking at the

[96] Mallory Hope Ferrell, *Rails, Sagebrush, and Pine: A Garland of Railroad and Logging Days in Oregon’s Sumpter Valley* (Boulder, CO: Golden West Books, 1967), 58–59; Mullett and Merritt, *Sumpter Valley Railway*, 102; Mullett and Merritt, *Sumpter Valley Railway*, 95.
[97] Russell Holter and Kelsey Doncaster, Historical Context of Oregon Lumber Company and its Railway, Bates, OR, prepared for Bonneville Power Administration (Tacoma, WA: Cultural Reconnaissance, 2022), 32.
[98] Holter and Doncaster, *Historical Context*, 32.

dinner table" was permitted, and that "no talking at all was preferred."[99] Blacksmiths maintained forges at camps to shoe horses and mules and to repair logging machinery, while water tanks supplied both camps and steam locomotives via pipe from adjacent streams or artesian springs.[100]

The workforce housed in the camps was ethnically diverse. Anecdotal evidence from the Middle Fork drainage suggests that railroad construction crews during the OLC's early years included workers of Japanese and possibly Chinese ancestry.[101] Oral histories from former residents recall distinct work areas identified by the ethnic composition of their crews.[102] Workers were also accommodated in converted boxcars and refrigerator cars at Bates Junction and Knuteville, where housing shortages led families as well as single workers to take up residence in surplus rolling stock.[103]

Camp locations within the Middle Fork shifted throughout the period of significance as timber stands were cut over, new drainages opened, and priorities shifted. For example, the OLC operated Camp 2 in the vicinity of Big Boulder Creek during the late 1930s; wartime housing shortages eventually prompted management to dismantle it and relocate its outfitting cars back to Bates for loggers' families.[104]

As archaeological resources, logging camps may contain a range of features and artifact assemblages: structural remains of bunkhouses, cookhouses, and blacksmith forges; food refuse and tin ware in trash pits or surface scatters; tool and hardware caches; corrals; and, in some cases, arborglyphs or blaze marks on surviving trees. The presence of narrow-gauge rail hardware—spikes, fish-plate bolts, tie plates—adjacent to a camp site may indicate its proximity to a spur loading area or reload site.[105]

Significance: Logging camps are significant as direct material expressions of the social and labor history of the SVRy and the broader regional lumber industry. They represent not only the industrial extraction of timber but the everyday lived experience of the ethnically diverse workforce that drove that extraction throughout the period of significance. Camp sites possess particular potential to yield information on the social and material conditions of the loggers, section crew laborers and other workers who resided within them, making them candidates for eligibility under Criterion D for the information they are likely to contain regarding industry, ethnic heritage, and transportation. Where documentary evidence links a camp directly to the operations of the SVRy or its associated logging operations, camps may also possess significance under Criterion A for their association with the broad patterns of the regional lumber industry.

Registration Requirements: For a logging camp from the period of significance to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. A logging camp must be located within the Malheur National Forest and created during the period of significance.
2. To be eligible for listing under Criterion A, the site must be demonstrably associated with railroad logging operations within the Malheur National Forest. Association may be established through direct proximity to a known or documented railroad grade, spur, or landing. To convey that association, the site must also retain sufficient integrity of location, setting, feeling, and association to link it to the railroad logging era.
3. To be eligible for listing under Criterion D, the site must contain surface or subsurface remains capable of yielding significant information about the social history or material culture of the logging industry in the Malheur National Forest. Sites that possess both good visibility (quantity of physical remains) and good focus (intactness and interpretability of those remains) are most likely to be eligible. Sites with poor visibility but intact subsurface deposits may also be eligible if they can be expected to yield data relevant to a well-defined research question.
4. Logging camps can be eligible individually as an archaeological resource or as a contributing feature of a site. If a logging camp is in the immediate vicinity of a railroad grade and is not being considered as a separate resource, it would be eligible as a contributing feature to a site.
5. If features and artifacts within the camp are too degraded to yield important information regarding the history of the area, but the camp is located in the Malheur National Forest it may be eligible as a contributing resource to potential archaeological districts.

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[99] Holter and Doncaster, *Historical Context*, 45, quoting oral history of Myrtle Fehrenbacher, sister of Earl Emlaw, in the Oregon Lumber Company Archives, Emlaw fonds.

[100] Friends of Bates State Park, oral history of Jackie Leishman Rapp, conducted by the authors, Bates, OR, July 27, 2019, in Holter and Doncaster, *Historical Context*, 51.

[101] Holter and Doncaster, *Historical Context*, 34–35. The authors note that by 1917 most western railroad construction crews were of Japanese ancestry, though earlier construction on the Middle Fork may have involved Chinese labor.

[102] Friends of Bates State Park, oral history of Elwood Greer, in Holter and Doncaster, *Historical Context*, 35.

[103] Friends of Bates State Park, oral history of Daniel Barnhart, in Holter and Doncaster, *Historical Context*, 50.

[104] Holter and Doncaster, *Historical Context*, 46–47; Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, pp. 17–18.

[105] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 6–7; McCulloch, Woods Words, s.v. "camp."

Railroad Grade, Mainline

Description: At its height, the mainline of the SVRy stretched approximately 80 miles between Baker City in Baker County, and Prairie City, in Grant County. The line was used to transport logs, freight, and passengers through a resource-rich section of the Blue Mountains, providing access to swathes of both the Strawberry and Elkhorn mountain ranges. Construction on the mainline began in Baker City in 1890 with designs provided by Joseph A. West of the SVRy Company.[106] By the end of the nineteenth century, narrow-gauge railroads were common across the Western U.S. and were increasingly being converted to standard gauge as they were acquired by larger companies.[107]

The mainline railroad grade is the primary engineered track bed of the OLC Railway system, running approximately twenty miles from the mill site at Bates northwestward down the Middle Fork of the John Day River toward Susanville, Oregon. Unlike the temporary spur lines that radiated from it, the mainline was constructed to near-main-railroad standards, with a raised track bed averaging fifteen feet at the crown and a substantial rock ballast bed elevated above the surrounding terrain.[108]

The mainline of the OLC Railway was designed and constructed beginning in 1916 and entered operation by the summer of 1917. The civil engineer responsible for the work held mainline grades to no greater than five percent and limited curve radii to standards comparable to those of the parent SVRy, even though the geared narrow-gauge locomotives used on the OLC Railway were capable of negotiating steeper grades and sharper curves. This conservative approach assured that the mainline could sustain the rigors of hard daily use over its approximately twenty-five years of operation.[109]

The mainline track bed was constructed using a continuous series of cuts and fills through the mountainous terrain of the Middle Fork valley, descending from an elevation of approximately 4,100 feet at Bates before ascending again as spurs climbed into the tributary drainages. Watercourse crossings on the mainline were accomplished primarily by rock fills with wooden culverts; where fills were impractical, vertical-bent timber trestles or bridges were used. Rails on the mainline weighed forty-five pounds to the yard, heavier than the thirty-five-pound relay rail used on logging spurs, and were spiked to sawn and treated ties.[110]

Following abandonment of railroad operations in the early 1940s, salvage crews removed the rails and most of the reusable hardware, leaving ties and earthwork in place. Conversion of portions of the right-of-way to motor vehicle use, flooding, vegetation encroachment, and industrial activity at the Bates mill site have since affected different segments to varying degrees.

Significance: The mainline railroad grade is the primary surviving physical expression of the OLC Railway and is the resource most directly associated with the industrial transportation system that made large-scale logging of the Middle Fork drainage possible. As the engineered spine of the entire railway system, the mainline is significant under Criterion A for its association with the industrialization of the Blue Mountains and under Criterion C as an example of narrow-gauge logging railroad engineering constructed to unusually high standards. The mainline is eligible for listing as a linear historic district. Sections retaining sufficient track bed integrity are eligible as contributing resources to that district; sections where the original track bed is no longer discernible are not eligible.

Registration Requirements: For a section of mainline railroad grade to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The section must be located within the Malheur National Forest and constructed during the period of significance as part of the OLC Railway mainline.
2. To be eligible under Criterion A, the section must retain a visual sense of a linear transportation corridor. A majority of the earthwork or ballast bed must be intact, and the section must provide a line of sight of contiguous length. If earthworks are present and substantial to the degree that they portray association and feeling, rail remains need not be present. Earthworks must follow the original rail alignment and maintain the original elevation and grading. They must not be considerably eroded or otherwise modified by natural or mechanical activities.
3. To be eligible under Criterion C, the section must retain sufficient character-defining engineering features—including cuts, fills, culverts, drainage ditches, and tie remains—to convey its method and type of construction. Rails need not be present.

[106] Ferrell, *Rails, Sagebrush & Pine*, 13.

[107] Ferrell, *Rails, Sagebrush & Pine*, 13.

[108] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 1–2.

[109] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 2–3; Holter and Doncaster, *Historical Context*, 10–11.

[110] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 2, pp4–5; Holter and Doncaster, *Historical Context*, 33.

4. Sections where the original track bed has been obscured by highway construction, industrial activity, or severe erosion are not individually eligible but may retain associative value as part of an eligible linear district.[111]

Railroad Grade, Permanent Spurs

Description: Permanent spur grades are secondary railroad grades that branched from the OLC Railway mainline to access specific timber drainages and operated continuously for five or more years. Within the Middle Fork system, permanent spurs were distinguished from temporary spurs by higher construction standards, including raised track beds six to eight feet wide at the crown with bases ten to fifteen feet wide, cuts and fills greater than six feet, grades generally less than five percent, rock track beds, and the use of wyes or water tanks at major junction points.[112]

Permanent spurs served the most productive and longest-lasting timber tracts in the OLC system. Field investigations conducted for the 1987 National Register nomination identified evidence of permanent spur construction in more than twenty drainages off the Middle Fork mainline, including Cottonwood Creek, Davis Creek, Deerhorn Creek, Gorge Creek, Little Boulder Creek, Little Butte Creek, Murdock Creek, and Placer Gulch.[113]

Like the mainline, permanent spurs used sawn ties, though the supply of sawn ties was supplemented with hewn ties made from eight- to ten-inch logs. Rail on permanent spurs was thirty-five-pound relay weight. Trestles on permanent spurs were built with vertical bents rather than the horizontal crib construction used on temporary spurs, providing greater longevity. Drainage structures on permanent spurs included ditches and culverts, though generally of lesser quality than those on the mainline.[114]

Significance: Permanent spur grades are significant under Criterion A for their association with the organized exploitation of specific timber tracts within the Malheur National Forest, and under Criterion C as examples of logging railroad engineering designed for extended productive use. Because permanent spurs were built to recoup their construction costs over multi-year operations, their engineering reflects deliberate decisions about the value of accessible timber. Permanent spurs are not individually eligible for the National Register but may be eligible as contributing resources to a linear historic district anchored by the mainline grade, where they retain sufficient track bed integrity.

Registration Requirements: For a section of permanent spur grade to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The section must be located within the Malheur National Forest and constructed during the period of significance as a permanent spur of the OLC Railway system.
2. The section must retain physical evidence of permanent construction standards, including a raised and ballasted track bed, cuts and fills greater than six feet, or drainage infrastructure. The presence of vertical-bent trestle remains, wyes, or water tank features is strongly indicative of permanent spur status.
3. The section must be in sufficient proximity to the mainline or another contributing resource to demonstrate its role within the broader railway system.
4. Sections converted to truck roads or otherwise obliterated are not eligible as contributing resources to a historic district.[115]
5. Discontiguous sections obscured by highway construction, industrial activity, or severe erosion are not individually eligible but may retain associative value as part of an eligible linear district.

Railroad Grade, Temporary Spurs

Description: Temporary spur grades are short railroad grades constructed to extract timber from a specific tract and then dismantled and relocated once cutting was complete. Within the OLC Railway system, temporary spurs were characterized by minimal engineering: ties were laid on depressed or slightly prepared ground rather than a raised track bed; cuts and fills were generally less than six feet; grades could exceed five percent; track beds were of soil rather than rock, often incorporating logs within fills for reinforcement; and trestles were of horizontal crib construction using unpeeled logs rather than the more durable vertical-bent design.[116]

[111]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 10–11.

[112]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 3–4.

[113]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 3–4; Holter and Doncaster, *Historical Context*, 33.

[114]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 4.

[115]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 10–11.

[116]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 3–4.

The economics of temporary spur construction reflected the OLC's operating philosophy. Management pushed spur lines forward only as far as the profits from the immediately accessible timber could fund, keeping the railroad system solvent without incurring debt.[117] Steel rails were the most expensive component of spur construction and were invariably pulled and reused when a spur was abandoned. Ties, cut to a non-standard length incompatible with other railways, were left in place to rot. Roundwood ties made from eight- to ten-inch logs were common on temporary spurs. Balloon tracks—loop tracks requiring only two switches rather than the three needed for a wye—were employed at multiple locations on the temporary spur system to allow locomotives to reverse direction without the expense of a full wye installation.[118]

Because of their insubstantial construction, temporary spurs have generally fared poorly in the decades since abandonment. The use of logs in fills has caused sections of track bed to collapse as the timber rotted. Many spurs were converted to truck roads as the transition from rail to truck logging proceeded in the late 1930s and early 1940s, effectively obliterating all evidence of the railway. Where conversion did not occur, ties have rotted to a fraction of their original dimensions in many locations, and washouts, erosion, and vegetation have further degraded the track bed.[119]

Significance: Temporary spur grades are significant primarily for their ability to document the spatial extent and operational sequence of logging activities within the Middle Fork drainage. Because individual spurs served specific timber tracts during defined periods, their locations and construction details provide information about patterns of resource extraction that cannot always be recovered from documentary sources. Temporary spurs are not individually eligible for the National Register. They may be eligible as contributing resources to an eligible historic district or as features within an eligible archaeological site where they retain sufficient physical evidence.

Registration Requirements: For a section of temporary spur grade to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The section must be located within the Malheur National Forest and constructed during the period of significance as a temporary spur of the OLC Railway system.
2. The section must be a contributing resource to an eligible historic district or a feature within an eligible archaeological site.
3. The section must retain physical evidence of its use as a railroad grade, including rotted tie remains *in situ,* rail spikes or fish-plate hardware, log-reinforced fill sections, or crib trestle remains.
4. The section must be associated with a known or documented timber drainage or cutting unit within the Middle Fork system.
5. Sections converted to truck roads or otherwise obliterated are not eligible as contributing resources.

Rolling Stock

Description: Rolling stock includes all wheeled vehicles operated on the OLC Railway and SVRy grades within the Malheur National Forest, including locomotives and railroad cars. Locomotives on the OLC Railway were drawn exclusively from the geared-locomotive types favored for steep-grade logging service: Shay, Heisler, and Climax designs, together with a single rod-driven Baldwin 4-4-0 inherited from the SVRy.[120]

The OLC's locomotive fleet at its peak numbered ten engines across three geared types. Shay locomotives, manufactured by Lima and characterized by a distinctive three-cylinder vertical drive arrangement, provided exceptional torque and a smooth ride over uneven temporary track, though they were slow and maintenance-intensive. Heisler locomotives, with their V-configured opposed pistons, offered a practical balance of torque and speed and were preferred by crews for empty-train runs to the woods. The single Climax locomotive was the nimblest of the three types but delivered a rough ride when not properly maintained.[121]

All locomotives on the OLC Railway burned wood rather than coal or oil for most of their service lives, fueled by mill ends supplied by the sawmill at Bates. Tenders were modified with wooden racks above the standard fuel compartment to more than double wood-carrying capacity. Additional in-house modifications included steam-powered gypsy motors mounted on the pilot for log-loading operations and fire hose reels on the cab roofs.[122]

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[117]Holter and Doncaster, *Historical Context*, 33–34.

[118]Holter and Doncaster, *Historical Context*, 33–34; McCulloch, Woods Words, s.v. "balloon track."

[119]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 10–12.

[120]Holter and Doncaster, *Historical Context*, 36–37. A complete list of locomotives used by companies associated with the SVRy may be found in Ferrell, *Rails, Sagebrush & Pine*, pages 103 through 111.

[121]Holter and Doncaster, *Historical Context*, 36–44.

[122]Holter and Doncaster, *Historical Context*, 43–44.

Railroad cars in the OLC fleet included log flats—skeletonized frames with bunks fabricated from scrap rail—and bulkhead flatcars with full-length decking and end walls for lumber transport. Cars measured approximately thirty-seven feet long with a load capacity of fourteen tons each. Sawdust gondolas and side-dump ballast cars rounded out the fleet.

Of the ten locomotives that operated in the OLC system, only Shay No. 7 is known to survive. Following the end of railroad operations at Bates, No. 7 was used to scrap the mainline and remaining spur trackage before being acquired and eventually restored to operating condition at the Hesston Steam Museum in LaPorte, Indiana.[123]

Significance: Rolling stock embodies the distinctive engineering characteristics of narrow-gauge geared locomotive technology developed specifically for the demands of mountain logging. Rolling stock is eligible for listing under Criterion A for its association with the railroad logging industry and under Criterion C as an example of a type, period, and method of construction now largely obsolete. Consistent with National Register policy on rolling stock integrity, a locomotive or car is eligible only if it retains the physical characteristics that convey its historical identity and is located in an appropriate setting with a meaningful connection to its period of use.[124]

Registration Requirements: For a piece of rolling stock to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The object must have been used within the Malheur National Forest during the period of significance.
2. To be eligible under Criterion A, the object must be located within the Malheur National Forest or in an appropriate forested or logging-related setting with a demonstrable connection to the OLC Railway or SVRy. Objects permanently removed to museum settings outside the Malheur National Forest are generally not eligible for individual listing, as such recognition is redundant to museum preservation missions.
3. To be eligible under Criterion C, the object must retain the distinctive design characteristics of its locomotive or car type. Objects extensively modified for non-logging purposes are not eligible.

Rural Historic Landscapes

Description: The Middle Fork of the John Day River drainage constitutes a rural historic landscape shaped by the interplay of natural resources and the industrial systems developed to extract them during the late nineteenth and early twentieth centuries. The landscape is defined by the valley corridor of the Middle Fork and its tributaries, encompassing the former railroad right-of-way, mill sites, agricultural lands, mining properties, and the second-growth ponderosa pine forest that replaced the logged-over old-growth stands.[125]

The natural character of the landscape—its valley meadows, steep canyon walls, riparian corridors, and forested ridgelines—provided both the resource base and the physical constraints that determined the form of the railroad logging system. The ponderosa pine that grew at elevations between 4,000 and 5,000 feet in the Middle Fork drainage was recognized as among the finest quality pine timber in the Pacific Northwest, a quality that made the construction of an expensive railroad logging system economically viable.[126]

Industry in the period of significance left a layered imprint on the landscape. The railroad grade, now largely converted to road or reclaimed by vegetation, defines the primary circulation corridor through the valley. Former mill sites, logging camps, landings, and mining properties associated with the OLC occupy cleared or semi-cleared areas along the valley floor. The progressive replacement of old-growth forest by second growth stands of varying age and density reflects the sequence of timber cutting that advanced up the drainage from 1917 to the early 1940s.[127]

Subsequent to the logging era, the Warm Springs Tribe has been actively engaged in habitat reclamation along the Middle Fork, particularly in re-establishing beaver habitat using portions of the former railroad grade as staging areas. This work has also involved breaching portions of the grade to restore wetlands habitat cut off by the line's construction. This reclamation effort represents a continuation of Indigenous relationships with the landscape that predate the logging era and coexist with its industrial legacy.[128]

Significance: The Middle Fork rural historic landscape is significant under Criterion A as a tangible record of the industrialization of the Blue Mountains and of the patterns of human settlement, resource extraction, and land use that shaped Eastern Oregon's economy and environment during the period of significance. The landscape is also significant for its ability to communicate the relationship between natural geography and industrial decision-making: the form of the

[123] Holter and Doncaster, *Historical Context*, 47.

[124] Wyatt, Integrity Requirements for Setting and Locations, 3.

[125] Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, pp. 1–2.

[126] Mosgrove, The Malheur National Forest, passim; Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, pp. 1–2.

[127] Holter and Doncaster, *Historical Context*, 57–59.

[128] Holter and Doncaster, *Historical Context*, 57–59.

railroad system, the locations of mill communities, and the sequence of logging activities are all legible in the landscape's current character. The rural historic landscape is eligible as a historic district encompassing contributing and non-contributing resources across the Malheur National Forest.[129]

Registration Requirements: For a rural historic landscape to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The landscape must encompass land within the Malheur National Forest that was directly shaped by or associated with railroad logging operations during the period of significance.
2. The landscape must retain sufficient integrity of setting, feeling, and association to convey its historic character. The presence of extant railroad grades, mill sites, ranch lands, or second-growth forest of the appropriate age class are all indicators of retained historic character.
3. Individual resources within the landscape need not be individually eligible; the landscape's eligibility derives from the cumulative association and integrity of its component features.

Sawmill (Millsite)

Description: Sawmill sites are the locations of facilities used to convert logs into rough lumber within or directly associated with the railroad logging system of the Malheur National Forest. Within the Middle Fork drainage, the primary sawmill of the period of significance was the OLC Mill at Bates, which operated continuously from September 1917 until 1975, first under OLC ownership and then under the Edward Hines Lumber Company.[130]

The Bates Mill was designed as a green lumber mill producing rough-cut stock for finishing at the OLC's planing and drying facilities in South Baker, sixty miles distant—the "milling-in-transit" model that the OLC perfected at a scale unmatched elsewhere in the American pine industry. At peak production during the 1920s, the mill cut 120,000 board feet per day; during high wartime production years, it reached a reported 180,000 board feet per day. The mill complex included two band saws, a resaw, edgers, a slab slasher, automatic trimmers, a steam turbine power plant, a log pond, and associated facilities for storing and moving raw logs and finished lumber.[131]

The mill community at Bates grew up around the millsite and included a hotel, company houses, a store, dance hall, and school. Former residents describe a self-contained industrial community where nearly all aspects of daily life—housing, food, water, heat, and social activity—were organized around the mill's operations.[132]

The Bates millsite today is an Oregon State Park. The mill itself was demolished following closure in 1975, and the townsite was subsequently cleared by a private owner. The site was transferred to the Oregon Parks and Recreation Department in 2008 and opened for public recreation in 2011. Archaeological deposits associated with the mill's operational period remain present beneath the surface, including the filled log pond and associated industrial debris.[133]

Smaller satellite millsites associated with the OLC Railway system also existed within and near the Malheur National Forest, including the Austin mill and the Whitney mill. These sites served as intermediate processing or supply points in the broader OLC operation and may retain archaeological evidence of their industrial function.[134]

Significance: Sawmill sites are significant under Criterion A for their central role in the railroad logging industry that defined the economy and landscape of the Middle Fork drainage during the period of significance. As the terminal point of the milling-in-transit system, the Bates millsite is the most significant sawmill resource in the Malheur National Forest. If no above-ground structures associated with the historic mill period survive, sawmill sites are not eligible under Criteria B or C. They may be eligible under Criterion D if their archaeological deposits retain sufficient integrity and information potential. The Bates millsite is additionally significant under Criterion A at the local level for its association with the community life of Bates.

Registration Requirements: For a sawmill site to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The site must be located within the Malheur National Forest and have functioned as part of the railroad logging system during the period of significance.

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[129] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 1; Nancy Langston, Forest Dreams, Forest Nightmares: The Paradox of Old Growth in the Inland West (Seattle: University of Washington Press, 1995), passim.

[130] Holter and Doncaster, *Historical Context*, 13–18.

[131] Holter and Doncaster, *Historical Context*, 30–32.

[132] Holter and Doncaster, *Historical Context*, 51–54.

[133] Holter and Doncaster, *Historical Context*, 54–56.

[134] Mosgrove, Malheur National Forest, passim.

2. The site must contain surface or subsurface remains capable of yielding significant information about industrial processes or the material culture of the logging community. Sites with good visibility and good focus are most likely to be eligible under Criterion D.
3. Sites where surface deposits have been heavily disturbed must demonstrate the presence of intact subsurface features through testing or monitoring before eligibility can be confirmed.
4. Sawmill sites are eligible as contributing resources to an eligible historic district where they retain integrity of location and association with other railroad logging resources.[135]

Steam Donkeys and Conveyance Machinery

Description: Steam donkeys and conveyance machinery include the portable steam-powered winches, skidders, and log loaders used to move felled logs from their fall sites to railroad landings and loading areas. Within the OLC Railway system, the Blue Mountains' ponderosa pine stands—less dense than coastal Douglas-fir and growing on gentler terrain—favored the use of horse teams and rail-mounted skidding machinery rather than the high-lead yarding systems common west of the Cascades.[136]

Steam donkeys, so named because they were considered too small for their power to be rated in horsepower, were portable steam-powered winches used to drag logs along the ground to a landing using cables.[137] In the Eastern Oregon pine country, a common variant was the rail-mounted skidder, which combined skidding and loading functions: positioned on a siding adjacent to the cutting area, the skidder used cables to pull logs from the woods and then load them directly onto waiting flatcars.[138]

A distinctive adaptation found on OLC geared locomotives was the installation of steam-powered gypsy motors on the pilot. These small auxiliary winches allowed a stationary locomotive to drive cables for log loading at reload sites without requiring a separate donkey engine. When the locomotive was ready to move, the gypsy motor was shut off and the train departed.[139][140] The gypsy drum—a separate cable-driven winch mounted to fixed structures at reload areas—was a related device that served a similar function without requiring locomotive attachment.[141]

After the shift from rail to truck logging in the late 1930s and early 1940s, steam donkeys and rail-mounted skidders were largely displaced by gas and diesel-powered equipment. Most steam machinery was sold for scrap during World War II, when the wartime premium on iron provided an economic incentive to liquidate obsolete industrial equipment.[142]

Significance: Steam donkeys and conveyance machinery are significant under Criterion A for their association with the yarding and loading technology that enabled large-scale railroad logging of the Middle Fork drainage, and under Criterion C as examples of a type and period of industrial machinery now essentially obsolete. No intact examples of steam donkeys or rail-mounted skidders used within the Malheur National Forest are known to survive. Fragmentary remains of such machinery found as archaeological features at landing or reload sites are not individually eligible for listing but may be eligible as contributing elements to an eligible archaeological site or historic district.

Registration Requirements: For a steam donkey or conveyance machinery resource to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The resource must be located within the Malheur National Forest and have been used during the period of significance in association with railroad logging operations.
2. Intact objects may be eligible under Criteria A and C if they retain the distinctive design characteristics of their type and are located in an appropriate setting. Objects in museum settings outside the Malheur National Forest are generally not eligible for individual listing.
3. Fragmentary remains found at landing or reload sites are eligible only as contributing features to an eligible archaeological site or historic district, not as individually eligible objects.

Telegraph and Utility Poles

[135]Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, pp. 15–16.

[136]Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, Appendix C, pp. 24–25.

[137]McCulloch, Woods Words, s.v. "donkey engine," "skidder."

[138]Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, Appendix C, pp. 24–25.

[139]Holter and Doncaster, *Historical Context*, 38–42; Tonsfeldt, Sumpter Valley Railway Historic District Nomination, Continuation Sheet Item 8, Appendix C, p. 25.

[140]Holter and Doncaster, *Historical Context*, 38.

[141]McCulloch, Woods Words, s.v. “gypsy,” “gypsy engine.”

[142]Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, Appendix C, p. 25; Mosgrove, Malheur National Forest, 142.

Description: Telegraph and utility pole lines are linear infrastructure features that paralleled railroad grades in the Malheur National Forest, providing communication between mill communities, railroad division points, and U.S. Forest Service ranger stations during the period of significance. Telephone and telegraph service was established along the SVRy corridor in connection with railroad operations and was extended into the Middle Fork drainage as the OLC Railway was constructed. The Pacific Telephone and Telegraph Company maintained infrastructure in the Malheur National Forest that was used for forest fire detection and suppression coordination—a function made increasingly important by the Forest Service's expanded role in fire prevention after 1910.[143]

The communication infrastructure associated with the railroad logging system generally followed the railroad right-of-way, as the cleared and graded corridor provided the most practical route for stringing lines through otherwise roadless terrain.[144] Poles were typically of ponderosa pine, cut and treated in the field, and set at regular intervals along the grade. Telegraph and telephone lines allowed the OLC's locomotive crews to coordinate train movements, communicate mechanical problems, and arrange for supplies and personnel between Bates, Austin, and Baker without waiting for the next scheduled train.[145]

Few if any intact telegraph or utility poles from the period of significance are known to survive within the Malheur National Forest. Where poles have fallen or been removed, the regular spacing of former pole holes may be detectable as soil disturbances along the railroad right-of-way. Hardware associated with pole lines—glass insulators, wire staples, and bracket hardware—may survive as surface or subsurface artifacts at former pole locations or in trash scatters near railroad infrastructure sites.[146]

Significance: Telegraph and utility pole lines are significant under Criterion A as components of the communication infrastructure that supported the coordinated operation of the OLC Railway system and the broader activities of the Malheur National Forest during the period of significance. No intact pole line resources from the period of significance are known to survive within the Malheur National Forest. Telegraph and utility pole features are not individually eligible for listing in the National Register. Hardware and pole-hole features may be eligible as contributing elements to an eligible archaeological site or historic district where they can be directly associated with railroad logging operations during the period of significance.

Registration Requirements: For telegraph or utility pole features to be eligible within the context established in this MPD, they must exhibit the following qualities:

1. The features must be located within the Malheur National Forest and constructed or installed during the period of significance in association with railroad logging or railroad communication operations.
2. Features are eligible only as contributing elements to an eligible archaeological site or historic district. No telegraph or utility pole feature is individually eligible for listing.
3. Hardware artifacts such as glass insulators are eligible only in association with a site or district and not as individually eligible objects.

Trestle

Description: Trestles are structures built to carry railroad grades across streams, drainages, and depressions where earthwork fills were impractical or prohibitively expensive. Within the OLC Railway system, trestles were used at major watercourse crossings on both the mainline and the permanent and temporary spur lines, with construction quality varying according to the intended lifespan of the grade they served.[147]

On the mainline and permanent spurs, trestles were constructed with vertical bents—A-frame timber structures set on rock pads—which kept the primary structural timbers in compression rather than deflection, extending their service life. Main bridge timbers were eight-by-fifteen-inch sawn lumber in ten-foot spans, bolted together with steel spacers. This type of trestle was more expensive to build than the horizontal crib design used on temporary spurs, requiring carefully designed bents, metal hardware, and concrete pads, but was intended to last the duration of mainline operations.[148] On temporary spurs, trestles were built of logs laid across one another in a horizontal crib or "pigpen" pattern, requiring no engineering expertise and using material available at hand. Because crib trestles contacted the soil directly and bore their loads by deflection rather than compression, they were short-lived; most did not survive the abandonment of the spur lines they served. Trestle timbers were typically left in place after abandonment rather than salvaged.[149]

[143]Mosgrove, Malheur National Forest, 154.

[144]Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, p. 2.

[145]McCulloch, Woods Words, s.v. "telegraph line."

[146]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 2.

[147]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 4–6.

[148]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 5–6.

[149]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 5–6.

Of the major wooden trestles and bridges that crossed the Middle Fork and its tributaries on the mainline, only a single-span timber bridge remained intact at the time of the 1987 National Register nomination; that structure was counted as a contributing feature to the nominated district. All other mainline trestles had washed out or deteriorated to the point of collapse in the decades following abandonment.[150]

Significance: Trestles are significant primarily under Criterion C as engineering structures that solved the problem of crossing topographic obstacles on a logging railroad built through mountainous terrain. Their construction type—whether vertical-bent or crib—reflects deliberate engineering decisions about cost and longevity that are directly readable in the surviving physical evidence. Trestles are also significant under Criterion A for their association with the construction and operation of the OLC Railway. Intact or substantially intact trestles are eligible for individual listing or as contributing resources to a historic district. Where adjacent grades have been obliterated, significant trestle remains may provide the only surviving evidence of the former railroad alignment and may be eligible under Criterion D for their information potential.

Registration Requirements: For a trestle to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The structure must have been part of the OLC Railway or SVRy system within the Malheur National Forest and constructed during the period of significance.
2. To be eligible under Criterion C, the trestle must be intact enough to convey its method and type of construction. A burned or partially collapsed trestle may qualify if sufficient members remain *in situ* to demonstrate how the structure was built.
3. To be eligible under Criteria A or D, the trestle must provide the primary or only remaining evidence of the location of a former logging railroad grade where the grade itself has been obliterated.
4. Trestles that do not qualify for individual listing under the above criteria should be evaluated as features within the railroad grade and assessed as contributing or non-contributing elements of a potential historic district.[151]

Water Management Features

Description: Water management features are the drainage and erosion-control structures built into and alongside the OLC Railway right-of-way to protect the track bed from surface water and to carry water courses beneath the grade. Because the OLC Railway mainline and its permanent spurs traversed a mountainous drainage system with numerous perennial and seasonal streams, effective water management was essential to maintaining serviceable track. The principal feature types in this category are culverts, check dams, side ditches, headwalls, and water tanks.[152]

Culverts were the most common water management structure on the OLC Railway system, installed wherever a minor watercourse crossed beneath the grade. On the mainline and permanent spurs, culverts were typically of corrugated metal pipe or, in earlier construction, of wood-stave or box construction using sawn timber. Culvert openings were sized to pass the estimated high-water flow of their respective drainages; undersized culverts were a recognized cause of track bed failure during spring runoff and were replaced or supplemented as problems developed. Where culvert outlets discharged onto erodible fill faces, rock aprons or splash pads were placed to prevent undercutting.[153]

Side ditches flanked the track bed on the uphill side of cuts, intercepting sheet flow and directing it to culverts or natural drainages. On the mainline, side ditches were graded to a consistent fall and lined with rock where slopes were steep enough to cause erosion. On temporary spurs, side ditching was minimal or absent, contributing to the accelerated deterioration of those grades following abandonment. Check dams of rock or timber were installed in side ditches and in small drainages adjacent to the grade where concentrated flow threatened to incise channels that would undermine the track bed fill.[154]

Water tanks constituted an essential component of the railroad's operational infrastructure, as steam locomotives required frequent resupply of water to maintain boiler pressure. Wooden tank structures were placed at intervals along the mainline and at key operational nodes, typically supplied by gravity flow from an adjacent stream or spring directed into an elevated cistern of tongue-and-groove stave planking bound with iron hooping. On the OLC's Middle Fork Spur, the Big Boulder Water Tank represented the most substantial of these features, a large wooden structure elevated on a heavy timber

[150]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 12.

[151]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 10–12.

[152] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 2–3.

[153]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 2–3; Holter and Doncaster, Historical Context, 33.

[154]Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 3.

frame that allowed locomotives to take on water by gravity feed.[155] The physical footprint of a water tank site typically includes a level platform or fill pad, timber foundation elements or pipe fittings, and iron hardware fragments.

Following abandonment of railroad operations and removal of the rails, many culverts were either removed by salvage crews or have since collapsed, leaving collapsed corrugated metal or rotted timber fragments in the drainage channel below the former grade. Where culverts remain at least partially intact, they are among the most reliably datable features along the grade and can assist in confirming the alignment of the railroad in locations where the earthwork has been obscured. Stone headwalls and rock aprons, being non-perishable, have generally survived better than the culvert pipes themselves and are identifiable as anomalous masonry features in otherwise undeveloped drainages.[156]

Significance: Water management features are significant under Criterion C as engineering components of the railroad grade that reflect the construction standards applied to the OLC Railway's mainline and permanent spur system, and under Criterion D for their potential to confirm grade alignments and construction dates in segments where earthwork integrity is poor. No water management feature within the Malheur National Forest is individually eligible for listing in the National Register. Features are eligible as contributing elements to a historic district where they retain sufficient integrity to be identifiable as original drainage infrastructure associated with the period of significance.

Registration Requirements: For a water management feature to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The feature must be located within the Malheur National Forest and constructed during the period of significance as part of the OLC Railway mainline or permanent spur system.
2. The feature must retain sufficient physical evidence to be identified as a railroad drainage installation. Qualifying evidence includes corrugated metal pipe fragments *in situ*, timber box culvert remnants, stone headwalls or aprons, graded side ditch alignments, or check dam structures of rock or timber in drainage channels adjacent to the grade.
3. Features are eligible only as contributing elements to an eligible railroad grade or historic district, not as individually eligible structures or objects.
4. Water management features on temporary spur grades, where drainage infrastructure was minimal, are generally not eligible as contributing features unless they can be shown to represent an unusual level of construction effort for that grade type.

Wyes and Sidings

Description: Wyes and sidings are trackage features associated with the management of train movements on the single-tracked OLC Railway system. Sidings are short sections of parallel track where trains could pass one another or where cars could be loaded or unloaded without blocking the mainline. Wyes are Y-shaped trackage arrangements that allow a locomotive to reverse direction by heading up one branch and backing down the other.[157]

Wyes required three switches to execute a single locomotive reversal on a standard-gauge railway, making them relatively expensive to install. On the narrow-gauge OLC system, the alternative was the balloon track—a loop requiring only two switches—which was employed at multiple locations along the spur system as a cost-effective substitute. Balloon tracks also required less right-of-way than wyes, an advantage in the confined drainages of the Middle Fork system.[158]

Sidings were located at strategic points along the mainline and permanent spurs to allow the coordination of train movements in an era when the single-track railroad carried multiple trains in both directions each day. Sidings at reload sites allowed locomotives to exchange empty flatcars for loaded ones without complex moves on the mainline. An expanded interchange yard was constructed at Austin in 1936 to manage the growing volume of lumber traffic between the OLC Railway and the SVRy.[159]

Significance: Wyes, balloon tracks, and sidings are significant under Criterion A as operational infrastructure components of the OLC Railway system that enabled efficient management of a single-track narrow-gauge railroad serving an active industrial operation. They are also significant under Criterion C as engineering features that reflect the

[155] Please note that the Big Boulder Water Tank was disassembled and relocated to Sumpter, Oregon, approximately thirty miles from its historic location. A relocated structure is generally not eligible for listing in the National Register of Historic Places unless it meets the requirements of Criterion Consideration B, which provides for properties removed from their original location that are primarily significant for their architectural merit. A relocated water tank may therefore be eligible under Criterion C if it retains sufficient integrity of design, materials, and workmanship to convey its historic character.

[156] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, pp. 10–12.

[157] Holter and Doncaster, *Historical Context*, 33–34.

[158] McCulloch, Woods Words, s.v. “wye,” “siding”; Holter and Doncaster, *Historical Context*, 34.

[159] Tonsfeldt, SVR Historic District, Continuation Sheet Item 7, p. 6; Holter and Doncaster, *Historical Context*, 20, 26.

cost-conscious adaptations made by the OLC Railway to operate efficiently in confined mountain terrain. Wyes, balloon tracks, and sidings are not individually eligible for the National Register. They may be eligible as contributing features to an eligible railroad grade historic district where they retain sufficient earthwork integrity to be identifiable as distinct trackage features.

Registration Requirements: For a wye, balloon track, or siding to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The feature must be located within the Malheur National Forest and constructed during the period of significance as part of the OLC Railway or SVRy system.
2. The feature must retain sufficient earthwork or material evidence to be identifiable as a wye, balloon track, or siding rather than a generalized disturbance. Characteristic indicators include bifurcating grade earthwork, the presence of switch hardware, or an anomalous widening of the right-of-way consistent with a passing siding.
3. Features are eligible only as contributing elements to an eligible railroad grade or historic district, not as individually eligible structures.

Skid Roads

Description: Skid roads are linear pathways used to move felled logs from their fall sites to railroad landings, high wheels, or steam donkey loading positions. In the logging industry of the Pacific Northwest, the term “skid road” historically referred to a prepared path over which logs were dragged by animal teams or mechanical power, distinguished from a “skid trail,” which was a more temporary, minimally improved route.[160]

Within the Eastern Oregon pine logging tradition practiced in the Malheur National Forest, skid roads served as the connection between fell-and-buck operations in the timber and the reload sites along the railroad spurs. Horse teams pulling high wheels were the primary skidding method during the OLC’s early decades of operation, with the animals confined to skidding distances of approximately 1,000 feet from the reload site. Where trees were felled farther from the nearest spur, steam-powered skidding equipment—donkey engines or rail-mounted skidders—extended the effective reach of the logging operation.[161]

Skid roads in the Malheur National Forest were not formally engineered structures. They were defined by the repeated passage of logs being dragged across the forest floor, which progressively compacted the soil and stripped the duff layer from the surface. On slopes, logs were sometimes dragged downhill over a prepared surface of small-diameter poles or “corduroy” laid perpendicular to the direction of skidding to reduce friction and prevent the logs from burying in soft ground.[162]

Oral histories and photographic documentation confirm that horse-drawn high wheel skidding was the standard method at OLC operations during the first decades of Bates mill production, consistent with broader patterns in the Eastern Oregon pine logging industry.[163] As the OLC transitioned to truck logging in the early 1940s, the skid road network was reorganized around truck landings, and many former horse skid roads were widened and improved to accommodate mechanized equipment.

Significance: Skid roads are significant under Criterion A as evidence of the primary method by which logs were moved from forest to railroad during the period of significance, linking the fell-and-buck operations in the timber to the transportation infrastructure of the railroad logging system. Because skid roads were informal features defined by use rather than construction, they survive only where soil compaction, duff removal, or corduroy remnants remain identifiable in the archaeological record. No skid roads within the Malheur National Forest are individually eligible for listing in the National Register. They may be eligible as contributing features to an eligible archaeological site or historic district where they retain sufficient physical evidence to be identified and associated with logging operations during the period of significance.

Registration Requirements: For a skid road to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The feature must be located within the Malheur National Forest and have been used during the period of significance in association with railroad logging operations.

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[160] McCulloch, Woods Words, s.v. “skid road,” “skid trail.”

[161] Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, Appendix C, pp. 24–25.

[162] Holter and Doncaster, *Historical Context*, 32; Tonsfeldt, SVR Historic District, Continuation Sheet Item 8, Appendix C, p. 25; McCulloch, Woods Words, s.v. “corduroy road.”

[163] Mullett and Merritt, *Sumpter Valley Railway*, 22.

2. The feature must retain physical evidence of its use as a skid road, including identifiable soil compaction, surface stripping, corduroy remains, or associated artifacts such as cable fragments, log dog spikes, or high wheel hardware.
3. The feature must be demonstrably associated with a nearby railroad grade, landing, or reload site to establish its role within the railroad logging system.
4. Skid roads are eligible only as contributing features to an eligible archaeological site or historic district. No skid road is individually eligible for listing.

Eligibility as a Historic District

Description: A historic district is a geographically definable area that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.[164] Within the context of this MPD, a historic district is the principal vehicle for recognizing the significance of the OLC Railway system as a whole, because the railway's historical importance derives from the spatial and functional relationships among its component parts rather than from any single surviving resource. No individual railroad grade segment, logging camp site, trestle remnant, or water management feature fully expresses the scale and character of the OLC operation in isolation; the district form captures the system-level significance that individual resources cannot convey alone.

Two district types are anticipated within the Malheur National Forest. The first is a linear railroad corridor district anchored by the OLC Railway mainline and encompassing the permanent spur grades, trestles, wyes, sidings, and water management features that together constituted the engineered infrastructure of the railway system. This district type is primarily a structural and engineering district, drawing its significance from Criteria A and C. The second is an archaeological district encompassing the non-linear resources associated with the logging operation—logging camp sites, sawmill sites, skid roads, landing areas, and steam donkey locations—that are distributed across the landscape served by the railway. This district type draws its significance primarily from Criteria A and D.[165]

The two district types may overlap geographically and need not be nominated separately; a single district nomination could encompass both the linear railroad infrastructure and the associated archaeological resources where they occur within a contiguous or closely related area. The boundaries of any nominated district should be drawn to exclude areas where the historic character of the railroad logging system has been so thoroughly altered that contributing resources are absent.[166]

Significance: A historic district encompassing OLC Railway resources is eligible for listing under Criterion A for its association with the industrialization of the Blue Mountains ponderosa pine timber industry, the development of the milling-in-transit model of lumber production, and the economic and social history of Grant County during the period of significance. It is eligible under Criterion C for the engineering of the narrow-gauge railroad system and its constituent structures. An archaeological district, or the archaeological components of a combined district, is eligible under Criterion D for the information potential of its associated sites regarding labor history, material culture, and the spatial organization of an industrial logging operation. All district nominations under this MPD are evaluated at the local level of significance.

Registration Requirements: For a historic district to be eligible within the context established in this MPD, it must exhibit the following qualities:

1. The district must encompass land within the Malheur National Forest that was directly associated with OLC Railway operations during the period of significance, and its boundaries must be defined by the extent of that association rather than by modern land ownership or administrative boundaries.
2. The district must contain a sufficient number of contributing resources to convey its historic character. For a linear railroad corridor district, a majority of the grade segments within the nominated boundary must retain integrity of location, design, and workmanship sufficient to read as a railroad alignment. Individual grade segments in Condition Class A or B, as defined in the 1987 National Register nomination, are contributing resources; segments in Class C or D are non-contributing. As defined in that nomination, Condition Class A describes a track bed that remains undisturbed with its ties in place and its earthwork well preserved; Class B, a track bed whose surface has been altered for motor-vehicle use but whose major features—cuts, grades, and fills—remain intact and clearly visible; Class C, a route that can be deduced only from the engineers' choice of alignment, with little physical fabric remaining; and Class D, a route that has been completely obscured by later construction and is no longer discernible on the surface.

[164] National Park Service, How to Apply the National Register Criteria for Evaluation, National Register Bulletin 15 (Washington, DC: U.S. Department of the Interior, 1997), 5–6.
[165] National Park Service, How to Complete the National Register Multiple Property Documentation Form, National Register Bulletin 16A (Washington, DC: U.S. Department of the Interior, 1999), 20.
[166] Holter and Doncaster, *Historical Context*, 57–59.

3. An archaeological district, or the archaeological components of a combined district, must encompass a minimum of two distinct types of associated resources drawn from the property types defined in this MPD. A concentration of logging camp sites alone, for example, does not constitute an eligible archaeological district under this MPD; the logging camp sites must be accompanied by at least one additional resource type—such as a railroad grade segment, a landing, a skid road, or a trestle remnant—that demonstrates the functional relationship among the district's components. This requirement reflects the National Register principle that district integrity derives from the associative relationship among varied contributing resources, not from the accumulation of a single repeated site type.
4. Non-contributing resources within the nominated boundary do not disqualify a district from eligibility, provided that the contributing resources retain sufficient integrity to convey the district's historic character and that the overall pattern of association among contributing resources remains legible.
5. The district must retain at least five of the seven aspects of integrity—location, design, setting, materials, workmanship, feeling, and association—considered as a whole, across the nominated area. Because the district form evaluates integrity at the level of the whole rather than the individual resource, a district may be eligible even where individual components have lost some aspects of integrity, provided that the cumulative integrity of the contributing resources is sufficient.
6. All resources within a nominated district must have reached the fifty-year threshold for National Register consideration unless they possess exceptional significance that would justify evaluation prior to that threshold.

G. Geographical Data

The geographical area considered within this MPD encompasses the congressionally mandated limits of the Malheur National Forest, which is located in Grant County, Oregon (see Figure 1).

H. Summary of Identification and Evaluation Methods

(Discuss the methods used in developing the multiple property listing.)

The preparation of this MPD was primarily conducted by Willamette Cultural Resources Associates in conjunction with the Malheur National Forest unit of the United States Forest Service, the North Fork of the John Day Watershed Council, and the Bonneville Power Administration. This MPD was drafted as mitigation for the Dunstan and Camp Creek restoration projects, which included the removal of segments of the OLC railroad grade that was listed in the NRHP as the SVRy Middle Fork (John Day River) Spur in Grant County, Oregon (NRIS 87001066). As described in the delisting nomination:

> Supplementary research indicates that the listed railway was incorrectly identified in the nomination as the SVRy and that, in fact, the resource actually was commonly known as the Oregon Lumber Company (OLC) Railway and briefly as the Grant County Railway (GCRy). Therefore, because the nomination incorrectly identified the resource and its history, the railroad was listed based on a historic significance that the resource did not have. Further, once the resource was properly identified as the OLC Railway, a survey was completed to evaluate the current physical appearance of the resource which found that since listing in 1987, natural forces, including flooding and wildfire, along with road improvements have impacted the integrity of the 16-mile-long historic resource so that the resource no longer reflects its historic appearance nor retains integrity. Thus, per 36 CFR 60.15 the resource is not eligible for listing in the National Register.
>
> The original 1987 nomination was prepared by Ward Tonsfeldt, who evaluated the Middle Fork Spur as a linear historic district significant under Criterion A for its association with the broad pattern of events in the history of the Blue Mountain area. Tonsfeldt identified areas of significance in Commerce, Industry, and Transportation, and established a period of significance corresponding to the spur's construction dates of 1916–1917. The nomination also noted the spur's associations with historically significant individuals, including David Eccles and his son Marriner Eccles, and its builder, engineer Joseph A. West, though the nomination was not formally advanced under Criterion B.

In developing the 1987 nomination, Tonsfeldt established five criteria for evaluating sections of the SVRy system for a linear district nomination. These criteria required that: (1) integrity of the track bed be maintained, with the track bed not interrupted for more than one-tenth of a mile; (2) nominated sections display associations with communities along the railway corridor; (3) nominated sections display a concentration of engineering features characteristic of SVRy construction; (4) nominated sections display features associated with the industries the railway served, including logging, lumber manufacturing, and ranching; and (5) nominated sections display associations with nationally recognized figures involved in the railway's construction or operation. To assess the physical condition of the corridor, Tonsfeldt developed a five-tier classification system: Condition A (track bed features intact), Condition B (engineering preserved), Condition C (route visible), Condition D (route obscured), and Condition E (restoration). Under this system, the nominated 16.2-mile district was assessed as approximately thirty percent Condition A, fifty-seven percent Condition B, six percent Condition C, and five percent Condition D.

This MPD both builds upon and departs from Tonsfeldt's framework. Several of Tonsfeldt's criteria—integrity of the track bed, the presence of engineering features, and associations with the industries the railway served—are retained in revised form as registration requirements for individual property types in Section F. His emphasis on associations with communities and significant individuals has been incorporated into the historic context developed in Section E. However, the present document differs from the 1987 nomination in several important respects. First, the historic context has been corrected to reflect the proper identity of the railroad as the OLC Railway, operated by the OLC rather than the SVRy. Second, the period of significance has been expanded to 1897–1946 to encompass the full span of railroad logging activity on the Malheur National Forest, from the earliest timber operations associated with the SVRy to the abandonment of the OLC Railway. Third, the scope of identified property types has been broadened well beyond the railroad grade itself to include the full range of resources associated with the railroad logging system—camps, sawmill sites, trestles, rolling stock, culturally modified trees, landings, skid roads, water management features, and others—reflecting a more comprehensive understanding of the industrial landscape than was attempted in the earlier nomination. Fourth, the evaluation framework has been expanded to address Criteria A, C, and D, whereas the 1987 nomination was advanced solely under Criterion A. Fifth, and perhaps most significantly, this MPD treats archaeological resources as a distinct category requiring their own integrity standards and evaluation methods, an approach absent from Tonsfeldt's work, which assessed the corridor exclusively as an above-ground linear resource.

The identification and evaluation of resources within the Malheur National Forest related to railroad logging is based on a review of published and unpublished sources available at various archives throughout Oregon. These include records at the Baker County Public Library, the DeWitt Museum, the Grant County Library, the Harney County Historical Museum, the Harney County Library, the archives of the SVRy Restoration Inc., and the Sumpter Municipal Museum. Published secondary sources on Pacific Northwest logging history, railroad technology, labor and community development, and

Forest Service administration provided the foundation for the historic context in Section E. Cultural resources records, including the original National Register nomination form, the delisting amendment, archaeological site records, and data from the Oregon Archaeological Records Remote Access (OARRA) database, provided the basis for assessing the comparative significance and integrity of resources related to the railroad logging system. Recent archaeological investigations on the Malheur National Forest, including the Southern Oregon University Laboratory of Anthropology's work at the Baker White Pine Mill and Japanese Meadow sites, contributed field data and evaluative models that directly informed the registration requirements and integrity standards in Section F.

The property types and registration requirements in Section F were developed by synthesizing several sources: the physical evidence documented in the 1987 nomination and the delisting survey; archaeological site records and reports from the Malheur National Forest; comparative MPD forms for analogous resource types, particularly the Multiple Property Documentation Form for Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona; guidance from National Register Bulletins 15 and 36; and the Oregon State Historic Preservation Office's reporting guidelines for archaeological investigations. The Coconino and Kaibab MPD forms, prepared by Pat H. Stein in 1993, provided a particularly useful structural model, as it addressed many of the same property types—railroad grades, trestles, rolling stock, logging camps, and culturally modified trees—in an analogous western mountain setting. The present document adapts Stein's framework to the specific conditions of the Malheur National Forest, incorporating her visibility and focus concepts for evaluating archaeological site integrity while adjusting property type definitions and registration requirements to reflect the distinctive characteristics of narrow-gauge railroad logging in the Blue Mountains of Oregon.

I. Major Bibliographical References

(List major written works and primary location of additional documentation: State Historic Preservation Office, other State agency, Federal agency, local government, university, or other, specifying repository.)

Adams, Kramer A. *Logging Railroads of the West*. Seattle: Superior Publishing, 1961.

Andrews, Ralph Warren. *This Was Logging!* Schiffer Publishing, Ltd., 1984.

Arrington, Leonard J. "David Eccles: A Man for His Time." *Journal of Mormon History* 25, no. 1 (Spring 1999): 1–8.

Arrington, Leonard J. *David Eccles: Pioneer Western Industrialist*. Logan: Utah State University Press, 1975.

Azuma, Eiichiro. "In This Land of Freedom: Japanese Pioneers of Oregon: Chapter 1—The Issei Arrive in Oregon." *Discover Nikkei*, 2017. Cited in Rose et al., *Railroad and Logging Camps*, 40.

Code of Federal Regulations. Title 36, Chapter I, Part 60. https://www.ecfr.gov/current/title-36/chapter-I/part-60.

Conlin, Joseph R. "'Did You Get Enough of Pie?' A Social History of Food in Logging Camps." *Journal of Forest History* 23, no. 4 (October 1979).

Cultural Resources Overview of the Malheur, Umatilla, and Wallowa-Whitman National Forests. Portland, OR: USDA Forest Service, Pacific Northwest Region, 1978.

Ferrell, Mallory Hope. *Rails, Sagebrush, and Pine: A Garland of Railroad and Logging Days in Oregon's Sumpter Valley*. Boulder, CO: Golden West Books, 1967.

Francaviglia, Richard F. "Mining and Religion in the Intermountain West." *John Whitmer Historical Association Journal* (2004): 199–213.

Hann, Don. "Chinese Mining Kongsi in Eastern Oregon: A Case Study of Cultural Amnesia." *Oregon Historical Quarterly* 122, no. 4 (2021): 340–367.

Hayner, Norman S. "Taming the Lumberjack." *American Sociological Review* 10, no. 2 (April 1945): 217–225.

Holter, Russell, and Kelsey Doncaster. *Historical Context of Oregon Lumber Company and its Railway, Bates, OR*. Prepared for Bonneville Power Administration. Tacoma, WA: Cultural Reconnaissance, 2022.

Langston, Nancy. *Forest Dreams, Forest Nightmares: The Paradox of Old Growth in the Inland West*. Seattle: University of Washington Press, 1995.

Lyon, Elizabeth A. *Guidelines for Evaluating and Registering Historical Archeological Sites and Districts*. National Register Bulletin 36. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1993.

Massek, Shelli, with Doug Hansen. "High Wheels: Preserving Logging Equipment History." *Farm Collector*, May 1, 2007. https://www.farmcollector.com/equipment/high-wheels-logging-equipment-history/.

McClelland, Linda F. *Guidelines for Completing National Register Registration of Historic Places Forms, Part A*. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1997.

McCulloch, Walter. *Woods Words: A Comprehensive Dictionary of Loggers Terms*. 1st ed. Oregon Historical Society and the Champoeg Press, 1958. https://archive.org/details/woodswordscompre00mccu.

Michigan Historical Center. "The Big Wheels." Michigan Historical Museum System, January 9, 2002. https://web.archive.org/web/20020605231900/http://www.sos.state.mi.us/history/museum/explore/museums/hismus/prehist/lumber/bigwheel.html.

Mosgrove, Jerry L. *The Malheur National Forest: An Ethnographic History*. Washington, DC: USDA Forest Service, 1980.

Mullett, Alfred, and Leonard Merritt. *Sumpter Valley Logging Railroads*. Charleston, SC: Arcadia Publishing, 2011.

Mullett, Alfred, and Leonard Merritt. *Sumpter Valley Railway*. Charleston, SC: Arcadia Publishing, 2009.

National Park Service. "Area of Significance, Legacy and Current." National Park Service, February 2025. https://irma.nps.gov/DataStore/DownloadFile/740952.

Oregon Lumber Company Archives. Emlaw fonds. Enterprise, OR.

Oregon State Historic Preservation Office. *State of Oregon Guidelines for Reporting on Archaeological Investigations*. Salem: Oregon Parks and Recreation Department, 2015.

“Pioneer Eastern Oregon Lumber Firm.” *The Timberman*, September 1933.

Pope, Clem L. *Switchback to the Timber*. Hood River, OR: Old Forester Publishing Co., 1992.

Rajala, Richard A. “The Forest as Factory: Technological Change and Worker Control in the West Coast Logging Industry, 1880–1930.” *Labour/Le Travail* 32 (Fall 1993): 73–104.

Robbins, William G. “Lumber Production and Community Stability: A View from the Pacific Northwest.” *Journal of Forest History* 31, no. 4 (October 1987): 187–196.

Rose, Chelsea, Katie Johnson, Eric Gleason, and Anna Sloan. *Railroad and Logging Camps at the Baker White Pine Mill and Japanese Meadow, Archaeological Investigations 2022.16*. Ashland, OR: Southern Oregon University Laboratory of Anthropology, 2025.

Smith, Gregg. “Community of Bates.” *Oregon Encyclopedia*. https://www.oregonencyclopedia.org/articles/bates_community_/.

Sprinkle, John H., Jr. “A Site Form for Important Sites: Converting Archeological Reports into National Register Nominations.” *CRM* 18, no. 6, Supplement (1995): 13–16.

Stein, Pat H. “Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona.” National Register of Historic Places Multiple Property Documentation Form. Flagstaff, AZ: SWCA, Inc., 1993.

Sumpter Valley Railway Company. Roadway Department Time Book and Distribution of Labor, Section 4, September 1914. Sumpter Valley Railway Co. Archives.

Tobie, Harvey Elmer. “Oregon Labor Disputes, 1919–1923: II; Government and Wages.” Oregon Historical Quarterly 48, no. 3 (September 1947): 195–213.

Tonsfeldt, Ward. National Register of Historic Places Nomination of the Sumpter Valley Railway Historic District. Washington, DC: National Park Service, 1987.

U.S. Bureau of the Census. Thirteenth Census of the United States, 1910. Grant County, Oregon, Austin Precinct.

U.S. Bureau of the Census. Fourteenth Census of the United States, 1920. Grant County, Oregon, Austin Precinct.

U.S. Department of the Interior, National Park Service. *How to Apply the National Register Criteria for Evaluation*. National Register Bulletin 15. Washington, DC: U.S. Department of the Interior, 1997.

U.S. Department of the Interior, National Park Service. *How to Complete the National Register Multiple Property Documentation Form*. National Register Bulletin 16A. Washington, DC: U.S. Department of the Interior, 1999.

U.S. Department of the Interior, National Park Service. *How to Complete the National Register Multiple Property Documentation Form*. National Register Bulletin 16B. Washington, DC: U.S. Department of the Interior, 1991. https://www.nps.gov/subjects/nationalregister/upload/NRB16B-Complete.pdf.

U.S. Department of the Interior, National Park Service. “Sumpter Valley Railway, Middle Fork (John Day River) Spur: Amendment for Removal.” NRIS No. 87001066. 2021.

Warf, Barney. “Regional Transformation, Everyday Life, and Pacific Northwest Lumber Production.” *Annals of the Association of American Geographers* 78, no. 2 (1988): 326–346.

Wyatt, Barbara. *Integrity Requirements for Setting and Locations of Locomotives and Other Rolling Stock*. National Register Policy Clarification. National Park Service, 2009. https://www.nps.gov/subjects/nationalregister/upload/Policy_clarification_for_integrity_of_locomotive_settings_4-09.pdf.

Additional Documentation
(Figures, Maps, Appendices, and other materials. Please include a list of all included additional materials. Reduce file size to 300kb or less for each individual image.)

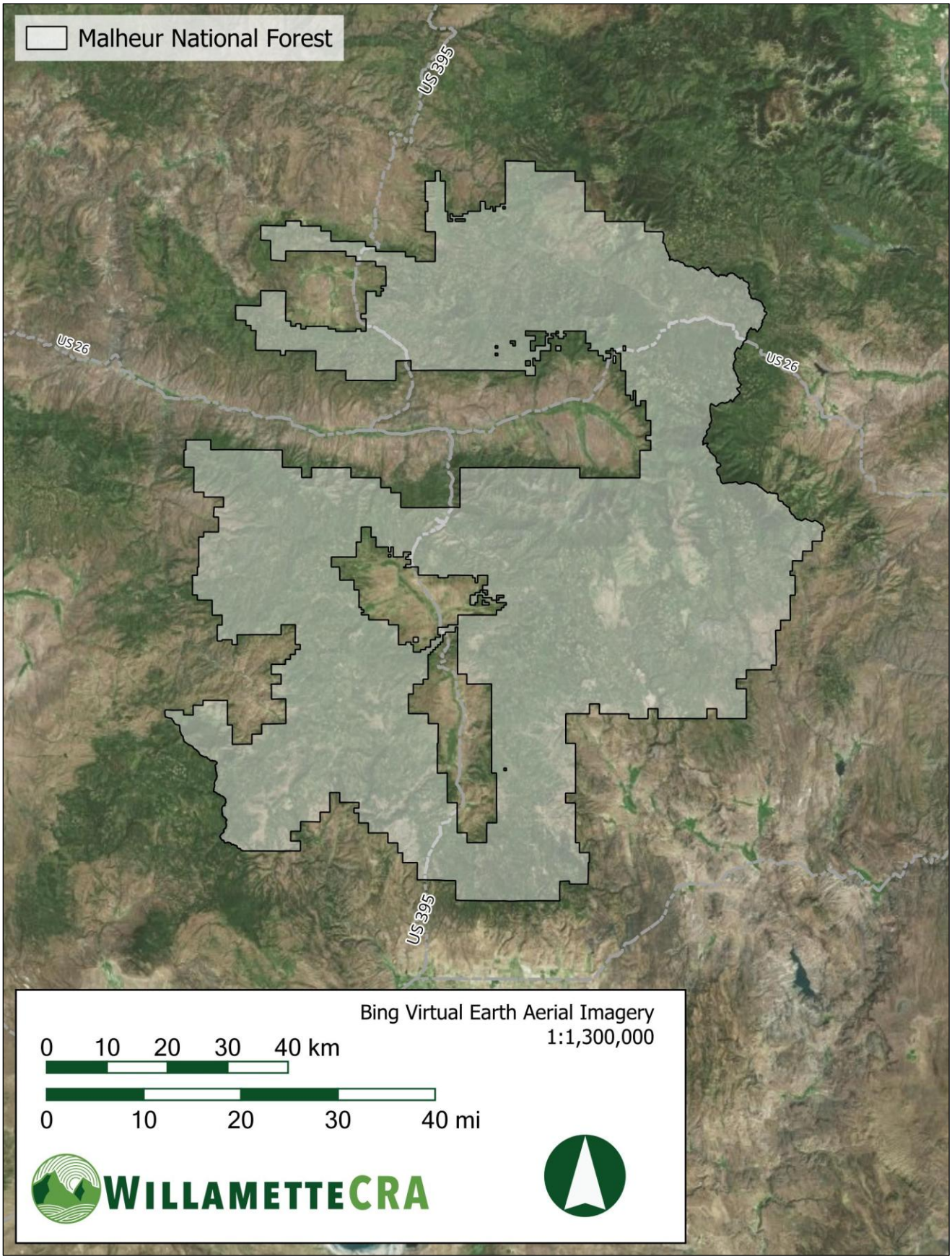

Figure 1. Map of the Malheur National Forest. Willamette Cultural Resources Associates, Ltd.

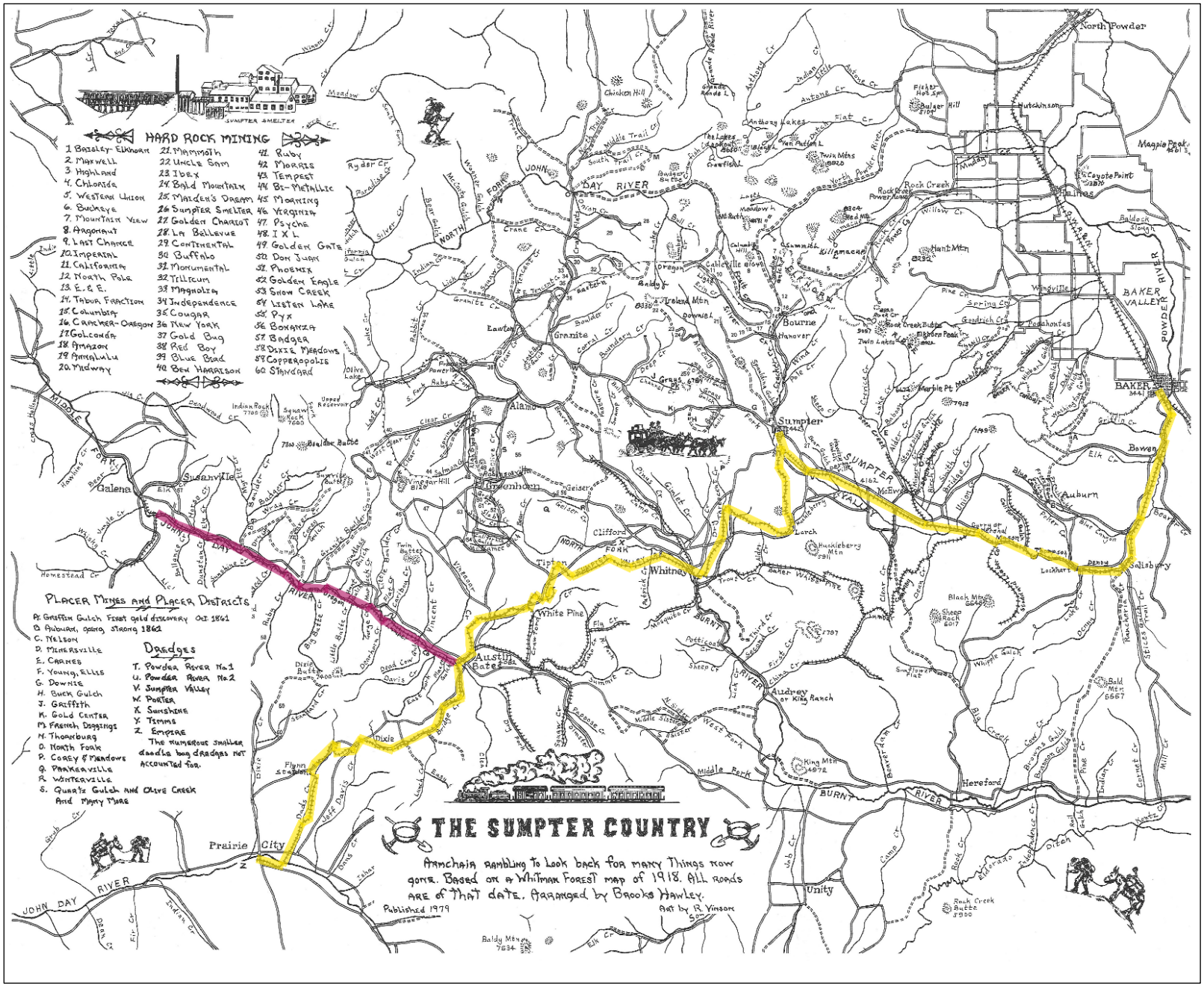

Figure 2. *The Sumpter Country.* Arranged by Brooks Hawley with art by R. Yinson. 1979. Collection of the author. Copies available at the Sumpter Museum. Yellow highlighting shows the SVRy while pink highlighting shows the OLC Railway (see also Figure 3). Highlighting added by author.

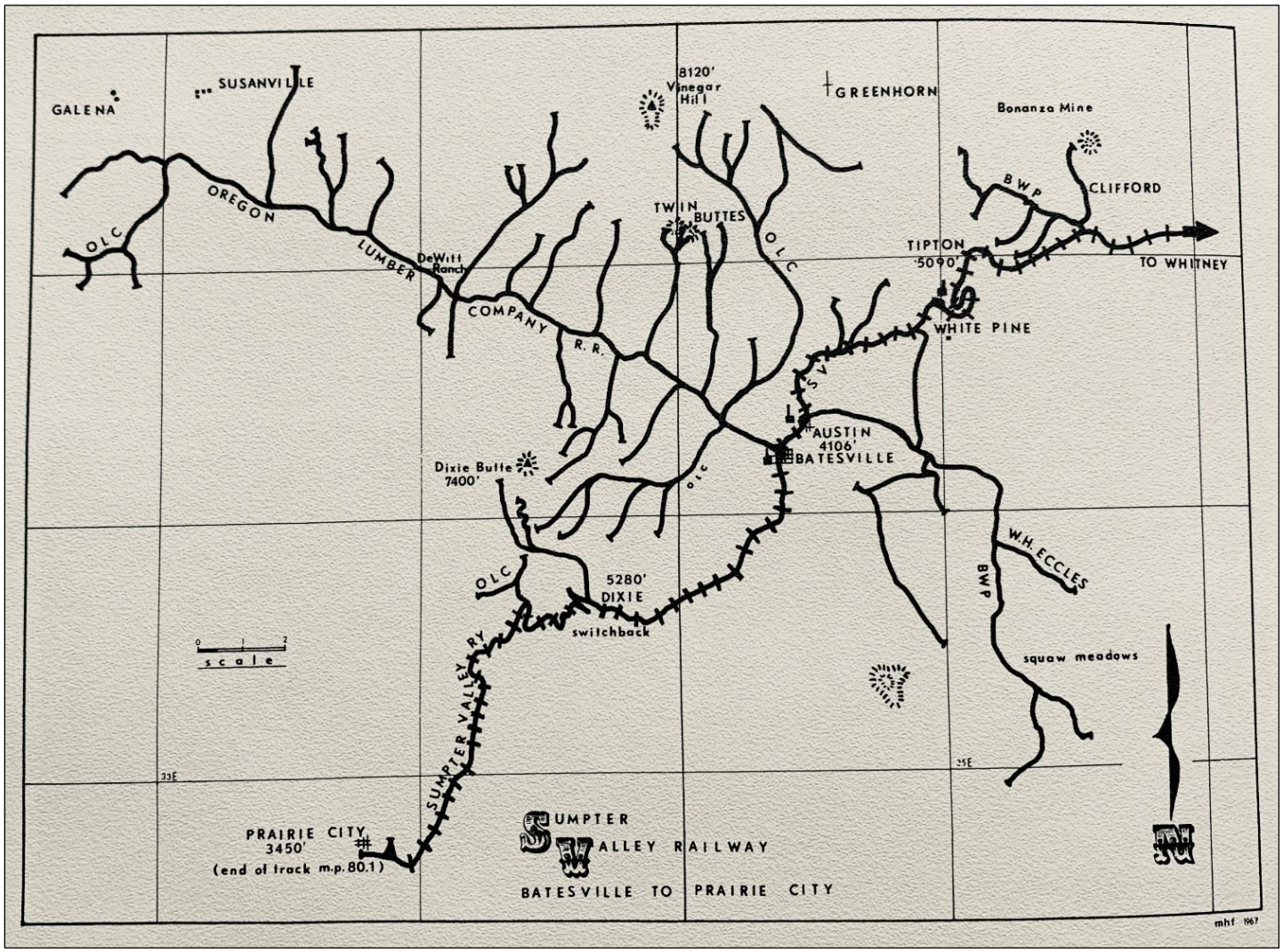

Figure 3. *Sumpter Valley Railway Batesville to Prairie City.* Arranged by Mallory Hope Ferrell. Ferrell, Rails, Sagebrush, and Pine, 46. Detail map showing the location of spur lines off the OLC Railway line.

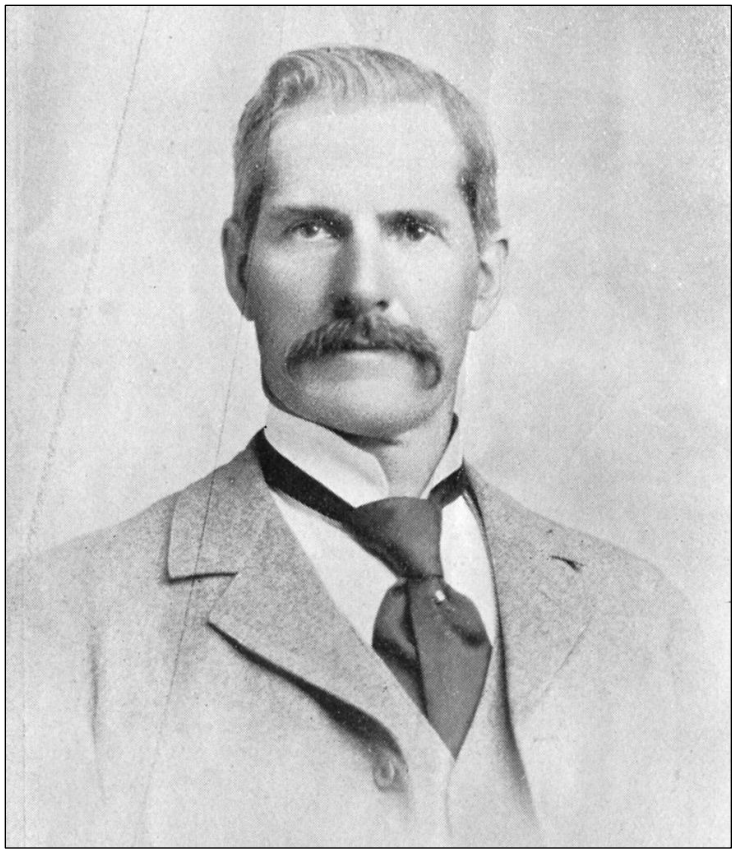

Figure 4. *Eccles, David*. Photograph by Parker's Studio or M. M. Hazeltine, 1898. Baker County Library Digital Archive, Baker City, Oregon. 1980.1.554.

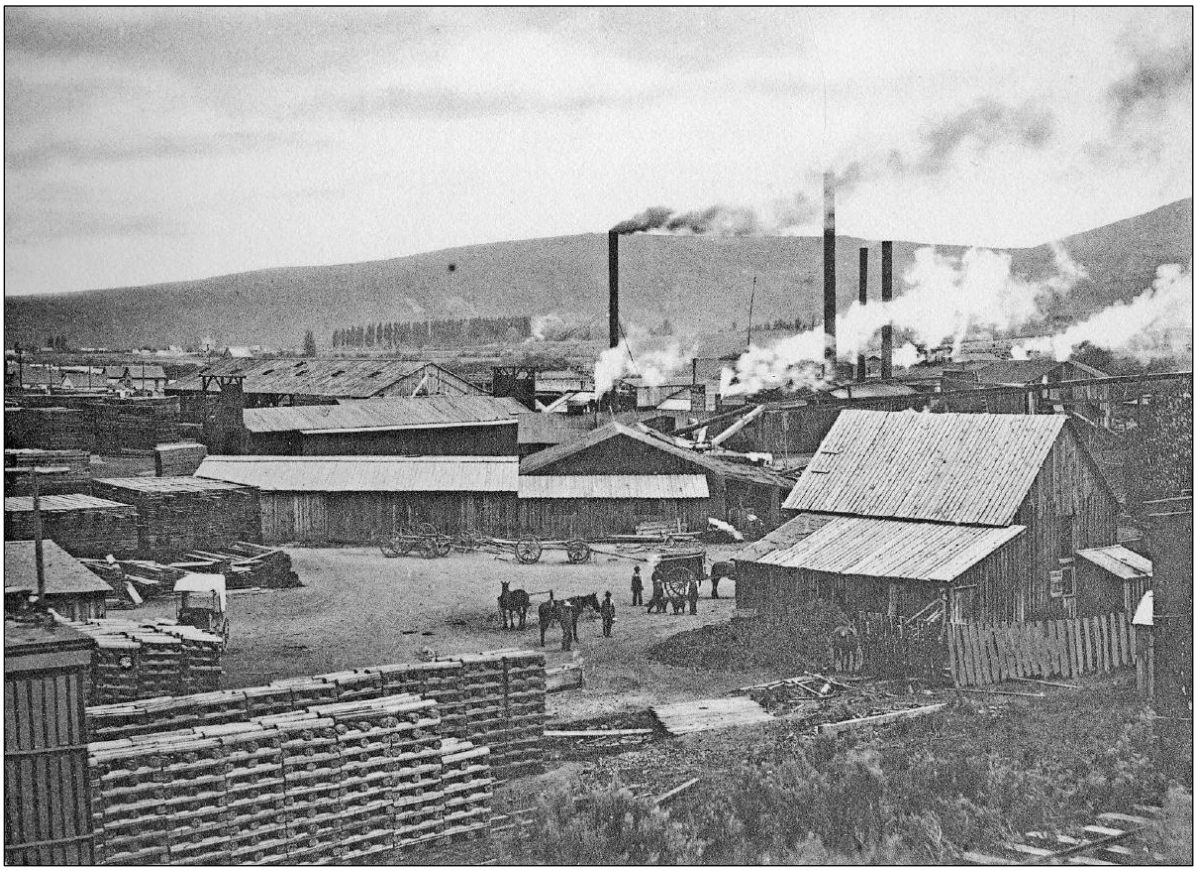

Figure 5. Oregon Lumber Co. mills. Photograph by Carl Adler? Ca. 1905. Baker County Library Digital Archive, Baker City, Oregon. 1950.1.15.

Figure 6. *SVRy. Baker White Pine Lumber Co. logging near Tipton in 1922*. Photographer unknown. 1922. Baker County Library Digital Archive, Baker City, Oregon. 1992.1.772.

Figure 7. *70 Ton Shay Locomotive on Hines Logging Railroad. Train load of Oregon soft ponderosa pine logs enroute to Seneca Oregon, over logging spur track before 1936…"* Photographer unknown. Harney County Historical Museum, Burns, Oregon.

Figure 8. *SVRy. Climax Engine logging near Whitney*. Photographer unknown. Between 1911 and 1929. Baker County Library Digital Archive, Baker City, Oregon. 1992.1.687.

Figure 9. Oregon Lumber Co. #100 Heisler c/n 1510 built in Nov. of 1924 and weighed 50 tons. Photographer unknown. Date unknown. Sumpter Valley Railroad Archives, McEwen, Oregon.

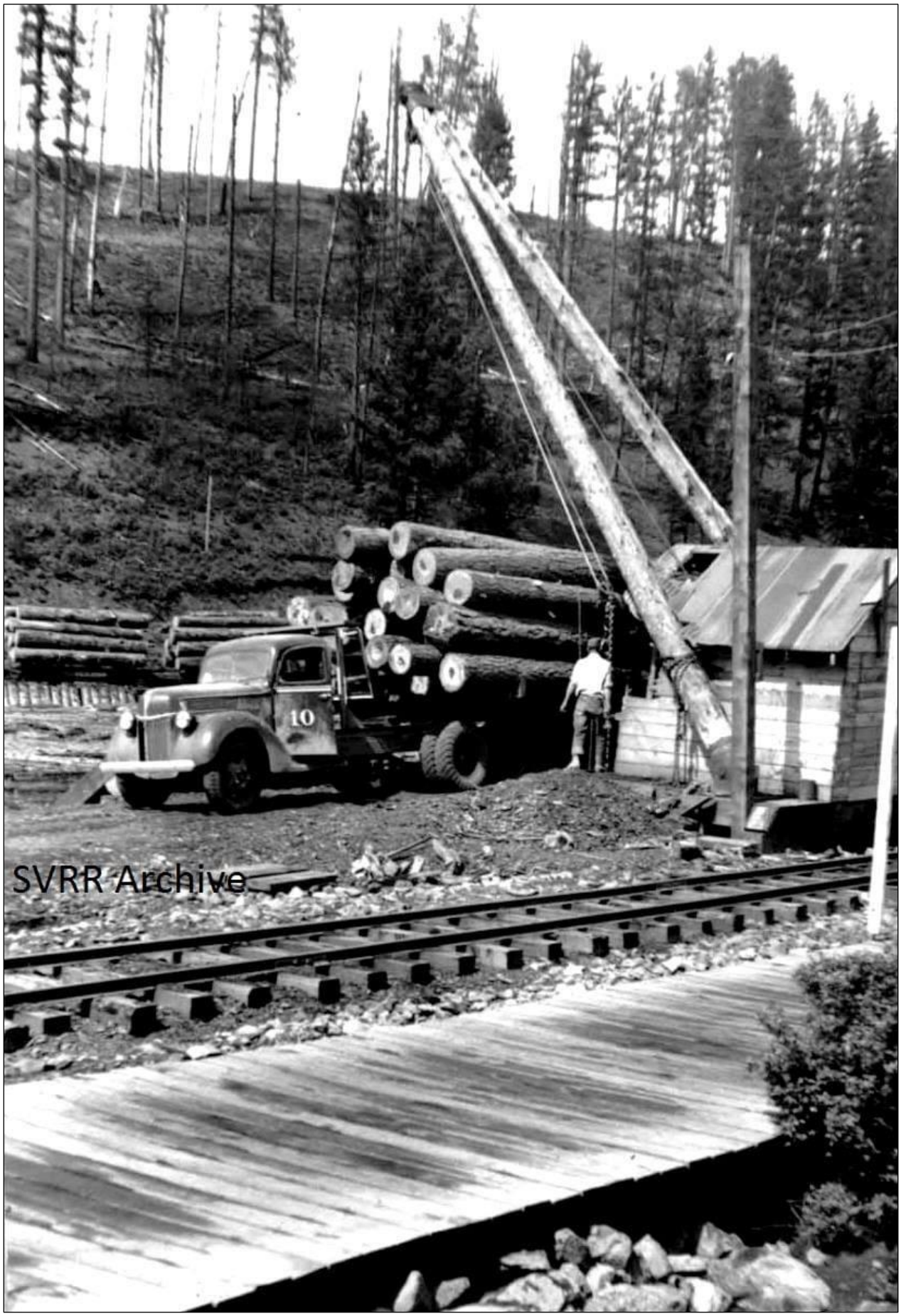

Figure 10. *OLC at Bates.* Photograph by Earl Emlaw, May 29, 1940. Sumpter Valley Railroad Archives, McEwen, Oregon.

Figure 11. *Unloading logs at Austin.* Photographer unknown. No date. Baker County Library Digital Archive, Baker City, Oregon. 1992.1.1182.

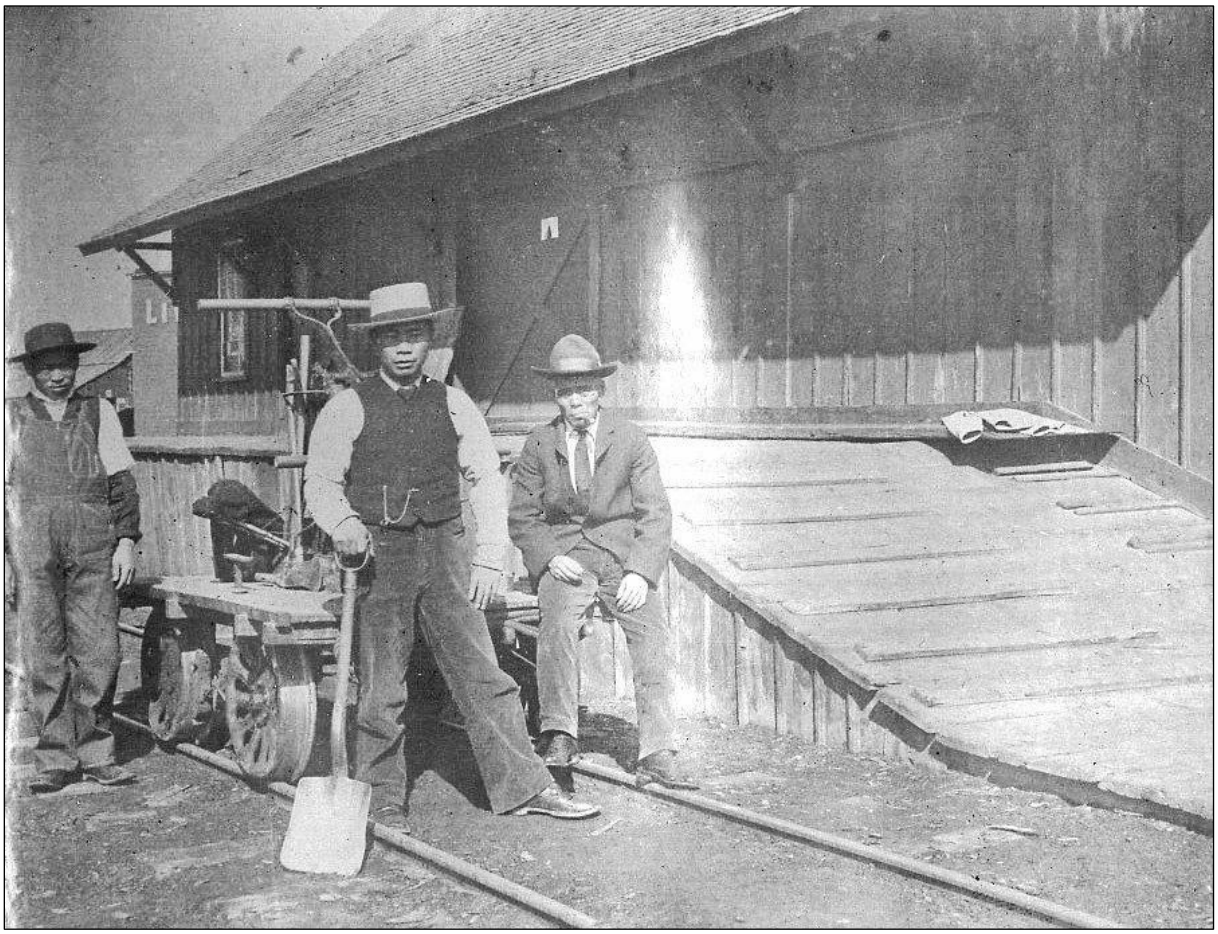

Figure 12. *Japanese section crew at the Sumpter depot.* Photographer unknown. No date. Baker County Library Digital Archive, Baker City, Oregon. 1992.1.917.

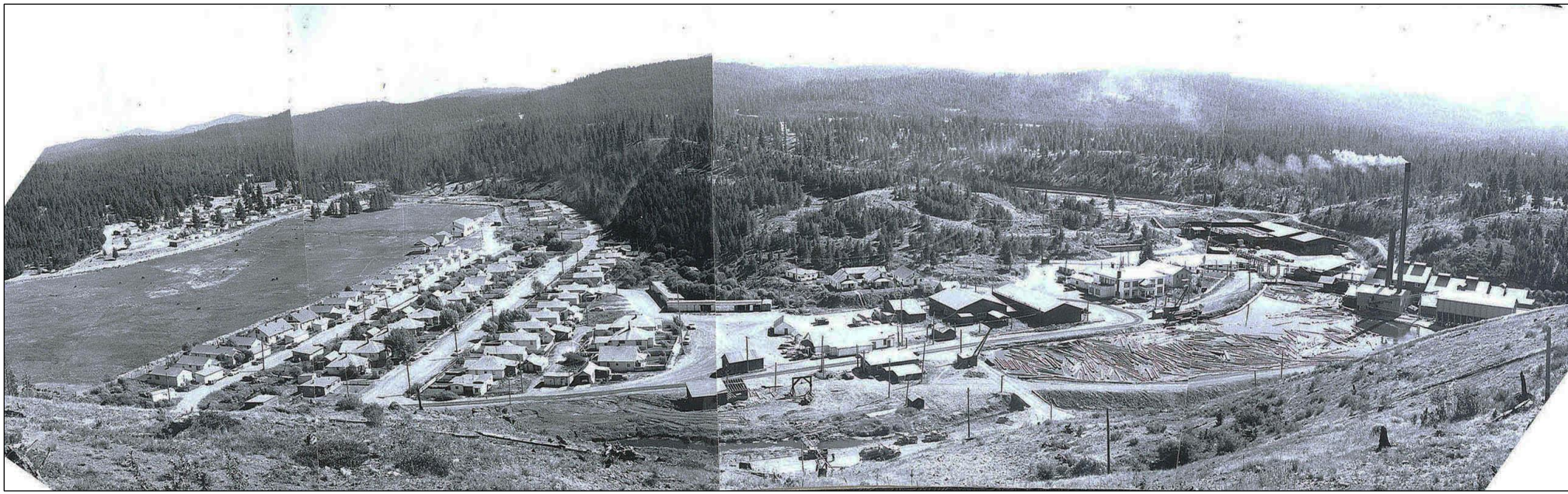

Figure 13. *Bates, panorama*. Photographer unknown, 1959. Oregon Encyclopedia.

Appendix: State of Oregon Archaeological Site Forms