United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. **Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).**

1. Name of Property

historic name Balch Gulch Bridge

other names/site number Thurman Street Bridge; ODOT Bridge No. 25B15

Name of Multiple Property Listing Historic Highway Bridges of Oregon Thematic Group

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

street & number 3010 NW Thurman Street ☐ not for publication

city or town Portland ☐ vicinity

state Oregon code OR county Multnomah code 051 zip code 97210

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this **X** nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance: ___ **national** **X** **statewide** **X** **local**

Applicable National Register Criteria: **X** **A** ___ **B** **X** **C** ___ **D**

Signature of certifying official/Title: Deputy State Historic Preservation Officer Date

Oregon State Historic Preservation Office
State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

Signature of the Keeper Date of Action

Balch Gulch Bridge
Name of Property

Multnomah Co., OR
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply.)

- [ ] private
- [X] public - Local
- [ ] public - State
- [ ] public - Federal

Category of Property
(Check only **one** box.)

- [ ] building(s)
- [ ] district
- [ ] site
- [X] structure
- [ ] object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
		buildings
		site
1		structure
		object
1	0	**Total**

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions.)

TRANSPORTATION \ road-related (vehicular)
TRANSPORTATION \ rail-related

Current Functions
(Enter categories from instructions.)

TRANSPORTATION \ road-related (vehicular)

7. Description

Architectural Classification
(Enter categories from instructions.)

NO STYLE

Materials
(Enter categories from instructions.)

foundation: CONCRETE
walls:
roof:
other: STEEL

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity).

Summary Paragraph

The Balch Gulch Bridge (ODOT Bridge No. 25B15), also known as the Thurman Street Bridge, is a pin-connected Pratt deck truss that carries NW Thurman Street across Balch Gulch in Portland, Oregon. The bridge is located in the Willamette Heights Addition, a primarily residential neighborhood in Portland's Northwest District, and spans a narrow section of city-owned parkland. The structure, which was designed by James B. C. Lockwood and completed in 1905, consists of one 160-foot-long, eight-panel, pin-connected Pratt deck truss and one 60-foot-long, three-panel, pin-connected Pratt deck truss between three steel towers with concrete footings.[1] In total, the bridge is approximately 400 feet long and 40 feet wide, including an approximately 27-foot-wide roadway with approximately 6-foot-wide pedestrian walkways on either side. The bridge has received a number of alterations and repairs to its original structure, the most noteworthy of which are the removal of streetcar tracks in the early 1950s; the replacement and reinforcement of the railing and guardrails in 1955; the addition of steel struts to strengthen truss members in 1978; and a major rehabilitation in 2014 that involved the replacement of the wood decking with form-lock steel planks, in-kind replacement of the steel floor beams, and replication of the original railing removed in 1955.[2] The bridge maintains nearly all its character-defining features, including its Pratt deck truss design, pin connections, original steel towers with concrete footings, and location spanning Balch Gulch in northwest Portland's Willamette Heights Addition. It maintains an overall high degree of integrity.

Narrative Description

Location and Setting

The Balch Gulch Bridge is located in the Willamette Heights Addition, a primarily residential neighborhood in Northwest Portland (Figure 1). It carries NW Thurman Street, a paved two-lane residential street, over Balch Gulch from NW 29th Street (at the eastern terminus) to NW 31st Street (at the western terminus). This section of NW Thurman Street includes one four-foot-wide bike lane adjacent to the north traffic lane and has sidewalks lining both sides of the roadway. The surrounding neighborhood is generally characterized by turn-of-the-century single-family houses to the east and west of the bridge, and low-rise multi-family buildings to the north (Figure 2).

Directly below and extending south of the Balch Gulch Bridge is a narrow section of Forest Park, a 5,200-acre city-owned public park and natural area that abuts the Bird Alliance of Oregon Wildlife Sanctuary.[3] Pedestrians can access the park from NW Thurman Street via a staircase at the north side of the Balch Gulch Bridge's eastern abutment (Figure 4, Photograph 2). The upper portion of the staircase is made of

[1] Robert Hadlow, "Oregon Inventory of Historic Properties Section 106 Level of Effect Form: Balch Gulch Bridge No. 25B15," Oregon Dept. of Transportation/NW Thurman St.: Macleay Park Bridge Rehabilitation Project, ODOT Key No. 18340, Fed.-Aid No. 5900(259), July 7, 2013, 2.

[2] Portland City Archives, record no. AP/28388, "A2000-025.2367 : Steel pipe by men and crane laying new deck for reconstruction of NW Thurman St Bridge," record date August 28, 1951, https://efiles.portlandoregon.gov/record/3918221/; Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," record date July 28, 1950 (contains plans from 1905 through 1978), https://efiles.portlandoregon.gov/record/12122251/; Portland Bureau of Transportation, Project No. STP-5900 (260) NW Thurman St. Macleay Park Bridge Rehab, approved August 2013.

[3] "Bird Alliance of Oregon Wildlife Sanctuary," Bird Alliance of Oregon, accessed March 19, 2025, https://birdallianceoregon.org/our-work/steward/portland-audubon-wildlife-sanctuary/.

concrete, while the lower two-thirds are a replacement steel stairway with non-skid treads installed in 2002.[4] Constructed in 1950, the staircase is a separate asset in the Portland Bureau of Transportation (PBOT)'s portfolio and is not within the nominated boundary of the bridge.[5]

The portion of Forest Park that runs below the Balch Gulch Bridge includes Balch Creek, a tributary of the Willamette River with a 3.5-square-mile watershed. The creek enters a large pipe ("trunk sewer") approximately 115 feet south of the Balch Gulch Bridge and continues, underground, beneath the bridge and north to the Willamette River (Figure 4). This pipe was first installed in 1921 (Figure 21) and has been upgraded several times, most recently with the 2021-2022 repair and replacement of a substantial metal trash screen dubbed the "Balch Creek Trash Rack."[6]

This portion of Forest Park also includes the Lower Macleay Trail (Figure 4), which is the park's busiest portal.[7] The first 0.2-mile of the trail, including the segment that runs underneath the bridge, is a paved, wheelchair-accessible path also known as the Judy Weinsoft ADA Accessible Trail.[8] The trailhead originates at a circular, paved parking area located approximately 80 feet north of the Balch Gulch Bridge, at the western terminus of NW Upshur Street. A combination maintenance building and public restroom facility and a covered picnic shelter are located at the southwest corner of this parking area. Additional, uncovered picnic tables on concrete pads are scattered along the trail below and to the north of the bridge. Approximately 120 feet south of the bridge, on the west side of the trail, are three geometric abstract steel sculptures collectively named *Untitled*.[9] Historic, informational, and directional signs are installed at various locations around the trailhead and base of the bridge.

Physical Description

The Balch Gulch Bridge has two pin-connected steel deck trusses: one 8-panel, 160-foot Pratt main span truss, and one 3-panel, 60-foot Pratt side span (Figure 5, Photographs 1, 3, 5-12). It is supported by three steel towers with concrete footings and two concrete abutments. A 12-inch steel water main, which carries water uphill to the Willamette Heights water tower, exits the east abutment and runs under the sidewalk along the south side of the bridge (Photograph 12).

---

[4] Portland City Archives, record no. M/20178, "Stairway replacement S - 52 , Northwest Thurman Street Bridge to Balch Gulch," record date December 31, 1984, https://efiles.portlandoregon.gov/record/5197317/; Portland City Archives, record no. M/20178, "Lower Macleay Park - Northwest Thurman Street Overpass - New Steel Stairway," record date August 7, 2002, https://efiles.portlandoregon.gov/record/5197317/.

[5] Portland City Archives, record no. F/4539719, "Stairway S052A, 052B - 1/4-2826 - Thurman Street Stairs," May 16, 1950, record date March 27, 2012, https://efiles.portlandoregon.gov/record/11720868/.

[6] "Trunk Sewer Finished: Balch Creek Project Is Difficult Job," *Morning Oregonian* (Portland, OR), September 10, 1921; "Balch Creek Trash Rack Replacement and Repair," City of Portland Bureau of Environmental Services, accessed March 11, 2025, https://www.portland.gov/bes/improvements/construction/balch-creek-trash-rack-replacement-and-repair.

[7] Paul Gerald, *60 Hikes Within 60 Miles: Portland: Including the Coast, Mount Hood, St. Helens, and the Santiam River* (Birmingham, AL: Menasha Ridge Press, 2014), 246-249.

[8] The Judy Weinsoft ADA Accessible Trail runs from the trailhead at the NW Upshur Street parking area, beneath the Balch Gulch Bridge, through the forest along Balch Creek, over a short wooden bridge with a smooth transfer onto horizontal boards, to a small overlook. From here on south, the Lower Macleay Trail is packed earth. When Donald Macleay donated 107 acres to the City of Portland in 1897, he not only stipulated that proceeds from the sale of any cut timber were to go to two local hospitals but that they city was to provide, "a conveyance for carrying patients from the hospitals through the park during the summer" (Kimbark D. MacColl, *The Shaping of a City: Business and Politics in Portland, Oregon 1885 to 1915* [Athens, GA: The Georgian Press Co., 1976], 14-15). Many years later (1994) the dying wish of one of Macleay's descendants, Judy Weinsoft, made her ancestor's dream a reality. Family and friends worked to create Forest Park's only wheelchair accessible path, which crosses under the Balch Gulch Bridge (Laura O. Foster, *Portland Hill Walks: Twenty Explorations in Parks and Neighborhoods* [Portland, OR: Timber Press, 2005], 25).

[9] "Untitled," Public Art Archive, accessed April 16, 2025, https://publicartarchive.org/art/Untitled/4ca4881e.

The length of the Balch Gulch Bridge from abutment to abutment is 400 feet with a grade of 6.666%. The width of the deck, which is constructed of 9-inch-wide form-lock steel planks with concrete infill, is 40 feet.[10] The asphalt-paved roadway surface is approximately 26 feet, including two traffic lanes and one bike lane on the north side of the bridge. On either side of the roadway, separated by two-tube steel guardrails, are approximately 7-foot-wide pedestrian walkways surfaced with "SlipNot" aluminum sidewalk planks (Photographs 4). The railings, which are made of coated galvanized steel, feature a lattice-like design including evenly spaced, vertically oriented bars of alternating width in the lower half of the railing and a repeating pattern of X-shaped bars in the upper half (Photograph 3). The ends of the deck's riveted steel floor beams extend an additional 15 inches beyond the decking, making the full structural width measurement 42 feet and 9⅞ inches (Photograph 2).[11]

The bridge is owned by the City of Portland and receives regular attention by the Oregon Department of Transportation (ODOT), the Portland Bureau of Transportation (PBOT), and other City agencies as an asset in PBOT's portfolio.

Alterations

In 1906, some of the earliest recorded maintenance on the Balch Gulch Bridge involved extending a tile drain on NW Thurman Street by four feet and cleaning out all the gutters on the bridge to prepare for winter rains.[12] That same year, concerns were raised about the safety of four wooden electrical streetcar poles on the bridge's sidewalks. These poles, which had been problematic since the bridge's opening, were of an incorrect type and had been incorrectly installed, posing dangers to pedestrians and streetcar passengers. After months of complaints and correspondence involving Sanderson Reed, an attorney, and officials from the City of Portland and the Portland Railway Company, the poles were replaced by the end of the year.[13]

In December 1921, the City began repair work on the bridge as part of a broader bridge repair program. This included replacing the bridge's wood stringers and installing a completely new decking system.[14] A decade later, in 1932, Portland's Public Works Department and Works Progress Administration (WPA) laborers performed additional work on the bridge as part of the Balch Gulch Infill and Lower Macleay Park grading project (Figure 22). This included painting and sealing the bridge (Figure 23), as well as work on the trash screen over the Balch Creek trunk sewer 115 feet south of the bridge. At the same time, grading

[10] Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Erection Diagram, Thurman Street Bridge Crossing Balch Gulch, Portland Oregon, Sheet 1 of 20, Riverside Bridge Co., Wheeling, W.V.," 1904. record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/; Hadlow, "Oregon Inventory of Historic Properties Section 106 Level of Effect Form: Balch Gulch Bridge No. 25B15," 2.

[11] Oregon Dept. of Transportation/NW Thurman St.: Macleay Park Bridge Rehabilitation Project, 2013; deck plan.

[12] Portland City Archives, record no. AF/65860, "R - Reed, Sanderson and Taylor, Douglas W - City Engineer," "From D. W. Taylor, City Engineer to Mayor Harry Lane regarding correspondence of Sanderson Reed," Document #1; Personal correspondence regarding cleaning of drains and gutters on NW Thurman St. From D. W. Taylor, City Engineer to Harry Lane, Mayor, record date December 31, 1906, https://efiles.portlandoregon.gov/record/104045/.

[13] Portland City Archives, record no. AF/65860, "R - Reed, Sanderson and Taylor, Douglas W - City Engineer," "Correspondence between Reed, Taylor and Lane concerning drains, poles, Thurman St Bridge, sidewalks, and trolley poles," record date December 31, 1906, https://efiles.portlandoregon.gov/record/104045/; Richard Thompson, *Slabtown Streetcars* (Charleston, SC: Arcadia Publishing, 2015), 27. Parties involved were Sanderson Reed (complainant), Mayor Harry Lane and city staff, and two streetcar company representatives, Charles Swigert and Franklin Fuller, then-secretary and later president of Portland Railway Company. It was not uncommon at the time for trolley and streetcar companies to control and maintain responsibility for the roadways and bridges upon which their tracks ran. Nothing had been done to address the problem "since the bridge opened," which would have been nearly a year with at least two close calls to passengers and one to a driver with nothing more than promises from Fuller that the ornamental poles were on the way. In the meantime, the streetcar company installed lights around the menacing poles as a "heads up" while awaiting the replacements called for in the original plans.

[14] "City News in Brief: Bridge Repairs Begun," *Morning Oregonian,* December 23, 1921.

and infill in Balch Gulch reduced the clearance beneath the bridge while making the park drier, more level, and more accessible for public use.[15]

The Balch Gulch Bridge was originally constructed to carry two streetcar tracks, but in 1950, the last streetcar lines in Portland ceased operations. The NW 23rd Avenue route and the Willamette Heights line were the last with a car on the tracks and received heavy nostalgic coverage in the papers (Figure 24).[16] Following this car's last run, rails, ties, and ballast were removed from the bridge deck and the surface was subsequently replaced. At the same time, a new 12-inch steel water main was installed under the sidewalk (Figure 25).[17] A few years later, in late 1954, a serious accident involving a car that skidded on ice and crashed through the north railing of the bridge prompted significant safety upgrades. Between 1955 and 1956, the bridge's original pipe guardrails and lattice-like cast iron railings were replaced with sturdier "modernized" models (visible in Figures 27 and 29), and a west abutment retaining wall was added for extra support.[18]

In 1974, a sewer pipe previously installed on the underside of the bridge deck was removed.[19] Later in 1978-1979, repairs focused on strengthening the bridge's truss system and addressing issues with the eyebars. This involved adding steel struts and retensioning various structural elements that had relaxed over time (a common issue for pin-connected trusses), improving the stability of the bridge (Figure 7, Figure 26).[20]

The most extensive and comprehensive alterations to the bridge occurred in 2014, when the Balch Gulch Bridge underwent a major rehabilitation funded largely by a $3.392 million Federal Historic Bridge Program grant. The City of Portland matched $388,309, as authorized by Ordinance No. 186215.[21] This project prioritized addressing structural issues while preserving the bridge's integrity. Temporary bracing was installed (using clamps, avoiding the need for drilling) to preserve the stability of the original steel

---

[15] "Balch Creek Sewer Done," *Morning Oregonian*, February 15, 1932.
[16] "Early Transit Companies Recalled as Streetcars Make Last Runs," *Oregonian*, February 19, 1950; "Street Cars Clang Death Knell," *Oregonian*, February 27, 1950; "Nostalgic Souvenir Hunters Crowd Streetcars on Final Portland Runs," *Oregonian*, February 27, 1950.
[17] Portland City Archives, record no. AP/28388, "A2000-025.2367 : Steel pipe by men and crane laying new deck for reconstruction of NW Thurman St Bridge," record date August 28, 1951, https://efiles.portlandoregon.gov/record/3918221/.
[18] "Skid on Icy Pavement Sends Car through Guard Rail on N.W. Thurman Viaduct," *Oregonian*, December 17, 1954; "Auto Crash Victims, Son Retain Morale Tough Pair to Be in Hospital for Months," *Oregonian*, December 23, 1954; "Fund Planned for Masseys," *Oregonian*, December 25, 1954; Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Details of Railing & Flex-Beam Support, N.W. Thurman St. Bridge, Sheet 1 of 1," January 24, 1955, record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/; Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Details of Handrail Replacement, N.W. Thurman St. Bridge, Sheet 1 of 6," August 10, 1955, record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/.
[19] Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Details of NW Thurman St. Bridge over Balch Gulch," original plans July 1950, revised April 30, 1974, record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/.
[20] Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "B-015-03-1978: Eyebar Repair to the Thurman St. Bridge, Sheet 1 of 1," 1978, record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/; Portland City Archives, record no. AP/98743, "Maintenance : Thurman Bridge : Steel (5/7)," record date May 1, 1979, https://efiles.portlandoregon.gov/record/17173583/.
[21] Portland City Archives, record no. D/75780, "186215 NW Thurman Street Balch Gulch Bridge over Macleay Park contract ordinance," record date September 4, 2013. https://efiles.portlandoregon.gov/Record/6024819; Kevin Harden, "Historic Makeover Will Close Thurman Street Bridge," *Portland Tribune*, September 6, 2013.

trusses during the first phase of the project, which involved removal of the bridge's deteriorated wood plank decking, timber stringers, and riveted steel floor beams (Figures 29 through 31). Modern replacement floor beams, designed to replicate the appearance of the originals but adequate to carry modern freight loading, were installed atop the braced, original trusses (Figures 32a and b). Finally, nine-inch-wide form-lock steel bridge decking was laid plank by plank, filled with structural concrete, and covered with asphalt paving (Figures 33a and b).[22]

The 2014 rehabilitation also updated the sidewalks, guardrails, and railings. The bridge's wood plank sidewalk, which was uneven and slippery in wet or icy weather, was replaced by nonslip "SlipNot" aluminum sidewalk planks over steel stringers (Figures 34a and b, Photograph 4). The flex-beam curb rail was replaced with a modern two-tube steel design that meets current crash standards, and the incompatible cyclone fence and tube frame railing were replaced with a faithful reproduction of the original lattice-like railing in coated galvanized steel (Photograph 3, Figure 6, Figures 35a and b).[23] Finally, two new decorative features were added: pinecone finials atop the post caps at the ends of the railings, and a dedication plaque with the bridge's historic name ("Balch Gulch Bridge").[24]

The rehabilitated Balch Gulch Bridge reopened on October 10, 2014, in a celebration hosted by Commissioner Steve Novick and the Portland Bureau of Transportation. The project was heralded as a victory for history preservation, showcasing Portland's commitment to maintaining its historical infrastructure while meeting contemporary needs. Its success was widely recognized, and it received the following awards:

- American Public Works Association - National Project of the Year (Historical Preservation)
- Oregon Heritage Commission - Heritage Excellence Award
- American Public Works Association, Oregon Chapter - Project of the Year (Historical Preservation)
- Oregon Department of Transportation Geo-Environmental - Professional Partnership Award
- Daily Journal of Commerce, Portland - Top Project Award[25]

Integrity

As described above, the Balch Gulch Bridge has undergone numerous alterations and one extensive rehabilitation over its 120-year history. The current floor beams and railings are replicas of the originals—consistent in design but differing in material and workmanship—and the current decking, including the road and sidewalk surfaces, does not conform to the original design, materials, or workmanship. However, these changes have not impacted the bridge's most important character-defining features. The Balch Gulch Bridge holds significance as a rare surviving example of a steel pin-connected deck truss bridge, and as vital infrastructure for the Willamette Heights neighborhood during the development surge prompted by the 1905 Lewis and Clark Exposition. Therefore, its most important character-defining features are its location, setting, and association with the Willamette Heights neighborhood and the design, materials, and workmanship of its two pin-connected Pratt deck trusses.

The Balch Gulch Bridge retains its original location spanning Balch Gulch and continues to function as the most direct route to the western portion of the Willamette Heights Addition. While the setting beneath the bridge has been modified through the underground diversion of Balch Creek and the construction of

[22] "NW Thurman St Bridge | Portland, OR," Cascade Bridge LLC, accessed April 8, 2025, https://www.cascadebridge.com/projects/rehabilitation/nw-thurman-st-bridge-rehab.html; Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation), 2015.
[23] "NW Thurman St Bridge | Portland, OR"; Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park."
[24] Portland Bureau of Transportation, Project No. STP-5900 (260) NW Thurman St. Macleay Park Bridge Rehab, approved August 2013.
[25] "NW Thurman St Bridge | Portland, OR"; Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park."

the Lower Macleay Trail, the neighborhood's residential character—the context for which the bridge was originally built—has remained consistent since the period of significance. The bridge retains integrity of design, materials, and workmanship through its two pin-connected Pratt deck trusses and three steel towers, which remain intact and have been protected through previous rehabilitation efforts. Although the replicated railings and floor beams differ from the originals in materials and workmanship, they do have the same appearance and therefore contribute to the bridge's integrity of design and feeling.

Through its location in the Willamette Heights neighborhood over Balch Gulch, the preservation of its character-defining pin-connected steel trusses, the replication of its distinctive railing, and its continued use by local vehicular and pedestrian traffic, the Balch Gulch Bridge retains sufficient integrity to convey its historic significance and justify listing in the National Register of Historic Places.

Balch Gulch Bridge
Name of Property

Multnomah Co., OR
County and State

8. Statement of Significance

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

[X] A Property is associated with events that have made a significant contribution to the broad patterns of our history.

[ ] B Property is associated with the lives of persons significant in our past.

[X] C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

[ ] D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

[ ] A Owned by a religious institution or used for religious purposes.

[ ] B removed from its original location.

[ ] C a birthplace or grave.

[ ] D a cemetery.

[ ] E a reconstructed building, object, or structure.

[ ] F a commemorative property.

[ ] G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions.)

COMMUNITY PLANNING AND DEVELOPMENT

ENGINEERING

Period of Significance

1905

Significant Dates

1905: Balch Gulch Bridge completed and opened to the public

Significant Person
(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation (if applicable)

N/A

Architect/Builder

Lockwood, James B. C.

Period of Significance (justification)

The period of significance for the Balch Gulch Bridge is 1905, the year of the bridge's completion and the year the Lewis and Clark Centennial and American Pacific Exposition and Oriental Fair was held in nearby Guild's Lake. This event spurred significant public and private development in Portland, as well as substantial economic and population growth in the years that followed. Constructed just a few months before the exposition opened, the Balch Gulch Bridge extended continuous streetcar service over Balch Gulch to the Willamette Heights neighborhood. This enhanced accessibility boosted the neighborhood's appeal, spurring development along the streetcar route, while also supporting Portland's broader marketing efforts during the exposition by showcasing the city's attractions to tourists. The streetcar route made possible by the bridge was advertised to tourists visiting Portland for the fair, and several vantage points that were only accessible by crossing the bridge were used for promotional photos of the nearby fairgrounds. Because 1905 marks both the bridge's completion and its significant contributions to community development, including the shaping of Willamette Heights and its association with the Lewis and Clark Exposition, it is the bridge's period of significance under both Criteria A and C.

Criteria Considerations (explanation, if necessary)

N/A

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations).

The Balch Gulch Bridge is of statewide significance under Criterion C in the area of Engineering as a rare example of a pin-connected steel Pratt deck truss bridge. Designed by J.B.C. Lockwood and constructed for the City of Portland in 1905, the bridge demonstrates a design thoughtfully tailored to its location and functional demands. Its siting over Balch Gulch in Northwest Portland provided the necessary vertical clearance for its deck truss design, which in turn allowed the bridge to support the weight of electric streetcars and accommodate associated overhead catenary systems. The bridge's use of pin connections rather than rivets is also notable, as it reflects the dominant connection method for truss bridges erected in the late nineteenth and very early twentieth centuries. By the early 1910s, however, most new bridges employed riveted joints, and over time the number of pin-connected bridges in Oregon has declined. Today, the Balch Gulch Bridge stands out as the only extant pin-connected deck truss bridge in Oregon. It is also one of just four remaining deck truss bridges and one of only thirteen extant pin-connected highway bridges of any type in the state, representing both a rare design and a historically significant bridge construction technology.[26]

The Balch Gulch Bridge is also of local significance under Criterion A in the area of Community Planning and Development for its role in shaping the growth and accessibility of the Willamette Heights neighborhood and in supporting Portland's efforts to market itself during the 1905 Lewis and Clark Centennial and American Pacific Exposition and Oriental Fair. Constructed just a few months before the exposition, the bridge extended continuous streetcar service over Balch Gulch to Willamette Heights, enhancing the neighborhood's appeal and spurring development along the streetcar route. This increased accessibility benefited more than just the immediate neighborhood, however; it was integral to Portland's broader marketing strategy during the exposition, which aimed to showcase the city's scenic and residential appeal to tourists and potential new residents. The streetcar route made possible by the bridge was prominently advertised to fair visitors, and several vantage points in Willamette Heights, accessible only by crossing the bridge, were used for promotional images of the nearby exposition grounds (Figures 15 through 18). As an investment in anticipated growth, and as a practical asset that improved an existing neighborhood, the Balch Gulch Bridge is significant for its role in shaping the growth of Willamette Heights and Portland overall.

[26] Rebecca Burrow, Chris Bell, and Chris Leedham, *Oregon's Historic Bridge Field Guide* (Salem, OR: Oregon Department of Transportation, 2013), 206-208; Dwight A. Smith, James B. Norton, Pieter T. Dykman, *Historic Highway Bridges of Oregon* (Salem, OR: Oregon Department of Transportation, 1985, updated with 2018 bridge status information), 18, 57.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

A Brief History of Balch Gulch and the Willamette Heights Addition

The story of the Balch Gulch Bridge begins with the land upon which it was built, and how that property was bought, sold, used, and developed ahead of the bridge's construction. The bridge is located on a portion of the Donation Land Claim (DLC) patented by Danford and Mary Jane Balch, who crossed the Oregon Trail with their children in 1847.[27] The 555.85-acre claim was the second DLC granted in Northwest Portland and included a narrow waterway that came to be known as Balch Creek, after the family's surname. Correspondingly, the steep ravine containing the creek came to be known as Balch Gulch.[28]

Following Danford Balch's death in 1859,[29] the Portland Water Company purchased the western half of the Balch DLC—including the portion of the Balch Gulch over which the bridge is now located—and set up a system of wood pipes to convey water from Balch Creek to downtown Portland. In 1887, the company sold the land to real estate investor John Hale and his partners for $40,000. They retained their water rights to Balch Creek.[30]

Hale bought out his partners in 1889 and in the following year hired John A. McQuinn to survey and plat the land as the Willamette Heights Addition to Portland (Figure 9). He then engaged real estate attorney Percy Blyth, of the Scottish American Investment Company and the real estate firm of Russell, MacLeod, and Blyth, to market the new addition and manage lot sales.[31] Headquartered in Edinburgh, the Scottish American Investment Company was investing heavily in land and buildings throughout the American West during the final decades of the nineteenth century, and Blyth was one of two attorneys responsible for managing its Portland-area real estate investments.[32] By 1891, the company owned fifteen lots in Willamette Heights, and sales were managed by Blyth through his own, separate real estate firm, in which he partnered with realtors Donald Macleod and Lewis Russell. About a year later, in August 1892, Hale sold his remaining ownership interest in the land to the Scottish American Investment Company for $150,000.[33]

As platted, the Willamette Heights Addition's boundaries generally correspond to NW Roosevelt Street to the north, NW 28th Avenue to the east, NW Serpentine Avenue and NW Pettygrove Street to the south, and NW Aspen Avenue to the west (Figures 9 and 10).[34] While a portion of this area is located to the east of Balch Gulch, the majority is located to the west, necessitating a solution to literally "bridge" the gap between the new neighborhood and the businesses, schools, and other amenities concentrated in Portland's growing city center.

---

[27] Joseph Gaston, *Portland, Oregon, Its History and Builders in Connection with the Antecedent Explorations, Discoveries and Movements of the Pioneers That Selected the Site for the Great City of the Pacific*, vol. II (Chicago, IL: S.J. Clarke Publishing Co., 1911), 764.

[28] Oregon Serial Patent 3881, Genealogical Forum of Oregon, Research Library (2505 S.E. 11th Ave., Ste B018, Portland, OR 97202).

[29] In 1858, Danford Balch's 15-year-old daughter, Anna, eloped with a 26-year-old hired man, Mortimer Stump. Sometime later, Balch encountered his daughter and new son-in-law at the Stark Street Ferry landing. During a scuffle, Stump was killed by a blast from Balch's shotgun. Balch maintained that the discharge was accidental, but he was convicted of murder by a jury in 1859. In October of that year, approximately eight months after Oregon officially achieved statehood, Danford Balch became the first man to be legally hung in Multnomah County ("Dying Statements of Danford Balch," *Weekly Oregonian* [Portland, OR], October 22, 1859).

[30] Sally Donovan and Sharr Prohaska, "Grant, Henry M., House," National Register of Historic Places Nomination Form (Washington, DC: U.S. Department of the Interior, National Park Service, 1991), 8-2B.

[31] Donovan and Prohaska, "Grant, Henry M., House," 8-2B.

[32] W. Turrentine Jackson, *The Enterprising Scott: Investors in the American West* (Edinburgh: Edinburgh University Press, 1968), 249.

[33] Donovan and Prohaska, "Grant, Henry M., House," 8-8.

[34] "Abstract of Title," Lot 19, Block 20, Willamette Heights Addition, Coleman and Mackie, Portland, p. 43.

In 1892, the same year a building permit was issued for the neighborhood's first house,[35] a wooden bridge was constructed to extend NW Thurman Street across Balch Gulch and link the two sides of Willamette Heights.[36] That bridge, referred to as "High Bridge" or the "Willamette Heights Bridge," was 401 feet in length and the "loftiest" bridge in Portland at the time, rising 108 feet over the gulch below. It was made entirely of 10-inch-by-12-inch timbers and resembled a railroad trestle (Figure 11).[37]

Though technically located on the Willamette Heights streetcar route, the wooden bridge over Balch Gulch was insufficient to support the weight of an electric streetcar. For years, streetcars on the Willamette Heights line carried passengers north from the city center, along NW 23rd Avenue, and then west on NW Thurman Street up to the eastern end of the bridge; at this point, passengers had to disembark, cross the wooden bridge on foot, then transfer to a second streetcar that continued along NW Thurman Street into the western portion of Willamette Heights.[38] This arrangement persisted until November 1902, when the wooden bridge was closed to streetcar traffic for necessary repairs.[39] Although it was reopened in early 1903, it soon closed again, this time permanently.[40] Construction of the current Balch Gulch Bridge began in spring 1904.[41]

Bridging the Gap: The Manifold Impetus for the Balch Gulch Bridge

The replacement of the original wooden bridge across Balch Gulch with the current Balch Gulch Bridge was the product of several growing movements in Northwest Portland around the turn of the twentieth century. These included Blyth's ongoing marketing and promotion of Willamette Heights, alongside other newly developed Portland neighborhoods, and increasing demands for more reliable access between Willamette Heights and the city center. However, the construction of the current Balch Gulch Bridge was also spurred by promotional efforts for the 1905 Lewis and Clark Exposition at nearby Guild's Lake, the related expansion of Portland's electric streetcar routes, and growing concern over the poor condition of the original wooden bridge. Although distinct in many ways, these concerns were interconnected, and their proponents recognized that improved infrastructure in the Willamette Heights neighborhood could benefit all parties involved. The construction of the Balch Gulch Bridge served all of these needs, providing a practical solution that supported Northwest Portland's growth and development in the early twentieth century.

The Lewis and Clark Exposition: Preparation & Promotion

The Lewis and Clark Centennial and American Pacific Exposition and Oriental Fair was a product of Portland's ambition to establish itself as a prominent city in the Pacific Northwest. The idea for the fair was first proposed in 1895 by Dan McAllen, a local dry goods merchant, as a way to boost Portland's economy during a period of stagnation. However, it wasn't until the early 1900s that the concept gained traction among Portland's business leaders, who recognized the potential of hosting a major international event. Their primary aim was to present an idealized self-portrait of Portland, highlighting its most glorious features and successful industries, in the interest of a substantial economic payoff. A second major goal was to promote trade with the markets of East Asia, which were attracting attention after the United States' recent acquisition of Hawaii and the Philippines.[42]

In 1902, the exposition's organizers selected Guild's Lake in Northwest Portland as the fairground site. Though marshy and underdeveloped (Figures 12a and b), the site appealed to planners because of its central location

[35] This permit, for a two-story frame house on NW Thurman Street, was likely for the Henry M. Grant House (3114 NW Thurman Street), which was listed in the National Register in February 1991 (Donovan and Prohaska, "Grant, Henry M., House," 8-3). The Grant House is located on the corner opposite the west end of the Balch Gulch Bridge.
[36] "2-888-030101 | 3010 NW Thurman Street," City of Portland Historic Resource Inventory, ca. May 1981, https://heritagedata.prd.state.or.us/historic/index.cfm?do=main.loadFile&load=50223.pdf.
[37] Portland City Archives, record no. M/14875, "20345 – NW Thurman St Bridge," record date August 27, 1892, https://efiles.portlandoregon.gov/record/2764905/.
[38] Donovan and Prohaska, "Grant, Henry M., House," 8-3; Chet Orloff, "Willamette Heights: A History," M.A. Thesis, Portland State University, 1980, 30-31.
[39] "One More Bridge Closed," *Morning Oregonian*, November 8, 1902.
[40] "Bridge Open to Travel," *Morning Oregonian*, January 16, 1903.
[41] "Will Build Bridge: Lockwood Gets Contract on Balch," *Morning Oregonian*, March 5, 1904.
[42] Carl Abbott, "Lewis and Clark Fair," Oregon Encyclopedia, accessed April 14, 2025, https://www.oregonencyclopedia.org/articles/lewis_clark_exposition/.

and potential to provide the exposition with a distinctive water feature.[43] The layout of the grounds was designed by noted landscape architect John Olmsted, and construction began in 1903. The land was drained and meticulously landscaped over the next two years, creating terraces and building sites around a sparkling lake fed by water continuously pumped from the Willamette River.[44] The entrance was located just beyond the northeast corner of the Willamette Heights neighborhood, about three and a half blocks east and one block north of the Balch Gulch Bridge (Figure 14).[45]

The Lewis and Clark Exposition was a true western exposition, with involvement and representation of all neighboring states and Pacific countries.[46] President Theodore Roosevelt himself laid the cornerstone for Lewis and Clark Monument at the fairgrounds site in May 1903. His remarks were reproduced in an official souvenir booklet, "Laying of the Corner-Stone of the Lewis & Clark Monument by the President of the United States," printed by the fair's Press and Publicity Bureau the same year:

> The view from the fair grounds [*sic*] commands four great snow peaks, the harbor of Portland at whose wharves fronting the exposition grounds vessels of war and trade from all nations touch, the Willamette and Columbia valleys and the flourishing city […] The world is just in front of the Pacific Coast […] Within the next decade the greatest industrial movement will be on the Pacific slope.[47]

As this souvenir booklet illustrates, promotion for the Lewis and Clark Exposition began early—years before the fair—and in earnest. The fair's board of directors turned to Colonel Henry Dosch, Oregon's representative to other city expositions throughout the country and an early proponent of hosting a fair in Portland, to lead the effort. His mantra, which was recorded in the inaugural issue of the *Lewis and Clark Journal*, the official promotional publication of the Lewis and Clark Exposition, was a simple one:

> Now is the time to strike […] We have the resources; we have the climate; we have everything else needed for a happy and prosperous commonwealth. There is no way so successful of exploiting our advantages and unrivaled resources than by an exposition. No man or set of men can stop Portland from growing, but we can assist her to grow […] and the way to do that is explained in one word: 'hustle' […] Portland and the Pacific Northwest expects every man and woman to do their duty and give the exposition the necessary tiny pushes, until the turnstiles cease to click.[48]

As the fair's Director of Exhibits, Dosch never went anywhere without brochures, photographs, and cards in his pockets. Due to its proximity to the fairgrounds and slightly higher elevation, the young Willamette Heights neighborhood provided an excellent view of the exposition site and the surrounding mountains, woods, and Willamette River. Photographs taken from Willamette Heights, many near or at the site of the Balch Gulch Bridge, were the basis for several panorama and stereoview photographs used in promotional literature and souvenir cards (Figures 15 through 17). These views were also used to draft a special Northern Pacific (Yellowstone Edition) two-sided Exposition-specific promotional piece. One side featured a map of the United States with notations regarding Meriwether Lewis and William Clark's expedition and routes; the other featured

[43] Trudy Flores and Sarah Griffith, "Central Vista, Lewis & Clark Centennial Expo," accessed April 14, 2025, https://www.oregonhistoryproject.org/articles/historical-records/central-vista-lewis-amp-clark-centennial-expo/.
[44] Carl Abbott, "Lewis and Clark Fair."
[45] Portland City Archives, record no. M/10624, "Official Ground Plan of the Lewis and Clark Centennial Exposition," record date December 31, 1905, https://efiles.portlandoregon.gov/record/16943/.
[46] Multnomah County Public Library, identifier Jwpic_001065, "Laying of the Corner-Stone of the Lewis and Clark Monument by the President of the United States" (Portland, Oregon), May 21, 1903, shelf location OREGON 606 P85, https://gallery.multcolib.org/document/lewis-and-clark-monument.
[47] Multnomah County Public Library, identifier Jwpic_001065, "Laying of the Corner-Stone of the Lewis and Clark Monument by the President of the United States."
[48] Multnomah County Public Library, identifier JWtxt_00001, *Lewis and Clark Journal* vol. 1, no. 1 (January 1904), shelf location OREGON 606 P85, https://gallery.multcolib.org/document/lewis-and-clark-journal-january-1904.

an aerial view of Portland's Lewis and Clark Exposition, as seen from the eastern edge of Willamette Heights (Figures 18a and b).[49]

When contemporary news sources and promotional materials—and later, historians—wrote about the Exposition, they frequently praised the beauty of the neighborhoods and parks near the fairgrounds and noted their tourism potential. Willamette Heights and the adjacent Macleay Park, a 108-acre natural area donated to the city by Donald Macleay in 1897 (now part of Forest Park),[50] were regularly mentioned by name. The 1903 souvenir booklet, for instance, effused that "the site [of the fairgrounds] possesses great natural scenic charm. It lies on a gentle slope from Willamette Heights to the Willamette River in the northwest part of the City of Portland."[51] An article in the *Street Railway Journal* detailing the new infrastructure constructed for the exposition described the "grand view" of the "surrounding and distant scenery," including the "timbered hills" of Willamette Heights.[52] A piece in a June 1904 issue of the *Oregonian*—part of a series highlighting "picturesque hillside homes near Portland"—emphasized the proximity of the Willamette Heights neighborhood, the exposition site, and Macleay Park, as well as the area's scenic vistas and the connectivity afforded by the soon-to-be-completed Balch Gulch Bridge:

> The accessibility of Willamette Heights as a resident section has made it more popular than the other hillsides surrounding Portland, and numerous up-to-date homes dot the slopes overlooking the Willamette River. St. Helens looms up in her snowy majesty and stands guard over these picturesque spots, while the houses built around on the Macleay Park side of the heights command a fine view of Hood and the other mountains […] When the steel bridge is built over the gulch on Thurman street, and the Fair grounds [*sic*] and Macleay Park both belong to the city [the] handsome homes at the crest of the bordering hills will add much to their natural beauty and effectiveness.[53]

Portland's Park Commissioner, Colonel L. L. Hawkins, also lauded the views from Willamette Heights as well as the beauty of Macleay Park, which extends into Balch Gulch and beneath the bridge. In early 1905, shortly after the new Balch Gulch Bridge was completed, Hawkins wrote a promotional article for the *Lewis and Clark Journal* which avidly described the "magnificent vistas" to be seen from the "housetops" of Willamette Heights and the wild, foreboding beauty of the gulch "peeping out" from under the new bridge:

> Few large cities in the United States may boast of a forest primeval within its corporate limits […] Visitors to the Lewis and Clark Exposition will have Balch Creek canyon constantly in the near-by background for the magic pictures of the "Ivory City" on Guild's Lake which the plates of memory will surely carry for many a day—as well as being a pleasure forever after. […]
>
> Any visitor to the Exposition, who has a touch of nature within his soul, cannot afford to miss this short, pleasant outing. When you see the mouth of the canyon peeping out at you from under the arches of the Thurman Street bridge, southwest of the Experimental Gardens, be unafraid.[…]
>
> You soon reach the top of the ridge. Here you may take possession of an inviting seat beside the pathway or, perfected upon a ladder-cut stump that blocks the open way and look out, while you rest, through the swath-hedged vista from many housetops nestling among trees, over the Exposition grounds where its white palaces seem to glisten and try to rival and ermine of the sentinels of the

[49] Portland City Archives, record no. M/1155, "Bird's-eye view of Lewis and Clark Centennial Exposition and Oriental Fair," record date May 1, 1905, https://efiles.portlandoregon.gov/record/2682231/.
[50] "City News in Brief: Mr. Macleay the Donor," *Morning Oregonian*, May 1, 1897; Libby Provost, "Forest Park," Oregon Encyclopedia, last updated August 29, 2022, https://www.oregonencyclopedia.org/articles/forest_park/.
[51] Multnomah County Public Library, identifier Jwpic_001065, "Laying of the Corner-Stone of the Lewis and Clark Monument by the President of the United States."
[52] Portland City Archives, record no. AD/16208, "Portland Railway Company Promotional Brochure: Lewis & Clark Exposition," November 12, 1904, in "Lewis and Clark Exposition articles," record date March 23, 1907, https://efiles.portlandoregon.gov/record/16743825/.
[53] "Some Picturesque Hillside Homes in Portland: Residences on Terraces at Willamette Heights Overlooking Guild's Lake and the River," *Sunday Oregonian*, June 5, 1904.

> Cascade Range, then the river lined with vessels, and beyond, the rolling Columbia, and on and on the eye is carried until again a forest clad range of foothills and the mounting hills that reach to the snow-line of Saint Helens, Mount Rainier, Mount Adams, Mount Hood, the Three Sisters—jewels in an incomparable setting.[54]

Streetcar Connections: Getting There and Back Again

Public transportation—the means for getting tourists and residents to the fairgrounds, and from the fairgrounds into the iconic sites and attractions of Portland—was an important aspect of planning for the Lewis and Clark Exposition. Electric streetcar service to the grounds from the city center or via scenic loops was to be furnished by Charles Swigert and Henry W. Corbett's Portland Consolidated Railway Company, who had been operating the Willamette Heights line since 1896. The two men, partners in more than one business, had handily cornered the market and by the early 1900s were the dominant electric streetcar company in Portland.[55]

In preparation for the increased traffic the fair was anticipated to bring to Portland, the Portland Consolidated Railway Company set up additional routes specifically for the exposition. The company rerouted four lines to use newly installed fairground loop tracks on NW Upshur Street between NW 25th and 27th Avenues (Figure 19), just a few blocks northeast of Willamette Heights, and planned for a special Willamette Heights loop that would provide tempting photo opportunities over the fairground as well as a glimpse of a premier Portland neighborhood. Service on all four lines traveling to the exposition and to Willamette Heights would require a carrying capacity "to and from the grounds of ninety cars to the hour" on regular days, and up to 150 cars an hour at peak periods on "special days." The seating capacity ranged from forty to fifty people, though most of the cars were described as able to accommodate, when heavily loaded, as many as 150 people.[56] Clearly, the need for a bridge that could support the weight of the electric streetcars, to avoid the awkward, inconvenient disembarkation and transfer necessitated by the original wooden bridge, was an issue the city could no longer prolong.

Necessary Infrastructure Upgrades: Condition of the Original Balch Gulch Bridge

In addition to its inability to support rail-weight traffic, the decade-old wooden bridge over Balch Gulch was in relatively poor condition by the eve of the Lewis and Clark Exposition. The end of the nineteenth century had been a time of economic depression throughout the United States, and by the early 1900s Portland had built—but could not afford to maintain—a number of rotting and wobbly wooden bridges. By late 1902, nearly three miles of bridges and elevated roadways connecting downtown Portland to its residential suburbs had been closed as unsafe, with only a dozen bridges still open to traffic. The original Balch Gulch bridge was itself closed for repairs in late 1902, and the City had concerns for its longevity.[57]

At the same time, more and more Portlanders were moving into the Willamette Heights Addition, and the aforementioned tourism and transportation preparations for the Lewis and Clark Exposition were looming. Collectively, these pressures made apparent the need for a more substantial and safe bridge over Balch Gulch. Responding to a petition by Percy Blyth, Lewis Russell, and prominent neighborhood residents, the

---

[54] Multnomah County Public Library, identifier JWtxt_00014, Col. L.L. Hawkins, "Along the Wildwood Trail of Macleay Park: Virgin Beauties of a Walk from the Exposition Grounds to the City Park through Balch Gulch," *Lewis and Clark Journal* vol. 3, no. 2 (February 1905), shelf location OREGON 606 P85, https://gallery.multcolib.org/document/lewis-clark-journal-february-1905.

[55] Portland City Archives, record no. AD/16208, "Lewis and Clark Exposition articles," record date March 23, 1907, https://efiles.portlandoregon.gov/record/16743825/.

[56] "Transportation Facilities at the Portland Fair," *Street Railway Journal* vol. XXVI, no. 8 (August 19, 1905): 266-267, accessed April 15, 2025, https://libraryarchives.metro.net/DPGTL/ERJ/srj-street-railway-journal/1905-srj-volume-26-no-08-august-19.pdf.

[57] "Few Bridges Open," *Oregonian*, November 5, 1902; "One More Bridge Closed," *Morning Oregonian*, November 8, 1902.

Portland City Council adopted Ordinance Number 13703 on November 18, 1903, to contract the construction of a steel bridge across Balch Gulch.[58]

Construction of the Balch Gulch Bridge

The contract for the new Balch Gulch Bridge opened for bids at the same time as the Marquam Gulch Bridge in southwest Portland. Eleven companies vied for the work. Exasperated, City Engineer Elliott suggested that all the bids for the Balch Gulch Bridge be rejected, as the majority of the plans submitted deviated widely from the specifications he had indicated should be followed. If, however, any bid was accepted, he recommended that of engineer James Button Clyde (J.B.C.) Lockwood as conforming closely to the official specifications at a low figure. Board member George H. Howell agreed and moved that, "If Mr. Lockwood's plan and price are satisfactory to the City Engineer, I think he should be awarded the contract." The motion carried.[59]

The plans for the new Balch Gulch Bridge were drawn up by Riverside Bridge Company of Wheeling, West Virginia (Figure 8). While Lockwood was local to the Portland area at the time he bid on the Balch Gulch Bridge, it is possible that he briefly represented or worked with this company; unfortunately, definitive information regarding the connection has not been identified. *For additional biographical information about Lockwood, see Appendix A in the Additional Documentation section, following the Figures.*

Working with Pacific Construction Company, Lockwood's team moved forward quickly with the concrete and pier work. However, delayed steel shipments and a response to concerns about local access caused the project to stall briefly in fall 1904.[60] Residents of Willamette Heights had raised concerns about the loss of access to and from their neighborhood during the bridge's next phase of construction, and they appealed to the City to require a temporary solution. Portland newspaper the *Oregonian* reported the situation:

> While the new steel bridge is being built across Balch's Gulch, the old structure will be used to support the falsework. All the traffic to and from the heights comes over this bridge. For a month or more there will be no way to cross the gulch. Thirty children go from the heights to school every day. The gulch is deep and rough. During a rain it would be almost impossible for a child to go up and down through the brush.
>
> Members of the Council and the Executive Board were appealed to. […] R. L. Glisan moved that City Engineer Elliott be instructed to ask the contractor, J.B.C. Lockwood, if foot passengers could not be accommodated on the old [wood] structure. Unless Lockwood could make some provision of the kind he need expect no extension of time upon his contract.[61]

Lockwood likely did not want to risk penalties, having already lost time due to tardy steel shipments, and so agreed to quickly construct "a substantial foot-bridge" with "ample lighting […] immediately below the present structure" (i.e., the original wooden bridge) for residents to cross the gulch; access was promised to "involve only a short climb over a comparatively easy grade." The same article announced that the new steel bridge was expected to be completed within 40 days.[62]

This estimate seems to have been more or less accurate. Newspapers reported that the new Balch Gulch Bridge was passable by pedestrians in December 1904 and officially completed in January 1905, less than six months before the opening of the Lewis and Clark Exposition in nearby Guild's Lake.[63] It received a clean bill

[58] Chet Orloff, "Willamette Heights: A History," M.A. Thesis, Portland State University, 1980, 30-31.
[59] "Will Build Bridge: Lockwood Gets Contract on Balch," *Morning Oregonian*, March 5, 1904.
[60] "Will Get a Foot-Bridge: Residents of Willamette Heights Not to Be Incommoded," *Morning Oregonian*, November 9, 1904.
[61] "Street Committee to Rescue: Residents on Willamette Heights in Danger of Isolation," *Morning Oregonian*, October 28, 1904.
[62] "Will Get a Foot-Bridge: Residents of Willamette Heights Not to Be Incommoded," *Morning Oregonian*, November 9, 1904.
[63] "Bridges Well Built: Expert Bihler Reports on His Investigation," *Morning Oregonian*, January 6, 1905.

of health from the Charles S. Bihler of Tacoma, an "expert engineer" retained by the City to examine its construction. Bihler's extensive report appeared in part in the *Oregonian* on January 6, 1905:

> "The dimensions are correctly proportional. The detailing, in general, has been very faithfully carried out, and there can be no question that the contractor has fully fulfilled his obligations . . . and that [all] is within accordance with the original design as submitted. The loading for which this bridge is calculated […] is in conformity with good practice for bridges of this character, and the resulting structure will without doubt be sufficient for all demands of traffic."[64]

After the Fact: Impact on Willamette Heights and Portland

How much difference can the presence of one bridge make in the fortunes of a neighborhood, a world-class exposition, the development of a city's streetcar network, or even an individual tourist's decision to relocate to Portland? Longtime Willamette Heights resident Ted Kaye's 2009 neighborhood report in the book *Willamette Heights Chronicles* suggests that in the case of the Balch Gulch Bridge, it played a definite, albeit nuanced, role.[65] Certainly, its overarching story has been facilitating access to Willamette Heights as it survives—and serves—year after year.

When completed in January 1905, the Balch Gulch Bridge provided immediate benefit to the Willamette Heights neighborhood by increasing accessibility for residents and visitors. In one promotional profile released a few months prior to its completion, an imagined conversation highlights the importance of the continuous streetcar route along NW Thurman Street—made possible, of course, by the new steel bridge—in connecting the neighborhood to the city center:

> "But you are so far away," says the caller who has lived for years "within walking distance" and the Willamette Heighter replies, 'Fifteen minutes isn't far with the best [electric street]car service in town."[66]

In addition to its value to existing residents of Willamette Heights, the bridge also encouraged additional neighborhood development by cementing the neighborhood's role as a desirable residential area. With the replacement of the rickety wood bridge and the awkward, interrupted streetcar service that it necessitated, the Willamette Heights neighborhood was more attractive to upper middle-class Portlanders who naturally expected convenient access to the city center; this is likely the primary reason that realtors Percy Blyth and Lewis Russell led the call to replace the original bridge. Illustrating the effect of the Balch Gulch Bridge and related extension of the streetcar line, much of the development that occurred in the early years after the bridge's completion was initially concentrated along NW Thurman Street and the bridge itself (Figure 10).

The Balch Gulch Bridge's proximity to the Lewis and Clark Exposition in Guild's Lake, as well as its ability to accommodate electric streetcars, also made it an important asset to the exposition's organizers, the streetcar company, and ultimately, the City of Portland. The bridge allowed tourists visiting Portland for the exposition to enjoy comfortable, continuous streetcar rides to the panoramic views of Willamette Heights, and to speculate about whether they would like to move to such a richly forested environment in a relatively young city. Promotional materials indicate that the Willamette Heights streetcar line, which passed by the entrance to the fair and crossed over the Balch Gulch Bridge, was "very popular" among visitors; it numbered among "the most enjoyable trips" in the promotional brochure that the Portland Consolidated Railway Company issued for the fair:

> WILLAMETTE HEIGHTS TRIP. Takes the visitor by the Lewis & Clark Fair to Willamette Heights, a beautiful residence section overlooking the river and the Exposition grounds and affording a fine view of

[64] "Bridges Well Built: Expert Bihler Reports on His Investigation."
[65] Ted Kaye, "The Pattern of Development in Willamette Heights," in *Willamette Heights Chronicles*, ed. Miranda Weigler (Portland, OR: privately published, 2009), 189-190.
[66] "Some Picturesque Hillside Homes in Portland: Residences on Terraces at Willamette Heights Overlooking Guild's Lake and the River," *Sunday Oregonian*, June 5, 1904.

> the snow clad mountains in the distance. A very popular ride. Take cars on Washington Street. Fare 5 cents. Time required for round trip: 50 minutes.[67]

The bridge's impact extended beyond the pleasant day trip, however. In promoting the Willamette Heights streetcar route to visiting tourists, the Portland Consolidated Railway Company was also promoting the neighborhood, and Portland itself. Over the course of its four-and-a-half-month run, the Lewis and Clark Fair brought a total of over 2,500,000 visitors to the city, including more than 135,000 from east of the Mississippi River. On the opening day, attendance was between 39,000 and 40,000, and on July 4, 1905—the heaviest day for streetcar service—the turnstiles at the fairgrounds registered 54,000.[68] The publicity generated by the fair attracted thousands of new businesses and residents to Portland, helping to boost the city's population from 90,000 to 207,000 between 1900 and 1910; not even World War II would have the impact on the growth of Portland that the Lewis and Clark Exposition had.[69] From 1905 to 1911, "every economic indicator reflected extraordinary prosperity," according to Carl Abbott in his book, *The Great Extravaganza: Portland and the Lewis and Clark Exposition*.[70] This prosperity and growth undoubtedly had an impact on Willamette Heights, as these years generally coincide with the neighborhood's first major phase of development.[71]

Constructed on the eve of the fair, Balch Gulch Bridge was both a marker of the city's anticipated growth and investment ahead of the exposition, and a contributor to that "extraordinary prosperity" that resulted—at a citywide level, as well as neighborhood one. As an asset to Willamette Heights, Portland's streetcar service, the Lewis and Clark Exposition, and the City of Portland's broader campaign to market itself to visitors in the year 1905, the Balch Gulch Bridge stands as an early and important example of public development from this transformative era in Portland's history.

The Distinctive Design of the Balch Gulch Bridge

The Balch Gulch Bridge is additionally significant for its uncommon design and as one of Oregon's few remaining examples of pin connection technology. The bridge's designer, J.B.C. Lockwood, did not have a characteristic or favored bridge design; rather, he was a pragmatic and versatile designer, taking into account factors such as location, intended use, and aesthetic appeal, and allowing the circumstances of each of his projects to shape its design. As a result, his bridges were highly varied and tailored to their unique environments. In his book, *To Engineer is Human*, Henry Petroski writes, "The engineering task of designing a bridge shares qualities with the tasks of both poetry and science. Like poetry, the exact bridge one designer conceives to span a given space during a given technological era may never exist in the mind of any other engineer at any other time. Yet, like discoveries in science, if the theoretical and motivational foundations for a bridge are laid, then a bridge will be built, and it will be the bridge for that place and time."[72]

As described in Section 7, the bridge that Lockwood designed for his particular place and time—Willamette Heights, over Balch Gulch, in 1905—was a pin-connected steel Pratt deck truss bridge on steel towers (Figures 8 and 13). It is likely that Lockwood proposed the Pratt deck truss design for the Balch Gulch Bridge because it was affordable, well-tested, and suitable for the expected demands of a 400-foot-long bridge tasked with carrying rail-weight traffic, avoiding interference with overhead streetcar wires, and offering scenic vistas

---

[67] Portland City Archives, record no. APF/161, "The Scenic Line of Portland," in "Souvenir book - Portland 1905 - What To See And How To See It : Hand Book and Guide, Containing Valuable Information About Portland and Vicinity," record date December 31, 1905, https://efiles.portlandoregon.gov/record/2953507/.
[68] "Transportation Facilities at the Portland Fair," *Street Railway Journal* vol. XXVI, no. 8 (August 19, 1905): 266-267, accessed April 15, 2025, https://libraryarchives.metro.net/DPGTL/ERJ/srj-street-railway-journal/1905-srj-volume-26-no-08-august-19.pdf.
[69] "Born in 1897 - Lewis-Clark fair early day dream," *Oregon Journal,* August 19, 1977.
[70] Carl Abbott, *The Great Extravaganza: Portland and the Lewis and Clark Exposition* (Portland, OR: Oregon Historical Society, 1981), 59.
[71] William G. Robbins, "The Growth of Portland," Oregon Historical Society, Oregon History Project, accessed April 15, 2025, https://www.oregonhistoryproject.org/narratives/this-land-oregon/the-rural-urban-interface/the-growth-of-portland/.
[72] Henry Petroski, *To Engineer is Human* (New York: Vintage Books, 1992), 81.

of the Lewis and Clark Fairgrounds and the mountains and river beyond. He likely selected the pin connection technology because of its popularity at the time (relative to riveted connection), and because it was more convenient for on-site construction. Today, the Balch Gulch Bridge is one of the last examples of its type and connection method in the state of Oregon. It is one of only four deck truss highway bridges remaining extant in Oregon, and of these, it is the only example using pin-connected trusses. Context for the significance of the bridge's design is provided below.

Truss Design: Pratt Deck Truss

In a chapter devoted to truss bridges, the Oregon Department of Transportation's *Historic Highway Bridges of Oregon* offers a concise explanation of what constitutes a truss bridge:

> In its simplest form, a truss is a structural frame based on the geometric rigidity of the triangle. A truss bridge consists of a framework of members forming triangles and functions as an 'open' beam or cantilever. The connecting truss members of a bridge, acting in tension, compression, or both, form a rigid structure capable of supporting not only the weight of the truss, but the applied load.[73]

Truss bridges are first and foremost characterized by their truss type, or the position of their members (top chord, bottom chord, and web members). The Balch Gulch Bridge utilizes Pratt trusses, which were the most popular truss type in the country at that time. Patented in 1844 by engineer Thomas Pratt (1812-1875) and his father Caleb, the Pratt truss is simple but effective, using vertical members in compression and diagonal members in tension. The great advantage of the Pratt truss over many earlier designs was the relative ease of calculating the distribution of stress throughout the structure.[74]

Truss bridges are also characterized by the position of their traffic decks. Most Pratt truss bridges are deck truss or pony truss designs, in which the traffic deck is carried along the bottom chord of the trusses. On a pony truss bridge, the trusses are not connected at the top (over the traffic deck), while on through truss bridges, they are connected. The Balch Gulch Bridge is a deck truss design, which is the least common of the three traffic deck positions. In this design, the traffic deck is directly on top of the trusses, meaning that the superstructure is entirely below the travel surface. The deck truss was used when clear spans exceeded 80 to 100 feet, allowing sufficient vertical clearance for the trusses to be below the roadway elevation, and when higher vertical clearances above the roadway were needed. This design was most commonly employed for railroad bridges because of its ability to support particularly heavy loads over long spans.[75]

The Balch Gulch Bridge, while not a railroad bridge, was designed to accommodate electric streetcars. At 400 feet long, it was also a relatively long span with substantial vertical clearance below, into Balch Gulch, and the need for overhead clearance to accommodate the catenary systems (i.e., overhead electrical wires) powering the streetcars. As constructed, the Balch Gulch Bridge carried two tracks, featured electrical wires strung on poles, and was engineered to withstand specific stresses and weights where additional support might be required. Electric streetcars at that time measured 35 to 38 feet in length, weighed an average of about 28,360

[73] Smith et al., *Historic Highway Bridges of Oregon*, 52.
[74] Parsons Brinckerhoff and Engineering and Industrial Heritage, "A Context for Common Historic Bridge Types," NCHRP Project 25-25, Task 15, prepared for the National Cooperative Highway Research Program, Transportation Research Council, and National Research Council, October 2005, accessed online April 2, 2025, https://deldot.gov/environmental/archaeology/historic_pres/bridges/pdf/context/context_cov_abs.pdf?cache=1744306436254. Note that the mechanism used in the Pratt truss reverses the mechanism used in the earlier Howe truss.
[75] Commonwealth of Pennsylvania, "History and significance of bridge building technology in Pennsylvania from the earliest days until 1956," March 1997, accessed online April 9, 2025, https://www.pa.gov/content/dam/copapwp-pagov/en/penndot/documents/programs-and-doing-business/cultural-resources/documents/3-bridge-technology-context.pdf.

pounds, and routinely accommodated 40 to 50 people (Figure 20).[76] Some of the open scenic cars operating for the 1905 Lewis & Clark Exposition were even longer and heavier, holding as many as 150 passengers when packed to full capacity.[77] The Balch Gulch Bridge was designed expressly for these kinds of heavy loads.

Connection Mechanism: Pin Connections

The Balch Gulch Bridge is notable for its age and deck truss design, but also as a rare extant example of a pin-connected bridge. Most metal truss bridges built before the turn of the twentieth century were assembled in the field (at the site) using pinned connections: circular bars with threaded ends which were passed through the individual components (Figure 7). The authors of *Historic Highway Bridges of Oregon* explain that "pin-connected bridges had the two-fold advantage of easy on-site construction and reduction of stress at the joints because the pins were free to rotate . . . however, the flexibility of the joints meant swift wear of the pins and truss members."[78]

This disadvantage helps explain why the rigid riveted joint, developed in the early twentieth century, eventually supplanted the pin connection in popularity. Riveting increased load capacity and extended the service life of metal bridges. By 1915 the riveted joint had completely displaced pin connection as the preferred connection mechanism for truss bridges.[79] Most surviving truss bridges in Oregon employ riveted construction, underscoring the significance of extant pin-connected examples such as the Balch Gulch Bridge.

Rarity and Comparative Significance

The Balch Gulch Bridge is one of only four bridges with deck trusses remaining extant in Oregon, and of these it is the only one with pin-connected trusses (Table 1). The other three deck truss bridges were constructed in 1909 by the Spokane, Portland, & Seattle Railroad (SP&S) over the "Portsmouth Cut" (also "St. Johns Cut"), a 4.75-mile-long series of railroad bridges, cuts, and causeways between the Columbia and Willamette Rivers in North Portland. The N Willamette Boulevard Overcrossing, N Fessenden Street Overcrossing, and N Lombard Street Overcrossing are riveted Warren deck truss designs prepared by internationally recognized road engineer Ralph Modjeski. These bridges represented (at that time) the future in design and connection methods, while the Balch Gulch Bridge represents the tail end of the dominance of the Pratt truss and the flexible pin connection.[80]

Table 1. Oregon's Extant Deck Truss Highway Bridges

Name	County	Year Constructed	Length (ft)	Truss Type	Truss Material	Connection Type	Status
Balch Gulch Bridge	Multnomah	1905	400	Pratt deck truss	steel	pin-connected	In use.
N Willamette Blvd. Overcrossing	Multnomah	1909	240	Warren deck truss	steel	riveted	In use.
N Fessenden St. Overcrossing	Multnomah	1909	79	Warren deck truss	steel	riveted	In use.
N Lombard St. Overcrossing	Multnomah	1909	340	Warren deck truss	steel	riveted	In use.

As previously noted, the Balch Gulch Bridge is also one of a very small number of extant pin-connected highway bridges, of any truss design, in Oregon. A careful review of Oregon bridge inventories indicates that

[76] Email communication from Richard Thompson (author of *Slabtown Streetcars*, Arcadia Publishing. 2015), March 18, 2025.
[77] "Transportation Facilities at the Portland Fair," *Street Railway Journal* vol. XXVI, no. 8 (August 19, 1905): 266-267, accessed April 15, 2025, https://libraryarchives.metro.net/DPGTL/ERJ/srj-street-railway-journal/1905-srj-volume-26-no-08-august-19.pdf.
[78] Smith et al., *Historic Highway Bridges of Oregon*, 18.
[79] Smith et al., *Historic Highway Bridges of Oregon*, 18.
[80] Smith et al., *Historic Highway Bridges of Oregon*, 59, 60, 269; Burrow et al., *Oregon's Historic Bridge Field Guide*, 207.

only a dozen other pin-connected highway bridges remain extant as of this writing (Table 2).[81] Many pin-connected bridges have been decommissioned, relocated, or dismantled due to the challenges of inspecting and predicting pin connection failures, deterioration of wooden or wrought iron components over time, or the inability to handle the increasing weight of farming or truck traffic. The extant pin-connected highway bridges are often located in rural areas, where lighter use has spared them from the wear endured by their urban counterparts, and they are often held in high regard by local residents. With only one exception (the Rogue River [Robertson] Bridge in Josephine County), these extant bridges are significantly shorter than the Balch Gulch Bridge; more are 250 feet in length or less, compared to the Balch Gulch Bridge's 400 feet. Most have steel trusses, like the Balch Gulch Bridge, but two have wrought iron trusses reflective of their late nineteenth century construction dates. Only about half remain open to vehicular traffic; two are in private ownership, two have been converted to pedestrian use only, and one has been abandoned entirely.

Table 2. Oregon's Extant Pin-Connected Highway Bridges

Name	County	Year Constructed	Length (ft)	Truss Type	Truss Material	Status
Balch Gulch Bridge	Multnomah	1905	400	Pratt deck truss	steel	In use.
Bull Run River Bridge	Clackamas	1894; relocated 1926	240	Pennsylvania-Petit through truss	wrought iron	Closed to vehicles weighing over 12 tons as of 2024.
Cow Creek Bridge	Malheur	ca. 1900	79	Pratt through truss	steel	In use.
Grande Ronde River (Troy) Bridge	Wallowa	1910	235	Pennsylvania-Petit through truss main span, riveted Warren pony truss secondary span	steel	Closed to vehicular traffic in 1999 and now a pedestrian bridge.
Grande Ronde River (Yarrington) Bridge	Union	1905; relocated 1925	250	Pratt through truss	steel	In use.
North Myrtle Creek (Mrytle Park) Bridge	Douglas	ca. 1912; relocated 1965	110	Pratt through truss	steel	In use.
Owyhee River (Rome) Bridge	Malheur	1906	192	Parker through truss main span, half-hip Pratt pony truss approach span	steel	In use.
Rhea Creek (Spring Hollow) Bridge	Morrow	1909	114	Pratt through truss	steel	Closed to vehicular traffic in 2011 and now a pedestrian bridge.
Rock Creek (Olex) Bridge	Gilliam	ca. 1905	~60	Half-hip Pratt pony truss	steel	Abandoned and in private ownership.
Rogue River (Robertson) Bridge	Josephine	1909; relocated 1929	583	Parker through truss main spans, Pratt through truss secondary span	steel	Bypassed in 2001, deck removed and abandoned.

[81] Smith et al., *Historic Highway Bridges of Oregon*, 55, 56, 58, 61, 64, 65, 209, 263, 268, 269, 271; Burrow et al., *Oregon's Historic Bridge Field Guide*, 18, 72, 183, 184, 198, 206, 258, 270, 277, 316; "North Myrtle Park Bridge," Bridgehunter.com, accessed April 10, 2025, https://www.bridgehunter.com/bridge/29944.

Name	County	Year Constructed	Length (ft)	Truss Type	Truss Material	Status
Sandy River (Lusted Road) Bridge	Clackamas	1894; relocated 1926	300	Pennsylvania-Petit through truss	wrought iron	In use.
South Umpqua River (Worthington) Bridge	Douglas	ca. 1910	205	Pennsylvania-Petit through truss	steel	In use.
Willow Creek (Cecil) Bridge	Morrow	1909	60	Half-hip Pratt pony truss	steel	Relocated to private ownership in 1987.

It is estimated that the average lifespan of an average bridge is less than 100 years.[82] The rarity of extant examples suggests that the lifespan of pin-connected truss bridges is even shorter. At 120 years old as of this writing, the Balch Gulch Bridge is not only extant but in active use. As one of Oregon's few extant pin-connected truss bridges, it is a rare surviving example of a once-common bridge building technology. As the state's oldest and only pin-connected deck truss bridge, it also represents an unusual type employed to great success.

1985 Determination of Eligibility and the "Historic Highway Bridges of Oregon" Thematic Group

The Balch Gulch Bridge is one of 68 public highway bridges included in the "Historic Highway Bridges of Oregon" Thematic Group. These bridges, all of which were constructed between 1894 and 1939, were identified by the Oregon Department of Transportation through a comprehensive inventory of the approximately 7,000 bridges in Oregon on the Federal-Aid Highway Program as of 1984.[83] While the documentation for the thematic group does not identify an applicable Criterion or Criteria for significance, it does specify that these bridges are significant "at the state level of importance" in the areas of Architecture, Engineering, and Transportation as "important examples of structures in the bridge building history and tradition in Oregon."[84] The National Park Service determined that 57 of the 68 bridges included in the "Historic Highway Bridges of Oregon" Thematic Group, including the Balch Gulch Bridge, are eligible for the National Register of Historic Places on May 2, 1985, under 36 CFR Part 63.3.[85]

[82] U.S. Department of Transportation, Federal Highway Administration, Office of Bridges and Structures, "Service Life Design Reference Guide," November 2022, accessed April 15, 2025, https://www.fhwa.dot.gov/bridge/preservation/docs/hif22052.pdf.
[83] Oregon State Highway Division, Oregon Department of Transportation, "Historic Highway Bridges of Oregon Thematic Group," Cultural Property Inventory and Request for a Determination of Eligibility (Washington, DC: U.S. Department of the Interior, National Park Service, 1984), 7.
[84] Oregon State Highway Division, "Historic Highway Bridges of Oregon Thematic Group," 9.
[85] Two of the bridges in the thematic group had been determined eligible earlier the same year. The National Park Service did not make a determination on the eligibility of the remaining nine bridges because they were less than 50 years old at the time.

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Books and Theses

Abbott, Carl. *The Great Extravaganza: Portland and the Lewis and Clark Exposition*. Portland, OR: Oregon Historical Society, 1981.

Burrow, Rebecca, Chris Bell, and Chris Leedham. *Oregon's Historic Bridge Field Guide*. Salem, OR: Oregon Department of Transportation, 2013.

Foster, Laura O. *Portland Hill Walks: Twenty Explorations in Parks and Neighborhoods*. Portland, OR: Timber Press, 2005.

Gaston, Joseph. *Portland, Oregon, Its History and Builders in Connection with the Antecedent Explorations, Discoveries and Movements of the Pioneers That Selected the Site for the Great City of the Pacific*, vol. II. Chicago, IL: S.J. Clarke Publishing Co., 1911.

Gerald, Paul. *60 Hikes Within 60 Miles: Portland: Including the Coast, Mount Hood, St. Helens, and the Santiam River*. Birmingham, AL: Menasha Ridge Press, 2014.

Jackson, W. Turrentine. *The Enterprising Scott: Investors in the American West*. Edinburgh: Edinburgh University Press, 1968).

Kaye, Ted. "The Pattern of Development in Willamette Heights." In *Willamette Heights Chronicles*, ed. Miranda Weigler. Portland, OR: privately published, 2009.

MacColl, Kimbark D. *The Shaping of a City: Business and Politics in Portland, Oregon 1885 to 1915*. Athens, GA: The Georgian Press Co., 1976.

Orloff, Chet. "Willamette Heights: A History." M.A. Thesis. Portland State University, 1980.Smith, Dwight A. James B. Norton, Pieter T. Dykman. *Historic Highway Bridges of Oregon*. Salem, OR: Oregon Department of Transportation, 1985, updated with 2018 bridge status information.

Petroski, Henry. *To Engineer is Human*. New York: Vintage Books, 1992.

Thompson, Richard. *Slabtown Streetcars*. Charleston, SC: Arcadia Publishing, 2015.

Newspapers and Periodicals

"Auto Crash Victims, Son Retain Morale Tough Pair to Be in Hospital for Months." *Oregonian* (Portland, OR). December 23, 1954.

"Balch Creek Sewer Done." *Morning Oregonian* (Portland, OR). February 15, 1932.

"Big Fills Help East Side," *Morning Oregonian* (Portland, OR). March 14, 1909.

"Born in 1897 - Lewis-Clark fair early day dream." *Oregon Journal* (Portland, OR). August 19, 1977.

"Bridge Open to Travel." *Morning Oregonian* (Portland, OR). January 16, 1903.

"Bridges Well Built: Expert Bihler Reports on His Investigation." *Morning Oregonian* (Portland, OR). January 6, 1905.

"City News in Brief: Bridge Repairs Begun." *Morning Oregonian* (Portland, OR). December 23, 1921.

"City News in Brief: Mr. Macleay the Donor." *Morning Oregonian* (Portland, OR). May 1, 1897.

"Dying Statements of Danford Balch." *Weekly Oregonian* (Portland, OR). October 22, 1859.

"Early Transit Companies Recalled as Streetcars Make Last Runs." *Oregonian* (Portland, OR). February 19, 1950.

"Electric Railway Bridge Over the Clackamas River Near Portland, Oregon." S*treet Railway Journal* vol. XXXI, no. 19 (May 9, 1908): 790.

"Few Bridges Open." *Oregonian* (Portland, OR). November 5, 1902.

"Fund Planned for Masseys." *Oregonian* (Portland, OR). December 25, 1954.

Harden, Kevin. "Historic Makeover Will Close Thurman Street Bridge." *Portland Tribune* (Portland, OR). September 6, 2013.

"Kelly Resigns: J. B. C. Lockwood Will Take Charge of Port of Portland Dredging." *Morning Oregonian* (Portland, OR). January 10, 1903.

"Lockwood Gets It." *Morning Oregonian* (Portland, OR). January 2, 1903.

"Lockwood Works Manager." *Sunday Oregonian*, (Portland, OR). July 28, 1918.

"Nostalgic Souvenir Hunters Crowd Streetcars on Final Portland Runs." *Oregonian* (Portland, OR). February 27, 1950.

"One More Bridge Closed." *Morning Oregonian* (Portland, OR). November 8, 1902.

"Skid on Icy Pavement Sends Car through Guard Rail on N.W. Thurman Viaduct." *Oregonian* (Portland, OR). December 17, 1954

"Some Picturesque Hillside Homes in Portland: Residences on Terraces at Willamette Heights Overlooking Guild's Lake and the River." *Sunday Oregonian* (Portland, OR). June 5, 1904.

"Street Committee to Rescue: Residents on Willamette Heights in Danger of Isolation." *Morning Oregonian* (Portland, OR). October 28, 1904.

"Street Cars Clang Death Knell." *Oregonian* (Portland, OR). February 27, 1950.

"Supple-Ballin Make Change." *Morning Oregonian* (Portland, OR). August 2, 1918.

"Transportation Facilities at the Portland Fair." *Street Railway Journal* vol. XXVI, no. 8 (August 19, 1905): 266-267.

"Trunk Sewer Finished: Balch Creek Project Is Difficult Job." *Morning Oregonian* (Portland, OR). September 10, 1921.

Warren, Dr. James R. *Puget Sound Business Journal*. February 17, 1986.

"Will Build Bridge: Lockwood Gets Contract on Balch." *Morning Oregonian* (Portland, OR). March 5, 1904.

"Will Get a Foot-Bridge: Residents of Willamette Heights Not to Be Incommoded." *Morning Oregonian* (Portland, OR). November 9, 1904.

Online Resources

Abbott, Carl. "Lewis and Clark Fair." Oregon Encyclopedia. Accessed April 14, 2025. https://www.oregonencyclopedia.org/articles/lewis_clark_exposition/.

"Balch Creek Trash Rack Replacement and Repair." City of Portland Bureau of Environmental Services. Accessed March 11, 2025. https://www.portland.gov/bes/improvements/construction/balch-creek-trash-rack-replacement-and-repair.

"Bird Alliance of Oregon Wildlife Sanctuary." Bird Alliance of Oregon. Accessed March 19, 2025. https://birdallianceoregon.org/our-work/steward/portland-audubon-wildlife-sanctuary/.

Commonwealth of Pennsylvania. "History and significance of bridge building technology in Pennsylvania from the earliest days until 1956." March 1997. Accessed online April 9, 2025. https://www.pa.gov/content/dam/copapwp-pagov/en/penndot/documents/programs-and-doing-business/cultural-resources/documents/3-bridge-technology-context.pdf.

Flores, Trudy, and Sarah Griffith. "Central Vista, Lewis & Clark Centennial Expo." Accessed April 14, 2025. https://www.oregonhistoryproject.org/articles/historical-records/central-vista-lewis-amp-clark-centennial-expo/.

"North Myrtle Park Bridge." Bridgehunter.com. Accessed April 10, 2025. https://www.bridgehunter.com/bridge/29944.

"NW Thurman St Bridge | Portland, OR." Cascade Bridge LLC. Accessed April 8, 2025. https://www.cascadebridge.com/projects/rehabilitation/nw-thurman-st-bridge-rehab.html.

Parsons Brinckerhoff and Engineering and Industrial Heritage. "A Context for Common Historic Bridge Types." NCHRP Project 25-25, Task 15, prepared for the National Cooperative Highway Research Program, Transportation Research Council, and National Research Council. October 2005. Accessed April 2, 2025. https://deldot.gov/environmental/archaeology/historic_pres/bridges/pdf/context/context_cov_abs.pdf?cache=1744306436254.

Portland Streetcar LLC. "Design Development Standards." Accessed March 20, 2025. https://www.portland.gov/sites/default/files/2020-08/streetcar-dev-stds-v7.pdf.

Provost, Libby. "Forest Park." Oregon Encyclopedia. August 29, 2022. March 20, 2025. https://www.oregonencyclopedia.org/articles/forest_park/.

Robbins, William G. "The Growth of Portland." Oregon Historical Society, Oregon History Project. Accessed April 15, 2025. https://www.oregonhistoryproject.org/narratives/this-land-oregon/the-rural-urban-interface/the-growth-of-portland/.

U.S. Department of Transportation, Federal Highway Administration, Office of Bridges and Structures. "Service Life Design Reference Guide." November 2022. Accessed April 15, 2025. https://www.fhwa.dot.gov/bridge/preservation/docs/hif22052.pdf.

"Untitled." Public Art Archive. Accessed April 16, 2025. https://publicartarchive.org/art/Untitled/4ca4881e.

Multnomah County Library Gallery (https://gallery.multcolib.org/)

Identifier Jwpic_001065. "Laying of the Corner-Stone of the Lewis and Clark Monument by the President of the United States" (Portland, Oregon). May 21, 1903. Shelf location OREGON 606 P85, https://gallery.multcolib.org/document/lewis-and-clark-monument.

Identifier JWtxt_00001. *Lewis and Clark Journal* vol. 1, no. 1 (January 1904). Shelf location OREGON 606 P85. https://gallery.multcolib.org/document/lewis-and-clark-journal-january-1904.

Identifier JWtxt_00014. Col. L.L. Hawkins, "Along the Wildwood Trail of Macleay Park: Virgin Beauties of a Walk from the Exposition Grounds to the City Park through Balch Gulch." *Lewis and Clark Journal* vol. 3, no. 2 (February 1905). Shelf location OREGON 606 P85. https://gallery.multcolib.org/document/lewis-clark-journal-february-1905.

Portland City Archives & Records Center (1800 SW 6th Ave., #550, Portland, OR 97201)

Record no. AD/16208. "Portland Railway Company Promotional Brochure: Lewis & Clark Exposition." November 12, 1904. In "Lewis and Clark Exposition articles." Record date March 23, 1907. https://efiles.portlandoregon.gov/record/16743825/.

Record no. AF/65860. "R - Reed, Sanderson and Taylor, Douglas W - City Engineer," "From D. W. Taylor, City Engineer to Mayor Harry Lane regarding correspondence of Sanderson Reed," Document #1; Personal correspondence regarding cleaning of drains and gutters on NW Thurman St. From D. W. Taylor, City Engineer to Harry Lane, Mayor. Record date December 31, 1906. https://efiles.portlandoregon.gov/record/104045/.

Record no. AF/65860. "R - Reed, Sanderson and Taylor, Douglas W - City Engineer," "Correspondence between Reed, Taylor and Lane concerning drains, poles, Thurman St Bridge, sidewalks, and trolley poles." Record Date December 31, 1906. https://efiles.portlandoregon.gov/record/104045/.

Record no. AP/4535. "A2001-008.153 : From temporary trestle looking northeast at south abutment, south wing walls poured, #1 Unit hand rail completed except two south panels, showing one lamp post completed without bronze head [Union Ave]." Record date July 18, 1916. https://efiles.portlandoregon.gov/record/2656089/.

Record no. AP/28388. "A2000-025.2367 : Steel pipe by men and crane laying new deck for reconstruction of NW Thurman St Bridge." Record date August 28, 1951. https://efiles.portlandoregon.gov/record/3918221/.

Record no. AP/98743. "Maintenance : Thurman Bridge : Steel (5/7)." Record date May 1, 1979. https://efiles.portlandoregon.gov/record/17173583/.

Record no. APF/161. "The Scenic Line of Portland." In "Souvenir book - Portland 1905 - What To See And How To See It : Hand Book and Guide, Containing Valuable Information About Portland and Vicinity." Record date December 31, 1905. https://efiles.portlandoregon.gov/record/2953507/.

Record no. D/75780. "186215 NW Thurman Street Balch Gulch Bridge over Macleay Park contract ordinance." Record date September 4, 2013. https://efiles.portlandoregon.gov/Record/6024819.

Record no. F/4539719. "Stairway S052A, 052B - 1/4-2826 - Thurman Street Stairs." May 16, 1950. Record date March 27, 2012. https://efiles.portlandoregon.gov/record/11720868/.

Record no. M/1155. "Bird's-eye view of Lewis and Clark Centennial Exposition and Oriental Fair." Record date May 1, 1905. https://efiles.portlandoregon.gov/record/2682231/.

Record no. M/14875. "20345 – NW Thurman St Bridge." Record date August 27, 1892. https://efiles.portlandoregon.gov/record/2764905/.

Record no. M/20178. "Stairway replacement S - 52 , Northwest Thurman Street Bridge to Balch Gulch." Record date December 31, 1984. https://efiles.portlandoregon.gov/record/5197317/

Record no. M/22396. "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Erection Diagram, Thurman Street Bridge Crossing Balch Gulch, Portland Oregon, Sheet 1 of 20, Riverside Bridge Co., Wheeling, W.V." 1904. Record date July 28, 1950. https://efiles.portlandoregon.gov/record/12122251/.

Record no. M/22396. "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Details of NW Thurman St. Bridge over Balch Gulch." Original plans July 1950, revised April 30, 1974. Record date July 28, 1950. https://efiles.portlandoregon.gov/record/12122251/.

Record no. M/22396. "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Details of Railing & Flex-Beam Support, N.W. Thurman St. Bridge, Sheet 1 of 1." January 24, 1955. Record date July 28, 1950. https://efiles.portlandoregon.gov/record/12122251/.

Record no. M/22396. "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "Details of Handrail Replacement, N.W. Thurman St. Bridge, Sheet 1 of 6." August 10, 1955. Record date July 28, 1950. https://efiles.portlandoregon.gov/record/12122251/.

Record no. M/22396. "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "B-015-03-1978: Eyebar Repair to the Thurman St. Bridge, Sheet 1 of 1." 1978. Record date July 28, 1950. https://efiles.portlandoregon.gov/record/12122251/.

Record no. M/22396. "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," "B-015-03-1978: Strengthening Truss Members, Sheet 2 of 2." August 1978. Record date July 28, 1950. https://efiles.portlandoregon.gov/record/12122251/.

Portland Bureau of Transportation Records

Project No. STP-5900 (260) NW Thurman St. Macleay Park Bridge Rehab. "Sheet BR-1: Plan & Elevation." Approved August 2013.

Oregon Department of Transportation Records (355 Capitol St. NE, MS11, Salem, OR 97301)

Hadlow, Robert. "Oregon Inventory of Historic Properties Section 106 Level of Effect Form: Balch Gulch Bridge No. 25B15." Oregon Department of Transportation/NW Thurman St.: Macleay Park Bridge Rehabilitation Project, ODOT Key No. 18340, Fed.-Aid No. 5900(259). July 7, 2013.

"Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation). 2015. https://www.oregon.gov/ODOT/LocalGov/Documents/04-Balch-Gulch-Bridge-Project-at-Thurman-Street-09-16.pdf.

Balch Gulch Bridge | Multnomah Co., OR
Name of Property | County and State

Oregon State Historic Preservation Office Records (725 Summer St. NE, Suite C, Salem, OR 97301)

Donovan, Sally, and Sharr Prohaska. "Grant, Henry M., House." National Register of Historic Places Nomination Form. Washington, DC: U.S. Department of the Interior, National Park Service, 1991. https://heritagedata.prd.state.or.us/historic/index.cfm?do=v.dsp_siteSummary&resultDisplay=49267.

Oregon State Highway Division, Oregon Department of Transportation. "Historic Highway Bridges of Oregon Thematic Group." Cultural Property Inventory and Request for a Determination of Eligibility. Washington, DC: U.S. Department of the Interior, National Park Service, 1984. https://heritagedata.prd.state.or.us/historic/index.cfm?do=v.dsp_siteSummary&resultDisplay=673150.

Genealogical Forum of Oregon Research Library (2505 SE 11th Ave., Ste B018, Portland, OR 97202)

Oregon Serial Patent 3881.

Previous documentation on file (NPS):

____preliminary determination of individual listing (36 CFR 67 has been requested)
____previously listed in the National Register
__X__previously determined eligible by the National Register
____designated a National Historic Landmark
____recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record # _____
____recorded by Historic American Landscape Survey # _____

Primary location of additional data:

____State Historic Preservation Office
____Other State agency
____Federal agency
__x__Local government
____University
____Other
Name of repository: _____

Historic Resources Survey Number (if assigned): N/A

Balch Gulch Bridge | Multnomah Co., OR
Name of Property | County and State

10. Geographical Data

Acreage of Property less than one
(Do not include previously listed resource acreage; enter "Less than one" if the acreage is .99 or less)

Latitude/Longitude Coordinates
Datum if other than WGS84:
(enter coordinates to 6 decimal places)

1	45.535579°	-122.712704°		3			
	Latitude	Longitude			Latitude	Longitude	
2				4			
	Latitude	Longitude			Latitude	Longitude	

Verbal Boundary Description (Describe the boundaries of the property.)

The nominated boundary is a rectangle approximately 400 feet by 40 feet encompassing the bridge's abutments, deck, trusses, and towers, as depicted by Figure 4 (Site Plan) and Figure 5 (Current Plan and Elevation).

Boundary Justification (Explain why the boundaries were selected.)

This boundary encompasses the full extent of the Balch Gulch Bridge, the subject of this nomination, as it has existed from its initial construction in 1905 through the present. The boundary is limited to the bridge structure; it excludes the portion of Forest Park beneath the bridge.

11. Form Prepared By

name/title Michael Taylor date April 15, 2025
organization N/A telephone (503) 201-0454
street & number 725 Summer St. NE, Ste. C email caitlyn.abrahms@oprd.oregon.gov
city or town Salem state OR zip code 97301

Additional Documentation

Submit the following items with the completed form:

- **Regional Location Map**
- **Local Location Map**
- **Tax Lot Map**
- **Site Plan**
- **Floor Plans (As Applicable)**
- **Photo Location Map** (Include for historic districts and properties having large acreage or numerous resources. Key all photographs to this map and insert immediately after the photo log and before the list of figures).

Balch Gulch Bridge | Multnomah Co., OR
Name of Property | County and State

Photographs:

Submit clear and descriptive photographs. The size of each image must be 3000x2000 pixels, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property: Balch Gulch Bridge
City or Vicinity: Portland
County: Multnomah **State:** OR
Photographer: Michael Taylor
Date Photographed: January 6, 2025

Description of Photograph(s) and number, include description of view indicating direction of camera:

Photograph 1 of 12: OR_MultnomahCounty_BalchGulchBridge_0001
Eastern portion of the Balch Gulch Bridge including 160' deck truss, looking north from Lower Macleay Trail.

Photograph 2 of 12: OR_MultnomahCounty_BalchGulchBridge_0002
North side of the Balch Gulch Bridge, looking east from the northwest corner of the bridge. The staircase, which was initially constructed in 1950, is a separate structure.

Photograph 3 of 12: OR_MultnomahCounty_BalchGulchBridge_0003
South side of the Balch Gulch Bridge, looking west from the southeast corner of the bridge.

Photograph 4 of 12: OR_MultnomahCounty_BalchGulchBridge_0004
Balch Gulch Bridge deck, including reconstructed railing and replacement corrugated metal panel walkway, looking east from the northwest corner of bridge.

Photograph 5 of 12: OR_MultnomahCounty_BalchGulchBridge_0005
Balch Gulch Bridge trusses, looking west from the staircase in the hillside at the northeast corner of the bridge.

Photograph 6 of 12: OR_MultnomahCounty_BalchGulchBridge_0006
Underside of the Balch Gulch Bridge, looking west.

Photograph 7 of 12: OR_MultnomahCounty_BalchGulchBridge_0007
Detail view of 60' deck truss at the western side of the Balch Gulch Bridge, looking southwest.

Photograph 8 of 12: OR_MultnomahCounty_BalchGulchBridge_0008
Detail view of 160' deck truss, center panel, looking north.

Photograph 9 of 12: OR_MultnomahCounty_BalchGulchBridge_0009
Southeast corner of 160' deck truss, looking north.

Photograph 10 of 12: OR_MultnomahCounty_BalchGulchBridge_0010
Detail of pin connection on southwest corner of 160' deck truss, looking upward/east.

Photograph 11 of 12: OR_MultnomahCounty_BalchGulchBridge_0011
Detail of pin connection on 160' deck truss, looking north.

Photograph 12 of 12: OR_MultnomahCounty_BalchGulchBridge_0012
Underside of east concrete abutment footing, showing water main pipe, looking southeast.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 32

List of Figures
(Resize, compact, and paste images of maps and historic documents in this section. Place captions, with figure numbers above each image. Orient maps so that north is at the top of the page, all documents should be inserted with the top toward the top of the page.

Figure 23: WPA Bridge Painters at Balch Gulch Bridge (1935)

Figure 24: Portland Streetcar's Last Run over Balch Gulch Bridge (1950)

Figure 25: Balch Gulch Bridge, Wood Decking Replacement (1951)

Figure 26: Balch Gulch Bridge, Maintenance (1979)

Figure 27: Balch Gulch Bridge (1985)

Figure 28: "Thurman Street crossing its bridge […]" (August 1985)

Figure 29: Balch Gulch Bridge (2014)

Figures 30a-b: Balch Gulch Bridge, Temporary Bracing during Rehabilitation (2014)

Figures 31 Balch Gulch Bridge, Decking Removal (2014)

Figures 32a-b: Balch Gulch Bridge, Replica Steel Floor Beams (2014)

Figures 33a-b: Balch Gulch Bridge, Replacement Steel Decking (2014)

Figures 34a-b: Balch Gulch Bridge, Replacement Sidewalk Planks (2014)

Figures 35a-b: Balch Gulch Bridge, Replica Railing (2014)

Figure 36: Balch Gulch Bridge Inspection (2014)

Figure 37: Gladstone Trolly Bridge (1908)

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 34

Figure 1: Regional Location Map

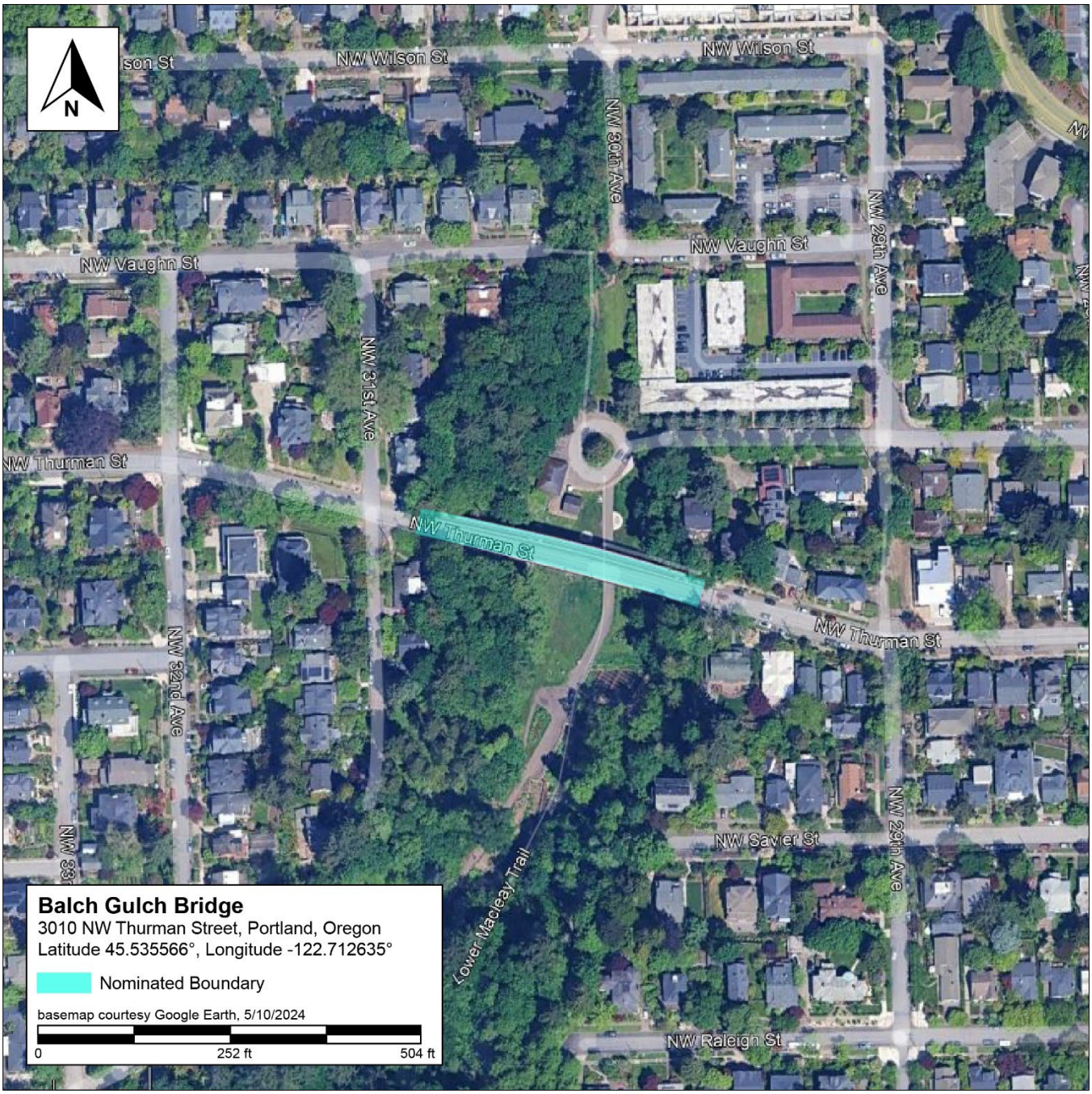
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 35

Figure 2: Local Location Map



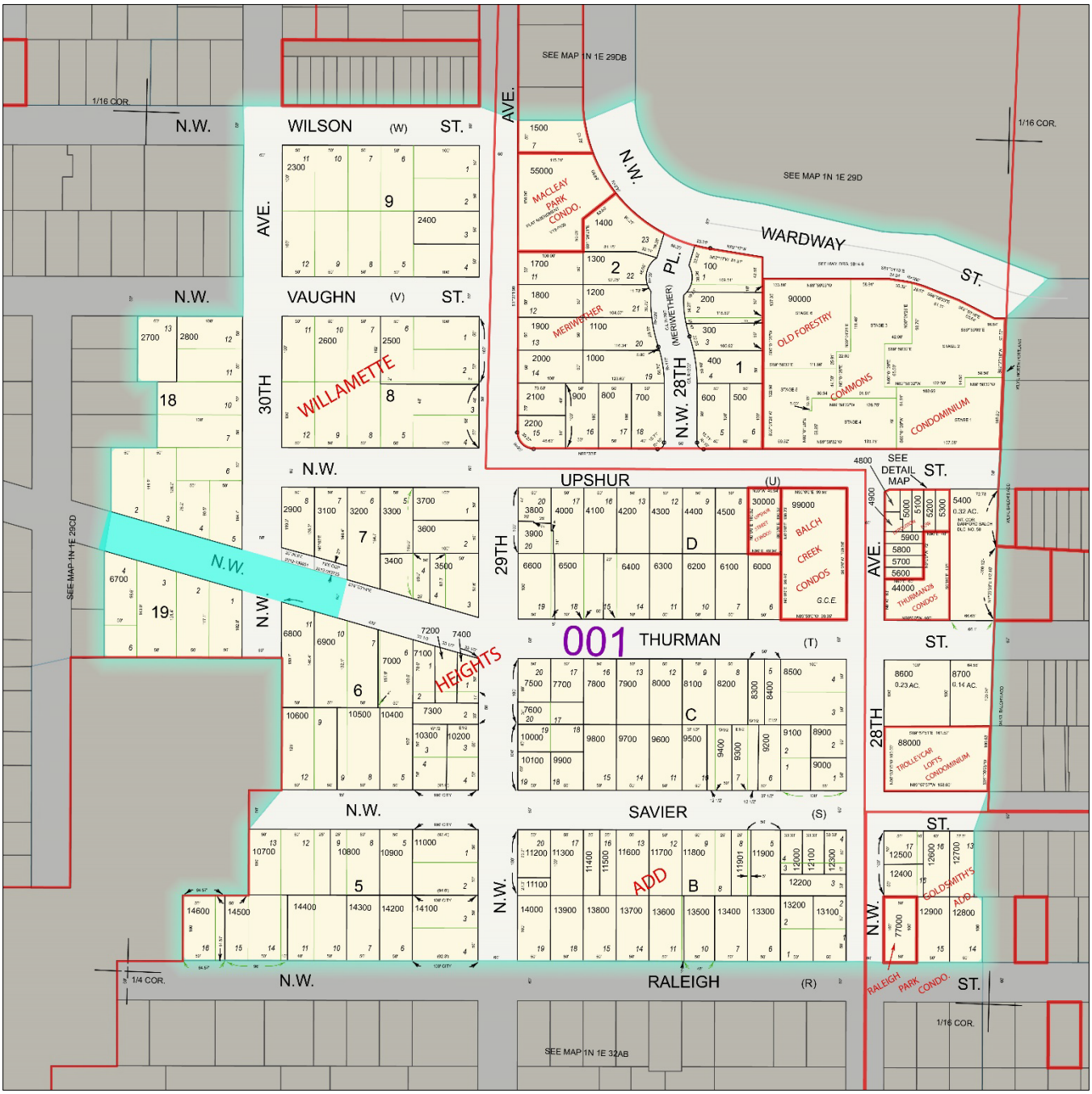
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge
Name of Property
Multnomah Co., OR
County and State
Historic Highway Bridges of Oregon TG
Name of multiple listing (if applicable)

Section number Additional Documentation Page 36

Figure 3: Multnomah County Tax Assessor's Map



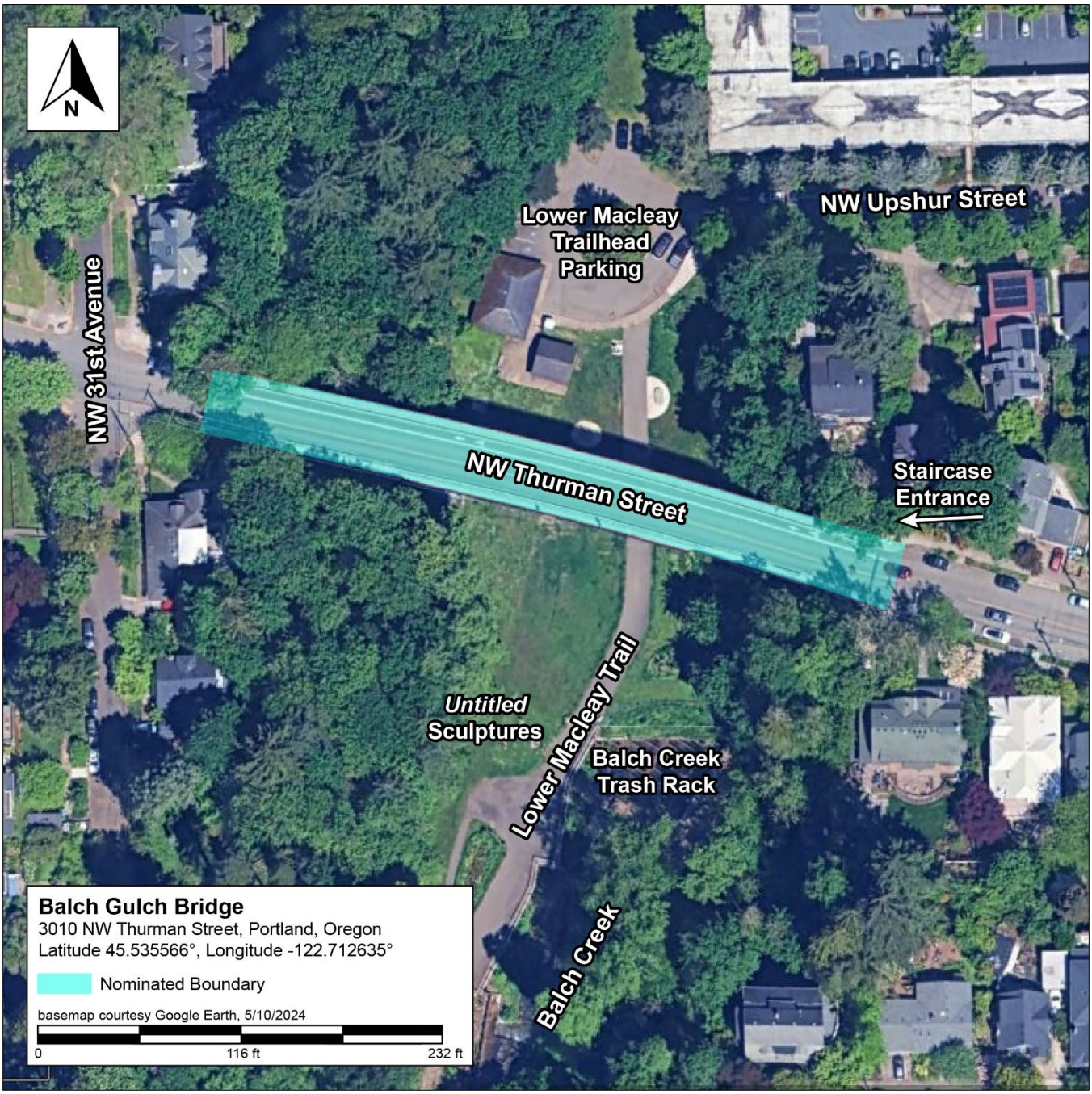
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 37

Figure 4: Site Plan



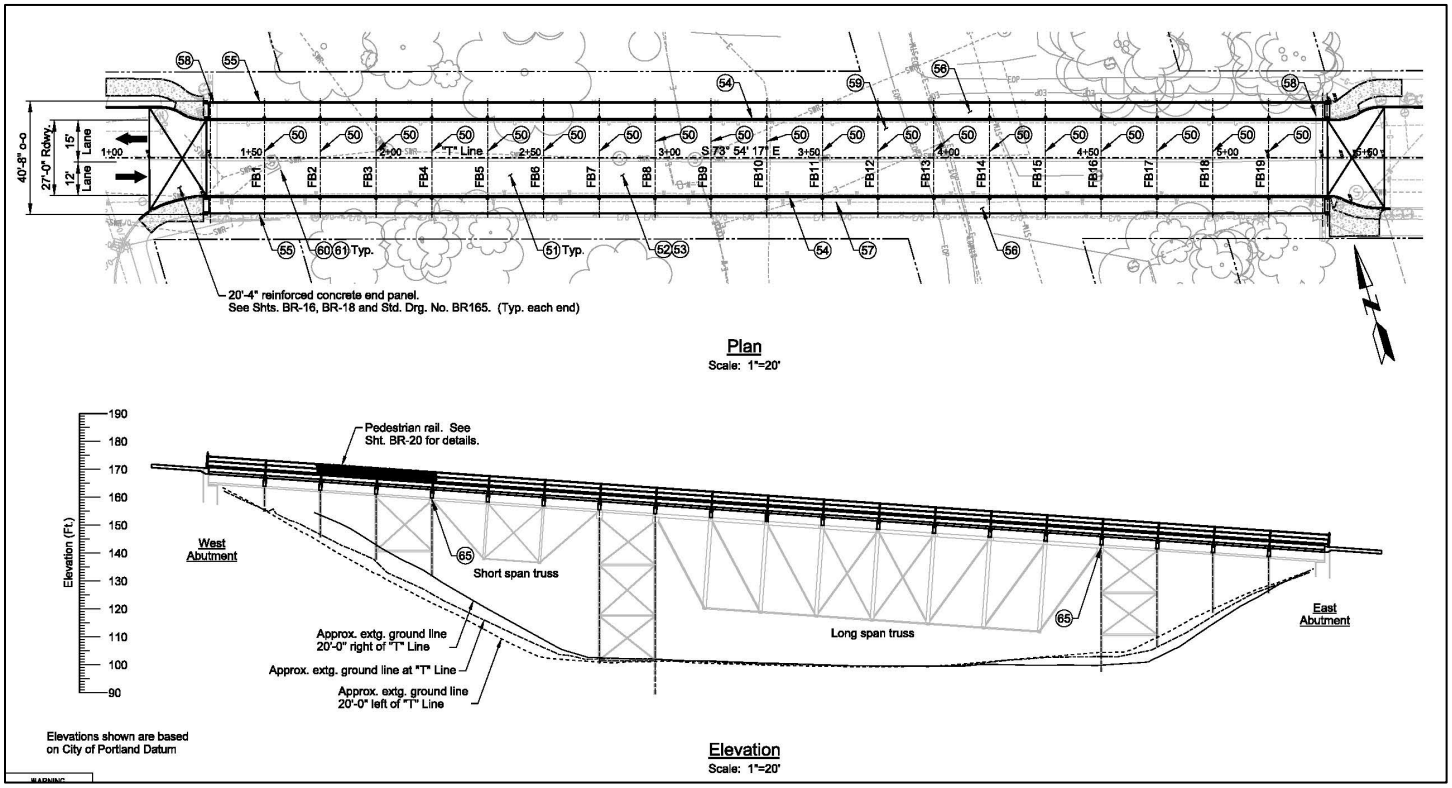
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge
Name of Property
Multnomah Co., OR
County and State
Historic Highway Bridges of Oregon TG
Name of multiple listing (if applicable)

Section number Additional Documentation Page 38

Figure 5: Current Plan and Elevation



Source: Portland Bureau of Transportation, Project No. STP-5900 (260) NW Thurman St. Macleay Park Bridge Rehab, "Sheet BR-1: Plan & Elevation," approved August 2013.

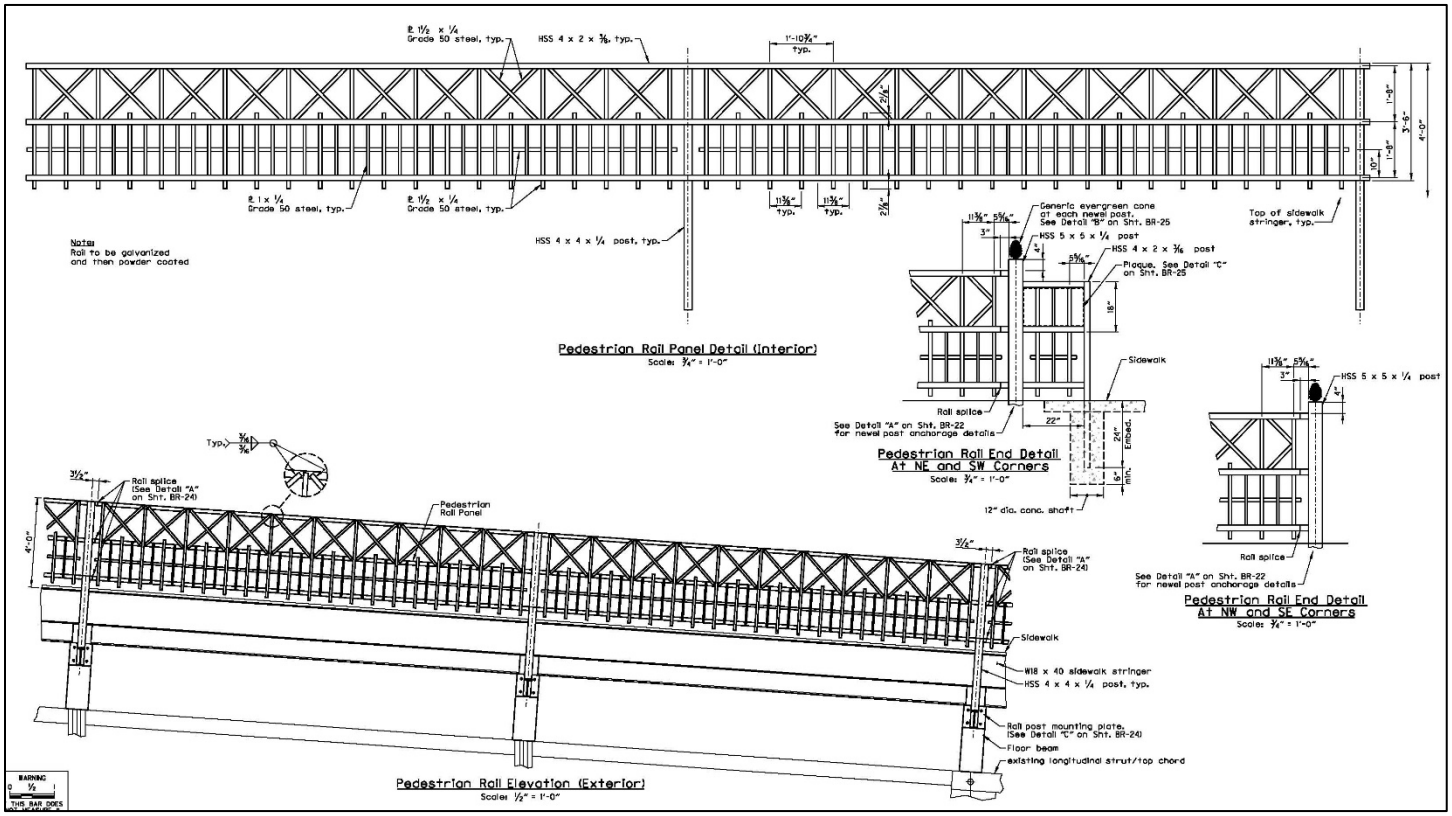
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge
Name of Property
Multnomah Co., OR
County and State
Historic Highway Bridges of Oregon TG
Name of multiple listing (if applicable)

Section number Additional Documentation Page 39

Figure 6: Current Railing Detail



Source: Portland Bureau of Transportation, Project No. STP-5900 (260) NW Thurman St. Macleay Park Bridge Rehab, "Sheet BR-23: Pedestrian Rail Details," approved August 2013.

United States Department of the Interior
National Park Service

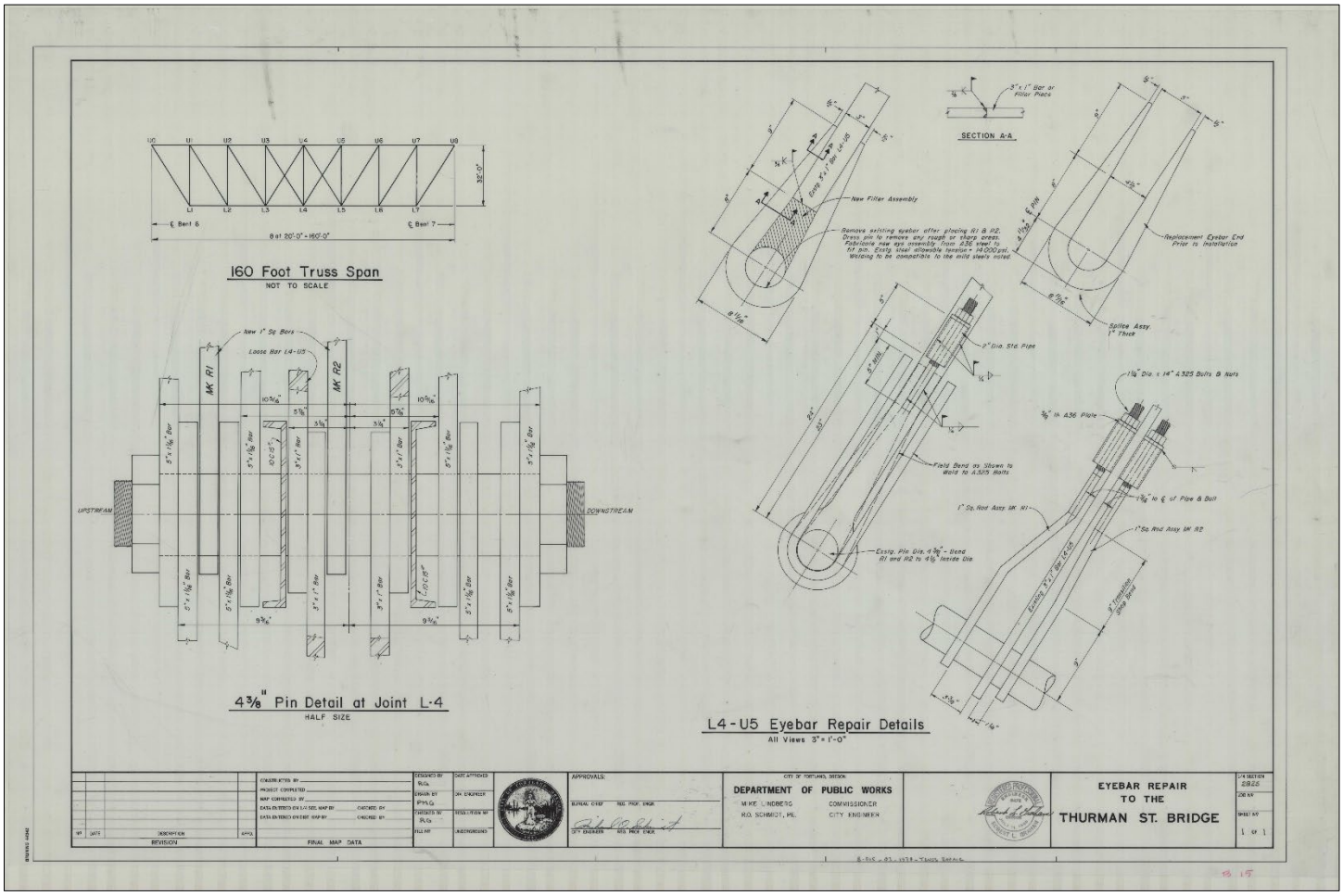
National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 40

Figure 7: Pin Connection Detail from 1978-1979 Retensioning Project

The Balch Gulch Bridge's pin connections are original to the structure and continue to appear as they do in these 1978 plans.



Source: Portland Department of Public Works, B-015-03-1978-Truss Repair, "Sheet 1 of 1: Eyebar Repair to the Thurman St. Bridge," 1978. In Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch," record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/.

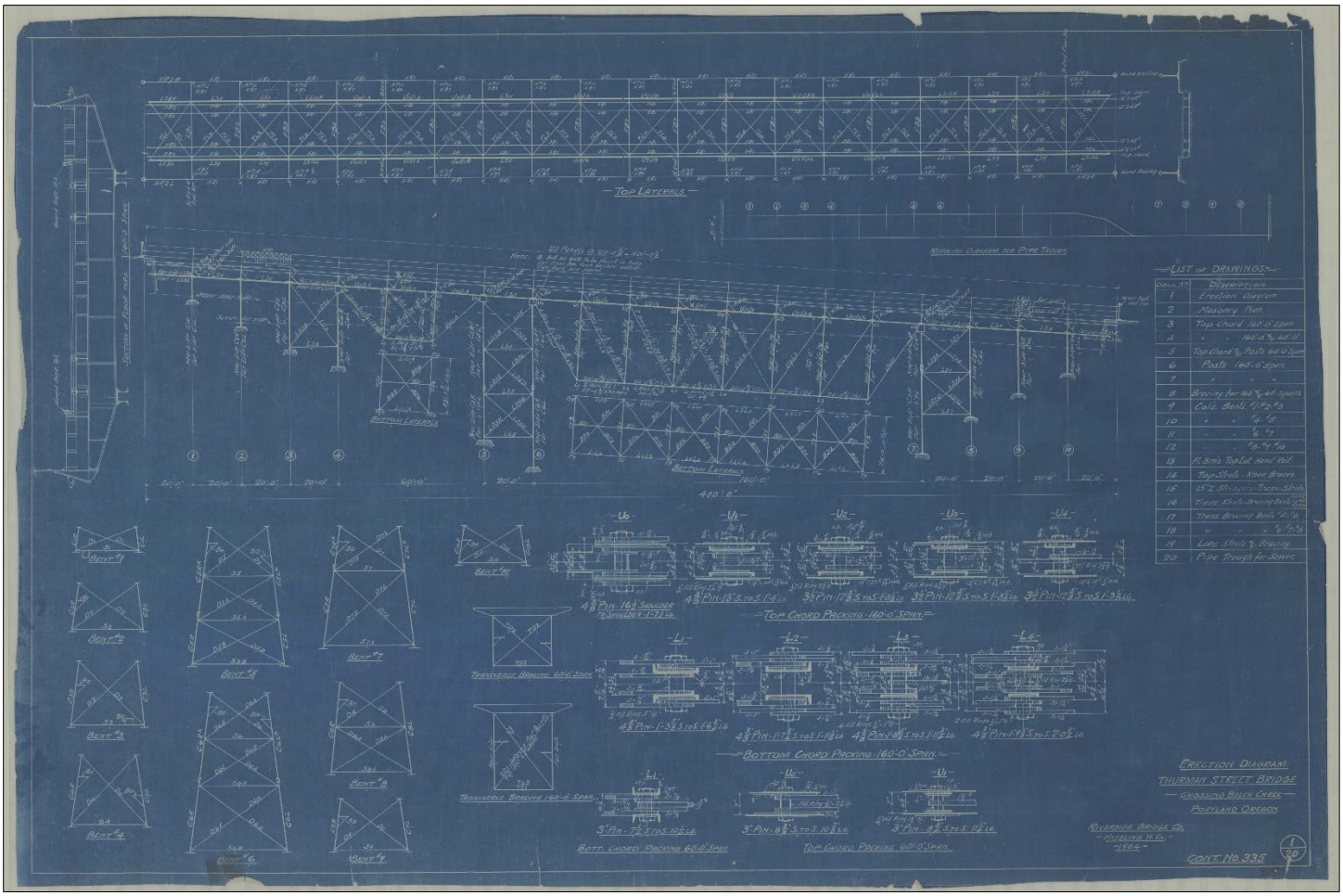
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 41

Figure 8: Original Plan and Elevation, Including Pin Connection Detail



Source: Riverside Bridge Co., “Erection Diagram: Thurman Street Bridge Crossing Balch Creek, Portland, Oregon,” 1904. In Portland City Archives, record no. M/22396, "Transportation Engineering - Structural Maintenance - Structural Plans & Drawings - B015 - Northwest Thurman Street Bridge over Balch Gulch,” record date July 28, 1950, https://efiles.portlandoregon.gov/record/12122251/.

United States Department of the Interior
National Park Service

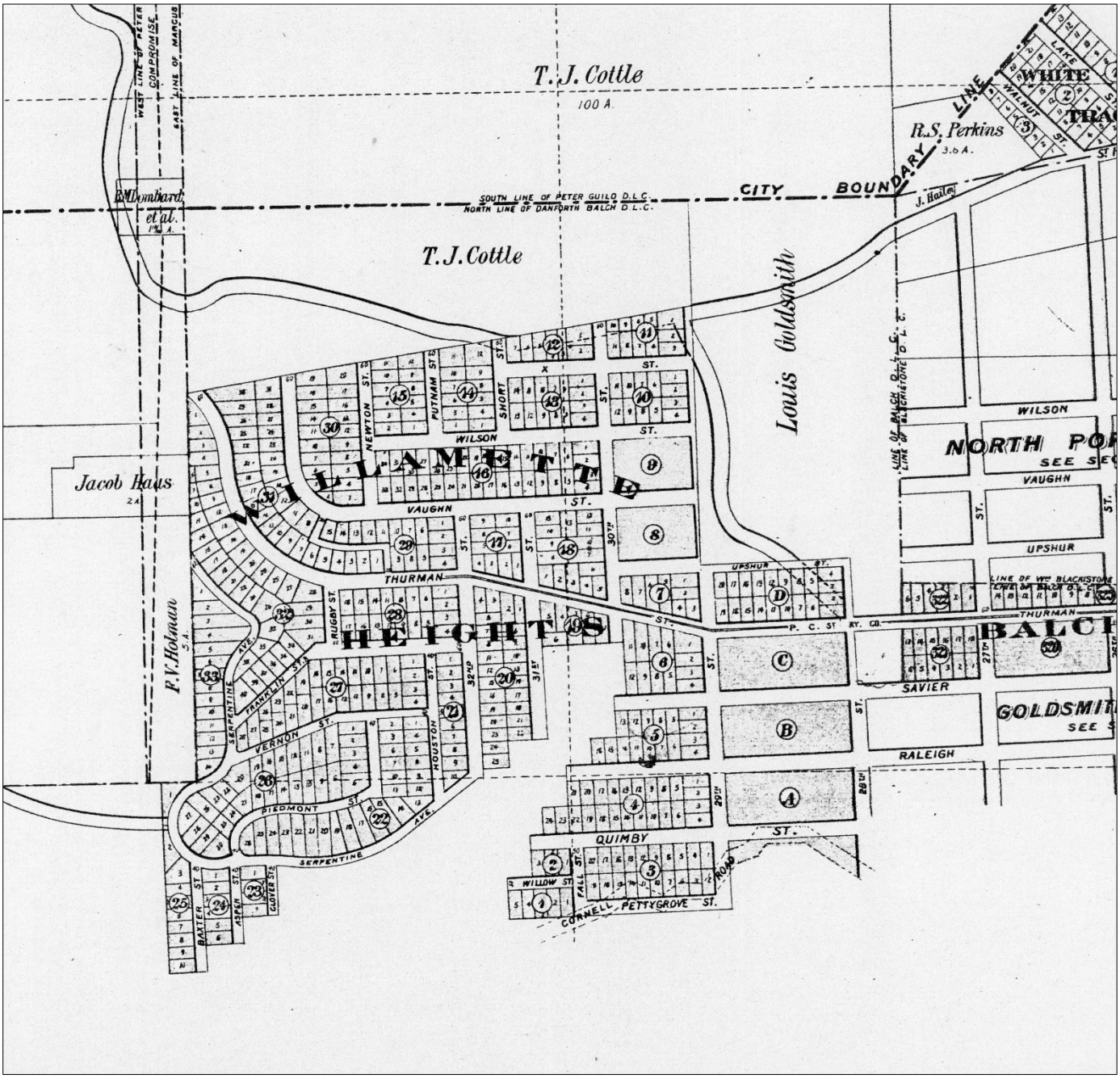
National Register of Historic Places Continuation Sheet

Balch Gulch Bridge
Name of Property
Multnomah Co., OR
County and State
Historic Highway Bridges of Oregon TG
Name of multiple listing (if applicable)

Section number Additional Documentation Page 42

Figure 9: Willamette Heights Plat Map (1894)

The Willamette Heights Addition to Portland, which was platted in 1890, is essentially bisected by Balch Gulch. Much of Blocks 18 and 19, located within the gulch, were not developed.



Source: Lewis & Dryden, "Map of Willamette Heights," in *Atlas of Portland and Vicinity*, 1894.

United States Department of the Interior
National Park Service

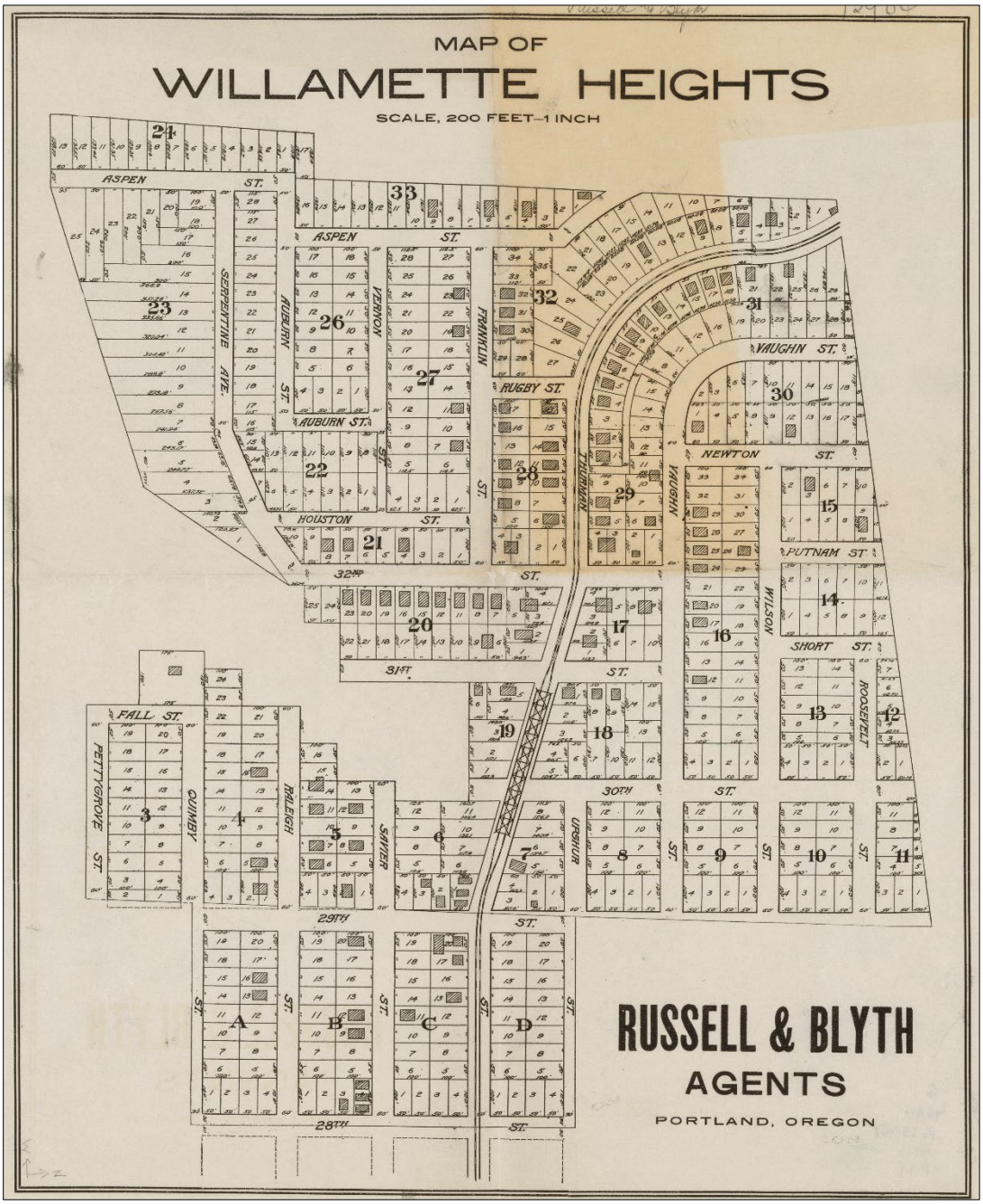
National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 43

Figure 10: Willamette Heights Plat Map (undated, post-1905)

This map, produced for real estate agents Percy Blyth and Lewis Russell (both of whom lived in Willamette Heights themselves) illusrtates the pattern of early development in the neighborhood; a majority of houses are concentrated along the NW Thurman streetcar line, which runs over the Balch Gulch Bridge.



Source: Oregon Historical Society Library, Maps Collection, G4294 .P6:3N87 1910z .R77, https://digitalcollections.ohs.org/g4294-p6-3n87-1910z-r77.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

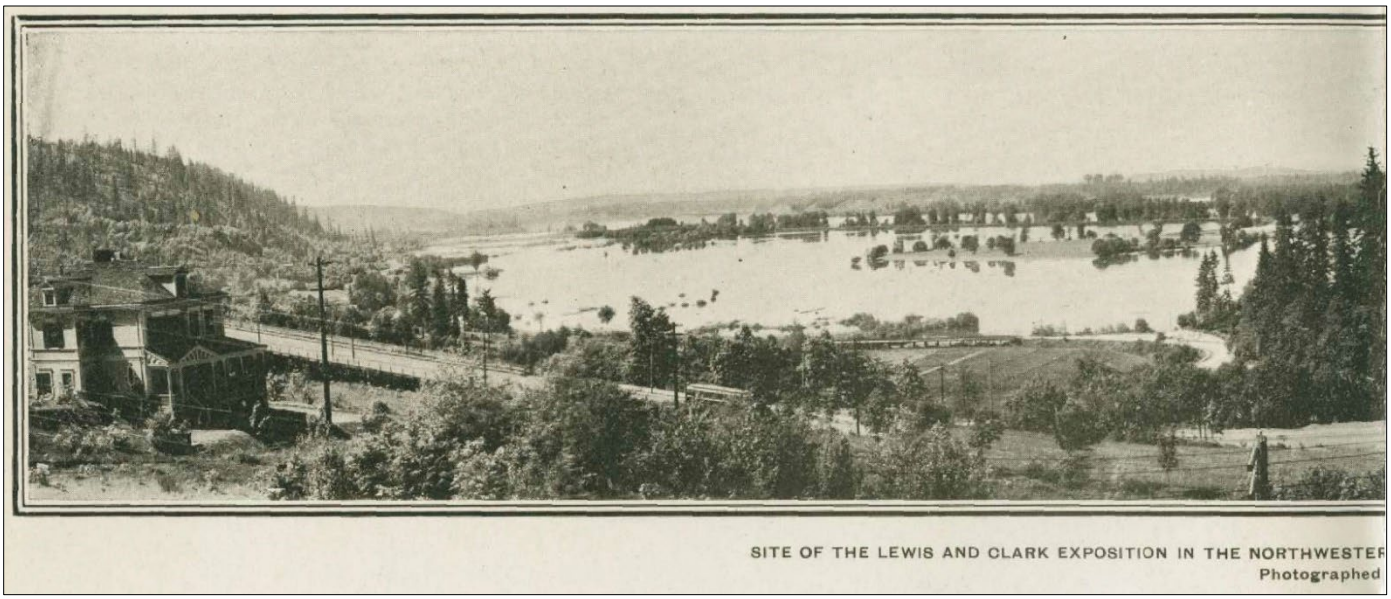
Figure 11: First Bridge over Balch Gulch (ca. 1903)

Before the Balch Gulch Bridge was built, residents of Willamette Heights traversed this wooden bridge to get into town. Travelers took a streetcar to the east side of the gulch, then walked across to catch a second car on the west side. View is looking south, up Balch Gulch and into what is present-day Forest Park.

Source: Oregon Historical Society Library, Photograph File 1667.

Figures 12a and b: View from Willamette Heights Neighborhood to future location of Lewis & Clark Centennial Exposition Site, including first bridge over Balch Gulch (1903)

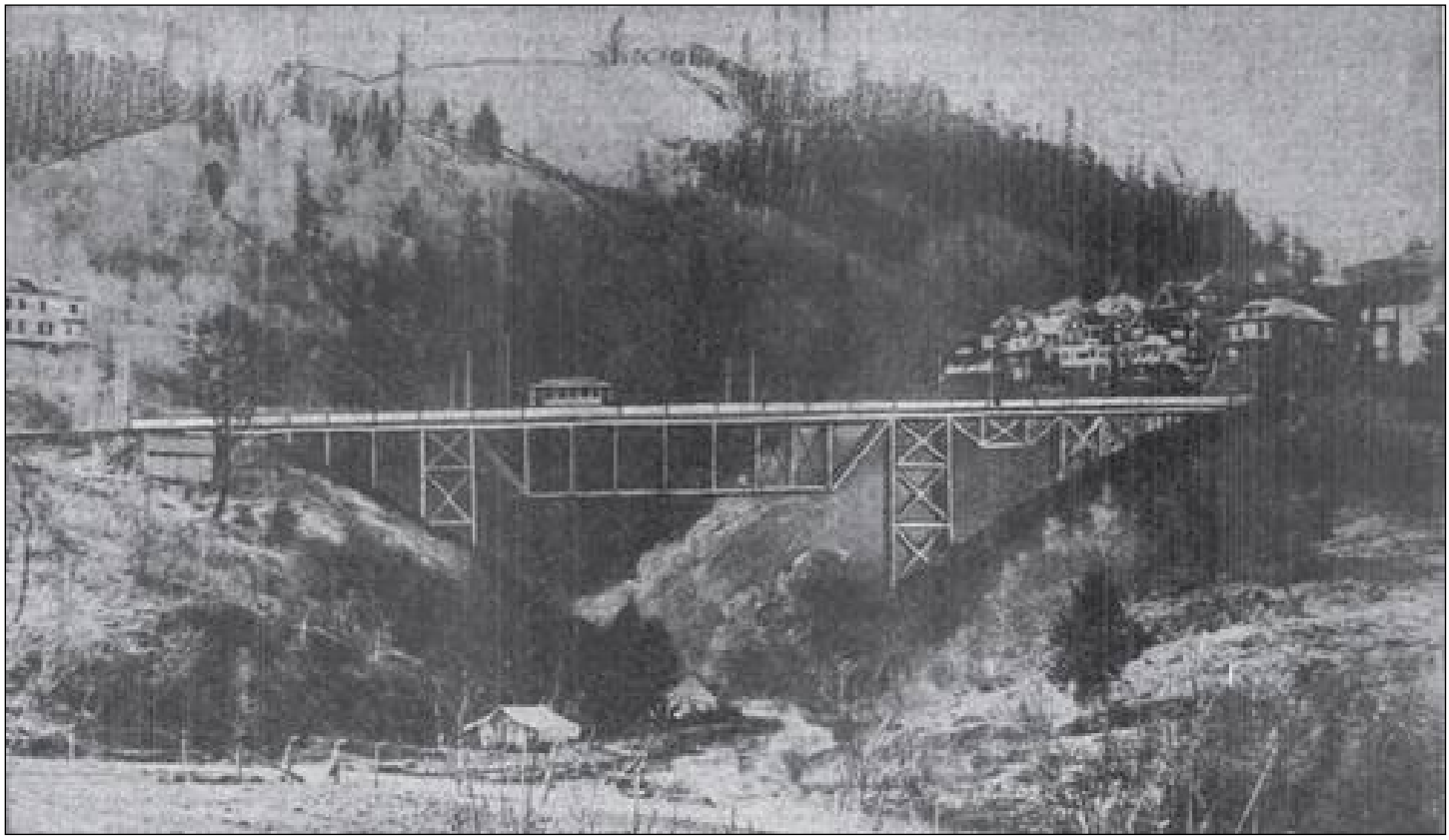
This panoramic image captured from the eastern portion of the Willamette Heights Neighborhood overlooks Guild's Lake, the site of the 1905 Lewis & Clark Centennial Exposition, immediately before construction of the exposition facilities began in 1903.The first bridge over Balch Gulch, made of wood, is shown at the left of the top photo. The Lewis & Clark Centennial Exposition spurred significant development in Portland, including construction of the current Balch Gulch Bridge.



Source: Multnomah County Public Library, identifier Jwpic_001065, "Laying of the Corner-Stone of the Lewis and Clark Monument by the President of the United States" (Portland, Oregon), May 21, 1903, shelf location OREGON 606 P85, https://gallery.multcolib.org/document/lewis-and-clark-monument.

Figure 13: Pre-Construction Rendering of the Balch Gulch Bridge (1904)

Published in the *Morning Oregonian* in March 1904, the caption for this rendering read: "The accompanying illustration shows the Thurman Street Bridge across Balch's Gulch, as it will appear when completed. The bridge has the distinction of being the highest in the city, the highest point being 110 feet. The Executive Board has let the contract for its construction to J.B.C. Lockwood, the cost being $28,284. The new structure will occupy the same position as the wooden bridge now on the ground, the ends of the approaches being at the same point. The bridge, as designed by Mr. Lockwood on general plans laid down by City Engineer Elliott is for an all-steel truss bridge . . . will carry the tracks of the Portland Railway Company's Willamette Heights line, as well as several sewers."



Source: *Oregonian* (published as *Morning Oregonian*), March 10, 1904, 1.

United States Department of the Interior
National Park Service

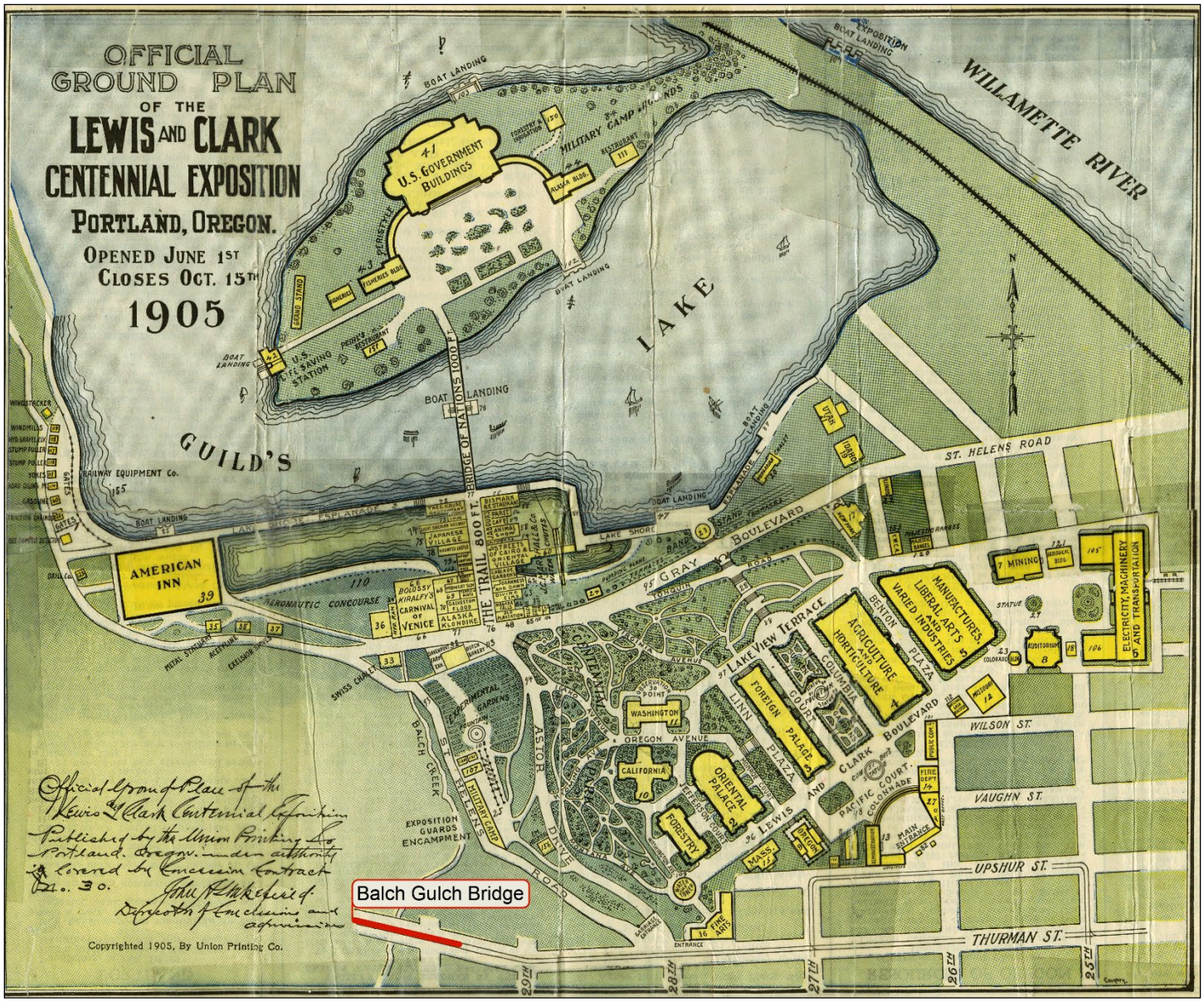
National Register of Historic Places Continuation Sheet

Balch Gulch Bridge
Name of Property
Multnomah Co., OR
County and State
Historic Highway Bridges of Oregon TG
Name of multiple listing (if applicable)

Section number Additional Documentation Page 47

Figure 14: Lewis & Clark Exposition, Location Relative to the Balch Gulch Bridge (1905)

Souvenir map of the Lewis & Clark Exposition (June 1 through October 15,1905) with location of the Balch Gulch Bridge (then recently constructed) indicated on NW Thurman Street. Willamette Heights Addition, the neighborhood in which the bridge is located, overlooked the exposition site.



Source: Portland City Archives, record no. M/10624, "Official Ground Plan of the Lewis and Clark Centennial Exposition," record date December 31, 1905, https://efiles.portlandoregon.gov/record/16943/. Annotated by preparer.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Figure 15: Lewis & Clark Exposition, view from Willamette Heights Neighborhood (ca. 1905)

A view of the Lewis & Clark Centennial Exposition grounds and the recently completed Balch Gulch Bridge from western Willamette Heights. The houses in the foreground are located on the east side of NW 32nd Avenue.

Source: Mike Ryerson, et al., *Portland's Slabtown* (Charleston, SC: Arcadia Publishing, 2013), 58.

Figure 16: Lewis & Clark Exposition, view from Willamette Heights Neighborhood (ca. 1905)

Source: H.C. White Co. (Publisher), *General view of Lewis & Clark Exposition from Willamette Heights, Portland Exposition, Oregon, U.S.A*. (Portland, OR: 1906). https://www.loc.gov/item/2022654044/.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 50

Figure 17: Lewis & Clark Exposition, view from Willamette Heights Neighborhood (1905)

Source: B.W. Kilburn (Publisher), *Floral Gardens and the U.S. Government Building, Lewis and Clark Exposition, Portland, Oregon* (Portland, OR: 1905). Image archived at

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 51

Figures 18a and b: Northern Pacific (Yellowstone Edition) Promotional Map (1905)

The view of the Lewis & Clark Exposition from Willamette Height inspired this special Northern Pacific (Yellowstone Edition) two-sided Exposition-specific promotional piece. One side (bottom) featured a map of the United States with notations regarding Meriwether Lewis and William Clark's expedition and routes; the other (top) featured an aerial view of the fairgrounds as seen from the eastern edge of Willamette Heights.

Source: Portland City Archives, record no. M/1155, "Bird's-eye view of Lewis and Clark Centennial Exposition and Oriental Fair," record date May 1, 1905, https://efiles.portlandoregon.gov/record/2682231/.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 52

Figure 19: Diagram Showing Streetcar Routes to the Lewis and Clark Exposition Grounds (1905)

In preparation for the influx of visitors to the fairgrounds, the Portland Consolidated Railway Company rerouted four lines to use newly installed fairground loop tracks on NW Upshur Street between NW 25th and 27th Avenues, just a few blocks northeast of Willamette Heights. They also planned for, and advertised, a special Willamette Heights loop; note “To Willamette Heights” at the left edge of the diagram.

perienced by the cars in the way of congestion from teams and vehicles. This fact is largely due to the efficiency of the switchmen mentioned, as well as to the street railway company's foresight in running separate car lines to the Exposition grounds. As the loops at the fair entrance are located on

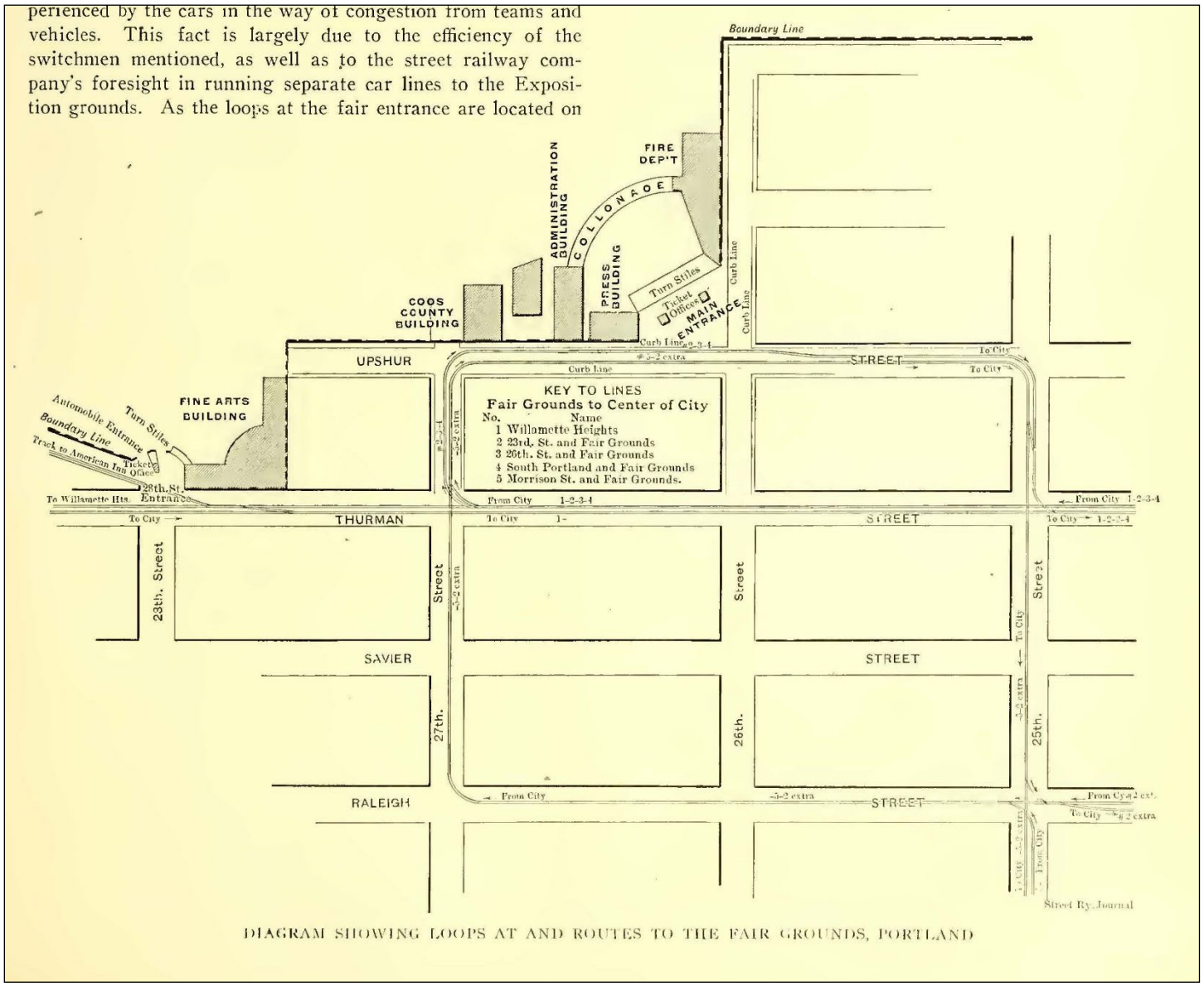
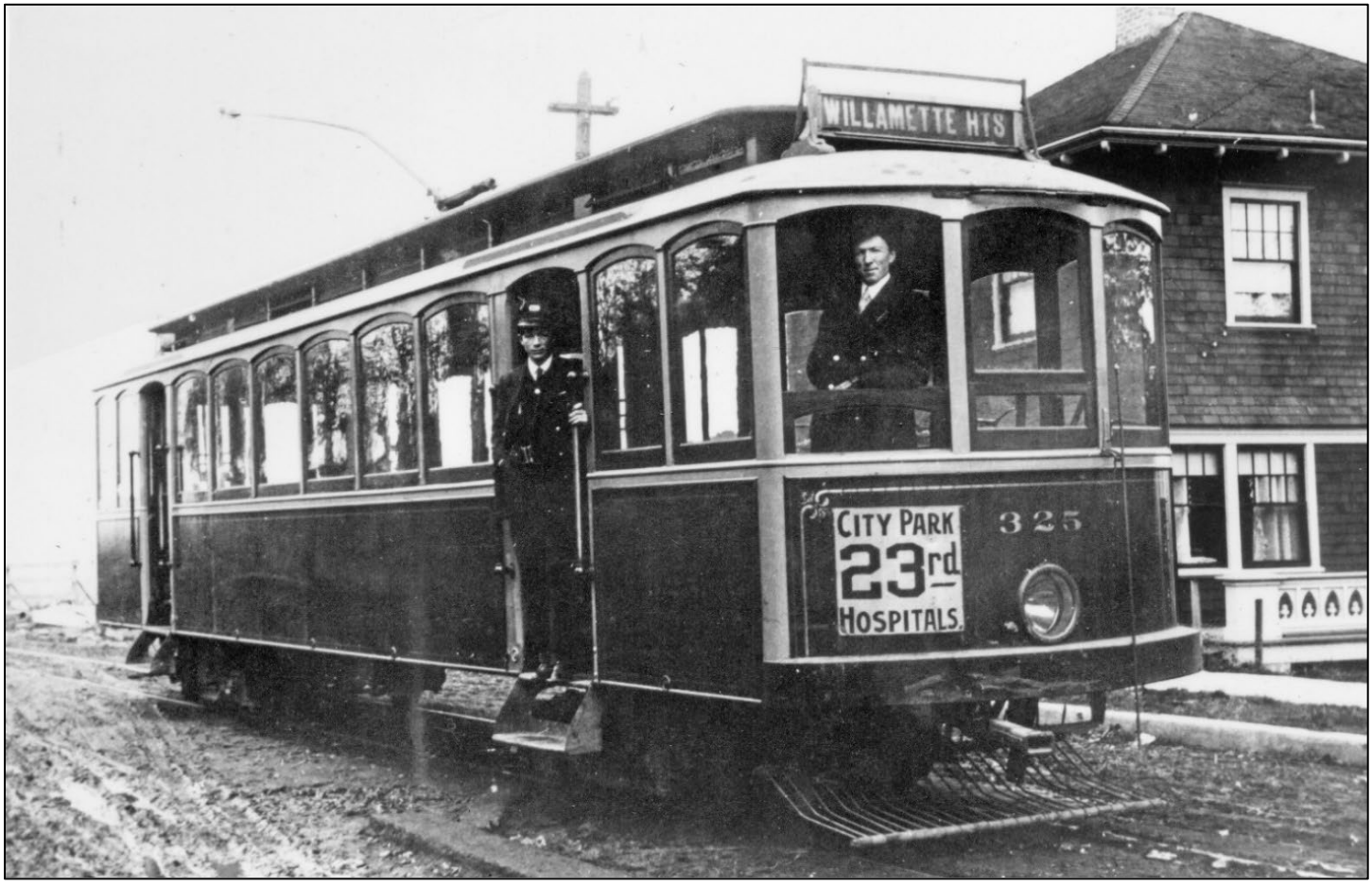


DIAGRAM SHOWING LOOPS AT AND ROUTES TO THE FAIR GROUNDS, PORTLAND

Source: Excerpted from “Transportation Facilities at the Portland Fair,” *Street Railway Journal* vol. XXVI, no. 8 (August 19, 1905): 266-267, accessed April 15, 2025, https://libraryarchives.metro.net/DPGTL/ERJ/srj-street-railway-journal/1905-srj-volume-26-no-08-august-19.pdf..

Figure 20: Fuller Car #325, Willamette Heights Line, NW Thurman Street Terminus (ca. 1905)

"The cars that began operation on what would become known as the Willamette Heights Line (originally a branch of the 23rd Avenue and later Depot-Morrison lines) were second series Fuller 'Standard' cars built locally by the second Portland Railway Company ca. 1902 and originally numbered 100-140 (by PRL&P days numbers 311-357). They weighed between 27,742 and 30,600lbs and were 38' 7.5" to 39' 3.5" in length. Width was 7'7" to 7'8". The last of this series was retired in 1933."[86] By comparison, an average vehicle in the present-day Portland Streetcar fleet is approximately 66' long and 8' wide and weighs between 30 and 33.5 tons. Like the old-fashioned electric streetcars, the modern streetcars have the ability to operate in either direction, with an operator's cab located at both ends.[87]



Source: Richard Thomas (Vice President of the Oregon Electrical Railway Historical Society), personal collection.

[86] Email communication from Richard Thompson, March 18, 2025. Thompson is a noted Portland Streetcar historian and author of several titles on Portland's streetcar past. One of his books, *Slabtown Streetcars*, includes information on the Willamette Heights Line and the Balch Gulch Bridge. He is also the Vice President of the Oregon Electrical Railway Historical Society, 3995 Brooklake Road, Brooks, OR 97303

[87] Portland Streetcar LLC, "Design Development Standards," accessed March 20, 2025, https://www.portland.gov/sites/default/files/2020-08/streetcar-dev-stds-v7.pdf, 37-39.

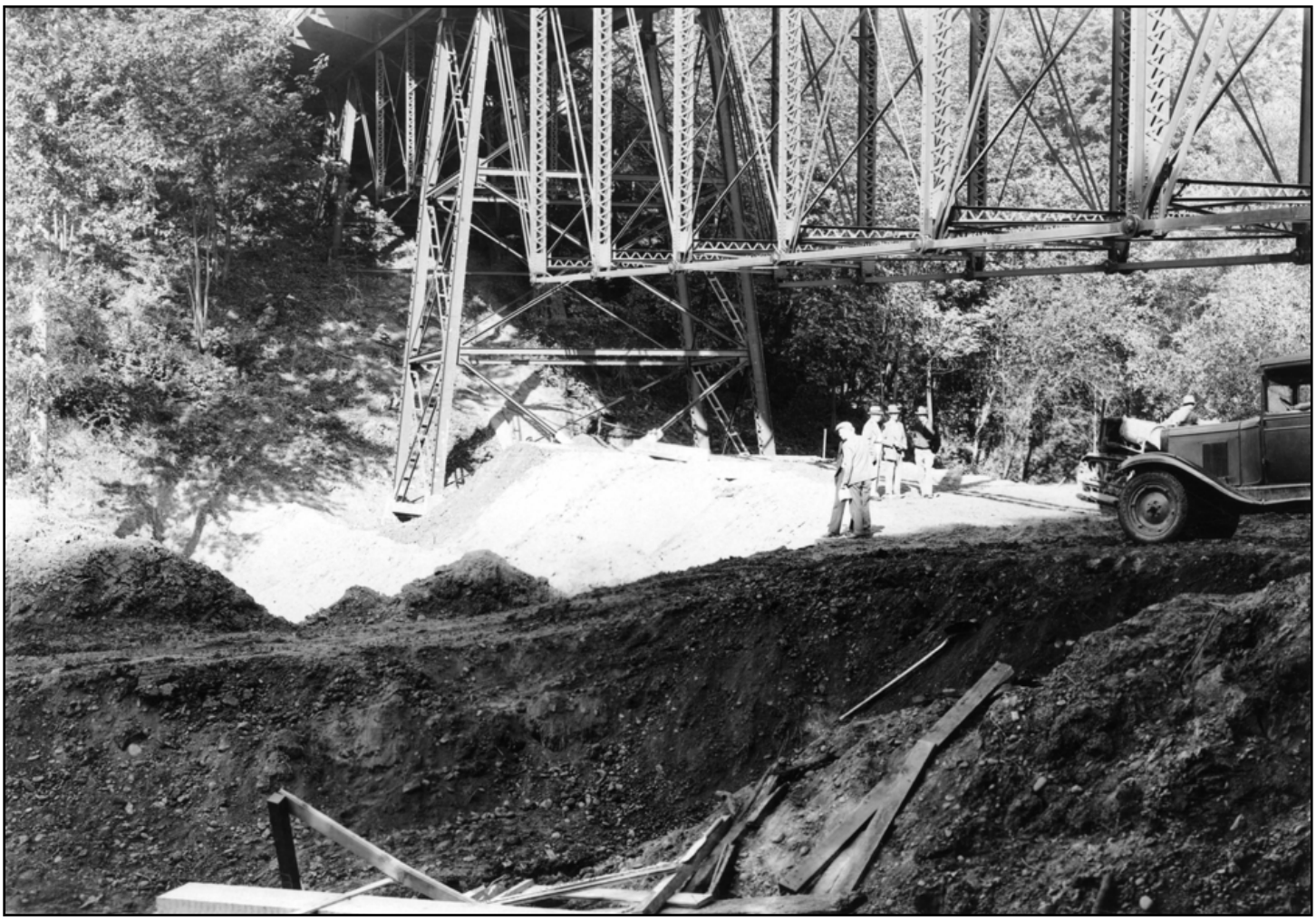
Figure 21: Balch Gulch Trunk Sewer (1922)

The first Balch Gulch trunk sewer diverting Balch Creek underground was installed in 1921 a short distance to the south of the Balch Gulch Bridge. This view is looking upstream (north) from rocky field below the sewer intake, with a view of the Balch Gulch Bridge in the distance.

Source: Portland City Archives, record no. AP/786, A2001-008.16 (February 28, 1922).

Figure 22: WPA Improvements in Balch Gulch (1932)

Works Progress Administration (WPA) money and labor made it possible for Portland to raise the grade, level the terrain, define Macleay Park and tame Balch Creek by building the first in a succession of “trash racks” in the creek bed below the bridge. These were various dams and barriers to prevent debris, large branches and silt from entering and blocking the trunk sewer dug a decade before. The Balch Gulch Bridge originally carried several water pipes.



Source: Portland City Archives, record no. AP/3204, 004-364 (December 30, 1932).

Figure 23: WPA Bridge Painters at Balch Gulch Bridge (1935)

View of the south elevation of the 160’ deck truss and original railing.

Source: Portland City Archives, record no. AP/25732, A2000-025.862 (January 14, 1935).

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Figure 24: Portland Streetcar's Last Run over Balch Gulch Bridge (1950)

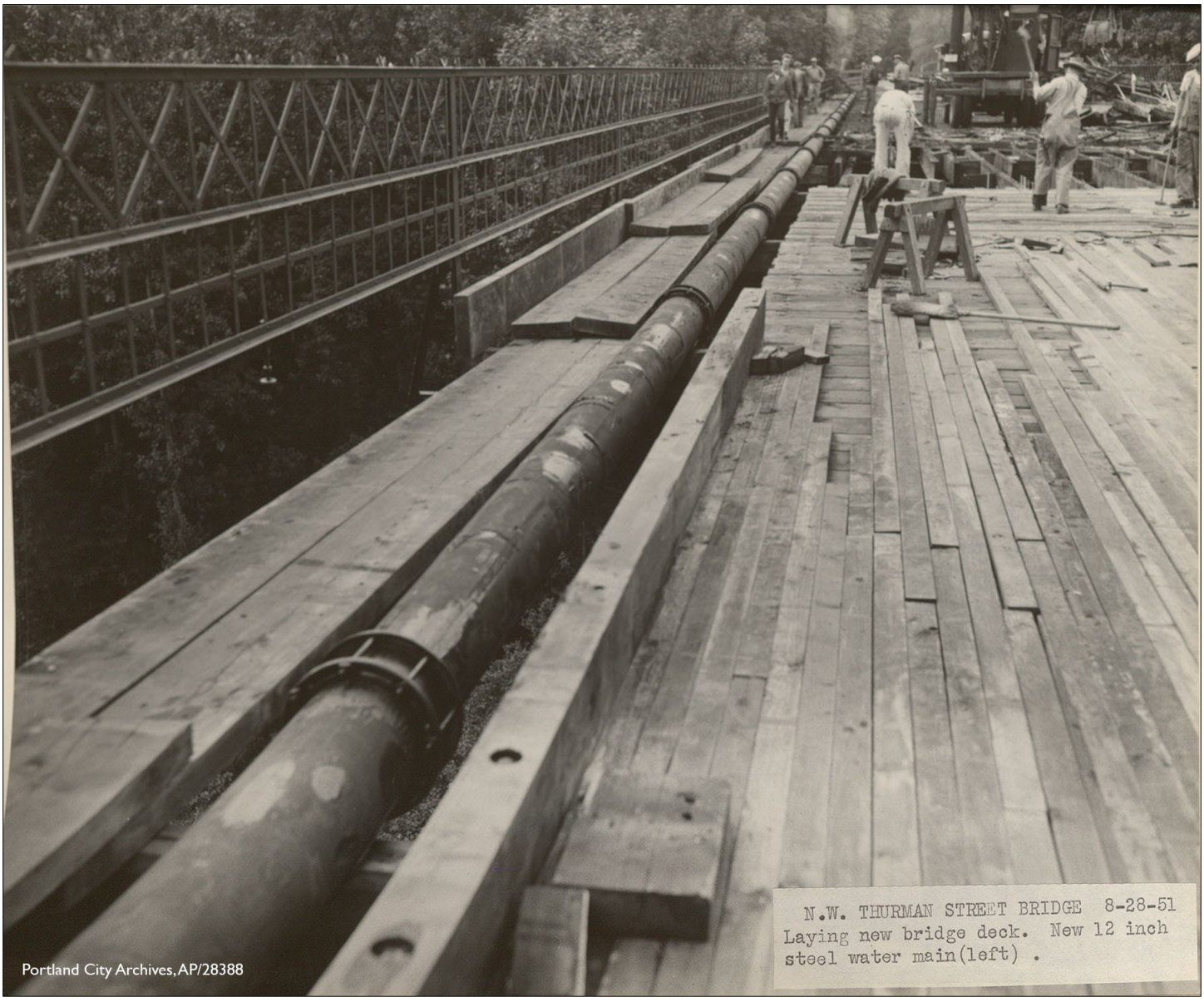
A Willamette Heights streetcar on the occasion of its last run before retirement, traveling west on the Balch Gulch Bridge; the streetcar tracks were removed from the roadway shortly thereafter.

Source: Oregon Historical Society Library, Al Monner news negatives, Org. Lot 1284; Box 35; 1680-4.

Figure 25: Balch Gulch Bridge, Wood Decking Replacement (1951)

Following the conclusion of streetcar service in 1950, the rails, ties, and ballast were removed from the Balch Gulch Bridge deck, and the wood decking was subsequently replaced in kind. At the same time, a new 12" steel water main was laid under the bridge's sidewalk.

Note the distinctive lattice-like railing, which was replaced just a few years later following a tragic accident.



Source: Portland City Archives, 025.2367, record no. AP/28388 (August 28, 1951).

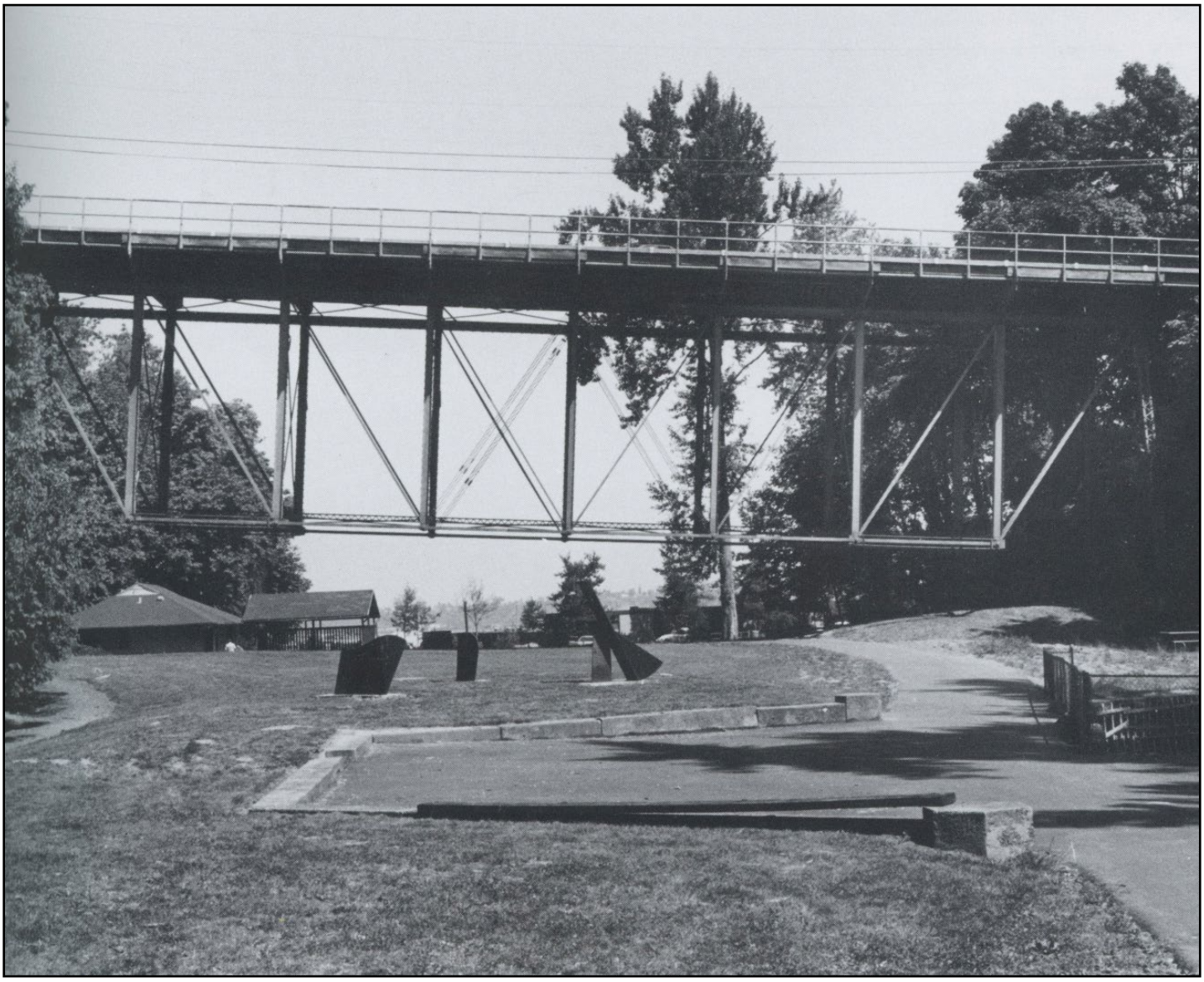
Figure 26: Balch Gulch Bridge, Maintenance (1979)

Maintenance and repairs in 1978-1979 focused on strengthening the bridge's truss system and addressing issues with the eyebars. This involved adding steel struts and retensioning various structural elements that had relaxed over time (a common issue with pin connections), improving the stability of the bridge.

Source: Portland City Archives, record no. AP/98742, "Maintenance : Thurman Bridge : Steel (4/7)," record date May 1, 1979, https://efiles.portlandoregon.gov/record/17173559/.

Figure 27: Balch Gulch Bridge (1985)

View of the south elevation of the 160' deck truss. Note simplified railing, which replaced the original in 1954 after a passenger car slid on ice, breached the railing, and plunged into the park below.[88]



Source: Dwight A. Smith et al., *Historic Highway Bridges Oregon* (OR Dept. of Transportation, 1985), 57.

[88] "Skid on Icy Pavement Sends Car Through Guard Rail on N.W. Thurman Viaduct," *Oregonian* (Portland, OR), December 17, 1954.

United States Department of the Interior
National Park Service

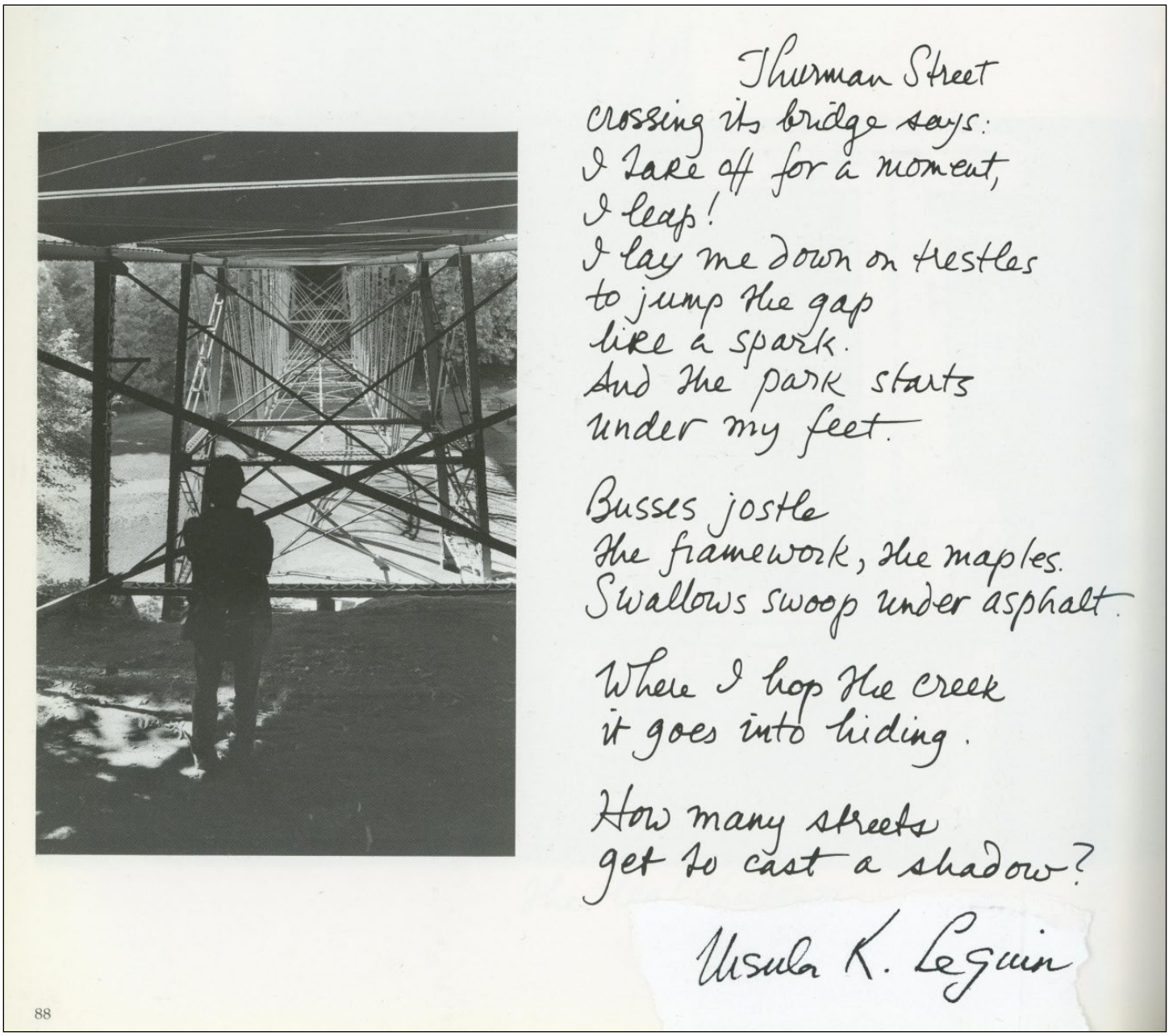
National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 61

Figure 28: "Thurman Street crossing its bridge […]" (August 1985)

Author Ursula K. Le Guin lived on NW Thurman Street, approximately two blocks west of the Balch Gulch Bridge, from 1960 through her death in 2018. Between 1985 and 1992, she collaborated with Portland photographer Roger Dorband on *Blue Moon over Thurman Street*, a book of poetry and photographs that capture the essence of the street—including the Balch Gulch Bridge.



Thurman Street
crossing its bridge says:
I take off for a moment,
I leap!
I lay me down on trestles
to jump the gap
like a spark.
And the park starts
under my feet.

Busses jostle
the framework, the maples.
Swallows swoop under asphalt.

Where I hop the creek
it goes into hiding.

How many streets
get to cast a shadow?

Ursula K. Le Guin

88

Source: Ursula K. Le Guin, *Blue Moon over Thurman Street* (Tillamook, OR: NewSage Press, 1993), 88.

Figure 29: Balch Gulch Bridge (2014)

View of the south elevation of the 160’ deck truss, immediately prior to major rehabilitation project spanning March 17, 2014, though October 17, 2014.

Source: Oregon Department of Transportation, “Balch Gulch Bridge: NW Thurman Street over Macleay Park” (PowerPoint presentation), 2025, slide 55.

Figures 30a and b: Balch Gulch Bridge, Temporary Bracing during Rehabilitation (2014)

Temporary bracing (left) was used to maintain the bridge's stability during and following removal of the deteriorated wood stringers and steel floor beams. Clamps (detail at right) were used to avoid drilling into the bridge's original steel trusses.

Source: Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation), 2015, slides 49-50.

Figure 31: Balch Gulch Bridge, Decking Removal (2014)

View of the north elevation of the 160’ deck truss following removal of deteriorated wood joists and deck and steel floor beams.

Source: Oregon Department of Transportation, “Balch Gulch Bridge: NW Thurman Street over Macleay Park” (PowerPoint presentation), 2015, slide 56.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Balch Gulch Bridge	Name of Property
Multnomah Co., OR	County and State
Historic Highway Bridges of Oregon TG	Name of multiple listing (if applicable)

Section number Additional Documentation Page 65

Figures 32a and b: Balch Gulch Bridge, Replica Steel Floor Beams (2014)

Cascade Bridge LLC partnered with the Oregon Department of Transportation's materials lab to replicate the original 36-inch steel floor beams (top). These were installed atop the original, character-defining trusses, which were braced to maintain their stability throughout the rehabilitation (bottom). The modern steel beams allowed for the removal of previous weight restrictions, which improved emergency vehicle response times to Willamette Heights.

Source: Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation), 2015, slides 58 and 63.

Figures 33a and b: Balch Gulch Bridge, Replacement Steel Decking (2014)

Nine-inch-wide form-lock steel bridge decking, **i**nstalled one plank at a time, replaced the original wood decking. The planks were then covered by concrete and asphalt paving.

Source: Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation), 2015, slides 80 and 81.

Figure 34a and b: Balch Gulch Bridge, Replacement Sidewalk Planks (2014)

Wood planks made up the surface of the Balch Gulch Bridge sidewalk from 1903 through early 2014 (top). Uneven and slick when wet or icy, they presented a hazard to pedestrians. New nonslip aluminum sidewalk planks were installed as part of the 2014 rehabilitation project (bottom).

Source: Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation), 2015, slide 92.

Figures 35a and b: Balch Gulch Bridge, Replica Railing (2014)

As part of the 2014 rehabilitation project, the non-compatible 1954 replacement railing was removed and replaced with a faithful replica of the original, lattice-like railing.

Source: Oregon Department of Transportation, "Balch Gulch Bridge: NW Thurman Street over Macleay Park" (PowerPoint presentation), 2015, slides 87 and 99.

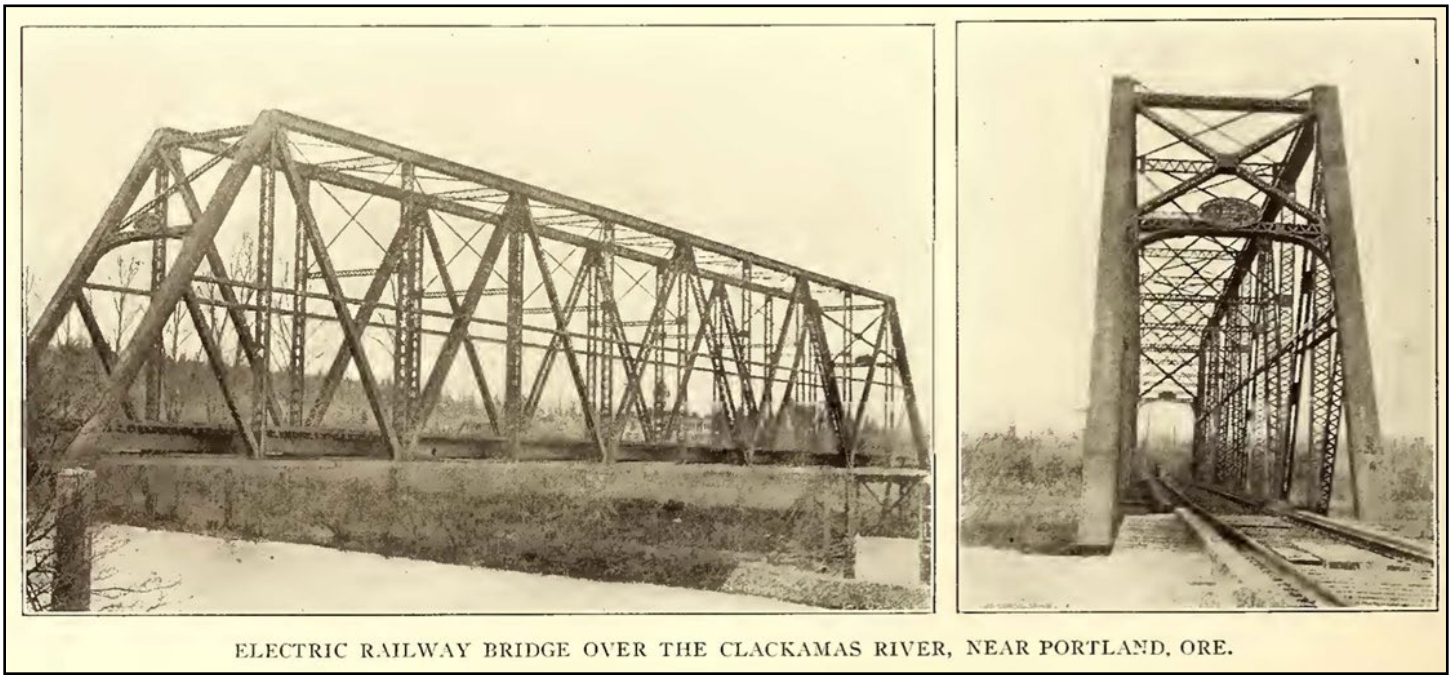
Figure 36: Balch Gulch Bridge Inspection (2014)

Bridge inspection, showing the west end of the 160’ truss and the entirety of the 60’ truss, looking southwest.

Source: Oregon Department of Transportation, “Balch Gulch Bridge: NW Thurman Street over Macleay Park” (PowerPoint presentation), 2015, slide 102.

Figure 37: Gladstone Trolley Bridge (1908)

J.B.C. Lockwood, designer of the Balch Gulch Bridge, also designed this Warren riveted truss bridge to carry the Oregon City line of the Portland Railway, Light & Power Company of Portland over the Clackamas River. The bridge was completed in 1908.



ELECTRIC RAILWAY BRIDGE OVER THE CLACKAMAS RIVER, NEAR PORTLAND, ORE.

Source: "Electric Railway Bridge Over the Clackamas River Near Portland, Oregon," S*treet Railway Journal* vol. XXXI, no. 19 (May 9, 1908), 790, accessed April 15, 2025, https://libraryarchives.metro.net/DPGTL/ERJ/srj-street-railway-journal/1908-srj-volume-31-no-19-may-09.pdf.

APPENDIX A: Biography of James Button Clyde (J.B.C.) Lockwood, Sr. (1863-1945)

James Button Clyde Lockwood, designer of the Balch Gulch Bridge, was born in Marshalltown, Iowa, in 1863, and died in 1945 in Seattle at the age of 82. He was a veteran northwest marine engineer and a consulting engineer specializing in the design and construction of dredges and bridges, recognized as one of the leading authorities in the United States in those fields. He graduated from Iowa Agricultural College (now Iowa State University) at Ames, one of only ten in the graduating class of 1885 with a bachelor's degree in engineering. Few were aware that he helped pay for college by playing the cornet.[89]

He was a co-founder and the first president of the Puget Sound Bridge and Dredge Company (now Lockheed Shipbuilding), upon its founding in 1889.[90] After retiring from the presidency, he became a Consulting Engineer specializing in the design and construction of bridge and dredging equipment. He designed and supervised the construction of many hydraulic and dipper dredges for his Seattle company and then for the City of Portland when he was appointed Drydock Engineer, taking charge of the port's dredging operations in January 1903. His work in dredge design and skill in implementing the construction of dredges were cited as "sufficient endorsement by the board."[91]

During the early years of his time in Portland, Lockwood designed and saw constructed numerous innovative dredges: the Columbia River, Willamette River, and all other dredges at Port of Portland during his working years there. When renovated, these continued in use through World War I. He supervised some of the earliest serious dredging on the Columbia and Willamette Rivers near port and shipbuilding facilities in Vancouver, and also supervised infill projects on the east side of the Willamette River, from the banks to Union Avenue (now Martin Luther King Jr. Blvd.).[92]

In 1908, Lockwood designed and successfully completed a bridge on the Oregon City line of the Portland Railway, Light & Power Company of Portland. The 260-ft. single-span steel bridge of ten 26-ft. panels with Warren riveted trusses traversed the Clackamas River (Figure 37). It was called the Gladstone Trolley Bridge. Unusual points about the bridge were the length of span for a riveted connection bridge of heavy loading and the fact that it was entirely a western venture; the bridge was designed by Mr. Lockwood (Portland) and fabricated by the Northwest Bridge Works (formerly J. R. Bowles). The erection was done by Robert W. Wakefield without any interruption of traffic. The location of the bridge on the Clackamas River made the erection difficult, as it was subject to very sudden rises of from 10 to 12 feet. During such a rise the current was very rapid and the drift of logs, timber, and trees quite considerable. When construction began, winter weather and river depths made work miserable.[93]

In 1916, Lockwood undertook the design and execution of the Union Avenue Viaduct at Sullivan's Gulch. This was the second bridge built in this location and one of several that eventually spanned the gulch, constructed years before eventual excavation and the opening of the gulch to enable building of the Banfield Freeway

[89] Dr. James R. Warren, *Puget Sound Business Journal*, February 17, 1986.
[90] Warren, *Puget Sound Business Journal*, February 17, 1986.
[91] "Lockwood Gets It," *Morning Oregonian*, January 2, 1903; "Kelly Resigns: J. B. C. Lockwood Will Take Charge of Port of Portland Dredging," *Morning Oregonian*, January 10, 1903.
[92] "Big Fills Help East Side," *Morning Oregonian*, March 14, 1909.
[93] "Electric Railway Bridge Over the Clackamas River Near Portland, Oregon," S*treet Railway Journal* vol. XXXI, no. 19 (May 9, 1908), 790, accessed April 15, 2025, https://libraryarchives.metro.net/DPGTL/ERJ/srj-street-railway-journal/1908-srj-volume-31-no-19-may-09.pdf.

(I-84) in 1955. This small bridge is of poured, reinforced concrete with #1 unit handrails and lampposts with bronze heads.[94]

During World War I, Lockwood was owner of the shipbuilding firm of Supple-Ballin and Lockwood. He later was one of the organizers and president of the Drummond Lighterage, Tug and Barge Company.[95] He sold out in 1922 and, after a period of building dredges in various parts of the country, he made Seattle his home and was active until the very late years of his life as a consulting engineer, specializing in dredging. During World War II, Lockwood was consultant for the Gilpin Construction Company of Portland.[96]

Just after the turn of the century, Lockwood had invested in property on the Clyde Hill side of Meydenbauer Bay in Bellevue. He eventually deeded the property to the city of Bellevue where it became Meydenbauer Park. Lockwood also operated a lime quarry on Orcas Island where the family maintained a summer cabin. In their early days on the island, they became friends with Robert Moran and visited him at his home, Rosario. Moran (1857-1943), head of a major shipbuilding company, was twice elected mayor of Seattle, and is credited with helping that city rebuild and modernize after a devastating fire in 1889. [97]

Lockwood remained a consulting engineer all of his life and during World War II he was employed by such companies as General Construction and Puget Sound Bridge and Dredge. He remained a consulting engineer all of his life; it seems he just couldn't give it up. At 82, he designed his last dredge for the later company, drawing freehand and without eyeglasses. The following year, he died after a brief illness. He was survived by his widow, Mary Reynolds Lockwood, and by two sons and two daughters. He was buried in Seattle.[98]

[94] Portland City Archives, record no. AP/4535, "A2001-008.153 : From temporary trestle looking northeast at south abutment, south wing walls poured, #1 Unit hand rail completed except two south panels, showing one lamp post completed without bronze head [Union Ave]," record date July 18, 1916, https://efiles.portlandoregon.gov/record/2656089/.
[95] "Lockwood Works Manager," *Sunday Oregonian*, July 28, 1918; "Supple-Ballin Make Change," *Morning Oregonian*, August 2, 1918.
[96] Warren, *Puget Sound Business Journal*, February 17, 1986.
[97] Warren, *Puget Sound Business Journal*, February 17, 1986.
[98] Warren, *Puget Sound Business Journal*, February 17, 1986.

Photograph 1 of 12: OR_MultnomahCounty_BalchGulchBridge_0001
Eastern portion of the Balch Gulch Bridge including 160’ deck truss, looking north from Lower Macleay Trail.

Photograph 2 of 12: OR_MultnomahCounty_BalchGulchBridge_0002
North side of the Balch Gulch Bridge, looking east from the northwest corner of the bridge. The staircase, which was initially constructed in 1950, is a separate structure.

Photograph 3 of 12: OR_MultnomahCounty_BalchGulchBridge_0003
South side of the Balch Gulch Bridge, looking west from the southeast corner of the bridge.

Photograph 4 of 12: OR_MultnomahCounty_BalchGulchBridge_0004
Balch Gulch Bridge deck, including reconstructed railing and replacement corrugated metal panel walkway, looking east from the northwest corner of bridge.

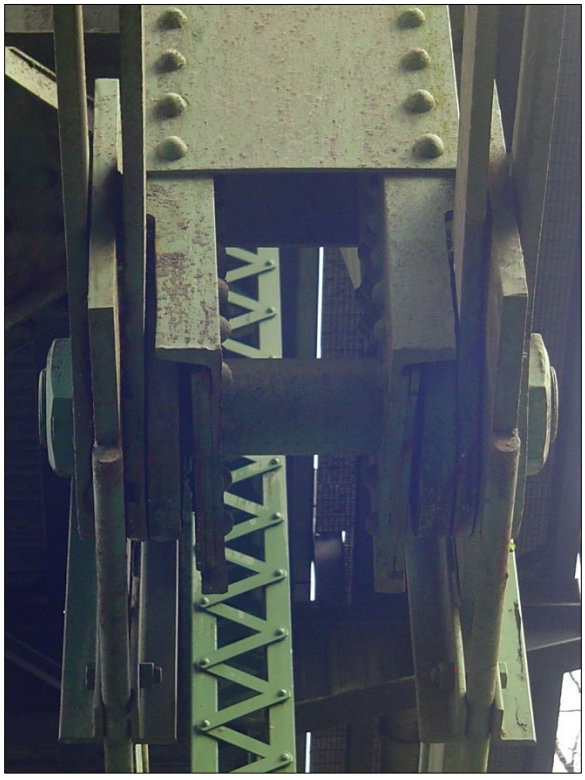
Photograph 5 of 12: OR_MultnomahCounty_BalchGulchBridge_0005
Balch Gulch Bridge trusses, looking west from the staircase in the hillside at the northeast corner of the bridge.

Photograph 6 of 12: OR_MultnomahCounty_BalchGulchBridge_0006
Underside of the Balch Gulch Bridge, looking west.

Photograph 7 of 12: OR_MultnomahCounty_BalchGulchBridge_0007
Detail view of 60’ deck truss at the western side of the Balch Gulch Bridge, looking southwest.

Photograph 8 of 12: OR_MultnomahCounty_BalchGulchBridge_0008
Detail view of 160’ deck truss, center panel, looking north.

Photograph 9 of 12: OR_MultnomahCounty_BalchGulchBridge_0009
Southeast corner of 160’ deck truss, looking north.



Photograph 10 of 12: OR_MultnomahCounty_BalchGulchBridge_0010
Detail of pin connection on southwest corner of 160’ deck truss, looking upward/east.

Photograph 11 of 12: OR_MultnomahCounty_BalchGulchBridge_0011
Detail of pin connection on 160’ deck truss, looking north.

Photograph 12 of 12: OR_MultnomahCounty_BalchGulchBridge_0012
Underside of east concrete abutment footing, showing water main pipe, looking southeast.