HISTORIC AMERICAN ENGINEERING RECORD
VAN BUREN BRIDGE
(WILLAMETTE BRIDGE)

HAER No. OR-191

Location: NW Van Buren Avenue, spanning the Willamette River between Corvallis, Benton County, and Linn County, Oregon.

The Van Buren Bridge is located at latitude: 44.56540, longitude: -123.25614 (NAD83). The coordinates represent the center of the swing-span pier and were obtained via Google Earth, using June 26, 2022, imagery. The location has no restriction on its release to the public.

Significance: When it opened in 1913, the Van Buren Bridge was the uppermost movable bridge on the navigable portion of the Willamette River. It was the first bridge across the river at Corvallis, replacing a cable ferry located about 450' downstream (north). Built for Benton County by Coast Bridge Company of Portland, OR, the Van Buren Bridge had a human-powered swing span with two Pratt through trusses that could be opened to provide a 102'-wide navigation channel on either side of the central pier. Approach spans included a fixed pin-connected Parker through truss and two Warren pony-truss approach spans. George A. Sears of Coast Bridge Company prepared initial designs. Andrew Lee Porter served as construction superintendent on behalf of Benton County. The swing span opened for the last time in 1960. By 2023 Van Buren Bridge was one of only two surviving vehicular swing spans in Oregon and an increasingly rare example of a pin-connected steel truss. After years of planning, the Oregon Department of Transportation decided to replace the bridge. Hamilton Construction Company started dismantling the Van Buren Bridge in November 2023 and began the multiyear process of erecting an earthquake-resistant, multimodal, four-span deck girder crossing.

Historians: Duncan Hay, HAER Historian, and Christopher H. Marston, HAER Architect, 2023-24

PART I. HISTORICAL INFORMATION

A. Physical History

1. Dates of construction: 1912-13

2. Engineer: Preliminary design was by George A. Sears and construction drawings were prepared by Coast Bridge Company. Sears, who listed himself as a consulting engineer based in Seattle, contracted with Benton County on October 18, 1909, to "prepare plans and specifications for the proposed bridge . . ." He would also prepare applications required by the U.S. Army Corps of Engineers office in Portland required to build a bridge across a navigable waterway. Sears was to be paid $250 upon delivery of the plans and specifications and receipt of a permit from the War Department but a handwritten note on the margin of the contract read: "In the event of an award of the steel for the proposed bridge noted above, to my company, no charge will be made for plans and work as above noted."[1] Three years later, Sears signed the steel fabrication contract as vice president of Coast Bridge Company, Portland.[2] Andrew Lee Porter (1865-1946) conducted early site surveys and served as construction superintendent on behalf of Benton County.

3. Original and subsequent owners and uses: Benton County, Oregon, maintained the Van Buren Bridge as a vehicular and pedestrian bridge from 1913-1938. Oregon Department of Transportation (ODOT) maintained it from 1938-2023. Originally known as the Oregon State Highway Department, the agency assumed control of the bridge in 1938. Van Buren Bridge served as a vehicular and pedestrian bridge through 2023 when it was closed and dismantled. It will be replaced by a new multi-modal, earthquake-resistant bridge by 2026.

4. Builder, Contractor, Suppliers: Coast Bridge Company designed and managed production and erection of the bridge's steel. The fixed spans and tubular pier were fabricated by Northwest Steel Company of Portland, OR. The swing span and its operating machinery were fabricated by Milwaukee Bridge Company (1903-61) of Milwaukee, WI.[3] Mill roll stamps indicate that the steel came from several mills, including those of the Carnegie, Illinois, and Lackawanna steel

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[1] "Agreement between George A. Sears, Consulting Engineer of Seattle, Washington, and the County of Benton, Oregon," October 18, 1909, Benton County Historical Society (BCHS), Philomath, OR, 2006-113.0258.
[2] Coast Bridge Company, "Proposal," George A Sears, Vice President, Coast Bridge Company to County Court of Benton County, October 2, 1912, BCHS, 2006-113.0258; Drawing: "Contract No. 131, Coast Bridge Company, Portland Oregon, Contract Dated Jan 25-12" in a Coast Bridge Company portfolio of county bridge contracts in Oregon and Washington from 1910-16, Oregon Department of Transportation (ODOT), Salem, OR (henceforth "Contract 131 drawing, 1912").
[3] Milwaukee Bridge Company should not be confused with the Milwaukee Bridge and Iron Works (1870-1905), a once independent and prolific fabricator that was absorbed into the American Bridge Company conglomerate in 1900 and disappeared by 1905. Jeffrey A. Hess, *Historic Highway Bridges in Wisconsin: Truss Bridges*, Vol. 2, Part 1, (Madison: Wisconsin Department of Transportation, 1998), 104-08.

companies. S.M. Armstrong erected the steel under contract with Coast Bridge Company. Abutments, concrete piers, steel cylinder pier, and the timber approach trestle on the Linn County (east) end were built by Beebe & Stevenson of Salem, OR. Benton County supplied lumber from local sawmills for decking and railings. Local contractors Tharp & Smith painted the steelwork with paint supplied by Coast Bridge Company.[4]

5. Original plans and construction: The Coast Bridge Company designed the Van Buren Bridge as a steel through-truss to carry two-way traffic over the Willamette River on Van Buren Avenue from Corvallis, Benton County, to Linn County. It was approximately 708' long overall. From west-to-east it included five segments: A 57'-long approach span supported by a Warren pony truss, a fixed 171'-long nine-panel Parker through truss, two 114'-long six-panel Pratt through trusses with a 21'-4" tower in-between forming the swing span, and a 57'-long three-panel Warren pony truss with polygonal top chords leading to a 228'-long approach trestle supported by twelve treated-timber bents on the east (Linn County) end.

The substructure included a round concrete pier supporting the center of swing span, two oblong concrete piers at either end of the movable section supporting the fixed Parker truss to the west and the Warren pony truss to the east. A steel bent supported the east end of the east pony truss. A pair of concrete-filled steel tube piers supported the west end of the Parker truss and the west pony truss. There was a concrete abutment on the west bank.

Originally the swing span and its center pier were protected by a "draw rest" built of rows of timber piles driven parallel to the river's flow and sheathed with horizontal rows of heavy timber planks. This was a common feature of swing bridges, installed to protect the central pier and the open swing span from collisions with passing steamboats and floating debris. The 1909 contract with George A. Sears called for two 5'-wide sidewalks. Triangular concrete brackets were cast on both sides of the piers at either end of the swing span to support them, but only one 6' sidewalk was built outboard of the south (upstream) truss panels.[5]

The floor of the road deck was made of 4" x 12" transverse wood planks resting on 4" x 14" longitudinal wood stringers spaced 2' on center with 2" x 6" bridging. The trusses were protected

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[4] Contract 131 drawing, 1912; Coast Bridge Company, "Proposal," October 2, 1912, BCHS, 2006-113.0258; "Coast Bridge Company, Specifications for Material and Details for the Manufacture of Steel Highway Bridges," n.d. [1912], BCHS 2006-113.0258 (henceforth: Coast Bridge Specifications); "Bid Form," J.M. Stevenson, Beebe & Stevenson to County Commissioners, Benton County Oregon, June 25, 1912, BCHS 2006-113.0258. Coast Bridge supplied the steel under contract 131, dated January 25, 1912, and erected it under Contract 178, dated October 2, 1912; "Local Items," *Daily Gazette-Times* (Corvallis, OR), May 12 and 22, 1913; In addition to major contracts with Coast Bridge Company and Beebe & Stevenson, the Benton County clerk reported payments to local merchants: Corvallis Lumber Company, J.R. Smith & Co. (hardware), Buxton & Sons (gates), and J.T. Phillips (bolts, hinges, etc.), "Facts About Cost New Bridge," *Daily Gazette-Times,* June 20, 1913.

[5] An early undated drawing shows steel brackets for a 6'-wide sidewalk on one side only. Coast Bridge Company, "Submitted by Coast Bridge Company, Portland, Oregon, Contract No. 131, Sheet 6 of 8," ODOT Archives, microfiche 2728.

from glancing vehicles by 4" x 6" timber "curbs" laid flat and two rows of wood rubrails with a double layer of 2" x 6" planks atop a single 3" x 10". The sidewalk had 2" x 12" plank flooring on 3" x 12" stringers spaced 2' on centers. A two-row 2" x 6" wooden railing was installed on wood posts along the pedestrian walkway.

There are partially legible microfilm copies of three Coast Bridge Company drawings for the Corvallis bridge in the ODOT archives and a stress diagram found in a portfolio of Coast Bridge contracts between 1910 and 1916. One drawing labeled "Submitted by Coast Bridge Company, Portland, Oregon, Contract No 131, Sheet 6 of 8," shows sections through the truss portals at four locations and a quarter plan and half section of the turning hub with details of the end rollers and end latch. The other two are detailed shop drawings for the fabrication of the swing span turntable and its operating machinery. They have Coast Bridge Company title blocks with freehand labels "Con't 1257" and "Cont 1257A" above those title blocks. The numbers correspond to the shop order numbers with Milwaukee Bridge Company on the Contract No. 131 stress diagram in the Coast Bridge contract portfolio. Several castings in the machinery drawing are called out by pattern number, indicating that components of this design had been used on previous swing bridges.[6]

6. Alterations and additions: The wood decking, stringers, and railings have been replaced several times, most recently with pressure treated planks and timbers.[7] Floods tore away sections of the timber draw rest during the early 1930s. The structure was deemed unnecessary due to declining river traffic and was not replaced.[8] The timber decks and railings were replaced and the east approach trestle was realigned to the south and extended from twelve to seventeen spans (323' long), in 1940.[9] Steel sheet piling was driven around the swing span pier and concrete poured to fill the void in 1941 to provide some of the erosion protection previously supplied by the draw rest.[10] The bridge was redecked again in 1957.[11] The swing span operated for the last time in October 1960 and the operating mechanism was disabled and covered over soon after.

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[6] Coast Bridge Company, "Turntable for Corvallis Draw, Sheet 1 of 3"; Coast Bridge Company, "Machinery for Corvallis Draw, Sheet 1 of 1," ODOT archives, microfiche 2728; Coast Bridge Company, "Bridge over Willamette River at Corvallis, Ore., Contract No. 131, Contract dated Jan. 25, 1912" [Stress diagrams included in a Coast Bridge Company portfolio of county bridge contracts in Oregon and Washington from 1910-16.]

[7] Heavy traffic wore out two plank floors during the bridge's first six years of operation. "Laying New Floor," *Daily Gazette-Times*, February 13, 1919. Asphalt paving installed atop new planks in 1919 slowed deterioration and reduced splinters but the deck still had to be replaced periodically. "Bridge Paved," *Daily Gazette Times*, July 2, 1919; "Willamette River Bridge Redecking Work in Progress: Travel Permitted only Ten Minutes Each Even Hour," *Corvallis Gazette-Times*, March 9, 1933.

[8] "Willamette River Bridge Redecking Work in Progress," *Corvallis Gazette-Times*, March 9, 1933.

[9] Oregon State Highway Commission, "Corvallis Draw Span over Willamette River at Corvallis," January 19, 1940 (4 sheets), ODOT Archives. Everett Corbin, who was working on that job, lost his grip on a plank, fell to the river, and drowned on May 11, 1940. "Corbin Body Not Recovered from River," *Benton County Herald*, May 16, 1940; "Corbin body found in river by local Fisherman, Sunday," *Benton County Herald*, May 23, 1940.

[10] "Corvallis Draw Span Pier Protection," April 9, 1941, microfilm copy, ODOT Archives.

[11] Oregon State Highway Department, Bridge Division, "Corvallis Draw Span, Redecking Details," (7 sheets), June 3, 1957, ODOT Archives.

The pony-truss approach span on the west (Corvallis) side was crushed by a falling tree during the Columbus Day storm in October 1962 and was replaced by a multi-beam deck span supported by a steel framework that incorporates some original members.[12] In 1963 several bents at the eastern end of the east approach trestle were replaced by an earthen embankment supported by a timber bulkhead, reducing the approach to nine spans. The approach grade was elevated and the deck from bents 6 through 9 were raised the following year.[13] Two-way traffic on the Van Buren Bridge ceased in 1964 when the two-lane Harrison Street Bridge, one block north, started carrying westbound traffic into Corvallis. The Van Buren Bridge was reduced to one-way eastbound. Several panels of the sway bracing between trusses were damaged by an over-height log truck in 1974. They were subsequently modified in 1979 with welded "W" and lattice panels replacing the original riveted ones, possibly to increase overhead clearance over the roadway.[14] Tightline staging with rolling platforms were installed below the main truss sections in 1998 to facilitate inspections and maintenance.[15] The bridge was painted and lateral bracing under the former swing span received additional reinforcing gusset plates in 2006.[16] Contractor Hamilton Construction Company started dismantling the Van Buren Bridge in November 2023 and began the multiyear process of erecting a new multimodal fixed span on a similar alignment.

B. Historical Context

Kalapuya people lived in the Willamette Valley before European contact. There may have been 15,000 people during the late 1700s but malaria, smallpox, and other diseases carried by traders, missionaries, explorers, and early settlers decimated the native population. By the mid-nineteenth century there were fewer than 600 individuals throughout the valley. Euro-Americans began settling the area that would become Corvallis in 1846, establishing claims on the west bank of the Willamette River downstream (north) of the mouth of Marys River in an area that had been home to the Chepenefa band of Kalapuva speaking people.[17] The site was about ninety miles upstream of Portland and 132 miles above its confluence with the Columbia below Portland. Joseph C. Avery surveyed and platted a townsite called Marysville and established a store there

[12] "Bridge Repairs Tie Up Traffic," *Corvallis Gazette-Times*, January 3, 1963; "Will. River Bridge @ Corvallis, BR NO 2728," October 13, 1962, BCHS 2017-001.0023.01-02.
[13] Oregon State Highway Department, Bridge Division, "Corvallis Draw Span Remodeling, Bent 12 Bulkhead Details," October 31, 1963, ODOT Archives.
[14] "Van Buren Bridge damaged, closed," *Corvallis Gazette Times*, September 24, 1974, 1; "Trucker Heard 'Bump'," September 25, 1974, 2; "Finishing Touches," October 3, 1974, 1; Oregon Department of Transportation, Structural Design Section, "Van Buren St Bridge, Swing Span Bracing Revisions, November 1979; "Grade Revision, East Approach, Van Buren Street Bridge," September 9, 1964, ODOT Archives.
[15] Oregon Department of Transportation, Bridge Engineering Section, "Willamette River (Van Buren Blvd.) Bridge, Tightline Staging," Drawing Nos. 56025, 56026, 56027, January 16, 1998, ODOT Archives.
[16] Oregon Department of Transportation, Bridge Engineering, "OR34: Willamette River (Van Buren Ave) Bridge Painting & Floor Lateral System Bracing," (36 sheets), August 26, 2006, ODOT Archives.
[17]Judy Rycraft Juntunen, May D. Dasch, and Ann Bennett Rogers, *The World of the Kalapuya: A Native People of Western Oregon* (Philomath, OR: Benton County Historical Society and Museum, 2005), 13; William G. Loy, Stuart Allan, Aileen R. Buckley, James E. Meacham, *Atlas of Oregon*, 2nd ed. (Eugene: University of Oregon Press, 2001).

in 1849. Two years later, Avery and William F. Dixon, his neighbor to the north, each donated back-to-back, forty-acre parcels to establish the county seat of Benton County.[18] The new settlement's street plan featured numbered streets running roughly north-south, parallel to and counting westward from the Willamette River. East-west avenues and boulevards were named for American presidents in sequence, starting with Washington at the south end of town. Marysville was renamed Corvallis—Latin for "heart of the valley"—in December 1853 and incorporated as a city on January 29, 1857.[19]

The Oregon Provisional Legislature established Benton County on December 23, 1847, named for Missouri Senator Thomas Hart Benton, a proponent of Manifest Destiny and U.S. control of the Oregon Territory. Initially, Benton County was far larger than it is today, with boundaries extending from the Willamette River west to the Pacific Ocean and from Polk County south to the California border.[20] Southern and western portions of that vast area were divided into seven other counties starting in 1852, and Benton County assumed its present 679 square mile area with Corvallis as its county seat.

Corvallis Academy, the ancestor of today's Oregon State University (OSU), was established in 1856. It was renamed Corvallis College in 1858 and started granting bachelor's degrees in 1865. The school started offering agricultural courses in 1873 and was called the Oregon Agricultural College (OAC) after the state took control during the 1880s.

Pioneer settler William F. Dixon initiated ferry service across the Willamette in 1848 and the first steamboat, the *Canemah*, docked in 1852 with regular service by several boats following soon after.[21] Riverboat traffic increased after the Army Corps of Engineers completed locks and a canal around Willamette Falls, opening an all-water route to Portland where lumber and agricultural products could be transshipped to ocean going vessels for distribution throughout the Pacific. A branch of Henry Villard's Oregon Railway & Navigation Company connected Corvallis and Portland by rail with a line along the west side of the river in 1880.

Corvallis experienced a boom during the late 1880s and early '90s with construction of a new county courthouse, a privately owned electric light plant, a street railway, and a new flour mill on the riverbank. The city constructed a waterworks, laid sewers, and made a bid to take over the electric light plant as a public enterprise.[22] Proposals to replace the toll ferry with a bridge across the Willamette rose during this heady period of civic betterment. In October 1888 the *Corvallis*

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[18] David D. Fagan, *History of Benton County, Oregon: Including its Geology, Topography, Soil and Productions, ...* (Portland: A.G. Walling, Printer, 1885), 421, 423.
[19] Ibid., 426. Corvallis continued the practice of naming avenues for presidents up until Cleveland Avenue at the north end of town.
[20] Hubert Howe Bancroft, *History of Oregon, Vol. II, 1848-1888* (San Francisco: The History Company, 1888), 706-07.
[21] Fagan, 424.
[22] Bruce Martin, "Bushrod Washington Wilson," *Oregon Historical Quarterly* 39, no. 3 (Sept. 1938): 283-284.

Gazette noted: "Oregon City's new free suspension bridge across the Willamette is fast being completed. Where, oh where, is the bridge at Corvallis?" [23] In December 1889 the paper reported that: "A bridge over the Willamette, a water-ditch to furnish water for power purposes, a railroad connection with the east side S.P. line south, and a railway from Brownsville, Linn County, are much talked of movements in Corvallis just now." The editor asked local business leaders to identify their priorities for projects to be supported by local fund-raising efforts. The published responses were split between a power canal and a bridge, with several writers asking for both.[24]

The matter arose again in April 1891 when it became clear that the citizens of Albany, the seat of Linn County located about twelve miles downstream (north) of Corvallis, had committed to build a bridge over the Willamette. The Willamette River forms the border between Benton and Linn counties. The question was: should Benton County subsidize construction of a bridge at Albany if Linn County agreed to help pay for a bridge at Corvallis? The editor of the *Corvallis Gazette* and the business leaders that he canvassed agreed that there would be no savings to either county in that arrangement and no guarantee that Linn County would be able to pay their share toward a Corvallis bridge at some point in the future. He used the prospect of an Albany bridge to spur Corvallis residents into action: "this community only needs a thorough canvass and a properly organized effort, to secure the construction of a bridge over the Willamette here. The citizens are in the humor for this." He concluded:

> As in Portland, Salem, and Albany, Corvallis also has its principal business street adjacent to and parallel with the Willamette River. The opposite bank may never assume the relative importance of East Portland, but it is certain that a bridge would widely extend the influence of this business street and the city. Let the community then, arouse itself and by concentrated action bring about this desirable result. Corvallis needs no outside aid to make improvements tending to her own aggrandizement. She rises superior to the conditions surrounding her and her prosperity is the sure index of her future greatness.[25]

Ultimately, neither Linn nor Benton counties contributed much funding to the Albany bridge, so the city sold bonds to build it on its own. King Iron Bridge Company of Cleveland, Ohio, fabricated the 400'-long steel cantilever bridge, claiming that it was one of the longest cantilever spans in the country when it was completed in 1892.[26] The Willamette River Steel Bridge in Albany opened with much fanfare, but the panic of 1893 soon brought municipal infrastructure projects to an abrupt halt. Corvallis found itself with a bonded debt of $150,000 for the

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[23] *Corvallis Gazette*, October 19, 1888.
[24] "Bridge or Water-Ditch: Which Will Be the Most Beneficial to Corvallis?" *Corvallis Gazette*, December 20 and 25, 1889.
[25] "The Bridge Question," *Corvallis Gazette*, April 3, 1891, 2.
[26] Allan King Sloan, "The Six Great King Bridges," May 2004, https://www.kingbridgecompany.com/great-king-bridges/, accessed April 15, 2024.

waterworks and sewer projects and bonds for the bridge at Albany drove that city to the brink of default.[27] In 1901 Albany imposed a toll of 15¢ per two-horse team. New revenues paid for maintenance and helped retire a portion of the debt. The toll was widely resented by residents, even though it was less that the 25¢ per team charged by the ferry before the bridge opened in 1892.[28] Within a month, there was a petition for Benton County to take over operations of the Corvallis ferry and make it free although the move was opposed by residents in outlying parts of the county who saw no reason to subsidize a ferry that they would never use.[29]

The Corvallis ferry was made toll free but residents on both sides of the river complained about crowding and long waits to cross. In September 1902 the ferry made 2,150 trips across the river carrying 4,753 vehicles and their teams and 6,759 people on those vehicles, plus an additional 4,136 pedestrians and cyclists. Total numbers were comparable in October, but with fewer pedestrians, probably because "Hop picking greatly augmented the travel by footmen during two weeks of September."[30] By September 1909 the *Daily Gazette-Times* featured articles like: "Demand Bridge Across River, Everybody Crossing River is Kicking Because of Ferry: Long Delays at Ferry Cause Corvallis to Lose Much Trade and Makes Development Across River Improbable – Bridge Could be Made Profitable," excerpted below:

> The demand for a bridge across the Willamette, to replace the ferry service. is becoming so insistent that it seems the County Court can hardly refuse to take preliminary action very soon. The people of Linn County who make Corvallis their market are kicking, the Benton County people who must cross the river here find serious objection to the continuous delay occasioned by the ferry service, the merchants of this city, who find it well-nigh impossible to get their rightful share of the Linn county trade, are insistent on a bridge, and so far as is known there isn't a single man familiar with the situation but is in favor of a bridge across the river here.
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> "Benton County loses thousands of dollars every year because it has no bridge here," is the statement made by different men who claim to know. They claim that many Linn county people will not come here to trade simply because they must wait at the ferry, and that they do have to wait is made clear to every observer who stand the ferry and length of time. A half dozen vehicles on each side of the river were held up a half hour

[27] Martin, "Bushrod Washington Wilson," 283-84; "Is an Elephant: Albany Bridge and the Source of Expense it has Constantly Been. Has Swallowed up Albany's Revenues and Plunged City Into Deep Debt," *Corvallis Times*, January 14, 1901, 4.
[28] Ibid.
[29] "Still Under Advisement," *Corvallis Times*, XIII:52, February 13, 1901, 2; *Corvallis Gazette*, XXXVIII:8, February 15, 1901, 2; "Those Objections Considered," *Corvallis Gazette*, II:4, May 21, 1901, 2.
[30] "What the Figures Are: Many People Cross the Corvallis Ferry – Ferryman's Record," *Corvallis Times*, November 8, 1902. Statistics were collected Monday through Saturday. 2,150 trips in September would average more than eighty-two trips per day and more than six per hour, based on a 12-hour workday.

> yesterday simply because the ferry could not handle the traffic, and it is reported that this condition in a more or less aggravated form exists at all times. .
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> That a ferry service in this age is really out-of-date can not be questioned, but it sometimes happens that a county hasn't the money to build all the bridges it wants. The argument here is that Benton County can get the money to build this bridge and cannot afford to neglect it longer. It is certain that more than a few feel that the bridge is a necessity, and they propose to make things uncomfortable for county official until favorable action is taken.[31]

The paper continued to report on long delays and travelers turning back to avoid waiting, noting that it represented business lost by Benton County and Corvallis.[32]

On October 11, 1909, the County Court adopted a resolution to apply to the War Department for a permit to build a bridge across the Willamette at Corvallis.

> In line with the Court's disposition, one Sears, a Seattle engineer and bridge builder, will be in Corvallis Thursday to join Surveyor F.M. Wilkes in completing a survey of the Willamette here. Yesterday Surveyor Porter, of Albany, with Mr. Wilkes and Commissioner Smith, ran some lines and discovered that a bridge at the ferry would have to be 627 feet long, with a 300 foot approach. . . Old river men agree that the best and safest place for the bridge is just a few feet above the present ferry course, where there is an excellent bottom to the river and a straight current.
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> Surveys and soundings for the War Department require the depth of water each ten feet for one mile above the proposed site of the bridge and a half mile below.[33]

On October 18, 1909, the three commissioners of the Benton County Court signed an agreement with George A. Sears, consulting Engineer of Seattle, Washington. For the sum of $250 Sears agreed to:

> . . . assist in the survey of the site for the proposed bridge across the Willamette River at Corvallis, see that necessary papers are prepared for the United States Engineer's Office at Portland, follow same through and see that the necessary permit it granted for the proposed bridge; also to prepare plans and specifications for the proposed bridge with the capacity for a ~~twenty-five~~ *forty* ton electric car. Said bridge to have a clear roadway of

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[31] "Demand Bridge Across River, Everybody Crossing River is Kicking Because of Ferry," *Daily Gazette-Times*, September 16, 1909. Note: County names were generally not capitalized in the *Gazette-Times*; hence Linn county and Benton county.
[32] *Daily Gazette-Times*, September 18, 1909, 3; September 27, 1909, 3; October 11, 1909,3.
[33] "County Court Favors a Bridge," *Daily Gazette-Times*, 1:139, October 12, 1909, 1. "Surveyor Porter, of Albany" was probably Andrew Lee Porter.

> ~~eighteen~~ *twenty* feet and two ~~six~~ *five*-foot walks on the outside of the trusses, length to be governed and controlled by the report of the United States War Department.[34]

In addition to handwritten insertions increasing the bridge's weight bearing capacity and roadway width while decreasing the width of sidewalks, Sears wrote in the margin: "In the event of an award of the steel for the proposed bridge noted above, to my company, no charge will be made for plans and work as above noted."[35]

With electric interurban rail lines sprouting throughout Oregon, the *Corvallis Gazette* noted that "it would cost but $1000 more to equip the proposed bridge across the Willamette for electric car service" and suggested that an interurban company might help defray the cost of construction.[36]

By December the paper reported:

> The ferry is doing land-office business these days everybody across the river wants to get here. W. L. Walker, in town this morning, intimated that about one more failure of the ferry would induce all the east-siders to go to Albany to trade, and if it is necessary to wait two years for that bridge all the people will have left his section. As one watches the waiting of the teamsters, the slow-going ferry, and the difficulty in getting on an off the old scow he is easily convinced that that there should be an early change.[37]

Pressure to build a bridge grew on both sides of the Willamette. In 1911 the paper reported:

> Linn County Wants That Bridge Built. When will Benton county put in a bridge at Corvallis? . . . for twenty or more teams to wait their turn at a ferry that cannot take more than four loaded teams, means a wait of from thirty minutes to an hour, any amount of profane thoughts and not a few profane utterances. Since the free ferry was established trade has increased and population has increased, and the ferry is too slow a mode of travel, which has been laid aside for thirty years in prosperous cities.[38]

Residents of other parts of Benton County were not as supportive of the project as Corvallis citizens, their neighbors across the river, or the editor of the *Gazette-Times*. Letters expressing skepticism or outright opposition started to arrive shortly after the County Court announced its

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[34] "Agreement between Sears and County of Benton." Some typewritten specifications were crossed-out and replaced by handwritten insertions, shown in italics above.
[35] Ibid.
[36] "Inducements for Electric," *Daily Gazette-Times*, October 25, 1909, 1, 3. Although steelwork of the Van Buren bridge was designed to carry the extra load, tracks were never added. The Oregon Electric Railway constructed a spur from its mainline along the east side of the Willamette Valley to a station at the east (Linn County) end of Van Buren bridge in 1913. Its competitor, the Southern Pacific Red Electric Lines opened an electric interurban from Portland to Corvallis along the west side of the Willamette in 1917. Richard Thompson, *Willamette Valley Railways* (Mount Pleasant, SC: Arcadia Publishing, 2008), 58-77.
[37] "The City and Vicinity," *Daily Gazette-Times*, December 1, 1909, 3.
[38] "Linn County Wants That Bridge Built," *Weekly Gazette Times*, March 17, 1911, 6.

plans to proceed with a survey and hire an engineer to draw plans and submit a permit application to the War Department. The argument was: if Corvallis wants a bridge, let them pay for it, rather than taxpayers throughout the county, many of whom would not use or garner any benefit.[39] Petitions circulated supporting or opposing bridge construction. By September 1911, with more than 800 signatures supporting construction in-hand, the County Court appointed three citizens as "viewers" to examine the proposed bridge site at the foot of Van Buren Street and submit a recommendation and cost estimate. They concluded that the site "is the most advantageous place for the erection and construction of the proposed Bridge within the County of Benton" and estimated that it would cost $60,000. Based on the viewers approval of plans and site recommendation, members of the Benton County Court travelled to Albany to secure formal approval from Linn County to land the bridge on the east bank of the river.[40]

On January 25, 1912, the Benton County Court contracted with the Coast Bridge Company of Portland to furnish the bridge's steelwork for $34,200 delivered to Corvallis by September 1. Andrew Lee Porter was appointed superintendent to represent Benton County during construction. Coast Bridge Company was required to file a $34,200 completion bond with the county within ten days of the award.[41]

John Porter (J.P.) Whitlock (1873-1919) founded Coast Bridge Company in Portland in 1910. Born in Illinois, he worked as a bridge construction foreman in the Midwest before establishing an office in Denver in 1896. He later moved to Seattle before establishing Coast Bridge Company in Portland where he served as president and general manager. The firm leased offices in Suite 407 of the newly completed Railway Exchange Building at the corner of SW Stark Street (now Harvey Milk Street) and SW 3rd Avenue in downtown Portland. George A. Sears joined the company as vice president.[42]

The company received over 300 contracts to supply or erect bridges in Oregon and Washington between October 7, 1910, and November 1916. Most were fabricated by Northwest Steel Company of Portland although some early jobs went to Bellefontaine Bridge & Steel Company of Bellefontaine, OH, and Milwaukee Bridge Company. The multispan swing bridge over the Willamette at Corvallis was contract no. 131 with steel fabrication for the fixed spans

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[39] "Wants City to Build Bridge: County Farmer Would Help but Says Corvallis Should Take Lead," *Daily Gazette-Times*, 1:193, December 15, 1909, 1.
[40] Court order appointing Marion Hayden, George Lindeman and L.N. Edwards as viewers to report on bridge site, September 6, 1911, BCHS 2006-113.0258; "May Get Bridge," *Daily Gazette-Times*, September 6, 1911, 1; "Bridge to Cost But $60,000: Viewers Approve the Site and Court Visits Linn Today," *Daily Gazette-Times*, September 7, 1911.
[41] Proceedings and Costs, 1953; "The Corvallis Bridge," *Albany Weekly Democrat*, XLVII:27, February 2, 1912, 1.
[42] Charles Henry Carey, "John Porter Whitlock," in *History of Oregon,* vol. 2 (Chicago: The Pioneer Historical Publishing Co., 1922), 604-607; Coast Bridge Company letterhead, C.W. Raynor to Victor P. Moses, April 7, 1913, Victor P. Moses papers, BCHS, 1994-038-322, folder 048; John M. Tess, "Railway Exchange Building and Huber's Restaurant," National Register of Historic Places Inventory Nomination Form (Washington, DC: National Park Service, U.S. Department of the Interior, 1979).

subcontracted to Northwest Steel Company and the trusses and machinery for the swing span subcontracted to Milwaukee Bridge Company.[43]

While George A. Sears developed a schematic layout for the bridge in 1909, the person(s) responsible for the final design have not been determined. Soon after the contract was awarded the *Gazette-Times* reported:

> The plans of the bridge were drawn by a competent engineer of Portland and later passed upon by three other engineers, two of them being connected with railroads, and is reported by all to be of sufficient capacity for inter-urban passenger and express traffic.[44]

Specifications submitted by Coast Bridge stated that:

> The Draw Span machinery shall be designed to be operated by one man. . . working a hand wheel, keyed to the operating shaft. The ends of the draw span shall be interchangeable and the time allowed for opening Draw shall not be more than 180 seconds.
>
> The Contractor shall also submit for approval the methods he proposes to use in locking and unlocking the ends of the Draw Span to the Rest Piers by means of levers and cables from the center panel of said span.[45]

Several features would soon become obsolete. The Parker through truss utilized eyebar tension members, connected to other elements by pins with keeper nuts on the ends. The use of eyebars facilitated field erection, where comparatively small shop-fabricated sections could be hoisted into position using human muscle, blocks and tackles, screw jacks, and levers, then joined by pins. However, that fastening method was falling out of favor as engineers promoted the rigidity of all-riveted connections over the field assembly ease of pinned connections. The specifications stated that: "Wherever possible, all rivets must be machine driven. Field riveting must be reduced to a minimum or entirely avoided where possible."[46]

Rim-bearing swing spans were also falling from favor as new bearing materials allowed for the fabrication of center bearings that could support large bridges. In his 1898 book *De Pontibus: A Pocket-book for Engineers,* J.A.L. Waddell, a noted engineer who specialized in movable bridges, stated a strong preference for rim-bearing swing mechanisms, like the one installed at Corvallis in 1913.[47] By the 1920s other authors favored center-bearing swing spans where

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[43] Coast Bridge Company, Untitled portfolio of county bridge contracts in Oregon and Washington from 1910-16, n.d. [1916], pp. 1-12, 50, ODOT Archives.
[44] "Bridge to be Built at Once: County Court will begin structure over Willamette at Corvallis," *Daily Gazette-Times*, January 26, 1912, 1.
[45] Coast Bridge Specifications, 8.
[46] Ibid., 4.
[47] J.A.L. Waddell, *De Pontibus: A Pocket-book for Engineers* (New York: John Wiley & Sons, 1898), 123.

wheels around the perimeter served to keep the movable section from tipping or pitching under wind load rather carrying weight.[48]

Soon after the contract was awarded, attorneys representing about fifty taxpayers in the northern part of Benton County sued to stop construction and threatened a recall election to replace the county commissioners.[49] The suit was dropped two months later after a group of Corvallis residents agreed to raise an additional $5,000 toward the cost of construction: "the business men of the city agreeing with the enjoiners that because Corvallis receives the most direct benefit It should contribute most toward the cost of the bridge. The steel for one span is here and the remainder will be shipped at once."[50]

On June 25, 1912, Benton County awarded a $26,661.50 contract to Beebe and Stevenson of Salem, Oregon, to construct the concrete abutments and piers, erect the tubular steel piers, drive piles, and build the timber draw rest to protect the swing span. The contract covered all work on the bridge except erecting and painting the steelwork, laying the deck, and constructing the approach trestle on the Linn County end. The work was to be completed by October 1, 1912.[51]

Although several carloads of construction equipment were delayed in transit, Beebe and Stevenson's crews were hard at work during the low water period of early July, sinking cofferdams so that the areas around the piers could be pumped dry. Construction activities disrupted ferry service, requiring an old ferry site further upstream to be reactivated.[52]

By August the *Albany Weekly Democrat* reported:

> The new bridge at Corvallis will soon be an assured fact. The work is progressing slowly but if the weather is favorable, it will be ready for use by January first. The old ferry is

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[48] Charles A. Ellis, "Swing Bridges," in George A Hool and W.S. Kinne, eds. *Movable and Long-Span Steel Bridges* (New York: McGraw Hill, 1923), 180-82, 196-97; Otis Ellis Hovey, *Movable Bridges,* Vol. 1 (New York: John Wiley & Sons, 1926), 36-39.

[49] "Fighting the Corvallis Bridge," *Albany Weekly Democrat*, XLVII:31, March 1, 1912, 6; "Objectors to a Bridge Here File Petition asking for an Injunction," *Weekly Gazette-Times*, March 29, 1912, 6.

[50] "Corvallis Raises Money Demanded by North Benton for Recalling Suit," *Daily Gazette-Times*, May 11, 1912; "Corvallis Builds Bridge: Town and County Agree So Work on Structure Will Go Forward," *The Sunday Oregonian* (Portland), XXXI:19, May 12, 1912, 1. Corvallis citizens later voted to raise half of the pledged amount through a bond issue. The municipal bond referendum on November 22, 1912, may have been the first instance when Oregon women had the right to vote after statewide suffrage passed in the November 5, 1912, election. "Corvallis Is Asked to Vote $2500 Bridge Bonds at Tomorrow's Election," *Weekly Gazette-Times*, November 21, 1912, 1-2, "City Votes in Favor of Bonds," *Weekly Gazette Times*, November 29, 1912, 7, as cited in H. Butler and C. Ruiz, "Van Buren Bridge (ODOT Bridge No. 02728), Section 106: Bridge Determination of Eligibility Form" (Eugene: University of Oregon Museum of Natural and Cultural History/Oregon State Museum of Anthropology), February 19, 2020, 7-8.

[51] "Advertisement for Bids," *Weekly Gazette-Times*, June 7, 1912, 8; Beebe & Stevenson bidding form, BCHS 2006-113.0261; "Contract for Bridge Now Let," *Daily Gazette-Times*, June 25, 1913, 1.

[52] "Work on Big Bridge is Begun: Beebe & Stevenson to Push Construction of Piers with All Speed," *Daily Gazette-Times*, July 10, 1912, 1.

> crowded day and night and during the day the business men are lined up watching the progress.[53]

The *Benton County Republican* was less sanguine:

> Work on the Willamette bridge is going forward in a leisurely manner not calculated to inspire confidence in promise that the structure will be out of the way of the boats when navigation again opens in the fall. The falsework and piles of gravel raised in the stream disturbs the current and has made operation of the ferry at its present location difficult and a real problem.
>
> Hard pan foundation was struck near the surface for the east shore pier; but soundings for the next pier indicate that the gravel in the river bed is very deep. A pile was driven 18 feet into the gravel and is still settling. It is thought that hard pan cannot be reached at this point and that the pier will have to stand on sunken piles.[54]

Despite an accident when a bridge worker was struck by swinging timber and broke his leg, and delays caused by an unanticipated number of logs buried in the riverbed at the site of the eastern pier, things were looking good by the third week of September. Falsework stretched across the river, cofferdams were installed and pumped dry, the west pier was in place, and the central pier that would support the swing span was nearly finished.[55]

On October 2, 1912, the Benton County Commissioners accepted a $5,000 proposal by Coast Bridge Company to erect and paint all steelwork, lay the timber floor, and build the 226'-long wood approach trestle on the Linn County end with lumber provided by Benton County and delivered to the site. The proposal was signed by George A. Sears, who now listed himself as vice president of the company, based in Portland.[56]

By October 18 an Albany paper reported that:

> Piers for New Structure Are Completed and Laying of Steel Will Begin This Week.
>
> Workmen are removing the upper platform of the false work of the big bridge, used as a track for the cars carrying cement, as the piers have been completed except the one on the east bank, and the steel men are ready to proceed.

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[53] *Albany Weekly Democrat*, XLVIII:2, August 9, 1912, 3.
[54] "Progress Slow on New Bridge," *Benton County Republican*, August 15, 1912.
[55] "First Accident to Bridge Building Crew Occurs This Morning," *Benton County Republican*, September 5, 1912; "Bridge Progressing Rapidly," *Benton County Republican*, September 5, 1912; "November 15th Will See Completion of the Bridge Across Willamette River: Contractors to Finish Second Pier This Week, Buried Drift Logs Interfere with Work," *Benton County Republican*, September 19, 1912.
[56] Coast Bridge Company, "Proposal," October 2, 1912," BCHS 2006-113.0261; The contract to supply steel was #131; the erecting contract was #178, "Coast Bridge Company," 2, 5, ODOT Archives.

> The laying of the steel will begin on the Corvallis side of the river and this work is expected to be carried forward speedily. The falsework has been braced and strengthened and cleared of everything not essential to the steel crew.
>
> The pile driver is engaged in driving piling about the bridge for the upper draw rest and with this completed and the lower rest built, nothing remains but the putting together of the steel superstructure.[57]

Three days later the *Daily Gazette-Times* reported that steel was: "being put into place very rapidly" and that work was nearly completed as far as the first concrete pier in the river. "A track has been built on the bridge and the heavy steel is wheeled into place and with machinery is quickly lifted and put together."[58]

Steelwork for the western pony truss and the large, fixed Parker truss was completed by late October and the city of Corvallis had built a temporary wooden approach ramp to bring Van Buren Ave. up to the level of the bridge deck.[59]

J.A.L. Waddell's 1884 book, *The Designing of Ordinary Iron Highway Bridges*, described how a fifteen-to-sixteen-man gang would erect a bridge of this scale using hand tools including: blocks and tackles, screw jacks, wedges, beam carts, drift pins, wrenches of varying sizes including large wrenches for pins, riveting hammers, and a portable rivet forge.[60]

Newspapers predicted speedy completion, but those hopes were dashed when delivery of steel for the swing span from Milwaukee was delayed by more than a month. Bridge crews occupied their time laying the timber floors on completed truss sections and building the Linn County approach trestle. Pedestrians could be carried across the river in rowboats, but the vehicle ferry had been permanently suspended.[61]

As delays stretched into the third week of December, John Porter (J.P.) Whitlock, President of Coast Bridge Company, traveled to Corvallis "to see if something cannot be done to hasten the completion of the bridge." The *Benton County Republican* added:

> Two cars, containing the remaining of steel for the draw span, have been unaccountably delayed on the road, but they reached Portland yesterday and will probably arrive here this afternoon. The material will all be moved to the draw pier upon its arrival and built

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[57] "Work Progressing on Big Corvallis Bridge," *Albany Weekly Democrat*, XLVIII:12, October 18, 1912, 5.
[58] "Pushing the New Bridge," *Daily Gazette-Times*, October 21, 1912. 1.
[59] "Two Spans Bridge Are Completed," *Benton County Republican*, October 24, 1912; "Local Notes," *Daily Gazette-Times*, October 31, 1912, 3.
[60] J.A.L. Waddell, "Erection and Maintenance," chap. XX in *The Designing of Ordinary Iron Highway Bridges* (New York: John Wiley & Sons, 1884), 196-211.
[61] "Delay of the Draw Material," *Benton County Republican*, October 31, 1912; "Bridge Material Is Here at Last," *Benton County Republican*, December 5, 1912.

> up there. When the draw span is bolted together it will be swung into place and the work will be finished.
>
> The workmen will be handicapped by piling of so much material on the pier, making it necessary to re-handle most of the parts many times; but a rise of a few feet in the river will doubtless take out the piling of the false work that now connects the West pier and the draw pier, making it impossible to get steel over when needed.[62]

Winter rain slowed progress. On January 2, 1913, the *Benton County Republican* reported:

> About fifteen minutes after nine last night the piling connecting the bridge span and the draw was speedily removed from existence by his highness the Willamette. It is not believed that this will hinder the bridge builders to any extent except to make access to the draw a little more difficult. Owing to the recent rains the bridge work has been suspended for a time. If all goes nicely, we should have a bridge in a few weeks.[63]

Two weeks later the paper continued:

> The draw span of the steel bridge across the Willamette will probably be completed next week, the contractors are expecting to swing it into place next Friday. The flooring on this span will then be laid and with the completion of the East side approach the ferry can be laid away.
>
> The piling for the approach on the Linn County side is in and it will not take long to complete the approach. The work would have been done before now if the company had been able to secure delivery of the bents. The walk for foot passengers will be the last portion of the bridge to be built, but this work can be carried on while the roadway is in use by the public.
>
> The draw is to be swung by hand power and it is estimated that after it is in good working order one man can open and close the draw in 3 minutes. At first, with the parts not worn smooth and not thoroughly oiled, the draw will not operate easily. Because the draw will be used with comparative infrequency the installation of power machinery for moving the draw would not be economical.[64]

The un-decked swing span was swung closed for the first time on January 30, 1913, with officials on hand to cheer the event. Work remained. The deck was higher than originally planned, necessitating additional fill for the approaches at both ends. “The bridge men insisted on the five feet of clearance above the highest stages of the river ever known as a necessary

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[62] “To Hasten Work on the Bridge,” *Benton County Republican*, December 19, 1912.
[63] “Local Happenings,” *Benton County Republican*, January 2, 1913.
[64] “The Draw to Swing Next Week,” *Benton County Republican*, January 16, 1913.

margin of safety to prevent possible damage to the superstructure by projecting flood drift."[65] A week later the paper reported that people were walking across the bridge on the exposed stringers. Planking was still missing from the swing span due to production and delivery delays from the sawmill.[66]

The Van Buren Bridge opened to wagon traffic on February 12, 1913:

> There was ardent rivalry yesterday among Linn county farmers living across the river from Corvallis as to who would be the first to drive across the new bridge. A large number of teams were lined up at the time the last flooring plank was laid and crossing was permitted. "The first time, the first in right," was the rule adopted and Chas. Beach and Freeman Bevans were the first to drive from the Linn county side to this city over the structure. John Beach, accompanied by Commissioner George Smith, drove the first rig on the west to east trip.
>
> Until the side railing is in place the county court disavows any responsibility for accidents that might occur. Those driving across the bridge do so at their own risk. Notices to this effect have been posted. However, the danger of a team going over the side is very slight and travel over the bridge is already heavy.[67]

Soon after the bridge opened, the Oregon Electric Railway completed a branch line that terminated at a new station at the Linn County end. The old ferry boat was to be moved about 10.5 miles upstream (south) to a crossing at Peoria but a period photograph suggests that it was abandoned a short distance upstream at the mouth of the Marys River.[68]

The city of Corvallis celebrated the grand opening of the Van Buren Bridge with parades, speeches, and the bridge bedecked with American flags on March 10, 1913. "Grandma" Stewart, a 96-year-old Corvallis pioneer, rode in the first auto to cross the bridge. J.P. Whitlock and George A. Sears, president and vice president of Coast Bridge Company, attended the event and reported that the bridge, whose total cost had been about $70,000, could not be duplicated for less than $80,000 to $85,000 at current prices.[69]

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[65] "Draw Span of Bridge is Swung: Mayor Yates Leads in Cheering Over Event," *Benton County Republican*, January 30, 1913.
[66] "Nearing Completion," *Benton County Republican*, February 6, 1913; "Delayed by the Sawmill," *Benton County Republican*, February 6, 1913.
[67] "Anxious to Cross It First," *Benton County Republican*, February 13, 1913.
[68] "Corvallis Bridge is Open," *Morning Oregonian* (Portland), LIII:16,293, February 12, 1913, 7; Photograph, BCHS 2003-101.0028.
[69] "The Bridge is Officially Opened: Covered with Old Glory, and With Sun Shining, Bridge is Officially Opened," *Daily Gazette-Times,* March 11, 1913; "New Bridge is Paid For Already," *Weekly Gazette-Times*, March 14, 1913, 8. Corvallis merchants advertised discounted merchandise to help promote the event. "Bridge Day Celebration, Tuesday, March 11th," *Benton County Republican*, March 6, 1913, 1, 5, 6, 9.

The swing mechanism required some early adjustments. On March 21, 1913, ten days after the official opening, the steamboat *City of Eugene* was delayed going upriver by difficulties opening the swing span. As reported by the *Weekly Gazette-Times*: "One man is supposed to operate the draw, but it was stuck and two men could not budge it. Finally, five men got hold of the lever and the great draw was opened. It is probable that the mechanism needs a little use in order to make it work properly."[70]

In his books on bridges, J.A.L. Waddell anticipated this application of extra muscle and cautioned that the mechanisms for human-powered swing bridges needed to be made extra strong:

> . . . because if there be anything wrong with the apparatus which prevents it from operating properly, the men are liable to crowd upon the levers wherever they can find room, and then surge thereon to their utmost capacity.
>
> As a drawbridge is a piece of machinery, it will require a certain amount of care, for otherwise it will get out of order and give trouble just at the wrong time. It should be opened at least once a month, and all parts which move on other parts, especially the wheels and tracks, should be kept clean and well lubricated. The lower rolling surface for the wheels should be kept free from all obstructions, and the wheels should be maintained in proper adjustment by means of the spider-rods. The operating machinery also should receive due care and attention.[71]

Other times the bridge opened too easily. It blew open in high winds on January 25, 1914, stranding George Way, a Japanese student in the middle of the swing span.

> He hailed help, which came to him after he had been on the draw long enough for his clothing to become drenched by the rain. Three men in a launch propelled to the turning pier, climbed to the bridge, and cranked the bridge, which is hand turned, back to its position.[72]

This was the second time the bridge had blown open and the county commissioners promised to take measures to keep it from happening again.[73]

The plank deck wore rapidly. Teamsters were encouraged to drive on the far right and left to reduce wear caused by everyone driving their horses and wagons down the middle. The county nailed a longitudinal plank down the middle to demark the lanes.[74] Two plank floorings were

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[70] *Weekly Gazette-Times*, March 21, 1913.
[71] Waddell, *De Pontibus,* 128-29.
[72] "Bridge Blown Open," *Oregon Daily Journal* (Portland), XII:277, January 26, 1914.
[73] "Marooned on the Bridge Draw," *Daily Gazette-Times*, January 26, 1914.
[74] "Local Items," *Daily Gazette-Times*, March 26, 1913.

replaced before the third was covered with asphalt paving in 1919 in an attempt to extend its life.[75] The bridge was redecked again in 1933.[76] A small fire broke out on the wood deck in 1939 but it was quickly extinguished.[77]

The Oregon State Highway Commission and the State Highway Department that it oversaw were established in August 1913 during the 1911-1915 term of reformist governor Oswald West and not long after Benton County's swing bridge over the Willamette opened. With the motto "Get Oregon out of the mud," the department initially focused on building long-distance roads with the first state highway plan approved in 1914.[78] In 1913 Governor West appointed Henry Lee Bowlby (1879-1948) to lead the department as the state's first highway engineer. Bowlby had received an engineering degree from the University of Nebraska in 1905, after being expelled from West Point in 1901. He taught engineering at the University of Washington in Seattle and served as chief engineer of the Washington State Highway Department from 1907 until 1911 when he was dismissed by a new governor. He worked the next two years in private practice as a consulting highway engineer and as executive officer of the Pacific Highway Association, a group promoting construction of a road that would eventually become US Route 99 by 1927 and superseded by Interstate 5 in certain areas by 1964-68.

Soon after he took charge of the new department, Bowlby hired Charles Henry Purcell (1883-1951) to be the agency's first bridge engineer.[79] Purcell designed and supervised construction of several reinforced concrete bridges along the Columbia River Highway and would later become better known as chief engineer of the San Francisco-Oakland Bay Bridge (1936).

Henry Bowlby and Charles Purcell worked to standardize road and bridge building throughout Oregon. The law that established the Oregon State Highway Commission allowed counties to request plans, specifications, and construction supervision from the state. During its first year the department designed and built thirty-one steel and reinforced concrete bridges. In his first annual report Bowlby noted:

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[75] "People-Events – Laying New Floor," *Daily Gazette Times*, February 13, 1919; "Bridge Paved," *Daily Gazette Times*, July 2, 1919; "Steel Bridge across Willamette at Corvallis has been paved," *Jacksonville Post* (Jacksonville, OR) XIII:12, July 19, 1919, 1.

[76] "Willamette River Bridge Redecking Work in Progress: Travel Permitted only Ten Minutes Each Even Hour," *Corvallis Gazette-Times*, March 9, 1933; "Bridge is Open Every Half Hour: Change Made Yesterday to Allow Traffic Into City for Period of Repairs," *Corvallis Gazette-Times*, March 10, 1933.

[77] "Cigarette Believed to Have Caused Bridge Fire," *Benton County Herald* (Corvallis), August 3, 1939.

[78] *First Annual Report of the Highway Engineer for the Period Ending November 30, 1914* (Salem: State Printing Department, 1914); Gary D. Halvorson, "Oregon Department of Transportation Agency History" (Salem: Oregon State Archives, 2009); *Oregon on the Move: A history of Oregon's transportation systems* (Salem, ODOT History Committee, 2009, 12.

[79] Bowlby and Purcell were both natives of Nebraska who studied engineering at the University of Nebraska. Bowlby graduated in 1905, Purcell in 1906. It is likely that they knew each other before working together in Oregon.

> The design and construction of highway bridges is the most difficult part of road construction that is encountered by County Courts. Bridge engineering is a very much specialized branch of civil engineering. County Courts seldom, if ever, have the advice of a competent bridge engineer to rely upon. This has caused the custom to grow up in the State of relying upon the bridge companies for both the bridge engineering and bridge construction. Bridge companies employ the smoothest talker for their salesman that can be secured. This is part of the selling end of the business and does not differ from the selling end of any other commercial business. The trouble has been that the County Courts "fall for" the talk put up to them by these salesmen.
>
> County Courts have been victims, to a greater or less extent, of extortion on the part of bridge companies with whom they have had to deal.[80]

Bowlby proposed legislation requiring that all bridges costing more than $500 be built under the direct supervision of the Oregon State Highway Department.

> The bridge troubles usually met with by the County Courts can be avoided if they will avail themselves of competent bridge engineers; that is, bridge engineers not connected with the erecting company.
>
> It is very natural that the bridge companies that have profited by the county bridge business as it has been conducted in the past, should object to having this work supervised by the State office. The examples following show that the profit on county bridges has been as high as 150 per cent. A County Court without the services of a competent bridge engineer is helpless in the hands of the average bridge company.[81]

The Willamette River Bridge at Corvallis was the first example of overpayment in a report compiled by Purcell. Benton County paid Coast Bridge Company $31,407 for 185 tons of structural steel (about $170 per ton). Purcell claimed that the price for fabricated steel delivered to Corvallis and ready for erection should only have been about $75 per ton, including engineering costs and a 10% profit to the contractor. By his estimates, Benton County paid more than twice what the steel was worth, delivering a 105% profit to the Coast Bridge Company. The county paid Coast Bridge an additional $4,550 to erect the steel; about $24 per ton when the going rate was $20 per ton.[82] There were other examples from Lane and Yamhill counties, some compared with recent work overseen by the State Highway Commission. Although overcharges used as examples were all by Coast Bridge Company, the report claimed that the firm had not been singled out. "Undoubtedly, if an examination were made in other counties, a similar

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[80] *First Annual Report of the Highway Engineer* (1914), 168. The practice had a long tradition. There is an amusing account of the letting process for county bridge contracts in: Waddell, "Bridge Lettings," chap. XVII in *The Designing of Ordinary Iron Highway Bridges*, 157-61.
[81] *First Annual Report of the Highway Engineer* (1914), 177.
[82] Ibid., 177-78.

condition would be found to exist, except that in some cases the work would have been done by some other bridge company." [83]

A typescript of the report contains comments that were not included in the published document:

> It is interesting to note that the contractors, Messrs. Sears & Whitlock, Vice- President and President of the Coast Bridge Company, donated $2500.00 towards the cost of the bridge, along with the City of Corvallis, and citizens of Linn County, who gave a like amount. These contractors could well afford to donate $2500.00.
>
> Another interesting feature of this bridge is that one of the contractors on the foundation work is Mr. Beebe, President of the Northwest Steel Co., who furnished the steel to the Coast Bridge Company for the work, and received $29489.00 for the foundation work, a high figure. The steel given above was sold without competition, and we have been informed by contractors that they were anxious to figure on this steel but were not given the opportunity. We also understand the price on this steel was represented to be a bargain due to a slump in the steel market, and that by ordering that day the court would save money and give the contractors time to ship steel by water from the East.[84]

Bowlby and Purcell's efforts to limit overcharges raised the ire of county officials and politically connected road and bridge contractors. It may explain why their employment with the Oregon State Highway Commission came to abrupt ends with the arrival of a new governor in 1915.[85]

In January 1938, Judge H.C. Herron, representing the county commissioners of Benton County, asked the Oregon State Highway Commission to take over maintenance of the bridge at Corvallis, noting that one state highway terminated at the east end of the bridge, and another ran within a block of the west end. The Commission took the request under advisement.[86] In June the state engineer reported that it would cost about $16,000 to repair the bridge and improve the alignment in Linn County, or about $10,500 for the bridge work alone, noting that the work

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[83] Ibid., 185

[84] "Report on the Cost of a Bridge at Corvallis Across the Willamette River," 6-7, Oregon State Archives, Salem, OR, Department of Transportation Record Series, Commission Biennial Reports, 1916-1958, folder: "Costs of Steel Highway Bridge Construction by Counties."

[85] "Another on the Firing Line: Yamhill Judge, Like Postmast'r Moses, Touches Up Engineer Bowlby," *Weekly Gazette-Times*, January 22, 1915, 1; "Engineer Purcell is Retained to Manage Bridge Construction," *Oregon Daily Journal*, April 22, 1915, 18; Michael C. Taylor, *Road of Difficulties: Building the Lower Columbia River Highway* (Wallowa, OR: Bear Creek Press, 2008), 41-42. Bowlby joined the American Road Builders Association Board of Governors in 1916 and became senior highway engineer with the U.S. Department of Agriculture in 1917. After service as a bridge engineer with the Army during WW I and the U.S. Bureau of Public Roads in the postwar years, he became Chief Engineer with the Long Island and Taconic Parkway commissions under Robert Moses in 1923. Purcell completed bridges on the Columbia River Highway under Multnomah County before moving on to became District Engineer with the U.S. Bureau of Public Roads. He was appointed California State Highway Engineer in 1928 and rose to become Director of Public Works in 1942 before retiring in 1951. He designed the San Francisco-Oakland Bay Bridge in 1936 and supervised the early development of California's freeway system.

[86] "Minutes of the State Highway Commission," January 7, 1938, Box 3, Volume 22, Part 3, 7860-7861.

could be deferred because there was several year's life left in the bridge deck. The Commission favored assuming responsibility for the bridge but deferred action due to lack of funds.[87] On November 18, 1938, the Commission voted to add 950' of Van Buren Street to the state highway system as an extension of the Albany-Corvallis Highway 210 and authorized the state engineer to make repairs to the bridge.[88]

One year after control of the bridge passed from Benton County to the Oregon State Highway Commission (now the Oregon Department of Transportation or ODOT), the Army Corps of Engineers notified the state that the swing span had not opened for many years and requested that it be operated to ensure that vessels could pass during high water.[89] Within three weeks the state's bridge testing engineer reported that the span had swung a full 90 degrees and back again, taking 7-½ minutes to open and five minutes to close. His crew had tried a week earlier but found that wood stringers and deck planks at the ends of the swing span had not been cut to the proper radius, causing the ends to bind and shear some rivets. The ends had also sagged, causing the rollers to bind on their shoes atop the abutments.[90]

In June 1952, the *Corvallis Gazette-Times* featured a large photo of the bridge partially open to allow the Army Corps of Engineers snag boat *Monticello* to pass upstream. The caption stated that despite annual "practice swings" it took four men about an hour to open and close the swing span. The paper also noted that no boat tall enough to require bridge openings had passed Corvallis since 1927.[91]

The bond raised by Corvallis business leaders to pay for a larger share of bridge construction costs and settle the 1913 suit by residents in the northern part of the county was finally paid off in 1953.[92]

The swing span opened for the last time on October 5, 1960, to allow a dredge that had been working at the Corvallis Sand and Gravel Company to pass downstream. Spectators lined up to watch the event. Although the original 1912 Coast Bridge Company specifications stated that

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[87] "Minutes of the State Highway Commission," June 14, 1938, Box 3, Volume 23, Part 1, 8188-8189.
[88] "Minutes of the State Highway Commission," November 18, 1938, Box 3, Volume 23, Part 2, 8526-8527.
[89] B.B. Talley, Captain Corps of Engineers, Office of the District Engineer, Portland, to C.S. Paxton, Oregon State Highway Commission, Salem, December 9, 1939, ODOT Archives.
[90] E.G. Ricketts, Bridge Testing Engineer to C.S. Paxton, Bridge Engineer Office, December 29, 1939, ODOT Archives. The letter referenced "Special Regulations for the Operations of Drawbridges Across the Willamette River at Albany, Corvallis and Harrisburg, Oregon, approved February 7, 1937."
[91] "Van Buren Bridge opens for Boat First Time in 25 Years," *Corvallis Gazette Times,* June 11, 1952.
[92] "At Long Last It's Now Paid For: Final Bond on Bridge is Retired 40 Years After Structure Opened," *Corvallis Gazette-Times*, January 27, 1953. The article includes many details compiled by County Clerk Ralph P. Schindler, "Proceedings and Costs – Van Buren Street Bridge at Corvallis," January 24, 1953, BCHS 1994-038.1267.

one man should be able to open or close the bridge in three minutes, it took six men, three on each end of the key, considerably longer to operate the bridge in 1960.[93]

As vehicles grew larger, the 20'-wide deck became too narrow for two-way traffic. Two trucks jammed together while trying to cross the bridge in opposite directions in 1961 and surveyors were investigating possible routes for a second bridge soon afterwards.[94]

The pony truss at the west (Corvallis) end of the bridge was crushed by a falling tree during the Columbus Day Storm of October 1962. Repair work stretched into the next year, prompting calls for a second bridge over the Willamette at Harrison Street.[95] The Harrison Street Bridge opened in 1964, carrying two lanes of west-bound traffic into Corvallis and the Van Buren Bridge became one-way, one-lane eastbound. That eased traffic congestion but by the 1970s the one-lane Van Buren Bridge was considered a seismically vulnerable bottleneck with weight restrictions and limited overhead and side clearances on the roadway. The load atop an over height log truck struck and damaged several sway brace panels, closing the bridge for two months and leading to partial retrofit in 1979. Studies evaluating the design and possible alignments of a replacement for Van Buren Bridge were conducted 2004-2009 and were revived in 2017. A design contract was awarded in 2019 to OBEC Consulting Engineers (now DOWL, LLC). Hamilton Construction received a contract to remove the 110-year-old bridge and construct a new one on the same alignment, and work on temporary bypass structures began in May 2023.[96]

PART II. PHYSICAL INFORMATION

A. General Statement:

1. Character: Van Buren Bridge is a comparatively late and now rare example of a pin-connected truss bridge with a human-powered rim-bearing swing span turntable. Steel truss components are fabricated of angle-iron and plate fastened by rivets. Lattice uprights, inclined members, and top chords, built-up of channels and small plates, carried compressive loads. Forged eyebars acted in tension. Pin connections between uprights, eyebars, and bottom chord members minimized the need for field riveting and facilitated

[93] "Van Buren Bridge to Open Wednesday," *Corvallis Gazette-Times*, October 4, 1960; BCHS photos: 1994-038.0130; 2005-001.0011-.0027; Coast Bridge Specifications, 8.
[94] "Two Trucks Jammed on Narrow Bridge." *Corvallis Gazette-Times*, September 25, 1961; "Survey Eyes 2nd Corvallis Bridge for Future Use," *Benton County Herald*, January 18, 1962.
[95] "Bridge Repairs Tie Up Traffic," *Corvallis Gazette-Times*, January 3, 1963.
[96] "Van Buren Bridge damaged, closed," *Corvallis Gazette-Times,* September 24, 1974, 1; ODOT Bridge Section, "Preliminary Plan & Elevation," ODOT Bridge Section, Drawing No. 30295-A, January 1975; "OR 34: Van Buren Bridge Project," https://www.oregon.gov/odot/projects/pages/project-details.aspx?project=20688, last updated December 23, 2024.

erection by a small gang using hand tools. Changes in bridge technology in the decades after 1913 when the Van Buren Bridge opened combine to make it look anachronistic. Steel mills were able to roll larger sections, reducing the need for elaborate built-up members. Transportation and materials handling equipment could handle greater loads allowing larger pieces to be shop fabricated and shipped to building sites for erection. Welding, which saw widespread use in shipyards during WWI, came into use for structural steel and bridge elements by the late 1920s. High-strength bolts displaced pin and field-riveted connections. Improved bearing material initiated a shift from rim-bearing to center-bearing swing-bridge designs, just as that configuration was losing favor in the face of new bascule bridge designs that could open without leaving a vulnerable and obstructing swing span in mid-channel.

2. Condition of fabric: Despite periodic maintenance and reinforcement by ODOT, Van Buren Bridge evidenced wear at the time of HAER fieldwork in October 2023. Reinforcing gusset plates had been installed, deteriorated rivets had been chipped-out and replaced by high-strength bolts, some original forged eyebars had been replaced with bolt-connected counterbars, and the steel had been cleaned and repainted as recently as 2006. Yet pack rust in the multi-layered pin connections remained an ongoing problem.[97]

B. Description:[98]

The Van Buren Bridge is a steel through-truss that carries eastbound traffic on OR Route 34 from Van Buren Avenue in Corvallis, Benton County, to Linn County. It is approximately 710' long overall and includes five segments from west-to-east it: A 59'-3"-long deck beam supported approach span (replacing an earlier Warren pony truss), a 171'-long nine-panel Parker through truss, two 114'-3"-long six-panel Pratt through trusses with a 21'-4" tower in-between forming the swing span, and a 57'-long three-panel Warren pony truss with polygonal top chords leading to an approximately 168'-long, nine-span approach trestle supported by treated timber bents on the east (Linn County) end.

The trusses are spaced 21'-4" apart with a 17'-4½"-wide roadway clearance. A single 6'-wide sidewalk is supported by brackets outboard of the trusses on the south (upstream) side. Most of the steelwork is riveted with gusset plates. Vertical posts are fabricated of channels separated and braced by flat bars riveted to their flanges in a "Z" pattern. Top chords and inclined end posts are built up of channels with plates riveted to their upper

[97] ODOT, Bridge Engineering, "OR34 Willamette River (Van Buren Ave) Bridge Painting," 36 sheets 74518-74533, August 28, 2006, ODOT Archives.
[98] Description of bridge at time of HAER fieldwork in October 2023, prior to disassembly.

flanges and lattice bars on their undersides. Diagonal tension members are forged steel eye bars with pin connections and nuts at both ends.

Portal bracing and sway bracing between the truss panels is made of horizontal hot-rolled "H" sections with angle-iron "W" and lattice bracing. These are ca. 1979 replacements for the original panels that are bolted on and incorporate some of the original gussets and top members.[99]

The road deck is 17'-4-½" wide through the trusses, comprised of 4"x12" planks covered by asphalt. The 6'-wide sidewalk is plank with wood handrails. The roadway and sidewalk are both cross planked, supported by longitudinal wood stringers with diagonal bracing. The sidewalk stringers are supported by triangular brackets made of riveted steel angles that are attached to the south ends of the deck beams, supplemented by triangular cast-concrete projections on both sides of the oblong concrete piers at either end of the swing span.

1. Swing Span: The swing span consists of two 114'-3-5/8"-long six-panel Pratt through trusses with a 21'-4"-long by 33'-9"-tall tower rising from a center drum. The Pratt trusses are irregularly shaped quadrilaterals – deeper toward the center pier to carry the extra dead load of their unsupported ends when the bridge is open. They are hung from eyebars that are connected across the top of the central tower.

2. Approach Truss Spans: The fixed 171'-2-3/8"-long Parker through truss is composed of nine 19' panels and has horizontal pin-connected eyebars between each panel along the bottom chord, just above the deck beams, with built-up "H" beams between the inclined end posts and hip verticals at each end.

Truss panels of the surviving 57'-long Warren pony truss at the east end of the crossing are riveted throughout.

3. Substructure: A cylindrical concrete pier (pier 3), approximately 24' in diameter and rising 28'-7-½" from a footing in the riverbed, supports the turntable at the center of the swing span. The outboard ends of the swing span land on concrete piers (2 & 4) that taper vertically and are oblong in plan. Triangular concrete brackets project from the upstream and downstream edges at the tops of those piers but only those on the south side are used

[99] ODOT, Structural Design Section, "Swing Span Bracing Revisions," Drawing No. 34966, November 1979, ODOT Archives.

to support the walkway.[100] Pier 1, fabricated of two riveted steel tubes, filled with concrete, and connected by an angle-reinforced plate web, supports the west end of the Parker truss and the approach span. A steel bent (pier 5) supports the east end of the Warren pony span, and a series of timber bents support the approximately 168'-long eastern approach deck from Linn County (as measured on the north side). There is a concrete abutment supporting the west end of the approach span at the west (Corvallis) end and a skewed, treated timber bulkhead at the end of the embankment leading to the timber trestle approach on the east (Linn County) end. The east approach is trapezoidal in shape as the deck widens to two lanes to accommodate eastbound OR-34 traffic heading towards I-5, and measures approximately 178' on the south side.

C. Mechanicals/Operation:

The swing span turning mechanism is rim-bearing, riding atop the cylindrical central pier on forty-two tapered cast-iron rollers that travel on a 22'-diameter cast-iron track ring. The roller axles are 1-¼"-diameter rods, radiating from a central 4'-6"-diameter cast iron hub. A 4'-tall, riveted-steel octagonal drum with a cast-iron bottom rim mirroring the track ring rides atop the rollers and supports the swing span. The drum is stiffened by eight triangular plate-steel spokes with back-to-back angle reinforcements at their edges, radiating from a central cast-iron spider. The octagonal drum is surrounded by a plate girder box that carries the four legs of the swing span's central tower. Fifteen cast-steel segments, bolted to the outside of the lower track ring, form a 23'-10-½"-diameter ring gear with 300 teeth that can be driven by a train of double-reduction cast-steel spur gears whose bearings are on a bracket mounted on the east side of the turntable drum. Originally, the vertical square-headed input shaft extended to a hole in the bridge deck. To open the bridge, operators inserted a "key" with a square socket at the base of a vertical iron shaft connected to the middle of a 17'-long wood crossbar onto the head of the primary shaft and opened the bridge by walking in circles.[101] Cast-iron rollers, mounted on brackets at the outboard ends of the trusses, rode up on ramped shoes on the oblong concrete piers to support the ends of the swing span when it is closed and prevent

[100] "Agreement between Sears and County of Benton." The 1909 design contract called for two sidewalks, one on either side of the bridge outside of the trusses but only one 6'-wide walkway was built on the south side of the bridge. The unused brackets, cast on the north sides of the piers reflect that original specification, and suggest that a second sidewalk could have been constructed at a later date.

[101] The gear train was extant at the time of HAER fieldwork but the hole in the deck had been planked over sometime after 1960 when the bridge was last opened. The original 17'-long key is in the collections of the Benton County Historical Society, BCHS 2023-036.0001. Coast Bridge Specifications (1912) stated that one man should be able to open the swing span in three minutes, but the key was probably too large and heavy for one-person operation. Later accounts report that five or six people were required to open and close the span. Another square-headed fitting was revealed at the top of the vertical secondary shaft during demolition. This would have allowed the span to turn more quickly using single-rather than double-reduction gearing. Given the manpower needs reported during the bridge's infrequent openings, it is unlikely that the high-speed gearing saw much use.

vertical deflection from heavy vehicles passing overhead. Original drawings show latches to lock the swing span in the closed position, but they were not evident to the HAER team and may have been removed after the bridge was last operated in 1960.

D. Site Information:

The Van Buren Bridge crosses the Willamette River carrying eastbound vehicles on NW Van Buren Avenue / OR-34 between the city of Corvallis, Benton County, on the west bank and an unincorporated portion of Linn County on the east bank, about 131 miles upstream (south) of the river's mouth at its confluence with the Columbia River. The riverbank at the bridge site is steeper on the west side than the east. Riverfront Commemorative Park lines the west bank of the river, historically the location of flour mills and warehouses along NW 1st Street in Corvallis, south of Van Buren Bridge. Alan B. Berg Park and the Orleans Natural Area are on the Linn County side south of the bridge. The Harrison Street Bridge, a multi-beam deck girder bridge on concrete piers that opened in 1964, carries westbound traffic across the Willamette about 250' north (downstream) of Van Buren Bridge. A riverside bike path passes under the west approach spans of the Van Buren and Harrison Street bridges but was closed during the construction period. North Riverfront Park, a golf course, and the Oregon State University boathouse and crew dock are on the east side north of the crossings.

Preparations to dismantle Van Buren Bridge were underway at the time of HAER site work in October 2023. A temporary multibeam girder wood-decked construction bridge, supported by tubular steel piers, was on the south (upstream) side. A temporary bypass structure of similar construction, built to carry vehicle and pedestrian traffic, had been erected on the north side.

Hamilton Construction dismantled the Van Buren Bridge between November 2023 and January 2024. Steelwork of the east pony-truss approach span was saved for possible reuse as a pedestrian bridge in a nearby park and portions of the swing mechanism were saved for possible exhibit. The wood decking and remaining steel were scrapped, and the concrete piers and abutments were demolished.

The replacement bridge, built for ODOT by Hamilton Construction and scheduled to be completed in 2026, will be an earthquake-resistant, 52'-wide four-span deck girder crossing with two eastbound vehicle lanes and buffered bike and pedestrian lanes.

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Sunday Oregonian, Portland (1881-)
"Corvallis Builds Bridge: Town and County Agree So Work on Structure Will Go Forward," May 12, 1912, 1.

Related HABS/HAER reports:

Corvallis Downtown Historic District, HABS No. OR-183
Trusses: A Study by the Historic American Engineering Record, HAER No. TI-1 (Poster)

Select list of other HAER-recorded, early-twentieth century swing bridges:

Niantic River Swing Bridge, HAER No. CT-22
New York, New Haven & Hartford Railroad, Shaw's Cove Bridge, HAER No. CT-24
New York, New Haven & Hartford Railroad, Mystic River Bridge, HAER No. CT-26

Chapel Street Swing Bridge, HAER No. CT-42
Saugatuck River Bridge, HAER No. CT-46
New York, New Haven & Hartford Railroad, Norwalk River Bridge, HAER No. CT-195
Chicago, Milwaukee & St. Paul Railway, Bridge No. Z-6, HAER No. IL-162
Pacific Shortline Bridge, HAER No. IA-1
Coquille River Bridge, HAER No. OR-32
Umqua River Bridge, HAER No. OR-45

E. Likely Sources Not Yet Investigated:

U.S. Army Corps of Engineers, Portland District records, National Archives and Records Administration (NARA) Seattle Federal Records Center.

77.9.19 – Records of the North Pacific Division (Portland, OR)

Letters and endorsements sent, 1907-8. General correspondence, 1917-40. Miscellaneous reports, 1907-8. Structural permit files, 1916-50.

77.10.46 – Records of the Portland, OR District

Records of the First Portland District, including letters sent, 1907-26, and general correspondence, 1910-42. Letters sent and received by individual engineer officers, 1884-1919. Navigable waterways files, 1871-1964.

"Special Regulations for the Operations of Drawbridges Across the Willamette River at Albany, Corvallis and Harrisburg, Oregon, approved February 7, 1937."

PART IV. PROJECT INFORMATION

The Oregon Department of Transportation sponsored the Van Buren Bridge Recording Project in 2023-24 as mitigation for removing the historic bridge. ODOT staff members who helped facilitate the project include Chris Bell, Christine Hildebrant, Kirsten Straus, Markus Schaff, and Jennifer Barrett. The documentation of the Van Buren Bridge was undertaken by the Historic American Engineering Record (HAER). HAER is part of the Heritage Documentation Programs (HDP) division of the National Park Service (Scott Keyes, Chief). The HAER field team consisted of Christopher H. Marston, Project Leader; Jason McNatt, Dana Lockett, Architects; Duncan Hay, Historian; and Justin Scalera, Photographer. Special thanks to Hamilton Construction Company; Patti Larkin, Curator, Benton County Historical Society; and independent researcher Bill McCash, who provided assistance to the HAER team.

PART V. SUPPLEMENTAL MATERIALS

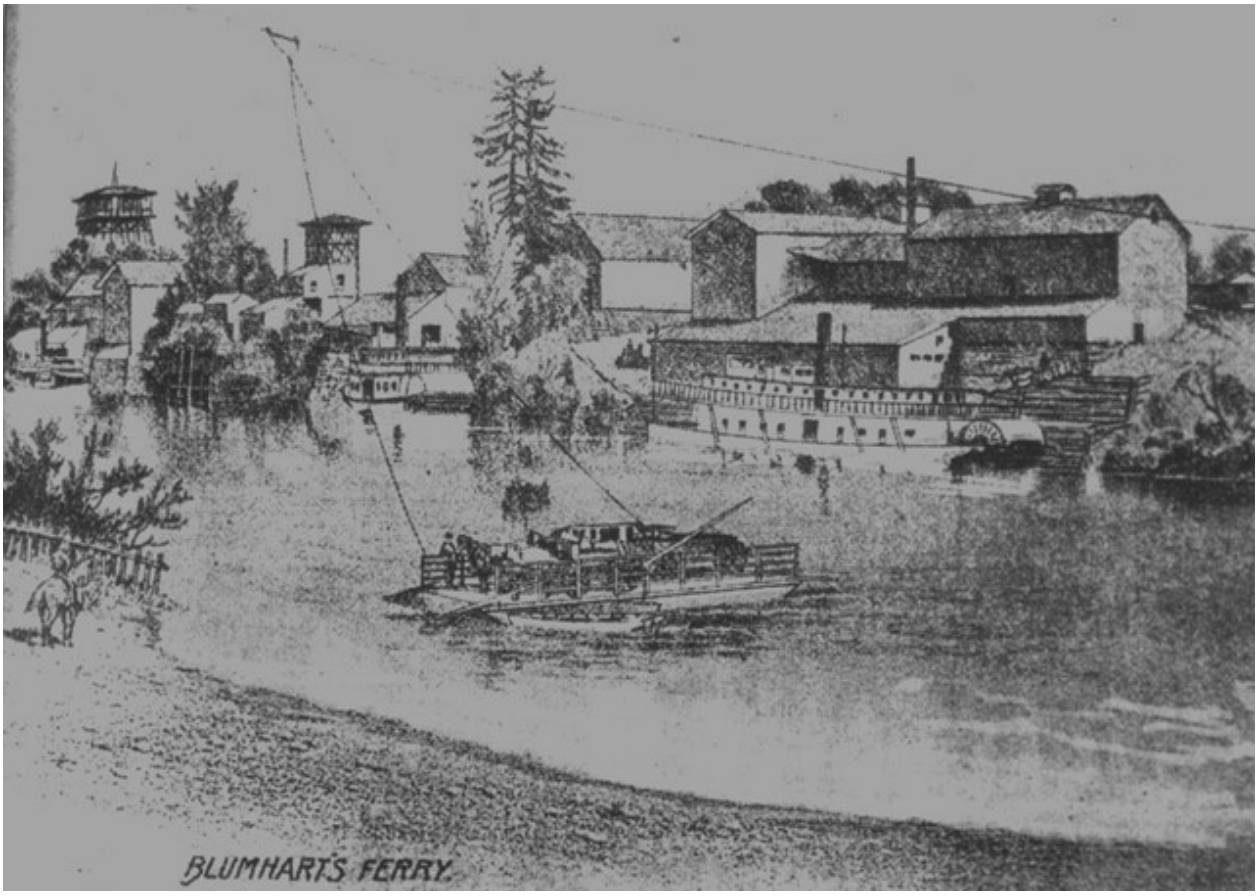

Figure 1. "Blumhart's Ferry," ca. 1889.

View looking southwest from Linn County into Corvallis. Note sternwheel steamboat docked at Fischer Flour Mill. Illustration from larger print done supplement to *West Shore Magazine,* June 1889. BCHS 1994-038.0345.

Figure 2. “Ferry at Corvallis, 1907.”

View looking west toward Corvallis at site of future Van Buren Bridge. Benton County purchased the ferry in 1902 and made it free, paying a salary to Fred Blumhart, the previous owner to operate it.

BCHS, Edna Wiese Collection, 1990-068.1303.

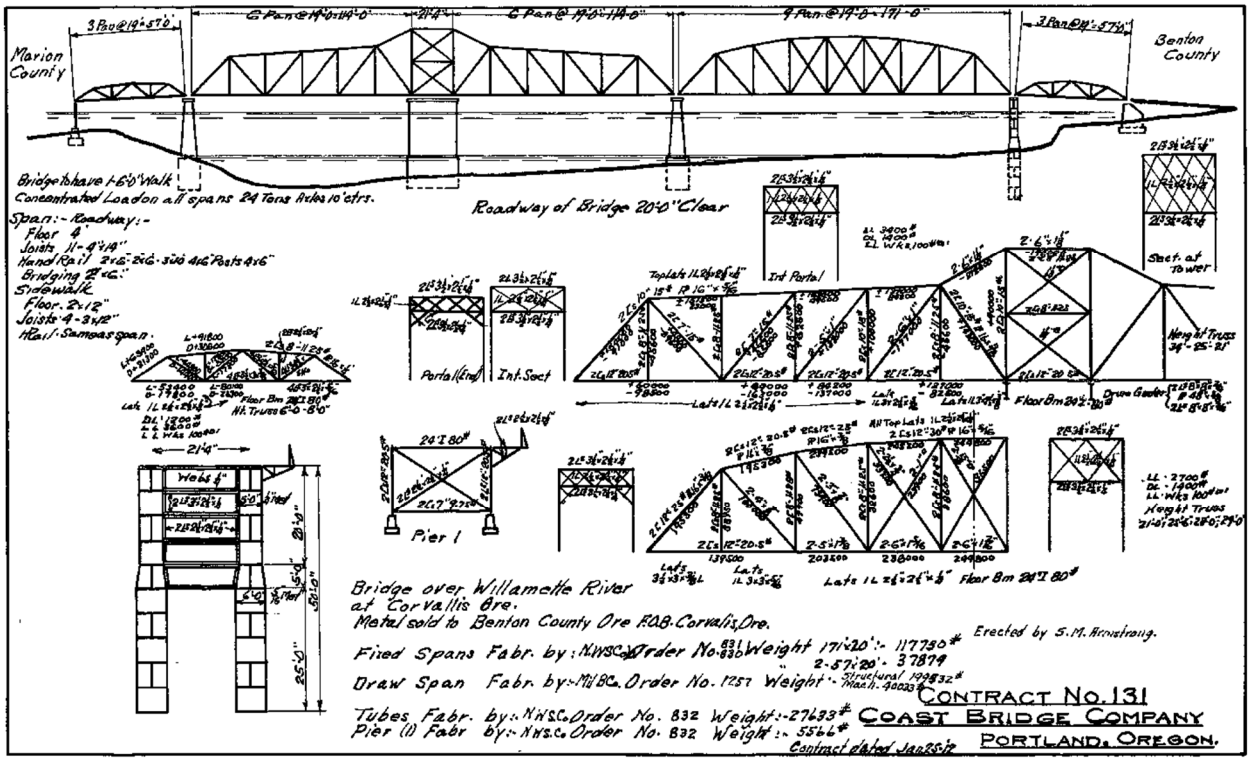

Figure 3. Coast Bridge Company. "Bridge over Willamette River at Corvallis, Ore.," 1912.

Included in a Coast Bridge Company portfolio of county bridge contracts in Oregon and Washington from 1910-16. Oregon DOT Archives, Salem, OR.

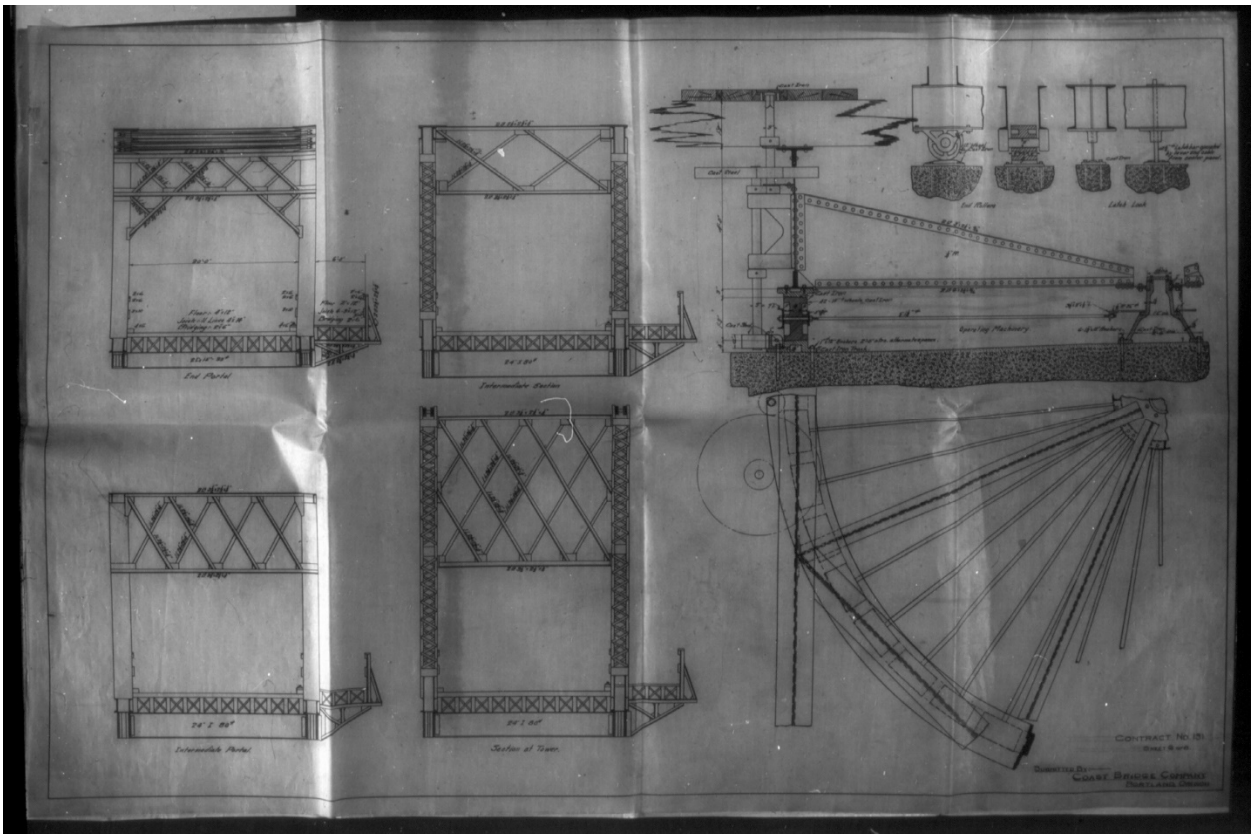

Figure 4. Coast Bridge Company. “Submitted by Coast Bridge Company, Portland Oregon, Contract No. 131, Sheet 6 of 8,” n.d. [1912].

Sections through trusses and swing span tower, and generalized plan and section of turntable.

ODOT Archives, microfiche.

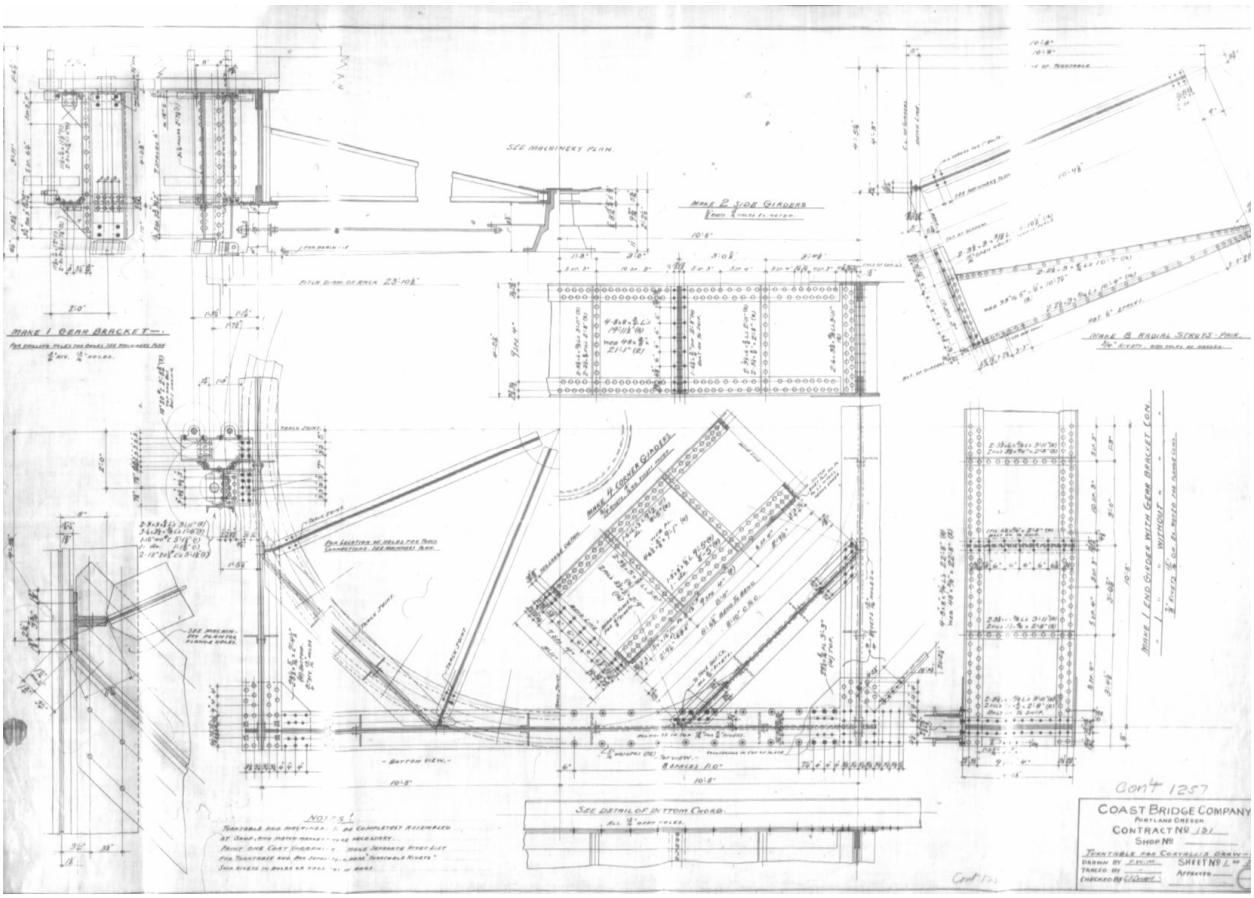

Figure 5. Coast Bridge Company. “Turntable for Corvallis Draw,” Sheet 1 of 3, n.d. [1912].

Fabrication drawings for riveted steel plate and angle drum, spokes, girders, and mounting bracket for gear train. Handwritten note “Con’t 1257” above title block refers to subcontract between Coast Bridge Company and Milwaukee Bridge Company for fabrication of swing span.

ODOT Archives, microfiche 2728.

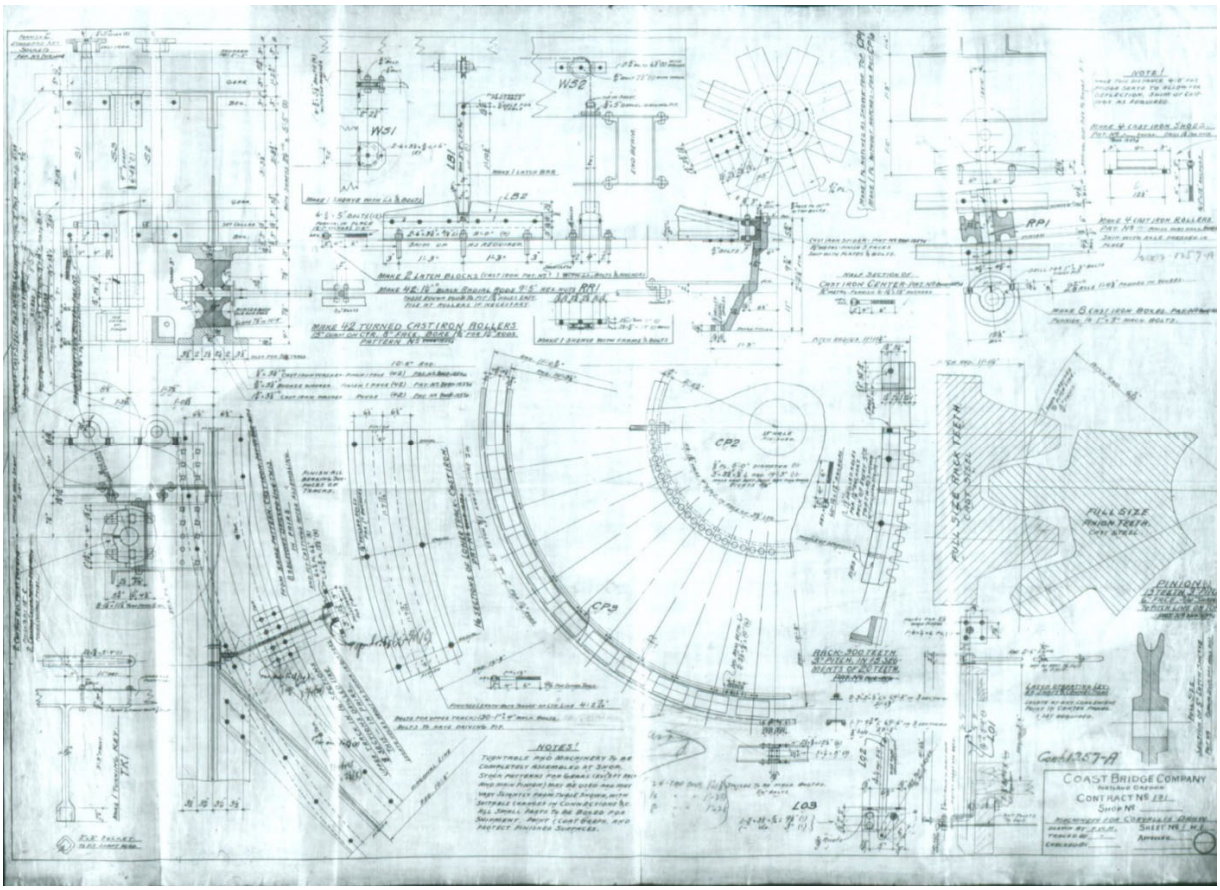

Figure 6. Coast Bridge Company. “Machinery for Corvallis Draw,” Sheet 1 of 1, n.d. [1912].

Includes details of gear train, rollers, spokes, hub, spider, track, ring gear, and end latches. Handwritten note “Cont. 1257-A” above title block refers to subcontract between Coast Bridge Company and Milwaukee Bridge Company for fabrication of the swing span.

ODOT Archives, microfiche 2728.

Figure 7. “New Steel Bridge, Corvallis, Oregon.” Patton Postcard Co., Salem, Oregon, ca. 1913.

Sign on portal reads: “$25.00 fine for riding or driving over this bridge faster than a walk or for driving on this bridge at one time more than 25 head of cattle or horses.”

BCHS, John Kirkhuff Collection (Mrs.), 1984-015.0007.

Figure 8. “New Bridge at Corvallis, Oregon.” Patton Post Card Co., Salem, OR, ca. 1915.

View looking northeast from Fischer Flour Mill, 1st Street, Corvallis. Note timber “draw rest” to protect open swing span from passing vessels and central pier from ice and floating debris.

BCHS, Harriet Moore Collection, 1994-038.0650.

Figure 9. Game Day Traffic: westbound cars and pedestrians crowd the Van Buren Bridge on their way to an Oregon Agricultural College football game, ca. 1915.

OSU Special Collections & Archives Research Center, P025:1469.

Figure 10. Sheep on Van Buren Bridge, ca. 1916. From a photo album compiled by student at Oregon Agricultural College.

BCHS, William McCash Collection, 2016-042.0001.

Figure 11. Van Buren Bridge swing span opened to allow upstream passage of Corps of Engineers tug towing snag boat *Monticello*, view looking northeast, June 10, 1952. Photo by Mike Bradley, *Corvallis Gazette-Times.*

Notes on verso:
"On June 10, 1952, for the first time in 25-years, the Van Buren St. bridge was opened to permit a boat to pass upstream. The boat was Corps of Engineer's snag boat Monticello. The bridge when closed rests on jacks that have to be removed and replaced every time the bridge is opened or closed. The whole process of opening and closing takes about an hour. 6-hrs notice is required, and it takes 4 men pushing on capstan bars to turn huge gears that move the bridge."

BCHS, Harriet Moore Collection, 1994-038.0130.

Figure 12. Columbus Day Storm Damage, October 13, 1962.

A falling cottonwood tree crushed the pony-truss approach span on the west (Corvallis) end. The Warren pony truss was subsequently replaced by a girder span.

BCHS 2017-001.0023.01-02.