NR listed 4/9/90

NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Judsonia Bridge

other names/site number HAER No. AR-51

2. Location

street & number County Road #66, spanning the Little Red River ☐ not for publication N/A

city, town Judsonia ☐ vicinity N/A

state Arkansas code 05 county White code 145 zip code 72081

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☐ private	☐ building(s)		buildings
☒ public-local	☐ district		sites
☐ public-State	☐ site	1	structures
☐ public-Federal	☒ structure		objects
	☐ object	1	Total

Name of related multiple property listing:
Historic Bridges of Arkansas

Number of contributing resources previously listed in the National Register N/A

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of certifying official — Date

Arkansas Historic Preservation Program
State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☐ entered in the National Register.
☐ See continuation sheet.

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

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain:) _____

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Transportation/Road-Related	Transportation/Road-Related

7. Description

Architectural Classification
(enter categories from instructions)

Other: Warren Swing

Materials (enter categories from instructions)

foundation concrete
walls steel
roof
other

Describe present and historic physical appearance.

[X] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

☐ nationally ☒ statewide ☐ locally

Applicable National Register Criteria ☒ A ☐ B ☒ C ☐ D

Criteria Considerations (Exceptions) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Transportation	1924-1939	1924
Engineering		

Cultural Affiliation: N/A

Significant Person: N/A

Architect/Builder: Builder: R.L. Gaster Construction Co.

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

☒ See continuation sheet

9. Major Bibliographical References

See Historic Bridges of Arkansas, Multiple Property Nomination, Section H.

☐ See continuation sheet

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☒ recorded by Historic American Engineering Record # HAER No. AR-51

Primary location of additional data:

- ☒ State historic preservation office
- ☐ Other State agency
- ☒ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Specify repository: U.S. Library of Congress

10. Geographical Data

Acreage of property Less than one acre

UTM References

	Zone	Easting	Northing
A	15	623730	3909035
B	15	623700	3909026
C			
D			

☐ See continuation sheet

Verbal Boundary Description

Beginning at a point approximately 575 feet south of the intersection of County Road #66 and U.S. Highway 67C, the Judsonia Bridge boundary starts here at the north abutment, where it extends south across the Little Red River for approximately 397 feet, where it terminates at the south abutment.

☐ See continuation sheet

Boundary Justification

The boundary includes the main swing span, approach spans, piers and abutments that are historically associated with this property.

☐ See continuation sheet

11. Form Prepared By

name/title Text by Kathryn Steen & Corinne Smith; edited by Michael Swanda, Survey Coordinat

organization Arkansas Historic Preservation Program date February 5, 1990

street & number 225 East Markham Street telephone (501) 371-2763

city or town Little Rock state Arkansas zip code 72201

SUMMARY

The Judsonia Bridge is located on the south-side of the small community of Judsonia where it crosses the Little Red River, supplying vehicular access to the southern part of the county. This bridge uses a Warren cantilevered swing truss that was turned by hand to allow river traffic to pass at high water.

ELABORATION

The Judsonia Bridge is a single lane, three span bridge of 397 feet length, comprised of two approach spans of 49 and 79 feet, and a center bearing swing span of 266 feet length. The twelve panel swing span provides two channels approximately 125 feet wide for river traffic if the bridge is opened. All three Warren trusses have riveted connections throughout. The members of all three trusses are built-up from channels, angles, batten plates, continuous plates, or lacing bars riveted together. The vertical and diagonal web members of the five panel through north approach span are two channels, flanges outward, with double lacing on either side. The two diagonals in the center panel are two angles joined by lacing. The top chord is similar to the verticals except that a continuous plate replaces one side of lacing. The bottom chord is two angles with the horizontal legs facing inward and riveted to batten plates. Diagonal rods and struts laterally brace the top chords.

The south pony approach, with six panels, is shorter than the north approach, but has identical top and bottom chord sections. The web members are two angles with flanges inward, connected by batten plates. The two verticals, placed at the second panel point from each end, are like the web members except that they have four angles. The top chord of the swing span is constructed with two inch deep channel sections, flanges turned out, riveted to a continuous plate on top and lacing on the bottom. This chord is flat at a height of 22 feet, but reduced in size to four angles with batten plates at the center two panels, the chord slopes to a peak 36 feet over the pivot. This increased height helps the span to act like a cantilever on either side of the pivot when the bridge is opened. The center vertical member and the web members radiating from the bottom chord at this panel point are similar in section to the top chord, but larger in size to carry the extra load when the bridge is opened. The vertical and web members from the peak out to the ends are one of three different sections: four angles with batten plates four inches on center, ten inch deep channel sections with double lacing, or channel sections with lacing. The sections decrease in cross-sectional area toward the ends of the span where less force is carried. The bottom chord is composed of seven to eight inch deep channels with double lacing. The channels deepen at the center four panels where extra strength is needed to support the open bridge.

A three panel double intersection Warren truss made from angles acts as the portal bracing in the swing span. A similar lateral brace is on the web members at the center pivot. The upper half of the space between the center vertical members is braced by crossed channel and plate sections, riveted to a square plate at the intersection. Double angles connect the upper end of each panel point and are themselves braced against the vertical members. Crossed rods between the top chords complete the lateral bracing.

The handrail and floor system for the swing span and approaches is the same. The handrail consists of two horizontally placed channels, spaced two feet apart, bolted to the web members. A cylindrical spacer on each web member keeps the rails at a constant distance. The floor system of all three trusses consists of I-beam girders at each panel point, with eight I-beam stringers connecting to the girders. Long nails were used to weld the stringer joints for a continuum the length of the span. Timber planks form the fourteen foot wide deck, with five planks running longitudinally along each tire path. Angles crossing beneath the floor at each panel point laterally brace the lower chords.

Additional girders are present at the center pier to strengthen the bridge when opened. These girders, similar to the bottom chord, are laid in two Y-shaped geometries. The base of the Y extends from the edge of

I-beams, made from steel angles and plates, close the cup of the Y, forming the central panel point of the span. The center-bearing pivot, surrounded by the composite girders, is made of steel. Eight wheels rotate on a flat steel track on the top of the center pier to balance the bridge as it turns. The bridge was turned by one man operating an unknown type of handle that keyed into a shaft accessible through a hole near the center of the floor deck. This first shaft was short and operated a small gear, less than one foot in diameter. This gear engaged a larger gear, of three foot diameter. A shaft from the second gear transmitted the torque down to another small gear on a gear track on the top of the pier. This track travels quarter way around the pier and allowed the bridge to swing 90 degrees counter-clockwise. The combination of the two small gears and one large decreased the number of turns the operator had to make to open and close the bridge. Before the bridge was turned, the operator released a spring latch at either end of the span with a pulley at the center pier. Steel wheels at the edge of each end of the turn span move the bridge smoothly along the pier. A steel ramp directs the moving wheel back onto a concrete pad when the bridge is closed. The concrete piers have shelves where the wheels rest, and the bearings of the approach spans sit at a higher level. The bridge is no longer operable because the original deck has been replaced and the key removed.

The Judsonia Bridge is in good condition and is currently being maintained as a vehicular bridge by the county.

SUMMARY

The Judsonia Bridge, completed in 1924 by the R.L. Gaster Construction Company of Little Rock, Arkansas, is significant as one of three known swing truss bridges in the state and the only swing bridge in Arkansas designed as a cantilever (the other two swing trusses are the Black River Bridge, HAER No. AR-8, and the Madison Bridge, HAER No. AR-20). Besides adding an aesthetic touch, the cantilever-like peak on the top of the bridge structurally aids in centering the weight over the center pivot and supporting the ends when the bridge is in an open position. Built during the Arkansas Highway and Transportation Department Era: 1923-1939, the bridge was part of a national modernizing movement to improve roads giving the town of Judsonia access to outlying regions on the opposite side of the river. The Judsonia Bridge is being nominated under Criteria A and C with statewide significance.

ELABORATION

TOWN HISTORY

Judsonia, Arkansas is a small town (population 2025) lying on the banks of the Little Red River. The relatively peaceful appearance today of this White County community belies its rather colorful past.

Originally named Prospect Bluff, this little river landing was one stop on a navigable route down the Little Red River to the White River and on to the Mississippi. Early businesses, several of which were saloons, crowded the north bank of the river.[1] Following the Civil War, Prospect Bluff underwent a major transformation as a group of northern colonists with a vision of a southern university arrived in 1870. In 1871, a charter for the Baptist University--a one building college--was granted. The northerners took over by establishing a ban on alcohol sales and changing the town's name to Judsonia in honor of Adoniram Judson, ". . .the first Baptist missionary to leave America."[2]

The colonists of the north brought more than a straight-laced society--they brought strawberries. From the plant's first appearance in the 1870's, the industry grew with the encouragement of the railroad and steamboat operators. Supporting businesses such as container manufacturers were appearing by the 1880's. The farmers reached peak production in 1928 before the berrys' decline in the early 1930's.[3]

Distribution of the strawberries was made possible by the railroads. By 1873, Jay Gould's St. Louis, Iron Mountain and Southern Railroad had built a line through Judsonia after purchasing the land from the Cairo and Fulton. In 1917, the Missouri Pacific took over the line, which included a swinging steel railroad bridge dating to 1912 (the steel bridge was preceded by a wooden one).[4]

BRIDGE

With the exception of those who walked across the railroad bridge, the only way across the river was by ferry or fording. This was an inconvenience (especially for farmers with produce) to get to Kensett, a town only four miles away, but on the opposite side of the river. By 1915, the townspeople were anxious for a highway bridge.[5]

The local newspaper, the Judsonia Weekly Advance, reported that Senator Davenport had pushed a bill through in the Senate in February, 1915, and Representative Miller was working on the House. The legislation was necessary since the Little Red qualified as a navigable stream.[6] The bill was eventually successful and notice of a bridge letting was made public in August, 1916. The notice indicated that bridge commissioners Judge John

found at the county clerk's office in Searcy, Arkansas, the county seat.[7] Choosing a swing span was most likely based on the simple economic factor that "for unimportant crossings, a hand operated shear-pole swing bridge is the cheapest of all types," as O.E. Hovey wrote in his 1926 book Movable Bridges.[8]

LOCAL POLITICS

On September 25, 1916, six companies were present bidding for the contract. The low bid of $32,990 fell to the Virginia Bridge and Iron Company of Memphis. As it turned out, this was the start of some political and legal haggling. The county judge, who was a minority on the bridge commission but master of the purse strings, was opposed to the bid. Despite the other two commissioners' support for the bid, the judge was adamant in his refusal to sign the contract.[9] A newspaper article of a few days later that was announcing a public meeting about the bridge, suggested there may have been personal conflicts holding up the project: "Now is the time for the people to show what interest they have in the bridge. All must work together harmoniously and drop all selfish interests if the bridge is to be secured."[10] This October 6th meeting drew a supportive crowd and even raised pledges for a part of the financial backing.[11]

The meeting was all for nought, however, as Chancery Court Judge John Martineau of Little Rock ruled ". . .that the commissioners had no power to let a contract without the complete approval of the county judge, that the judge was the fiscal agent of the county. . . .[T]he County Judge could build a bridge without the consent of the other commissioners but that the commissioners could not operate without the consent of the county judge."[12] That was the end of the bridge--for a while.

CONSTRUCTION

A few years later--perhaps partly because Judge Marsh was no longer in office and partly from the cessation of the ferry in 1921[13]--a second attempt was made at getting a contract. Judge F.O. White and fellow bridge commissioners J.S. Ladd, A. Neelly, and P.A. Billingsley chose a bid from Rexford L. Gaster, a road contractor from Little Rock who did regional construction work.[14] His $45,000 offer won out over the $46,000 of Judsonia's J.S. Kelley. In the latter half of August, 1923, construction of the bridge under the supervision of R.M. Travis was finally begun. A newspaper article reported: "From a time whence man's memory runneth not to the contrary a bridge across the river has been one of the chief desires of the people of this community."[15]

On January 25, 1924, the bridge commissioners were formally presented with the new bridge. At this point, the bridge consisted solely of the "steel work." Gaster probably ordered from other manufacturing companies for the bridge truss members since, according to imprints on the bridge beams, at least three different steel manufacturers (Inland, Illinois, and Lackawanna) are represented, but no records were found on this topic. Neither approach had been included in the contract with the R.L. Gaster Construction Company. Consequently, this town which had waited so long for a bridge pitched together to build the approaches. The approach on the southern bank opposite the town was contracted out to a local Oscar Stevens on donated money,[16] but the approach on the northern side was truly a community project. Bridge commissioner and local retired Ford agent[17] J.S. Ladd donated the fill located three blocks from the bridge. "More than one hundred men and two dozen teams made 1500 trips" over that three block course. It was a two day project and those who could not donate time donated money. The women of the town even provided a meal on the bridge in the midst of construction.[18]

Known in town as the "wagon bridge" (as opposed to the neighboring railroad bridge), the highway bridge became a focal point--at least for some in town. A local man was employed to turn the bridge. At the sound of a boat whistle, he would hurry to the bridge and manually turn it by means of a lever over the center pier. The turner of the bridge was not the only one who heard the boat whistle. It was considered an "honor" among the younger generation to actually ride on the bridge as it turned.[19]

According to Judsonia historian W.E. Orr, most frequently the reason to turn the bridge was that a barge hauling rock from the Bee Rock quarry a few miles upstream was making another trip. In the late 1920's, that business dropped off and consequently the reason to turn the bridge ceased. Most likely the 1920's were the only years of operating the turn mechanism.[20] Today, the swing span is welded to the approach spans and there are continuous pipes lying along the whole length of the deck, rendering turning impossible.

After its completion in 1924, the bridge formed a link in a newly constructed county road.[21] In a way, the bridge was both a beginning and an end for Judsonia. As part of the larger trend toward improved highways, the town had easier access to outlying areas. Trucking started to replace the railroad as the distributor of Judsonia's strawberries. Judsonia did become a trucking center for a while, but strawberries were becoming a thing of the past--due in part to the transportation revolution. Whereas railroads had formed an efficient advertising and distributing mechanism,[22] the truckers decentralization seemed to inhibit an effective marketing program despite the efforts of local growers' associations. Just as the town changed their environment by crossing the river, the new mobility changed the town.

The bridge's life has not been an easy one. On top of six-plus decades of ordinary wear and tear, the bridge survived the flood of 1927 that put a good portion of Arkansas under water,[23] and a 1952 tornado that leveled everything in Judsonia except the highway and railroad bridges.[24] Currently, the Judsonia bridge continues in its capacity as a county highway bridge.

ENDNOTES

1. Interview by Kathryn Steen (HAER), W.E. Orr (Judsonia historian), June 22, 1988.

2. Diana Sherwood, "Arkansas Baptist Colony, 1870, "Arkansas Gazette, Vol. 122, No. 243 (July 20,1941), Sunday Magazine Section, p. 2.

3. Elouise Scott, "Railroads and Strawberries, "White County Heritage, Vol. XIX (1981), pp. 24, 26.

4. Scott, pp. 35.

5. Orr interview, June 22, 1988.

6. "Bill for Bridge has passed Senate, "Judsonia Weekly Advance, Vol. 37, No. 32 (February 10, 1915), p. 1.

7. "Notice, "Judsonia Weekly Advance, Vol. 39, No. 4 (August 23, 1916), p. 5.

8. Otis Ellis Hovey, Movable Bridges (New York: John Wiley & Sons, Inc., 1926), p. 22.

9. "Awarding of Bridge Contract Delayed," Judsonia Weekly Advance, Vol. 39, No. 8 (September 27, 1916), p. 1.

10. "Bridge Meeting Next Friday Night, "Judsonia Weekly Advance, Vol. 39, No. 9 (October 4, 1916), p. 1.

11. "Bridge Meeting a Big Success," Judsonia Weekly Advance, Vol. 39, No. 10 (October 11, 1916), p. 1.

12. "Bridge Injunction was Sustained, "Judsonia Weekly Advance, Vol. 39, No. 11 (October 18, 1916), p. 1.

13. W.E. Orr, Comments (taken by Steve Mitchell), Heritage Tour, White County Historical Society (May 15, 1988), Judsonia, Arkansas.

14. "R.L. Gaster, Road Contractor, is Dead in Minnesota," Arkansas Gazette, Vol. 108, No. 287 (September 6, 1927), p. 8.

15. "Work Started on Judsonia Bridge, "White County Record (August 23, 1923), p. 1.

16. "Judsonia Bridge is Completed, "White County Record (January 31, 1924), p. 1.

17. Centennial History of Arkansas, Vol. I. Chicago: The S. J. Clarke Publishing Company, 1922), pp. 196-7.

18. W.E. Orr, That's Judsonia (Judsonia: White County Printing Company, 1957), p. 161. : "Judsonia Bridge Is Completed, "White County Record (February 7, 1924),p. 1.

19. Orr interview, June 22, 1988.

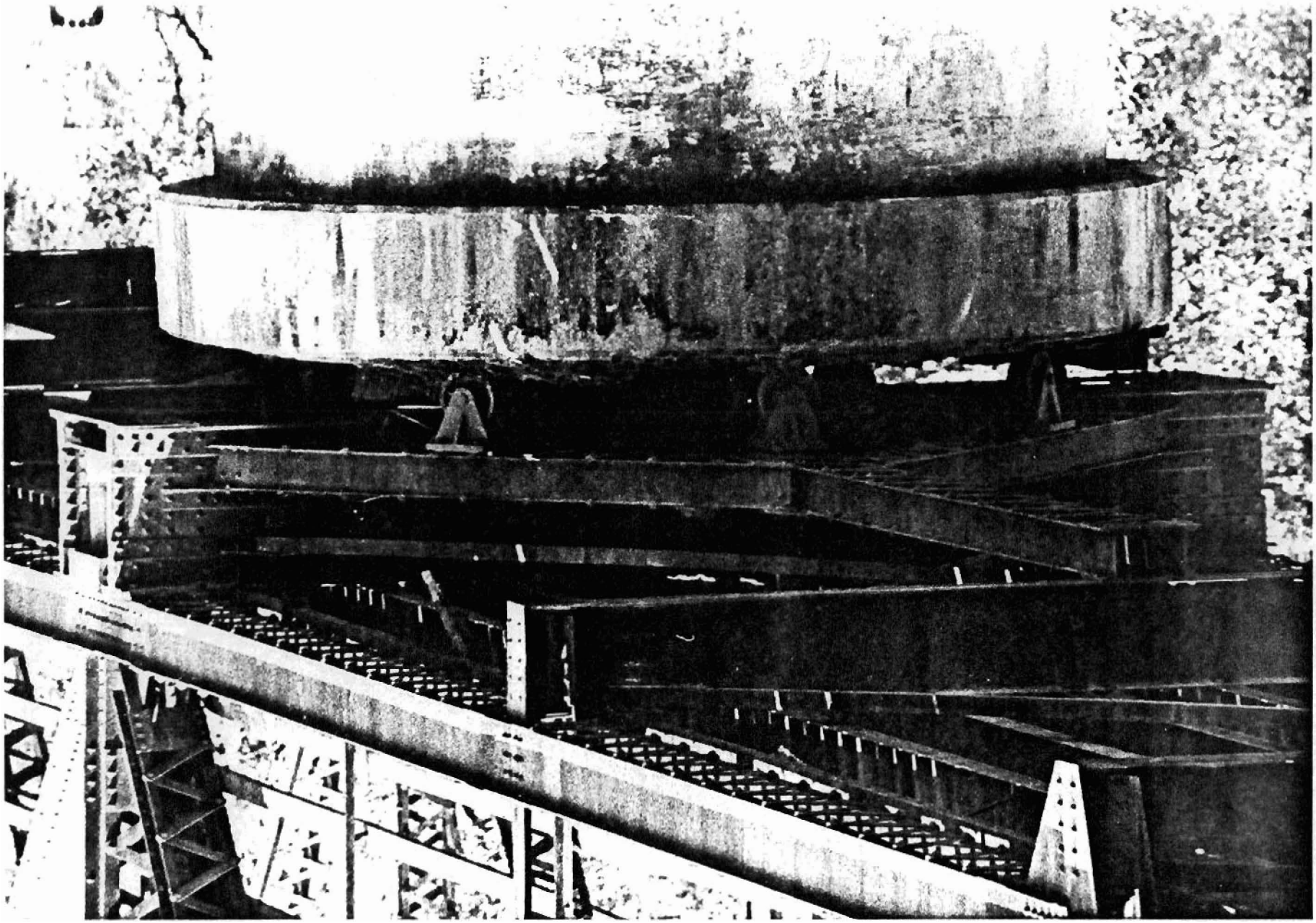
20. Orr interview, June 22, 1988.

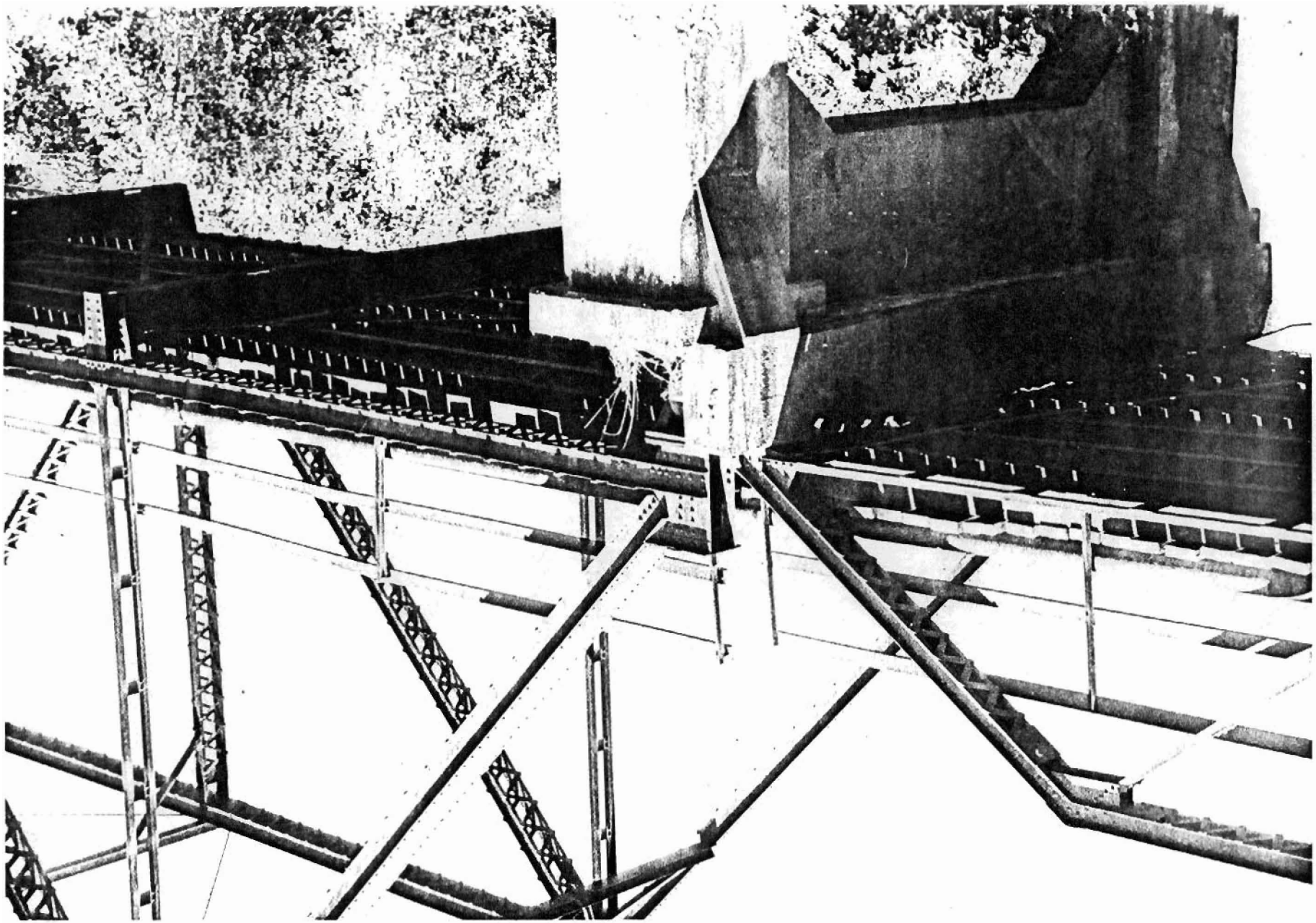
21. "Locating Bridge, "Judsonia Weekly Advance (April 13, 1922), p. 1.

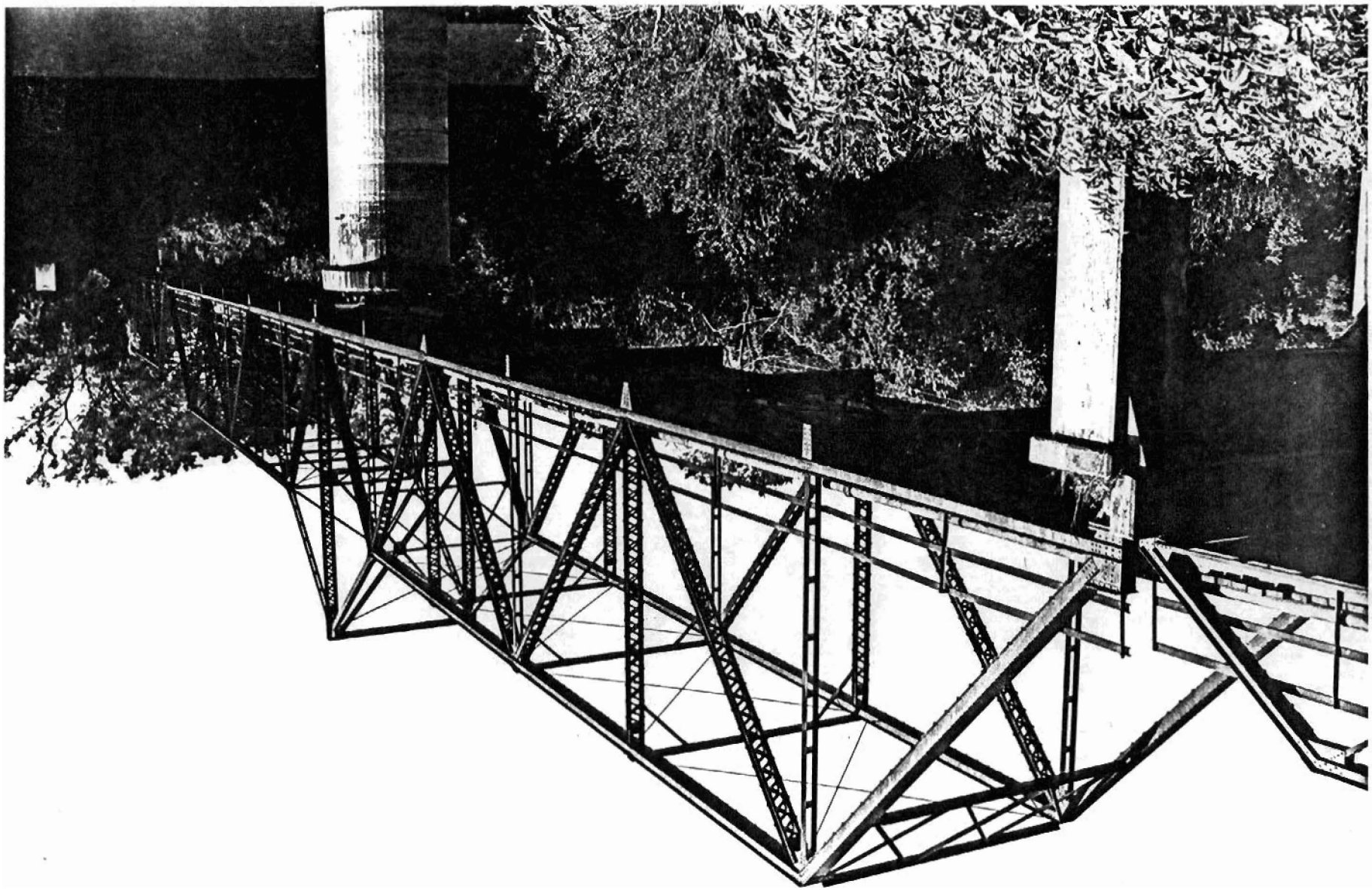
22. Scott, p. 35.: Orr interview, June 22, 1988.

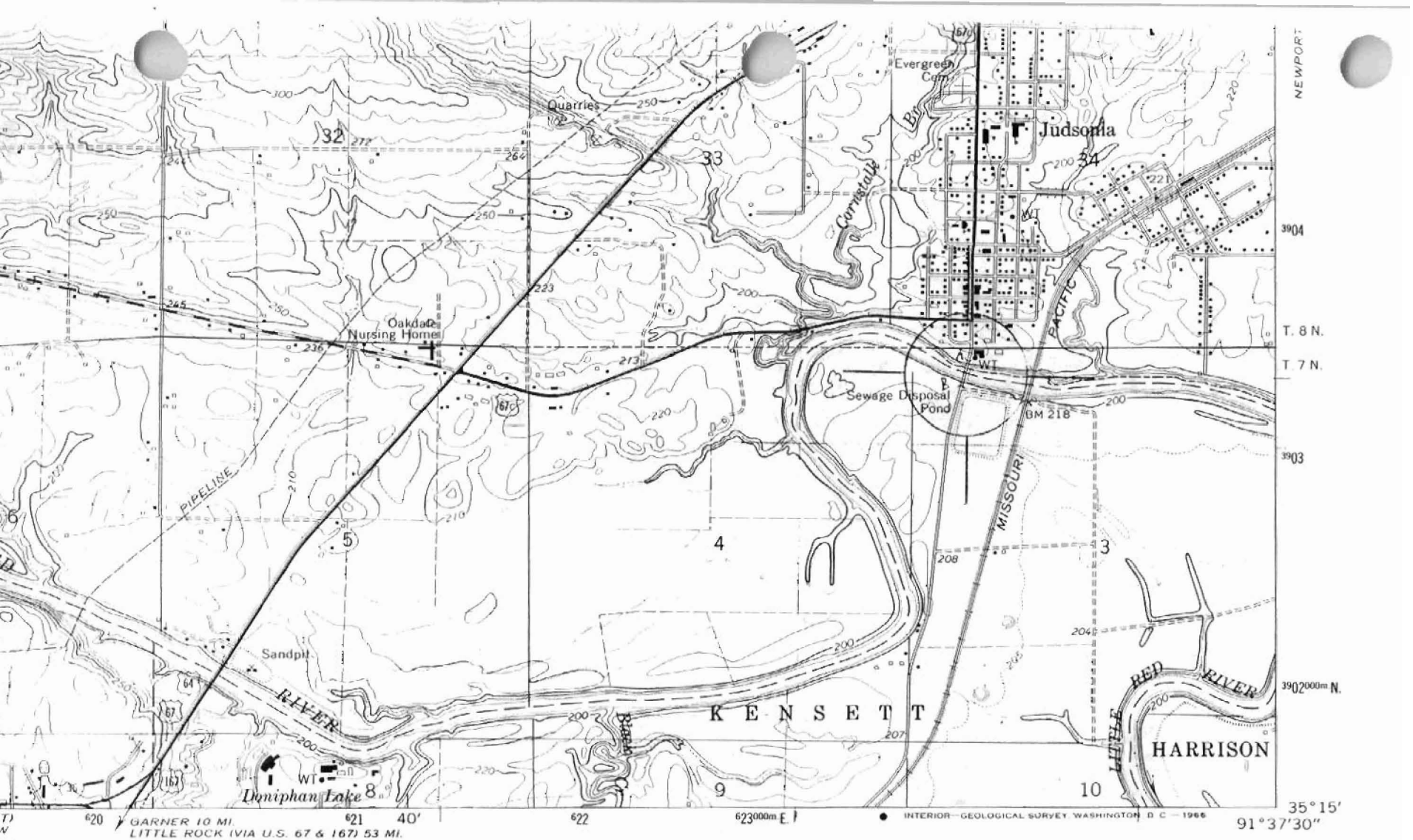
23. "State Incurs Huge Loss in Wake of Record Flood, "White County Record, Vol. 5, No. 47 (April 28, 1927), p. 6.

24. Orr interview, June 22, 1988.









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MAP ACCURACY STANDARDS
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D SYMBOLS IS AVAILABLE ON REQUEST

Judsonia Bridge
Judsonia, Arkansas
White County
A) 15/623730/3903365
B) 15/623700/3903260
Judsonia Quadrangle
1:24,000

ROAD CLASSIFICATION

ıty — Light-duty

-duty — Unimproved dirt

U. S. Route

State Route

JUDSONIA, ARK.

SW/4 BALD KNOB 15' QUADRANGLE
N3515—W9137.5/7.5

1965

AMS 7654 I SW—SERIES V884