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

NK Ltr 4/9/96

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 Big Piney Creek Bridge
other names/site number HAER No. AR-22

2. Location

street & number State Highway 123, spanning Big Piney Creek ☐ not for publication N/A
city, town Hagersville ☒ vicinity
state Arkansas code 05 county Johnson code 071 zip code 72839

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)	Materials (enter categories from instructions)
Other: Warren through-truss	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	1931-1939	1931
Engineering		

Cultural Affiliation
N/A

Significant Person
N/A

Architect/Builder
Architect: Arkansas Highway & Transportation
Builder: Luttjohann, Fred

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-22

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	478630	3947955
B	15	478770	3947965
C			
D			

☐ See continuation sheet

Verbal Boundary Description

Beginning at a point approximately 1,850 feet east of the intersection of State Highway 123 and Fort Douglas Cemetery Road, the boundary of the Big Piney Bridge starts here at the west abutment, continues across the Big Piney Creek for approximately 461 feet, where it terminates at the east abutment.

☐ See continuation sheet

Boundary Justification

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

☐ See continuation sheet

11. Form Prepared By

name/title Text by Sean O'Reilly & Corinne Smith; edited by Michael Swanda, Survey Coordinator
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

Situated in the scenic mountains of the Ozark National Forest in a secluded area of Johnson County, Arkansas, the Big Piney Creek Bridge is a one lane, steel Warren truss of total length 461 feet, comprised of the 141 foot long main span and 320 feet of reinforced concrete deck girder approaches, 240 feet of which are on the west end. This version of the Warren truss is unusual in that it uses verticals and diagonal and vertical sub-struts. By using sub-struts to create more units in the truss, the strength capacity of the bridge is increased. This six panel bridge is able to have thirteen floor girders because there are more verticals to carry floor girders.

ELABORATION

The sub-struts are two angles, legs turned inward, joined with lacing on the top legs. All verticals and diagonals spanning a full panel are I-sections, with webs oriented transverse to the direction of the bridge. The web members are riveted to the top and bottom chords. The top chord consists of double channels, attached by single lacing on the bottom and a continuous top plate, and reaches a maximum height just over 23 feet. The bottom chord is composed of two six inch deep angles, joined by batten plates. The ends of the chord are pin connected to a fixed hinge on the east concrete pier and an expansion rocker on the west. The rockers have tilted substantially toward the center of the bridge. Lateral bracing of the bridge is achieved in three ways. First, at each vertical a two panel, double intersection Warren truss spans the upper five feet between the paired trusses. Crossed angle sections between panel points take lateral forces as both upper and lower lateral bracing. The portal bracing is a single Warren truss made from angles and batten plates. Floor girders at each panel support four I-beam stringers. The twelve foot clear road deck is a concrete slab.

The handrail of two channels, connected to the verticals with angle brackets, is continuous from the main span to the approaches, where the rail then becomes concrete. The approaches are reinforced concrete slabs supported by two concrete stringers. The stringers rest on solid piers which are narrower than the roadway at the top and flare to the road width at the bottom.

Big Piney Creek Bridge is in good condition and is being maintained as a vehicular bridge.

SUMMARY

The bridge over Big Piney Creek provides an interesting example of a State Highway Department bridge, designed and built during the Arkansas Highway and Transportation Era: 1923-1939, and executed with limited funds. The effect of the limited funding is revealed through the narrowing of the roadway and a limited loading capacity, yet no loss of quality in the design or execution of the bridge is evident. The Piney Creek Bridge was designed by the Arkansas Highway and Transportation Department and constructed by Fred Luttjohann of Topeka, Kansas, in 1931 as a Warren through-truss. Its status as a Forest Highway bridge caused its limited funding and further enhances the significance of the bridge. As such, the Big Piney Creek Bridge is nominated under Criteria A and C with statewide significance.

BIG PINEY CREEK BRIDGE

The bridge over Big Piney Creek, near Fort Douglas, Johnson County, lay within the Ozark National Forest and, as such, was classified as a Forest Highway bridge.[1] Though part of the State Highway System and erected by the State Highway Department, the bridge was constructed within a special financial process related to its Forestry status. The limited funds available in this process explained the uncharacteristically narrow roadway, twelve feet, and the limited loading provided for in the design. In a memorandum on the projected bridge it was noted that:

> "the road is not on the Federal Aid System but appears to be a local mountain road. The 12 ft. roadway and H-10 loading are therefore considered justifiable in the interests of economy."[2]

As Federal funding was not available for the route, the bridge was to be financed within the general funding of the National Forestry Division of the Department of Agriculture, the body responsible for the route. Funding for routes within National Forests required "special congressional appropriation" to the Department and, in the 71st Congress, that funding was provided for the bridge over Big Piney Creek.

ACT 550

Preparations for the bridge over Big Piney Creek were particularly efficient. In Act No. 550 of the 71st Congress, there was granted to the Forestry Division of the Department of Agriculture "an allotment of approximately $32,000 which had been made for emergency construction in Arkansas."[3] It was proposed that this fund be used to construct a bridge over Big Piney Creek. Due to the fact that this fund was "an emergency fund" and that, as such, the funds were to be used by September 1, 1931, the arrangements for the bridge were commenced immediately. In a meeting held on January 12, 1931 in the offices of Senior Highway Engineer F. D. Hudgins, the State Highway Department agreed to "survey, prepare the plans for this structure and supervise the construction."[4]

DESIGNED CONTRACT LETTING

The speed with which the preparations were made was evident in the design of the bridge. The drawings were commenced on January 28, 1931, just 16 days after agreement on the bridge was reached, and completed on February 11.[5] On that same day the bridge bid was let.[6] The notice to bridge contractors of the letting described the bridge as consisting of "...one bridge with one 140 foot through steel truss span and reinforced concrete deck girder approaches."[7] The bridge construction contract was let to the lowest bidder, Fred Luttjohann, of Topeka, Kansas, at a contract price of $24,336.04.[8] As in the case of the Big Buffalo River

Bridge, Newton County, Luttjohann sub-contracted the Virginia Bridge and Iron Company of Roanoke, Virginia, to provide the steel.[9]

ENDNOTES

1. c.f. Arkansas State Highway Commission, Ninth Biennial Report, Russellville, 1930, pp. 43-44.

2. Bridge Memorandum by C.E. Vincent, Highway Bridge Engineer, February 24, 1931, AHTD Microfilm Files.

3. F.D. Hudgins, Senior Highway Engineer, to C.S. Christian, State Highway Engineer, January 12, 1931, AHTD Microfilm Files.

4. ibid.

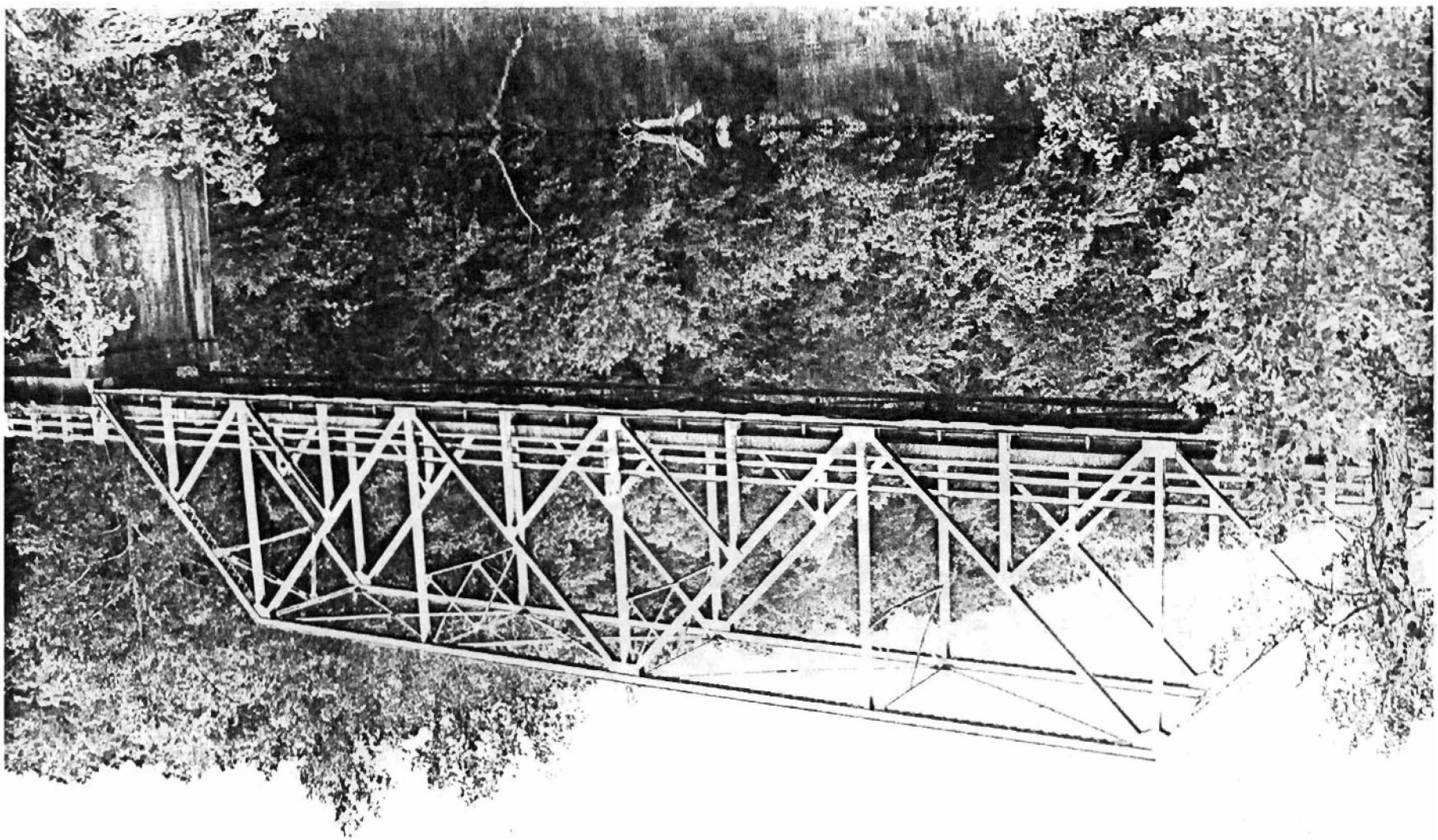
5. AHTD Card Index.

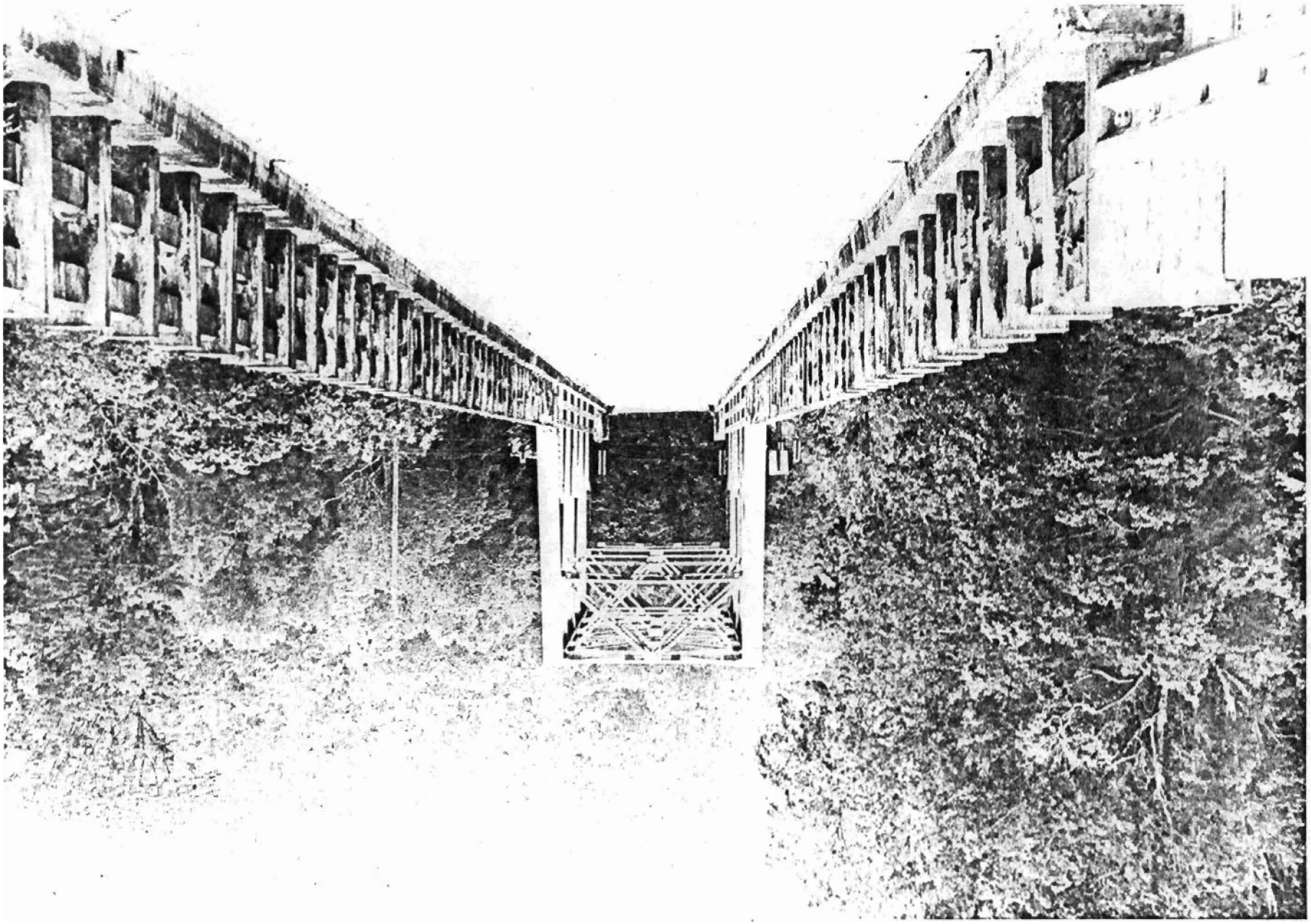
6. ibid.

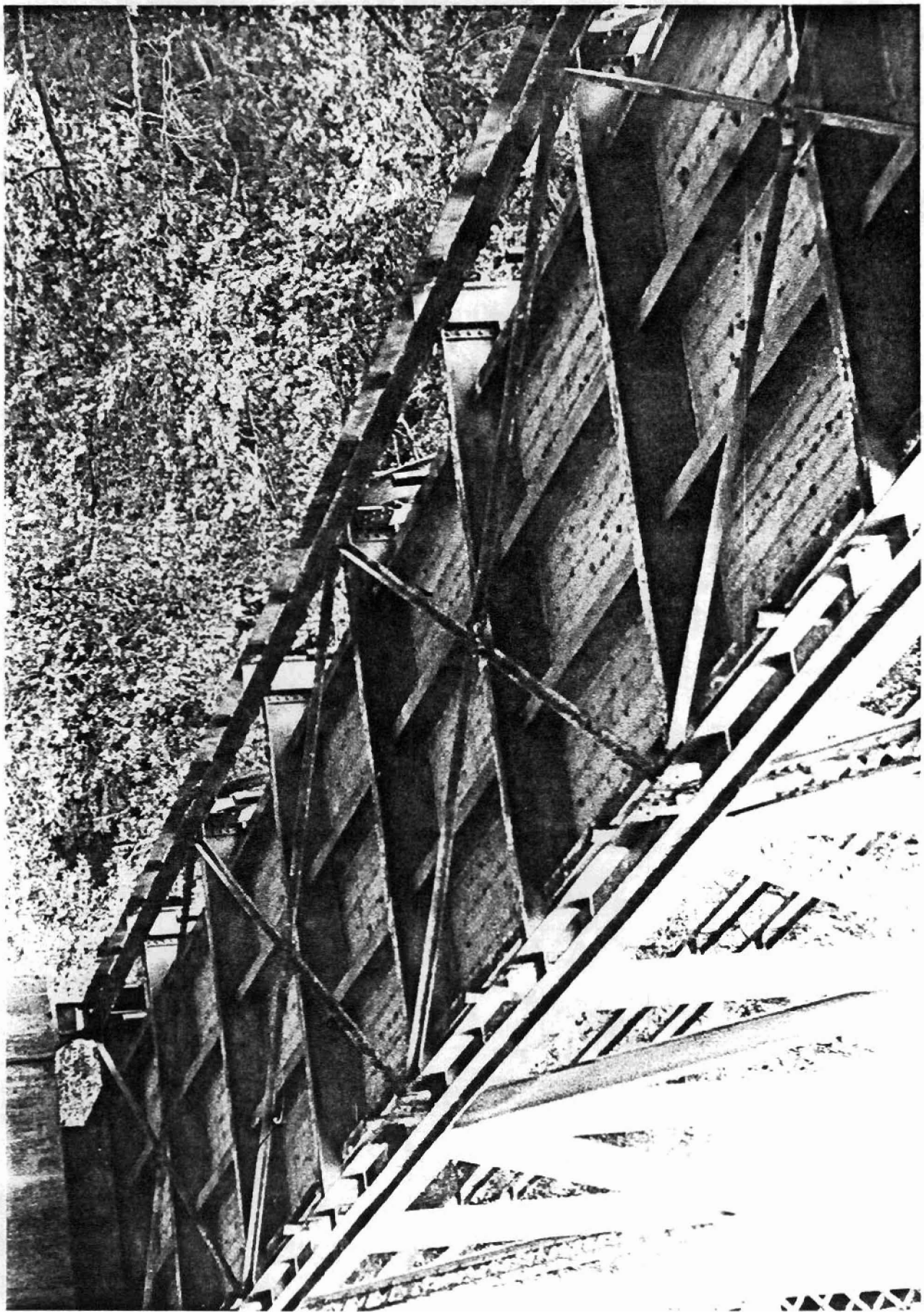
7. Notice to bridge contractors, Job. No. 8160, February 11, 1931, AHTD Microfilm Files.

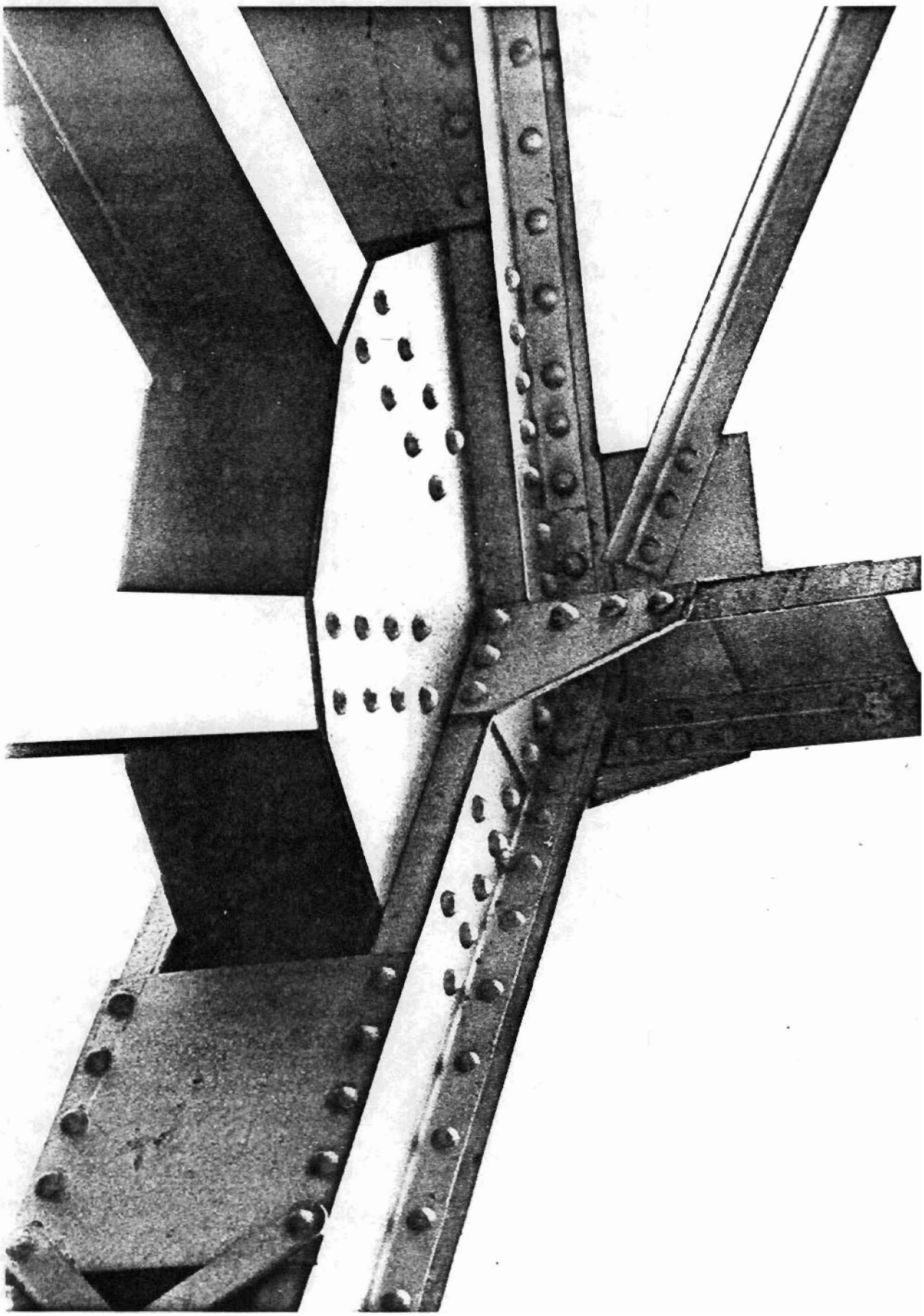
8. AHTD Card Index.

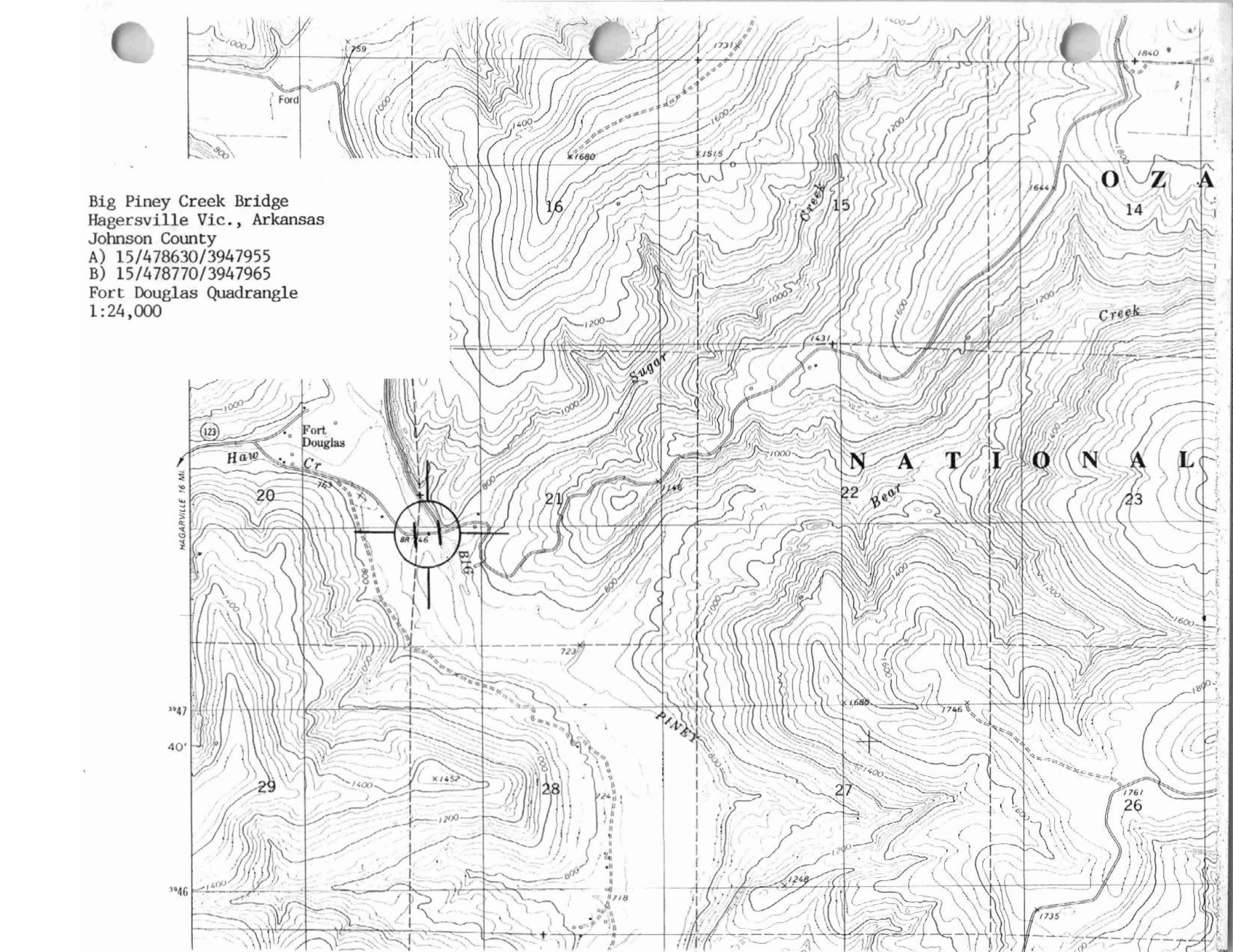
9. Records in AHTD Microfilm Files.










Big Piney Creek Bridge
Hagersville Vic., Arkansas
Johnson County
A) 15/478630/3947955
B) 15/478770/3947965
Fort Douglas Quadrangle
1:24,000
Ford
Fort Douglas
Haw Cr
Sugar Creek
Bear Creek
Big Piney
HAGARVILLE 16 MI.
NATIONAL
OZA
16
15
14
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21
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23
29
28
27
26
BR 146
123
3947
40'
3946