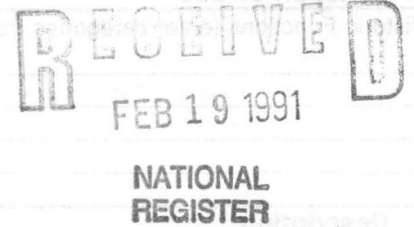


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United States Department of the Interior
National Park ServiceNational Register of Historic Places
Registration Form

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 Rivervale Inverted Siphons

other names/site number Rivervale Tunnel; Rivervale Culvert

2. Location

street & number State Highway 135

n/a ☐ not for publication

city, town Rivervale

n/a ☐ vicinity

state Arkansas

code AR

county Poinsett

code 111

zip code 72377

3. Classification

Ownership of Property

☒ private☐ public-local☐ public-State☐ public-Federal

Category of Property

☐ building(s)☐ district☐ site☒ structure☐ object

Number of Resources within Property

Contributing

0

0

1

0

1

Noncontributing

0 buildings

0 sites

0 structures

0 objects

0 Total

Name of related multiple property listing:

n/a

Number of contributing resources previously
listed in the National Register 0

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

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:)Entered in the
National Register

Signature of the Keeper

Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)

Other: Drainage

Other: Flood Control

Current Functions (enter categories from instructions)

Other: Drainage

Other: Flood Control

7. Description

Architectural Classification
(enter categories from instructions)

no style

Materials (enter categories from instructions)

foundation concrete

walls concrete

roof n/a

other concrete

Describe present and historic physical appearance.

SUMMARY: The Rivervale Inverted Siphons are located parallel to State Highway 135 at Rivervale, in Poinsett County, and at the intersection of the Right Hand Chute of Little River with Ditch Number Four of Drainage District Number Seventeen of Mississippi County and Ditch Number Sixty-three of Drainage District Number Seven of Poinsett County. Described by the U.S. Army Corps of Engineers as "monolithic," the 750 feet long, reinforced concrete structure consists of eight elliptical barrels which transport drainage waters from Ditch Number Four under the Right Hand Chute into Ditch Number Sixty-three. There have been no significant alterations to the structure. Despite minor changes to the setting, it retains integrity of design, materials, workmanship, location, and association.

ELABORATION: Inverted siphons were among the most ancient engineering structures and were generally used to transport potable water. Modern structures are used for the same purpose, such as in the Colorado River Aqueduct, and also in drainage projects where there is insufficient clearance with a normal culvert, such as under some roadbeds. The decision by engineers of Drainage District Number Seven to construct inverted siphons under the Right Hand Chute of Little River was dictated by the unvarying topography of northeastern Poinsett County, as well as by the prohibitive costs of alternative solutions such as pumping stations and separate channels for the Right and Left Hand Chutes and Buffalo Creek.

The eventual success of a comprehensive drainage plan for District Seven required the economical mediation of the excessive flow of water from tributary districts at the point it first entered the District. The inverted siphons redirected the flow of water from its natural outlet--the Right Hand Chute--through a man-made channel into a new outlet selected by District Engineers Pride and Fairley--the Left Hand Chute of Little River. Effective operation of the inverted siphons at Rivervale is also dependent on the same unique topography which demanded its

☒ See continuation sheet

United States Department of the Interior
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Rivervale Inverted Siphons
Section number 7 Page 1

construction. The elevation at the outlet end of the inverted siphons has to be lower than at the inlet end, although the elevation under the Right Hand Chute is lower than at either end. Water from Ditch Number Four enters the structure at 215 feet above Mean Gulf Level (MGL) and drops to 212 MGL as it passes under the Right Hand Chute. The flow reemerges in Ditch Number Sixty-three at an elevation of 214 MGL, essentially traveling uphill due to its acquired head.

The Rivervale Inverted Siphons are a reinforced concrete structure which consists of inlet and outlet head walls, wing walls, and retaining walls, and eight barrels of elliptical section, 8.5 feet deep and 6.5 feet wide. Recessed in both the upstream and downstream head walls is the date "1924," apparently the date of their construction but not the date of the completion of the structure. Width of the overall structure, including wing and head walls, is 120 feet. On the inlet side, width across the culvert openings is ninety feet, while it is only eight-six feet across the outlet. The first 13.5 feet of the inlet end and the final 16.5 feet of the outlet end are flared; the width across the barrels narrows to fifty-eight feet, four inches along most of the length of the inverted siphons. Thickness of the concrete on the bottom of the structure is 1.5 feet, while on its top the thickness varies from ten inches to one foot, three inches. Round and sheet piling supports the construction.

The Rivervale Inverted Siphons are largely a subterranean structure. Inlet and outlet wing, head, and retaining walls are the only visible elements. Its main length is concealed by the noncontributing topography of the Big Lake Floodway of the Right Hand Chute of Little River. This topography consists of enclosing levees, which have been rebuilt and strengthened since their original construction from 1919 to 1925; graveled roads along the crown of each levee; and the Right Hand Chute, which flows over the inverted siphons.

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)

Other: Drainage and Flood Control

Engineering

Period of Significance

1926-1940

Significant Dates

1926

Cultural Affiliation

n/a

Significant Person

n/a

Architect/Builder

Pride & Fairley Engineering Co.; Elliott
& Harmon Engineering Co./McWilliams
Construction Co.

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

SUMMARY: The Rivervale Inverted Siphons are nominated under Criteria A and C as a structure with state-wide significance. Under Criterion A, the siphons are significant in the area of [Other:] Drainage and Flood Control. Completed in 1926, the Rivervale Inverted Siphons were a prerequisite to permanent settlement in eastern Poinsett County and adjacent areas in the St. Francis River and Little River Basins. The Inverted Siphons provided relief from overflow and outlet for runoff from Craighead and Mississippi Counties and portions of southeast Missouri. One of the first components in the comprehensive drainage plan devised for Drainage District Number Seven of Poinsett County, the Inverted Siphons also permitted the immediate agricultural development and economic exploitation of parts of Poinsett County and those counties in Missouri and Arkansas tributary to District Seven. They were also a necessary reaction to the proliferation of organized drainage and levee districts in the early twentieth century, which engineering historian Robert W. Harrison has described as a social, as well as an economic, movement.¹ A response to the unvarying, low gradient slopes of northeastern Poinsett county, the Inverted Siphons are also eligible under Criterion C in the area of Engineering. The eight, reinforced concrete barrels were a unique application of a type of structure usually employed to transport potable water or in smaller drainage projects hampered by inadequate clearance. The period of significance for the siphons extends from its completion in 1926 to 1940, the

¹Robert W. Harrison, Alluvial Empire, vol. 1: A Study of State and Local Efforts toward Land Development in the Alluvial Valley of the Lower Mississippi River (n.p.: Delta Fund in cooperation with Economic Research Service, U.S. Department of Agriculture, 1961), p. 177.

☒ See continuation sheet

9. Major Bibliographical References

Previous documentation on file (NPS): n/a

- ☐ 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 # _____

☒ See continuation sheet

Primary location of additional data:

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

Specify repository:

Memphis District Office, Corps of Engineers
Drainage District Seven of Poinsett County

10. Geographical Data

Acreage of property Approximately three

UTM References

A 15 740840 3950630
Zone Easting Northing

C

B
Zone Easting Northing

D

☐ See continuation sheet

Verbal Boundary Description

The boundary of the Rivervale Inverted Siphons is shown as the solid line on the accompanying map entitled "Culvert Repair, Big Lake Floodway, Rivervale."

☐ See continuation sheet

Boundary Justification

This boundary includes all the features and property historically associated with this resource.

☐ See continuation sheet

11. Form Prepared By

name/title Steven E. Mitchell

organization n/a

street & number 1228A East Dunklin

city or town Jefferson City

date April 27, 1990

telephone 314/751-5368

state MO zip code 65101

9. Major Bibliographical References

Previous documentation on file (NPS): n/a

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
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- ☐ Local government
- ☐ University
- ☒ Other

Specify repository:

Memphis District Office, Corps of Engineers

Drainage District Seven of Poinsett County

10. Geographical Data

Acreage of property Approximately three

UTM References

A

1	5
---	---

7	4	0	8	4	0
---	---	---	---	---	---

3	9	5	0	6	3	0
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Zone Easting Northing

C

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--	--	--	--	--	--

--	--	--	--	--	--	--	--

B

--	--

--	--	--	--	--	--

--	--	--	--	--	--	--	--

Zone Easting Northing

D

--	--

--	--	--	--	--	--

--	--	--	--	--	--	--	--

☐ See continuation sheet

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Rivervale Inverted Siphons
Section number 8 Page 1

arbitrary fifty year limit, although the drainage and flood control functions of the structure remain unaltered.

ELABORATION: In the traditional flow of westward movement, the St. Francis River Basin was shunned by settlers and regarded as an obstacle to progress and development. Scoured by the errant wanderings of the Mississippi River in prehistoric times, the area remained sparsely populated into the late nineteenth and early twentieth centuries. Early travelers found a maze of swamps, shallow lakes, and seemingly aimless rivers and streams which defied meager, unorganized efforts to reclaim the fertile land. The Basin's drainage problems were intensified by the New Madrid Earthquakes of 1811-1812, as caved banks and felled trees along the St. Francis and other rivers created vast rafts which inundated large portions of the area and convinced observers of the disaster's aftermath that the region had subsided.²

In 1836, a report to the Senate Committee on Commerce described the course of the St. Francis River from Cape Girardeau to Helena:

The greater part of the area . . . is covered by an immense morass, inundated by the overflowing of the 'Father of Waters,' or submerged by the rushing torrents from the neighboring hills . . . These streams . . . spread over the country, giving it the appearance of a vast Lake over which magnificent forests of Cypress and other gigantic trees wave their branches in gloomy solitude.³

²Roger T. Saucier, "Origins of the St. Francis Sunk Lands, Arkansas and Missouri," Geological Society of America Bulletin 81 (September 1970): 2847-2853; and Steve Mitchell, "City in the Wildlands," in Georgia Lewis Moore, Trumann That Was--and Trumann That Is (N.p., 1986).

³Clarence Edwin Carter, ed., Territorial Papers of the United States, 26 vols. (Washington, D.C.: Government Printing Office, 1936-1954), vol. 21: Territory of Arkansas 1829-1836, p. 1161.

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Rivervale Inverted Siphons

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Only the "lost hills" of Crowley's Ridge dominated a region "annually covered by water, and at all seasons by a heavy growth of timber [and] thick cane-breaks closely interwoven by many plants . . ."⁴

In 1840 and 1842, original surveyors of these lowlands encountered broad expanses submerged under three to four feet of water much of the year. In addition, timber and other growth often extended from one to one-and-a-half miles into the flooded areas. Confounded in their attempts to establish section lines, the surveyors instead meandered along the edges of the impassable reaches and listed large portions of the St. Francis Basin as lakes or "Sunk Lands" on survey plats. The largest such area in Poinsett County was Lake St. Francis, which reached depths of up to fifteen feet as the river bed was neared. The lake, which began six miles north of Marked Tree, extended a distance of twenty-four miles and broadened to a width of twelve miles⁵.

By 1850, according to Rupert B. Vance in Human Geography of the South, the line of the frontier had progressed through Arkansas and was drawn to the west of the state⁶. The St. Francis River Basin, however, was largely shunned in the advance of settlement and remained more sparsely peopled than most other areas of the

⁴Ibid.

⁵"Chapman and Dewey Lumber Company v. Board of Directors of St. Francis Levee District," 100 Ark. 94 (1911), pp. 96-97; "Chapman and Dewey Lumber Company v. St. Francis Levee District," 232 U.S. 186 (1914), p. 189; Anne Ritter, "Marked Tree from 1885-1936," Craighead County Historical Quarterly 5 (Winter 1967): 25; and U.S. Department of Interior, The New Madrid Earthquake, by Myron L. Fuller, Bulletin 394 (Washington, D.C.: Government Printing Office, 1912; reprint ed., Cape Girardeau, Mo.: Ramfire Press, 1966), p. 67.

⁶Rupert B. Vance, Human Geography of the South: A Study in Regional Resources and Human Adequacy, 2d ed. (Chapel Hill: University of North Carolina Press, 1935), p. 53.

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Rivervale Inverted Siphons

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state. Much of the St. Francis Basin was patented under the 1850 Swamp Land Act. Designed to help Arkansas and other states retrieve their lowlands from flood waters and impaired drainage, the act granted the states all unsold federal lands judged "swamp and overflowed lands, unfit thereby for cultivation."⁷ The intent of the legislation was to allow the states, by sale of the swamp lands, to raise revenue exclusively for the construction of levees and drains to reclaim the lands. The Surveyor-General initially approved 428,620 acres of swamp lands in Poinsett County, the fifth largest amount in any Arkansas county. Land patented as swamp land was sold and auctioned for fifty cents to \$1.25 per acre.⁸

Early efforts to apply swamp land revenues by the inexperienced local levee and drainage boards were sporadic, uncoordinated, and largely futile. Their fragile levees, derided as "mud pies," were virtually useless during Mississippi River floods which occurred with relentless frequency in 1858, 1862, 1867, and 1882. Dismayed by the lack of progress in reclamation, newspaper editorialists dismissed much of the admittedly fertile but usually uninhabitable lands as "wildlands" and despaired of their useful occupation.⁹ In 1883, however, the Kansas City, Fort Scott and Gulf Railroad (KC,FS&G) was completed to Memphis and

⁷"An Act to enable the State of Arkansas and other States to reclaim the 'Swamp Lands within their limits," Chapter 84, 9 Stat. at L. 519, p. 519; and History of the Organization and Operations of the Board of Directors, St. Francis Levee district of Arkansas, 1893-1945 (West Memphis, Ark.: n.p., n.d.), p. 30.

⁸Robert W. Harrison and Walter M. Kollmorgen, "Land Reclamation in Arkansas under the Swamp Land Grant of 1850," Arkansas Historical Quarterly 6 (Winter 1947): 371-379.

⁹Marked Tree Gazette, September 29, 1905, p. 1.

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Rivervale Inverted Siphons

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threaded along the edge of the wetlands in northeast Arkansas.¹⁰ Coincident with the construction of the KC,FS&G and other rail lines, the depletion of the timber resources of the Northwest and the Great Lakes region compelled lumbermen to turn to the virtually untouched forests of the South. The railroads provided entrance into areas inaccessible by river transportation and, with the establishment of sawmills and lumber plants, imposed a new incentive and pattern for settlement.¹¹

Although inducements for relocation increased, overflow and runoff waters continued to seasonally deny the land to its would-be inhabitants. Following two additional Mississippi River floods, in 1884 and 1890, organized levee construction in the Basin finally began. In 1893, the St. Francis Levee District was created and was as powerless as its predecessors to control a disastrous flood only four years later. The 1897 flood prompted some engineers to suggest to the Senate Committee on Commerce that the still largely unsurveyed St. Francis Basin be depopulated and divided into a series of reservoirs. In the justification for this suggestion, Mississippi River Commission Engineer J.A. Ockerson explained: "We know, in a general way, that [the Basin] is filled with sloughs, swamps, and ridges, and that only about 15 per cent of it is cleared land."¹²

In its final report, the Commerce Committee rejected Ockerson's plan as impractical, and the Mississippi River Commission and

¹⁰"Burlington Northern Railroad's Predecessors--The Frisco: A Battler and a Survivor" [pamphlet], Burlington Northern Railroad (n.d.), p. 3.

¹¹Wendell Holmes Stephenson and E. Merton Coulter, eds., A History of the South, 10 vols. (Baton Rouge: Louisiana State University Press, 1951-1967), vol. 10: The Emergence of the New South, by George Brown Tindall, p. 82.

¹²U.S. Senate, Committee on Commerce, Report on the Mississippi River Floods, 55 Cong., 3d sess., Report No. 1433, (1898), p. 435.

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local districts continued to rely on the inconstant system of levees. Floods continued to occur, also, most notably in 1903, 1912, 1913, 1915, and 1916. Efforts to control the river upstream only intensified the severity of floods in the unprotected areas downstream. For example, in 1908, the Little River Drainage District was organized to reclaim the low lands of the Little River in Missouri. Under their drainage plan, the district's runoff waters were discharged into Big Lake, which increased the overflow in the unprotected and unorganized portions of Mississippi County, Arkansas.

From 1910 to 1920, the number of drainage districts organized in Arkansas, Mississippi, and Missouri reached a peak.¹³ In 1917, the Mingo Drainage and Inter-River Improvement Districts were created in Missouri and provided the final provocation for the inhabitants of Eastern Arkansas. The Marked Tree Gazette editorialized at length on "this threatened destruction."¹⁴ According to engineers the planned improvements would increase the flow in times of flood of the St. Francis River in Arkansas five to ten times its previous volume. If the plans were completed, the Gazette promised "nothing short of ruination for the people of the St. Francis river valley, . . . drowning us out of homes and away from our farms and factories. There is nothing more serious threatening us than these two Missouri districts."¹⁵

Incited by the formation of the new districts, as well, Senator Thaddeus H. Caraway joined the Marked Tree newspaper in its assessment of the future. In a letter to the "prominent men in Eastern Arkansas," the Senator warned that Missouri intended to divert the overflow from the Ozarks and "turn the entire column

¹³George W. Pickels, Drainage and Flood-Control Engineering, 2d ed. (New York: McGraw-Hill Book Company, 1941), pp. 445-449.

¹⁴Marked Tree Gazette, January 12, 1917, p. 1.

¹⁵Ibid.

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Rivervale Inverted Siphons

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loose on Arkansas."¹⁶ Caraway counseled Arkansans to seek an injunction against the Missouri improvement districts until the United States government canalized or dredged the St. Francis River to control the increased volume of water. A solemn editorialist for the Marked Tree Tribune agreed and warned that, if the Missouri projects were completed, "the entire St. Francis basin will become a wilderness of water . . ."¹⁷

With the proliferation of local efforts, Congress finally responded to the increasingly apparent need for a consistent flood control policy. The Ransdell-Humphreys Flood Control Act of 1917 reaffirmed the Federal government's commitment to flood prevention and control, although the \$45 million appropriation was insufficient. Local interests were encouraged by a provision of the act which reduced their contribution to one-half the cost of flood prevention works in their area, from the two-thirds previously required.

In the same year, with the renewed interest in flood prevention, the Arkansas General Assembly authorized the establishment of six drainage districts by direct legislation. Act 193 created Drainage District Number Seven in Poinsett County. The District boundaries, which originally encompassed the lands between Crowley's Ridge and the St. Francis River and Lake, were amended in 1919 to include a total of 190,000 acres in eastern Poinsett County. In 1919, the District, one of the largest in the country, began a series of ambitious, interrelated projects designed to reclaim "the lands therein by drainage ditches and levees."¹⁸

¹⁶Marked Tree Tribune, February 9, 1917, p. 1.

¹⁷Ibid.

¹⁸Public and Private Acts and Joint and Concurrent Resolutions and Memorials of the Forty-first General Assembly of the State of Arkansas, January 8, 1917-March 9, 1917 (n.p., n.d.), pp. 1053-1083; and Pickels, pp. 445-449.

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The first concern of the new district's directors was management of waters which entered Poinsett County from adjacent counties. The natural outlet for Drainage District Number Seventeen of Mississippi County was through the Right Hand and Left Hand Chutes of the Little River, which joined the St. Francis River north of Marked Tree, within the boundaries of Drainage District Number Seven. A number of other watersheds were tributary to District Seven, as well. Parts of the drainage of Districts Sixteen and Seventeen of Mississippi County, Districts Nine and Eighteen of Craighead County, and part of the runoff from Dunklin County, Missouri, originally had their outlet through Buffalo Creek, which emptied into the Right Hand Chute in District Seven. As part of their improvements the Arkansas and Missouri drainage districts straightened and deepened the shallow, sluggish creek to handle increased flow. The improved channel, renamed Ditch Number Four, increased the drainage burden imposed on the northeastern portion of District Number Seven.

As part of their comprehensive drainage plans, Districts Seventeen and Seven proposed to construct floodways to contain the Right Hand Chute of the Little River and the St. Francis River. With the completion of leveed basins and channels for the two waterways, a man-made basin or bowl would be created in the northeast corner of Poinsett County and drainage would be restricted to a single outlet into the Right Hand Chute of the Little River. Because of the shallow slopes, which averaged one foot per mile, and the limited channel capacity of the Right Hand Chute, District Number Seven Engineers Pride and Fairley anticipated disastrous overflows in the northeast portion of the district and in adjacent districts. To contend with the heavy runoff from already organized districts, the Blytheville engineering firm devised and evaluated three solutions. The first two proposals--isolation of runoff carried by Ditch Number Four and the Right Hand Chute in separate channels or the construction and maintenance of a pumping station--were rejected as prohibitively expensive. The third proposal was construction of a culvert beneath the Right Hand Chute and its floodway. The culvert would carry the flow of Ditch Number Four under its natural outlet--the Right Hand Chute--and conduct it into the Left Hand Chute, decreasing the drainage burden imposed on the

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Rivervale Inverted Siphons

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Right Hand Chute.

On October 4, 1919, officials of the newly created Drainage District Eighteen of Craighead County agreed to pay District Seven \$100,000 for an outlet for the Buffalo Creek runoff through the Poinsett County district. One third of the payment would be made when work began, one third when construction was one-half complete, and the remainder on completion.¹⁹ On December 20, 1921, the directors of Drainage District Seventeen of Mississippi County agreed to acquire the rights-of-way for a floodway for the Right Hand Chute and to maintain the floodway. In return, District Seven agreed to provide an outlet for District Seventeen. On February 7, 1922, contracts between the three districts were approved for construction of Improvement Number Fifty-eight--a culvert with ten rectangular shaped barrels under the District Seventeen floodway. The 750 feet long monolithic structure was designed by District Engineers Pride and Fairley of Blytheville and Consulting Engineers Elliott and Harmon Engineering Company of Memphis, Tennessee.²⁰

On August 1, 1922, the plans for the structure were amended to decrease the number of barrels.²¹ Studies conducted by Elliott and Harmon Engineering Company indicated elliptically shaped barrels increased the structure's capacity 10 percent over the capacity of a rectangular barrel. Also, because better workmanship and materials were required to construct an elliptical barrel, the coefficient of roughness was also reduced, which resulted in an additional 10 percent increase in capacity. The resulting 20 percent increase in capacity permitted engineers to reduce the total number of barrels from

¹⁹Minutes of the Meeting of the Board of Commissions of Drainage District No. Seven of Poinsett County, Book 2, pp. 19-20.

²⁰Idem, p. 18.

²¹Idem, p. 47.

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the original ten rectangular barrels to eight elliptical ones.²²

On December 21, 1922, the directors of Drainage District Number Seven awarded the contract for the construction of the inverted siphons at Rivervale to the McWilliams Construction Company of Memphis. The contract allowed the company a 15 percent profit, with total cost of the improvement not to exceed \$190,000.²³

The project was hampered by delays from its inception. Work did not begin on February 1, 1923, as required in the contract, and continued beyond the specified completion date of December 1, 1923. By July 6, 1925, the inverted siphons were still unfinished and awaited payment of Drainage District Number Eighteen's share of the expenses of the contract.²⁴ By 1926, however, Improvement Number Fifty-eight was completed and the district's comprehensive drainage plan implemented. Runoff previously carried by Buffalo Creek, or Ditch Number Four, into the Right Hand Chute of Little River was now diverted under the Right Hand Chute--its natural outlet--and into Ditch Number Sixty-Three by the inverted siphons. The flow was then carried by Ditch Number Sixty-three approximately 1.7 miles southeast and south into the Left Hand Chute, which entered the St. Francis River north of Marked Tree.

By 1926, with the completion of the Inverted Siphons, Steep Gut

²²G.J. Schmidt to Jacob A. Harmon, Chief Engineer, Elliott and Harmon Engineering Company, "Office Report on Computations for Drainage Culvert at Rivervale, Drainage District No. 7--Poinsett County, Arkansas," August 22, 1922, pp. 1-2, [file] Rivervale Culverts, Original Plans--St. Francis River, Rivervale Culvert (1936), U.S. Army Corps of Engineers, Memphis District Office.

²³Minutes of the Meeting of the Board of Directors of Drainage District No. Seven of Poinsett County, Book 2, pp. 93 and 95.

²⁴Idem, pp. 215 and 235.

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National Park Service**

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Floodway, Marked Tree Lock and Sluiceway, and numerous smaller and tributary ditches, the first comprehensive drainage plan for Drainage District Number Seven was implemented. Although the district drainage plan was subsequently revised and refined, especially after devastating floods in 1927 and 1937, the function of the Rivervale Inverted Siphons has remained unaltered and consistent. In 1936, with the passage of the Flood Control Act of that year, the Inverted Siphons were also included as a component of the U.S. Army Corps of Engineers' St. Francis River Basin Flood Control Project.²⁵ The Inverted Siphons permitted the economic development and exploitation of parts of Poinsett, Craighead, and Mississippi Counties in Arkansas, and the portions of southeast Missouri tributary to Drainage District Number Seven. With an effective outlet for drainage and runoff waters, the permanent and comfortable introduction of agriculture, industry, settlement, and a stable system of transportation were also introduced and maintained.

²⁵Steve Mitchell, "Marked Tree Lock and Siphons," National Register of Historic Places Registration Form, 1988.

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"An act to enable the State of Arkansas and other states to reclaim the 'Swamp Lands' Within their limits," Chapter 84, 9 Stat. at L. 519.

Carter, Clarence Edwin, ed. Territorial Papers of the United States. 26 vols. Washington, D.C.: Government Printing Office, 1934-1951. Vol. 21: Territory of Arkansas, 1829-1836.

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Rivervale Inverted Siphons
Section number 9 Page 2

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Rivervale Inverted Siphons

MULTIPLE
NAME:

STATE & COUNTY: ARKANSAS, Poinsett

DATE RECEIVED: 2/19/91 DATE OF PENDING LIST: 3/05/91
DATE OF 16TH DAY: 3/21/91 DATE OF 45TH DAY: 4/05/91
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 91000339

NOMINATOR: STATE

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: N SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

☒ ACCEPT ☐ RETURN ☐ REJECT 3/22/91 DATE

Entered in the
National Register

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA _____
REVIEWER _____
DISCIPLINE _____
DATE _____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

CLASSIFICATION

___count ___resource type

STATE/FEDERAL AGENCY CERTIFICATION

FUNCTION

___historic ___current

DESCRIPTION

___architectural classification

___materials

___descriptive text

SIGNIFICANCE

Period Areas of Significance--Check and justify below

Specific dates

Builder/Architect

Statement of Significance (in one paragraph)

___summary paragraph

___completeness

___clarity

___applicable criteria

___justification of areas checked

___relating significance to the resource

___context

___relationship of integrity to significance

___justification of exception

___other

BIBLIOGRAPHY

GEOGRAPHICAL DATA

___acreage ___verbal boundary description

___UTMs ___boundary justification

ACCOMPANYING DOCUMENTATION/PRESENTATION

___sketch maps ___USGS maps ___photographs ___presentation

OTHER COMMENTS

Questions concerning this nomination may be directed to

_____ Phone _____

Signed _____ Date _____



Riverdale Inverted Siphons
Riverdale, Poinsett County AR
Photographed by Steve Mitchell
April 1988
Negatives on file at AHPP
Northwest elevation

J
N



Rivervale Inverted Siphons

Rivervale, Poinsett County AR

Photographed by Steve Mitchell

April 1988

Negatives on file at AHAP

Northwest elevation

64



RIVERVALE Inverted Siphons
Riverdale, Poinsett County
Photographed by Steve Mitchell
April 1988
Negatives on File at AHPP

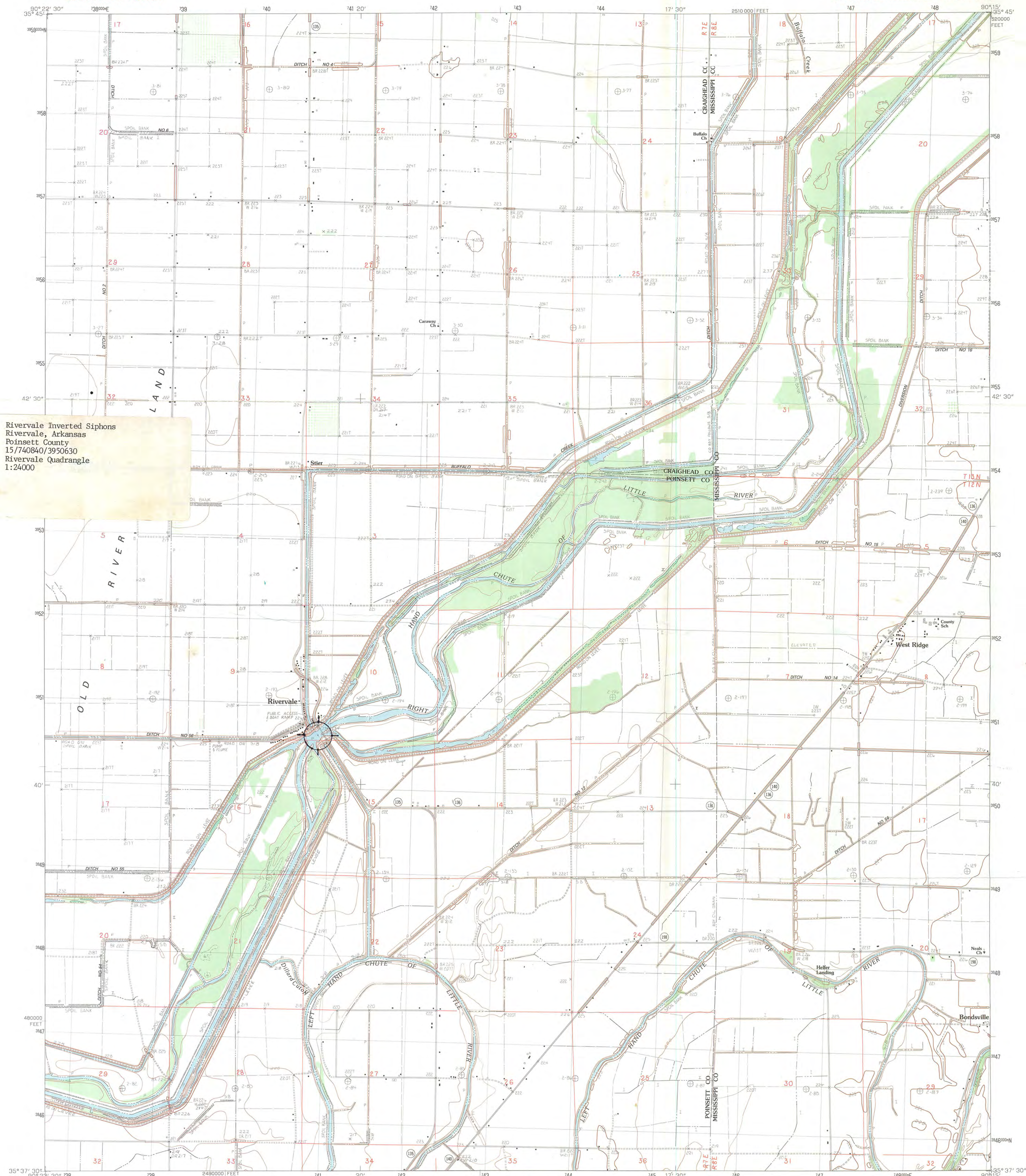
AK

NORTHWEST VIEW: DETAIL



RIVERVALE Inverted Siphons
RIVERVALE, Poinsett County AR
Photographed by Steve Mitchell
April 1988
Negatives on FILE at AHPP
VIEW FROM ~~NORTH~~ SOUTH

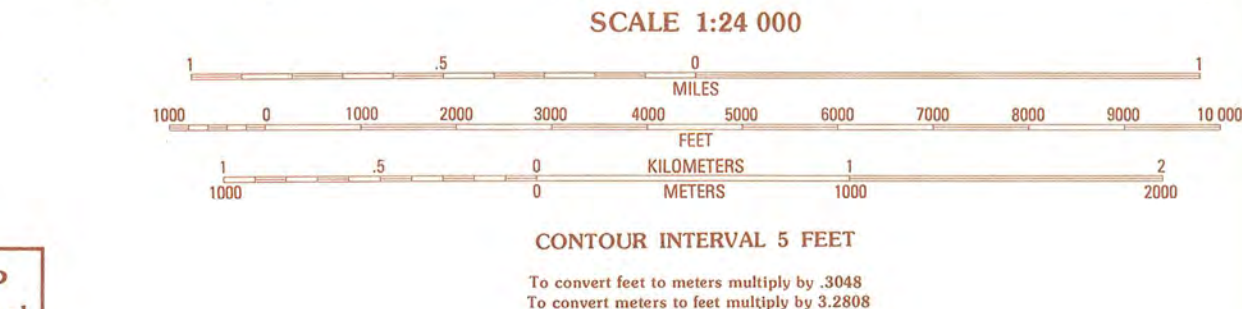




Riverville Inverted Siphons
Riverville, Arkansas
Poinsett County
15/740840/3950630
Riverville Quadrangle
1:24000

PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY: USGS AND NOS-NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN: 1976
FIELD CHECKED: 1979. MAP EDITED: 1983
PROJECTION: LAMBERT CONFORMAL CONIC
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR
ZONE: 15
10,000-FOOT STATE GRID TICS: ARKANSAS, NORTH ZONE
UTM GRID DECLINATION: 1°34' EAST
1983 MAGNETIC NORTH DECLINATION: 3°00' EAST
VERTICAL DATUM: NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM
To place on the predicted North American Datum of 1983
move the projection lines as shown by dashed corner ticks
(6 meters south and 9 meters east)
There may be private inholdings within the boundaries of any
Federal and State reservations shown on this map

PROVISIONAL MAP
Produced from original
manuscript drawings. Information
shown as of date of
field check.



1	2	3	1 Lake City
4	5	2 Caraway	
6	7	3 Manila South	
		4 Hatchee Con	
		5 Etowah	
		6 Marked Tree	
		7 Lepanto	
		8 Joiner	

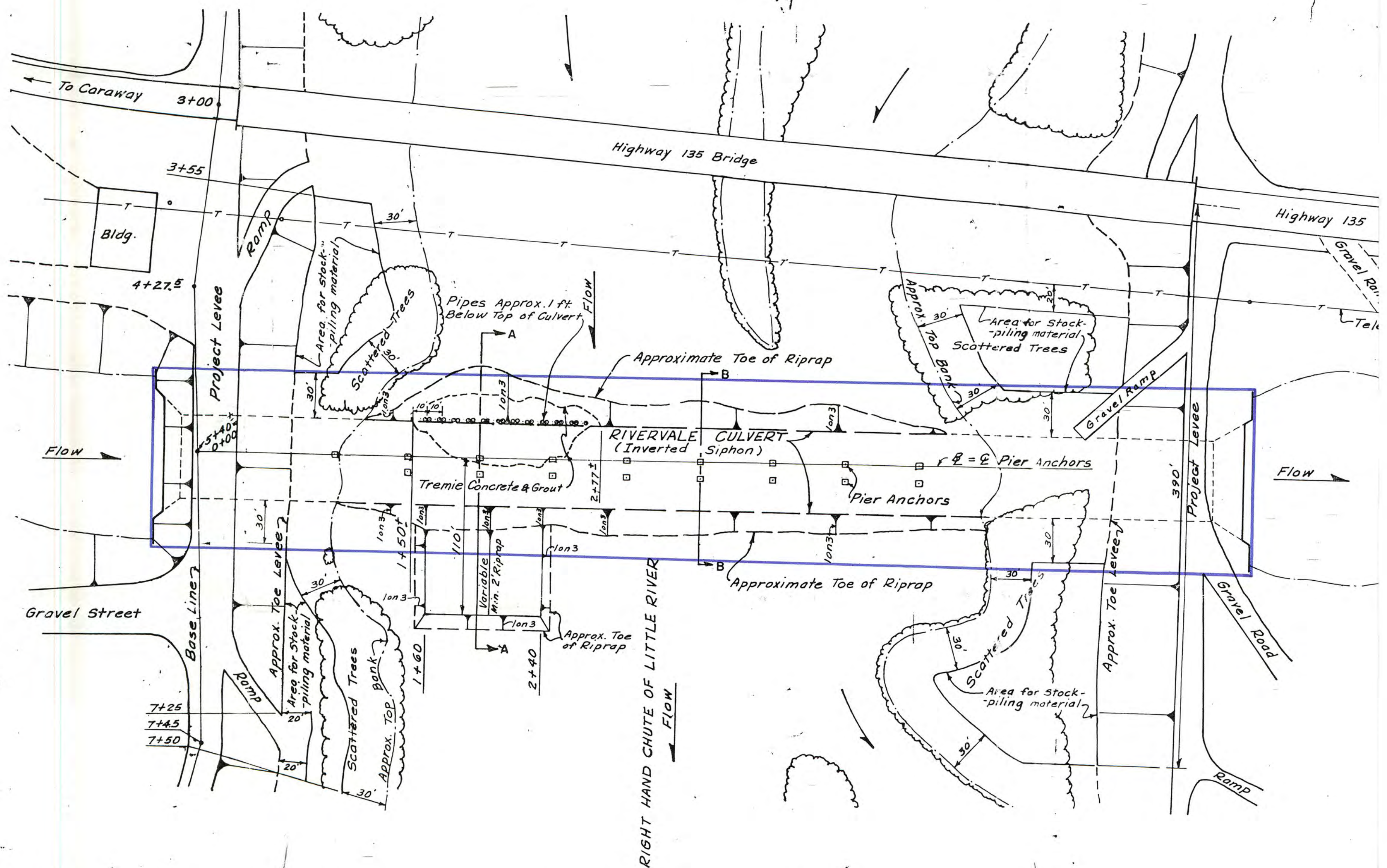
ROAD LEGEND
Improved Road
Unimproved Road
Trail
Interstate Route U.S. Route State Route

RIVERVALE, ARKANSAS
PROVISIONAL EDITION 1983

35090-F3-TF-024

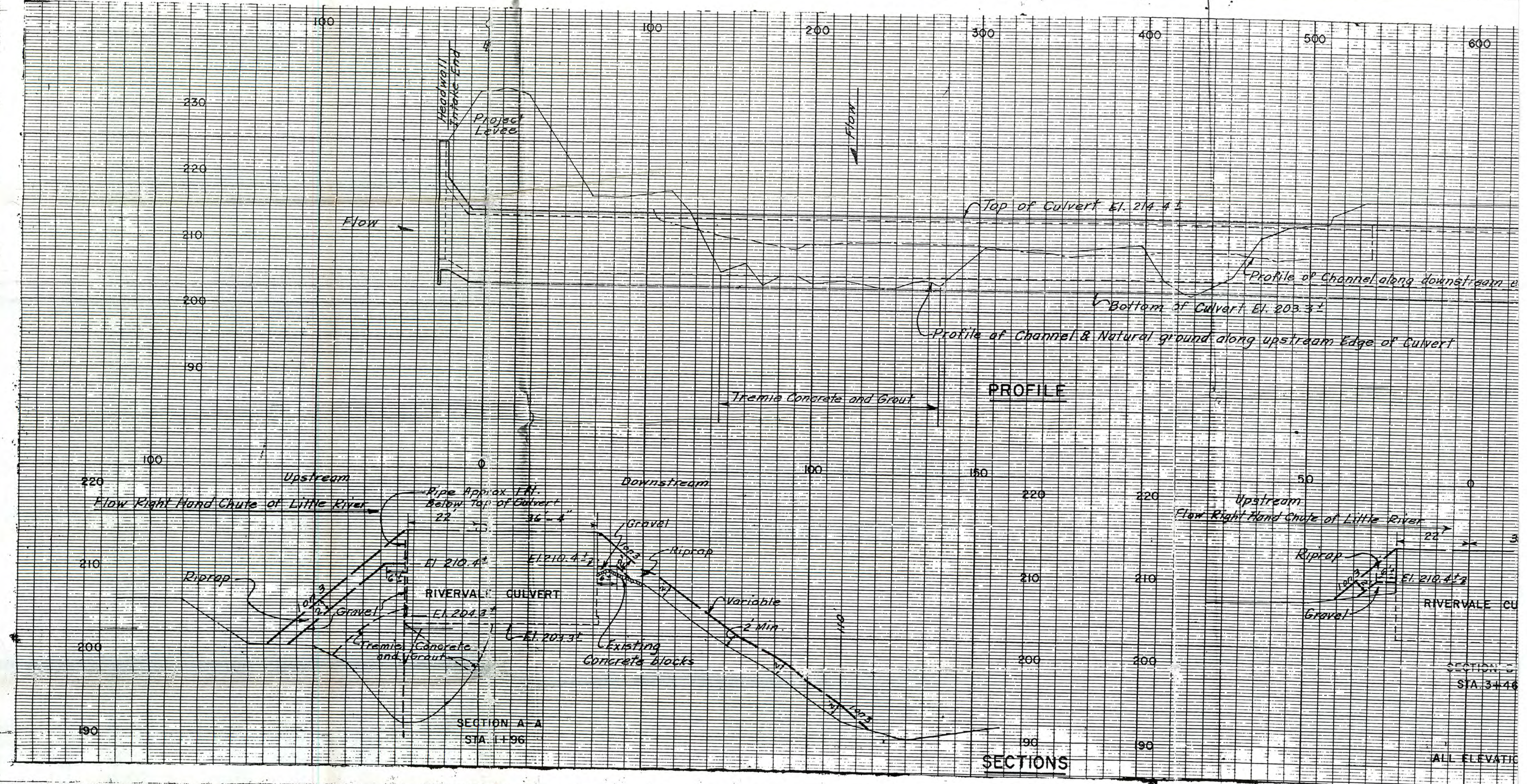
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND ARKANSAS GEOLOGICAL COMMISSION, LITTLE ROCK, ARKANSAS 72204

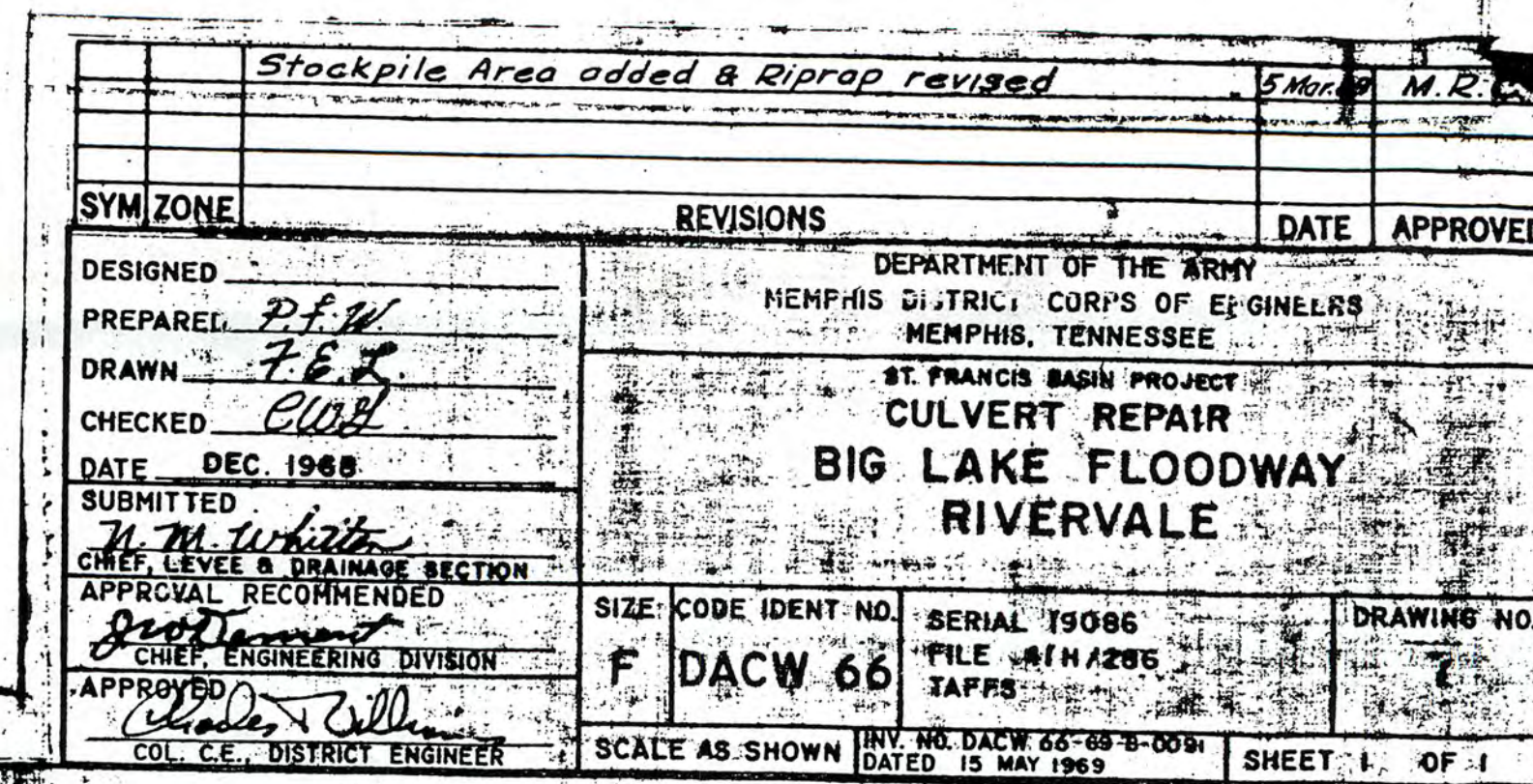
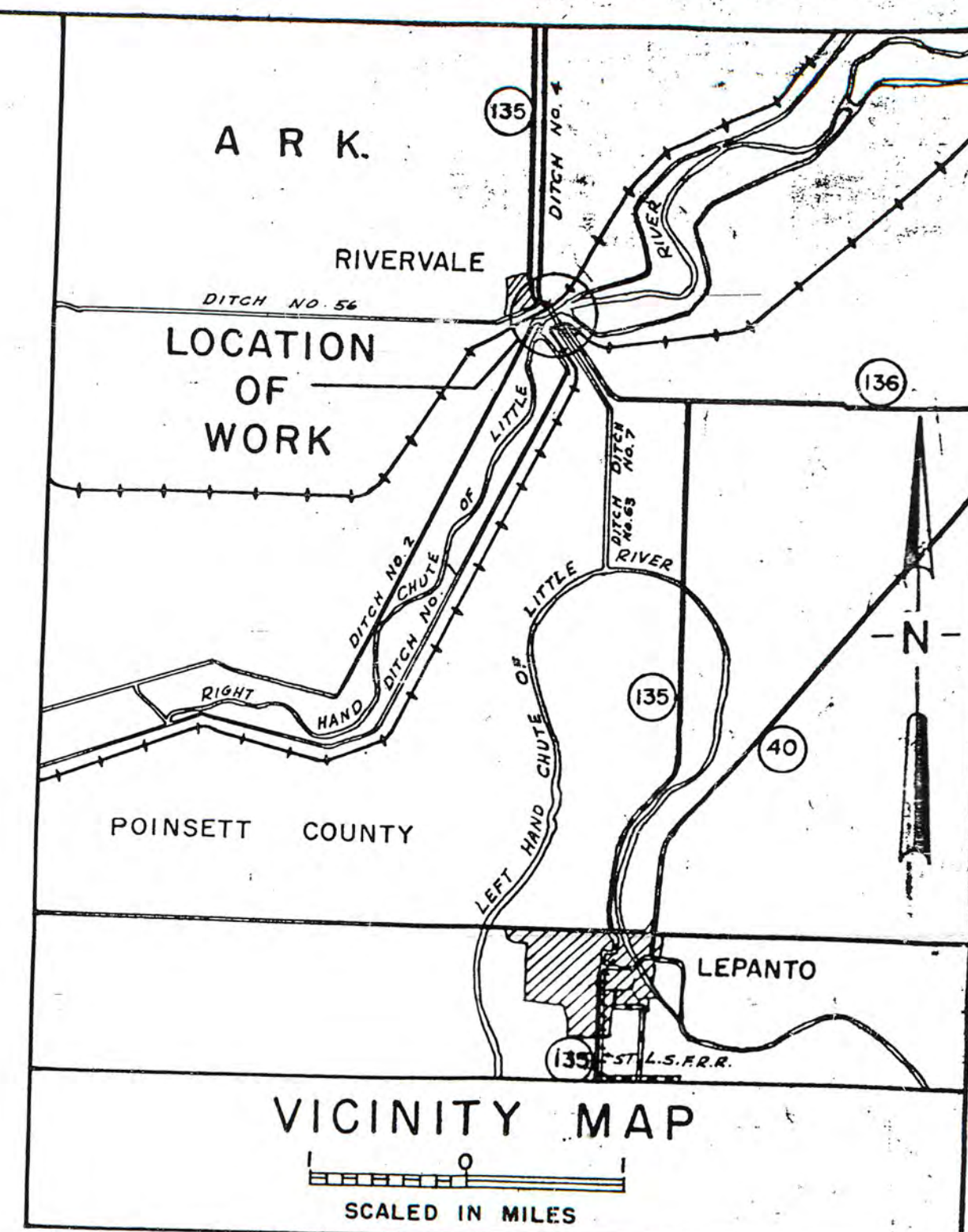
ARKANSAS



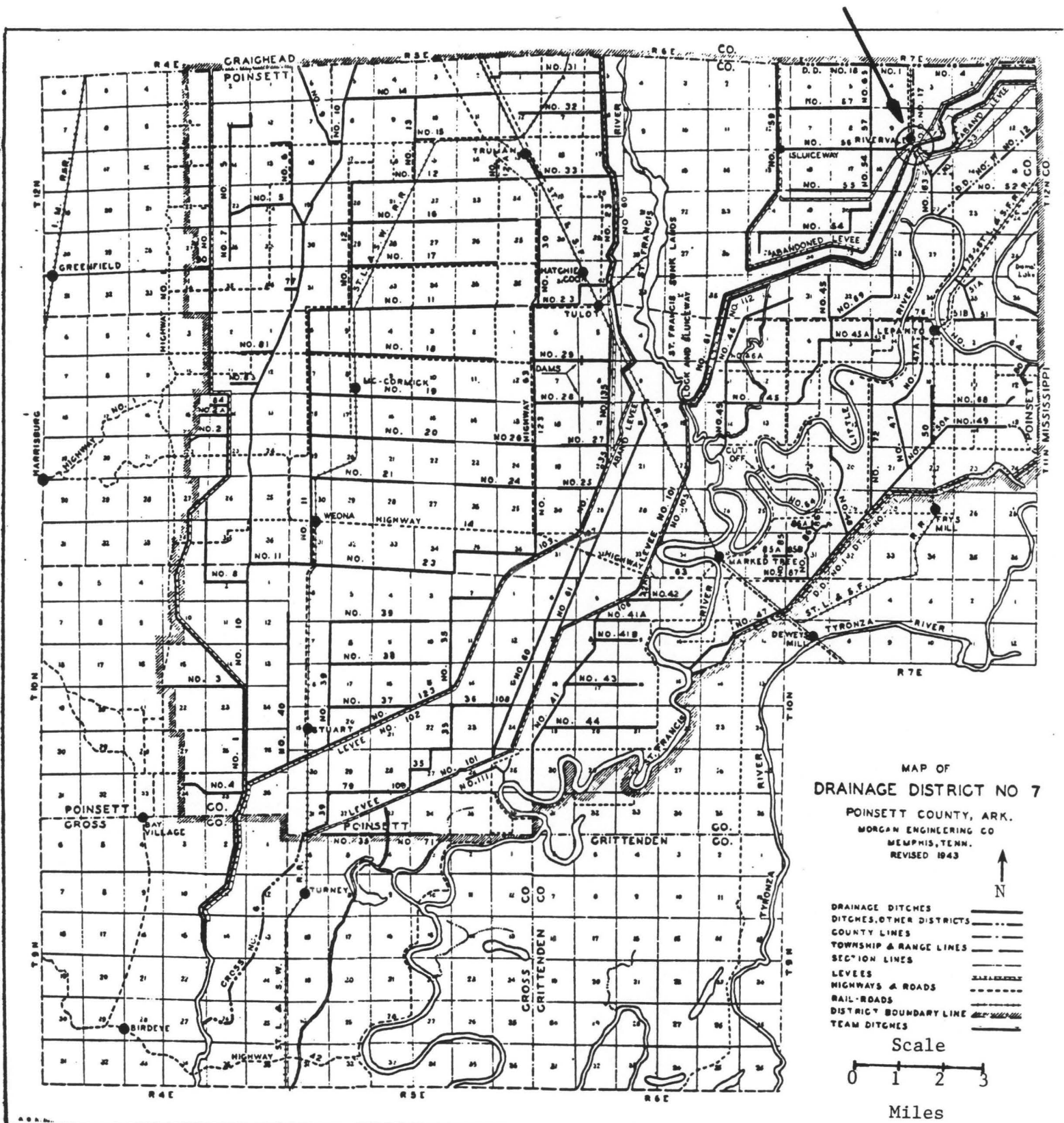
Topography shown is approximate only and may not reflect all changes which have occurred since original survey was made.

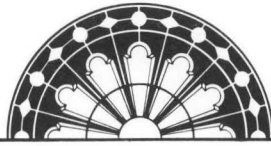
POINSETT COUNTY





Rivervale Inverted Siphons
Rivervale, Poinsett County, Arkansas





ARKANSAS
HISTORIC
PRESERVATION
PROGRAM

RECEIVED
FEB 19 1991

NATIONAL
REGISTER

February 11, 1991

Carol D. Shull
Chief of Registration
United States Department of the Interior
National Register of Historic Places
National Park Service
1100 "L" Street, NW
Washington, DC 20240

RE: Rivervale Inverted Siphons
Rivervale - Poinsett County, Arkansas

Dear Carol:

We are enclosing for your review the nomination of the above referenced property. The Arkansas Historic Preservation Program has complied with all applicable nominating procedures and notification requirements in the nomination process.

Thank you for your consideration in this matter.

Sincerely,

Cathy Buford
State Historic Preservation Officer

CB:dg

Enclosures

