Listed 3-22-91

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 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street & number State Highway 135 n/a ☐ not for publication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	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☒ private	☐ building(s)	0	0 buildings
☐ public-local	☐ district	0	0 sites
☐ public-State	☐ site	1	0 structures
☐ public-Federal	☒ structure	0	0 objects
	☐ object	1	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.

Cathryn A. Buford — 2-11-91
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

3-22-91

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
Other: Drainage and Flood Control	1926-1940	1926
Engineering		

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

[1]Robert 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

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.

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 Giradeau 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]

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[2]Roger 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).

[3]Clarence 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.

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 miles[5].

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 state[6]. 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

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[4]Ibid.

[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 Giradeau, Mo.: Ramfire Press, 1966), p. 67.

[6]Rupert 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.

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

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[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.

[8]Robert 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.

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

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

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

[11]Wendell 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.

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

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

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

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

[15] Ibid.

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]

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

[17] Ibid.

[18] Public 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.

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

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

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

[20]Idem, p. 18.

[21]Idem, p. 47.

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

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[22]G.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.

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

[24]Idem, pp. 215 and 235.

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.

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

"An act to enable the "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.

"Chapman and Dewey Lumber Company v. St. Francis Levee District," 232 U.S. 186. 1914.

Drainage District No. 7, Poinsett County, Arkansas. An Early Report by Pride and Fairley, Blytheville. Drainage District Number Seven of Poinsett County, Marked Tree, Arkansas.

Faulkner, G.D. "Conservation in Poinsett County." Poinsett County. W.P.A. Place File. Arkansas History Commission.

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

Left Hand Chute of Little River. File No. 1. Drainage District Number Seven of Poinsett County, Marked Tree, Arkansas.

Minutes of the Meeting of the Board of Directors of Drainage District No. Seven of Poinsett County. Books 1 and 2. Marked Tree, Arkansas.

Mitchell, Steve. "City in the Wildlands," in Georgia Lewis Moore, Trumann That Was--and Trumann That Is. N.p., 1986.

Morgan Engineering Company. Right-of-Way Descriptions, Drainage District No. 7, Poinsett County, Arkansas. Compiled June 1950. Drainage District Number Seven of Poinsett County, Marked Tree, Arkansas.

Pickels, George W. Drainage and Flood-Control Engineering. 2d ed. New York: McGraw-Hill Book Company, 1941.

Plans, Specifications and contract for Reinforced Concrete Culvert at Rivervale, Arkansas, 1922. Pride and Fairley, Blytheville, District Engineer. Elliott and Harmon Engineering Co., Memphis, Consulting Engineer. Drainage District Number Seven of Poinsett County, Marked Tree, Arkansas.Reinforced Concrete Culvert, Improvement 58,

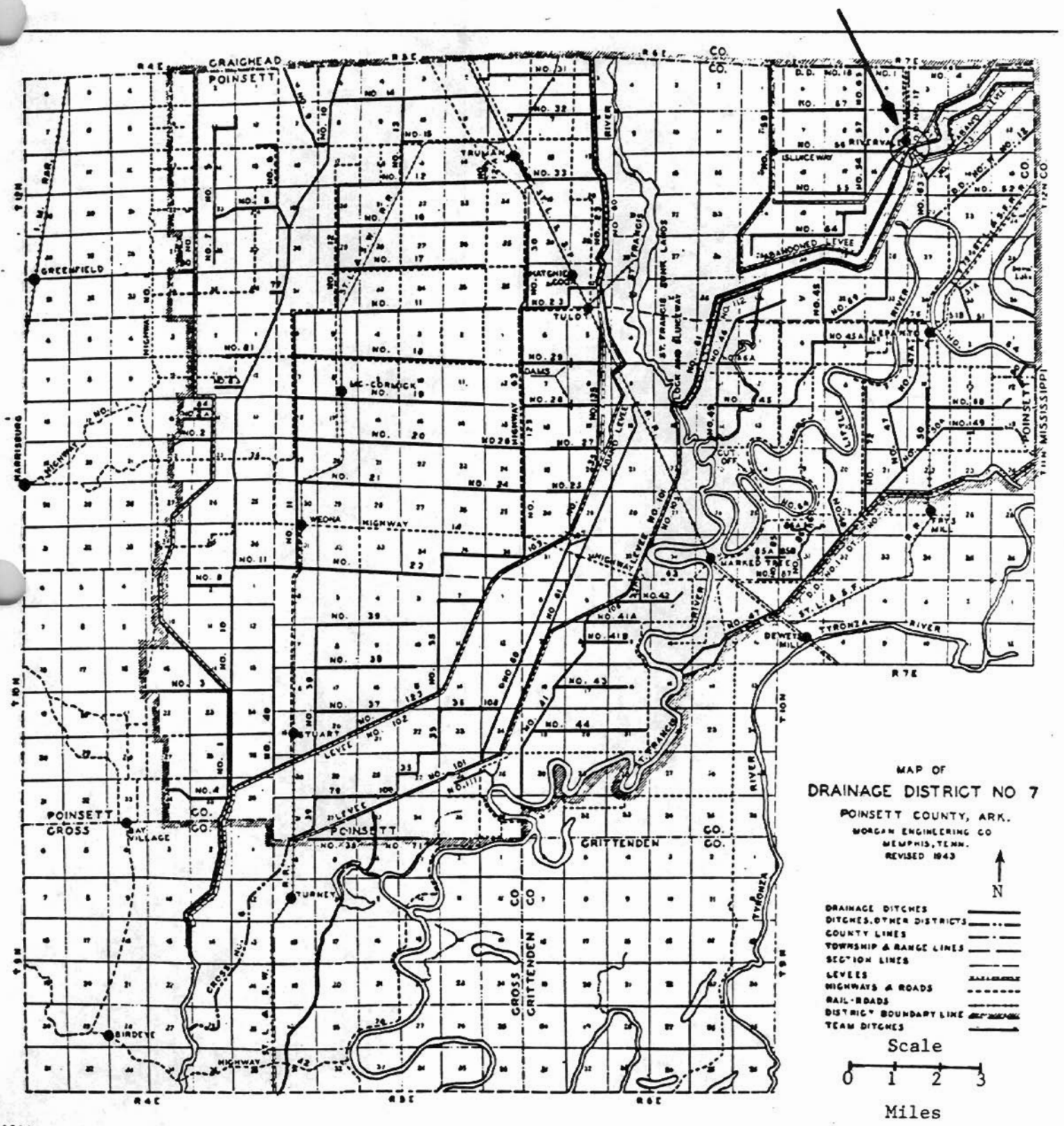
Reinforced Concrete Culvert, Improvement 58, Drainage District No. 7, Poinsett County, Arkansas. Pride and Fairley, Blytheville, District Engineer. Elliott and Harmon Engineering Co., Memphis, Consulting Engineer. [Blueprints.] Drainage District Number Seven of Poinsett County, Marked Tree, Arkansas.

Rivervale Culverts, Original Plans--St. Francis River, Rivervale Culvert (1936). [File.] U.S. Army Corps of Engineers, Memphis District Office, Memphis, Tenn.

U.S. Congress. House of Representatives. Flood Control in the Mississippi Valley. House Document No. 90. 70th Cong., 1st sess. 1928.

U.S. Congress. Senate. Committee on Commerce. Report on the Mississippi River Floods. Report No. 1433. 55th Cong., 3d sess. 1898.

Rivervale Inverted Siphons
Rivervale, Poinsett County, Arkansas



Rivervale Inverted Siphons
Rivervale, Arkansas
Poinsett County
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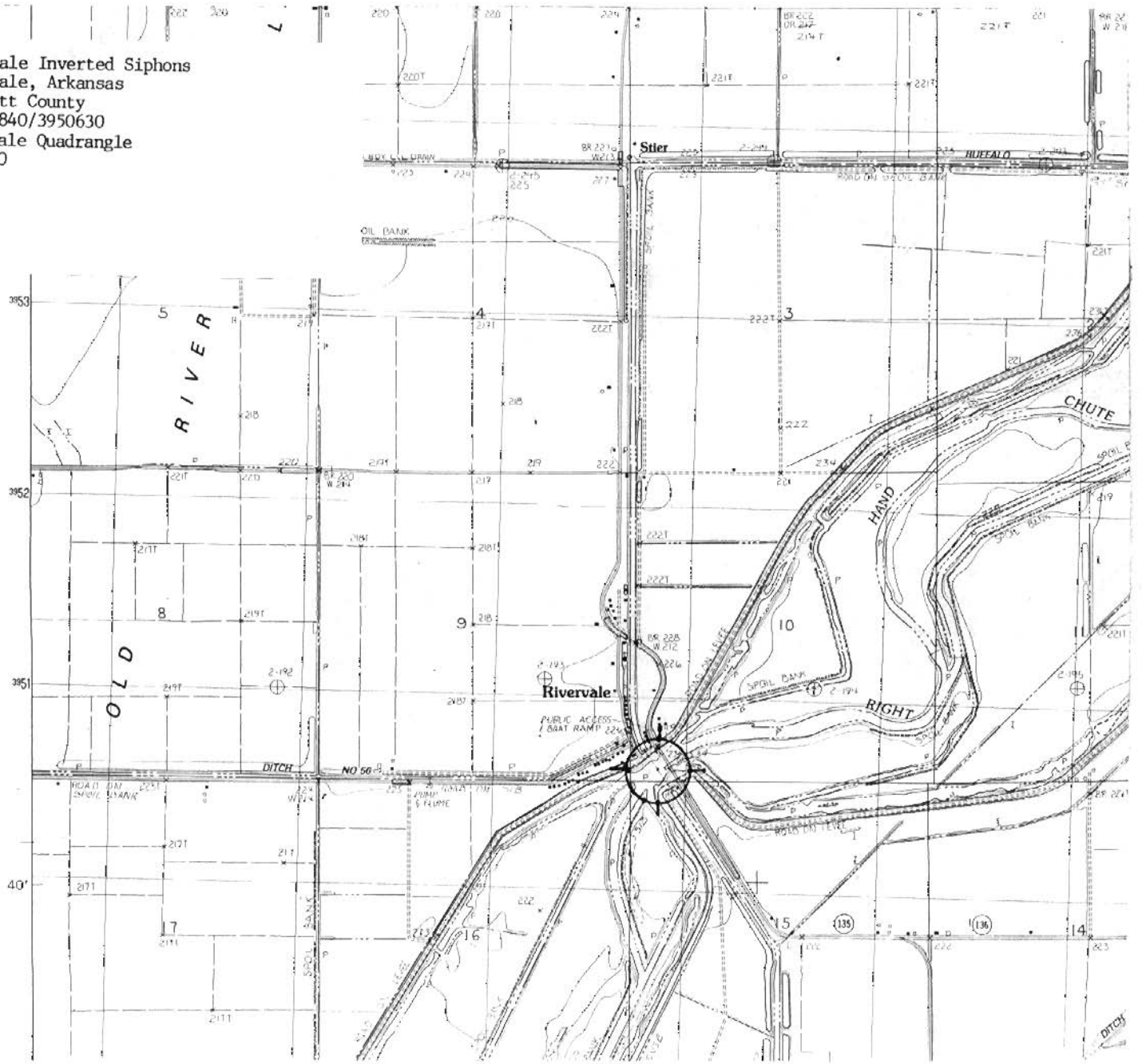
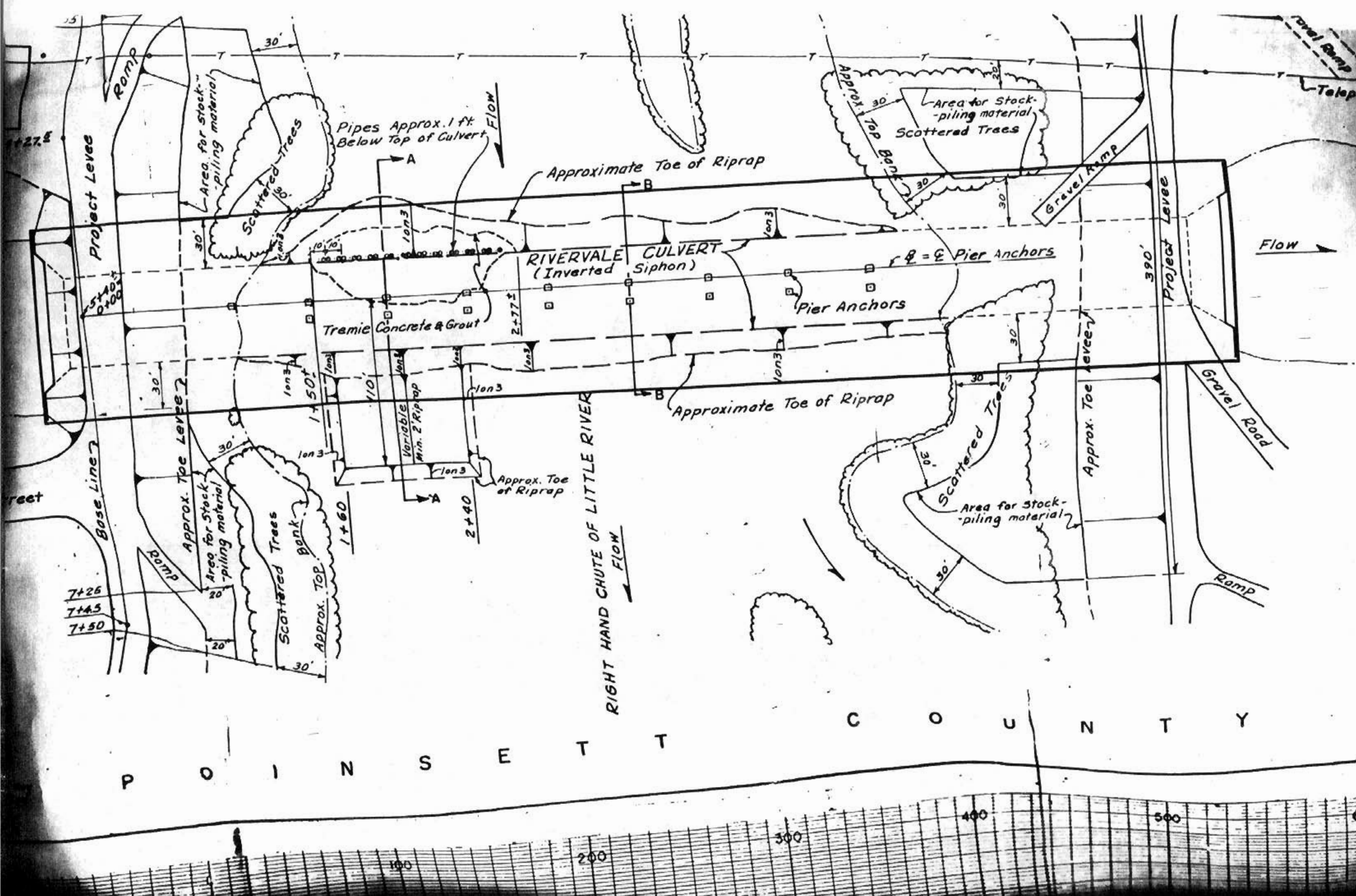
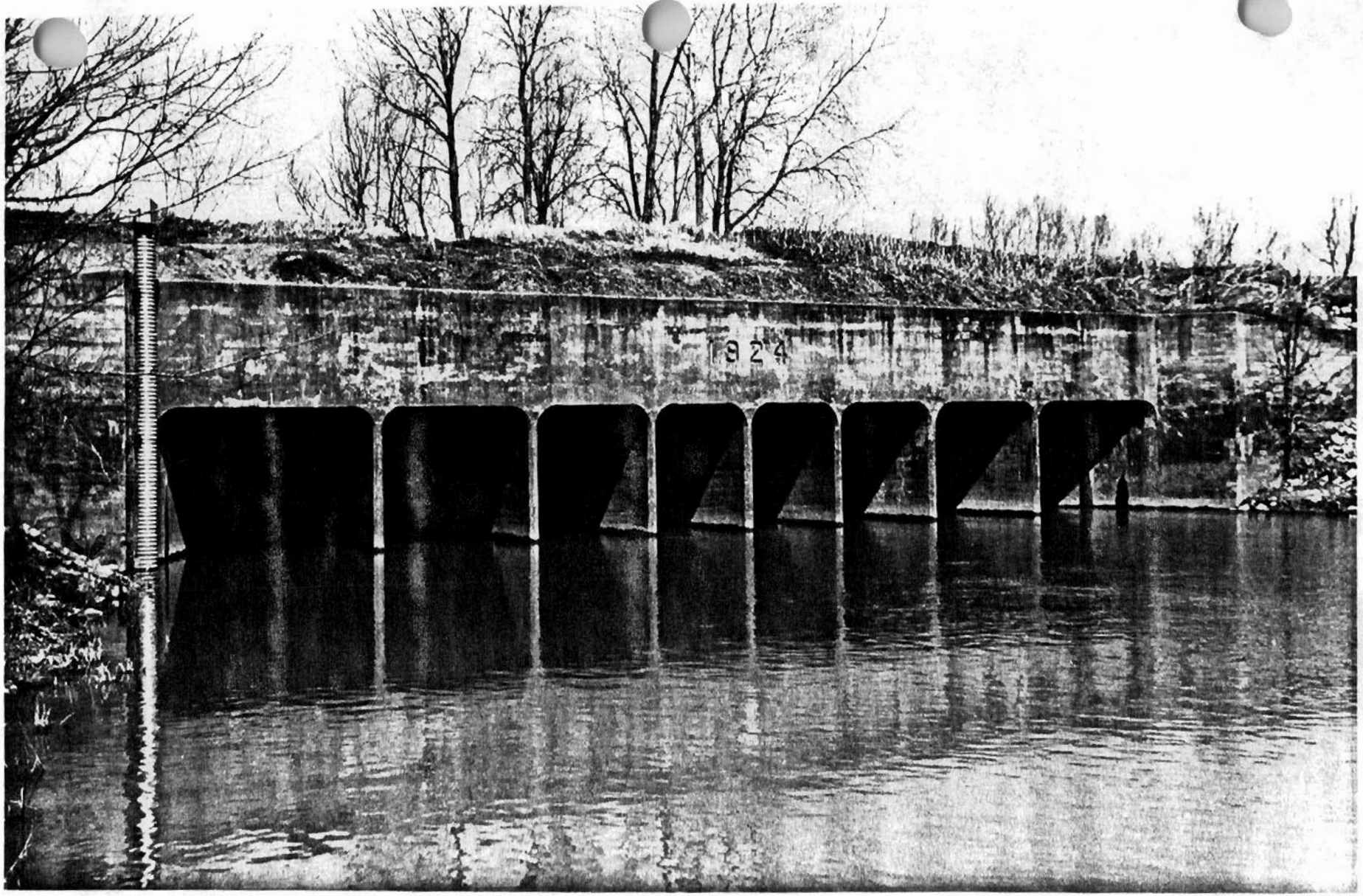
Rivervale Quadrangle
1:24000




RIVERVALE CULVERT
(Inverted Siphon)
Project Levee
Base Line
Approx. Toe Levee
Area for Stock-piling material
Scattered Trees
Approx. Top Bank
Pipes Approx. 1 ft. Below Top of Culvert
Flow
Approximate Toe of Riprap
Tremie Concrete & Grout
Variable Min. 2' Riprap
Approx. Toe of Riprap
Pier Anchors
℄ = ℄ Pier Anchors
RIGHT HAND CHUTE OF LITTLE RIVER
Gravel Ramp
Gravel Road
Ramp
Street
390'
1+50±
1+60
2+40
2+77±
5+40±
0+00
7+26
7+45
7+50
1 on 3
30'
20'
110'
P O I N S E T T C O U N T Y
100
200
300
400
500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