

Arkansas Historic Bridge Inventory
Review and Evaluation

Volume II

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INTRODUCTION

The publication of the first AHTD historic bridge inventory review and evaluation was in December, 1987. This volume contained the Preservation Plan which stipulated the obligations of AHTD and the Arkansas Historic Preservation Program (AHPP) relative to the treatment of historic bridges. One of the original stipulations was for an annual inventory review and evaluation of all bridges which had attained an age of 50 years in the previous calendar year. The most recently appointed Arkansas State Historic Preservation Officer (SHPO) felt this was too frequent an interval and suggested an updated review every five years. Therefore, in the Spring of 1992 personnel from AHPP and AHTD met and planned the next historic bridge review. There had been a number of staff changes at AHPP which brought about different perspectives and approaches to the subject of historic bridges.

During the time of the first statewide historic bridge survey the AHTD Bridge Division implemented the OASIS (On-Line Arkansas Structure Inventory System) computerized inventory program. At that time the basic criterion for data retrieval on an individual bridge was by the bridge's main span type. Subsequent refinements in the OASIS program made it possible to call up data in a wide variety of ways. This benefited subsequent studies in broadening data organization and retrieval potential.

In the initial review a number of decisions were made which in retrospect seem arbitrary, if not capricious. Many of these decisions are not recorded in the

1987 volume, primarily because they were more in the nature of ground rules rather than definable (and sensible) criteria of significance.

For instance, it was decided to completely ignore all wooden trestle bridges. The reason for this particular decision is not known, other than it seemed like a good idea at the time.

In 1985, as the historic bridge study was being defined, the topic of bridges built by the Civilian Conservation Corps (CCC) and Works Progress Administration (WPA) was discussed, but these groups, too, were ignored for what, at the time, were valid reasons. There was (and still is) no accurate way to determine if a bridge was built by the CCC because they did not mark their bridges. Most of the bridges erected by CCC forces were in conjunction with fire prevention roads which may or may not have survived and passed into various county road systems. About the only way to determine the CCC origin of a bridge is to meet a person who had been a member of the CCC and have him point out a specific bridge and state that he helped build that bridge when he was in the CCC. This does not happen with any noticeable frequency.

The WPA did mark many of their bridges, either with a bronze plaque or impressed in cement, usually on the bridge end, but sometimes in other places. This information was not a standard notation on AHTD bridge inspection forms and was rarely and only fortuitously included in them. More to the point, information on the builders is not included in the OASIS program. Although the WPA erected a number of different types of bridges, as defined by the main span type, one of their frequent practices was the use of native cut stone, random ashlar construction for bridge piers and abutments, where this material was available.

The original survey had considered all bridges still in service which had been built prior to 1941, with the aforementioned exceptions. The 1992 inventory would examine all bridges built in the years 1941 through 1945, inclusive, plus all

wooden trestle structures built prior to 1945, and a group of bridges which, it was hoped, would yield an array of the WPA built bridges.. One of the aforementioned refinements in the OASIS program made it possible to retrieve structures based on substructure type. So, all bridges with masonry main spans or substructures, that is anything with an 800 material designation, built between the years of 1933 and 1945, the years the WPA was in existence, were easily retrievable. Information from the AHTD District Bridge Inspectors also yielded data on WPA bridges of non-masonry structure types which might otherwise have gone unnoticed.

In the previous inventory relative age had been a significant factor in the evaluation. With this group age was not significant, except possibly with some of the timber bridges. All other bridge types were from specifically defined and limited time brackets.

THE INVENTORY REVIEW AND EVALUATION

In November, 1991, a structural inventory was run from the OASIS program. This inventory consisted of all bridges still in service constructed in the years 1941 through 1945, plus all wooden (type 702) bridges built prior to 1945, all masonry (type 811) main span bridges built between 1933 and 1945 (inclusive) and all bridges with masonry substructures built between 1933 and 1945 (inclusive).

The categories consisted of the following totals:

| <u>Category</u> | <u>Total</u> | |
|---------------------------------|--------------|---|
| All Bridges 1941 - 1945 | 247 | (includes 54 Type 702; 6 Type 800 main spans; 77 Type 800 substructure) |
| Type 702, Pre 1941 | 160 | |
| Type 800 Main, Pre 1941 | 1 | |
| Type 800 Substructure, Pre 1941 | <u>174</u> | |
| Total Inventory | <u>582</u> | |

This total of 582 is less than a quarter (22%) of the 1985 inventory of 2,596. This fact, coupled with the experience gained in the first review and evaluation, made the whole process somewhat easier to cope with. It did not take appreciably less time than the first, but the delays this time were more of an administrative nature rather than ignorance as had been the case previously.

The first administrative (non-field) review of the inventory was done in early 1992 by a joint group of AHTD and AHPP personnel. This review process and

the resultant refining of the inventory produced a group of 177 structures selected for the first field review.

An actual group of 170 were recorded in the field. During the field work it was found that some structures had already been replaced, or were in the process of being replaced. The computer had not caught up with reality.

Table 1 shows the statewide distribution of the inventory types in the general population of all types, 1941-1945.

| <u>Type</u> | <u>Number</u> |
|-------------|---------------|
| 102 | 1 |
| 104 | 7 |
| 111 | 3 |
| 122 | 6 |
| 302 | 2 |
| 303 | 1 |
| 309 | 1 |
| 310 | 1 |
| 313 | 1 |
| 402 | 7 |
| 702 | 30 |
| 819 | 1 |
| 902 | <u>1</u> |
| Total | 62 |

Table 2 illustrates the bridges selected from the 1933-1944 masonry substructure group of possible WPA constructed bridges.

TABLE 2
Field Specimens; WPA, 1933-1945

| <u>Type</u> | <u>Number</u> |
|-------------|---------------|
| 101 | 19 |
| 104 | 3 |
| 201 | 36 |
| 302 | 39 |
| 310 | 5 |
| 402 | 2 |
| 811 | <u>4</u> |
| Total | 108 |

Each of these 170 bridges was examined in the field, photographed, and recorded on an AHPP Standing Structure Form. This was done in the summer of 1992 by personnel from AHTD. This is not an apology, but for anyone who might be interested, summer is not a good time for this kind of work. Foliage is thick, and since bridges are usually associated with water, that's where the foliage is the thickest. Decent photographs are frequently difficult and sometimes impossible to get, as is obvious with some of the photographs in Appendix C.

The forms and photographs were submitted to AHPP as they were completed. From the information thus supplied the AHPP staff was able to reduce the inventory to a group of 31 bridges they felt warranted a second and final field examination. This field review was done by AHPP staff personnel, and resulted in more detailed descriptions and additional photographs which resulted in a final listing of 25 bridges presented to the Arkansas State Review Board for nomination to the National Register. In addition to the 25 bridges obtained from the statewide

AHTD inventory and review process, there were two other structures in Fayetteville, Arkansas which were nominated as part of a historic district in that city. These two urban bridges had not been recommended as part of the statewide bridge survey. The nominated structures were presented at the December, 1994 State Review Board meeting, and the bridges were placed on the National Register in May, 1995.

INTERIM ACTIVITIES AND DEVELOPMENTS

The eligibility determinations for the 1986 inventory were announced in December, 1987. Shortly thereafter Eric DeLoney, Chief Architect of the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) Division of the National Park Service, contacted AHTD and AHPP proposing to record all significant Arkansas bridges to HABS/HAER levels of documentation as a summer project by his agency. This was readily agreed to by both state agencies, and a Memorandum of Agreement (MOA) was executed in March, 1988. The HABS/HAER team spent approximately 12 weeks in Arkansas, beginning in late May of 1988. The MOA stated that the completed documentation would be submitted to the state agencies within 18 months of the beginning of the project. These things never seem to work out as originally planned, and the completed documentation finally arrived in January, 1992.

The original Scope of Work for the project stated that approximately 30 bridges would be documented, from a priority list of 47. No more than six would be documented to Level I standards by the HABS/HAER team; AHPP would document 17 of the 47 to Level III standards and the HABS/HAER team would document the remainder of the 30 to Level II standards. As it worked out a total of 48 bridges was recorded by HABS/HAER and AHPP. This total included all AHTD National Register structures. The documentation thus acquired meant that, in future, any National Register bridge which was scheduled for replacement, and

could not be preserved, already had the adverse effects mitigated through documentation.

In addition to the National Register bridges from the AHTD inventory, other bridges had been nominated to the National Register by local communities and organizations, and by AHPP as components of historic districts, and for other reasons. Indeed, this continues to the present, although the number of individually nominated bridges is much less than the periodic AHTD inventory results.

Another aspect of historic bridge recording has been the type and level of documentation required. At first all bridges were recorded to HABS/HAER standards, which are quite demanding and complicated. Situations arose early on, prior to the '88 HABS/HAER session, when a structure would be scheduled for replacement and the standard Section 106 review process found the bridge to be eligible for the National Register. If it were not possible to preserve the bridge, which is more often the case than not, it was necessary to document to HABS/HAER standards prior to demolition. This documentation would suffice as adequate mitigation for the physical removal of the structure. In 1990 the HABS/HAER regional office in Atlanta, Georgia stated that such a level of documentation was no longer necessary. HABS/HAER, which has the responsibility of reviewing and storing these documents, would be satisfied with whatever level of documentation was stipulated as satisfactory by the individual state's State Historic Preservation Offices (SHPO). At that time the Arkansas SHPO determined that, as of that time, documentation with the AHPP Standing Structure Form would be the required documentation for National Register bridges scheduled for demolition.

As of this writing all bridges still in service on federal, state, county and urban roads which were built prior to 1945 and are in the AHTD OASIS inventory program have been reviewed and evaluated, and those of significance have been

placed on the National Register. Now, when a bridge replacement job is initiated, if the subject bridge is not on the National Register list ,a statement to that effect is put in the environmental document. and no further treatment is required. If the bridge is one of the National Register structures then those elements of the Preservation Plan dealing with the treatment of such bridges are activated. The Historic Bridge Review Team consists of the Engineers of Bridge, Roadway Design, Surveys, and Maintenance Division, Head of the Environmental Division, Heavy Bridge Maintenance Engineer, and the Environmental Division person responsible for the records of historic bridges. The Team is chaired by the State Bridge Engineer. Each team member visits the bridge site and reports to the team chairperson. The chair drafts a report combining all the information and examines the options available. The Analysis Team report is submitted to the Chief Engineer for review and comment. The Chief Engineer can either accept the recommendation of the Analysis Team, or request that another option be considered.

Once the AHTD option has been decided a Memorandum of Agreement is drawn up between the Arkansas SHPO and the FHWA stipulating that the bridge will be treated in whatever way has been determined. This MOA is forwarded to the Advisory Council on Historic Preservation for their acceptance. The Advisory Council usually does not choose to be an active party to the MOA. Observance of the stipulations in the MOA completes the agency's obligations under the Section 106 review process.

The report written by the Analysis Team Chairperson also serves as the explanation of alternatives required in the Section 4(f) determination.

A copy of an Analysis Team report which recommends the demolition of a National Register bridge is included in this volume as Appendix B.

1995 AHTD NATIONAL REGISTER BRIDGES

In the 1987 volume describing the first historic bridge inventory and National Register listings the bridges were arranged in groups by structure types, then numerically within these types. The present listing is much smaller, and is presented numerically by bridge number. Appendix C contains illustrations of the bridges. The photographs are in the same order as the following bridge descriptions. Appendix A contains the letter from the Arkansas SHPO announcing the incorporation of the structures in the National Register, and the list of AHTD owned bridges.

The present total National Register list also contains those bridges on county roads and city streets which appear in the following descriptions. Those bridges are indeed “owned” by their respective local governmental agencies, but since rehabilitation and replacement are usually done with a combination of federal, state and local funding, all the pertinent structural and historic data is housed in the AHTD OASIS Program. It is logical that they be reviewed as part of the statewide bridge inventory.

The data contained in the individual bridge descriptions is taken from the National Register nomination forms (NPS Form 10-900, OMB No. 1024-0018, Rev. 8-86) as completed by the Arkansas Historic Preservation Program, and additional information provided by the Inventory, Rating and Management Section of the AHTD Bridge Division. Inclusion in the National Register was made in May, 1995.

The “M” prefix to the AHTD bridge number indicates that the structure was built by an agency or entity other than the Arkansas Highway Department and was subsumed into the state highway system at a later date at which time the AHTD bridge number was assigned. There was no order with which these numbers were assigned, either temporally or geographically, so there is no way to tell by the number when the bridge was taken over by the state. In many, if not most, cases the bridges so numbered were probably built by the county government road departments, but there is no way to verify this at the present time.

Bridges designed and built by AHTD have, normally, a three or four digit bridge number with no letter prefix. A letter prefix will appear rarely, usually an “A” and “B” prefix denoting a pair of structures on the same highway crossing the same feature, a pair of one-way couplets. Bridges on county roads and urban streets have, usually, a five digit number. These numbers were assigned by AHTD when bridge inspection, rehabilitation and replacement became a joint financial activity among local, state and federal governments, and statewide bridge inventory and inspection became the basic responsibility of the state highway agency. There is little overall order in the way these numbers were assigned.

As with everything else, exceptions exist. There are five digit bridges on state highways. This happens when the road was originally a county road, but came into the state system after the current numbering system went into effect. There are three and four digit bridges on current county roads. These roads were once part of the state system, but were subsequently re-assigned to the local county government.

AHTD Bridge Number M1701

Located in Sebastian County at the point where State Highway 96 crosses Vache Grasse Creek, this bridge is of steel pony truss design (type 310) with stone

masonry substructure. It consists of a single span, 60 feet in length. The entire bridge is 62 feet long, 18.8 feet wide curb to curb, and 22.2 feet to the outside of the bottom chords. The abutment material is stone and the deck is asphalt and concrete over a steel substructure. Additional steel handrails run the length of the deck on each side.

Constructed in 1938, this bridge is associated with the Arkansas Highway and Transportation Era historic context. The identity of its original designer does not survive, but it was probably built by the WPA.

AHTD Bridge Number M2642

Located in Calhoun County where State Highway 274 crosses an unnamed ditch approximately 1/4 mile from its junction with State Highway 203. This bridge is a timber trestle (type 702), and consists of a total of seven timber spans, the longest of which is 15 feet. Its total length is 105 feet, its deck width is 28.4 feet and its overall width is 31 feet. Its abutments and piers are constructed of wood and the deck is timber covered with asphalt. A simple wood rail balustrade runs the full length of each edge of the deck.

Constructed in 1940, this bridge is associated with the World War II Era historic context. Original designer and builder unknown.

AHTD Bridge Number M2675

Located in Crawford County approximately two miles west of Arkansas Highway 71 on State Highway 282 at its crossing with Frog Bayou a short distance to the west of the City of Mountainburg. It is a Parker steel through truss design (type 310), and consists of one 150-foot through truss span and 4 approach spans. The total length of the bridge is 209 feet, the width curb to curb is 15.4 feet, with a maximum width of 18.8 feet. The northern approach is supported by a

stone and concrete abutment and a stone and concrete pier, while the southern approach is supported by a single stone and concrete abutment. The deck material is asphalt and wood over steel.

Constructed in 1942, the Frog Bayou Bridge is associated with the World War II Era historic context. The original designer and builder are unknown though the stone masonry work suggests the bridge may have been built by the WPA.

AHTD Bridge Number M2889

Located in Newton County on State Highway 327 at its crossing of the Little Buffalo River (approximately 1.5 miles northwest of Parthenon and one-half mile south of Union Hill Cemetery), the bridge is of concrete tee beam construction (type 104) with open masonry substructure. It consists of a total of seven spans with a maximum span length of 30 feet. The total bridge length is 212 feet, the width is 19.1 feet curb to curb, and the overall width is 22.3 feet. The two abutments and six piers are constructed of cut stone with reinforced concrete caps. The deck is asphalt overlay on reinforced concrete. A reinforced concrete balustrade runs down each side of the deck.

Constructed in 1939, the Little Buffalo River Bridge is associated with the Arkansas Highway and Transportation Era historic context. The original designer is not known but the bridge was constructed by the WPA.

AHTD Bridge Number M2925

Located in Crawford County on State Highway 348 where it crosses Cedar Creek 1.5 miles north of Rudy. This bridge is a Pratt steel through truss (type 310). It has a single main span 101 feet in length, plus three approach spans. The bridge is 178 feet long, 15.5 feet wide curb to curb and 18 feet maximum width.

Abutments and piers are made of cut stone with concrete caps. The deck is asphalt over concrete.

It was constructed in 1938 and is associated with the Arkansas Highway and Transportation Era. The original designer and builder are not known. The cut stone piers and abutments suggest the bridge may have been built by the WPA, but this is not indicated on the structure.

This bridge was originally reviewed in the 1986 inventory and was not nominated at that time. Since then the Crawford County government has had the bridge placed on the National Register, and so it appears in this group.

AHTD Bridge Number M3349

Located in Logan County on State Highway 109 at its crossing of the Petit Jean River (approximately .5 miles south of Logan County Road 738 and Highway 109, about one mile north of Sugar Creek). This is a Pratt steel through truss bridge (type 310). The two through truss spans and four approach spans combine for a total structure length of 273 feet. The deck width is 19 feet curb to curb with an outside width of 24 feet. The abutments and piers are of cut stone masonry. The deck is timber over a steel substructure. A simple metal handrailing runs the length of each side of the deck

Constructed in 1938, the Petit Jean River Bridge is associated with the Arkansas Highway and Transportation Era historic context. The original designer and builder are not known although the masonry work suggests the bridge could have been built by the WPA.

AHTD Bridge Number 1160

Located in Perry County on Highway 7 at the point where it crosses the Fourche LaFave River, this bridge is an open spandrel concrete arch (type 111) It

consists of a total of three spans, the longest of which is 184 feet. The total bridge length is 518 feet with a deck width of 26 feet curb to curb and an outside width of 31.5 feet. The abutments, piers and open arches that support the deck are all of reinforced concrete, as is the deck, which has an asphalt overlay. A moderately elaborate concrete balustrade runs the full length of each edge of the deck.

Constructed in 1941 the Fourche LaFave River Bridge is associated with the World War II Era historic context. It was erected by the Lutten Bridge Company in conjunction with the Arkansas Highway Commission and the Federal Works Agency Public Roads Administration.

AHTD Bridge Number 01940

Located on Maple Street in Fayetteville, Washington County, this bridge spans the Arkansas and Missouri Railroad. It is a concrete deck arch bridge (type 111) and consists of a single span, 72 feet long. The travel surface is 30 feet wide, and the total width is 42.1 feet.

This bridge was built in 1936 and is part of a historic district in the city of Fayetteville.

AHTD Bridge Number 01941

Located on Lafayette Street in Fayetteville, Washington County, this bridge spans the Arkansas and Missouri Railroad a block south of Bridge Number 01940. It is a concrete continuous slab structure (type 201) with a length of 118 feet. The travel surface is 24.2 feet and the total width is 34.4 feet.

This bridge was built in 1938 and is part of a historic district in the city of Fayetteville.

AHTD Bridge Number 2199

Located in North Little Rock, Pulaski County, on State Highway 365 where it crosses the Union Pacific Railroad tracks, the Amboy Overpass is of steel continuous multi-beam or girder construction (type 402). It consists of twelve spans, the longest of which measures 80 feet. The total structure length is 573 feet, with a deck width of 30 feet, curb to curb and an overall width of 36 feet. The bridge is supported by eleven sets of reinforced concrete piers and reinforced concrete abutments. A reinforced concrete balustrade runs the full length of the deck on each side.

Constructed in 1941, the Amboy Overpass is associated with the World War II Era historic context. It was erected by the contractor J. P. McNulty in conjunction with the Arkansas State Highway Commission and the Federal Works Agency Public Roads Administration.

AHTD Bridge Number 2224

Located in Sebastian County where State Highway 45 spans Hackett Creek, the Hackett Creek Bridge is a steel continuous multi-beam or girder structure (type 402). It consists of three spans the longest of which is 36 feet, giving the bridge a total length of 98 feet. It is 26 feet wide curb to curb, and 30 feet in overall width. Abutments and both piers are of cut stone construction and the deck is asphalt over concrete. A simple reinforced concrete balustrade runs down both sides of the deck.

Constructed in 1941 the Hackett Creek Bridge is associated with the World War II Era historic context. It was most likely designed by Arkansas State Highway Department engineers.

AHTD Bridge Number 2236

This bridge is currently located on Stone County Road 283D. This particular segment of the county road was at one time a part of State Highway 14, hence the four digit designation. It consists of one 200-foot steel suspension span (type 313), and is one of only two suspension bridges still in service in the state. The deck is timber, and wooden hand rails run the length of the deck on both sides.

The bridge was constructed in 1945 by Highway Department forces, and was designed by AHTD staff engineers. It was reconstructed in 1985 because of deterioration of the deck and certain structural elements. The reconstruction primarily replaced damaged material and did not alter or affect the historic character of the bridge.

This bridge was originally nominated to the National Register in 1986 by the Arkansas Historic Preservation Program although it was not on the AHTD historic bridge inventory which was reviewed for that nomination group. It was removed from the nomination list for reasons which no one can seem to recall at present. It was nominated again with this present group, but again was withdrawn from the list. A spokesperson from the Historic Preservation Program has stated firmly that this bridge will "soon" be nominated to the National Register, so it is included in this volume. If, for some reason, it is again withdrawn from nomination it would indeed be a shame. This bridge certainly deserves to be placed on the Register.

AHTD Bridge Number 2407

Located in Saline County where State Highway 9 crosses the North Fork of the Saline River, this bridge is a steel continuous multi-beam or girder structure (type 402). It consists of a total of six spans, with a maximum span length of 33 feet. The total length is 200 feet, the travel surface is 20 feet wide, and the overall width is 23 feet. The deck is asphalt over reinforced concrete. The abutments and

piers are reinforced concrete. A simple concrete balustrade runs the full length of each edge of the deck.

Constructed in 1944 this bridge is associated with the World War II Era historic context. It was probably designed by Arkansas State Highway Department engineers.

AHTD Bridge Number 4068

Located on Pulaski County Road 67D at the point where it crosses Bridge Creek, this bridge is of simple reinforced concrete slab construction (type 101). It consists of six spans, the longest of which is 14 feet, with a total structure length of 84 feet. The travel surface is 22 feet wide and an overall width of 24 feet. The abutments and piers are of cut stone masonry. A simple reinforced concrete balustrade runs the full length of the deck on each side.

Constructed in 1939 this bridge is associated with the Arkansas Highway and Transportation Era historic context. The original designer is not known but was either a Highway Department engineer or a public works engineer since the bridge was erected by the WPA.

AHTD Bridge Number 12149

Located on Craighead County Road 513C at its crossing of an unnamed ditch approximately 1.5 miles east of Dixie and just east of the junction of County Roads 513C and 669 at the St. Francis River levee. The main span of the bridge is of steel deck truss construction (type 309) and measures 76 feet. The two approach spans are timber, with timber trestle piers and spring from earthen abutments. The deck is timber over the steel truss.

Constructed in 1942 this bridge is associated with the World War II Era historic context. It was probably built by county work forces and the name of the

designer is not known. It is possible that the existing main span is not original. It looks very much like the deck truss bed of a long railroad flat car. Historic documentation of county bridges tends to be rather sparse.

AHTD Bridge Number 12189

Located in Crawford County where County Road 32D crosses Cove Creek, immediately east of the junction of County Road 32D and 257. This bridge is steel multi-beam construction (type 302), and consists of four spans the longest of which is 28 feet, for a total structure length of 110 feet. The travel surface is 19 feet and the overall width is 20 feet. Abutments and piers are of cut stone masonry, and the deck is timber over reinforced concrete.

The bridge was constructed in 1937 and is associated with the Arkansas Highway and Transportation Era historic context. Original designer and builder are not known but the masonry work suggests the WPA may have built it.

AHTD Bridge Number 14001

Located on Independence County Road 235 at the point where it crosses Cedar Creek (approximately 1.5 miles south of Highway 14), the Cedar Creek Bridge is of closed spandrel stone masonry deck arch construction (type 811). It consists of two barrel arches each of which measures 15 feet. The total length is 30 feet, the travel surface is 24.1 feet and the outside width is 26.1 feet. The deck is tar/gravel mix over concrete. A solid concrete cap runs the length of the deck on each side

It was constructed in 1941 and is associated with the World War II Era historic context. The identity of the original designer and builder is not known, but the masonry construction suggests it may have been build by the WPA.

AHTD Bridge Number 15767

Located on Phillips County Road 14I at the point where it crosses Lambrook Levee Ditch, the Warrens Bridge is a timber trestle structure (type 702). It has a total of seven spans the longest of which is 15 feet, for a total structure length of 100 feet. It is 16 feet wide. Abutments, piers and the deck are all of timber.

Constructed in 1930, the Warren's Bridge is associated with the Arkansas Highway and Transportation Era historic context. The original designer is not know and it was probably built by county work forces.

AHTD Bridge Number 15802

Located on Phillips County Road 66G at the point where it crosses Little Cypress Creek, the bridge is distinguished by the use of textured metal deck plating and an aluminum multi-beam construction (type 902). The deck rests on reinforced concrete piers and abutments. It consists of two spans each of 15 feet for a total structure length of 30 feet. It has a width of 18 feet

Constructed in 1942, the Little Cypress Creek Bridge is associated with the World War II Era historic context. The identity of the original designer is not known and it was probably built by county work forces.

AHTD Bridge Number 16509

Located on Pulaski County Road 71D at the point where it crosses Bayou Meto, this bridge has a steel multi-beam deck (type 302). It consists of four spans, the longest of which is 30 feet, for a total structure length of 120 feet. The travel surface is 18 feet wide and the overall width is 21.2 feet. The three sets of piers and the abutments are all of reinforced concrete. A simple reinforced concrete balustrade runs the full length of the deck on each side.

Constructed in 1939 the bridge is associated with the Arkansas Highway and Transportation Era historic context. The original designer is not known, but it was built by the WPA as attested by the impressed legend on the end posts of the balustrade. This is one of a number of WPA bridges which did not make use of cut stone masonry either in the piers or abutments.

AHTD Bridge Number 16763

Located on Sebastian County Road 4G at the point where it crosses a tributary to Sugar Loaf Creek, this bridge has a concrete continuous slab deck (type 201) which rests on one pier. The spans are each of 22 feet for a total length of 44 feet. The pier and abutments are of cut stone masonry construction. The travel surface is 18 feet wide and the overall width is 21 feet. A simple reinforced concrete balustrade runs along both edges of the deck.

Constructed in 1940 this bridge is associated with the World War II Era historic context. The identity of the original designer is not known but the cut stone masonry substructure suggests the bridge was built by the WPA.

AHTD Bridge Number 16819

Located on Sebastian County Road 77A at its crossing of Vache Grasse Creek, this bridge is a single vault, closed spandrel cut stone masonry arch bridge (type 811). The arch is ten feet in width and the bridge has an overall length of 24 feet. The travel surface is 18 feet wide and the maximum width is 21 feet. The deck is a tar/gravel mix over a reinforced concrete subsurface. A metal pedestrian handrail, probably a later addition, runs along both sides of the deck.

Constructed in 1940 the bridge is associated with the World War II Era historic context. The original designer is not known but the masonry construction suggests it was built by the WPA.

AHTD Bridge Number 17264

Located on Van Buren County Road 2E this bridge has three spans of simple reinforced concrete slab construction (type 101) each measuring 12 feet for a total structure length of 36 feet. The deck is a gravel and asphalt mix over a reinforced concrete subsurface. The abutments and both piers are of cut stone masonry construction with concrete caps. The travel surface is 19.9 feet wide with an overall width of 21.5 feet.

Constructed in 1940 under the auspices of the WPA this bridge is associated with the World War II Era historic context.

AHTD Bridge Number 17357

Located on Washington County Road 80F where it crosses the Muddy Fork of the Illinois River just east of the junction with County Road 621, this bridge is a steel pony truss (type 310). It consists of a single span 66 feet in length with a total structure length of 70 feet. The travel surface is 14 feet wide, and an overall width of 16 feet. The abutments are made of cut stone masonry work. The deck is an asphalt/gravel mix over reinforced concrete.

Constructed in 1940 under the auspices of the WPA the bridge is associated with the World War II Era historic context.

AHTD Bridge Number 18116

Located in Logan County on Highway 309 at its crossing of a tributary of Cove Creek approximately 8.5 miles southeast of Paris and one-half mile southeast of the junction of highway 309 and Logan County Road 53. This bridge is a filled spandrel cut stone masonry arch bridge (type 811). It consists of two barrel arches, each 11 feet wide, with a total structure length of 23 feet. The travel

surface is 29 feet wide and an overall width of 32 feet. The deck is asphalt over a reinforced concrete subsurface. A low, solid concrete barrier with a steel guard rail runs along both sides of the deck, and is probably a later addition.

Constructed in 1936 this bridge is associated with the Arkansas Highway and Transportation Era historic context, and although it is not so designated, it is likely the bridge was built by the WPA.

AHTD Bridge Number 18376

Located on State Highway 309 at its crossing with Cove Creek approximately .4 miles southeast of County Road 52 where it intersects with State Highway 309. This bridge is a closed spandrel, cut stone masonry arch bridge (type 311). It has two barrel vaults each 13 feet in diameter, and a total structure length of 30.7 feet. The deck is asphalt over a reinforced concrete subsurface. A later, solid concrete barrier runs along both sides of the deck.

Constructed in 1936 this bridge is associated with the Arkansas Highway and Transportation Era historic context. The identity of the designer is not known but it is very likely the bridge was built by the WPA.

AHTD Bridge Number 19224

Located in the town of Redfield, Jefferson County, on West James Street where it crosses the Missouri-Pacific Railroad line (approximately two blocks east of State Highway 365) this bridge is a wooden trestle with a wooden deck (type 702). It consists of six spans, the longest of which is 22 feet, with a total structure length of 131 feet. The travel surface is 20 feet and the overall width is 26.5 feet. The abutments are a combination of wood and reinforced concrete, and the piers are timber uprights resting on concrete bases. The balustrade is made of concrete pillar uprights with metal pipe railings.

Constructed in 1924 the bridge is associated with the Arkansas Highway and Transportation Era historic context. The Original designer is not known but it was probably built by county work forces.

AHTD Bridge Number 19476

Located on Sebastian County Road 236 the bridge is of concrete continuous slab construction (type 201) and consists of two spans which measure 22 feet each for a total structure length of 44 feet. The abutments and single pier are of cut stone masonry construction. The deck is reinforced concrete, and a simple reinforced concrete balustrade runs along both sides of the deck.

Constructed in 1940 this bridge is associated with the World War II Era historic context. The identity of the designer is not known but the cut stone masonry substructure suggests the bridge may have been built by the WPA.

THE FUTURE OF HISTORIC BRIDGES

The future of historic bridges is not all that rosy, for obvious reasons. For a bridge to be historic the first requirement is that it be 50 years old. Old bridges wear out, like it or not. Bridge replacements are scheduled primarily for two reasons; either the bridge is structurally deficient or it is functionally obsolete, or both, and these factors are unfortunate functions of age.

There have been a number of workshops, and volumes produced by various agencies dealing with the preservation and adaptive reuse of historic bridges, but in the real world saving a historic bridge is more often the exception than the rule. When one of these bridges is scheduled for replacement only one of three things can happen: (1) preserve in place, (2) preserve in a new location, or (3) demolish.

Preservation in Place

This requires that the new bridge be built on new location, and that the old bridge can be left in place, posted for lesser load limits and kept in limited service, or isolated and blocked to vehicular traffic. Highway agencies are reluctant to retain ownership of a bridge no longer in use since this is not considered to be a judicious use of highway tax dollars, plus the continued liability for personal injury. AHTD has preserved structures, both in and out of service, and retained ownership, but rarely. It is more desirable to find another agency or entity which will accept future responsibility for the structure. This, too, has been done, but even more rarely. There aren't that many local groups who have the desire to

accept an old bridge, much less have the funds to continue its maintenance and assume continuing liability. It happens, but not very often.

Adaptive reuse is highly touted but many adaptations have a way of destroying the historic qualities which made the bridge significant in the first place. The same goes for rehabilitation, either to bring a bridge up to standard for continued use, or for adaptive reuse by another entity. Rehabilitation usually requires such measures that the historic character of the bridge is seriously altered.

Preservation in a New Location

Most of the above applies as well here. Preservation implies ownership by someone willing to assume and maintain responsibility for the structure, plus furnish a new location in which the bridge can be placed. Another highly significant factor is the portability of the structure. An open spandrel concrete arch bridge is not going to be moved anywhere (or a closed spandrel concrete arch bridge either). A steel truss bridge might be moved if it were quite small, but most of them are simply too large to move intact, and if they have hot rivet or welded joints, then dismantling is virtual destruction. In addition, even if it is decided that a structure can be moved and a cooperative group expresses a desire to take the bridge, at some point it seems that the cost involved reaches a prohibitive level and the otherwise agreeable recipient has serious second thoughts.

Some federal funding is available for historic bridge rehabilitation under 23 U.S.C. 144 which will reimburse the recipient of a historic bridge for expenses incurred up to the estimated cost of demolition. This usually proves to be nowhere near the amount needed for this grand an undertaking.

Demolition

When none of the above work, this is what is left. Demolition is considered the last resort. It is to be utilized only when it is clear that preservation of any sort is not feasible. In spite of its being the last resort, it is the usual outcome.

The permanent removal of these structures is as unfortunate as it is frequently inevitable. The bridges of that earlier time had style and an aesthetic sense that reflected the feeling of an era when there was time to experiment and play with material and form, when craftsmanship and pride in one's work was more important than rapidity of construction and cost effectiveness. Today's world is one of mass production, utility, and cost efficiency. In short, The Age of The Bottom Line. These are not automatically bad qualities, but the end products, such as today's bridges, exhibit a sameness that lacks that spirit and passion of an earlier time.

Since World War II it seems that most bridges are of two basic genre of construction: big bridges are steel girders, little bridges are r/c slabs. Certainly this is an oversimplification, but not too big a one. These are the strongest materials for the purpose. They are easy to obtain and fabricate. They work and they're reasonably cheap. But they all look alike. This is another of the unfortunate aspects of the future of historic bridges. It is quite possible at some point there will be no particularly distinguishing features or traits which would set aside one bridge as interesting or unique and worthy of remembrance. It can only be hoped that the gains made in efficiency can offset the losses in inspiration.

APPENDIX A

SHPO letter confirming National Register Acceptance of Bridges



ARKANSAS
HISTORIC
PRESERVATION
PROGRAM

RECEIVED

JUN 20 1995

Asst. Chief Engr - Planning

June 7, 1995

Mr. Dan Flowers, Director
Arkansas Highway & Transportation Department
10324 Interstate 30
Little Rock, AR 72209

RE: See attached list

Dear ^{Dan} Mr. Flowers:

The Arkansas Historic Preservation Program (AHPP), an agency of the Department of Arkansas Heritage, is happy to inform you that we have recently been notified that the above referenced property has been included in the National Register of Historic Places. The National Register is the official inventory of significant historic sites in this country. We feel that Arkansas can be proud to have a large and growing representation in the Register. As a tangible link between our past and our present, these historic structures play an important role in portraying Arkansas's heritage.

Listing in the National Register is important for a number of reasons in addition to the pride and prestige that comes with this recognition. Technical advice relating to all aspects of restoration, adaptive reuse, and renovation of older structures is available from the AHPP upon request by owner. Financial incentives, including a 20% investment tax credit, are available for the rehabilitation of certain commercial, industrial, and residential, income-producing properties that have been certified as historic structures. Also, the Tax Treatment Extension Act of 1980 includes provisions regarding charitable contributions for conservation purposes of partial interests of historically important sites or structures.

Other incentives sponsored by the AHPP include a low interest loan fund and a mini-grant program for the restoration of historic properties, both residential and commercial, that are listed on the National Register of Historic Places.

RECEIVED

JUN 13 1995

**DIRECTOR'S OFFICE
ARKANSAS STATE HIGHWAY AND
TRANSPORTATION DEPARTMENT**

1500 Tower Building • 323 Center • Little Rock, Arkansas 72201 • Phone (501) 324-9880

Fax (501) 324-9154

A Division of the Department of Arkansas Heritage



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AA
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JUN 15 1995

**Deputy Director &
Chief Engineer's Office**

Page 2

We want to thank you for encouraging preservation in Arkansas through the interest you've taken in the above referenced historic property. Please do not hesitate to call upon us should you have any questions about this National Register listing or any preservation related issues.

Again, our warmest congratulations!

Sincerely,

A handwritten signature in cursive script that reads "Cathy Slater".

Cathy Buford Slater
State Historic Preservation Officer

CBS:KS:kg

AMENDMENT
HISTORIC BRIDGES OF ARKANSAS
Multiple Property Nomination

1. State Highway 274 Bridge - Thornton vic., Calhoun Co. (M2642).
2. Cedar Creek Bridge (State Highway 348) - Rudy vic., Crawford Co. (M2925).
3. Frog Bayou Bridge (State Highway 282) - Mountainburg vic., Crawford Co. (M2675).
4. Petit Jean River Bridge (State Highway 109) - Sugar Grove vic., Logan Co. (M3349).
5. Cove Creek Bridge (State Highway 309) - Corley vic., Logan Co. (18376).
6. Cove Creek Tributary Bridge (State Highway 309) - Corley vic., Logan Co. (18116).
7. Little Buffalo River Bridge (State Highway 327) - Parthenon vic., Newton Co. (M2889).
8. Fourche LaFave River Bridge (State Highway 7) - Nimrod vic., Perry Co. (1160).
9. Amboy Overpass (State Highway 365) - North Little Rock, Pulaski Co. (2199).
10. North Fork Saline River Bridge (State Highway 9) - Paron vic., Saline Co. (2407).
11. Hackett Creek Bridge (State Highway 45) - Hackett vic., Sebastian Co. (2224).
12. State Highway 96 Bridge - Greenwood vic., Sebastian Co. (M1701).

APPENDIX B
Historic Bridge Analysis Team Report

INTEROFFICE MEMORANDUM

DATE: September 10, 1993

TO: Historic Bridge Analysis Team Members

FROM: Dale F. Loe, Bridge Engineer



SUBJECT: Historic Bridge Study - Job No. 100255
Bridge No. 934

The Report on Analysis of Alternatives for Bridge No. 934 has been signed by the Review Board Chairman, Mr. Charles E. Venable, Chief Engineer, and is enclosed for your files.

Members Distribution:

Kit Carson, Surveys Engineer
Paul BeBusk, Roadway Design Engineer
Allan Holmes, Const. & Maint. Engineer
David Lambert, Bridge Maintenance Engineer
Marion Butler, Chief, Environmental
Burney McClurkan, Secretary, Environmental ✓

cc: Bob Walters, Assistant Chief Engineer - Design

REPORT ON ANALYSIS OF ALTERNATIVES FOR BRIDGE NO. 934

INTRODUCTION

Bridge No. 934 on US. Route 49B, Section 2B, Log Mile 1.00 in Green County over Eight Mile Creek is on the candidate list of bridges eligible for replacement under the FHWA Bridge Replacement and Rehabilitation Program. The structure has a sufficiency rating of 38.9 indicating a high priority need for replacement.

This structure has been programmed for replacement by Job No. 100255.

This structure is considered historically significant and is currently listed in the National Register of Historic Places.

An Analysis Team has been established in the Department to evaluate the options available for possible retention or rehabilitation of historic bridges; thereby preserving the historically significant bridges or to justify their removal, if required.

OPTIONS EVALUATED

Options studied by the Committee are: (1) Do nothing, (2) rehabilitate structure for two-way traffic, (3) rehabilitate structure for one-way traffic, (4) construct new structure with future liability assumed by another entity, (5) construct new structure and state maintain ownership of structure and, (6) construct new structure and remove existing structure.

Option 1. Do nothing.

The structure is posted for 29 tons and the allowable loading will continue to decrease as deterioration continues. The structure is 20' wide and the ADT is 7850. The width required for a replacement bridge for this traffic volume is 40 feet. Also, the structure is located in seismic Zone C and does not meet current AASHTO Seismic Code requirements. Due to the condition of the structure, the traffic need and seismic requirements the "Do nothing" alternate is not a satisfactory solution.

Option 2. Rehabilitate structure for two-way traffic.

It is not possible to upgrade the truss to a level that would adequately handle 40' width, truck traffic, seismic requirements and maintain the historical significance of the truss span. This makes Option 2 an unacceptable solution.

Option 3. Rehabilitate structure for one-way traffic.

It is not possible to upgrade the truss to a level that would adequately handle seismic requirements and maintain the historical significance of the truss span. Also, the alignment for the highway would not be satisfactory. This makes Option 3 an unacceptable solution.

Option 4. Construct new structure with future liability assumed by another entity.

Option 4 requires the construction of a new structure on a new location and the persuasion of another entity to accept ownership of the structure. It is doubtful that a new owner for this structure can be found. Also, the alignment for the highway would not be satisfactory.

Costs of Option 4 are:

| | | |
|---------------|---|----------------|
| New Structure | = | \$320,000 |
| Approaches | = | <u>300,000</u> |
| Total | = | \$620,000 |

This option would retain this historic structure.

Option 5. Construct new structure and state maintain ownership of structure.

Under this option a new bridge would be constructed in accordance with Option 4. The state would leave the truss span only in place and retain ownership. AHTD does not wish to maintain liability and responsibility for a structure no longer in vehicular use, plus the approach geometry would be unacceptable.

Costs of Option 5 are:

| | | |
|---------------|---|---------------|
| New Structure | = | \$320,000 |
| Approaches | = | 300,000 |
| Removal | = | <u>15,000</u> |
| Total | = | \$635,000 |

This option would retain this historic structure.

Option 6. Construct new structure and remove existing structure.

Under this option a new bridge would be constructed on the existing alignment and the existing structure would be removed.

The existing structure has been documented to HABS/HAER Standards, and the documentation is now housed in the Arkansas State Archives.

Costs of Option 6 are:

| | | |
|------------------|---|---------------|
| New Structure | = | \$320,000 |
| Approaches | = | 300,000 |
| Temporary Bridge | = | 45,000 |
| Removal | = | <u>15,000</u> |
| Total | = | \$680,000 |

SUMMARY AND RECOMMENDATION

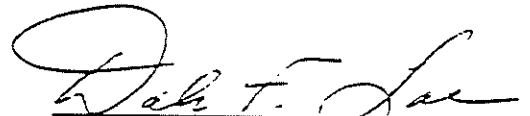
Options 1, 2, and 3 are not acceptable solutions as they do not meet the traffic needs or retain the historic significance. Therefore, these options are dropped from further consideration.

Options 4 and 5 would retain this historic structure, but are unsatisfactory for the above stated reasons.

Option 6 provides improved geometry for the highway and offers acceptable mitigation for the adverse effect of the project.


Option 6 is the only option which satisfies the needs of the traveling public and is the only option which satisfies the requirements of mitigation for adverse effects. Therefore, the Analysis Team recommends that Option 6 be adopted as the plan of action for upgrading of this crossing and fulfilling the requirements for consideration of the historical significance of this structure.

9-7-93
Date

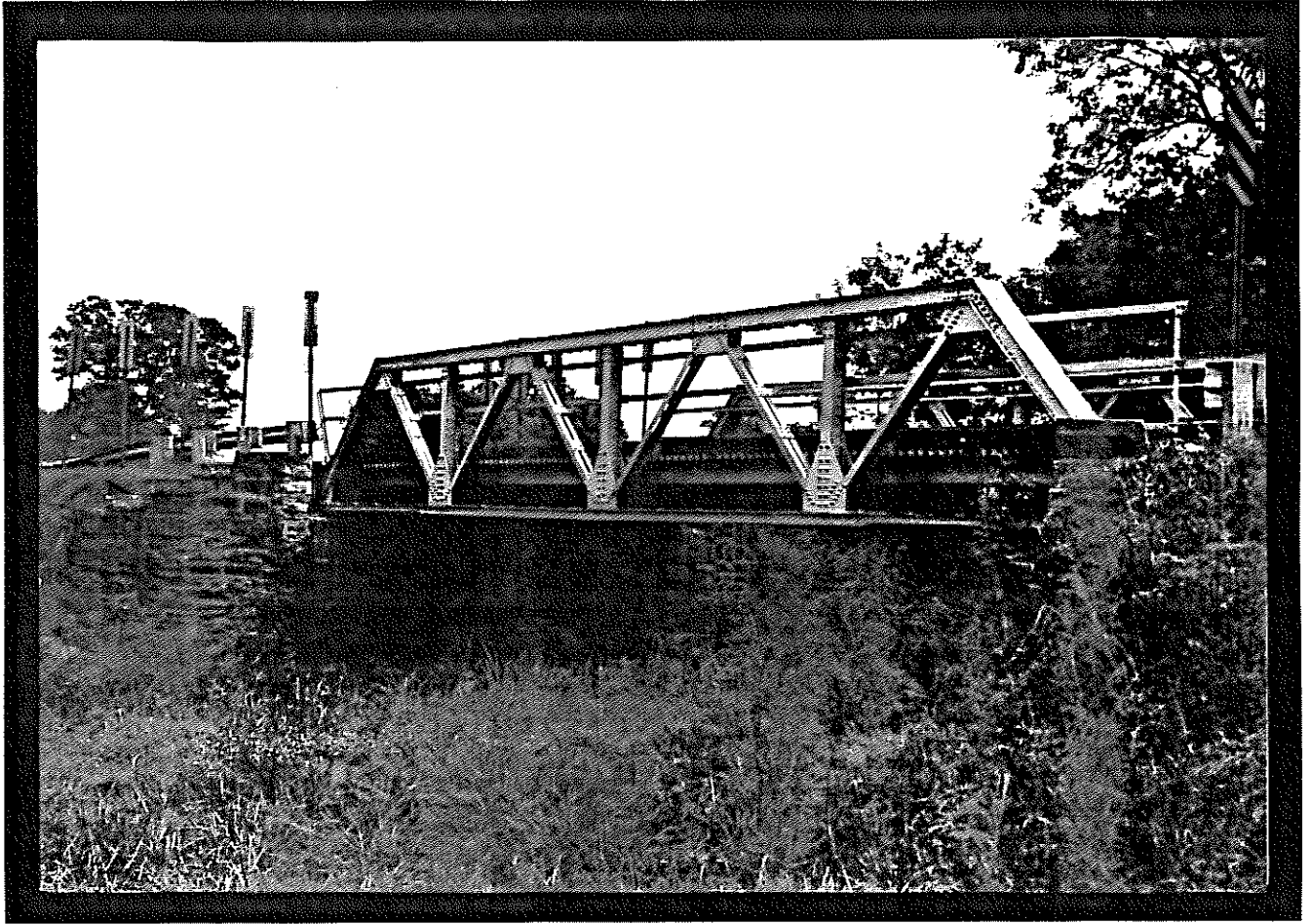

Chairman, Analysis Team

APPROVED:

9-8-93
Date


Chairman, Review Board

APPENDIX C
Photographs of Bridges



**Bridge #M1701
Type 310**



Bridge #M2642
Type 702



Bridge #M2675
Type 310



Bridge #M3349
Type 310



Bridge #1160
Type 111



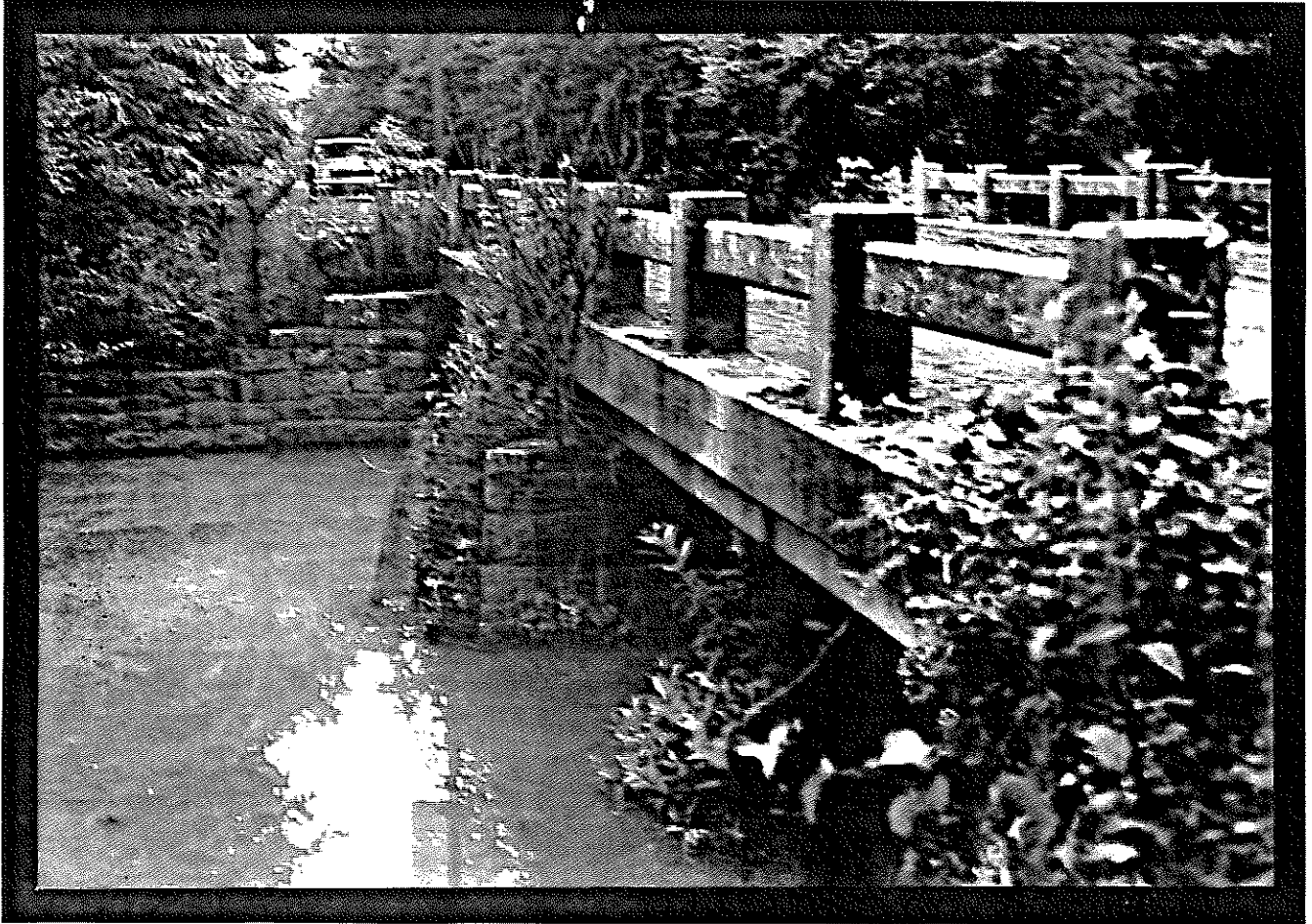
Bridge #2199
Type 402



Bridge #15767
Type 702



Bridge #15802
Type 902



Bridge #16763
Type 201



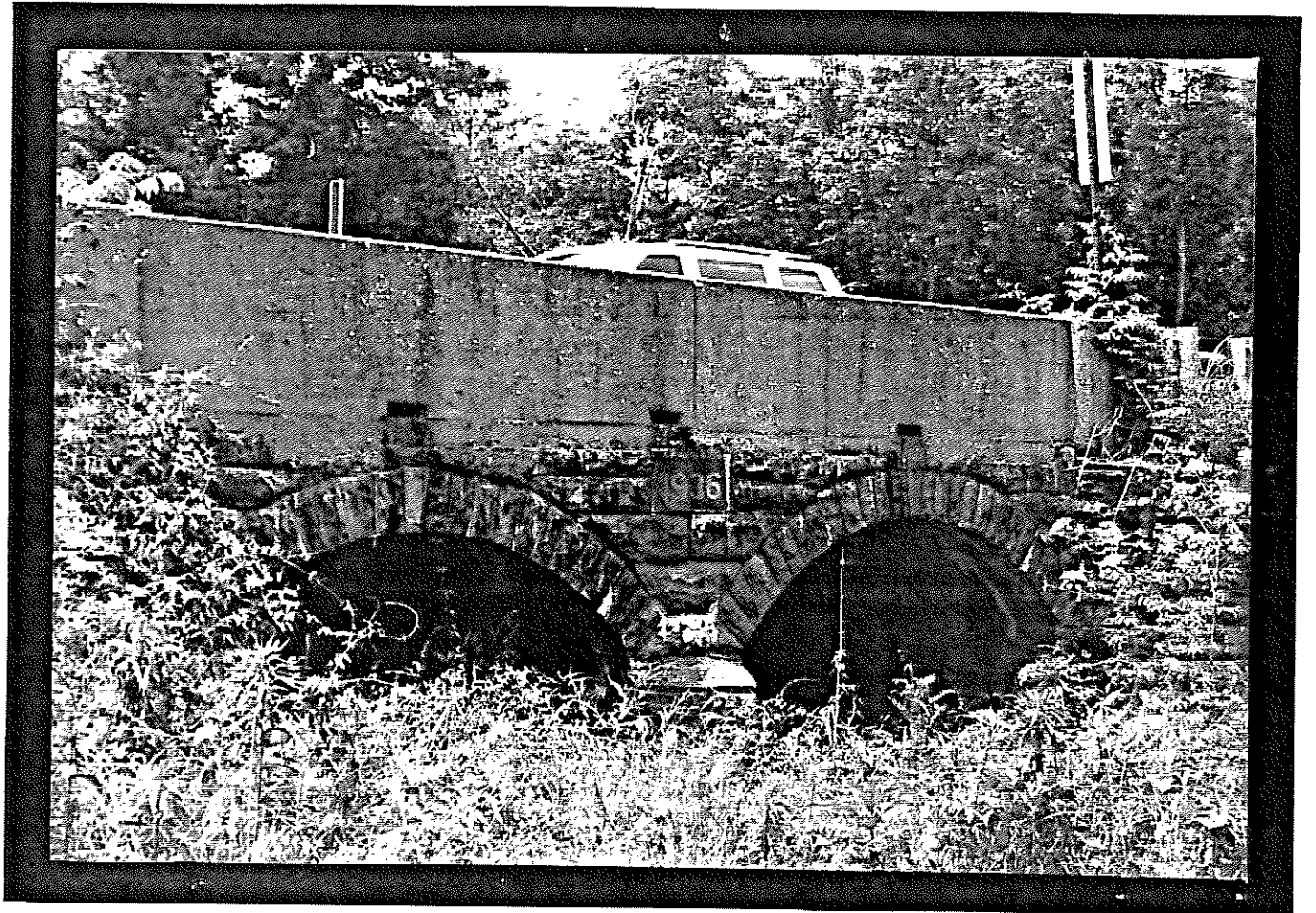
Bridge #16819
Type 811



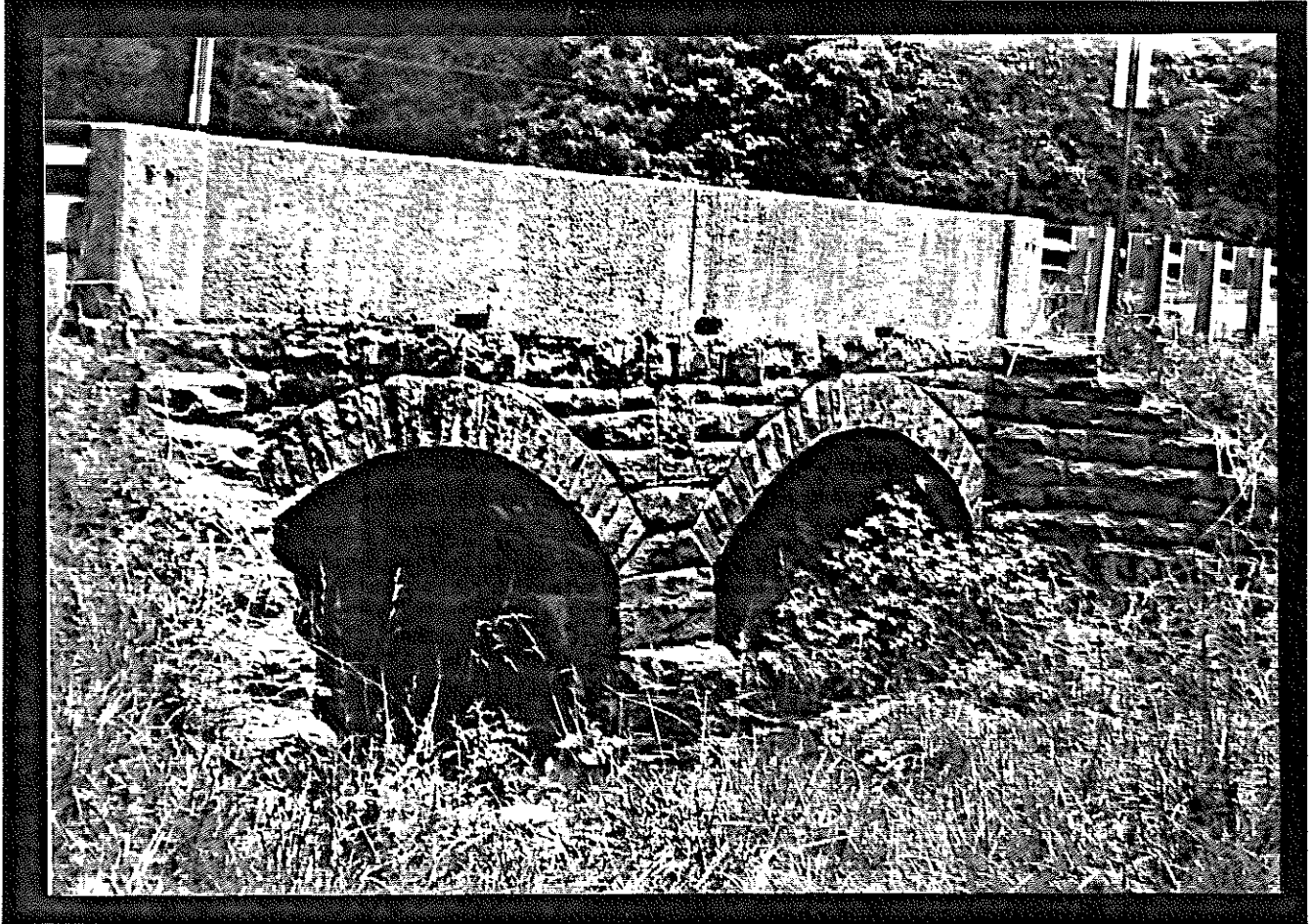
Bridge #17264
Type 101



Bridge #17357
Type 310



Bridge #18116
Type 811



Bridge #18376
Type 811



Bridge #19224
Type 702



Bridge #19476
Type 201