# Documentation of the Historic Gasconade River Bridge 

Bridge No. J-802
Overflow Structures (Bridge Nos. K-112 \& K-113)
Pulaski County, Route 17


This page intentionally left blank for printing purposes

# Gasconade River Bridge (Bridge No. J-802) <br> And <br> Overflow Structures (Bridge Nos. K-112 and K-113) Route 17, Pulaski County 

David C. Austin, Historian
July 2008
The Gasconade River Bridge and two companion overflow structures are located on Route 17, Pulaski County, approximately 1.5 miles north of Waynesville, the county seat. These three bridges and over four miles of new highway leading north from Waynesville were constructed in the early 1930s under the auspices of the Missouri State Highway Commission. Bridge No. J-802 over the Gasconade River consists of a Parker through truss span, two Warren pony truss spans, and two steel stringer approach spans. To the west, the companion structures K-112 and K-113 crossing the Gasconade River floodplain are both nine-span I-beams on skewed, reinforced concrete bents. Together the three bridges essentially form one crossing nearly one-half mile in length. These bridges are significant as outstanding examples of modern bridge engineering designed to overcome the natural barrier posed by the Gasconade River.

The Missouri State Highway Department began improvements to Route 17 in the 1920s as part of its statewide road construction program. Route 17 was a secondary state highway beginning at U.S. Route 54 in southwest Cole County, and meandering south through the county seats of Miller, Pulaski, and Texas counties before terminating at U.S. Route 60 near Mountain View in northeast Howell County. The highway would later be extended farther south through West Plains to the Arkansas border. By the beginning of 1933, Route 17 had been practically completed along its entire length, with a road surface of crushed stone or oiled earth. The only remaining gap in Route 17 awaiting construction was in north Pulaski County between Crocker and Waynesville. ${ }^{1}$ In planning for those remaining improvements to Route 17, the State Highway Department designated the first 3.86 miles north of Waynesville as Project No. E-359B; within that segment, Project No. E-359C covered 0.438 mile at the Gasconade River and included Bridges J-802, K-112, and K-113. ${ }^{2}$

One of the largest rivers in the central Ozarks, the Gasconade River winds through central Pulaski County in an easterly direction. At the Route 17 crossing, it is joined by Roubidoux Creek, another substantial, spring-fed stream with wide meanderings flowing from south to north. The mouth of the Roubidoux is bordered on its north side by high cliffs of dolomite rising some 200 feet above the confluence. There, the Gasconade makes a sharp hairpin bend as it turns to flow to the northwest. Missouri State Highway Department engineers laid out Route 17 to run across the Gasconade's

[^0]low-lying plain on its left bank, cross the river at its bend, and squeeze between the cliffs and Roubidoux Creek. The highway would follow the right bank of Roubidoux Creek into Waynesville. ${ }^{3}$

An on-site field check made in early February 1932 produced the initial layouts for the three bridges. Bridge Nos. K-112 and K-113 would both have nine 40’ I-beam spans on reinforced concrete bents with left-advanced skews. Both bridges would be slightly curved, but in opposite directions. Bridge K-112 would have a $5^{\circ}$ curve to the left, while Bridge K-113 would have a $4^{\circ}$ curve to the right. The bridges would have an even grade over the floodplain. Bridge No. J-802 would have two 100’ spans, one 200’ span, and two 35 ' spans composed of trusses and I-beams. Sketches indicated the extent of the timber that would have to be cleared between the bridges and the Gasconade River for a distance of about 450 feet. ${ }^{4}$ The corresponding highway plans and profiles showed shallow overflow channels running perpendicular to Bridge K-112. Roadway fill to connect the bridges would be taken from a large borrow area on the north side of Bridge K-113. ${ }^{5}$ The project would also rechannel the mouth of Roubidoux Creek. Coring samples taken along the length of the project in late February showed varying strata of sandy clays, gravels and boulders overlaying solid bedrock. ${ }^{6}$

Bridge engineers at the State Highway Department's Bureau of Bridges subsequently produced the detailed plans for the three bridges from April to August 1932. Bridge Engineer N. R. Sack and Chief Engineer T. H. Cutler signed the three sets of bridge plans on August 16. ${ }^{7}$ Bids for Project No. E-359C were opened on August 31, 1932. The Maxwell Construction Company received the construction contract for its bid of \$92,499.64, and the State Highway Commission approved the bid on September 13. At the same time, the Commission awarded contracts for the construction of two adjacent

[^1]sections of Route 17 (Projects E-359A and E-359B) extending from Waynesville to about two miles south of Crocker. The Davis Construction Company of Boonville received those two contracts. Except for the short segment south of Crocker, the contract awards of September 1932 represented the final stages of construction to complete Missouri Route $17 .{ }^{8}$ Unfortunately, any records documenting the construction of Bridges J-802, K-112, and K-113 have not survived. The Maxwell Construction Company received its final payment in July 1934. The total costs amounted to $\$ 111,474$, or $\$ 10,421$ above the estimated costs. The overrun was due to the contractor having to carry some of the footings deeper than the planned elevations; the extension of stone revetments at the Gasconade River bridge to the low water elevation; and additional borrow excavations for the roadway fill. ${ }^{9}$

Route 17 incidentally allowed increased access to a large cave located in the bluff just east of the Gasconade River Bridge at Roubidoux Creek. Known as Kraft Cave, Roubidoux Cave, and Indian Cave, in the 1950s a developer renamed it Pikes Peak Cave and turned it into a tavern and dance hall, with other nightclub buildings outside the cave entrance. The business did not fare well, and burned in the 1960s. ${ }^{10}$

## Bridge No. J-802

Bridge No. J-802 spanning the Gasconade River at Route 17 consists from west to east of two 100', six panel, polygonal Warren pony truss spans; a ten panel Parker through truss span 200’ in length; and two 35' I-beam approach spans. The superstructure is carried on reinforced concrete bents and piers. The total length of the bridge is over $481^{\prime}$. It has a roadway width of $24^{\prime}$ on a level grade.

The substructure consists of four bents and two piers, numbered 1 through 6 from west to east, of reinforced concrete construction. The footings were to be carried at least 18 " into shale or other soft rock, or 6 " into solid rock. Bent No. 1 on the west end is a two-column open bent set on rectangular footings measuring $12^{\prime}-6$ " $\times 5$ ' x $2^{\prime}-6$ ". The columns, centered 26'-6" apart, have a front batter of $3^{\prime \prime}$ per $1^{\prime}$, and are 3 ' wide and nearly 28 ' high. The columns are connected by a cap beam with a backwall and wings extending 46’-10" across. The bridge seat is at the grade elevation of $963.15^{\prime}$, with cast steel expansion rocker bearings centered over the columns. The bent is backfilled and protected by a heavy stone revetment.

Bent No. 2 supporting the two pony truss spans is a two-column bent with an upper web wall. The two footings are $5^{\prime}-6$ " $\times 5$ ' x 3 ', while the rectangular columns are

[^2]

The Gasconade River Bridge shortly after its completion.
(Missouri State Highway Commission, Tenth Biennial Report of the Missouri State Highway Commission for the Period Ending December 1, 1936 (Jefferson City: Hugh Stephens Press, 1936), 68.

3' x 3'-6" x 32 ', centered 26'-6" apart. The connecting web wall begins 22' above the footings and is $1^{\prime}-3$ " thick and $10^{\prime}$ high up to the cap beam. The cap beam is $1^{\prime}-6{ }^{\prime \prime} \times 4^{\prime}-$ 1 ". Two cast steel fixed bearings are centered over each column for the two pony trusses.

Pier No. 3 is an open pier with an upper web wall. It supports the east end of the second pony truss and the west end of the Parker through truss. The pier is set on large square footings $9^{\prime}-3 " \times 9^{\prime}-3 " \times 5$ '. The two pier columns are cylindrical, with a basal diameter of $7^{\prime}-3 \prime$ ", and are battered $1 / 2^{\prime \prime}$ per $1^{\prime}$. The columns are nearly $30^{\prime}$ high up to the cap beam. The web wall begins about 20 ' from the top of the footings, and is $1^{\prime}-3$ " thick. The cap beam is $5^{\prime}-3^{\prime \prime}$ wide and has expansion rocker bearings for the pony truss span and fixed bearings for the Parker through truss span.

Pier No. 4 is similar to Pier No. 3. It supports the east end of the Parker through truss and the west end of the first I-beam approach span. Pier No. 4 has square footings 8'-7" x 8'-7" x 5’. Its two cylindrical columns have basal diameters of 6’-7" and are battered $1 / 2$ " per 1 '. The columns are 28 ' -7 " high. The bottom of the connecting web wall is $18^{\prime}-7$ " above the footing. The cap beam has a backwall $1^{\prime}-2{ }^{\prime \prime}$ wide and $1^{\prime}-4^{\prime \prime}$ high to form the bridge seat for the I-beam span. Expansion rocker bearings are used for the east end of the through truss.

Bent No. 5 supporting the two approach spans is relatively smaller in scale. It has two square footings 4'-6" x 4'-6" x 2'-6", and two square columns 2'-6" x 2'-6" centered 16 ' apart. The columns are joined $15^{\prime}-3$ "' above the footing by a tie beam 2 ' high. The columns are $30^{\prime}-3^{\prime \prime}$ high, and the connecting cap beam is $2^{\prime}-6^{\prime \prime}$ high x $2^{\prime}-6^{\prime \prime}$ wide x $24^{\prime}-$ $6^{\prime \prime}$ long. Eight fixed bearing plates atop the cap beam support the I-beam stringers of the two approach spans.

Bent No. 6 at the bridge's east end is a two-column open bent. Its two rectangular footings are $4^{\prime}-6$ " wide $\times 2^{\prime}-6$ " high, but the left (north) column footing is 8 ' long compared to the right column footing's length of $11^{\prime}-3^{\prime \prime}$. The left footing was set at a higher elevation at 941', while the right column footing was set 13 feet deeper at the 928’ elevation. Presumably this was due to the corresponding levels of bedrock at this location. Centered 19' apart, the bent's two columns are $2^{\prime}-6$ " wide and have a front batter of 3 " per 1 '. The columns are connected by a cap beam with a backwall and wings extending 42 ' across. The bridge seat holds four expansion bearing plates for the steel stringers of the approach span. The bent is backfilled and protected by a heavy stone revetment.

The two polygonal Warren pony truss spans were based in general on a standard design developed earlier by the Missouri State Highway Department (Standard Drawing S-918). The spans are 100 ' long as measured between the centers of the bearings. The trusses have end panels of 10'and four 20' interior panels. The trusses are centered 26'6 " apart and are $12^{\prime}-6^{\prime \prime}$ high at the center. The members are connected with $3 / 4$ "diameter rivets. The end posts and polygonal upper chords are constructed of two 10 " channels with cover plates, single lacing and end tie plates. The lower chords consist of two angles with batten plates. Vertical and diagonal members are 10" Carnegie beams, a
type of wide-flange I-beam. The floor system consists of 24 " Carnegie beams for the end beams and floor beams, and 21" Carnegie beams for the four stringers. Lateral crossbracing is made of single angles. The reinforced concrete bridge deck is 7-3/4" thick and 24 ' wide between the curbs. Drainage outlets along the curbs are 4'-6" long. Two 6" channel handrails run along the interior of the panels.

The 200’ Parker through truss span represents one of a relatively few, late examples of this type built by the Missouri State Highway Department. ${ }^{11}$ It has ten panels of $20^{\prime}$, and is rigid-connected with 7/8" diameter rivets. The trusses are centered 26'-6" apart and are $20^{\prime}$ high at the hip vertical and $33^{\prime}-4$ " high at the center vertical members. The end posts and upper chords consist of two 15 " channels with cover plates and lacing. The lower chords are two 15 " channels with batten plates. The hip verticals are four angles with single lacing. The other vertical members are two 9 " channels with single lacing and batten plates. Diagonal members are two angles with batten plates. The end portals originally consisted of K-frame bracing composed of two angle members with lacing. However, those end portal bracings have been replaced by single horizontal I-beam struts. Sway bracings at each panel are double X-frames of two angle struts and center verticals, and single angle diagonal braces, allowing for a 14 ' vertical clearance. Upper lateral cross-bracings are composed of single angles. The floor system of the Parker through truss includes 24" Carnegie beams for the floor beams and 21" Carnegie beams for the four stringers. Lower lateral cross-bracing is made of single angles on lateral hangers. With two layers of reinforcing steel, the concrete deck is 7-3/4" thick and 24 ' wide between the curbs. Two 6 " channel handrails on 4 " posts run along the interior of the panels.

The two approach spans at the bridge's east end each consist of four 27" Carnegie beam stringers. The west approach span between Pier No. 4 and Bent No. 5 is 38’-5" long, while the east end span is $37^{\prime}-6^{\prime \prime}$ long. Floor beams at the pier and bents are 12 " channels. The stringers are braced intermittently by angle cross braces. The deck, curbs, and railings are similar to those on the truss spans.

## Bridge No. K-112

Bridge No. K-112 crossing the Gasconade River floodplain has nine steel stringer spans carried on skewed, reinforced concrete bents. The bridge is on a $5^{\circ}$ simple curve bearing left that begins at the west end of the bridge at Station 405+70. The end of the curve (Point of Tangency) is at Station 409+70 just beyond the bridge's east end, making the total length of the curve 400'. The point of intersection of tangents is at the center of the bridge at Station 407+72.1. The ten bents have left-advanced skews relative to the highway centerline that increase incrementally from west to east, from a $35^{\circ}-26^{\prime}-24^{\prime \prime}$ skew of $10^{\prime}-5-1 / 4^{\prime \prime}$ at Bent No. 1 to a $54^{\circ}-33^{\prime}-36^{\prime \prime}$ skew of $14^{\prime}-8$ " at Bent No. 10. Each

[^3]span is $42^{\prime}-6^{\prime \prime}$ long as measured from the centers of the bents' center columns along the chord of the curve. As measured on tangent, the center span is $42^{\prime}-6$ " while the remaining spans decrease incrementally in length to 42.03 ' at the two end spans. The bridge has a total length of $382^{\prime}-6^{\prime \prime}$ as measured along the centerline between the center columns of the two end bents. It has a 24 '-wide roadway on an even grade along centerline with a superelevated deck.

End Bent No. 1 is a three-column open bent on rectangular footings 9' -6 " $\times 4^{\prime}-6$ " x $2^{\prime}-6{ }^{\prime \prime}$. The three columns are $7^{\prime}-6{ }^{\prime \prime} \times 2^{\prime}-6$ " at the bases with a front batter of $3^{\prime \prime}$ per $1^{\prime}$, and are approximately $20^{\prime}$ high up to the cap beam that forms the bridge seat. The three columns are centered $18^{\prime}$ apart. The bridge seat is $1^{\prime}-6^{\prime \prime}$ wide and $41^{\prime}-6^{\prime \prime}$ long, and is stepped horizontally, rising in three increments of 6-3/4" from right to left of centerline. The four steps each have 8 " $\times 10$ " bearing plates and expansion bearings. The cap beam is backed by a wingwall over $60^{\prime}$ long. It also is stepped similarly to the bridge seat. The bent is backfilled and protected by a light stone revetment.

End Bent No. 10 is similar to End Bent No. 1. Its footings are larger at 11’ in length, with a corresponding column basal length of 9 '. The three columns are spaced 18 ' apart with a front batter of 3 " per 1 ', and are approximately 26 ' high from the footings to the cap beam. The bridge seat at End Bent No. 10 has stepped rises that increase in height from right to left of centerline. The bridge seat is fitted with four expansion bearings. The stepped, back wingwall is over 60' in length. The bent is protected by a light stone revetment.

The eight intermediate bents have three square columns, $2^{\prime}-6$ " $\times 2$ ' -6 ", on footings of $4^{\prime}-6$ " $\times 4^{\prime}-3$ " x $2^{\prime}-6$ ". The columns are centered $13^{\prime}-9^{\prime \prime}$ apart. The heights of the columns vary, depending on the final elevations of the footings in the underlying bedrock. Planned column heights from the tops of the footings to the bottoms of the cap beams ranged from 20’-5-7/8" at Bent No. 2 to $23^{\prime}-6-3 / 8$ " at Bent No. 9. The final heights of the columns range from approximately 20 ' to 24 '. The connecting cap beams are 35 ' -1 " long x 2 ' -6 " wide. The tops of the cap beams are stepped horizontally with three rises of just over 6 ". The heights of the cap beams therefore increase from right to left relative to centerline from 2'-3" to 3 ' $-9-7 / 8^{\prime \prime}$. Each bent (and each span) has four fixed bearings and four expansion bearings.

Each of the nine spans consists of four 27" Carnegie I-beam stringers with lateral cross-braces of single angles. Due to the skewed bents, the lengths of the stringers increase from $42^{\prime}-1-1 / 8^{\prime \prime}$ on the inside of the curve to $42^{\prime}-11^{\prime \prime}$ on the outside of the curve. Distances between the stringers vary from 10 ' $-3-5 / 8^{\prime \prime}$ to $10^{\prime}-5-1 / 8$ ". End floor beams between the stringers are 15" channels. The reinforced concrete bridge deck was built to a minimum thickness of $7-1 / 4$ ", and is superelevated at $0.0716^{\prime}$ per foot width. The elevation of the roadway grade between the curbs rises from 962' to 962.72' at centerline to 964.4 ' on the outside of the curve. Concrete curbs built parallel to centerline are 10 " high and 1 '- 6 " wide, with 5 '-long drainage outlets. Concrete balustrades with posts at each bent and intermediate subposts are 2'-6" high. Curved, beveled end posts at the end bents are $2^{\prime}-6$ " x $1^{\prime}-3$ ", and are $2^{\prime}-9$ " high.

## Bridge No. K-113

Bridge No. K-113, approximately 400 feet east of Bridge No. K-112 on the Gasconade River floodplain, has nine steel stringer spans carried on skewed, reinforced concrete bents. The bridge is on a $4^{\circ}$ simple curve bearing right that begins at Station $412+48,140$ feet west of the bridge's west end. The end of the curve is east of the bridge at Station $420+52$, making the total length of the curve 803.3'. The point of intersection of tangents is at the center of the bridge at Station $415+79$. The ten bents have leftadvanced skews that increase incrementally from east to west, from a $22^{\circ}-21^{\prime}$ skew of $5^{\prime}$ -$2-3 / 4^{\prime \prime}$ at Bent No. 10 to a $7^{\circ}-39^{\prime}$ skew of $8^{\prime}-4-3 / 4$ " at Bent No. 1 . Each span is $42^{\prime}-6^{\prime \prime}$ long as measured from the centers of the bents along the chord of the curve. As measured on tangent, the center span is $42^{\prime}-6$ " while the remaining spans decrease in length to $42.2^{\prime}$ at the two end spans. The bridge has a total length of $382^{\prime}-6$ " as measured along the highway centerline between the centers of the two end bents. The bridge has a 24 '-wide roadway on an even grade along centerline with a superelevated deck.

End Bent No. 1 is a three-column open bent on rectangular footings measuring $10^{\prime}-7$ " x 4'-6" x 2'-6". The columns are 8'-7" x 2'-6" at the bases, and have a front batter of 3 "' per 1 ". They are about $24^{\prime}$ high from the top of the footing to the bottom of the cap beam. The columns are centered 13 ' -9 " apart. The top of the cap beam forms the bridge seat that is $1^{\prime}-6$ " wide and 33 ' long. It is stepped horizontally in three increments of 5 " from left to right relative to the highway centerline. Each step is fitted with bearing plates and expansion bearings. The back wingwall is $52^{\prime}$ long and is stepped similarly to the cap beam to support the west end of the bridge deck. The bent is protected by a light stone revetment.

End Bent No. 10 has slightly longer footings at 10 ' -11 ", and its three battered columns have basal lengths of 8 ' -11 ". The planned column heights were over 25'. It is otherwise similar to End Bent No. 1.

The eight intermediate bents each have two square columns 2'-6" x $2^{\prime}-6$ " on square footings $4^{\prime}-6^{\prime \prime} \times 4^{\prime}-6^{\prime \prime}$. Note that two-column bents are used at this bridge, rather than three-column bents as found at Bridge No. K-112, to allow for the easier passage of overflow and driftwood. The bent columns at Bridge No. K-113 are centered 19’-6" apart. Planned column heights from the tops of the footings to the bottoms of the cap beams were 23'-7-1/2" at Bents 2 through 4, 24’-7-1/2" at Bents 5 through 8, and 25’-8" at Bent 9. However, final dimensions varied according to the depths to bedrock. The connecting cap beams are $28^{\prime}-11^{\prime \prime}$ long x $2^{\prime}-6$ " wide. The tops of the cap beams are stepped horizontally from left to right relative to centerline with three rises of 5". The ends of the cap beams rise from 2'-8" on the left side to $3^{\prime}-11-1 / 8^{\prime \prime}$ on the right. The four steps of each bent each have one fixed bearing and one expansion bearing.

The nine spans are composed of four 27" Carnegie beam stringers with lateral cross-braces of single angles. The lengths of the stringers increase from 42'-2-1/8" on the inside of the curve to $42^{\prime}-10^{\prime \prime}$ on the outside of the curve. Distances between the
stringers are approximately 8 '-5-3/4". End floor beams consist of 12 " channels. The bridge deck has a minimum thickness of 7-1/4". It is superelevated at 0.0573' per foot width. The elevation of the roadway grade between the curbs rises from 962 ' to 962.57 ' at centerline to 963.14 ' on the outside of the curve. The concrete curbs are 10" high and 1 '-6" wide with 5'-long drainage outlets. Concrete balustrades with posts at each bent and intermediate subposts are $2^{\prime}-6$ " high. Curved, beveled end posts at the end bents are $2^{\prime}-6$ " $\times 1^{\prime}-3$ ", and are $2^{\prime}-9$ " high.




geman on or 0.3

Fosemen

> ERIOGE OVE GASCONADE RIVER Etate goad frow wavnesville to crocker 20. 8. 2 MILES SOUTH OF CROCKER
PULASKI P $G$ UN

BRIDGE OVER GASCONADE RIVER
state road from watiesville to crocker
ABOUT 8.2 MILES SOUTH OF CROCKER FIGBFHED PROJECT NOE E359C(RIT) STH OF CROCKER
STA. $421+90$
PULASKI
COUNTY





plan
DETAILS OF RAIL AT END


PART ELEVATION OF CURB


Vitce:This drowing is not io scole
Nillor cuinconsions:
EXP Shoe guide


Note: All fillets ${ }^{3}$


PART PLARV SHOWING REINFORCING-100'-0" TRUSS SPAN

ace May 1933?












# Gasconade River Bridge (Bridge No. J-802) <br> And <br> Overflow Structures (Bridge Nos. K-112 and K-113) Route 17, Pulaski County 

Randall Dawdy, Photographer
February 2008

## Photo Index:

1. Bridge No. F-802. West approach. View to east.
2. Bridge No. F-802. North profile. View to southeast.
3. Bridge No. F-802. Warren pony truss detail. View to northeast.
4. Bridge No. F-802. Rocker bearing at east abutment. View to north.
5. Bridge No. F-802. Subdeck at east abutment. View to northwest.
6. Bridge No. F-802. West pony truss profile. View to northwest.
7. Bridge No. F-802. Bent No. 2. View to north.
8. Bridge No. F-802. East pony truss profile. View to northeast.
9. Bridge No. F-802. Pier No. 3. View to north.
10. Bridge No. F-802. Parker through truss main span. View to northeast.
11. Bridge No. F-802. Subdeck at Pier No. 4. View to northeast.
12. Bridge No. F-802. I-beam approach spans. View to northeast.
13. Bridge No. F-802. South profile. View to northwest.
14. Bridge No. F-802. East portal of main span. View to west.
15. Bridge No. F-802. East approach. View to west.
16. Bridge No. F-802. East nameplate. View to west.
17. Bridge No. K-112. West approach. View to east.
18. Bridge No. K-112. Balustrades and roadway. View to east.
19. Bridge No. K-112. South profile. View to northeast.
20. Bridge No. K-112. South profile. View to northeast.
21. Bridge No. K-112. East end. View to northeast.
22. Bridge No. K-112. Bent No. 9. View to east.
23. Bridge No. K-112. Bent No. 6. View to east.
24. Bridge No. K-112. South profile. View to northwest.
25. Bridge No. K-112. South profile. View to northwest.
26. Bridge No. K-112. East end post. View to west.
27. Bridge No. K-112. East end post. View to north.
28. Bridge No. K-112. East approach. View to west.
29. Bridge No. K-113. West approach. View to east.
30. Bridge No. K-113. South profile. View to northwest.
31. Bridge No. K-113. Pier No. 2. View to east.
32. Bridge No. K-113. East end. View to north.
33. Bridge No. K-113. North profile. View to southwest.
34. Bridge No. K-113. East approach. View to west.


































[^0]:    ${ }^{1}$ Missouri State Highway Commission, "Map of Missouri Showing State Road System, Numbers, Road Conditions, and Points of Interest," January 1, 1933.
    ${ }^{2}$ Pulaski County, Route 17, Project History Map. Design Division, Missouri Department of Transportation.

[^1]:    ${ }^{3}$ Waynesville Quadrangle, Missouri—Pulaski County. 7.5 Series Topographic Map. Scale 1:24000. Geological Survey, United States Department of the Interior and Corps of Engineers, United States Department of the Army. 1954, photorevised 1985.

    4 "Field Check Memoranda," Bureau of Bridges, February 2, 1932, Correspondence File, Project No. E359C. Microfiche. Bridge Division, Missouri Department of Transportation.
    ${ }^{5}$ Missouri State Highway Commission, "Plan and Profile of Proposed State Road, Federal Aid Project, Pulaski County." Route 17, Project No. E-359C. Microfiche. Design Division, Missouri Department of Transportation.

    6 "Log of Soundings," February 26, 1932. Correspondence File, Project No. E-359C.
    ${ }^{7}$ Missouri State Highway Department, "Bridge Over Gasconade River Overflow, State Road from Waynesville to Crocker, About 7.9 Miles South of Crocker, Project No. 359C (R. 17), Sta. $405+70$ " [Bridge Plans, K-112, 4 sheets]. Microfiche. Bridge Division, Missouri Department of Transportation; Missouri State Highway Department, "Bridge Over Gasconade River Overflow, State Road from Waynesville to Crocker, About 8 Miles South of Crocker, Project No. 359C (R. 17), Sta. $413+88$ " [Bridge Plans, K-113, 4 sheets]. Microfiche. Bridge Division, Missouri Department of Transportation; Missouri State Highway Department, "Bridge Over Gasconade River, State Road from Waynesville to Crocker, Project No. E359C (R 17), Sta. 421 + 90" [Bridge Plans, J-802, 9 sheets]. Microfiche. Bridge Division, Missouri Department of Transportation.

[^2]:    8 "Approval of Awards for Bids on State Road Work Received August 31, 1932," Minutes of Proceedings of Missouri State Highway Commission, September 13, 1932. Secretary’s Office, Missouri State Highway Commission, Jefferson City.
    ${ }^{9}$ "Final Payment to Contractors for Month of July 1934," Minutes of Proceedings of Missouri State Highway Commission, August 14, 1934.
    ${ }^{10}$ H. Dwight Weaver, Missouri: The Cave State (Jefferson City: Discovery Enterprises, 1980), 112-113.

[^3]:    ${ }^{11}$ Clayton B. Fraser, "Pratt Truss Subtypes," in Missouri Historic Bridge Inventory, 5 Vols., Missouri Department of Transportation, Project No. NBIH (6) (Loveland, Colorado: Fraserdesign, Inc., 1996), I: 102-104.

