
Documentation of the Historic Jacks Fork Bridge at Eminence

Bridge No. K-209
Shannon County, Route 19



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Eminence Bridge (Jacks Fork Bridge)
Bridge No. K-209
Shannon County, Route 19

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Historical Narrative

The Eminence Bridge spans the Jacks Fork River at Missouri Route 19 at Eminence, Shannon County. The bridge is a three-span, reinforced concrete, two-rib open spandrel arch structure with reinforced concrete deck girder approach spans and reinforced concrete abutments and piers. The bridge is a well-preserved example of open spandrel arch construction employed by the Missouri State Highway Department during the 1920s and early 1930s.¹

Route 19 had been mandated by the 1921 Centennial Road Law to link Eminence, the county seat of Shannon County, with the adjacent county seats of Salem, Dent County, and Alton, Oregon County.² Within Shannon County, work on the highway proceeded in stages beginning in the early 1920s. Crossing Jacks Fork at Eminence, Route 19 initially utilized a single-span Parker through truss bridge built in 1918-1919 by the Shannon County Court for \$14,775. The state highway department had provided \$1,000 toward a wood approach at the north end of the bridge. The county spent another \$12,000 to cut through a rock bluff at the south end of the bridge. Having incorporated the steel bridge into the state highway system, the highway department refloored the structure in 1926.³ One of the first state highway projects in Shannon County, completed in 1923, involved 4.26 miles of a 24-foot wide graded earth road leading south from the Eminence courthouse. In 1928, another Route 19 project provided 2.4 miles of a 30-foot wide graded earth road north of Jacks Fork. The highway department meanwhile constructed a reinforced concrete filled spandrel arch bridge over the upper Current River and a reinforced concrete open spandrel arch bridge over Sinking Creek, both in northern Shannon County. Nearby, the department erected a skewed open spandrel arch bridge over Spring Valley Creek near Round Spring in 1930. The highway department had realized that the area's natural supplies of sand and gravel provided an economical source of concrete aggregate. "It is generally recognized that southern Missouri has an abundant supply of good road materials. All through the Ozark territory, the streams are filled with a good grade of road gravel and in

¹ Clayton B. Fraser, "HAER Inventory Data Sheet, Eminence Bridge (Jacks Fork Bridge), SHAN04," Missouri Historic Bridge Inventory, (Draft), 5 Vols., Missouri Department of Transportation, Project No. NBIH (6) (Loveland Colorado: Fraserdesign, Inc., 1996).

² Missouri State Highway Commission, Third Biennial Report of the State Highway Commission of Missouri for the Period Ending December 1, 1922 (Jefferson City: Hugh Stephens Company, Printers), 41-55.

³ Louis V. Stigall, Chief Counsel, to L. B. Shuck, Shannon County Prosecuting Attorney, January 18, 1938, in Bridge K-209 Project File, Bridge Division, Missouri Department of Transportation, Jefferson City.

many cases a quality of gravel suitable for concrete work.”⁴ By 1930, most of Route 19 in Shannon County consisted of either a newly-graded earth road awaiting a gravel surface, or a state-maintained, all-weather road still needing modern improvements.⁵

The state highway department began planning for a new bridge over Jacks Fork in late 1932. Although the existing bridge built by Shannon County was only a dozen years old, it apparently was inadequate by modern standards and had received load-limit restrictions. A new bridge would link into the adjacent sections of Route 19 already completed, and cross the river on a relatively straight alignment compared to the existing location one-quarter mile upstream from Eminence. In December 1932 and April 1933, the department made extensive soundings of the Jacks Fork river bed, boring through layers of sand, gravel, clay and rock to determine the depths to solid limestone bedrock. The department’s bridge engineers drew, traced and checked construction plans for the new crossing from March through July 1933. The Bridge Engineer N. R. Sack and Chief Engineer Thomas H. Cutler signed off on the bridge design on August 8. The bridge project, designated NRH-379A, received federal funding under the National Industrial Recovery Act (NIRA) enacted in June 1933. The project included roadway approaches at each end of the bridge to total just over three-quarters of a mile in length. Letting of the construction contract on October 28, 1933, drew bids from twelve firms. The List and Clark Construction Company of Kansas City submitted the low bid of \$69,137.⁶

Soon after receiving the contract, the List and Clark Construction Company began shipping their machinery and equipment by railroad to Winona, then hauled it the remaining ten miles north to Eminence. W. F. Mason arrived as the project superintendent for List and Clark, while W. R. Wallace would oversee the work for the highway department. Federal provisions under NIRA required the use of local labor as far as possible, with minimum wages of 35 cents an hour for unskilled labor and 50 cents an hour for skilled labor. Work on the Eminence Bridge began around November 13. Mason first began the excavations for Pier 6 and Bent 7 on the south bank, pouring the concrete footings on December 3. That evening, water erupted through bedrock fissures into the left footing of Pier 6 and completely flooded its cofferdam, ruining the

⁴ Route 19, Shannon County, Construction History [map], Plans and Records Office, Design Division, Missouri Department of Transportation, Jefferson City; Fraser, “HAER Inventory Data Sheet, Current River Bridge, SHAN01,” “HAER Inventory Data Sheet, Sinking Creek Bridge, SHAN02,” and HAER Inventory Data Sheet, Round Spring Bridge, SHAN03,” in Missouri Historic Bridge Inventory; Missouri State Highway Commission, *Fourth Biennial Report of the State Highway Commission of Missouri for the Period Ending December 1, 1924* (Jefferson City: Hugh Stephens Press, 1924), 64.

⁵ Missouri State Highway Commission, “Map of Missouri Showing State Road System, Route Numbers, Road Conditions, and Points of Interest,” (Jefferson City: Botz-Hugh Stephens Press, 1930).

⁶ *Current Wave* (Eminence), November 16, 1933; “Log of Soundings,” December 3, 1932 and April 10, 14 and 19, 1933, in Bridge K-209 Project File; Missouri State Highway Department, “Bridge Over Jack’s Fork of Current River,” Bridge No. K-209 design plans [eleven sheets], August 18, 1933, Bridge Division, Missouri Department of Transportation, Jefferson City; Missouri State Highway Commission, “Plan and Profile of Proposed State Road,” Route 19, Shannon County, Project 19-NRH-379A, Plans and Records Office, Design Division, Missouri Department of Transportation, Jefferson City; “Tabulation of Bids Received,” Shannon County, Route 19, Project NRH-379A, October 28, 1933, Plans and Records Office, Design Division, Missouri Department of Transportation, Jefferson City.

freshly-poured concrete and suspending the work there for several days. Worse misfortune followed on December 8, when one of the workers, Frank Dixon, suffered fatal injuries at the project's gravel plant. A cable on a hoisting gin snapped, and a heavy gin pole fell on Dixon. He sustained a skull fracture, internal injuries, and back injuries. Dixon was taken to a hospital in West Plains where he died on December 12. Dixon was a lifelong resident of Shannon County and left a wife and several children.⁷

After this inauspicious beginning, the bridge construction proceeded relatively smoothly. Construction of Pier 6 resumed on December 14, while pouring of Pier 3 on the opposite bank began by December 18. On February 1, 1934, the *Current Wave* newspaper of Eminence reported that two piers (presumably Pier 6 and Bent 7) were "practically complete" and two others on the north bank (including Pier 3) were partially built. Pouring of the footings for Pier 5 began in mid-February. All of the fine aggregate and course aggregate used in the concrete came from the Jacks Fork River. Steam heat was used to maintain the temperature of the concrete during the curing process. Pouring of the arch ribs for the three arch spans occurred during March 1934, beginning with Span 3 (the northern span) on March 1. This was followed by the ribs for Span 4 on March 8, and the final key sections of Span 5 (the southern arch span) on March 27. Specifications called for a richer mix of a quick-hardening cement to be used in the arch ribs. The two ribs on a given span were poured simultaneously in four segments to equalize the stresses on the falsework centering that temporarily supported the structure. The first blocks poured were from the construction joints at the spring line outward approximately 15'; next, block two was a 21' section of the arch crown; then block three, two 20' sections left and right of the arch crown; finally, two 4'-0" key sections at the ends of the latter blocks to close the arch. Pouring the final key sections occurred at least twenty-four hours after the adjacent blocks had been poured. Pouring of the pilasters, the spandrel bents, the bridge deck and the balustrades completed the structure. While the bridge itself was finished before the end of May, more work remained in the construction of the roadway approaches.⁸

Constructing the adjoining sections of Route 19 involved the grading of about 2,500' of roadbed north of the bridge, with about 1,100' on a new alignment. On the south side of the bridge, the end abutment, Bent 7, was enclosed by approximately 3,100 cubic yards of rock fill built up 21' high to the bent's bridge seat. Running south into Eminence, the new highway required a 700'-long earth fill approach about 20' high, and the grading down of a small hill in north Eminence for a distance of about 500'. List and Clark used a steam shovel in the excavation of the road cut in north Eminence, and hauled the fill in dump trucks to build up the south approach. More roadway fill material came from leveling the floodplain beneath the arch

⁷ *Shannon County Democrat* (Winona), November 16, 1933; *Current Wave*, October 19, November 16, December 7, 14, 1933; "Report of Tests on Concrete Cylinders," January 3, 1934; Chief Engineer to S. W. O'Brien, Senior Highway Engineer, Bureau of Public Roads, July 17, 1934, in Bridge K-209 Project File.

⁸ *Current Wave*, February 1, May 24, 1934; "Report of Tests on Concrete Cylinders," *passim*; W. F. Mason, List and Clark Construction Company, to N. R. Sack, Bridge Engineer, January 3, 1934; N. R. Sack, Bridge Engineer, to List and Clark Construction Company, January 10, 1934, in Bridge K-209 Project File.

spans for over 200' both up and downstream. This left the surface of the floodplain just below the spring line of the arches and improved the channel overflow.⁹

While this work on the approaches continued through June, the citizens of Eminence made plans to dedicate the new bridge in conjunction with their Fourth of July celebration. The two-day festivities on July 3 and 4 included a picnic, a carnival, a "colored minstrel show," baseball games and an "old fiddlers" contest, but apparently the community leaders dropped the idea of the bridge dedication at the last minute. At least the *Current Wave* made no mention of it. Work on the approaches continued into late July. With the south approach finally complete, List and Clark had about one day's work to finish the north approach when their steam shovel broke down. Travelers meanwhile began using the new bridge, but had to take a detour along the north river bank and tie into the old section of highway. State and federal highway officials were able to conduct an inspection of the completed bridge project on July 25, 1934.¹⁰

In a subsequent inspection report, Mr. S. E. Sime of the Bureau of Public Roads detailed a number of deficiencies he saw with the structure, and recommended on those grounds that federal funding be withdrawn from the project. Protesting Sime's recommendation, Chief Engineer Cutler conceded that some "minor details" did not meet construction standards but insisted that the bridge was "structurally sound" and that the deficiencies could be corrected.¹¹ On August 21, representatives of the Missouri State Highway Department (including the project engineer W. R. Wallace; D. C. Wolfe of the Bridge Department; General Inspector O. D. Chrisman; Division Engineer of Division No. 9 Harry D. Griffith; and Division Construction Engineer J. E. Carlson) met at the bridge site with Sime of the Bureau of Public Roads and W. F. Mason of List and Clark. After another inspection, the men determined what work would be required to put the bridge in an acceptable condition. Mason's crew would have to remove and rebuild the balustrades along the entire structure; fill holes in the concrete caps and girders caused by the bolts from the falsework; rub down all of the concrete to a uniform finish, including the tops and sides of the arch ribs; and address "any other problems that need correction in order to comply with the specifications and plans." In addition, while Mason had already removed the old steel truss bridge, he had neglected to remove its north pier as required. Mason indicated he would resume the work immediately, but the project remained at a standstill for several more weeks. On September 15, Division Engineer Harry Griffith reminded the List and Clark Construction Company that they would be assessed liquidated damages if they went beyond the contracted completion date. Griffith also warned that if the company did not recommence the work within ten days, the highway department would consider them in default on the construction contract, and would call on their surety company to finish the job.¹²

⁹ Missouri State Highway Department, "Bridge Over Jack's Fork," Bridge K-209 Design Plans; Missouri State Highway Commission, Route 19, Shannon County, Project 19-NRH-379A, Design Plans.

¹⁰ *Current Wave*, June 7, 14, 28, July 5, 19, 1934.

¹¹ Sime's inspection report was not found in the Bridge K-209 project files. Chief Engineer [T. H. Cutler] to S. W. O'Brien, Senior Highway Engineer, Bureau of Public Roads, August 7, 1934, in Bridge K-209 Project File.

¹² Harry D. Griffith, Division Engineer, to List and Clark Construction Company, September 14, 1934, in Bridge K-209 Project File.

There are no additional records in the Bridge K-209 project files concerning this corrective work required of List and Clark. The *Current Wave* of Eminence made no mention of any continuing construction on the bridge. Presumably, however, List and Clark did complete the necessary corrections instead of defaulting on their contract. Ultimately, engineers from the Division No. 9 office at Willow Springs made a final inspection and accepted the project on February 13, 1935. The *Current Wave*, in briefly noting the completion of the Eminence Bridge, stated, “This is one of the finest bridges in this part of the state and the people of Eminence, as well as of Shannon County, are proud of it.”¹³

Construction Contractor

The List and Clark Construction Company of Kansas City, Missouri, first incorporated in March 1917 under owners William M. List and Charles E. Clark. Now based in Lenexa, Kansas, the company remains in operation in 2002 as a major general contractor for grading and excavation work, heavy construction, railroad construction, drainage and river dredging, and levee construction.¹⁴ In 1933, when List and Clark constructed the Eminence Bridge, the company had its headquarters office in Room 415 of the Railway Exchange Building on Walnut Street in Kansas City. Their contemporary stationary letterhead identified the company as “railroad contractors.”¹⁵ A 1933 Kansas City directory listed the List and Clark Construction Company under the heading of “Road Contractors.” Sharing the same office in Room 415 were the W.M. List General Contractors, Inc., and the W.M. List Construction Company. Adjacent offices in Rooms 413 and 416 held the List and Weatherly Construction Company, under William List and Everett P. Weatherly, and the C.J. List Construction Company under Clarence J. List. The various companies, clearly related, performed general construction, building construction, road construction, and railroad construction.¹⁶

During the 1920s and 1930s, the List and Clark Construction Company, the List and Weatherly Construction Company, and the List Construction Company constructed a number of bridges on Missouri’s state highway system. The companies presumably did other related highway construction work as well. The first known bridge attributed to the List and Weatherly Construction Company was the Grant Avenue Viaduct in Green County, a thirty-span concrete deck girder structure erected in 1927. Others included two open spandrel arch bridges erected by List and Weatherly in 1928 in Jasper County: the Kendricktown Bridge, with one 80’ arch span,

¹³ *Current Wave*, February 14, 1935; D. B. Levi, Engineer of Construction, to Harry D. Griffith, Division Engineer, “Final Inspection and Final Acceptance,” February 26, 1935, in Bridge K-209 Project File.

¹⁴ “List and Clark Company,” Charter Number 00033572, Business Entity Database, Office of the Secretary of State, Missouri, <<http://www.sos.state.mo.us/BusinessEntity>>, August 2002; “AGC Contractor Membership,” Associated General Contractors of Missouri, Inc., <<http://www.agcmo.org/>>, August 2002.

¹⁵ List and Clark Construction Company, stationary letterhead found in Bridge K-205 project file, e.g., W. F. Mason to N. R. Sack, January 3, 1934.

¹⁶ *Polk’s Kansas City Directory* (Kansas City: Gate City Directory Company, 1933).

and the Spring River Bridge, with three 122' arch spans. Another 1928 project by List and Weatherly involved the Highway 71 Viaduct in Jasper County, a thirteen-span concrete deck girder bridge. In 1929, the List Construction Company constructed the Sni-A-Bar Road Overpass in Jackson County, another open spandrel arch with one 128' span. The List and Clark Construction Company also constructed several Parker through truss bridges during the 1930s, including the Leeper Bridge in Wayne County, the Gasconade River Bridge in Pulaski County, and a railroad overpass in Buchanan County. In 1936, the List Construction Company built the Blue Parkway Viaduct in Jackson County, a steel plate deck girder structure with fourteen 105' spans. A later project constructed during World War II involved the Troost Avenue Viaduct in Jackson County, with ten 56' steel stringer spans.¹⁷

Description of the Eminence Bridge

The Eminence Bridge (Jacks Fork Bridge) crosses the Jacks Fork River at Route 19 in Shannon County. It consists of three 115' reinforced concrete, two rib open spandrel arches with reinforced concrete deck girder approach spans on reinforced concrete abutments and piers. The overall bridge length is 429'-10", with a roadway width of 22'-0" on a 0 percent grade. The bridge was designed by the Missouri State Highway Department in 1933, based on standard drawing S918R, and was constructed by the List and Clark Construction Company of Kansas City in 1933-1935.¹⁸

The substructure consists of two open abutments, one intermediate bent on the north side, and four piers. The substructure components are founded on solid bedrock. The footings of the four main piers are tied into the bedrock with ¾"-diameter steel dowels spaced at 1'-6" intervals, driven a foot into the rock and secured with cement mortar grout. Notations on the construction drawings indicate the planned dimensions of the piers and bents were slightly altered during construction when the excavations for the footings sometimes had to go slightly deeper than expected.

Bent 1 on the north bank has rectangular footings supporting two front-battered columns 2'-6" wide and approximately 29' high. The columns are connected by a cap beam, with a backwall and wings 44'-4" long. Intermediate Bent 2 supporting two deck girder spans at the north end of the bridge rests on 4'-6"-square footings that support 2'-6"-square columns approximately 24' high, with a connecting cap beam.

Bent 7 on the south bank is larger than but similar to Bent 1. Bent 7 has two rectangular footings and two front-battered columns approximately 31' high. The footings for Bent 7 were poured monolithic with the buttress footings of adjacent Pier 6. The arch buttresses extend from Pier 6 into the Bent 7 columns. Other dimensions of Bent 7 are the same as Bent 1.

¹⁷ Fraser, Missouri Historic Bridge Inventory, Vol. 1, pp. 83-143, *passim*.

¹⁸ Missouri State Highway Department, "Bridge Over Jack's Fork of Current River," Bridge No. K-209 design plans [eleven sheets].

Piers 3 and 6 anchor the ends of the arch spans with large buttresses extending into the adjoining arch ribs. Pier 3 is an open pier founded on rectangular footings 20'-0" x 8'-0" x 3'-0". Arch buttresses 5'-0" wide extend from the rear of the footings, where they are anchored with ½"-diameter reinforcing rods, to the front of the pier columns where there is a construction joint with the arch ribs. The pier columns are 5'-0" x 5'-0" square and 10' high from the footings up to the juncture of the arch buttresses where there is a construction joint with the pilasters. The pier columns are connected with a 3'-0" x 1'-6" tie beam. Above the construction joint, the fluted pilasters are offset from the centers of the arch ribs. The pilasters become narrower at 5'-0" x 3'-0", and are over 16' high. Flared, beveled crowns extend out another 3'-0" to support the bridge deck balustrades. The pilasters are connected by a 2'-3" x 1'-9" tie beam, and a 1'-6" x 2'-9" cap beam.

Pier 6 features a large footing poured monolithic with the footing for Bent 7. Combined, the footing measures 32'-2" x 11'-6" x 3'-0". As the anchor for the arch ribs, the buttresses at Pier 6 extend the length of the footings through the Bent 7 columns to its rear face. The buttresses are strengthened and secured with 7/8" diameter reinforcing rods. The two pier columns are approximately 21' high from the tops of the footings to the base of the tie beam, which corresponds to the arch spring line.

Piers 4 and 5, the main channel piers, are nearly identical in dimensions. They consist of battered cylindrical columns approximately 12' in diameter and 17' high, connected by a 3'-0"-thick webwall. At the arch spring line, cone-shaped cutwaters labeled "cocked hats" deflect the current and reduce cross-currents on the downstream side. The fluted pilasters, offset from the arch ribs, are 5'-0" x 3'-0", and are 21'-4" high from the spring line to the top of the cap beam.

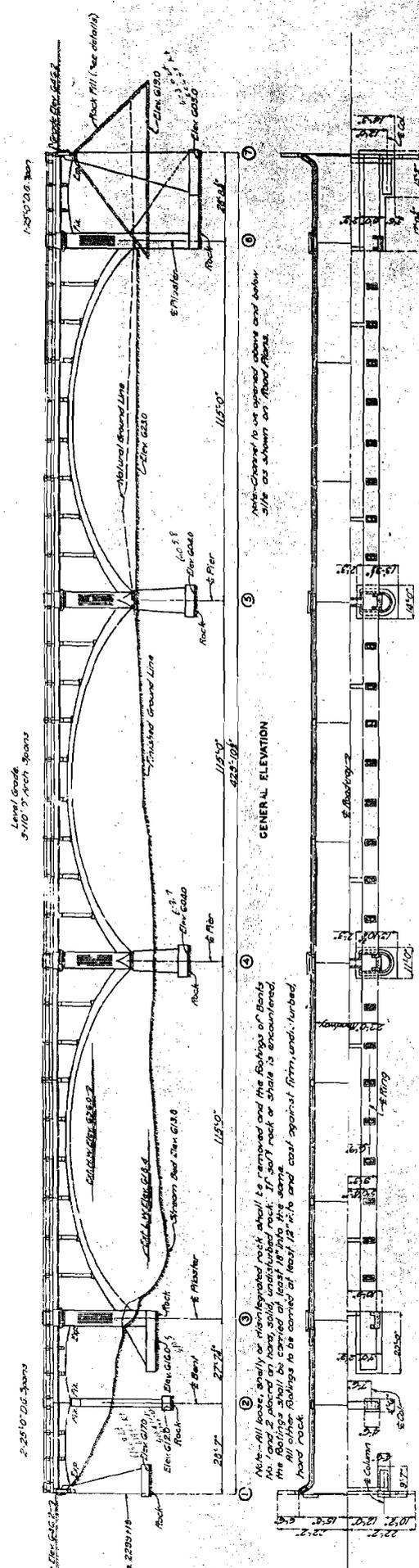
The spring line of the arch ribs is at an elevation of 624.0'. The arch ribs are 5'-0" wide with beveled edges, and are reinforced every 2'-6" with ½"-diameter steel reinforcement rods and angle bar spacers. They have a vertical thickness at the spring line of 2'-11" and narrow gradually to a thickness of 1'-6" at the crown. The rise of the arch measures 17'-3" from the spring line to the crown extrados. The arches are 115'-0" long as measured between the pier centerlines, or 110'-0" from the outside of the piers. The arches support spandrel bents which act as floor beams to support the bridge deck. The spandrel bents are placed symmetrically 11'-0-1/4" apart, giving eight bents per span. Cross struts between the arch ribs occur at Spandrel Bents 2 and 7. The spandrel bent columns are 1'-4" thick and 3'-6" wide, with cap beams 24'-0" long.

Two reinforced concrete deck girder spans at the north end are 28'-7" long at Span 1 and 27'-6" long at Span 2. The south end deck girder span, Span 6, is also 28'-7" long. The arched girders are 1'-5" thick, with two floor beams at each span. The girder spans rest on alternating fixed and expansion phosphor bronze bearing plates. The bridge deck is 10-1/2" thick at the crown of the roadway. The guardrails on top of 10" curbs consist of 4" x 4" balustrades with beveled coping, subposts at the spandrel bents, and 2'-6"-wide beveled concrete posts at each pilaster, with curved entrance posts displaying the bridge plates. Expansion joints at the posts and subposts above the spandrel bents are filled with a rubber compound.

The Eminence Bridge remains largely unaltered from its original construction. It is a representative example of multiple-span open spandrel arch construction employed by the Missouri State Highway Department during the 1920s and 1930s. Generally, multiple-span bridges of this type have span lengths of around 100'. The general structural design and subdued decorative details of the Eminence Bridge also appear typical, in the symmetry of its arch spans, the fluted pilasters, the concrete balustrades and the curved entrances. Construction of a new bridge adjacent to the Eminence Bridge is scheduled to begin in January 2003. The Eminence Bridge will be preserved in place and used as a pedestrian crossing.

MISSOURI STATE HIGHWAY DEPARTMENT

DATE	BY	SCALE	TOTAL SHEETS
1/11/33	W.C. BROWN	1" = 20'	12



ESTIMATED QUANTITIES

ITEM	QUANTITY	UNIT	EST. PRICE	TOTAL
Headwall	1	Sq. Yds.	10.00	10.00
Sub. Gravel	100.00	Cu. Yds.	2.00	200.00
Excavation, Class 1	200.00	Sq. Yds.	1.00	200.00
Excavation, Class 2	100.00	Sq. Yds.	1.00	100.00
Excavation, Class 3	50.00	Sq. Yds.	1.00	50.00
Excavation, Class 4	25.00	Sq. Yds.	1.00	25.00
Excavation, Class 5	12.50	Sq. Yds.	1.00	12.50
Excavation, Class 6	6.25	Sq. Yds.	1.00	6.25
Excavation, Class 7	3.125	Sq. Yds.	1.00	3.125
Excavation, Class 8	1.5625	Sq. Yds.	1.00	1.5625
Excavation, Class 9	0.78125	Sq. Yds.	1.00	0.78125
Excavation, Class 10	0.390625	Sq. Yds.	1.00	0.390625
Excavation, Class 11	0.1953125	Sq. Yds.	1.00	0.1953125
Excavation, Class 12	0.09765625	Sq. Yds.	1.00	0.09765625
Excavation, Class 13	0.048828125	Sq. Yds.	1.00	0.048828125
Excavation, Class 14	0.0244140625	Sq. Yds.	1.00	0.0244140625
Excavation, Class 15	0.01220703125	Sq. Yds.	1.00	0.01220703125
Excavation, Class 16	0.006103515625	Sq. Yds.	1.00	0.006103515625
Excavation, Class 17	0.0030517578125	Sq. Yds.	1.00	0.0030517578125
Excavation, Class 18	0.00152587890625	Sq. Yds.	1.00	0.00152587890625
Excavation, Class 19	0.000762939453125	Sq. Yds.	1.00	0.000762939453125
Excavation, Class 20	0.0003814697265625	Sq. Yds.	1.00	0.0003814697265625
Excavation, Class 21	0.00019073486328125	Sq. Yds.	1.00	0.00019073486328125
Excavation, Class 22	0.000095367431640625	Sq. Yds.	1.00	0.000095367431640625
Excavation, Class 23	0.0000476837158203125	Sq. Yds.	1.00	0.0000476837158203125
Excavation, Class 24	0.00002384185791015625	Sq. Yds.	1.00	0.00002384185791015625
Excavation, Class 25	0.000011920928955078125	Sq. Yds.	1.00	0.000011920928955078125
Excavation, Class 26	0.0000059604644775390625	Sq. Yds.	1.00	0.0000059604644775390625
Excavation, Class 27	0.00000298023223876953125	Sq. Yds.	1.00	0.00000298023223876953125
Excavation, Class 28	0.000001490116119384765625	Sq. Yds.	1.00	0.000001490116119384765625
Excavation, Class 29	0.0000007450580596923828125	Sq. Yds.	1.00	0.0000007450580596923828125
Excavation, Class 30	0.00000037252902984619140625	Sq. Yds.	1.00	0.00000037252902984619140625
Excavation, Class 31	0.000000186264514923095703125	Sq. Yds.	1.00	0.000000186264514923095703125
Excavation, Class 32	0.0000000931322574615453515625	Sq. Yds.	1.00	0.0000000931322574615453515625
Excavation, Class 33	0.000000046566128730772678125	Sq. Yds.	1.00	0.000000046566128730772678125
Excavation, Class 34	0.0000000232830643653863390625	Sq. Yds.	1.00	0.0000000232830643653863390625
Excavation, Class 35	0.00000001164153218269316953125	Sq. Yds.	1.00	0.00000001164153218269316953125
Excavation, Class 36	0.000000005820766091346584765625	Sq. Yds.	1.00	0.000000005820766091346584765625
Excavation, Class 37	0.0000000029103830456732923828125	Sq. Yds.	1.00	0.0000000029103830456732923828125
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Excavation, Class 44	0.0000000000227373675443226584765625	Sq. Yds.	1.00	0.0000000000227373675443226584765625
Excavation, Class 45	0.0000000000113686837721613282923828125	Sq. Yds.	1.00	0.0000000000113686837721613282923828125
Excavation, Class 46	0.00000000000568434188608066415453515625	Sq. Yds.	1.00	0.00000000000568434188608066415453515625
Excavation, Class 47	0.0000000000028421709430403320772678125	Sq. Yds.	1.00	0.0000000000028421709430403320772678125
Excavation, Class 48	0.00000000000142108547152016603863390625	Sq. Yds.	1.00	0.00000000000142108547152016603863390625
Excavation, Class 49	0.00000000000071054273576008301953125	Sq. Yds.	1.00	0.00000000000071054273576008301953125
Excavation, Class 50	0.000000000000355271367880041509765625	Sq. Yds.	1.00	0.000000000000355271367880041509765625
Excavation, Class 51	0.0000000000001776356839400207548828125	Sq. Yds.	1.00	0.0000000000001776356839400207548828125
Excavation, Class 52	0.00000000000008881784197001037744140625	Sq. Yds.	1.00	0.00000000000008881784197001037744140625
Excavation, Class 53	0.000000000000044408920985005188720703125	Sq. Yds.	1.00	0.000000000000044408920985005188720703125
Excavation, Class 54	0.00000000000002220446049250029436350625	Sq. Yds.	1.00	0.00000000000002220446049250029436350625
Excavation, Class 55	0.00000000000001110223024625001471816915625	Sq. Yds.	1.00	0.00000000000001110223024625001471816915625
Excavation, Class 56	0.000000000000005551115123125000735908078125	Sq. Yds.	1.00	0.000000000000005551115123125000735908078125
Excavation, Class 57	0.00000000000000277555756156250003679540390625	Sq. Yds.	1.00	0.00000000000000277555756156250003679540390625
Excavation, Class 58	0.0000000000000013877787807812500018397701953125	Sq. Yds.	1.00	0.0000000000000013877787807812500018397701953125
Excavation, Class 59	0.000000000000000693889390390625000091988509765625	Sq. Yds.	1.00	0.000000000000000693889390390625000091988509765625
Excavation, Class 60	0.00000000000000034694469519531250000459942548828125	Sq. Yds.	1.00	0.00000000000000034694469519531250000459942548828125
Excavation, Class 61	0.0000000000000001734723475976562500002299712744140625	Sq. Yds.	1.00	0.0000000000000001734723475976562500002299712744140625
Excavation, Class 62	0.000000000000000086736173798828125000011498563720703125	Sq. Yds.	1.00	0.000000000000000086736173798828125000011498563720703125
Excavation, Class 63	0.000000000000000043368086899414062500005749281863390625	Sq. Yds.	1.00	0.000000000000000043368086899414062500005749281863390625
Excavation, Class 64	0.00000000000000002168404344970703125000028746409316953125	Sq. Yds.	1.00	0.00000000000000002168404344970703125000028746409316953125
Excavation, Class 65	0.0000000000000000108420217248535156250000143732046584765625	Sq. Yds.	1.00	0.0000000000000000108420217248535156250000143732046584765625
Excavation, Class 66	0.000000000000000005421010862426781250000718660232923828125	Sq. Yds.	1.00	0.000000000000000005421010862426781250000718660232923828125
Excavation, Class 67	0.00000000000000000271050543121339062500003593301164619140625	Sq. Yds.	1.00	0.00000000000000000271050543121339062500003593301164619140625
Excavation, Class 68	0.0000000000000000013552527156066953125000017966505820703125	Sq. Yds.	1.00	0.0000000000000000013552527156066953125000017966505820703125
Excavation, Class 69	0.0000000000000000006776263578033476562500000898325291037744140625	Sq. Yds.	1.00	0.0000000000000000006776263578033476562500000898325291037744140625
Excavation, Class 70	0.0000000000000000003388131789016738281250000044916264559765625	Sq. Yds.	1.00	0.0000000000000000003388131789016738281250000044916264559765625
Excavation, Class 71	0.000000000000000000169406589450836914062500000224581322798828125	Sq. Yds.	1.00	0.000000000000000000169406589450836914062500000224581322798828125
Excavation, Class 72	0.000000000000000000084703294725418453125000001122906613994140625	Sq. Yds.	1.00	0.000000000000000000084703294725418453125000001122906613994140625
Excavation, Class 73	0.00000000000000000004235164736270922656250000056145330970703125	Sq. Yds.	1.00	0.00000000000000000004235164736270922656250000056145330970703125
Excavation, Class 74	0.000000000000000000021175823681354632812500000280726654853515625	Sq. Yds.	1.00	0.000000000000000000021175823681354632812500000280726654853515625
Excavation, Class 75	0.0000000000000000000105879118406772656250000014036332742678125	Sq. Yds.	1.00	0.0000000000000000000105879118406772656250000014036332742678125
Excavation, Class 76	0.0000000000000000000052939559203386562500000070181663713390625	Sq. Yds.	1.00	0.0000000000000000000052939559203386562500000070181663713390625
Excavation, Class 77	0.0000000000000000000026469779601693281250000035090831859765625	Sq. Yds.	1.00	0.0000000000000000000026469779601693281250000035090831859765625
Excavation, Class 78	0.0000000000000000000013234889800846640625000001754541594798828125	Sq. Yds.	1.00	0.0000000000000000000013234889800846640625000001754541594798828125
Excavation, Class 79	0.000000000000000000000661744490042332031250000008772707973994140625	Sq. Yds.	1.00	0.000000000000000000000661744490042332031250000008772707973994140625
Excavation, Class 80	0.0000000000000000000003308722450211661562500000043863539869970703125	Sq. Yds.	1.00	0.0000000000000000000003308722450211661562500000043863539869970703125
Excavation, Class 81	0.000000000000000000000165436122510583281250000002193176993498828125	Sq. Yds.	1.00	0.000000000000000000000165436122510583281250000002193176993498828125
Excavation, Class 82	0.0000000000000000000000827180612525916406250000010965884967494140625	Sq. Yds.	1.00	0.0000000000000000000000827180612525916406250000010965884967494140625
Excavation, Class 83	0.0000000000000000000000413590306262958203125000000548294248374703125	Sq. Yds.	1.00	0.0000000000000000000000413590306262958203125000000548294248374703125
Excavation, Class 84	0.0000000000000000000000206795153131479125000000274147124187350625	Sq. Yds.	1.00	0.0000000000000000000000206795153131479125000000274147124187350625
Excavation, Class 85	0.00000000000000000000001033975765626795845625000000137073562093678125	Sq. Yds.	1.00	0.00000000000000000000001033975765626795845625000000137073562093678125
Excavation, Class 86	0.00000000000000000000000516987882812639792728125000000068536781048828125	Sq. Yds.	1.00	0.00000000000000000000000516987882812639792728125000000068536781048828125
Excavation, Class 87	0.00000000000000000000000258493941406261989636406250000000342683905244140625	Sq. Yds.	1.00	0.00000000000000000000000258493941406261989636406250000000342683905244140625
Excavation, Class 88	0.000000000000000000000001292469707031260994820312500000001713419526220703125	Sq. Yds.	1.00	0.000000000000000000000001292469707031260994820312500000001713419526220703125
Excavation, Class 89	0.00000000000000000000000064623485351254996101562500000000856709763113390625	Sq. Yds.	1.00	0.00000000000000000000000064623485351254996101562500000000856709763113390625
Excavation, Class 90	0.00000000000000000000000032311742678125249805078125000000004283548815694140625	Sq. Yds.	1.00	0.00000000000000000000000032311742678125249805078125000000004283548815694140625
Excavation, Class 91	0.0000000000000000000000001615587133906			

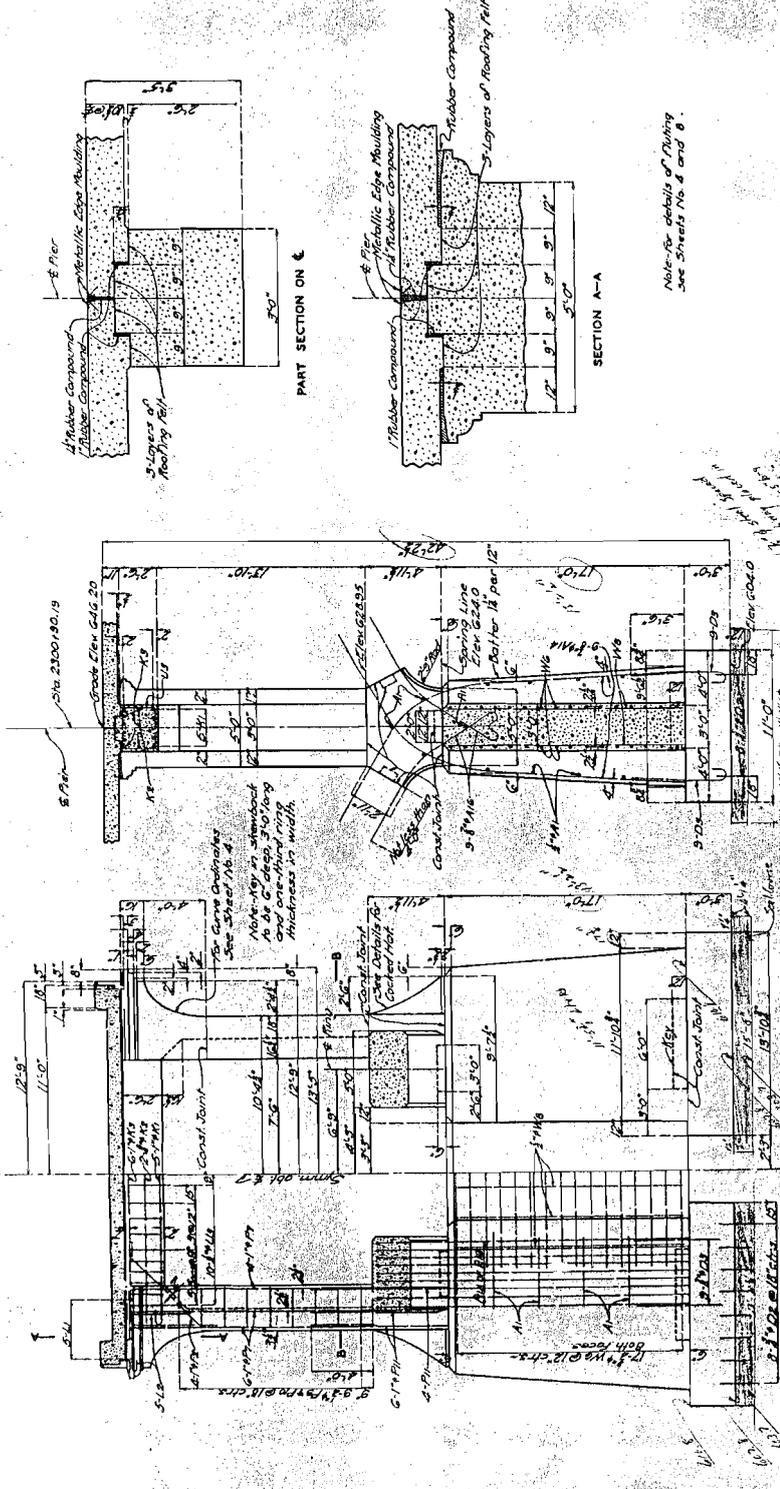
MISSOURI STATE HIGHWAY DEPARTMENT

DATE	NO.	SCALE	NO.
1933	10	1/2" = 1'	10

COMPLETE BILL OF REINFORCING STEEL		REINFORCING STEEL		REINFORCING STEEL		REINFORCING STEEL	
No.	Size	Length	Quantity	No.	Size	Length	Quantity
1	1/2"	10'-0"	10	1	1/2"	10'-0"	10
2	3/4"	10'-0"	10	2	3/4"	10'-0"	10
3	1"	10'-0"	10	3	1"	10'-0"	10
4	1 1/4"	10'-0"	10	4	1 1/4"	10'-0"	10
5	1 1/2"	10'-0"	10	5	1 1/2"	10'-0"	10
6	1 3/4"	10'-0"	10	6	1 3/4"	10'-0"	10
7	2"	10'-0"	10	7	2"	10'-0"	10
8	2 1/4"	10'-0"	10	8	2 1/4"	10'-0"	10
9	2 1/2"	10'-0"	10	9	2 1/2"	10'-0"	10
10	2 3/4"	10'-0"	10	10	2 3/4"	10'-0"	10
11	3"	10'-0"	10	11	3"	10'-0"	10
12	3 1/4"	10'-0"	10	12	3 1/4"	10'-0"	10
13	3 1/2"	10'-0"	10	13	3 1/2"	10'-0"	10
14	3 3/4"	10'-0"	10	14	3 3/4"	10'-0"	10
15	4"	10'-0"	10	15	4"	10'-0"	10
16	4 1/4"	10'-0"	10	16	4 1/4"	10'-0"	10
17	4 1/2"	10'-0"	10	17	4 1/2"	10'-0"	10
18	4 3/4"	10'-0"	10	18	4 3/4"	10'-0"	10
19	5"	10'-0"	10	19	5"	10'-0"	10
20	5 1/4"	10'-0"	10	20	5 1/4"	10'-0"	10
21	5 1/2"	10'-0"	10	21	5 1/2"	10'-0"	10
22	5 3/4"	10'-0"	10	22	5 3/4"	10'-0"	10
23	6"	10'-0"	10	23	6"	10'-0"	10
24	6 1/4"	10'-0"	10	24	6 1/4"	10'-0"	10
25	6 1/2"	10'-0"	10	25	6 1/2"	10'-0"	10
26	6 3/4"	10'-0"	10	26	6 3/4"	10'-0"	10
27	7"	10'-0"	10	27	7"	10'-0"	10
28	7 1/4"	10'-0"	10	28	7 1/4"	10'-0"	10
29	7 1/2"	10'-0"	10	29	7 1/2"	10'-0"	10
30	7 3/4"	10'-0"	10	30	7 3/4"	10'-0"	10
31	8"	10'-0"	10	31	8"	10'-0"	10
32	8 1/4"	10'-0"	10	32	8 1/4"	10'-0"	10
33	8 1/2"	10'-0"	10	33	8 1/2"	10'-0"	10
34	8 3/4"	10'-0"	10	34	8 3/4"	10'-0"	10
35	9"	10'-0"	10	35	9"	10'-0"	10
36	9 1/4"	10'-0"	10	36	9 1/4"	10'-0"	10
37	9 1/2"	10'-0"	10	37	9 1/2"	10'-0"	10
38	9 3/4"	10'-0"	10	38	9 3/4"	10'-0"	10
39	10"	10'-0"	10	39	10"	10'-0"	10
40	10 1/4"	10'-0"	10	40	10 1/4"	10'-0"	10
41	10 1/2"	10'-0"	10	41	10 1/2"	10'-0"	10
42	10 3/4"	10'-0"	10	42	10 3/4"	10'-0"	10
43	11"	10'-0"	10	43	11"	10'-0"	10
44	11 1/4"	10'-0"	10	44	11 1/4"	10'-0"	10
45	11 1/2"	10'-0"	10	45	11 1/2"	10'-0"	10
46	11 3/4"	10'-0"	10	46	11 3/4"	10'-0"	10
47	12"	10'-0"	10	47	12"	10'-0"	10
48	12 1/4"	10'-0"	10	48	12 1/4"	10'-0"	10
49	12 1/2"	10'-0"	10	49	12 1/2"	10'-0"	10
50	12 3/4"	10'-0"	10	50	12 3/4"	10'-0"	10
51	13"	10'-0"	10	51	13"	10'-0"	10
52	13 1/4"	10'-0"	10	52	13 1/4"	10'-0"	10
53	13 1/2"	10'-0"	10	53	13 1/2"	10'-0"	10
54	13 3/4"	10'-0"	10	54	13 3/4"	10'-0"	10
55	14"	10'-0"	10	55	14"	10'-0"	10
56	14 1/4"	10'-0"	10	56	14 1/4"	10'-0"	10
57	14 1/2"	10'-0"	10	57	14 1/2"	10'-0"	10
58	14 3/4"	10'-0"	10	58	14 3/4"	10'-0"	10
59	15"	10'-0"	10	59	15"	10'-0"	10
60	15 1/4"	10'-0"	10	60	15 1/4"	10'-0"	10
61	15 1/2"	10'-0"	10	61	15 1/2"	10'-0"	10
62	15 3/4"	10'-0"	10	62	15 3/4"	10'-0"	10
63	16"	10'-0"	10	63	16"	10'-0"	10
64	16 1/4"	10'-0"	10	64	16 1/4"	10'-0"	10
65	16 1/2"	10'-0"	10	65	16 1/2"	10'-0"	10
66	16 3/4"	10'-0"	10	66	16 3/4"	10'-0"	10
67	17"	10'-0"	10	67	17"	10'-0"	10
68	17 1/4"	10'-0"	10	68	17 1/4"	10'-0"	10
69	17 1/2"	10'-0"	10	69	17 1/2"	10'-0"	10
70	17 3/4"	10'-0"	10	70	17 3/4"	10'-0"	10
71	18"	10'-0"	10	71	18"	10'-0"	10
72	18 1/4"	10'-0"	10	72	18 1/4"	10'-0"	10
73	18 1/2"	10'-0"	10	73	18 1/2"	10'-0"	10
74	18 3/4"	10'-0"	10	74	18 3/4"	10'-0"	10
75	19"	10'-0"	10	75	19"	10'-0"	10
76	19 1/4"	10'-0"	10	76	19 1/4"	10'-0"	10
77	19 1/2"	10'-0"	10	77	19 1/2"	10'-0"	10
78	19 3/4"	10'-0"	10	78	19 3/4"	10'-0"	10
79	20"	10'-0"	10	79	20"	10'-0"	10
80	20 1/4"	10'-0"	10	80	20 1/4"	10'-0"	10
81	20 1/2"	10'-0"	10	81	20 1/2"	10'-0"	10
82	20 3/4"	10'-0"	10	82	20 3/4"	10'-0"	10
83	21"	10'-0"	10	83	21"	10'-0"	10
84	21 1/4"	10'-0"	10	84	21 1/4"	10'-0"	10
85	21 1/2"	10'-0"	10	85	21 1/2"	10'-0"	10
86	21 3/4"	10'-0"	10	86	21 3/4"	10'-0"	10
87	22"	10'-0"	10	87	22"	10'-0"	10
88	22 1/4"	10'-0"	10	88	22 1/4"	10'-0"	10
89	22 1/2"	10'-0"	10	89	22 1/2"	10'-0"	10
90	22 3/4"	10'-0"	10	90	22 3/4"	10'-0"	10
91	23"	10'-0"	10	91	23"	10'-0"	10
92	23 1/4"	10'-0"	10	92	23 1/4"	10'-0"	10
93	23 1/2"	10'-0"	10	93	23 1/2"	10'-0"	10
94	23 3/4"	10'-0"	10	94	23 3/4"	10'-0"	10
95	24"	10'-0"	10	95	24"	10'-0"	10
96	24 1/4"	10'-0"	10	96	24 1/4"	10'-0"	10
97	24 1/2"	10'-0"	10	97	24 1/2"	10'-0"	10
98	24 3/4"	10'-0"	10	98	24 3/4"	10'-0"	10
99	25"	10'-0"	10	99	25"	10'-0"	10
100	25 1/4"	10'-0"	10	100	25 1/4"	10'-0"	10
101	25 1/2"	10'-0"	10	101	25 1/2"	10'-0"	10
102	25 3/4"	10'-0"	10	102	25 3/4"	10'-0"	10
103	26"	10'-0"	10	103	26"	10'-0"	10
104	26 1/4"	10'-0"	10	104	26 1/4"	10'-0"	10
105	26 1/2"	10'-0"	10	105	26 1/2"	10'-0"	10
106	26 3/4"	10'-0"	10	106	26 3/4"	10'-0"	10
107	27"	10'-0"	10	107	27"	10'-0"	10
108	27 1/4"	10'-0"	10	108	27 1/4"	10'-0"	10
109	27 1/2"	10'-0"	10	109	27 1/2"	10'-0"	10
110	27 3/4"	10'-0"	10	110	27 3/4"	10'-0"	10
111	28"	10'-0"	10	111	28"	10'-0"	10
112	28 1/4"	10'-0"	10	112	28 1/4"	10'-0"	10
113	28 1/2"	10'-0"	10	113	28 1/2"	10'-0"	10
114	28 3/4"	10'-0"	10	114	28 3/4"	10'-0"	10
115	29"	10'-0"	10	115	29"	10'-0"	10
116	29 1/4"	10'-0"	10	116	29 1/4"	10'-0"	10
117	29 1/2"	10'-0"	10	117	29 1/2"	10'-0"	10
118	29 3/4"	10'-0"	10	118	29 3/4"	10'-0"	10
119	30"	10'-0"	10	119	30"	10'-0"	10
120	30 1/4"	10'-0"	10	120	30 1/4"	10'-0"	10
121	30 1/2"	10'-0"	10	121	30 1/2"	10'-0"	10
122	30 3/4"	10'-0"	10	122	30 3/4"	10'-0"	10
123	31"	10'-0"	10	123	31"	10'-0"	10
124	31 1/4"	10'-0"	10	124	31 1/4"	10'-0"	10
125	31 1/2"	10'-0"	10	125	31 1/2"	10'-0"	10
126	31 3/4"	10'-0"	10	126	31 3/4"	10'-0"	10
127	32"	10'-0"	10	127	32"	10'-0"	10
128	32 1/4"	10'-0"	10	128	32 1/4"	10'-0"	10
129	32 1/2"	10'-0"	10	129	32 1/2"	10'-0"	10
130	32 3/4"	10'-0"	10	130	32 3/4"	10'-0"	10
131	33"	10'-0"	10	131	33"	10'-0"	10
132	33 1/4"	10'-0"	10	132	33 1/4"	10'-0"	10
133	33 1/2"	10'-0"	10	133	33 1/2"	10'-0"	10
134	33 3/4"	10'-0"	10	134	33 3/4"	10'-0"	10
135	34"	10'-0"	10	135	34"	10'-0"	10
136	34 1/4"	10'-0"	10	136	34 1/4"	10'-0"	10
137	34 1/2"	10'-0"	10	137	34 1/2"	10'-0"	10
138	34 3/4"	10'-0"	10	138	34 3/4"	10'-0"	10
139	35"	10'-0"	10	139	35"	10'-0"	10
140	35 1/4"	10'-0"	10	140	35 1/4"	10'-0"	10
141	35 1/2"	10'-0"	10	141	35 1/2"	10'-0"	10
142	35 3/4"	10'-0"	10	142	35 3/4"	10'-0"	10
143	36"	10'-0"	10	143	36"	10'-0"	10
144	36 1/4"	10'-0"	10	144	36 1/4"	10'-0"	10
145	36 1/2"	10'-0"	10	145	36 1/2"	10'-0"	10
146	36 3/4"	10'-0"	10	146	36 3/4"	10'-0"	10
147	37"	10'-0"	10	147	37"	10'-0"	10
148	37 1/4"	10'-0"	10	148	37 1/4"	10'-0"	10
149	37 1/2"	10'-0"	10	149			

MISSOURI STATE HIGHWAY DEPARTMENT

THE ROAD STATE	NO. 10	SCALE	SHEET
DEPT. NO.	100	PROJECT	NO.
NO.	100	DATE	NO.



BRIDGE OVER JACK'S FORK OF CURR
 STATE ROAD FROM SALEM TO WINONA
 ABOUT 11 MILES NORTH OF WINONA
 PROJECT NO. MRH379A (R19) STA. 229+19
 SHANNON COUNTY

DETAILS OF PIER NO. 4

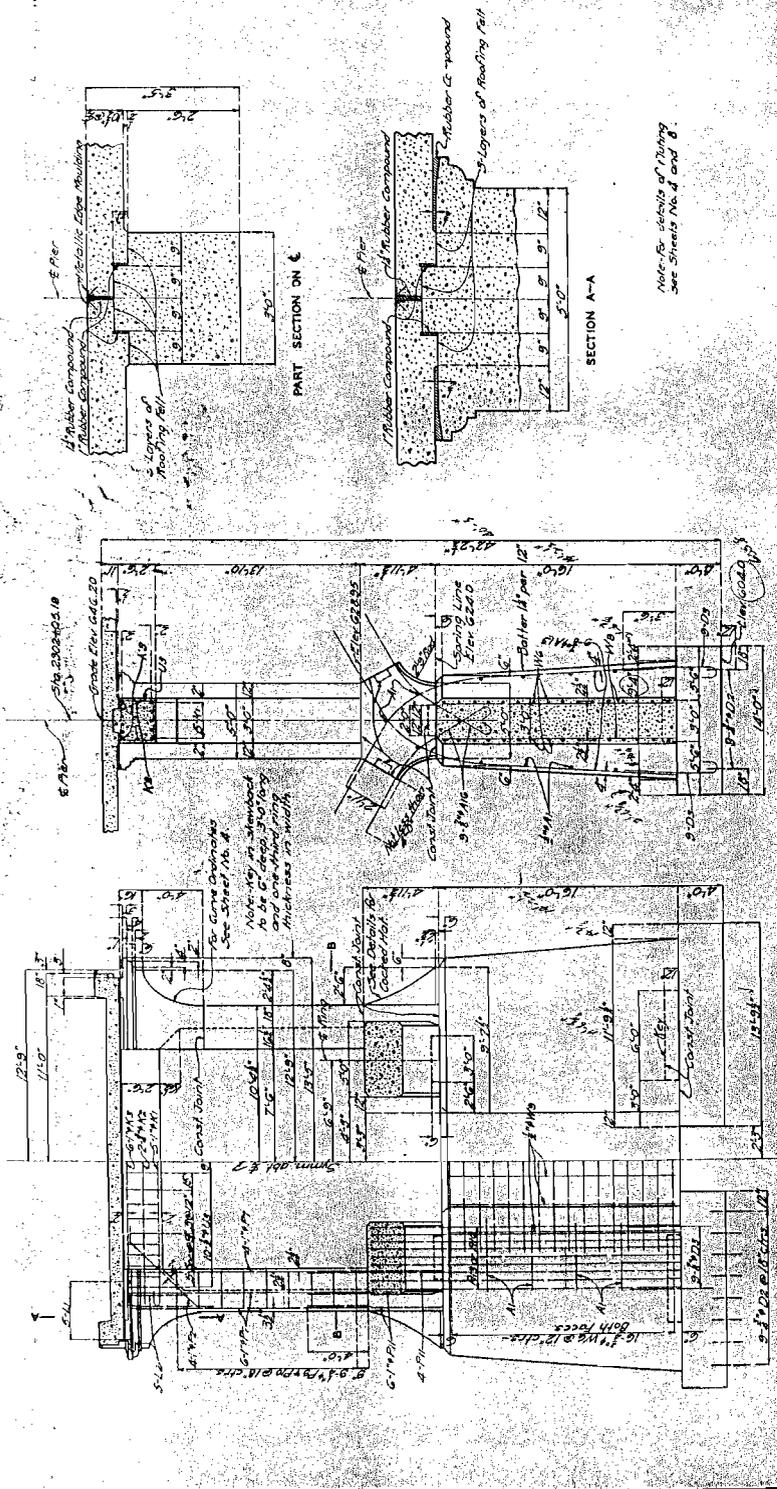
Drawn Apr. 1935 by F.C.L.
 Traced Apr. 1935 by C.L.F.
 Checked July 1935 by R.S.

Sheet No. 5 of 12
 F.A.

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MISSOURI STATE HIGHWAY DEPARTMENT

MO ROAD STATE (AD AD) FICAL SHEET
 SHEET NO. 10
 PROJECT NO. 378A (619) STA. 2298+19



BRIDGE OVER JACK'S FORK OF CURRE
 STATE ROAD FROM SALEM TO WINONA
 ABOUT 11 MILES NORTH OF WINONA
 PROJECT NO. 378A (619) STA. 2298+19
 SHANNON COUNTY

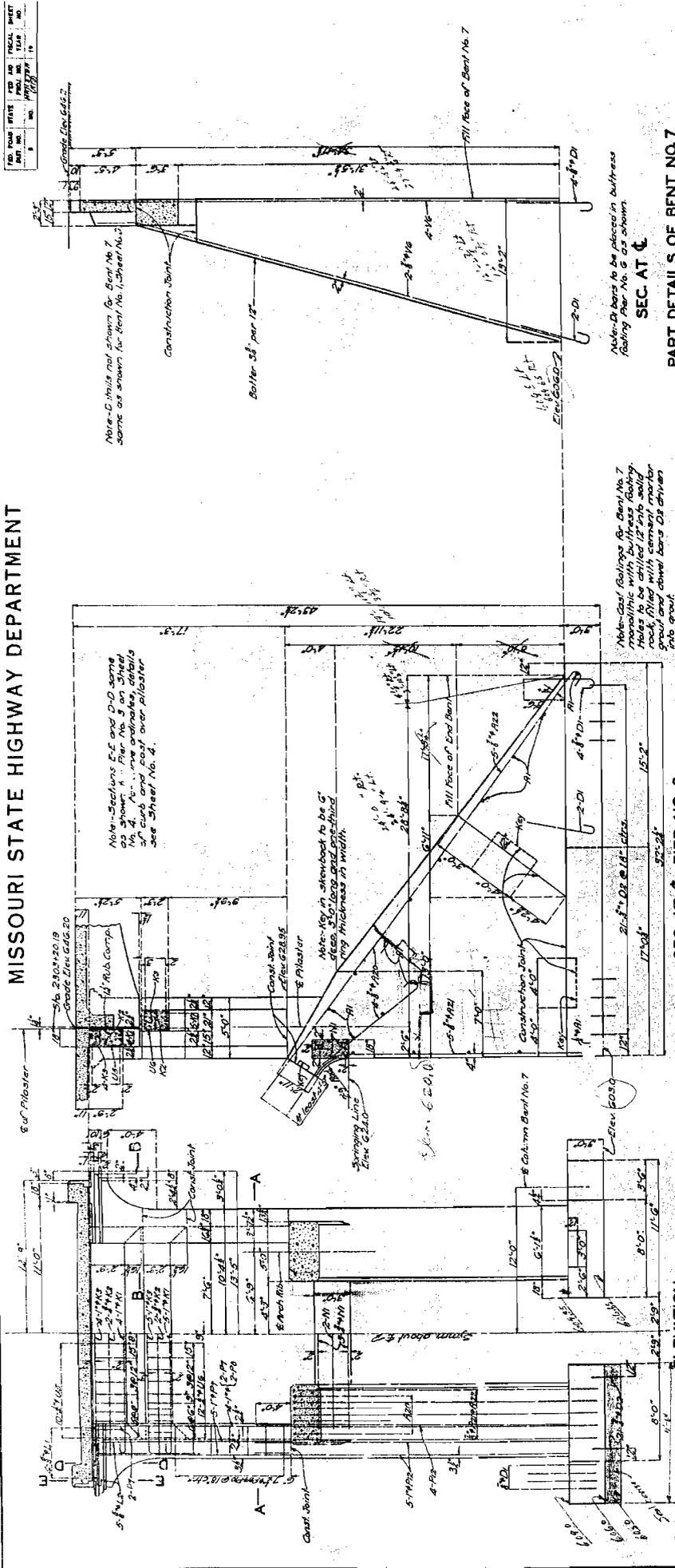
DETAILS OF PIER NO. 5

Drawn Apr. 1933 by A.C.L.
 Traced Apr. 1933 by C.L.
 Checked July, 1933 by P.A.S.

283

MISSOURI STATE HIGHWAY DEPARTMENT

PROJ. NO.	DATE	BY	SCALE	SHEET
1000	1935	J. H. B.	1/4" = 1'-0"	11



PART DETAILS OF BENT NO. 7

SEC. AT C

Note: Bent to be placed in buttress footing per No. 6 as shown.

Note: Bent to be placed in buttress footing per No. 6 as shown.

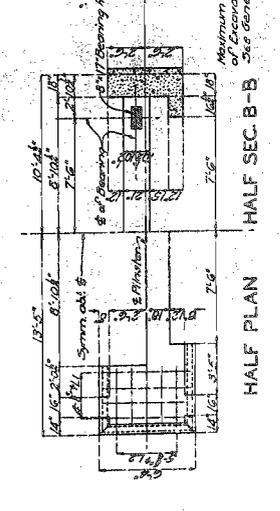
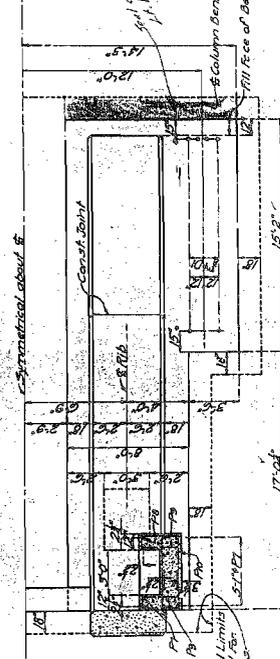
Note: Bent to be placed in buttress footing per No. 6 as shown.

Note: Bent to be placed in buttress footing per No. 6 as shown.

SEC. AT C PIER NO. 6

SEC. AT C PIER NO. 6

SEC. AT C PIER NO. 6



BRIDGE OVER JACK'S FORK OF CURRE
STATE ROAD FROM SALEM TO WINONA
ABOUT 11 MILES NORTH OF WINONA
PROJECT NO. 1041379A (110) STA. 2208+19
SHANNON COUNTY

DETAILS OF PIER NO. 6

Note: This drawing is not to scale. Follow dimensions.

Drawn May 1935 by J.C.L.
Checked July 1935 by P.P.B.

F.A.

Sheet No. 7 of 12

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MISSOURI STATE HIGHWAY DEPARTMENT

NO.	DATE	BY	CHKD.	REVISION
1	10/21/33	W. J. HARRIS		

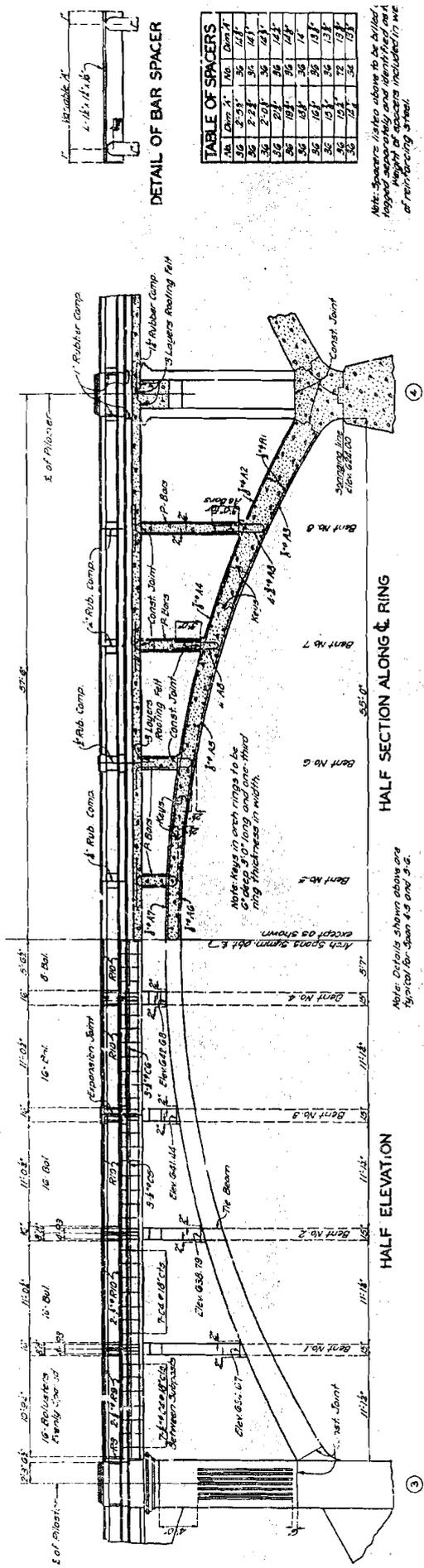


TABLE OF SPACERS

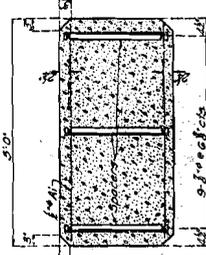
IN.	FR.	NO.	NO.	NO.
3/8	2-3/8	36	12-1/2	12-1/2
1/2	2-1/2	36	12-1/2	12-1/2
3/4	2-1/4	36	12-1/2	12-1/2
1	2	36	12-1/2	12-1/2
1 1/4	1 3/4	36	12-1/2	12-1/2
1 1/2	1 1/2	36	12-1/2	12-1/2
1 3/4	1 1/4	36	12-1/2	12-1/2
2	1	36	12-1/2	12-1/2
2 1/4	3/4	36	12-1/2	12-1/2
2 1/2	5/8	36	12-1/2	12-1/2
2 3/4	1/2	36	12-1/2	12-1/2
3	1/4	36	12-1/2	12-1/2
3 1/4		36	12-1/2	12-1/2
3 1/2		36	12-1/2	12-1/2
3 3/4		36	12-1/2	12-1/2
4		36	12-1/2	12-1/2
4 1/4		36	12-1/2	12-1/2
4 1/2		36	12-1/2	12-1/2
4 3/4		36	12-1/2	12-1/2
5		36	12-1/2	12-1/2
5 1/4		36	12-1/2	12-1/2
5 1/2		36	12-1/2	12-1/2
5 3/4		36	12-1/2	12-1/2
6		36	12-1/2	12-1/2
6 1/4		36	12-1/2	12-1/2
6 1/2		36	12-1/2	12-1/2
6 3/4		36	12-1/2	12-1/2
7		36	12-1/2	12-1/2
7 1/4		36	12-1/2	12-1/2
7 1/2		36	12-1/2	12-1/2
7 3/4		36	12-1/2	12-1/2
8		36	12-1/2	12-1/2
8 1/4		36	12-1/2	12-1/2
8 1/2		36	12-1/2	12-1/2
8 3/4		36	12-1/2	12-1/2
9		36	12-1/2	12-1/2
9 1/4		36	12-1/2	12-1/2
9 1/2		36	12-1/2	12-1/2
9 3/4		36	12-1/2	12-1/2
10		36	12-1/2	12-1/2

Note: Spacers listed above to be bolted, lagged separately and identified in weight of spacers included in weight of reinforcing steel.



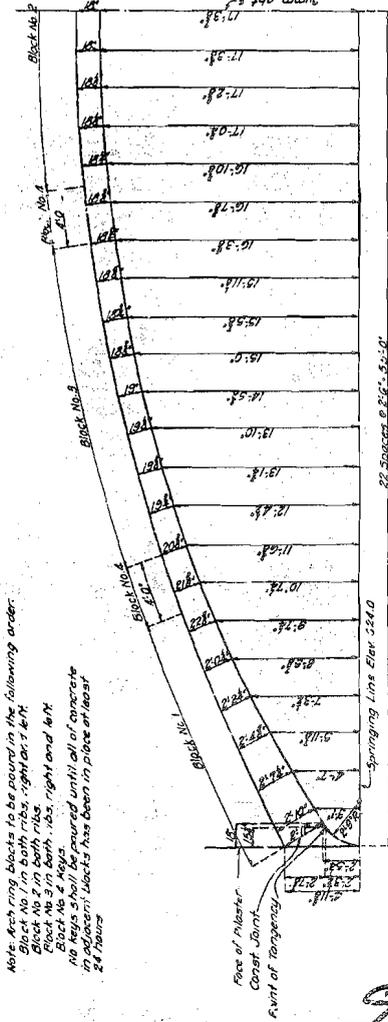
Note: See below as shown for exposed faces of all joints consisting of rubber compound, except at top surface of roadway slab. Use metallic edge providing of top surface of roadway slab each side of rubber compound joint.

DETAIL OF BEVEL FOR RUBBER COMP. J



Note: 1/2" bars at 2' centers measured horizontally shown in detail giving dimensions of arch rings. Spacers to be placed as shown in above detail and spaced some as 1/2" to bars. This spacers securely to both main and transverse steel. All main reinforcing steel to be spread in blocks No. 4.

SECTION THROUGH ARCH RING SHOWING REINFORCING



Note: Arch ring blocks to be poured in the following order:
 Block No. 1 in both ribs, right and left.
 Block No. 2 in both ribs.
 Block No. 3 in both ribs, right and left.
 Block No. 4 in both ribs.
 No ribs shall be poured until all of concrete in adjacent blocks has been in place at least 24 hours.

DIMENSIONS OF ARCH RINGS

BRIDGE OVER JACK'S FORK OF CURRE
 STATE ROAD FROM SALEM TO WILSONA
 ABOUT 11 MILES NORTH OF WILSONA
 PROJECT NO. W.H.R. 279A (R.R.) STA. 2239+10
 SHANNON COUNTY

Designed Mar. 1933 by F.C.L.
 Traced Mar. 1933 by G.H.
 Checked July 1933 by P.P.P.

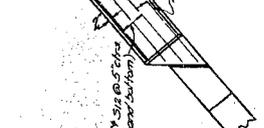
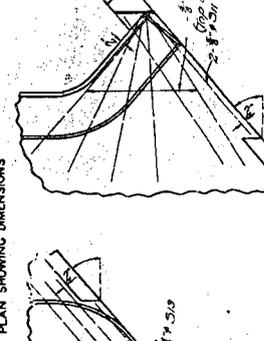
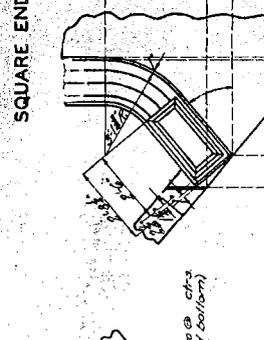
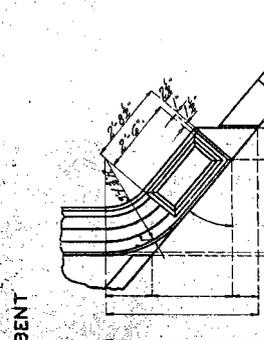
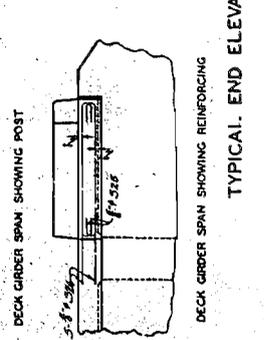
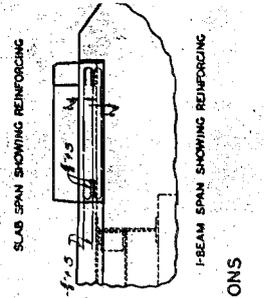
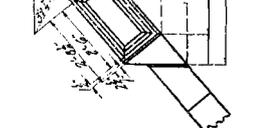
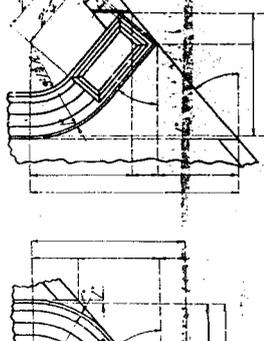
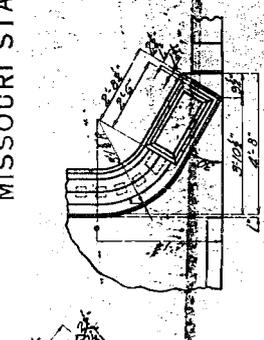
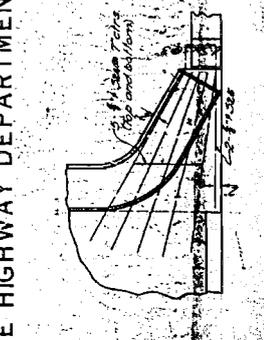
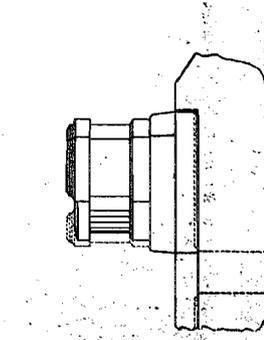
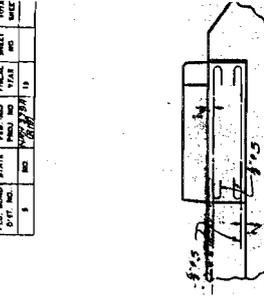
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 2

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MISSOURI STATE HIGHWAY DEPARTMENT

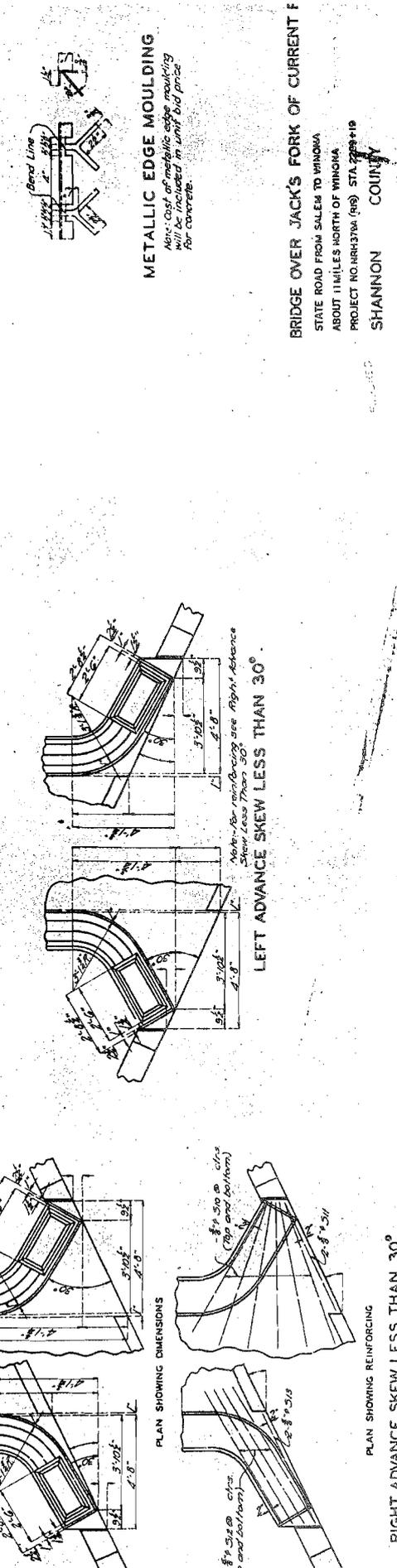
DES. NO.	DATE	BY	CHKD.	APPROVED	SHEET
100	10/11/33	J. H. W.	J. H. W.		11



GENERAL NOTES:
Reinforcing steel shown on this sheet will be used in addition to that required for straight curb and rail.

REINFORCING STEEL
METALLIC EDGE Moulding
Will cost of metallic edge moulding for concrete.

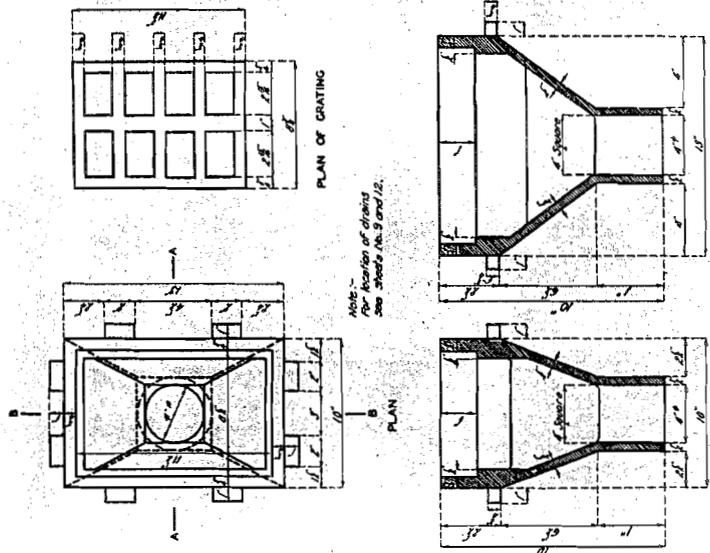
BRIDGE OVER JACK'S FORK OF CURRENT F
STATE ROAD FROM SALEM TO WINONA
ABOUT 11 MILES NORTH OF WINONA
PROJECT NO. RR4374 (49) STA. 22+11.8
SHANNON COUNTY



Assembled May 1933 by F.C.L.
Checked July 1933 by P.H.L.
Drawn April 1933 by C.A.P.
Checked July 1933 by P.H.L.

MISSOURI STATE HIGHWAY DEPARTMENT

DATE	BY	REVISION



PLAN OF GRATING

Note: For location of drains See sheets No. 9 and 12.

PLAN

SECTION B-B

SECTION A-A

DETAILS OF DRAIN CASTING & GRATING

30-CAST IRON DRAINS REQUIRED

BRIDGE OVER JACK'S FORK OF CUR
 STATE ROAD FROM SALES TO WINOONA
 ABOUT 11 MILES NORTH OF WINOONA
 PROJECT NO. MR 4379-A (RD) STA. 2239+10
 SHANNON COUNTY

Drawn Jan 1933 by H.L.C.
 Checked Jan 1933 by J.M.H.
 Assembled May 1933 by H.L.C.-C.H.F.
 Checked July 1933 by J.M.H.

Eminence Bridge (Jacks Fork Bridge)
Bridge No. K-209
Route 19, Shannon County

Randall Dawdy, Photographer

Index to Photographs:

1. Eminence Bridge, view looking east (downstream).
2. Eminence Bridge, view looking northwest.
3. Open spandrel arch Spans 3 and 4, view looking west (upstream).
4. North approach deck girder spans (Spans 1 and 2), and open spandrel arch (Span 3), view to the northeast.
5. Open spandrel arch (Span 4), view looking northwest.
6. Open spandrel arch (Span 5) and south approach deck girder (Span 6), view looking northwest.
7. Spans 4 and 5 at Pier 5.
8. Pier 3 and north approach deck girder spans (Spans 1 and 2), view to the northwest.
9. Intrados of arch ribs at Pier 5.
10. Extrados of arch ribs and spandrel bents on Span 4.
11. Side view of Pier 4, view looking west.
12. Close-up view of flared pilaster crown.
13. Side view of south deck girder approach span (Span 6), view looking west.
14. Underside of deck girder approach span.
15. South bridge entrance, view looking north.
16. Close-up view of bridge plate.

Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



