Newport Bridge
Spanning the White River at State Highway 14
Newport
Jackson County
Arkansas

HAER No. AR-12

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

NEWPORT BRIDGE

HAER No. AR-12

LOCATION:	Spanning the White River on U.S. Highway 67 at Newport, Jackson County, Arkansas. UTM: 15/3941365/655025 Quad: Newport, Arkansas
DATE OF CONSTRUCTION:	1930
ARCHITECT:	Ira G. Hedrick
CONTRACTOR:	Missouri Valley Iron and Bridge Company, Leavenworth, Kansas.
PRESENT OWNER:	Arkansas State Highway and Transportation Department, Little Rock, Arkansas 72203.
PRESENT USE:	Vehicular bridge.
SIGNIFICANCE:	The 400-foot, double-cantilevered bridge at Newport was a major construction project in 1929-30. The bridge, along with two similar bridges at Augusta and Clarendon, Arkansas, was designed by renowned bridge engineer Ira G. Hedrick, and became part of a main interstate highway route.
HISTORIAN:	Kathryn Steen
DESCRIPTION BY:	Corinne Smith Arkansas Historic Bridge Recording Project, 1988.

In 1927, Arkansas Governor Martineau sponsored a bill to increase funding for the building of Arkansas highways and bridges. What the Arkansas legislature ended up passing was a law which would make $52 million in state funds available for highway improvement over the next four years. The law also had the state assuming many debts of counties who had been unable to handle the financial strain of road construction. One of the bridges that was partly funded by this legislation was the state-owned toll bridge at Newport, Arkansas.(1)

TOWN HISTORY

The White River is a tributary of the Mississippi River. It starts in the Ozarks of northwest Arkansas, and meanders into Missouri before coming back into Arkansas and growing to a navigable size about twenty miles upstream from Newport, the county seat of Jackson County in northeast Arkansas. Local folklore says that Newport was a town created out of spite in 1872 when the St. Louis, Iron Mountain and Southern Railroad crossed the White River a few miles from Jacksonport, a town that had declined to help the railroad pay for a bridge. Existing records show, however, that Newport was present as early as 1835.(2) By the 1920s, the railroads had become the Missouri Pacific and a branch of the Rock Island Railroad, and Newport industries included lumber and cotton-related products.(3) One unique business in Newport was the making of buttons out of mussel shells pulled from the White River.(4)

Another river industry was the ferry service. Two ferries carried the traffic across the river at Newport. One of the ferries, the "upper" or Newport ferry operated right in Newport. The "lower" ferry was two miles downstream. In good weather and low water stages, an automobile

could cross for 25 cents. When the water was much higher than normal the automobile fee might be $5.00, provided one could cross at all.(5)

THE BRIDGE

The location of Newport was becoming more important because of Route 67, a major thoroughfare that was scheduled for improvements. On October 18, 1926, a franchise was given to Hamilton Moses of Little Rock and Steve Graham of Tuckerman to build and maintain a toll bridge over the White River at Newport, although the franchise was revoked after they failed to start work on the bridge within the allotted year starting December 3, 1927.(6)

By February of 1928, efforts were made to enable the Arkansas Highway Commission to build a toll bridge at Newport. U.S. Representative Oldfield's bill presented to the House requested authorization to bridge the navigable White River and also asked for federal financial assistance.(7) There was some delay, however, as it was made clear by the Arkansas Highway Department that they would prefer that the federal assistance come in a "lump sum" rather than be specifically appropriated for the Newport bridge. Since a toll bridge could conceivably pay for itself and a road could not, the department wanted the authority to distribute the federal funds in a way that would, in the department's estimation, most benefit the other highway and bridge projects.(8)

As news of the proposed state-owned toll bridge spread, word reached the Delaware Viaduct and Bridge Company office in Hot Springs, Arkansas. They had acquired the Moses and Graham franchise and, not knowing that the franchise had been canceled, had developed plans and worked out traffic and earnings estimates. In late March 1928 the company made a sales pitch to the bridge committee of the Jackson County Chamber of Commerce. The bridge company proposed to build

and operate a bridge for twenty-five years, at which time the bridge would be turned over to the county free of charge. The suggested toll rates that they published shortly after were significantly lower than the state proposed rates.(9)

Just when the public was thinking a private bridge might be the path to follow, Justin Matthews, a member of the State Highway Commission, made a public appearance in Newport. On April 10, 1928, Matthews warned against private toll bridge companies who "would build a cheap bridge and timber approaches," insisting that the published rates would not be sufficient to cover costs and the company could go to court to get the rates raised later on.(10) Matthews was sufficiently persuasive and, with "almost unanimous public sentiment," the decision was made at the county level to let the State Highway Commission take care of the bridge.(11) A week after Matthews' public meeting, Senator Oldfield's amended bill was put before the House.(12)

Progress was looking promising as congressional approval was granted in June 1928. Another delay emerged, however, when lawsuits were filed against the State Highway Commission for "exceeding its authority" in planning the Newport and several other state toll bridges. Various suits argued against the commission's "issuance and sale of highway notes," the impinging on county judges' authority and the illegality of state-owned toll bridges.(13)

PLANS

The suits managed to delay, but not halt progress on the Newport bridge. In January 1929 consulting bridge engineer Ira G. Hedrick and State Highway engineer C.S. Christian examined potential sites near Newport and found a preference for the spot where the Newport ferry ran in town. That site was favored in part because a concrete viaduct could be built over the Missouri

Pacific tracks which lay close to the river.(14) Besides the examination, the Arkansas Highway Commission had hired the consulting firm of Ford, Bacon & Davis, Inc. of New York to write up a report on the "Estimated Traffic and Revenue" of a Newport toll bridge. The firm had done traffic measurement in June 1928 and issued the final report on February 15, 1929. The report considered factors such as population growth, motor vehicle registration, and the increased traffic stimulated by a first class bridge and highway (Route 67) to figure the bridge's feasibility. It was understood that the ferries would be discontinued, thereby eliminating some of the proposed bridge's competition. With an average toll of 60 cents (50 for autos and more for the larger vehicles), the consultants estimated a net income of $50,500 for the first year of operation, increasing to $64,000 by the fifth year.(15)

Plans were drawn up by bridge engineer Ira G. Hedrick who had an office in Hot Springs. Hedrick had an impressive credential list by the time he was hired by the Arkansas Highway Commission to design several of the new toll bridges. He had studied in Arkansas for a short time around the turn of the century and his first wife was from Fayetteville, Arkansas. As a professional engineer, Hedrick was first an assistant and then a junior partner to bridge engineering great J.A.L. Waddell. Over the course of his life, he was a member of several engineering firms and also of the American Society of Civil Engineers.(16)

Hedrick's plan called for a double cantilevered arch bridge with a main span of 300 feet. Parts of the plans, such as this main span, were identical to another proposed toll bridge over the White River at Augusta, Arkansas. The two sister bridges were announced at the same time, bids to be opened on the same day. For each, the "bridge proper" and the approaches were to be

separate bids, in the hope that, by breaking the project up, the competition of smaller firms, who could not necessarily handle the whole project, would keep the price to taxpayers down.(17)

One more necessary hurdle before contracting was the sanction of the War Department's Memphis engineering office in charge of the region's navigable waterways. They withheld approval of the planned location near the middle of town, saying that there needed to be more clearance here than an arch bridge would allow. Rather than change the type of bridge to accommodate the chosen site, the site was move upstream one-half mile to accommodate the chosen bridge. The new site met with the War Department's approval and consent was granted by May 1, 1929.(18)

CONSTRUCTION

On May 15, 1929, bids were received for both the bridge and its approaches. With a low bid of $218,662, the Missouri Valley Bridge and Iron Company of Leavenworth, Kansas, won the contract for the bridge. The List and Weatherly Construction Company of Kansas City, Missouri had the low bid on the approaches at $239,662.(19)

The lack of contemporary newspaper articles to the contrary suggests that progress went fairly smoothly in the bridge's construction. The first project undertaken was pneumatically sinking two piers. By February 1930, the "overhead steel spans [were]. . . more than halfway across the river."(20) By the beginning of April all the main span's steel was in place.(21) In the course of construction, it was decided that the west approach, as previously planned, was too steep and the approach was altered from a Second Street to a Third Street entrance. The west approach was also changed to concrete, rather than wood as originally intended.(22)

The bridge's construction was not without incident: in December of 1929, a construction worker was killed by a plummeting, disconnected "shaft" when working in the encasement for one of the main piers;(23) the following January saw the shooting and killing of a man by a guard at the bridge site, although the shooting appeared to be more of a personal conflict than over bridge related matters.(24)

Since the Newport bridge was to be a toll bridge, provisions were made for the tollkeeper. A one-story "modern" house was erected by W.S. Upchurch of Little Rock at the base of the west approach on Third Street in August. Plans show that tolls were to be taken from traffic of both directions from an island that stood between the two lanes. At this stage, all that remained in construction was the completion of the west approach. (25)

COMPLETION CELEBRATION

The bridge was not quite finished when the scheduled opening celebration took place September 10 and 11, 1930. A combined celebration with the Jackson County centennial, the bridge's opening days was a well-planned spectacle. A queen was crowned by U.S. Senator T.H. Caraway; there was a parade, fireworks, a street dance, and a queen's ball; National Guard planes dropped poppies and "taps" sounded in memory of the war dead; and a series of speakers included Highway Commission Chairman Dwight Blackwood and commission member Justin Matthews. Estimates suggested 7,500 people attended the festivities.(26)

On the 12th of September, the public was informed that Robert Laird was to be the first supervisor of the bridge.(27) He and his wife moved into the new house and shortly after, Laird released the schedule of tolls. An automobile was listed at 50 cents. Truck prices ranged between

50 cents and $1.00. Livestock were charged at 5 cents per head and a pedestrian went free.(28) The day after the toll list was released, the first traffic crossed the bridge. That first day, Thursday, September 18, 1930, 220 vehicles went across the new Newport bridge. Despite the fact that the Ford, Bacon & Davis consultants had been informed the state would eliminate the competing ferry business, on the bridge's opening day, the Weekly Independent reported that both ferries did some business; it is conceivable that the state assumed the ferries would die a natural death after the bridge had operated for a while.(29) In November, the toll was cut to 25 cents, the lowest price the ferries had charged at low water.(30)

REMOVAL OF TOLL

The bridge operated according to plan for the next seven years. In 1937, the U.S. Congress authorized the Federal Bureau of Roads to refund half the cost to states for making certain post-1927 toll bridges free. (31) It was too good an offer to pass up and at 8:00 a.m. on April 1, 1938, the Newport bridge became toll free.(32) On May 3, the tollhouse was towed to the Highway Department's oil station in the east part of Newport.(33) The announcement of the freeing of the bridge gave the town short notice, but another celebration was organized and executed on May 26, 1938. "Several thousands" also turned out for the occasion, celebrated with political speakers, Miss Jackson County, seven bands, a banquet, a baseball game, and a street dance; this was, in part, a special effort to draw attention to the freeing of the bridge in order to attract business that may have been deterred by a toll bridge.(34)

ENGINEERING DESCRIPTION

The Newport Bridge is a two-lane, double cantilever truss, with 121-foot anchor-arms. Two cantilever-arms of 138 feet and a suspended span of 125 feet make the main opening 400 feet wide. The top chord of the anchor-arms and cantilever-arms are polygonal, with a slight concave upward curve to a peak at 60 feet above the 24-foot-wide road deck. The suspended span has a horizontal top chord at a constant height of 25 feet.

The truss design uses the philosophy of a Warren truss, where diagonal members carry compressive and tensile forces. The vertical members brace the triangular web system. All panels are 20 feet wide. Most web members and chord members are one of two basic sections: four angles with lacing or two channels with lacing. The top chord in the two panels to either side of the peak is the exception to this rule because it uses four eyebars to support the tremendous tensile forces imposed by the cantilevered suspension span. Large pins connect the top chord together and to the anchor-arm and the cantilever-arm. All other connections, except for the suspension joints, are riveted.

The suspension span is also hung by pins at U12 and L12 (see highway drawings) from the cantilever-arms. Member U12-U13 is referred to as an idle member because it carries no force. The suspension span acts as a truss which is supported at L12 and L20. The compression forces in its top chord are transmitted through member L12-U13, which acts as an impost, to the bottom chord. The forces from the suspension span are then distributed to the cantilever-arm by the bottom chord and web members.

The bridge is supported by reinforced concrete piers at the ends and underneath the two peaks. The concrete approaches are on 14-inch-square concrete pilings, extending an average of 50

feet into the ground. The west approach from Newport is 1,278 feet long, and the other approach is 911 feet long. Electric lamps once lined the approaches.

The Newport Bridge has a twin, also over the White River, at Augusta, Arkansas. The two bridges differ only in their approach lengths. The cantilevered bridge at Clarendon over the White River is also similar, but has two more panels in the anchor arms.

ENDNOTES

1. "White River Bridge at Newport will Be Major Highway Project in 1928," Newport Weekly Independent Vol. XXVII, No. 38 (December 23, 1927), p. 1.

2. Virgil H. Holder, "Historical Geography of the Lower White River," The Arkansas Historical Quarterly Vol. XXVII, No. 2 (Summer 1968), pp. 132, 142.: Ernie Deane, Arkansas Place Names (Branson, Mo: The Ozarks Mountaineer, 1986), pp. 46-7.

3. Ford, Bacon & Davis, Inc., consultants, "Report: Estimated Traffic and Revenue, Proposed Toll Bridge Across the White River at Newport, Arkansas," February 15, 1929, p. 11.

4. Holder, p. 143.

5. Ford, Bacon & Davis, p. 9.

6. "Toll Bridge Franchise Canceled," Newport Weekly Independent Vol. XXVII, No. 36 (December 9, 1927), p. 1.

7. "Bridge Bill Introduced by Oldfield," Newport Weekly Independent Vol. XXVII, No. 47 (February 17, 1928), p. 4.

8. "Bridge Should Be Constructed By State Commission," Newport Weekly Independent Vol. XXVIII, No. 1 (April 6, 1928), p. 6.

9. "Privately Owned Toll Bridge Proposal Made at Meeting Yesterday," Newport Weekly Independent Vol. XXVII, No. 52 (March 30, 1928),p. 1.

10. "Many Attend Meeting at Court House," Newport Weekly Independent Vol. XXVIII, No. 2 (April 13, 1928), p. 1.

11. "Toll Bridge in Hands of Commission," Newport Weekly Independent Vol. XXVIII, No. 3 (April 20, 1928), p. 1.

12. "Bridge Bill Introduced in Congress," Newport Weekly Independent Vol. XXVIII, No. 3 (April 20, 1928), p. 1.

13. "Court Actions Cause Delay in Highway Work," Newport Weekly Independent Vol. XXVIII, No. 30 (October 26, 1928), p. 6.

14. "Engineers in Favor of Locating Bridge at Newport Ferry," Newport Weekly Independent Vol. XXVIII, No. 43 (January 25, 1929), p. 5.

15. Ford, Bacon & Davis, "Report", p. 26.

16. John William Leonard, Who's Who in Engineering, 1925, 2nd ed. (New York: Who's Who Publications, Inc., 1925), p. 937.

17. "To Save Money on Bridge Contracts," Arkansas Gazette Vol. 110, No. 173 (May 12, 1929), p. 6.

18. "Bids Received on Highway Projects," Arkansas Gazette Vol. 110, No. 177 (May 16, 1929), p. 12.

19. "Bids Received",p. 12.

20. "Bridge Work Continues to Move Rapidly," Weekly Independent Vol. XXIX, No. 47 (February 21, 1930), p. 1.

21. "Bridge Span Over River Connected," Weekly Independent Vol. XXX, No. 1 (April 4, 1930), p. 2.

22. "Bridge to be Landed upon Third Street," Weekly Independent Vol. XXIX, No. 45 (February 7, 1930), p. 10.

23. "Falling Shaft Kills Negro at Bridge Site Here," Weekly Independents Vol. XXIX, No. 36 (December 6, 1929), p. 7.

24. "Vester Stillwell is Shot and Killed by Missouri Youth," Weekly Independent Vol. XXIX, No. 42 (January 17, 1930), p. 2.

25. "Bridge Tolls House will Be Finished Soon," Weekly Independent Vol. XXX, No. 21 (August 29, 1930), p. 2. : Ira G. Hedrick, plans, "Bridge Over Main Street at Newport, Arkansas, date.

26. "Newport Bridge Opened Formally," Arkansas Gazette Vol. III, No. 294 (September 11, 1930), p. 2.

27. "Bob Laird to Be Supervisor of New Bridge," Weekly Independent Vol. XXX, No. 23 (September 12, 1930), p. 2.

28. "Newport Toll Bridge is Put in Operation," Weekly Independent Vol. XXX, No. 24 (September 19, 1930), p. 1.

29. "220 Vehicles Cross Bridge on First Day," Weekly Independent Vol. XXX, No. 24 (September 19, 1930), p. 1.

30. "Bridge Tolls Reduced to 25 Cents for those Purchasing $2.50 Books," Newport Weekly Independent Vol. XXX, No. 31 (November 7, 1930), p. 2.

31. "Toll on Local State Bridge May Be Lifted," Newport Weekly Independent Vol. XXXVII, No. 50 (March 11, 1938), p. 1.

32. "Formal Opening on Freeing of Local Bridge," Newport Weekly Independent Vol. XXXVIII, No. 6 (May 6, 1938), p. 7.

33. "Approach to Bridge Open," Newport Weekly Independent Vol. XXXVIII, No. 6 (May 6, 1938), p. 7.

34. "Arkansas Welcomes Toll-Free Bridges", Newport Weekly Independent Vol. XXXVIII, No. 9 (May 27, 1938), p. 1.

35. Arkansas State Highway Department. Bridge inspection report, April 24, 1986.

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ARKANSAS STATE HIGHWAY COMMISSION

DWIGHT H. BLACKWOOD
CHAIRMAN

JUSTIN MATTHEWS J. LAN WILLIAMS
J. S PARKS SAM J. WILSON
COMMISSIONERS

HIGHWAY BRIDGE OVER WHITE RIVER

AT

NEWPORT, ARKANSAS
(JACKSON COUNTY)

C. S. CHRISTIAN, HIGHWAY ENGINEER
N. B. GARVER, BRIDGE ENGINEER

JOB NO. 5104
U.S.R. 67 S-16 & 17

IRA G. HEDRICK, INC.
CONSULTING ENGINEERS
HOT SPRINGS, ARKANSAS

REVISED
MAIN RIVER BRIDGE

INDEX

WHEEL CONCENTRATIONS, CLASS A LOADING

3000# 3000# 3000# 12000#
6'-0" 14'-0"

2 - 15 TON TRUCKS

EQUIVALENT UNIFORM LIVE LOADS

SPAN LENGTH	LOAD
0 TO 50'	150# PER SQ. FT.
50 TO 100'	130 " " " "
100 TO 200'	80 " " " "
200 AND OVER	64 " " " "

IMPACT: 25% — CONCRETE; $\frac{100}{L+300}$ — STEEL

GENERAL NOTES

[illegible]

CONSTANTS

	CONCRETE 1-1-2 MIX	STEEL
FLOOR SLABS, CROSS GIRDERS, GIRDERS, ETC.	975# PER SQ. IN.	
BEAMS CONTINUOUS OVER SUPPORTS: AT CENTER OF BEAMS	975 " " " "	
OVER SUPPORTS	1125 " " " "	
BOND FOR STEEL IN CONCRETE	150 " " " "	
COLUMNS IN DIRECT COMPRESSION	900 - 4ℓ/d " " "	
NOTE: FOR 1-2-4 CONCRETE DECREASE ABOVE STRESSES 33⅓%		
TENSION, NET SECTION		16000# PER SQ. IN.
COMP. IN COLS. & OTHER COMP. MEMBERS, FIXED ENDS		900 - 4ℓ/d " " "
MODULUS OF ELASTICITY, STEEL		30000000 " " "
CONCRETE 1-2-4	2000000 " " "	
1-1-2	3000000 " " "	
VARIATION IN TEMPERATURE	±50°	
COEFFICIENT OF EXPANSION	.0000055	.0000067

Sheet No. 2
Br. No. G12 Drwg. No. 5030

HAER NO. AR-12 Page 16/17

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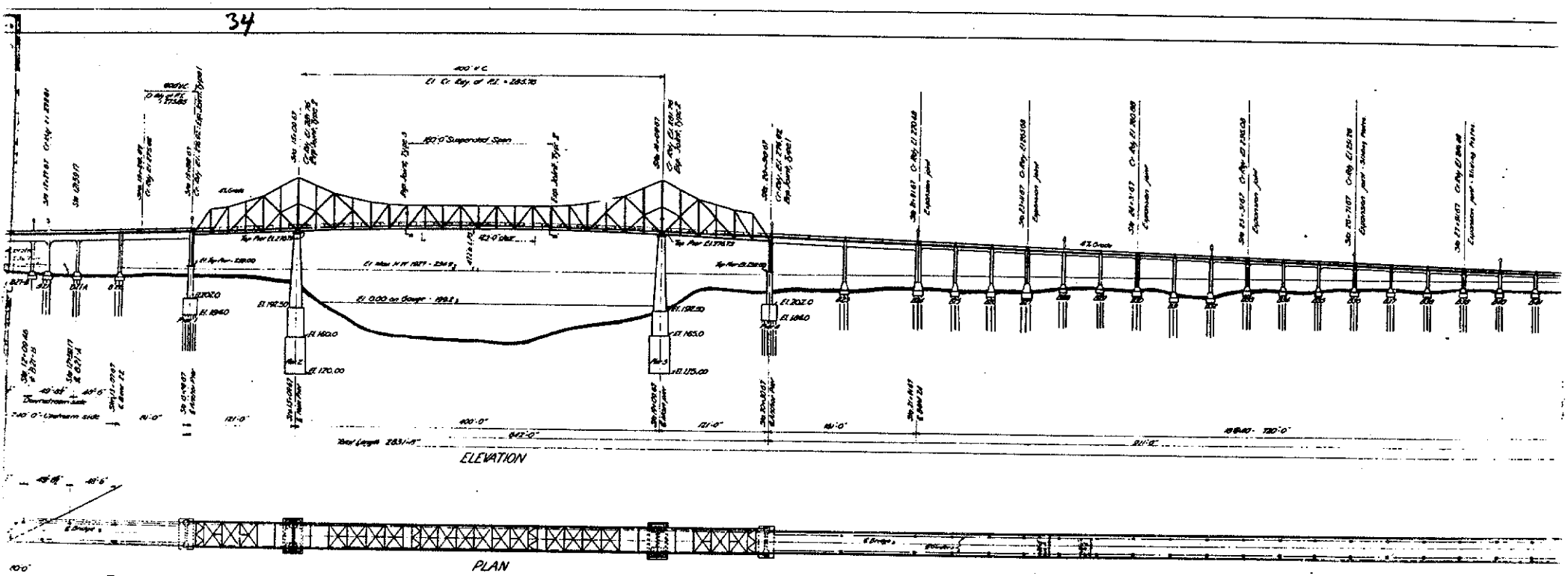


Note: Elevations of tops of footing caps

Bents 1 to 19, incl.	El. 220.30
Bent 20	El. 223.20
Bent 21	El. 224.80
Bents 22 to 32, incl.	El. 226.00
Bents 33 to 39, incl.	El. 225.00
Bent 40	El. 223.00
Bents 41 & 42	El. 222.00
Bents 43 to 51, incl.	El. 220.00

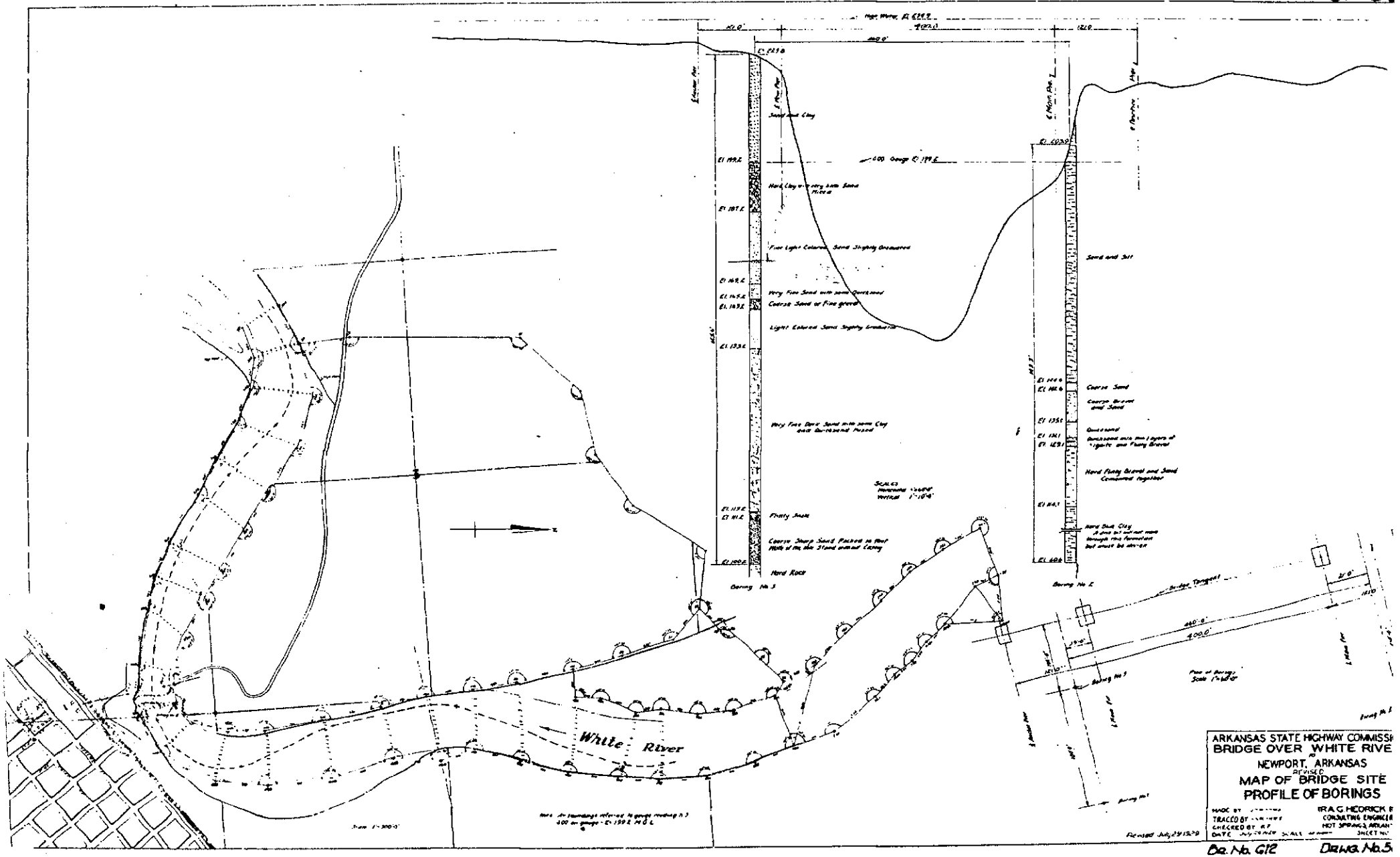
ARKANSAS STATE HIGHWAY
BRIDGE OVER WHITE
AT
NEWPORT, ARKAN
REVISED
GENERAL PLAN &

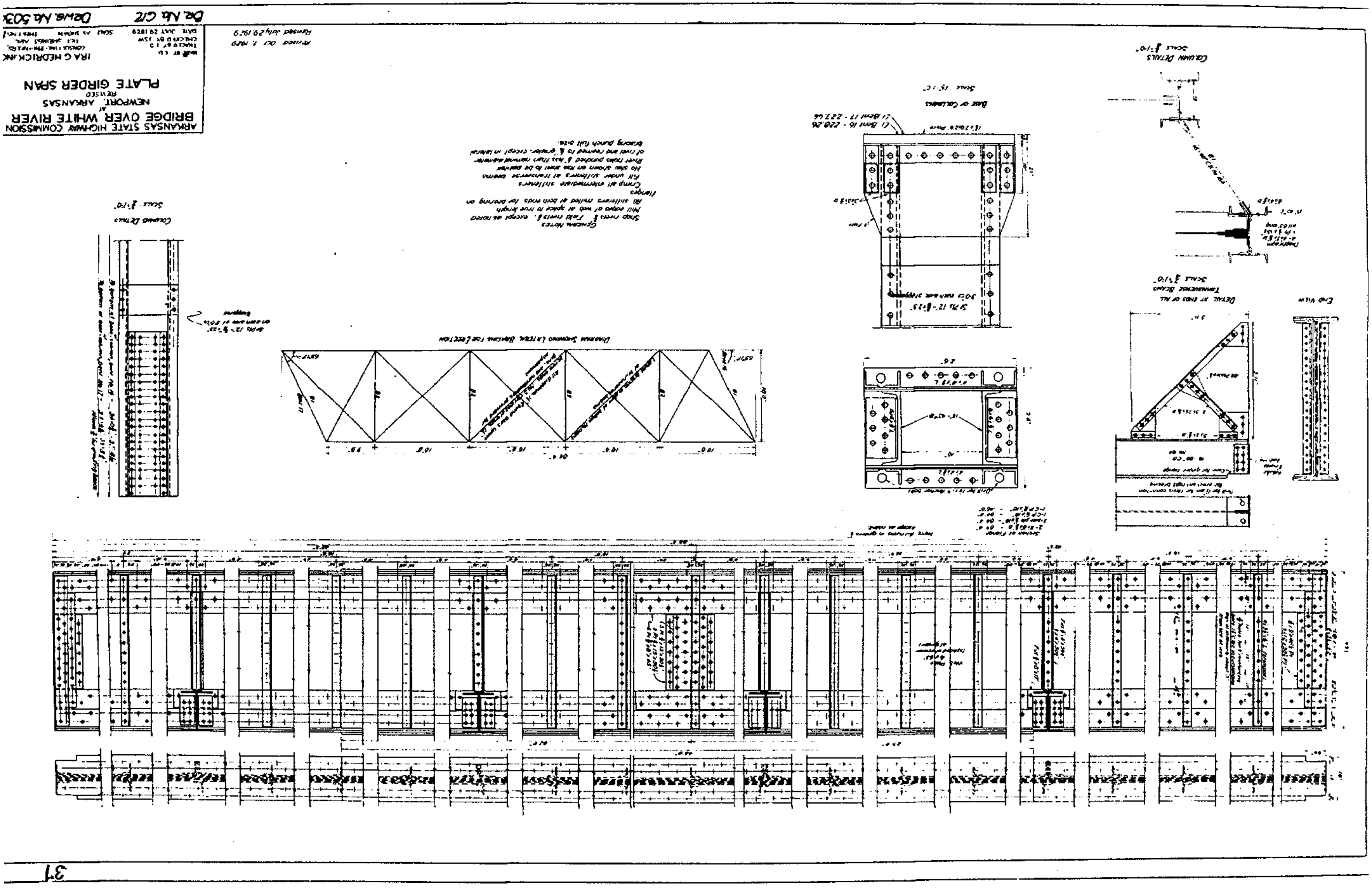
MADE BY J.A.M.
TRACED BY J.A.M.
CHECKED BY A.F.
DATE: JULY 20, 1929

IRA G.
CONSUL
HOT SPR
SCALE: 1"=50'-0"

Revised Jan. 7, 1930
Revised Oct. 22, 1929.
Revised Aug. 31, 1929

Dr. No. G12




ARKANSAS STATE HIGHWAY COMMISSION
BRIDGE OVER WHITE RIVER
AT NEWPORT, ARKANSAS
REVISED
PLATE GIRDER SPAN
IRA G HEDRICK, INC.
Dr. No. G12
Drwg. No. 503
Revised Oct. 7, 1929
Revised July 29, 1929
Diagram Showing Lateral Bracing for Erection
General Notes
Base of Columns
Column Details
Detail at Ends of All Transverse Beams
End View
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REVISED
CONCRETE APPROACHES

INDEX

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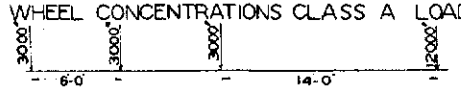


2 - 15 TON TRUCKS

EQUIVALENT UNIFORM LIVE LOADS

SPAN LENGTH	LOAD
0 TO 50'	150# PER SQ. FT.
50 TO 100'	130" " "
100 TO 200'	80" " "
200 AND OVER	64" " "

IMPACT $\left\{\begin{array}{l} 25\% \text{ ---- CONCRETE} \\ \frac{100}{L+300} \text{ -STEEL} \end{array}\right.$

GENERAL NOTES

All hooks on reinforcing bars to have a radius of 4d and a return of 12d where d= diameter of round bar, or side of square bar. Length of turned bars are given to starting point of hook, thus: ——. All bends such as on girder bars must have a radius of not less than 12d.

Centers of bars in floor slab to be not less than 1½" from face of concrete. Centers of bars to be 4" from face of concrete on piers, and 3" on girders and column unless otherwise noted.

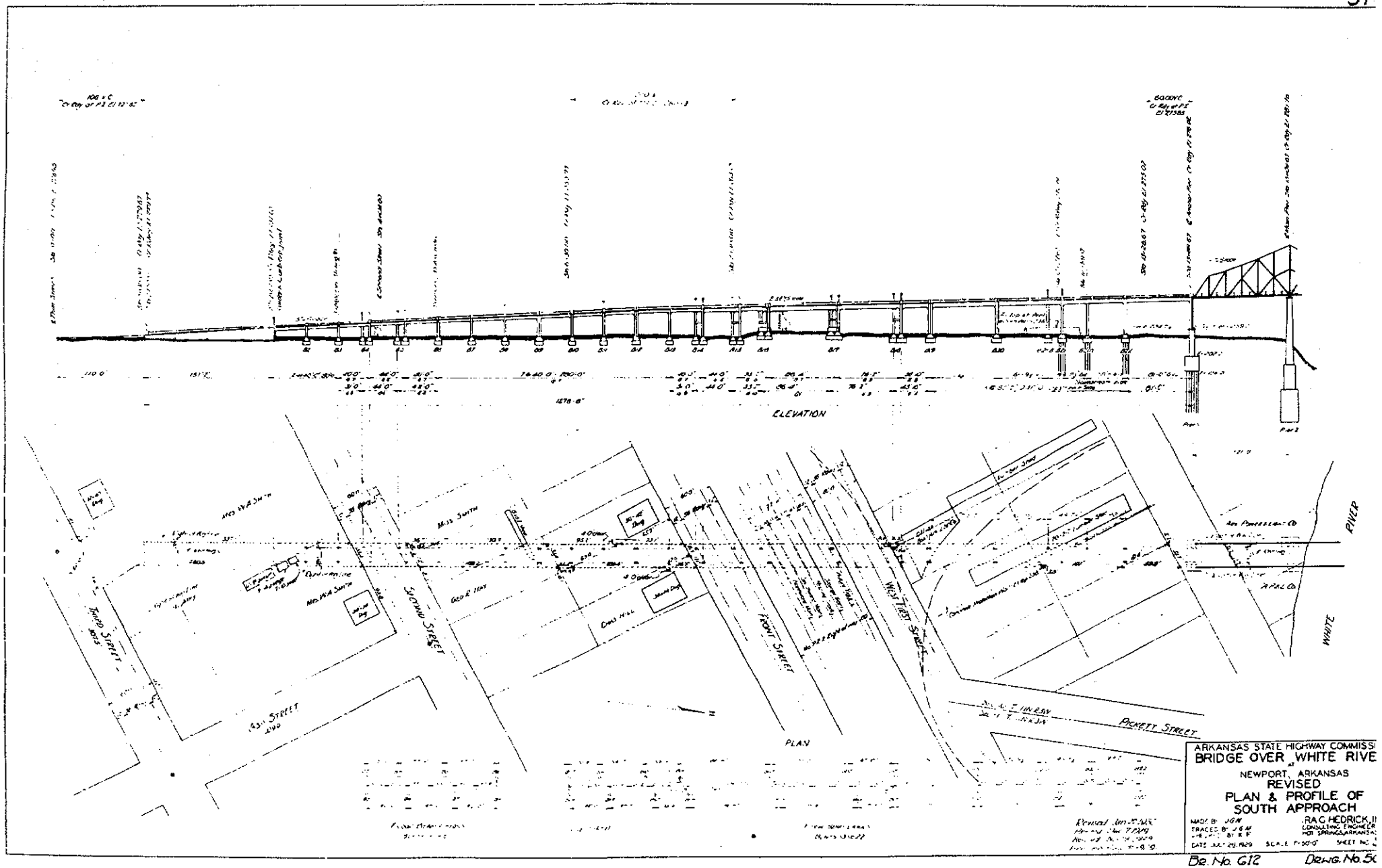
Chamfers to be 2" throughout unless otherwise noted.

CONSTANTS

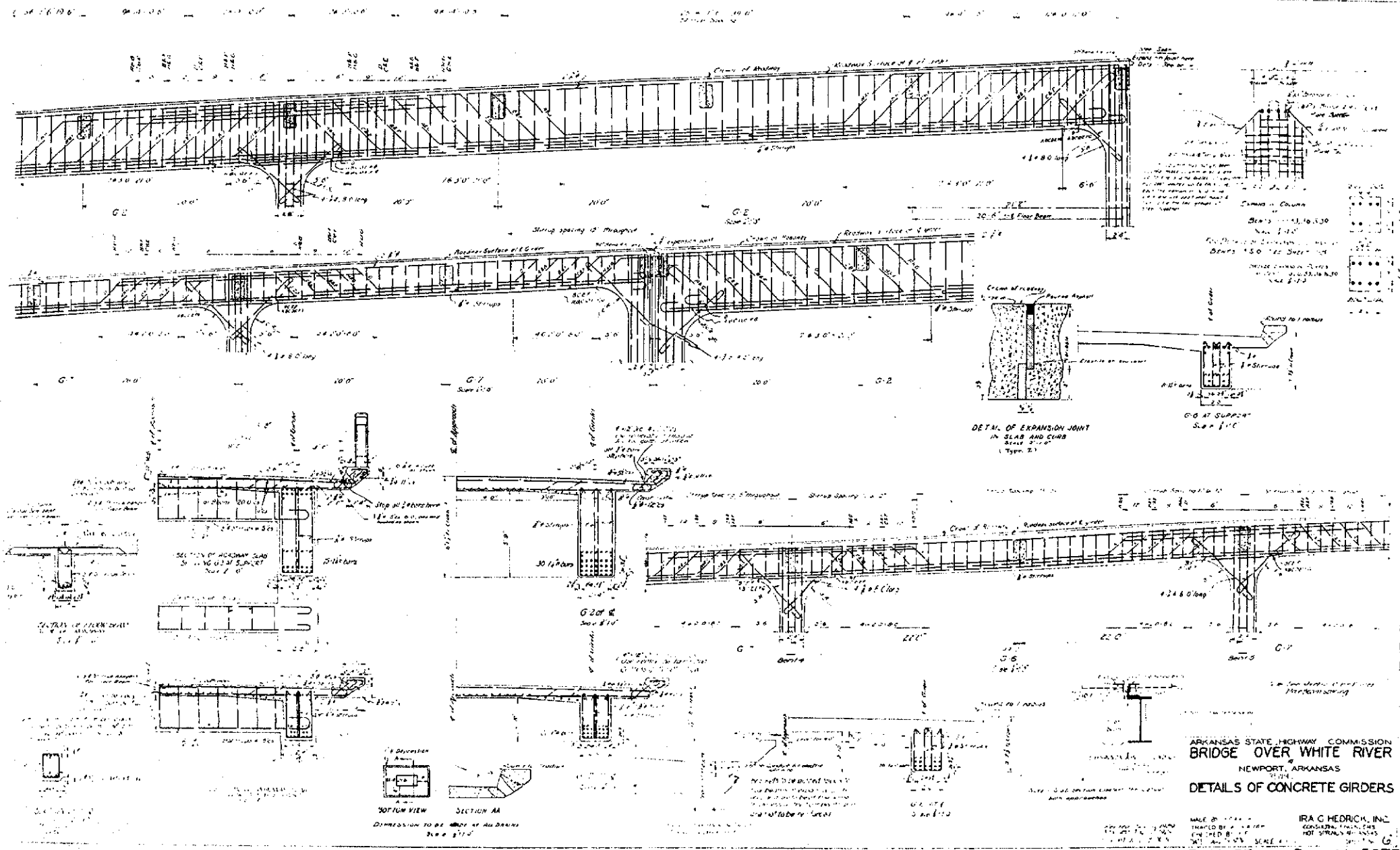
	CONCRETE 1-2 MIX	STEEL
FLOOR SLABS, CROSS GIRDERS, GIRDERS, ETC.	975# PER SQ. IN.	
BEAMS CONTINUOUS OVER SUPPORTS: AT CENTER OF BEAMS	975 " " "	
OVER SUPPORTS	1125 " " "	
BOND FOR STEEL IN CONCRETE	150 " " "	
COLUMNS IN DIRECT COMPRESSION	$\frac{600-22\frac{1}{2}L}{b}$ " " "	
NOTE FOR 1-2-4 CONCRETE DECREASE ABOVE STRESSES 33⅓ %		
TENSION, NET SECTION		16000 # PER SQ. IN.
COMP. IN COLS. & OTHER COMP. MEMBERS. FIXED ENDS	$\frac{800-22\frac{1}{2}L}{b}$ " " "	
MODULUS OF ELASTICITY, STEEL		30000000 " " "
CONCRETE 1-2-4	2000000 " " "	
1-1-2	3000000 " " "	
VARIATION IN TEMPERATURE	±50°	
COEFFICIENT OF EXPANSION	.0000055 " " "	.0000067

Sheet No. 2

Bo. No. 612 DRWG. No. 5035


ELEVATION
PLAN
Third Street
Second Street
Front Street
West First Street
Pickett Street
White River
Miss Smith
Chas. Hill
ARKANSAS STATE HIGHWAY COMMISSI
BRIDGE OVER WHITE RIVE
NEWPORT, ARKANSAS
REVISED
PLAN & PROFILE OF
SOUTH APPROACH
R.A.G. HEDRICK, II
CONSULTING ENGINEER
HOT SPRINGS, ARKANSAS
Br. No. 612
Drwg. No. 5

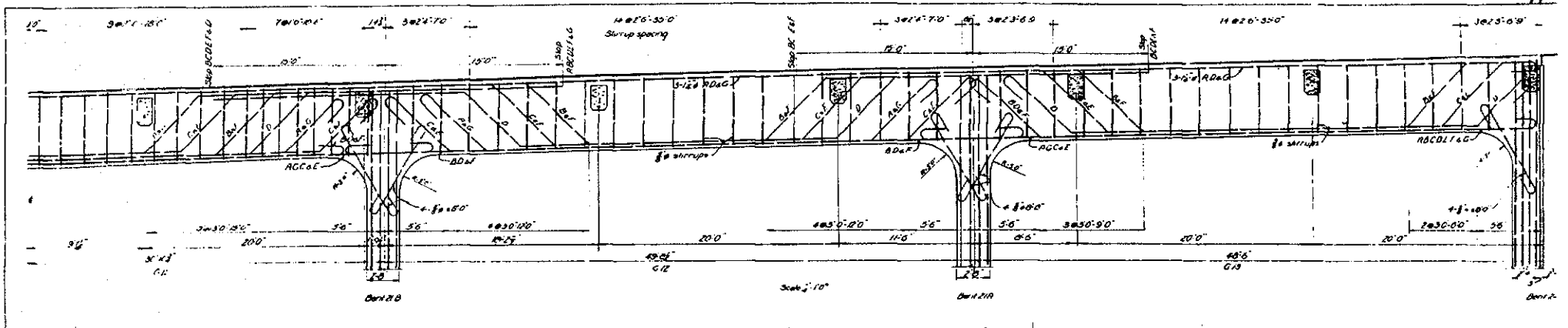
AR-12 40

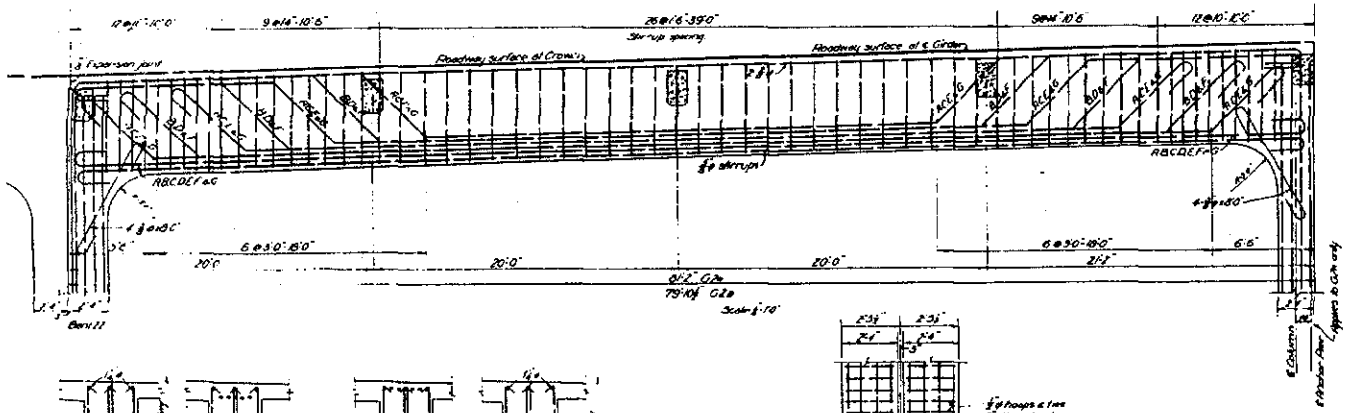


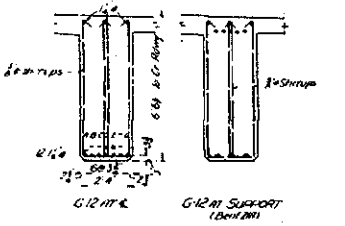
ARKANSAS STATE HIGHWAY COMMISSION
BRIDGE OVER WHITE RIVER
NEWPORT, ARKANSAS
DETAILS OF CONCRETE GIRDERS

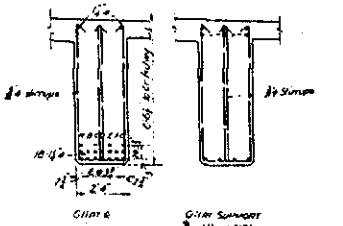
IRA G. HEDRICK, INC.
CONSULTING ENGINEERS
HOT SPRINGS, ARK.

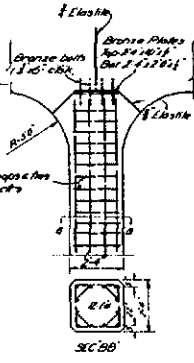
Br. No. G12 Drwg. No. 5037

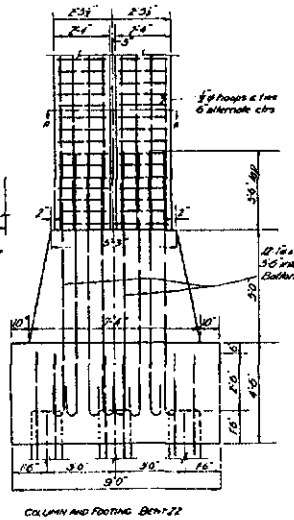


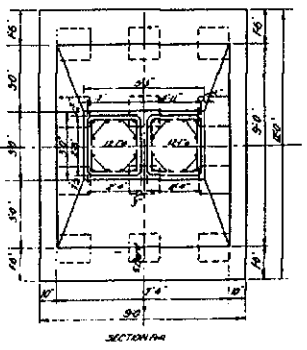




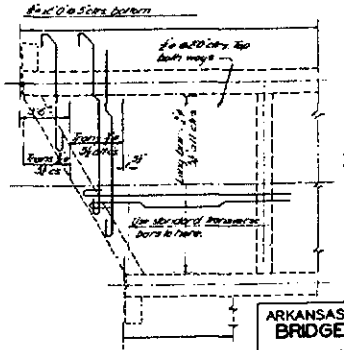








Note - For Bent 21A, make base same as for Bent 20, column and cap same as for Bent 21B. ℄ footing = one concrete yd.



ARKANSAS STATE HIGHWAY COMM
BRIDGE OVER WHITE RI
AT NEWPORT, ARKANSAS

GIRDER DETAILS

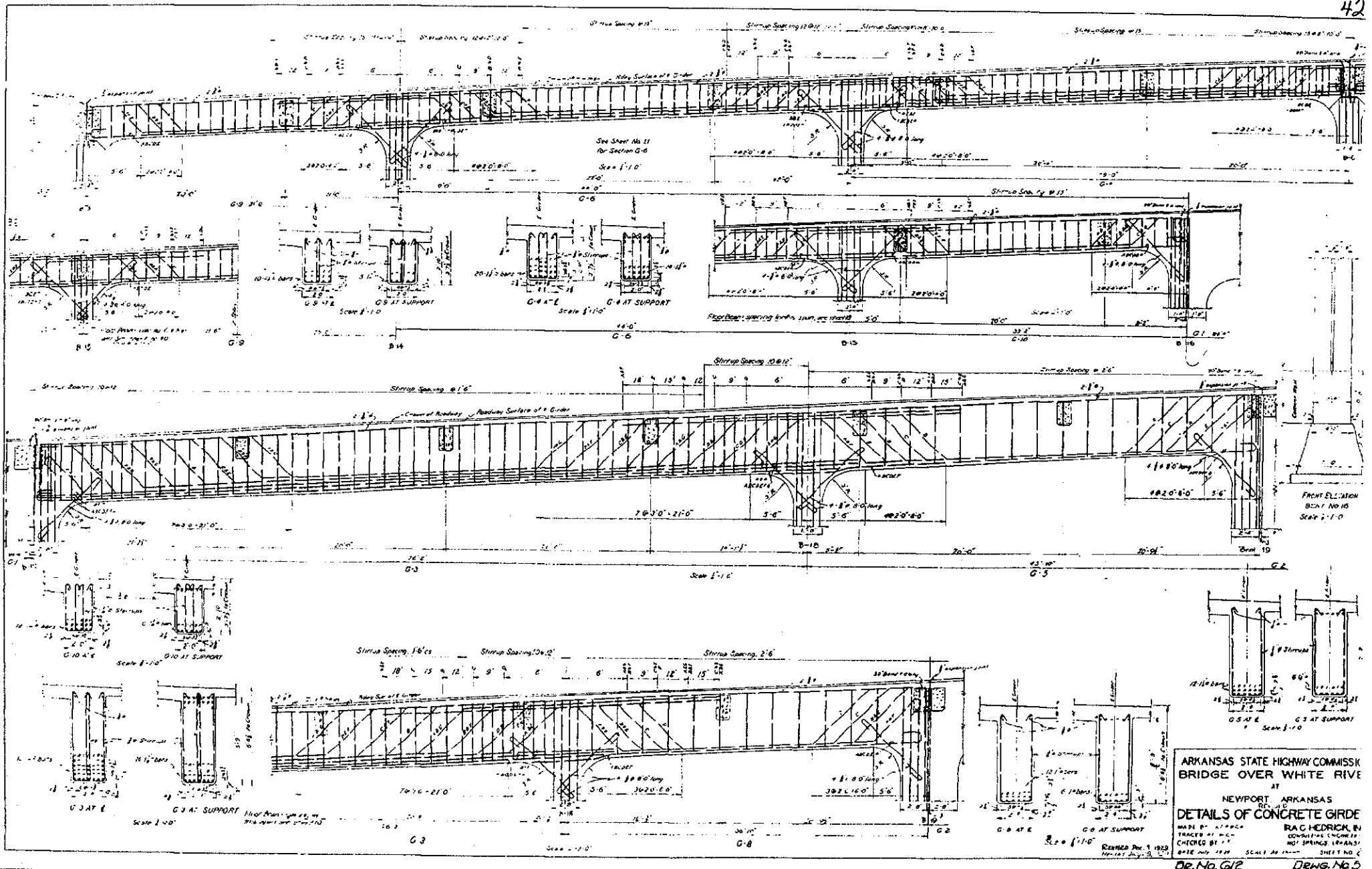
MADE BY E.S.
TRACED BY E.S.
CHECKED BY [illegible]
DATE May 1949

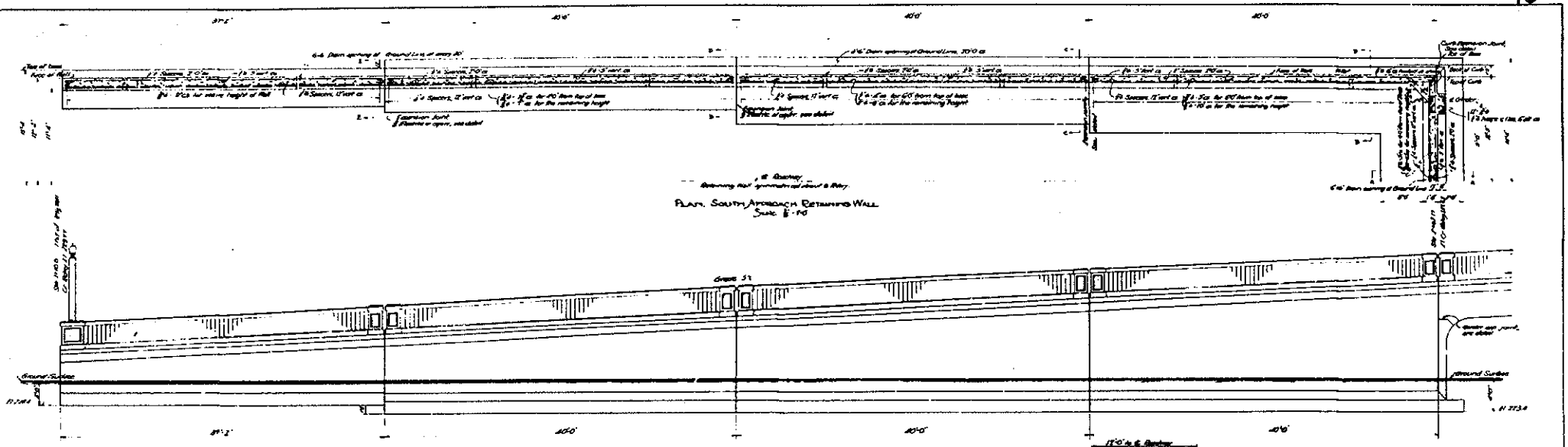
IRA G. HEDRIC
CONSULTING ENGI
HOT SPRINGS, AR
SHEET

Revised Dec 7, 1949

Br. No. G12

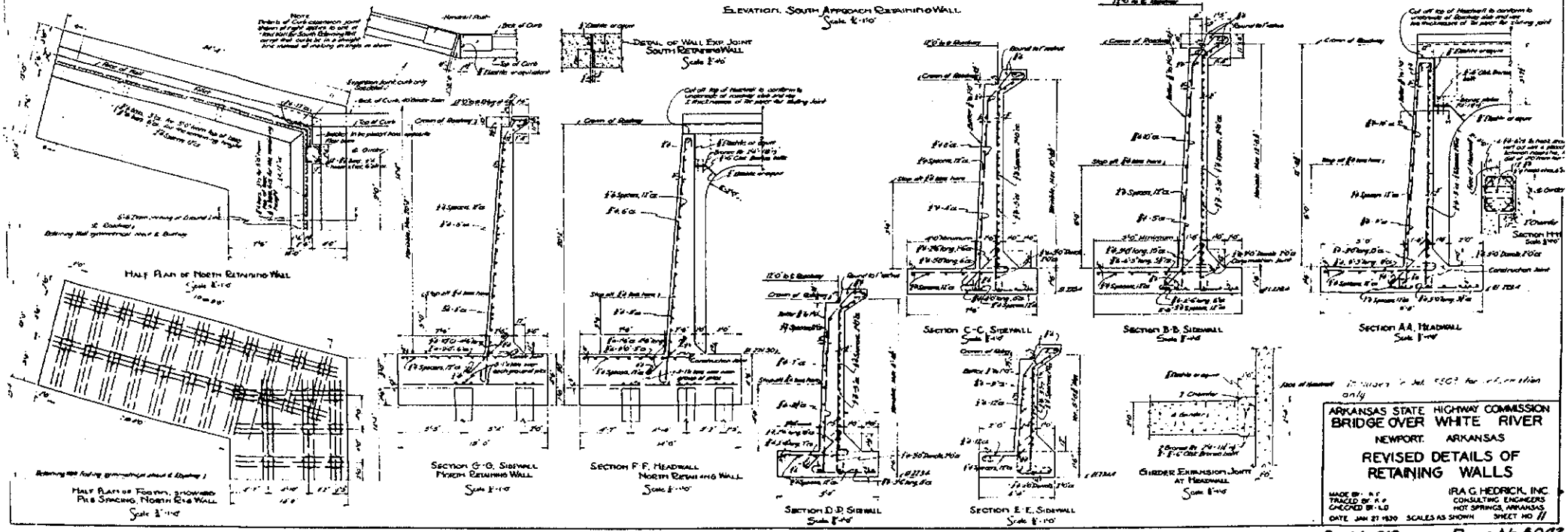
DRWG. No


See Sheet No. 11 for Section G-6
Scale 1"=10'
Roadway Surface of R Girder
Crown of Roadway
Stirrup Spacing @ 1'6"
Stirrup Spacing @ 2'6"
Stirrup Spacing 10 @ 12"
7 @ 3'0" = 21'0"
B-14
B-15
B-16
B-17
B-18
Bent 19
G-1
G-2
G-3
G-4
G-5
G-6
G-8
G-9
G-10
G-9 AT ℄
G-9 AT SUPPORT
G-10 AT ℄
G-10 AT SUPPORT
G-3 AT ℄
G-3 AT SUPPORT
G-5 AT ℄
G-5 AT SUPPORT
G-8 AT ℄
G-8 AT SUPPORT
FRONT ELEVATION BENT NO 19
Scale 1"=10'
ARKANSAS STATE HIGHWAY COMMISSION
BRIDGE OVER WHITE RIVER
AT
NEWPORT ARKANSAS
DETAILS OF CONCRETE GIRDER
R.A.G. HEDRICK, JR.
CONSULTING ENGINEER
HOT SPRINGS ARKANSAS
Dr. No. G12
DRWG. No. 5



Plan, South Approach Retaining Wall
Scale 1"=10'

Elevation, South Approach Retaining Wall
Scale 1"=10'



Half Plan of North Retaining Wall
Scale 1"=10'

Half Plan of Footing, Showing Pile Spacing, North Retaining Wall
Scale 1"=10'

Detail of Wall Exp. Joint South Retaining Wall
Scale 1"=1'

Section G-G, Sidewall North Retaining Wall
Scale 1"=10'

Section F-F, Headwall North Retaining Wall
Scale 1"=10'

Section D-D Sidewall
Scale 1"=10'

Section C-C, Sidewall
Scale 1"=10'

Section B-B, Sidewall
Scale 1"=10'

Section A-A, Headwall
Scale 1"=10'

Girder Expansion Joint at Headwall
Scale 1"=1'

Section E-E, Sidewall
Scale 1"=10'

ARKANSAS STATE HIGHWAY COMMISSION
BRIDGE OVER WHITE RIVER
NEWPORT, ARKANSAS

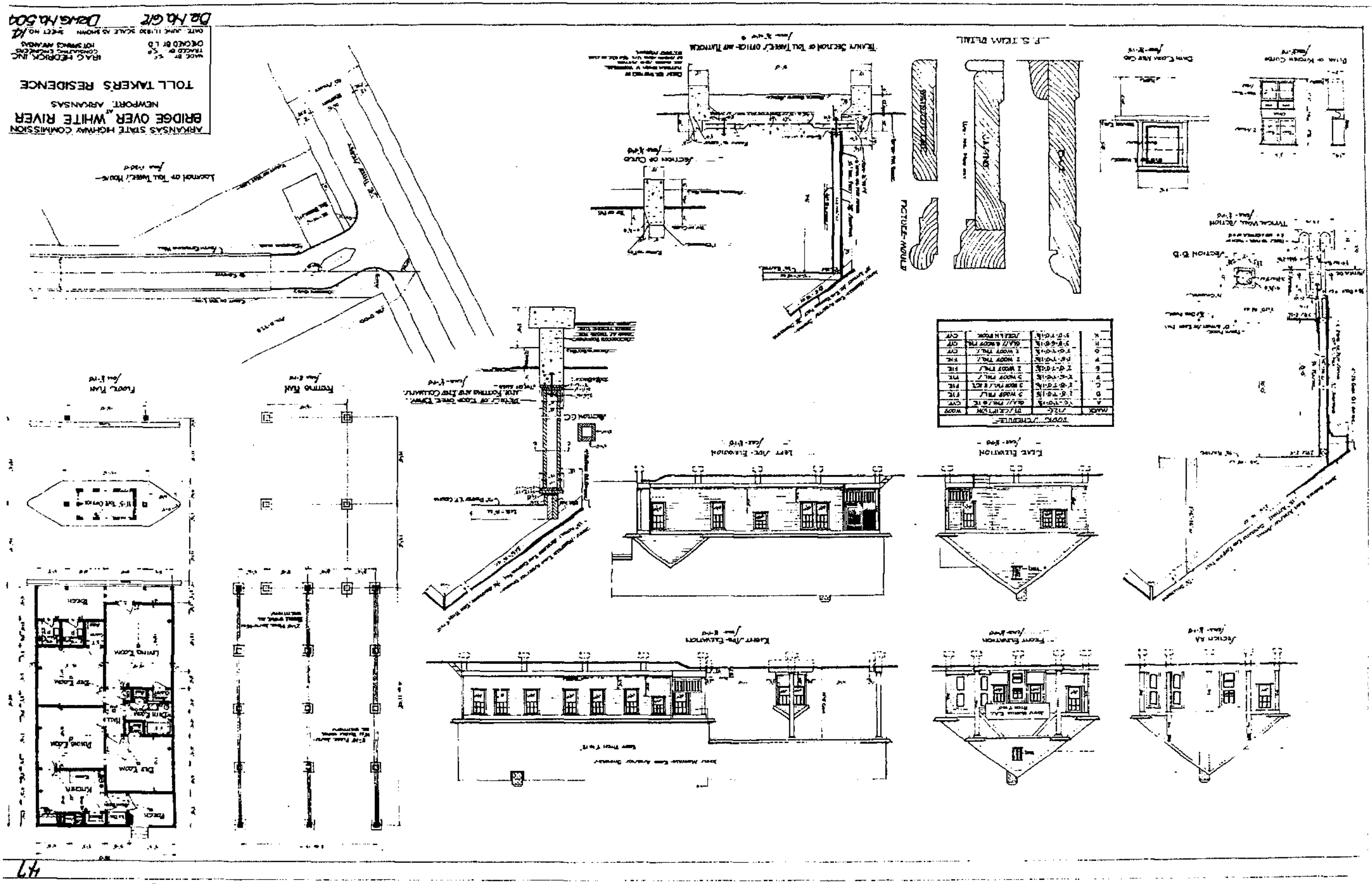
REVISED DETAILS OF RETAINING WALLS

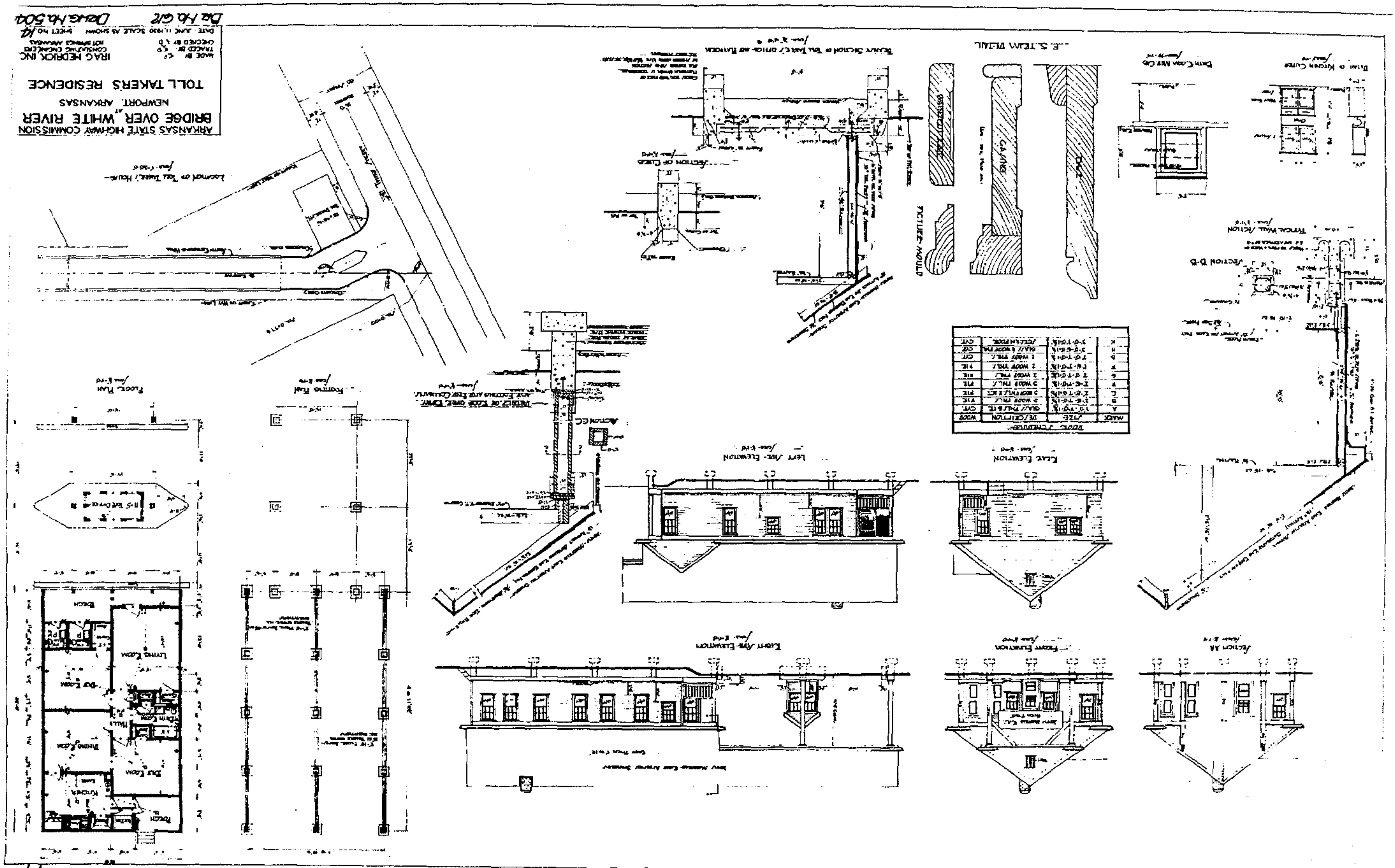
MADE BY: A.F.
TRACED BY: R.P.
CHECKED BY: L.D.

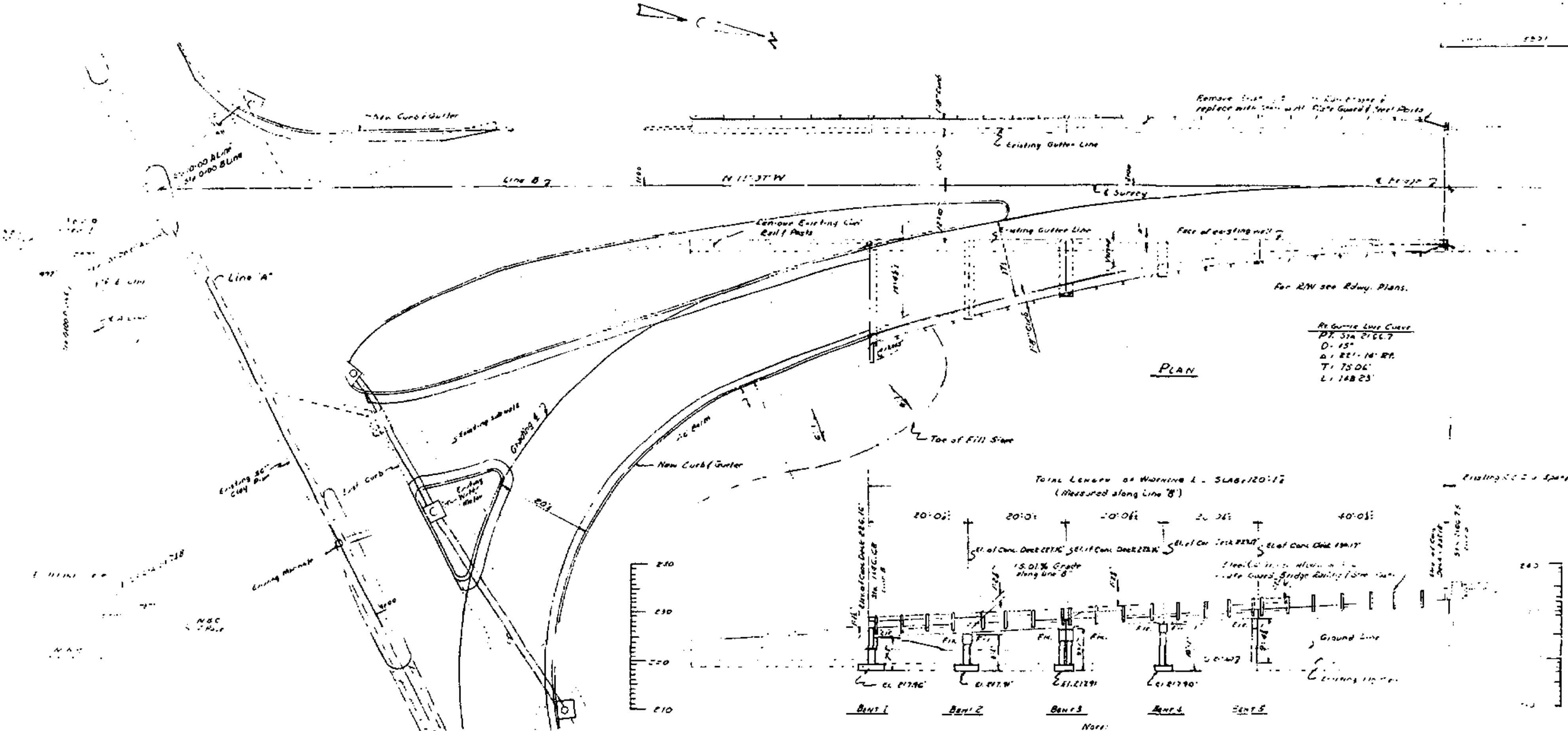
IRA G. HEDRICK, INC.
CONSULTING ENGINEERS
HOT SPRINGS, ARKANSAS.

DATE: JAN 27 1939 SCALES AS SHOWN SHEET NO 11

Br. No 612 Drwg. No. 5042


ARKANSAS STATE HIGHWAY COMMISSION
BRIDGE OVER WHITE RIVER
NEWPORT, ARKANSAS
TOLL TAKER'S RESIDENCE
IRA G. HEDRICK, INC.
CONSULTING ENGINEERS
HOT SPRINGS ARKANSAS
FLOOR PLAN
FOOTING PLAN
LOCATION OF TOLL TAKER'S HOUSE
RIGHT SIDE ELEVATION
LEFT SIDE ELEVATION
FRONT ELEVATION
REAR ELEVATION
SECTION AA
SECTION B-B
SECTION C.C.
SECTION OF CURB
TYPICAL WALL SECTION
DOOR SCHEDULE
PICTURE-MOULD
F.S. TRIM DETAIL


ARKANSAS STATE HIGHWAY COMMISSION
BRIDGE OVER WHITE RIVER
AT NEWPORT, ARKANSAS
TOLL TAKER'S RESIDENCE
IRA G. HEDRICK INC
CONSULTING ENGINEERS
HOT SPRINGS ARKANSAS
Drwg No. 504
PICTURE-MOULD
CASING



Note:
In order not to disturb the [illegible] material the final [illegible] feet of footing excavation shall be done carefully by hand [illegible] neat lines of the footing. [illegible] kept dry.

ELEVATION

SUMMARY OF BRIDGE QUANTITIES

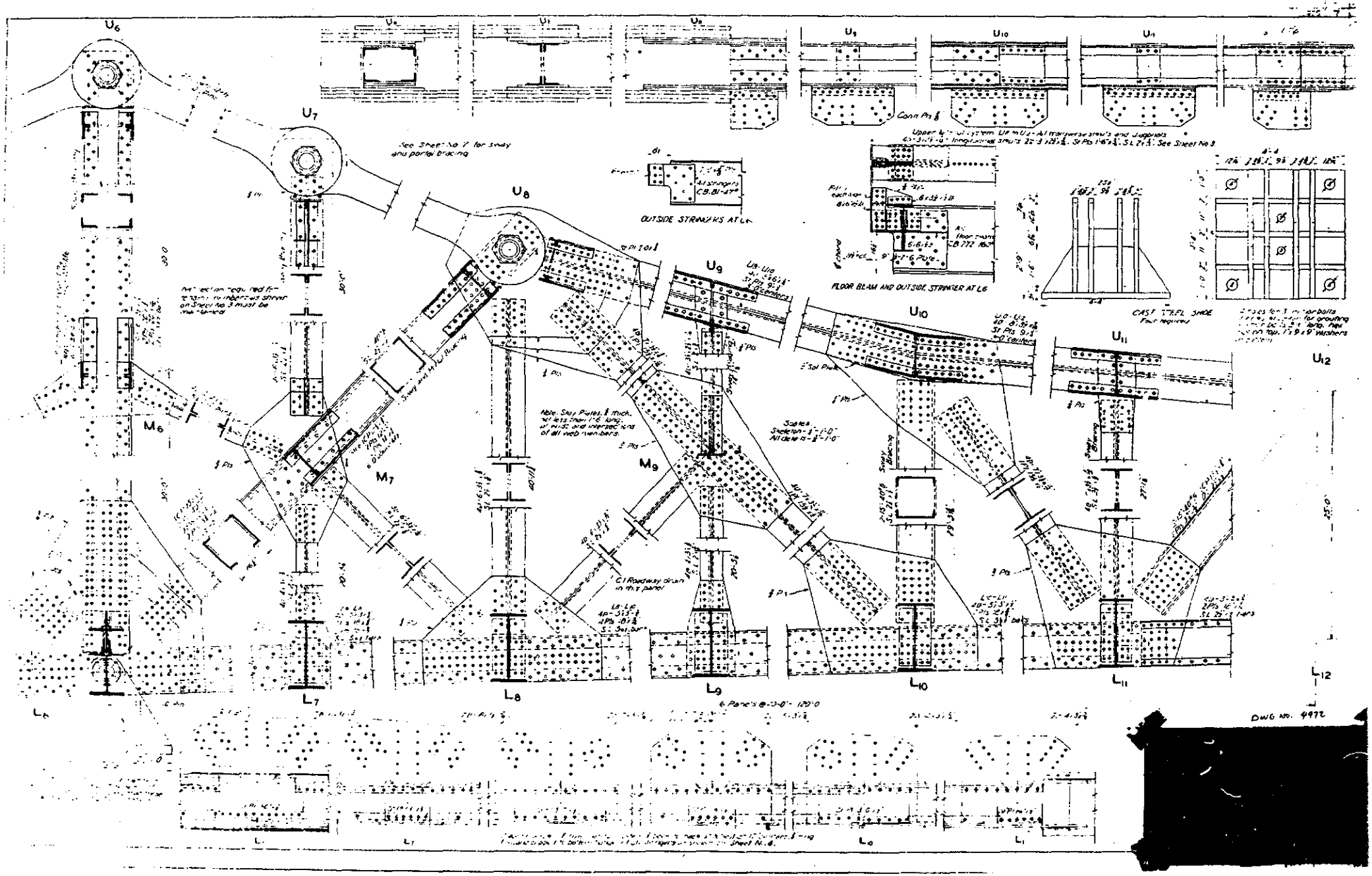
Item No	Item	Unit	Bent No 1	Bent No 2	Bent No 3	Bent No 4	Bent No 5	Span No 1	Span No 2	Span No 3	Span No 4	Span No 5	Left Wall	Bridge Total
801	Common Excavation for Structures	Cu Yd	25	10	10	9	1							55
802	Class A Concrete	Cu Yd	11.30	1.90	2.20	1.90	0.40							17.70
802	Class S Concrete	Cu Yd		2.45	2.55	1.16	0.46	15.10	10.16	7.70	5.30	5.44		51.10
803	Reinforcing Steel	Lb	599	796	618	445	232	3190	2313	1650	1040	546		11430
SP802-7	Steel (10 Ga) or Aluminum (0.125") Plate Guard Bridge Railing	Lin Ft						20.35	20.75	20.58	19.92	40.0	15.20	271.0
SP-18 5501	Remodeling Existing Bridge and Maintenance of Traffic	Comp Item												100%

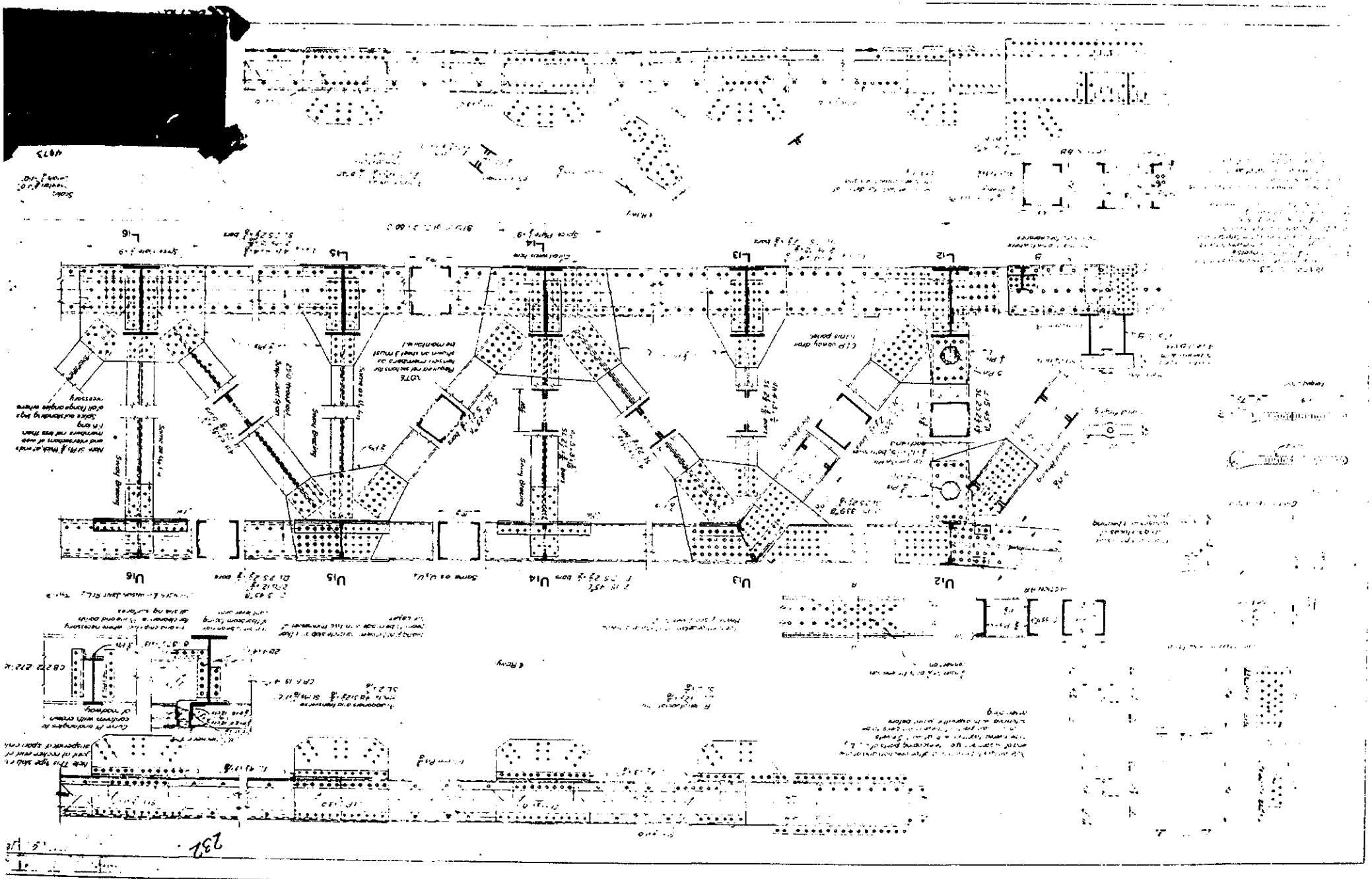
GENERAL NOTES:
Bench Mark, top of rod in conc. wall 4' Lt. Sta. [illegible] & Line El. [illegible]
For Layout & Details of Curbs & Islands see Rdwy Plans.
For details of existing walls see Drwg. 5082.
For Details of superstructure see Drwgs. 11082 & 11083.
For Details of substructure see Drwg. 11084 & 11085.
The Contractor shall make check measurements of existing structure and make necessary adjustments to fit new work.
Loading: H-20 A.A.S.H.O. 1957
Stresses: Class A Concrete (n=15) 840 p.s.i.
Class S Concrete (n=10) 1,200 p.s.i.
Reinforcing Steel 20,000 p.s.i.
Specifications: Arkansas State Highway Commission Standard Specification for Highway Construction Edition of 1951.

BRIDGE DESIGN ENGINEER

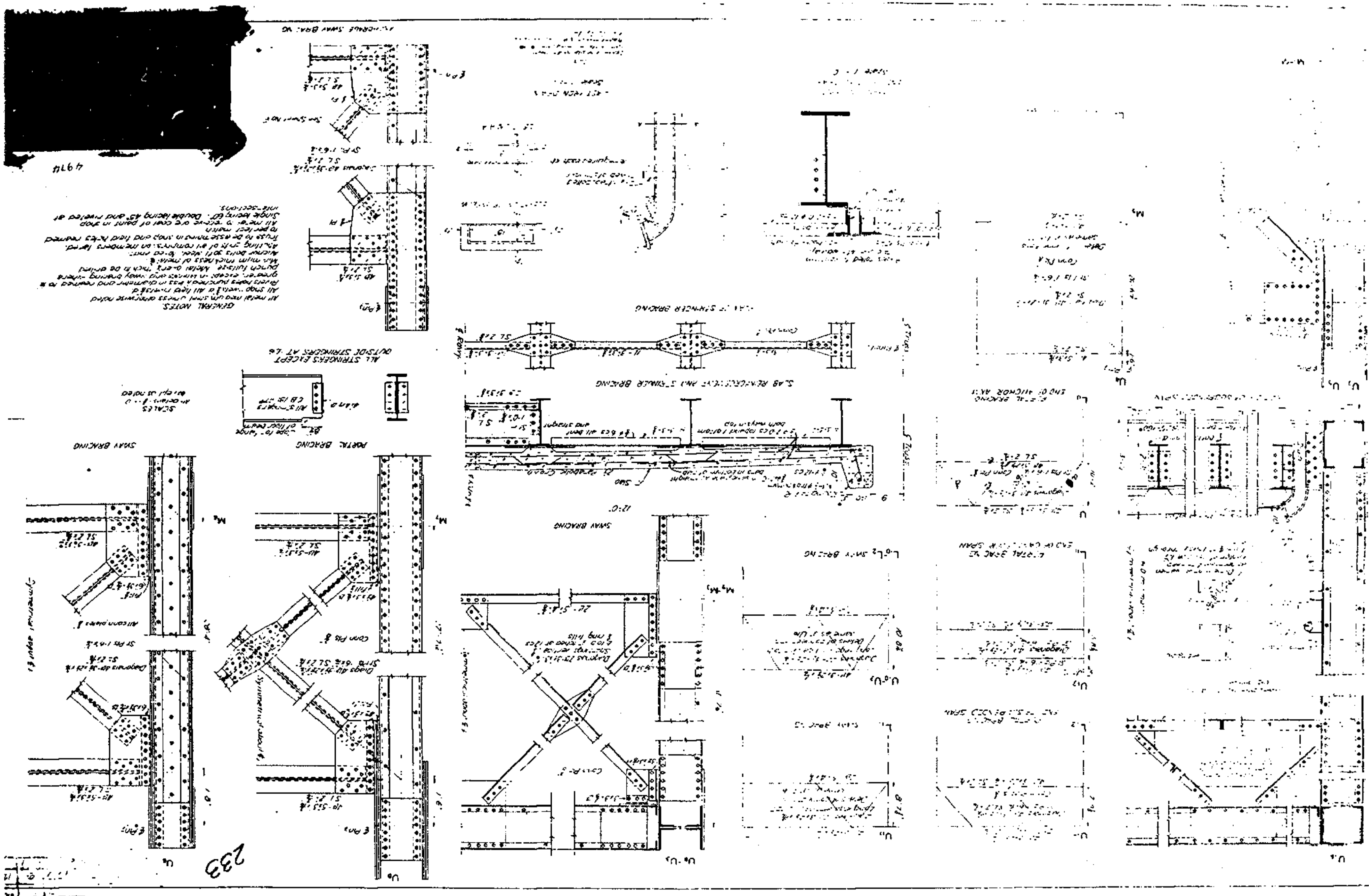
LAYOUT OF
WIDENING OF SOUTH APPROACH
WHITE RIVER BRIDGE
SOUTH APPROACH CHANNELIZATION
JACKSON COUNTY
ROUTE 67 SEC. 17
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

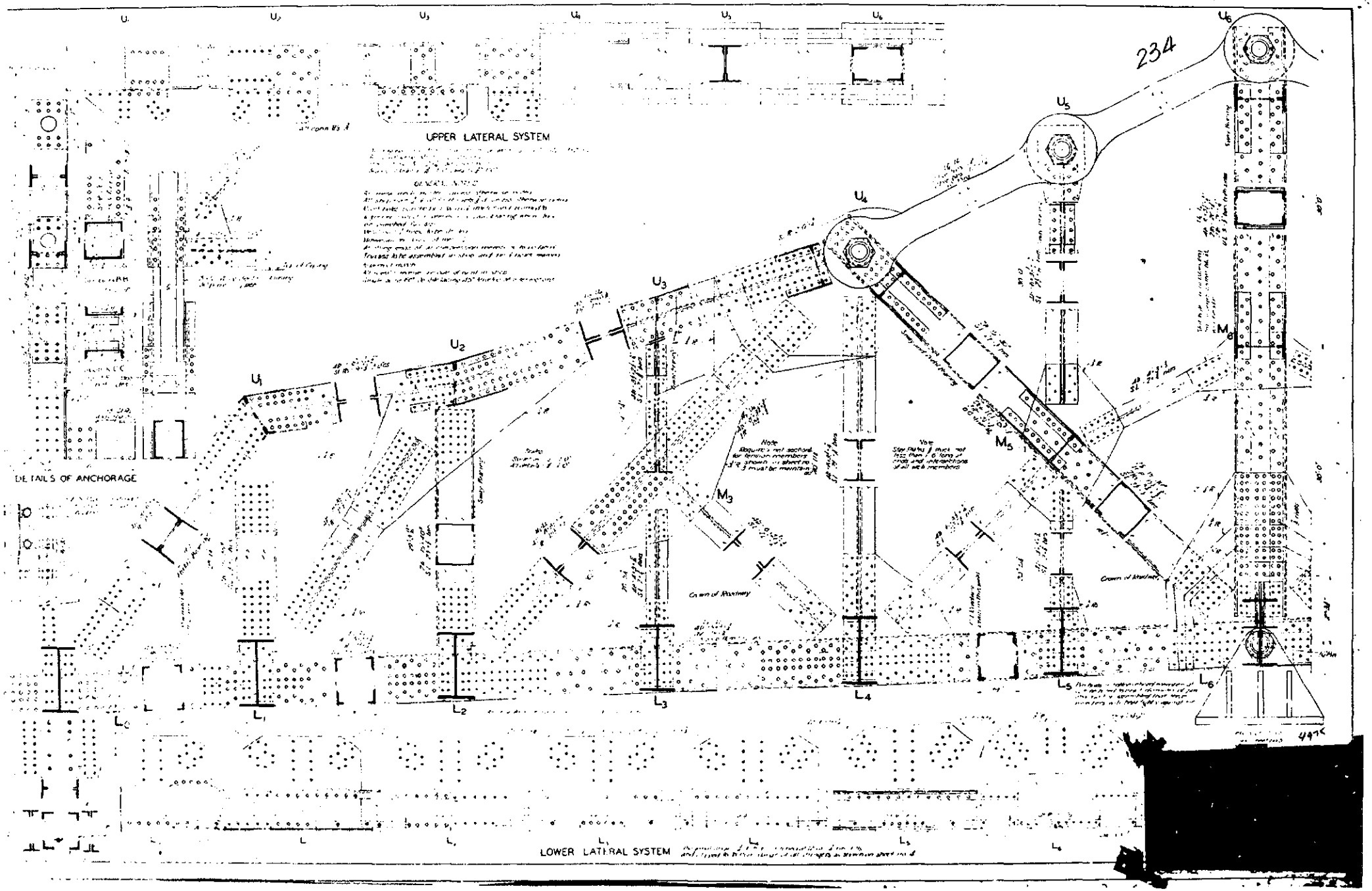
BRIDGE NO. 612-A
DRAWING NO. 11081


U6
U7
U8
U9
U10
U11
U12
M6
M7
M9
L7
L8
L9
L10
L11
L12
See Sheet No 7 for sway and portal bracing
OUTSIDE STRINGERS AT L6
FLOOR BEAM AND OUTSIDE STRINGER AT L6
CAST STEEL SHOE
Note: Stay Plates, ⅜ thick, at least every 6'-0" long, at mid. and intersections of all web members.
Scales
Skeleton - 1"=10'-0"
All details - 1"=1'-0"
6 Panels @ 20'-0" = 120'-0"
DWG NO. 4972



[redacted]

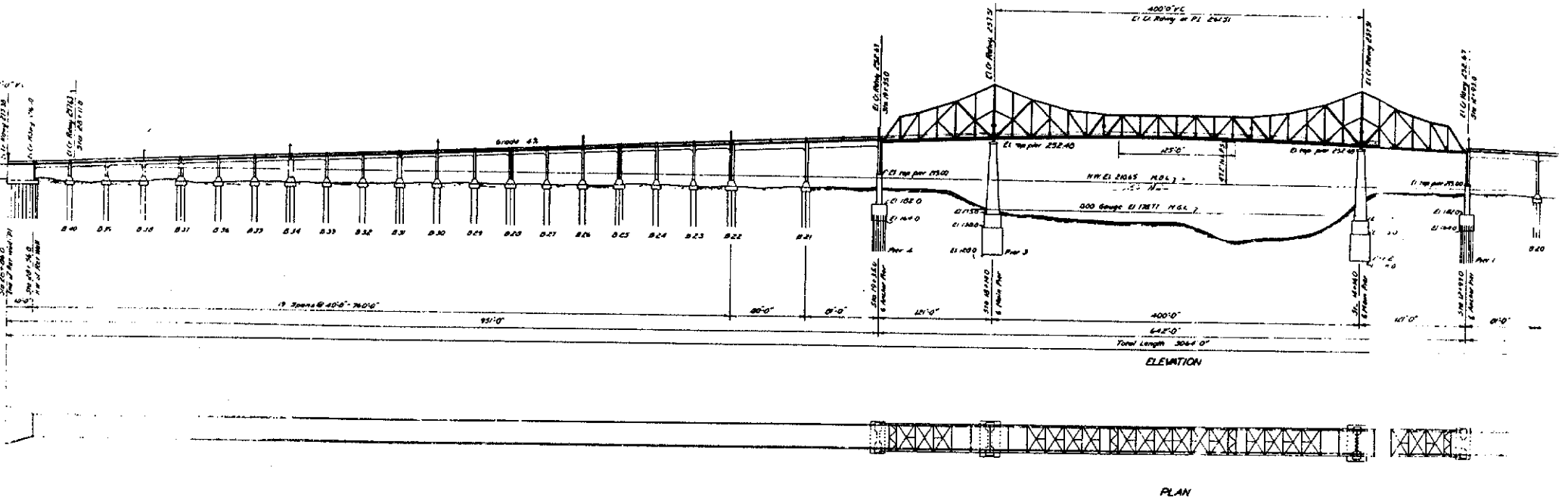

4974
GENERAL NOTES.
SCALES
PORTAL BRACING
ALL STRINGERS EXCEPT OUTSIDE STRINGERS AT L6
SWAY BRACING
SLAB REINFORCEMENT AND STRINGER BRACING
233


U1
U2
U3
U4
U5
U6
UPPER LATERAL SYSTEM
DETAILS OF ANCHORAGE
M3
M5
M6
L1
L2
L3
L4
L5
L6
LOWER LATERAL SYSTEM

A.2-12

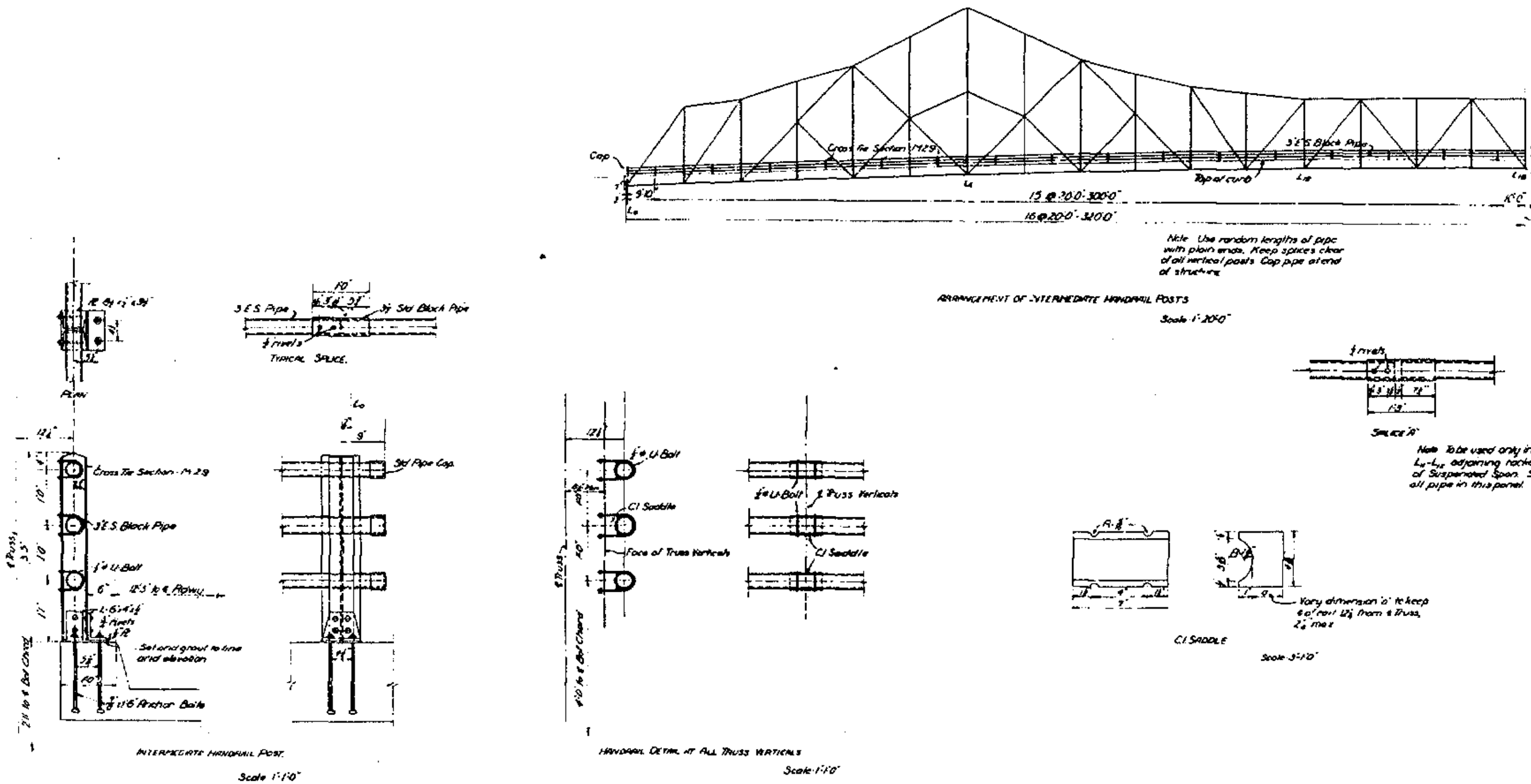
404

BALD KNOB



PLAN

49

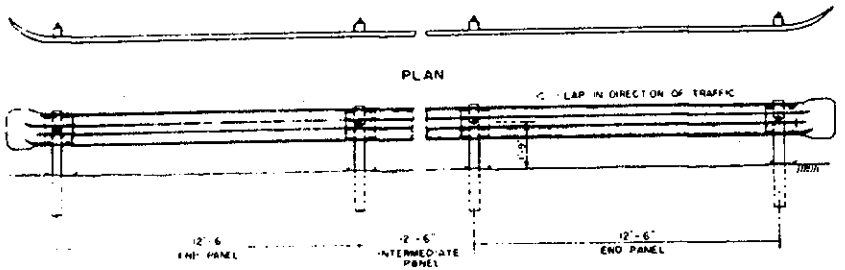


ARKANSAS STATE HIGHWAY COMMISSION
BRIDGES OVER WHITE RIVER
NEAR
AUGUSTA & NEWPORT, ARKANSAS

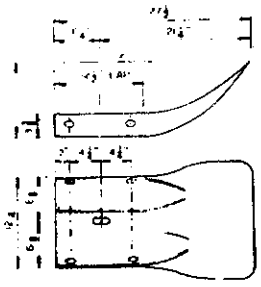
HANDRAIL DETAILS

IRA G. HEDRICK, INC.
CONSULTING ENGINEER
HOT SPRINGS, ARKANSAS

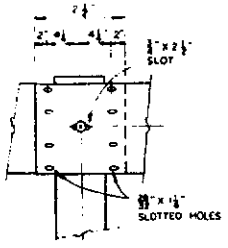
Drwg. No. 49



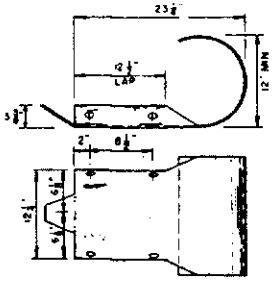
ELEVATION



TERMINAL SECTION

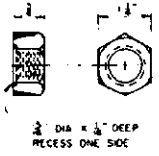


RAIL SPLICE

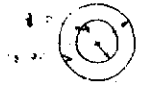


TERMINAL SECTION

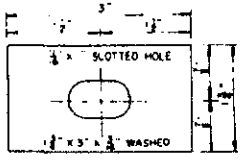
SPLICE BOLT



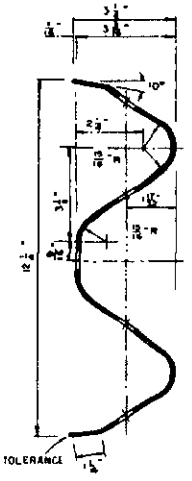
NUT



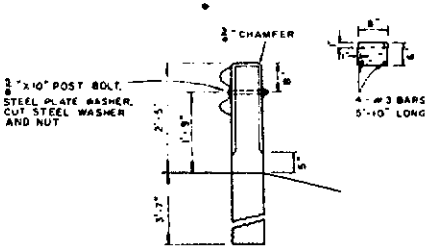
CUT STEEL WASHER



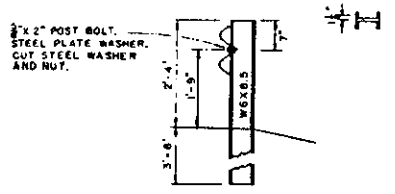
STEEL PLATE WASHER FOR POST BOLT



SECTION THRU RAIL

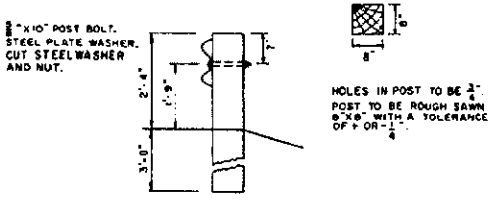


CONCRETE POST



BOLT TO BE ON SIDE AWAY FROM APPROACHING TRAFFIC WHERE FEASIBLE.

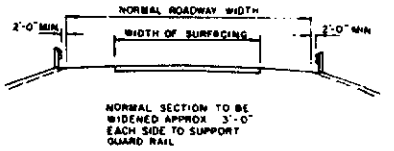
STEEL POST



WOOD POSTS SHALL BE EITHER NO. 1 STRUCTURAL 1350f (PIR) OR NO. 1 SR 1350f (PINE).

WOOD POST

DETAILS OF POST CONNECTIONS



DETAIL SHOWING POSITION OF GUARD RAIL ON HIGHWAY

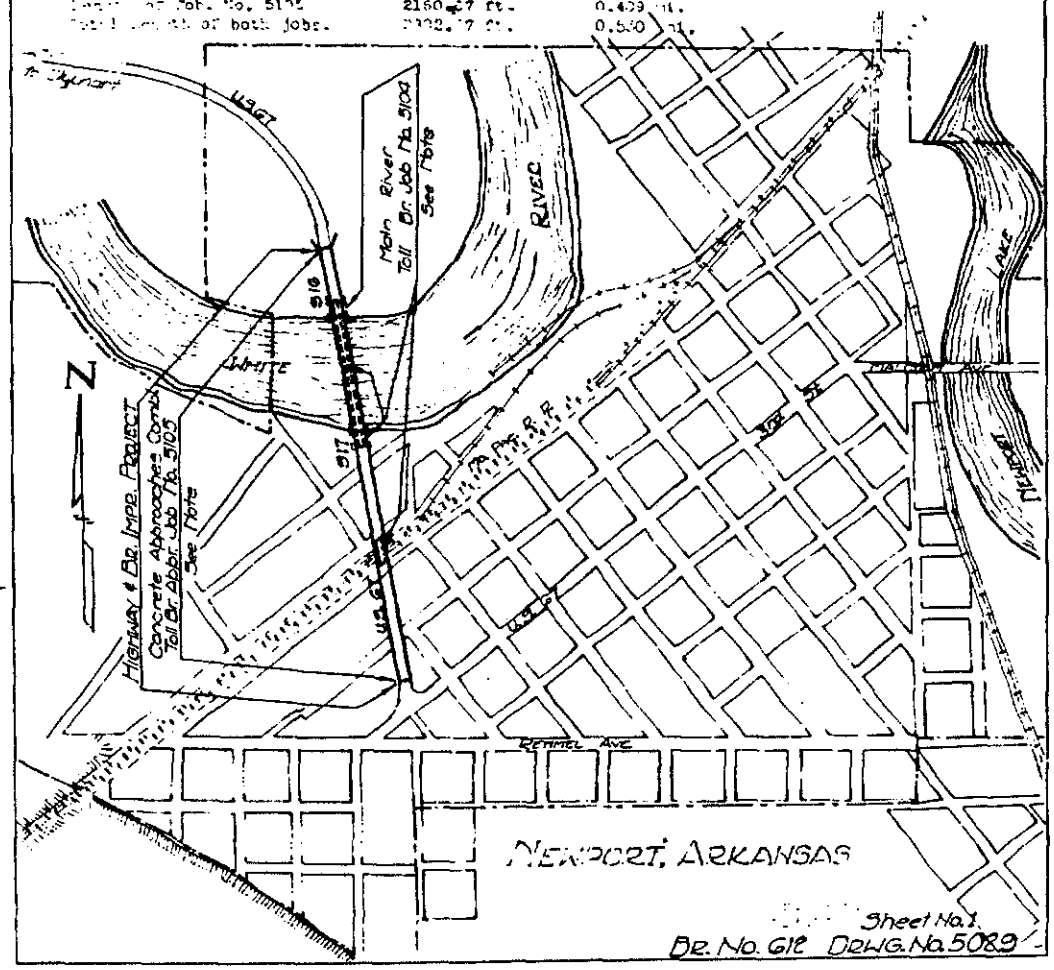
DATE	REVISION	DATE FILMED
1-4-63	GRADE FOR WOOD POSTS	
10-1-71	HARDENED WASHER	
10-2-72	REVISED & REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS
STREET / ROAD BARRICADE OR TEMPORARY INSTALLATION

STANDARD DRAWING
GR-7

36



HAER NO. AR-12 Page 36 37