Historical and Photographic Documentation of the St. John's Creek Bridge

Bridge N0141
Franklin County, Route YY

Missouri Department of Transportation

HISTORIC DOCUMENTATION
BRIDGE N0141

Location: Franklin County, Route YY approximately one mile east of Clover Bottom and three miles west of the junction with Route A.

Construction Dates: Trusses originally constructed in 1921 over Dardenne Creek in St. Charles County removed 1953 and relocated in 1957 to St. John's Creek, Franklin County.

Present Owner: Missouri Department of Transportation (MoDOT), Jefferson City, Missouri

Present Use: Highway Bridge to be removed and replaced by MoDOT Job Number J6S2320.

Significance: Bridge N0141 is eligible for listing on the National Register of Historic Places under criterion A for significance in transportation as a bridge that is directly related to two significant eras in the development of the state highway system—the development of the system following the passage of the Centennial Road Law in 1921 and the expansion of the system to include the supplementary system in 1952. It shows how the highway department transitioned to the supplementary system bridges that were still structurally sound, but not sufficient to carry the traffic of the primary system. The bridge is also eligible for listing under criterion C for local significance in engineering. Of the eight-three pony truss bridges on the state highway system (all constructed to 1962), it is the only extant example that features two different truss types—the warren and Pratt truss subtypes of the pony truss. There are other multi-span examples of pony trusses, but they all utilize the same truss type for all the spans, therefore this example is quite unusual.

Historian: Karen L. Daniels, Historic Preservation Section, Design Division, Missouri Department of Transportation, May 2015.

MISSOURI STATE HISTORIC PRESERVATION OFFICE

BRIDGE INVENTORY SURVEY FORM

1 No. N0141

2 County Franklin

3 Location of Negatives/CDs Missouri Department of Transportation

4 Type of Bridge Metal Truss X; Covered Wooden Truss; Stone; Concrete; Other

5 Present Name(s) St. John's Creek Bridge

6 Other Name(s)

7 Specific Legal Location
- Township 43N
- Range 2W
- Section 1
- Route YY

If City or Town, Street Address

8 City or Town. If Rural, Vicinity 7.1 Miles NW of Union

9 Description of Location: Rural Franklin County, over St. John's Creek

10 Coordinates UTM zone 15
- Lat 38.49928 N 4262927.46
- Long -91.0981 E 665846.55

11 On National Register? No

12 Is It Eligible

13 Part of Estab. Hist. Dist.? No

14 District Potential? No

15 Name of Established Dist. N/A

16 Date(s) 1957

17 Builder George R. Lemmon, Kirkwood, Mo.

18 Truss Design and/or Structural Design: 50-80-50 pony trusses; Pratt, Warran with all verticals, Pratt

Skew 46

19 No. of Spans 3

20 No. of Roadways 1

21 No. of Walkways 0

22 Length
- Overall 187'
- Clear Span

Width
- Overall 21'
- Roadway 20'

Height N/A

23 Abutment and Pier Material: timber pile abutment with concrete cap; concrete pile bents with concrete cap

Deck Material: Concrete

24 Owner's Name and Address: Missouri Highway & Transportation Commission, P. O. Box 270, Jefferson City, MO 65102

25 Original Site? No
Dardenne Creek, Rt 40, St. Charles Co.
Moved? Yes
When Moved? 1957

26 Legal Load Condition: 20 Tons

27 Preservation Underway? No

28 Endangered? Yes
By What Replacement

29 Other Surveys in which included: N/A

30 History and Significance: See Continuation Sheet

31 Description of Environment: See Continuation Sheet

32 Sources of Information: See Continuation Sheet

33 Prepared By: Karen Daniels

34 Organization: MoDOT

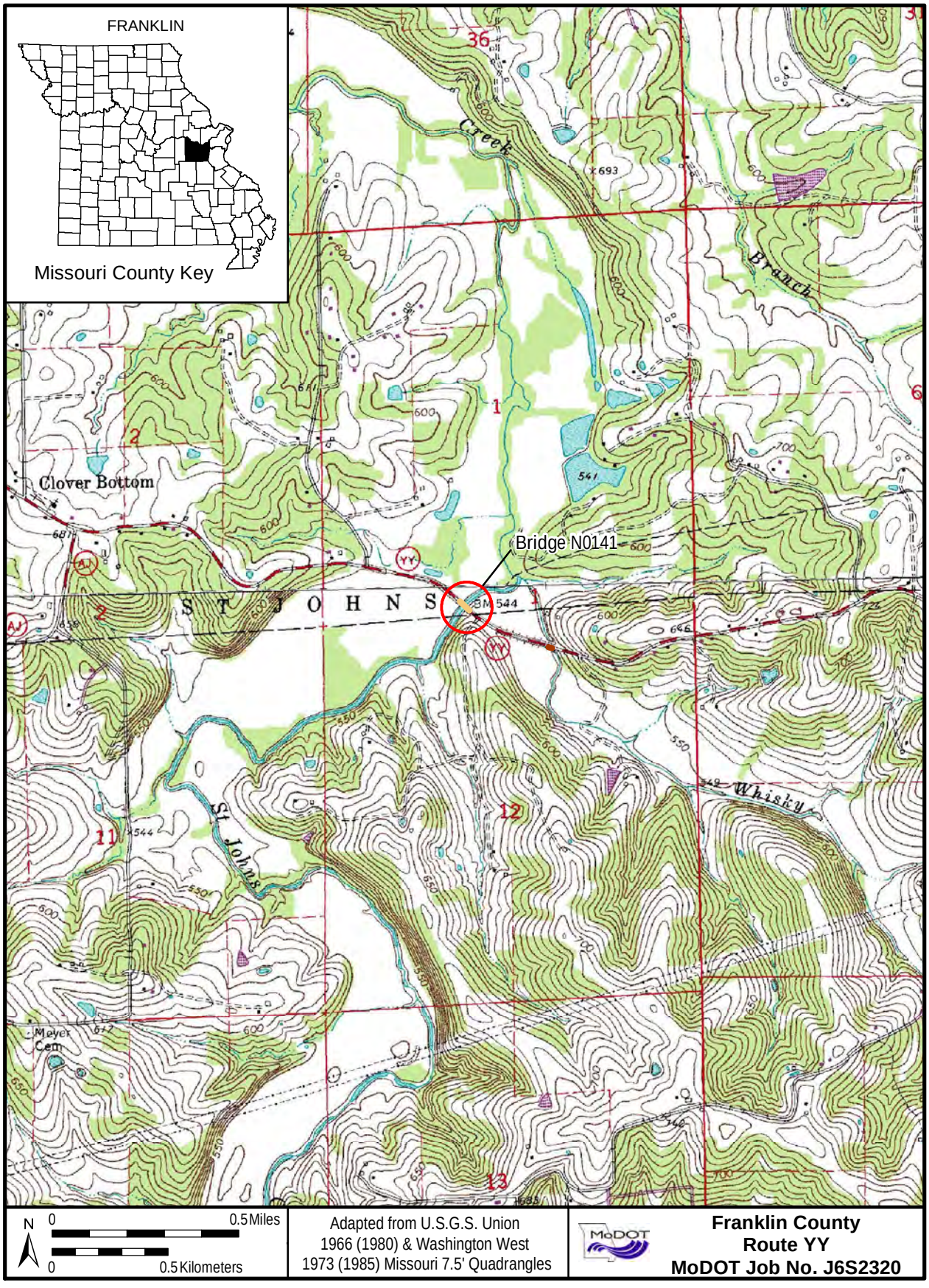
Note: A copy of a topo map of the bridge vicinity and photos of the bridge and surroundings should be included.

RETURN THIS FORM WHEN COMPLETED TO:

STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-7860

35 Date: Mar-15

Revision Date(s)


FRANKLIN
Missouri County Key
Bridge N0141
Clover Bottom
S T J O H N S
St. Johns
Whisky
Branch
Creek
Meyer Cem
N
0
0.5 Miles
0
0.5 Kilometers
Adapted from U.S.G.S. Union
1966 (1980) & Washington West
1973 (1985) Missouri 7.5' Quadrangles
MoDOT
Franklin County
Route YY
MoDOT Job No. J6S2320

30. History and Significance:

The St. John's Creek Bridge was originally constructed on Route 2 (later Highway 40) over Dardenne Creek following the passage of the Centennial Road Law (1921) using state bond funds. The project (2-71) was awarded on December 30, 1922 as were two adjacent sections of Route 2. The S. M. Timberlake Company of Indianapolis, Indiana was awarded all three projects.[1]

The General Elevation from the bridge plan shows the configuration of G336. It had two fifty foot Pratt pony trusses which were identical to each other, and an 80 foot Warren pony truss with all verticals over the channel.

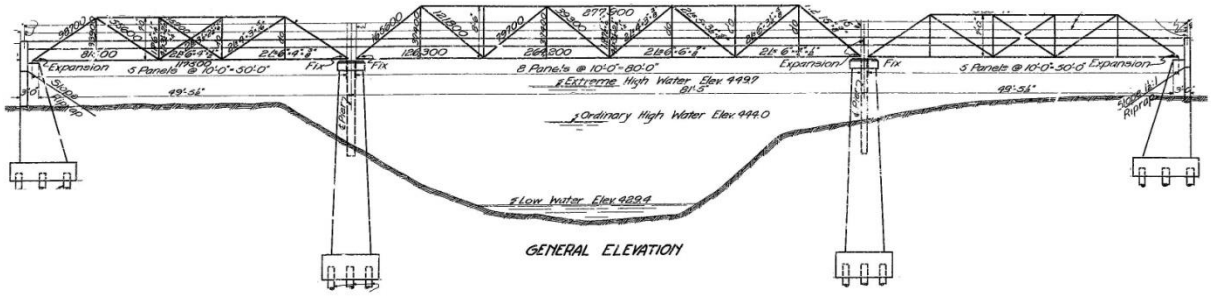


Figure 1: General Elevation of Bridge G336 in 1922[2]

The bridge was located at a curve on Highway 2 as the highway veered north between St. Peters and O'Fallon. The topographic map below shows the highway between these two communities and has the bridge highlighted.

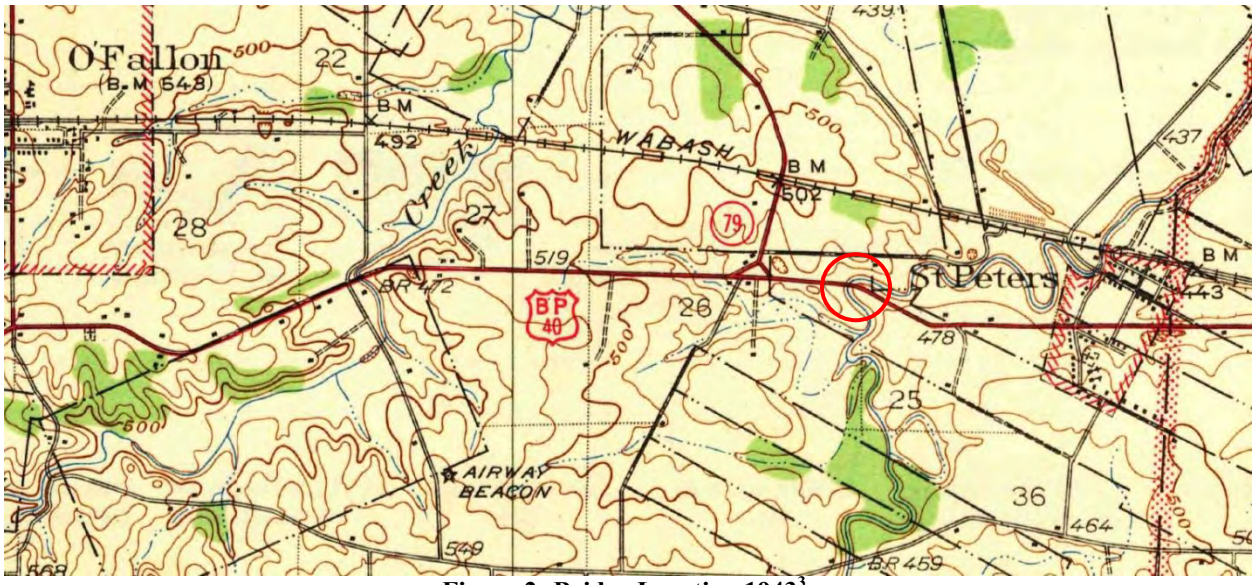


Figure 2: Bridge Location 1943[3]

[1] Missouri State Highway Commission, "Minutes of the State Highway Commission Meeting, December 30, 1922," as held by the Commission Secretary, Missouri Highway and Transportation Commission, Jefferson City, Missouri.
[2] Missouri State Highway Commission, Plans, Bridge G336, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

The bridge remained in place until the section of Highway 40 it was located on was realigned and widened in the early 1950s. The location sketch detail for the new bridge shows the relationship between the existing bridge and the planned bridge.

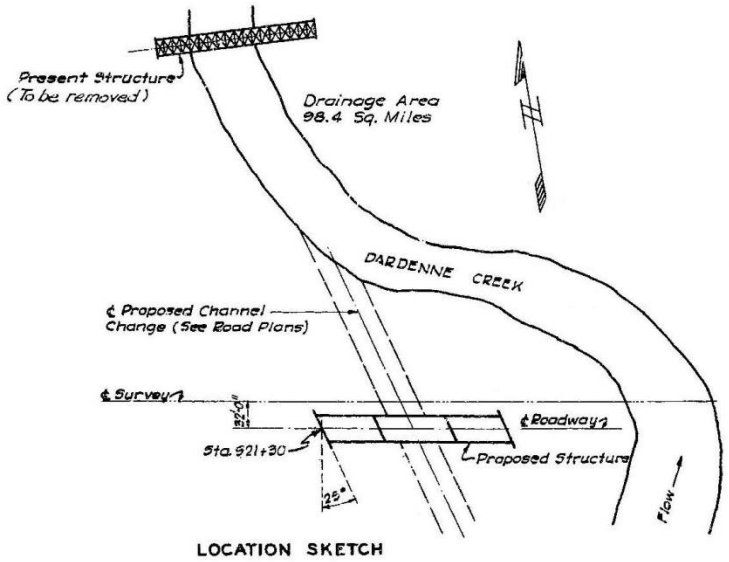


Figure 3: Location sketch for Bridge G336R[4]

Planning began in 1950 for the project. It was noted that the existing bridge would need to be removed, but its fate was not immediately determined—fluctuating between being questionable and reuse. The bridge abutments would be removed to the normal channel section.[5]

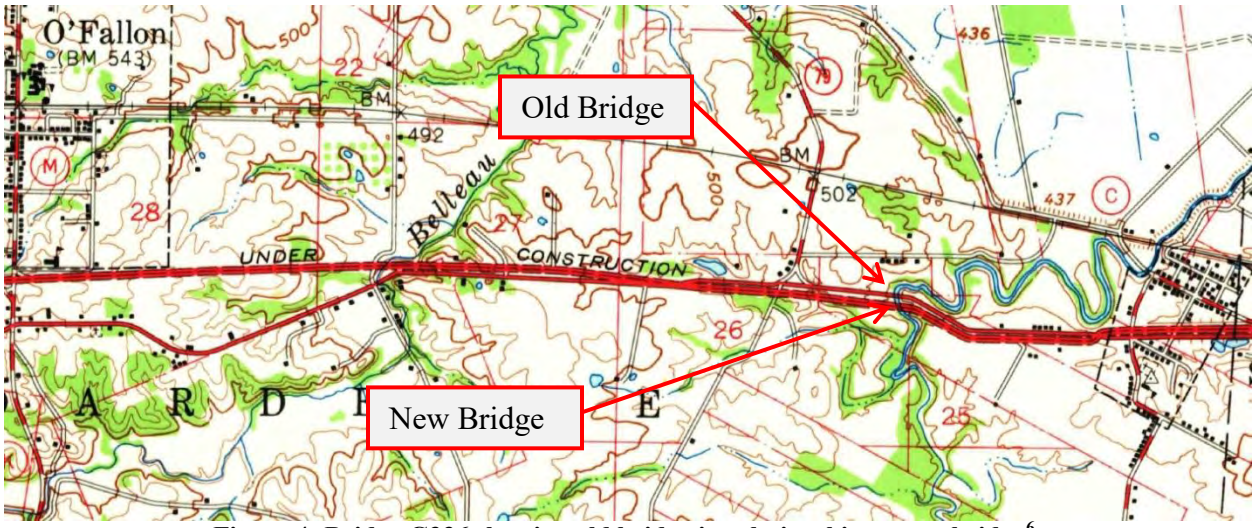


Figure 4: Bridge G336 showing old bridge in relationship to new bridge[6]

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[3] United States Geological Survey, Brussels, Missouri-Illinois Quadrangle, 15-minute topographic series, Denver, CO: United States Geological Survey, 1943; accessed on-line (http://store.usgs.gov: accessed 15 March 2015).
[44] Missouri State Highway Commission, Bridge G336R, Plans, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[5] "Field Check Memorandum," (draft) 1950, Correspondence File, Bridge G0336R, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

It was decided to redeem the old truss[7] and that it would be stored at the Wentzville Maintenance Facility until needed in the future.[8]

Porter-DeWitt of Poplar Bluff, Missouri received notice to proceed with construction of the new bridge on May 18, 1953.[9] The old bridge would remain in place until construction was complete.[10] Construction of the new bridge, including removal of the old bridge, was completed on October 5, 1954.[11]

In 1952 the Missouri State Highway Department took 12,000 miles of county highways into the state highway system, with the goal of improving them to hard surfaced road so that all Missourians would be within two miles of a hard surfaced road.[12] In exchange for taking over these roadways, the Department received an increase in the fuel tax from two cents per gallon to three cents per gallon.[13]

During the biennial period in which bridge N0141 was constructed, the State Highway Department Bridge Division designed 655 bridges, including 260 for the major highways and 395 for the supplementary system. In addition, they designed and contracted for the extension or widening of 31 additional bridges.[14]

A field check for bridges and culverts on Route YY in Franklin County was conducted on December 5, 1955. The project would require three culverts and a bridge across St. John's Creek. Rather than build a new bridge, it was planned to reuse bridge G336 which was sitting at the Wentzville Maintenance lot.[15]

The design layout for the St. John's Creek crossing noted that one of the "batter posts" on G336 was damaged and would need to be repaired. At the new location, the bridge would have a 50-80--50 configuration. The substructure would have creosote timber piles with concrete cap abutments and two concrete bents.[16]

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[6] United States Geological Survey, Brussels, Missouri-Illinois Quadrangle, 15-minute topographic series, Denver, CO: United States Geological Survey, 1954; accessed on-line (http://store.usgs.gov: accessed 15 March 2015).
[7] "Field Check Memorandum," (final) 1950, Correspondence File, Bridge G0336R, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[8] Missouri State Highway Commission, Bridge N0141, Plans, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[9] "Notice to Proceed," Construction File, Bridge G033R, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[10] "Field Check Memorandum," (final) 1950, Correspondence File, Bridge G0336R, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[11] Corbett, J. W., Intra-Department Memorandum, 15 October 1954, Construction File, Bridge G0336R, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[12] Missouri State Highway Commission, *Eighteenth Biennial Report of the State Highway Commission of Missouri for the Period July 1, 1950 to June 30, 1952*, no publisher, 1952: pp. 21-22.
[13] Ibid.
[14] Missouri State Highway Commission, *Twenty-First Biennial Report of the State Highway Commission of Missouri For the Period July 1, 1956 to June 30, 1958*, no publisher, 1958: p. 57.
[15] "Field Check Memorandum," (final), 5 December 1955, Correspondence File, Bridge N0141, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.
[16] "Design Layout," 23 January 1956, Correspondence File, Bridge N0141, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

Despite having a different substructure configuration, the superstructure of the bridge is identical to the way it was configured at Dardenne Creek, as shown on page 1 of the attached plans for Bridge N0141.

Bridge N0141 is a 1922 three span pony truss bridge re-erected in 1957. The bridge has a total length of 187 feet and is configured of two 50' five-panel Pratt pony truss spans and an 80' eight-panel Warren pony truss span with all verticals. The bridge has a 46 degree skew. The configuration of the pony trusses is shown on the accompanying plan sheets and photo plates.

The pony trusses are constructed of built up steel members with a concrete deck with asphalt surface (shown on plates 1, 2, 13 and 14). The bridge has timber abutments with concrete caps (shown on plate 18) and concrete wing walls and two concrete pile piers (shown on plates 15, 16 and 20).

31. Description of Environment:
Bridge N0141 is located in rural Franklin County, on Route YY between Krakow and Clover Bottom. It is surrounded by farmland.

32. Sources:
Missouri State Highway Commission, Bridge G0336R, Plans, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

Missouri State Highway Commission, Bridge N0141, Plans, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

Missouri State Highway Commission, *Eighteenth Biennial Report of the State Highway Commission of Missouri For the Period July 1, 1950 to June 30, 1952,* no publisher, 1952.

Missouri State Highway Commission, Minutes, various dates, as held by the Secretary to the Commission, Jefferson City, Missouri.

Missouri State Highway Commission, *Twenty-First Biennial Report of the State Highway Commission of Missouri For the Period July 1, 1956 to June 30, 1958*, no publisher, 1958.

Missouri Department of Transportation, Bridge G0336R, Correspondence & Construction files, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

Missouri Department of Transportation, Bridge N0141, Correspondence & Construction files, Bridge Division, Missouri Department of Transportation, Jefferson City, Missouri.

United States Geological Survey, Brussels, *Missouri-Illinois Quadrangle* 15-minute topographic map series, Denver, CO: United State Geological Survey, 1943; accessed online, (downloaded from http://store.usgs.gov, accessed 13 March 2015).

United States Geological Survey, *Brussels, Missouri-Illinois Quadrangle* 15-minute topographic map series, Denver, CO: United State Geological Survey, 1954; accessed online, (downloaded from http://store.usgs.gov, accessed 13 March 2015).

Photo Index

St. John's Creek Bridge, N0141
Franklin County, Missouri

Photographer: Rachel Campbell
Date: 26 March 2015

Digital images (.tiff format) provided to the Missouri State Historic Preservation Office and retained by the Missouri Department of Transportation.

#1 of 24
St. John's Creek Bridge, N0141, facing southeast, approaches and pony truss spans

#2 of 24
St. John's Creek Bridge, N0141, facing southeast, pony truss spans

#3 of 24
St. John's Creek Bridge, N0141, facing northeast, northeast trusses

#4 of 24
St. John's Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, northwest end of bridge, northeast truss

#5 of 24
St. John's Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, panels 1-3

#6 of 24
St. John's Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, panel 4

#7 of 24
St. John's Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, panels 5-7

#8 of 24
St. John's Creek Bridge, N0141, facing northeast, span 1, detail, gusset plate, inclined end post

#9 of 24
St. John's Creek Bridge, N0141, facing northeast, spans 2-3, northeast trusses

#10 of 24
St. John's Creek Bridge, N0141, facing northwest, spans 1-2, northeast trusses

#11 of 24
St. John's Creek Bridge, N0141, facing northeast, span 3, northeast truss

#12 of 24
St. John's Creek Bridge, N0141, facing northwest, northeast trusses

#13 of 24
St. John's Creek Bridge, N0141, facing northwest, deck and trusses

#14 of 24
St. John's Creek Bridge, N0141, facing northwest, approaches and pony trusses

#15 of 24
St. John's Creek Bridge, N0141, facing north, overview of bridge

#16 of 24
St. John's Creek Bridge, N0141, facing north, span 3, southwest truss

#17 of 24
St. John's Creek Bridge, N0141, facing northeast, span 3, panel 3

#18 of 24
St. John's Creek Bridge, N0141, facing southeast, southeast abutment

#19 of 24
St. John's Creek Bridge, N0141, facing northwest, span 3 bottom chord

#20 of 24
St. John's Creek Bridge, N0141, facing north, span 2 bottom chord, pier 2

#21 of 24
St. John's Creek Bridge, N0141, facing northeast, overview of bridge

#22 of 24
St. John's Creek Bridge, N0141, facing southwest, overview of bridge

#23 of 24
St. John's Creek Bridge, N0141, facing northeast, overview of bridge

#24 of 24
St. John's Creek Bridge, N0141, facing northeast, span 1, southwest truss

Photographic Methods and Processing

The archival photographs accompanying this documentation were taken and processed according to the standards for photographs accompanying National Register of Historic Places documentation.[1] Rachel Campbell took the photographs on March 26, 2015 using a Canon G10

[1] National Register of Historic Places, "National Register Photo Policy Factsheet updated 5/15/2013," National Park Service Web-site (http://www.nps.gov/history/nr/bulletins/photopolicy/index.htm: accessed 01 August 2013).

digital camera. Images were captured in a raw (cr2) format, which was manipulated for light contrast before being converted to a .tiff and printed. The State Historic Preservation Office (SHPO) was consulted about the selection of photographs by e-mail on March 27, 2015, and the SHPO approved the selection of the images on March 30, 2015.

Prints were made on Epson Premium Glossy Photo Paper and used Epson Matte Black Ultra Chrome K3 Ink, both identified as "best" practices by the National Register photo policy[2], and which Epson identifies as having 85-year permanence under glass.[3] Kept in archival conditions the materials will exceed the 75 year permanence standard for the National Register, which is the standard being used for this project.

All images were numbered according to the National Register Photographic Imaging Policy[4] and burned onto a Delkin Archival Gold compact disc, which was provided to the State Historic Preservation Office along with this report. A copy of the photographs and .tiff images on an archival compact disc will also be maintained by the MoDOT Historic Preservation Section.

Sources

Epson. "Permanence ratings from Wilhelm Imaging Research." Downloaded 30 April 2009 from www.epson.com/pdf/LightfastCPD_15334R2.pdf.

National Register of Historic Places. "National Register Photo Policy Factsheet updated 5/15/2013." Downloaded 01 August 2013 from the National Park Service Web-site: http://www.nps.gov/history/nr/publications/bulletins/photopolicy/index.htm.

[2] National Register of Historic Places.

[3] Epson, "Permanence ratings from Wilhelm Imaging Research." Downloaded 30 April 2009 from www.epson.com/pdf/LightfastCPD_15334R2.pdf.

[4] National Register of Historic Places.

1 of 24. St. John’s Creek Bridge, N0141, facing southeast, approaches and pony truss spans

2 of 24. St. John’s Creek Bridge, N0141, facing southeast, pony truss spans

3 of 24. St. John’s Creek Bridge, N0141, facing northeast, northeast trusses

4 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, northwest end of bridge, northeast truss

5 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, panels 1-3

6 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, panel 4

7 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 1, Pratt pony truss, panels 5-7

8 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 1, detail, gusset plate, inclined end post

9 of 24. St. John’s Creek Bridge, N0141, facing northeast, spans 2-3, northeast trusses

10 of 24. St. John’s Creek Bridge, N0141, facing northwest, spans 1-2, northeast trusses

11 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 3, northeast truss

12 of 24. St. John’s Creek Bridge, N0141, facing northwest, northeast trusses

13 of 24. St. John’s Creek Bridge, N0141, facing northwest, deck and trusses

14 of 24. St. John's Creek Bridge, N0141, facing northwest, approaches and pony trusses

15 of 24. St. John’s Creek Bridge, N0141, facing north, overview of bridge

16 of 24. St. John’s Creek Bridge, N0141, facing north, span 3, southwest truss

17 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 3, panel 3

18 of 24. St. John’s Creek Bridge, N0141, facing southeast, southeast abutment

19 of 24. St. John’s Creek Bridge, N0141, facing northwest, span 3 bottom chord

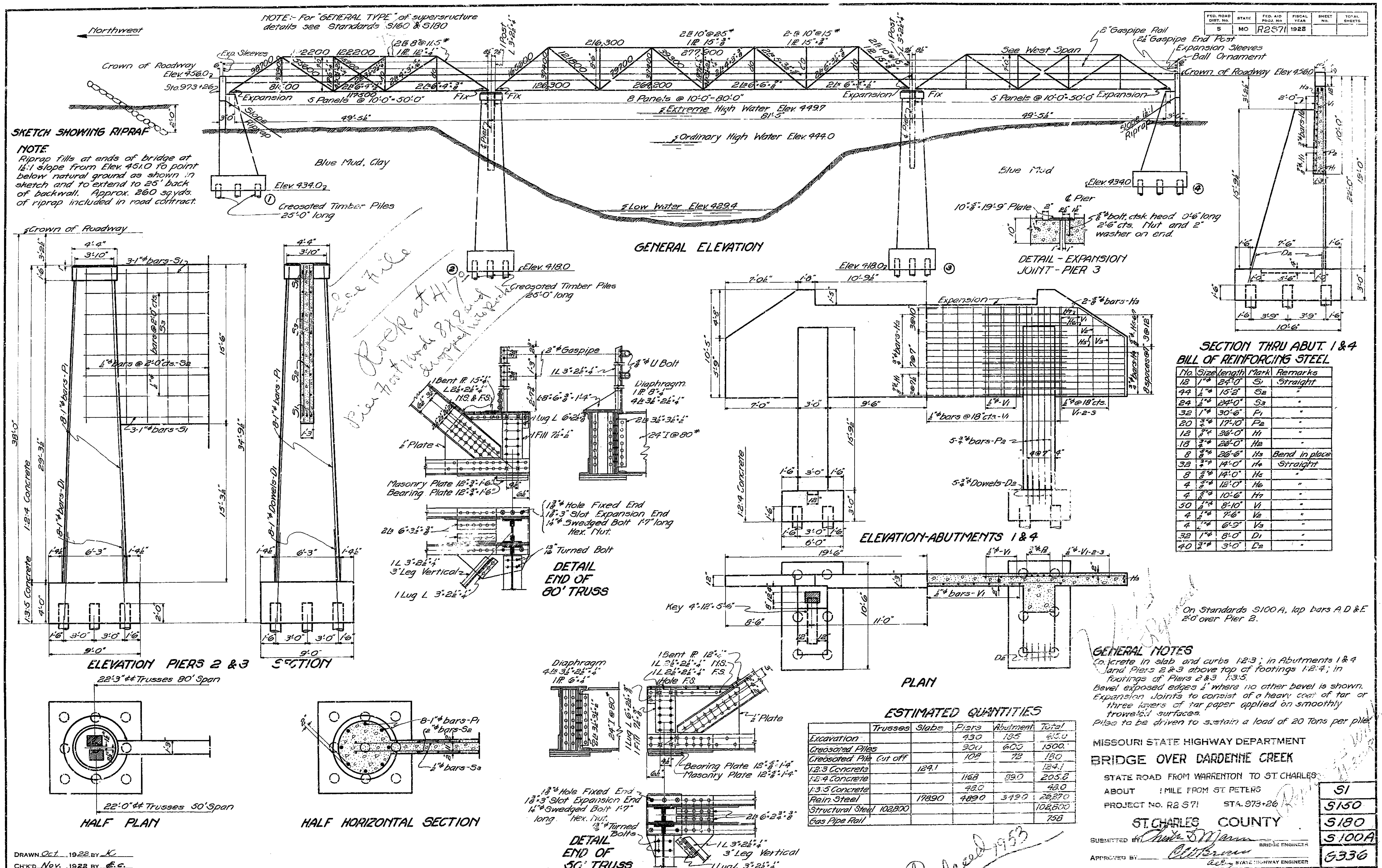
20 of 24. St. John’s Creek Bridge, N0141, facing north, span 2 bottom chord, pier 2

21 of 24. St. John's Creek Bridge, N0141, facing northeast, overview of bridge

22 of 24. St. John’s Creek Bridge, N0141, facing southwest, overview of bridge

23 of 24. St. John’s Creek Bridge, N0141, facing northeast, overview of bridge

24 of 24. St. John’s Creek Bridge, N0141, facing northeast, span 1, southwest truss



BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Remarks
12	1"φ	24'-0"	S_1	Straight
44	½"φ	15'-2"	S_2	"
24	½"φ	24'-0"	S_3	"
32	1"φ	30'-6"	P_1	"
20	¾"φ	17'-10"	P_2	"
12	⅞"φ	26'-0"	H_1	"
18	¾"φ	26'-0"	H_2	"
8	⅝"φ	26'-6"	H_3	Bend in place
32	¾"φ	14'-0"	H_4	Straight
8	⅝"φ	14'-0"	H_5	"
4	⅝"φ	12'-0"	H_6	"
4	⅝"φ	10'-6"	H_7	"
50	½"φ	8'-10"	V_1	"
4	½"φ	7'-6"	V_2	"
4	½"φ	6'-9"	V_3	"
32	1"φ	8'-0"	D_1	"
40	¾"φ	3'-0"	D_2	"

ESTIMATED QUANTITIES

	Trusses	Slabs	Piers	Abutment	Total
Excavation			430	185	615.0
Creosoted Piles			900	600	1500.
Creosoted Pile Cut off			108	72	180
1:2:3 Concrete		124.1			124.1
1:2:4 Concrete			116.8	89.0	205.8
1:3:5 Concrete			48.0		48.0
Rein. Steel		17890	4890	3490	26,270
Structural Steel	102,800				102,800
Gas Pipe Rail					758

GENERAL NOTES

Concrete in slab and curbs 1:2:3; in Abutments 1 & 4 and Piers 2 & 3 above top of footings 1:2:4; in footings of Piers 2 & 3 1:3:5.
Bevel exposed edges ½" where no other bevel is shown.
Expansion Joints to consist of a heavy coat of tar or three layers of tar paper applied on smoothly troweled surfaces.
Piles to be driven to sustain a load of 20 Tons per pile.

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	MO	R2S71	1922		

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER DARDENNE CREEK

STATE ROAD FROM WARRENTON TO ST. CHARLES
ABOUT 1 MILE FROM ST. PETERS
PROJECT NO. R2 S71 STA. 973+26
ST. CHARLES COUNTY

SUBMITTED BY ________ BRIDGE ENGINEER
APPROVED BY ________ Acting STATE HIGHWAY ENGINEER

S1
S150
S180
S100A
G336

DRAWN Oct. 1922 BY K.
CH'K'D Nov. 1922 BY E.C.

Replaced 1953

380

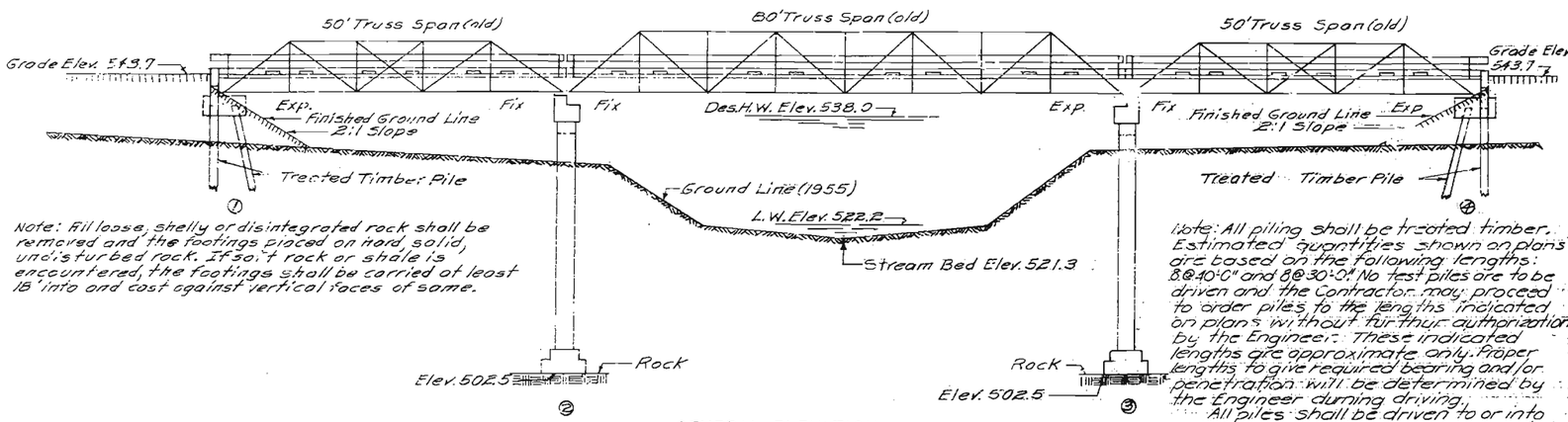
97-6

RUCKERT CO. ST. LOUIS

MISSOURI STATE HIGHWAY DEPARTMENT

Use 50'-80'-50' Truss Spans from Bridge G-336 stored at Wentzville, Mo. See Special Provisions.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1517(1) (SYY)	19	12	



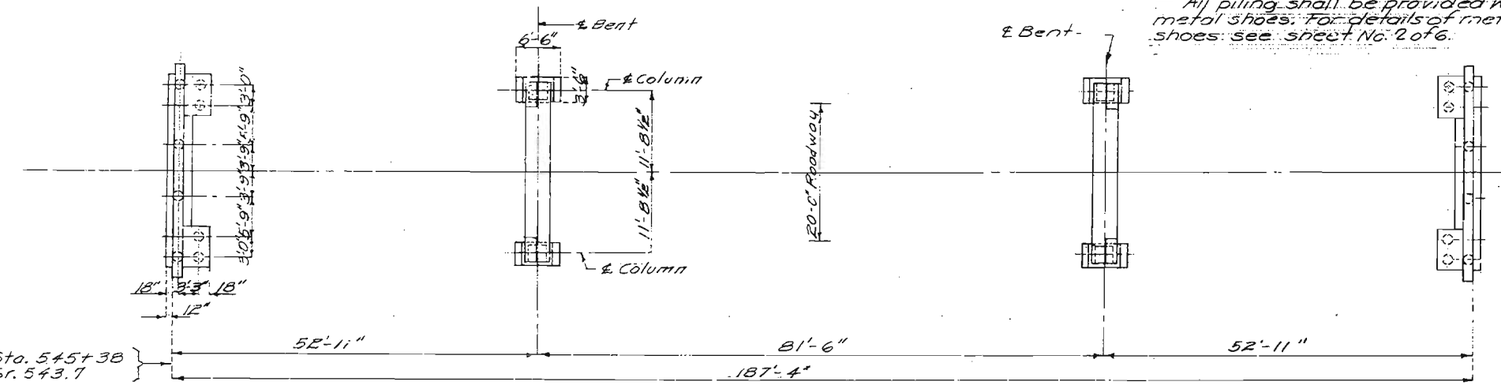
GENERAL ELEVATION

Note: Fill loose, shelly or disintegrated rock shall be removed and the footings placed on hard, solid, undisturbed rock. If so, if rock or shale is encountered, the footings shall be carried at least 18" into and cast against vertical faces of same.

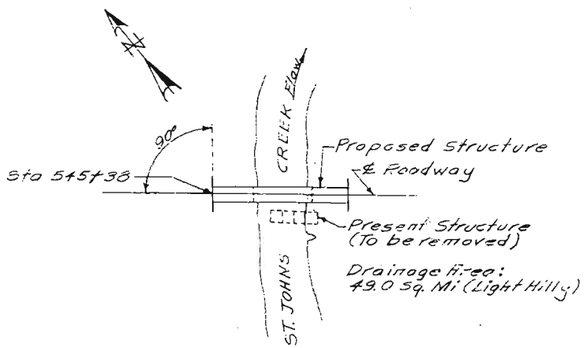
Note: All piling shall be treated timber. Estimated quantities shown on plans are based on the following lengths: 8@40'-0" and 8@30'-0". No test piles are to be driven and the Contractor may proceed to order piles to the lengths indicated on plans without further authorization by the Engineer. These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration will be determined by the Engineer during driving.

All piles shall be driven to or into solid rock, boulders, shale or cemented gravel; or to not less than full length authorized with a capacity of at least 20 ton per pile.

All piling shall be provided with metal shoes. For details of metal shoes see sheet No. 2 of 6.



PLAN



LOCATION SKETCH

GENERAL NOTES:

Design Specifications: A.A.S.H.O. 1953
Loading: H10-44
Structural Steel Stress: 18,000#/□"
Reinforcing Steel Stress: 18,000#/□"
Concrete Class "B" Stress 1,000#/□"
All concrete shall be Class "B."

Where joint filler is specified on plans it shall conform with the requirements for Premoulded Material for Filler as given in Section 59-220 of the Standard Specifications.

Field connections shall be made with high tensile steel bolts and corburized washers except for connections noted for handrail. The high tensile steel bolts shall be placed in such a manner that the nuts will always be in the least exposed position.

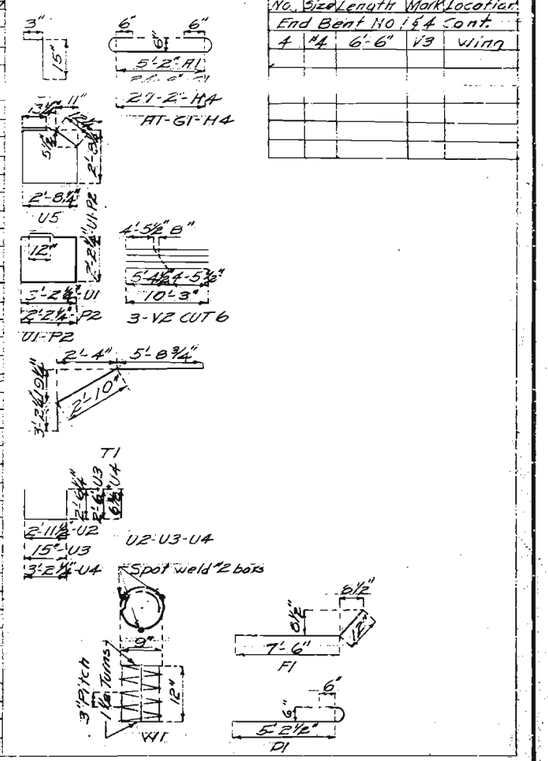
Qualifications of welding operators will be required.

Paint: Shop, none; Field, contact surfaces of bolted field connections, except where high tensile bolts are used, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for for fabricated structural steel. Red lead required shall be furnished by Contractor.

COMPLETE BILL OF REINFORCING STEEL

No	Size	Length	Mark	Location
		Superstructure		
356	#4	18"	C1	Curb
24	#6	9'-9"	C2	"
8	#6	10'-6"	C3	"
				"
269	#5	20'-9"	S1	Slab
78	#5	12'-9"	S2	"
74	#5	31'-9"	S3	"
116	#5	27'-3"	S4	"
78	#5	21'-9"	S5	"
87	#5	27'-9"	S6	"
74	#5	21'-9"	S7	"
78	#5	11'-6"	S8	"
		Int. Bents No 2 & 3		
32	#7	6'-6"	U1	Footing
8	#6	27'-3"	G1	Beam
12	#6	25'-6"	G2	"
8	#6	3'-6"	G3	"
52	#4	11'-9"	U1	"
16	#4	8'-0"	U2	Bm. Hitch
28	#4	6'-3"	U3	"
12	#4	4'-3"	U4	"
32	#7	33'-3"	P1	Column
120	#3	9'-9"	P2	"
16	#6	8'-6"	F1	Col. Hitch
8	#12	19'-9"	W1	Hitch Will
		End Bents No 1 & 4		
120	#6	7'-9"	H1	Brg. Cap
4	#6	21'-0"	H1	Bck Will
8	#6	6'-9"	H2	Wing
4	#4	21'-0"	H3	Bck Will
16	#6	29'-9"	H4	Bm.
4	#6	27'-9"	H5	"
24	#6	4'-3"	H6	Wing
8	#6	11'-9"	T1	"
30	#4	11'-3"	U5	Bm.
88	#4	3'-6"	V1	Bck Will
6	#4	10'-3"	V2	Wing

No.	Size	Length	Mark	Location
		End Bent No 1 & 4 Cont.		
4	#4	6'-6"	V3	Wing



ESTIMATED QUANTITIES

Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures Cu. Yds.	90		90
Class 2 Excavation for Structures Cu. Yds.	188		188
Repair, Haul and Erect Truss: Sears Lump Sum		1	1
Fabricated Structural Steel (New) Lbs.		8,420	8,420
Class "A" Concrete Cu. Yds.	904	974	1878
Reinforcing Steel Lbs.	8,160	20,410	28,570
Treated Timber Piles in Place Lin. Ft.	592		592
Treated Timber Pile Cut-offs Lin. Ft.	48		48

Note: Excavation for bridge mode above Elev. 523.0 will be paid for as Class 1 Excavation for Structures.

Excavation for bridge mode below Elev. 523.0 will be paid for as Class 2 Excavation for Structures.

Estimated quantities for Treated timber Piles in Place includes 5'-0" for each metal shoe specified.

B.M. #54 Elev. 534.24 Spike in N. Side 16" Walnut 22' Rt. Sta 547+28. (U.S.G.S. Datum)

BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. SC EAST TO RTE. 47 AT KRAKOW

ABOUT 7.1 MILES N.W. OF UNION

PROJECT NO. S-1517 (1) (SYY) STA. 545 + 38

FRANKLIN **COUNTY**

SUBMITTED BY J. A. Williams BRIDGE ENGINEER DATE 11-27-1956

APPROVED BY Ray M. Whittier CHIEF ENGINEER DATE 11-27-1956

STD-110R4

N-141

Drawn Feb 1956 by C.W.N.
Checked May 1956 by J.L.M.

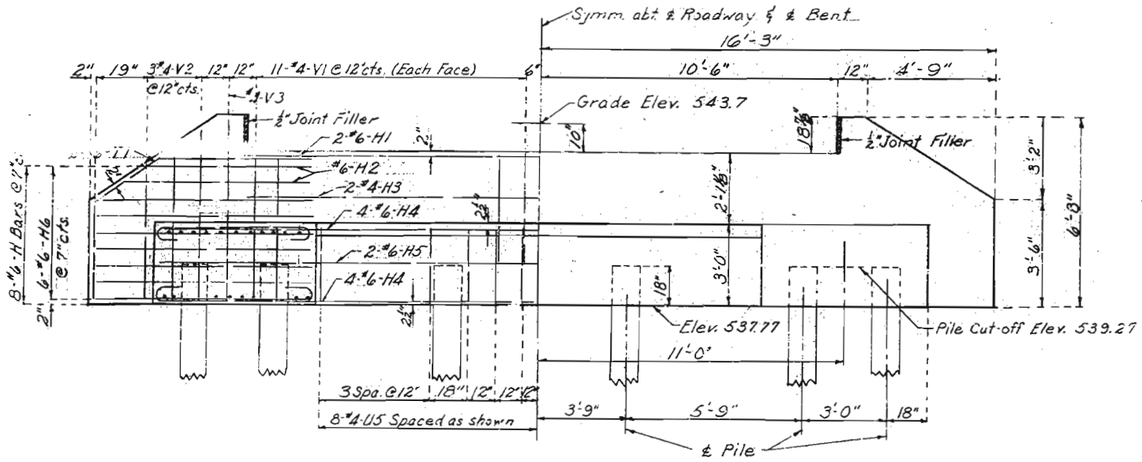
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 6.

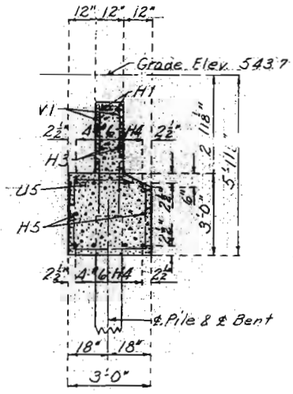
SEE FINAL PLANS BROWN-LINES

MISSOURI STATE HIGHWAY DEPARTMENT

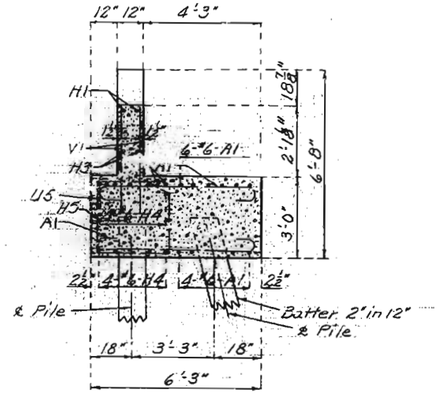
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	MO.	S-1517(1) (SYY)	19	13	



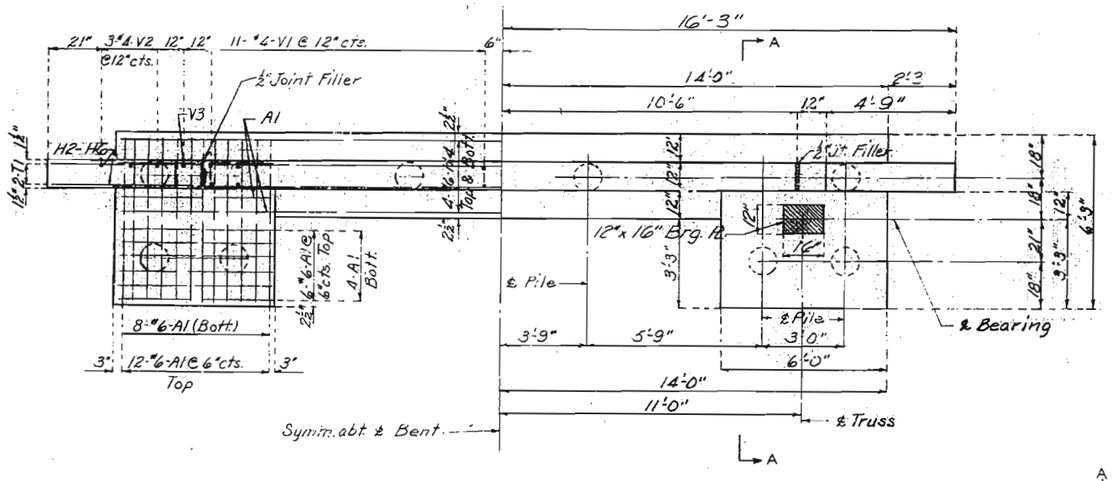
ELEVATION



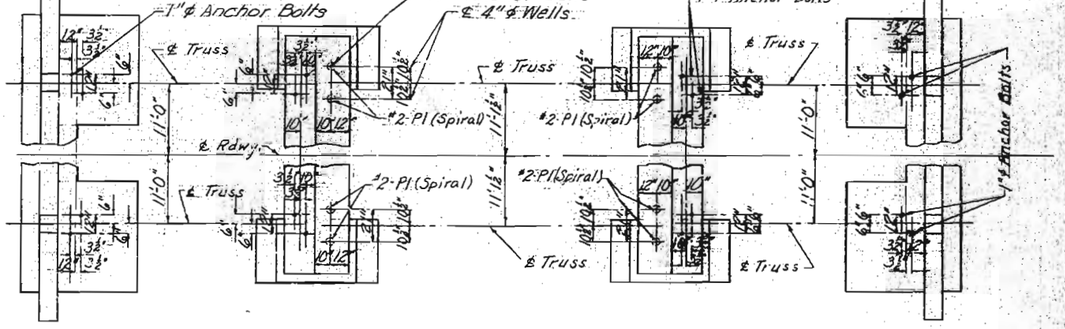
SECTION NEAR ℄



SECTION A-A



PLAN

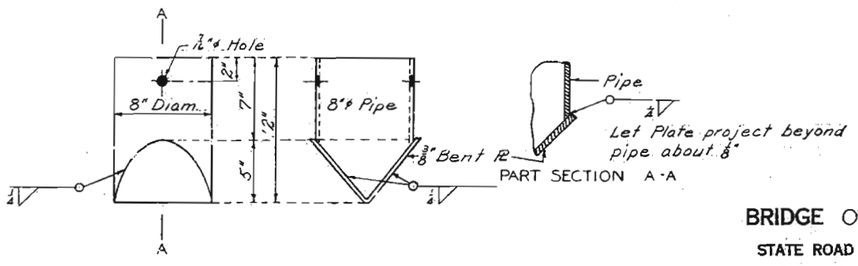


BENT NO. 1 BENT NO. 2 BENT NO. 3 BENT NO. 4

ANCHOR BOLT PLAN

Note: See Sheet No. 4 for details of Anchor Bolt Wells.

END BENTS NO. 1 & 4



DETAILS OF PILING SHOES

BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. SC EAST TO RTE. 47 AT KRAKOW

ABOUT 7.1 MILES N.W. OF UNION

PROJECT NO. S-1517 (1) (SYY) STA. 545 + 38

FRANKLIN **COUNTY**

N-141

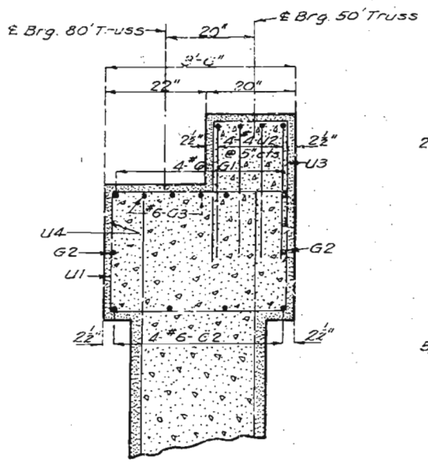
Drawn Feb. 1956 by A.J.K.
Checked May 1956 by J.D.M.

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

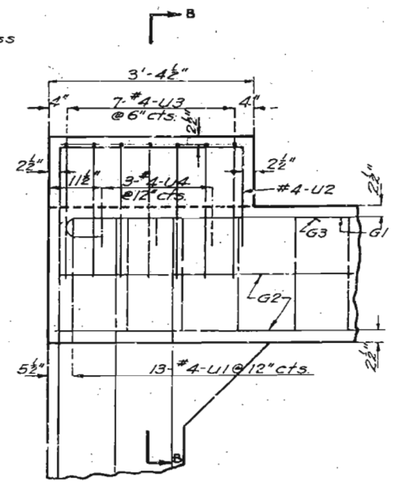
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

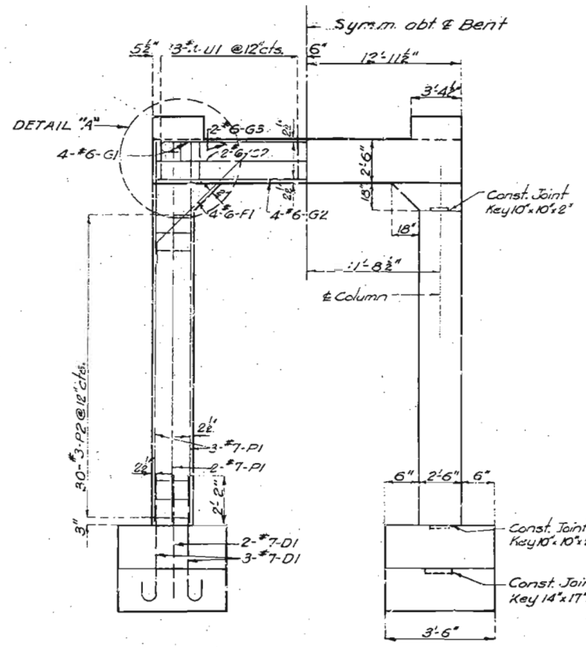
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1517(1) (SYY)	19	4	



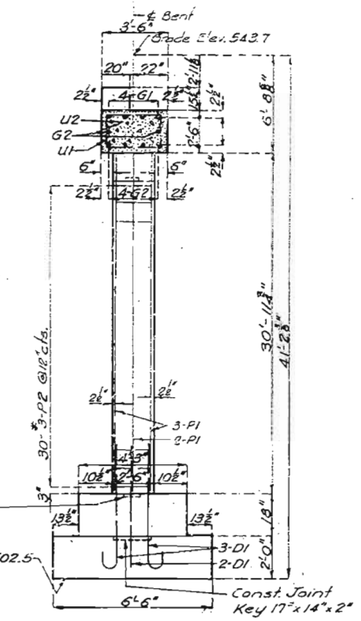
SECTION B-B



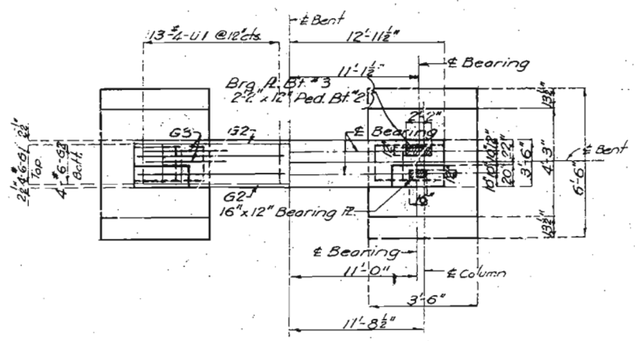
DETAIL "A" SHOWING REINFORCEMENT



ELEVATION



SECTION AT ℄



PLAN

DETAILS OF INT. BENT NO. 2 & NO. 3

BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. 8C EAST TO RTE. 47 AT KRAKOW
ABOUT 7.1 MILES N.W. OF UNION
PROJECT NO. S-1517(1) (SYY) STA. 545+38

FRANKLIN COUNTY

N-141

Assembled Feb. 1956 by C.W.M.-G.W.
Checked May 1956 by J.D.M.

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

Sheet No. 3 of 6.

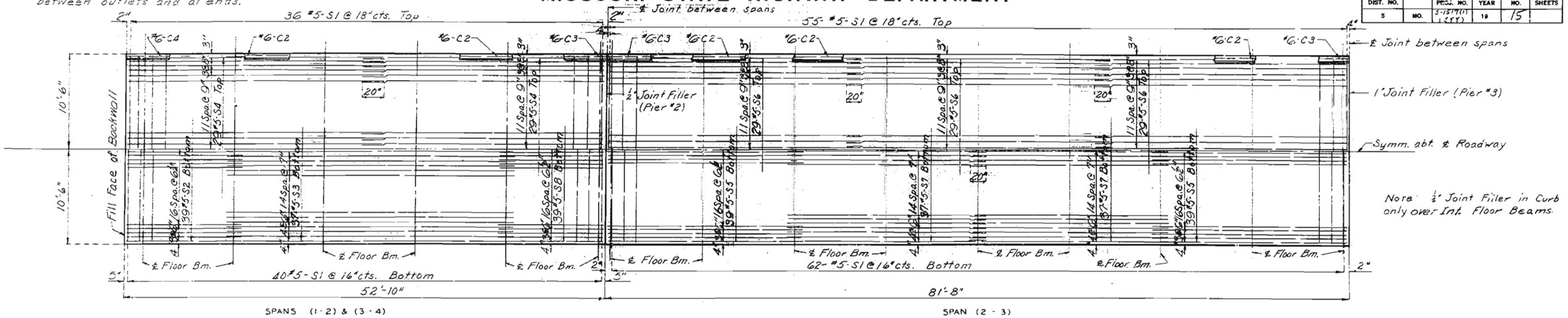
SEE FINAL PLANS BROWN-LINES

2 Col. Int. Square or Skewed

MISSOURI STATE HIGHWAY DEPARTMENT

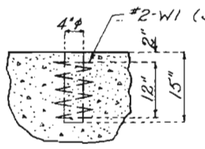
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1517(1) + (SYY)	19	15	

Note: Space #4-C1 bars in curbs at about 12" cts. between outlets and at ends.



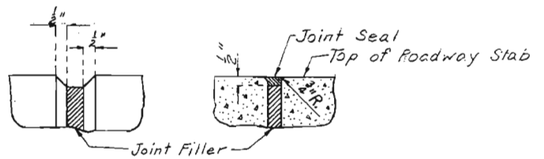
Note: ½" Joint Filler in Curb only over Int. Floor Beams.

PLAN OF SLAB SHOWING REINFORCEMENT



Note: Holes for all 1¼" ϕ anchor bolts shall be formed in substructure by placing and setting with template 4"ϕ wells of depth shown. Grout for wells shall contain Iron Oxide (Embeco or an approved equivalent.)

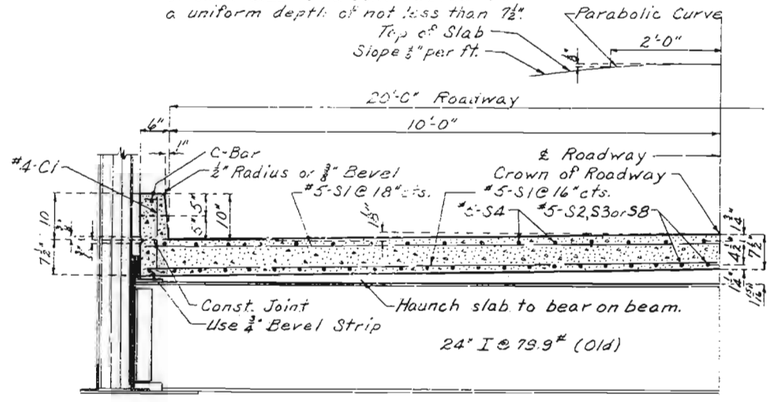
PART SECTION SHOWING ANCHOR BOLT WELL



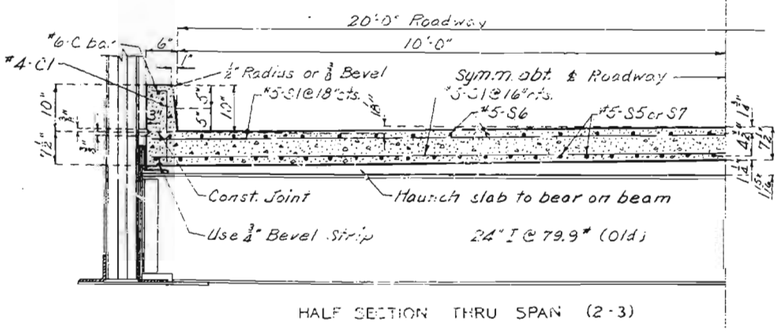
Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with ¾" radius at top surface of roadway slab each side of joint and fill flush with joint seal as shown.

DETAILS OF BEVEL FOR FILLED JOINTS

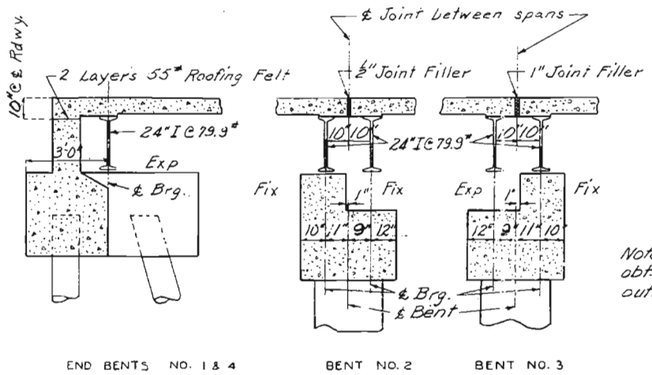
Note: Curb to be cast independently of slab. Slab to be constructed to a uniform depth of not less than 7½".



HALF SECTION THRU SPANS (1-2) & (3-4)

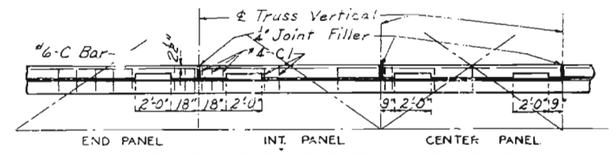


HALF SECTION THRU SPAN (2-3)

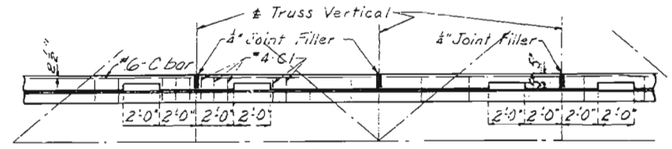


END BENTS NO. 1 & 4 BENT NO. 2 BENT NO. 3

PART LONGITUDINAL SECTION



TYPICAL CURB ELEVATION 50' TRUSS



TYPICAL CURB ELEVATION 80' TRUSS

Note: C1 bars @ abt. 12" cts. between outlets and at ends.

BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. SC EAST TO RTE. 47 AT KRAKOW

ABOUT 7.1 MILES N.W. OF UNION

PROJECT NO. S-1517(1) (SYY) **STA.** 545 + 38

FRANKLIN **COUNTY**

N-141

Drawn Feb. 1956 by A.J.K.
Checked May 1956 by J.D.M.

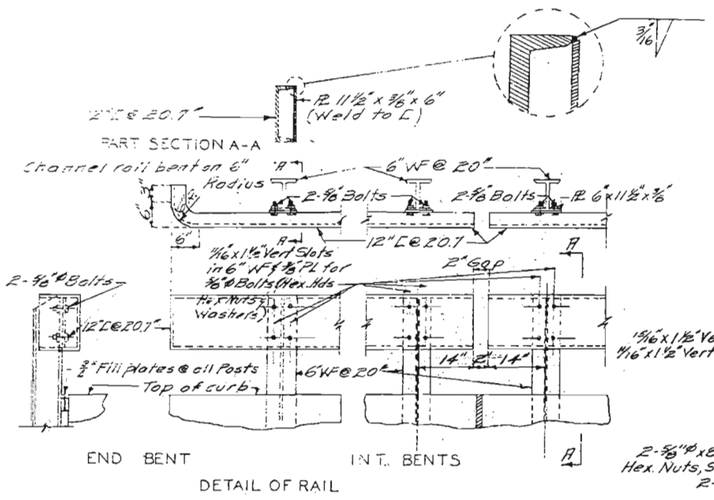
Note: This drawing is not to scale. Follow dimensions.

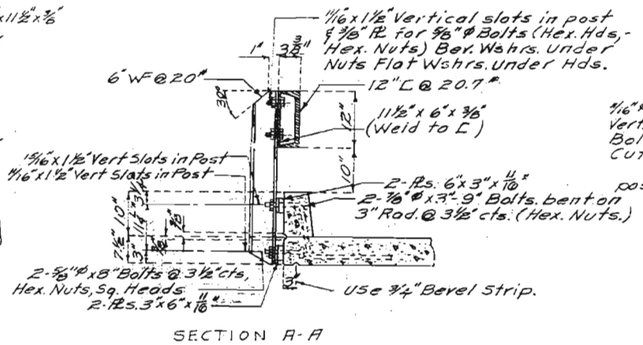
Sheet No. 4 of 6.

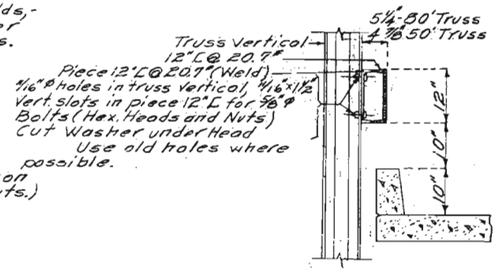
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

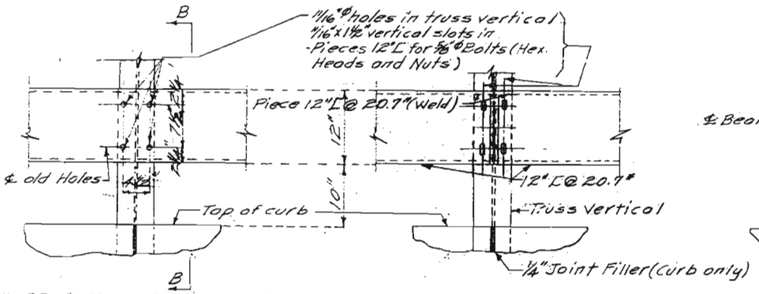
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1517(1) (SYY)	19	16	

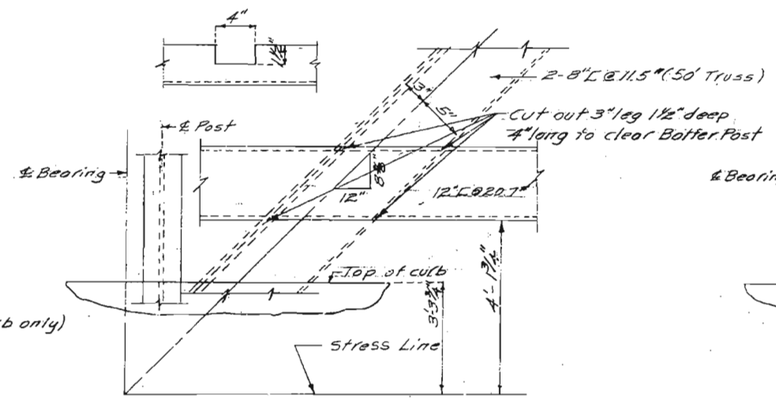


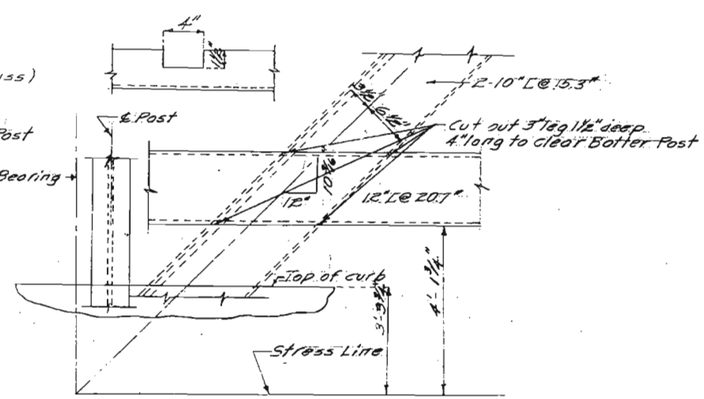




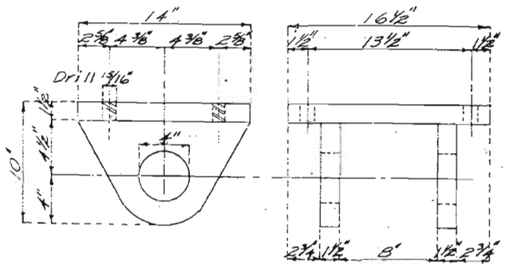
Note Channel rail to be adjusted for horizontal alignment by use of full size metal shims placed between truss vertical and connection L, or rail post and connection PL. Shims of 1/8" and ¼" thickness to be furnished with structural steel. Cost of shims to be included in price bid for other items.

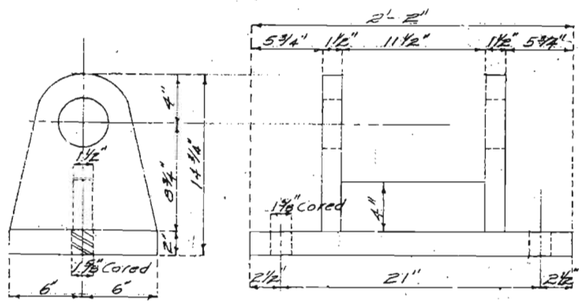


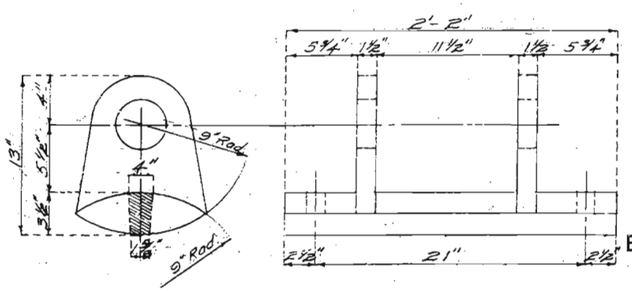




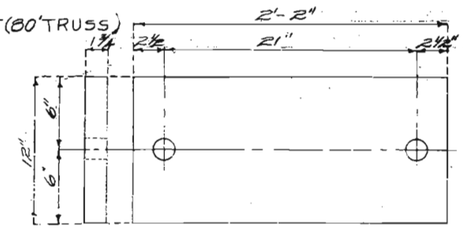
DETAILS OF RAIL ON TRUSS







CASTINGS FOR 80' TRUSS (STATE FURNISHED)
(STORED AT WENTZVILLE MO.)



BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. 5C EAST TO RTE. 47 AT KRAKOW
ABOUT 7.1 MILES N.W. OF UNION
PROJECT NO. S-1517(1)(SYY) **STA.** 545 + 38

FRANKLIN **COUNTY**

N-141

Drawn Feb 1956 by C.W.M.
Checked May 1956 by J.D.M.

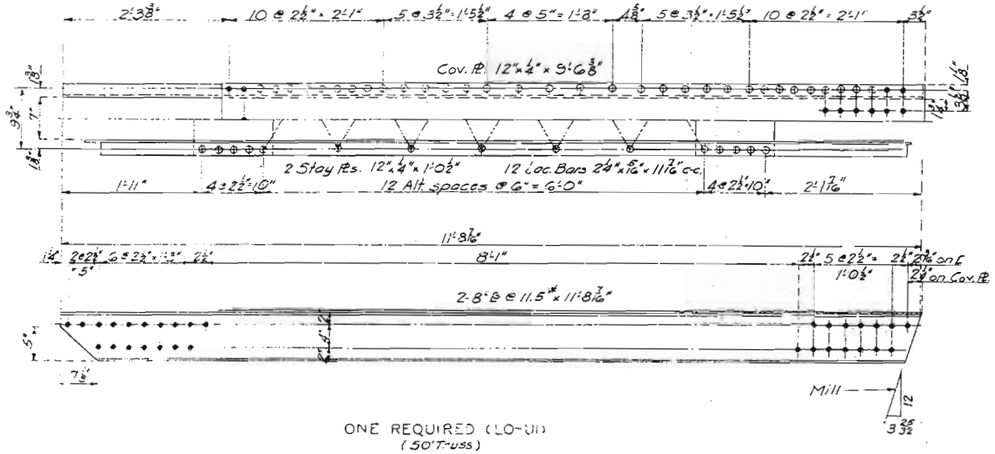
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5 of 6

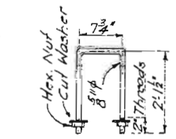
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

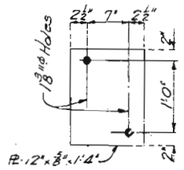
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1517(1) (SYY)	19	17	



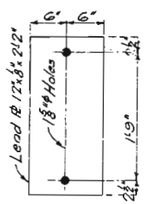
ONE REQUIRED (LO-UP)
(50'T-uss)



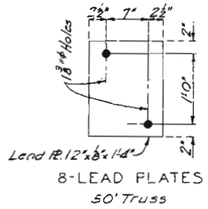
4-REQ'D. LATERAL HANGERS (80'Truss)



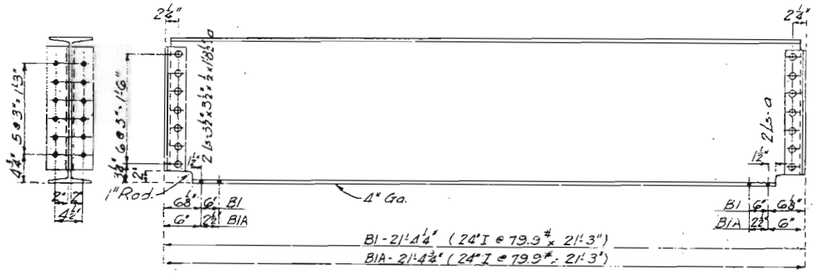
8-BEARING PLATES
50' Truss



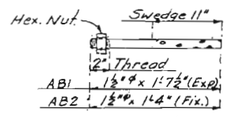
8-LEAD PLATES
80' Truss



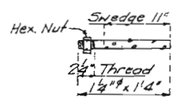
8-LEAD PLATES
50' Truss



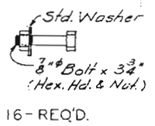
2-B1 REQ'D.-END FLOOR BEAM (50' TRUSS)
ONE-B1A " " " " (80'



4-AB1 REQ'D.
4-AB2 "
80' Truss

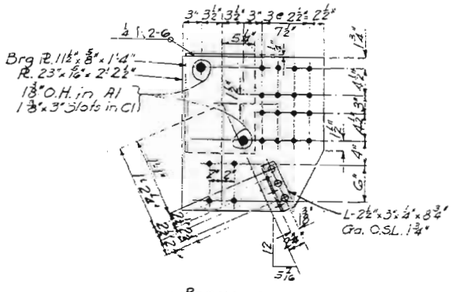


16-AB3 REQ'D.
50' Truss

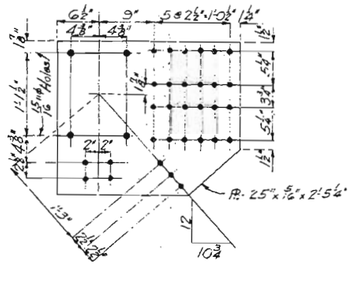


16-REQ'D.

¾" HIGH TENSILE FIELD BOLT LIST			
No	Size	Length	
640	¾"	2"	
200	"	2¼"	
60	"	2½"	
420	"	2¾"	
270	"	3"	
280	"	3¼"	
50	"	3½"	
3570 Std. Carburized Washers			
270 Bevel " " (2 in 12)			



4-A1 REQ'D. BOTTOM GUSSETS AT LO
4-C1 " " " " "
50' Truss



4-D1 REQ'D. BOTTOM GUSSETS AT LO
80' Truss

SHOP NOTES:
Shop Rivets ¾" ø.
Open holes ⅞" ø unless noted.
Shop paint; none.
Bearing plates to be straightened to plane surfaces.
Lead plates included in price bid for Structural Steel.
Field Connections to be ¾" High Tensile Bolts with two Carburized Washers.

Note: All items on this sheet required to complete and erect old Trusses.
This material is State furnished and is in storage at Wentzville, Missouri.

BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. 5C EAST TO RTE. 47 AT KRAKOW
ABOUT 7.1 MILES N.W. OF UNION
PROJECT NO. S-1517 (1) (SYY) **STA.** 545 + 38

FRANKLIN **COUNTY**

Drawn Feb. 1956 by J. N.N.
Checked Feb. 1956 by M.E.L.

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

Sheet No. 6 of 6.

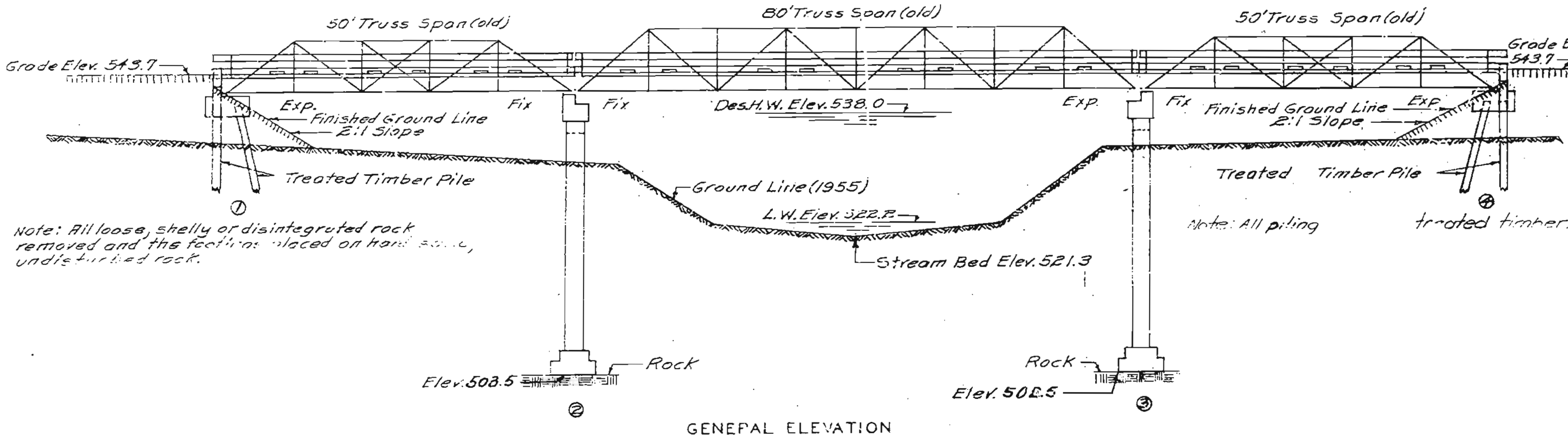
N-14:

NO CONSTRUCTION CHANGES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1517 (I) (SYY)	19	29	

MISSOURI STATE HIGHWAY DEPARTMENT

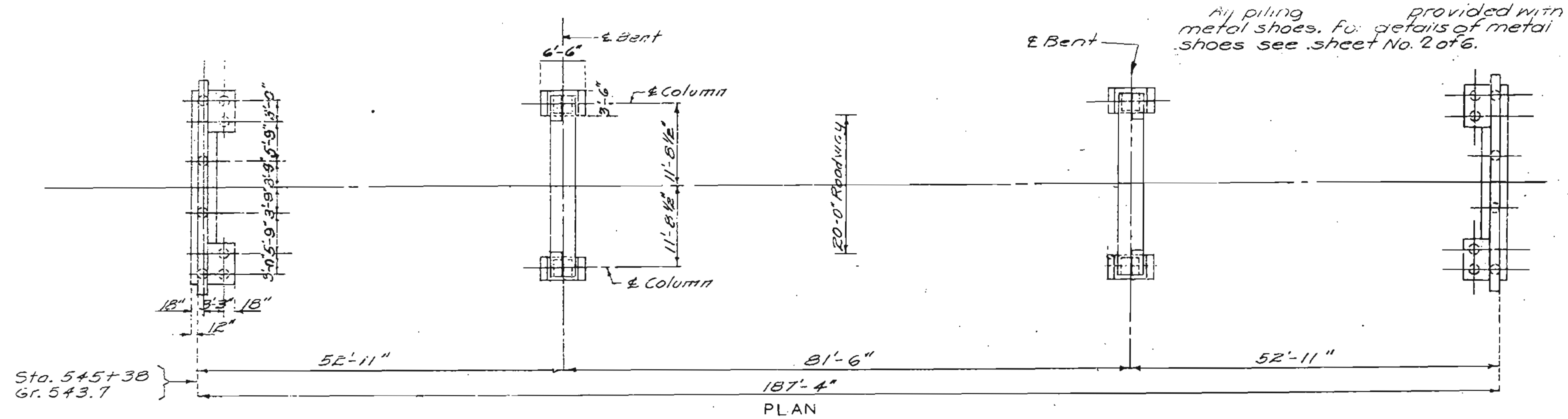
Used 50'-80'-50' Truss Spans from Bridge G-336 stored at Wentzville, Mo. See Special Provisions.



Note: All loose, shelly or disintegrated rock removed and the footings placed on hard sound, undisturbed rock.

GENERAL ELEVATION

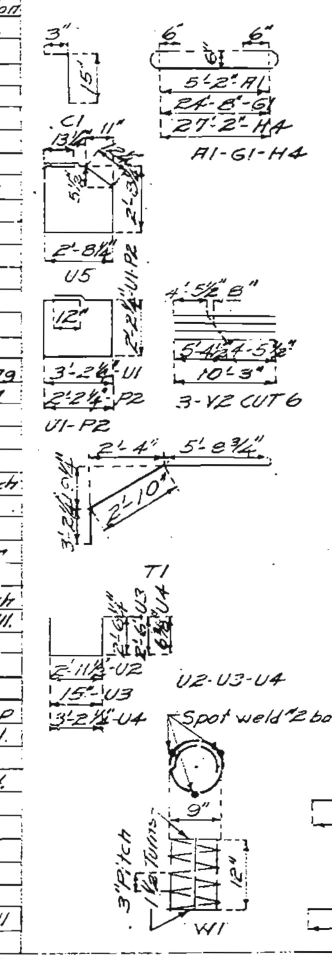
All piling provided with metal shoes. For details of metal shoes see sheet No. 2 of 6.



PLAN

FINAL PLANS

No	Size	Length	Mark	Location
COMPLETE BILL OF REINFORCING STEEL				
Superstructure				
356	#4	18"	C1	Curb
24	#6	9'-9"	C2	"
8	#6	10'-6"	C3	"
4	#6	11'-9"	C4	"
269	#5	20'-9"	S1	Slab
78	#5	12'-9"	S2	"
74	#5	31'-9"	S3	"
116	#5	27'-3"	S4	"
78	#5	21'-9"	S5	"
87	#5	27'-9"	S6	"
74	#5	21'-9"	S7	"
78	#5	11'-6"	S8	"
Int Bents No 2 & 3				
32	#7	6'-6"	D1	Footing
8	#6	27'-3"	G1	Beam
12	#6	25'-6"	G2	"
8	#6	3'-6"	G3	"
52	#4	11'-9"	U1	"
16	#4	8'-0"	U2	Bm. Hnch
28	#4	6'-3"	U3	"
12	#4	4'-3"	U4	"
32	#7	33'-3"	P1	Column
120	#3	9'-9"	P2	"
16	#6	8'-6"	F1	Col. Hnch
8	#2	19'-9"	W1	Anch. Wll.
End Bents No 1 & 4				
128	#6	7'-9"	A1	Brg. Cap
4	#6	21'-0"	H1	Bckwll.
8	#6	6'-9"	H2	Wing
4	#4	21'-0"	H3	Bckwll.
16	#6	29'-9"	H4	Bm.
4	#5	27'-9"	H5	"
24	#6	4'-3"	H6	Wing
8	#6	11'-9"	T1	"
30	#4	11'-6"	U5	Bm.
88	#4	3'-6"	Y1	Bckwll
6	#4	10'-3"	V2	Wing



No.	Size	Length	Mark	Location
End Bent No 1 & 4 Cont.				
4	#4	6'-6"	V3	Wing

FINAL QUANTITIES

Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds.	95.0		95.0
Class 2 Excavation for Structures	Cu. Yds.	183.0		183.0
Repair, Haul and Erect Truss Spans	Lump Sum		1	1
Fabricated Structural Steel (New)	Lbs.		9360	9360
Class "B" Concrete	Cu. Yds.	89.9	97.4	187.3
Reinforcing Steel	Lbs.	8160	20410	28570
Treated Timber Piles in Place	Lin. Ft.	604		604
Treated Timber Pile Cut-offs	Lin. Ft.	40		40
Foundation Test Holes	Lin. Ft.	16		16
~~High Tensile Bolts and Angle Braces~~	E.A.		888.81	888.81

Note: Excavation for bridge made above Elev. 523.0 paid for as Class 1 Excavation for Structures.

Excavation for bridge made below Elev. 523.0 paid for as Class 2 Excavation for Structures.

quantities for Treated timber Piles in Place includes 5'-0" for each metal shoe specified.

GENERAL NOTES:

Design Specifications: A.A.S.H.O. 1953
Loading: H10-44
Structural Steel Stress: 18,000 #/□"
Reinforcing Steel Stress: 18,000 #/□"
Concrete, Class "B" Stress 1,000 #/□"
All concrete Class "B."

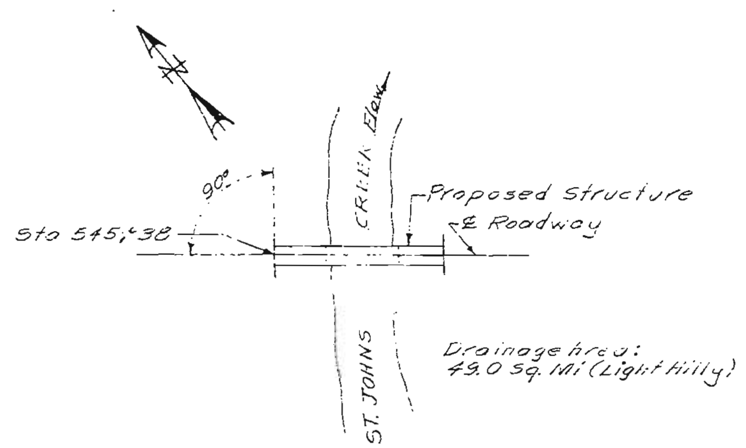
Where joint filler is specified on plans it shall conform with the requirements for Premoulded Material for Filler as given in Section 59-22D of the Standard Specifications.

Field connections made with high tensile steel bolts and carburized washers except for connections noted for handrail. The high tensile steel bolts placed in such a manner that the nuts will always be in the least exposed position.

Qualifications of welding operators will be required.

Paint: Shop, none; Field, contact surfaces of bolted field connections, except where high tensile bolts are used, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Payment for cleaning and painting such surfaces included in unit price bid for for Fabricated Structural steel. Red lead required furnished by Contractor.

B.M. #54 Elev. 534.24 Spike in N. Side 16" Walnut 22' Rt. Sta 547+28. (U.S.G.S. Datum)



LOCATION SKETCH

BRIDGE OVER ST. JOHNS CREEK

STATE ROAD FROM RTE. SC EAST TO RTE. 47 AT KRAKOW
ABOUT 7.1 MILES N.W. OF UNION
PROJECT NO. S-1517 (I) (SYY) STA. 545 + 38

FRANKLIN COUNTY

SUBMITTED BY J. A. Williams, BRIDGE ENGINEER, DATE 11-27-1956
APPROVED BY Rex M. Whitton, CHIEF ENGINEER, DATE 11-27-1956

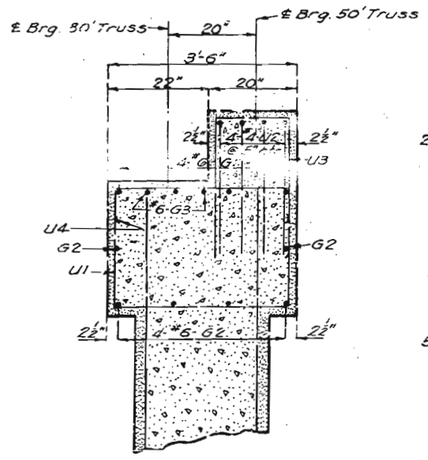
STD 110R4

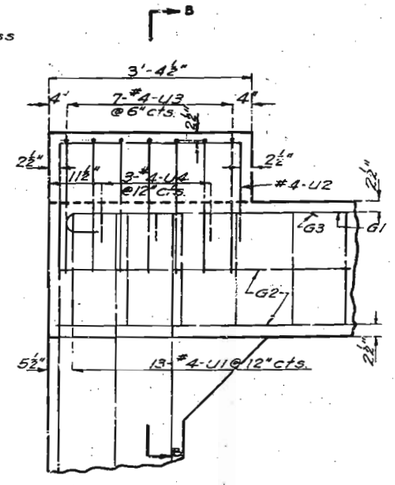
N-141

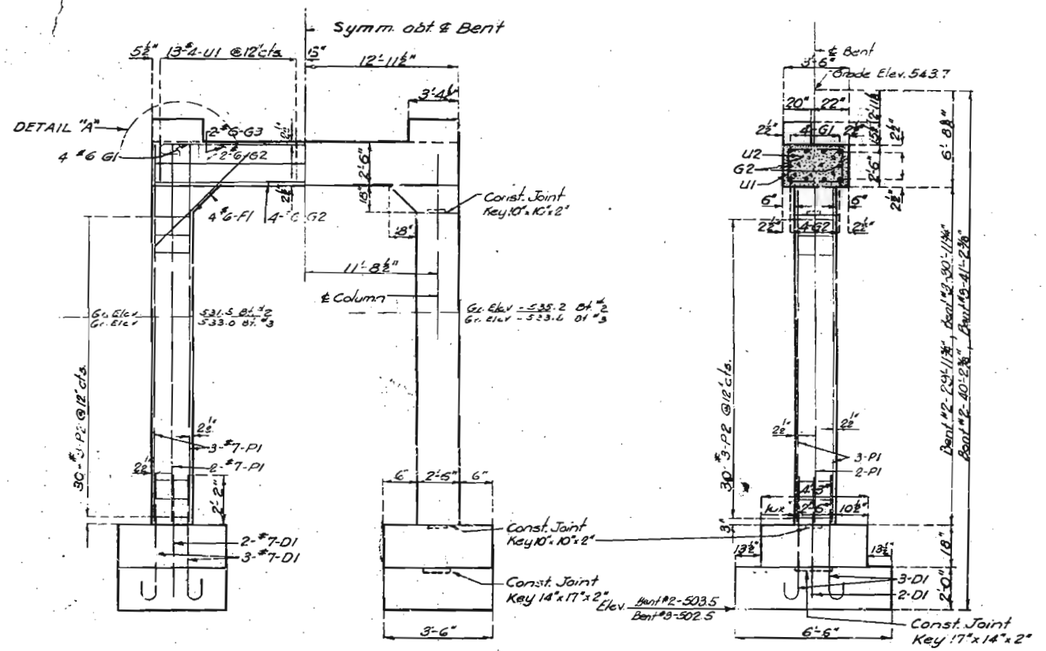
Drawn Feb 1956 by C.W.M.
Checked May 1956 by J.D.M.

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

FINAL PLANS







MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
5	MO	S-1517(1) (SYY)	19	31	

FINAL PLANS

SECTION B–B

DETAIL "A" SHOWING REINFORCEMENT

ELEVATION

SECTION AT ℄

PLAN

DETAILS OF INT. BENT NO. 2 & NO. 3

BRIDGE OVER ST. JOHNS CREEK
STATE ROAD FROM RTE. SC EAST TO RTE. 47 AT KRAKOW
ABOUT 7.1 MILES N.W. OF UNION
PROJECT NO. S-1517(1) (SYY) STA. 545 + 38
FRANKLIN COUNTY

N-141

Assembled Feb. 1956 by C.W.M. - G.W.
Checked May 1956 by J.U.M.

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

Sheet No. 3A of 7.

FINAL PLANS

2 Col. Int.
Square or S. ed