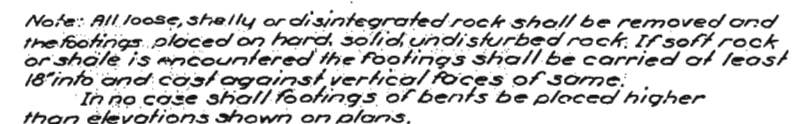


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		



Design Specifications: A.R.S.H.O. 1953  
Loading: H20-44  
Structural Steel Stress: 18,000 "a"  
Concrete, Class "B" Stress 1200 "a"  
Reinforcing Steel Stress 20,000 "a"  
Rivets: 8; 4 holes 1/2" except as noted  
Paint: Shop, none; Field contact surfaces of bolted field connections one coat of red lead, and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor except as noted for Bearings on Sheet No. 7 of the Design Plans. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for fabricated Structural Steel.

Where joint filler is specified on the plans it shall conform with the requirements for Gray Rubber Compound Joints as given in Section 5.9-22B of the Standard Specifications.

A rubbed surface finish will be required on all exposed surfaces of concrete end posts above top of curb. Concrete for superstructure shall be Class "B-1" air-entrained (See Special Provisions).

Concrete for substructure shall be Class "B" air-entrained. If the Contractor desires, he may use Class "B-1" in lieu of Class "B" for concrete in substructure with payment on the basis of Class "B" concrete.

Falsework over existing railroad tracks shall be constructed with a minimum vertical clearance of 20'-0" from top of rails and a minimum lateral clearance of 8'-6" from centerline of tracks.

ESTIMATED QUANTITIES				
Item		Substr.	Supersr.	Total
Class 1 Excavation for Structures	Cu. Yds.	175		175
Class 2 Excavation for Structures	Cu. Yds.	10		10
Class 'B' Concrete	Cu. Yds.	411.7		411.7
Class 'B' Concrete	Cu. Yds.		662.3	662.3
Reinforcing Steel	Lbs.	44,140	194,220	238,360
Fabricated Structural Steel (Bearings)	Lbs.		13,900	13,900
Fabricated Structural Steel (Handrail)	Lbs.		34,870	34,870

Note: Excavation for bridge made above Elev. 754.0 will be paid for as Class 1 Excavation for Structures.  
Excavation for bridge made below Elev. 754.0 will be paid for as Class 2 Excavation for Structures.

# **BILL OF REINFORCING STEEL (SUBSTRUCTURE)**

No.	Size	Length	Mark	Location
<b>End Bents No. 1 and 8</b>				
60	#7	4'-9"	D1	Footing
12	#6	8'-9"	F1	Haunch
24	#6	8'-6"	F3	"
20	#6	16'-6"	H1	Wing
8	#6	21'-9"	H2	Beam
8	#5	21'-9"	H3	"
26	#9	22'-3"	H4	"
10	#11	11'-6"	H5	"
12	#6	22'-9"	H6	"
8	#4	21'-6"	H7	"
8	#5	25'-6"	H8	"
60	#3	18'-3"	P1	Col. Bt. No. 1
18	#4	21'-9"	P4	" " " 1
90	#3	20'-9"	P5	" " " 8
24	#4	31'-6"	P6	" " " 8
8	#6	19'-0"	T1	Wing
12	#6	9'-0"	T2	"
106	#4	10'-6"	U1	Beam
10	#4	3'-6"	U2	"
84	#3	3'-9"	U5	Brkwall.
84	#4	10'-9"	V1	Wing
12	#7	35'-6"	V11	Col. Bt. No. 8
13	#7	34'-6"	V12	" " " 8
12	#7	25'-3"	V2	Col. Bt. No. 1
18	#7	24'-6"	V3	" " " 1

<b>Int. Bents No. 2, 3, 4, 5, C, and 7</b>				
16	#8	6'-0"	D2	Flg. Bt. No. 2
48	#8	5'-6"	D3	Flg. Bt. No. 3, 4, 7
32	#8	6'-6"	D4	Flg. Bt. No. 4 & 5
96	#6	8'-6"	F3	Haunch
72	#8	9'-6"	F4	Tie Bmt. Haunch
36	#8	22'-3"	G1	Tie Beam
36	#11	29'-0"	G2	Beam
48	#9	31'-0"	G4	"
12	#6	29'-0"	G6	"
348	#3	10'-9"	P2	Column
90	#4	9'-9"	P3	Tie Beam
174	#5	13'-9"	U3	Beam
72	#4	4'-3"	U4	"
16	#8	19'-3"	V4	Col. Bt. No. 2
32	#8	10'-9"	V5	Col. Bt. No. 2 & 3
16	#8	21'-9"	V6	" " " 3
16	#8	25'-3"	V7	" " " 4
64	#8	14'-9"	V8	Col. Bt. No. 4, 5, 6, 7
16	#8	24'-3"	V9	" " No. 5
16	#8	25'-9"	V10	" " " 6
16	#8	24'-0"	V13	" " " 7

## **Bending Sketches & Cutting Diagram**

The figure contains several bending sketches and cutting diagrams for substructure reinforcement. Key details include:

- 7-61 CUT 14:** A footing detail showing a 7'-0" length with 6-14 reinforcement bars.
- 30-PS CUT 90 BEND AS SHOWN:** A beam detail showing a 30'-0" length with 14-90 reinforcement bars.
- 20-PS CUT 80 & BEND AS SHOWN:** A column detail showing a 20'-0" length with 14-80 reinforcement bars.
- 3-2-14, 7-0-13, 2-0-13, 2-0-14, 2-0-15, 2-0-16, 2-0-17, 2-0-18, 2-0-19, 2-0-20, 2-0-21, 2-0-22, 2-0-23, 2-0-24, 2-0-25, 2-0-26, 2-0-27, 2-0-28, 2-0-29, 2-0-30, 2-0-31, 2-0-32, 2-0-33, 2-0-34, 2-0-35, 2-0-36, 2-0-37, 2-0-38, 2-0-39, 2-0-40, 2-0-41, 2-0-42, 2-0-43, 2-0-44, 2-0-45, 2-0-46, 2-0-47, 2-0-48, 2-0-49, 2-0-50, 2-0-51, 2-0-52, 2-0-53, 2-0-54, 2-0-55, 2-0-56, 2-0-57, 2-0-58, 2-0-59, 2-0-60, 2-0-61, 2-0-62, 2-0-63, 2-0-64, 2-0-65, 2-0-66, 2-0-67, 2-0-68, 2-0-69, 2-0-70, 2-0-71, 2-0-72, 2-0-73, 2-0-74, 2-0-75, 2-0-76, 2-0-77, 2-0-78, 2-0-79, 2-0-80, 2-0-81, 2-0-82, 2-0-83, 2-0-84, 2-0-85, 2-0-86, 2-0-87, 2-0-88, 2-0-89, 2-0-90, 2-0-91, 2-0-92, 2-0-93, 2-0-94, 2-0-95, 2-0-96, 2-0-9**

See Sheet No. 6 for Superstructure Bar Bill

B.M. #100 Elev. 770.27 "a" on top S.E. Cor. of Handrail Post of  
Conc. Bridge, Rte. "S0" 490' Lt. Sta. 797+00 (U.S.G.S. Datum)

STATE ROAD FROM BOYNE TERRE TO FARMINGTON  
ABOUT 1.8 MILES E. OF FLAT RIVER  
PROJECT NO. F-FG-254 (8) (RTE. 67) STA. 793+12.3

ST. FRANCOIS COUNTY

SUBMITTED BY: J. A. Williams DATE 8-15-1954  
BRIDGE ENGINEER  
APPROVED BY: Ray M. Whitton DATE 8-15-1954

STD.C-11GR4  
L-666

DRAWN May 1955 BY K.R.W.-JHK  
CHECKED Nov. 1956 BY C.S.A.

Sheet No 1 of 7.

Rev. 11-21-57<sup>A</sup> 1-24-58<sup>A</sup>

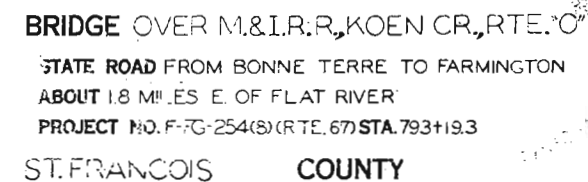
SEE FINAL PLANS BROWN-LINES

901

Drawn AUG. 1955 by D.J.G.  
Checked Feb 1956 by G.F.K.

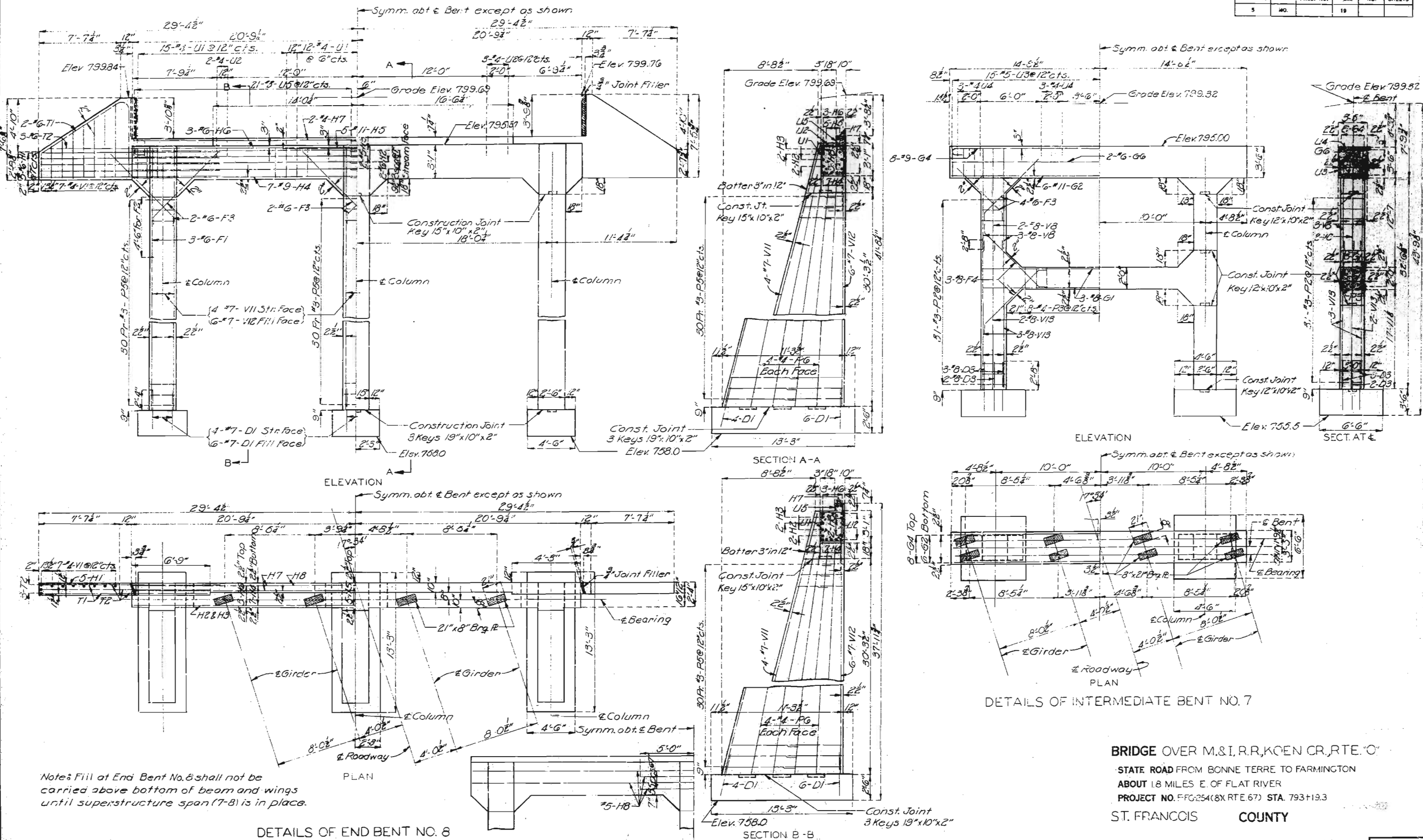
Sheet No. 2 of 7.

L - 666



MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		



BRIDGE OVER M.&I.R.R. KOEN CR. RTE. "O"  
STATE ROAD FROM BONNE TERRE TO FARMINGTON  
ABOUT 1.8 MILES E. OF FLAT RIVER  
PROJECT NO. FFG-254(8X RTE. 67) STA. 793+19.3  
ST. FRANCOIS COUNTY

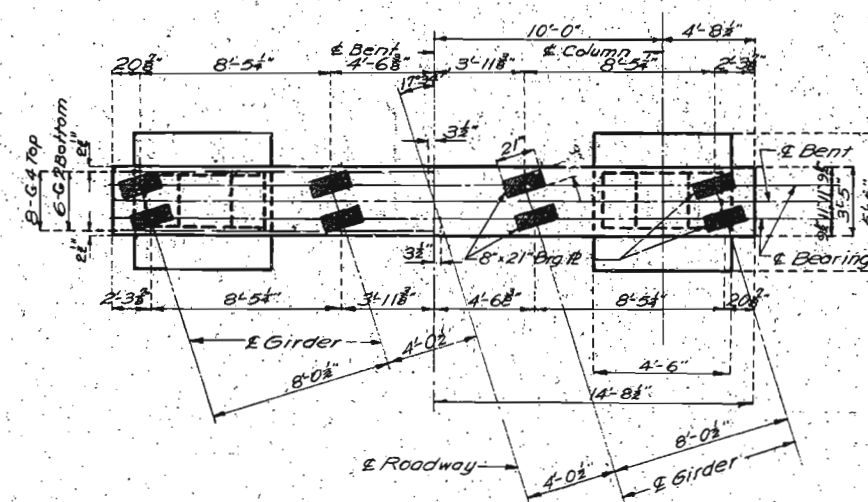
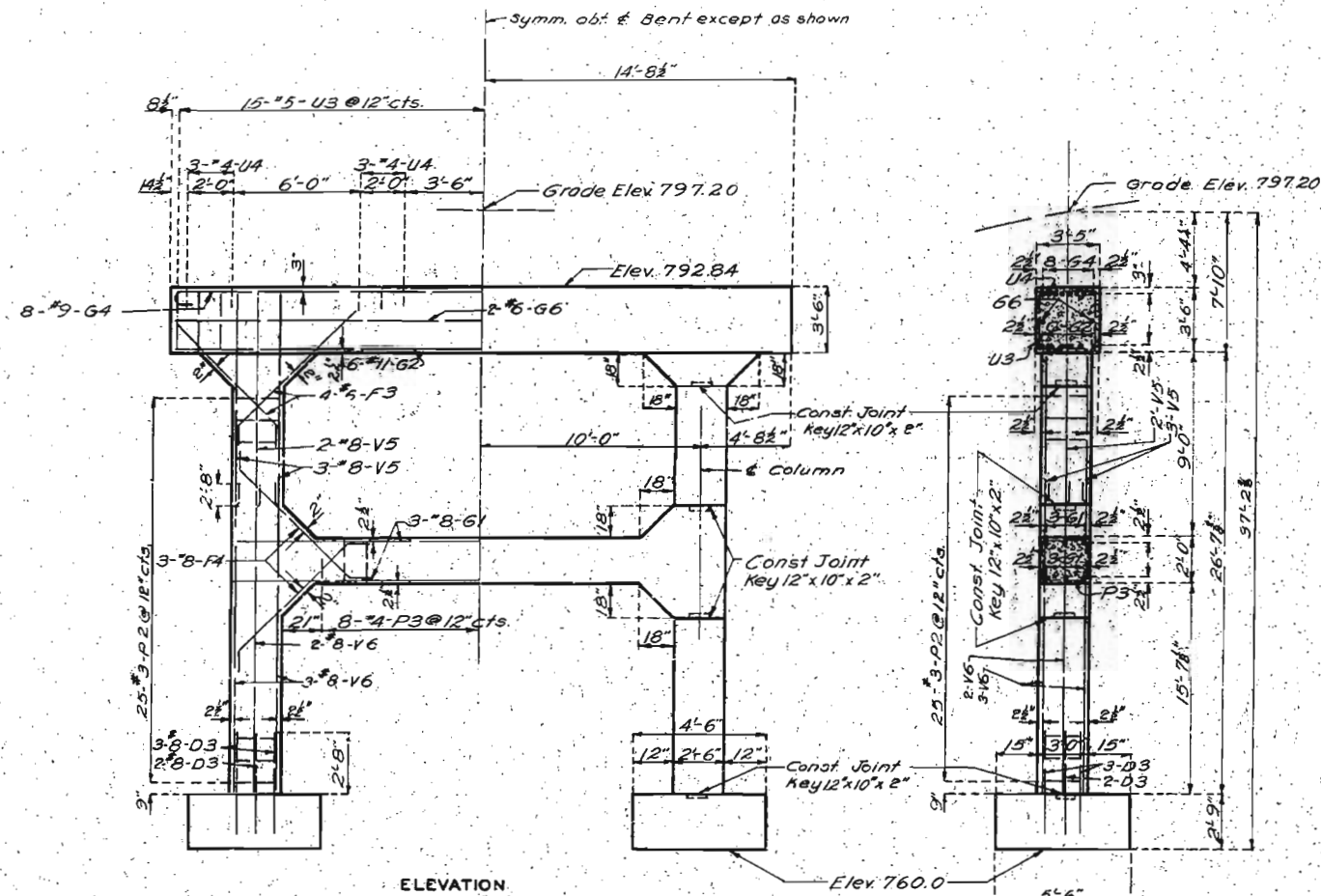
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Checked Feb. 1956 by A.F.K.

Sheet No. 3 of 7

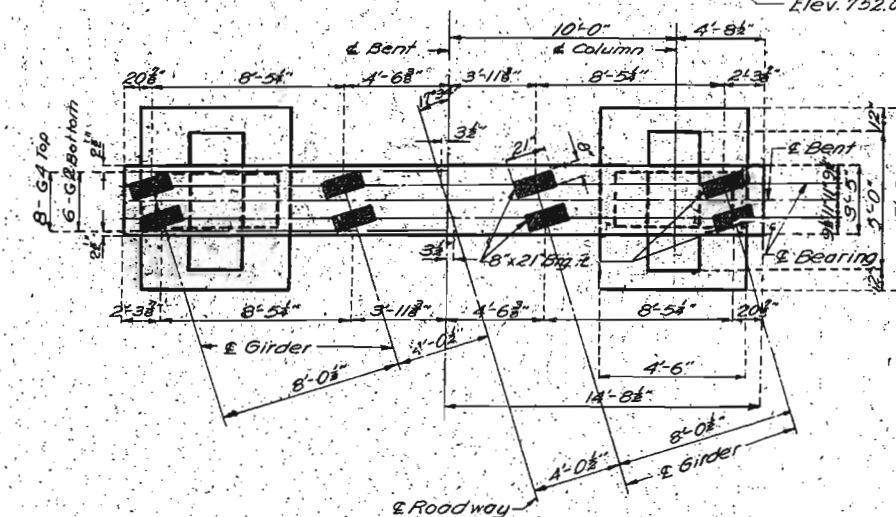
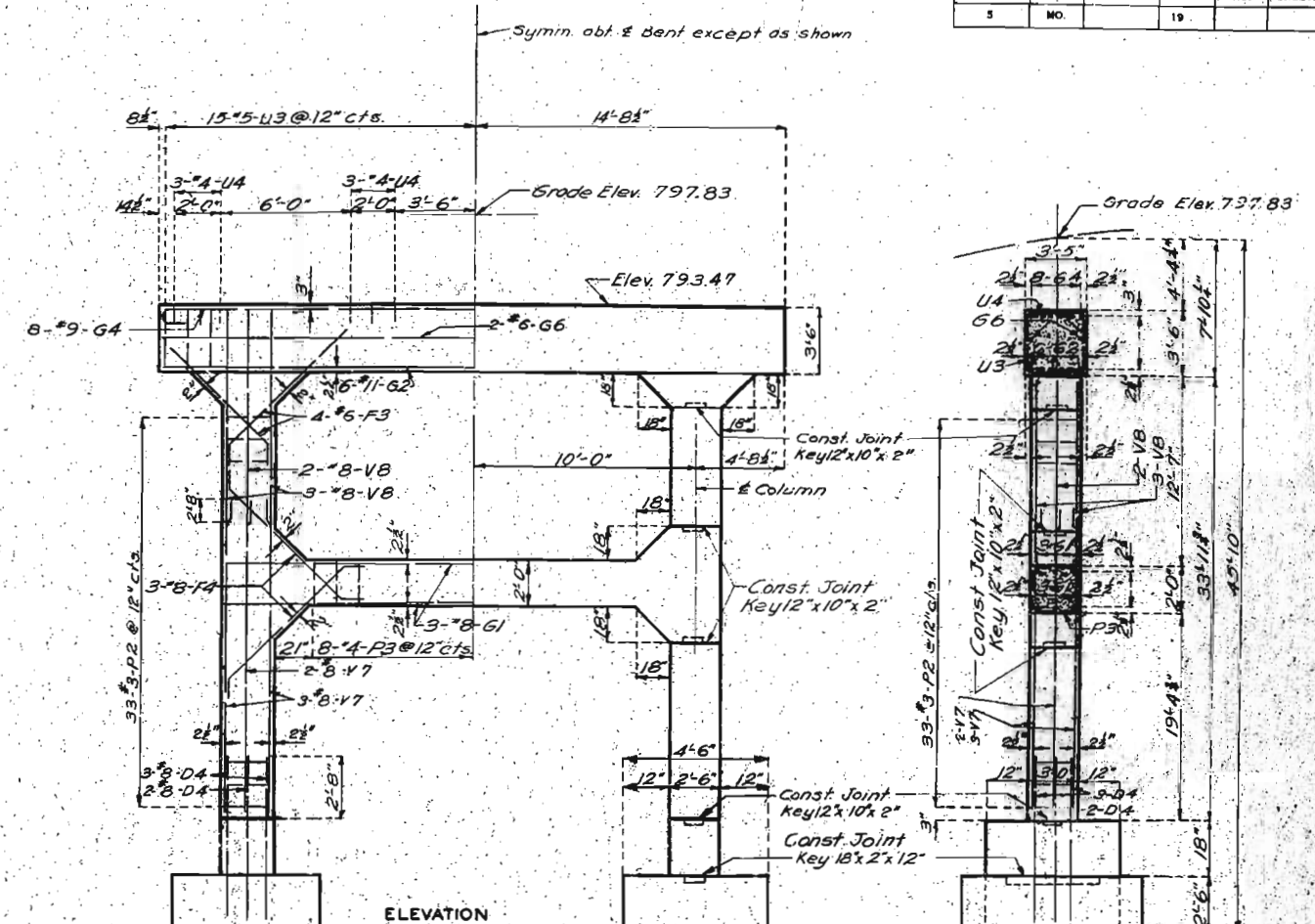
L-666



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		



PLAY!  
DETAILS OF INTERMEDIATE BENT NO.3



PLAN  
DETAILS OF INTERMEDIATE BENT NO.4

BRIDGE OVER M.&amp;I. R.R., KOEN CR., RTE. "O"

STATE ROAD FROM BONNE TERRE TO FARMINGTON

ABOUT 1.8 MILES E. OF FLAT RIVER

PROJECT NO. F-FG-254(8) (RTE. 67) STA. 793+19.3

ST FRANCOIS COUNTY

Assembled Sept. 1955 by D.J.G. & G.W.P.  
Checked Feb. 1956 by A.F.K.

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

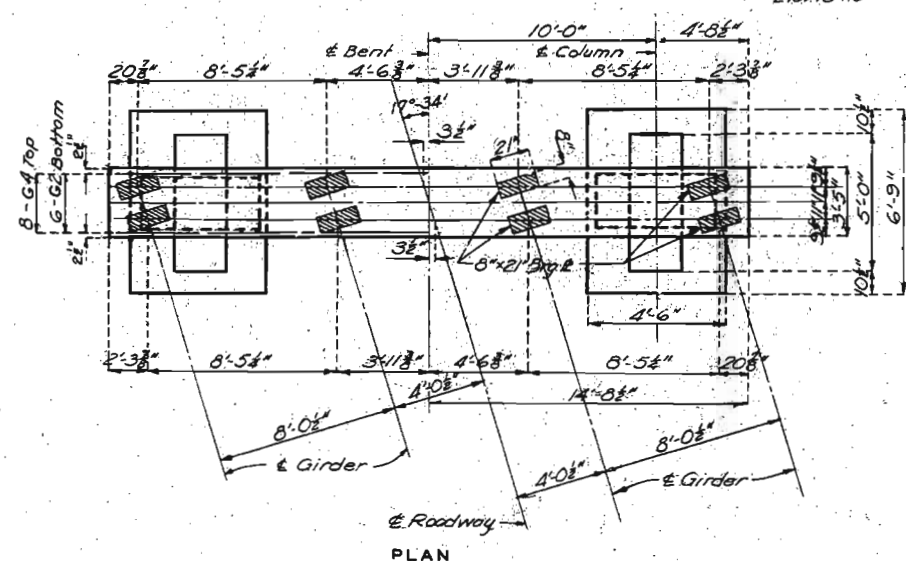
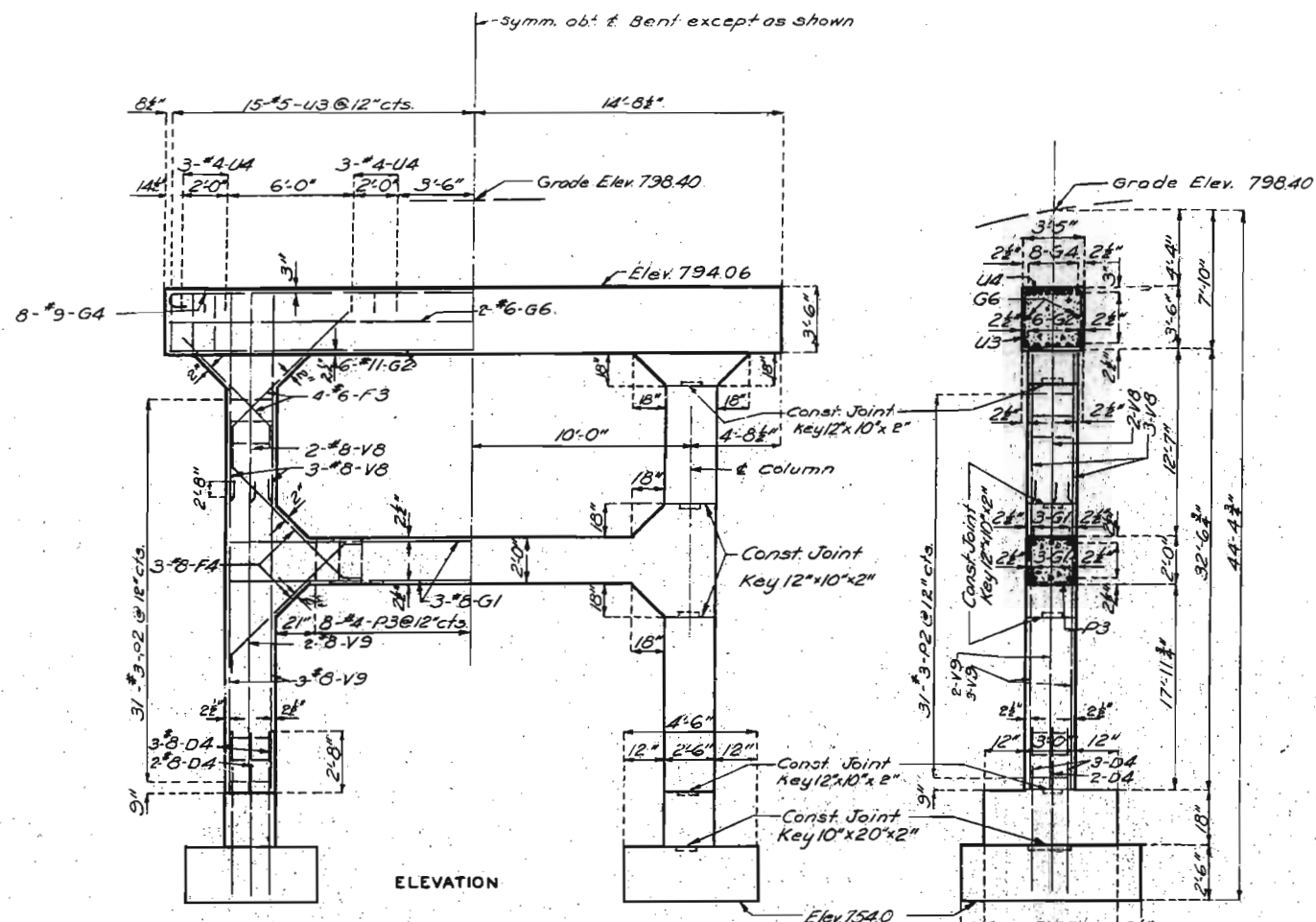
Sheet No 4 of 7

L-666

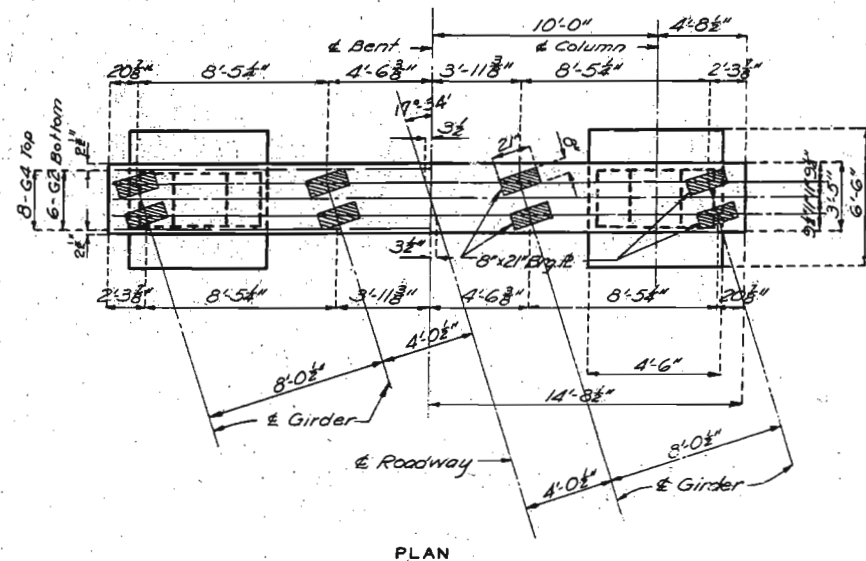
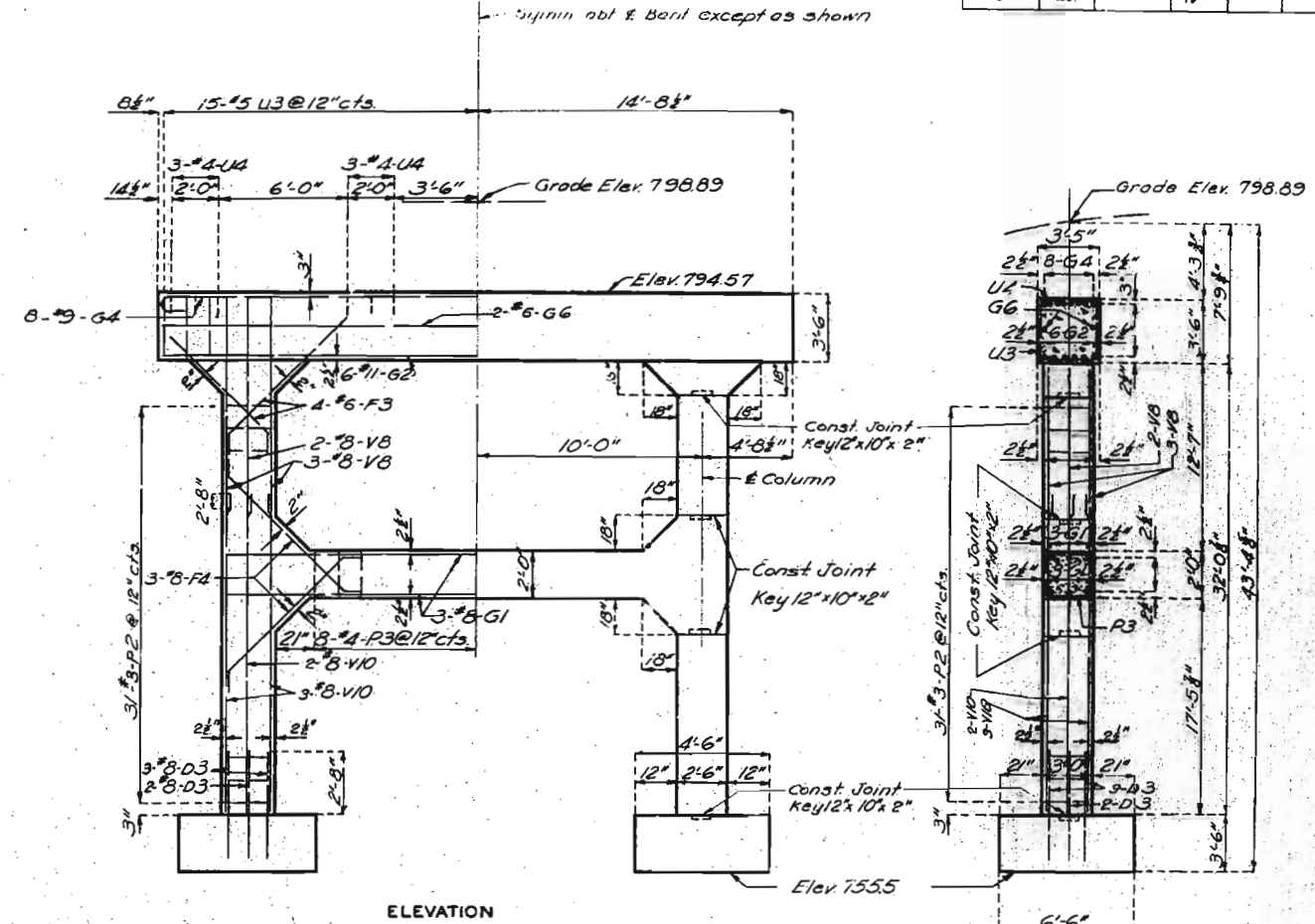
2dr3 Col.Int. } All Loadings

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		



DETAILS OF INTERMEDIATE BENT NO. 5



DETAILS OF INTERMEDIATE BENT NO. 6

BRIDGE OVER M.&I.R.R. KOEN CR., RTE. "O"

STATE ROAD FROM BONNE TERRE TO FARMINGTON  
ABOUT 1.8 MILES E. OF FLAT RIVER

PROJECT NO. FFG-254 (BX RTE. 67) STA. 793+19.3

ST. FRANCOIS COUNTY

Assembled by D.J.G. & W.J.K.  
Checked Feb. 1956 by A.F.K.

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

Sheet No. 5 of 7

SEE FINAL PLANS BROWN LINES

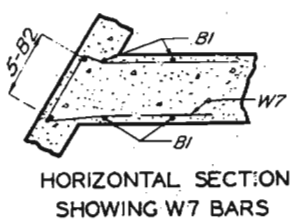
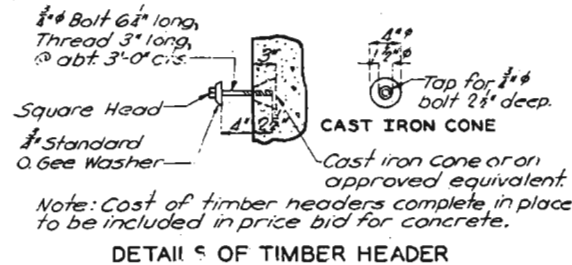
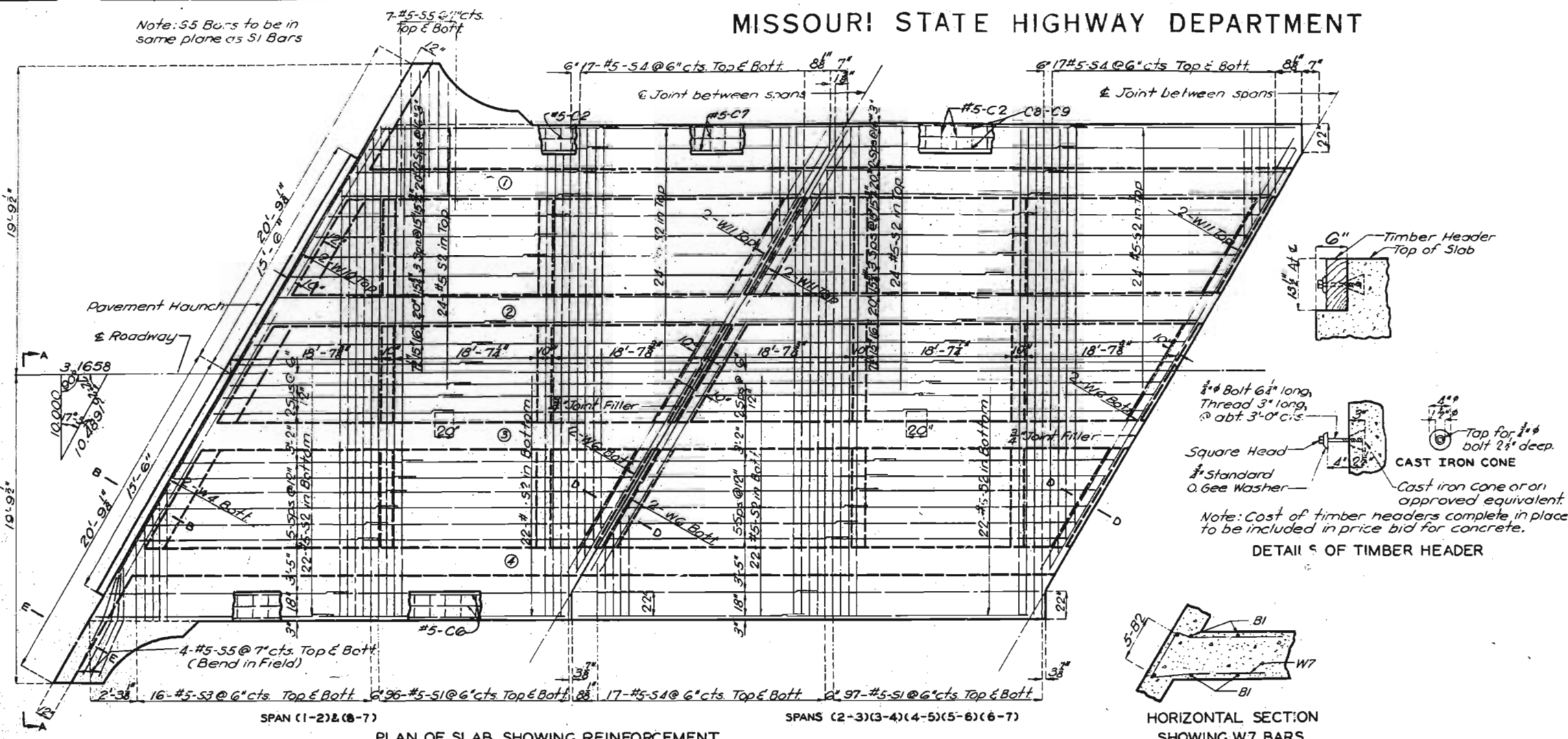
20x3 Col. Int. Squares or Stencils } All Loadings

L-666

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19		

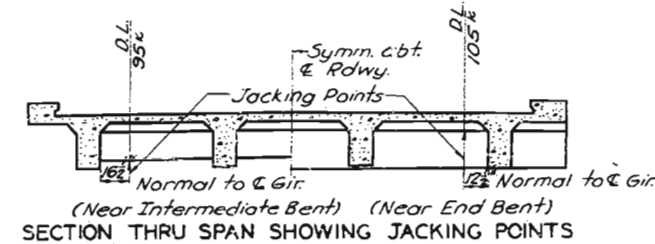
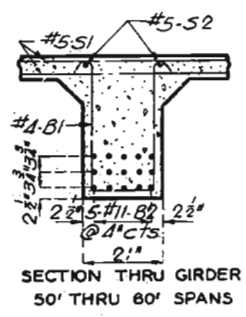
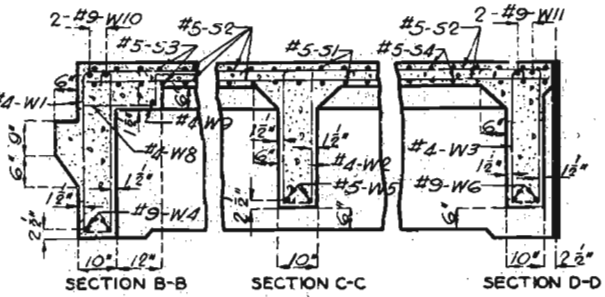
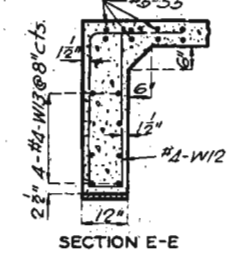
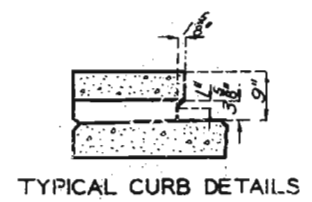
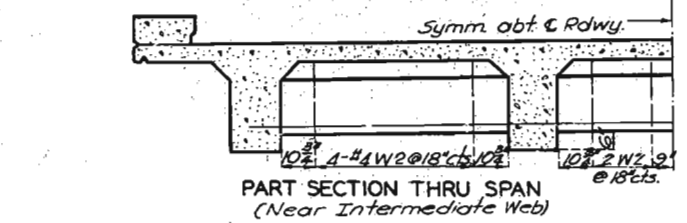
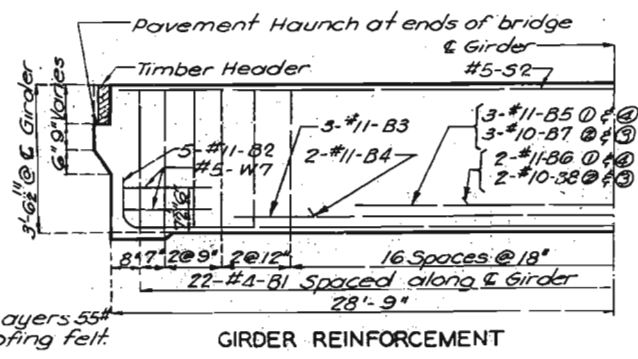
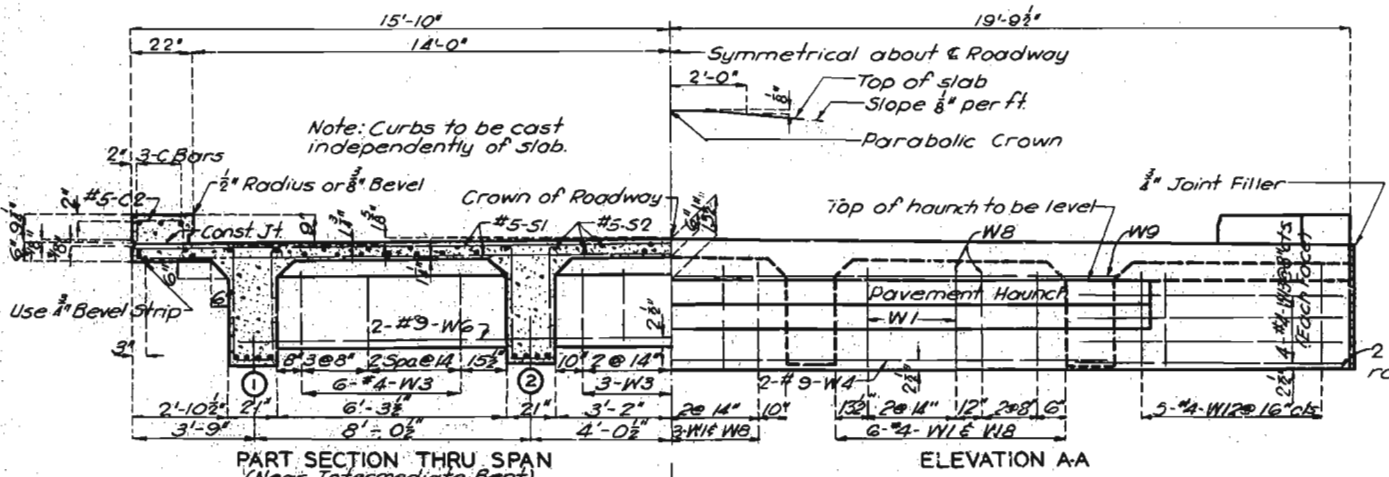
Note: S5 Bars to be in same plane as S1 Bars



## BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE

No.	Size	Length	Mark	Location	Remarks	Sketches & Cutting Diagrams
1204	#4	8'-6"	B1	Girder		6'-6" 10"
140	#11	59'-6"	B2	"		3'-5 1/2" 10"
84	#11	40'-6"	B3	"		
36	#11	42'-6"	B4	"		
42	#11	30'-0"	B5	"		
28	#11	24'-0"	B6	"		
42	#10	33'-9"	B7	"		
28	#10	22'-9"	B8	"		
28	#5	4'-6"	C1	Flare Curb		16-53 CUT 32
668	#5	3'-3"	C2	Curb		17-54 CUT 204
4	#5	11'-9"	C3	Flare Curb		
4	#5	10'-3"	C4	"		
4	#5	9'-3"	C5	"		
12	#5	24'-6"	C6	"		
12	#5	20'-0"	C7	"		
24	#5	20'-6"	C8	"		
36	#6	29'-0"	C9	"		
12	#4	6'-0"	R2	End Post		
12	#4	6'-9"	R1	"		
36	#6	3'-6"	R3	"		
1354	#5	31'-3"	S1	Slab		
644	#5	20'-6"	S2	"		
32	#5	30'-0"	S3	"		
204	#5	32'-3"	S4	"		
44	#5	6'-0"	S5	"		
34	#4	9'-6"	W1	End Web		
108	#4	9'-0"	W2	Int Web		
204	#4	8'-0"	W3	End Web		
4	#9	26'-0"	W4	End Web		
28	#5	25'-6"	W5	Int Web		
24	#9	26'-0"	W6	End Web		
112	#5	3'-0"	W7	Girder		
34	#4	2'-6"	W8	End Web		
2	#4	25'-9"	W9	"		
4	#9	32'-0"	W10	"		
24	#9	32'-9"	W11	"		
20	#4	9'-3"	W12	"		
32	#4	8'-6"	W13	"		

Note: Bars in the above unit to be billed and tagged separately.



BRIDGE OVER M.&I.R.R., KOEN CR., ROUTE "O"  
STATE ROAD FROM BONNE TERRE TO FARMINGTON  
ABOUT 1.8 MILES E. OF FLAT RIVER  
PROJECT NO. P-254 (8) (RTE. 67) STA. 793+19.3  
ST. FRANCOIS COUNTY

Assembled Sept. 1955 by D.J.G. & J.C.G.  
Checked Feb. 1956 by A.F.K.

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

Sheet No. 6 of 7.

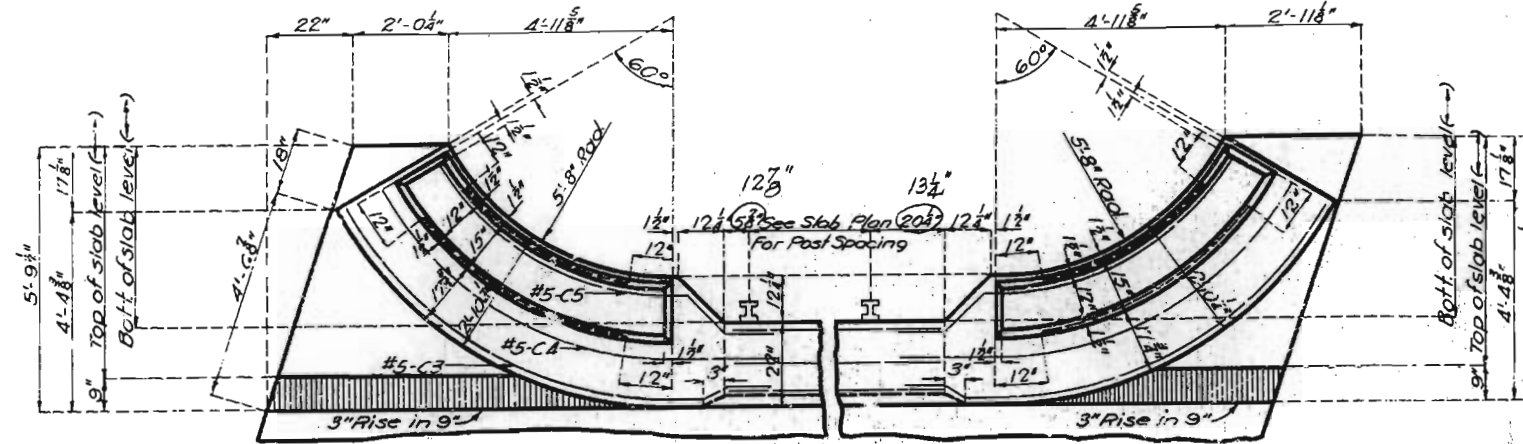
NO CONSTRUCTION CHANGES L.A. 40' thru 60' spans-Deck Girder-28' Rdwy.-H-20-7-1-55.

L-656

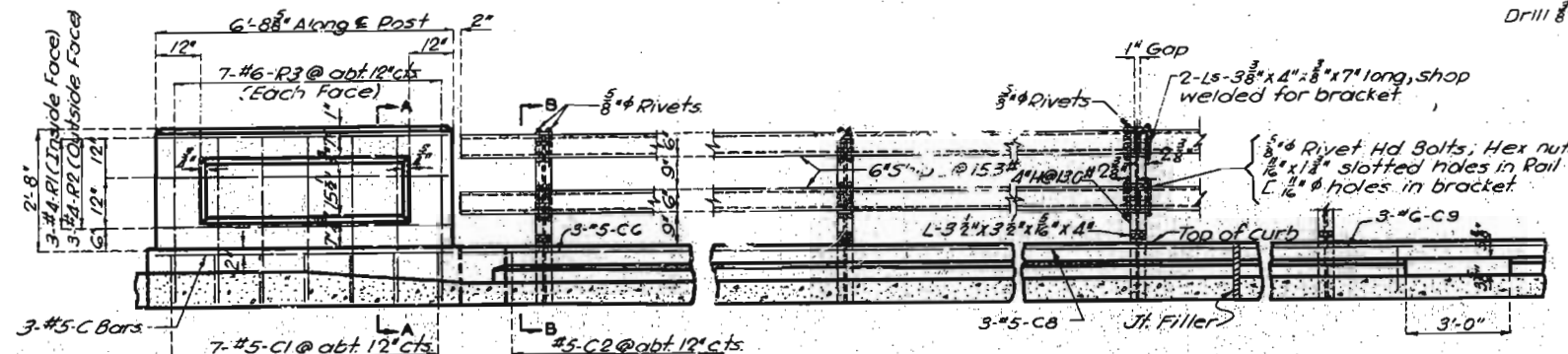


# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		

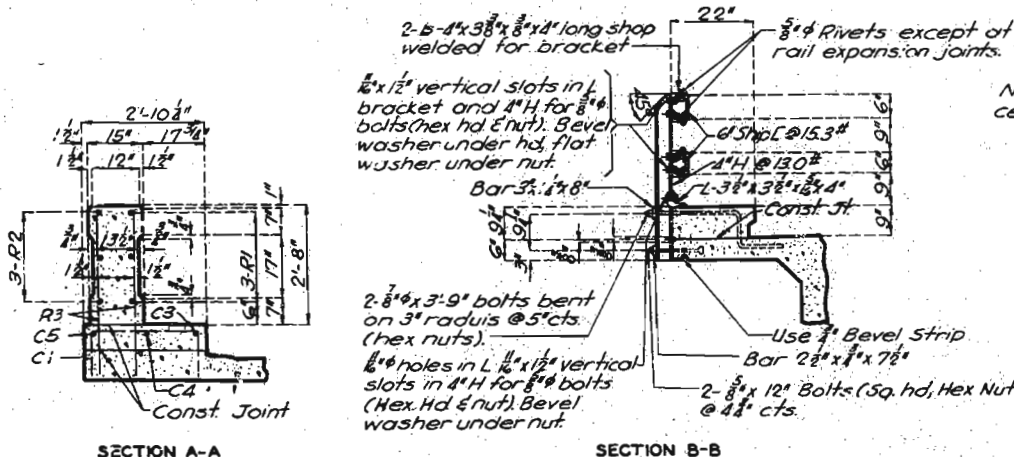


PLAN OF FLARED CURBS AND END POSTS



Note: Top of curbs and end posts to be built parallel to grade. H-Bearing posts to be normal to grade. Edges of end posts to be vertical.

EXPANDED ELEVATION OF END POST



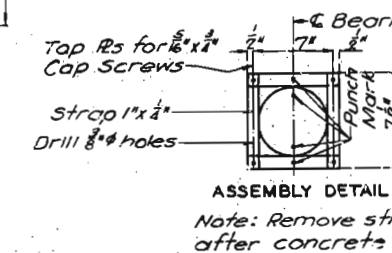
DETAILS OF RAIL AND END POST

Note: Outlets to be centered between rail posts.

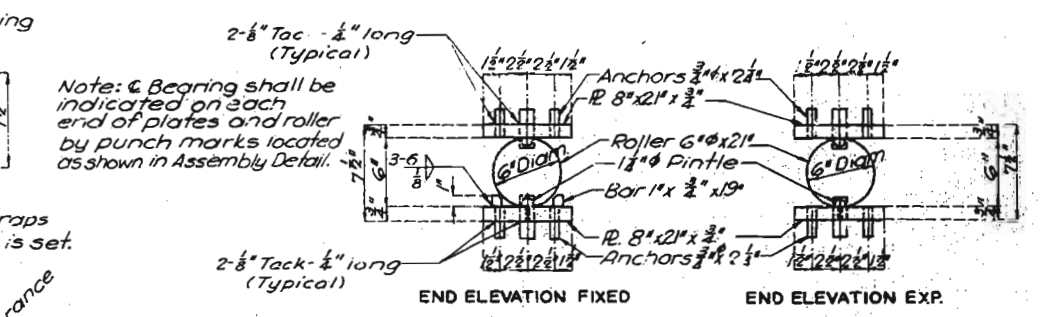
TYPICAL SECTION OF GIRDER HAUNCHES

HAUNCH DIMENSIONS	1	2	3	4	5	6	7	8
Bent No.	1	2	3	4	5	6	7	8
Dimensions	13'	13'	13'	13'	13'	13'	13'	13'
Girder (1)	13'	13'	13'	13'	13'	13'	13'	13'
Girder (2)	13'	13'	13'	13'	13'	13'	13'	13'
Girder (3)	13'	13'	13'	13'	13'	13'	13'	13'
Girder (4)	13'	13'	13'	13'	13'	13'	13'	13'

GIRDER DIAGRAM

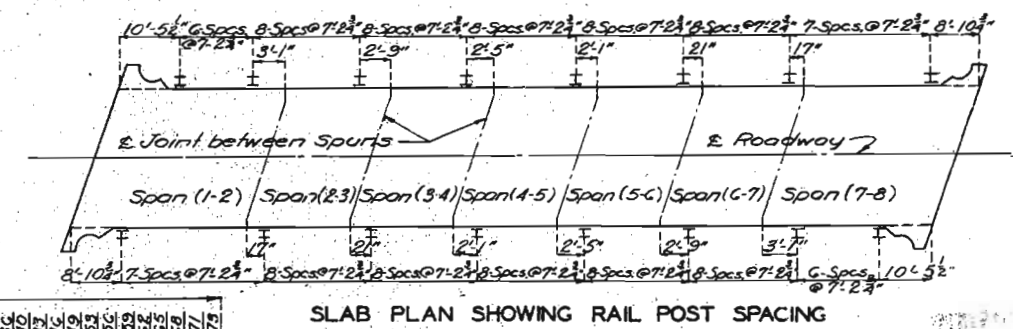


Note: Remove straps after concrete is set.

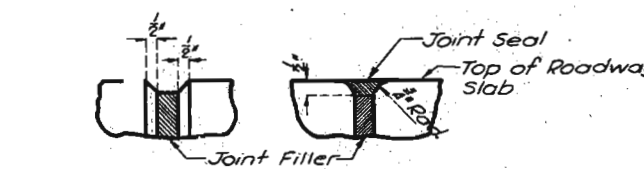


DETAILS OF BEARING DEVICE

Note: Material for plates and 1" x 1/2" bars shall be USS T-1 alloy steel or equivalent. Material for rollers and pintles shall be cold finished carbon steel A.I.S.I. C1042 or C1045 (turned and polished). E6015 or E6016 welding electrodes shall be used for welding. All bearing plates shall be straightened to plane surfaces. Paint: Shop, one coat red lead except top surface of top plates and bottom surface of bottom plates; Field, all exposed surfaces first coat brown and second coat aluminum. Payment for cleaning and painting such surfaces will be included in price bid. Items painted.

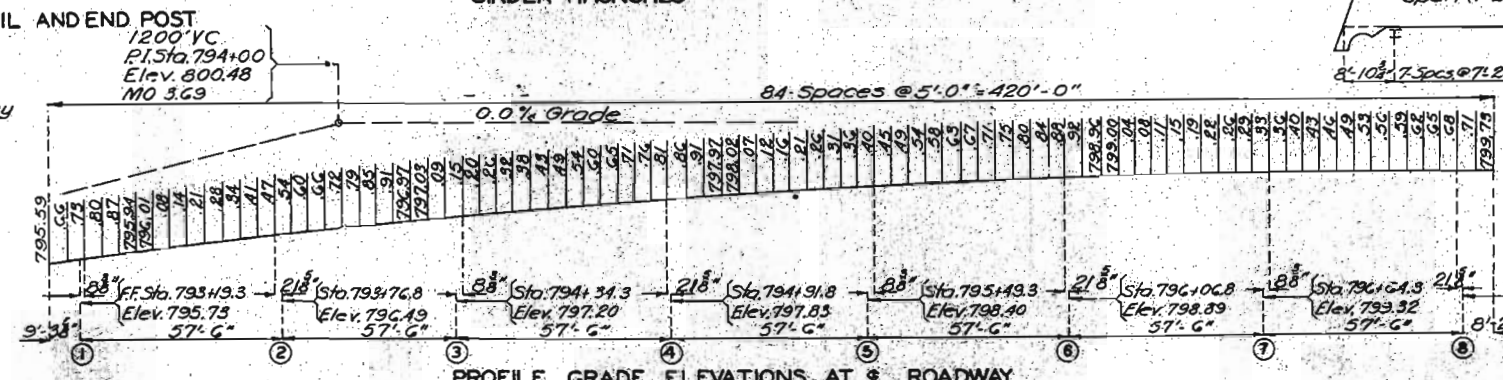


SLAB PLAN SHOWING RAIL POST SPACING



Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with 3/4" 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



PROFILE GRADE ELEVATIONS AT ROADWAY

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

BRIDGE OVER M&I. R.R., KOEN CR., ROUTE O

STATE ROAD FROM BONNE TERRE TO FARMINGTON ABOUT 1.8 MILES E. OF FLAT RIVER PROJECT NO. F-254 (B) (RTE. 67) STA. 793+19.3

ST. FRANCOIS COUNTY

Assembled Mar. 1956 by D.J.G. & J.H.K. Checked Mar. 1956 by G.F.K.

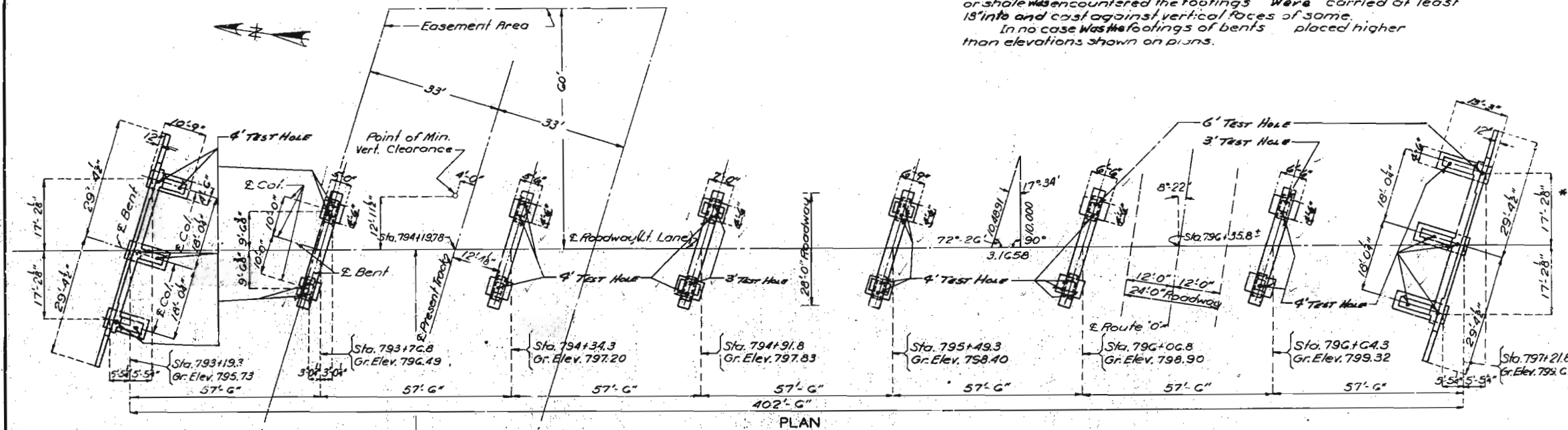
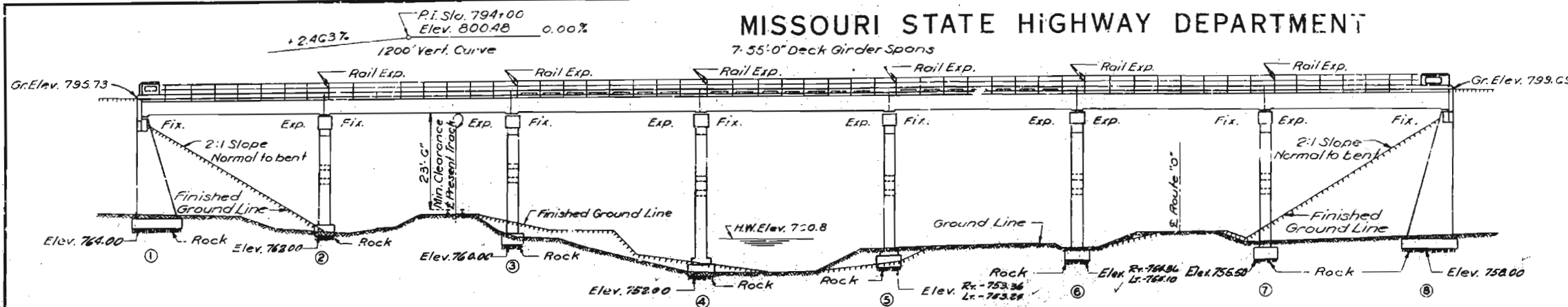
NO CONSTRUCTION CHANGES

Sheet No. 7 of 7. Revised 11-15-67

40'-60' spans - 12" Girder Bearing Plates & 21-36

L-666

# MISSOURI STATE HIGHWAY DEPARTMENT



## GENERAL NOTES:

Design Specifications: A.A.S.H.O. 1953  
 Loading: H20-44  
 Structural Steel Stress: 8,000 psi  
 Concrete, Class B Stress: 1200 psi  
 Reinforcing Steel Stress: 20,000 psi  
 Rivets: 8" holes 1/2" except as noted  
 Paint: Shop, none; Field contact surfaces of bolted field connections and contact of lead and surfaces inaccessible under erection, three coats of red lead. No other paint was applied by Contractor except as noted for bearings on Sheet No. 7 of the Design Plans.  
 Red lead required was furnished by Contractor.  
 Payment for cleaning and painting such surfaces was included in unit price bid for fabricated structural steel.

Where joint filler is specified on the plans it conformed with the requirements for Gray Rubber Compound Joints as given in Section 59-22B of the Standard Specifications.  
 A rubbed surface finish was required on all exposed surfaces of concrete and posts above top of curb.  
 Concrete for superstructure was Class B-1 air-entrained (See Special Provisions).  
 Concrete for substructure was Class B-1 air-entrained. Contractor did not elect to use Class B-1 in lieu of Class B for concrete in substructure with payment on the basis of Class B concrete, as provided in specifications.  
 Falsework over existing railroad tracks was constructed with a minimum vertical clearance of 20' 0" from top of rails and a minimum lateral clearance of 8' 0" from centerline of tracks.

FINAL QUANTITIES			
Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds. 172.5		172.5
Class 2 Excavation for Structures	Cu. Yds. 9.0		9.0
Class B Concrete	Cu. Yds. 412.8		412.8
Class B-1 Concrete	Cu. Yds. 662.3		662.3
Reinforcing Steel	Lbs. 44,310	19,420	63,730
Fabricated Structural Steel (Bearings)	Lbs. 13,850		13,850
Fabricated Structural Steel (Handrail)	Lbs. 34,610		34,610
Class 1 Excav. for Struc. + 25% Cut	Cu. Yds. 1.5		1.5
Class 2 Excav. for Struc. + 50% Cut	Cu. Yds. 2.5		2.5
TEST HOLES	Lin. Ft. 141		141

Note: Excavation for bridge made above Elev. 754.0 was paid for as Class 1 Excavation for Structures.  
 Excavation for bridge made below Elev. 754.0 was paid for as Class 2 Excavation for Structures.

ADDITIONAL REINFORCING STEEL (SUBSTR.)			
No.	SIZE	LEN.	MATERIAL
* END BENT NO. 1 - RT. FTG.			
2	#6	4'-0"	DIA
13	#6	4'-0"	DIA
* INT. BENT NO. 2 - LT. FTG.			
9	#6	4'-6"	DIA
2	#6	4'-0"	DIA

FINAL PLANS

DIST. NO.	MO.	PROJ. NO.	YEAR	NO.	SHEETS
5			19	2	

BILL OF REINFORCING STEEL (SUBSTRUCTURE)

No.	Size	Length	Work	Location
* End Bents No. 1 and 8				
60	#7	4'-9"	D1	Footings
12	#6	8'-9"	F1	Haunch
24	#6	8'-6"	F3	"
20	#6	10'-6"	H1	Wing
8	#6	21'-9"	H2	Beam
8	#5	21'-9"	H3	"
28	#9	22'-3"	H4	"
10	#11	11'-6"	H5	"
12	#6	22'-9"	H6	"
8	#6	21'-6"	H7	"
8	#5	25'-6"	H8	"
60	#3	18'-3"	P1	Col. Bl. No. 1
18	#4	21'-9"	P4	" " " 1
90	#3	20'-9"	P5	" " " 8
24	#4	31'-6"	PC	" " " 8
8	#6	19'-0"	T1	Wing
12	#6	9'-0"	T2	"
106	#4	10'-6"	U1	Beam
10	#4	3'-0"	U2	"
84	#3	3'-9"	U5	"
14	#4	10'-3"	VI	Wing
12	#7	35'-6"	VII	Col. Bl. No. 8
18	#7	34'-6"	V12	" " " 8
12	#7	25'-3"	V2	Col. Bl. No. 1
18	#7	24'-6"	V3	" " " 1

Bending Sketches & Cutting Diagrams

See Sheet No. 6 for Superstructure Bar Bill  
 B.M. #100 - Elev. 770.27 S.E. Cor. of Handrail  
 Post of Conc. Bridge, Rte. 30, 440' Lt. of ...  
 B.M. #100-B - Elev. 799.79 " on top of Rte. 30 of ABT\* B  
 30' R of Sta. 797+20  
 (U.S.G.S. Datum)

## BRIDGE OVER M.&I. R.R. KOEN CR., ROUTE "O"

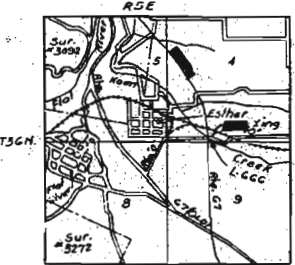
STATE ROAD FROM BONNE TERRE TO FARMINGTON  
 ABOUT 1.8 MILES E. OF FLAT RIVER  
 PROJECT NO. FPG-254 (8) (RTE. 67) STA. 793+19.3  
 ST. FRANCOIS COUNTY

SUBMITTED BY: J. Williams DATE: 5-15-1957  
 APPROVED BY: R. P. Whitson DATE: 8-15-1957  
 BRIDGE ENGINEER CHIEF ENGINEER

STD.C-110R4

L-366

## LOCATION SKETCH



Drainage Area  
 5.9 Sq. Mi. (Lt. Hilly)

DRAWN May 1955 BY K.R.W.:J.H.K.  
 CHECKED Nov. 1956 BY C.S.A.

Sheet No. 1A of 5

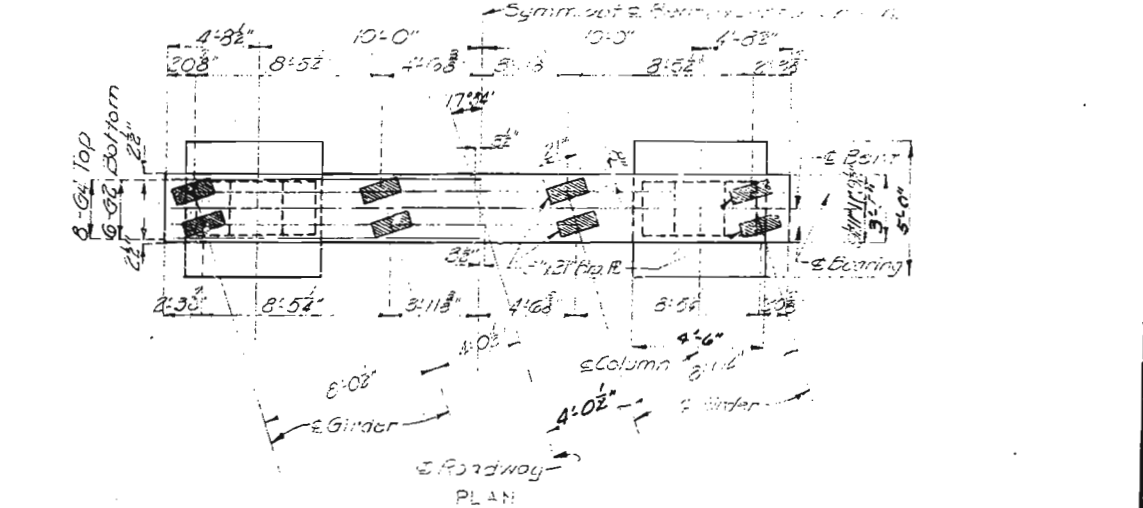
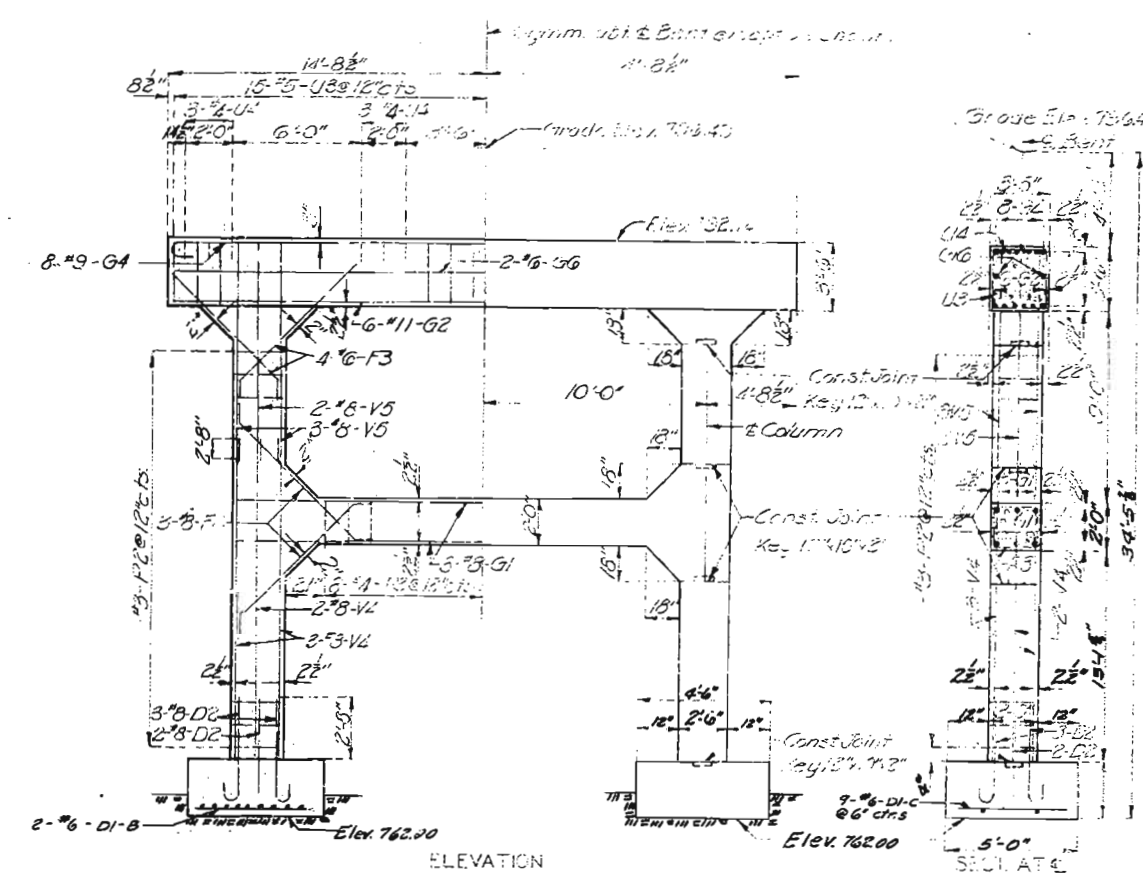
R.V. 11-21-57

FINAL PLANS



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FINAL PLANS



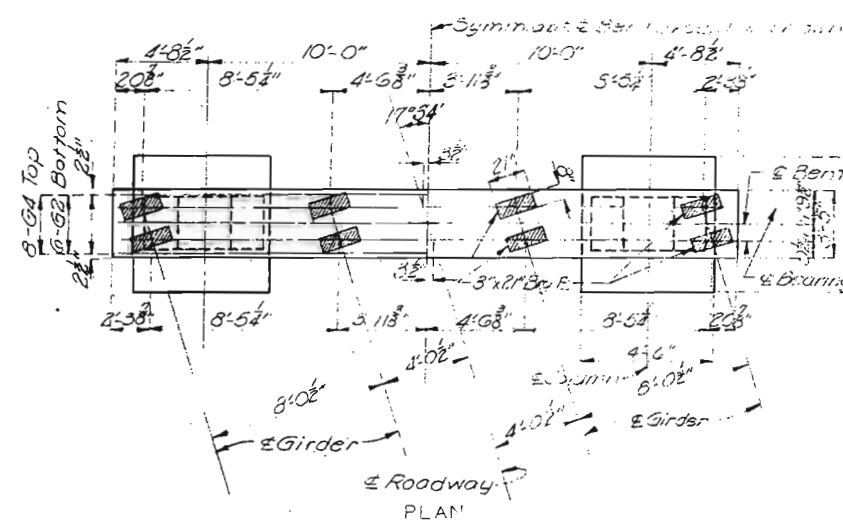
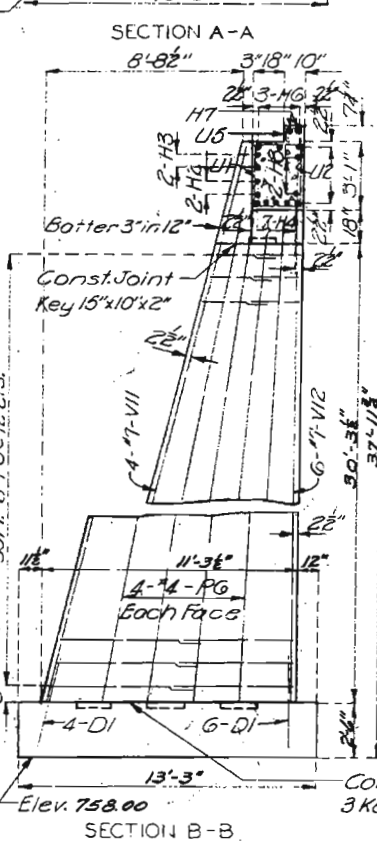
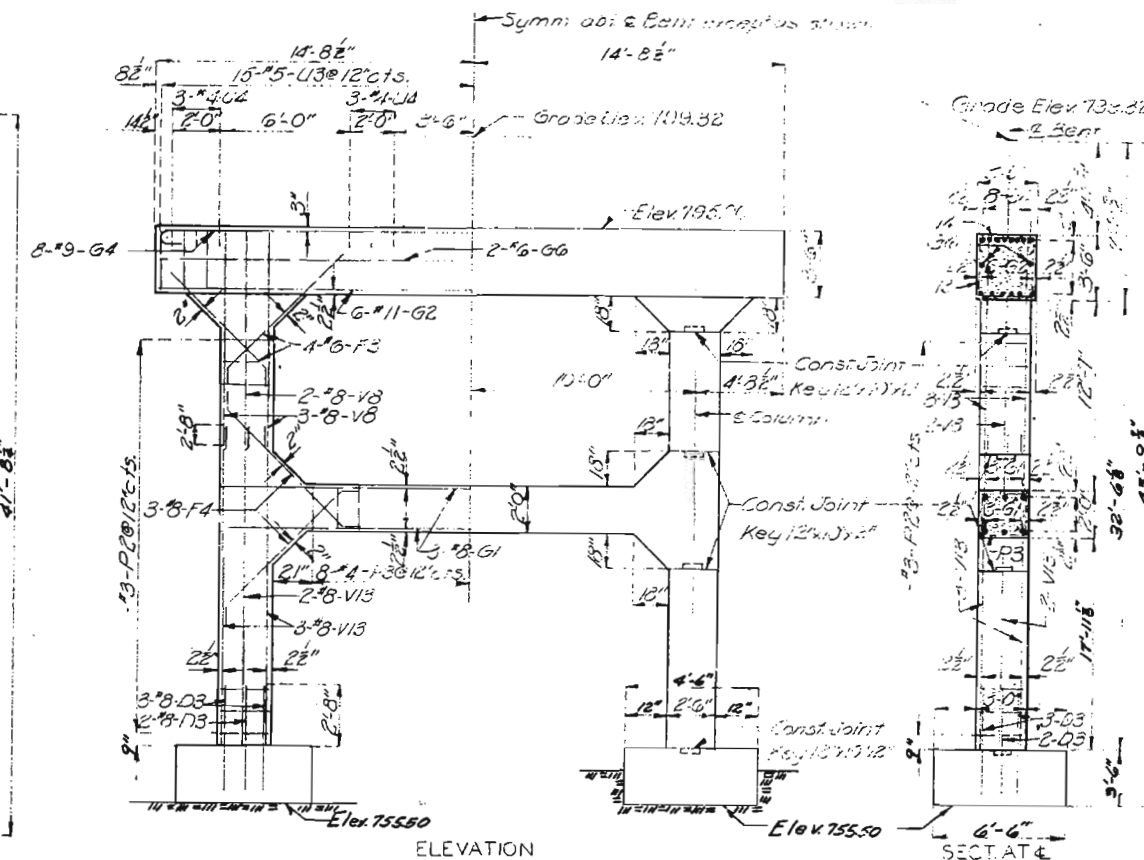
DETAILED TAIL OF END BENT NO. 1



L - 666

224

FINAL PLANS



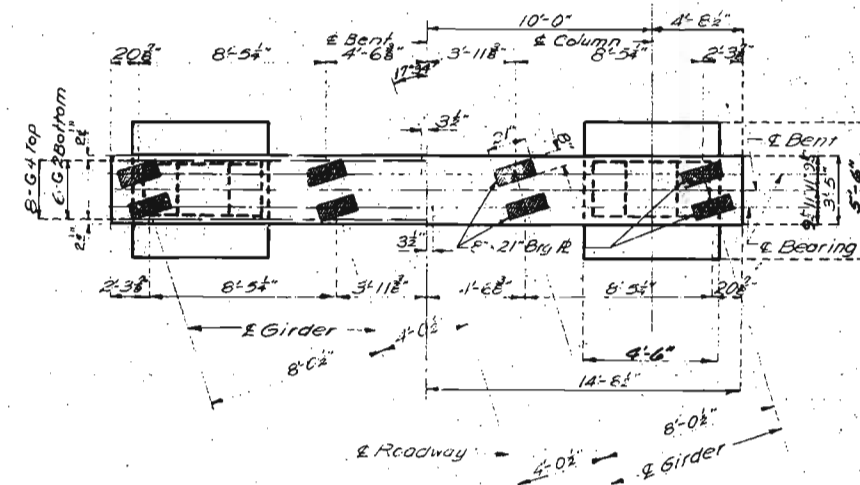
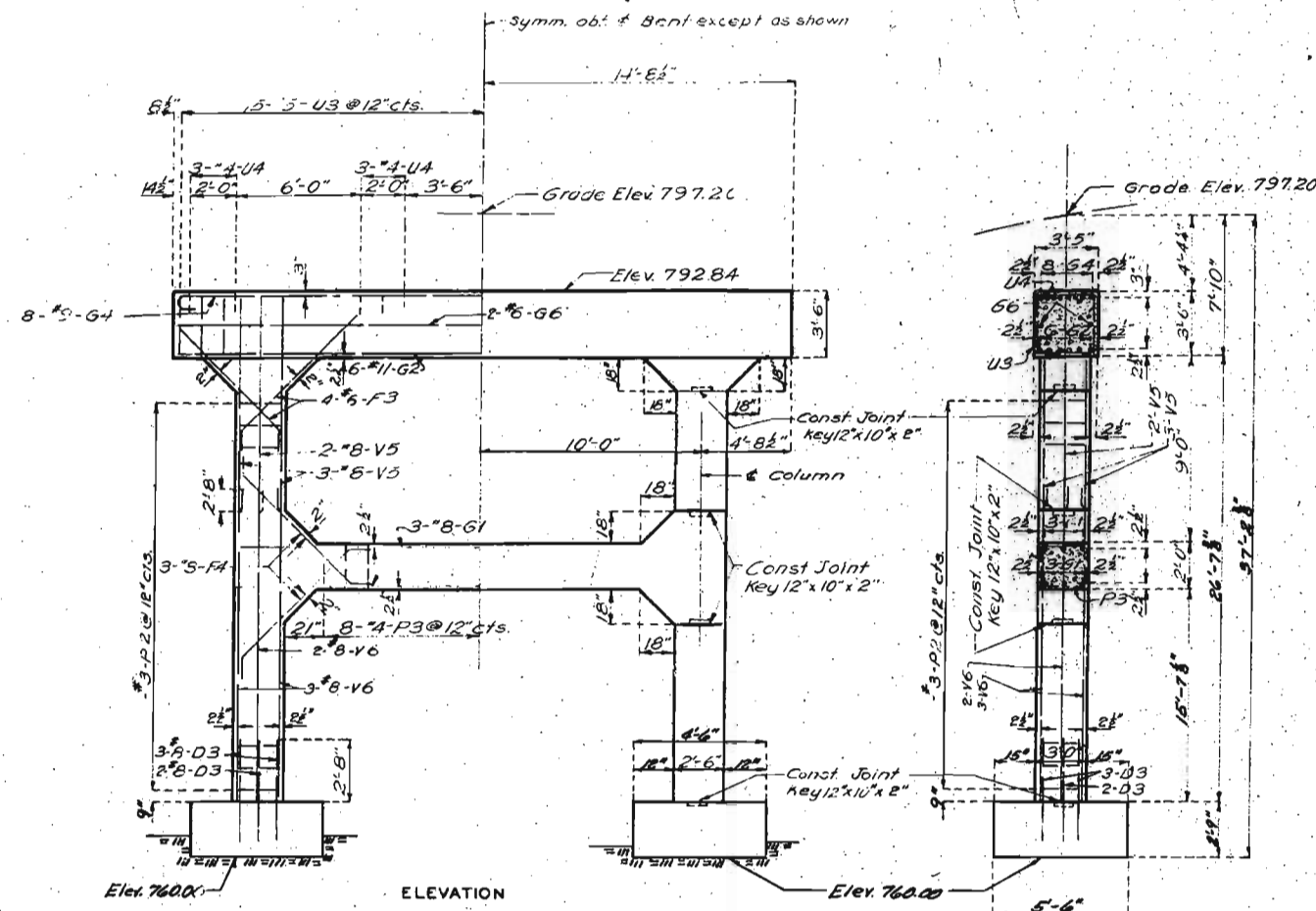
L-666

FINAL PLANS

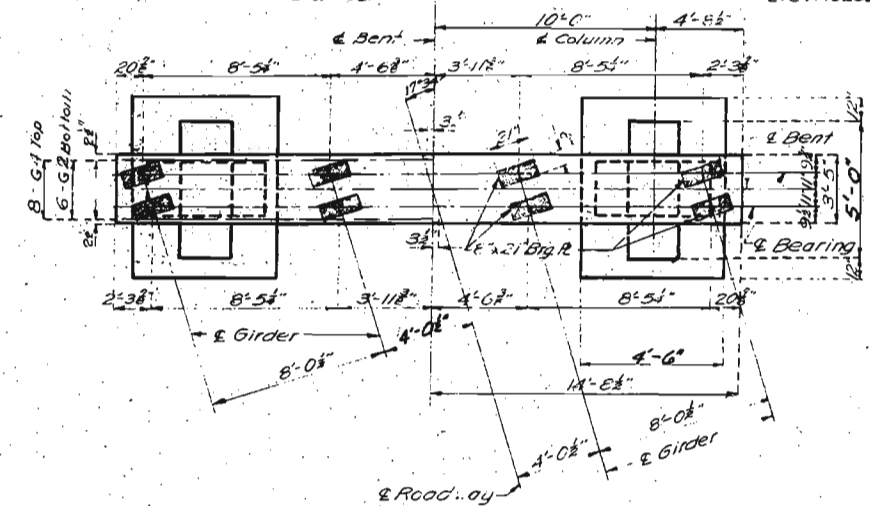
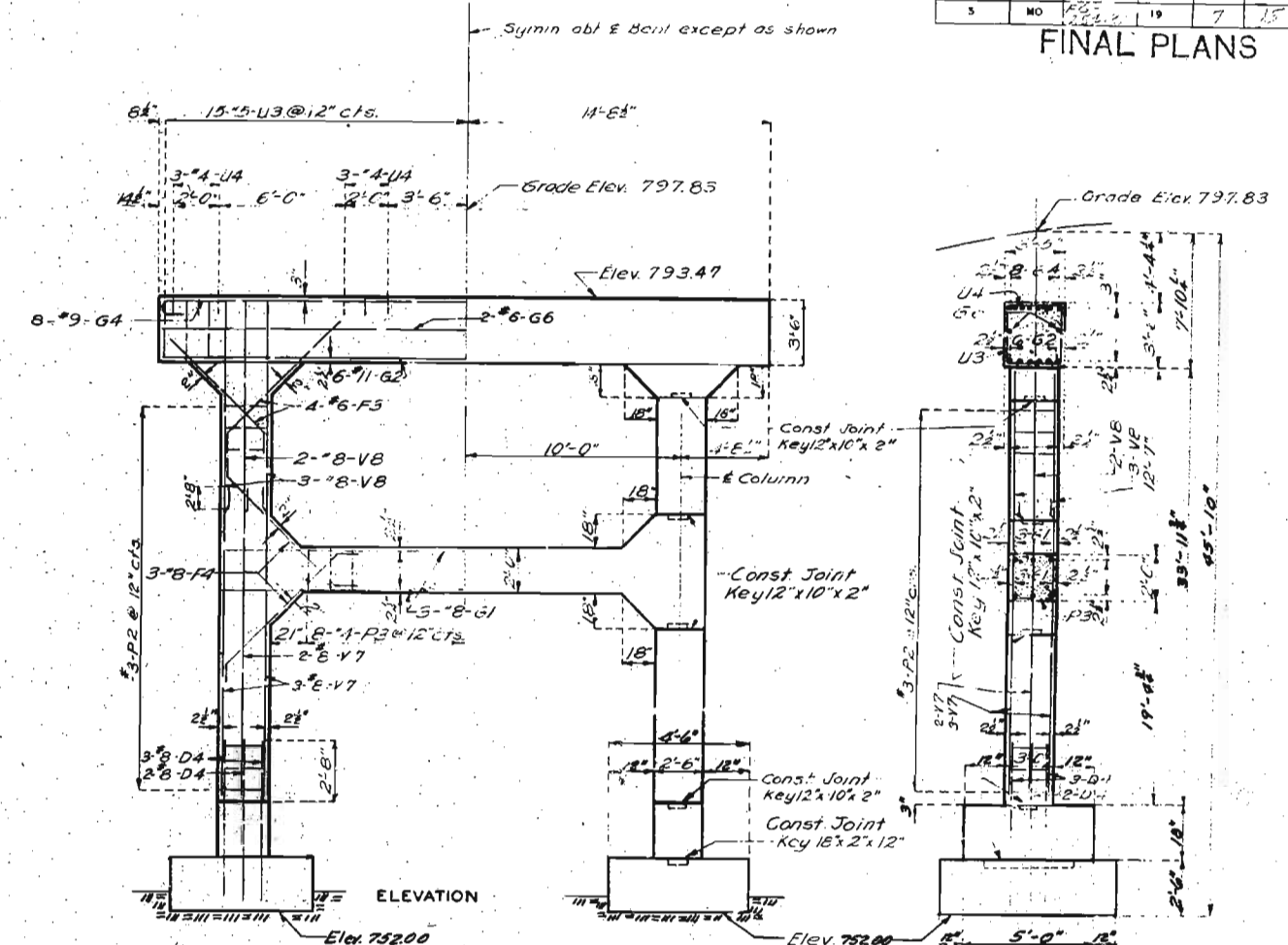
# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	254(8)	19	7	15

## FINAL PLANS



DETAILS OF INTERMEDIATE BENT NO. 3



DETAILS OF INTERMEDIATE BENT NO. 4

BRIDGE OVER M. & I. R.R., KOEN CR., RTE. "O"

STATE ROAD FROM BONNE TERRE TO FARMINGTON

ABOUT 1.8 MILES E. OF FLAT RIVER

PROJECT NO. FFG-254(8)(RTE. 67) STA. 793+19.3

ST FRANCOIS COUNTY

Assembled Sept. 1955 by D.J.G. & G.W.P.  
Checked Feb. 1956 by A.J.K.

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

Sheet No. 4A of 5.

FINAL PLANS

20-3 Col. Int. 3/4" Scale or Smaller 1/4" Scale or Smaller

L-666

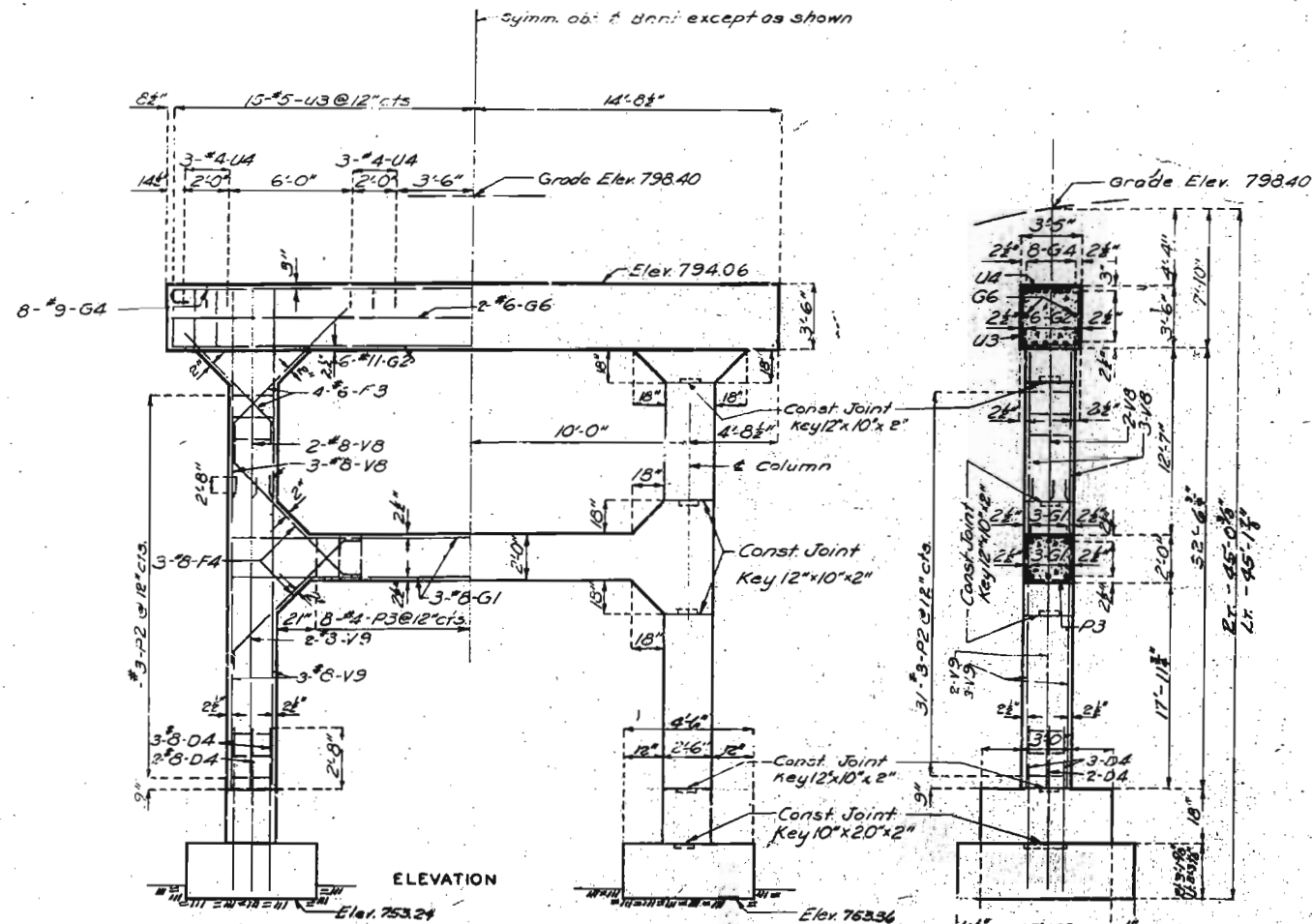
275



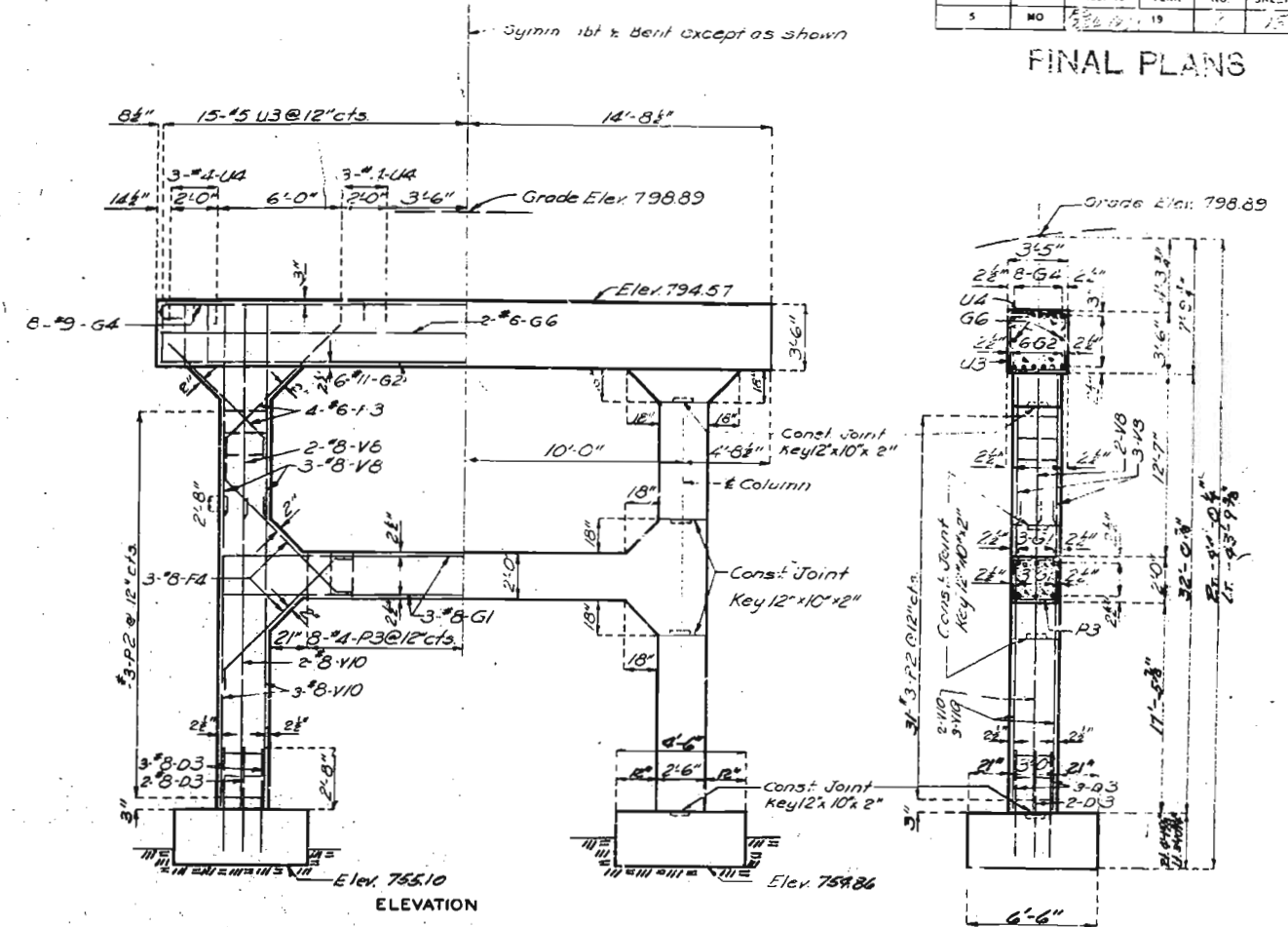
# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	226-19	19	1	1

## FINAL PLANS



DETAILS OF INTERMEDIATE BENT NO. 5



DETAILS OF INTERMEDIATE BENT NO. 6

BRIDGE OVER M.&I.R.R. KOEN CR., RTE. "O"

STATE ROAD FROM BONNE TERRE TO FARMINGTON  
ABOUT 1.8 MILES E. OF FLAT RIVER

PROJECT NO. FFG-254 (BX RTE. 67) STA. 793+19.3

ST. FRANCOIS COUNTY

Assembled by D.J.G. & W.J.K.  
Checked Feb. 1956 by A.F.K.

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

Sheet No 5A of 5.

FINAL PLANS

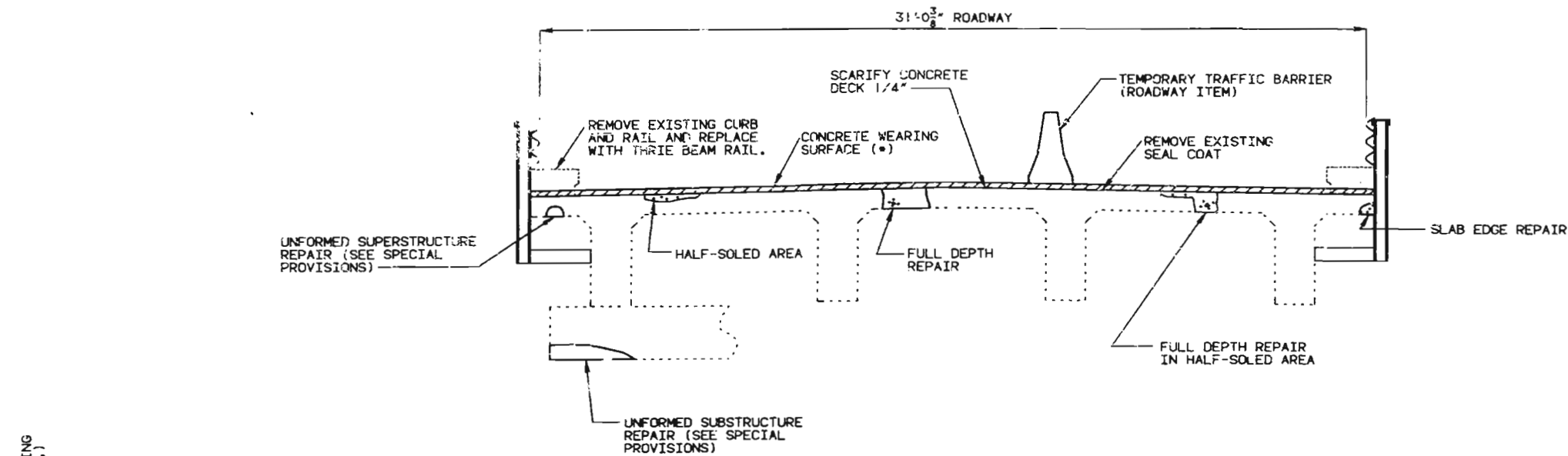
Scale 1/4" = 1'-0"

L-666

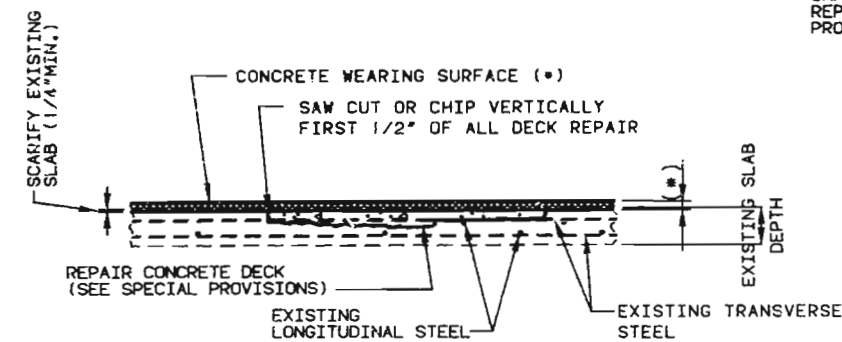
276

# MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

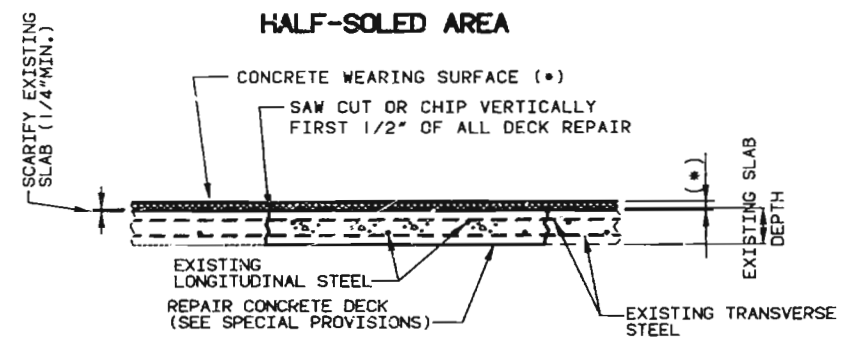
STATE	PROJ. NO.	SHEET NO.
MO.	F-67-3(54) SEC. A, B & C	26
SUR. 4 & 9	TWP. 36N RGE. 5E	



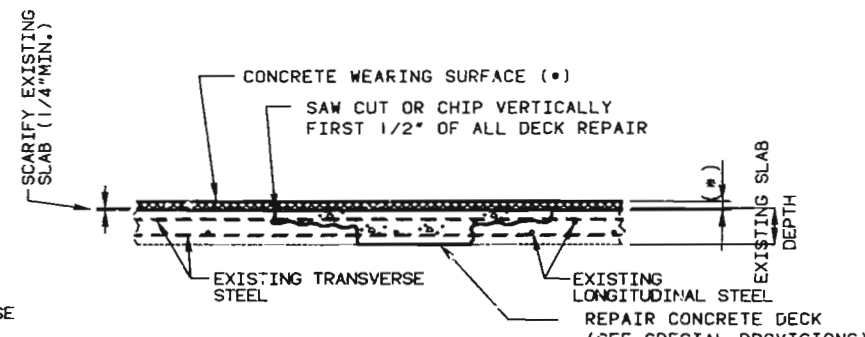
SECTION THRU SLAB



HALF-SOLED AREA



FULL DEPTH REPAIR



FULL DEPTH REPAIR IN HALF-SOLED AREA

(\*) 2 1/4\" (MIN.) FOR LOW SLUMP CONCRETE  
1 3/4\" (MIN.) FOR LATEX MODIFIED CONCRETE

## ESTIMATED QUANTITIES

ITEM	LUMP SUM	TOTAL
CURB AND SLAB REMOVAL FOR THRIE BEAM INSTALLATION		1
SEAL COAT REMOVAL (BRIDGES) (SEE SPECIAL PROVISIONS)	SQ. FT.	11,270
REPAIRING CONCRETE DECK (HALF-SOLED)	SQ. FT.	1,700
FULL DEPTH REPAIR	SQ. FT.	250
SLAB EDGE REPAIR (BRIDGES)	LIN. FT.	100
CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS	SQ. YD.	1,416
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.	796
SUBSTRUCTURE REPAIR (UNFORMED) SEE SPEC. PROV.	SQ. FT.	30
SUPERSTRUCTURE REPAIR (UNFORMED) SEE SPEC. PROV.	SQ. FT.	120

NOTE: OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.  
MAINTAIN ONE LANE OF TRAFFIC ON STRUCTURE DURING CONSTRUCTION.

ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH BRIDGE OVERLAY.

IN ORDER TO MAINTAIN GRADE AND A MINIMUM 1-3/4\" LATEX MODIFIED CONCRETE IT IS ANTICIPATED THAT AN AVERAGE APPLICATION DEPTH OF APPROXIMATELY 2-1/2\" WILL BE NECESSARY. NO PAYMENT WILL BE ALLOWED FOR ADDITIONAL LABOR, MATERIALS OR EQUIPMENT REQUIRED FOR THIS NECESSARY MINIMUM AND/OR VARIABLE DEPTH OF LATEX MODIFIED CONCRETE.

IN ORDER TO MAINTAIN GRADE AND A MINIMUM 2-1/4\" LOW SLUMP CONCRETE IT IS ANTICIPATED THAT AN AVERAGE APPLICATION DEPTH OF APPROXIMATELY 3\" WILL BE NECESSARY. NO PAYMENT WILL BE ALLOWED FOR ADDITIONAL LABOR, MATERIALS OR EQUIPMENT REQUIRED FOR THIS NECESSARY MINIMUM AND/OR VARIABLE DEPTH OF LOW SLUMP CONCRETE.

REPAIRS TO BRIDGE OVER RTE. 0,  
KOEN CREEK & UNION PACIFIC R.R.

STATE ROAD FROM BONNE TERRE TO FARMINGTON  
ABOUT 1.8 MILES E. OF FLAT RIVER

PROJECT NO. F-67-3(54) SEC. A, B & C STA. 793+19.3

JOB NO. 6P-887-67

RTE. 67

ST. FRANCOIS

COUNTY

DATE: 10/16/90

STD. 606.23

L-666R

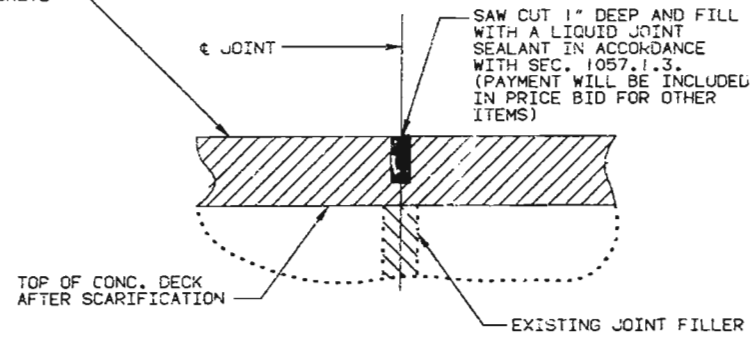
DESIGNED AUG. 1990  
DETAILED AUG. 1990  
CHECKED SEPT. 1990

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

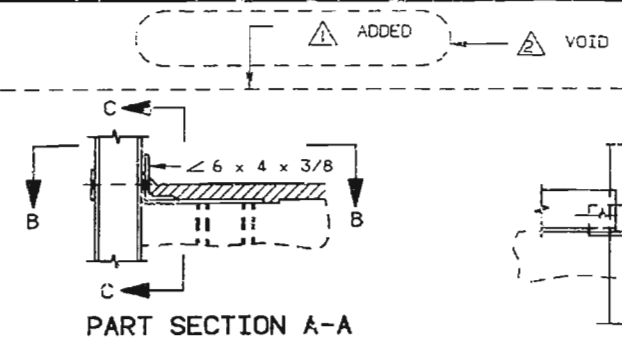
SEE FINISH PLANS  
SHEET NO. 1 OF 4

430 65

1 3/4" (MIN.) LATEX MODIFIED CONCRETE OR  
2 1/2" (MIN.) LOW SLUMP CONCRETE



DETAIL OF TRANSVERSE JOINT AT BTS. NO. 2,3,4,5,6 & 7



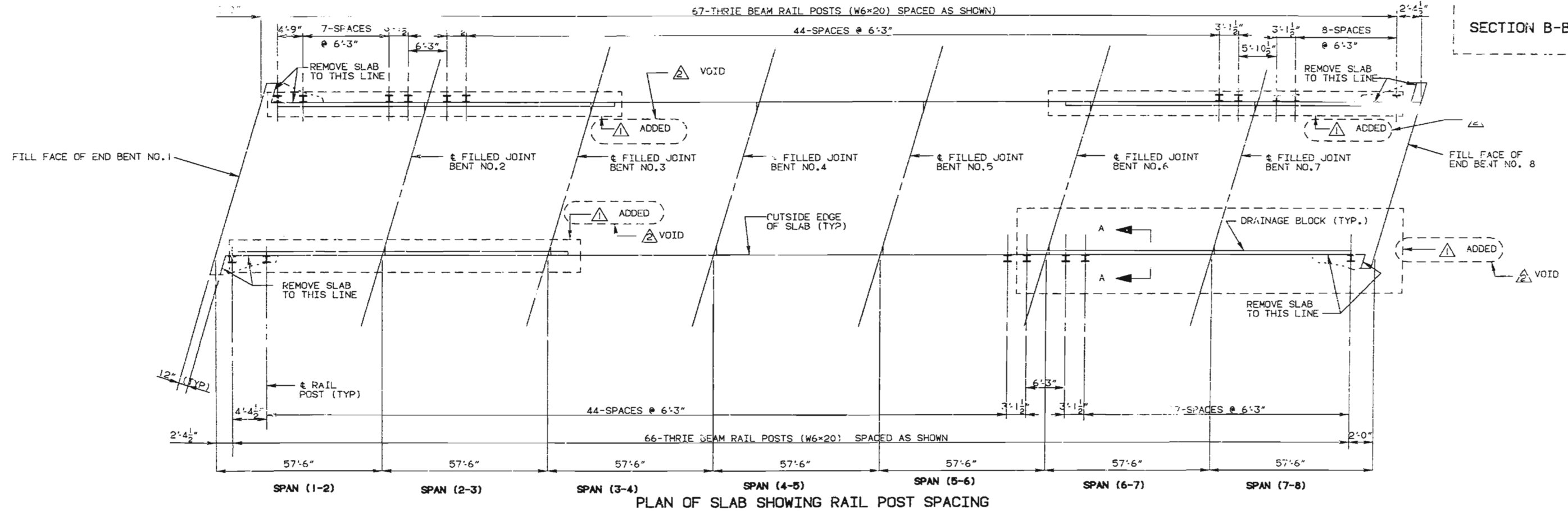
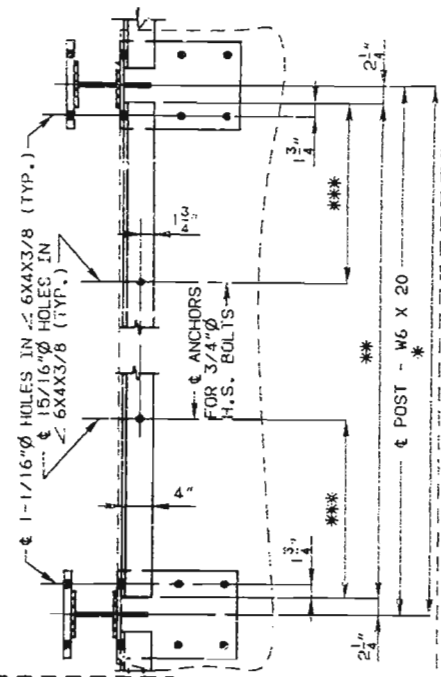
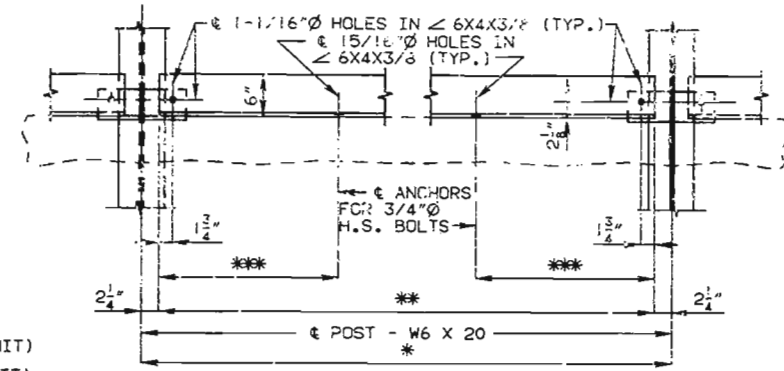
PART SECTION A-A

NOTE: ANGLES FOR DRAINAGE BLOCK SHALL BE FABRICATED FROM A-36 STEEL AND GALVANIZED. ENDS OF ANGLES TO BE GROUND TO BEAR ON BENT PLATES.

6'-3"	5'-10 1/2"	23 1/2"	(2 HOLES PER UNIT)
4'-9"	4'-4 1/2"	17 1/2"	(2 HOLES PER UNIT)
3'-1 1/2"	2'-9"	16 1/2"	(1 HOLE PER UNIT)
4'-4 1/2"	4'-0"	16"	(2 HOLES PER UNIT)
5'-10 1/2"	5'-6"	22"	(2 HOLES PER UNIT)

NOTE: FOR PART SECTION AT RAIL POST, SEE SHEET NO. 3.

FOR MORE DETAILS OF CHANGES, SEE SHEET NO. 2A.



PLAN OF SLAB SHOWING RAIL POST SPACING

DETAILED AUG. 1990  
CHECKED AUG. 1990

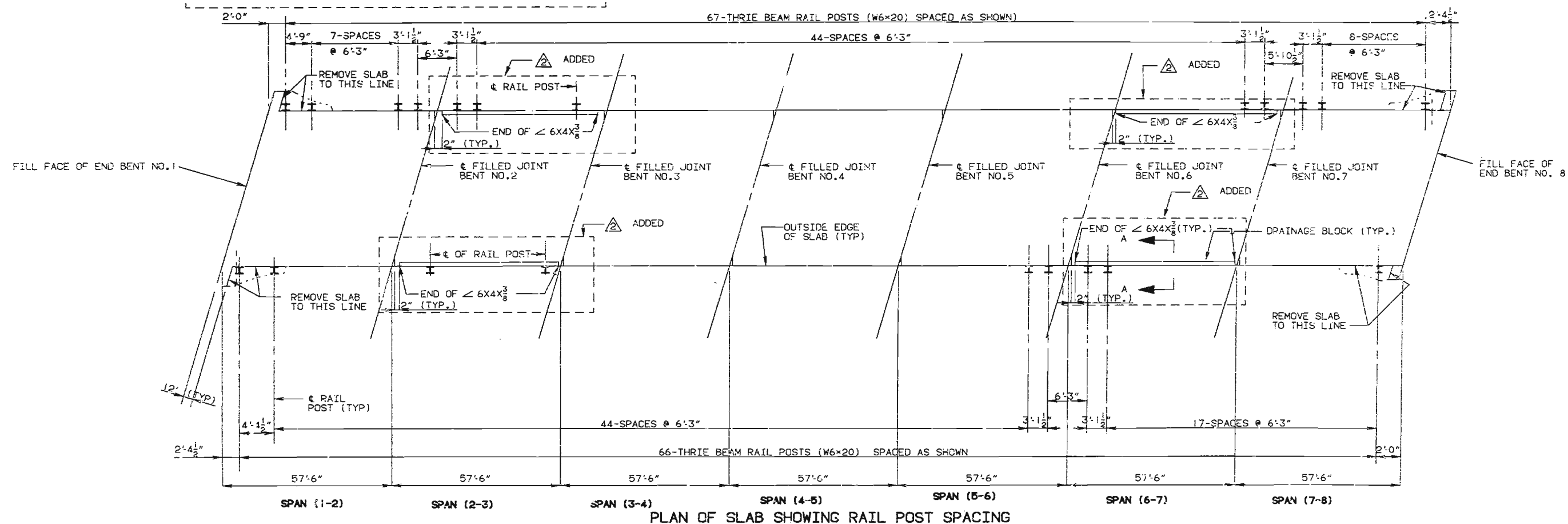
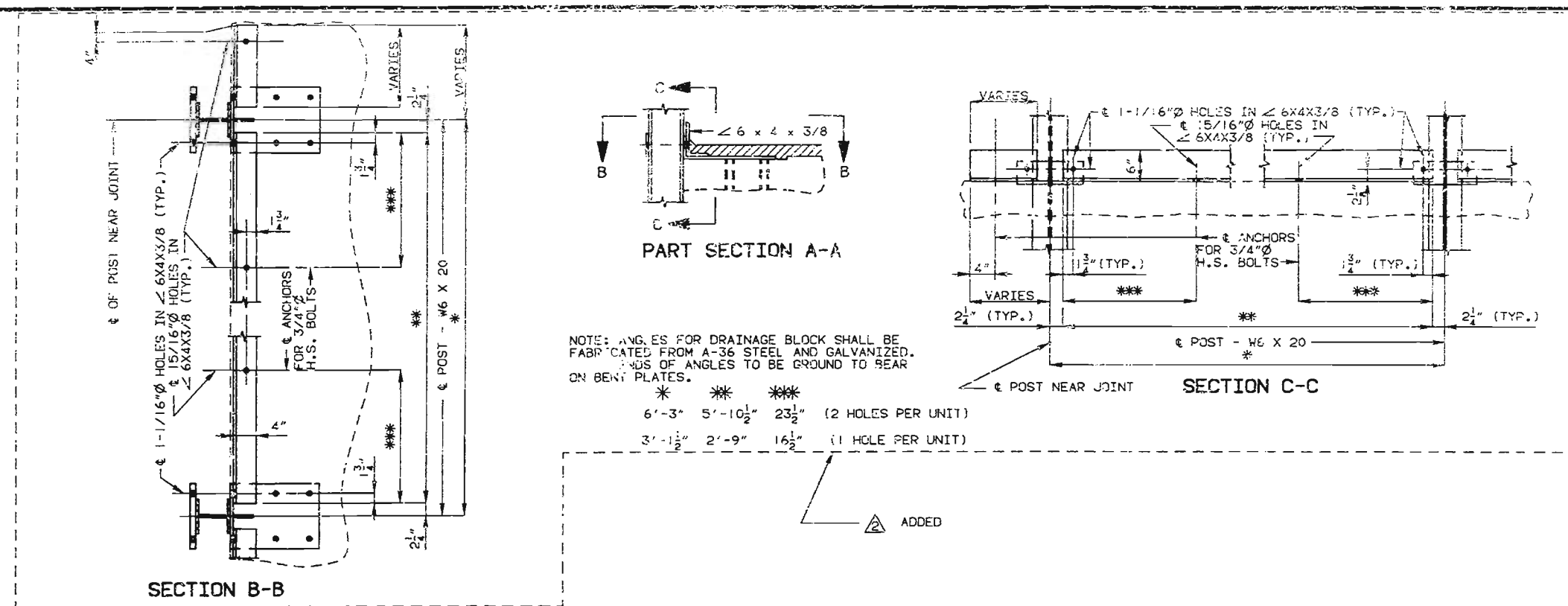
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED DEC. 1991  
REVISED NOV. 1991

SHEET NO. 2 OF 4

ST. FRANCOIS COUNTY L-666R





DETAILED AUG. 1990  
CHECKED AUG. 1990

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

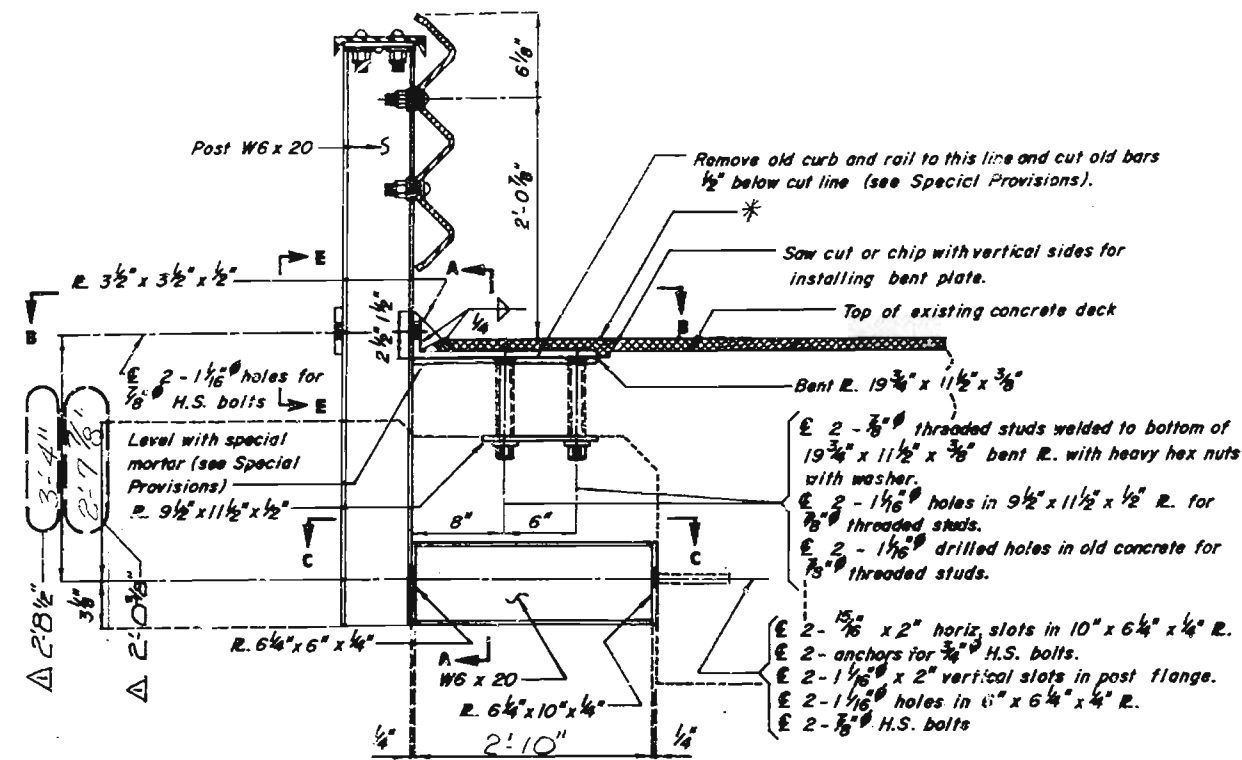
△ REVISED DEC. 1991

SEE FINAL PLANS  
SHEET NO. 24 OF 4

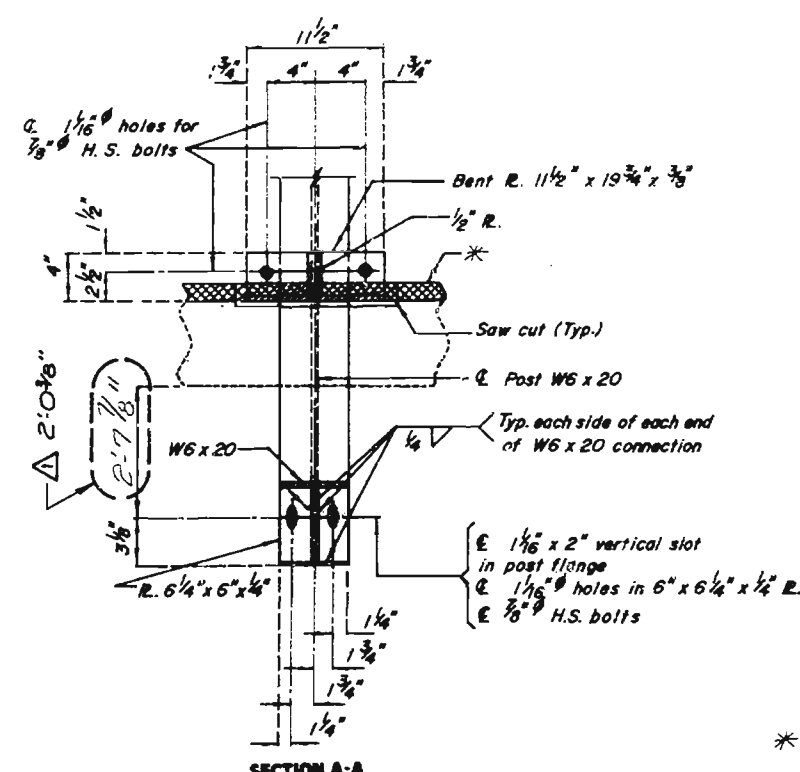
ST. FRANCOIS

COUNTY

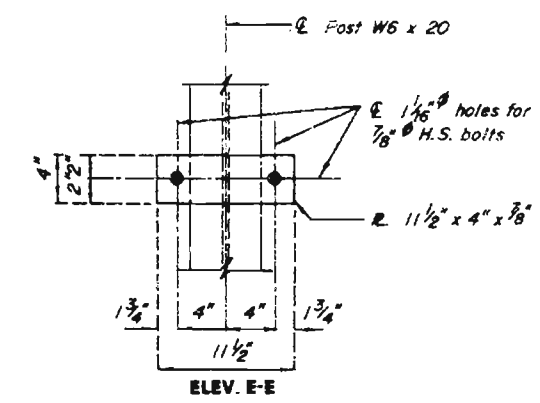
L-666R



PART SECTION AT RAIL POST

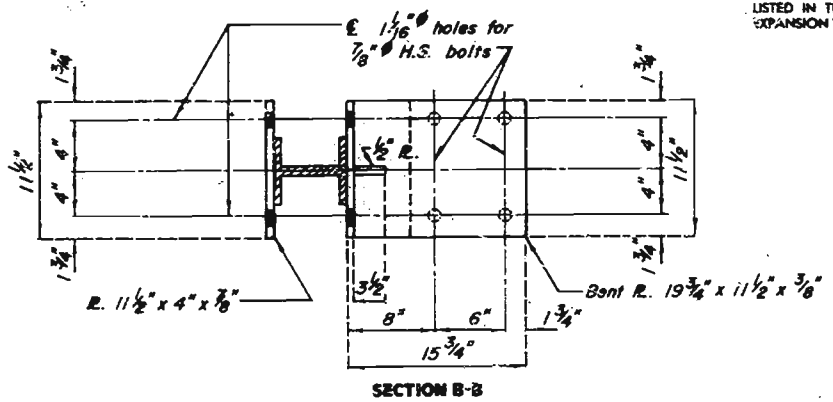


SECTION A-A

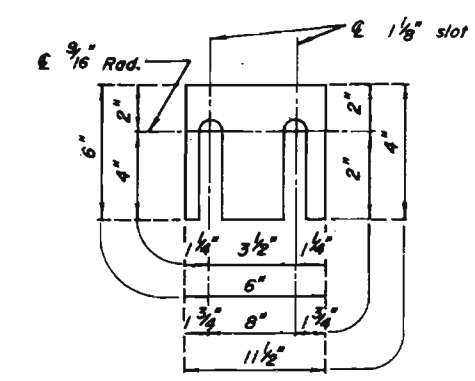


ELEV. E-E

NOTE:  
AT THE OPTION OF THE CONTRACTOR ONE OF THE ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS MAY BE SUBSTITUTED FOR THE CONE EXPANSION TYPE CONCRETE ANCHORS NOTED ON THE PLANS.



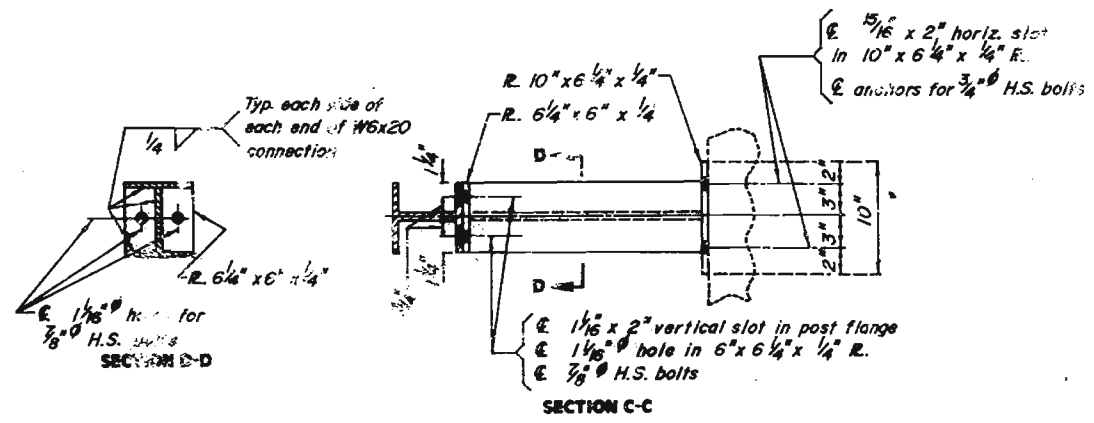
SECTION B-B



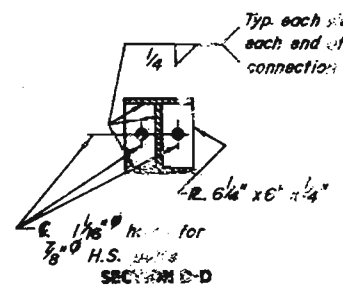
DETAIL OF SHIM PLATES

Note:  
Shim plates 6" x 6" x 1/8" may be used between post W6x20 and 6" x 6 1/4" x 1/4" R. and shim plates 11 1/2" x 4" x 1/8" may be used between post W6 x 20 and 19 3/4" x 11 1/2" x 3/8" bent plate as required for horizontal alignment.  
Shim plates may vary in thickness from 1/16" to the thickness required and may be used in multiples.  
Shim plates shall be galvanized after fabrication.

Note:  
Concrete anchors shall be the cone expansion type for hot-dip galvanized bolts.  
Concrete anchors shall have a certified concrete pull out strength (ultimate load) of at least 15,500 pounds in 3,000 psi concrete.



SECTION C-C



SECTION D-D

\* 1 3/4" (Min.) Latex Modified Concrete or 2 1/4" (Min.) Low Slump Concrete Overlay.

448 68

REHAB. (T-BM/DECK GDN)  
REVISED APR. 1987  
SEPT. 1988

DETAILED Aug. 1990  
CHECKED Sept. 1990

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

Revised 11/16/91  
ST. FRANCOIS  
Sheet No. 3 of 4

COUNTY  
L-666R

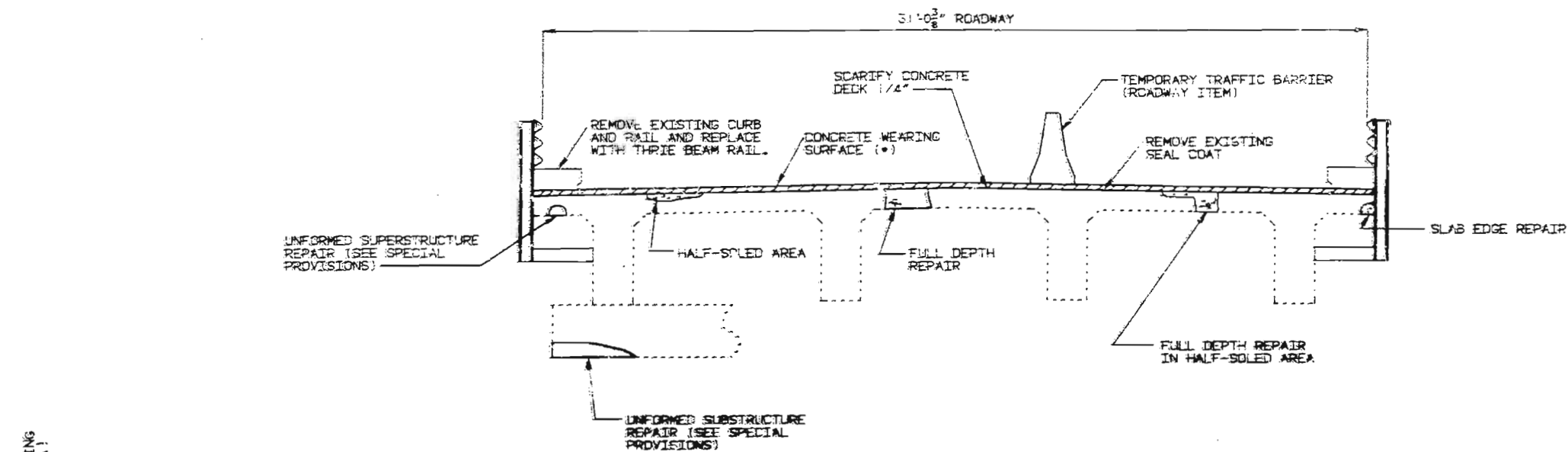




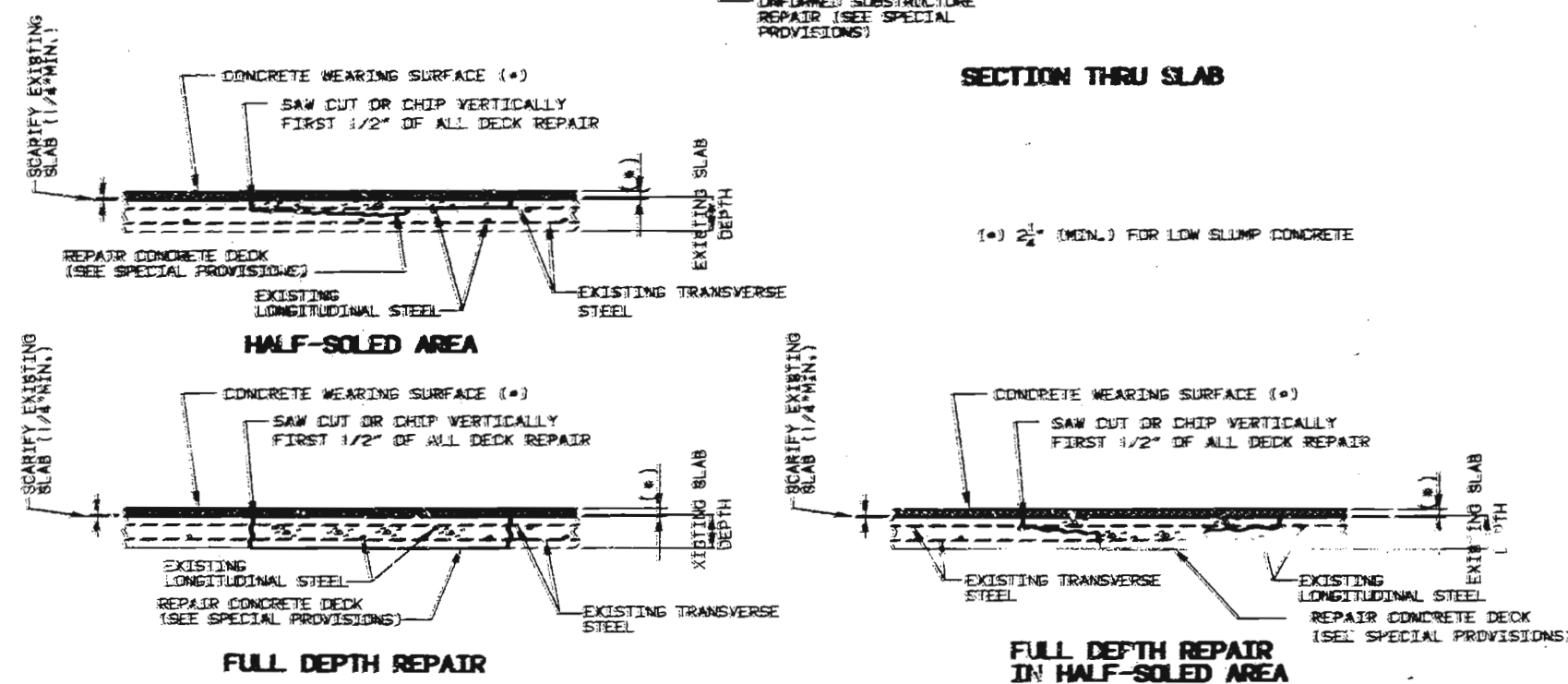


# MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	2-573-55, SEC. A, B & C	123
SUR. 4 & 9	TWP. 36N RGE. 5E	



## SECTION THRU SLAB



FINAL QUANTITIES		
ITEM		TOTAL
CURB AND SLAB REMOVAL FOR THRIE BEAM INSTALLATION	LUMP SUM	✓ 1
SEAL COAT REMOVAL (BRIDGES) (SEE SPECIAL PROVISIONS)	SD. FT.	✓ 11,270
REPAIRING CONCRETE DECK (HALF-SOLED)	SD. FT.	✓ 262
FULL DEPTH REPAIR	SD. FT.	✓ 342
SLAB EDGE REPAIR (BRIDGES)	LIN. FT.	✓ 100
CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS	SD. YD.	✓ 1,415
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.	✓ 795
SUBSTRUCTURE REPAIR (UNFORMED) SEE SPEC. PROV.	SD. FT.	✓ 732
SUPERSTRUCTURE REPAIR (UNFORMED) SEE SPEC. PROV.	SD. FT.	✓ 48
CONTINGENT ITEM		
N.W. WINGWALL REPLACEMENT (FORCE ACCOUNT)		✓ 1735.94
DRAIN BLOCKS	LIN. FT.	✓ 203.38

NOTE: OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.  
 MAINTAIN ONE LANE OF TRAFFIC ON STRUCTURE DURING CONSTRUCTION.  
 ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH BRIDGE OVERLAY.

IN ORDER TO MAINTAIN GRADE AND A MINIMUM 2-1/4\"/>

## REPAIRS TO BRIDGE OVER RTE. 0, KOEN CREEK & UNION PACIFIC R.R.

STATE ROAD FROM BONNE TERRE TO FARMINGTON  
 ABOUT 1.8 MILES E. OF FLAT RIVER

PROJECT NO. F-573-55(24) SEC. A, B & C STA. 793+19.3

JOB NO. 67-887-67 RTE. 67

ST. FRANCOIS COUNTY

DATE: 10/16/90

STD. 606.23

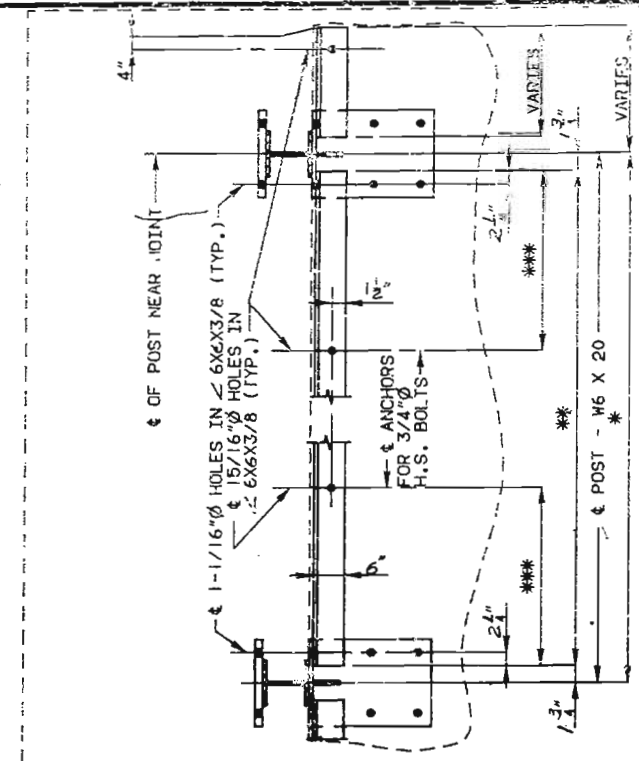
L-666R

DESIGNED AUG. 1990  
 DETAILED AUG. 1990  
 CHECKED SEPT. 1990

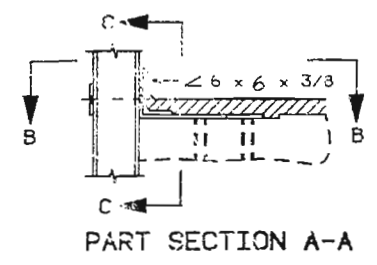
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 14 OF 4.

4-98-71



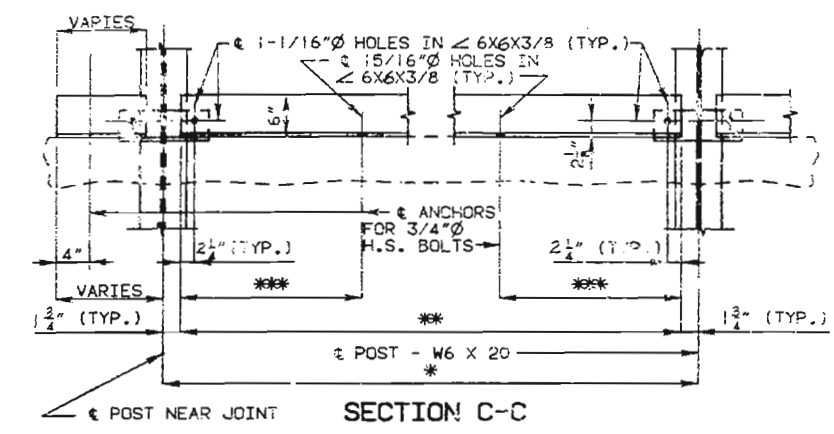
SECTION B-B



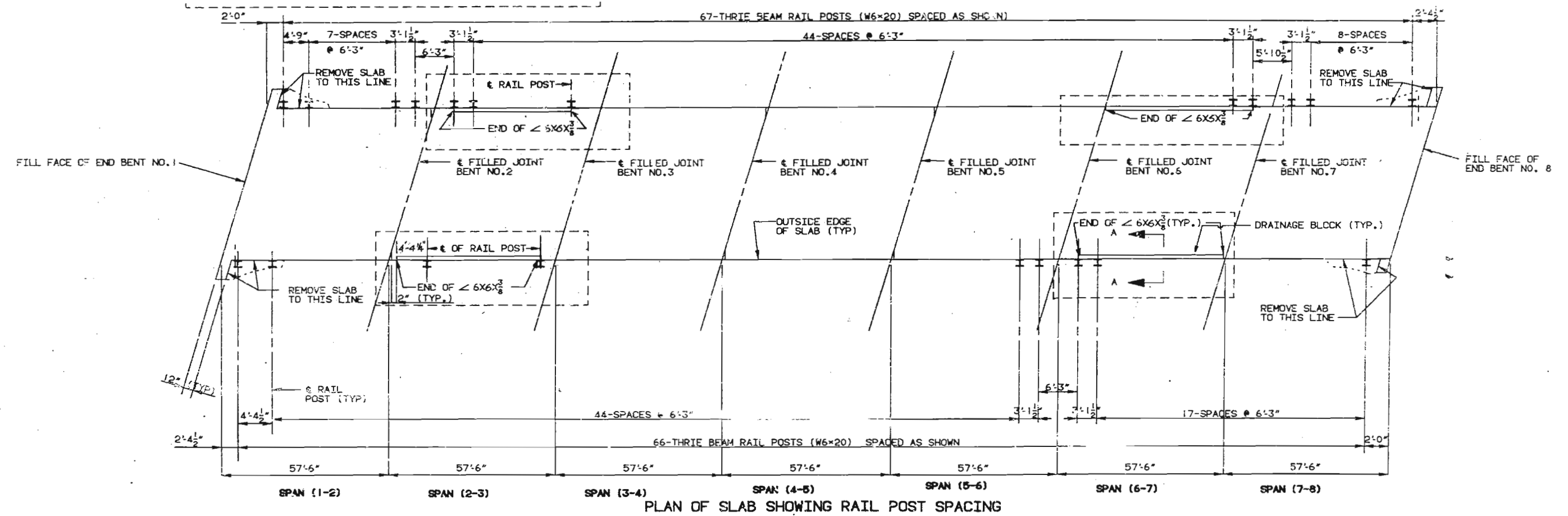
PART SECTION A-A

NOTE: ANGLES FOR DRAINAGE BLOCK SHALL BE FABRICATED FROM A-36 STEEL AND GALVANIZED. ENDS OF ANGLES TO BE GROUND TO BEAR ON BENT PLATES.

QTY	*	**	***	
32	6'-3"	5'-11 1/2"	23 3/4"	(2 HOLES PER UNIT)
3	3'-1 1/2"	2'-10"	17"	(1 HOLE PER UNIT)
1	4'-4 1/4"	4'-2 1/2"	17 1/4"	(2 HOLES PER UNIT)



SECTION C-C



PLAN OF SLAB SHOWING RAIL POST SPACING

DETAILED AUG. 1990  
CHECKED AUG. 1990

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED DEC. 1991

SHEET NO. 2A OF 4  
2A-A Final Plan

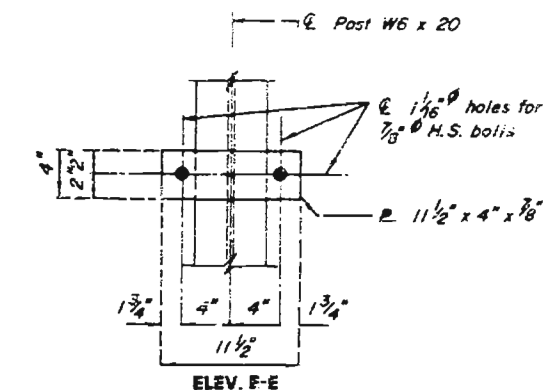
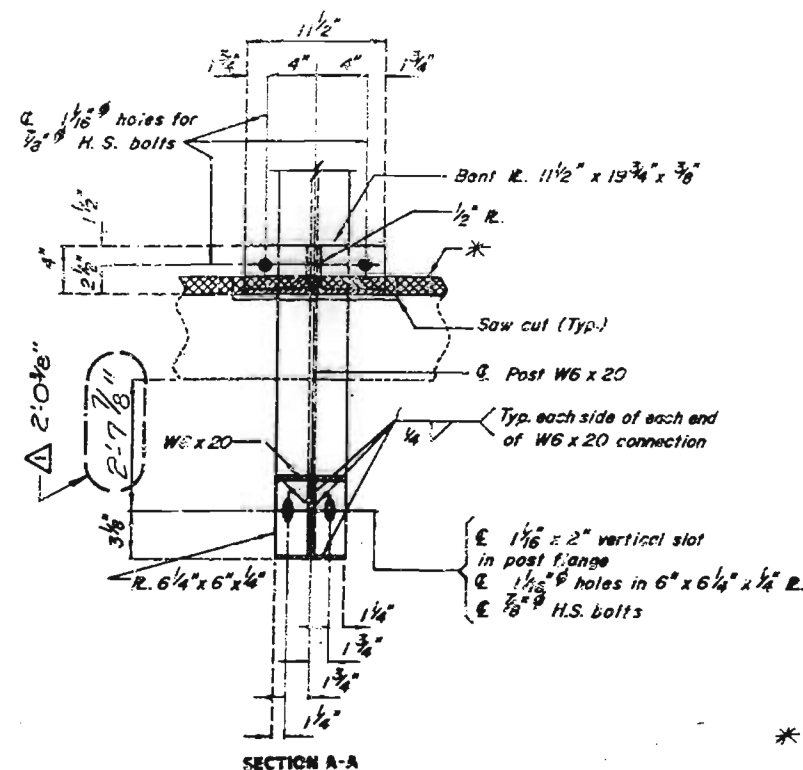
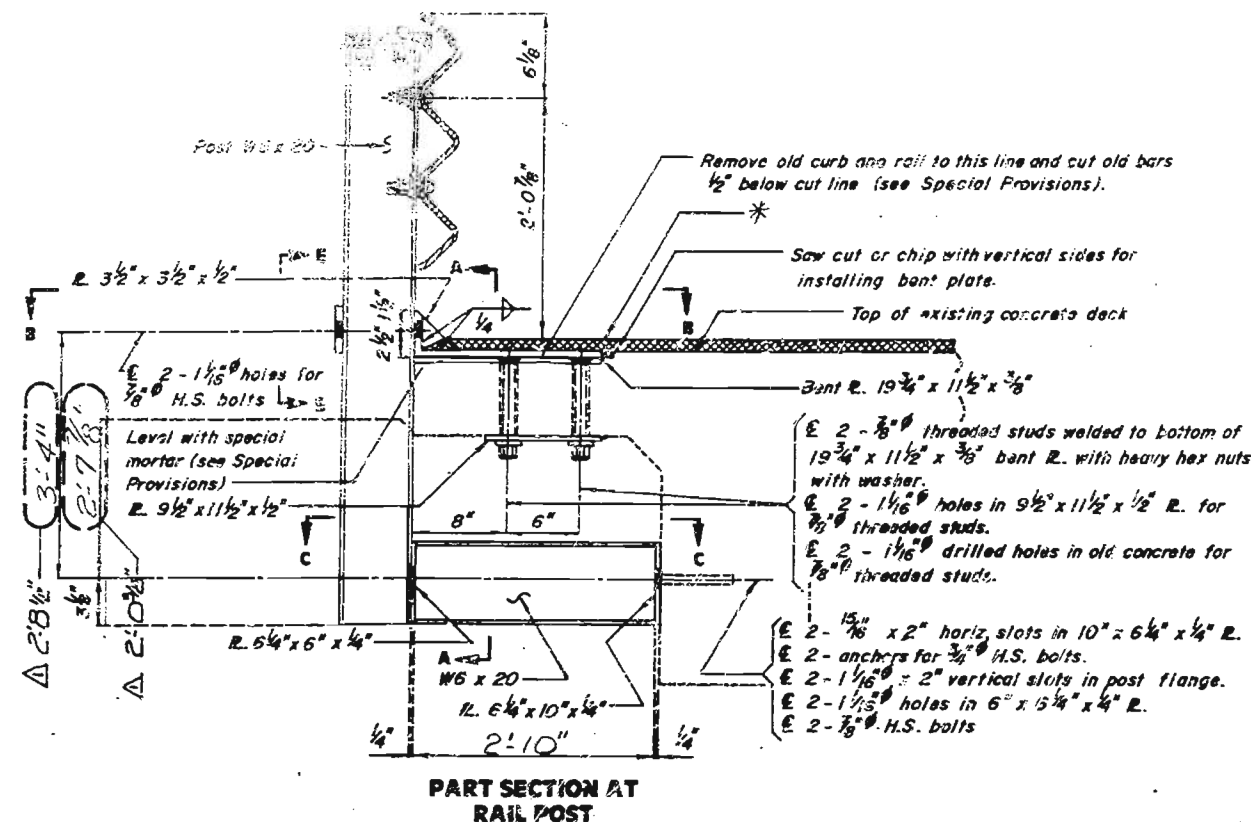
ST. FRANCOIS

COUNTY

L-666R

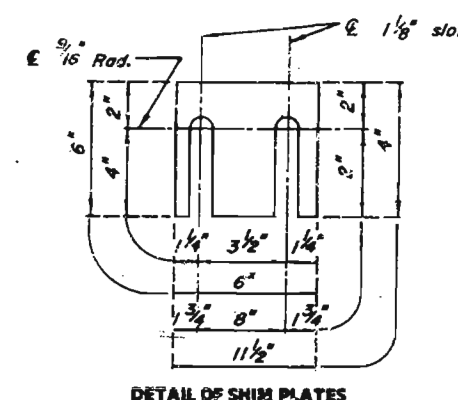
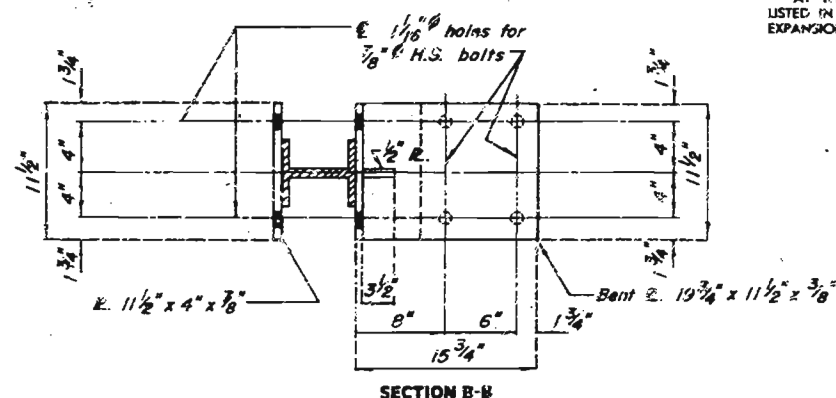


STATE	PROJ NO	SHEET NO
MO	F-67-3 (54)	28



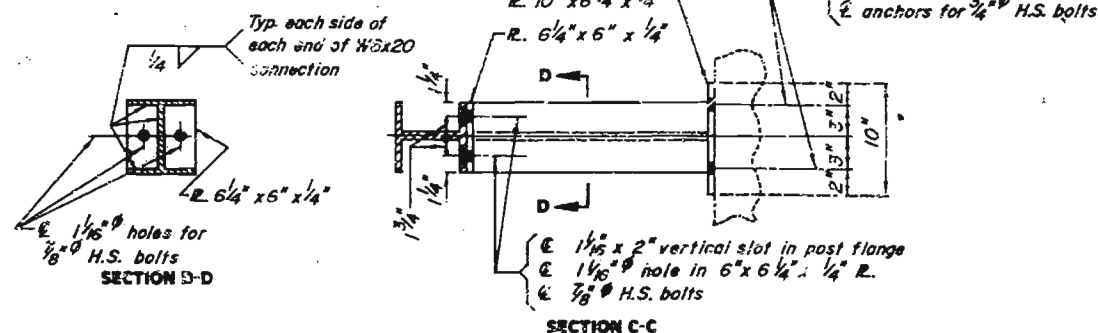
NOTE:  
AT THE OPTION OF THE CONTRACTOR ONE OF THE ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS MAY BE SUBSTITUTED FOR THE CONE EXPANSION TYPE CONCRETE ANCHORS NOTED ON THE PLANS.

\* 2 1/4\" (Min.) Low Slump Concrete Overlay.



Note:  
Shim plates 6\" x 6\" x 1/16\" may be used between post W6x20 and 6\"x6 1/4\"x 1/4\" R. and shim plates 11 1/2\" x 4\" x 1/16\" may be used between post W6 x 20 and 15 3/4\" x 11 1/2\" x 3/8\" bent plate as required for horizontal alignment.  
Shim plates may vary in thickness from 1/16\" to the thickness required and may be used in multiples.  
Shim plates shall be galvanized after fabrication.

Note:  
Concrete anchors shall be the cone expansion type for hot-dip galvanized bolts.  
Concrete anchors shall have a certified concrete pull out strength (ultimate load) of at least 15,500 pounds in 3,000 psi concrete.



DETAILED Aug. 1990  
CHECKED Sept. 1990

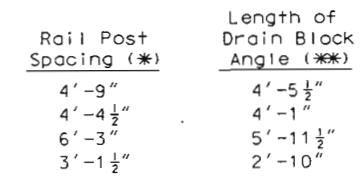
Note: This drawing is not to scale. Follow dimensions

Revised 1/16/91  
ST. FRANCOIS

COUNTY

L-666R

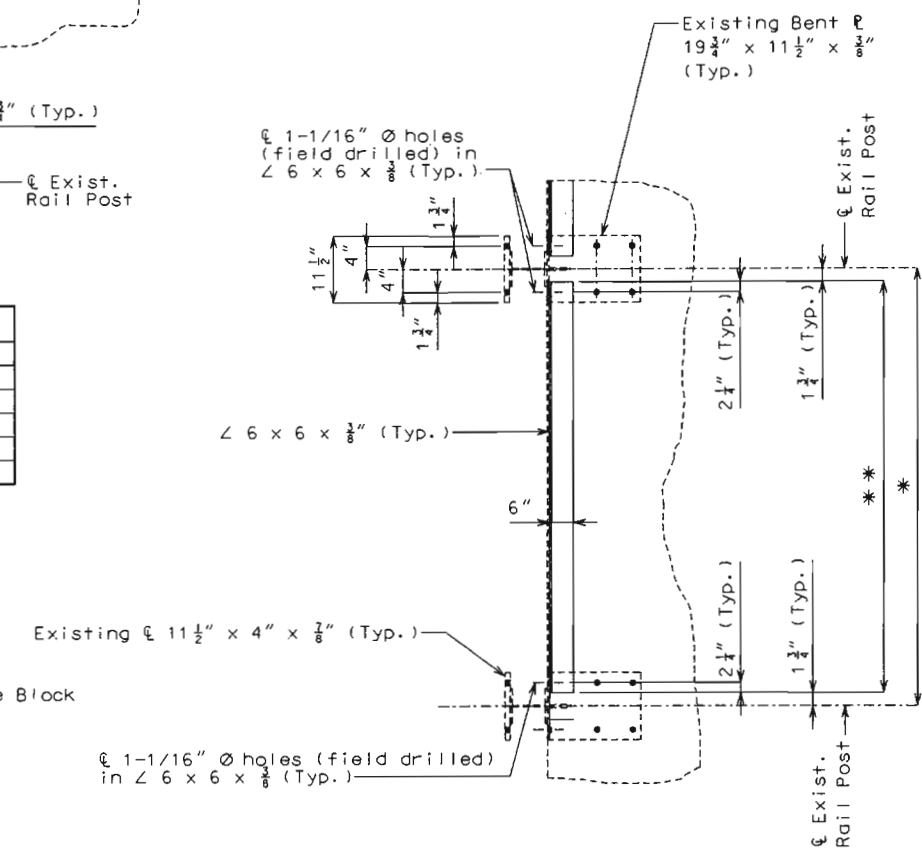
State	Proj. No.	Sheet No.
MO		D1
SEC/SUR 9	TWP 36N	RGE 5E



Note: Angles for drainage block shall be fabricated from ASTM A709 Grade 36 steel and galvanized in accordance with Sec 1081.

Bolts shall be  $\frac{7}{8}$ "  $\varnothing$  high-strength bolts.

Estimated Quantities		
Item		Total
Polymer Concrete	cu. ft.	23
Drainage Block	lin. ft.	113



General Notes:

Shop drawings will not be required for the Drainage Block.

Note: Payment for furnishing and installing drainage block complete in place will be considered completely covered by the contract unit price for Drainage Block.

DATE 6-16-04

L06662

Designed Apr. 2004  
Detailed Apr. 2004  
Checked May 2004

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

Sheet No. 1 of 1

Date: 06/17/04

ST. FRANCOIS COUNTY

STATE ROAD RTE 32 TO RTE 47

ABOUT 1.0 MILES NORTH OF RTE

ABOUT 1.0 MILES NORTH OF RTE 32

PROJECT NO. STA.

JOB NO. JOP

STA. 793+19.30

RTE. 67

ST. FRANCOIS COUNTY

DATE 6-16-04

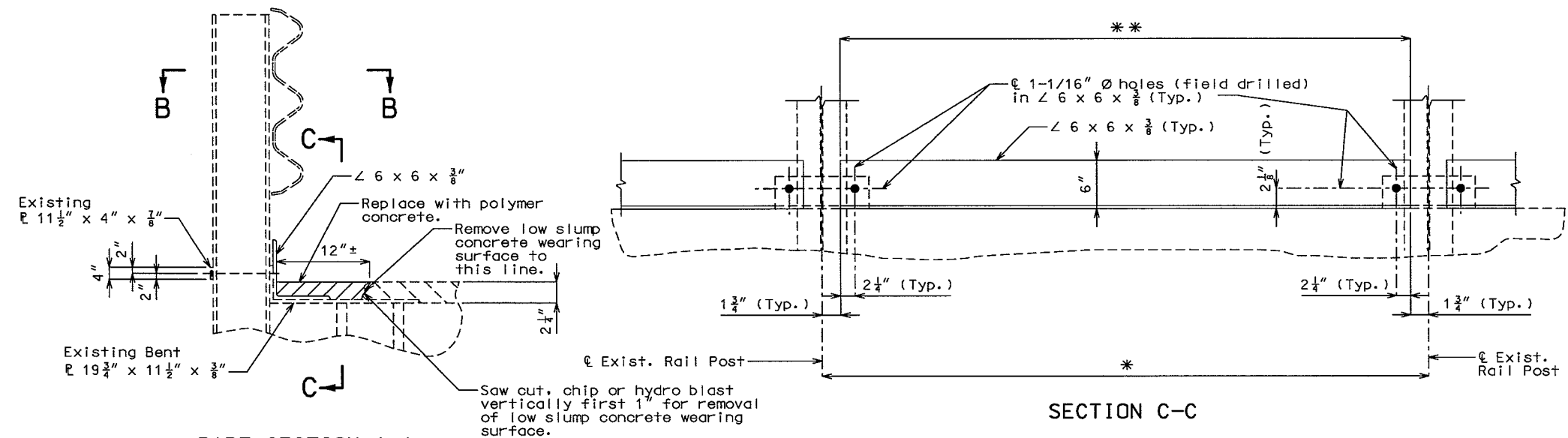
L06662

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MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FINAL PLANS

Route	State	District	Sheet No.
67	MO	10	B1
JOB NO. JOP0879			
CONTRACT ID 041119-X04			
PROJECT NO. FAHES-67-3 (87)			
COUNTY ST. FRANCOIS			
SEC/SUR 9	TWP 36N	RGE 5E	



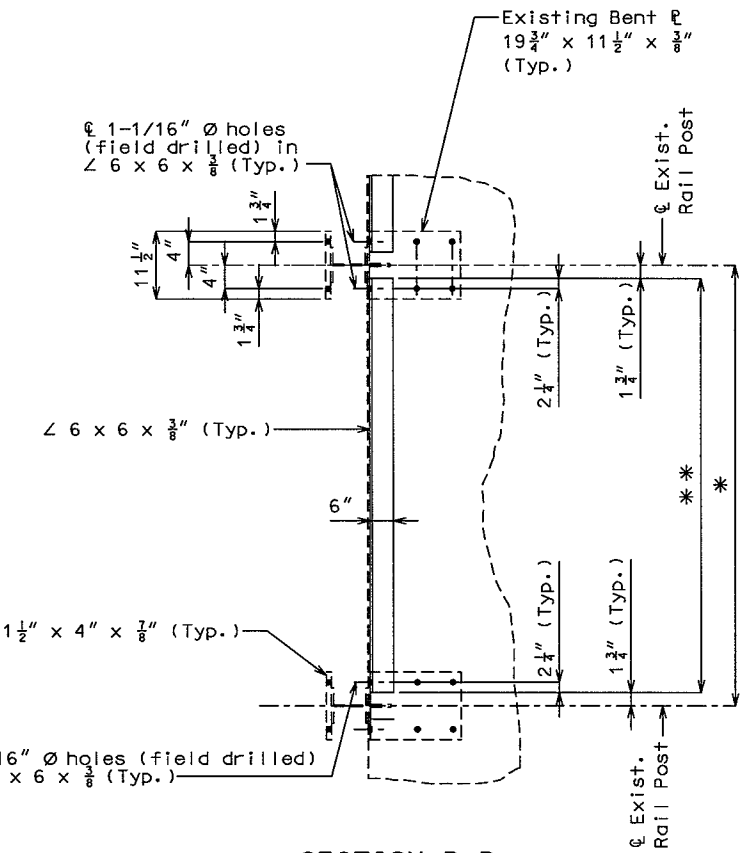
Note: Angles for drainage block were fabricated from ASTM A709 Grade 36 steel and galvanized in accordance with Sec 1081.

Ends of angles were ground to bear on bent plates @ rail posts.

Bolts were  $\frac{7}{8}'' \text{ } \phi$  high-strength bolts.

Payment for removal of the existing low slump concrete wearing surface to the limits as shown in Part Section A-A was considered completely covered by the contract unit price for Drainage Block.

Quantities		
Item		Total
Polymer Concrete	cu. ft.	23
Drainage Block	lin. ft.	113



General Notes:

- Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
- Contractor verified all dimensions in field before ordering new material.
- Polymer concrete was in accordance with Sec 623.
- Traffic over structure was maintained during construction in accordance with the traffic control plans.
- High Strength bolts, nuts, and washers were sampled for quality assurance as specified in Sec 106 and Field Section (FS-712) from Materials Manual.
- "Sec" refers to the sections in the standard and supplement specifications unless specified otherwise.
- Shop drawings were not required for the Drainage Block.

REPAIRS TO BRIDGE OVER RTE. 0,  
KOEN CREEK & UNION PACIFIC R.R.  
STATE ROAD RTE 32 TO RTE 47  
ABOUT 1.0 MILES NORTH OF RTE 32  
PROJECT NO. FAHES-67-3(87) STA. 793+19.30  
JOB NO. JOP0879 RTE. 67

ST. FRANCOIS COUNTY

L06662

**PLAN OF SLAB SHOWING LOCATION OF DRAINAGE BLOCK**

Note: Measurement of Drainage Block was to the nearest linear foot measured horizontal for length of the Drainage Block Angle (\*\*).

Note: Payment for furnishing and installing drainage block complete in place was considered completely covered by the contract unit price for Drainage Block.

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

Sheet No. 1 of 1

Date: / /