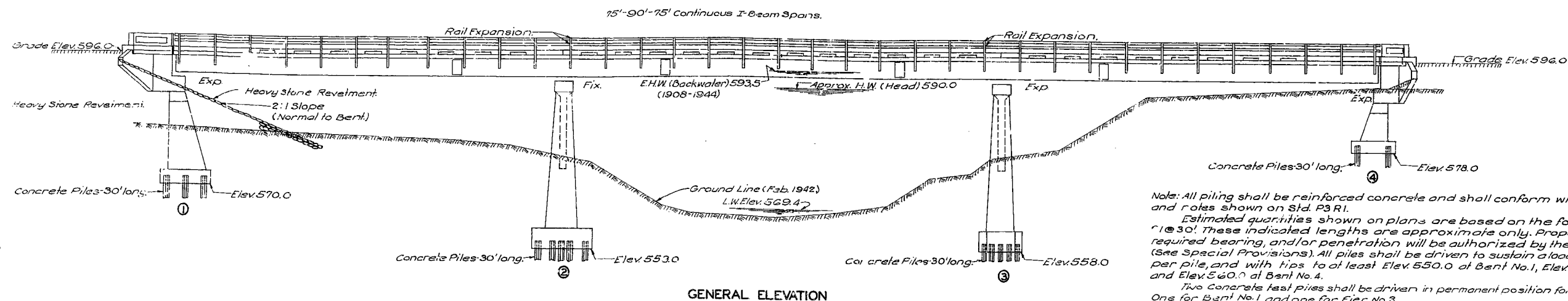
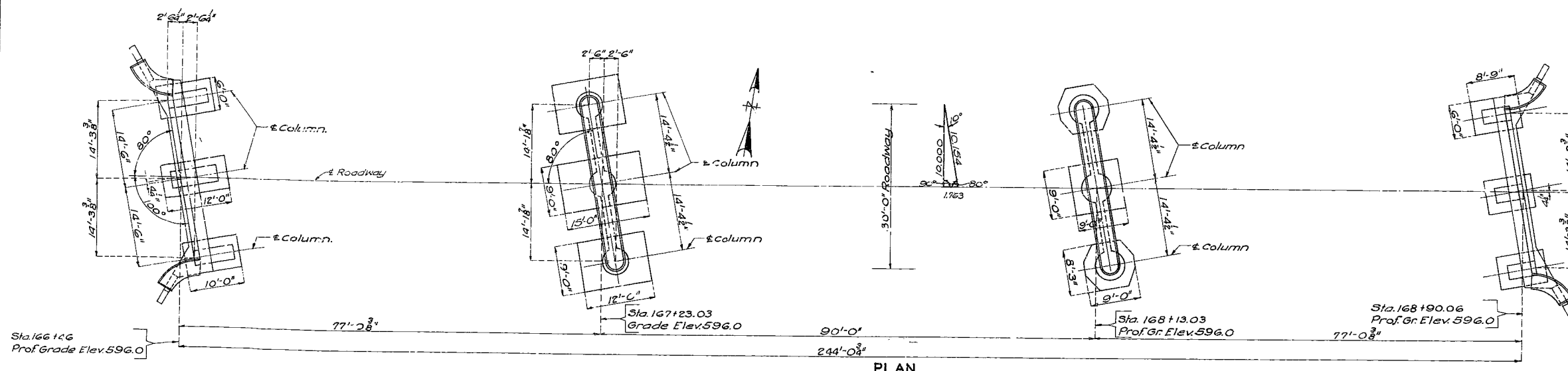


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STA. E	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235 (9) (U.S. 40)	19		



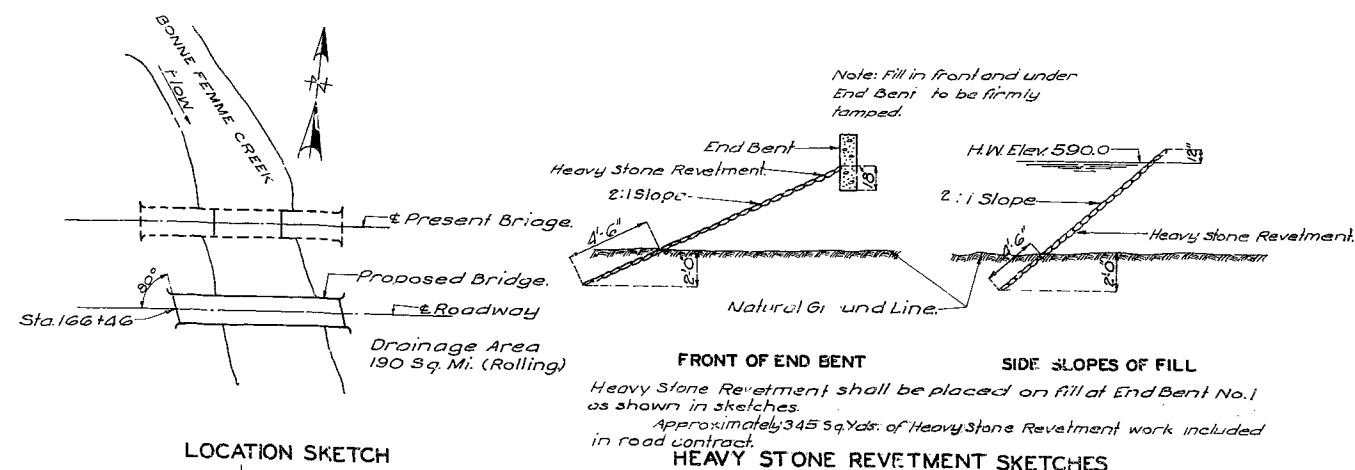
GENERAL ELEVATION



PLAN

GENERAL NOTES:

Design Specifications A.A.S.H.O. - 1944.
Loading H-20 5 16-44 (No overload)
Structural Steel Stress 18,000 #/sq. in.
Reinforcing Steel Stress 18,000 #/sq. in.
Class "B" Concrete Stress 1,000 #/sq. in.
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 38-19A(1)(h) of the Standard Specifications.
Rivets 3/4" diameter except as noted.
Paint: Shop, none; Field, surface inaccessible after erection, 3 coats of red lead. No other paint to be applied by contractor.
Red lead required shall be furnished by the contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for structural steel.
A rubbed surface will be required on all exposed surfaces of end posts and curb and on outside faces of roadway slabs.



ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds.	525	525
Class 2 Excavation for Structures	Cu. Yds.	461	461
Class "B" Concrete	Cu. Yds.	352.1	207.9
Fabricated Structural Steel	Lbs.	355790	355790
Steel Castings	Lbs.	7820	7820
Reinforcing Steel	Lbs.	23310	46260
Concrete Piles in Place	Lin. Ft.	2403	2403
Concrete Pile Cut-offs	Lin. Ft.	267	267
Concrete Test Piles	Lin. Ft.	80	80

Note: Excavation for bridge made above Elev. 571.0 will be paid for as Class 1 Excavation for Structures.
Excavation for bridge made below Elev. 571.0 will be paid for as Class 2 Excavation for Structures.

B.M. Elev. 595.49 Bronze Disc in N.W. Abutment of Present Bridge Stamped F-125-1935-12' Lt. Sta. 166+36. North Line.

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEW FRANKLIN
PROJECT NO. F-235 (9) (U.S. 40) STA. 166+46

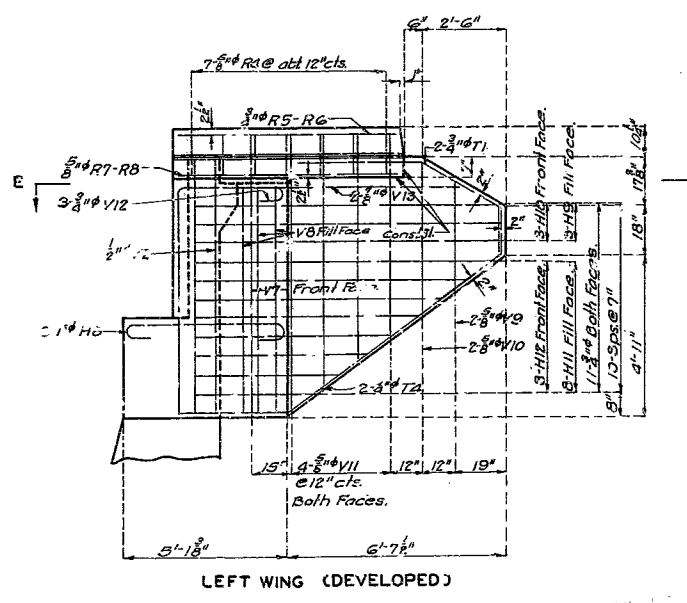
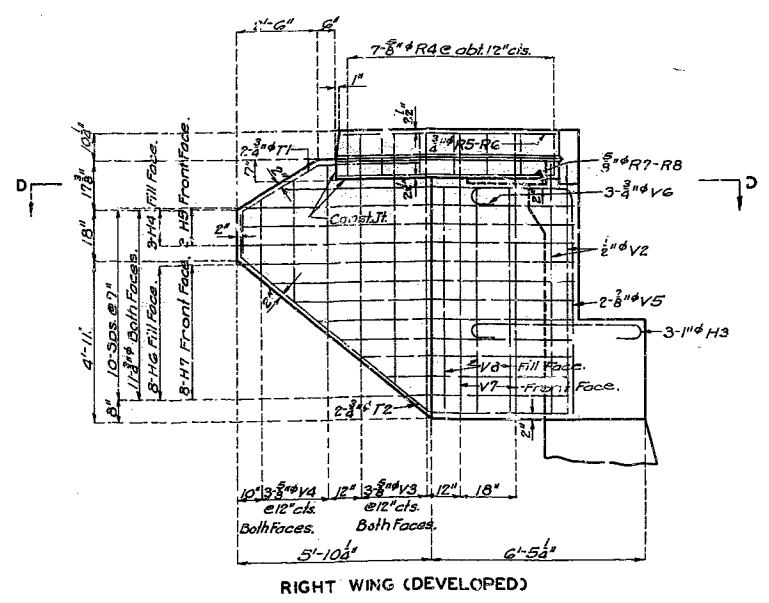
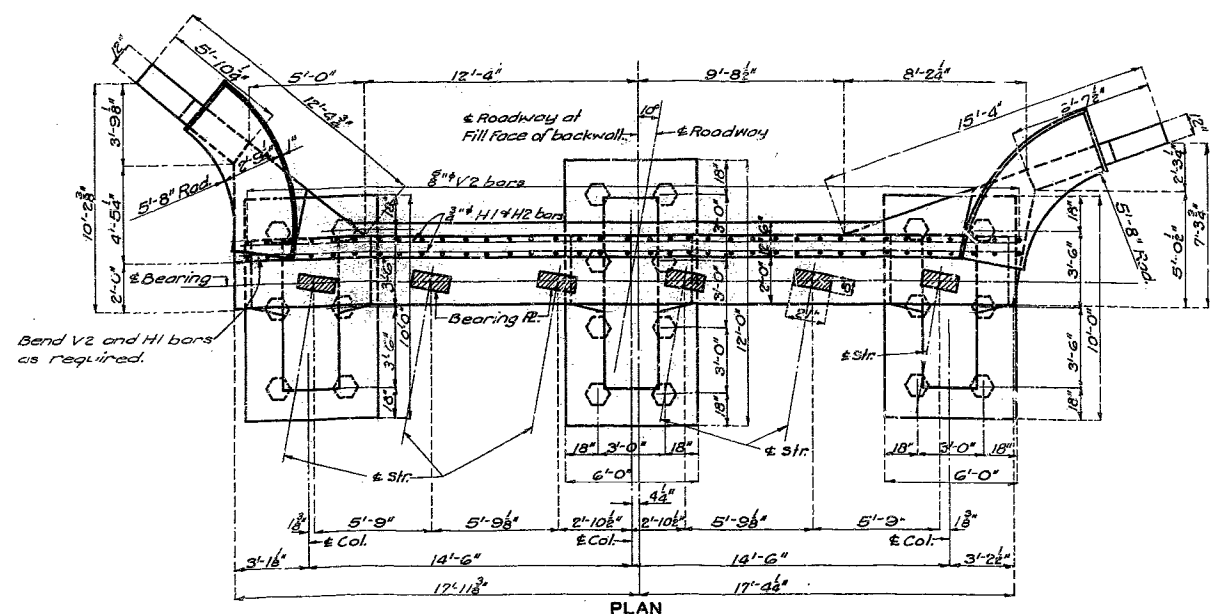
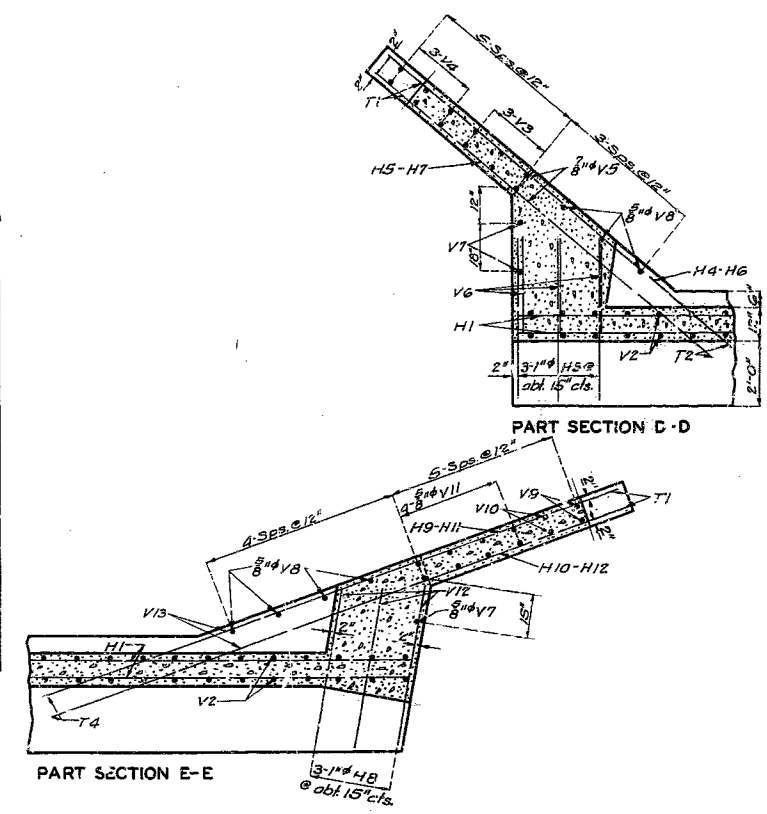
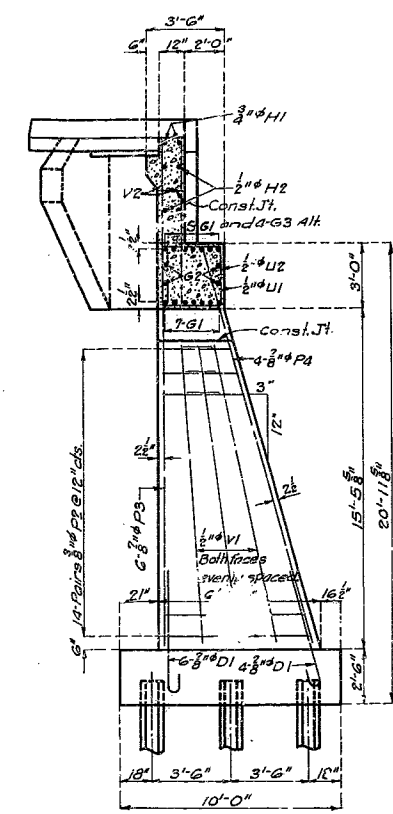
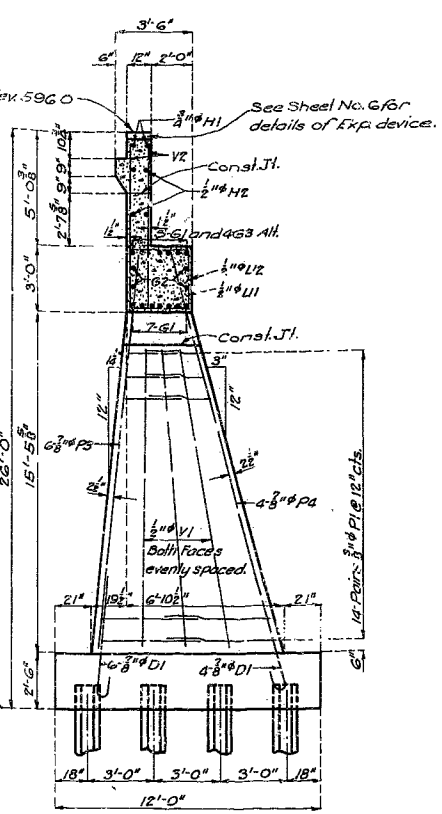
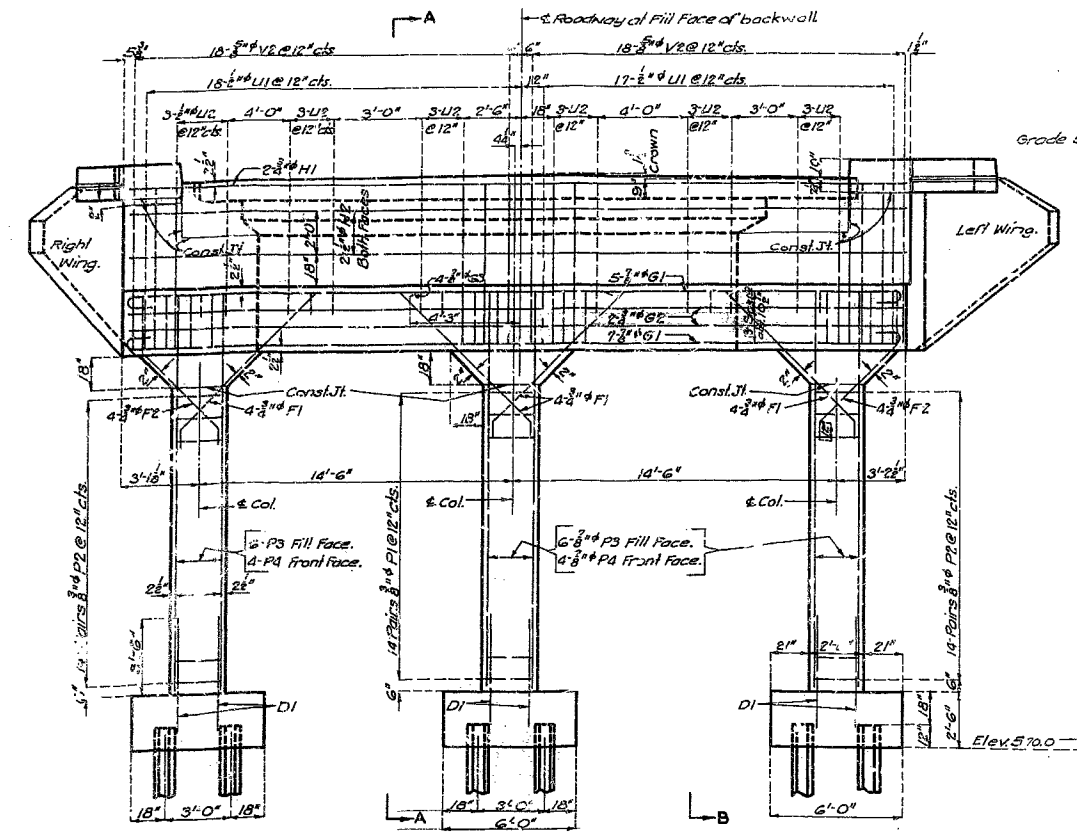
HOWARD COUNTY

SUBMITTED BY *U.W. Enslin* DATE 8/20/1947
APPROVED BY *C.W. Enslin* DATE 8/20/1947
BRIDGE ENGINEER
CHIEF ENGINEER

STD. P-3 R1
STD. C-110 R3
L-119

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235 (9) (U.S. 40)	19		



DETAILS OF END BENT NO.1

Note: For details of End Post See Sheet No. 5.

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S. EAST OF NEWFRANKLIN
PROJECT NO. F-235 (9) (U.S. 40) STA. 166 + 36

HOWARD

COUNTY

Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced Mar. 1947 by K.R.W.
Checked July 1947 by N.M.R.

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

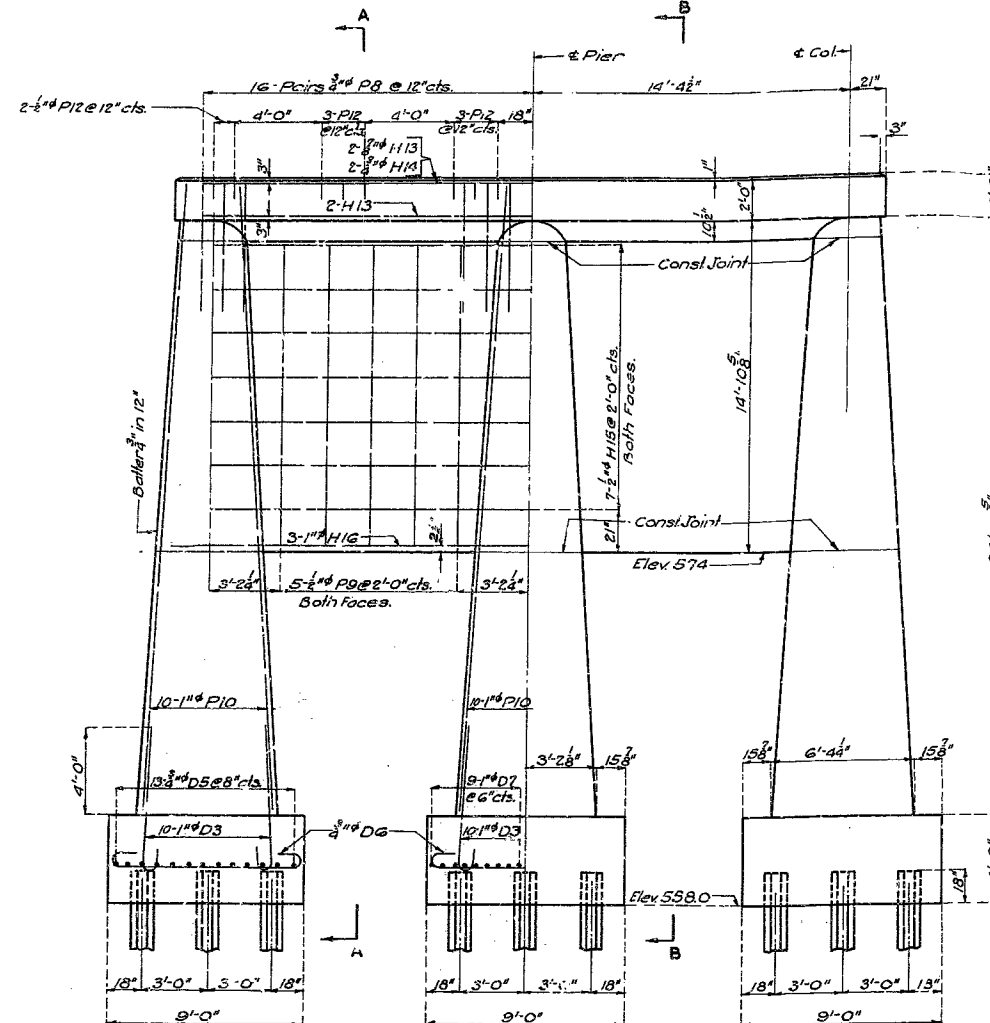
Sheet No. 2 of 8

SEE FINAL PLANS BROWN-LINES

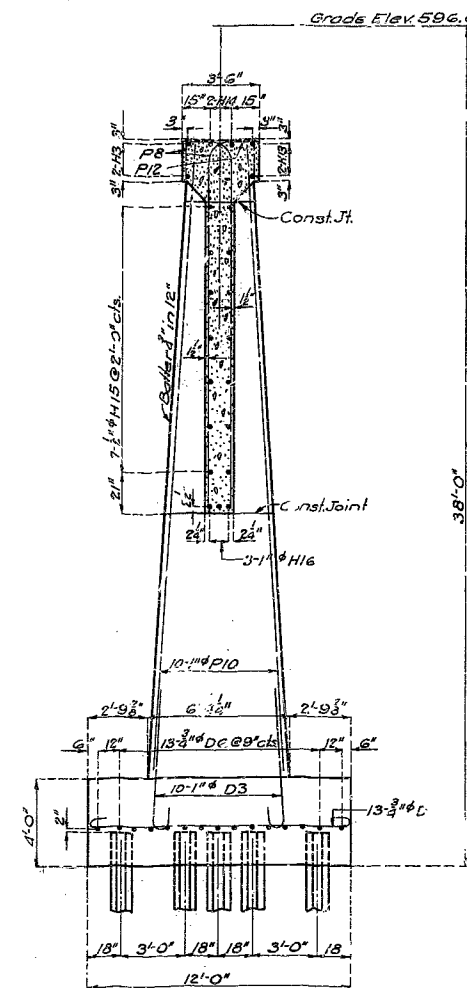
L-119

MISSOURI STATE HIGHWAY DEPARTMENT

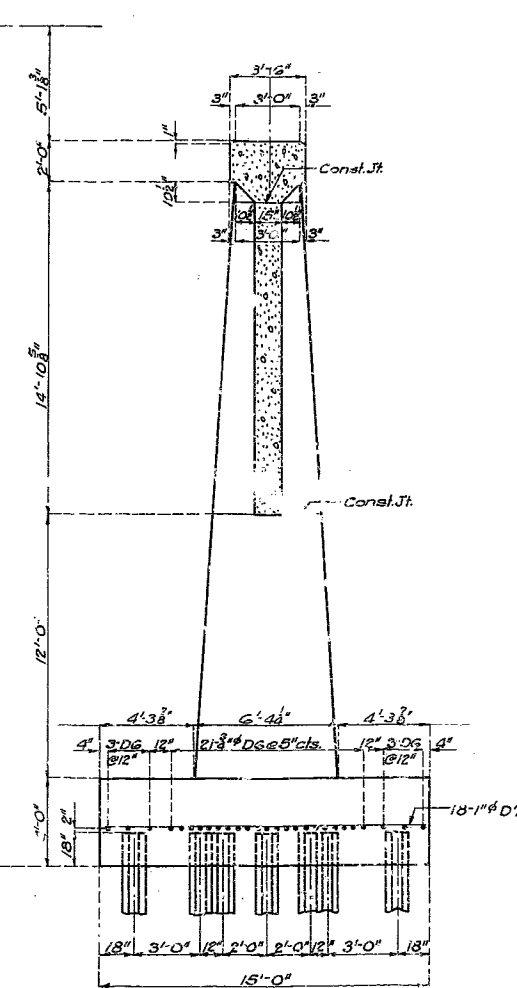
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5	MO	F-235 (9) (U.S. 40)	19		



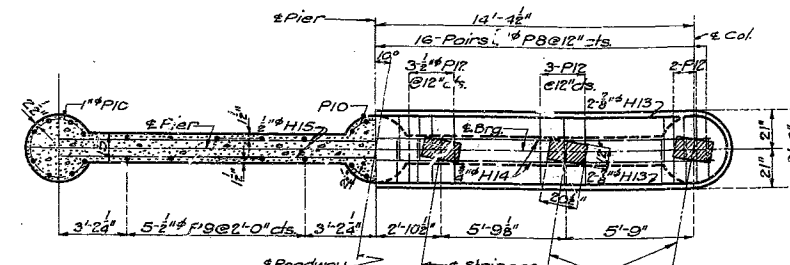
ELEVATION



SECTION A-A



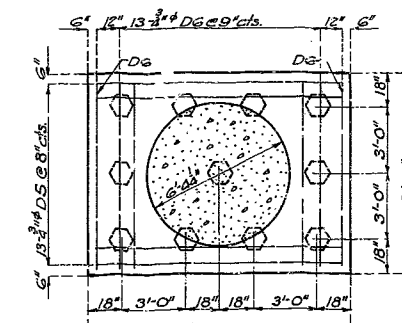
SECTION B-B



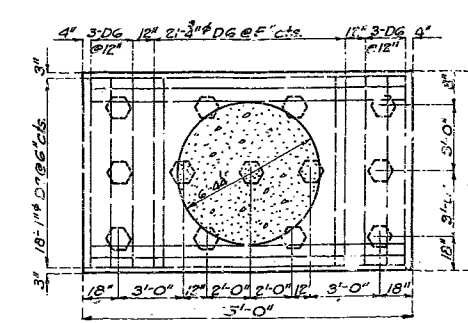
SECTION THRU WEB

PLAN OF CAP

DETAILS OF PIER NO. 2



PLAN OF EXT. FOOTING



PLAN OF INT. FOOTING

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEW FRANKLIN
PROJECT NO. F-235 (9) (U.S. 40) STA. 166 + 46

HOWARD COUNTY

Sheet No. 3 of 3

SEE FINAL PLANS BROWN LINES

FINISHED
FINISHED

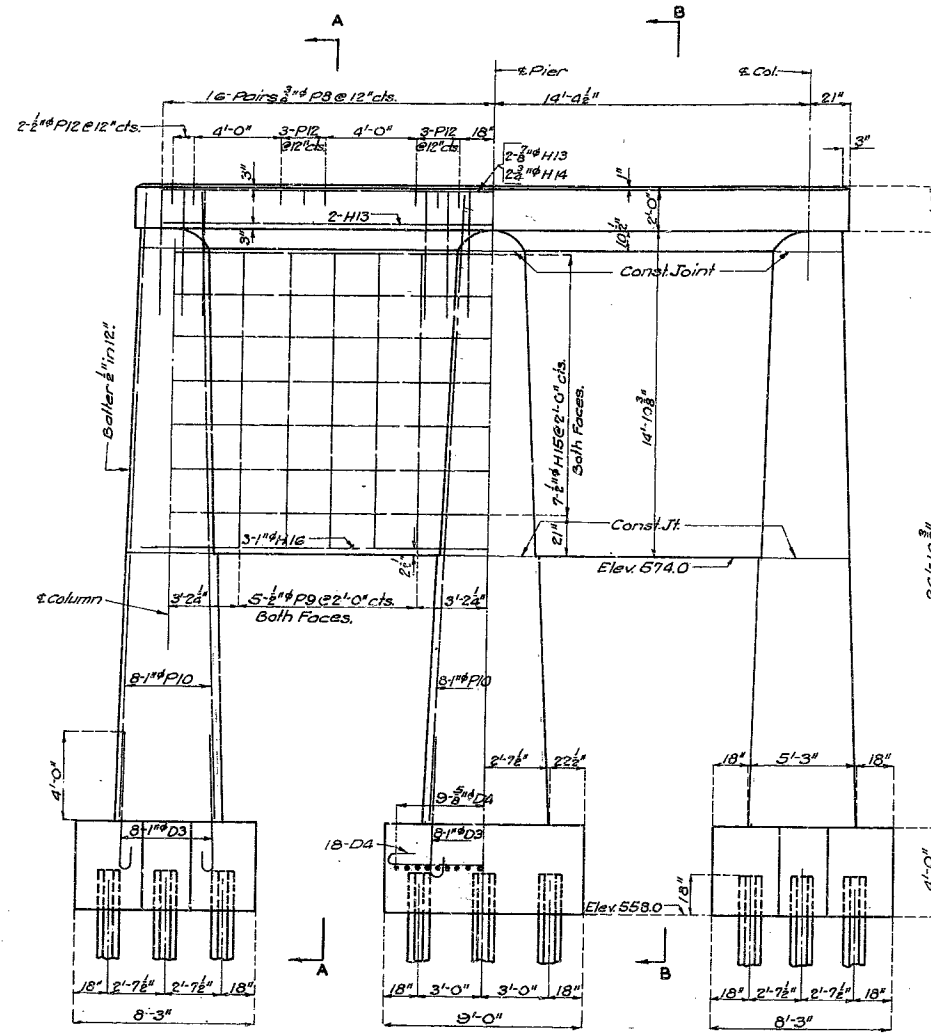
L-119

Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced April 1947 by K.R.W.
Checked July 1947 by N.M.R.

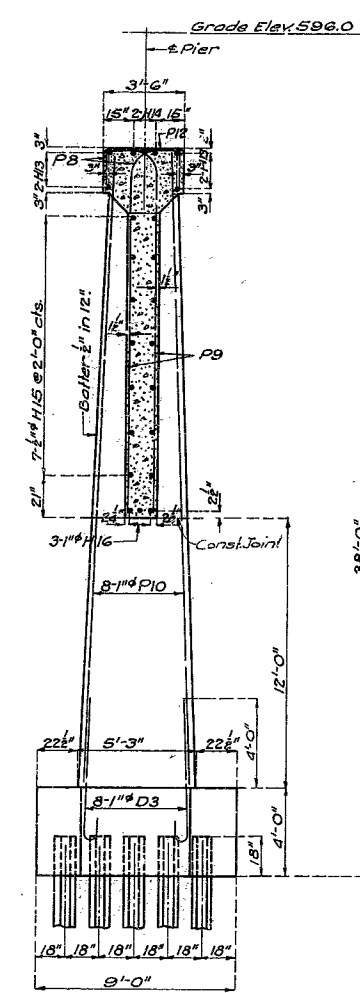
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

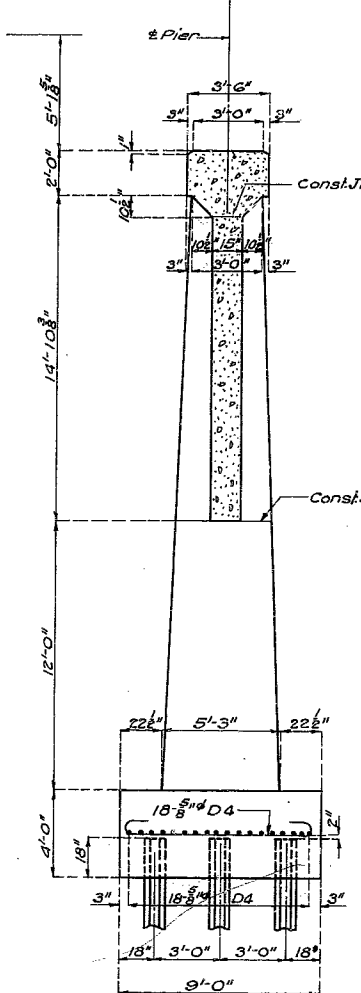
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235(9) (U.S. 40)	19		



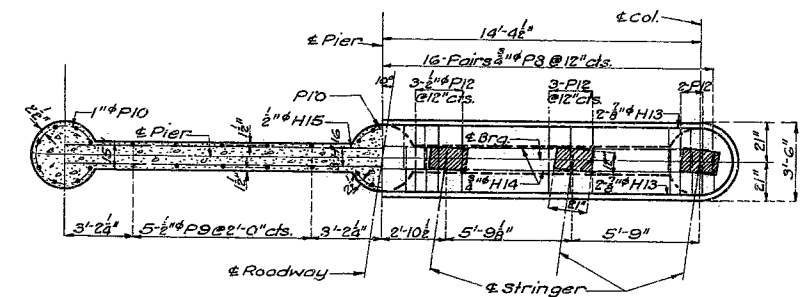
ELEVATION



SECTION A-A

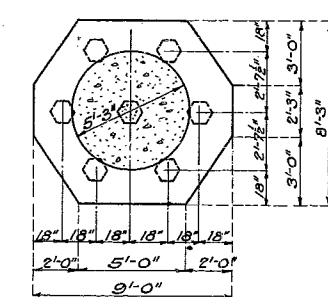


SECTION B-B

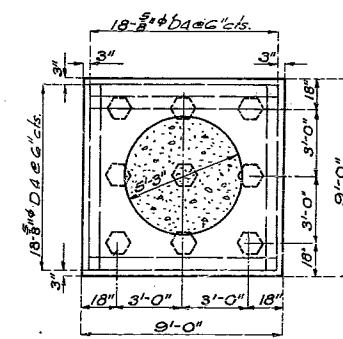


SECTION THRU WEB

PLAN OF CAP



PLAN OF EXT. FOOTING



PLAN OF INT. FOOTING

DETAILS OF PIER NO. 3

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEW FRANKLIN
PROJECT NO. F-235(9) (U.S. 40) STA. 165+45

HOWARD COUNTY

Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced April 1947 by J.K.R.V.
Checked July 1947 by M.M.R.

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

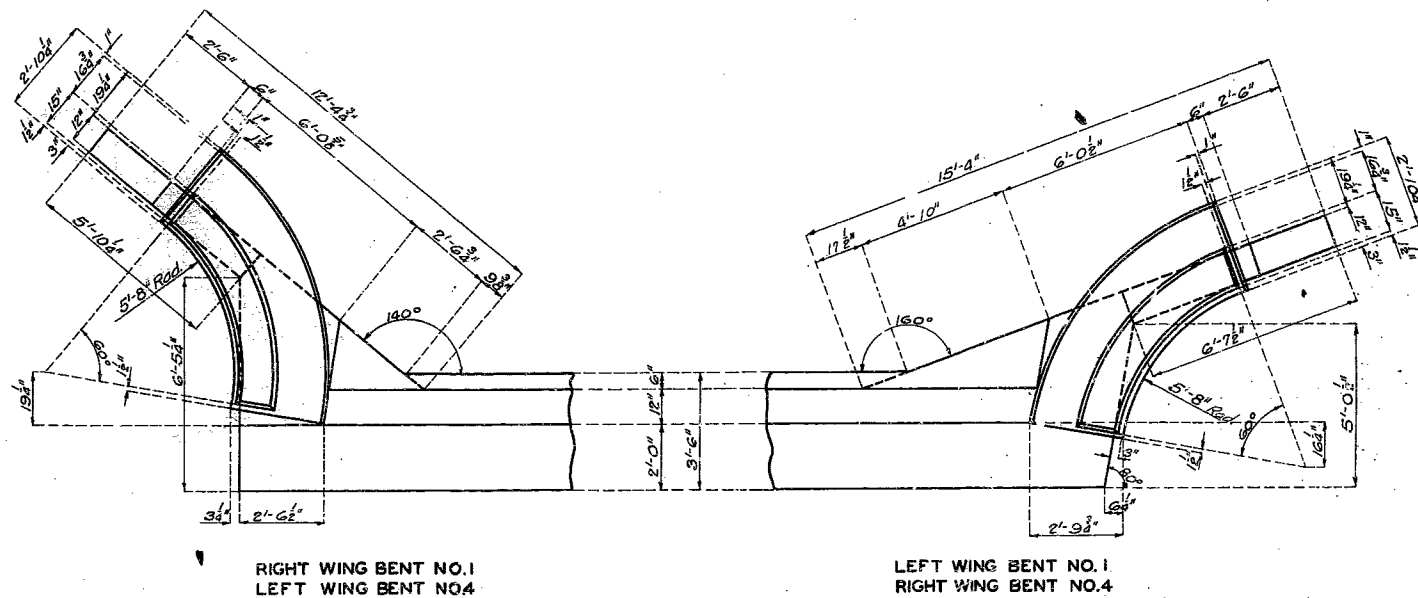
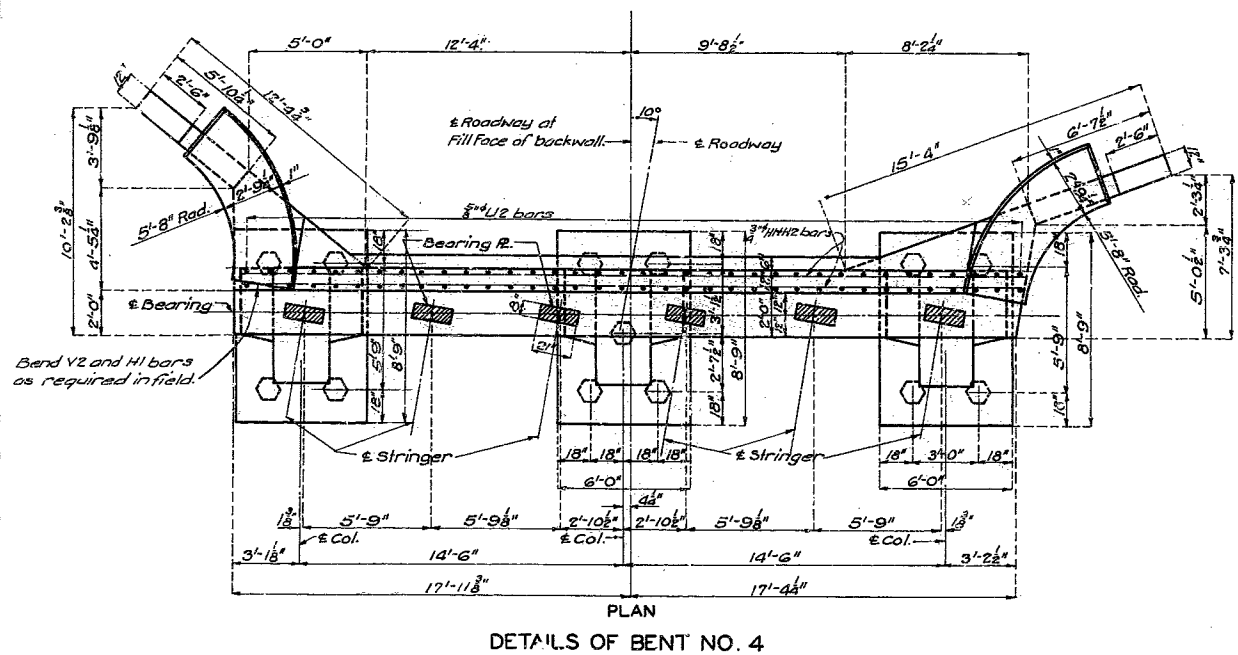
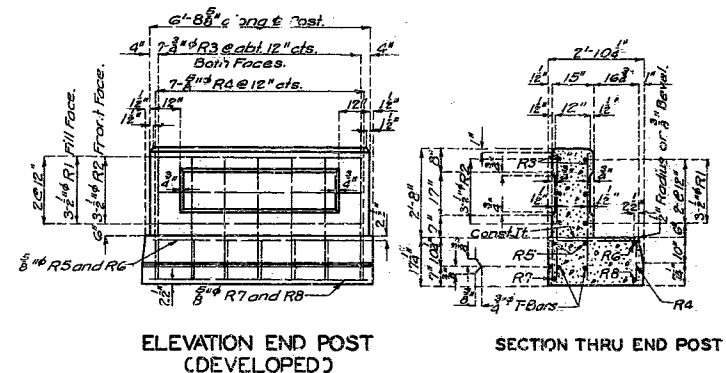
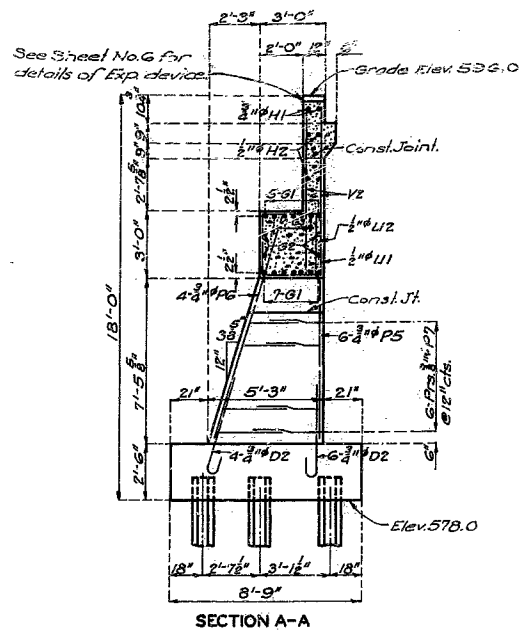
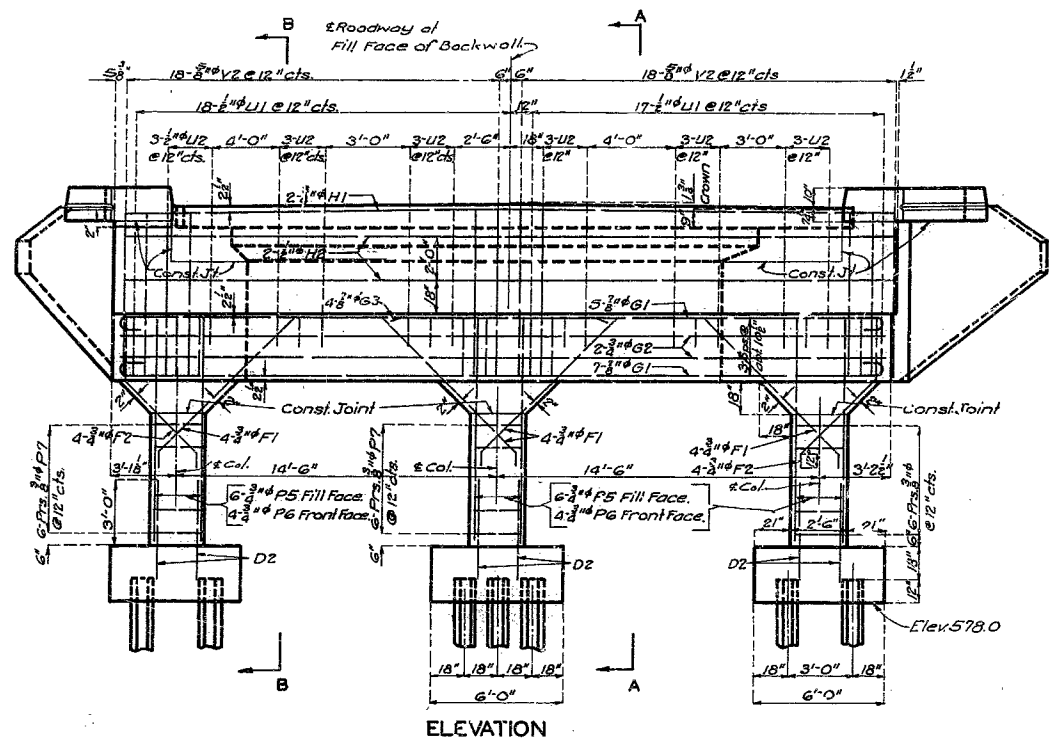
Sheet No. 4 of 8.

SEE FINAL PLANS BROWN-LINES.

L-119

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	A-235(23) (U.S.40)	12		



Note: Wing reinforcement similar to Bent No. 1.
See Sheet No. 2

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S. E. OF NEWFRANKLIN
PROJECT NO. F-235 (23) (U.S.40) STA. 166 + 46

HOWA COUNTY

Designed Mar 1947 by R.R.C.
Drawn Mar 1947 by R.H.L.
Traced Mar 1947 by R.W.W.
Checked July 1947 by M.W.R.

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

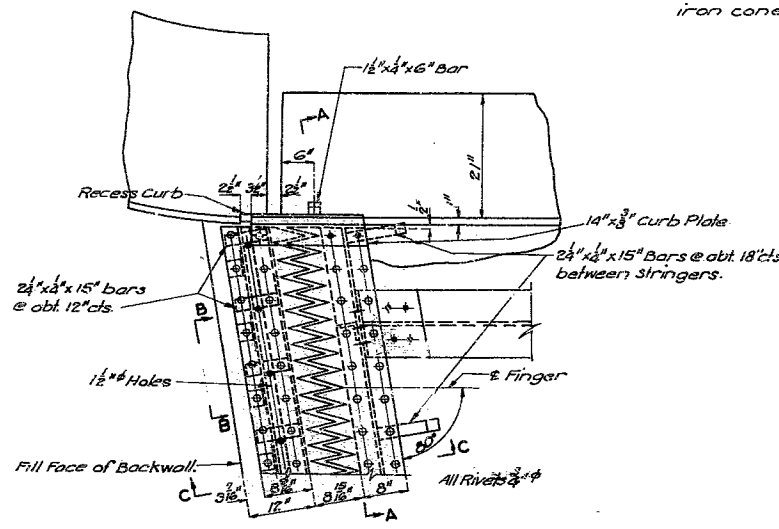
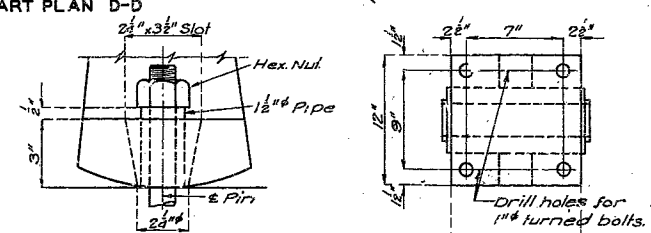
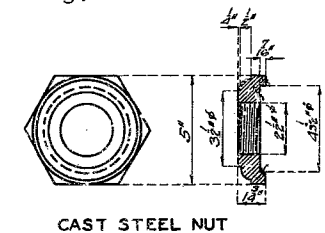
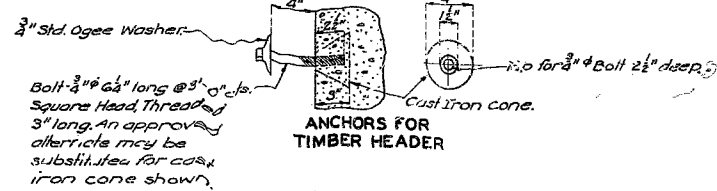
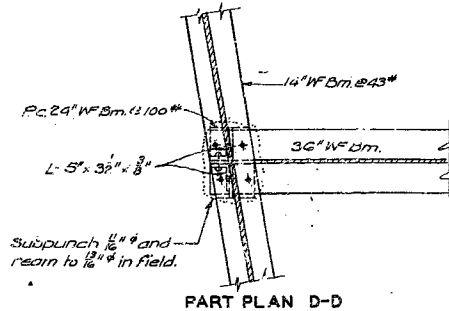
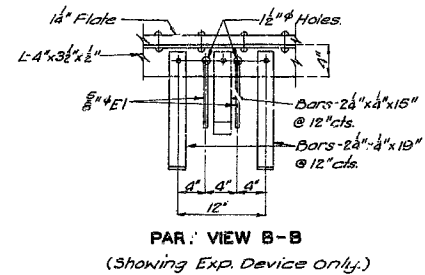
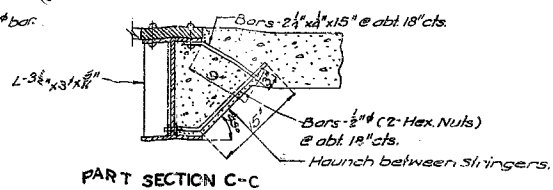
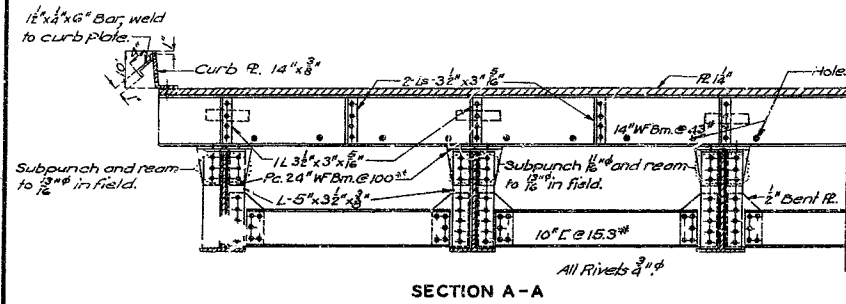
Sheet No. 5 of 8

SEE FINAL PLANS BROWN-LINES

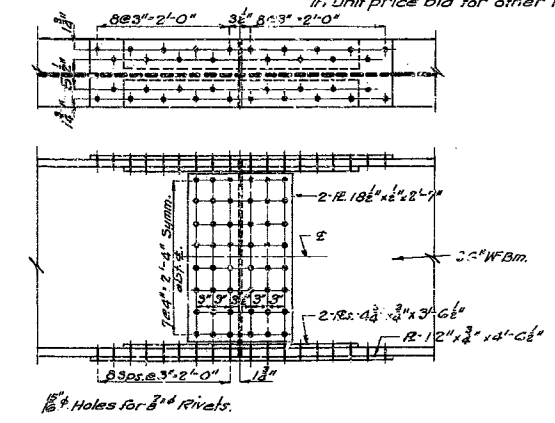
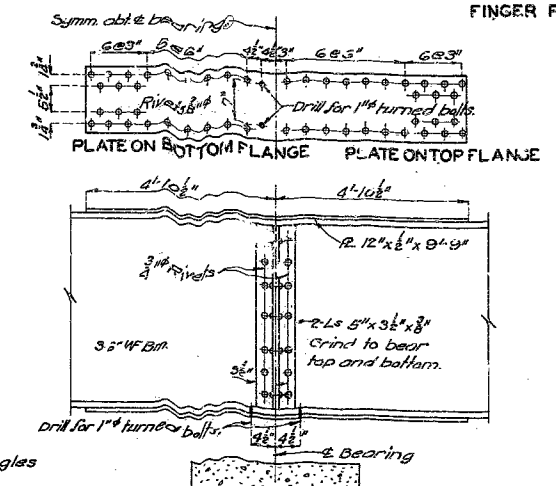
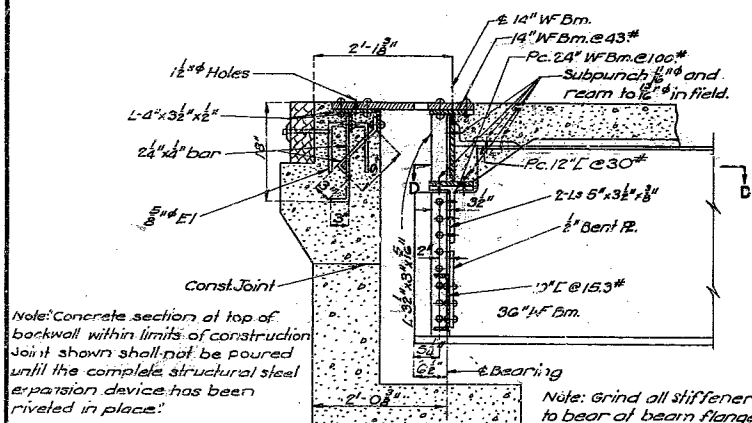
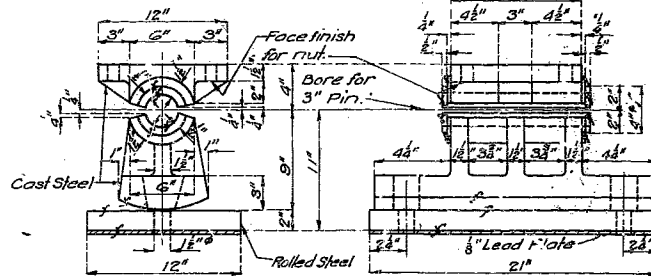
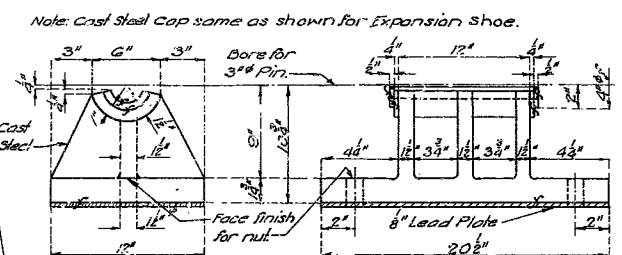
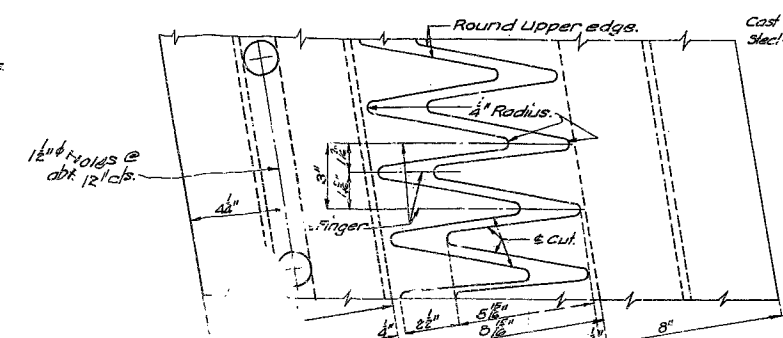
L-119

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235 (9) (U.S. 40)	19		



Note: Finger plates shall be cut from one plate 23" x 1/2". The surface of cut shall be perpendicular to the surface of plate. The cut shall not exceed 8" in width. The center line of cut shall not deviate more than 1/8" from the position of cut shown below. No part of expansion device may be spliced.



DETAILS OF SHOES AND BEARING PLATES

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEWFRANKLIN
PROJECT NO. F-235 (9) (U.S. 40) STA. 126+46

HOWARD COUNTY

Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced Mar. 1947 by K.W.W.
Checked July 1947 by N.H.R.

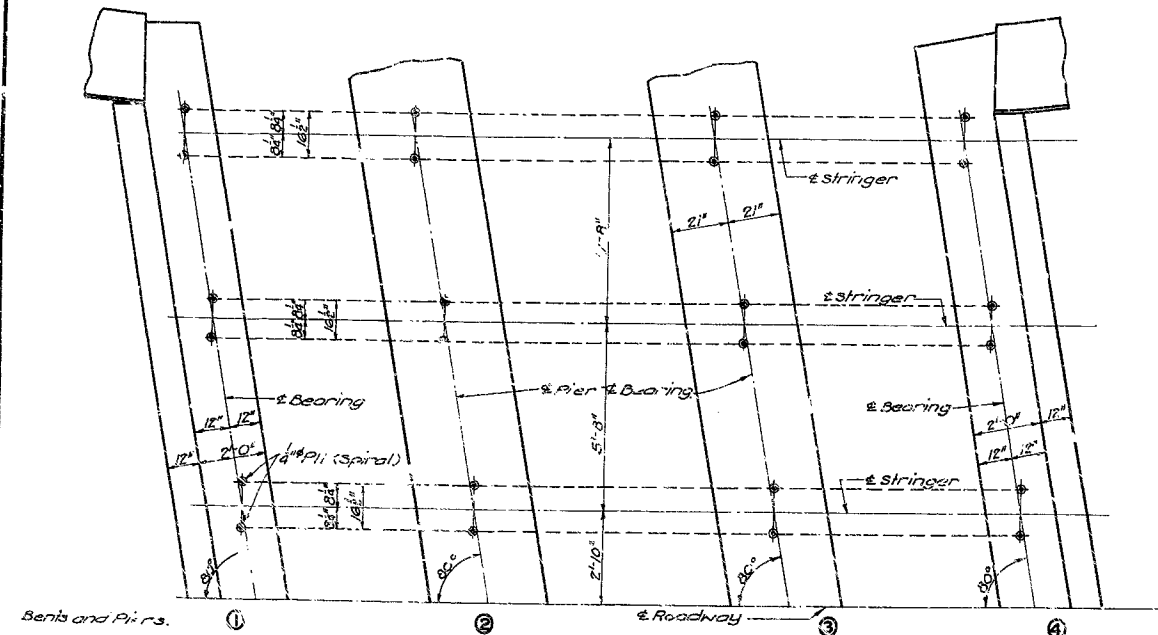
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 8

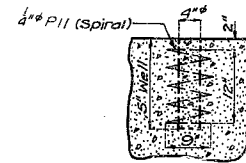
L-119

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235 (9)	19		



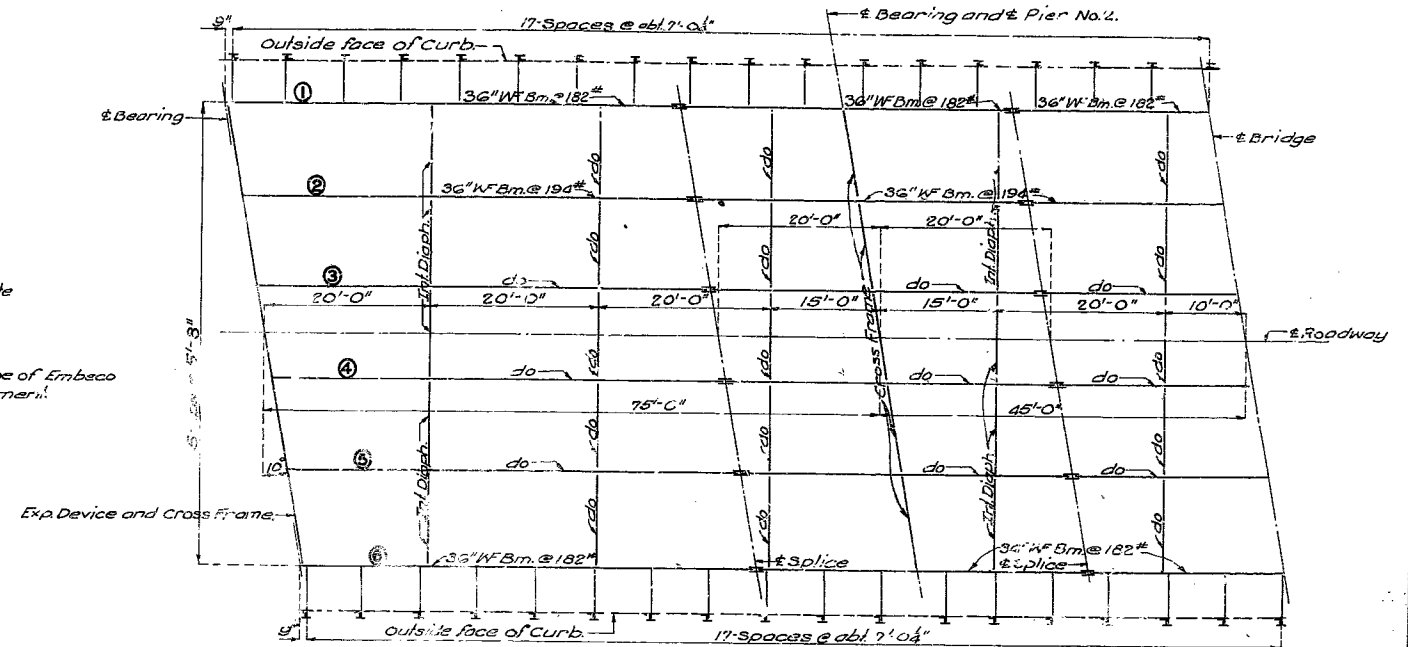
HALF ANCHOR BOLT PLAN



Note: Holes for all 1/4" anchor bolts shall be formed in substructure by placing and setting with template 4" wells of depth shown above.

ANCHOR BOLT WELLS

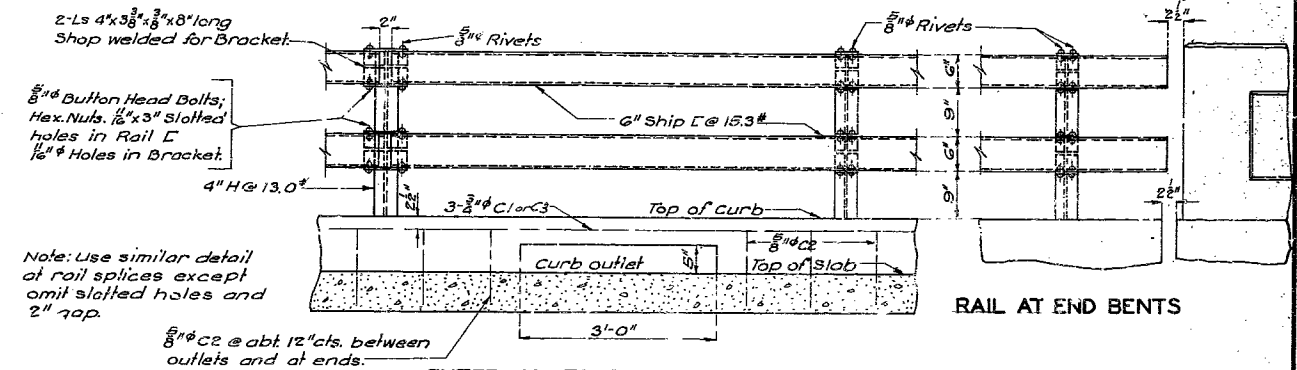
Note: Grout for anchor bolts shall be of Embecco or other approved expansive cement.



HALF PLAN OF STRUCTURAL STEEL

COMPLETE BILL OF REINFORCING STEEL				
No.	Size	Length	Mark	Location
30	5/8"	5'-0"	D1	Feeling Bl. #1
30	5/8"	5'-0"	D2	Feeling Bl. #1
120	5/8"	2'-0"	L1	Use Device
30	5/8"	5'-0"	F1	Handch.
12	5/8"	9'-0"	F2	Handch.
24	5/8"	37'-0"	G1	Beam
6	5/8"	35'-0"	G2	Beam
6	5/8"	8'-0"	G3	Beam
4	5/8"	35'-0"	H1	Backwall
6	5/8"	35'-0"	H2	Backwall
6	5/8"	7'-0"	H3	Wing
6	5/8"	13'-0"	H4	Wing
6	5/8"	12'-0"	H5	Wing
6	5/8"	21'-0"	H6	Wing
6	5/8"	19'-0"	H7	Wing
6	5/8"	7'-0"	H8	Wing
6	5/8"	16'-0"	H9	Wing
6	5/8"	14'-0"	H10	Wing
6	5/8"	27'-0"	H11	Wing
14	5/8"	19'-0"	P1	Column Bl. #1
28	5/8"	17'-0"	P2	Column Bl. #1
12	5/8"	18'-0"	P3	Column Bl. #1
12	5/8"	18'-0"	P4	Column Bl. #1
12	5/8"	10'-0"	P5	Column Bl. #1
12	5/8"	10'-0"	P6	Column Bl. #1
24	5/8"	15'-0"	P7	Column Bl. #1
12	5/8"	19'-0"	P8	Column Bl. #1
12	5/8"	6'-0"	R1	Anchor Bolt Wells
12	5/8"	6'-0"	R2	Anchor Bolt Wells
56	5/8"	3'-0"	R3	Anchor Bolt Wells
28	5/8"	4'-0"	R4	Anchor Bolt Wells
8	5/8"	6'-0"	R5	Anchor Bolt Wells
4	5/8"	8'-0"	R6	Anchor Bolt Wells
4	5/8"	8'-0"	R7	Anchor Bolt Wells
4	5/8"	9'-0"	R8	Anchor Bolt Wells
4	5/8"	18'-0"	T1	Wing
4	5/8"	21'-0"	T2	Wing
70	5/8"	21'-0"	T3	Wing
36	5/8"	3'-0"	U1	Beam
18	5/8"	13'-0"	U2	Beam
144	5/8"	15'-0"	V1	Column Bl. #1
6	5/8"	15'-0"	V2	Column Bl. #1
6	5/8"	7'-0"	V3	Wing
6	5/8"	18'-0"	V4	Wing
6	5/8"	10'-0"	V5	Wing
6	5/8"	8'-0"	V6	Wing
14	5/8"	6'-0"	V7	Wing
4	5/8"	9'-0"	V8	Wing
4	5/8"	4'-0"	V9	Wing
8	5/8"	14'-0"	V10	Wing
6	5/8"	10'-0"	V11	Wing
4	5/8"	20'-0"	V12	Wing
8	5/8"	24'-0"	V13	Wing
8	5/8"	24'-0"	V14	Wing

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



INTERMEDIATE RAIL PANEL (Curb outlets centered between panels)

Note: Omit curb outlets in the two end rail panels at each end and at curb joints.

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEWFRANKLIN
PROJECT NO. F-235 (9) & (U.S. 40) STA. 166+46

HOWARD COUNTY

FINISHED

MADE

Designed Mar 1947 by R.R.C.
Drawn Mar 1947 by R.H.L.
Traced Mar 1947 by K.R.W.
Checked July 1947 by N.W.R.

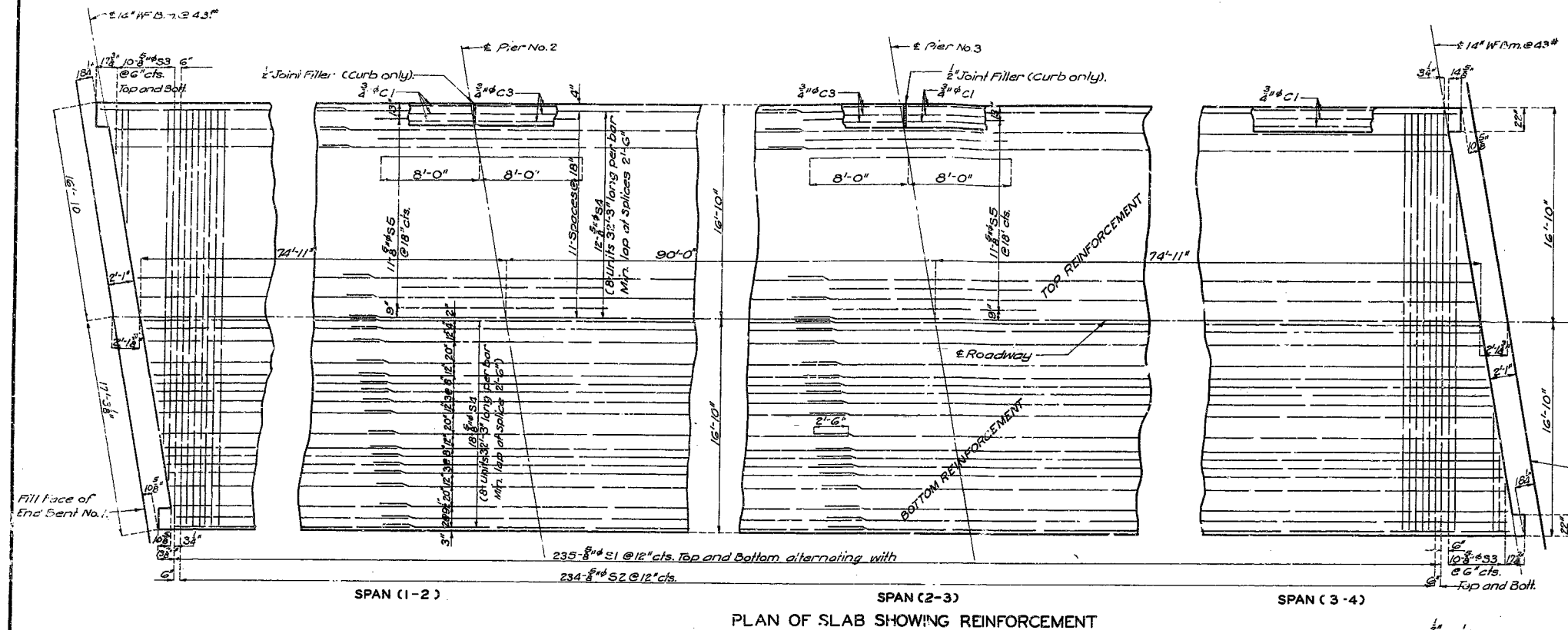
Sheet No. 7 of 8

L-119

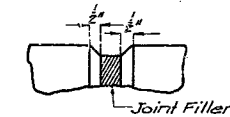
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MISSOURI STATE HIGHWAY DEPARTMENT

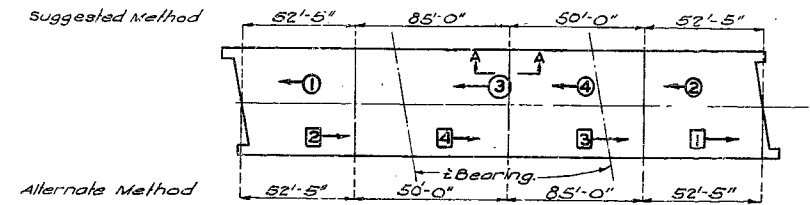
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235 (9) (U.S. 40)	19		



PLAN OF SLAB SHOWING REINFORCEMENT

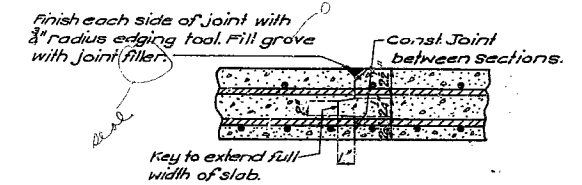


DETAIL OF BEVEL FOR FILLED JOINTS

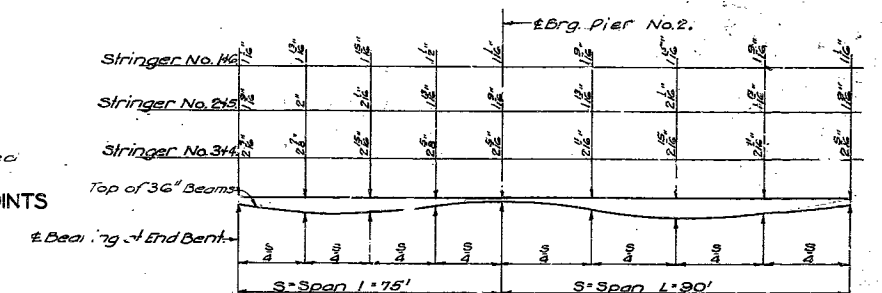


Note: Slab shall be poured in sections of size shown above and in the sequence indicated by the numbers 1, 2, 3, 4 or as an alternate by the numbers 1, 2, 3, 4. The separate pours shall also progress in the direction indicated by the arrows. Longitudinal construction joints will not be permitted.

SLAB POURING SEQUENCE

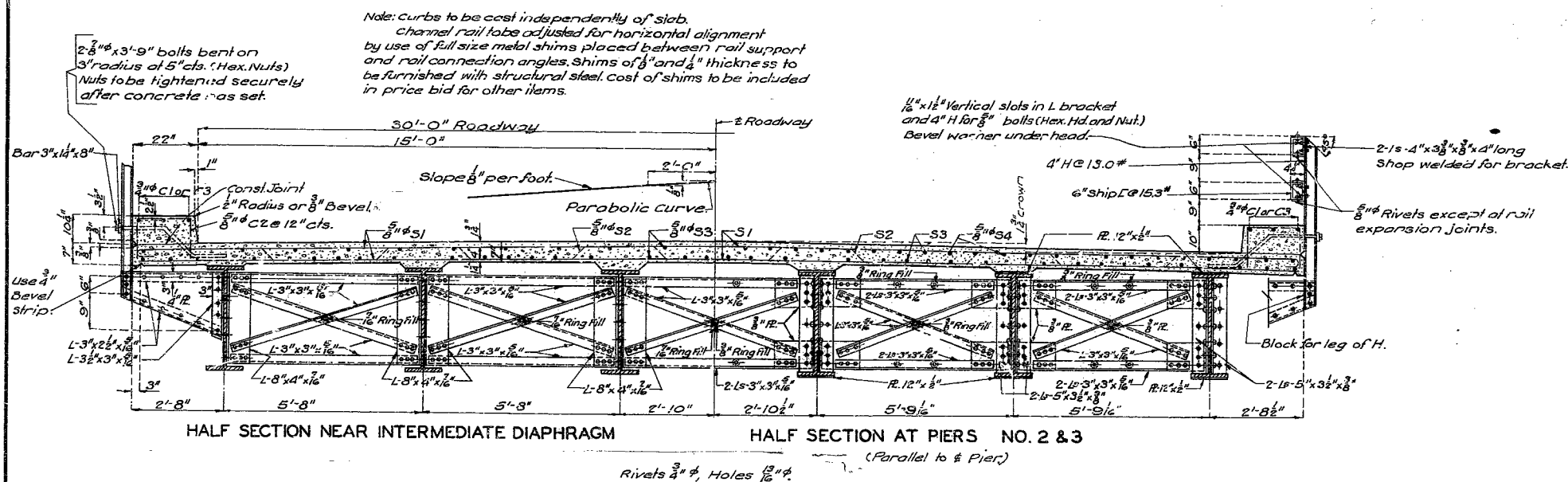


SECTION A-A



SLAB HAUNCHING DIAGRAM

Note: The slab shall be built parallel to grade and to a uniform thickness of 7". Dead load deflection and crown shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in Estimated Quantities.



HALF SECTION NEAR INTERMEDIATE DIAPHRAGM

HALF SECTION AT PIERS NO. 2 & 3

Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced Mar. 1947 by K.R.W.
Checked July 1947 by M.W.R.

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

Sheet No. 8 of 8

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S. E. OF NEWFRANKLIN
PROJECT NO F-235 (9) (U.S. 40) STA. 166 + 46

HOWARD

COUNTY

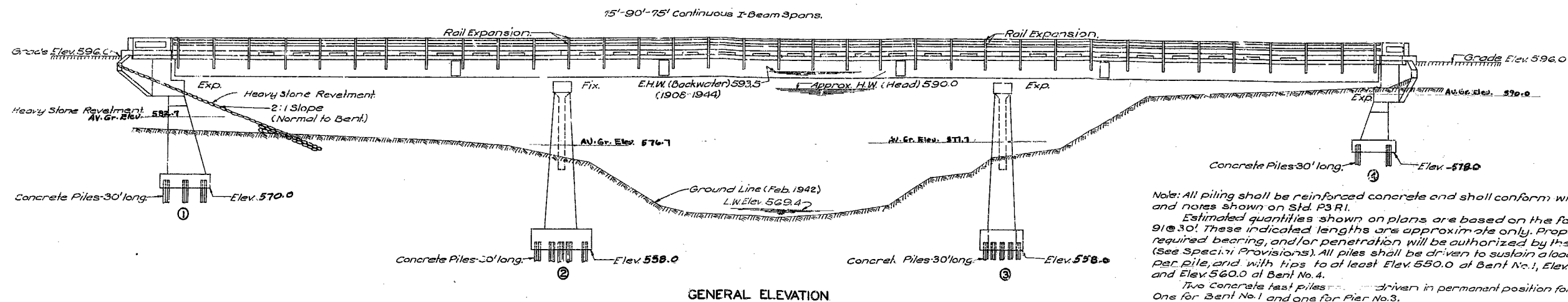
L-119

NO CONSTRUCTION CHANGES

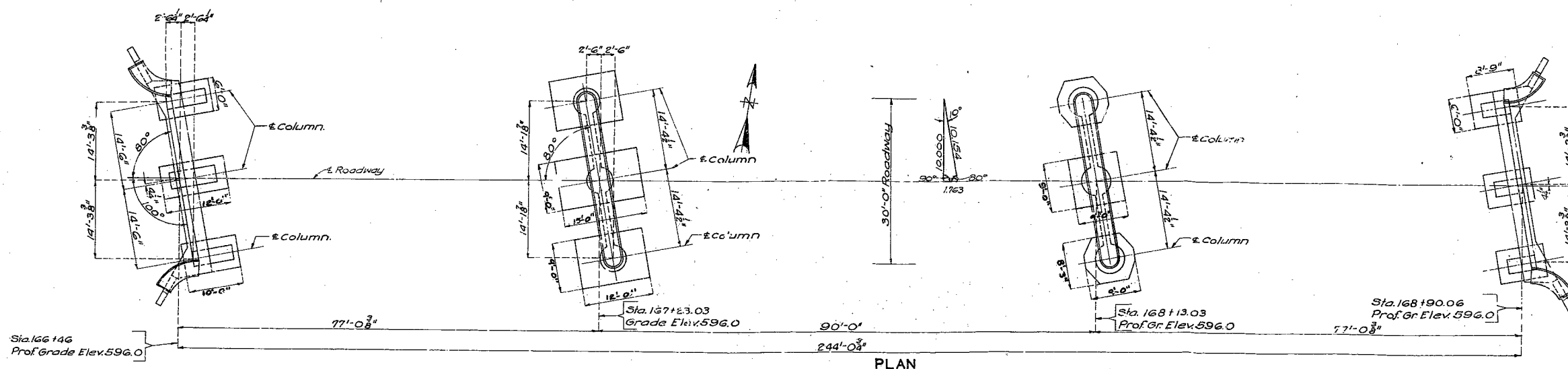
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235 (U.S. 40)	19	87	117

FINAL PLANS
FINAL PLANS



GENERAL ELEVATION



PLAN

GENERAL NOTES:

Design Specifications A.A.S.H.O.-1944.
Loading H-20 S 16-44 (No overload).
Structural Steel Stress 18,000 #/sq. in.
Reinforcing Steel Stress 18,000 #/sq. in.
Class "B" Concrete Stress 1,000 #/sq. in.
All concrete shall be class "B".
Where joint filler is specified on plans it shall conform with the requirements for Premolded Material for Filler as given in Section 38-19 A(1) of the Standard Specifications.
Rivets 3/4" Holes 1/2" except as noted.
Paint: Shop, none. Field, surface inaccessible after erection, 3 coats of red lead. No other paint to be applied by contractor.
Red lead required shall be furnished by the contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for structural steel.
A rubbed surface will be required on all exposed surfaces of end posts and curb and on outside faces of roadway slabs.

Note: Excavation of all existing materials under bridge shall be made to not less than 3'-0" below bottom of steel and not less than 4'-0" outside of curb lines. Payment for this excavation outside limits of excavation for structure will be made at unit contract prices for Roadway Excavation.

B.M. Elev. 595.49 Bronze Disc in L.W. Abutment of Present Bridge Stamped F-125-1935-12' Lt. Sta. 166+36. North Line.

FINAL QUANTITIES			
Item	Substr.	Superstr.	Total
Excavation for Structures	Cu. Yds.	535.5	535.5
Excavation for Structures	Cu. Yds.	461.5	461.5
Class "B" Concrete	Cu. Yds.	352.4	267.9
Fabricated Structural Steel	Lbs.	3545.0	3545.0
Steel Castings	Lbs.	7130	7130
Reinforcing Steel	Lbs.	23910	46260
Concrete Piles in Place	Lin. Ft.	2607	
Concrete Pile Cut-offs	Lin. Ft.	61	
Concrete Test Piles	Lin. Ft.	80	

Note: Excavation for bridge made above Elev. 571.0 will be paid for as Class 1 Excavation for Structures.
Excavation for bridge made below Elev. 571.0 will be paid for as Class 2 Excavation for Structures.

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEW FRANKLIN
PROJECT NO. F-235 (U.S. 40) STA. 166+46

HOWARD COUNTY

SUBMITTED BY: T.W. Carlson DATE: 8/20/1947
APPROVED BY: C.W. Brown DATE: 8/20/1947

STD. P-3 R1
STD. C-110 R3
L-119

FINAL PLANS

Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced April 1947 by K.R.W.
Checked July 1947 by N.H.R.

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

#Sec letter from Division Engr. dated 2-7-49

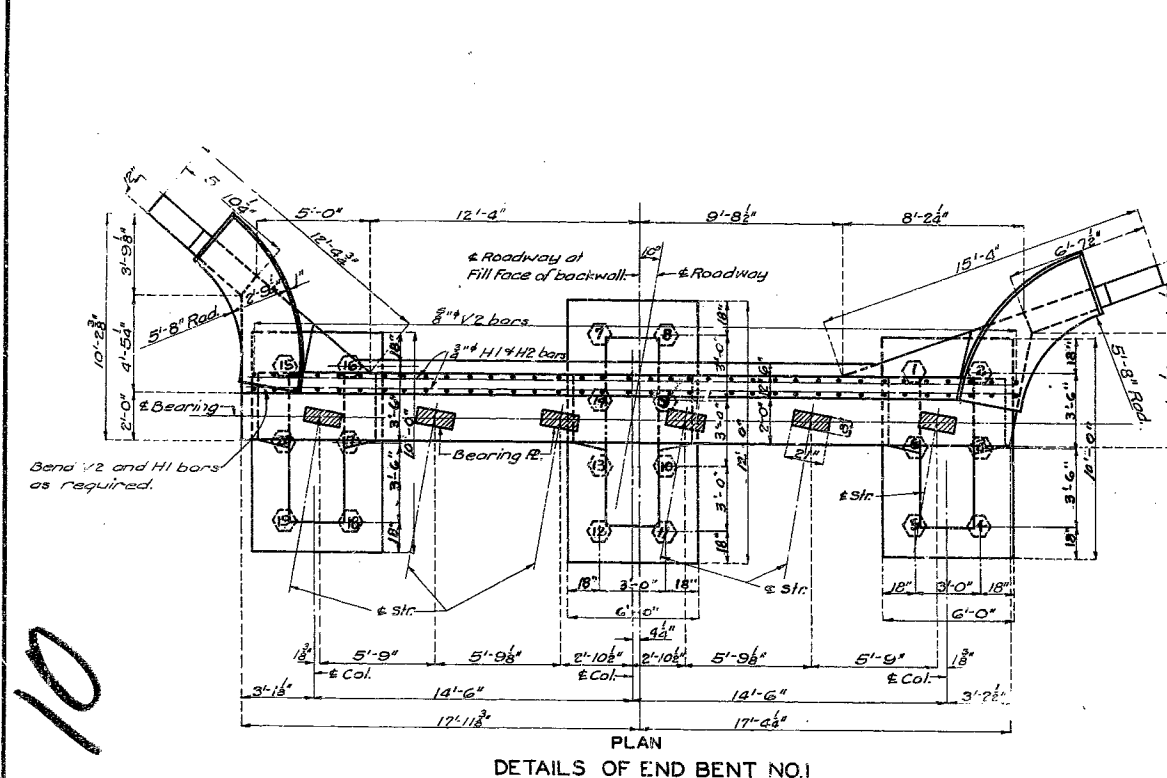
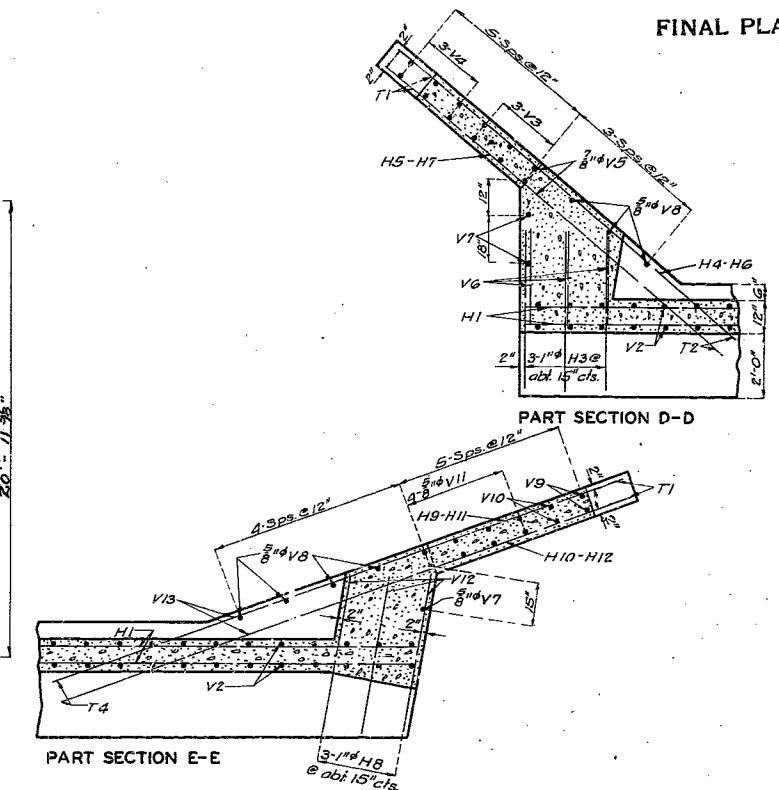
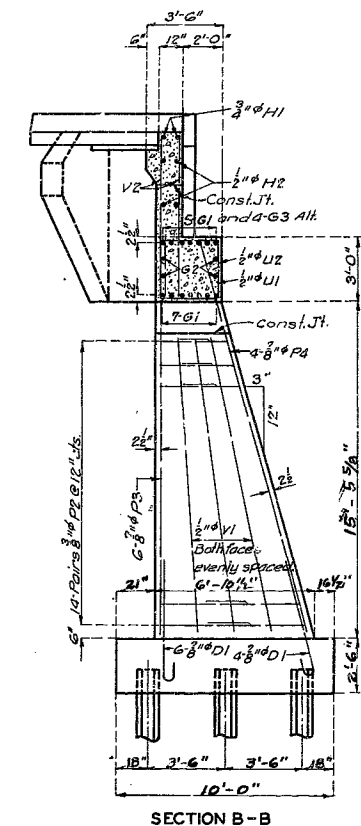
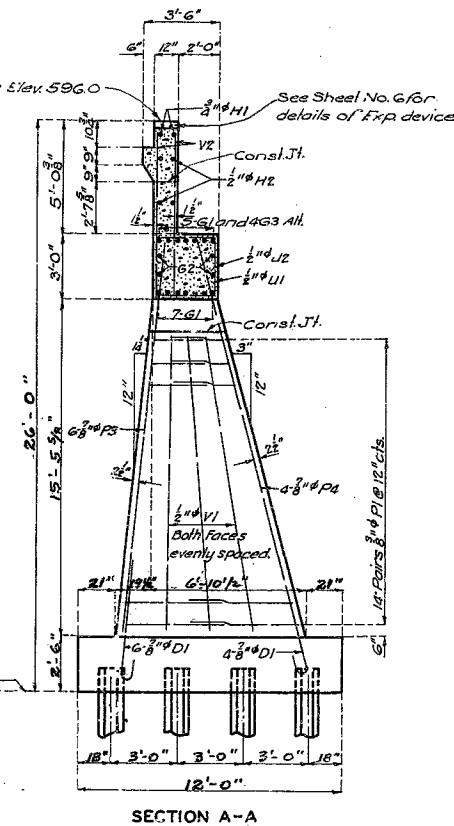
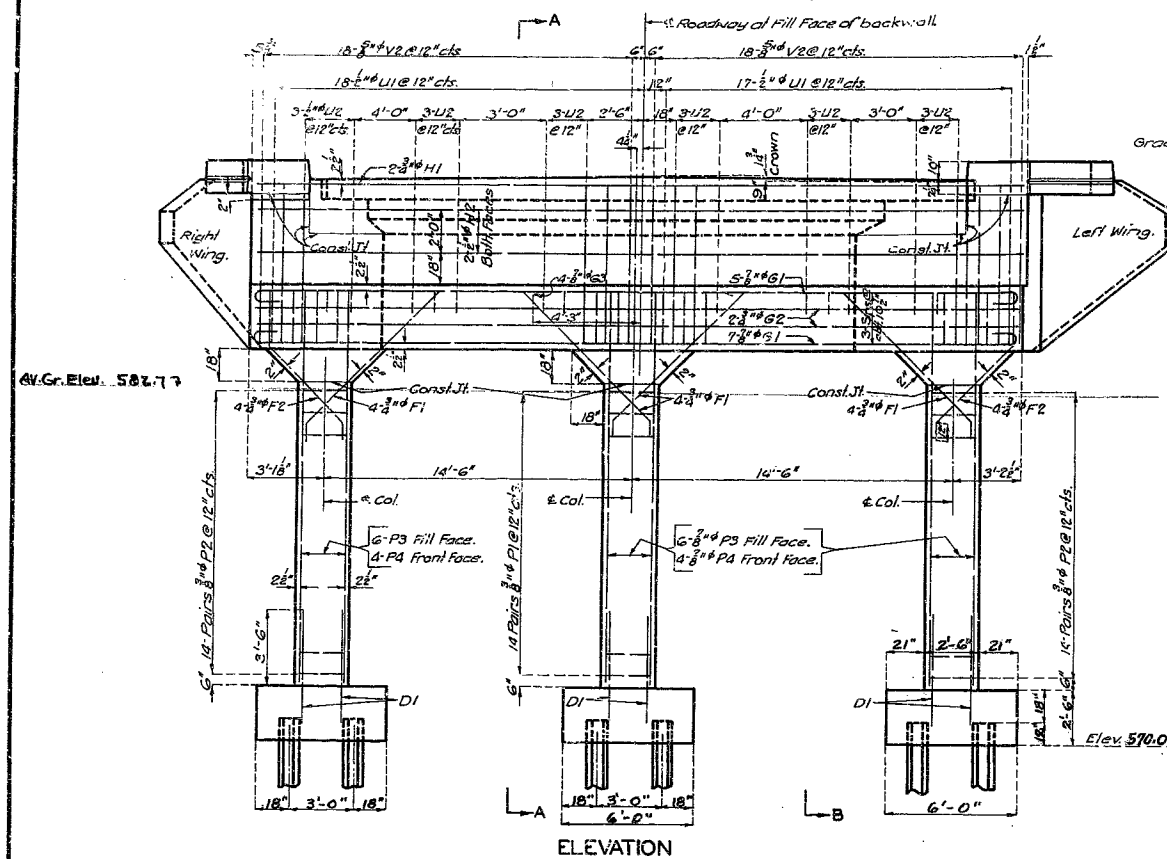
Sheet No. 1 of 5

MISSOURI STATE HIGHWAY DEPARTMENT

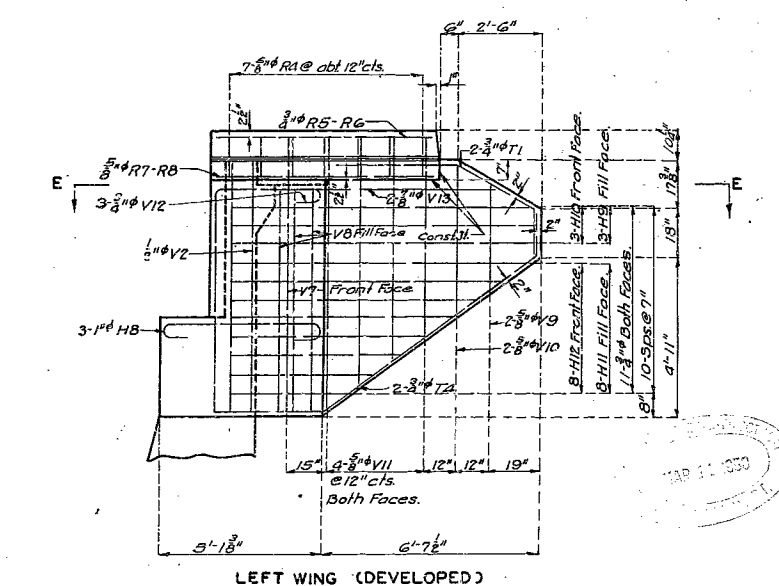
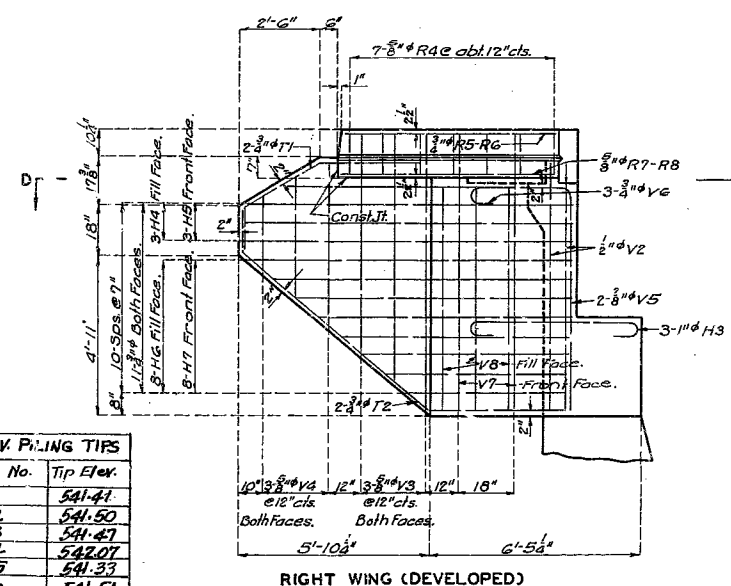
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5	MO.	F-235 (9) (U.S. 40)	19	88	111

FINAL PLANS

FINAL PLANS



ELEV. PILING TIPS	Pile No.	Tip Elev.
1	541.41	
2	541.50	
3	541.47	
4	542.07	
5	541.33	
6	541.51	
7	541.57	
8	535.32	Test pile
9	541.80	
10	541.90	
11	542.31	
12	541.99	
13	541.81	
14	541.67	
15	541.08	
16	541.62	
17	541.49	
18	541.32	
19	542.38	
20	541.43	



BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.EAST OF NEWFRANKLIN
PROJECT NO. F-235 (9) (U.S. 40) STA. 166 + 46

HOWARD COUNTY

L-119

FINAL PLANS

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

Sheet No. 2A of 5

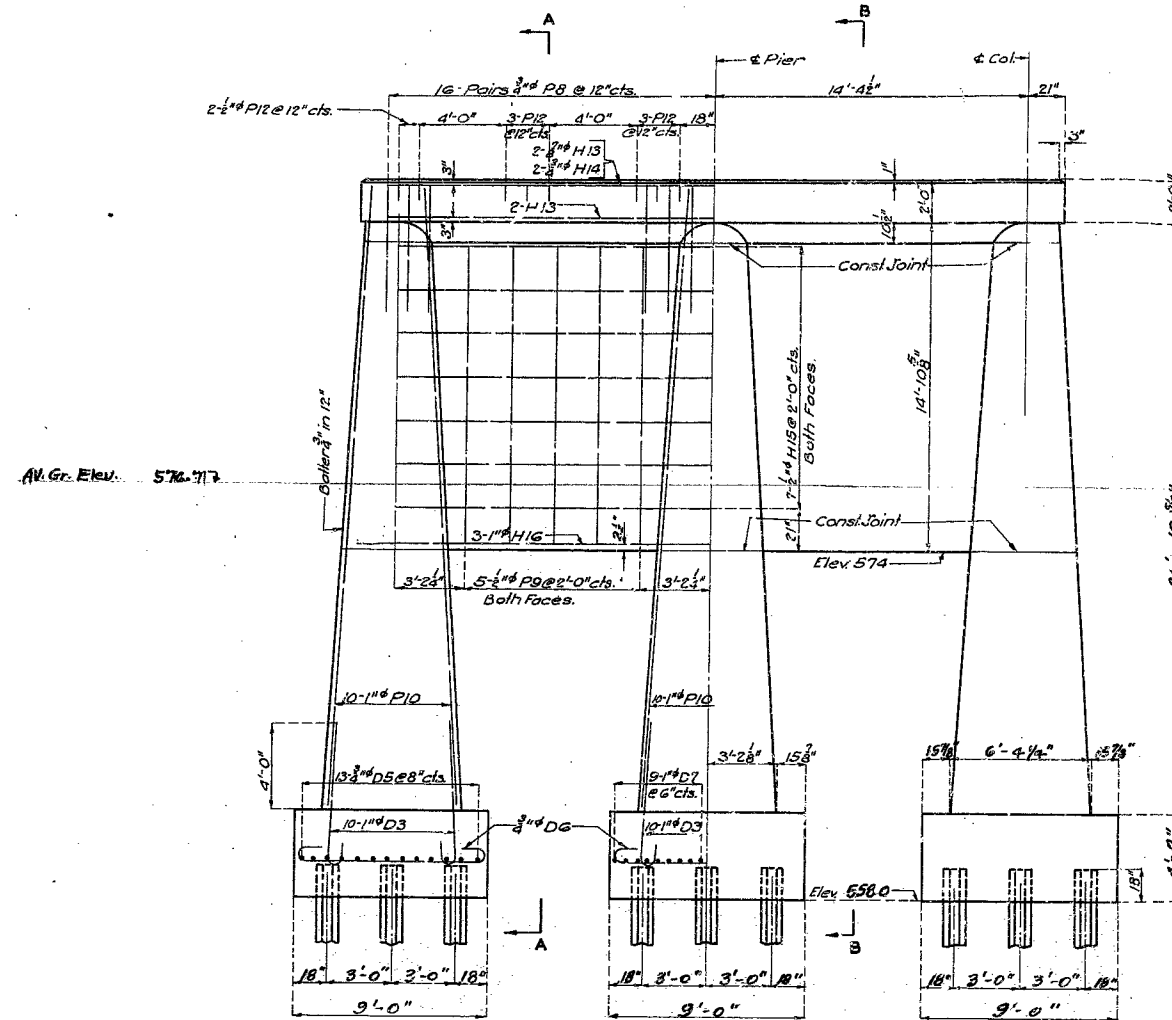
Designed Mar. 1947 by R.R.C.
Drawn Mar. 1947 by R.H.L.
Traced Mar. 1947 by K.W.N.
Checked July 1947 by N.W.R.

MISSOURI STATE HIGHWAY DEPARTMENT

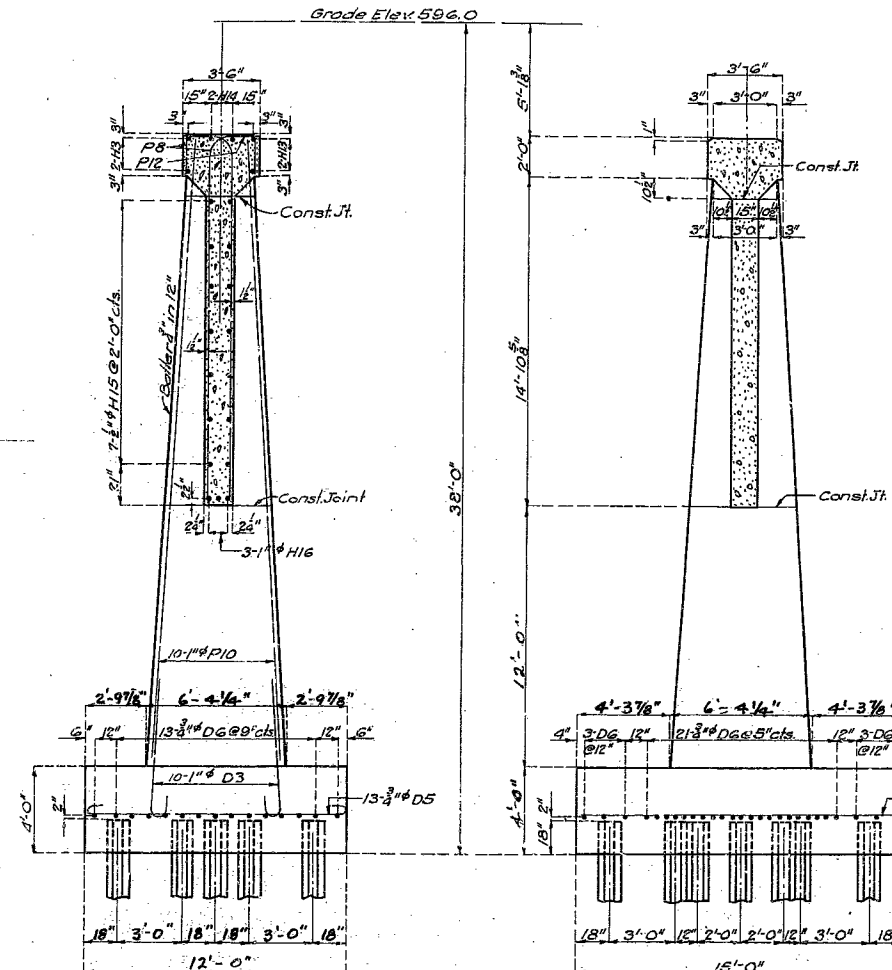
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5	MO.	F-235(9) (U.S. 40)	19	39	111

FINAL PLANS

FINAL PLANS

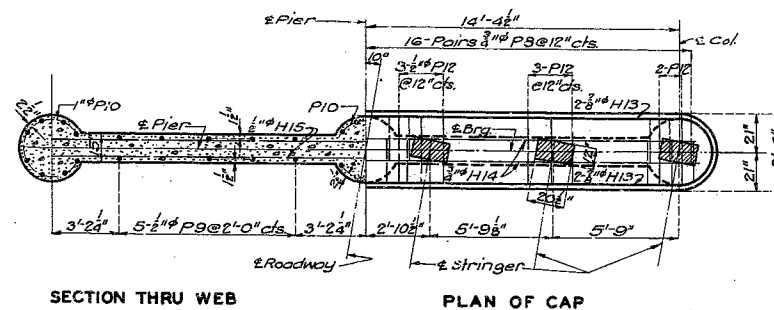


ELEVATION



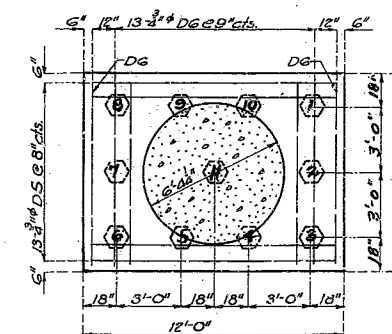
SECTION A-A

SECTION S-B

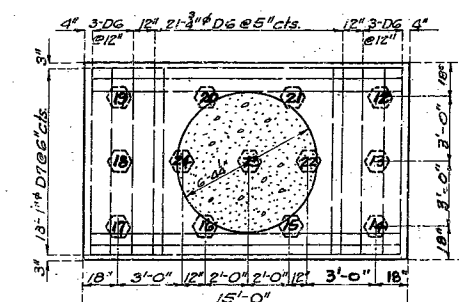


SECTION THRU WEB

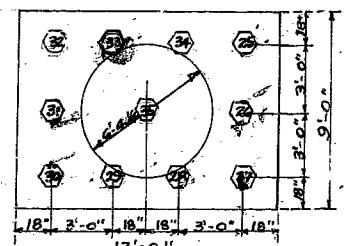
PLAN OF CAP



PLAN OF EXT. FOOTING L.H.



PLAN OF INT. FOOTING



PLAN OF EXT. FOOTING R.H.

DETAILS OF PIER NO. 2

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST

ABOUT 3 MILES S.E. OF NEWFRANKLIN

PROJECT NO. F-235(9) (U.S. 40) STA. 166 + 46

HOWARD

COUNTY

FINAL PLANS

L-119

Designed Mar 1947 by R.R.C.
Drawn Mar 1947 by R.H.L.
Traced April 1947 by K.R.W.
Checked July 1947 by N.W.R.

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

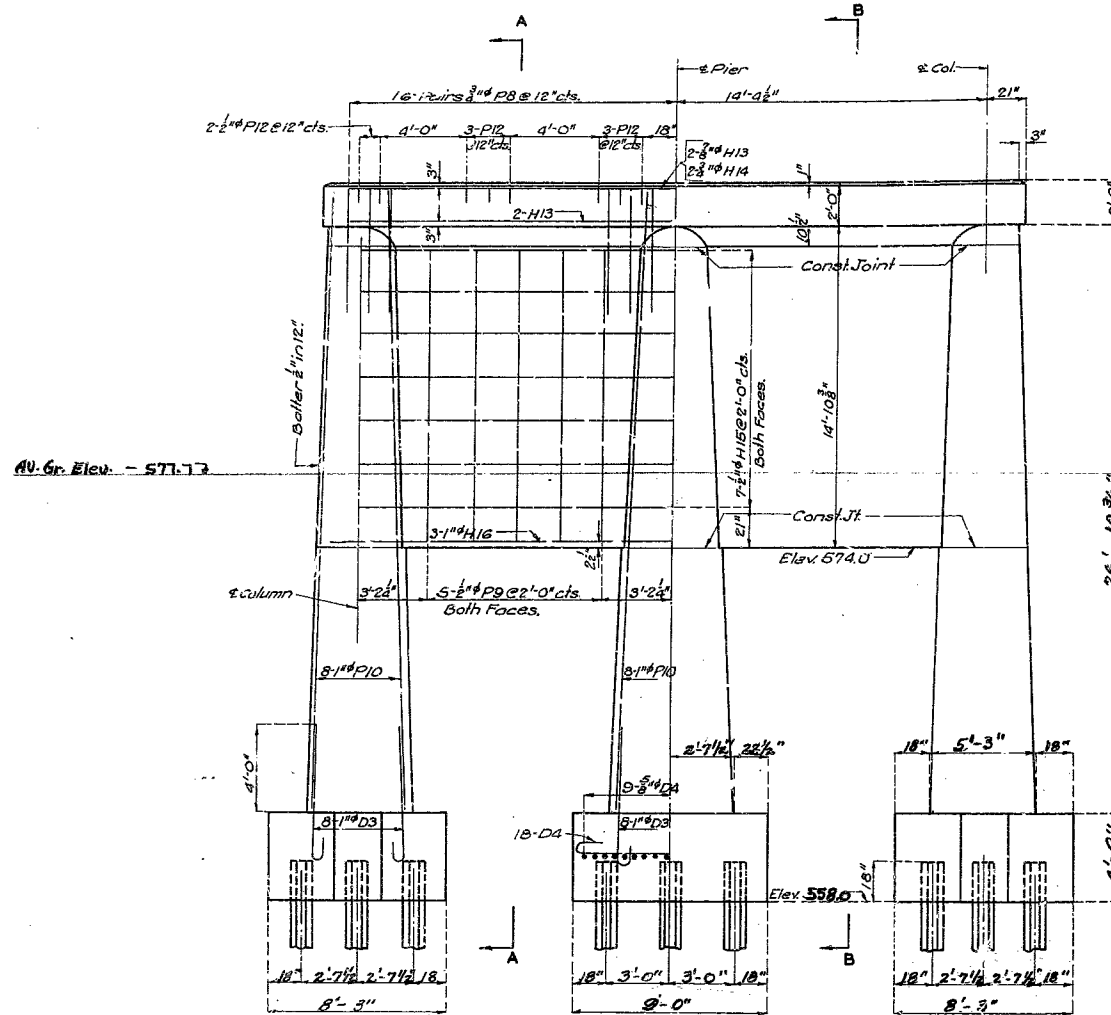
Sheet No. 34 of 35

MISSOURI STATE HIGHWAY DEPARTMENT

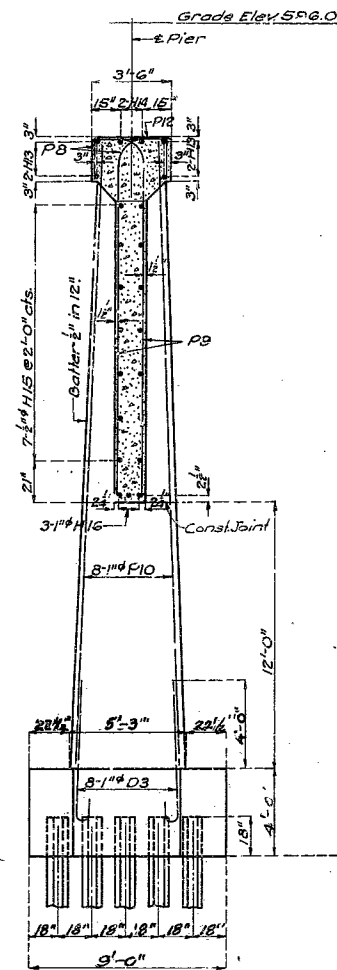
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-235(9) (U.S. 40)	19	90	111

FINAL PLANS

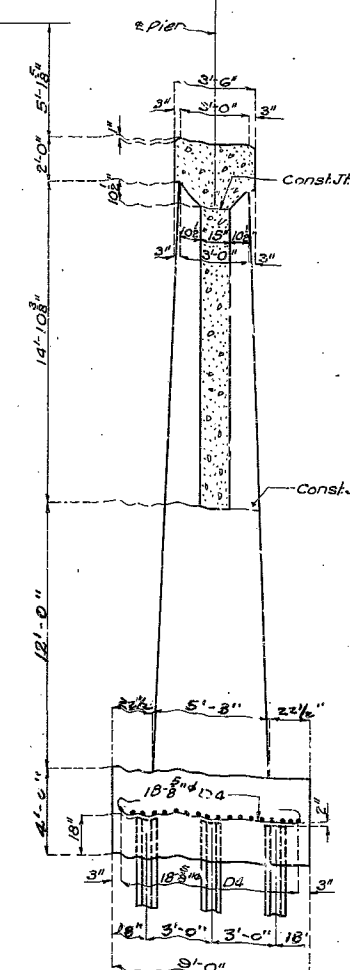
FINAL PLANS



ELEVATION



SECTION A-A

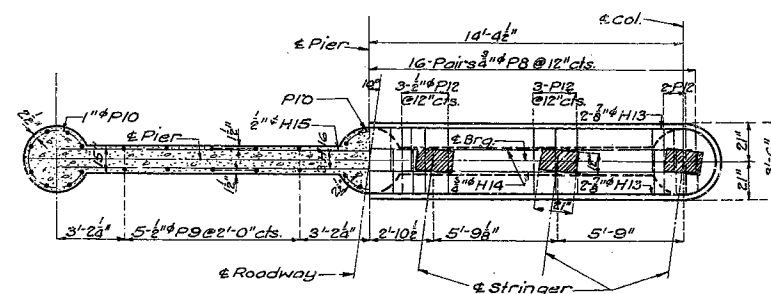


SECTION B-B

Note: The shafts on Pier 3 were built the same diameter and batter as is detailed for Pier 2. (See letter from Division Engr. to Proj. Engr. dated Jan. 6, 1949.) Use plan quantities for Conc. & Steel.

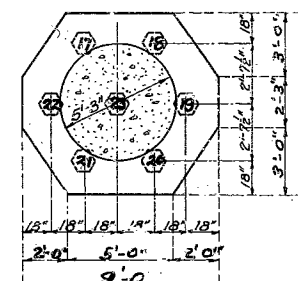
ELEV. PILE TIPS
Pile No. Elev. Tip.
1 529.74
2 529.82
3 529.76
4 529.74
5 529.87
6 529.88
7 531.55
8 530.44
9 529.90
10 529.79
11 529.72
12 530.02
13 529.97
14 530.06
15 529.03
16 529.11
17 531.19
18 530.52
19 531.7
20 529.17
21 529.74
22 526.11
23 536.19

Test Pile

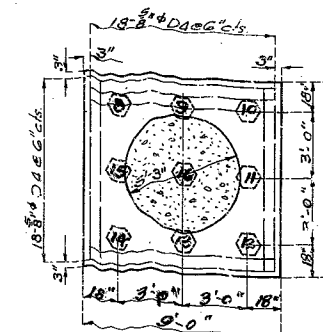


SECTION THRU WEB

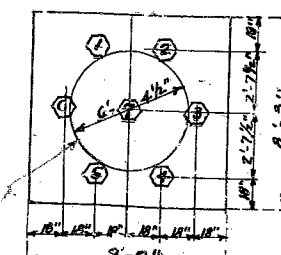
PLAN OF CAP



PLAN OF EXT. FOOTING
Rt. Ftg.



PLAN OF INT. FOOTING



PLAN OF EXT. FOOTING
Lt. Ftg.

BRIDGE OVER BONNE FEMME CREEK

STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEWFRANKLIN
PROJECT NO. F-235(9) (U.S. 40) STA. 165+46

HOWARD

COUNTY

DETAILS OF PIER NO. 3

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

Sheet No. 4A of 5

FINAL PLANS

L-119

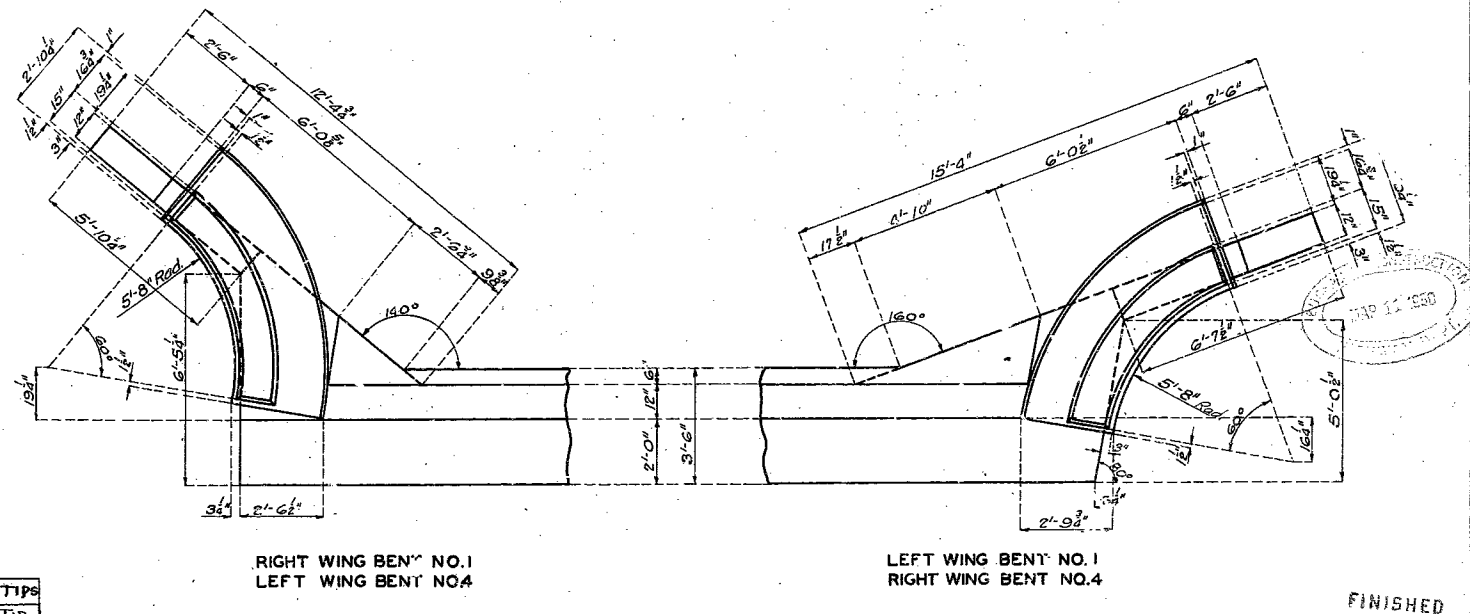
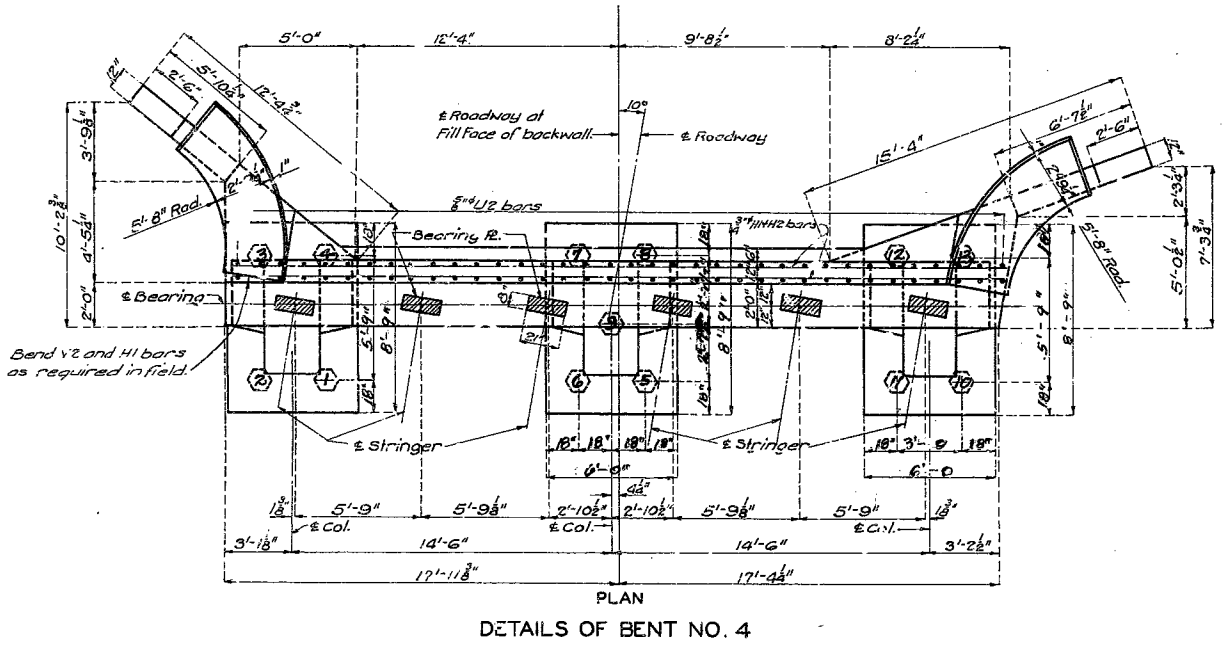
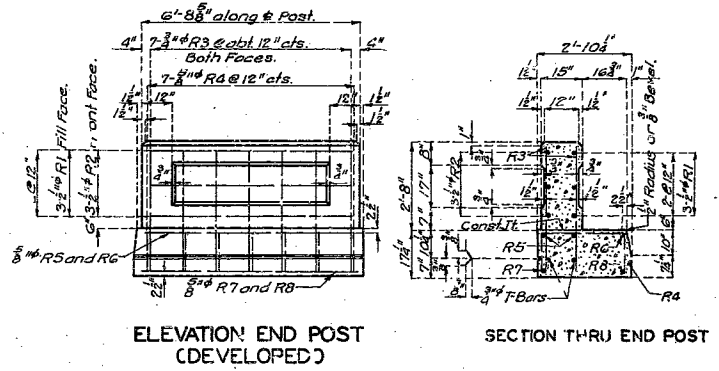
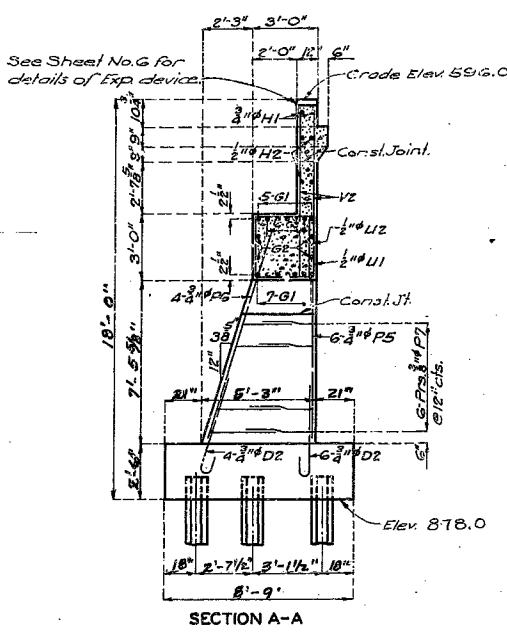
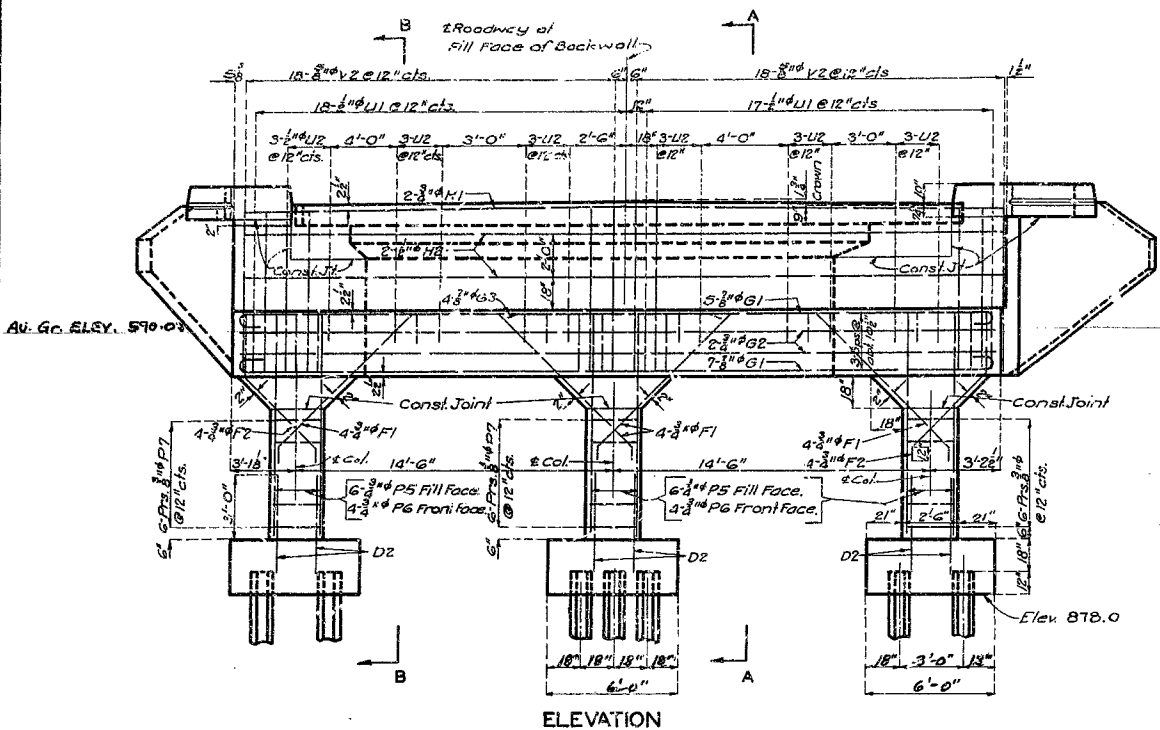
Designed Mar. 1947 by R.R.C.
Dr. in Mar. 1947 by R.H.L.
Traced April 1947 by K.R.W.
Checked July 1947 by M.W.R.

12

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	MO.	F-235(9)2 (U.S. 40)	19	91	111

FINAL PLANS
FINAL PLANS



ELEV.	PILE TIP
1	548.82
2	549.19
3	548.45
4	548.56
5	548.85
6	548.97
7	549.32
8	548.71
9	549.27
10	549.06
11	549.11
12	548.94
13	549.23

Note: Wing reinforcement similar to Bent No. 1. See Sheet No. 2.

BRIDGE OVER BONNE FEMME CREEK
STATE ROAD FROM BOONVILLE EAST
ABOUT 3 MILES S.E. OF NEWFRANKLIN
PROJECT NO. F-235 (9)2 (U.S. 40) STA. 156 + 46
HOWARD COUNTY

Designed Mar 1941 by R.R.C.
Drawn Mar 1941 by R.H.L.
Traced Mar 1941 by K.R.W.
Checked July 1947 by N.W.R.

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

Sheet No. 54 of 5.

FINAL PLANS

U.I.P. AND REHAB. EXISTING (75'-90'-75') CONTINUOUS WIDE FLANGE BEAM SPANS

SEC/SUR 34 TWP 49N RGE 16W

GENERAL NOTES:

Design Specifications:
2002 - AASHTO LFD (17th Edition) Standard Specifications

Design Unit Stresses:
Class B-1 Concrete $f'c = 4,000$ psi
Reinforcing Steel (Grade 60) $fy = 60,000$ psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

All curb blackout steel shall be epoxy coated.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Resin Anchors:
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4" \varnothing threaded rod.

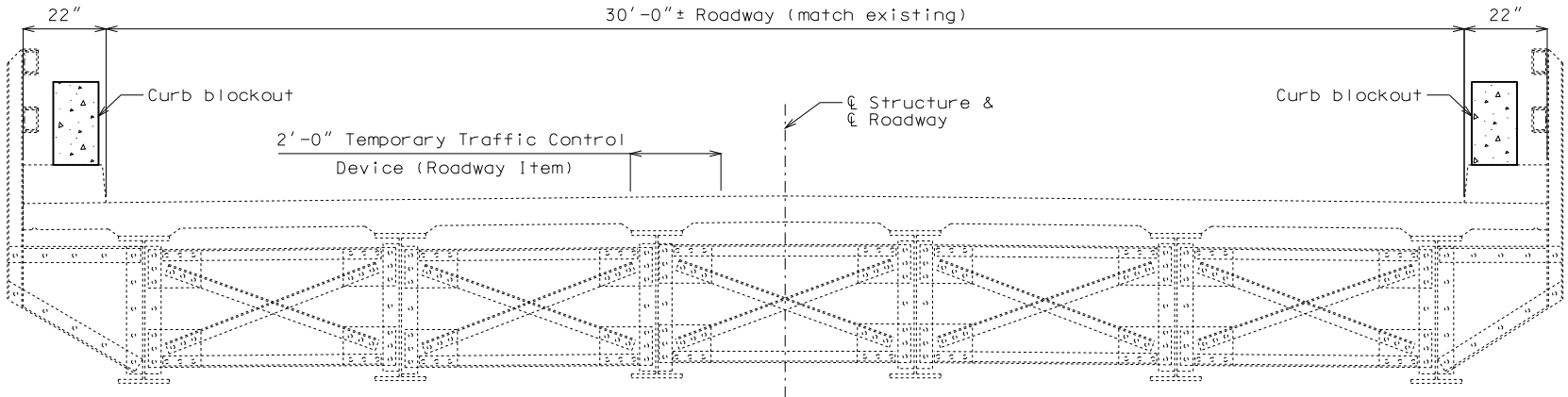
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Curb Blockout.

Miscellaneous:
Traffic to be maintained on structure during construction. See roadway plans for traffic control.

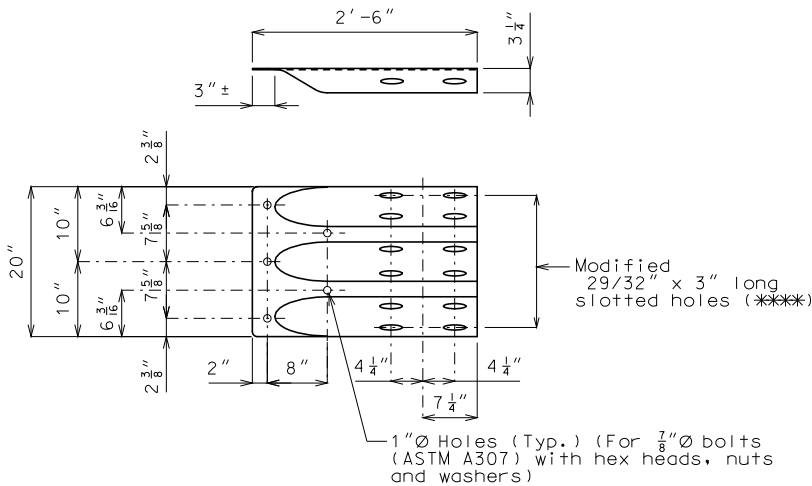
All exposed edges of curb blockout shall have either a 1/2" radius or a 3/8" bevel unless otherwise shown.

Outline of old work is indicated by light dashed lines. Heavy line indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

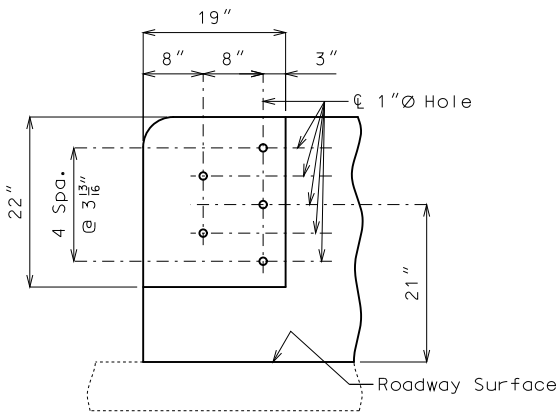


SECTION THRU SLAB



MODIFIED TERMINAL CONNECTION
AT ABUTMENTS (ROADWAY ITEM)
(3 Req'd.)

For Details of Type C Crashworthy End at Right End Post at End Bent No. 1, see Roadway Plans.



PART ELEVATION SHOWING
BRIDGE ANCHOR SECTION ATTACHMENT

Note: Holes shall be cast in curb blockout for Modified Terminal Connection. Drilling is not allowed.

Estimated Quantities

Item	Total
Curb Blockout linear foot	502

DETAILS OF RESIN ANCHOR SYSTEMS

* Manufacturer's recommended embedment length (5" min.)

Note:

For location of Resin Anchor Systems, see Sheets No. 2 & 3.

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

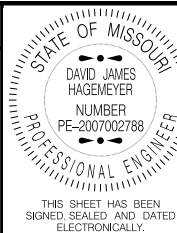
Sheet No. 1 of 4

BRIDGE: ROUTE 40 OVER BONNE FEMME CREEK

ROUTE 40 FROM 5 TO BB
ABOUT 1.9 MILES EAST OF ROUTE 5
STA. 166+46± (MATCH EXISTING)

STD. 606.60

STD. 617.10



DATE PREPARED
8/3/2017

ROUTE 40 STATE MO

DISTRICT BR SHEET NO. 1

COUNTY HOWARD

J5P3213

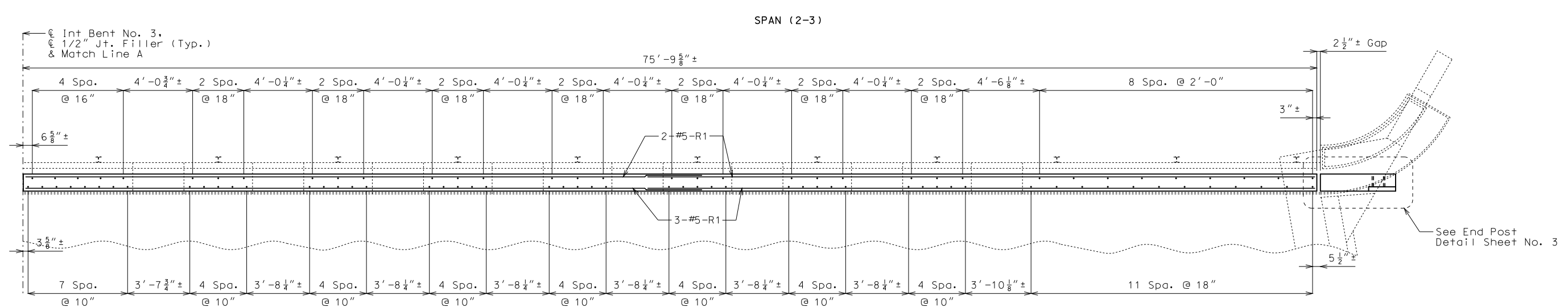
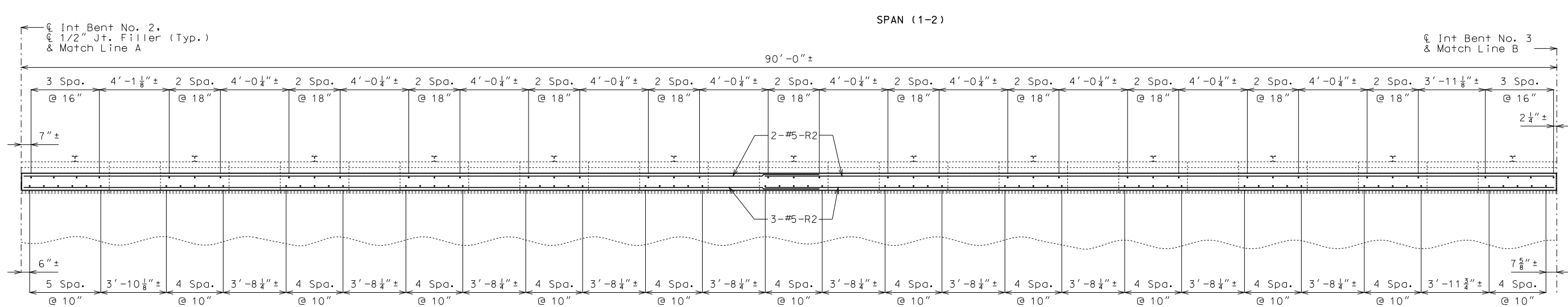
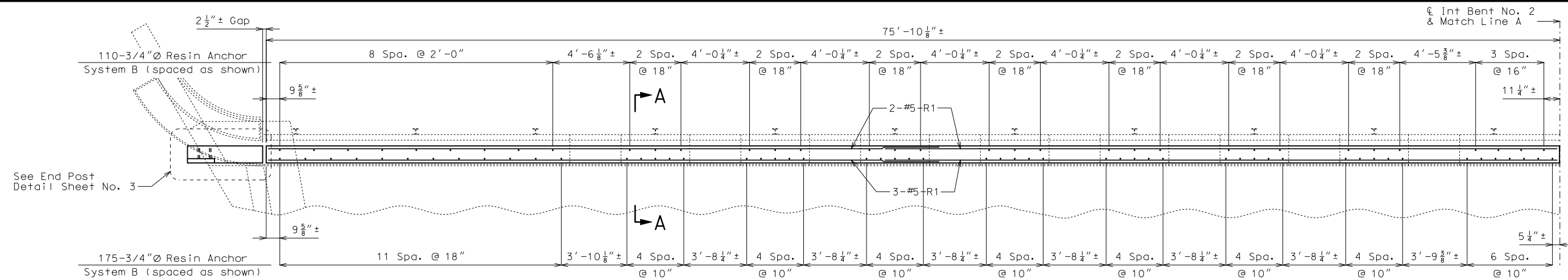
CONTRACT ID.

PROJECT NO.

BRIDGE NO. L01191

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



PLAN OF CURB BLOCKOUT SHOWING REINFORCEMENT AND RESIN ANCHOR SYSTEMS

(Left barrier curb shown; right barrier curb similar by 180° rotation)

Notes:

Longitudinal dimensions shown are horizontal.

All exposed edges of curb blockout shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

The cost of concrete, reinforcing steel, resin anchor systems and any other work incidental to the curb blockouts, complete in place, will be considered completely covered by the contract unit price for Curb Blockout.

Measurement of curb blockout is to the nearest linear foot for each structure, measured along the inside edge of curb from end of Curb Blockout to end of Curb Blockout.

Notes Cont.:

Concrete traffic barrier delineators shall be placed on top of the curb blockout as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Curb Blockout.

For Details and Notes of Resin Anchors, see Sheet No. 1.

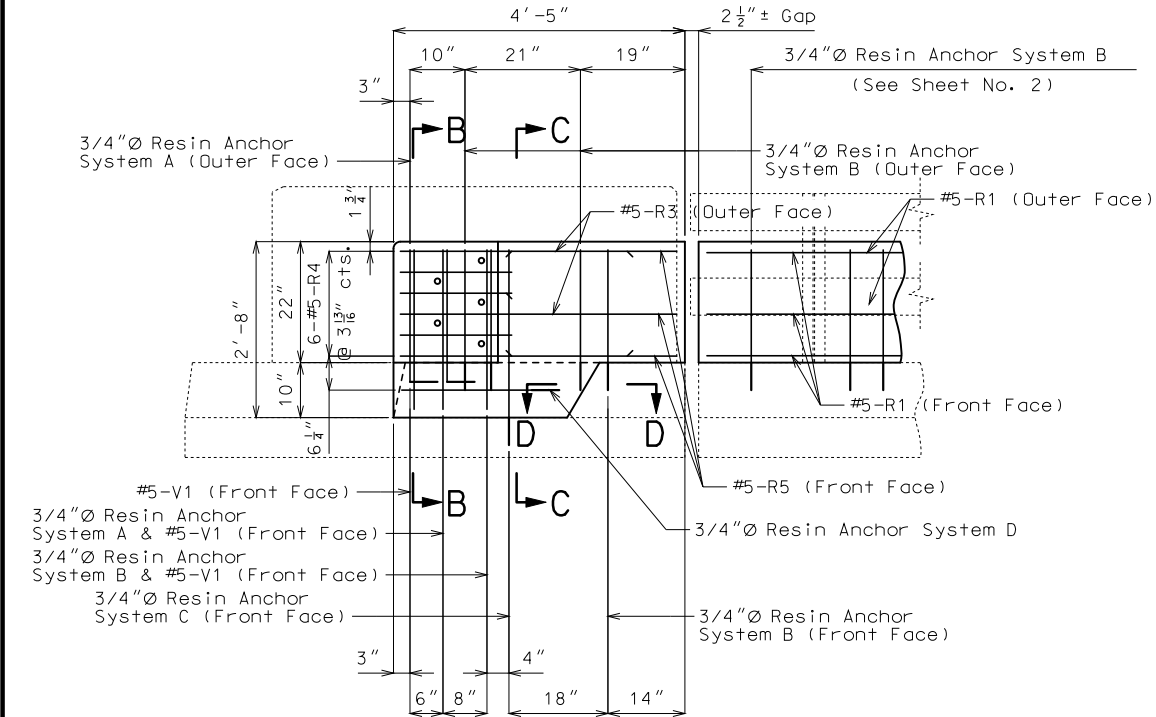
For Section A-A, see Sheet No. 3.

STATE OF MISSOURI
DAVID JAMES HAGEMAYER
NUMBER PE-2007002788
PROFESSIONAL ENGINEER

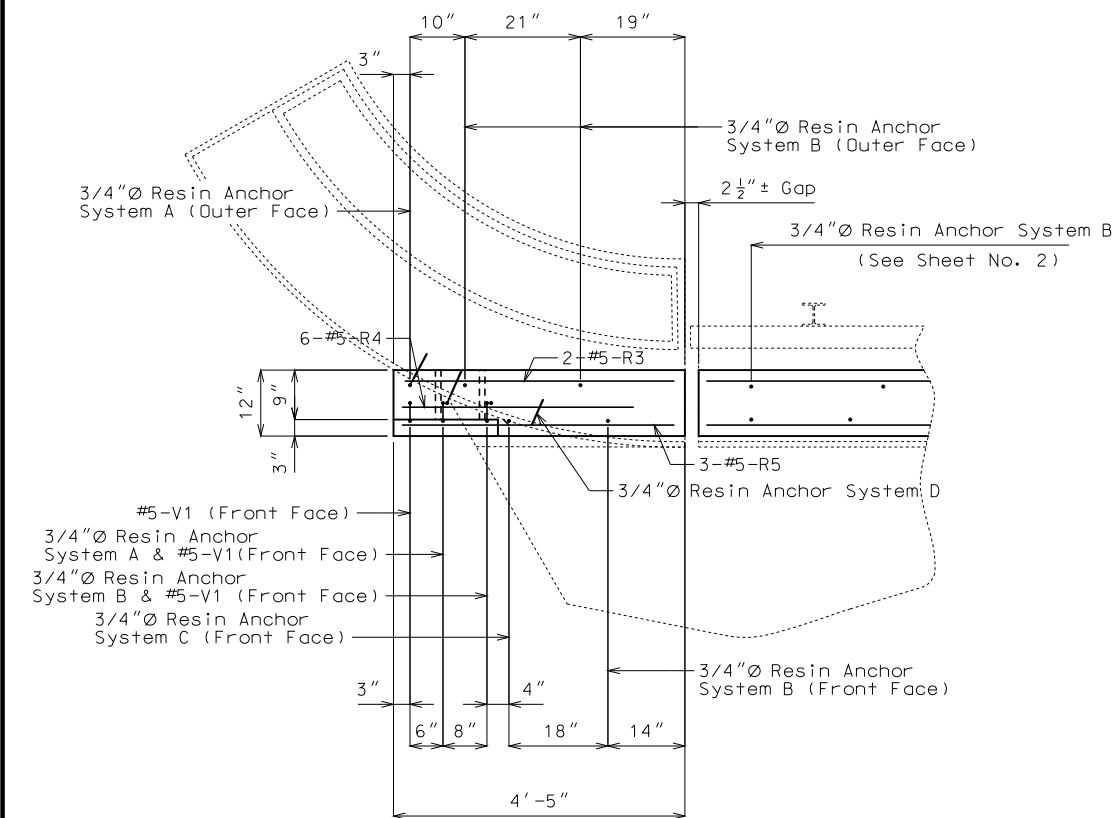
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/3/2017	
ROUTE 40	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY HOWARD	
JOB NO. J5P3213	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L01191	
DESCRIPTION	DATE
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	<p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>

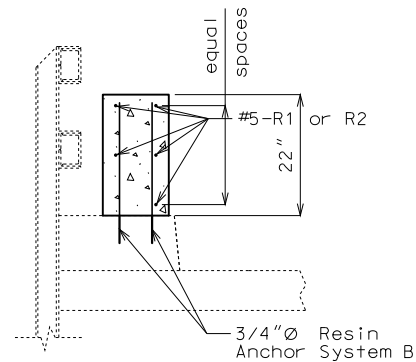
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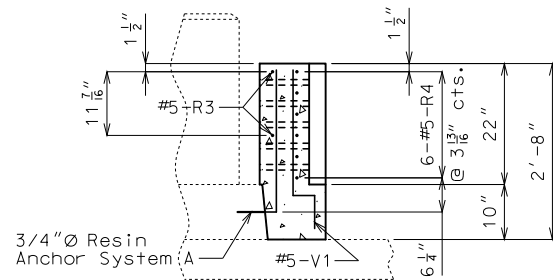
PART ELEVATION OF END POST
(Left End Post at End Bent No. 1 Shown, Left and
Right End Posts at End Bent No. 4 similar)



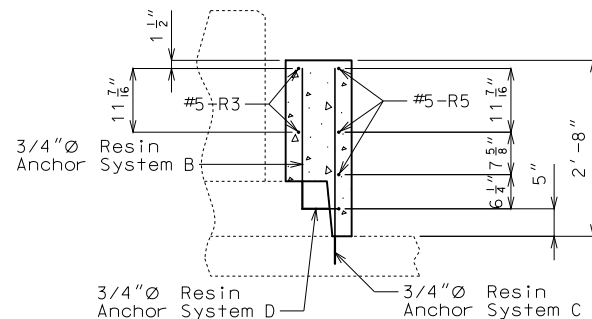
PART PLAN OF END POST
(Left End Post at End Bent No. 1 Shown, Left and
Right End Posts at End Bent No. 4 similar)



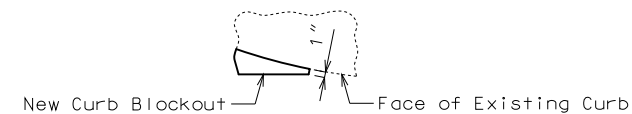
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

Notes:

All exposed edges of curb blackout shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

The cost of concrete, reinforcing steel, resin anchor systems and any other work incidental to the curb blackouts, complete in place, will be considered completely covered by the contract unit price for Curb Blackout.

Measurement of curb blackout is to the nearest linear foot for each structure, measured along the inside edge of curb from end of Curb Blackout to end of Curb Blackout.

Concrete traffic barrier delineators shall be placed on top of the curb blackout as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Curb Blackout.

For Details of Type C Crashworthy End at Right End Post at End Bent No. 1, see Roadway Plans.

For Details and Notes of Resin Anchors, see Sheet No. 1.

For Plan of Curb Blackout Showing Reinforcement and Resin Anchor Systems, see Sheet No. 2.

DETAILS OF END POST AT END BENTS

(Left barrier curb ends shown; right barrier curb ends similar by 180° rotation)

STATE OF MISSOURI
DAVID JAMES HAGEMeyer
NUMBER PE-2007002788
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

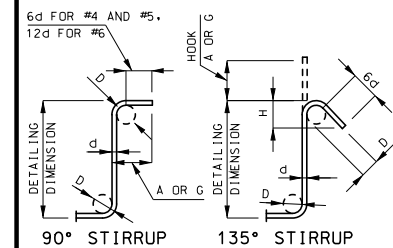
DATE PREPARED
8/3/2017
ROUTE 40
DISTRICT BR
COUNTY HOWARD
JOB NO. J5P3213
CONTRACT ID.
PROJECT NO.
BRIDGE NO. L01191

DESCRIPTION
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

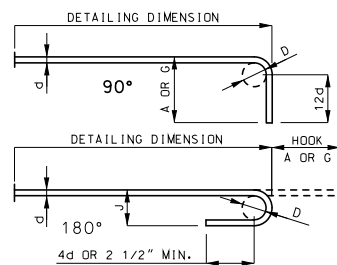
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

BILL OF REINFORCING STEEL

[illegible]

STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
		HOOK A OR G	HOOK A OR G	
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

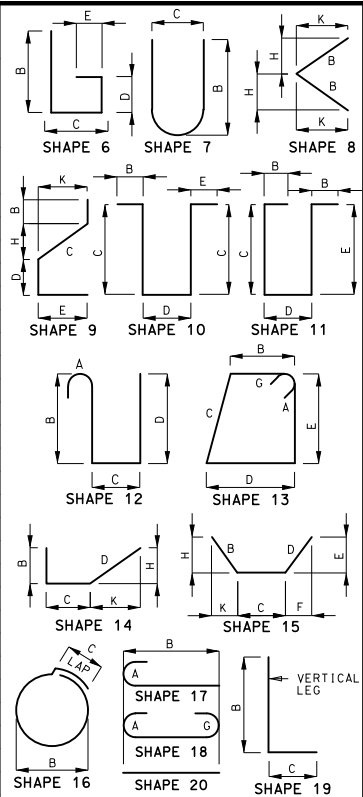
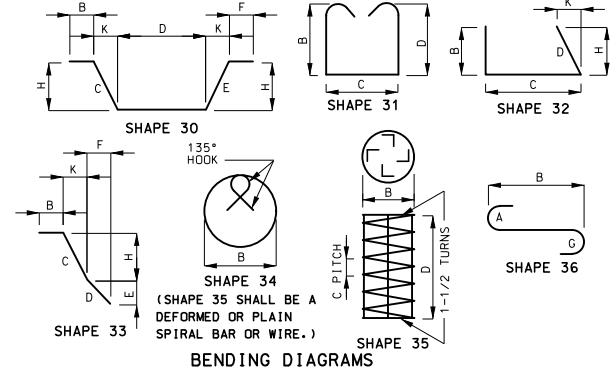
NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS					
BAR SIZE	D (1 IN.)	ALL GRADES			
		180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	J
#3	2 1/4"	4"	3"	6"	6"
#4	3"	6"	4"	8"	8"
#5	3 3/4"	7"	5"	10"	10"
#6	4 1/2"	8"	6"	12"	12"
#7	5 1/4"	10"	7"	14"	14"
#8	6"	11"	8"	16"	16"
#9	9 1/2"	15"	11 3/4"	19"	19"
#10	10 3/4"	17"	13 1/4"	22"	22"
#11	12"	19"	14 3/4"	21"-0"	21"-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"	2'-7"

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME
PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
Y = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE
AND THE FOLLOWING LINE.
NO. EX. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND
ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO
BE ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE
SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

BILL OF REINFORCING STEEL

[illegible]

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
8/3/2017

ROUTE 40	STATE MO
DISTRICT BR	SHEET NO. 4

COUNTY
HOWARD

JOB NO.
J5P3213

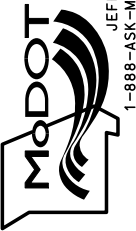
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L01191

[illegible]

NC

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



Missouri Department of Transportation

STRUCTURAL REHABILITATION CHECKLIST

Bridge No.: **L0119**

Job No.: **J5S3416**

Route: **40**

Over: **Bonne Femme**

County: **Howard**

Date of Field Check: **9/18/19**

*** Please include photographs for all items that apply. ***

1

OVERLAY

* Type of existing overlay: ☐ None ☒ Asphalt ☐ Low Slump ☐ Silica Fume ☐ Latex ☐ Epoxy ☐ Other: _____

* Existing overlay thickness: _____ " * Year overlay was applied: _____ ☐ Unknown

* % of overlay repaired or patched: _____ % * Replace overlay: ☐ Yes ☒ No

* Notes: **2019**

Picture #

2A

DECK REPAIRS (Deck repair quantities are required even if a Deck Test request has been ordered for this structure.)

* Half-sole repairs: _____ sq. ft. * Full-depth repairs: _____ sq. ft.
(round up to the nearest 50 sq. ft.) (round up to the nearest 25 sq. ft.)

* Slab edge repairs: _____ lin. ft. * Superstructure repair (Unformed): _____ sq. ft.
(covers the outer 4" of the slab edge) (covers the remaining slab cantilever beyond the outer 4")

* Clean & seal slab edge: _____ lin. ft. * Cantilever replacement: _____ lin. ft.
(in lieu of edge repairs)

* Total surface hydro demolition bridge deck: ☐ Yes ☐ No * Full deck replacement (redeck): ☒ Yes ☐ No ☐ Optional
(half-sole and full depth repair quantities still required)

* Deck repairs with voided tube replacement: ☐ Yes ☐ No * Superstructure replacement: ☐ Yes ☐ No ☐ Optional
(if applicable) _____ sq. ft. * Full bridge replacement: ☐ Yes ☐ No ☐ Optional
(Deck repair quantities required for cost comparison of alternatives)

* How were the quantities obtained? ☐ Visual ☐ Bridge Inspection Report ☐ Sounded ☐ Other _____

* Notes: **consider sealing edges if not re-decking.**

Picture #

DECK REPAIRS CONT.*** ISSUES \ PROBLEMS WITH PRECAST PRESTRESSED DECK PANELS**

Spans	Location in Span						Deterioration		Describe
	At Panel Jt.	Btwn (mid) Panel Jt.	End		Mid		End	Type	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		sq. ft.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		sq. ft.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		sq. ft.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		sq. ft.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		sq. ft.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		sq. ft.

* Notes: _____

(Deterioration may include water saturation, efflorescence, rust staining, cracking, spalling, exposed steel, disintegration of panel edges at joints, etc. Typically observed at or near panel joints. The location and "Type" of deterioration should be recorded.)

Picture # _____

APPROACH SLABS

* Is there a bridge approach slab in place? ☐ Yes ☐ No * Type: ☐ Concrete ☐ Asphalt ☐ Other _____

* Is there a rdwy. approach pavement in place? ☐ Yes ☐ No * Type: ☐ Concrete ☐ Asphalt ☐ Other _____

* Is the approach slab sinking at the end bent? ☐ N/A ☐ Yes ☐ No _____

* Are repairs needed to the bridge approach slab driving surface? ☐ Yes ☐ No _____
 (Typically a roadway item but will be reported to district on the Bridge Memorandum.)

* Notes: **covered over** _____

Picture # _____

4

SLAB DRAINS

* Is the drainage system working adequately? ☒ Yes ☐ No

* Recommendations: _____

* Notes: _____

Picture #

5

CURBS & RAILS

* Existing curb (left side): ☐ Safety Barrier Curb ☐ Curb/parapet ☒ Blockouts ☐ Thrie Beam ☐ Baluster ☐ Steel Channel

☐ Other _____ ☐ Handrail ☐ Fence _____

* Does curb need repair ☐ Yes ☒ No

* Curb repair _____ lin. ft.

* Remove hand rail ☐ Yes ☒ No

* Add curb blockout ☐ Yes ☐ No

* Existing curb (right side): ☐ Safety Barrier Curb ☐ Curb/parapet ☒ Blockouts ☐ Thrie Beam ☐ Baluster ☐ Steel Channel

☐ Other _____ ☐ Handrail ☐ Fence _____

* Does curb need repair ☐ Yes ☒ No

* Curb repair _____ lin. ft.

* Remove hand rail ☐ Yes ☒ No

* Add curb blockout ☐ Yes ☐ No

* Existing median curb: Type: _____ Width _____ " Height _____ "

* Does curb need repair ☐ Yes ☐ No

* Curb repair _____ lin. ft.

* Approach rail attachment: ☐ None ☐ Not attached ☐ 4 Hole ☐ 5 Hole ☐ Turn-down ☐ Other _____

* If the existing handrails will be removed, does the local maintenance supervisor wish to keep them? ☐ Yes ☐ No

Storage address: location: _____

address: _____

city: _____ state: _____ zip: _____

* Notes: _____

Picture #

6

EXPANSION DEVICES

Bent	Type	Recommendations			Gap Left	Gap Right	Temperature & Other Info
1	fingerplate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"	"	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"	"	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"	"	
4	fingerplate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"	"	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"	"	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"	"	

* Notes: cannot see, covered in asphalt

Picture #

7

BEARINGS

Bent	Coating	Recommendations				Notes (indicate which bearings at each bent)
1	<input type="checkbox"/> CLEAN & OVERCOAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	<input checked="" type="checkbox"/> CLEAN & OVERCOAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	<input checked="" type="checkbox"/> CLEAN & OVERCOAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	<input type="checkbox"/> CLEAN & OVERCOAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/> BLAST CLEAN & RECOAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/> BLAST CLEAN & RECOAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/> BLAST CLEAN & RECOAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

* Notes: try to make integral at both 1 and 4. If it can only be integral at one side, make 1 integral and 4 a sliding slab.

Picture # (Provide Pictures of Each Bearing)

8

COATING SYSTEM (PAINT)

* Existing coating system: _____ ☐ green ☐ gray ☐ other _____

* Date last coated: _____

* Is existing coating peeling? ☐ Yes (Overcoat is not an option) ☐ No

* Coating recommendation:

☐ Blast clean & recoat all steel

☐ Clean & overcoat all steel

☒ Blast clean & recoat only at joint locations ☐ Blast & recoat at joint locations and clean & overcoat all other steel

Note: Pull off test required for overcoat (Calcium Sulfonate) option. Bridge Division will request pull off tests.

* Notes: _____

Picture #

SUPERSTRUCTURE REPAIRS

(Repairs needed not previously stated.)

Concrete Slab Superstructure or Girder: (above the bearings)(Example: Deck solid slabs, voided slabs, box girder,
deck girders & prestressed girders)**Steel:** (Example: Beams, stringers, girders, diaphragms, cross-frames, misc. steel)**Member** (Check all that apply) (Attach pictures)**Describe & Locate**

G1 Abut1	<input type="checkbox"/>	Section Loss	Web 5 %	<input type="checkbox"/>	Cracks	in.	BF 10%
G3 Abut1			Web 40 %				BF 15%
G4 Abut1	<input type="checkbox"/>	Section Loss	Web 15%	<input type="checkbox"/>	Cracks	in.	BF 10%
G5 Abut1			Web 25%				BF 10%
G1 Abut4	<input type="checkbox"/>	Section Loss	Web 15%	<input type="checkbox"/>	Cracks	in.	BF 5%
G5 Abut4			Web 25%				BF 10%
G6 Abut4	<input type="checkbox"/>	Section Loss	Web 30%	<input type="checkbox"/>	Cracks	in.	BF 10%

Notes:

Picture #

SUBSTRUCTURE REPAIR

Bent	Formed Repair	Unformed Repair	Seal Concrete Beam Cap Bts.	Coat Exposed Pile @ Int. Pile Cap Bts.	Describe (Beam, Backwall, Wing, etc.)
1	sq. ft.	sq. ft.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	sq. ft.	sq. ft.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	sq. ft.	sq. ft.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	20 sq. ft.	sq. ft.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	top edge of cap
	sq. ft.	sq. ft.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

* Does the structure need graffiti protection? ☐ No ☐ Bottom 8' of Concrete ☐ End Bents ☐ Other* Notes: **backwall at abut 1 is in poor shape.**

Picture #

SIGNS, SIGNALS &/OR LIGHTING ATTACHED TO STRUCTURE

* Notes: _____

UTILITIES ATTACHED TO STRUCTURE

6 of 9

13

CATHODIC PROTECTION SYSTEM

* Is there a cathodic system on this structure? ☐ Yes ☐ No ☐ Remove ☐ Do not alter ☐ Abandon in place (grooved system)

* Is it on and working? ☐ Yes ☐ No ☐ Unknown _____

* Notes: _____

Picture #

14

CHANNEL ALIGNMENT, SLOPE PROTECTION & SCOUR

* Is channel aligned to bridge opening? ☐ Yes ☐ No Describe _____

* Is drift a continual problem? ☐ Yes ☐ No Describe & Locate _____

* Is erosion a problem? ☐ Yes ☐ No Describe & Locate _____

* Describe slope protection in place. _____

Scour	At Footing	At Piling	Depth	Bent	Recommendation
	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____
	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____

* Describe needed work. **B3 needs dive/probe following spring flood.** _____

B2 needs rock on channel edge _____

Picture #

15

TRAFFIC LANES

* Number of lanes striped: on structure 2 under structure _____

* Shoulder width: ☐ None on structure _____ (left) _____ (right) under structure _____ (left) _____ (right)

* Sidewalk widths: on structure _____ (left) _____ (right) under structure _____ (left) _____ (right)

* Median width: on structure _____ under structure _____

* Proposed improvements for lanes/shoulders/sidewalks: _____

Picture #

16

GENERAL AREA CONDITIONS

* **Primary area:** ☐ Commercial ☐ Industrial ☐ Residential ☐ Agricultural ☐ Military ☐ Other _____

* **Posted speed limit on structure:** 60 mph

* **Posted load on structure:** _____ tons @ _____ mph ☐ NA

Single Unit: _____ tons @ _____ mph ☐ NA

Semi (tractor/trailer): _____ tons @ _____ mph ☐ NA

* **Are both signs in place?**

☐ Yes ☐ No

* **Do pedestrians and/or bicyclists regularly use this structure?** ☐ Yes ☐ No ☐ Undetermined

* **Notes:** _____

Picture #

17

MAINTENANCE

* **What work has been done to this structure that may not be reflected on existing bridge plans?** _____

Picture #

18

ADDITIONAL FIELD NOTES

Picture #

19

STAGING / DETOUR

- * **Traffic Control:** ☐ Close structure ☐ Stage construction on structure ☐ Cross over traffic to adjacent structure ☐ Detour
- ☐ Other option _____

- * **Define probable detour route.** _____
- _____
- _____

20

PERSONS ASSISTING WITH CHECKLIST

Name	<u>Steve Frank</u>	Title	<u>Senior Highway Designer</u>	Ph.	<u>() -</u>
Name	<u>Gabriel Schubert</u>	Title	<u>Structural Specialist</u>	Ph.	<u>() -</u>
Name	<u>Mike Meyerhoff</u>	Title	<u>District Bridge Engineer</u>	Ph.	<u>() -</u>
Name	_____	Title	_____	Ph.	<u>() -</u>
Name	_____	Title	_____	Ph.	<u>() -</u>

21

REQUIRED SIGNATURES

I have reviewed the information on this checklist and believe it to be as accurate as possible.

Name	_____	Date	_____
	<i>Transportation Project Manager</i>		
Name	<u>Mike Meyerhoff</u>	Date	<u>10/15/19</u>
	<i>District Bridge Engineer</i>		

The structural rehabilitation checklist indicates how the bridge is functioning and aging.

All deterioration should be noted, even if it is known that the work will not be completed under the proposed project.

Send **NEW** Structural Rehabilitation Checklist by email

To: "Bridge Survey Processor"

Cc: Structural Project Manager or Structural Resource Manager







Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

November 4, 2019
11:21:27am

COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : APPROVED NBI STATUS : P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 2/3/2017 SUBMITTAL YEAR : 2016

GENERAL STRUCTURE INFORMATION			ROUTE DESIGNATION INFORMATION		
1	State	MISSOURI	5A	Record Type	ROUTE CARRIED 'ON' STRUCT
2	District	CD	5B	Route Signing Prefix	US
3	County	HOWARD	5C	Designated Level of Service	MAINLINE
8	Federal ID No.	6078	5D	Route Number	00040
27	Year Built	1948	5E	Directional Suffix	NOT APPLICABLE
106	Year Reconstructed	0	7	Facility Carried	US 40 E
42A	Type of Service On	HIGHWAY	12	Base Hwy. Network	NO
21	Structure Maintenance	STATE HIGHWAY AGENCY	13A	LRS Inventory Route No.	
22	Structure Owner	STATE HIGHWAY AGENCY	13B	Subroute No.	
33	Br. Median Code	NO MEDIAN	20	Toll Status	ON FREE ROAD
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP	26	Functional Classification	06-RURAL MINOR ARTERIAL
101	Parallel Struc Desg	NONE EXISTS	28A	Lanes on Structure	02
103	Temporary Structure	NOT TEMPORARY	100	STRAHNET Designation	RTE NOT A DEFENSE HWY
112	NBIS Bridge Length	YES	104	National Highway System	NOT ON NHS
			105	Federal Lands Highway	NOT APPLICABLE
			110	Designated Nat. Network	NO
STRUCTURE LOCATION INFORMATION			STRUCTURE TRAFFIC INFORMATION		
4	Place	FRANKLIN	29	AADT	2108
	Code	25642	30	AADT Year	2016
9	Location	S 34 T 49 N R 16 W	102	Direction of Traffic	2-WAY TRAFFIC
11	Milepoint	110.24 miles	109	AADT Truck Percent	10%
16	Latitude	39 D 0 M 15 S	114	Future AADT	2740
17	Longitude	92 D 42 M 12 S	115	Future AADT Year	2037
UNDERRECORD INFORMATION			STRUCTURE GEOMETRIC INFORMATION		
6	Features Intersected	BONNE FEMME CR	10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
42B	Type of Service Under	WATERWAY	19	By pass Detour Length	19.84 miles
28B	Lanes Under Structure	00	32	Approach Roadway Width	23 Ft. 11 In.
54A	Vert. Clearance Ref.	N/A	34	Skew	10.00 Degrees
54B	Vert. Clearance	0 Ft. 0 In.	35	Struct. Flared	NO
55A	Rt. Lat Clear Ref.	N/A	47	Total Horiz. Clear	29 Ft. 10 In.
55B	Rt. Lat Clearance	0 Ft. 0 In.	48	Maximum Span Length	89 Ft. 10 In.
56	Left Lat Clearance	0 Ft. 0 In.	49	Structure Length	244 Ft. 0 In.
38	Navigation Control	PERMIT NOT REQ	50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
39	Nav Vertical Clear	0 Ft. 0 In.	50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.	51	Curb to Curb Br. Width	29 Ft. 10 In.
111	Nav. Pier Protection		52	Deck Width (Out-Out)	33 Ft. 9 In.
116	Nav. Cl. Vert. Clear		53	Vert. Clearance Over Deck	99 Ft. 99 In.

Design_No = L0119



Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

November 4, 2019
11:21:27am

COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : APPROVED NBI STATUS : P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 2/3/2017 SUBMITTAL YEAR : 2016

LOAD RATING AND POSTING INFORMATION			MATERIAL/CONSTRUCTION INFORMATION		
31	Design Load	HS 20	43A	Main Struc. Mat type	STEEL CONTINUOUS
41	Structure Status	A - OPEN NO RESTRICTIONS	43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
63	Oper. Rating Meth.	ALLOWABLE STRESS	45	# of Main Spans	3
64	Operating Rating	62 Tons.	44A	Appr Struc. Mat type	
65	Inventory Rating Meth	ALLOWABLE STRESS	44B	Appr Struc. Cnstr. type	
66	Inventory Rating	40 Tons.	46	# of Approach Span	0
70	Bridge Posting Code	=>LEGAL LOADS	107	Deck Mat/Constr.	1 CONCRETE CIP
			108A	Wear Surf Mat/Constr.	6 BITUMINOUS
			108B	Membrane Mat/Constr.	0 NONE
			108C	Deck Protect Mat/Constr.	0 NONE
PROPOSED IMPROVEMENT INFORMATION			CONDITION RATING INFORMATION		
Sufficiency Rating 86.8 Percent			58	Deck Cond. Rating	5
Deficiency Rating NOT DEFICIENT			59	Superstructure Cond. Rating	6
Funding Eligibility			60	Substructure Cond. Rating	6
75A	Proposed Work		61	Channel /Channel Protection Cond. Rating	5
75B	Work Done By		62	Culvert Cond. Rating	N
76	New Struc Length	0 Ft. 0 In.			
94	Struc Improve Cost	\$ 0,000	INSPECTION INFORMATION		
95	Roadway Improve Cost	\$ 0,000	90	Gen. Insp Date	7 / 15
96	Total Project Cost	\$ 0,000	91	Gen. Insp. Frequency	24 Months
97	Year of Cost Estimates	0	92A	Frac. Critical Inspection	N Months
			93A	Frac. Critical Insp. Date	
			92B	Underwater Inspection	N Months
			93B	Underwater Insp. Date	
			92C	Special Inspection	N Months
			93C	Special Inspection Date	
APPRAISAL RATING INFORMATION			BORDER BRIDGE INFORMATION		
36A	Br. Rail App. Rating	DOES NOT MEET ACCEPT STND	98	Neighboring State Code	
36B	Transition Rail App. Rating	DOES NOT MEET ACCEPT STND	98B	Neighboring State % Respon	
36C	Approach Rail App. Rating	DOES NOT MEET ACCEPT STND	99	Neighboring State Struc. No.	
36D	Rail End Treat. App. Rating	DOES NOT MEET ACCEPT STND			
67	Struc Eval App. Rating	6	APPROVED POSTING INFORMATION		
68	Deck Geometry App. Rating	4	FIELD POSTING INFORMATION		
69	Underclearance App. Rating	N	Approved Posting Category S-1		
71	Waterway Adeq. App. Rating	8	Field Posting Category S-1		
72	Approach Road App. Rating	8	Ton1 Ton2 Ton3		
113	Scour Assess App. Rating	7	Ton1 Ton2 Ton3		
			Tonnage Values for Posting Sign		
			General Text for Posting Sign		
			NO POSTING REQUIRED		

Design_No = L0119



Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

November 4, 2019
11:21:27am

COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : APPROVED NBI STATUS : P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 1/11/2018 SUBMITTAL YEAR : 2017

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1	State	MISSOURI	5A	Record Type	ROUTE CARRIED 'ON' STRUCT
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			105	Federal Lands Highway	NOT APPLICABLE
			110	Designated Nat. Network	NO
STRUCTURE LOCATION INFORMATION			STRUCTURE TRAFFIC INFORMATION		
4	Place	FRANKLIN	29	AADT	2108
	Code	25642	30	AADT Year	2016
9	Location	S 34 T 49 N R 16 W	102	Direction of Traffic	2-WAY TRAFFIC
11	Milepoint	110.24 miles	109	AADT Truck Percent	9%
16	Latitude	39 D 0 M 15 S	114	Future AADT	2740
17	Longitude	92 D 42 M 12 S	115	Future AADT Year	2036
UNDERRECORD INFORMATION			STRUCTURE GEOMETRIC INFORMATION		
6	Features Intersected	BONNE FEMME CR	10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
42B	Type of Service Under	WATERWAY	19	By pass Detour Length	19.84 miles
28B	Lanes Under Structure	00	32	Approach Roadway Width	23 Ft. 11 In.
54A	Vert. Clearance Ref.	N/A	34	Skew	10.00 Degrees
54B	Vert. Clearance	0 Ft. 0 In.	35	Struct. Flared	NO
55A	Rt. Lat Clear Ref.	N/A	47	Total Horiz. Clear	29 Ft. 10 In.
55B	Rt. Lat Clearance	0 Ft. 0 In.	48	Maximum Span Length	89 Ft. 10 In.
56	Left Lat Clearance	0 Ft. 0 In.	49	Structure Length	244 Ft. 0 In.
38	Navigation Control	PERMIT NOT REQ	50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
39	Nav Vertical Clear	0 Ft. 0 In.	50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.	51	Curb to Curb Br. Width	29 Ft. 10 In.
111	Nav. Pier Protection		52	Deck Width (Out-Out)	33 Ft. 9 In.
116	Nav. Cl. Vert. Clear		53	Vert. Clearance Over Deck	99 Ft. 99 In.

Design_No = L0119



Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

November 4, 2019
11:21:27am

COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : APPROVED NBI STATUS : P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 1/11/2018 SUBMITTAL YEAR : 2017

LOAD RATING AND POSTING INFORMATION			MATERIAL/CONSTRUCTION INFORMATION		
31	Design Load	HS 20	43A	Main Struc. Mat type	STEEL CONTINUOUS
41	Structure Status	A - OPEN NO RESTRICTIONS	43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
63	Oper. Rating Meth.	ALLOWABLE STRESS	45	# of Main Spans	3
64	Operating Rating	62 Tons.	44A	Appr Struc. Mat type	
65	Inventory Rating Meth	ALLOWABLE STRESS	44B	Appr Struc. Cnstr. type	
66	Inventory Rating	40 Tons.	46	# of Approach Span	0
70	Bridge Posting Code	=>LEGAL LOADS	107	Deck Mat/Constr.	1 CONCRETE CIP
PROPOSED IMPROVEMENT INFORMATION			108A	Wear Surf Mat/Constr.	6 BITUMINOUS
	Sufficiency Rating	55.8 Percent	108B	Membrane Mat/Constr.	0 NONE
	Deficiency Rating	STRUCTURAL	108C	Deck Protect Mat/Constr.	0 NONE
	Funding Eligibility	PARTIAL	CONDITION RATING INFORMATION		
75A	Proposed Work	REHAB-GENERAL DETERIORAT	58	Deck Cond. Rating	4
75B	Work Done By	Contract	59	Superstructure Cond. Rating	4
76	New Struc Length	278 Ft. 9 In.	60	Substructure Cond. Rating	6
94	Struc Improve Cost	\$ 728,000	61	Channel /Channel Protection Cond. Rating	5
95	Roadway Improve Cost	\$ 72,000	62	Culvert Cond. Rating	N
96	Total Project Cost	\$ 1,092,000	INSPECTION INFORMATION		
97	Year of Cost Estimates	2018	90	Gen. Insp Date	9 / 17
APPRAISAL RATING INFORMATION			91	Gen. Insp. Frequency	24 Months
36A	Br. Rail App. Rating	DOES NOT MEET ACCEPT STND	92A	Frac. Critical Inspection	N Months
36B	Transition Rail App. Rating	DOES NOT MEET ACCEPT STND	93A	Frac. Critical Insp. Date	
36C	Approach Rail App. Rating	DOES NOT MEET ACCEPT STND	92B	Underwater Inspection	N Months
36D	Rail End Treat. App. Rating	DOES NOT MEET ACCEPT STND	93B	Underwater Insp. Date	
67	Struc Eval App. Rating	4	92C	Special Inspection	N Months
68	Deck Geometry App. Rating	4	93C	Special Inspection Date	
69	Underclearance App. Rating	N	BORDER BRIDGE INFORMATION		
71	Waterway Adeq. App. Rating	8	98	Neighboring State Code	
72	Approach Road App. Rating	8	98B	Neighboring State % Respon	
113	Scour Assess App. Rating	7	99	Neighboring State Struc. No.	
APPROVED POSTING INFORMATION			FIELD POSTING INFORMATION		
Approved Posting Category S-1			Field Posting Category S-1		
Ton1 Ton2 Ton3			Ton1 Ton2 Ton3		
Tonnage Values for Posting Sign			Tonnage Values for Posting Sign		
General Text for Posting Sign			General Text for Posting Sign		
NO POSTING REQUIRED			NO POSTING REQUIRED		

Design_No = L0119



Missouri Department of Transportation
Bridge Inventory and Inspection System
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November 4, 2019
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COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : APPROVED NBI STATUS : P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 1/11/2019 SUBMITTAL YEAR : 2018

GENERAL STRUCTURE INFORMATION			ROUTE DESIGNATION INFORMATION		
1	State	MISSOURI	5A	Record Type	ROUTE CARRIED 'ON' STRUCT
2	District	CD	5B	Route Signing Prefix	US
3	County	HOWARD	5C	Designated Level of Service	MAINLINE
8	Federal ID No.	6078	5D	Route Number	00040
27	Year Built	1948	5E	Directional Suffix	NOT APPLICABLE
106	Year Reconstructed	0	7	Facility Carried	US 40 E
42A	Type of Service On	HIGHWAY	12	Base Hwy. Network	NO
21	Structure Maintenance	STATE HIGHWAY AGENCY	13A	LRS Inventory Route No.	
22	Structure Owner	STATE HIGHWAY AGENCY	13B	Subroute No.	
33	Br. Median Code	NO MEDIAN	20	Toll Status	ON FREE ROAD
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP	26	Functional Classification	06-RURAL MINOR ARTERIAL
101	Parallel Struc Desg	NONE EXISTS	28A	Lanes on Structure	02
103	Temporary Structure	NOT TEMPORARY	100	STRAHNET Designation	RTE NOT A DEFENSE HWY
112	NBIS Bridge Length	YES	104	National Highway System	NOT ON NHS
			105	Federal Lands Highway	NOT APPLICABLE
			110	Designated Nat. Network	NO
STRUCTURE LOCATION INFORMATION			STRUCTURE TRAFFIC INFORMATION		
4	Place	FRANKLIN	29	AADT	2363
	Code	25642	30	AADT Year	2018
9	Location	S 34 T 49 N R 16 W	102	Direction of Traffic	2-WAY TRAFFIC
11	Milepoint	110.24 miles	109	AADT Truck Percent	9%
16	Latitude	39 D 0 M 15 S	114	Future AADT	3071
17	Longitude	92 D 42 M 12 S	115	Future AADT Year	2038
UNDERRECORD INFORMATION			STRUCTURE GEOMETRIC INFORMATION		
6	Features Intersected	BONNE FEMME CR	10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
42B	Type of Service Under	WATERWAY	19	By pass Detour Length	19.84 miles
28B	Lanes Under Structure	00	32	Approach Roadway Width	23 Ft. 11 In.
54A	Vert. Clearance Ref.	N/A	34	Skew	10.00 Degrees
54B	Vert. Clearance	0 Ft. 0 In.	35	Struct. Flared	NO
55A	Rt. Lat Clear Ref.	N/A	47	Total Horiz. Clear	29 Ft. 10 In.
55B	Rt. Lat Clearance	0 Ft. 0 In.	48	Maximum Span Length	89 Ft. 10 In.
56	Left Lat Clearance	0 Ft. 0 In.	49	Structure Length	244 Ft. 0 In.
38	Navigation Control	PERMIT NOT REQ	50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
39	Nav Vertical Clear	0 Ft. 0 In.	50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.	51	Curb to Curb Br. Width	29 Ft. 10 In.
111	Nav. Pier Protection		52	Deck Width (Out-Out)	33 Ft. 9 In.
116	Nav. Cl. Vert. Clear		53	Vert. Clearance Over Deck	99 Ft. 99 In.

Design_No = L0119



Missouri Department of Transportation
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COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : APPROVED NBI STATUS : P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 1/11/2019 SUBMITTAL YEAR : 2018

LOAD RATING AND POSTING INFORMATION			MATERIAL/CONSTRUCTION INFORMATION		
31	Design Load	HS 20	43A	Main Struc. Mat type	STEEL CONTINUOUS
41	Structure Status	A - OPEN NO RESTRICTIONS	43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
63	Oper. Rating Meth.	ALLOWABLE STRESS	45	# of Main Spans	3
64	Operating Rating	62 Tons.	44A	Appr Struc. Mat type	
65	Inventory Rating Meth	ALLOWABLE STRESS	44B	Appr Struc. Cnstr. type	
66	Inventory Rating	40 Tons.	46	# of Approach Span	0
70	Bridge Posting Code	=>LEGAL LOADS	107	Deck Mat/Constr.	1 CONCRETE CIP
PROPOSED IMPROVEMENT INFORMATION			108A	Wear Surf Mat/Constr.	6 BITUMINOUS
	Sufficiency Rating	55.1 Percent	108B	Membrane Mat/Constr.	0 NONE
	Deficiency Rating	STRUCTURAL	108C	Deck Protect Mat/Constr.	0 NONE
	Funding Eligibility	PARTIAL	CONDITION RATING INFORMATION		
75A	Proposed Work	REHAB-GENERAL DETERIORAT	58	Deck Cond. Rating	4
75B	Work Done By	Contract	59	Superstructure Cond. Rating	4
76	New Struc Length	278 Ft. 9 In.	60	Substructure Cond. Rating	6
94	Struc Improve Cost	\$ 728,000	61	Channel /Channel Protection Cond. Rating	5
95	Roadway Improve Cost	\$ 72,000	62	Culvert Cond. Rating	N
96	Total Project Cost	\$ 1,092,000	INSPECTION INFORMATION		
97	Year of Cost Estimates	2019	90	Gen. Insp Date	9 / 17
APPRAISAL RATING INFORMATION			91	Gen. Insp. Frequency	24 Months
36A	Br. Rail App. Rating	DOES NOT MEET ACCEPT STND	92A	Frac. Critical Inspection	N Months
36B	Transition Rail App. Rating	DOES NOT MEET ACCEPT STND	93A	Frac. Critical Insp. Date	
36C	Approach Rail App. Rating	DOES NOT MEET ACCEPT STND	92B	Underwater Inspection	Y Months 60
36D	Rail End Treat. App. Rating	DOES NOT MEET ACCEPT STND	93B	Underwater Insp. Date	6 / 18
67	Struc Eval App. Rating	4	92C	Special Inspection	N Months
68	Deck Geometry App. Rating	4	93C	Special Inspection Date	
69	Underclearance App. Rating	N	BORDER BRIDGE INFORMATION		
71	Waterway Adeq. App. Rating	8	98	Neighboring State Code	
72	Approach Road App. Rating	8	98B	Neighboring State % Respon	
113	Scour Assess App. Rating	7	99	Neighboring State Struc. No.	
APPROVED POSTING INFORMATION			FIELD POSTING INFORMATION		
Approved Posting Category S-1			Field Posting Category S-1		
Ton1 Ton2 Ton3			Ton1 Ton2 Ton3		
Tonnage Values for Posting Sign			Tonnage Values for Posting Sign		
General Text for Posting Sign			General Text for Posting Sign		
NO POSTING REQUIRED			NO POSTING REQUIRED		

Design_No = L0119



Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

November 4, 2019
11:21:27am

COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : REVIEW NBI STATUS : T
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 10/4/2019 SUBMITTAL YEAR : 2019

GENERAL STRUCTURE INFORMATION			ROUTE DESIGNATION INFORMATION		
1	State	MISSOURI	5A	Record Type	ROUTE CARRIED 'ON' STRUCT
2	District	CD	5B	Route Signing Prefix	US
3	County	HOWARD	5C	Designated Level of Service	MAINLINE
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42A	Type of Service On	HIGHWAY	12	Base Hwy. Network	NO
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33	Br. Median Code	NO MEDIAN	20	Toll Status	ON FREE ROAD
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP	26	Functional Classification	06-RURAL MINOR ARTERIAL
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112	NBIS Bridge Length	YES	104	National Highway System	NOT ON NHS
			105	Federal Lands Highway	NOT APPLICABLE
			110	Designated Nat. Network	NO
STRUCTURE LOCATION INFORMATION			STRUCTURE TRAFFIC INFORMATION		
4	Place	FRANKLIN	29	AADT	2148
	Code	25642	30	AADT Year	2018
9	Location	S 34 T 49 N R 16 W	102	Direction of Traffic	2-WAY TRAFFIC
11	Milepoint	111.13 miles	109	AADT Truck Percent	9%
16	Latitude	39 D 0 M 15 S	114	Future AADT	2792
17	Longitude	92 D 42 M 12 S	115	Future AADT Year	2038
UNDERRECORD INFORMATION			STRUCTURE GEOMETRIC INFORMATION		
6	Features Intersected	BONNE FEMME CR	10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
42B	Type of Service Under	WATERWAY	19	By pass Detour Length	20.00 miles
28B	Lanes Under Structure	00	32	Approach Roadway Width	23 Ft. 11 In.
54A	Vert. Clearance Ref.	N/A	34	Skew	10.00 Degrees
54B	Vert. Clearance	0 Ft. 0 In.	35	Struct. Flared	NO
55A	Rt. Lat Clear Ref.	N/A	47	Total Horiz. Clear	29 Ft. 10 In.
55B	Rt. Lat Clearance	0 Ft. 0 In.	48	Maximum Span Length	89 Ft. 11 In.
56	Left Lat Clearance	0 Ft. 0 In.	49	Structure Length	244 Ft. 1 In.
38	Navigation Control	PERMIT NOT REQ	50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
39	Nav Vertical Clear	0 Ft. 0 In.	50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
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111	Nav. Pier Protection		52	Deck Width (Out-Out)	33 Ft. 10 In.
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COUNTY : HOWARD BRIDGE : L0119 1 REVIEW STATUS : REVIEW NBI STATUS : T
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 10/4/2019 SUBMITTAL YEAR : 2019

LOAD RATING AND POSTING INFORMATION			MATERIAL/CONSTRUCTION INFORMATION		
31	Design Load	HS 20	43A	Main Struc. Mat type	STEEL CONTINUOUS
41	Structure Status	OPEN NO RESTRICTIONS	43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
63	Oper. Rating Meth.	ALLOWABLE STRESS	45	# of Main Spans	3
64	Operating Rating	62 Tons.	44A	Appr Struc. Mat type	000
65	Inventory Rating Meth	ALLOWABLE STRESS	44B	Appr Struc. Cnstr. type	000
66	Inventory Rating	40 Tons.	46	# of Approach Span	0
70	Bridge Posting Code	=>LEGAL LOADS	107	Deck Mat/Constr.	1 CONCRETE CIP
PROPOSED IMPROVEMENT INFORMATION			108A	Wear Surf Mat/Constr.	6 BITUMINOUS
Sufficiency Rating 55.7 Percent			108B	Membrane Mat/Constr.	0 NONE
Deficiency Rating STRUCTURAL			108C	Deck Protect Mat/Constr.	0 NONE
Funding Eligibility PARTIAL			CONDITION RATING INFORMATION		
75A	Proposed Work	REHAB-GENERAL DETERIORAT	58	Deck Cond. Rating	4
75B	Work Done By	Contract	59	Superstructure Cond. Rating	4
76	New Struc Length	278 Ft. 10 In.	60	Substructure Cond. Rating	6
94	Struc Improve Cost	\$ 728,000	61	Channel /Channel Protection Cond. Rating	5
95	Roadway Improve Cost	\$ 72,000	62	Culvert Cond. Rating	N
96	Total Project Cost	\$ 1,092,000	INSPECTION INFORMATION		
97	Year of Cost Estimates	2019	90	Gen. Insp Date	9 / 19
APPRAISAL RATING INFORMATION			91	Gen. Insp. Frequency	24 Months
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36B	Transition Rail App. Rating	DOES NOT MEET ACCEPT STND	93A	Frac. Critical Insp. Date	
36C	Approach Rail App. Rating	DOES NOT MEET ACCEPT STND	92B	Underwater Inspection	Y Months 60
36D	Rail End Treat. App. Rating	DOES NOT MEET ACCEPT STND	93B	Underwater Insp. Date	6 / 18
67	Struc Eval App. Rating	4	92C	Special Inspection	N Months
68	Deck Geometry App. Rating	4	93C	Special Inspection Date	
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71	Waterway Adeq. App. Rating	8	98	Neighboring State Code	
72	Approach Road App. Rating	8	98B	Neighboring State % Respon	
113	Scour Assess App. Rating	7	99	Neighboring State Struc. No.	
APPROVED POSTING INFORMATION			FIELD POSTING INFORMATION		
Approved Posting Category S-1			Field Posting Category S-1		
Ton1 Ton2 Ton3			Ton1 Ton2 Ton3		
Tonnage Values for Posting Sign			Tonnage Values for Posting Sign		
General Text for Posting Sign			General Text for Posting Sign		
NO POSTING REQUIRED			NO POSTING REQUIRED		

Design_No = L0119

SHOP DRAWINGS FOR STEEL STRUCTURE

Howard COUNTY BRIDGE NO. L-119

PROJECT NO. F-235(9) & (U.S. 40)

INDEX

ERECTION SHEET NOS. E1 THRU _____

GENERAL MATERIALS SHEET NOS. 1 THRU 7

BOLT LIST SHEET NOS. _____ THRU _____

BEARING DETAILS SHEET NOS. _____ THRU _____

BRIDGE RAILING DETAILS SHEET NOS. _____ THRU _____

PAINT DETAILS SHEET NOS. _____ THRU _____

BLOCKING DIAGRAM SHEET NOS. _____ THRU _____

EXPANSION DEVICE DETAILS SHEET NOS. _____ THRU _____

SHOP WELDED SPLICE DETAILS SHEET NOS. _____ THRU _____

WEB AND FLANGE CUTTING DETAILS SHEETS NOS. _____ THRU _____

DRAIN DETAILS SHEET NOS. _____ THRU _____

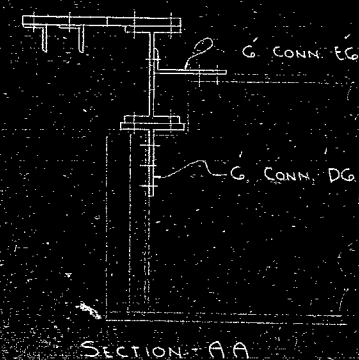
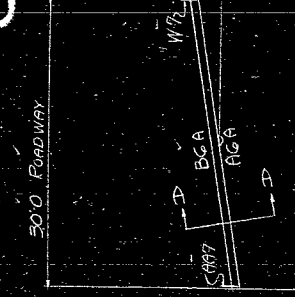
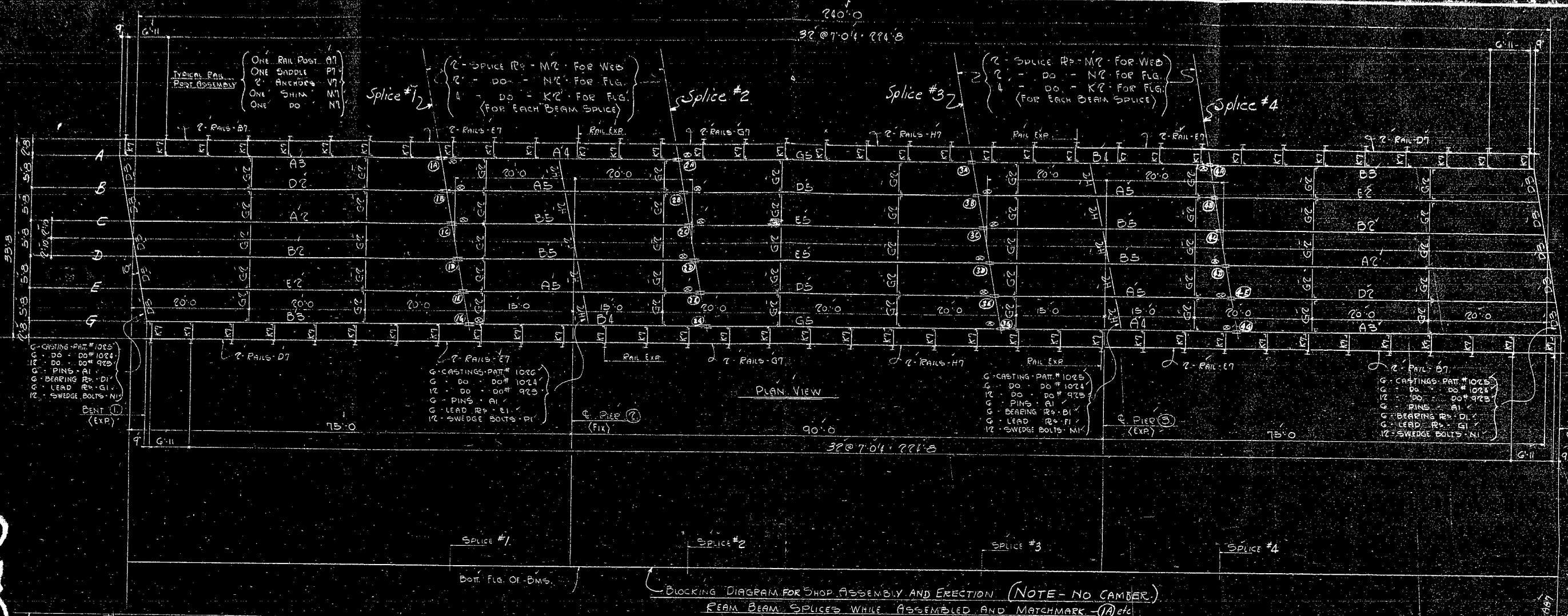
DRAINAGE SYSTEM DETAILS SHEET NOS. _____ THRU _____

STEEL GRID FLOORING DETAILS SHEET NOS. _____ THRU _____

PEDESTRIAN FENCE DETAILS SHEET NOS. _____ THRU _____

322

323



FIELD RIVET & BOLT LIST

Actual amount	Riv.	Bolts
(+115)	1152	3/8" x 3 1/2"
(+172)	1728	3/8" x 4 1/2"
(+7)	70	3/8" x 1 1/2"
(+30)	312	3/8" x 2 1/2"
(+30)	374	3/8" x 2 1/2"
(+22)	270	3/8" x 2 1/2"
(+8)	48	3/8" x 2 1/2"
(+2)	12	3/8" x 2 1/2"
(+20)	200	3/8" x 3 1/2"
(+51)	48	3/8" x 3 1/2"
(+2)	8	3/8" x 3 1/2"
(+28)	560	5/8" x 2 hex hd. & hex nut
(+2)	32	1/2" button hd. & hex nut
(+60)	1120	Cut Washers for 3/8" bolts - 1 1/2"

GENERAL NOTE

Rivet 3/8" except as noted

O. H. 1/2" except as noted

End Distance 4" unless noted

Shop Paint NONE

Contact Surfaces NO PAINT

Shop Inspection MISSOURI STATE HWY. DEPT.

Field Camber RAILROAD EXCEPT FOR RAIL

Field Paint 1

Erected by

Relinquish

HAWARD County

STUFF BROS. BRIDGE & IRON CO.

ST. LOUIS, MO.

Project No. 200/91153/101/100-10

Missouri State Highway Dept.

Drawn by J. H. Galt

Checked by J. H. Galt

1931

EXPANSION SHOE
PATT No 1025 CAST STEEL
15 FT RD

SHOE CAP
PART NO. 1024 CAST STEEL
24 REQD

3. LEAVING FLU-P-1

12-BEARING FLS. DI

6 LEAD PLATES - FI
6 LEAD PLATES - FI

Lead II - 5.5 x 1.9

The diagram shows a rectangular lead plate with a height of 4.74 and a width of 5.5. The plate is divided into three horizontal sections. The top section is labeled '1.4 Holes'. The middle section is labeled '1.4' and '3.1'. The bottom section is labeled '1.9'. The text '12- LEAD PLATES = GI' is written at the bottom.

12- LEAD PLATES = GI

FIXED SHOE
PATT NO. 1026 CAST STEEL
'6 REG'D

SHOE PIN NUT
PATT NO. 923 CAST STEEL
48 REQD

24 PINS A-1

12 SWEDGE BOLTS - MI
(PIEC-3)
24 - DO - NI
(BENTS - 1 & 4)
12 - DO - PI
(PIEC-2)

48-TURNED BOLTS - 1" ϕ x 4" } (SHOE CAP TO BEAM)
48 - DO. - 1" ϕ x 4 1/2" }

Note: All finished surfaces to be painted with one coat of white lead and tallow.

GENERAL NOTE

Rivets _____ except as noted.

O. H. _____ except as noted _____

End Distance _____ unless noted

Shop Paint No Flint except as noted

Contact Surfaces No Paint

Shop Inspection By Mo. State Highway

Revisions _____
by _____

HOWARD COUNTY

STUPP BROS. BRIDGE & IRON

ST. LOUIS, MO. 12

Purchaser's No. _____ Shop No. 12
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PROJECT No. E-235(9) (1510) 5th

Missouri State Highway Dept.

Drawn By WMH Date 11-22-48 Chk'd By GEM Da

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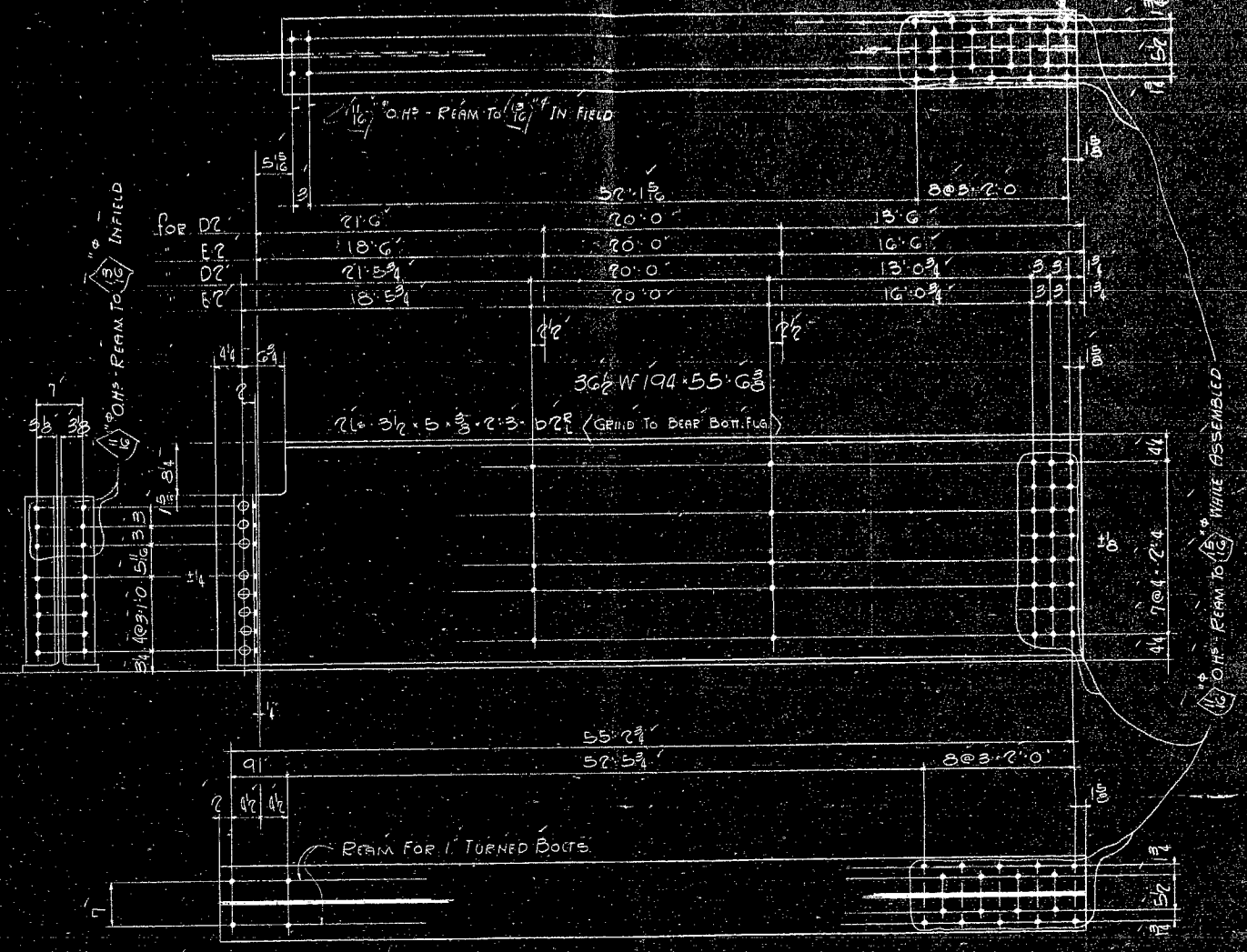
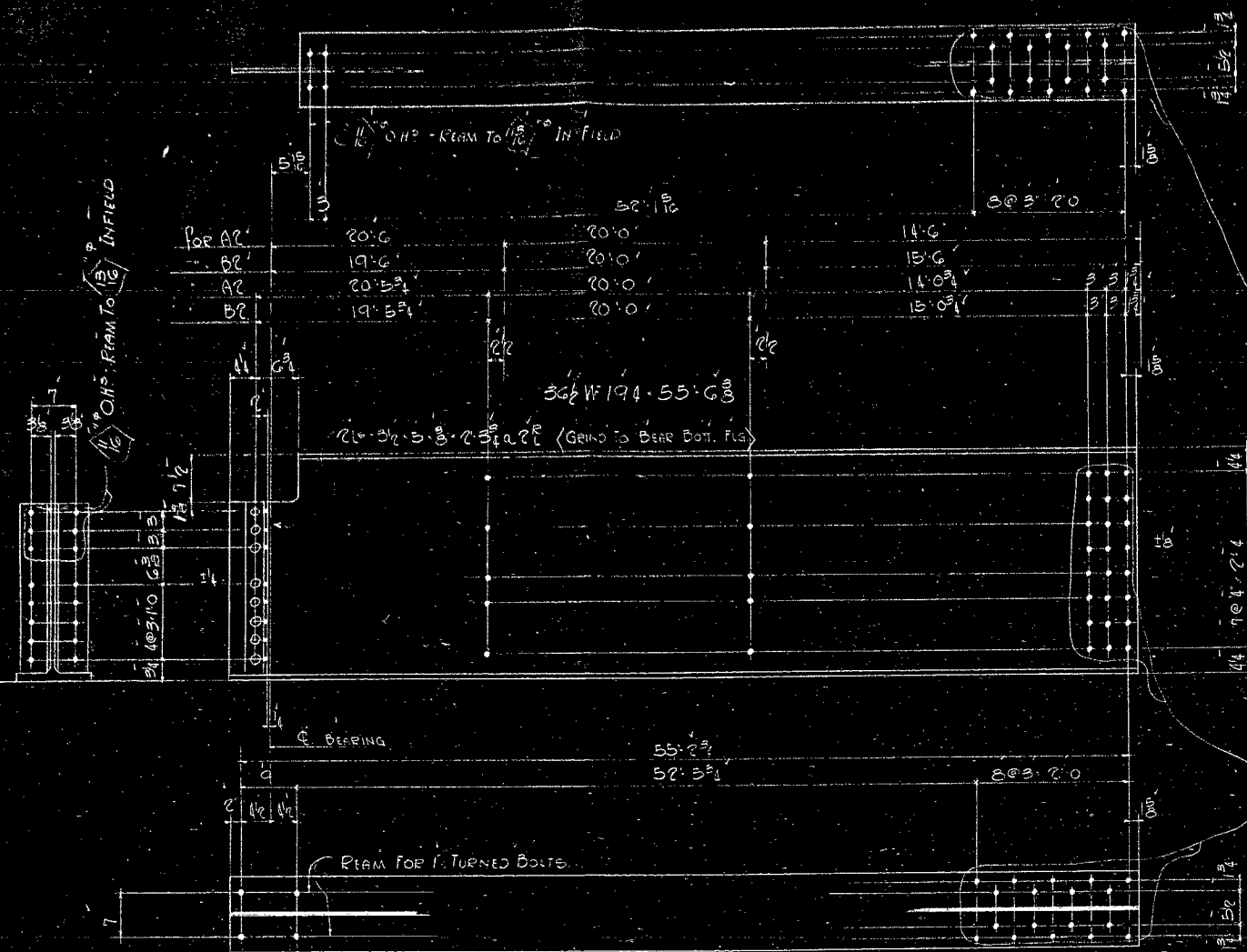
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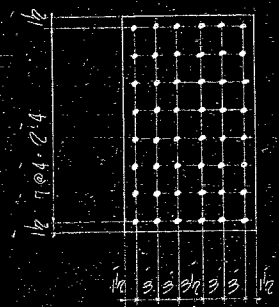
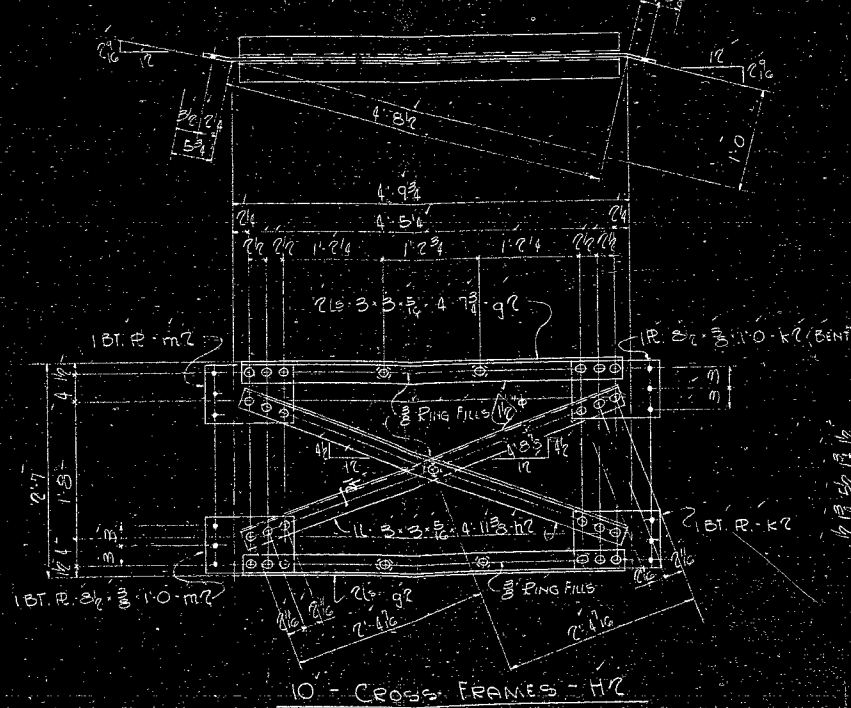
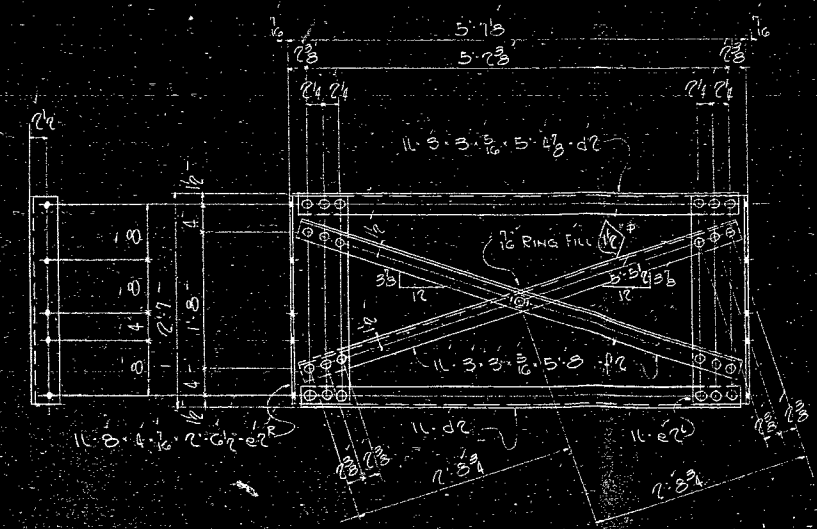
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48	" " PIN NUTS	1	#123		✓
24	C.R.S. 3" x 8"	1	41		✓
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12	" 8" x 18"	1	9	" "	T ✓
6	L98" 12" x 6"	1	84	E1	T ✓
6	" 6" x 6"	1	9	F1	T ✓
12	" 8" x 8"	1	9	G1	T ✓
12	SWITCH ANCHOR 14"	1	76	M1	HER. NUT ✓
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12	" 6"	1	33	P1	" ✓
24	PRE-12" x 12"	1	32	M-N	R-MATE ✓
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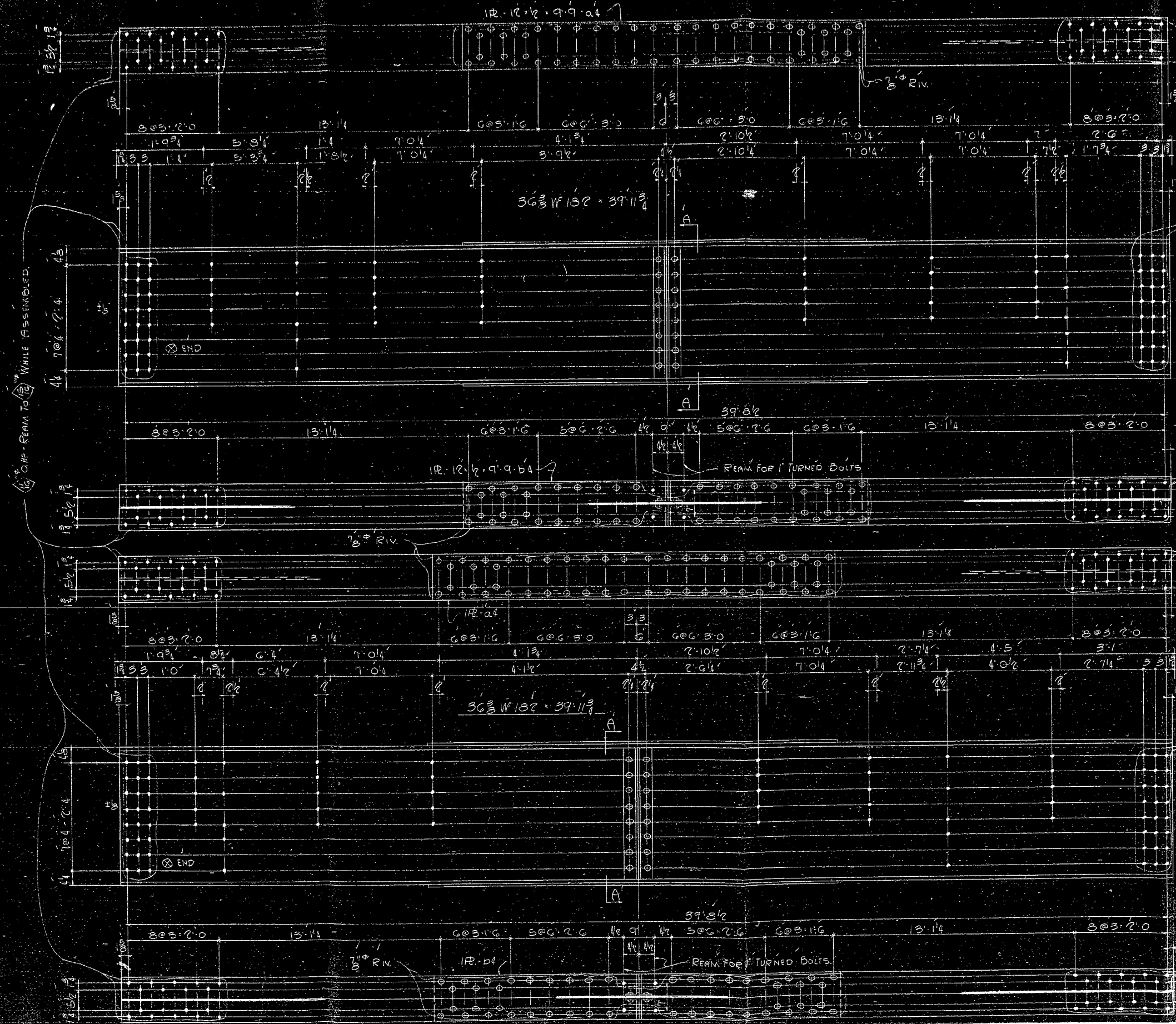
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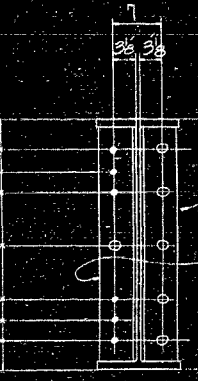
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ST. LOUIS, MO.
Purchaser's No. 12711
Bridge Over Boone Farm Creek
Project No. 12711 (US 10) STA 16+10
Missouri State Highway Dept.
Drawn by JAT Date 12/1/11
Checked by JAT Date 12/1/11

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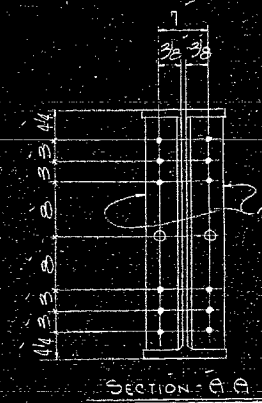
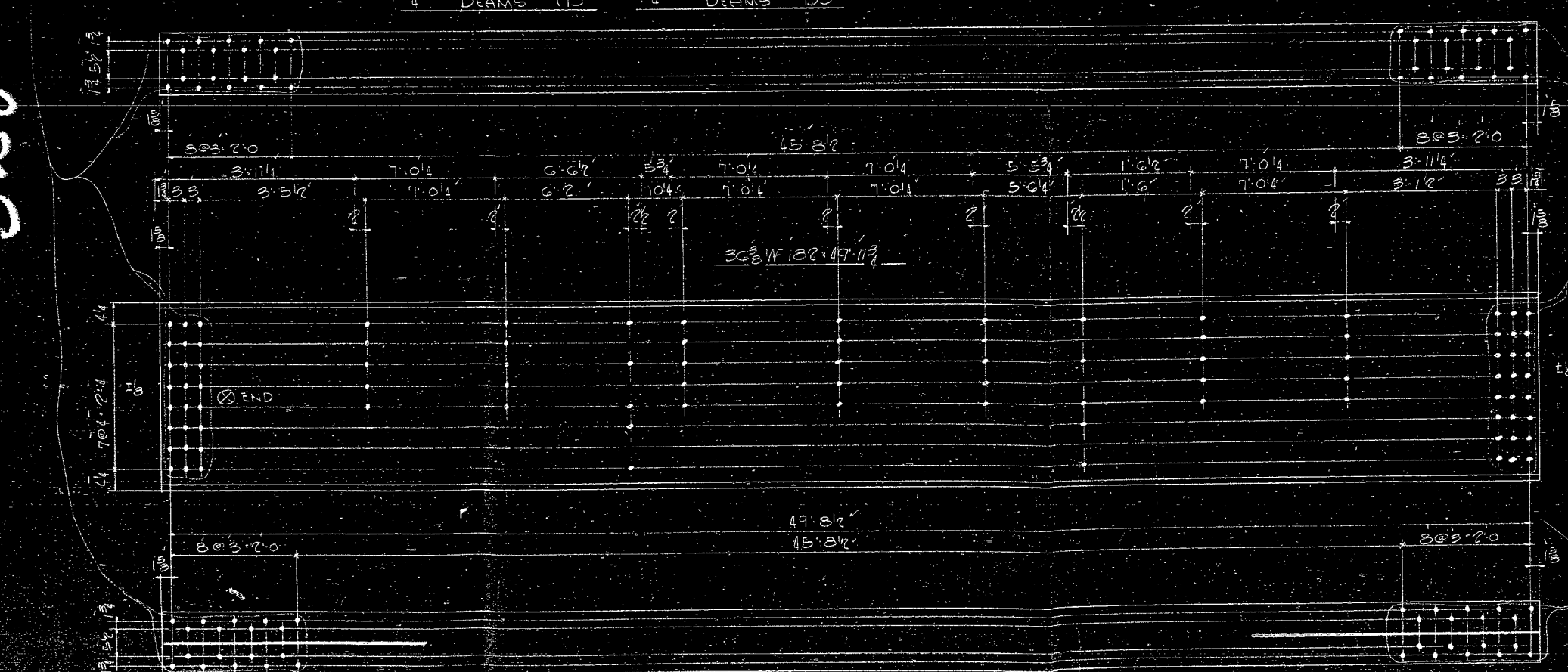
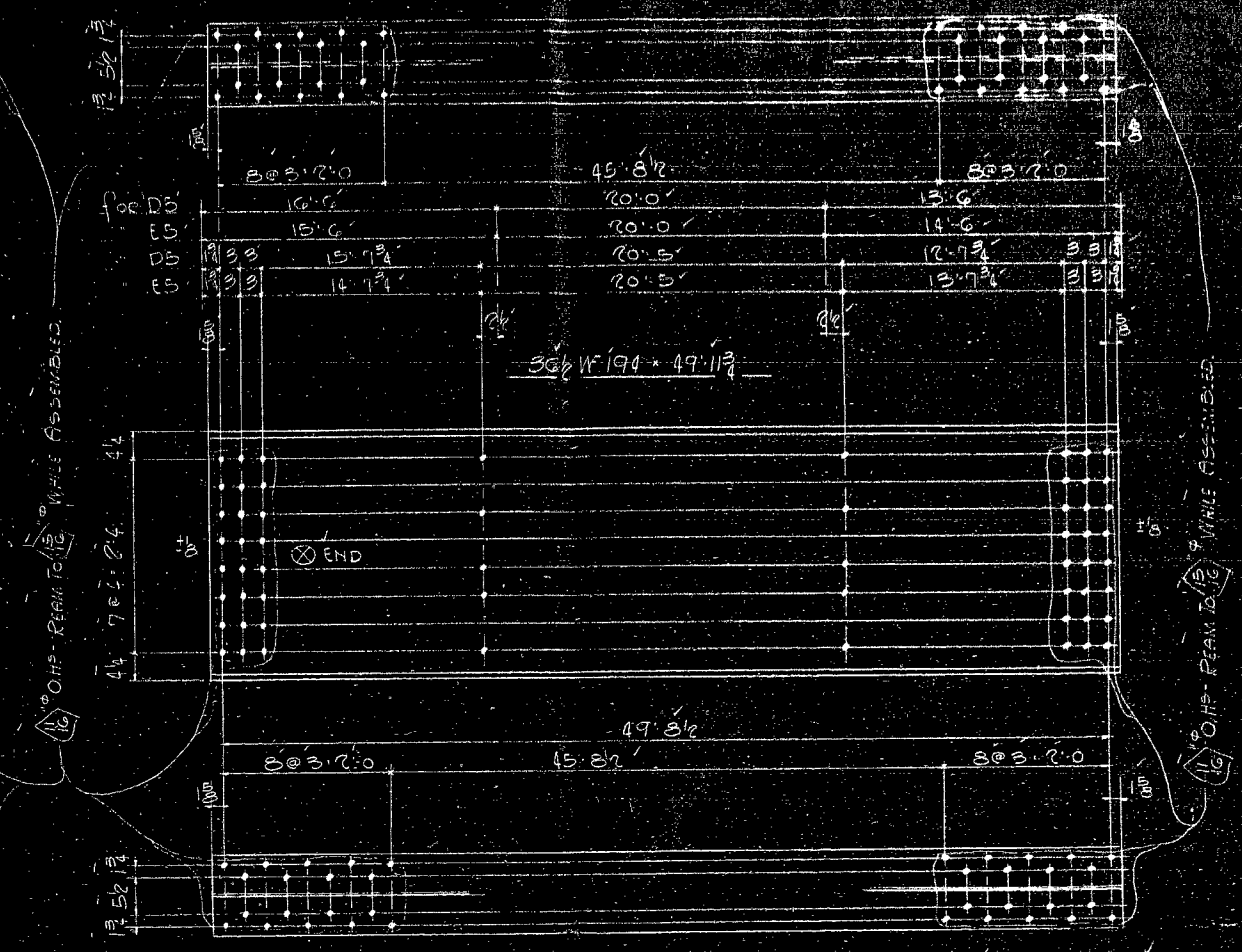
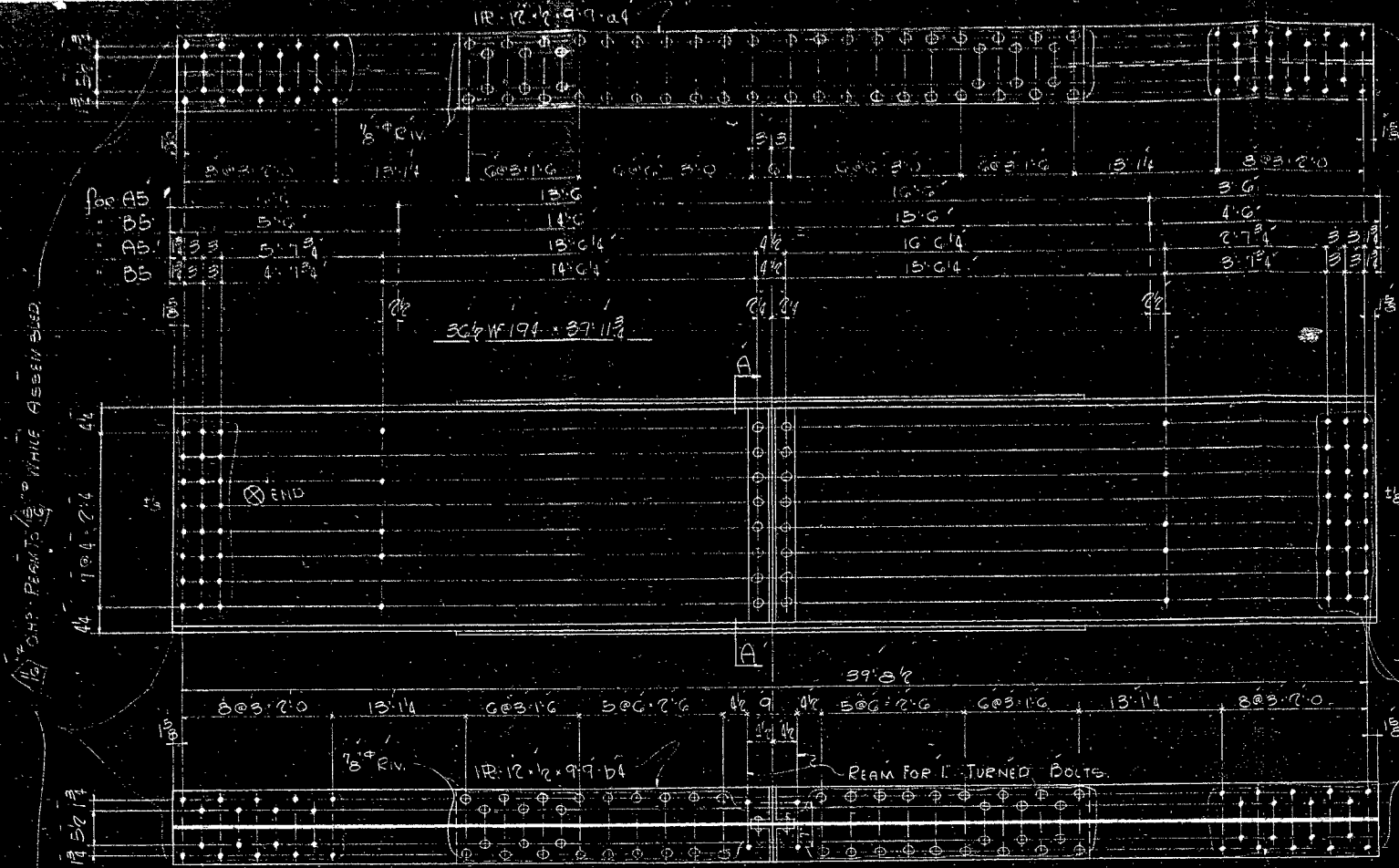
2 - BEAMS - A4

2 - BEAMS - B4

GENERAL NOTE
Rivets 2 1/2\"/>

STUPP BROS. BRIDGE & IRON CO.
ST. LOUIS, MO.
Purchaser's No. _____ Shop No. 12717
BRIDGE OVER BONNE FEMALE CREEK
PROJECT No. T 235912 (U.S. 101766-10)
MISSOURI STATE HWY. DEPT.
Drawn by JAT Date _____ Check by GFM Date 2/26/23
Sheet No. 1
Total Sheets 1

328



2 - BEAMS - D5
2 - DO - E5

2 - BEAMS - G5

GENERAL NOTE
 Rivets $\frac{1}{2}$ except as noted
 O. H. $\frac{1}{2}$ except as noted
 End Distance $\frac{1}{4}$ unless noted
 Shop Paint NONE
 Contact Surface NO PAINT
 Shop Inspection By MISSOURI STATE HWY. DEPT.
 Field Conn's

Field Paint
 Erected by
 Revisions

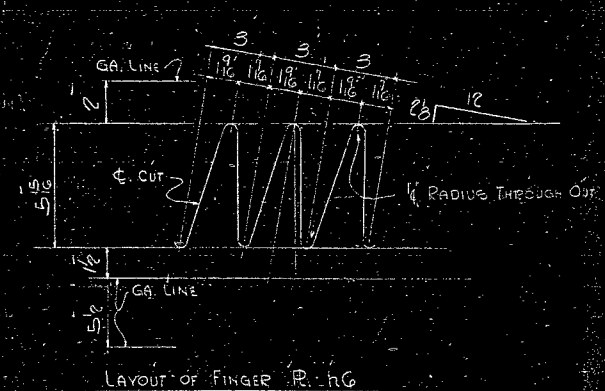
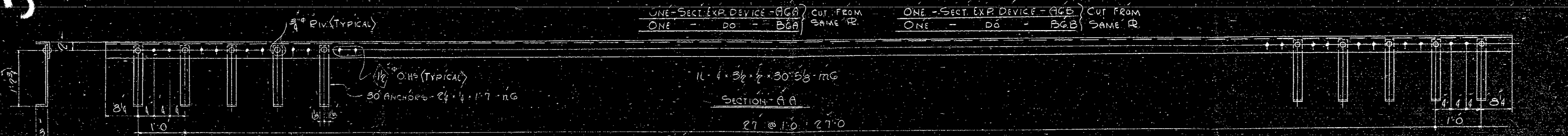
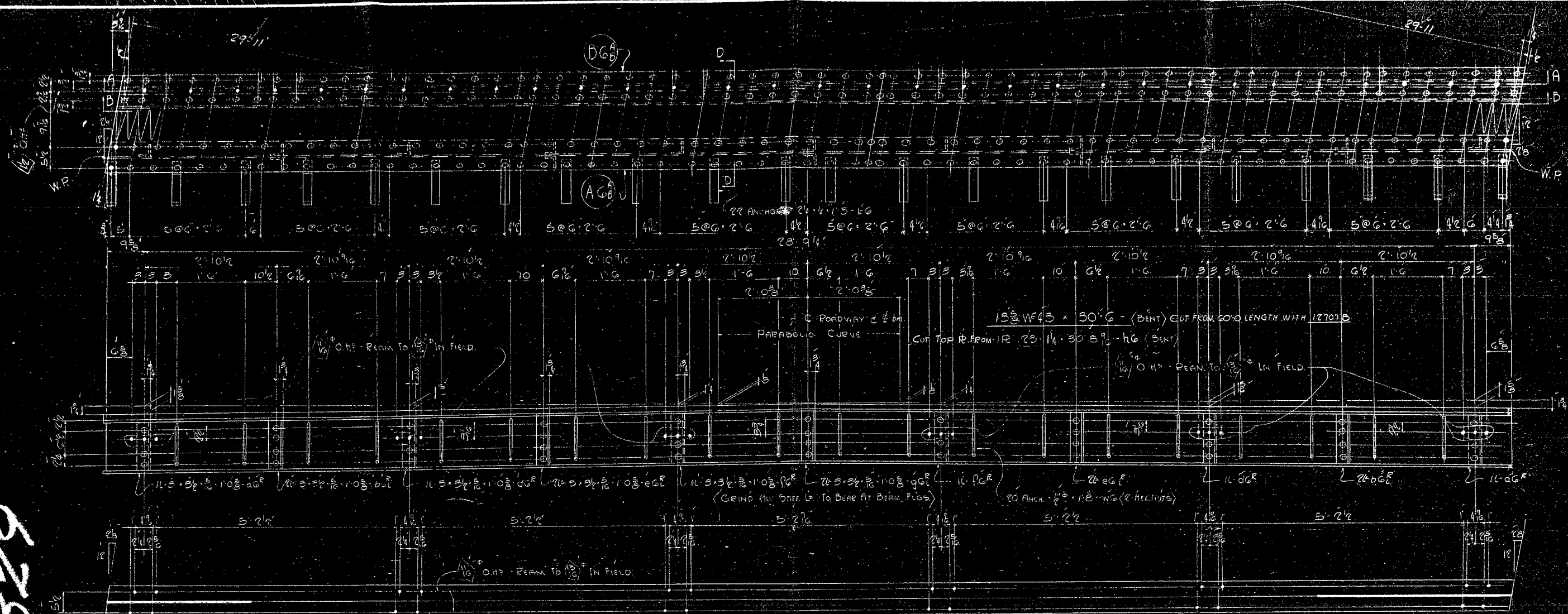
HOWARD LUNNEY

STUPP BROS. BRIDGE & IRON CO.
 ST. LOUIS, MO.
 Purchase No. 12717
 Bridge Over DONNE FEMALE CREEK
 Project No. F-2250 & MISSOURI STATE HWY. DEPT.
 Missouri State Hwy. Dept.
 Drawn By J.R. Date 12/15/44 Check By W.E.M. Date 12/15/44

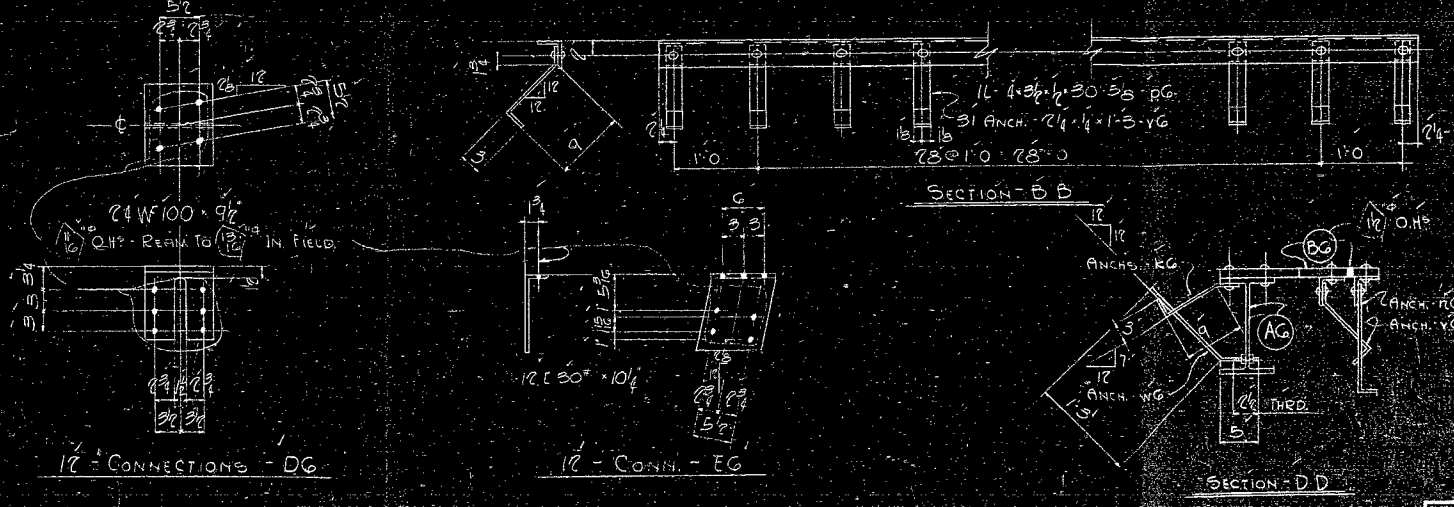
STEEL INSURANCE
INTEGRITY
AND
SECURITY

Sheet No. 5
 Total Sheets

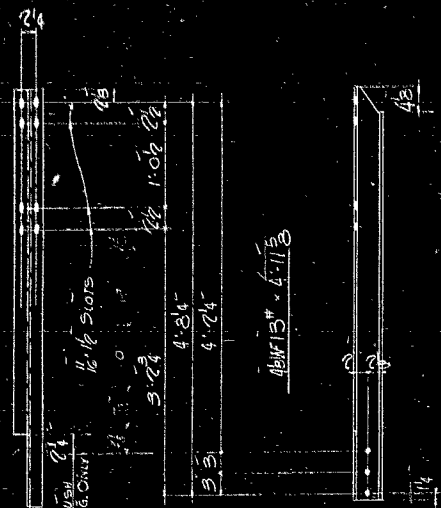
329



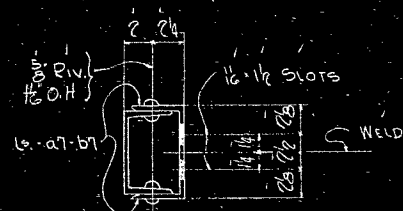
NOTE: FINGER R. SHALL BE CUT FROM ONE R. RG. THE SURFACE OF CUT SHALL BE PERPENDICULAR TO THE SURFACE OF R. THE CUT SHALL NOT EXCEED 8 IN. WIDTH. THE C. OF CUT SHALL NOT DEVIATE MORE THAN 1/16" FROM THE POSITION OF C. OF CUT SHOWN IN LAYOUT ABOVE.



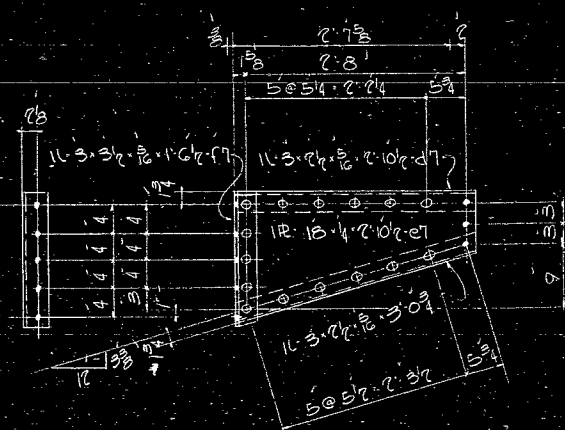
GENERAL NOTE
Revised 3/2/50 except as noted
O. N. E. except as noted
End Distance 1/4" unless noted
Shop Paint NONE
Contact Surfaces NO PAINT
Shop Inspection By MISSOURI STATE HWY DEPT
Field Comm. [blank]
Field Paint [blank]
Erected by [blank]
Regions HOWARD COUNTY
STUPP BROS BRIDGE & IRON CO.
ST. LOUIS, MO.
Fabricator's No. [blank] Shop No. 12717
BRIDGE OVER BONNETT CREEK
DISTRICT NO. 12, DISTRICT 12, DISTRICT 12
MISSOURI STATE HWY DEPT
Drawn By J. B. Day Date 12/12/49
Checked By [blank]
Field Comm. [blank]



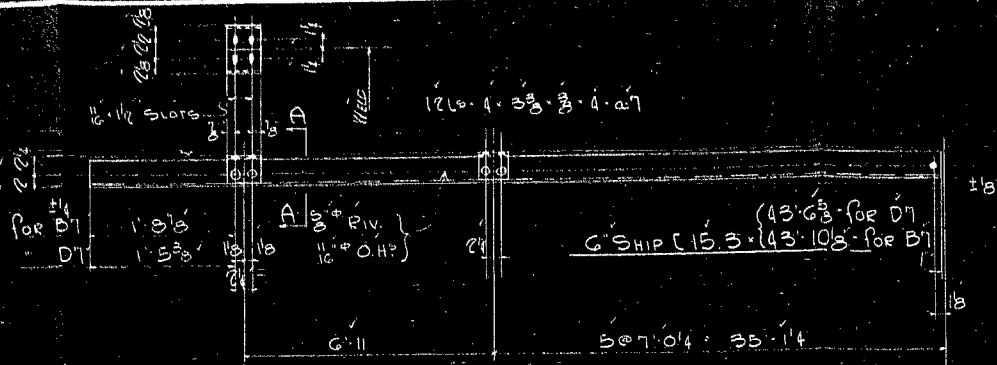
10 - Pier - A7



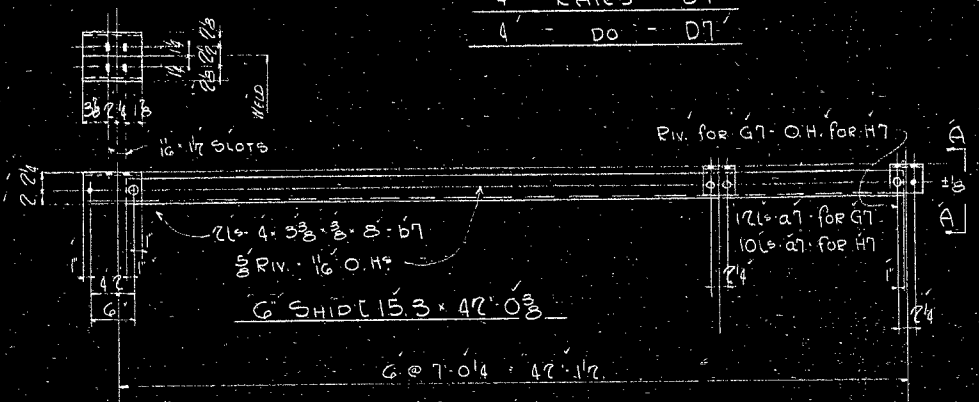
SECTION - A A



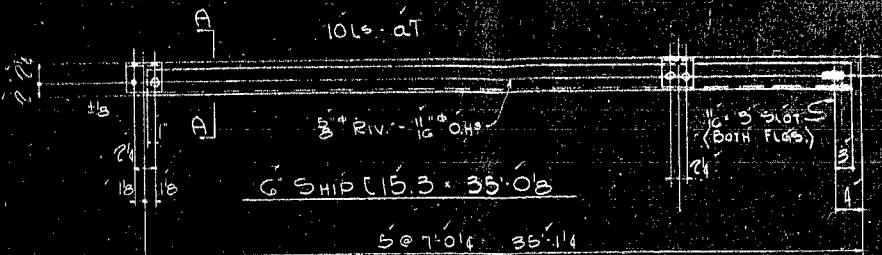
10 - BRACKETS - K7



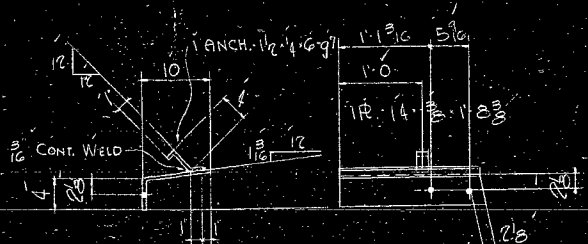
4 - RAILS - B7
4 - DO - D7



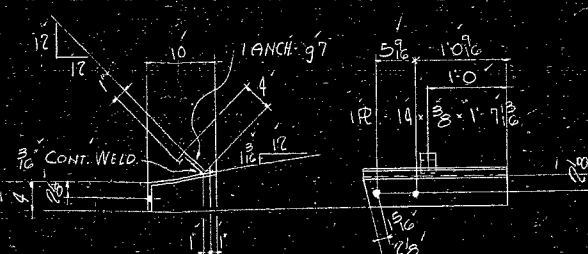
4 - RAILS - G7
4 - DO - H7



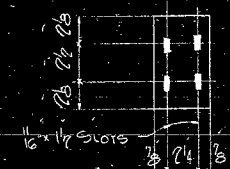
8 - RAILS - E7



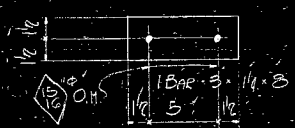
2 - CURB R - W7



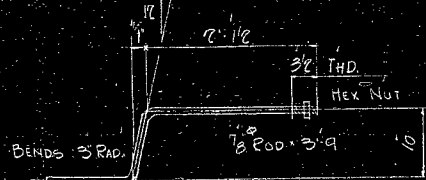
2 - CURB R - A7



10 - SHIMS - 4' 3' 0" - M7
10 - DO - 4' 3' 0" - N7
(INCLUDED IN PRICE BID FOR OTHER ITEMS)



10 - SADDLES - P7



140 - ANCHORS - V7

GENERAL NOTE	
Reinforce	except as noted
End Distance	unless noted
Shop Paint	None
Contact Surfaces	NO PAINT
Shop Inspected By	MISSOURI STATE HWY. DEPT.
Field Conn's	
Field Paint	
Erected by	
Revisions	

STUPP BROS. BRIDGE & IRON CO.
ST. LOUIS, MO.

Project OVER BONNE FEMME CREEK
Project NO. 12717
Missouri STATE HIGHWAY DEPT.
Drawn by JAT Date 12/17/17
Checked by Date

THE TRINITY
12717
12/17/17