

240



Field connections except as noted in handrail details may be riveted or bolted with high strength bolts. Final pay weight for Fabricated Structural Steel will be based on the use of field rivets except for bolted connections specified for handrail.

Drawn Feb. 1961 by H.M.M.
Checked Mar. 1961 by D.J.G.

GENERAL NOTES, CONT.

made under unit price bid for Painting.

Permits must be obtained for all truck loads over legal length. See Section 52.4.7 of Standard Specifications for required painting of steel piles.

A minimum vertical clearance of 22'-0" from top of rails and a minimum lateral clearance of 10'-0" from centerline of tracks shall be maintained over railroad tracks during construction.

Where joint filler is specified on the plans it shall conform with the requirements for Gray Sponge Rubber as given in Section 157.2.4 of the Standard Specifications.

Rivets, $\frac{3}{4}$ " ϕ ; holes, $\frac{1}{8}$ " ϕ except where otherwise noted.

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

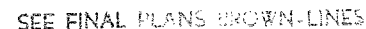
For Log of Soundings see Sheet No. 3 of 7.

Note: All excavation for bridge will be paid for as Class 1 Excavation for Structures.

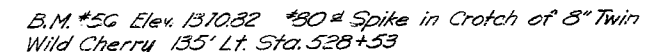
Weight of shear connectors is included in weight of Fabricated Structural Carbon Steel but not included in Painting. Payment for shear connectors will be based on weight of type furnished.

Weight of all bearings is included in weight of Fabricated Structural Carbon Steel.

No payment for excavation will be allowed at End Bents No. 1 & 4.



CUTTING DIAGRAMS & BENDING SKETCHES



BRIDGE OVER MO. PAC. R.R.

STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC. 55 (X) RTE. 60 STA. 528+03.82 (E RDWY)

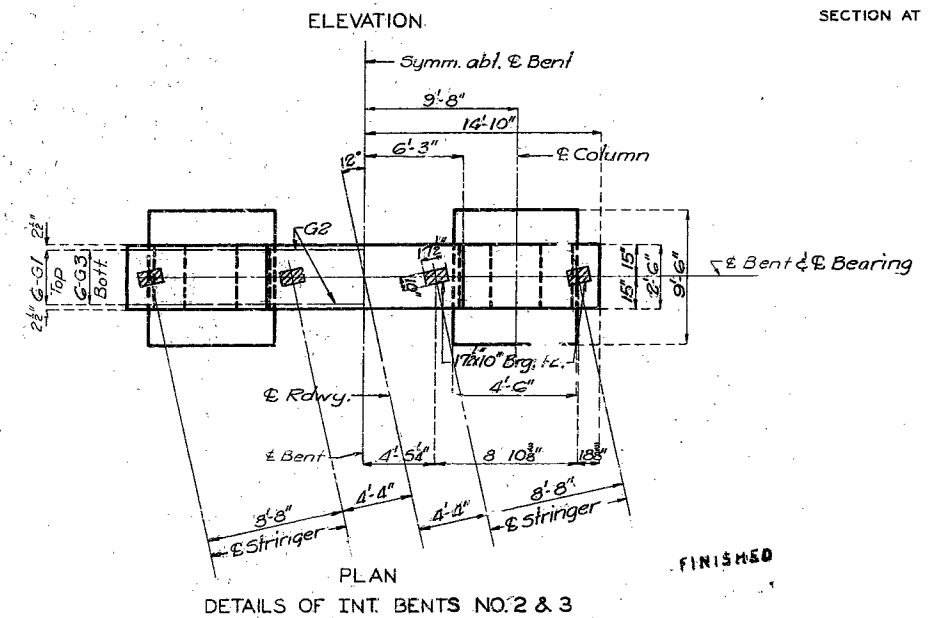
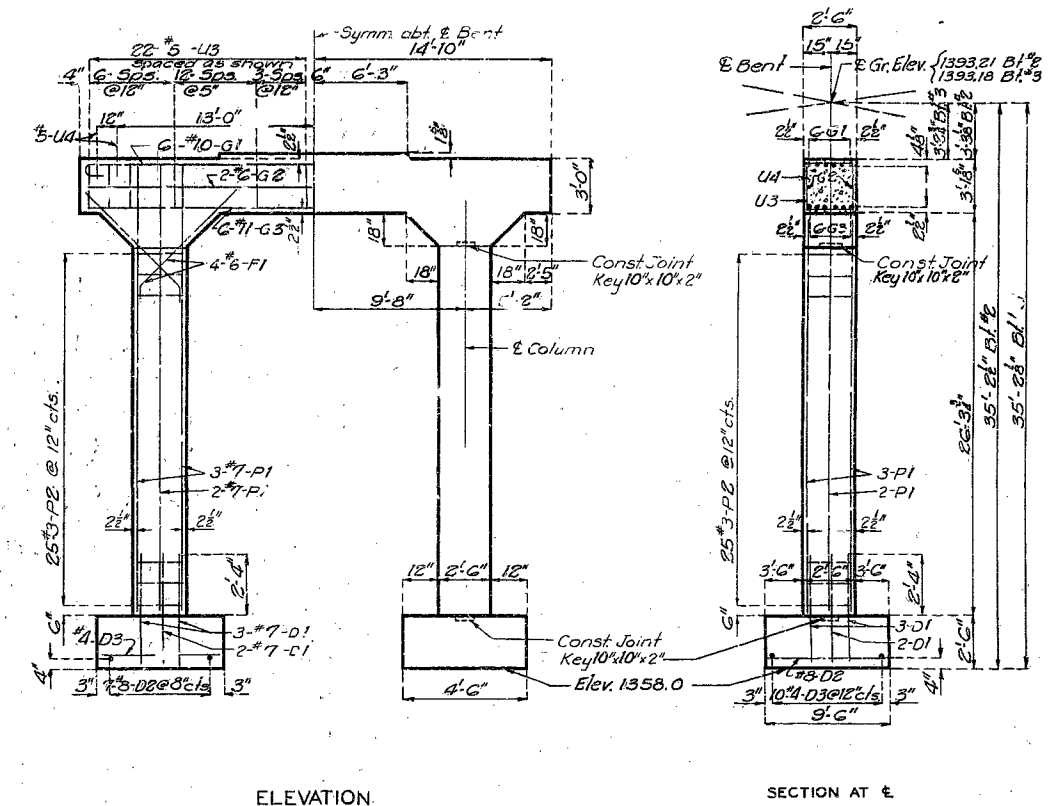
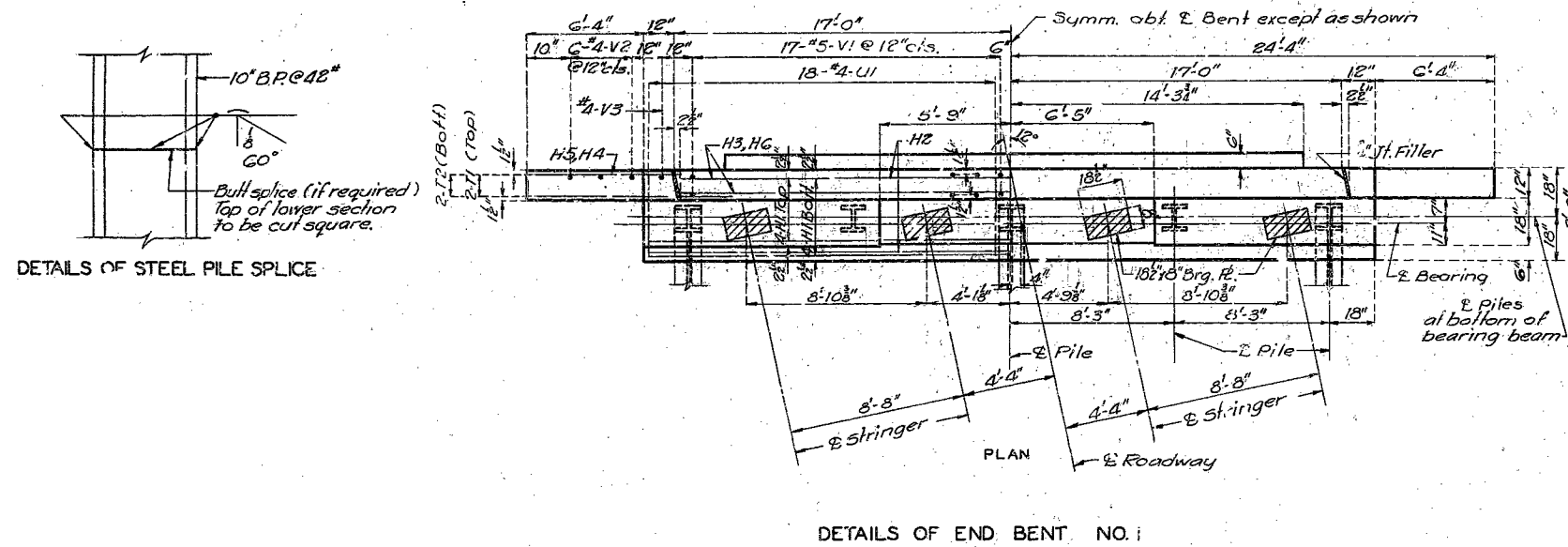
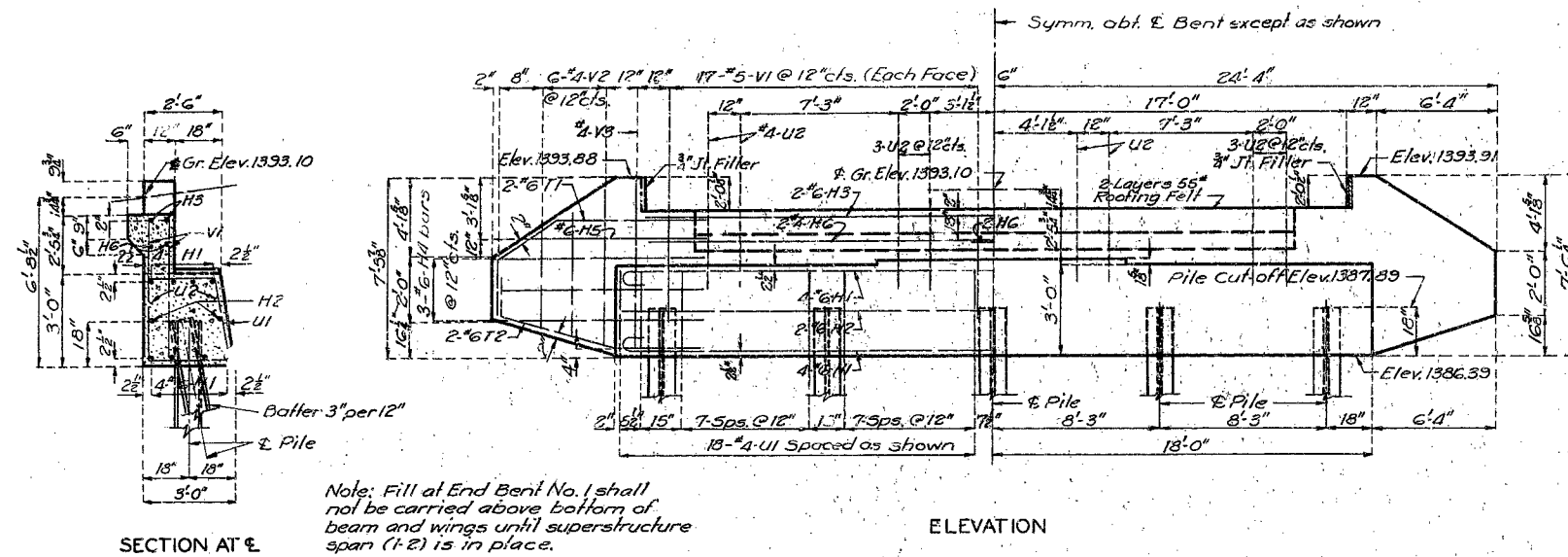
LAWRENCE COUNTY

SUBMITTED BY DB Jenkins DATE 5/8/61
BRIDGE ENGINEER
APPROVED BY J. J. Corbett DATE 5/8/61
CHIEF ENGINEER

STD. 54.00
A-872

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	167	



BRIDGE OVER MO. PAC. R.R.

STATE ROAD FROM MONETT TO MARIONVILLE FINISHED
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC. 55 (1) (RTE. 60) STA. 528+03.82 (E RDWY.)

LAWRENCE COUNTY

FINISHED

Sheet No. 2 of 7.

A-872

Assembled Feb. 1961 by L.G.S. & J.H.K.
Checked Mar. 1961 by D.J.G.

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

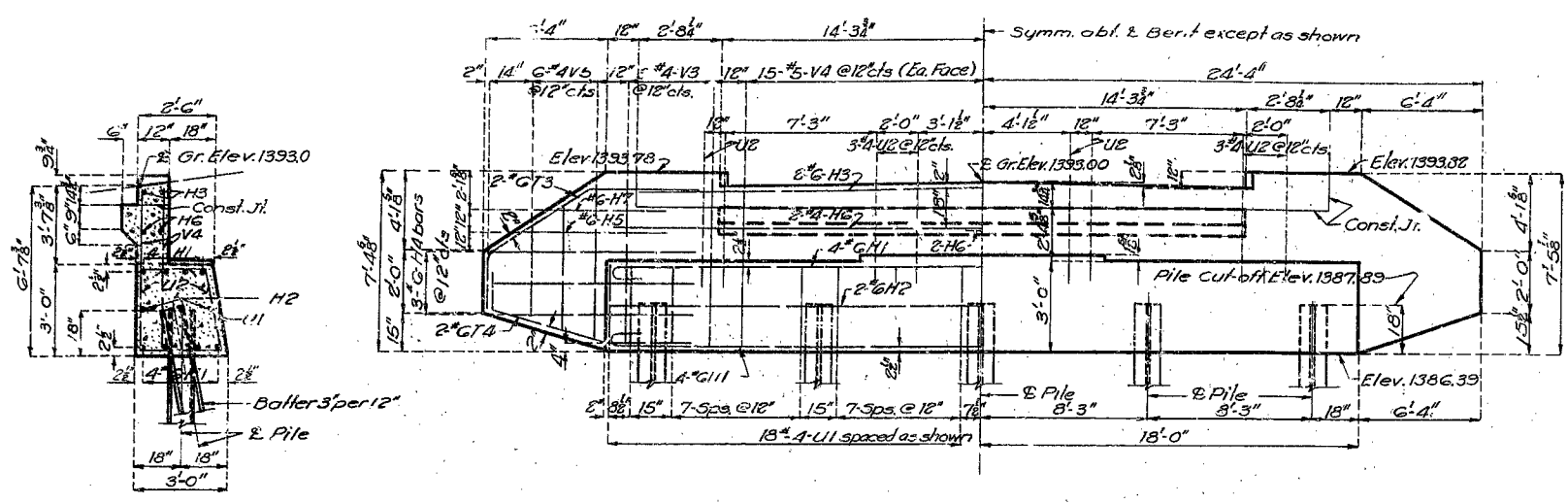
SEE FINAL PLANS BROWN-LINES

Square or skewed T-Brn. conc. cap Type End Bt. on Piles with conc. Int Bent
With or without Conc. App. Slab at End Bt. 3-4-60

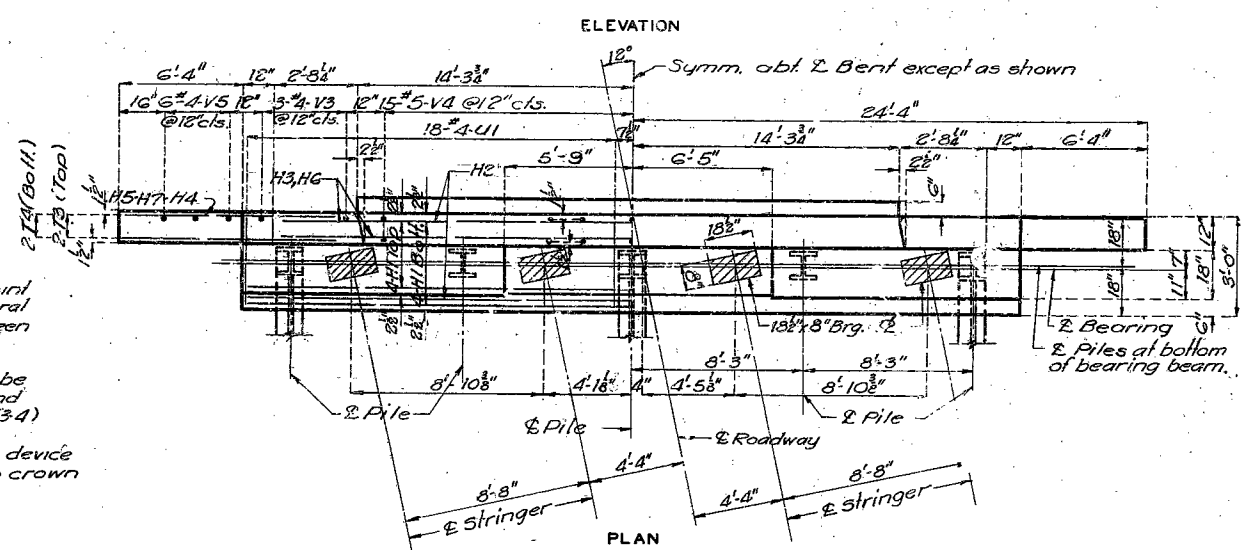
249

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	68	

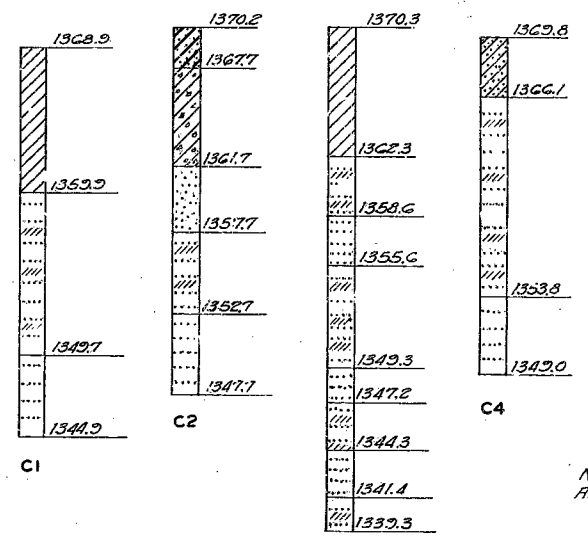


SECTION AT E

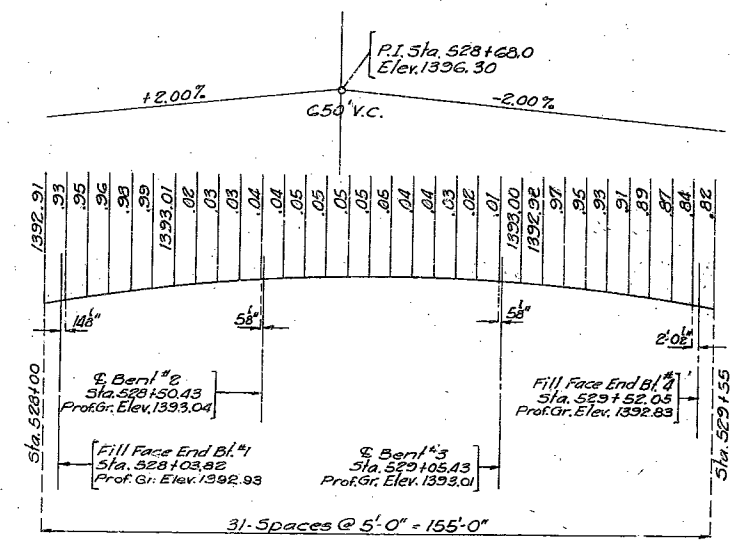


DETAILS OF END BENT NO. 4

Note: Backwall above construction joint shall not be poured until the structural steel of the expansion device has been installed and slab has been poured in adjacent span.
Fill at End Bent No. 4 shall not be carried above bottom of beam and wings until superstructure span (3-4) is in place.
Top of backwall and expansion device for end bent No. 4 to conform to crown of roadway slab.



LOG OF SOUNDINGS



PROFILE GRADE ELEVATIONS

BRIDGE OVER MO. PAC. R. R.
STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC. 55 (H. RTE. 60) STA. 528+03.82 (C. RDWY.)
LAWRENCE COUNTY

Assembled Feb 1961 by L.G.S. & J.H.K. & E.J.W.
Checked Mar. 1961 by D.J.G.

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

Sheet No. 3 of 7.

NO CONSTRUCTION CHANGES

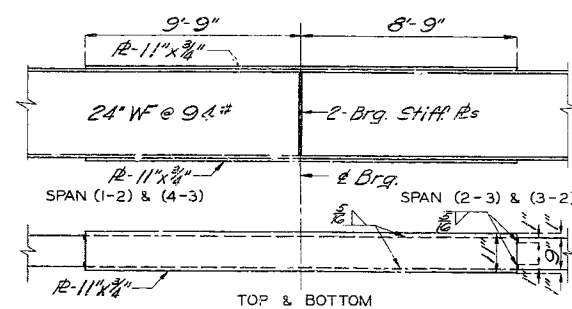
Square or Skewed I-Bm. Conc. Cap Type End Bts. on Piles
With or without Conc. App. Slab. of End Bt. 3-4-60

A-872

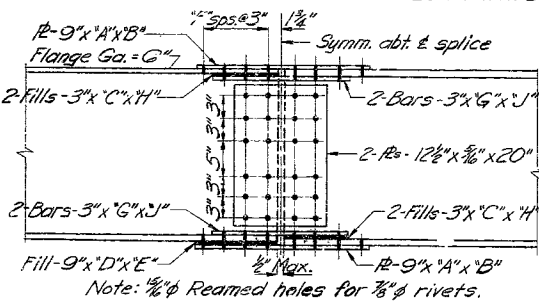
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
5	MO.		19	69	

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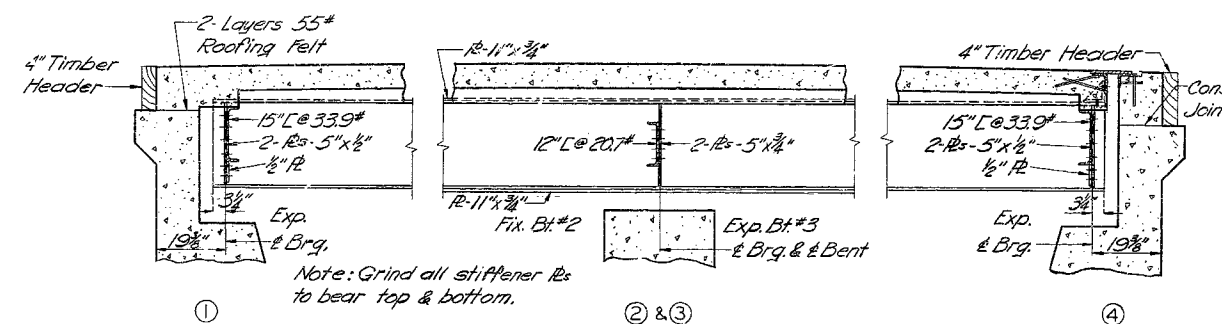
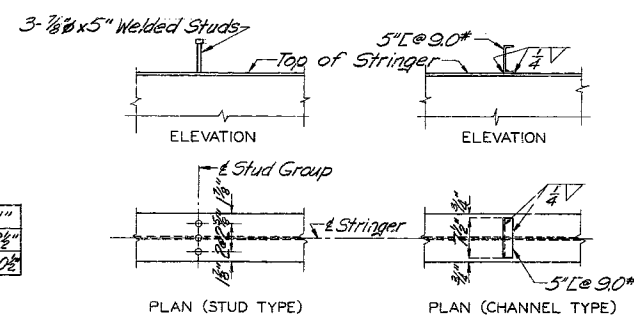
Note: Longitudinal dimensions shown are taken horizontally.
Elevations shown are at top of top flange of stringers.



DETAILS OF FLANGE PLATES AT INT. BENTS

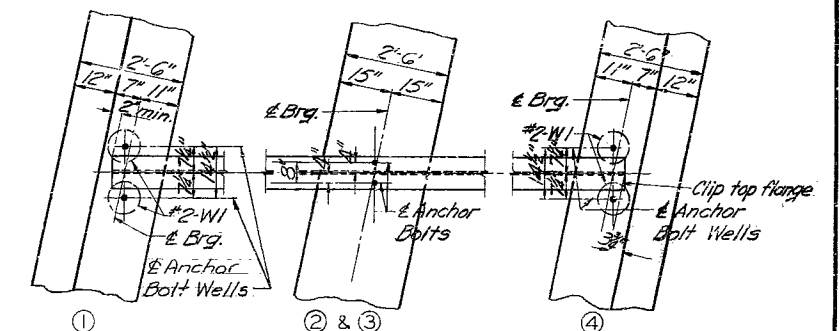


DETAIL OF FIELD SPLICE

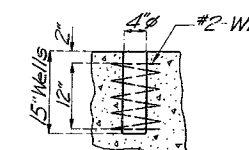
PART LONGITUDINAL SECTION
(NEAR INT. STRINGER)

Note: For spacing of shear connectors see Plain of Structural Steel. See Special Provisions.

DETAILS OF SHEAR CONNECTORS



PART ANCHOR BOLT PLAN



Note: Anchor bolts for Type "D" bearings may be set in wells as shown or in holes drilled into concrete substructure. See Standard Specifications for setting anchor bolts.

DETAIL OF SPIRAL AROUND
ANCHOR BOLTS

STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC.55(IXRTE.60) STA. 528 +03.82 (E RDWY)
LAWRENCE COUNTY FINISHED

Drawn Feb. 1961 by H.M.M.
Checked Mar. 1961 by D.J.G.

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

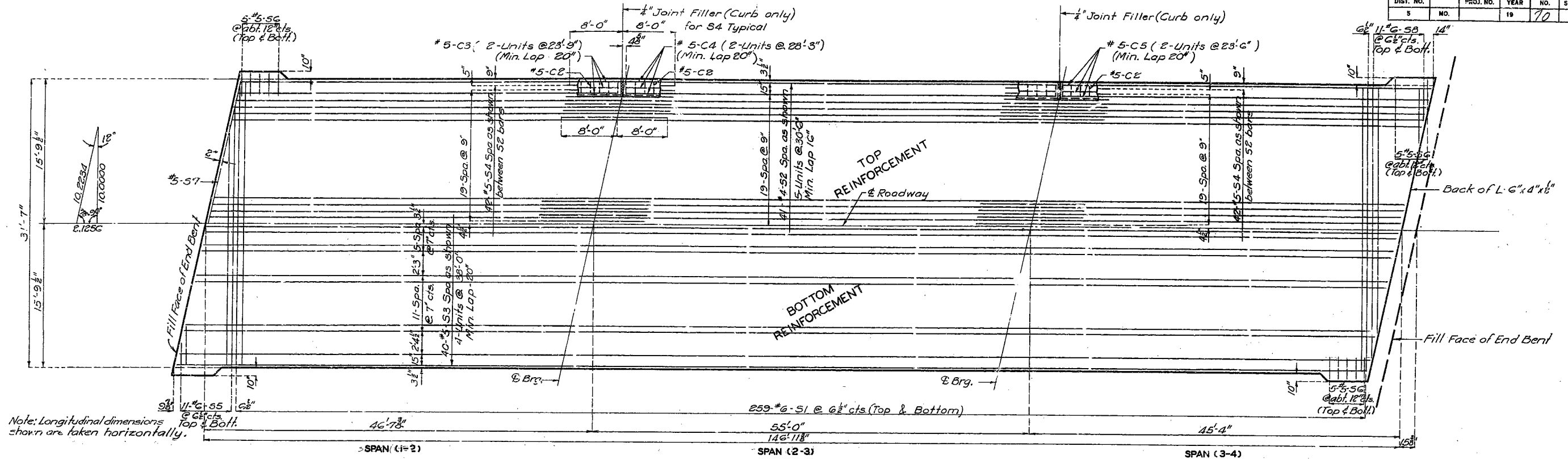
Sheet No. 4 of 7.

NO CONSTRUCTION CHANGES

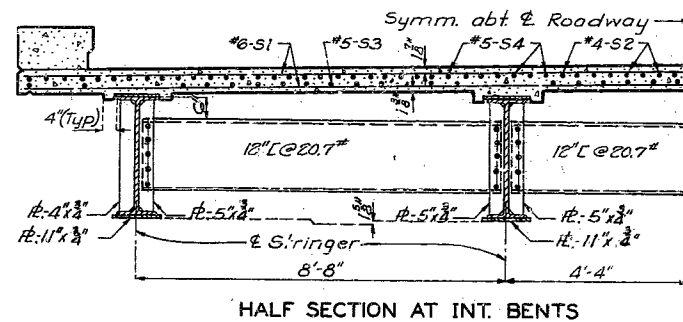
4-872

MISSOURI STATE HIGHWAY DEPARTMENT

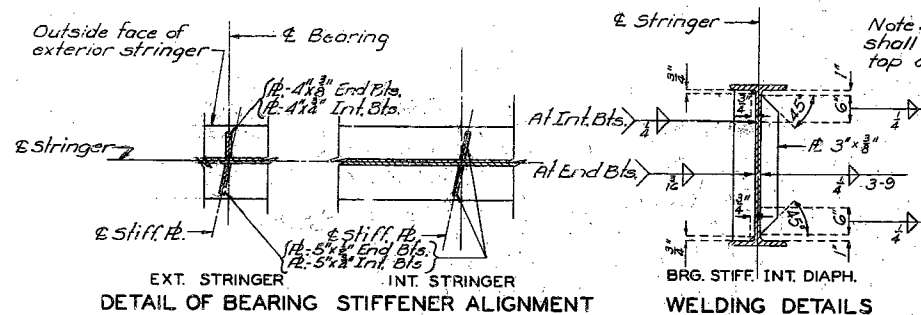
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	70	



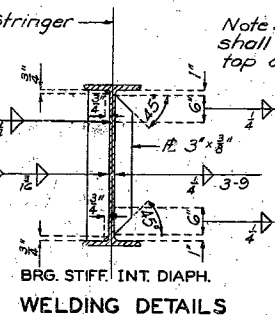
PLAN OF SLAB SHOWING REINFORCEMENT



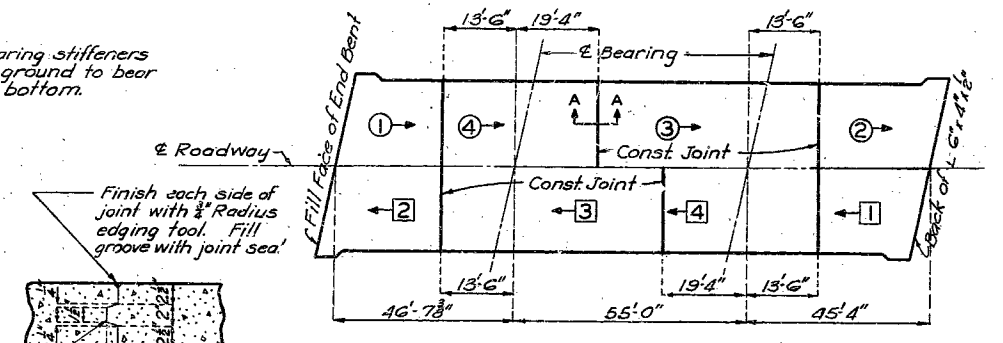
HALF SECTION AT INT. BENTS



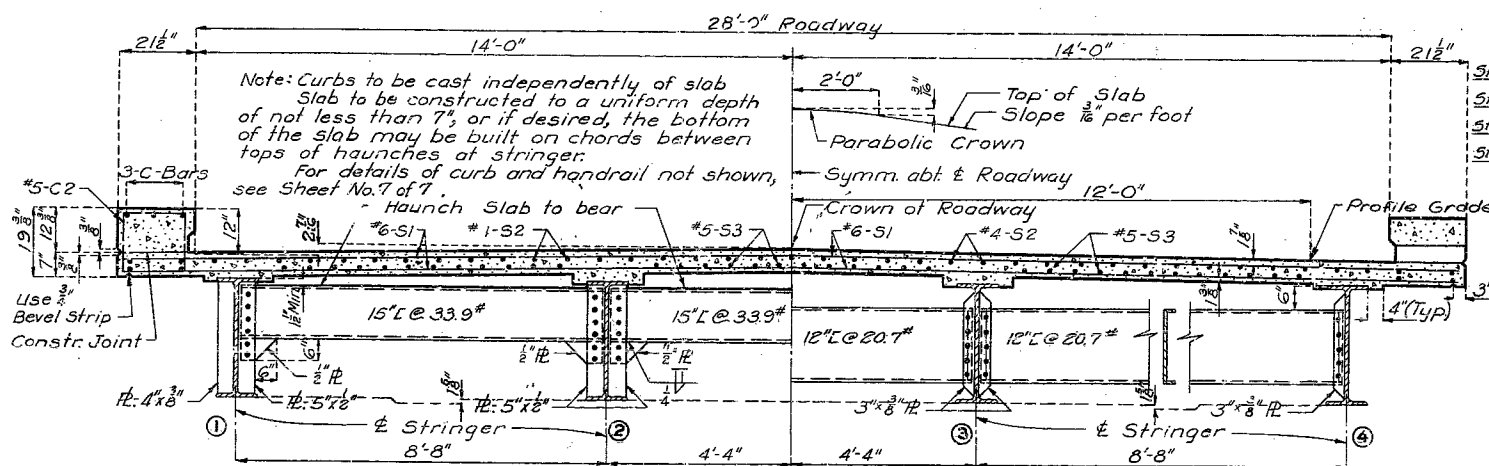
DETAIL OF BEARING STIFFENER ALIGNMENT



WELDING DETAILS

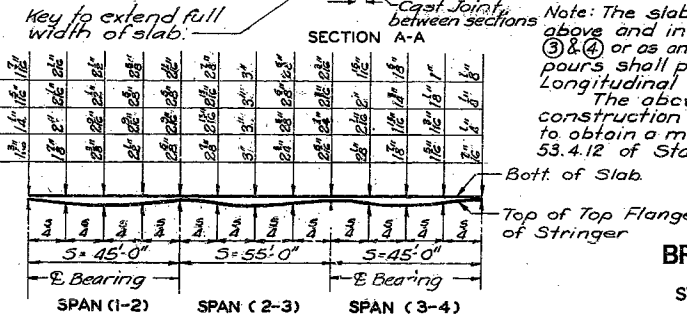


SLAB POURING SEQUENCE



HALF SECTION NEAR END BENTS

HALF SECTION NEAR INT. DIAPH.



SLAB HAUNCHING DIAGRAM

BRIDGE OVER MO. PAC. R. R.

STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC. 55 (1) (RTE. 60) STA. 528+03.82 (C&D RDY.)
LAWRENCE COUNTY

FINISHED

FINISHED

Assembled Feb. 1961 by L.G.S. & J.H.K.
Checked Mar. 1961 by D.J.G.

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

Sheet No. 5 of 7

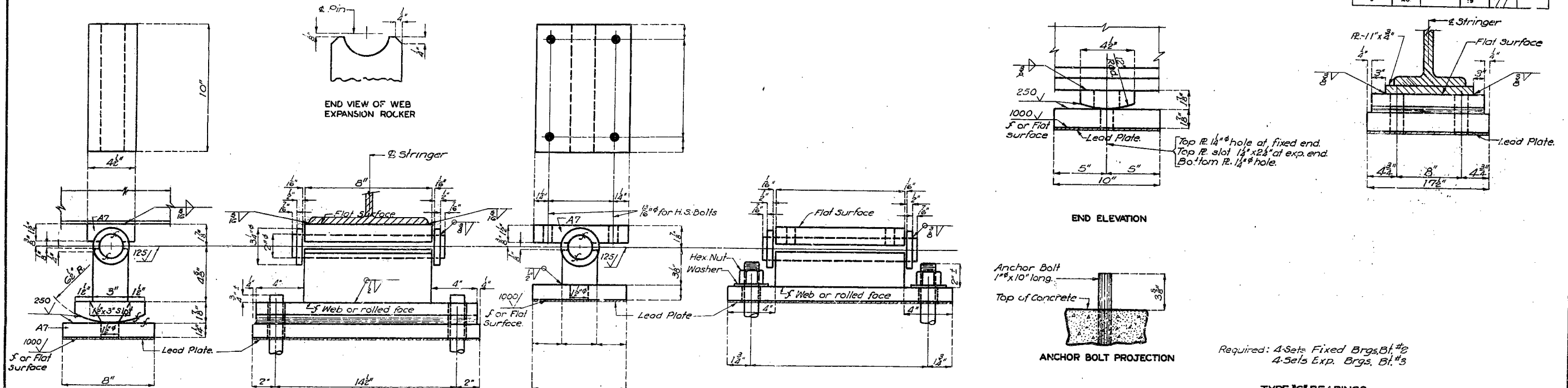
NO CONSTRUCTION CHANGES

Conf. I.B.M. H-20 28' Rdwy. Feb. 1961

A-872

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	77	



TYPE "D" BEARINGS
(Approx. Wt. 1280#)

TYPE "C" BEARINGS
(Approx. Wt. 1006#)

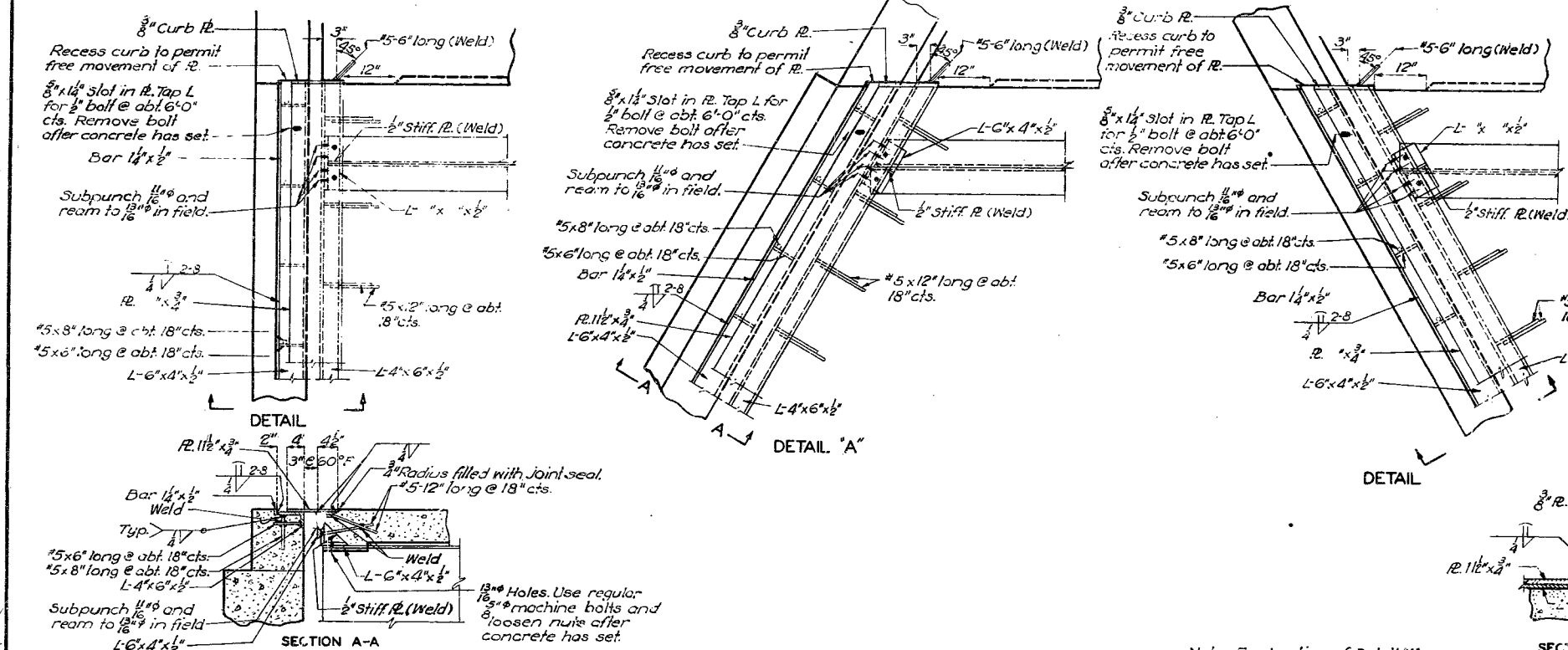
GENERAL NOTES:
Material for Type "D" Bearings shall be except as noted A.S.T.M. A-373 Steel or A7 meeting the carbon and manganese requirements of A-373.
Material for Type "C" Bearings shall be A.S.T.M. A-36 Steel.
Material for Pins shall be A.I.S.I. C-1018.
Anchor Bolts for Type "D" Bearings shall be 1 1/2" swaged Bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for Fixed Bearings, no nuts for Exp. Bearings.
Anchor Bolts for Type "C" Bearings shall be 1" swaged Bolts, 10" long with no heads or nuts. Top of Anchor Bolts shall be set approximately 1" below top of bearing.
Lead Plates under bearings shall be approximately 1/8" thickness and weigh 8#/sq. Foot. Cost of lead plates shall be included in price bid for other items.
Material for Bearings will be paid for as Fabricated Carbon Steel.

Note: Expansion Device shall be fabricated in one section and shall be bent to conform to crown and grade of roadway.
#5 Bars for expansion device shall be structural grade.
Approved stud welded anchors may be used in lieu of #5 bars shown.
Use #5 anchors immediately adjacent to L supports over stringers and the remaining anchors at not more than 18" cts.
Use edging tool with 1/4" Radius at edge of Exp. Device.

BRIDGE OVER MO. PAC. R.R. FINISHED
STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC.55 (1) (RTE. 60) STA. 528+03.82 (E. RDWY.)
LAWRENCE COUNTY

FINISHED

FINISHED



DETAILS OF EXPANSION DEVICE
Note: This drawing is not to scale. Follow dimensions.

Note: For location of Detail "A" see Sheet No. 4 of 7.

Sheet No. 6 of 7.

NO CONSTRUCTION CHANGES

A-872

253

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	72	



FIXED POST

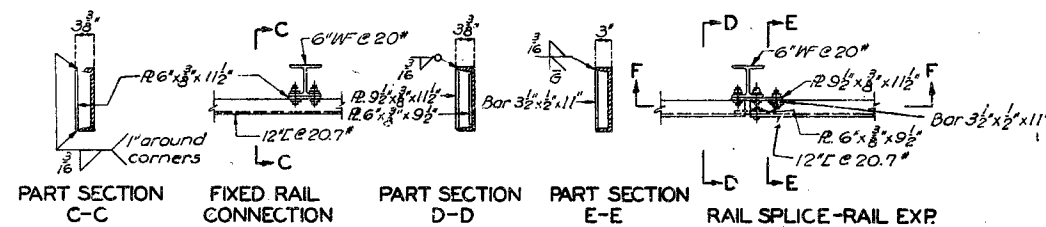
Note: Outlets to be centered between rail posts. For location of outlets if any, see Sheet No. 1 of design plans.
C2 bars in curb to be spaced at abt 12" cts. from end post to end post on bridges having no outlets.

SECTION F-F ELEVATION
SPLICE POST OR EXP POST

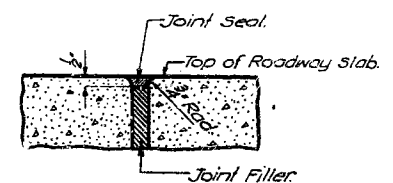
SECTION B-B

SECTION A-A

Note: Channel rail to be adjusted for horizontal alignment by use of full size metal shims placed between 6" Wf and connection R. shims of $\frac{1}{8}$ " and $\frac{1}{4}$ " thickness to be furr shied with structural steel. Cost of shims to be included in price bid for other items.

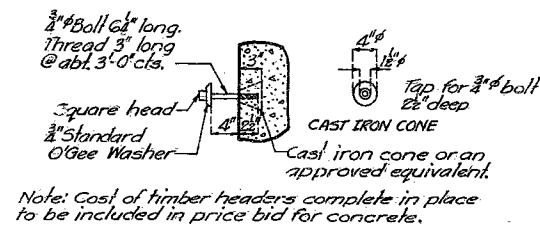


RAIL SPLICE-RAIL EXP



DETAILS OF BEVEL FOR FILLED JOINTS

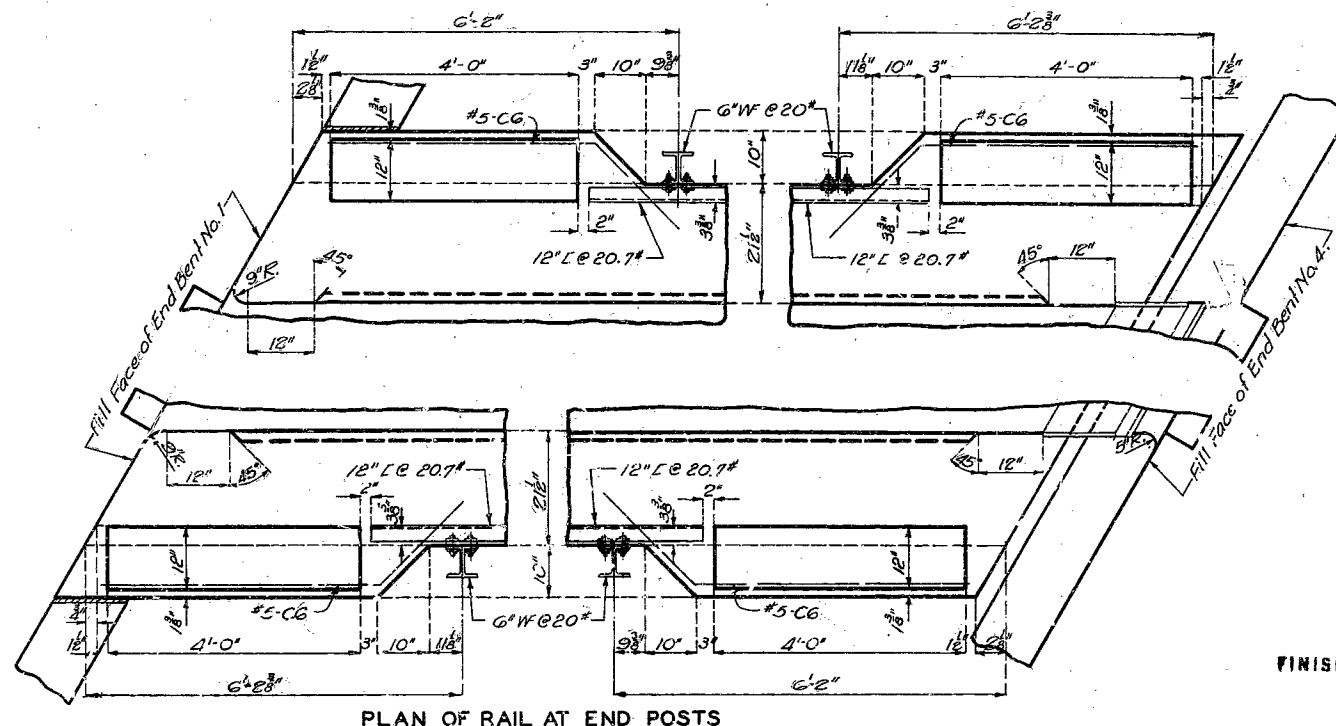
Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with $\frac{3}{4}$ " radius at top surface of roadway slab each side of joint and fill flush with joint seal as shown.



DETAILS OF TIMBER HEADER

GENERAL NOTES:

Top of curbs and end posts to be built parallel to grade. Vertical faces of end posts to be vertical. All exposed edges of end posts to be beveled $\frac{1}{2}$ " 6" W/F posts to be set normal to grade. 12" L rails shall be fabricated to conform to horizontal and vertical alignment of curb.



PLAN OF RAIL AT END POSTS

Note: Omit curve on curb at ends of bridge where drain basin is provided on approach pavement.

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

FINISHED

BRIDGE OVER MO. PAC. R. R.
STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC.55(1) (RTE.60.) STA. 528+03.82 (E. RDWY.)
LAWRENCE COUNTY

FINISHED

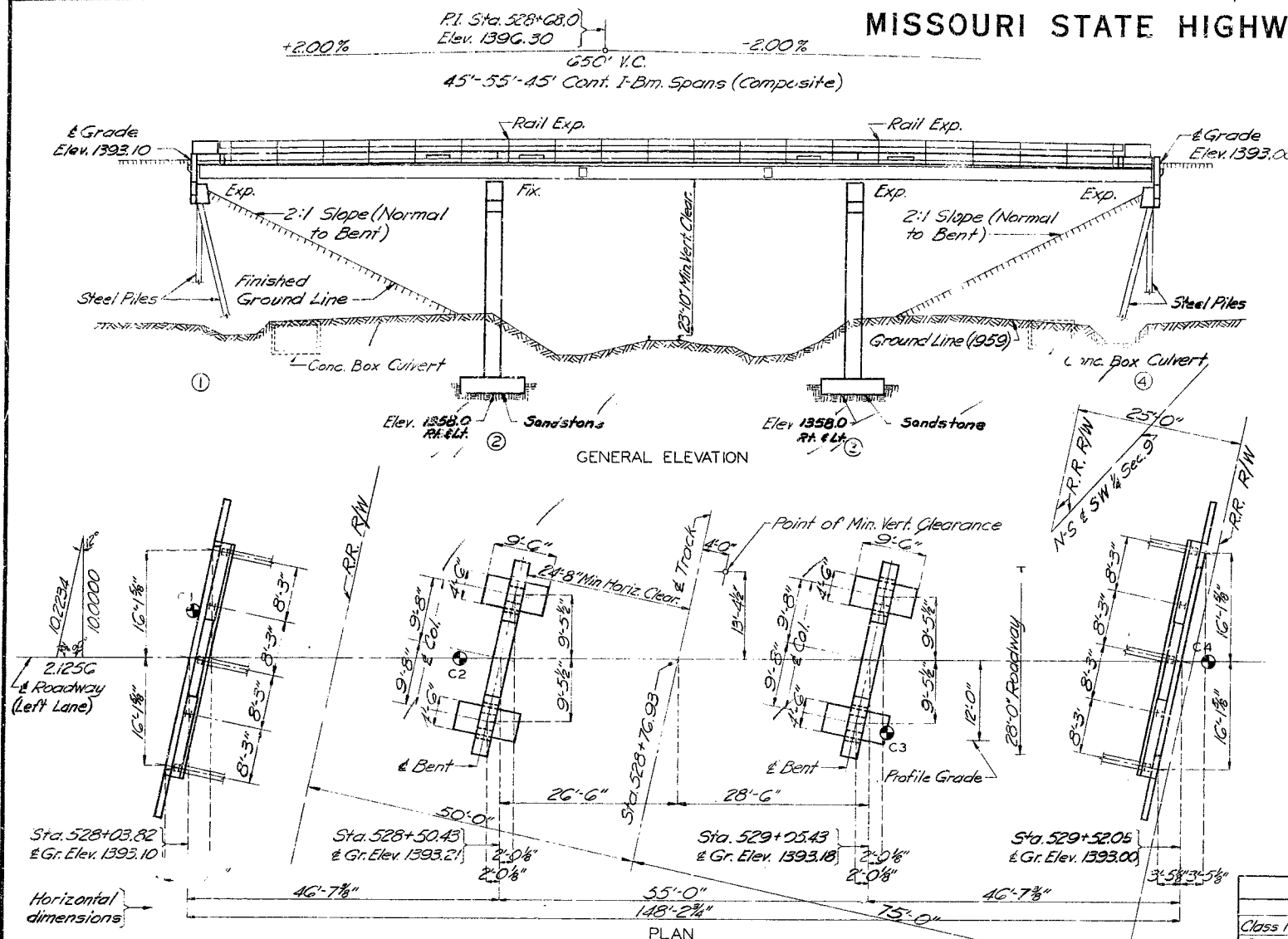
A-872

Sheet No. 7 of 7.

NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		15		



Note: Footings were carried at least 18" into and cast against vertical faces of firm undisturbed sandstone.

Bearing of 4.0 ton/sq. ft. used in design of footings for Bents No. 2 & 3. In no case were footings of Bents No. 2 & 3 placed higher than elevations shown on plans.

Compacted roadway fill (full roadway width) was placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of End Bents No. 1 and 4 before steel piles were driven.

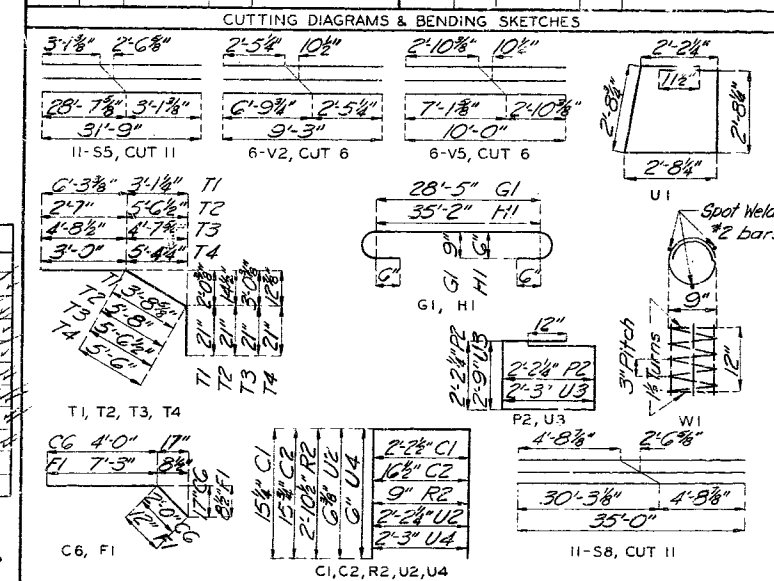
All piling were 10" bearing piles @ 42# and did conform with details and notes on sheet No. 2 of design plans. Estimated quantities shown on plans were based on the following length: 10 @ 30'-0". This indicated length was approximate only. Proper lengths to give required bearing and/or penetration was authorized by the Engineer.

All piles were driven to or into solid rock, boulders, shale or cemented gravel; or to not less than full length authorized and did sustain a load of at least 37 ton per pile, and with tips to at least Elev. 1362.0.

All piles were driven with a power hammer.

For Log of Soundings see Sheet No. 3 of 7.

COMPLETE BILL OF REINFORCING STEEL									
No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location
End Bents No. 1 & 4									
16	#6	37'-9"	H1	Beam	32	#7	4'-9"	D1	Footing
1	#6	35'-9"	H2	"	28	#8	9'-3"	D2	"
4	#6	33'-9"	H3	Bkwl.	40	#4	4'-3"	D3	"
12	#6	2'-6"	H4	Wing					
4	#6	7'-9"	H5	Wing	32	#7	28'-9"	F1	Column
8	#4	17'-9"	H6	Bkwl.	100	#3	9'-9"	F2	"
2	#6	7'-0"	H7	Wing Bt. #1					
4	#6	11'-9"	T1	Wing Bt. #1	88	#5	11'-0"	U3	Beam
4	#6	12'-0"	T2	"	8	#5	3'-3"	U4	"
4	#6	10'-3"	T3	Wing Bt. #4					
4	#6	10'-3"	T4	"					
Superstructure									
72	#4	11'-3"	U1	Beam	20	#5	4'-9"	C1	Curb
20	#4	3'-3"	U2	"	242	#5	4'-0"	C2	"
					12	#5	23'-9"	C3	"
					12	#5	23'-9"	C4	"
68	#5	4'-0"	V1	Bkwl. Bt. #1	12	#5	23'-6"	C5	"
6	#4	9'-3"	V2	Wing Bt. #1	4	#5	6'-0"	C6	"
8	#4	6'-0"	V3	Wing Bt. #4					
58	#5	5'-3"	V4	Bkwl. Bt. #4	24	#4	3'-9"	R1	End Post
6	#4	10'-0"	V5	Wing Bt. #4	20	#5	6'-6"	R2	"
16	#2	19'-9"	W1	A.B. Well					
Int. Bents No. 2 & 3									
32	#6	8'-3"	F1	Col. Hrch.	160	#5	38'-0"	S3	"
					84	#5	16'-0"	S4	"
12	#10	31'-3"	G1	Beam	11	#6	31'-9"	S5	"
4	#6	29'-3"	G2	"	40	#5	2'-6"	S6	"
12	#11	29'-3"	G3	"	7	#5	32'-3"	S7	"
					11	#6	35'-0"	S8	"



QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu.Yd.	36.0	136.0
Steel Piles in Place	Lin. Ft.	261	261
Steel Pile Cut-offs	Lin. Ft.	39	39
Class B Concrete	Cu.Yd.	33.2	33.2
Class B1 Concrete	Cu.Yd.	127.8	127.8
Reinforcing Steel	Lb.	11746	39750
Fabricated Structural Carbon Steel	Lb.		34400
Painting	Ton	41.3	41.3

Note: All excavation for bridge was paid for as Class I Excavation for Structures.

Weight of shear connectors is included in weight of Fabricated Structural Carbon Steel but not included in Painting. Payment for shear connectors was based on weight of type furnished.

Weight of all bearings is included in weight of Fabricated Structural Carbon Steel.

No payment for excavation was allowed at End Bents No. 1 & 4.

GENERAL NOTES:

Design Specifications AASHTO - 1957
Loading H20-44 (15' sq. ft. Future wearing Surface)
Structural Steel Stress (A.S.T.M. A7-58T) 18,000#/sq. in.
Structural Steel Stress (A.S.T.M. A56-GOT) 20,000#/sq. in.
Reinforcing Steel Stress 20,000#/sq. in.
Concrete, Class B Stress 1200#/sq. in.
Concrete, Class B1 Stress 1600#/sq. in.
Superstructure concrete was Class B1 (Air-Entrained)
Substructure concrete was Class B (Air-Entrained)
Fabricated structural steel for wide flange beams, flange and splice plates were A.S.T.M. A36-GOT and all other steel was A.S.T.M. A7-58T except as noted for bearings.

Field connections except as noted in handrail details were bolted with high strength bolts. Final pay weight for Fabricated Structural Steel was based on the use of field rivets except for bolted connections specified for handrail.

Qualification of welding operators was required.
Paint: Shop, none; Field, contact surfaces of bolted field connections (except where high strength bolts are used) one coat of red lead and surfaces inaccessible after erection three coats of red lead. All other exposed surfaces first coat red lead, second coat brown, third coat aluminum. Payment for cleaning and all painting

GENERAL NOTES, CONT.

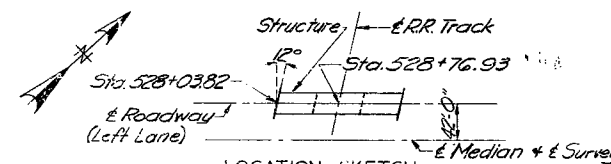
made under unit price bid for Painting.

Permits were obtained for all truck loads over legal length. See Section 52.4.7 of Standard Specifications for required painting of steel piles.

A minimum vertical clearance of 22'-0" from top of rails and a minimum lateral clearance of 10'-0" from centerline of tracks was maintained over railroad tracks during construction.

Where joint filler was specified on the plans it did conform with the requirements for Gray Sponge Rubler as given in Section 157.2.4 of the Standard Specifications.

Rivets, 3/4" φ; holes, 1/2" except where otherwise noted.



LOCATION SKETCH

Sheet No. 14 of 2

FINAL PLANS

B.M. X in ctr. Rt. Wing Bt. #1 Elev. 1393.88

BRIDGE OVER MO. PAC. R.R.

STATE ROAD FROM MONETT TO MARIONVILLE

ABOUT 2.5 MILES E. OF AURORA

PROJECT NO. SEC. 55 (RTE. 60) STA. 528+03.82 (E. RDWY)

LAWRENCE

COUNTY

FINISHED

SUBMITTED BY: D.B. Jenkins DATE: 5/1/61
APPROVED BY: J.G. Conner DATE: 5/1/61

FINISHED

STD. 54.00

A-872

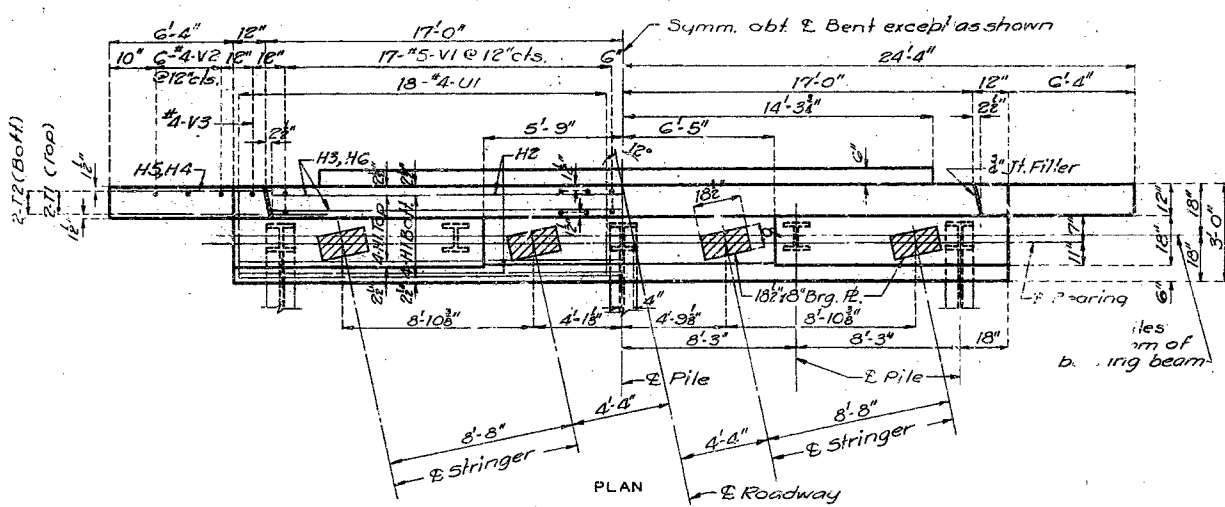
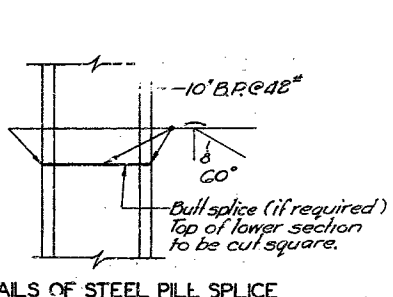
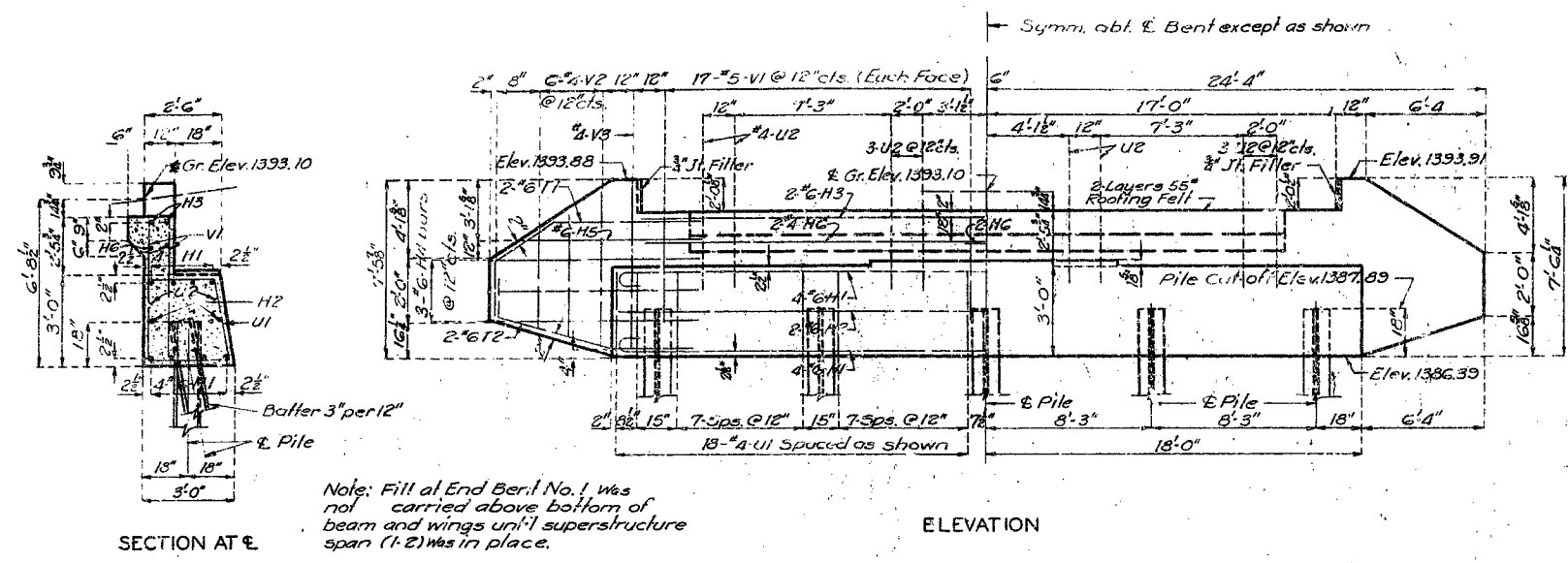
Note: This drawing is not to scale. Follow dimensions.

Drawn Feb. 1961 by H.M.M.

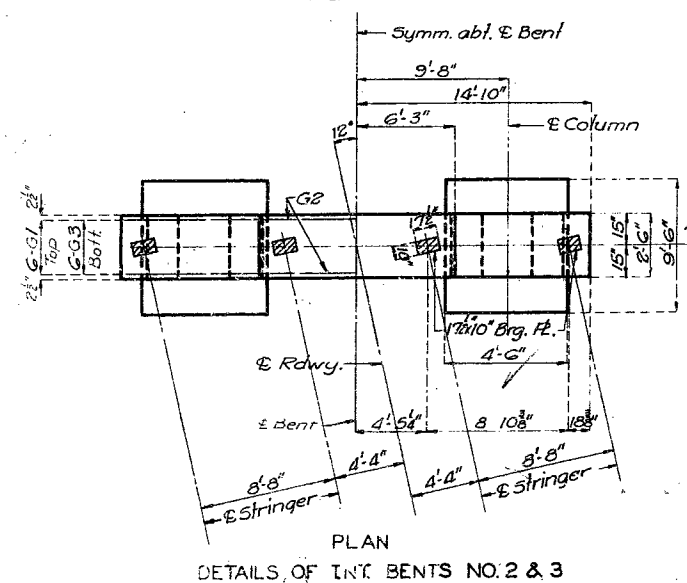
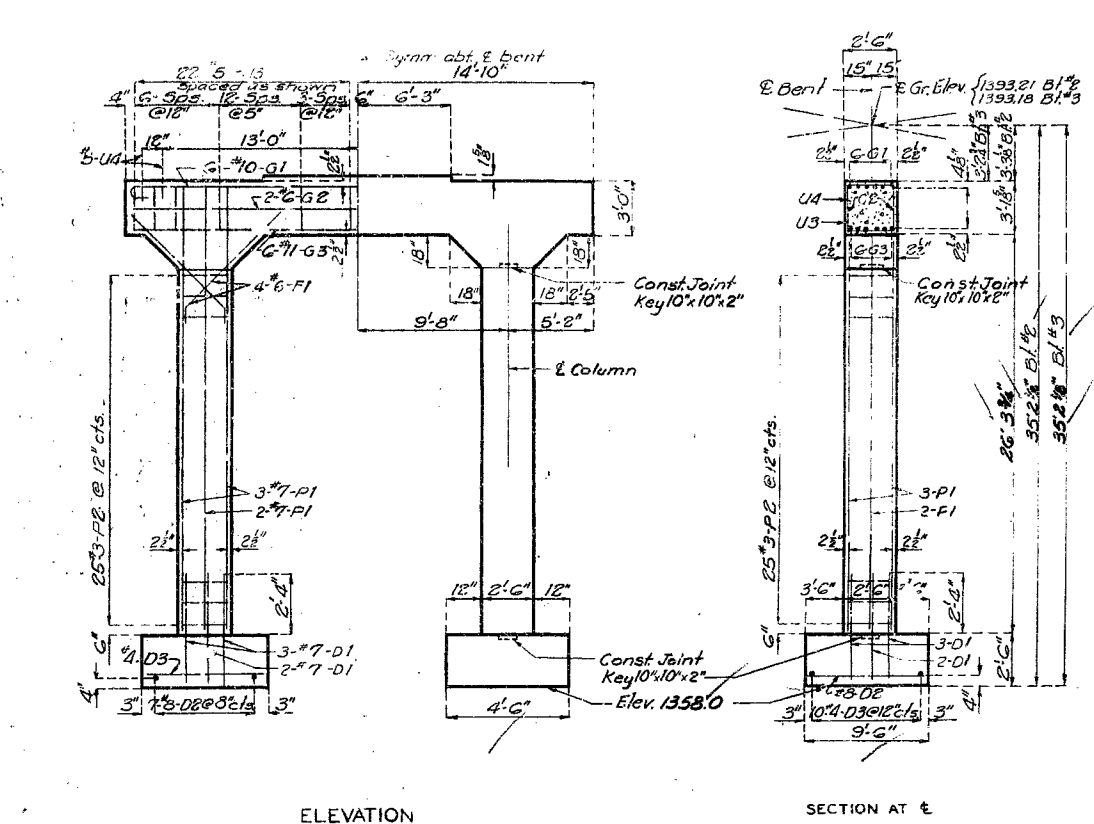
Checked Mar. 1961 by D.J.G.

MISSOURI STATE HIGHWAY DEPARTMENT

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



DETAILS OF END BENT NO. 1



DETAILS OF INT. BENTS NO. 2 & 3

BRIDGE OVER MO. PAC. R.R.
STATE ROAD FROM MONETT TO MARIONVILLE
ABOUT 2.5 MILES E. OF AURORA
PROJECT NO. SEC. 55 (1) (RTE. 60) STA. 528+03.82 (C. RDWY.)
LAWRENCE COUNTY

Assembled Feb. 1961 by L.G.S. & J.H.K.
Checked Mar. 1961 by D.J.G.

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

Sheet No. 2A of 2

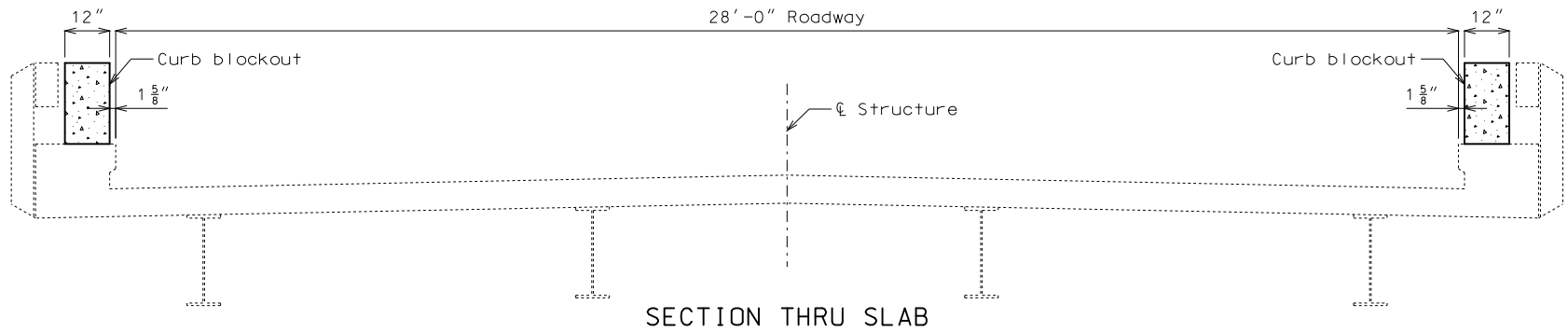
FINAL PLANS

Square or Skewed T-Bm. conc. cap Type End Bt. on Piles with conc. Int Bent with or without conc. App. Slab at End Bt. 3-4-60

A-872

U.I.P. AND REHAB. EXISTING (45'-55'-45') CONT. I-BEAM SPANS

SEC/SUR 9 TWP 26N RGE 25W



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.

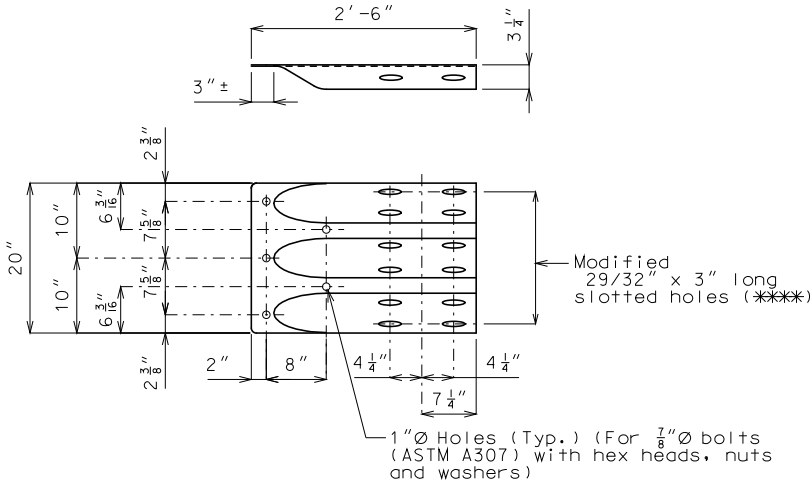
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Curb Blockout.

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.



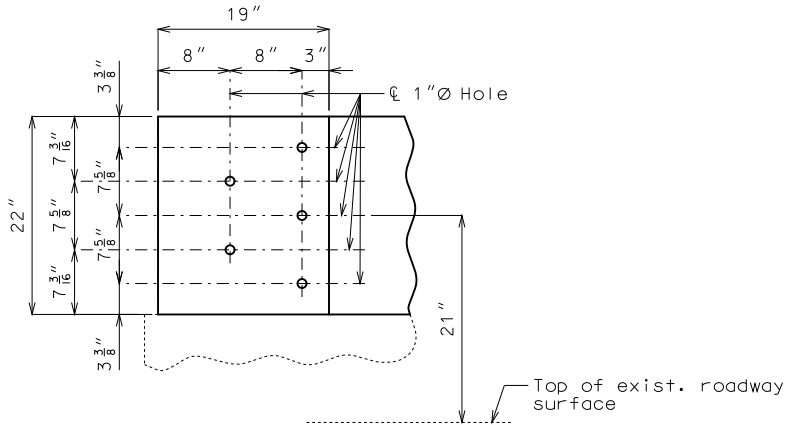
*** Tighten bolts, back off 1/2 turn and burr threads
Allow for sliding between Modified Bridge Anchor
Section (Thrie Beam) and End Post

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



DETAILS OF RESIN
ANCHOR SYSTEM

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



PART ELEVATION SHOWING
BRIDGE ANCHOR SECTION ATTACHMENT

Estimated Quantities		
Item		Total
Curb Blockout	linear foot	294

BRIDGE: ROUTE 60 OVER MNA RR

ROUTE 60 FROM ROUTE 265 TO ROUTE 39
ABOUT 3.3 MILES S.W. OF ROUTE 265
STA. 582+03.82

STD. 606.22

STD. 617.10

Detailed July 2015
Checked July 2015

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

Sheet No. 1 of 3



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
7/21/2015

ROUTE 60 STATE MO

DISTRICT BR SHEET NO. 1

COUNTY LAWRENCE

JOB NO. J7P2220B

CONTRACT ID.

PROJECT NO.

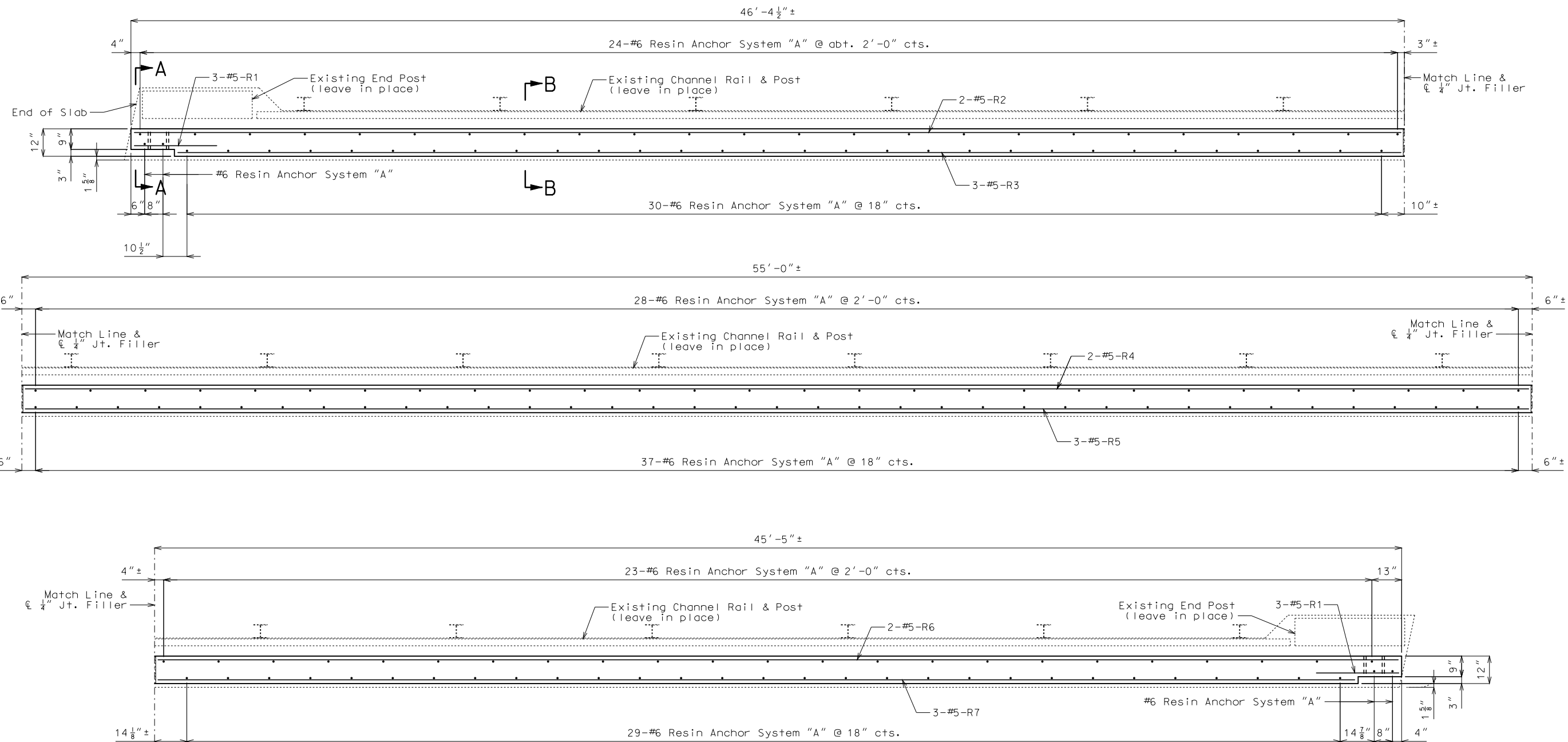
BRIDGE NO. A08721

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITAL
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.



PLAN OF LEFT 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.

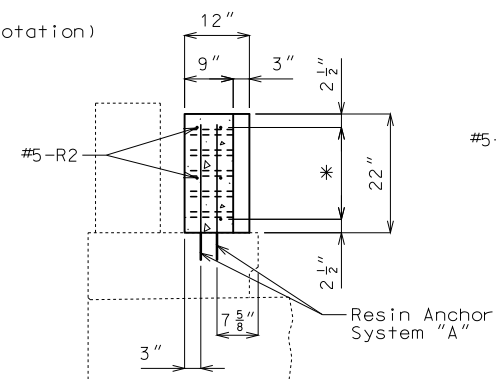
The cost of concrete, reinforcing steel, resin anchor systems and any other work incidental to the curb blockouts, complete in place, will be considered completely covered by the contract unit price for Curb Blockout.

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

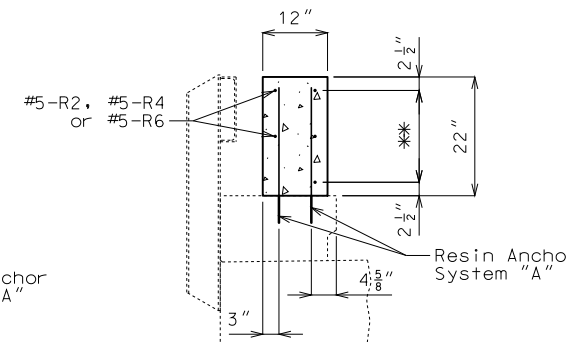
Concrete traffic barrier delineators shall be placed on top of the curb blockout as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Curb Blockout.

* 3-#5-R1 (Equally Spaced)

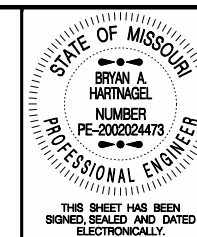
* 3-#5-R3, 3-#5-R5 or 3-#5-R7 (Equally Spaced)



SECTION A-A



SECTION B-B



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
7/16/2015

ROUTE 60 STATE MO

DISTRICT BR SHEET NO. 2

COUNTY LAWRENCE

JOB NO. J7P2220B

CONTRACT ID.

PROJECT NO.

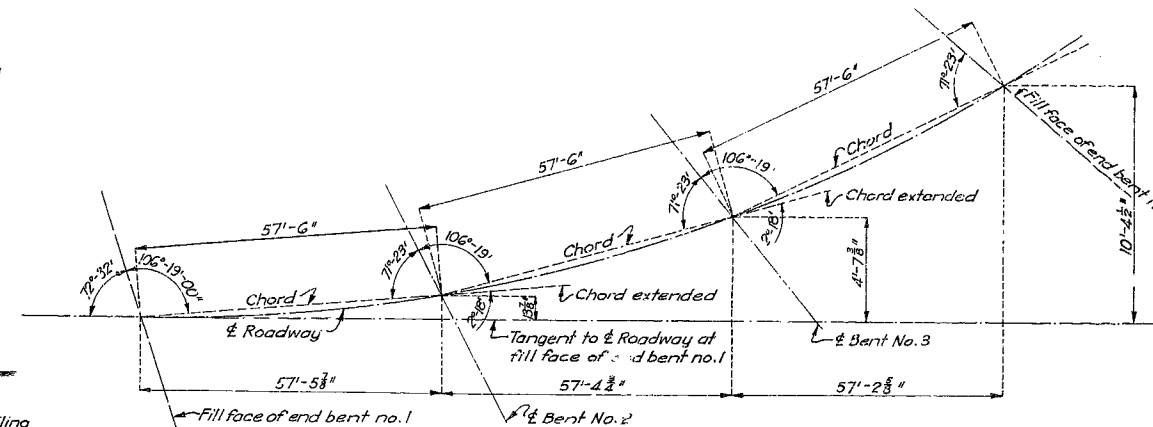
BRIDGE NO. A08721

DESCRIPTION	DATE



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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT. SHEET
5	MO	1611 8313 ST. 141	19		



GENERAL ELEVATION

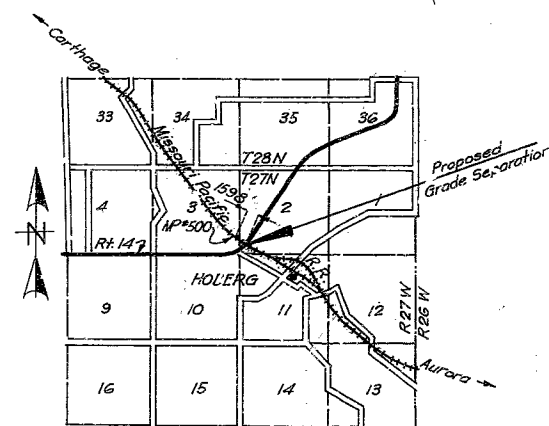
Note: All loose, shelly or disintegrated rock shall be removed and footings for Bent No. 2 placed on hard, solid, undisturbed rock. If soft rock or shale is encountered footings shall be carried 18" into and cast against vertical faces of same.



Design specifications A.A.S.H.O.
Loading H-15 A.A.S.H.O.
Reinforcing Steel Specification 15,000 #10,
Concrete Class "B" 900 #10.
All concrete shall be Class "B".
All rubber compound shall be gray in color.
Qualification of welding operators and electrodes for
welding shown on plans will not be required.

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds	330	330
Class "B" Concrete (handrail)	Cu. Yds.	20.7	20.7
Class "B" Concrete	Cu. Yds.	377.6	347.8
Reinforcing Steel	Lbs.	29970	83880
Phosphor Bronze Bearing Plates	8"x24"(Planged)	12 sets of 5 plates each	175.2
Steel Piles in Place	Lin. Ft.	1790	

Note: All excavation for bridge will be paid for as Class I Excavation for Structures.



4	1139.76 +89-1139.86 +75-1139.87	Left of & Roadway
3	1140.15 +83-1140.18	
2	1140.37	
1	1140.71	
0	1141.15 = 540.387 + 10.6	
1	718-1141.45 1141.67	Right of & Roadway
2	1142.22	
3	1142.71	

PROFILE ON TOP OF SOUTH RAIL

PROFILE ON TOP OF SOUTH RAIL

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

STATE ROAD FROM ROUTE 97 TO MT.VERNON
ABOUT 0.5 MILE NORTH OF HOBERG
PROJECT NO. FAGH 53(3) (RT.14) STA. 586+30.3

SUBMITTED BY *N.R. Lack* DATE *3/28/41*
BRIDGE ENGINEER
APPROVED BY *C.W. Brown* DATE *3/28/41*
CHIEF ENGINEER

Sheet No. 1 of 12

K-947

MISSOURI STATE HIGHWAY DEPARTMENT

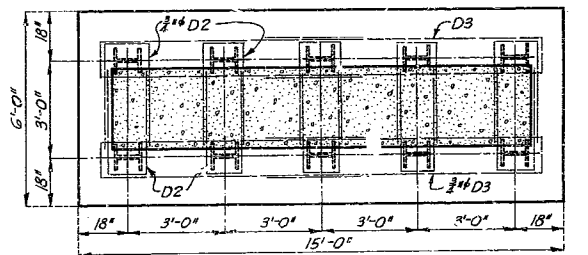
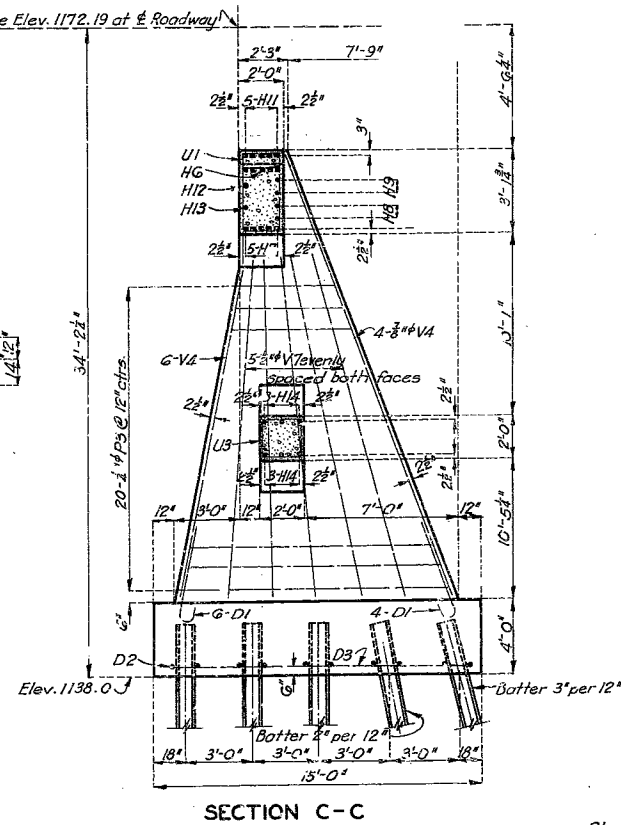
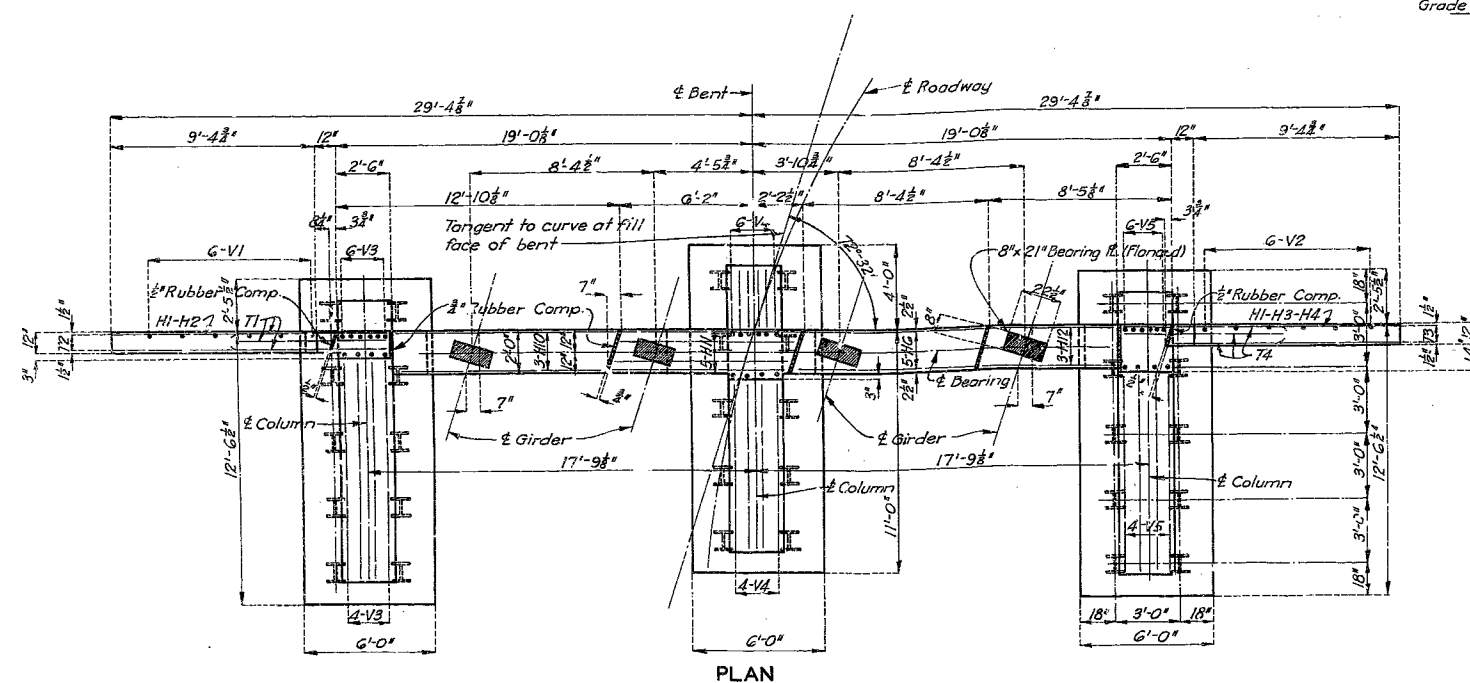
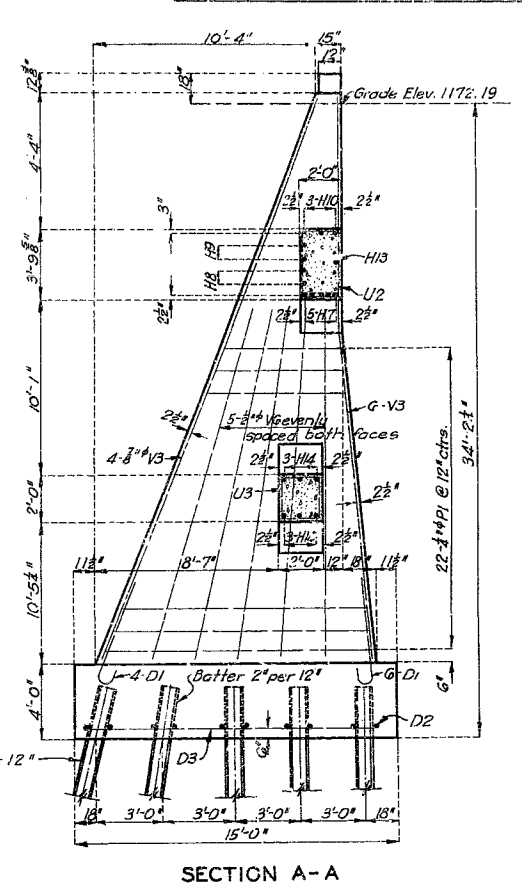
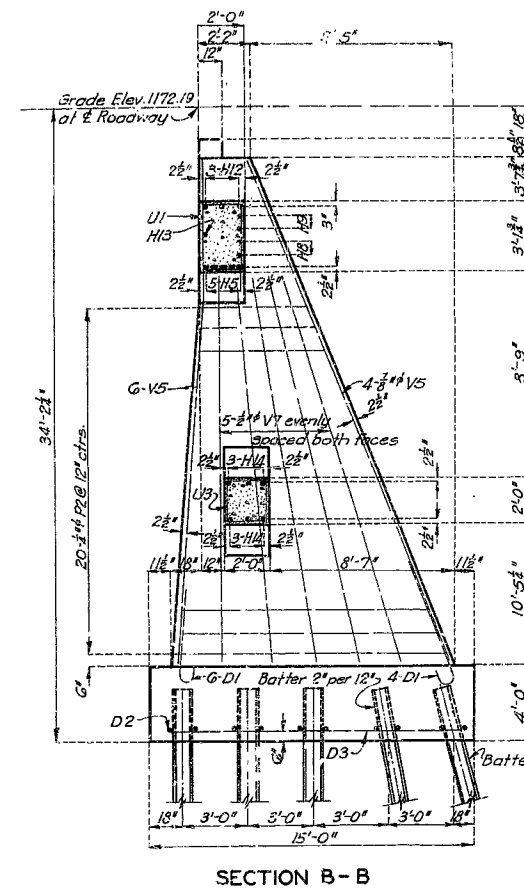
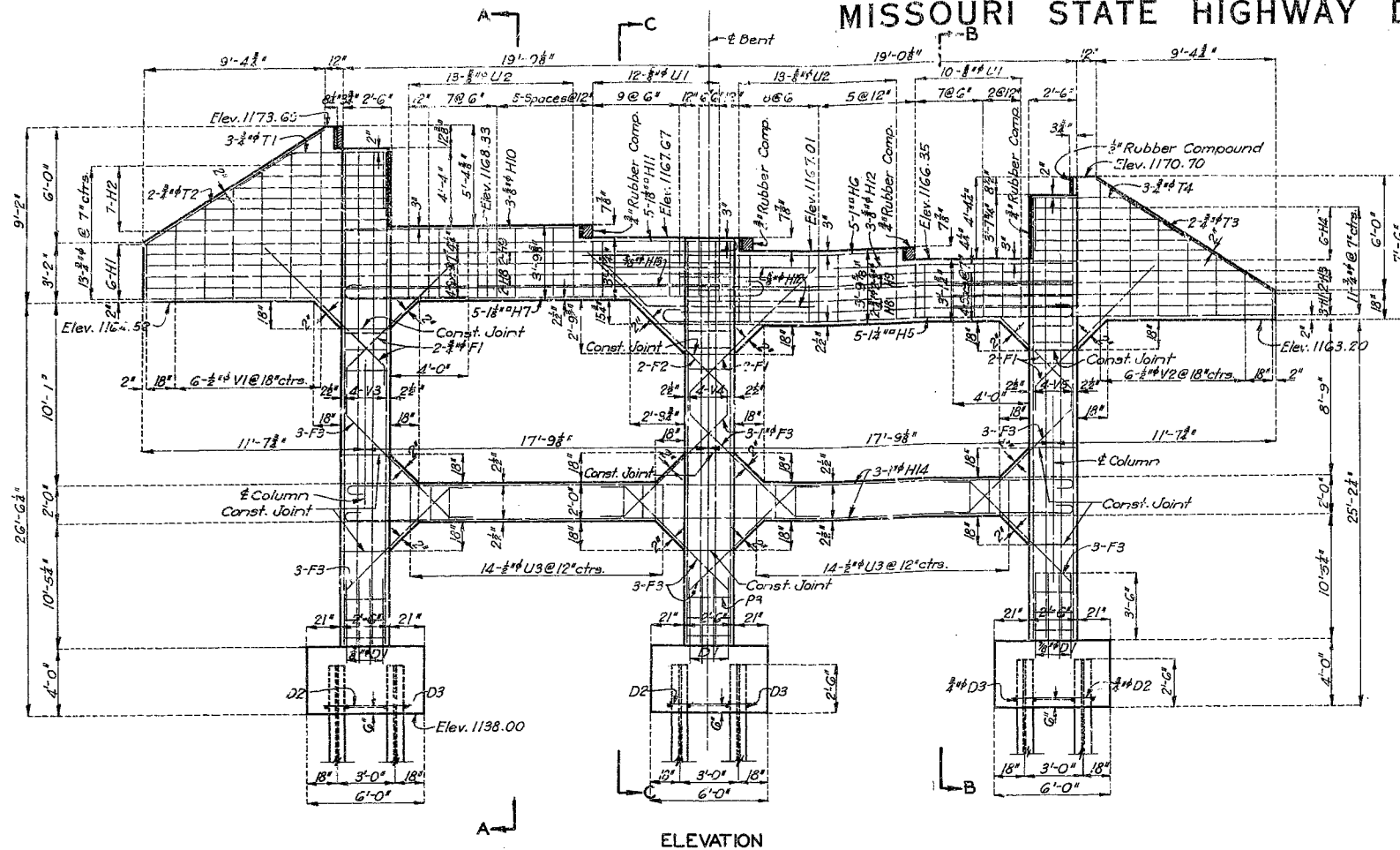
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	PAGH 53(3) (RT.14)	19		

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams	No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams	No.	Size	Length	Mark	Location	Bending Sketches																																																																																																																																																																																																		
Superstructure						End Bents No. 1 & 4						Intermediate Bents No. 2 & 3																																																																																																																																																																																																							
48	1/2"	29'-6"	B1	Girder		30	1/2"	5'-9"	D1	Footing		8	1/2"	11'-0"	D7	Footing		12	1/2"	10'-0"	D5	"	<table><tr><th>Mark</th><th>a</th><th>b</th><th>c</th></tr><tr><td>P7</td><td>2'-8"</td><td>2'-8"</td><td>12"</td></tr><tr><td>U1</td><td>2'-10"</td><td>2'-10"</td><td>13"</td></tr><tr><td>U2</td><td>2'-10"</td><td>3'-6"</td><td>12"</td></tr><tr><td>U3</td><td>2'-10"</td><td>2'-10"</td><td>12"</td></tr><tr><td>U4</td><td>2'-8"</td><td>3'-2"</td><td>14"</td></tr><tr><td>U5</td><td>2'-8"</td><td>3'-10"</td><td>13 1/2"</td></tr><tr><td>U6</td><td>2'-8"</td><td>3'-4"</td><td>13 1/2"</td></tr><tr><td>U7</td><td>2'-8"</td><td>3'-11 1/2"</td><td>13"</td></tr><tr><td>U8</td><td>2'-8"</td><td>4'-1 1/2"</td><td>12 1/2"</td></tr><tr><td>U9</td><td>2'-8"</td><td>2'-8"</td><td>11"</td></tr></table>	Mark	a	b	c	P7	2'-8"	2'-8"	12"	U1	2'-10"	2'-10"	13"	U2	2'-10"	3'-6"	12"	U3	2'-10"	2'-10"	12"	U4	2'-8"	3'-2"	14"	U5	2'-8"	3'-10"	13 1/2"	U6	2'-8"	3'-4"	13 1/2"	U7	2'-8"	3'-11 1/2"	13"	U8	2'-8"	4'-1 1/2"	12 1/2"	U9	2'-8"	2'-8"	11"	16	1/2"	8'-9"	D10	"		16	1/2"	9'-0"	D11	"		24	1/2"	10'-3"	F6	"		28	1/2"	13'-0"	G1	Beam		8	1/2"	15'-0"	G2	"		8	1/2"	3'-6"	G3	"		4	1/2"	28'-9"	G4	"		14	1/2"	25'-0"	G5	"		28	1/2"	9'-0"	G6	"		12	1/2"	24'-3"	G7	Tie Beam		120	1/2"	11'-9"	P7	Column		16	1/2"	10'-9"	P8	"		16	1/2"	27'-0"	P9	"		16	1/2"	15'-6"	P10	"		15	1/2"	17'-6"	P11	"		14	1/2"	13'-0"	U4	Beam		6	1/2"	14'-3"	U5	"		36	1/2"	13'-3"	U6	"		26	1/2"	14'-6"	U7	"		14	1/2"	12'-9"	U8	"		30	1/2"	9'-9"	U9	Tie Beam		6	1/2"	13'-0"	U5	"		4	1/2"	13'-9"	T2	"		4	1/2"	12'-0"	T3	"	
Mark	a	b	c																																																																																																																																																																																																																
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U6	2'-8"	3'-4"	13 1/2"																																																																																																																																																																																																																
U7	2'-8"	3'-11 1/2"	13"																																																																																																																																																																																																																
U8	2'-8"	4'-1 1/2"	12 1/2"																																																																																																																																																																																																																
U9	2'-8"	2'-8"	11"																																																																																																																																																																																																																

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	33(3) (RT. 14)	15		



BRIDGE OVER MO. PAC. R. R.
 STATE ROAD FROM ROUTE 97 TO MT. VERNON
 ABOUT 0.5 MILE NORTH OF HOBERG
 PROJECT NO. FAGH 53 (3) (RT. 14) STA. 586+30.3
LAWRENCE COUNTY

DETAILS OF END BENT NO. 1

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

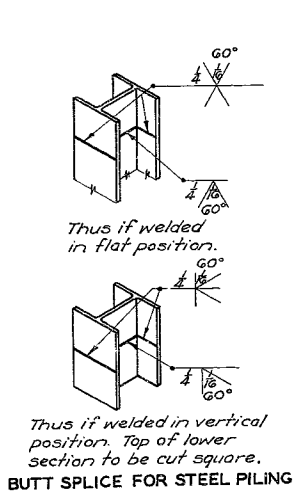
Drawn Feb. 1941 by A.F.K.
 Traced Feb. 1941 by J.T.F.
 Checked Mar. 1941 by H.D.

Sheet No. 3 of 10

K-947

205

206

[illegible][illegible][illegible]

Hand-drawn technical drawing of a rectangular reinforced concrete slab. The drawing shows a grid of reinforcement bars. Top horizontal bars are labeled "3# D5" and "3# D3". Bottom horizontal bars are labeled "3# D5". Vertical bars are labeled "3# D6". The overall dimensions are 18'0" by 18'0". The drawing is on a grid paper background.

BRIDGE OVER MO. PAC. R. R.

LAWRENCE COUNTY

Drawn Mar. 1941 by A.F.K.
Traced Mar. 1941 by G.W.
checked Mar. 1941 by H.D.

PLAN

Note: Tie beam is not shown in plan for sake of clearness.

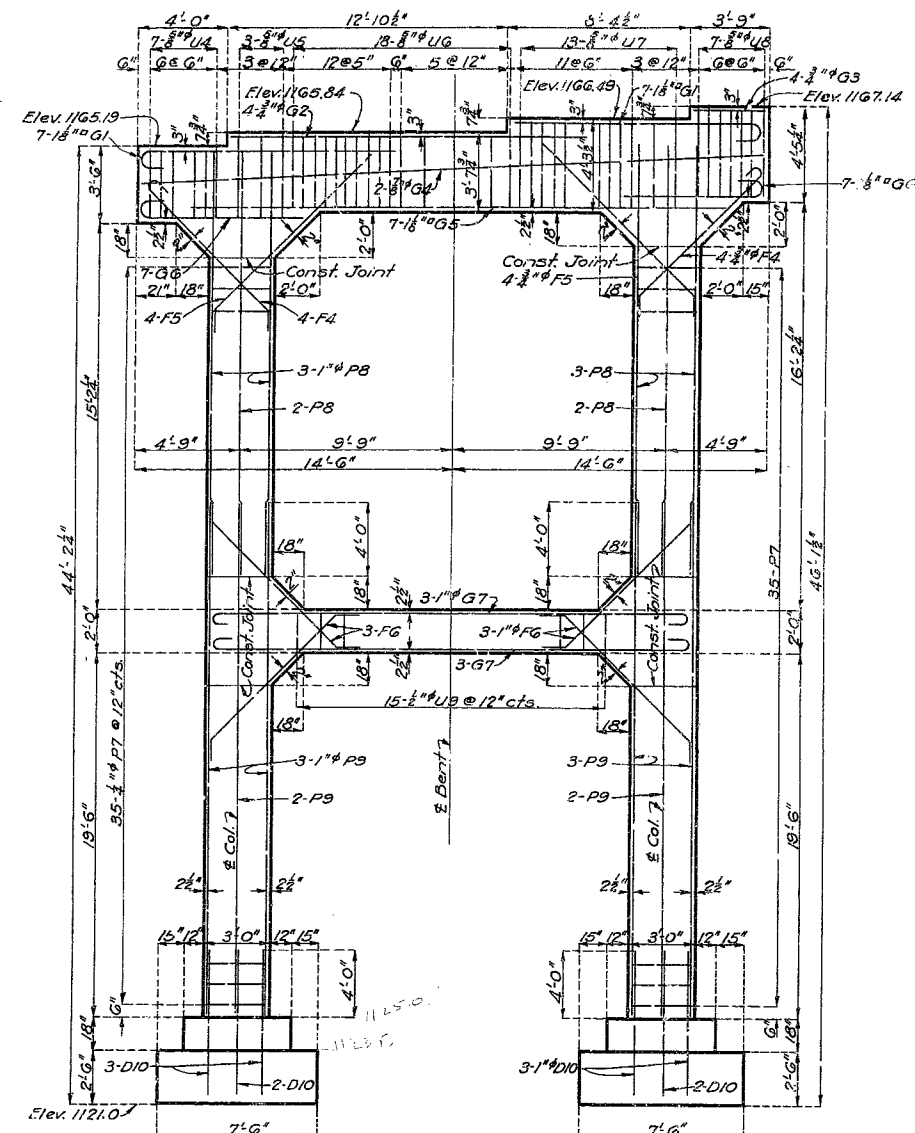
Note. This drawing is not to scale. Follow dimensions.

DETAILS OF TENT NO. 4

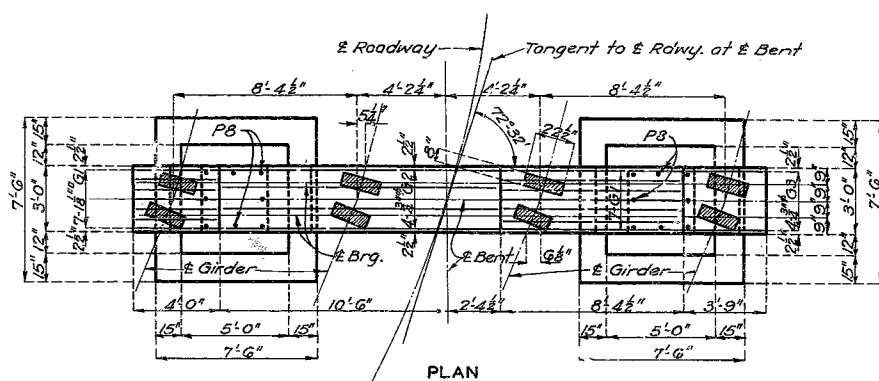
Sheet No 4 of 10.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	PA 53 (3) (RT. 14)	19		

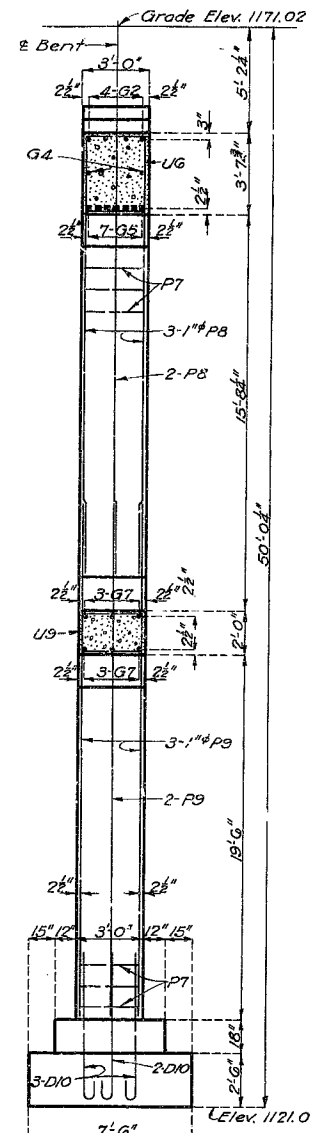


ELEVATION

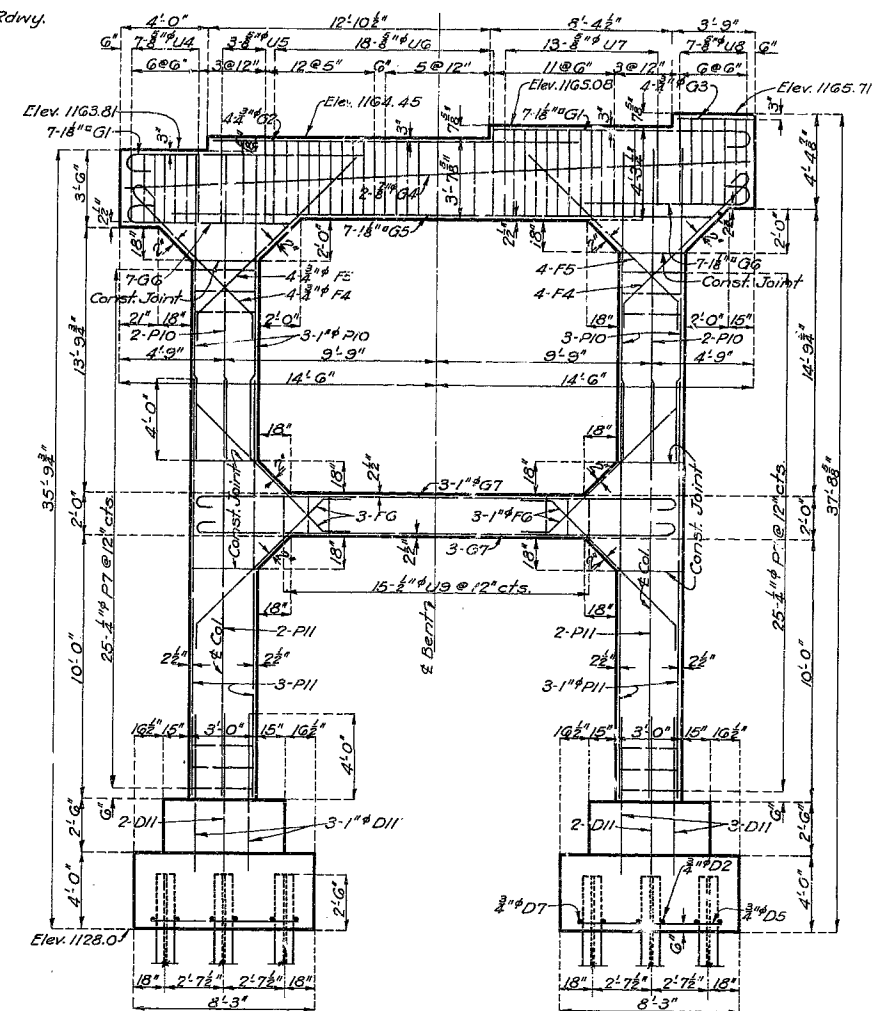


PLAN

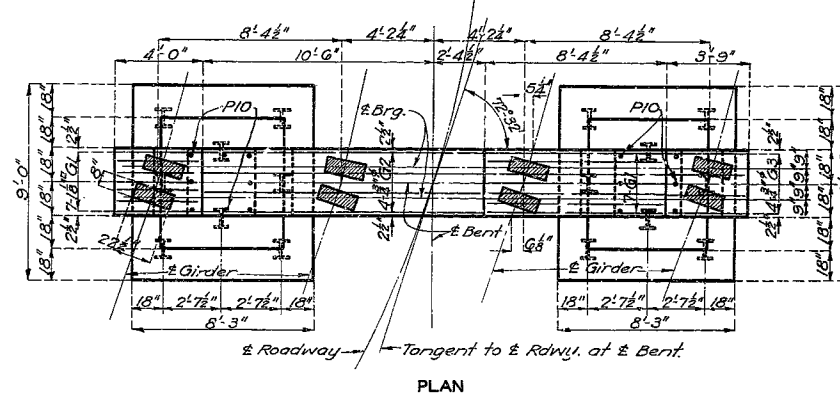
DETAILS OF INTERMEDIATE BENT NO. 2



SECTION AT E

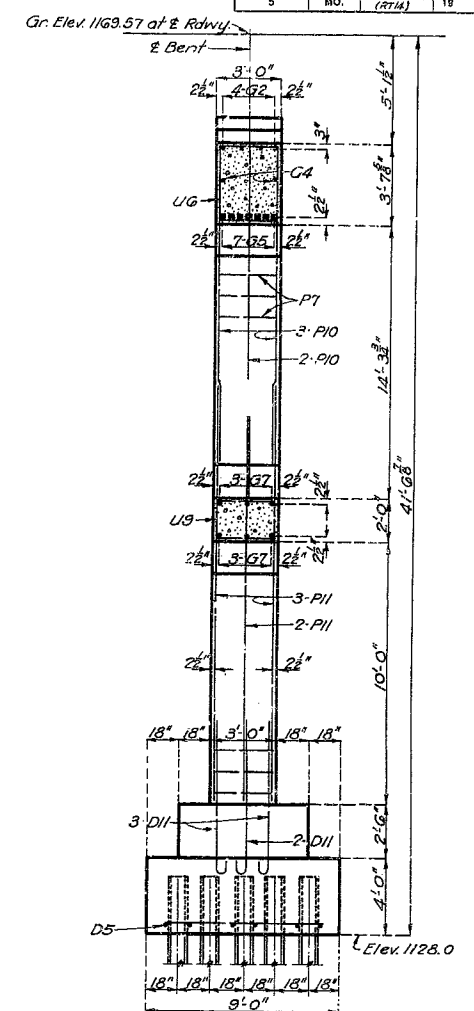


ELEVATION

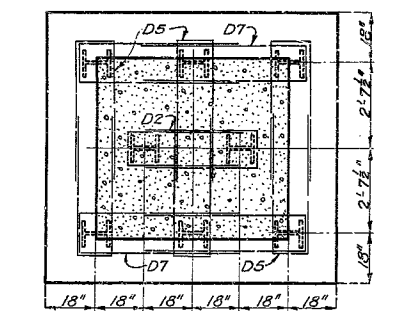


PLAN

DETAILS OF INTERMEDIATE BENT NO. 3



SECTION AT E



PLAN OF FOOTING SHOWING REINFORCEMENT

BRIDGE OVER MO. PAC. R. R.

STATE ROAD FROM ROUTE 97 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF HOBURG
PROJECT NO. FAGH 53 (3) (RT. 14) STA. 586+30.3

LAWRENCE COUNTY

Drawn Mar. 1941 by A.F.K.
Traced Mar. 1941 by G.W.
Checked Mar. 1941 by H.D.

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

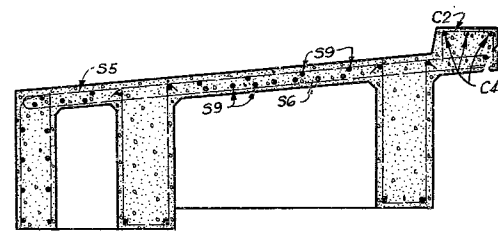
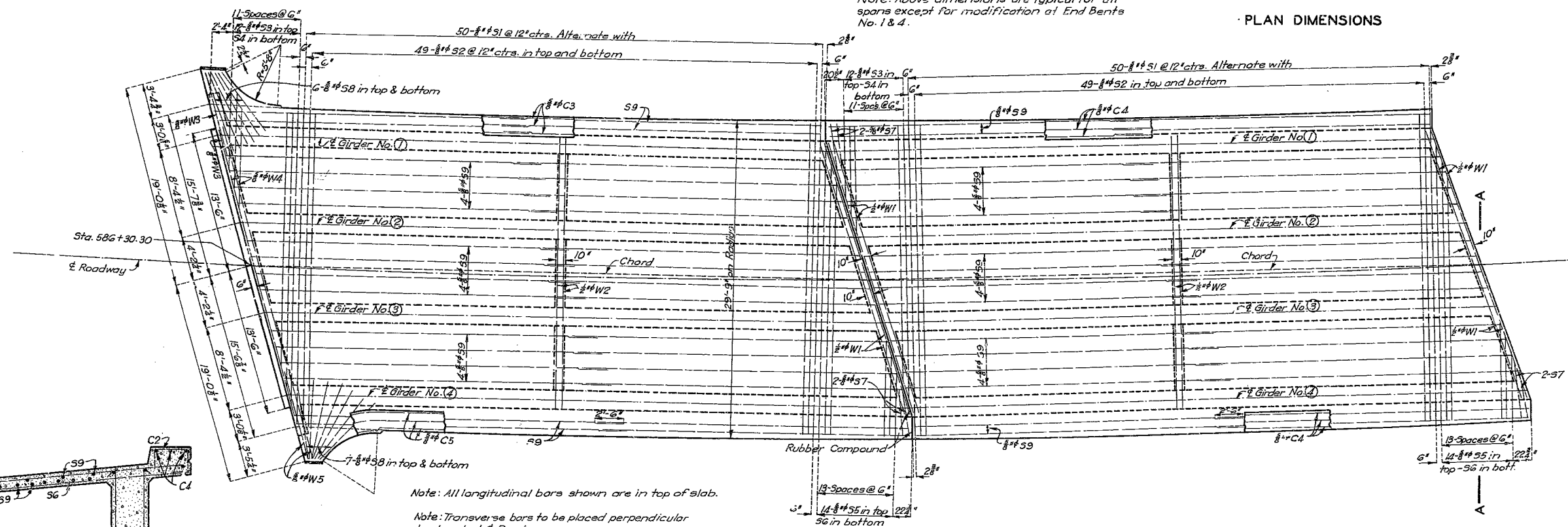
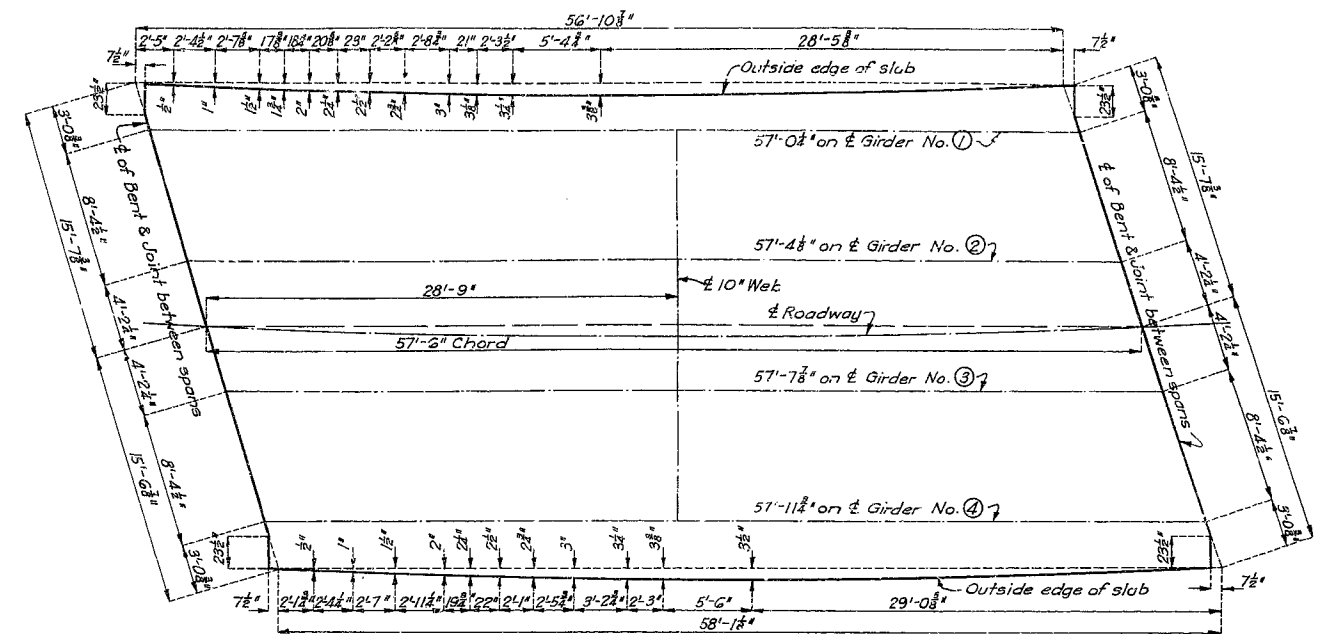
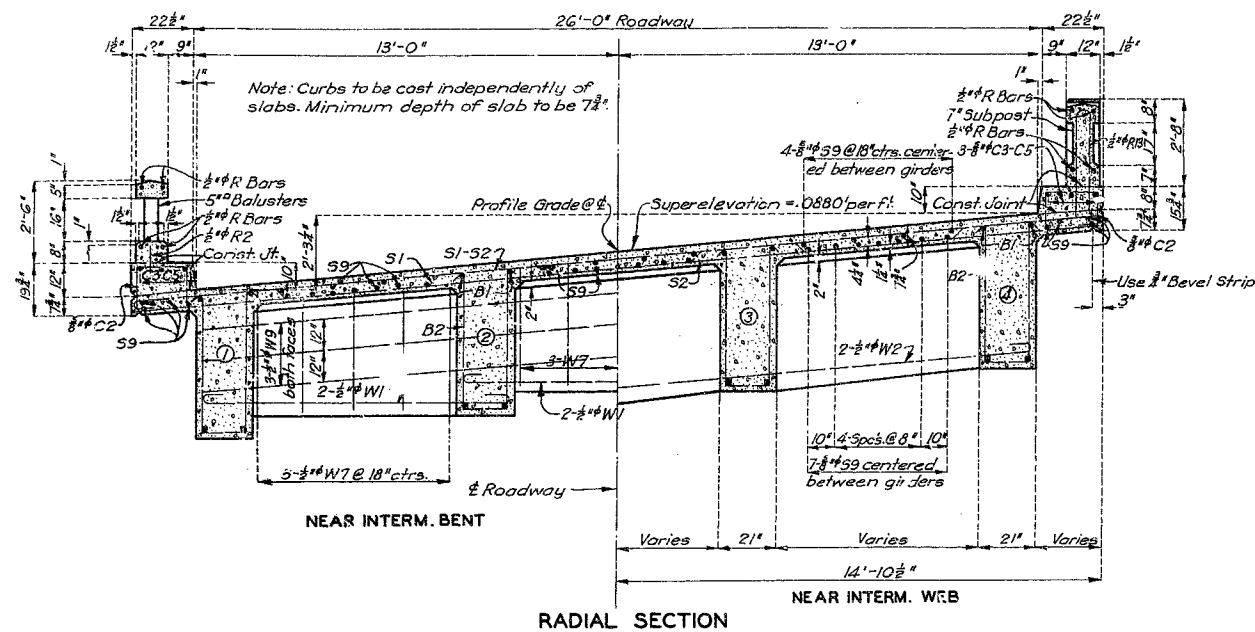
Sheet No. 5 of 10.

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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.	Page 53 (RT. 14)	19		



BRIDGE OVER MO. PAC. R. R.
STATE ROAD FROM ROUTE 97 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF HOSEB
PROJECT NO. FAGH 53 (3) (RT. 14) STA. 586+30.3
LAWRENCE COUNTY

Drawn Jan. 1941 by A. J. B.
Traced Jan. 1941 by J. T. F.
Checked Mar. 1941 by H. D.

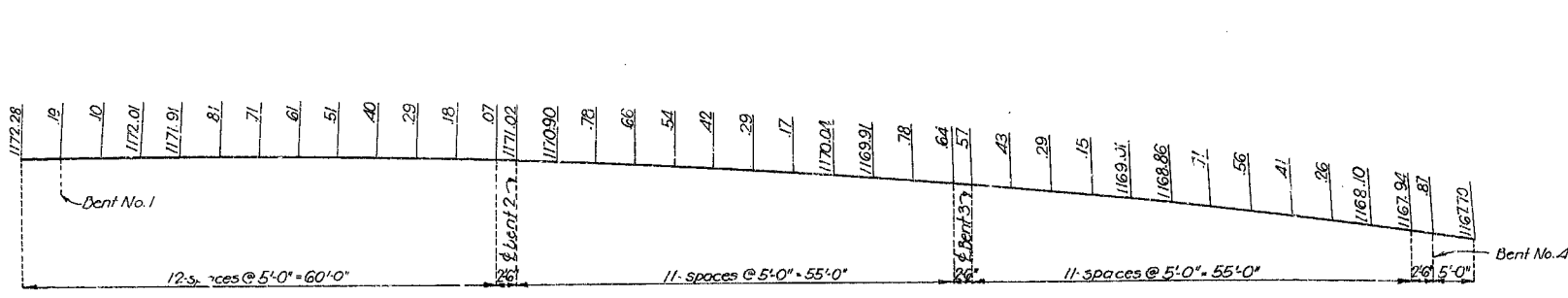
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 10.

K-947

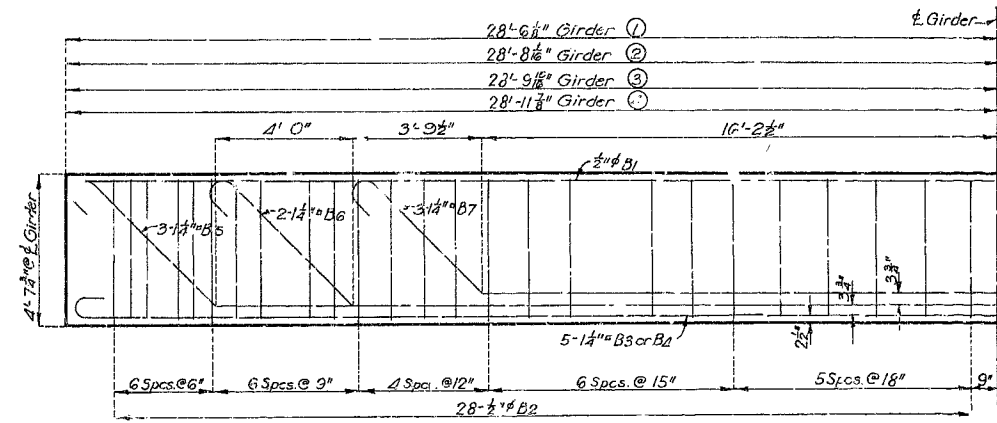
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	Proj. 53(3) (RT. 14)	19		

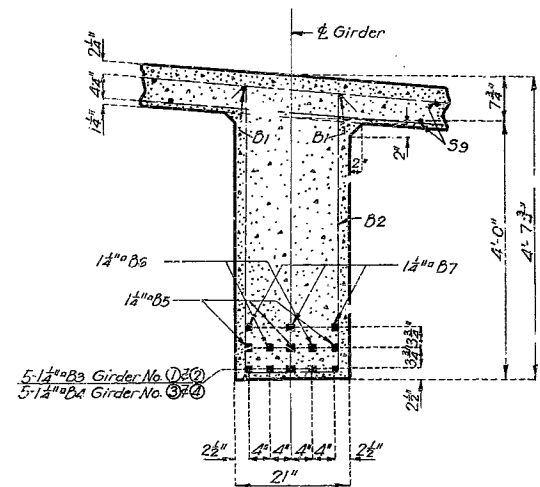
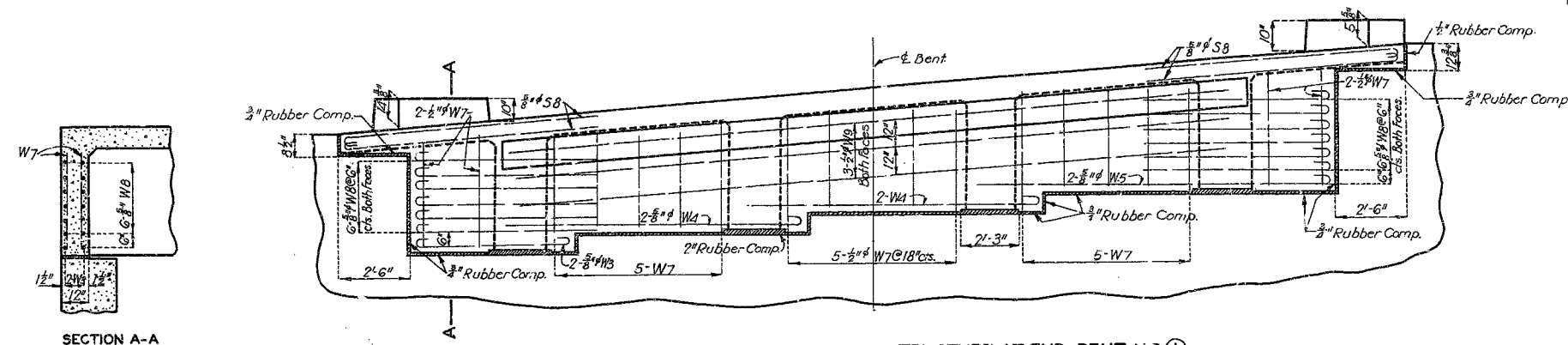


GRADE ELEVATION AT ROADWAY

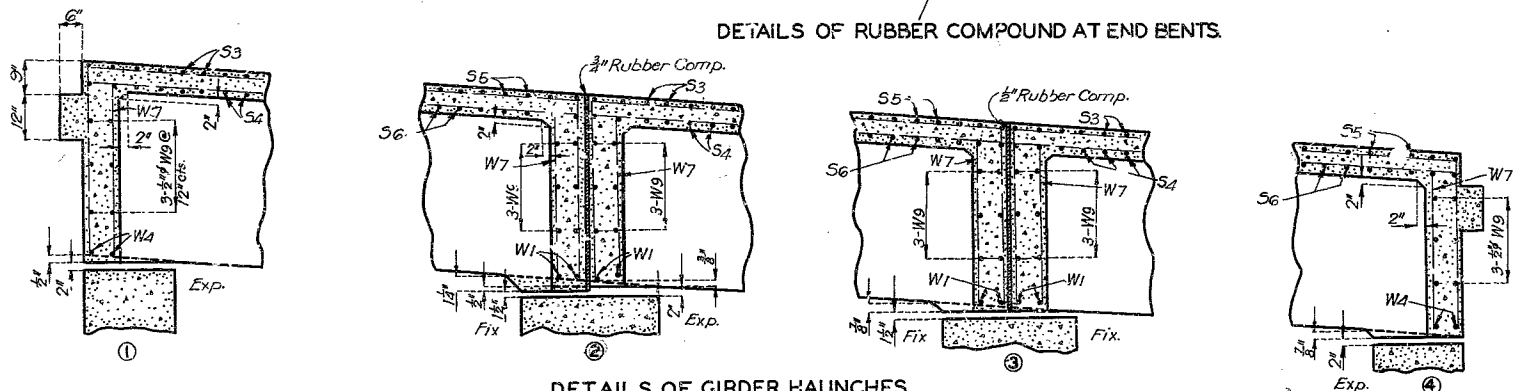
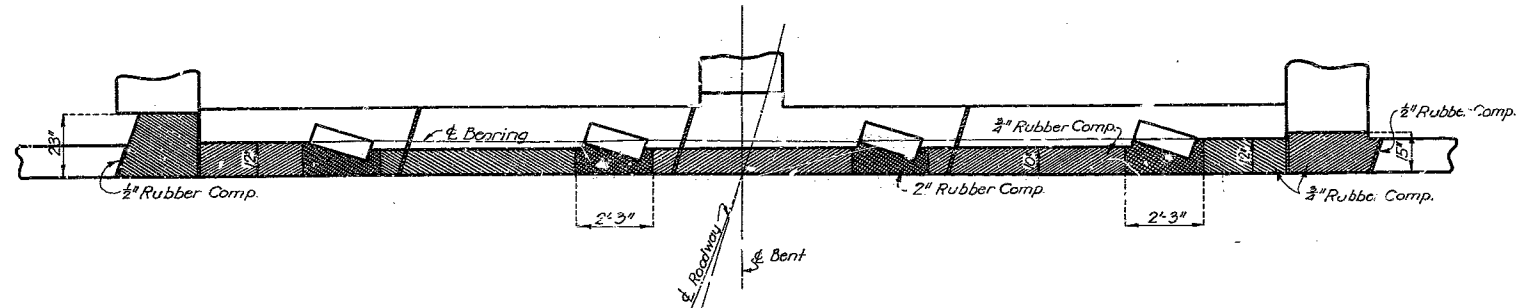
Note: Top of curb at flared corners to be built parallel to grade.



GIRDER REINFORCEMENT



RADIAL SECTION THRU GIRDER



BRIDGE OVER MO. PAC. R.R.
STATE ROAD FROM ROUTE 97 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF HOBERG
PROJECT NO. FAGH 53 (3) (RT. 14) STA. 586+30.3
LAWRENCE COUNTY

Drawn Feb. 1941 by AFK.
Traced Feb. 1941 by CWS
Checked Mar. 1941 by H.D.

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

Sheet No. 7 of 10

K-947

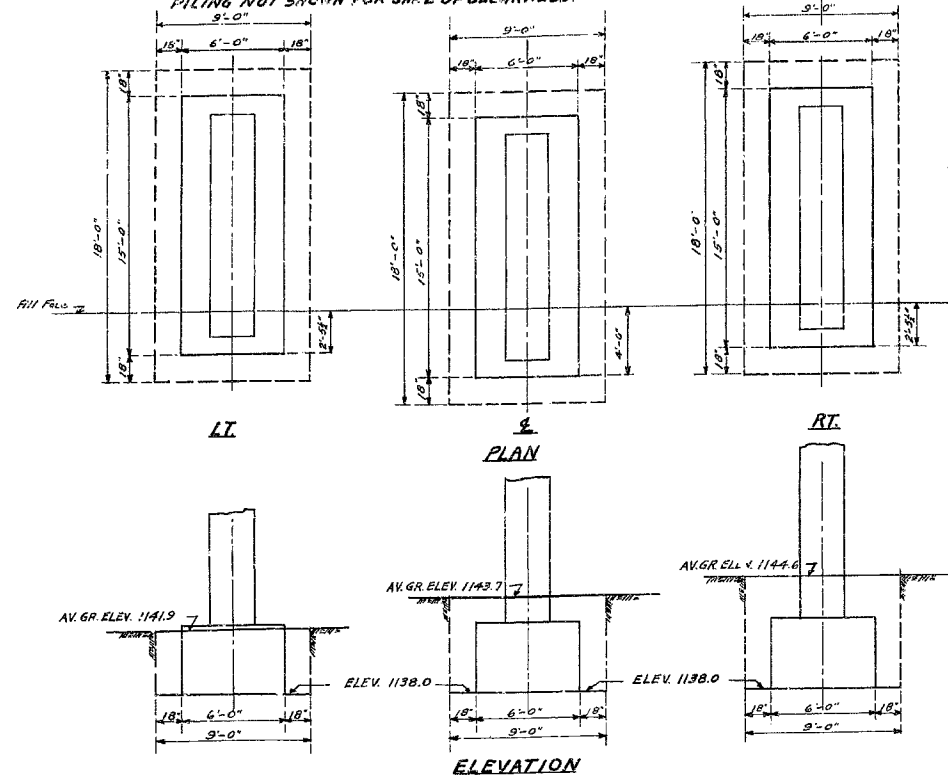
602

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	FAGH 53(3)	19		

BENT NO. 1

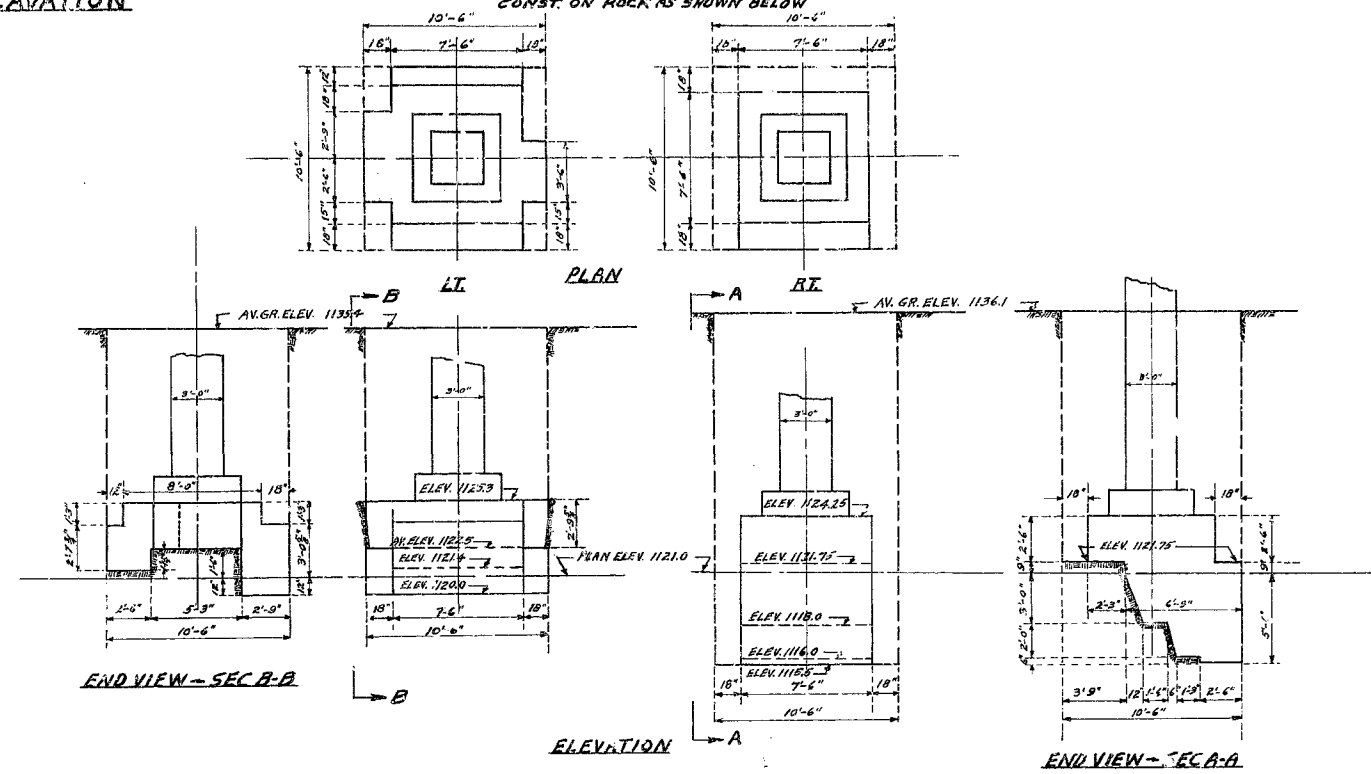
CONST. AS PLANS ON H-BM. PILING
PILING NOT SHOWN FOR SAKE OF CLEARNESS.



BRIDGE EXCAVATION

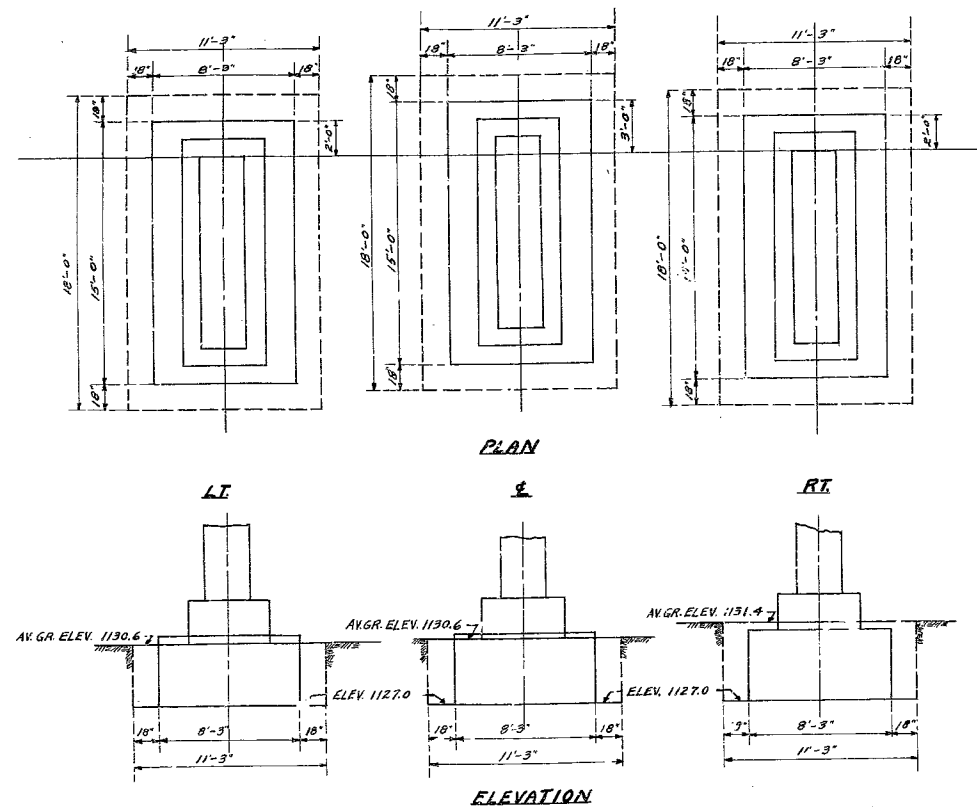
BENT NO. 2

CONST. ON ROCK AS SHOWN BELOW



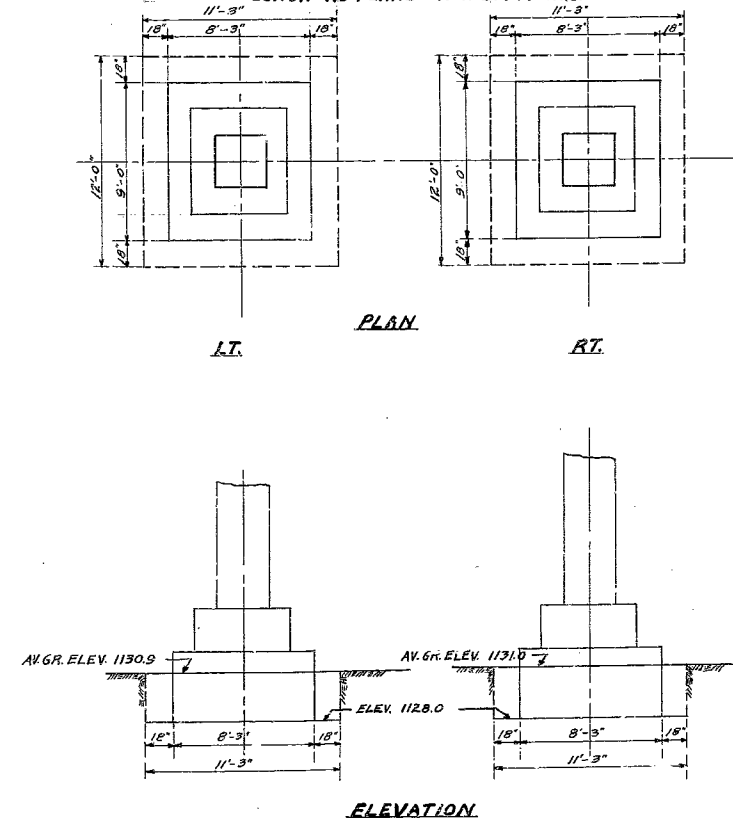
BENT NO. 4

CONST. AS PLANS ON H-BM. PILING



BENT NO. 3

CONST. AS PLANS ON H-BM. PILING



BRIDGE OVER MO. PAC. R.R.

STATE ROAD FROM ROUTE 97 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF HOBERG
PROJECT NO. FAGH 53(3)(RT.14) STA. 586+30.3

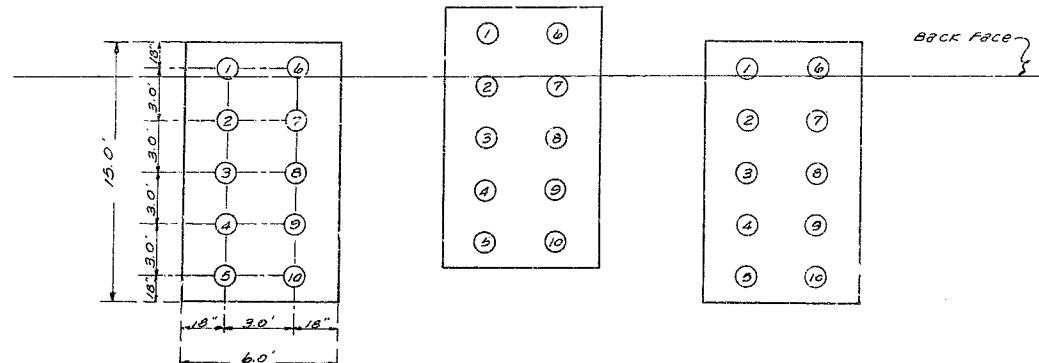
LAWRENCE COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

10" W.F. BEAM PILING

FED. ROAD DIST. NO.	STATE MO.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	PA 53 (3)	1942		

BENT NO 1

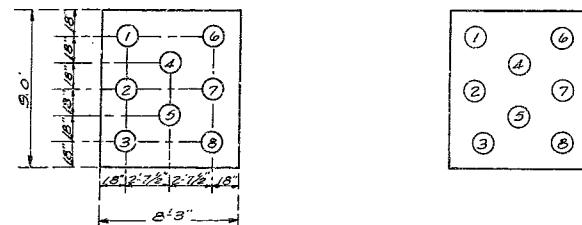


BENT NO 2

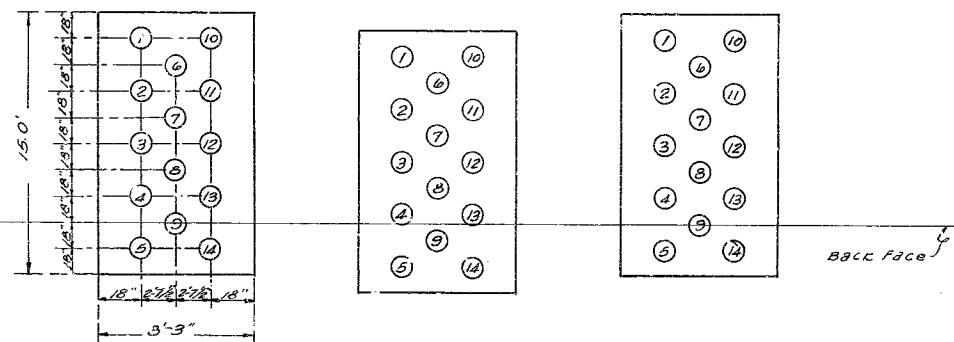
SEE SPECIAL SHEET NO. 90F10



BENT NO 3



BENT NO 4



BENT NO.	FOOTING NO.	PILING NO.	SPLICES	LENGTH PILING	TOTAL LENGTH	CUTOFF	IN PLACE	PAY LENGTH	BEARING TONS.
1	1st	1	0	16'-3"	16'-3"	1'-11"	14'-4"	14'	71.2
1	2d	2	0	16'-3"	16'-3"	2'-0"	14'-3"	14'	69.1
1	3d	3	0	26'-11"	26'-11"	12'-0"	14'-11"	15'	69.8
1	4d	4	0	18'-4"	18'-4"	1'-9"	16'-7"	17'	64.2
1	5d	5	22'-0"	25'-0"	47'-0"	15'-5"	31'-7"	32'	64.2
1	6d	6	0	15'-1"	15'-1"	0'-5"	14'-8"	15'	71.9
1	7d	7	0	16'-3"	16'-3"	1'-6"	14'-9"	15'	71.2
1	8d	8	0	16'-3"	16'-3"	1'-7"	14'-8"	15'	68.5
1	9d	9	28'-9"	18'-7"	47'-4"	22'-0"	25'-4"	25'	66.7
1	10d	10	0	24'-11"	24'-11"	6'-10"	18'-1"	18'	64.2
1	11 Ctr	1	0	32'-7"	32'-7"	18'-7"	14'-0"	14'	69.1
1	12 Ctr	2	0	32'-6"	32'-6"	17'-6"	15'-0"	15'	71.2
1	13 Ctr	3	32'-6"	22'-11"	55'-5"	28'-9"	26'-8"	27'	69.8
1	14 Ctr	4	0	32'-7"	32'-7"	16'-7"	16'-0"	16'	Refusal
1	15 Ctr	5	0	16'-1"	16'-1"	0	16'-1"	16'	66.1
1	16 Ctr	6	0	32'-7"	32'-7"	18'-4"	14'-3"	14'	69.8
1	17 Ctr	7	20'-0"	32'-6"	52'-6"	0'-4"	32'-2"	32'	66.0
1	18 Ctr	8	0	32'-6"	32'-6"	16'-9"	15'-9"	16'	69.1
1	19 Ctr	9	0	14'-9"	14'-9"	0'-9"	16'-0"	16'	68.7
1	20 Ctr	10	0	14'-7"	14'-7"	0	16'-7"	17'	63.6
1	21 Lt	1	0	32'-6"	32'-6"	16'-4"	16'-2"	16'	71.9
1	22 Lt	2	0	32'-7"	32'-7"	16'-1"	16'-6"	17'	71.9
1	23 Lt	3	0	16'-4"	16'-4"	0	16'-4"	16'	71.9
1	24 Lt	4	0	16'-3"	16'-3"	0	16'-3"	16'	68.7
1	25 Lt	5	0	20'-0"	20'-0"	2'-7"	17'-5"	17'	65.5
1	26 Lt	6	0	32'-6"	32'-6"	16'-7"	15'-11"	16'	71.9
1	27 Lt	7	0	32'-6"	32'-6"	16'-3"	16'-3"	16'	71.9
1	28 Lt	8	0	16'-7"	16'-7"	0	16'-7"	17'	72.2
1	29 Lt	9	0	17'-6"	17'-6"	0	17'-6"	18'	68.7
1	30 Lt	10	0	20'-1"	20'-1"	2'-5"	17'-8"	18"	64.2
3	31st	1	0	21'-8"	21'-8"	1'-5"	20'-3"	20'	71.9
3	32d	2	0	21'-8"	21'-8"	1'-1"	20'-4"	20'	71.9
3	33d	3	0	21'-9"	21'-9"	1'-5"	20'-4"	20'	71.9
3	34d	4	0	21'-8"	21'-8"	1'-4"	20'-4"	20'	Refusal
3	35d	5	0	20'-0"	20'-0"	0	20'-0"	20'	72.2
3	36d	6	0	21'-8"	21'-8"	1'-3"	20'-5"	20'	71.9
3	37d	7	0	21'-8"	21'-8"	1'-3"	20'-5"	20'	71.2
3	38d	8	0	21'-9"	21'-9"	1'-4"	20'-5"	20'	71.9
3	39 Lt	1	0	20'-1"	20'-1"	3'-8"	16'-5"	16'	71.2
3	40 Lt	2	0	20'-0"	20'-0"	3'-4"	16'-8"	17'	69.8
3	41 Lt	3	0	20'-2"	20'-2"	0	20'-2"	20'	72.2
3	42 Lt	4	0	20'-0"	20'-0"	3'-4"	16'-8"	17'	71.9
3	43 Lt	5	0	20'-0"	20'-0"	3'-9"	16'-8"	17'	71.2
3	44 Lt	6	0	20'-1"	20'-1"	3'-6"	16'-7"	17'	69.1
3	45 Lt	7	0	20'-0"	20'-0"	2'-11"	17'-1"	17'	69.8
3	46 Lt	8	0	20'-1"	20'-1"	0	20'-1"	20'	71.2
4	47d	1	20'-0"	25'-0"	45'-0"	1'-7"	43'-5"	43'	63.5
4	48d	2	20'-0"	25'-0"	45'-0"	2'-7"	42'-5"	42'	66.7
4	49d	3	0	21'-8"	21'-8"	1'-0"	20'-8"	21'	71.2
4	50d	4	0	21'-8"	21'-8"	1'-4"	20'-4"	20'	71.9
4	51d	5	0	21'-8"	21'-8"	3'-10"	17'-10"	18'	71.2
4	52d	6	20'-0"	25'-0"	45'-0"	4'-0"	41'-0"	41'	66.7
4	53d	7	29'-0"	21'-8"	50'-8"	7'-8"	43'-0"	43'	68.5
4	54d	8	0	25'-0"	25'-0"	4'-5"	20'-7"	21'	71.9
4	55d	9	0	21'-9"	21'-9"	1'-5"	20'-4"	20'	71.9
4	56 Lt	10	20'-0"	25'-0"	45'-0"	3'-2"	41'-10"	42'	64.1
4	57 Lt	11	13'-0"	25'-0"	38'-0"	6'-10"	41'-2"	41'	66.7
4	58 Lt	12	20'-0"	21'-9"	41'-9"	1'-0"	40'-9"	41'	71.9
4	59 Lt	13	0	21'-8"	21'-8"	1'-1"	20'-7"	21'	72.2
4	60 Lt	14	0	21'-8"	21'-8"	1'-0"	20'-8"	21'	71.2
4	61 Ctr	1	0	32'-6"	32'-6"	1'-10"	30'-8"	31'	64.5
4	62 Ctr	2	9'-10"	32'-6"	42'-4"	0'-10"	41'-6"	42'	66.7
4	63 Ctr	3	7'-6"	32'-6"	40'-0"	0'-10"	39'-2"	39'	69.8
4	64 Ctr	4	13'-1"	32'-6"	47'-7"	8'-5"	39'-2"	39'	69.8
4	65 Ctr	5	12'-0"	32'-6"	44'-6"	5'-4"	39'-2"	39'	71.2
4	66 Ctr	6	0	32'-6"	32'-6"	2'-7"	30'-5"	30'	66.7
4	67 Ctr	7	15'-5"	25'-0"	40'-5"	1'-1"	39'-4"	39'	71.2
4	68 Ctr	8	21'-8"	25'-0"	46'-8"	7'-6"	39'-2"	39'	71.2
4	69 Ctr	9	15'-1"	32'-6"	47'-7"	8'-5"	39'-2"	39'	71.9
4	70 Ctr	10	0	32'-6"	32'-6"	9'-10"	22'-8"	23'	64.1
4	71 Ctr	11	0	32'-6"	32'-6"	3'-1"	30'-5"	30'	66.7
4	72 Ctr	12	7'-7"	32'-6"	40'-1"	0'-7"	39'-6"	39'	71.2
4	73 Ctr	13	8'-5"	32'-6"	40'-11"	0'-4"	40'-7"	41'	69.8
4	74 Ctr	14	8'-5"	32'-6"	40'-11"	0'-6"	40'-5"	40'	69.1

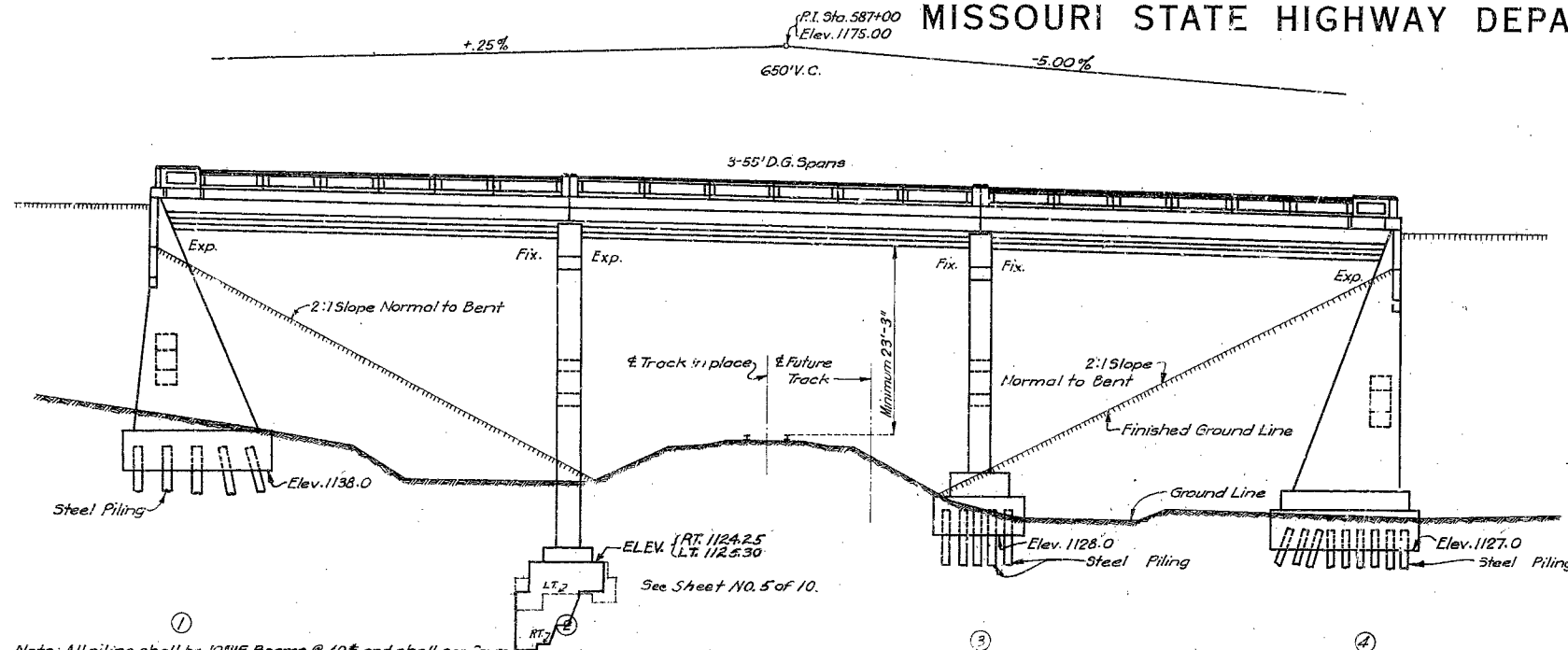
BENT NO.	FOOTING NO.	PILING NO.	SPLICES	LENGTH PILING	TOTAL LENGTH	CUTOFF	INPLACE	PAY LENGTH	BEARING TONS
4	48	1	9'-8"	25'-0"	34'-8"	3'-7"	31'-1"	31'	65.4
4	48	2	0	25'-0"	25'-0"	1'-8"	23'-4"	23'	64.7
4	48	3	0	21'-8"	21'-8"	1'-1"	20'-7"	21'	71.2
4	48	4	16'-3"	21'-9"	38'-0"	8'-11"	29'-1"	29'	71.2
4	48	5	0	21'-8"	21'-8"	0	21'-8"	22'	69.8
4	48	6	16'-4"	25'-0"	41'-4"	12'-8"	28'-8"	29'	69.8
4	48	7	0	21'-8"	21'-8"	0	21'-8"	22'	69.8
4	48	8	0	25'-0"	25'-0"	3'-9"	21'-3"	21'	71.5
4	48	9	0	21'-8"	21'-8"	0	21'-8"	22'	69.8
4	48	10	0	25'-0"	25'-0"	4'-0"	21'-0"	21'	65.4
4	48	11	2'-0"	25'-0"	27'-0"	0	27'-0"	27'	71.2
4	48	12	3'-11"	21'-9"	30'-8"	2'-3"	28'-5"	28'	69.8
4	48	13	16'-3"	21'-9"	38'-0"	9'-8"	28'-4"	28'	69.1
4	48	14	1'-11"	21'-8"	23'-7"	0	23'-7"	24'	69.1
TOTAL								2144'	

BRIDGE OVER MO. PAC. R.R.
STATE ROAD FROM RT. 97 TO MEYERSON
ABOUT 0.5 MILE NORTH OF HOBERG
PROJECT NO. 16H53(3) RT. 14 STA. 586+30.3
LAWRENCE COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLANS

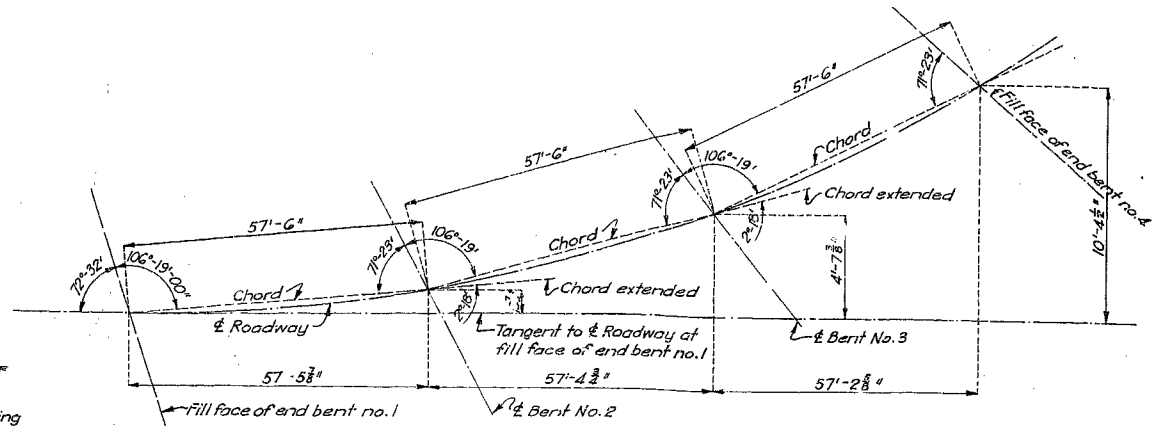
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	FAH 53(3) (RT. 14)	19		



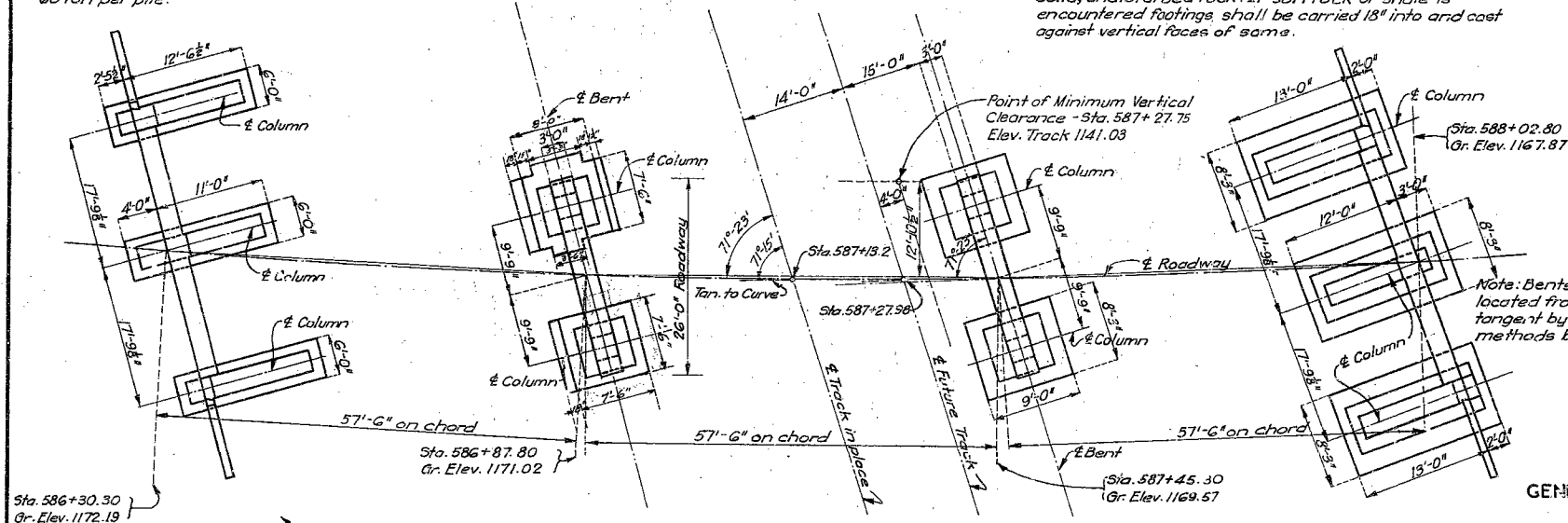
GENERAL ELEVATION

Note: All piling shall be 10" WF Beams @ 49' and shall conform to details and notes on Sheet No. 4 of design plans. All piles shall be driven to sustain a load of not less than 60 tons per pile.

Note: All loose, shelly or disintegrated rock shall be removed and footings for Bent No. 2 placed on hard, solid, undisturbed rock. If soft rock or shale is encountered footings shall be carried 18" into and cast against vertical faces of same.



LAYOUT ANGLES FOR BENTS & ROADWAY



PLAN

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds.	329.5	329.5
Class "B" Concrete (Handrail)	Cu. Yds.	20.7	20.7
Class "B" Concrete	Cu. Yds.	392.1	733.9
Reinforcing Steel	Lbs.	29970	83880
Phosphor Bronze Bearing Plates	8"x21"(Flanged) 12 sets of 5 plates each		
Steel Piles in Place	Lin. Ft.	2144	2144
Additional Class I Excavation	Cu. Yds.	12.0	12.0
Test Holes	Lin. Ft.	57.0	57.0

Note: All excavation for bridge will be paid for as Class I Excavation for Structures.

GENERAL NOTES:

Design Specifications A.A.S.H.O.
Loading H-15 A.A.S.H.O.
Reinforcing Steel Stress 18,000 #/sq.
Concrete Class "B" 900 #/sq.
All concrete shall be Class "B".
All rubber compound shall be gray in color.
Qualification of welding operators and electrodes for welding shown on plans will not be required.

BM. Elev. 1141.73 on SW corner conc. base R.R. Xing Sign
57' Rt. Sta. 587+20.

BRIDGE OVER MO. PAC. R.R. FINISHED

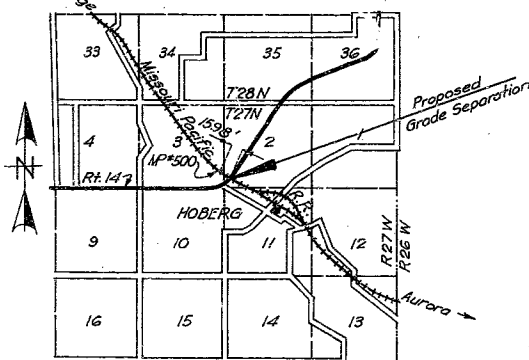
STATE ROAD FROM ROUTE 97 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF HOBERG
PROJECT NO. FAH 53(3) (RT. 14) STA. 586+30.3

LAWRENCE COUNTY

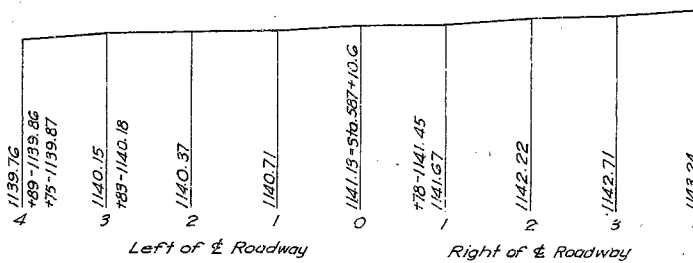
SUBMITTED BY *N.R. Lark* DATE 3/28/41
APPROVED BY *C.W. Brown* DATE 3/28/41
BRIDGE ENGINEER CHIEF ENGINEER

FINAL PLANS

K-947



LOCATION SKETCH
Scale 1"=5280'



PROFILE ON TOP OF SOUTH RAIL

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

18 of 10
Sheet No. 78-10

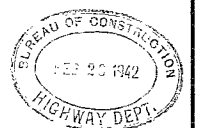
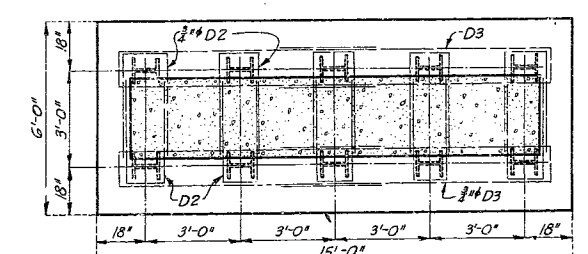
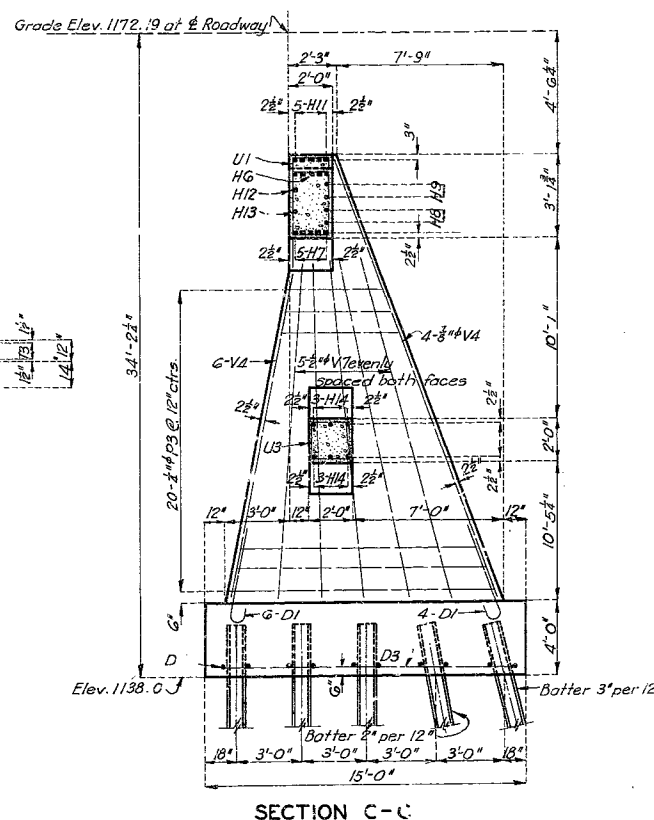
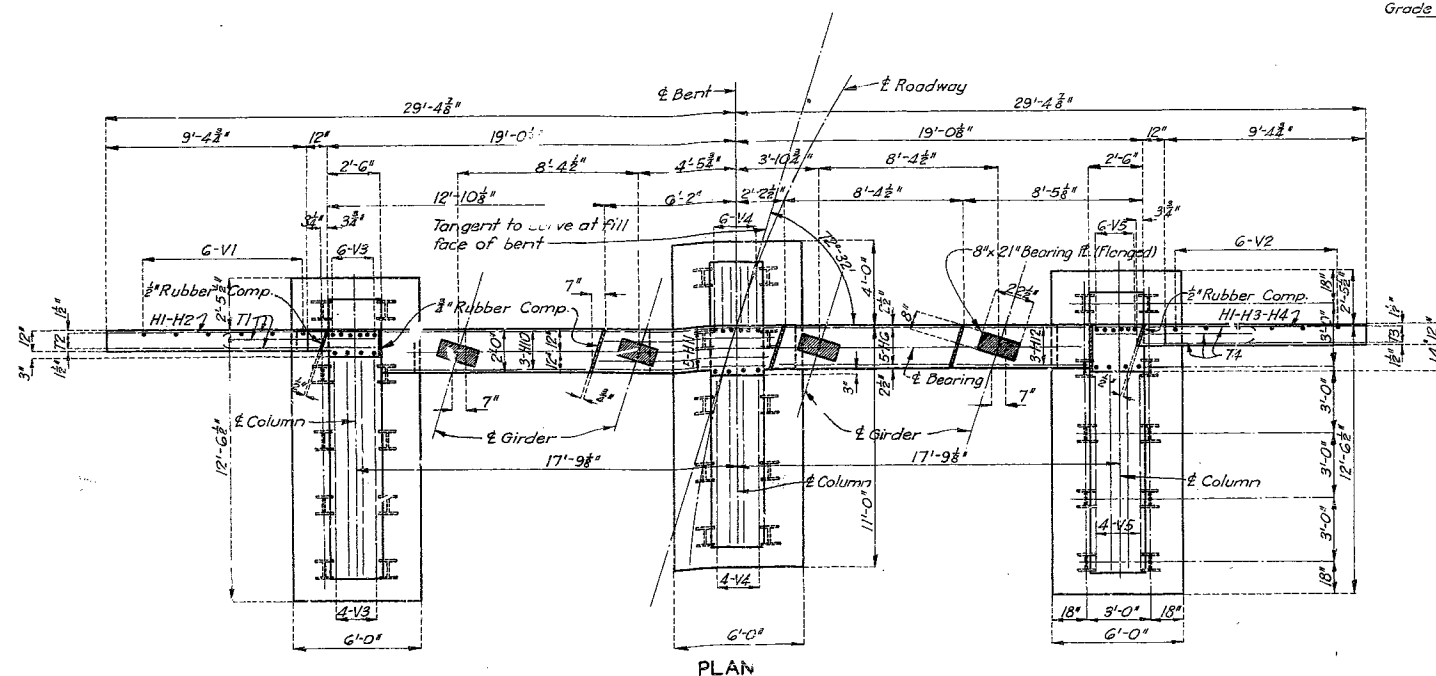
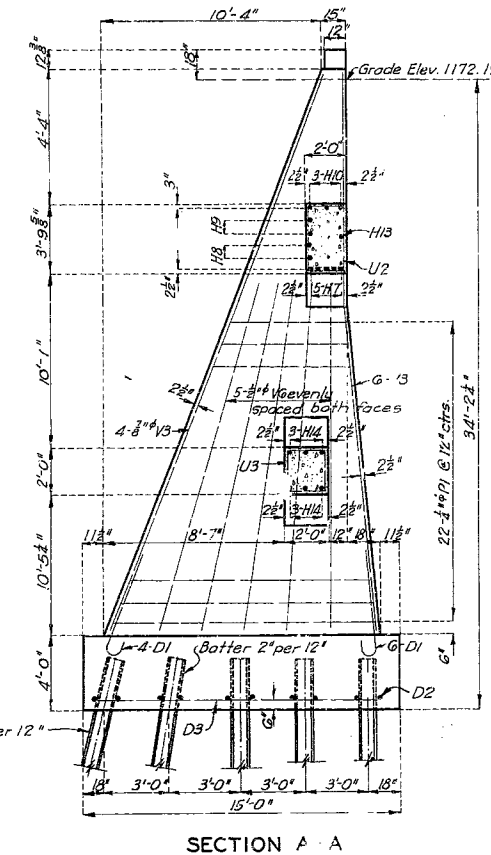
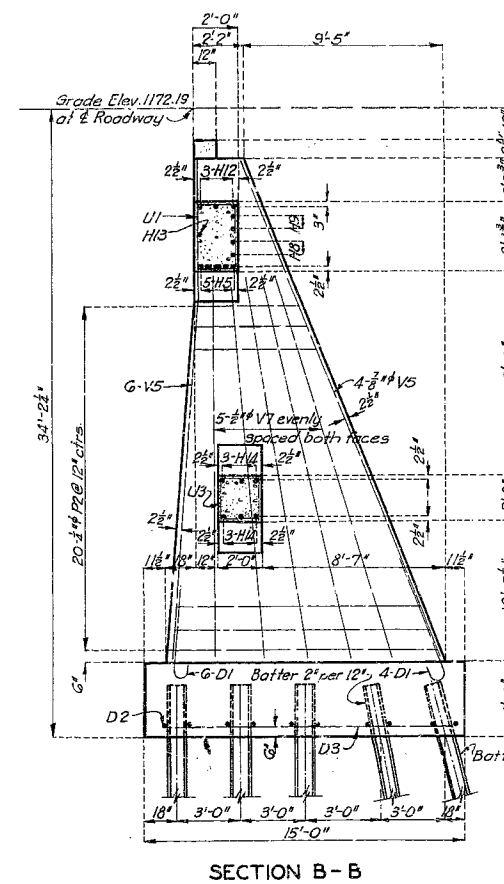
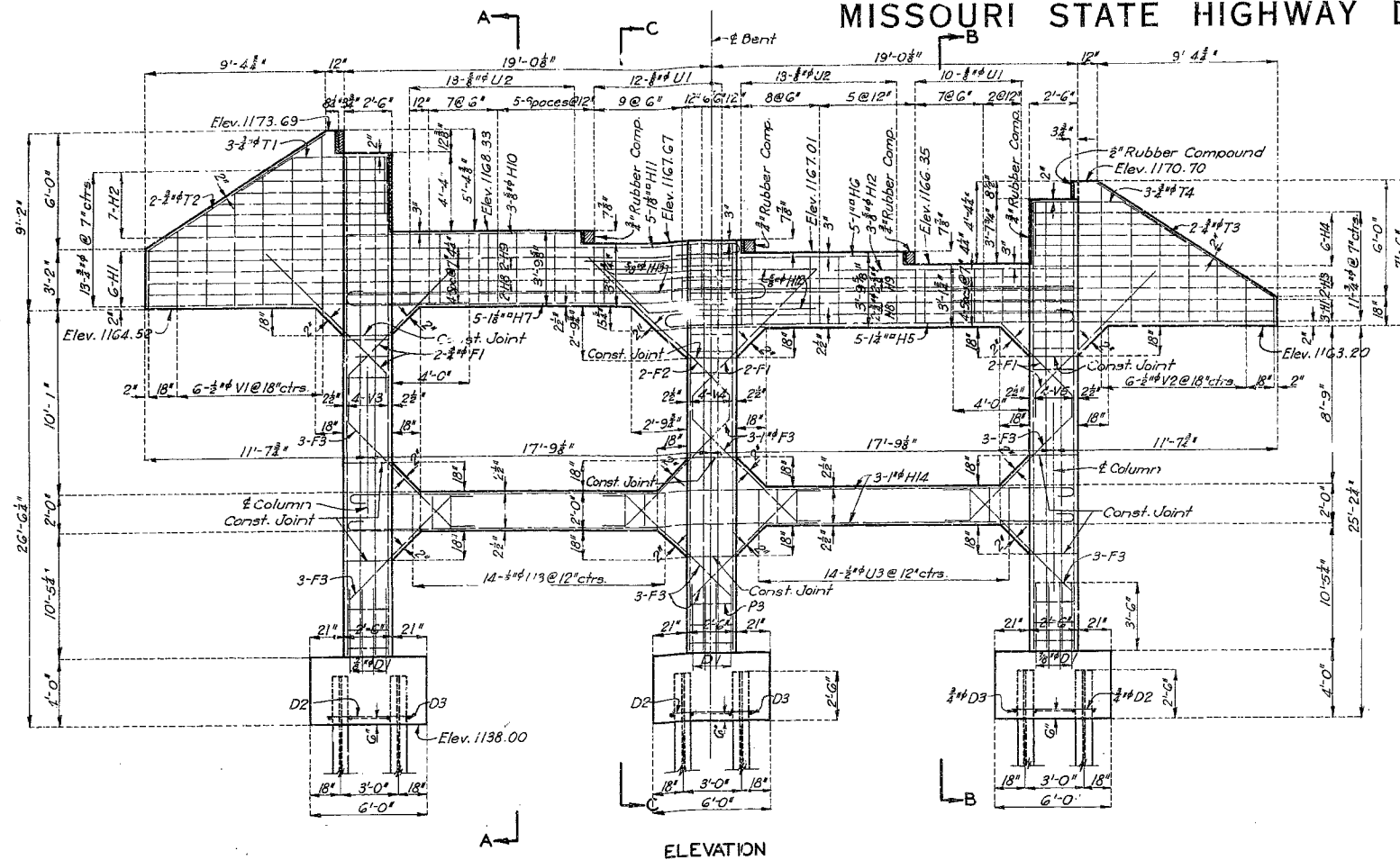
Drawn Sept. 1940 By C.S.A.
Traced Sept. 1940 By J.T.F.
Checked Oct. 1940 By H.H.M. - H.D.

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MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLANS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	141	19		



BRIDGE OVER MO. PAC. R.R.

STATE ROAD FROM ROUTE 27 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF HOBERG

PROJECT NO. FAGH 53 (3) (RT. 14) STA. 586+30.3

LAWRENCE COUNTY

FINAL PLANS

K-947

Drawn Feb. 1941 by A.F.K.
Traced Feb. 1941 by J.T.F.
Checked Mar. 1941 by H.D.

DETAILS OF END BENT NO. 1

Note: Tie beam is not shown in plan for sake of clearness.

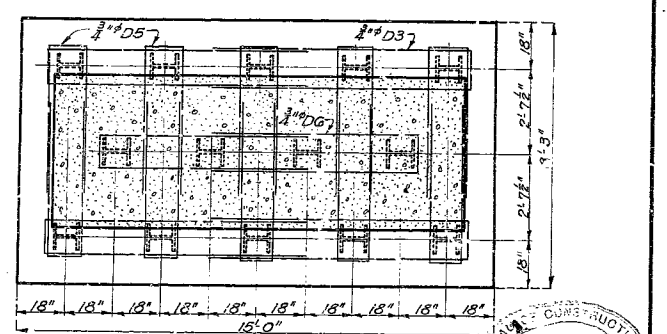
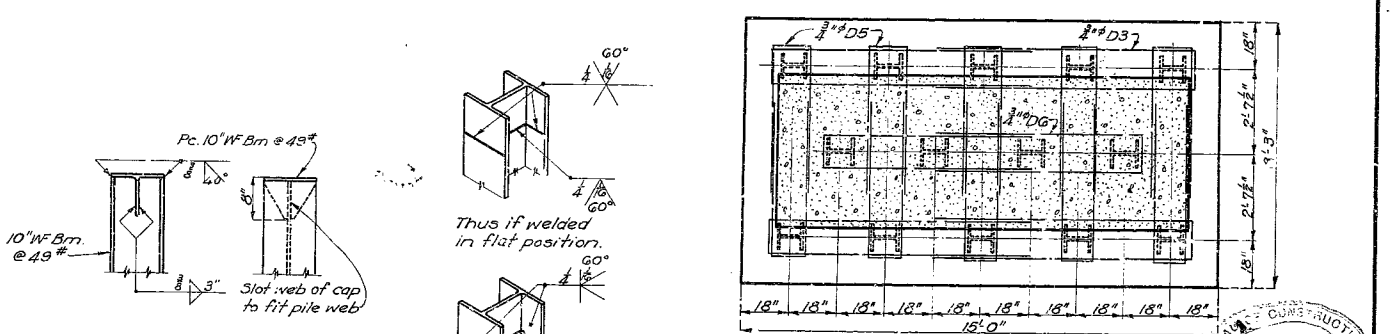
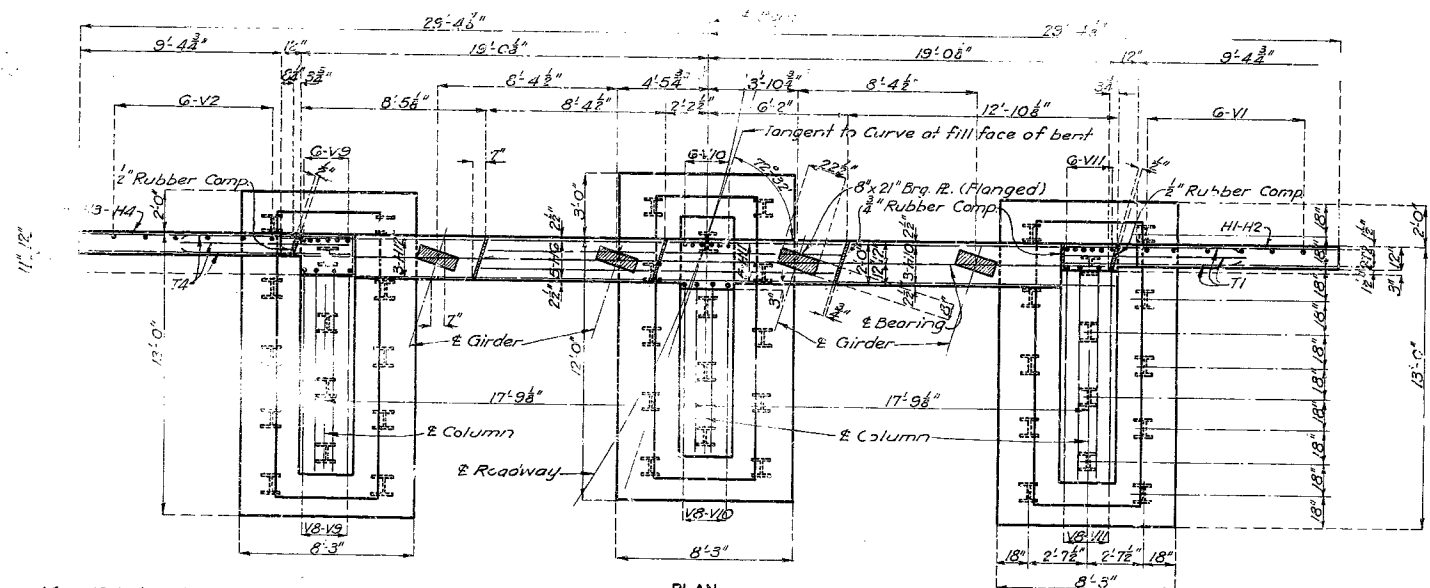
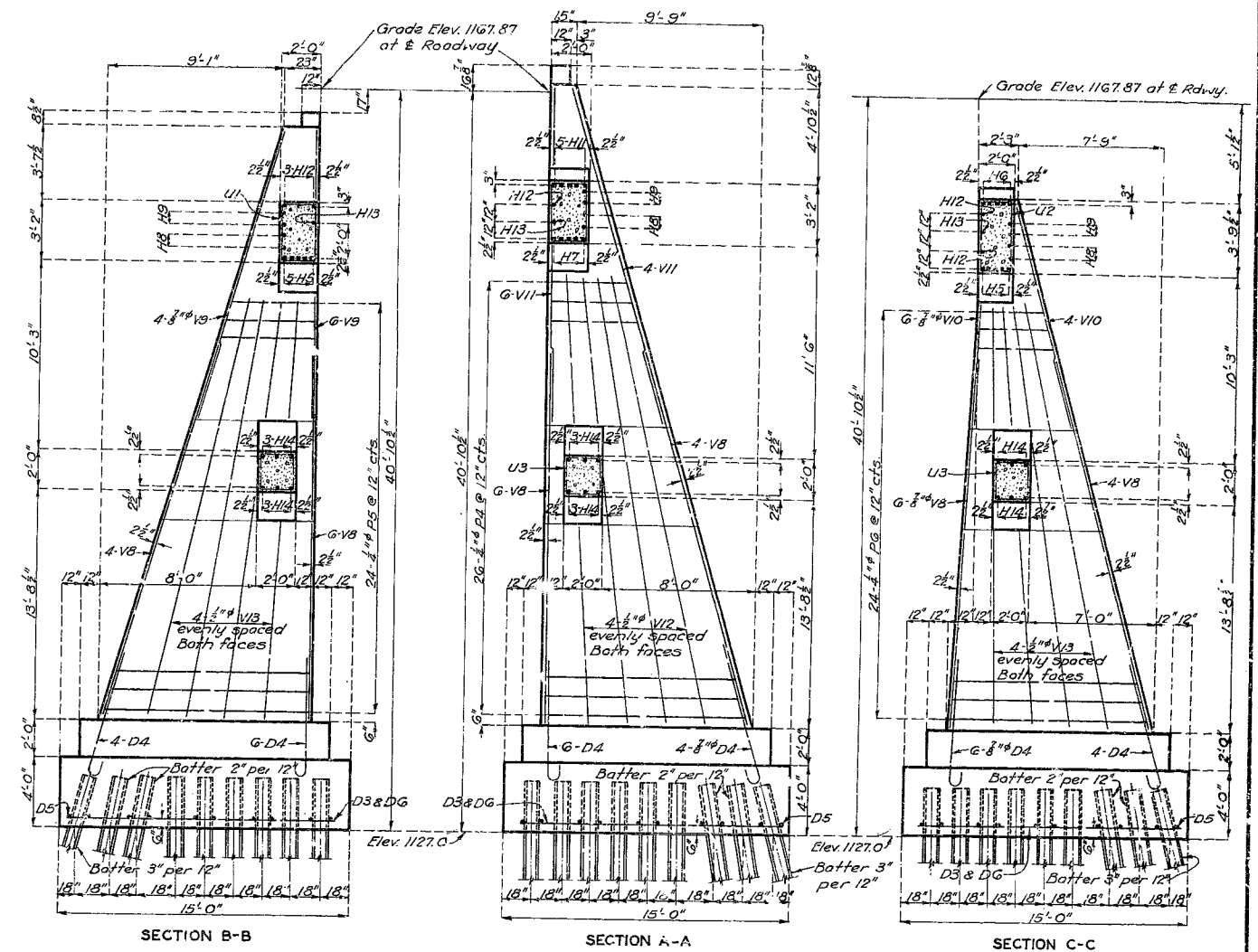
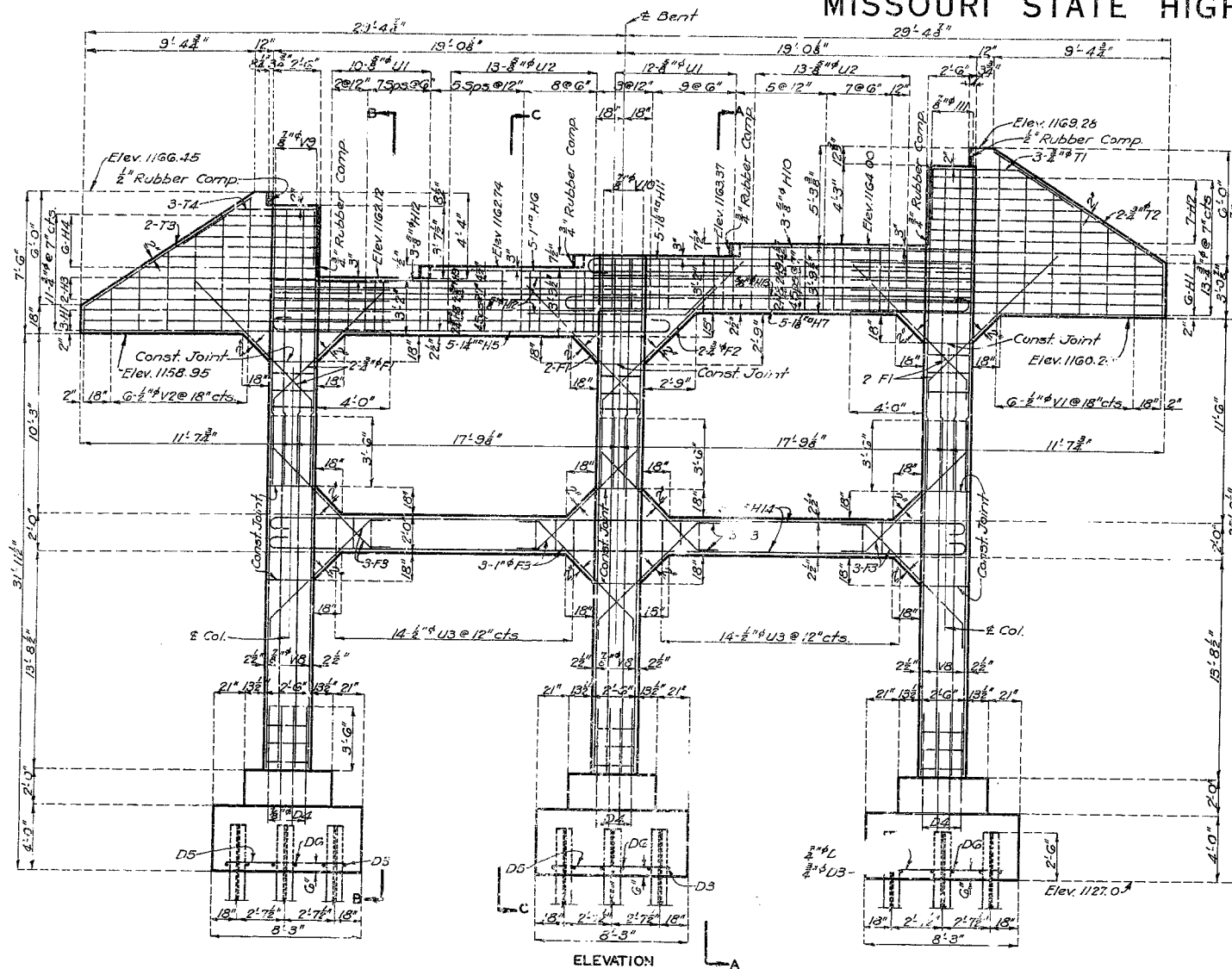
Note: This drawing is not to scale. Follow dimensions.

214

MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLANS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	746H 3913 (RT.14)	19		



BRIDGE OVER MO. PAC. R. R.

STATE ROAD FROM ROUTE 97 TO MT. VERNON
ABOUT 0.5 MILE NORTH OF MOBERG

PROJECT NO. FASH 53 (3) (RT.14) STA. 586+30.3

LAWRENCE COUNTY

FINISHED

FINISHED

K-947

Drawn Mar. 1941 by A.F.K.
Traced Mar. 1941 by G.W.
Checked Mar. 1941 by H.D.

Note: Tie beam is not shown in plan for sake of clearness.
Note: This drawing is not to scale. Follow dimensions.

DETAILS OF BENT NO. 4

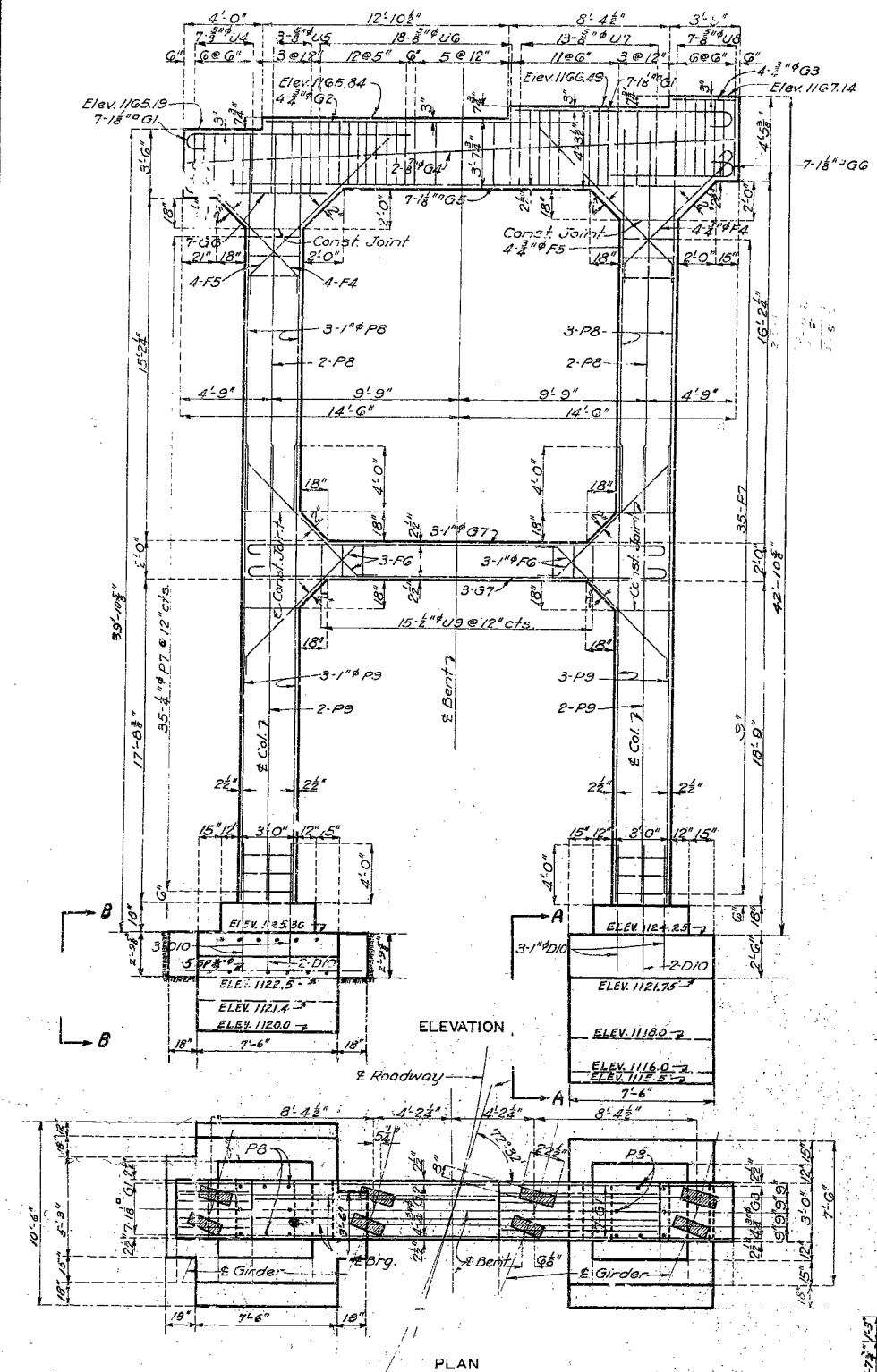
Thus if welded in vertical position. Top of lower section to be cut square.
BUT SPLICE FOR STEEL PILING

Sheet No. 1 of 10

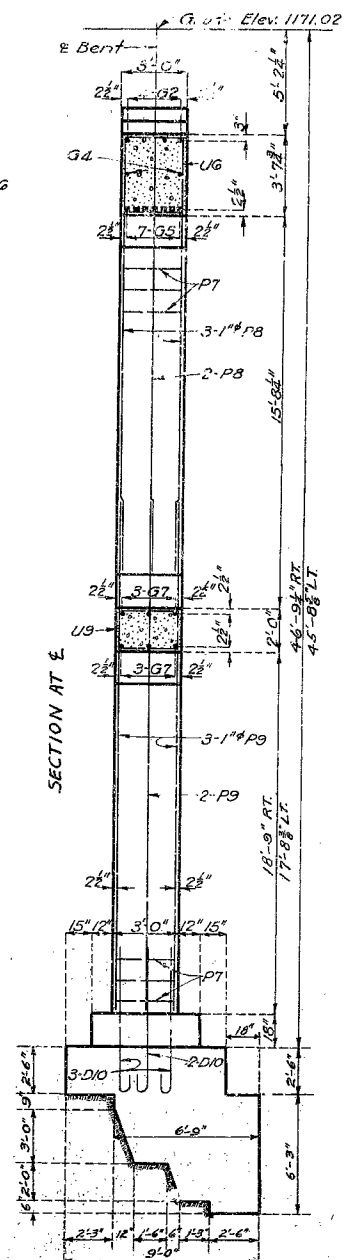
MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLANS

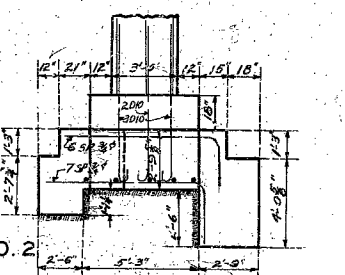
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	1437 33 (3) (RT. 14)	19		



DETAILS OF INTERMEDIATE BENT NO. 2



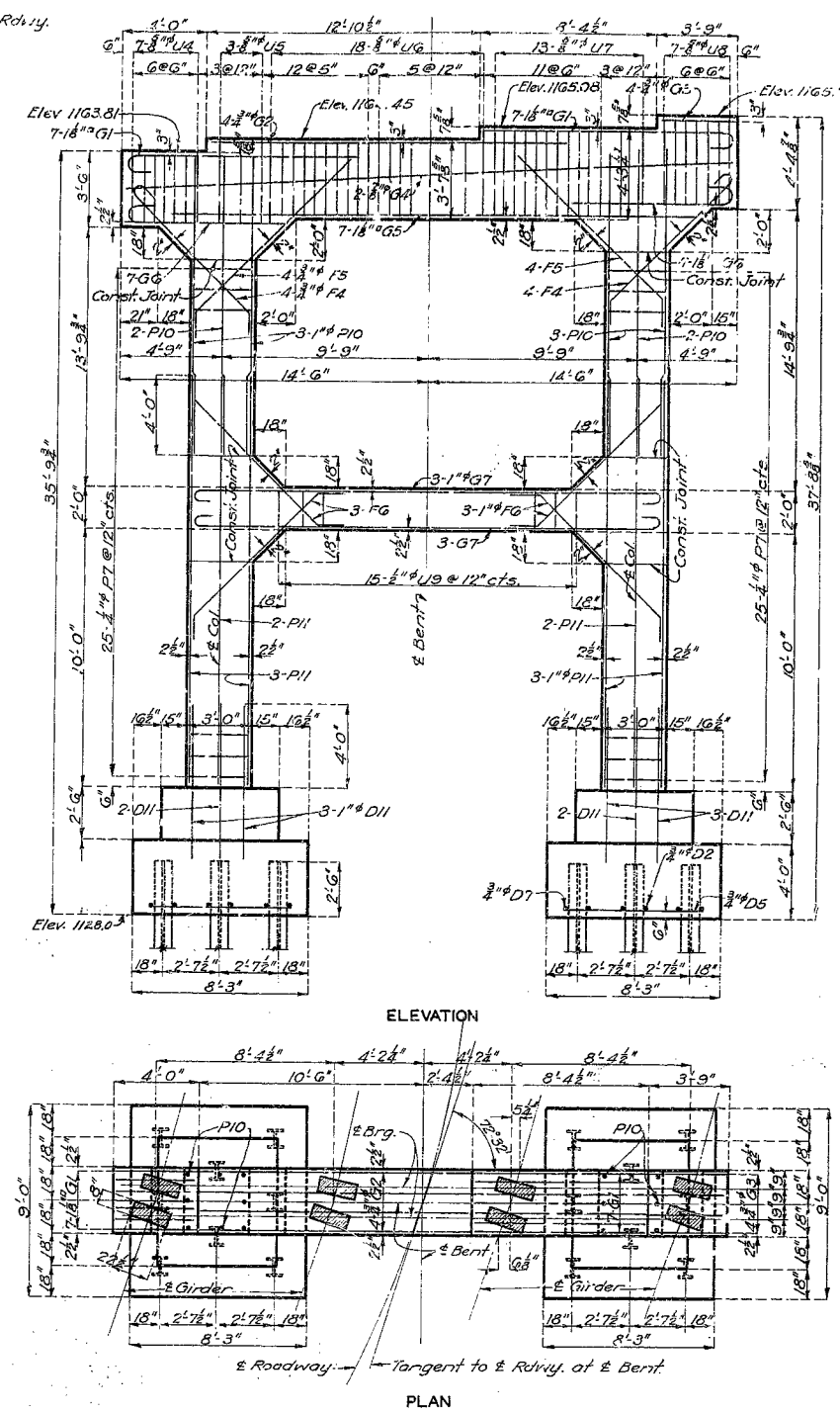
END VIEW - SEC A-A - RT. FOOTING



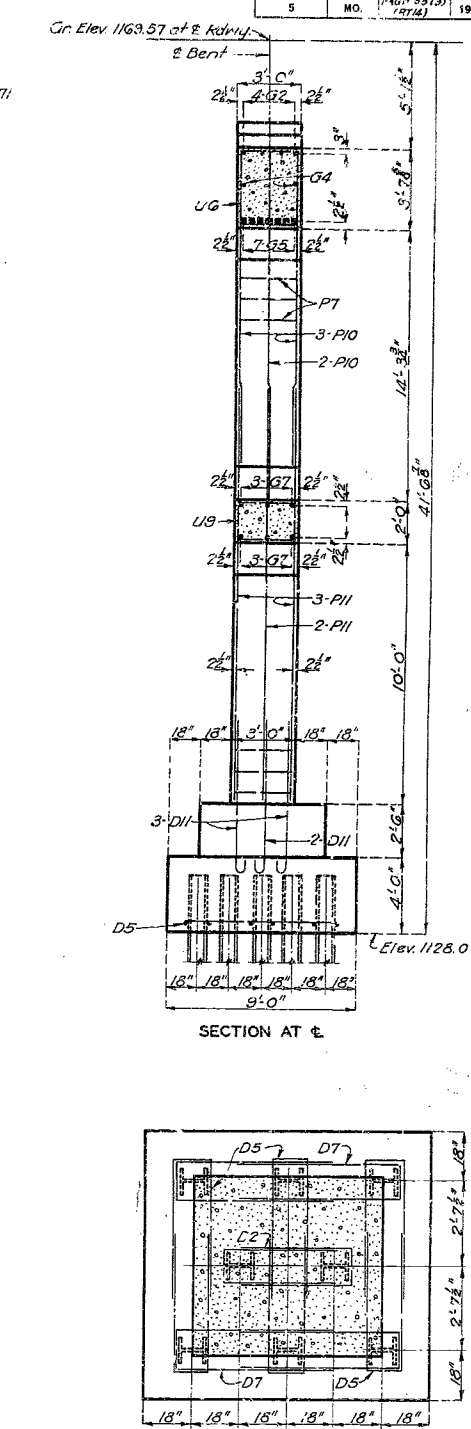
END VIEW - SEC B-B - LT. FOOTING

Note: No payment for Special Reinf. Steel bars in top and bottom of Lt. footing. State furnished from old Cols.

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



DETAILS OF INTERMEDIATE BENT NO. 3



PLAN OF FOOTING SHOWING REINFORCEMENT

BRIDGE OVER MO. PAC. R. R.

STATE ROAD FROM ROUTE 97 TO MT. VERNON

ABOUT 0.5 MILE NORTH OF HOBERG

PROJECT NO. FAGH 53 (3) (RT. 14) STA. 586+30.3

LAWRENCE FINISHED COUNTY

FINAL PLANS

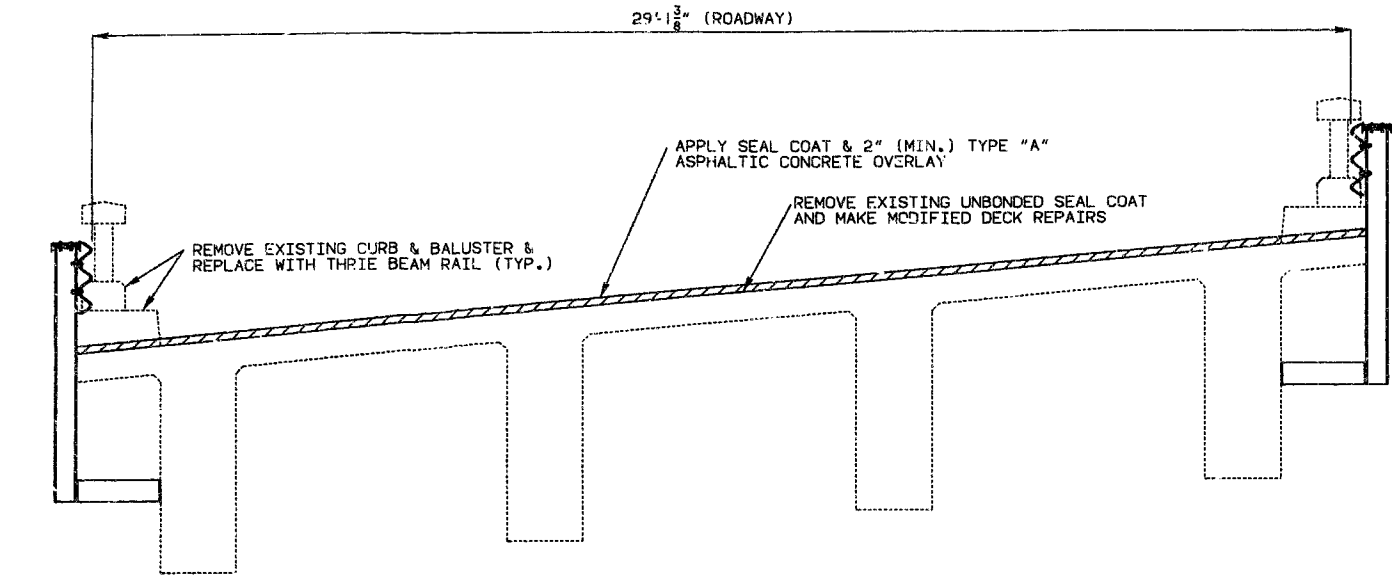
K-947

Sheet No. 59 of 113

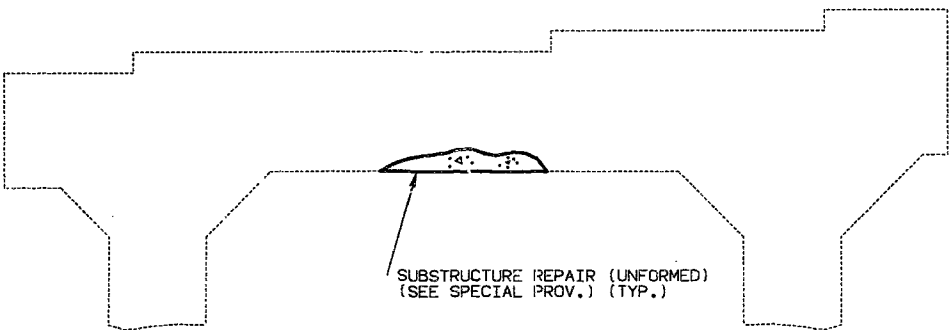
Drawn Mar. 1941 by A.F.K.
Traced Mar. 1941 by G.W.
Checked Mar. 1941 by H.D.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

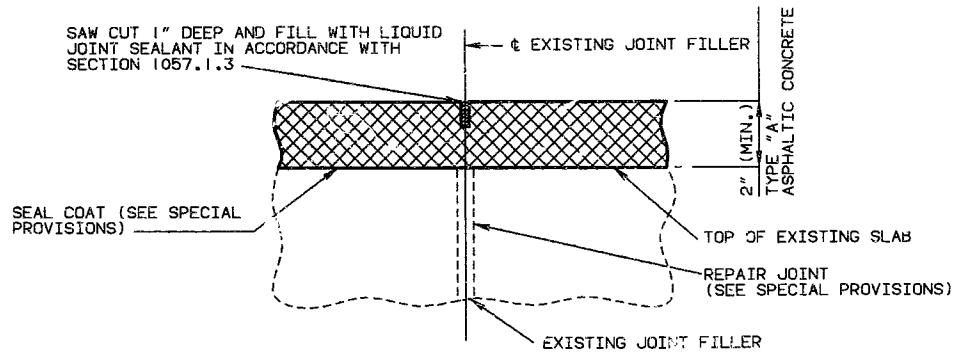
STATE	PROJ. NO.	SHEET NO.
MO.	RS-BRS-905(4)	18
SEC./SUR.	2 TWP. 27N RGE. 27W	



SECTION THRU ROADWAY



DETAIL SHOWING SUBSTRUCTURE REPAIR AREA



SECTION THRU JOINT

GENERAL NOTES:

- EXISTING WORK:
 - OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.
- APPROACHES:
 - ROADWAY SURFACING ADJACENT TO BRIDGE EN'S TO MATCH BRIDGE OVERLAY (SEE ROAD PLANS).
- TRAFFIC:
 - CLOSED TO TRAFFIC DURING CONSTRUCTION.

ESTIMATED QUANTITIES		
ITEMS		TOTAL
CURB REMOVAL FOR THRIE BEAM INSTALLATION	LIN. FT.	344
ASPH. CEMENT (ASPH. CONC.) 60-70 OR AC-20 (TYPE A MIX)	TON	3.2
MINERAL AGGREGATE (ASPH. CONC.) (TYPE A MIX)	TON	63
POLYMER MODIFIED ASPH. (SEAL COAT)	GAL.	200
COVER AGGREGATE	TON	9
SUBSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	30
MODIFIED DECK REPAIR	SQ. FT.	450
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.	341

NOTE: POLYMER MODIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.35 GALLON PER SQUAKE YARD. (SEE SPECIAL PROVISIONS)
COVER AGGREGATE SHALL BE APPLIED AT A RATE OF 0.015 TONS PER SQUAKE YARD. (SEE SPECIAL PROVISIONS)

REPAIRS TO
BRIDGE OVER UNION PACIFIC RAILROAD

STATE ROAD I-44 SOUTH
ABOUT 1 MILE NORTH OF HOBERG
PROJECT NO. RS-BRS-905(4) STA. 586 + 30.3
JOB NO. 7S-410-H RTE. H

LAWRENCE COUNTY
DATE 2/21/91

STD.
STD. 606.23
K-947R

DESIGNED JAN. 1991
DETAILED JAN. 1991
CHECKED JAN. 1991

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

SEE FINAL PLANS
SHEET NO. 1 OF 4.

47451

GENERAL NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS.

PANEL LENGTHS OF CHANNEL MEMBERS SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF SIX POSTS (EXCEPT AT END BENTS).

ALL BOLTS, NUTS, WASHERS AND PLATES ARE CONSIDERED AS PARTS OF THE THRIE BEAM RAIL FOR PAYMENT.

ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POSTS AND RAILING AND TOP PLATES SHALL BE GALVANIZED AFTER FABRICATION, FOR PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING, SEE SECTION 1040 OF THE MISSOURI STANDARD SPECIFICATIONS.

RAIL POSTS SHALL BE SET PERPENDICULAR TO ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, AND ALIGNED ACCORDING TO SECTION 713 OF THE MISSOURI STANDARD SPECIFICATIONS, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3" X 1-3/4" AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL.

SHIMS SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING MATERIAL FOR THIS ORDER.

AT THE EXPANSION SLOTS IN THE THIRIE BEAM RAILS AND CHANNELS,
TIGHTEN BOLTS, BACK OFF ONE-HALF TURN AND BURR THREADS.

AT THE THRIE BEAM CONNECTION TO POSTS ON WINGS, TIGHTEN BOLTS,
BACK OFF ONE-HALF TURN AND BURR THREADS.

MINIMUM LENGTH OF THRIE BEAM SECTIONS IS EQUAL TO ONE POST SPACE.

USE 5/8 INCH BUTTON HEAD, OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS. (THICKNESS OF HEX NUTS = 3/8".)

THREE BEAM GUARD RAIL ON THE BRIDGE SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE.

POSTS, TOP PLATES, CHANNELS AND CHANNEL SPLICE PLATES SHALL BE FABRICATED FROM A-36 STEEL AND GALVANIZED.

WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN THE BOLT HEAD AND BEAM). THEY SHALL BE RECTANGULAR IN SHAPE ($3" \times 1-3/4" \times 3/16"$ MIN.) AND FLAT WITH A $11/16" \times 1"$ SLOT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE BEAM. (USE A $3" \times 1-3/4" \times 5/8"$ RECTANGULAR WASHER BETWEEN THE POST AND THE THIRTE BEAM RAIL.)

SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE SPLICES
(ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP DRAWINGS.)

FABRICATION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SECTION 712 OF THE MISSOURI STANDARD SPECIFICATIONS.

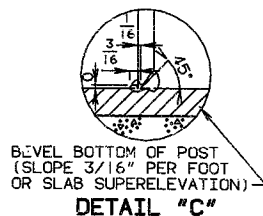
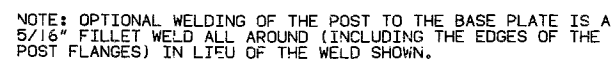
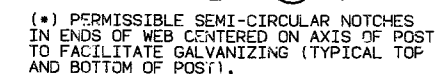
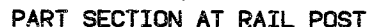
EXPANSION SPLICES IN THE THREE BEAM RAIL SHALL BE MADE AT EITHER THE FIRST OR SECOND POST ON EITHER SIDE OF THE JOINT AND ON STRUCTURE AT BRIDGE ENDS. WHEN THE SPLICE IS MADE AT THE SECOND POST, AN EXPANSION SLOT SHALL BE PROVIDED IN THE THREE BEAM RAIL FOR CONNECTION TO THE FIRST POST TO ALLOW FOR MOVEMENT.

IN ADDITION TO THE EXPANSION PROVISIONS AT THESE EXPANSION JOINTS, EXPANSION SPLICES IN THE THREE BEAM RAIL AND THE CHANNEL SHALL BE PROVIDED AT OTHER LOCATIONS SO THAT THE MAXIMUM LENGTH WITHOUT EXPANSION PROVISIONS DOES NOT EXCEED 200 FT.

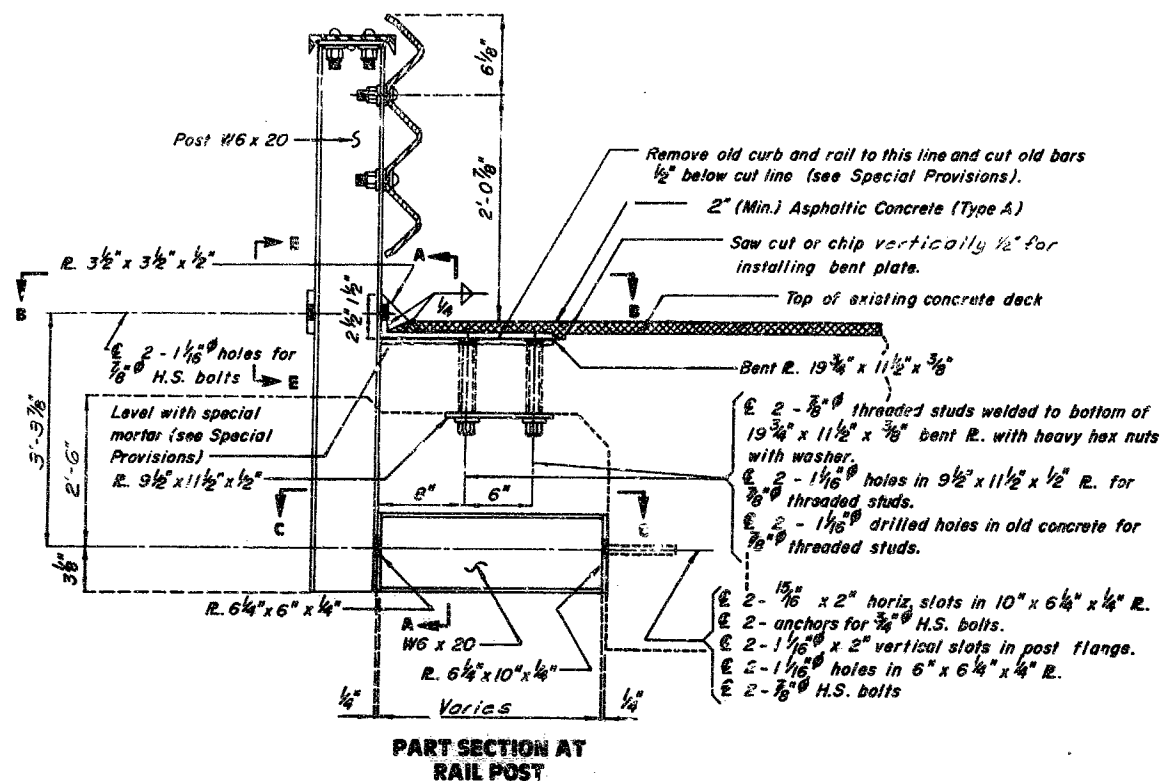
CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD BEFORE ORDERING MATERIALS.

SLIM PLATES 6" X 6" X 1/16" MAY BE USED BETWEEN THE TOP OF POST AND THE CHANNEL MEMBER AS REQUIRED FOR VERTICAL ALIGNMENT.

THE CONTRACTOR SHALL USE ONE OF THE RESIGN ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS. THESE ANCHOR SYSTEMS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS EXCEPT AS MODIFIED BY JOB SPECIAL PROVISIONS. COST OF ANCHOR SYSTEM COMPLETE IN PLACE SHALL BE INCLUDED IN PRICE BID FOR BRIDGE GUARD RAIL.

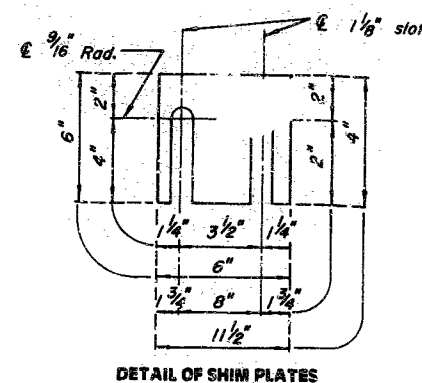
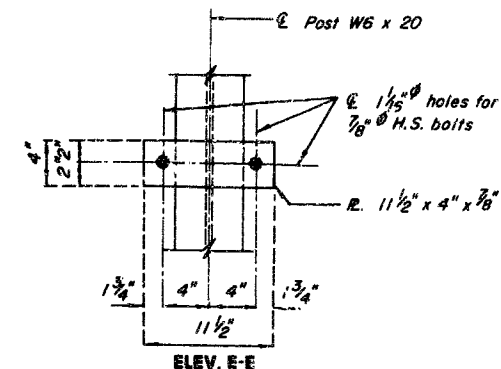
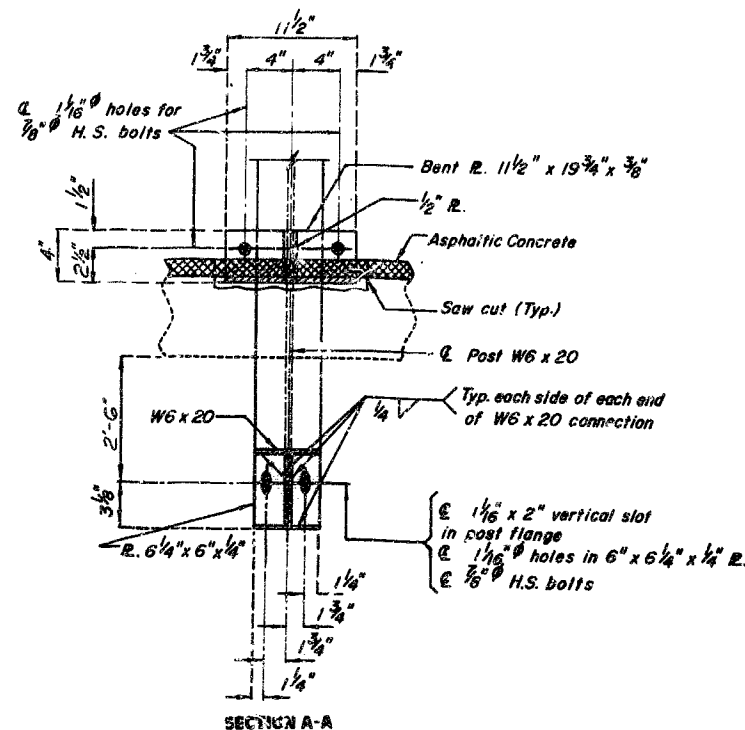
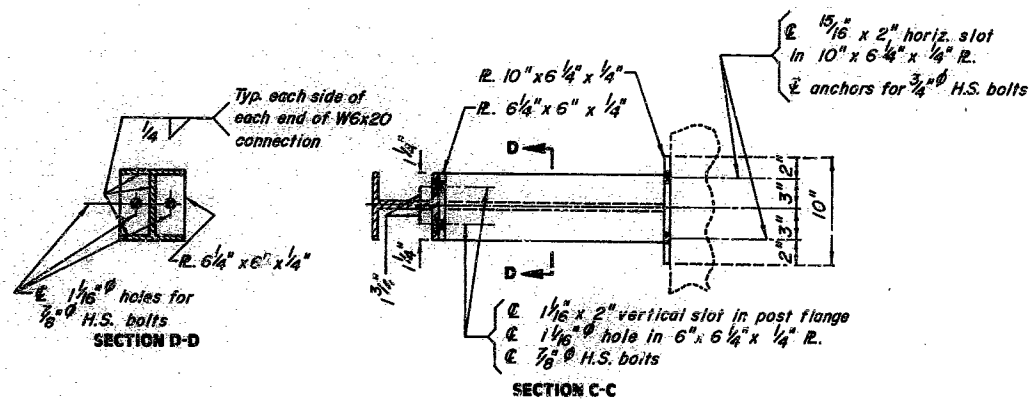
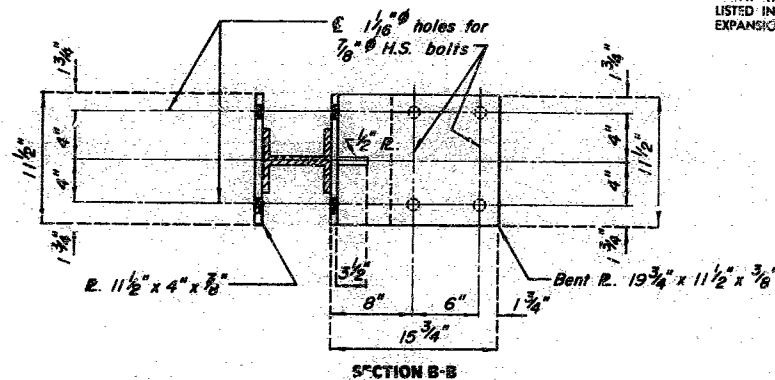


STATE	PROJ NO	SHEET NO
MO		15



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.



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.

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

Sheet No. 3 of 4

LAWRENCE

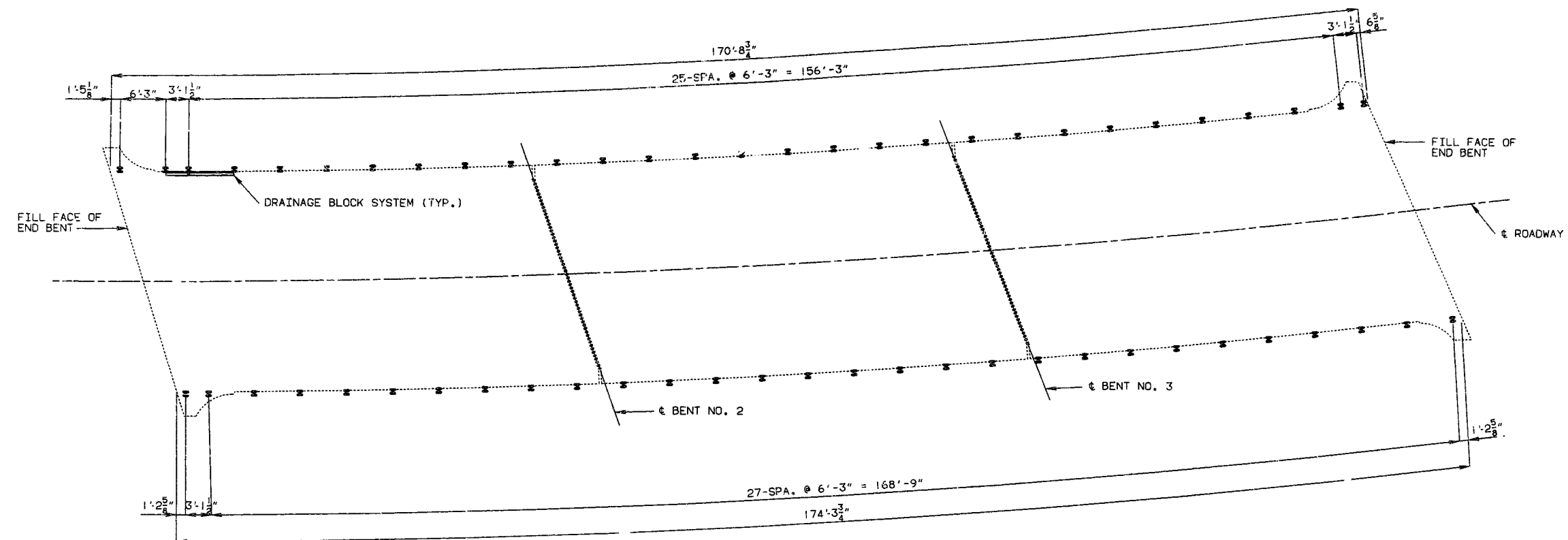
COUNTY

K-947R

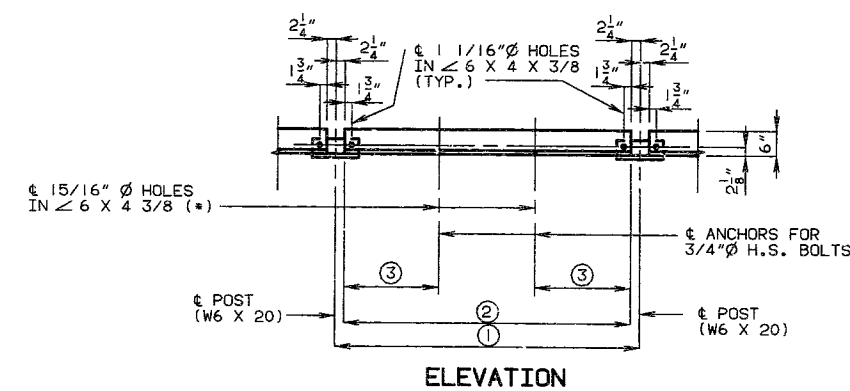
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Rehab. (T-BM/DECK GDR) REVISED APR. 1987
SEPT. 1985

DETAILED Feb. 1991
CHECKED Feb. 1991

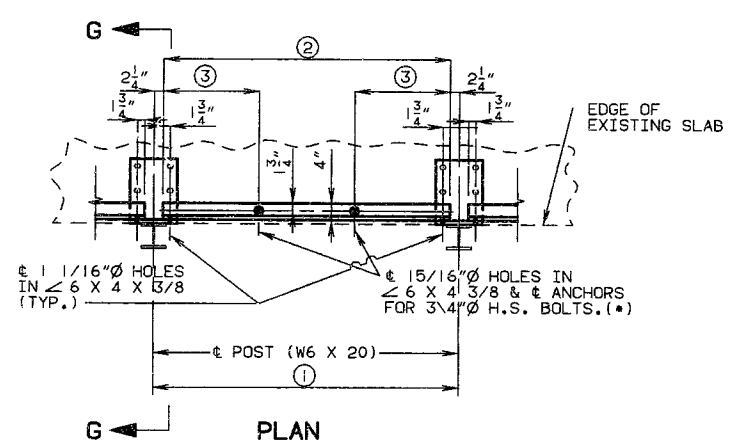


PLAN OF STRUCTURE SHOWING RAIL POST SPACING

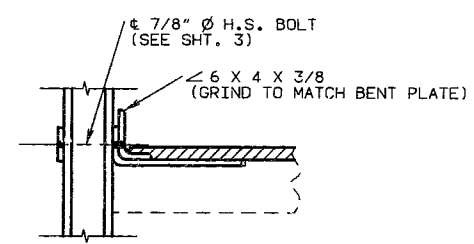


ELEVATION

①	②	③
6'-3"	5'-10 1/2"	1'-11 1/2"
3'-1 1/2"	2'-9"	1'-4 1/2"



PLAN



SECTION G-G

NOTE: ANGLES FOR DRAINAGE BLOCK SHALL BE FABRICATED FROM A-36 STEEL AND GALVANIZED. COST OF FURNISHING AND INSTALLING DRAINAGE BLOCK TO BE INCLUDED IN THE COST OF THREE BEAM RAIL. (*) ONE HOLE FOR 3'-1 1/2" POST SPACING.

DETAILS SHOWING DRAINAGE BLOCK

454

REVISED:	
CHECKED	

DETAILED JAN. 1991
CHECKED 19

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

SHEET NO. 4 OF 4

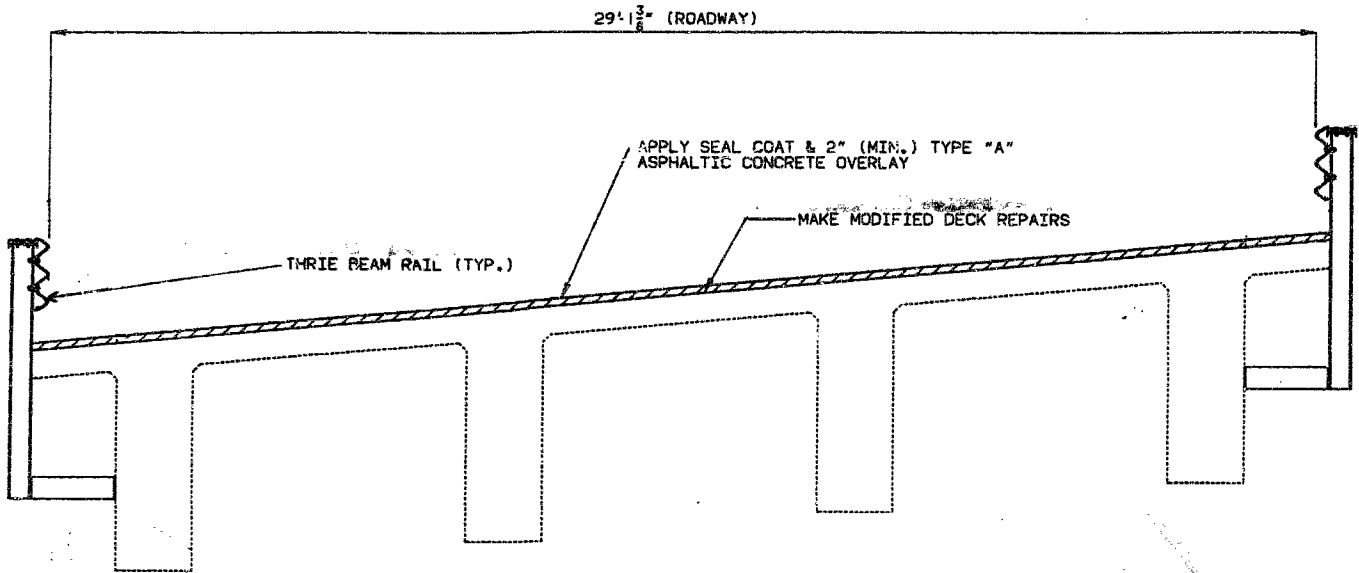
LAWRENCE

COUNTY

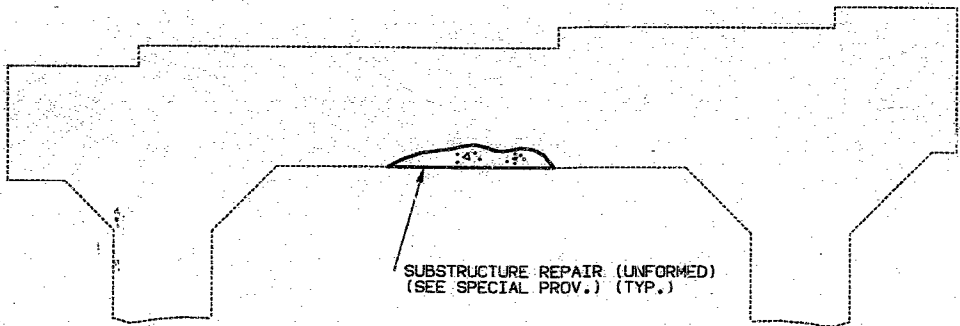
K-947R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

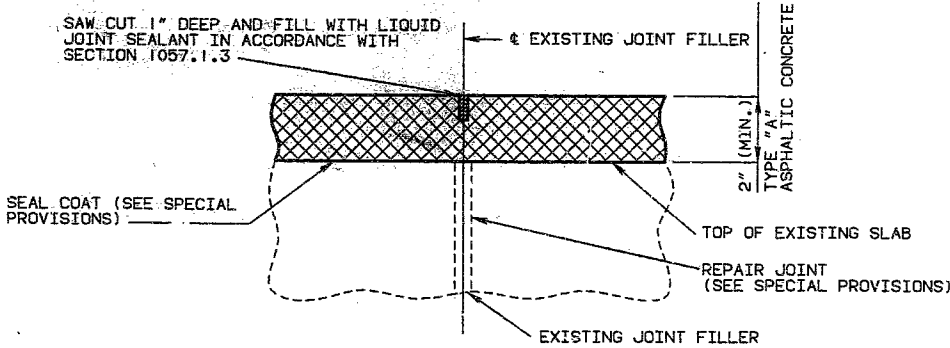
STATE	PROJ. NO.	SHEET NO.
MO.	RS-BRS-905(4)	18
SEC./SUR.	2 TWP. 27N RGE. 27W	



SECTION THRU ROADWAY



DETAIL SHOWING SUBSTRUCTURE REPAIR AREA



SECTION THRU JOINT

GENERAL NOTES:
EXISTING WORK:
OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES, HEAVY LINES INDICATE NEW WORK.
APPROACHES:
ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH BRIDGE OVERLAY (SEE ROAD PLANS).
TRAFFIC:
CLOSED TO TRAFFIC DURING CONSTRUCTION.

FINAL PLANS

FINAL QUANTITIES			
ITEMS			TOTAL
CURB REMOVAL FOR THRIE BEAM INSTALLATION	LIN. FT.		344
ASPH. CEMENT (ASPH. CONC.) AC-20 (TYPE A MIX)	TON		3.1
MINERAL AGGREGATE (ASPH. CONC.) (TYPE A MIX)	TON		63
POLYMER MODIFIED ASPH. (SEAL COAT)	GAL.		150
COVER AGGREGATE	TON		9
SUBSTRUCTURE REPAIR (UNFORMED)	SQ. FT.		167
MODIFIED DECK REPAIR	SQ. FT.		724
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.		341

NOTE: POLYMER MODIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.35 GALLON PER SQUARE YARD. (SEE SPECIAL PROVISIONS)
COVER AGGREGATE SHALL BE APPLIED AT A RATE OF 0.015 TONS PER SQUARE YARD. (SEE SPECIAL PROVISIONS)

REPAIRS TO
BRIDGE OVER UNION-PACIFIC RAILROAD

STATE ROAD I-44 SOUTH
ABOUT 1 MILE NORTH OF HOBERG
PROJECT NO. RS-BRS-905(4) STA. 586 + 30.3
JOB NO. 7S-410 RTE. H

LAWRENCE COUNTY
DATE 2/21/91

STD.
STD. 606.23
K-947R

DESIGNED JAN. 1991
DETAILED JAN. 1991
CHECKED JAN. 1991

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

SHEET NO. 1A OF 4.

477 455
K-947R
LAWRENCE
JAN. 1991