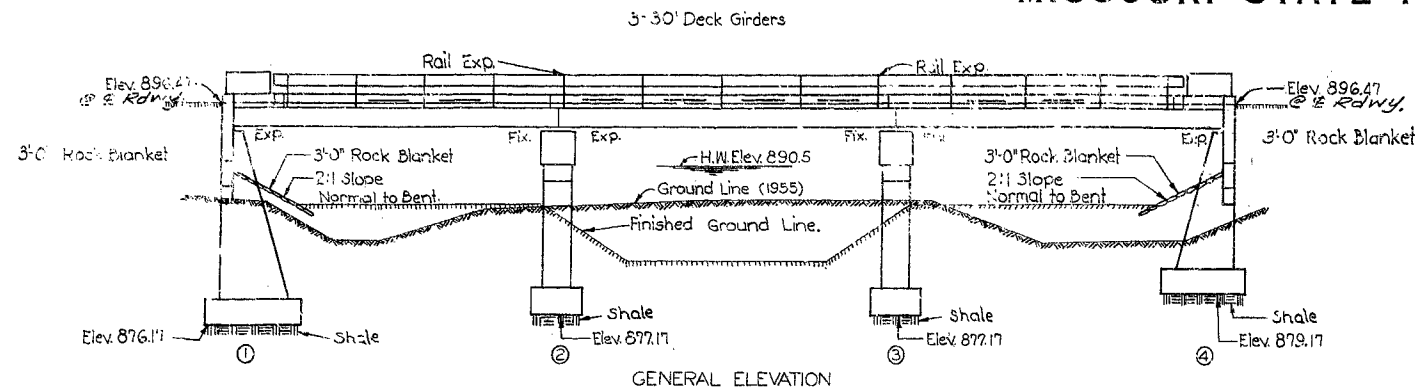
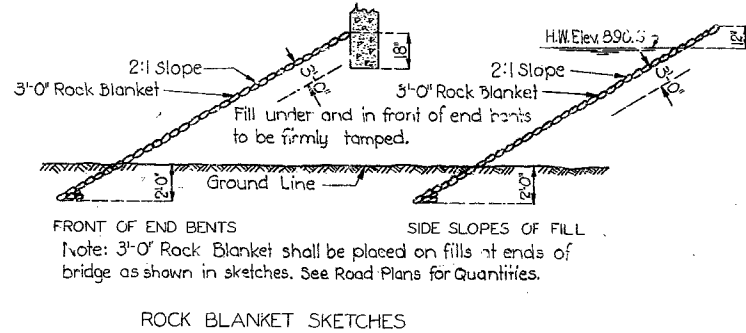
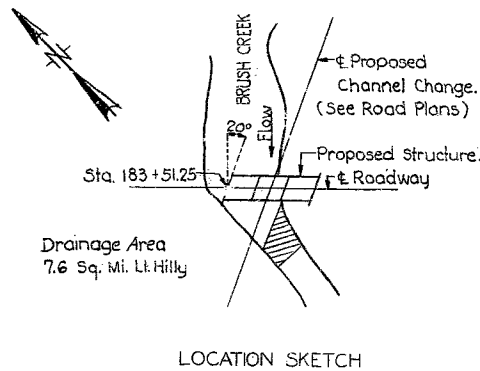
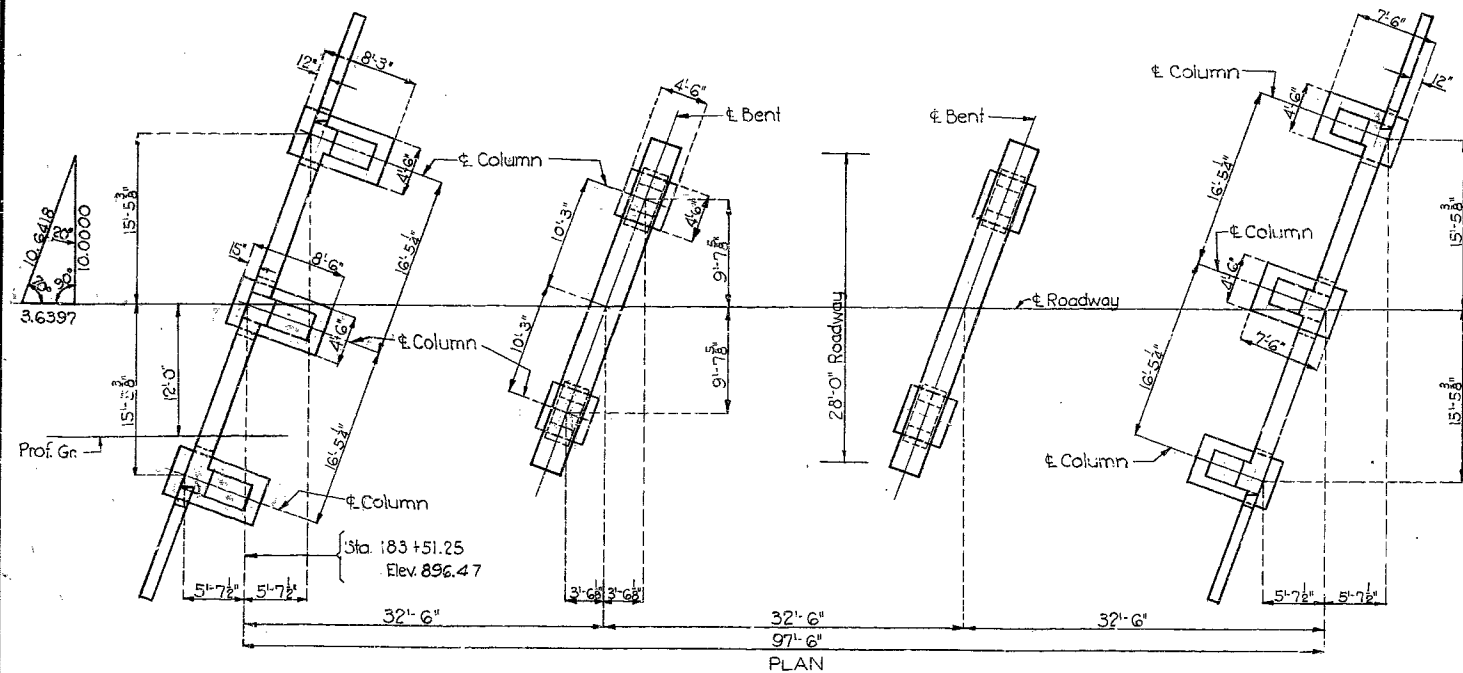


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	37	



Note: Footing shall be carried at least 18" into and cast against vertical faces of firm undisturbed shale or other soft rock. If solid hard rock is encountered, all loose, shelly, or disintegrated material shall be removed and the footings placed on hard, solid undisturbed rock.



BILL OF REINFORCING STEEL - SUBSTRUCTURE				
NO	SIZE	LENGTH	MARK	LOCATION
END BENT NO. 1				
30	# 6	4'-0"	D1	Footing
12	# 6	8'-6"	F1	Haunch
3	# 6	35'-0"	H1	Beam
2	# 7	9'-0"	H2	Beam
3	# 7	35'-0"	H3	Beam
2	# 6	35'-0"	H4	Beam
5	# 5	35'-0"	H5	Beam
6	# 6	16'-9"	H6	Wing
4	# 6	20'-0"	H7	Wing
7	# 5	22'-0"	H8	Beam
6	# 6	15'-3"	T1	Wing
4	# 6	16'-0"	T2	Wing
35	# 4	13'-0"	U1	Beam
8	# 4	2'-6"	U2	Beam
9	# 4	10'-6"	V1	Wing
27	# 3	16'-0"	V2	Column
18	# 6	14'-9"	V3	Column
12	# 6	15'-3"	V4	Column
12	# 4	10'-0"	V5	Column
8	# 4	8'-0"	VII	Column
INT. BENT NO. 2				
16	# 7	4'-9"	D2	Footing
16	# 6	8'-6"	F1	Haunch
7	# 8	31'-9"	G1	Beam
8	# 8	29'-9"	G2	Beam
2	# 6	29'-9"	G3	Beam
22	# 5	9'-3"	P1	Column
30	# 4	11'-3"	U3	Beam
10	# 4	3'-6"	U4	Beam
16	# 7	13'-9"	V10	Column
INT. BENT NO. 3				
16	# 7	4'-9"	D2	Footing
16	# 6	8'-6"	F1	Haunch
7	# 8	31'-9"	G1	Beam
8	# 8	29'-9"	G2	Beam
2	# 6	29'-9"	G3	Beam
22	# 5	9'-3"	P1	Column
30	# 4	11'-3"	U3	Beam
10	# 4	3'-6"	U4	Beam
16	# 7	13'-9"	V10	Column
END BENT NO. 4				
30	# 6	4'-0"	D1	Footing
12	# 6	8'-6"	F1	Haunch
3	# 6	35'-0"	H1	Beam
2	# 7	9'-0"	H2	Beam
3	# 7	35'-0"	H3	Beam
2	# 6	35'-0"	H4	Beam
5	# 5	35'-0"	H5	Beam
6	# 6	16'-9"	H6	Wing
4	# 6	30'-0"	H7	Wing
7	# 5	22'-0"	H8	Beam
6	# 6	15'-3"	T1	Wing
4	# 6	16'-0"	T2	Wing
35	# 4	13'-0"	U1	Beam
8	# 4	2'-6"	U2	Beam
9	# 4	10'-6"	V1	Wing
18	# 3	13'-0"	V6	Column
18	# 6	11'-9"	V7	Column
12	# 6	12'-0"	V8	Column
12	# 4	7'-6"	V9	Column
8	# 6	8'-0"	VII	Column

Note: See Sheet No. 3 for bill of Reinforcing Steel for Superstructure.

GENERAL NOTES:

Design Specifications: A.A.S.H.O. 1953.
 Loading: H20-44 (Future wearing surface 15"/ft).
 Structural Steel Stress: 18,000#/ft.
 Reinforcing Steel Stress: 20,000#/ft.
 Concrete, Class "B" Stress: 1200#/ft.
 Concrete, Class "B1" Stress: 1400#/ft.
 Concrete for superstructure shall be Class "B1" Air Entrained.
 Concrete for substructure shall be Class "B" Air Entrained. If the Contractor desires he may use Class "B1" in lieu of Class "B" for concrete in substructure with payment on the basis of Class "B" concrete.
 Where Joint filler is specified on the plans it shall conform with the requirements for Gray Rubber Compound Joints as given in Section 59-22 B of Standard Specifications.

Paint: Shop none; Field, contact surfaces of bolted field connections, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by contractor. Red lead required shall be furnished by contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Steel.

ESTIMATE QUANTITIES			
ITEM	Substr.	Superstr.	Total
Class 1 Excavation for Structures.	Cu. Yds.	90	90
Class 2 Excavation for Structures.	Cu. Yds.	150	150
Class "B" Concrete.	Cu. Yds.	17.0	17.0
Class "B1" Concrete.	Cu. Yds.	13.5	13.5
Reinforcing Steel.	Lbs.	10,970	48,140
Fabricated Structural Steel (Handrail)	Lbs.		5850
Fabricated Structural Steel (Bearings)	Lbs.		1650

Note: Excavation for bridge made above Elev. 883.0 will be paid for as Class 1 Excavation for Structures.
 Excavation for bridge made below Elev. 883.0 will be paid for as Class 2 Excavation for Structures.

B.M. Elev. 897.46 P.S. End Gate Post. 93' Lt. Sta. 175+24.0 (U.S.G.S. Datum)

BRIDGE OVER BRUSH CREEK

STATE ROAD FROM HUMANSVILLE TO BOLIVAR FINISHED

ABOUT 21.0 MILES N.W. OF BOLIVAR

PROJECT NO. F-100(2)(RTE.13) STA. 183+51.25

POLK COUNTY

SUBMITTED BY *J. A. McWilliam* DATE 5-14-1958
 APPROVED BY *Res. McWilliam* DATE 5-14-1958
BRIDGE ENGINEER
CHIEF ENGINEER

Drawn APRIL 1957 by K.R.W.
 Checked APR 1958 by A.K.K.

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

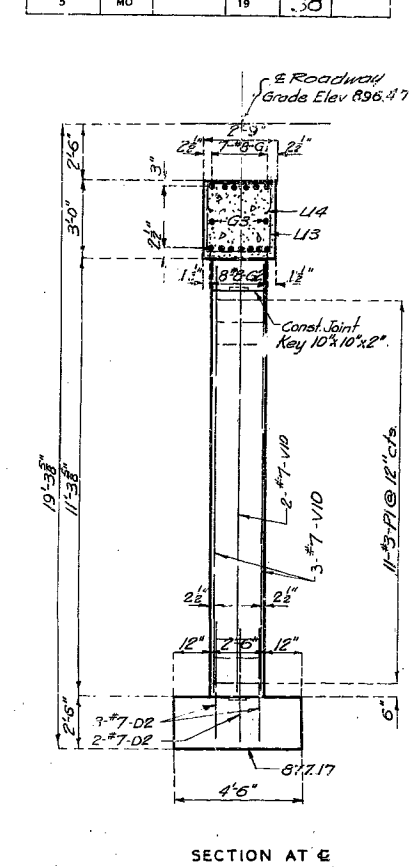
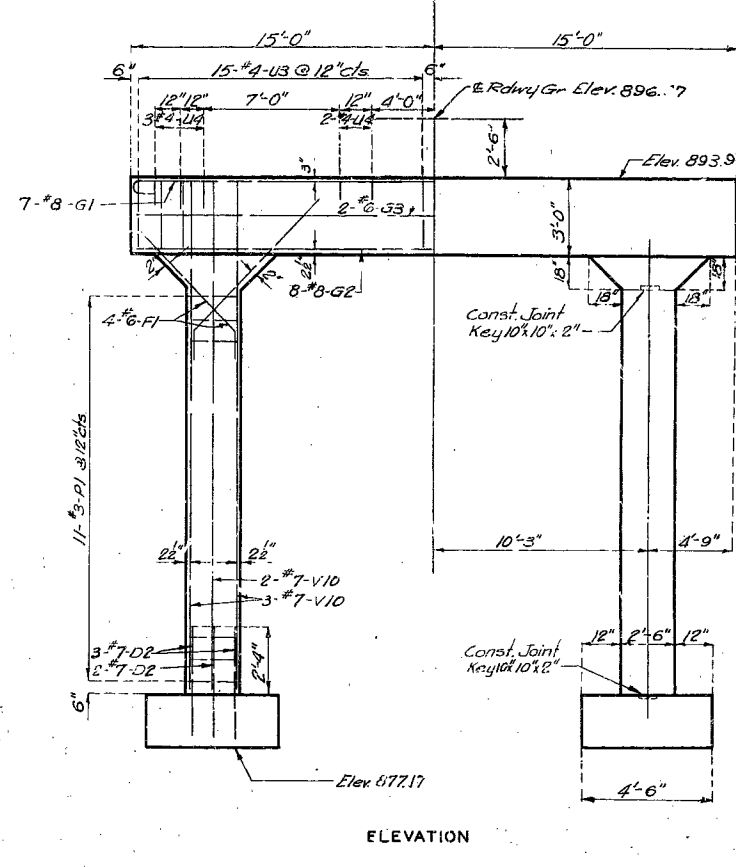
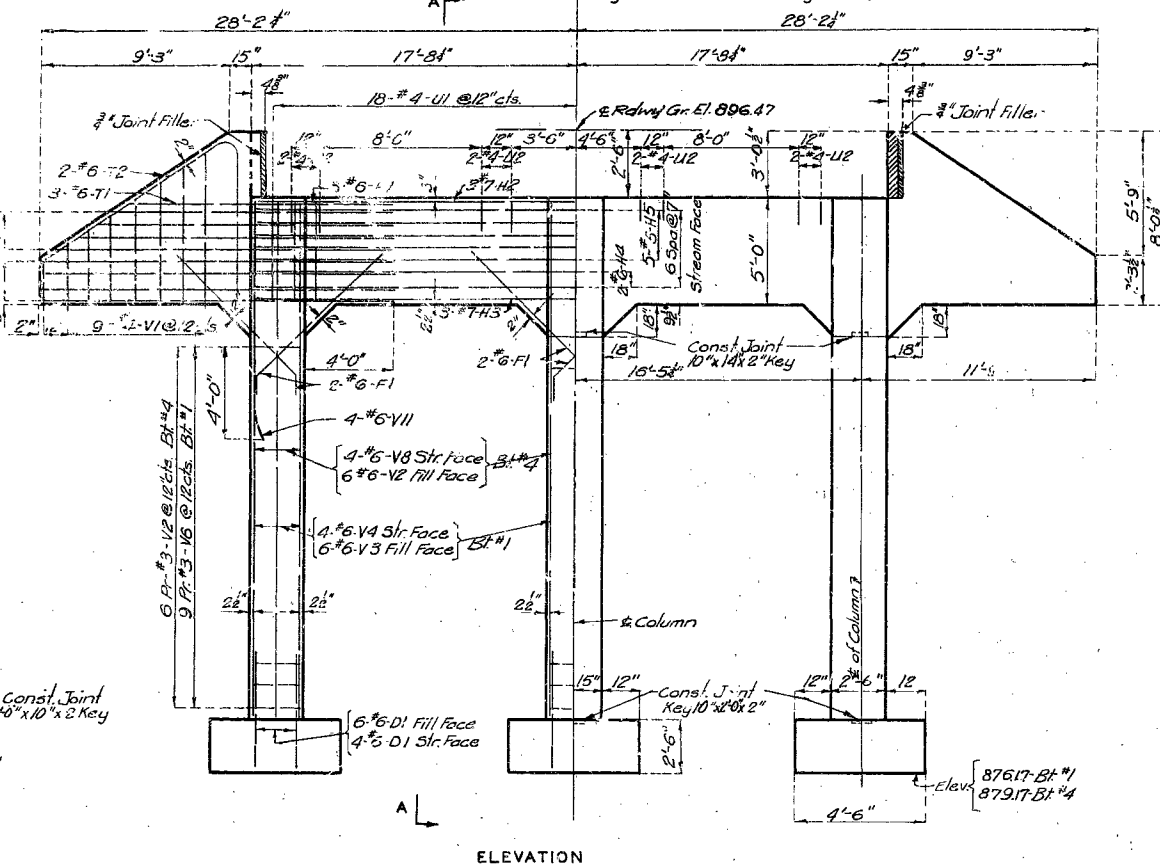
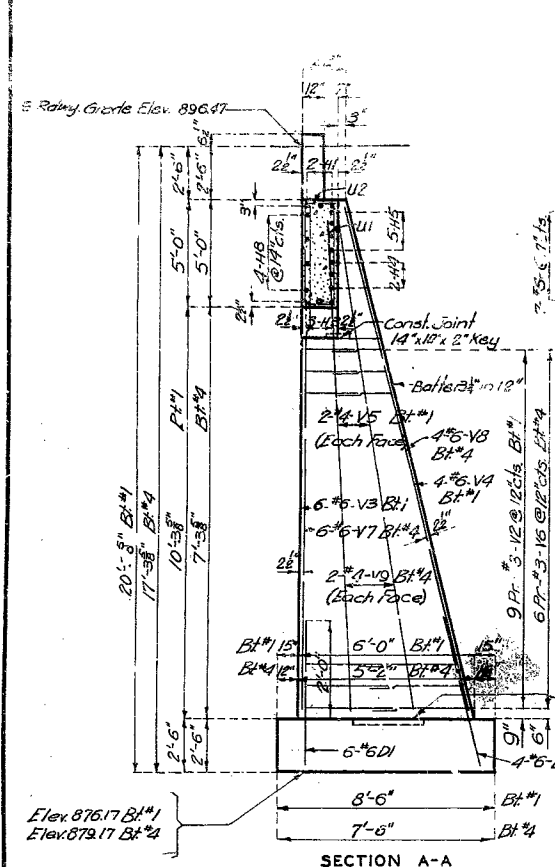
Sheet No. 1 of 5

SEE FINAL PLANS BROWN-LINES

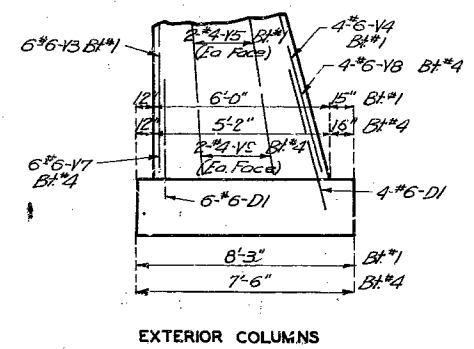
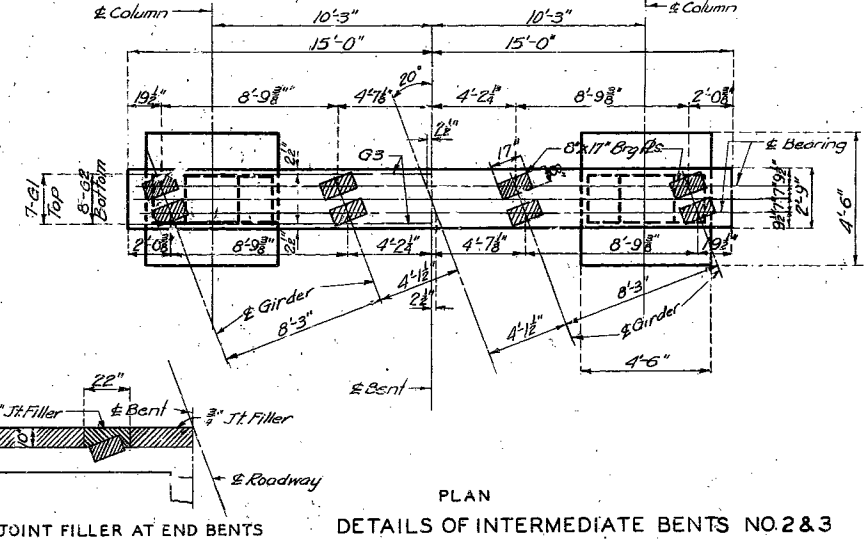
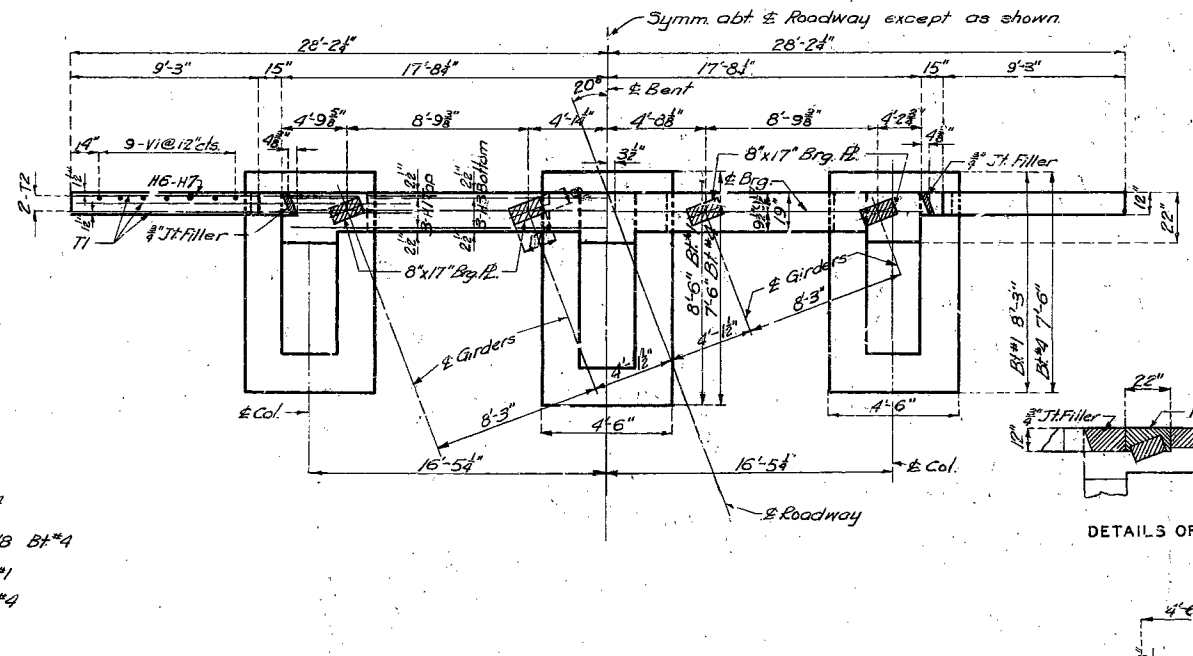
STD. C-10 R5
 A-63

MISSOURI STATE HIGHWAY DEPARTMENT

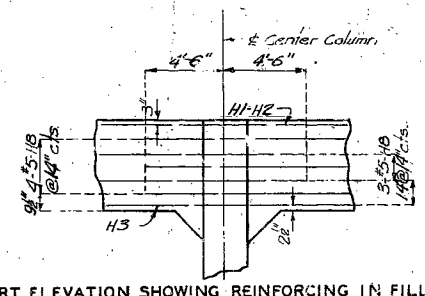
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	38	



Note: Fill at End Bents No. 1 & 4 shall not be carried above bottom of beams and wings until Superstructure Spans (1-2) and (3-4) are in place.



DETAILS OF END BENTS NO. 1 & 4



BRIDGE OVER BRUSH CREEK
 STATE ROAD FROM HUMANSVILLE TO BOLIVAR
 ABOUT 21.0 MILES N.W. OF BOLIVAR.
 PROJECT NO. F-100(2) (RTE. 13) STA. 193+51.25
 POLK COUNTY

Assembled March 1957 by J.L.L. & B.E.G.
 Checked Apr. 1958 by B.F.K.

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

Sheet No. 2 of 5.

SEE FINAL PLANS BROWN-LINES

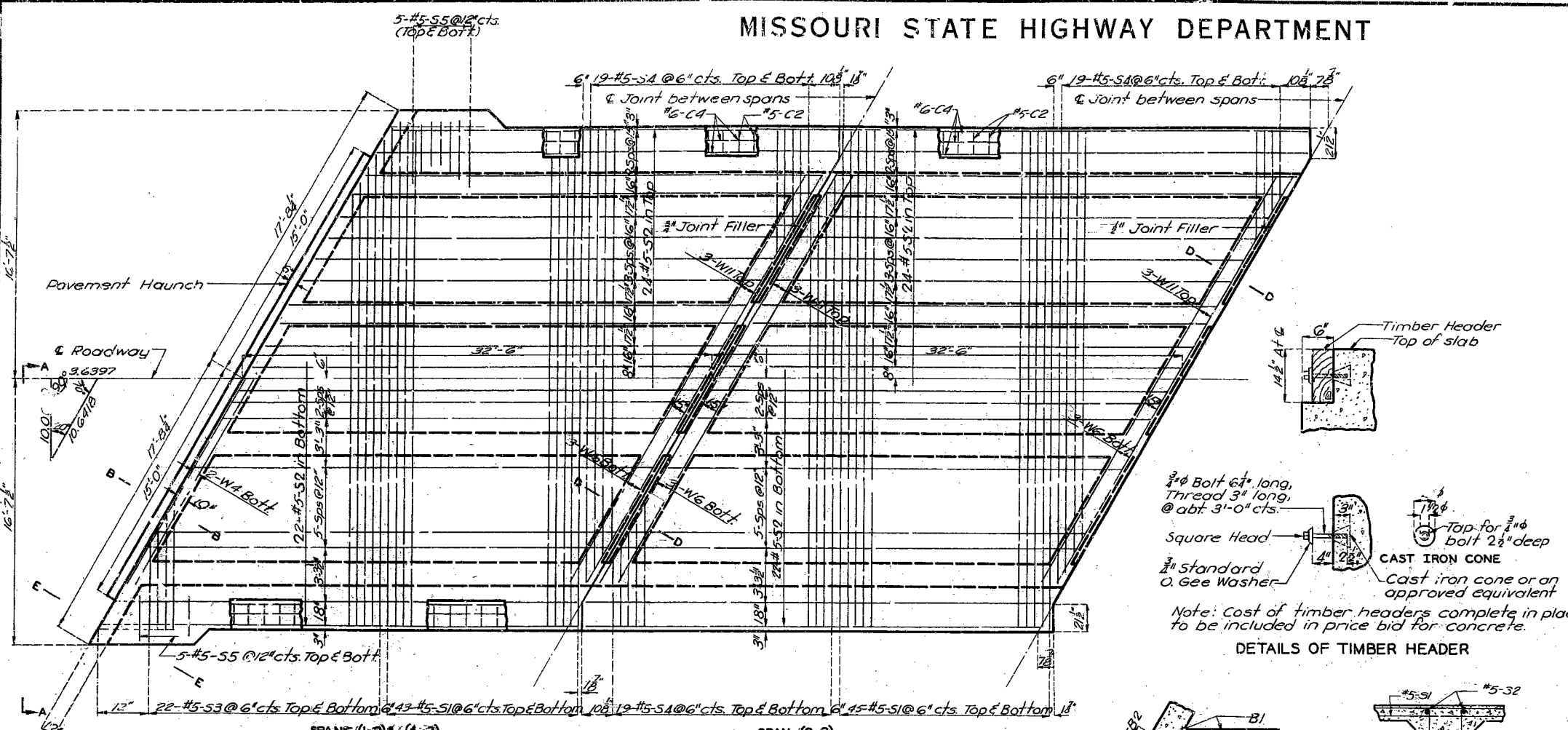
Deck Girder 3 col. End Bt. 2 or 3 col. Int. Bt.

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MISSOURI STATE HIGHWAY DEPARTMENT

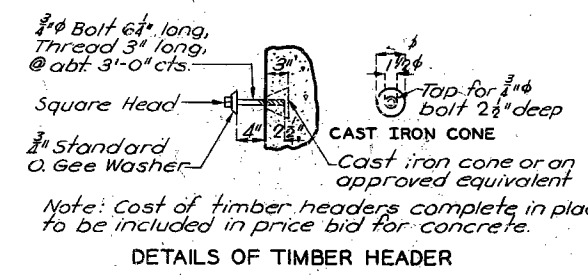
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5	MO.		19	39	



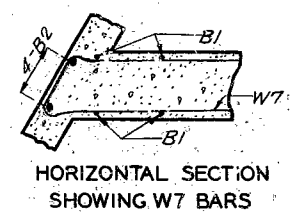
PLAN OF SLAB SHOWING REINFORCEMENT

BILL OF REINFORCING STEEL SPAN					
No.	Size	Length	Mark.	Location	Bending Sketches & Cutting Diagrams
384	#1	5'-6"	B1	Girder	
48	#1	34'-5"	B2	"	
24	#1	28'-0"	B3	"	
24	#1	23'-6"	B4	"	
12	#8	12'-6"	B5	"	
24	#9	17'-9"	B6	"	
20	#5	4'-0"	C1	Curb	
152	#5	3'-3"	C2	"	
4	#5	6'-0"	C3	"	
18	#6	32'-3"	C4	"	
24	#4	3'-9"	R1	End Post	
20	#5	6'-9"	R2	"	
262	#5	31'-3"	S1	Slab	
138	#5	32'-3"	S2	"	
44	#5	33'-3"	S3	"	
76	#5	32'-0"	S4	"	
40	#5	2'-6"	S5	"	
36	#4	6'-3"	W1	End Web	
96	#4	5'-0"	W2	Int Web	
4	#7	27'-0"	W3	End Web	
12	#7	27'-0"	W4	Int Web	
48	#5	5'-3"	W5	End Web	
12	#7	33'-3"	W6	End Web	
16	#4	6'-0"	W7	"	
8	#4	4'-6"	W8	"	

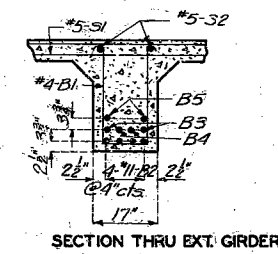
Note: Bars in the above unit to be billed and fagged separately.



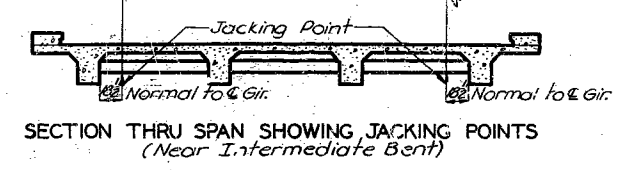
DETAILS OF TIMBER HEADER



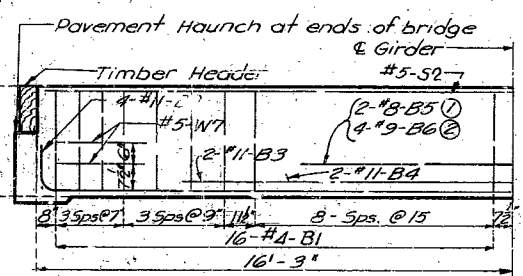
HORIZONTAL SECTION SHOWING W7 BARS



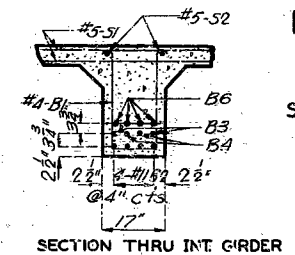
SECTION THRU EXT. GIRDER



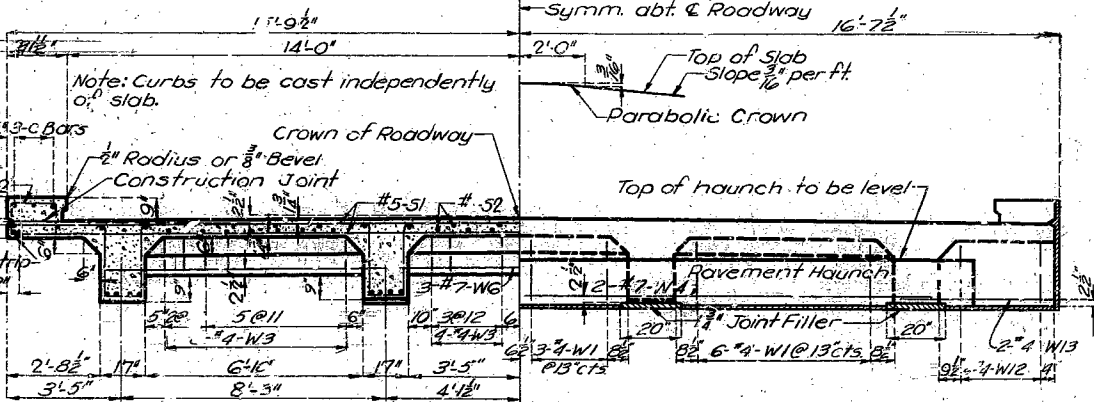
SECTION THRU SPAN SHOWING JACKING POINTS (Near Intermediate Bent)



GIRDER REINFORCEMENT

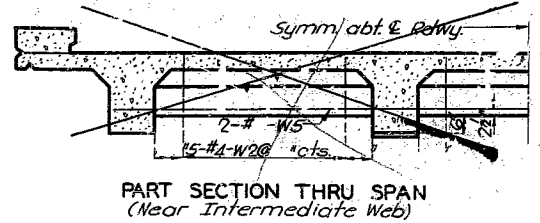


SECTION THRU INT. GIRDER

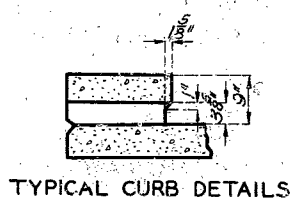


PART SECTION THRU SPAN (Near Intermediate Bent)

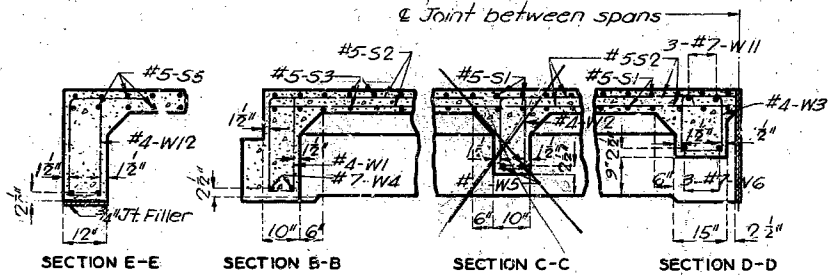
ELEVATION A-A



PART SECTION THRU SPAN (Near Intermediate Web)



TYPICAL CURB DETAILS



TYPICAL PART LONGITUDINAL SECTION

BRIDGE OVER BRUSH CREEK

STATE ROAD FROM HUMANSVILLE TO BOLIVAR
ABOUT 21.0 MILES N.W. OF BOLIVAR
PROJECT NO. F-100112 (RT.E.13) STA. 183+51.25
POLK COUNTY

Assembled Apr. 1957 by K.R.M. & J.C.F.
Checked April, 1958 by Q.F.K.

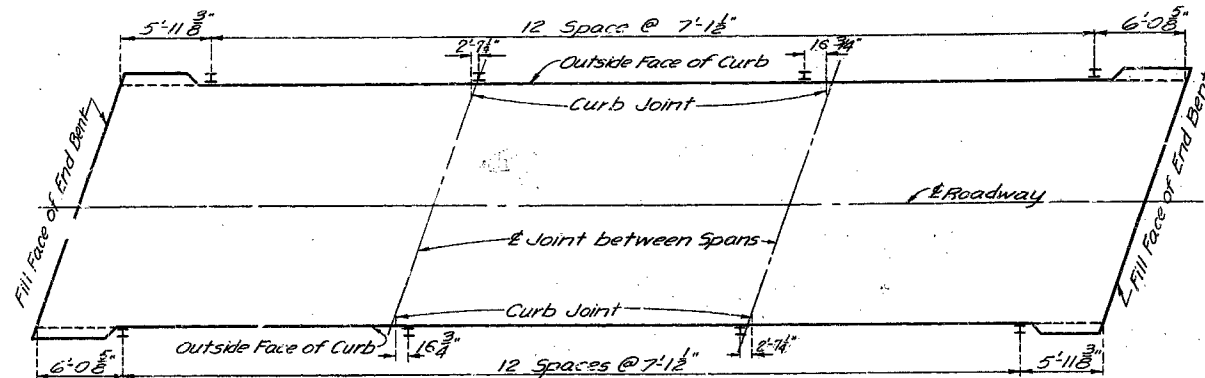
Note: This drawing is not to scale. Follow Dimensions.

Sheet No. 3 of 5.

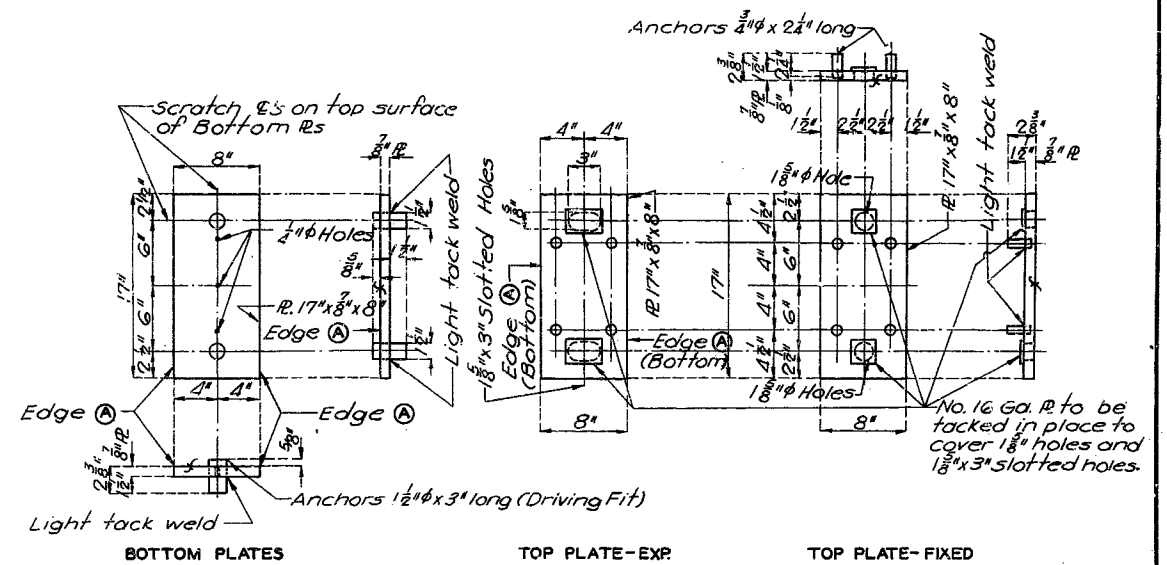
NO CONSTRUCTION CHANGES 3' thru 35' - Deck Girder - 28' Rdwy. - H-20 - 7-14-55

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	40	



PLAN OF SLAB SHOWING RAIL POST SPACING



Notes for bearings:
 Holes in $\frac{1}{8}$ " plates for $\frac{3}{4}$ " ϕ x $2\frac{1}{2}$ " and $1\frac{1}{2}$ " ϕ x 3 " anchors shall be made for driving fit. After anchors are driven in place they shall be lightly tack welded to $\frac{1}{8}$ " plates.
 Surfaces marked "S" shall be finished. All finished surfaces shall be coated with white lead and tallow in shop and just prior to placing plates in concrete all finished surfaces shall be thoroughly cleaned and coated with a mixture of graphite and oil.
 Edge A to be rounded ($\frac{1}{16}$ " to $\frac{3}{8}$ " radius)
 Material: A.S.T.M. A7

DETAILS OF BEARING PLATES

171

BRIDGE OVER BRUSH CREEK
 STATE ROAD FROM HUMANSVILLE TO BOLIVAR
 ABOUT 21.0 MILES N.W. OF BOLIVAR
 PROJECT NO. F-100(2) (RTE.13) STA. 183+51.25
 POLK COUNTY

Assembled Apr. 1957 by J.L.L. & J.C.F.
 Checked Apr. 1958 by Q.F.K.

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

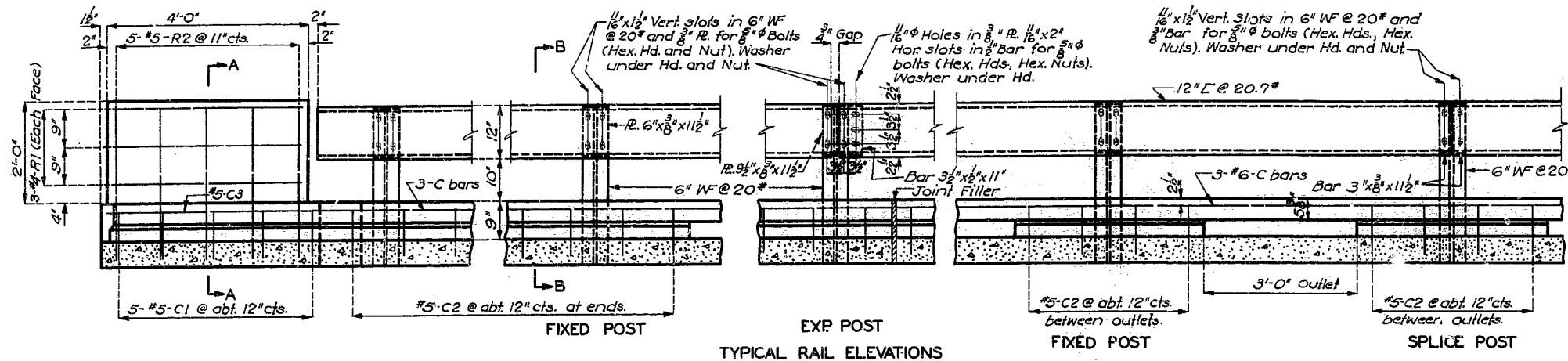
Sheet No. 40 of 5.

NO CONSTRUCTION CHANGES

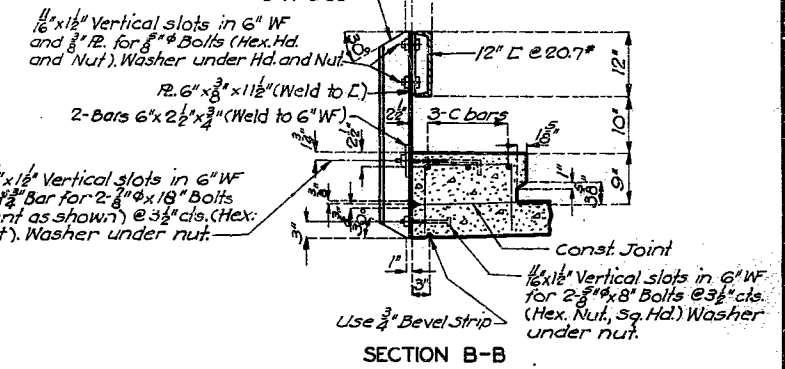
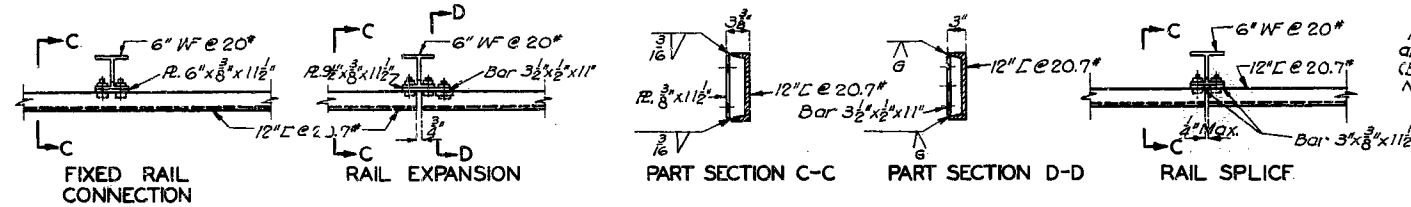
A-63

MISSOURI STATE HIGHWAY DEPARTMENT

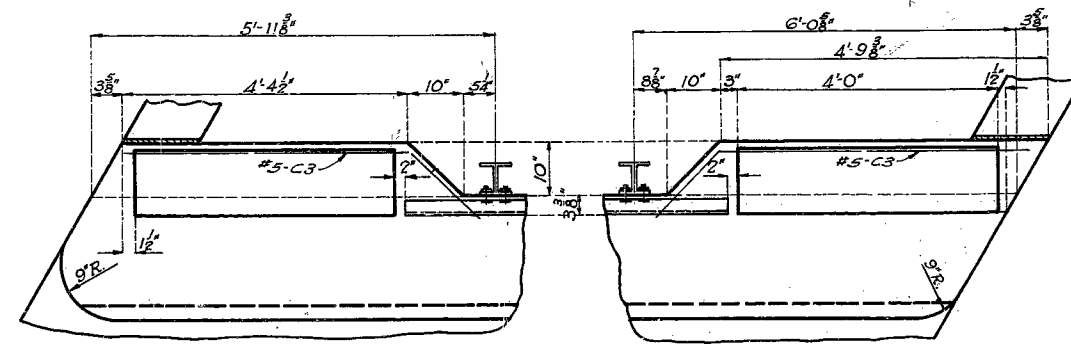
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5	MO.		19	41	



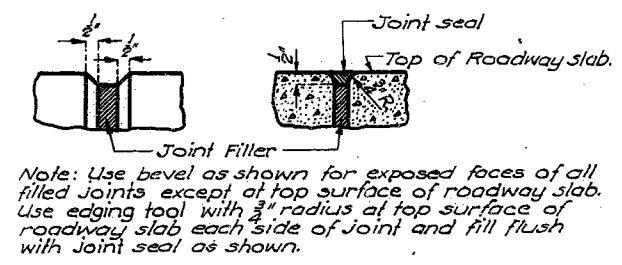
Note: Outlets to be centered between railpost.
For location of outlets, see Sheet No. 1 of design plans.
All exposed edges of end posts to be beveled 1/2".



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 1/4" thickness to be furnished with structural steel. Cost of shims to be included in price bid for other items.



Note: Omit 9" radius curve on curb at ends of bridge where drain basin is provided on approach pavement.



DETAILS OF BEVEL FOR FILLED JOINTS

BRIDGE OVER BRUSH CREEK
 STATE ROAD FROM HUMANSVILLE TO BOLIVAR
 ABOUT 21.0 MILES N. W. OF BOLIVAR
 PROJECT NO. F-100(12) (RTE.13) STA. 183+51.25
POLK COUNTY

Drawn April 1958 by KRW.
Checked Apr. 1958 by R.F.K.

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

Sheet No. 5 of 5

NO CONSTRUCTION CHANGES

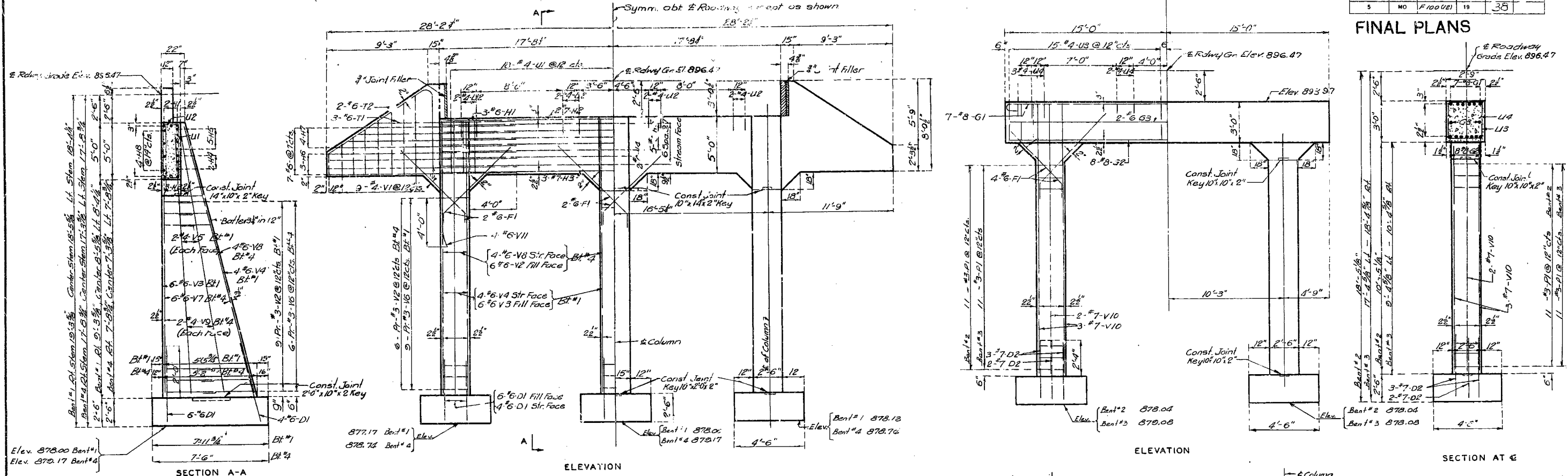
A-63

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	F.D. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	F10022	19	38	

FINAL PLANS

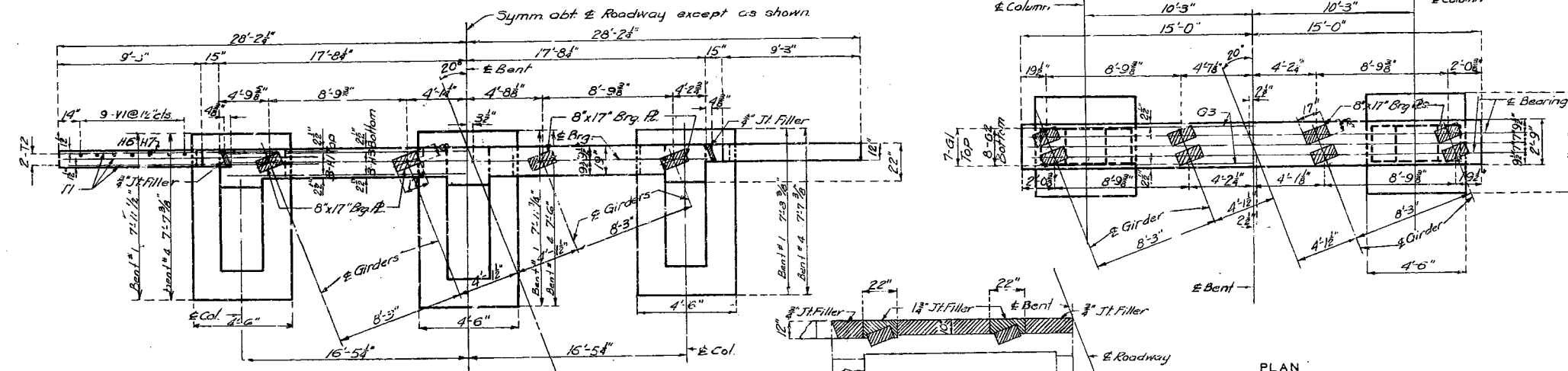


ELEVATION

ELEVATION

SECTION AT E

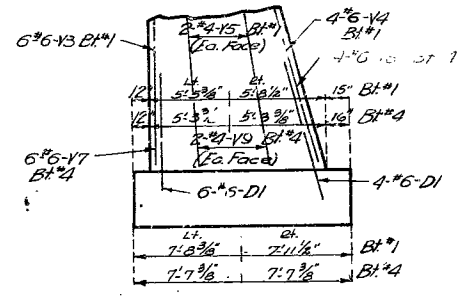
Note: Fill at End Bents No. 1 & 4 was not carried above bottom of beams and wings until Superstructure Spans (1-2) and (3-4) in place.



PLAN
DETAILS OF END BENTS NO. 1 & 4

PLAN
DETAILS OF INTERMEDIATE BENTS NO. 2 & 3

PART ELEVATION SHOWING REINFORCING IN FILL FACE



EXTERIOR COLUMNS

Assembled March 1957 by J.L.L. & B.E.G.
Checked Apr. 1958 by G.E.K.

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

Sheet No. 2 A of 2.

BRIDGE OVER BRUSH CREEK
STATE ROAD FROM HUMANSVILLE TO SOLIVAR
ABOUT 21.0 MILES N.W. OF SOLIVAR.
PROJECT NO. F-10022 (RTE. 13) STA. 183+51.25
POLK COUNTY

A-63

Deck Girder 3 col. End Bt. 2 or 3 col. Int. Bt.

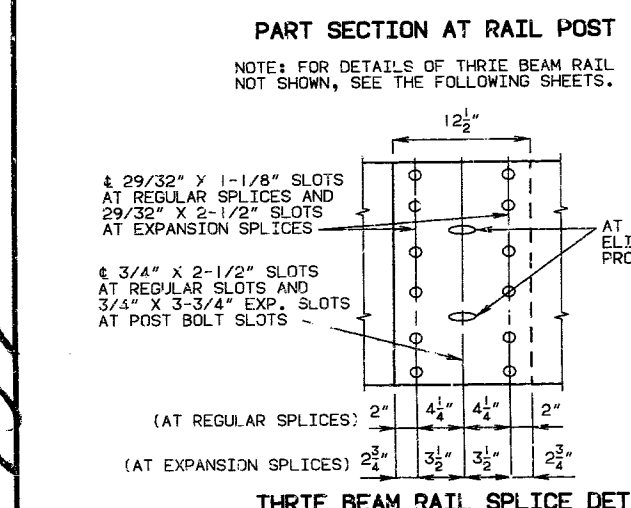
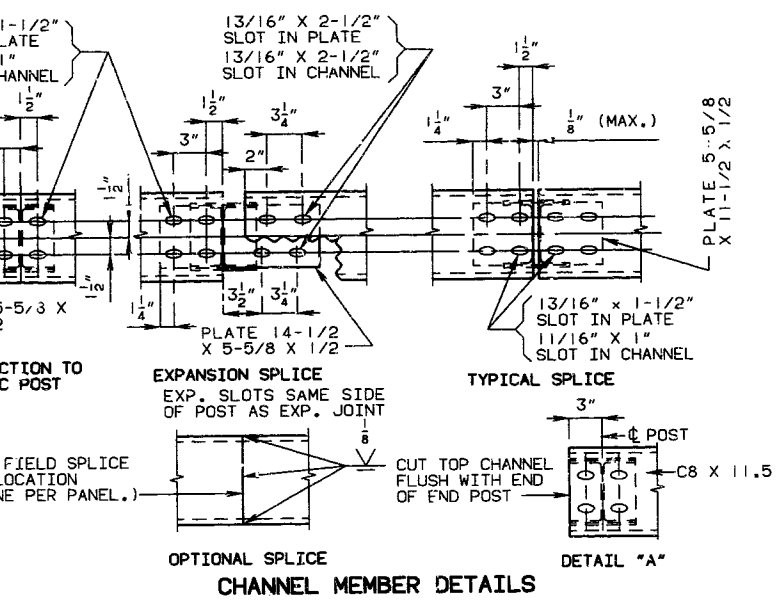
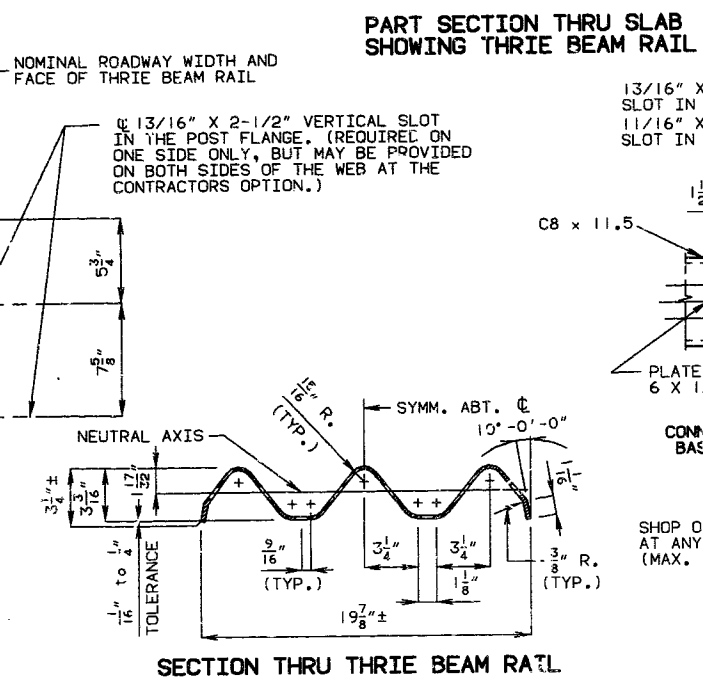
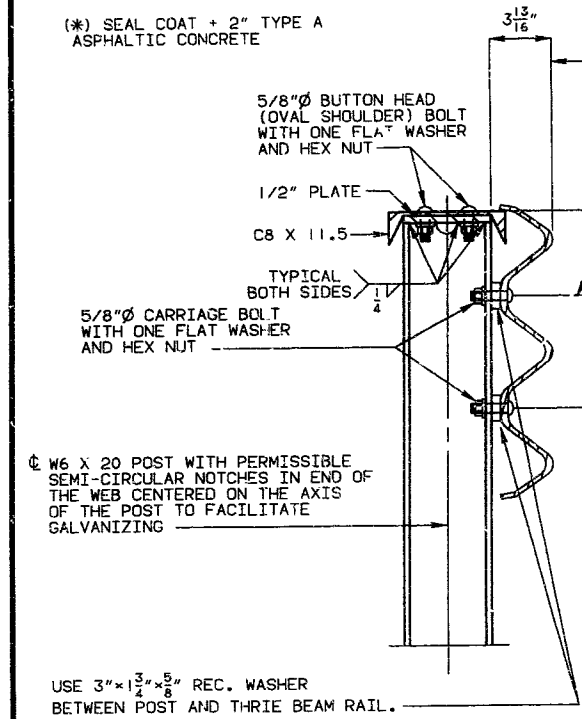
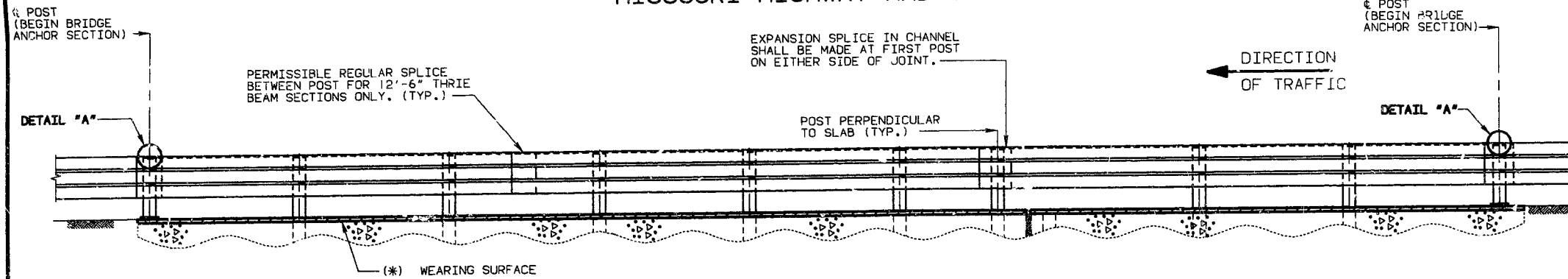
FINAL PLANS

FINAL PLANS

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MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	FAF-13-2(31)S:ABC	54
SEC.	16 TWP. 35N RGE. 24W	



ESTIMATED QUANTITIES		
ITEMS		TOTAL
REMOVAL AND STORAGE OF EXISTING BRIDGE RAIL	LIN. FT.	177
CURB REMOVAL FOR THRIE BEAM INSTALLATION	LIN. FT.	195
ASPHALT CEMENT (ASPHALTIC CONCRETE) 60-70 OR AC-20 (TYPE A MIX)	TON	1.9
MINERAL AGGREGATE (ASPHALTIC CONCRETE) (TYPE A MIX)	TON	38
POLYMER MODIFIED ASPHALT (SEA. COAT)	GAL.	120
COVER AGGREGATE	TON	5
SUBSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	50
SUPERSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	15
SLAB EDGE REPAIR (BRIDGES)	LIN. FT.	15
MODIFIED DECK REPAIR	SQ. FT.	50
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.	185

DESIGNED DEC. 1991
 DETAILED DEC. 1991
 CHECKED DEC. 1991

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

GENERAL NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS, AND INTERIM 1991.

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 ALL ANCHOR BOLTS, NUTS, WASHERS AND 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. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING MATERIAL FOR THIS WORK.

AT THE EXPANSION SLOTS IN THE THRIE 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" MIN.)

THRIE 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" X 1-3/16" X 3/16" MIN.) AND FLAT WITH A 1/16" X 1" SLOT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE BEAM. (USE A 3" X 1-3/4" X 5/8" RECTANGULAR WASHER BETWEEN THE POST AND THE THRIE 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 THRIE BEAM RAIL SHALL BE MADE AT EITHER THE FIRST OR SECOND POST ON EITHER SIDE OF THE JOINT AND IN STRUCTURE AT BRIDGE ENDS. WHEN THE SPLICE IS MADE AT THE SECOND POST, AN EXPANSION SLOT SHALL BE PROVIDED IN THE THRIE 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 THRIE 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.

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

SEE MISSOURI STANDARD PLANS DRAWING 606.00 FOR DETAILS NOT SHOWN.

MAINTAIN ONE LANE OF TRAFFIC OVER STRUCTURE DURING CONSTRUCTION (SEE RDWY PLANS)

MINIMUM LENGTH OF THRIE BEAM SECTIONS IS EQUAL TO ONE POST SPACE. THE CONTRACTOR SHALL USE ONE OF THE RESIN ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS.

7/8" Ø RESIN ANCHORS SHALL HAVE 27,000 LBS. PULLOUT STRENGTH IN 4,000 PSI CONCRETE.

THESE ANCHOR SYSTEMS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS SPEC. EXCEPT AS MODIFIED BY JOB SPEC. PROV.

COST OF FURNISHING AND INSTALLING THE ANCHOR SYSTEMS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF BRIDGE GUARD RAIL (THRIE BEAM).

REPAIRS TO BRIDGE OVER BRUSH CREEK

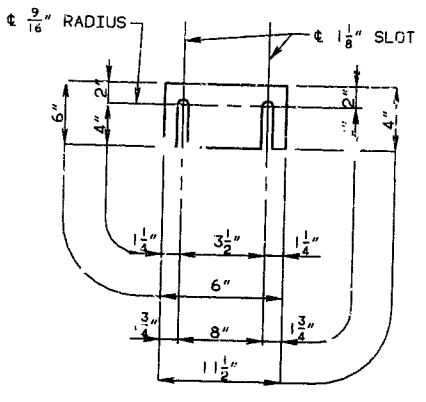
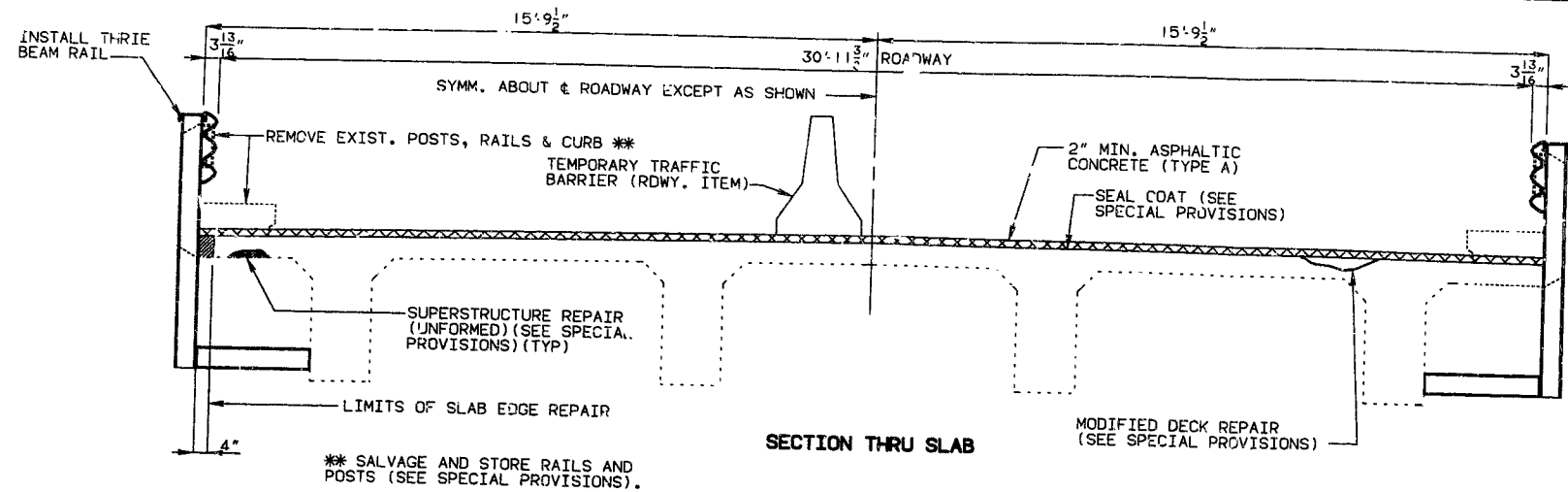
STATE ROAD FROM HUMANSVILLE TO BOLIVAR
 ABOUT .1 MILES S.E. OF HUMANSVILLE
 PROJECT NO. FAF-13-2(31)S:ABC STA. 183+51.25
 JOB NO. J8P0485 RTE. 13
 POLK COUNTY

A-63R

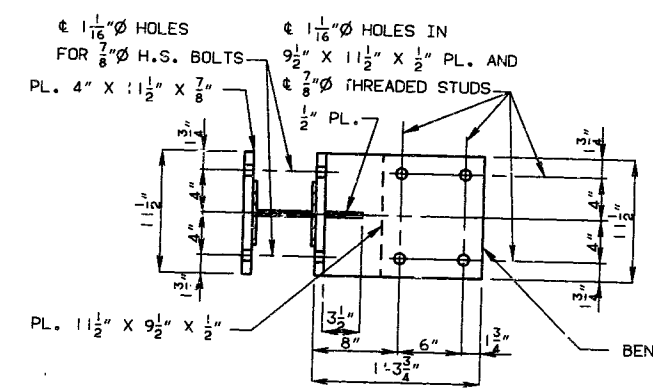
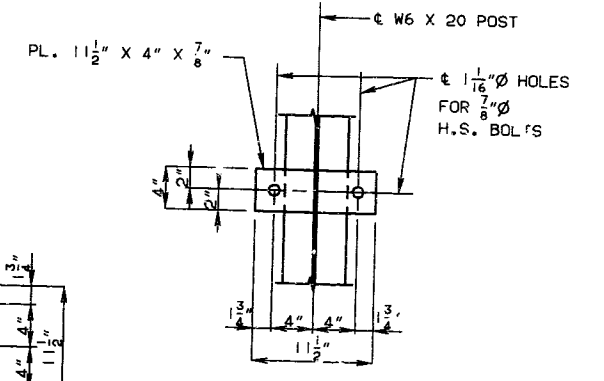
See Final Plans
 SHEET NO. 11 OF 3

DATE 1/2/92

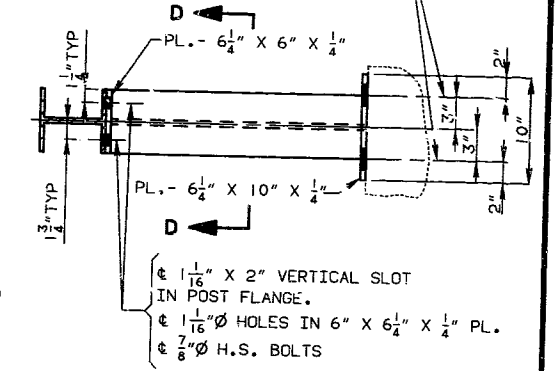
STATE	P.O.J. NO.	SHEET NO.
MO.		35



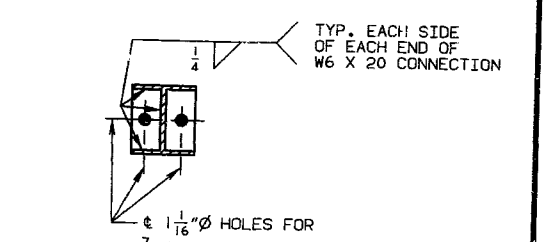
NOTE: SHIM PLATES 6" X 6" X 1/16" MAY BE USED BETWEEN POST W6 X 20 AND 6" X 6 1/4" X 1/4" PL. AND SHIM PLATES 11 1/2" X 4" X 1/16" MAY BE USED BETWEEN POST W6 X 20 AND 19 3/4" X 11 1/2" X 3/8" BENT PLATES AS REQUIRED FOR HORIZONTAL ALIGNMENT.
SHIM PLATES MAY VARY IN THICKNESS FROM 1/16" TO THE THICKNESS REQUIRED AND MAY BE USED IN MULTIPLES. SHIM PLATES SHALL BE GALVANIZED AFTER FABRICATION.



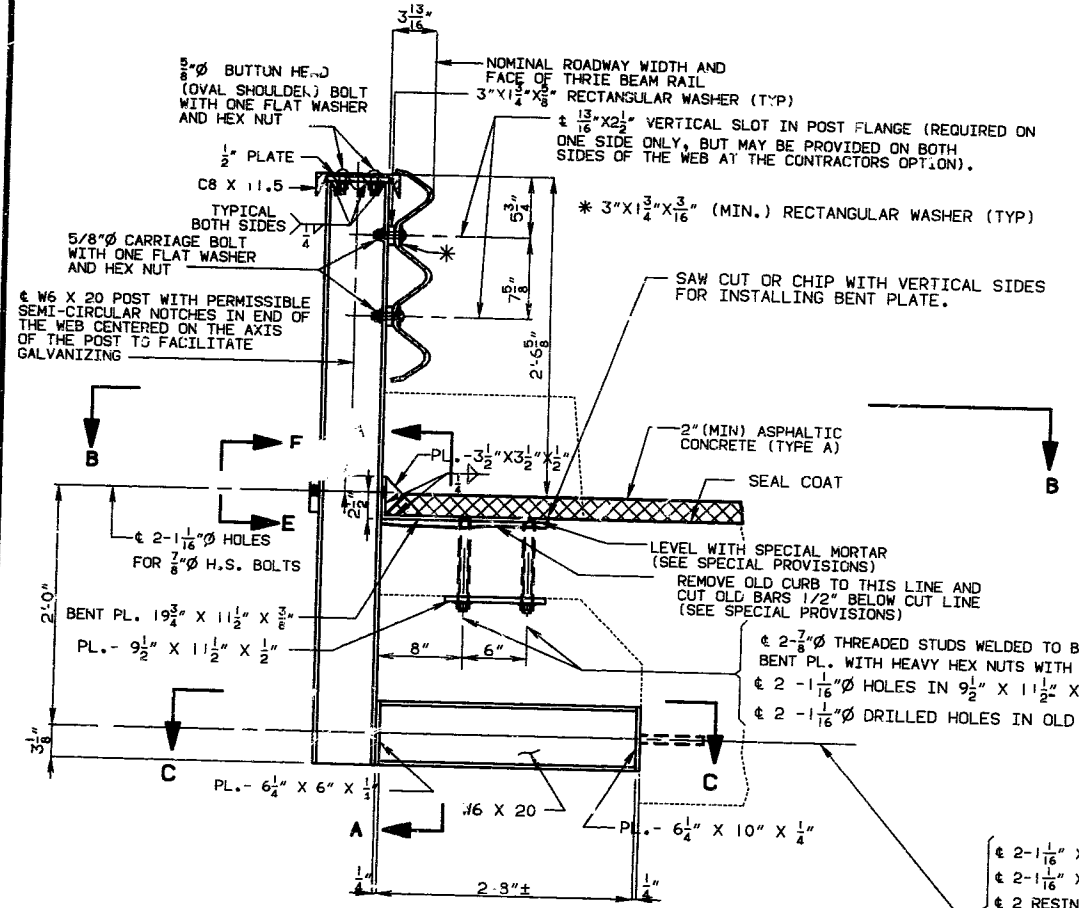
1/16" X 2" HORIZ. SLOTS IN 10" X 6 1/4" X 1/4" PL.
RESIN ANCHOR SYSTEM FOR 7/8" A325 GALV. THREADED RODS WITH HEX NUTS AND WASHERS



SECTION C-C

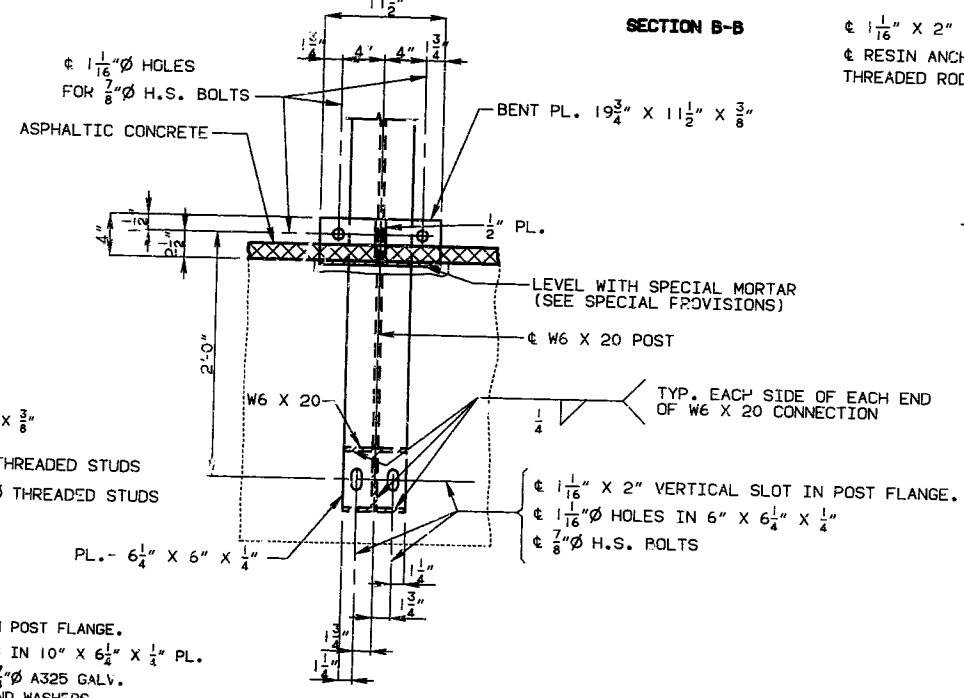


SECTION D-D



PART SECTION AT RAIL POST IN SPAN

NOTE: FOR DETAILS OF THRIE BFAM RAIL NOT SHOWN, SEE SHEET NO. 1.



SECTION A-A

NOTE: THE 7/8" THREADED STUDS SHALL BE IN ACCORDANCE WITH MO. STD. SPEC. 1037.2 & THE STRENGTH REQUIREMENTS OF SEC. 1037.6.1. IN LIEU OF THE STUDS, A-307 BOLTS (WITHOUT HEADS) OR A-36 THREADED RODS MAY BE WELDED TO THE BENT PLATE WITH A MINIMUM 5/16" FILLET WELD.

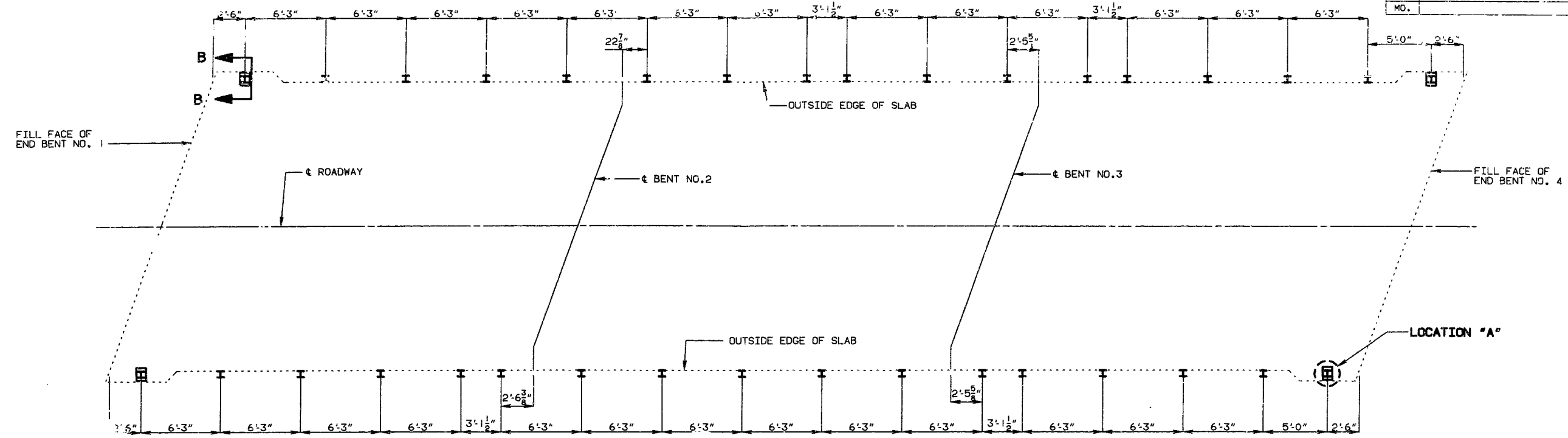
- 2-1/16" X 2" VERTICAL SLOT IN POST FLANGE.
- 2-1/16" X 2" HORIZONTAL SLOTS IN 10" X 6 1/4" X 1/4" PL.
- 2 RESIN ANCHOR SYSTEMS FOR 7/8" A325 GALV. THREADED RODS WITH HEX NUTS AND WASHERS
- 2-1/16" HOLES IN 6" X 6 1/4" X 1/4" PL.
- 2-7/8" H.S. BOLTS

458

DETAILED DEC. 1991
CHECKED DEC. 1991

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

STATE	PROJ. NO.	SHEET NO.
MD.		36

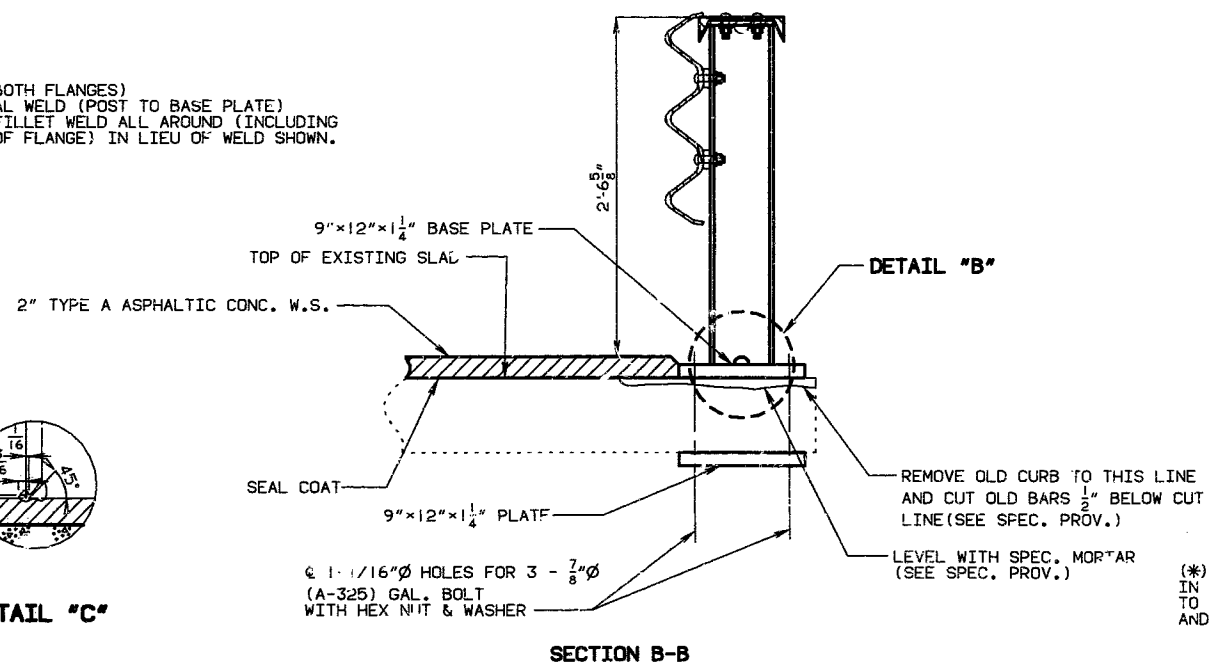


SPAN (1-2)

SPAN (2-3)
RAIL POST SPACING

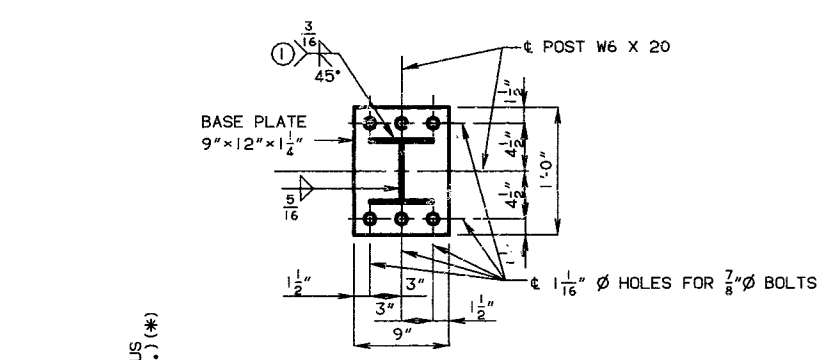
SPAN (3-4)

① (TYP. BOTH FLANGES)
OPTIONAL WELD (POST TO BASE PLATE)
5/16" FILLET WELD ALL AROUND (INCLUDING
EDGES OF FLANGE) IN LIEU OF WELD SHOWN.

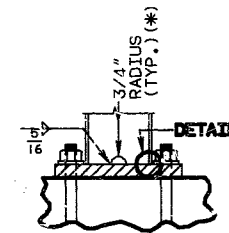


DETAIL "C"

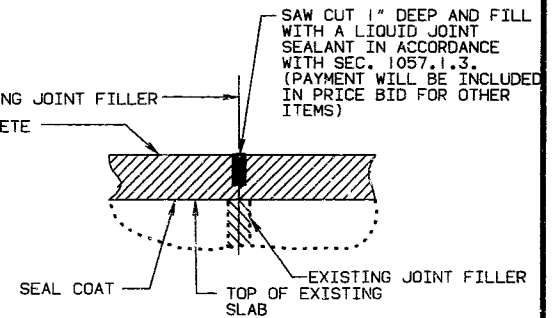
SECTION B-B



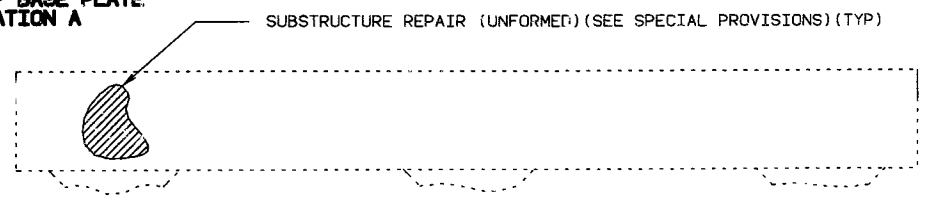
DETAILS OF BASE PLATE @ LOCATION A



DETAIL "B"



DETAIL OF TRANSVERSE JOINT AT BTS. NO. 2, & 3



DETAILS SHOWING SUBSTRUCTURE REPAIR AREA

(*) PERMISSIBLE SEMI-CIRCULAR NOTCHES IN ENDS OF WEB CENTERED ON AXIS OF POST TO FACILITATE GALVANIZING (TYPICAL TOP AND BOTTOM OF POST).

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

DETAILED DEC. 1991
CHECKED DEC. 1991

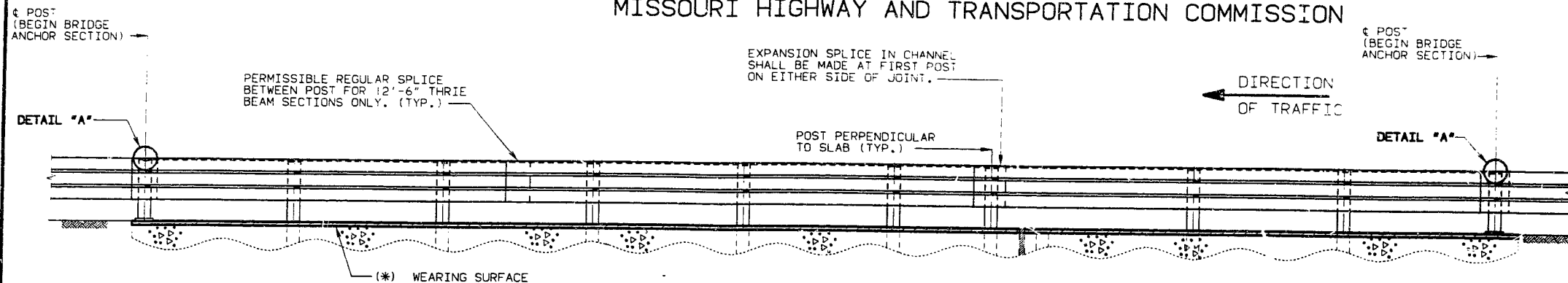
SHEET NO. 3 OF 3

POLK COUNTY A-63R

455

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE PROJ. NO. 15-EE
 MO. F-13-2(31)S:ABC STA.
 SEC. 16 TWP. 35N. RGE. 24W



GENERAL NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS, AND INTERIM 1991.

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

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 ALL ANCHOR BOLTS, NUTS, WASHERS AND PLATES SHALL BE GALVANIZED AFTER FABRICATION. FOR PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING, SEE SECTION 1040 OF THE MISSOURI STANDARD SPECIFICATIONS.

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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" MIN.)

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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" X 1-3/4" X 3/16" MIN.) AND FLAT WITH A 1/16" X 1" SLOT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE BEAM. (USE A 3" X 1-3/4" X 5/8" RECTANGULAR WASHER BETWEEN THE POST AND THE THRIE 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.)

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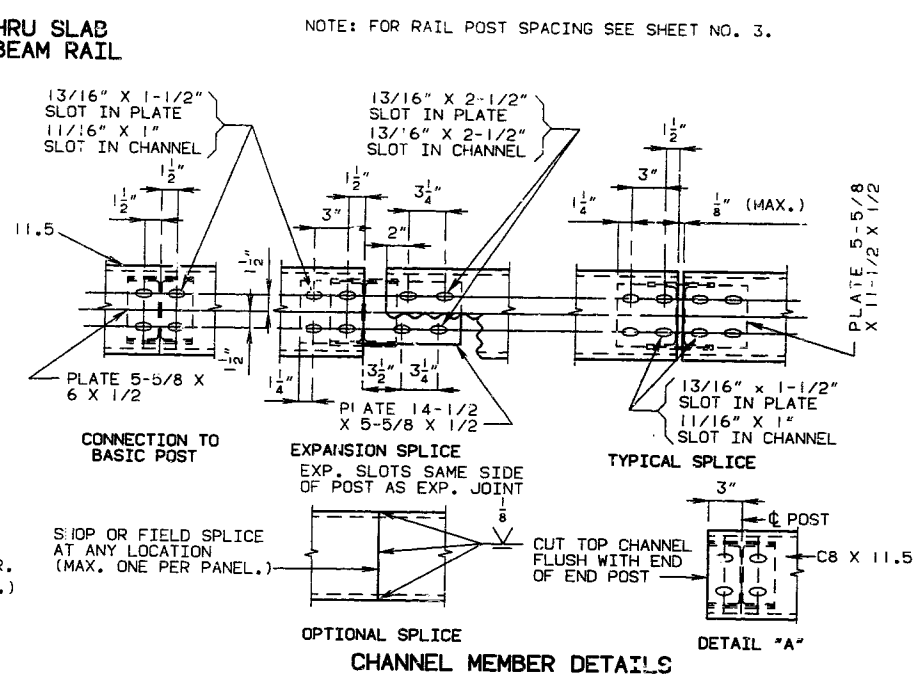
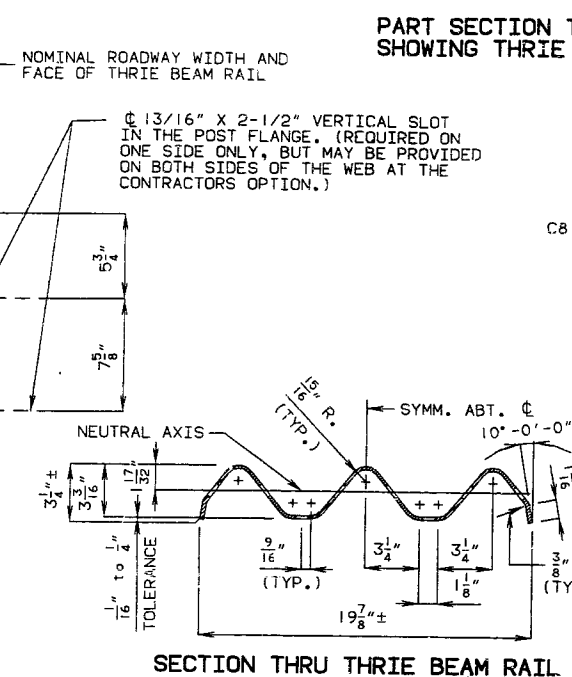
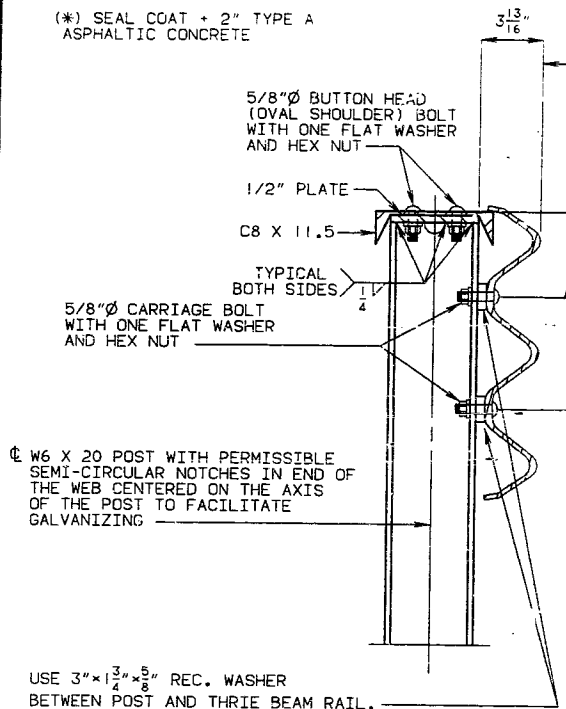
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IN ADDITION TO THE EXPANSION PROVISIONS AT THESE EXPANSION JOINTS, EXPANSION SPLICES IN THE THRIE BEAM RAIL AND THE CHANNEL SHALL BE PROVIDED AT OTHER LOCATIONS SO THAT THE MAXIMUM LENGTH WITHOUT EXPANSION PROVISIONS DOES NOT EXCEED 200 FT.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD BEFORE ORDERING MATERIALS.

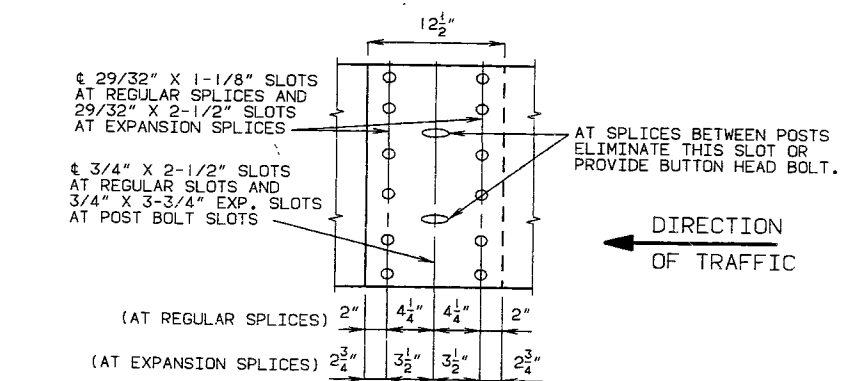
SHIM PLATES 6" X 6" X 1/16" MAY BE USED BETWEEN THE TOP OF POST AND THE CHANNEL MEMBER AS REQUIRED FOR VERTICAL ALIGNMENT.

SEE MISSOURI STANDARD PLANS D' TNG 606.00 FOR DETAILS NOT SHOWN.



PART SECTION AT RAIL POST

NOTE: FOR DETAILS OF THRIE BEAM RAIL NOT SHOWN, SEE THE FOLLOWING SHEETS.



FINAL QUANTITIES		
ITEMS		TOTAL
REMOVAL AND STORAGE OF EXISTING BRIDGE RAIL	LIN. FT.	177
CURB REMOVAL FOR THRIE BEAM INSTALLATION	LIN. FT.	195
ASPHALT CEMENT (ASPHALTIC CONCRETE) AC-20 (TYPE A MIX)	TON	2.1
MINERAL AGGERGATE (ASPHALTIC CONCRETE) (TYPE A MIX)	TON	38
POLYMER MODIFIED ASPHALT (SEAL COAT)	GAL.	120
COVER AGGERGATE	TON	5
SUBSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	101
SUPERSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	43
SLAB EDGE REPAIR (BRIDGES)	LIN. FT.	25
MODIFIED DECK REPAIR	SQ. FT.	6
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.	185

NOTE: OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK. ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH EXISTING CONCRETE DECK +2" ± (ROADWAY ITEM) THE POLYMER MODIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.35 GAL. PER SQ. YD. (SEE SPECIAL PROVISIONS) THE COVER AGGERGATE SHALL BE APPLIED @ A RATE OF 0.015 TONS PER SQ. YD. (SEE SPECIAL PROVISIONS)

MAINTAIN ONE LANE OF TRAFFIC OVER STRUCTURE DURING CONSTRUCTION (SEE RDWY PLANS)

MINIMUM LENGTH OF THRIE BEAM SECTIONS IS EQUAL TO ONE POST SPACE. THE CONTRACTOR SHALL USE ONE OF THE RESIN ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS.

7/8" RESIN ANCHORS SHALL HAVE 27,000 LBS. PULLOUT STRENGTH IN 4,000 PSI CONCRETE.

THESE ANCHOR SYSTEMS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS SPEC. EXCEPT AS MODIFIED BY JOB SPEC. PROV. COST OF FURNISHING AND INSTALLING THE ANCHOR SYSTEMS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF BRIDGE GUARD RAIL (THRIE BEAM).

REPAIRS TO BRIDGE OVER BRUSH CREEK

STATE ROAD FROM HUMANSVILLE TO BOLIVAR ABOUT .1 MILES S.E. OF HUMANSVILLE PROJECT NO. FAF-13-2(31)S:ABC STA. 183+51.25 JOB NO. J8P0485 RTE. 13 POLK - St. Clair COUNTY

DESIGNED DEC. 1991
 DETAILED DEC. 1991
 CHECKED DEC. 1991

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

SHEET NO. 1A OF 3

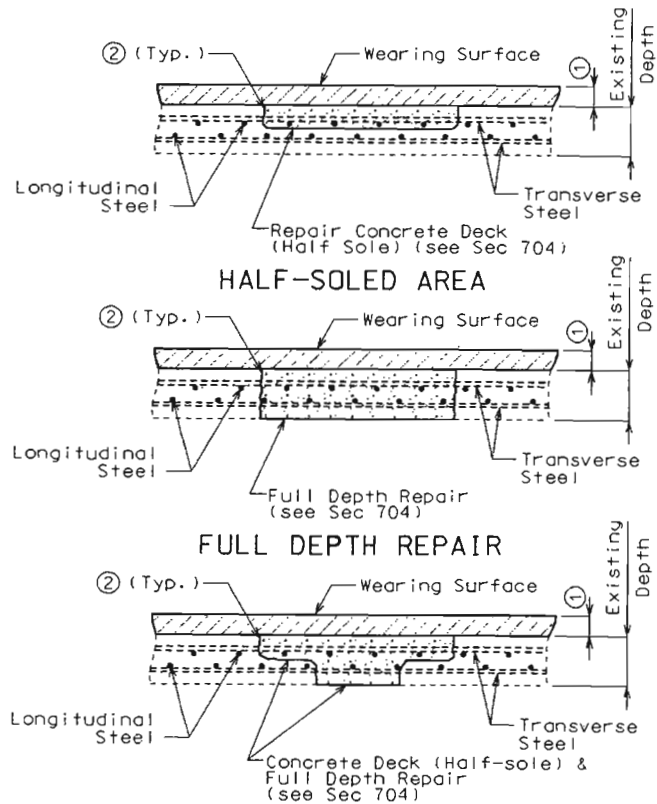
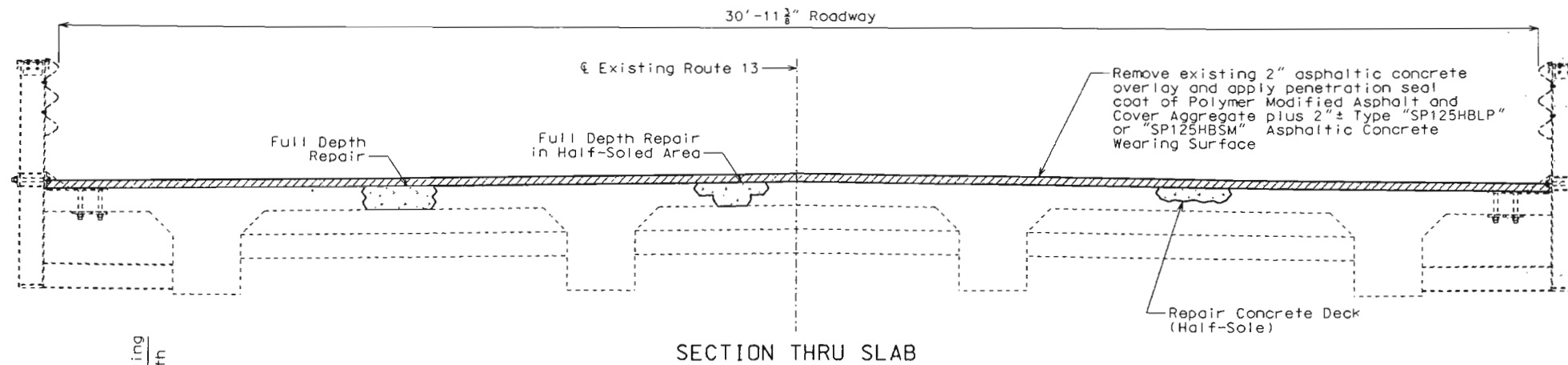
DATE 11/2/92

A-63R

460
 Checked by H.D. Gammathur, 9-15-93
 Checked by P.B. Patel 9-15-93

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
U.I.P. EXISTING (3 @ 30') DECK GIRDER SPANS

State	Proj. No.	Sheet No.
MO		81
SEC/SUR 16	TWP 35N RGE 24W	



Item		Total
Removal of Asphalt Wearing Surface	sq. foot	3080
Alternate Asphaltic Concrete Wearing Surface (Bridge)	sq. yard	342
Seal Coat, Grade A	sq. yard	342
Substructure Repair (Unformed)	sq. foot	100
Superstructure Repair (Unformed)	sq. foot	50
Repairing Concrete Deck (Half-Soling)	sq. foot	100
Full Depth Repair	sq. foot	50
Slab Edge Repair (Bridges)	linear foot	40

Notes:

- The polymer modified asphalt shall be applied at a rate of 0.35 gallon per square yard.
- The cover aggregate shall be applied at a rate of 0.0125 ton per square yard.
- The area of the asphaltic concrete wearing surface will be measured and computed to the nearest square yard. This area will be measured transversely from out to out of overlay and longitudinally from end of slab to end of slab.

Type of Wearing Surface	Asphaltic Binder (ton)	Mineral Aggregate (ton)	SMA Fibers (pound)	Mix Used (✓)
SP125HBSM Mix	2.4	36	236	
SP125HBLP Mix	2.2	35	N/A	

MoDOT construction personnel shall complete column labeled "Mix Used (✓)".
Type PG 64-22 asphalt binder is required in the asphaltic concrete mix for the bridge deck overlay.
The contractor shall select one of the alternate asphaltic concrete wearing surfaces listed in the table. The mixture shall be in accordance with Sec 403 and produced in accordance with Sec 404.
The table of Estimated Quantities for alternate asphaltic concrete wearing surface represents the quantities used by the State in preparing the cost estimate. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.
Payment for alternate Asphaltic Concrete Wearing Surface will be considered completely covered by the contract unit price per square yard.

General Notes:

- Design Specifications:
2002 - AASHTO 17th Edition
Bridge Deck Rating = 5
- Miscellaneous:
Outline of old work is indicated by dashed lines. Heavy lines indicate new work.
Contractor shall verify all dimensions in field before ordering new material.
In order to maintain grade and a minimum thickness of overlay as shown on plans, it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.
Roadway surfacing adjacent to bridge ends to match bridge overlay (Roadway Item).
- "Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.
- Traffic Handling:
Close bridge during construction while maintaining traffic on new Rte. 13 SBL (see Roadway Plans).

- ① Penetration seal coat of Polymer Modified Asphalt and Cover Aggregate plus 2"± Type "SP125HBLP" or "SP125HBSM" Asphaltic Concrete Wearing Surface.
- ② Saw cut, chip or hydroblast vertically first 1" for all deck repair.
Total width of full depth repair shall not exceed 1/3 of the deck width at one time. For any area of deck repair that extends over a concrete girder and is more than 18 inches in length along the girder, the concrete removal shall stop at the centerline of girder and repair completed in this area. Prior to continuing work in this area, the concrete shall have attained a compressive strength of 3200 psi. No traffic shall be permitted over the girder that is undergoing repair.
When the full depth repair extends over a diaphragm or girder and the deteriorated concrete extends into the diaphragm or girder, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in girders shall not be removed below the deck haunch of the girder without prior review and approval from the engineer.

REPAIRS TO BRIDGE OVER BRUSH CREEK

STATE ROAD FROM RTE. N TO RTE. 32
ABOUT 0.6 MILES S.E. OF RTE. N
PROJECT NO. STA. 183+51.25± (MATCH EXISTING)
JOB NO. J8P0732 RTE. 13 (NBL)



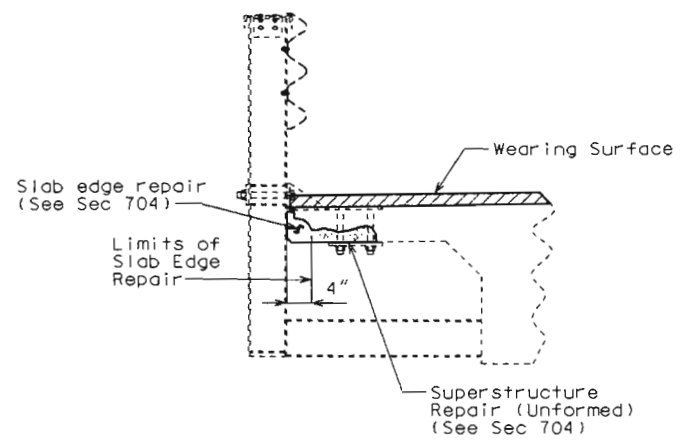
POLK COUNTY
Date: 6/8/04
A00632

Designed Apr. 2003
Detailed July 2003
Checked May 2004

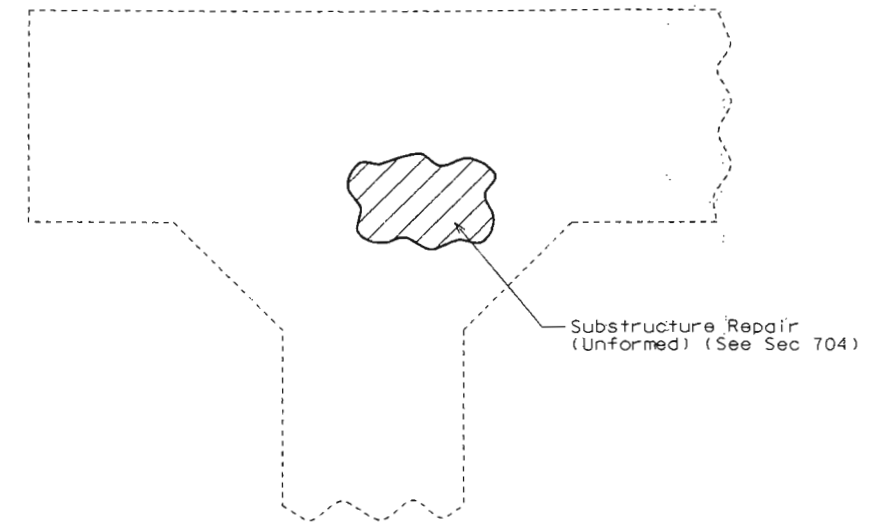
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Sheet No. 1 of 2

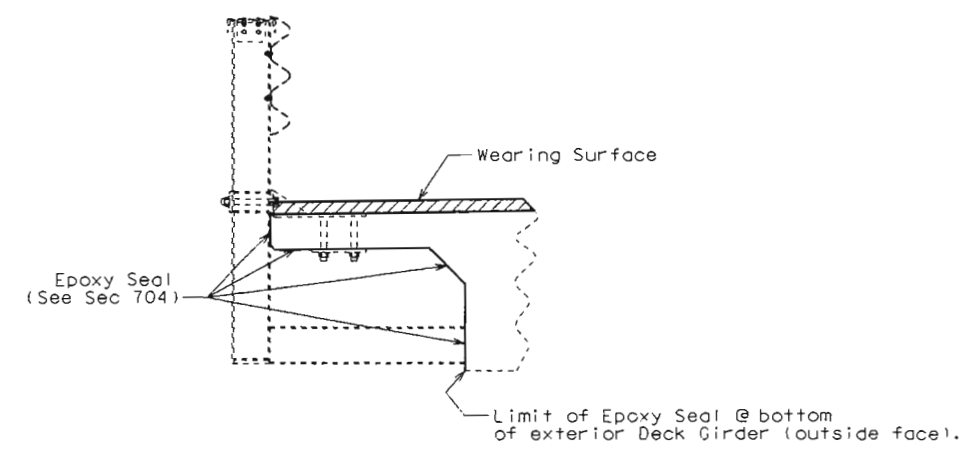
State	Proj. No.	Sheet No.
MO		82



CONCRETE EDGE REPAIR

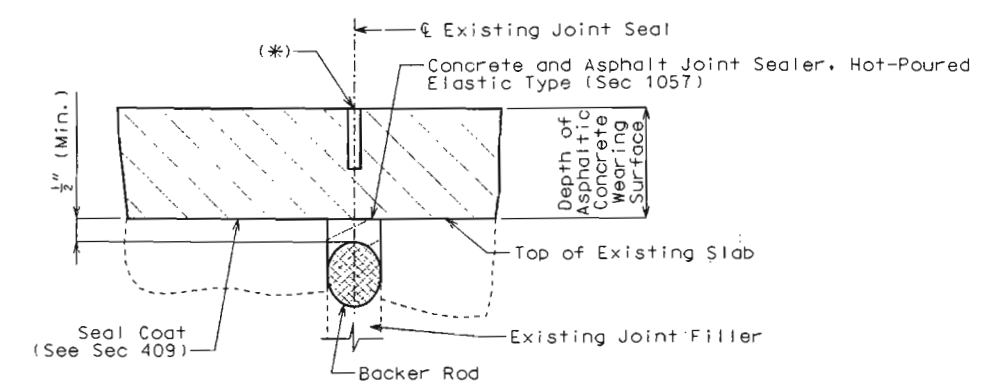


PART ELEVATION AT INT. BENTS SHOWING SUBSTRUCTURE REPAIR



TYPICAL SECTION SHOWING CLEANING AND SEALING OF SLAB & DECK GIRDER EDGES

Note: Clean & seal the entire length of the slab & deck girder edges on both sides of the bridge.



SECTION THRU JOINT

(*) Saw cut 1" deep and fill with concrete and asphalt joint sealer, hot-poured elastic type in accordance with Sec 1057.

Note: Joint shall be cleaned per the manufacturer's recommendations. Cost of concrete and asphalt joint sealer and backer rod shall be considered completely covered by the contract unit price for other items included in the contract.

STATE OF MISSOURI
 DANIEL M. SMITH
 NUMBER E-28896
 PROFESSIONAL ENGINEER
 DATE 6-7-04