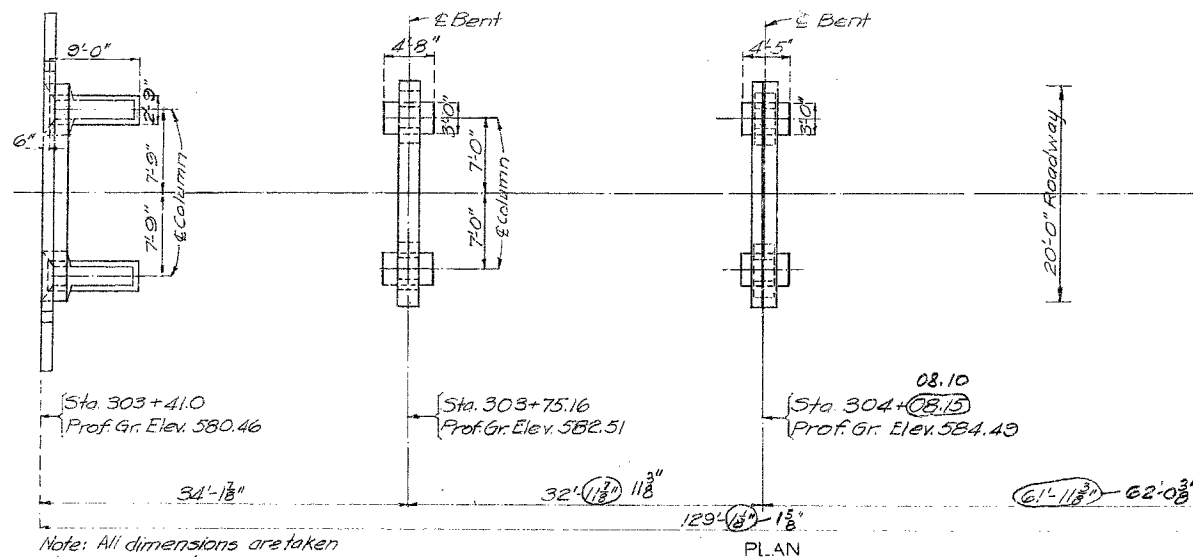
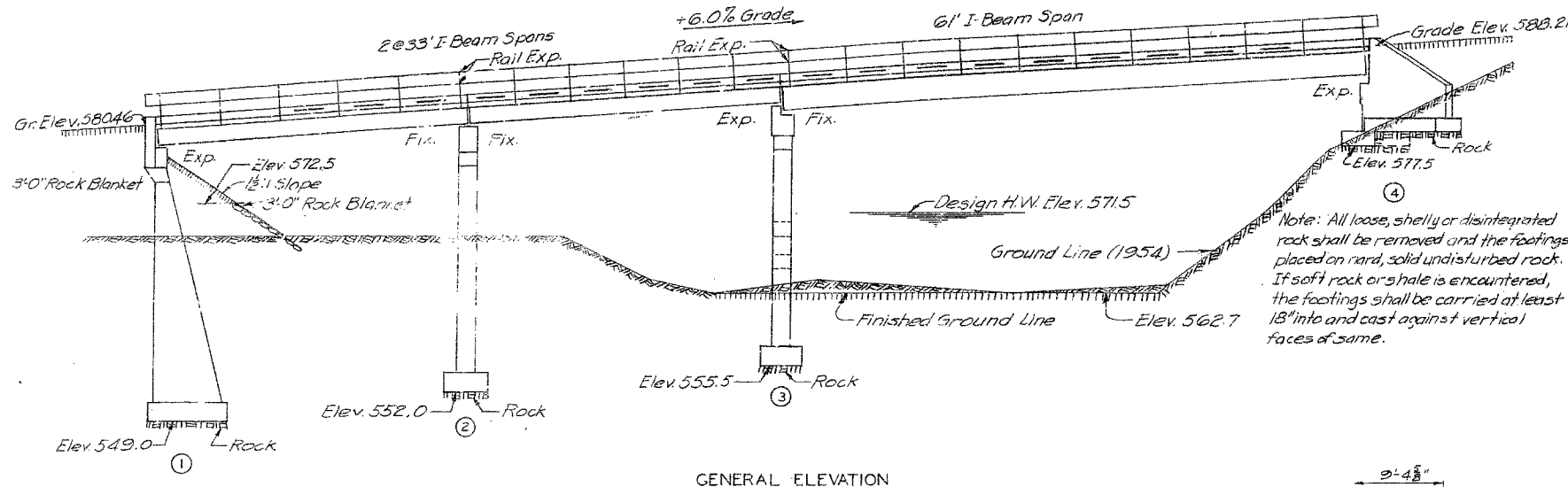


MISSOURI STATE HIGHWAY DEPARTMENT

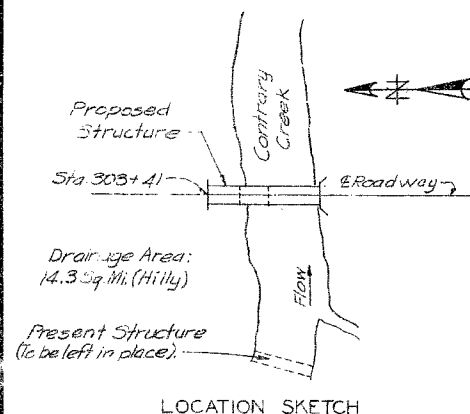
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-463(2) (S.N.)	19	17	



Note: All dimensions are taken along a horizontal line.

GENERAL NOTES:

Design Specifications: A.A.S.H.O.-1953
 Loading: H10-44
 Structural Steel Stress: 18,000 $\frac{\text{lb}}{\text{in}^2}$
 Reinforcing Steel Stress: 18,000 $\frac{\text{lb}}{\text{in}^2}$
 Concrete, Class "B" Stress: 1,000 $\frac{\text{lb}}{\text{in}^2}$
 All concrete shall be Class "B".
 Rivets $\frac{3}{4}$ " holes $\frac{1}{2}$ " except in handrail, where rivets shall be $\frac{3}{8}$ ", holes $\frac{1}{4}$ ".
 Field connections shall be riveted except as noted in handrail details or, if the Contractor desires to eliminate all field riveting on this project, he may use machine bolts except for the $\frac{3}{8}$ " rivet head bolts specified for handrail. Heads and nuts of machine bolts shall be American Standard Regular.
 Paint: Shop, rone; 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.
 Where joint filler is specified on the plans it shall conform with the requirements for Premolded Material for Filler as given in Section 59-22D of the Standard Specifications.
 Permits must be obtained for all truck loads over legal lengths. Items of material which cannot be transported by truck with over all length less than 15'-0" must be shipped by rail to the specified shipping point.



Drawn July 1955 by C.H.M.
 Checked Aug 1955 by C.S.A. & J.E.L.

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

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Work	Location
End Bent No. 1				
16	#6	4'-0"	D1	Footings
6	#6	7'-3"	F3	Haunch
6	#6	7'-6"	F4	"
2	#6	22'-6"	H1	Br. Wall
4	#6	22'-0"	H2	Beam
8	#6	20'-0"	H3	"
8	#5	8'-6"	H4	Wing
2	#5	7'-6"	H5	"
2	#5	8'-3"	H6	"
4	#6	10'-9"	T1	"
20	#4	10'-6"	U1	Beam
4	#4	3'-0"	U2	"
22	#4	3'-6"	V1	Br. Wall
4	#4	7'-9"	V2	Wing
2	#4	5'-0"	V3	"
48	#3	13'-9"	V4	Column
6	#6	27'-6"	V5	"
10	#6	26'-9"	V6	"
8	#4	24'-9"	V7	"
Int. Bent No. 2				
16	#6	4'-0"	D1	Footings
6	#6	7'-3"	F1	Haunch
8	#6	1'-6"	F2	"
4	#6	22'-0"	G1	Beam
2	#6	20'-0"	G2	"
4	#7	20'-0"	G3	"
44	#3	7'-9"	P1	Column
16	#6	25'-3"	P2	"
21	#4	3'-3"	U3	Beam
8	#4	2'-9"	U4	"

Bending Sketches and Cutting Diagrams		
7-D3 CUT 7	4-H14 CUT 4	4-V2 CUT 4
7-H11 CUT 11 & 8-F11 AS SHOWN	24-V4 CUT 48	7-V10 CUT 7

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds.	70	70
Class 2 Excavation for Structures	Cu. Yds.	135	135
Class 3 Concrete	Cu. Yds.	86.1	148.0
* Fabricated Structural Steel	Lbs.	57,460	57,460
Gray Iron Alloy Castings	Lbs.	830	830
Reinforcing Steel	Lbs.	8520	20,720

Note: Excavation for bridge made above Elev. 563.0 will be paid for as Class 1 Excavation for Structures.
 Excavation for bridge made below Elev. 563.0 will be paid for as Class 2 Excavation for Structures.
 * Final pay weight for Fabricated Structural Steel will be based on using field rivets except for bolted connections specified for handrail.

BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM ROUTE 50 TO HOPE
 ABOUT 18.5 MILES S.E. OF CHAMBERS
 PROJECT NO. DS-465 (3) (S.N.) STA. 303 + 41
 OSAGE COUNTY

SUBMITTED BY J. A. Williams DATE 8/11/1955
 APPROVED BY J. M. Winton DATE 8/11/1955
 CHIEF ENGINEER

Sheet No. 1 of 6.

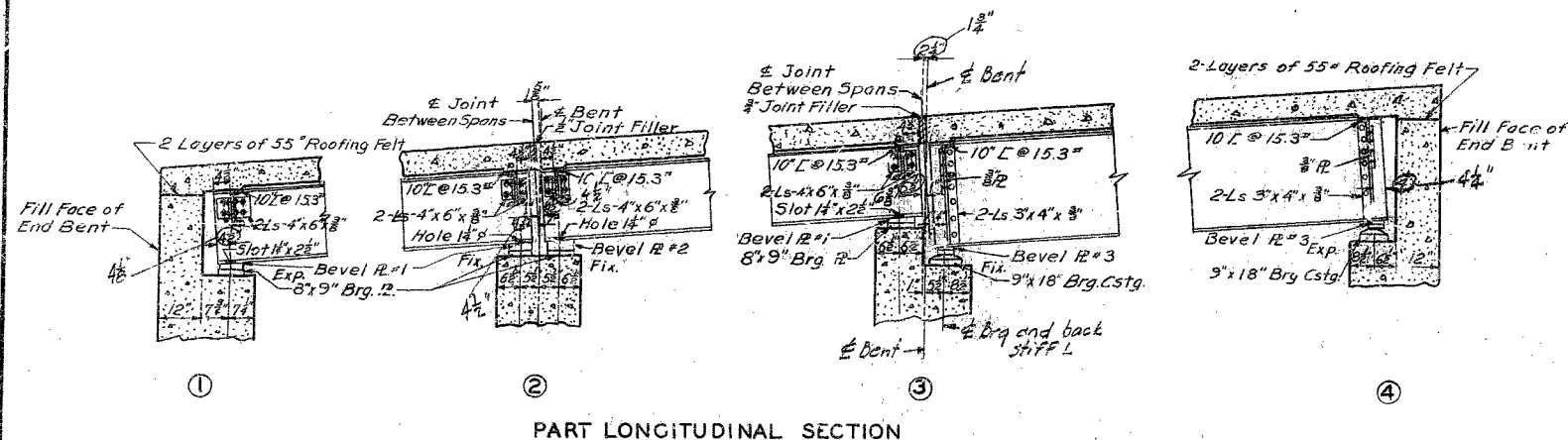
SEE FINAL PLANS BROWN LINES

Rev. 7-15-58

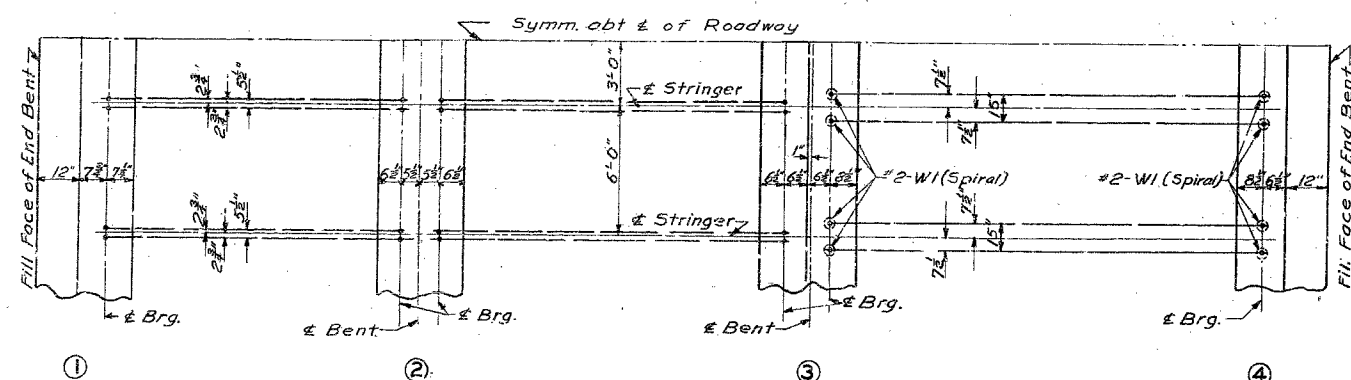
STD. C-110 R5
 P-866

MISSOURI STATE HIGHWAY DEPARTMENT

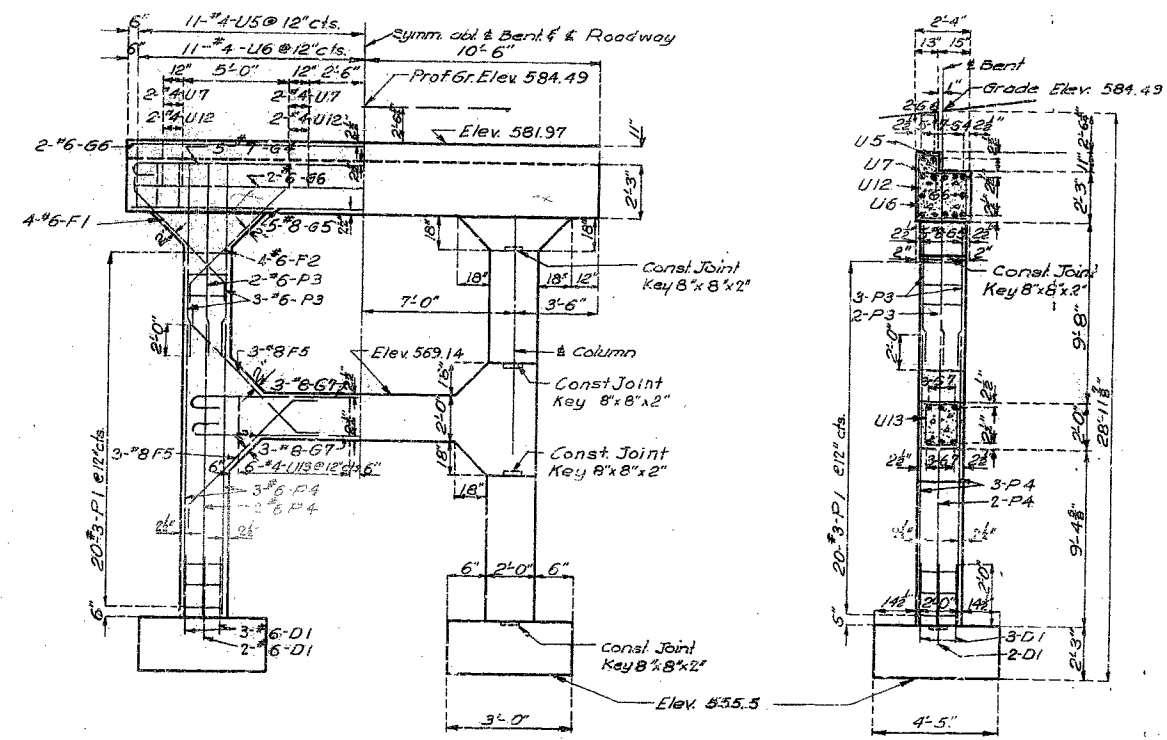
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-4831W (SN)	19	19	



PART LONGITUDINAL SECTION

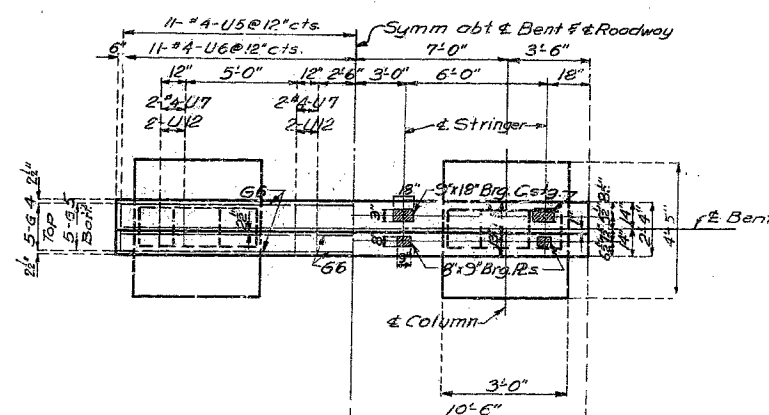


PART ANCHOR BOLT PLAN



ELEVATION

SECTION AT E



PLAN

DETAILS OF INT. BENT NO. 3

BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM ROUTE 50 TO HOPE
ABOUT 18.5 MILES S.E. OF CHAMOIS
PROJECT NO. DS-465 (3) (SN) STA. 303+41

OSAGE COUNTY

Assembled July 1955 by S.W.S. & G.W.R.
Checked Aug 1955 by C.S.A. F.J.E.L.

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

Sheet No. 3 of 6 Revised July 15, 1958

SEE FINAL PLANS DRAWN LINES

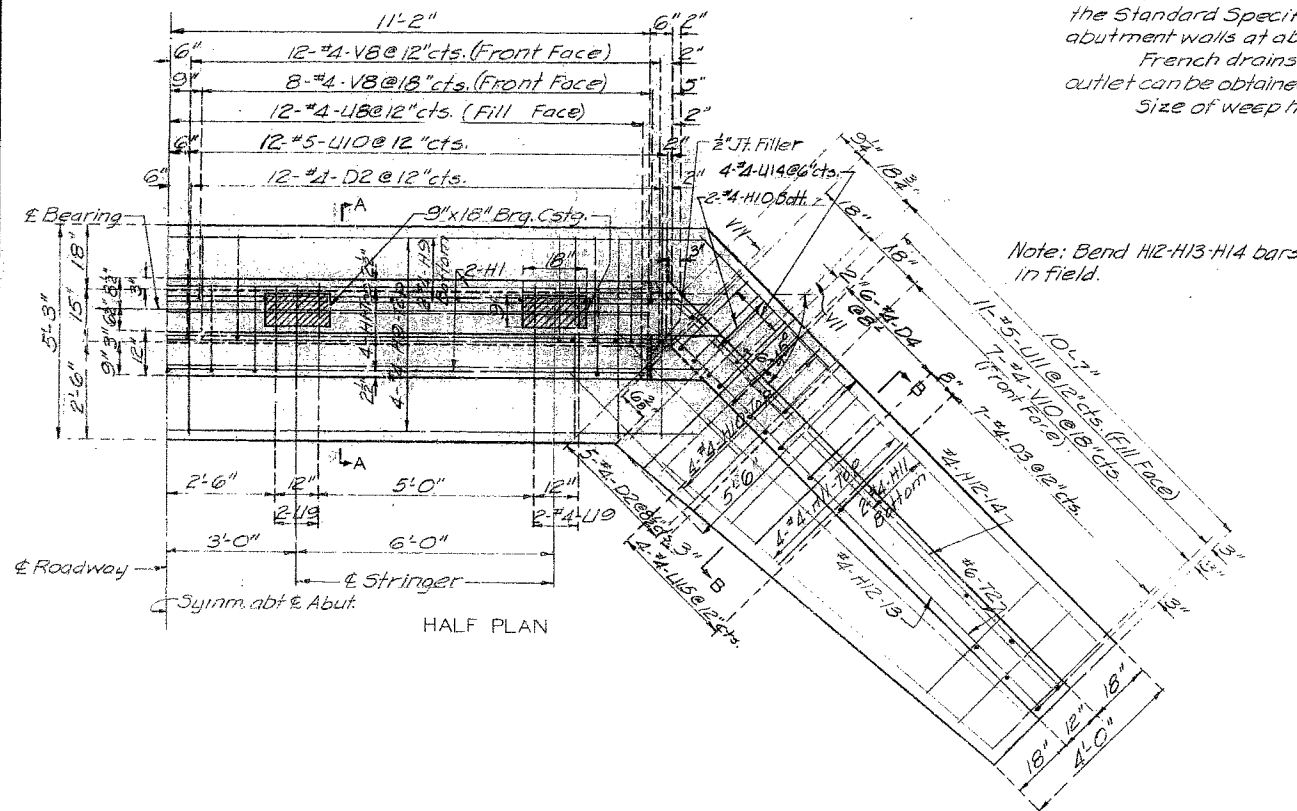
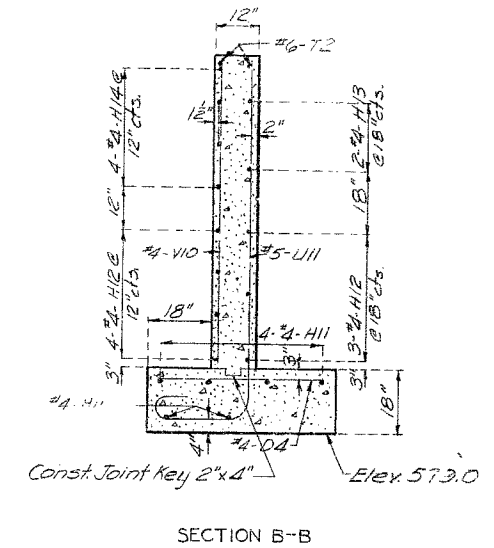
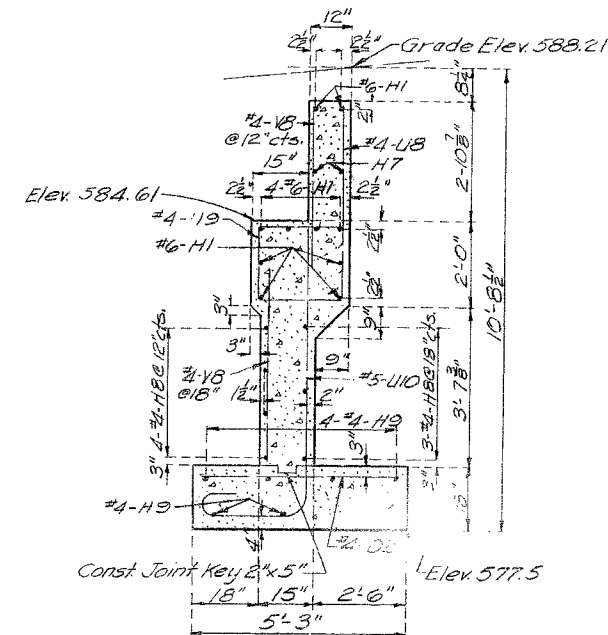
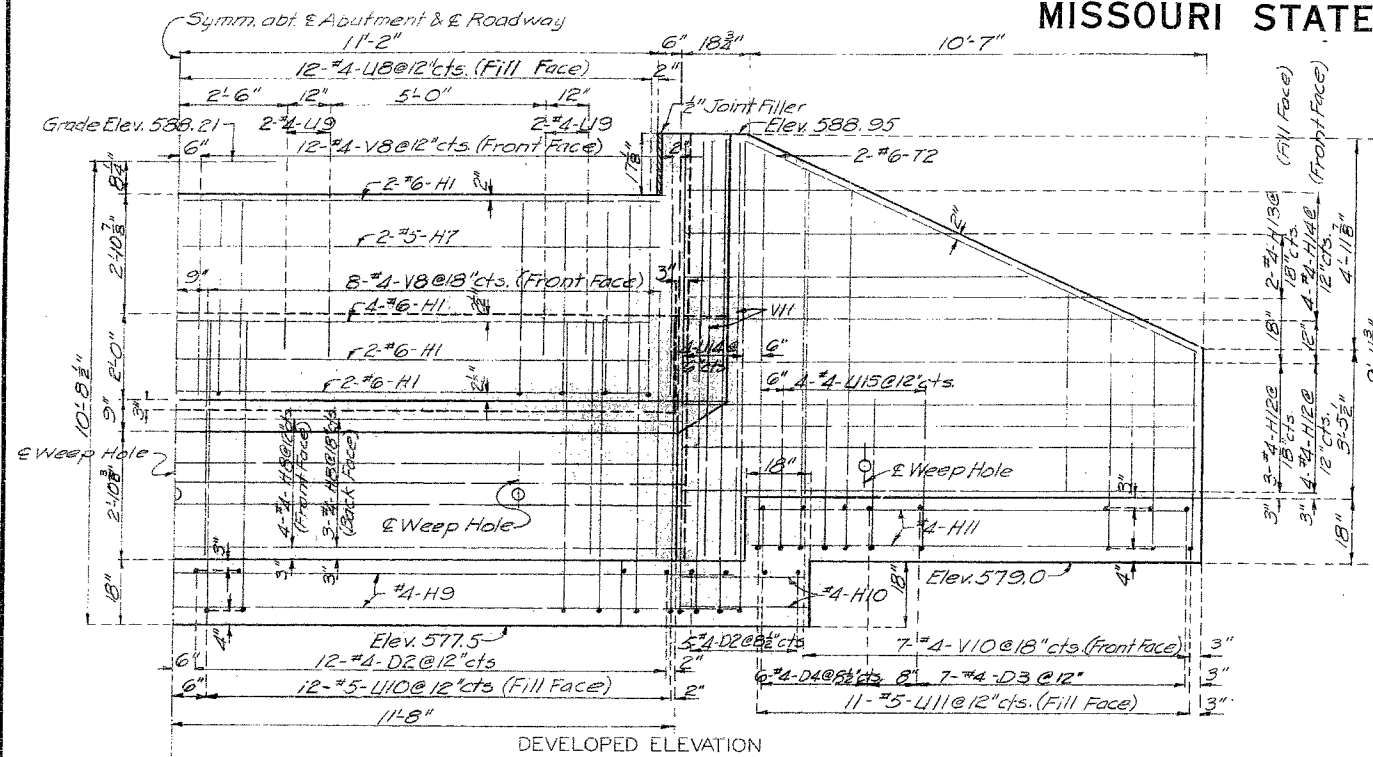
2 Col. Int. } 20' or 22' Roadway
Square & Skewed } H10

P-866

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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.	5-46312 (SN)	19	20	



Note: French drains in accordance with Sec. 1-22 of the Standard Specifications shall be placed in abutment walls at about 8'-0" centers. French drains are to be placed as low as free outlet can be obtained. Size of weep holes shall be 3".

Note: Bend H12-H13-H14 bars in field.

DETAILS OF ABUTMENT NO. 4.

BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM ROUTE 50 TO HOPE

ABOUT 18.5 MILES S.E. OF CHAMMOIS

PROJECT NO. DS-465 (3)

(SN) STA. 303+41

OSAGE

COUNTY

Drawn June 1955 by C.H.M.
Checked Aug. 1955 by C.S.A. & J.E.L.

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

Sheet No. 4 of 6.

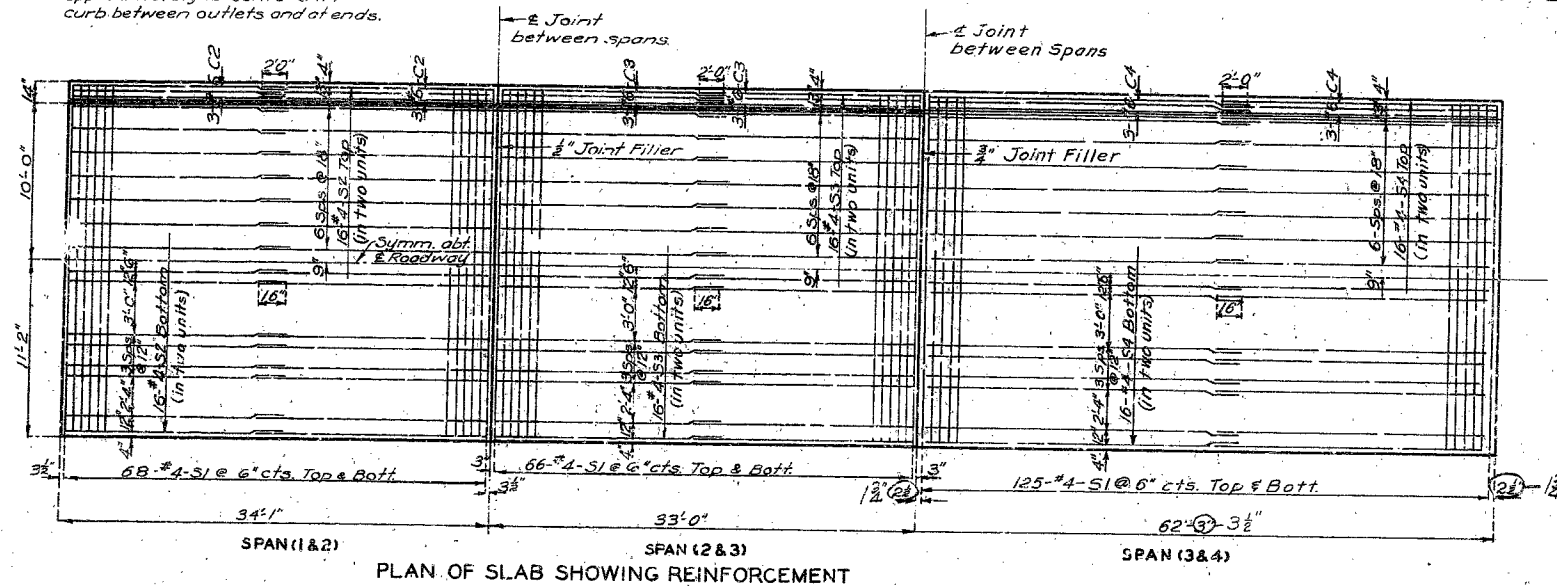
SEE FINAL PLANS BROWN-LINES

P-866

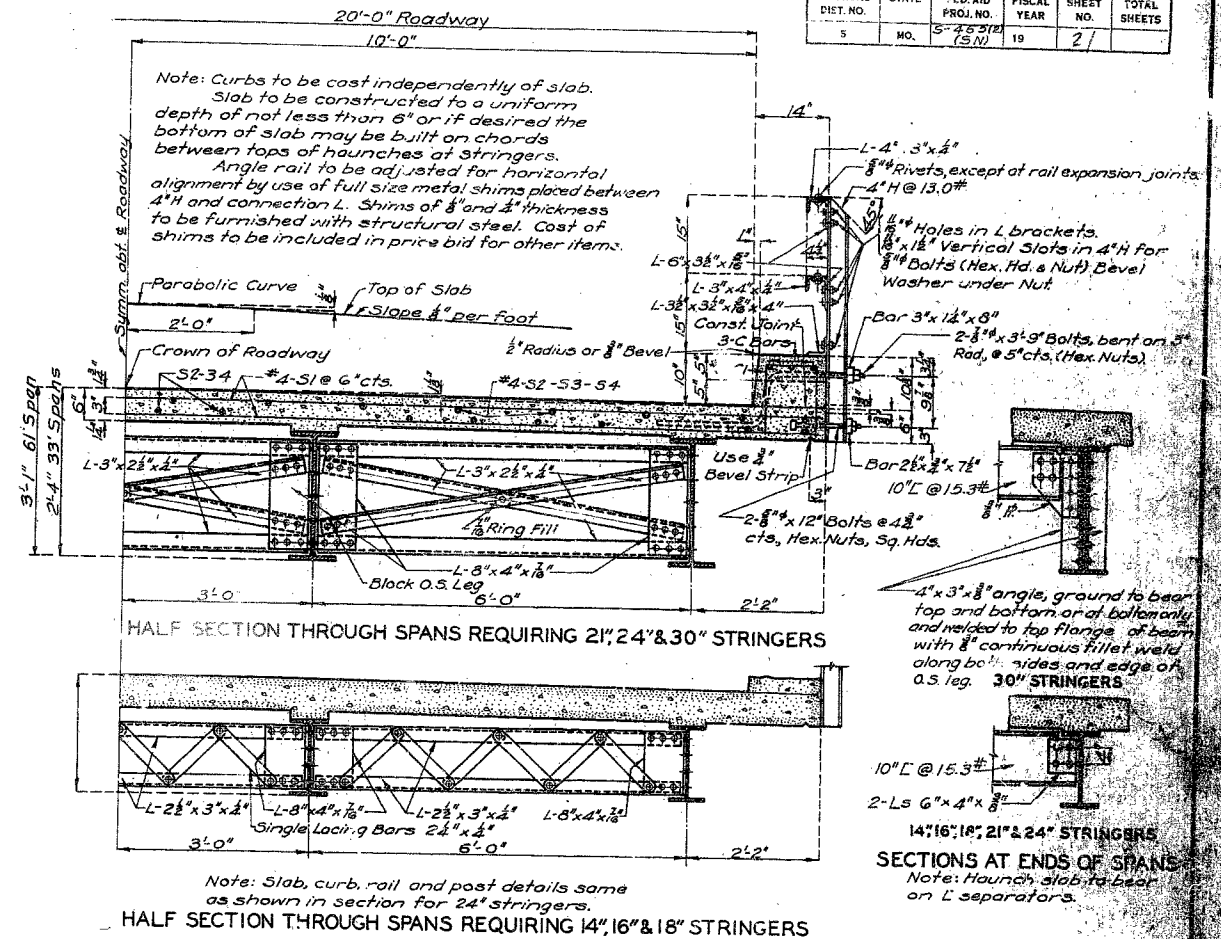
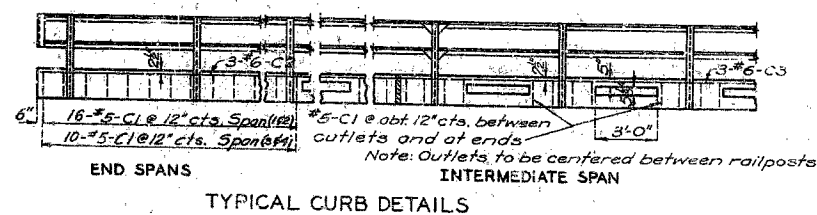
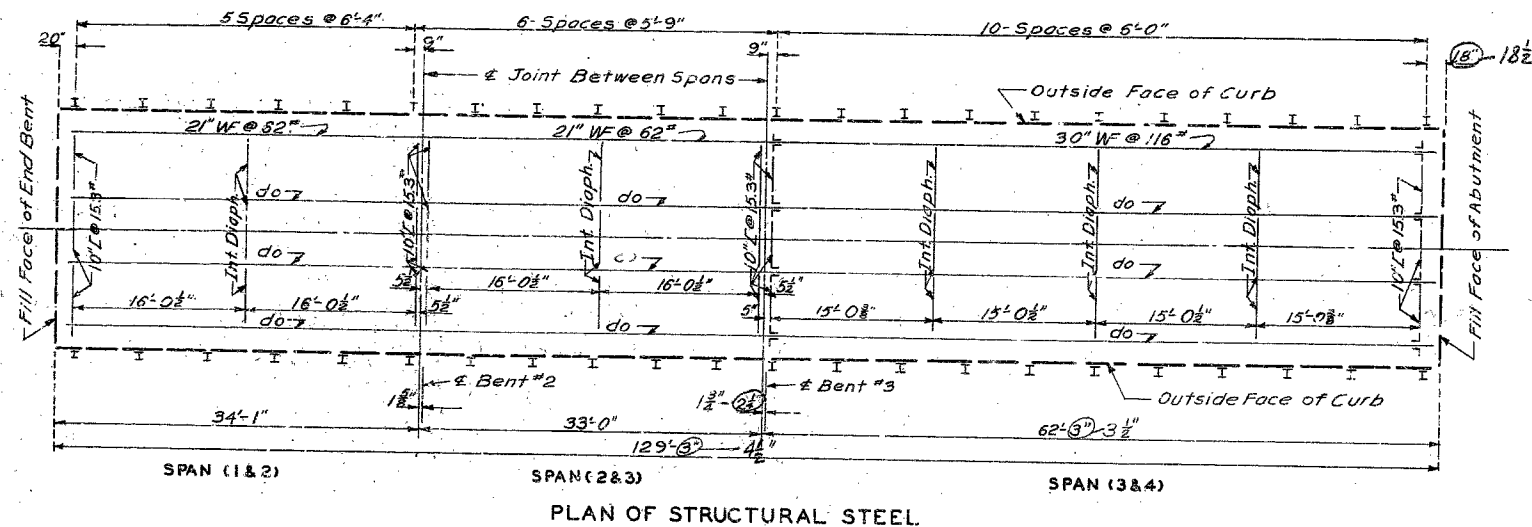
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-465(3) (S.N.)	19	2	

Note: Space dowel bars C1 at approximately 12" centers in curb between outlets and at ends.

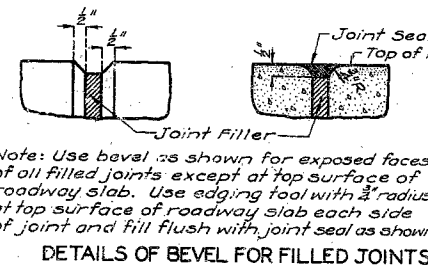


Note: All dimensions taken along profile grade.

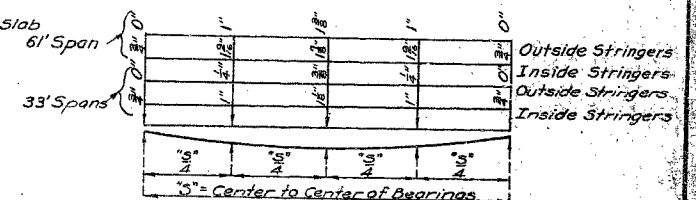


Note: Slab, curb, rail and post details same as shown in section for 24" stringers.

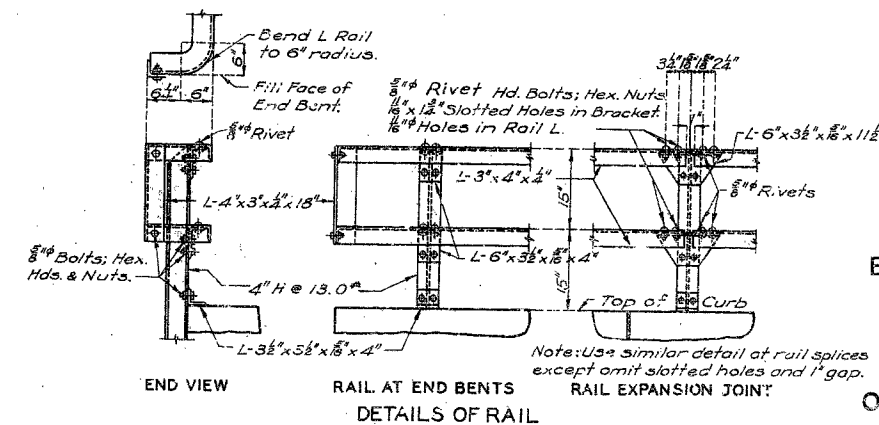
HALF SECTION THROUGH SPANS REQUIRING 14", 16" & 18" STRINGERS



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



Note: Slab shall be built parallel to grade and in a minimum thickness of 6". Dead load deflection, vertical curve (if any), crown and any difference in depth of stringers shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in "Estimated Quantities".



BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM RT. 50 TO HOPE
ABOUT 18.5 MILES S.E. OF CHAMOI
PROJECT NO. DS-465(3) (S.N.) STA. 303+41

OSAGE COUNTY

Assembled June 1955 by C.H.M. & G.W.P.
Checked Aug. 1955 by C.S.A. & J.E.L.

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

Sheet No. 5 of 6 Revised July 15, 1958

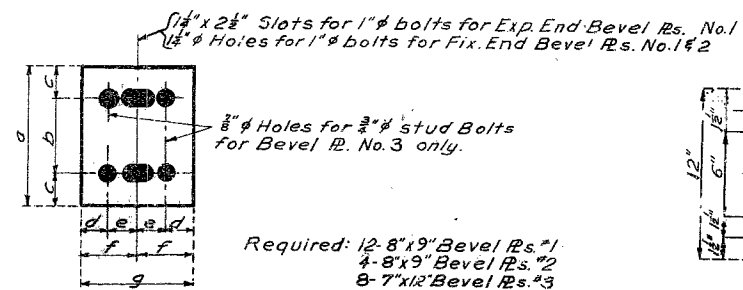
NO CONSTRUCTION CHANGES

P-866

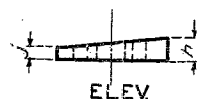
Sq. 20-H10
Rev. Feb. 1955

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISC. YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-45512 (SN)	26	22	

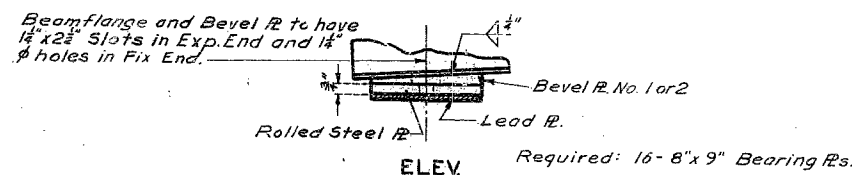
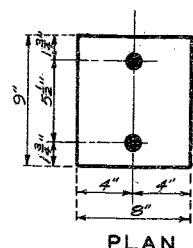


PLAN

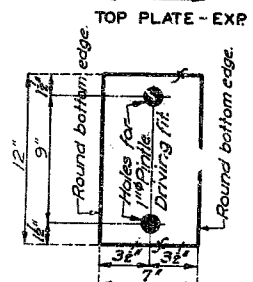
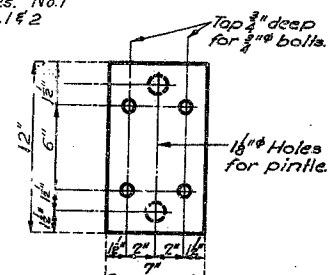


BEVEL PLATES			
Dimension	R #1	R #2	R #3
a	9"	9"	12"
b	5 1/2"	5 1/2"	6"
c	1 1/2"	1 1/2"	3"
d	-	-	1 1/2"
e	-	-	2"
f	4"	4"	3 1/2"
g	8"	8"	7"
h	1"	1 1/2"	2"
i	1"	1 1/2"	2"

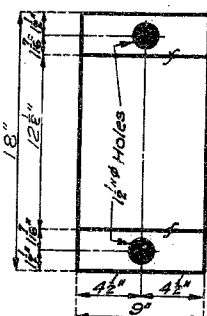
DETAILS OF BEVEL PLATES



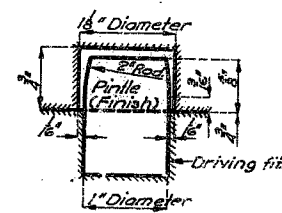
DETAILS OF BEARING PLATES FOR 33' SPAN



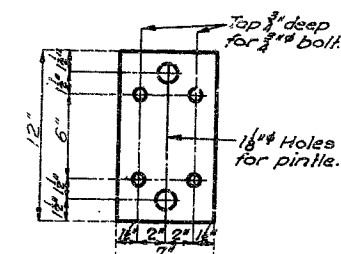
FLOATER PLATE - EXP



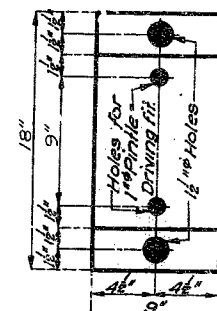
BOTTOM PLATE - EXP



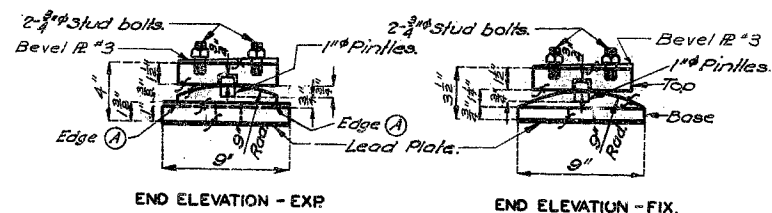
DETAIL OF PINTLE
16 - Required



TOP PLATE - FIX



BOTTOM PLATE - FIX



END ELEVATION - EXP

END ELEVATION - FIX

TYPE "B"

Required: 1 set 9"x18"
Each set consists of 5 plates

DETAILS OF BEARING CASTINGS FOR 61' SPAN

GENERAL NOTES:

Finish all surfaces marked f.
Material for 8"x9" bearing plates shall be Rolled Steel.
Bearing plates shall be straightened to plane surfaces.
Type "B" castings shall be either gray iron alloy or cast steel but payment will be made as Gray Iron Alloy.
Anchor bolts for Rolled Steel plates shall be 1" diameter swaged bolts, no heads, Hex. Nuts and shall extend 10" into concrete.
Anchor bolts for Type "B" casting shall be 1 1/2" diameter swaged bolts with Hex. Nuts and shall extend 12" into concrete.
Lead plates under bearings shall be approximately 1/4" thickness and weigh 8#/sq. Ft. Cost of lead plates shall be included in price bid for other items.
Edge A to be rounded (1/8" to 3/4") radius.
Bevel plates may be made part of top casting for type "B" castings if desired but payment will be made as Fabricated Structural Steel.

Assembled June, 1955 by C.H.M. & G.W.P.
Checked Aug. 1955 by C.S.A. & J.E.L.

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

Sheet No. 6 of 6

NO CONSTRUCTION CHANGES

BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM ROUTE 50 TO HOPE

ABOUT 18.5 MILES S.E. OF CHAMOIS

PROJECT NO. DS-465(3) (SN) STA. 303+41

OSAGE

COUNTY

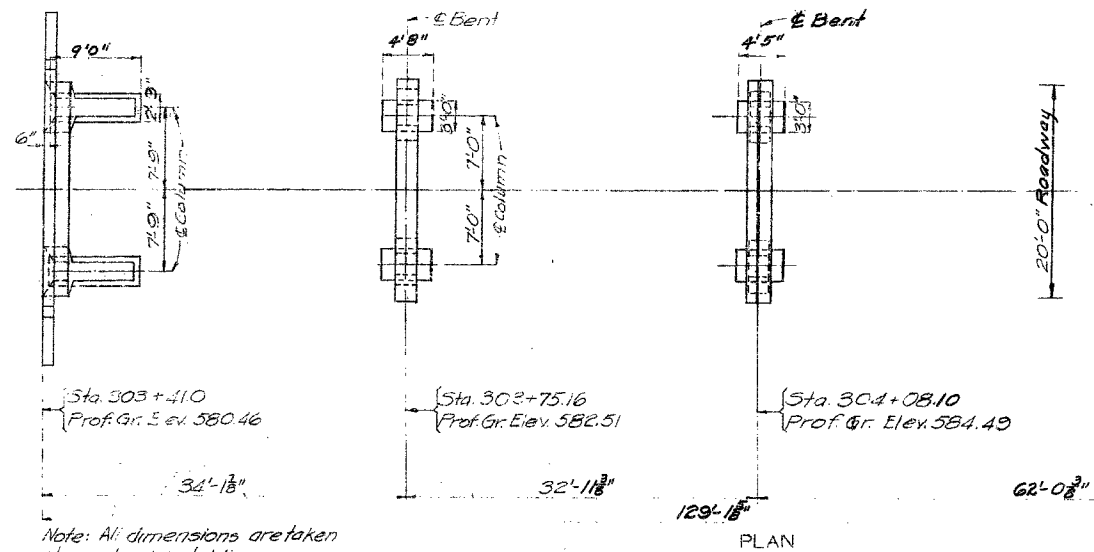
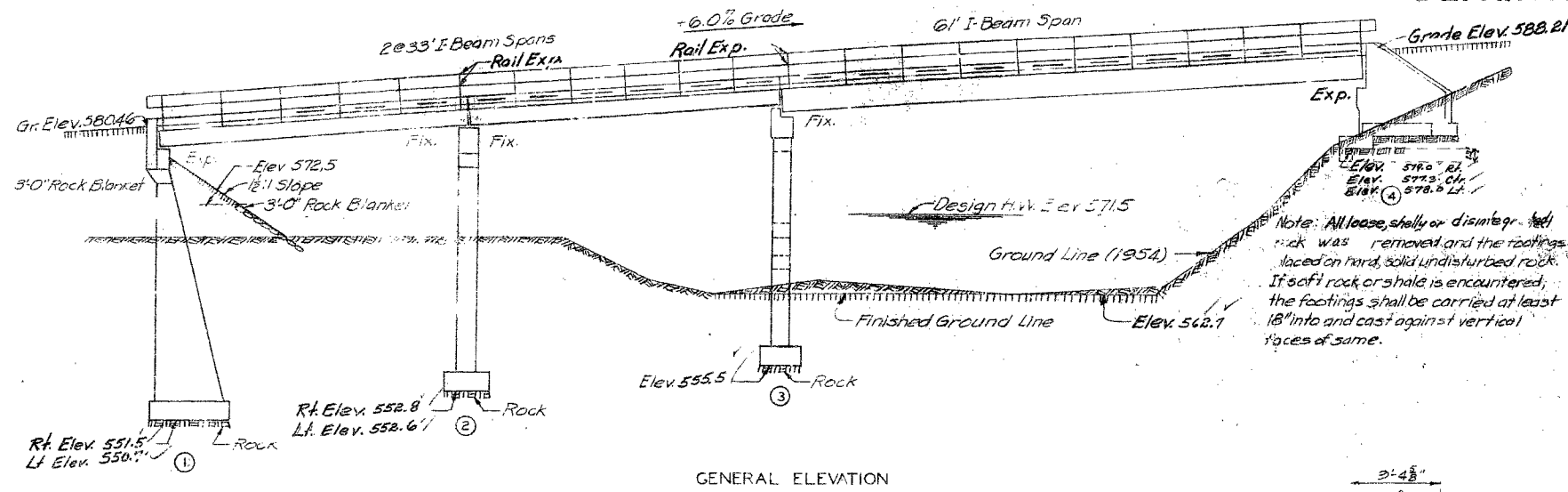
FINISHED

P-866

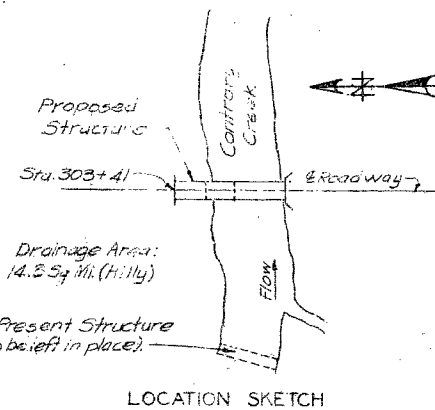
MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLANS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	5-465(2)	19	19	



Note: All dimensions are taken along a horizontal line.



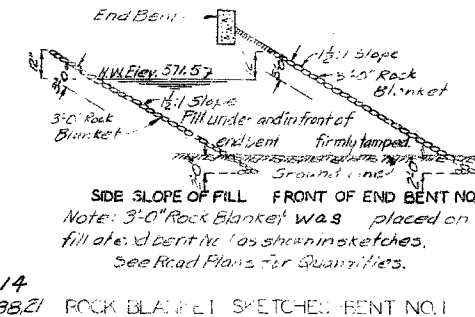
LOCATION SKETCH

GENERAL NOTES:

Design Specifications: A.A.S.H.O.-1953
 Loading: H10-44
 Structural Steel Stress: 18,000 psi
 Reinforcing Steel Stress: 18,000 psi
 Concrete, Class "B" Stress: 1,000 psi
 All concrete shall be Class "B".
 Rivets 3/4", holes 5/8" except in handrail, where rivets were 5/8", holes 3/4".
 Field connections were bolted except as noted in handrail details.
 Contractor desired to eliminate all field riveting on this project, and use machine bolts except for the 8" rivet head bolts specified for handrail. Heads and nuts of machine bolts were American Standard Regular.
 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 was applied by Contractor. Red lead required was furnished by Contractor. Payment for cleaning and painting such surfaces were included in unit price bid for Fabricated Structural Steel.
 Where joint filler is specified on the plans it did conform with the requirements for Premolded Material for Filler as given in Section 59-22D of the Standard Specifications.
 Permits were obtained for all truck loads over legal length. Items of material which were transported by truck with over all length less than 75'-0" were shipped by rail to the specified shipping point.

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

COMPLETE BILL OF REINFORCING STEEL									
Bending Sketches and Cutting Diagrams					Bending Sketches and Cutting Diagrams				
No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location
16	#6	4'-0"	D1	Footings	16	#6	4'-0"	D1	Footings
6	#6	7'-3"	F3	Haunch	8	#6	7'-3"	F1	Haunch
6	#6	7'-6"	F2	"	8	#6	7'-6"	F2	"
2	#6	22'-6"	H1	Beam	12	#8	9'-0"	F5	Tie Br.
4	#6	22'-0"	H2	Beam	5	#7	25'-3"	G4	Beam
8	#6	20'-0"	H3	"	4	#8	23'-9"	G5	"
8	#5	8'-3"	H4	"	4	#6	10'-0"	G6	Br. Arch
2	#5	7'-6"	H5	"	6	#8	17'-6"	G7	Br. Arch
4	#6	8'-3"	H6	"	4	#6	10'-0"	G8	"
2	#6	10'-9"	H7	"	2	#6	10'-0"	G9	"
20	#4	10'-6"	U1	Beam	24	#4	10'-0"	G10	"
4	#4	3'-0"	U2	"	7	#10	7'-0"	G11	"
22	#4	3'-6"	V1	Column	16	#6	10'-0"	P3	"
4	#4	7'-9"	V2	"	21	#4	3'-3"	U5	Br. Arch
2	#4	5'-0"	V3	"	8	#4	2'-0"	U6	Beam
48	#3	13'-9"	V4	Column	5	#4	3'-3"	U7	Beam
6	#6	27'-6"	V5	"	12	#4	7'-9"	U8	Tie Br.
10	#6	26'-0"	V6	"	8	#2	13'-3"	W1	A.B. Well
8	#2	24'-9"	V7	"					
Int. Bent No. 2					End Abutment No. 4				
16	#6	4'-0"	D1	Footings	6	#4	2'-6"	D4	Footings
6	#6	7'-3"	F1	Haunch	34	#4	4'-9"	D2	Footings
3	#6	7'-6"	F2	"	7	#4	8'-3"	D3	"
4	#6	22'-0"	G1	Beam	10	#6	23'-3"	H1	Main Sect
2	#6	20'-0"	G2	"	2	#5	23'-5"	H7	"
4	#7	20'-0"	G3	"	7	#4	23'-5"	H3	"
44	#3	7'-9"	P1	Column	6	#4	21'-0"	H3	Footings
16	#6	25'-3"	P2	"	12	#4	4'-3"	H10	"
21	#4	3'-3"	U3	Beam	12	#4	10'-3"	H11	"
8	#2	2'-9"	U4	"	14	#4	4'-0"	H12	Wing
					2	#4	18'-9"	H13	"
					4	#6	18'-9"	H14	"
					23	#4	11'-0"	U8	Main Sect
					8	#4	3'-0"	U9	"
					24	#5	10'-9"	U10	"
					11	#5	10'-9"	U11	Wing
					40	#4	5'-0"	V8	Br. Arch
					8	#5	13'-9"	U14	Wing
					7	#4	10'-9"	V10	Wing
					4	#4	11'-0"	V11	"
					8	#2	9'-9"	W1	A.B. Well
					8	#4	7'-3"	U13	Wing
					Superstructure				
					188	#5	2'-3"	G1	Curb
					12	#6	18'-0"	C2	"
					12	#6	17'-6"	C3	"
					12	#6	32'-0"	C4	"
					513	#4	22'-0"	S1	Slab
					64	#4	17'-0"	S2	"
					64	#4	17'-0"	S3	"
					64	#4	31'-9"	S4	"
					6	#6	2'-0"	F4	"



SIDE SLOPE OF FILL FRONT OF END BENT NO. 1
 Note: 3'-0" Rock Blanket was placed on fill etc. & bent has shown in sketches. See Road Plans for Quantities.

ROCK BLANKET SKETCHES: BENT NO. 1

FINAL QUANTITIES			
Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds.	89.5	89.5
Class 2 Excavation for Structures	Cu. Yds.	120.5	120.5
Class 3 Concrete	Cu. Yds.	87.5	61.9
Fabricated Structural Steel	Lbs.	57640	57640
Gray Iron Alloy Castings	Lbs.	830	830
Reinforcing Steel	Lbs.	3520	12200
Class 1 Excavation Below Plan Elev.	Cu. Yds.	6.0	6.0
Test Holes	Lin. Ft.	440	440

Note: Excavation for bridge made above Elev 563.0 was paid for as Class 1 Excavation for Structures.
 Excavation for bridge made below Elev 563.0 was paid for as Class 2 Excavation for Structures.
 * Final pay weight for Fabricated Structural Steel was based on using field rivets except for bolted connections specified for handrail.

BM. Elev. 588.96 D in Lt. well 14' Lt. South End of Bridge Sta. 303+41

BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM ROUTE 50 TO HOPE
 ABOUT 18.5 MILES S.E. OF CHAMBERS
 PROJECT NO. 5-465(2) (S.N.) STA. 303+41
 OSAGE COUNTY

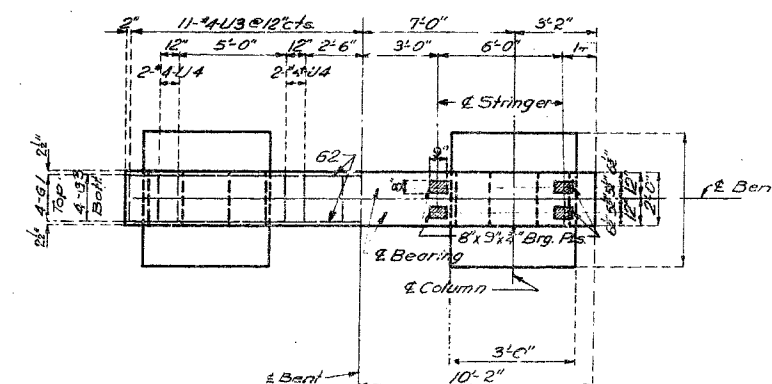
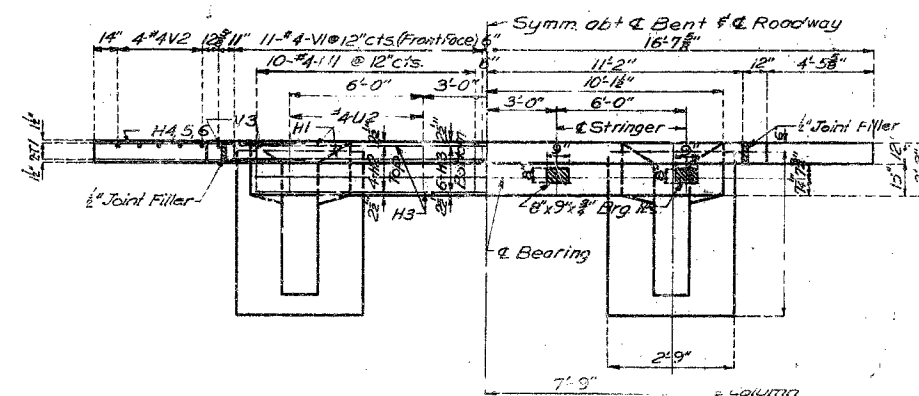
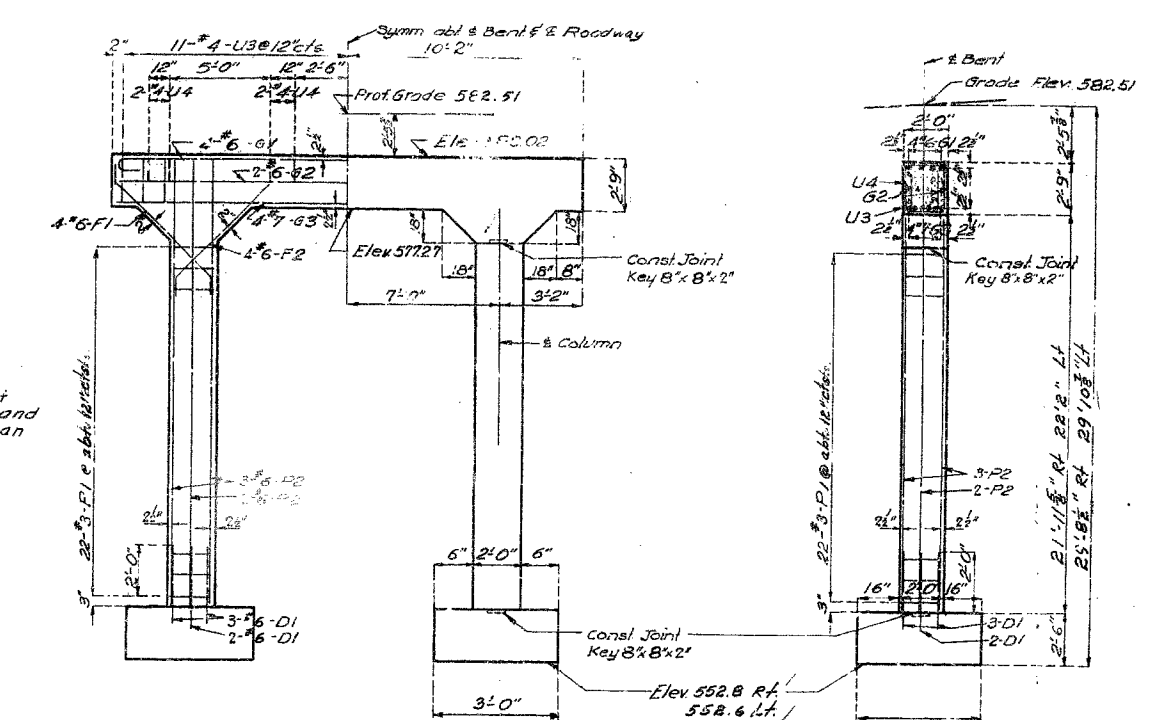
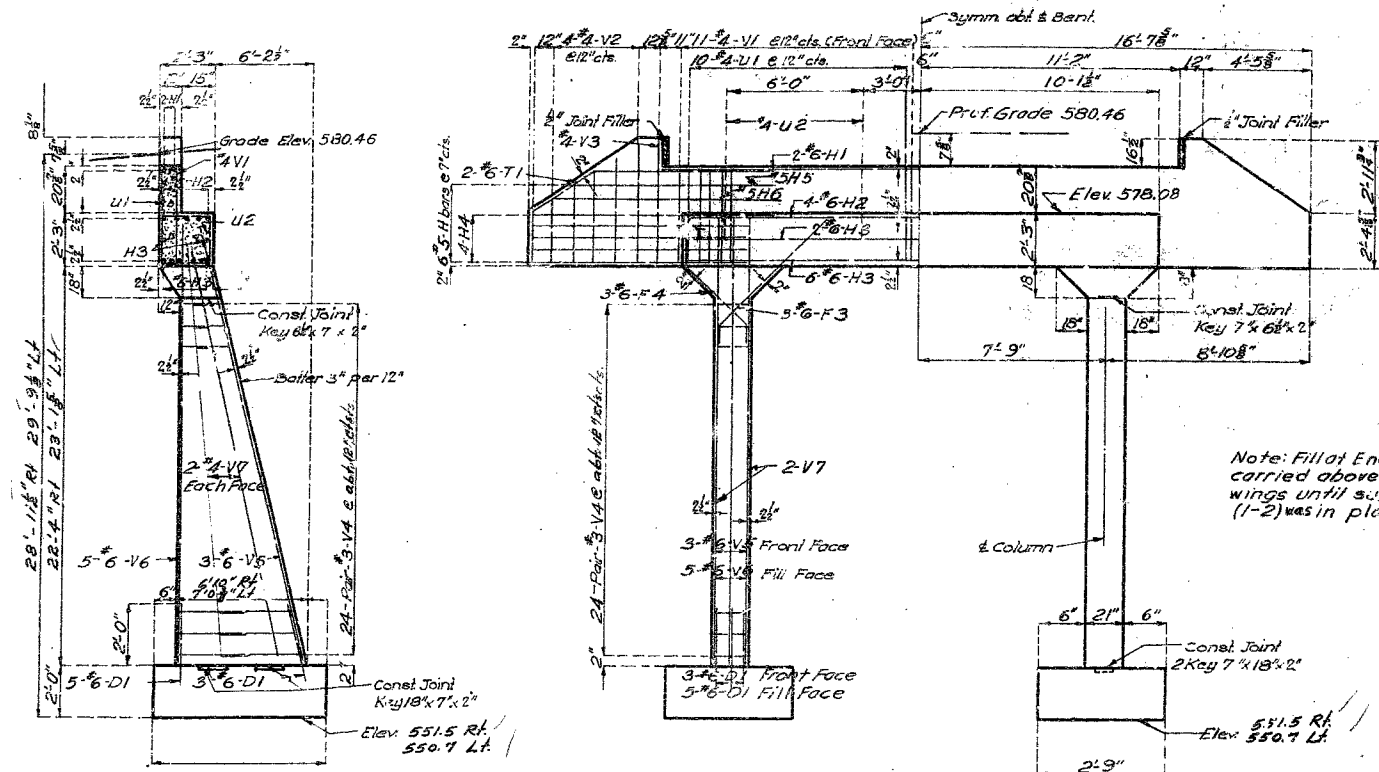
SUBMITTED BY: J. A. Williams DATE: 8/11/1955
 APPROVED BY: Geo. M. Whitton DATE: 8/11/1955

STD. C-110R
 R-866

MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLANS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	5-465(2) (SN)	19	20	



BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM RT. 50 TO HOPE

ABOUT 18.5 MILES S.E. OF CHAMOI

PROJECT NO. S-465(2) (SN) STA. 303+41

OSAGE

COUNTY

P-866

Assembled June 1955 by S.W.S. & G.W.P.
Checked Aug. 1955 by C.S.A. & J.E.L.

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

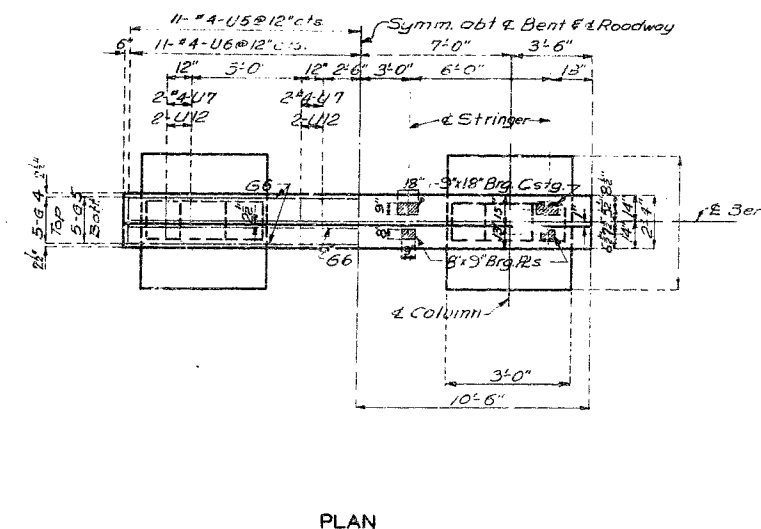
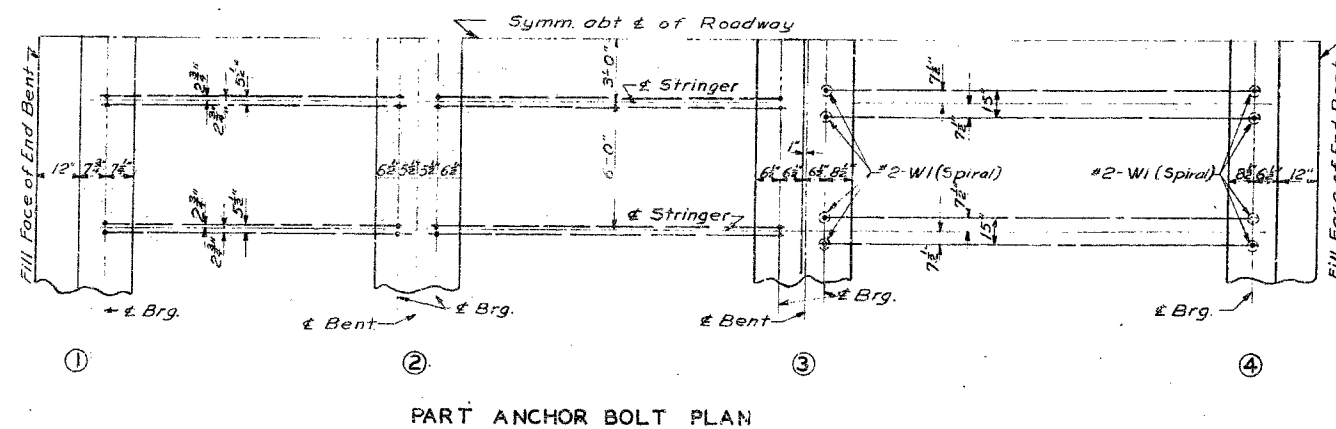
Sheet No. 2A of 4

FINAL PLANS

2 Col. End 3.2 Col. Int. 7' 20' or 22' Rdwy.
Square & Skewed H/O

FINAL PLANS

FED. ROAD DIST. NO.	STATE	F.D. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-463727 (SN)	19	21	



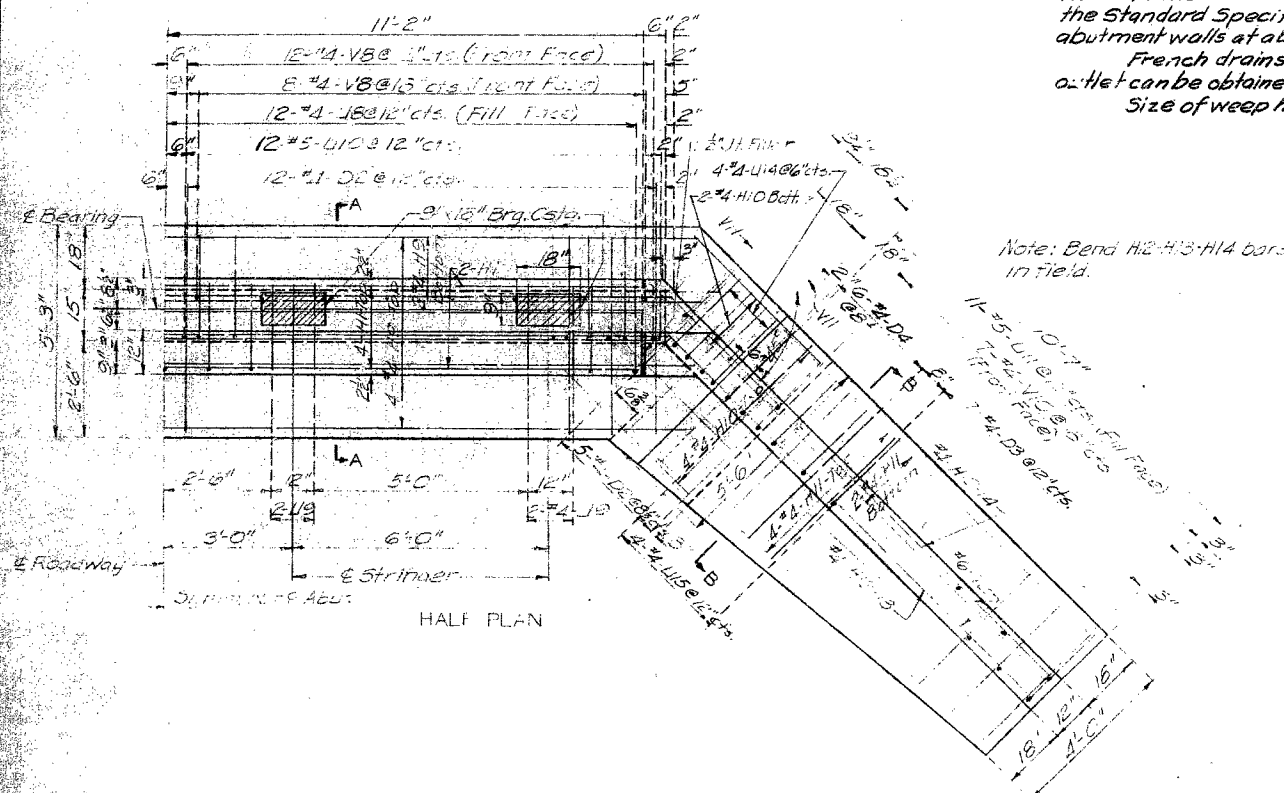
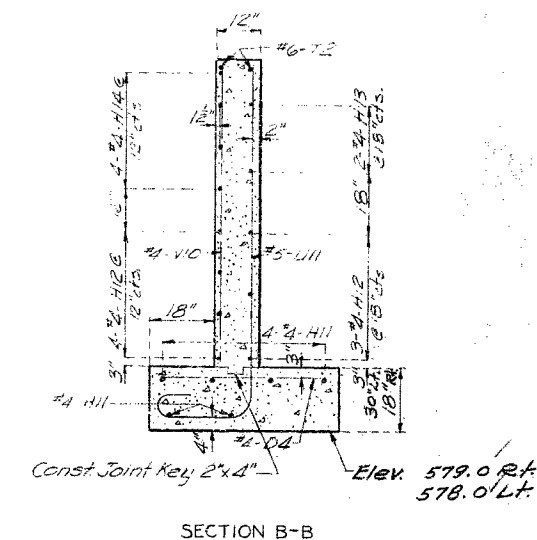
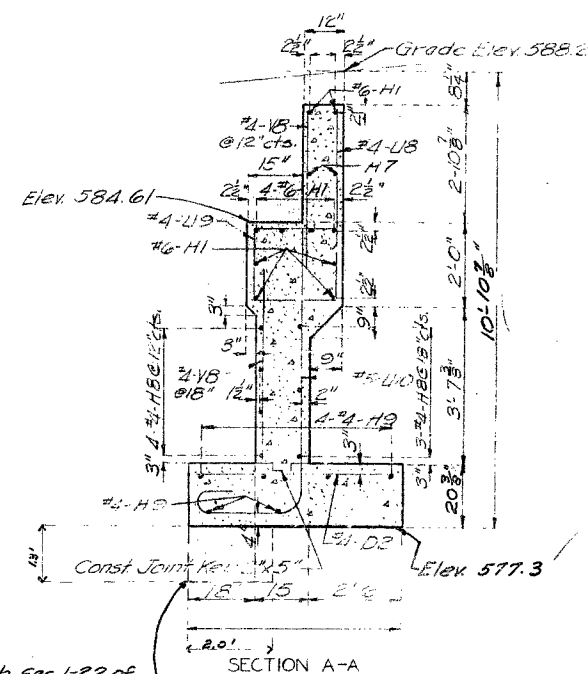
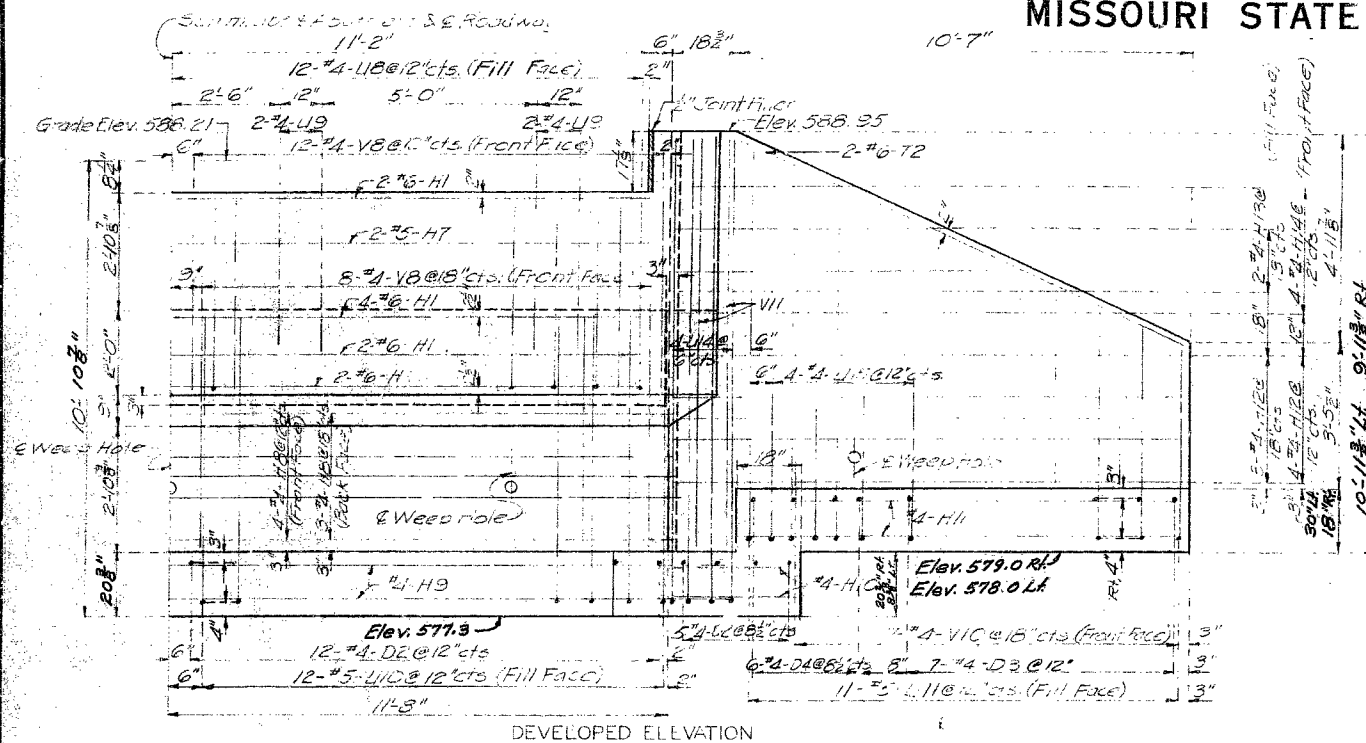
RECEIVED

P-866

2 Col. Inf. } 20' or 22' Rdwy.
Square & Skewed } H/O

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-46372 (SN)	19	22	



DETAILS OF ABUTMENT NO. 4.

Note: French drains in accordance with Sec. 1-22 of the Standard Specifications were placed in abutment walls at about 8'-0" centers. French drains are placed as low as free outlet can be obtained. Size of weep holes as 2 3/4\"/>

Note: Bend #12-#13-#14 bars in field.

Drawn June 1955 by C.H.M.
Checked Aug. 1955 by CSA & J.E.L.

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

Sheet No. 1A of 4

FINAL PLANS

BRIDGE OVER CONTRARY CREEK

STATE ROAD FROM ROUTE 50 TO HOPE

ABOUT 18.5 MILES S.E. OF CHAMOUS

PROJECT NO. 5-465 (2) (SN) STA. 30+41

OSAGE

COUNTY

P-866