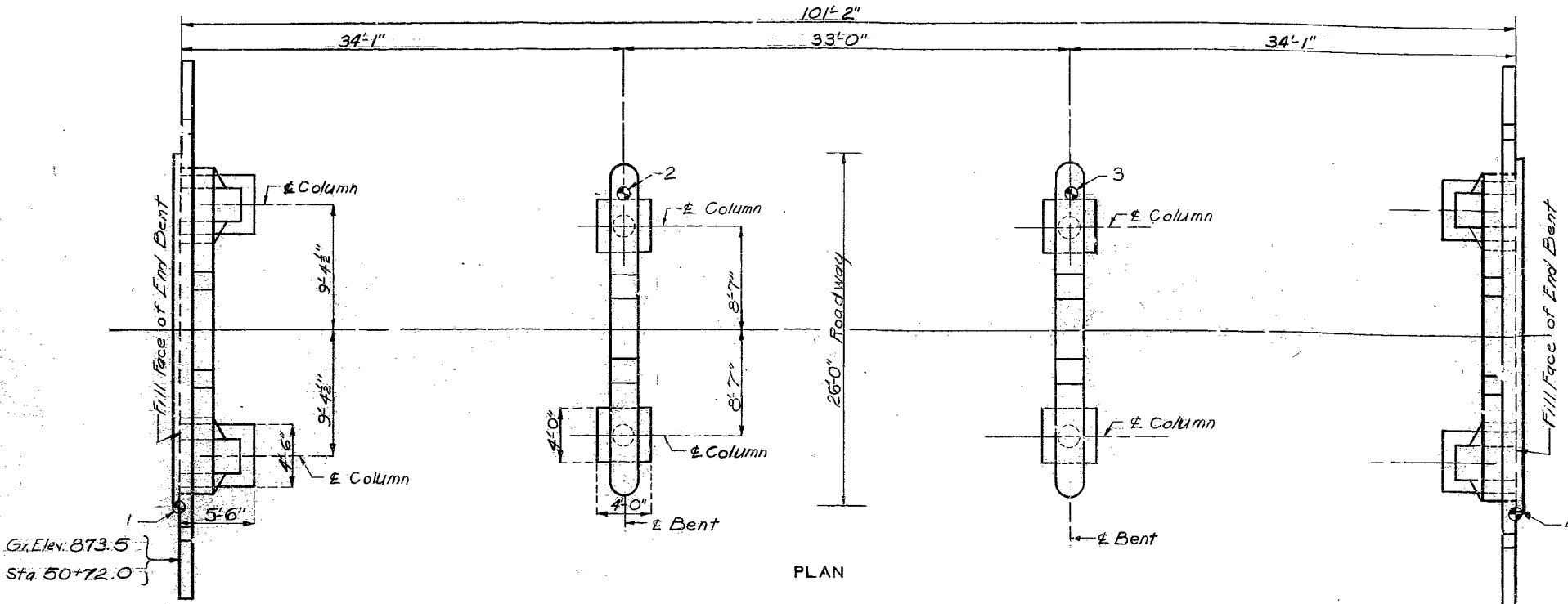
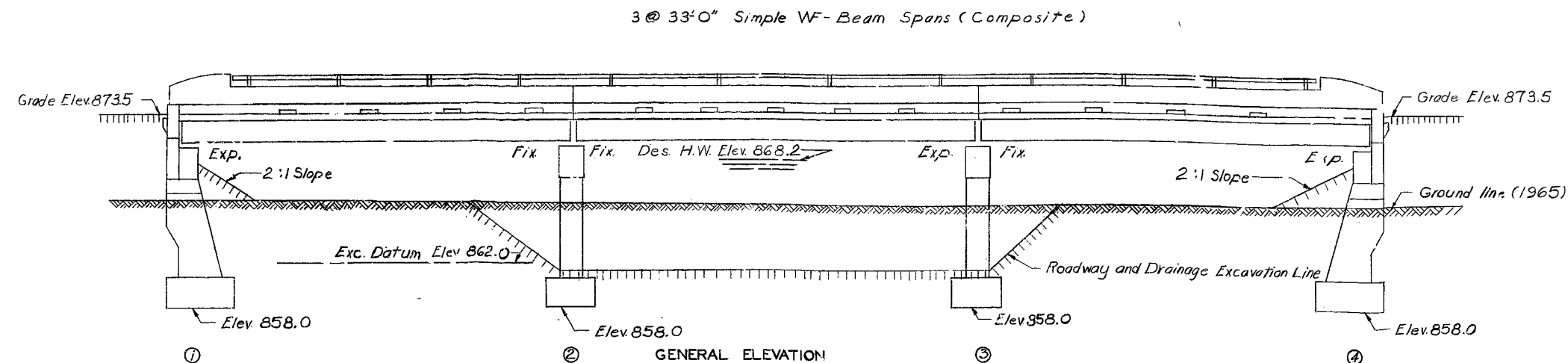


MISSOURI STATE HIGHWAY DEPARTMENT

FED. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	4	

GENERAL NOTES:
 Design Specifications: A.A.S.H.O. - 1961
 Design Loading:
 H15-44 15#/sq. ft. Future Wearing Surface
 Earth 120# Equivalent Fluid Pressure 30#
 Design Unit Stresses:
 Class B Concrete (substructure) $f_c = 1,200$ psi
 Class B1 Concrete (superstructure) $f_c = 1,600$ psi
 Reinforcing Steel $f_s = 20,000$ psi
 Structural Steel (A.S.T.M. A36-62T) $f_s = 20,000$ psi
 Surface Seal:
 Superstructure deck to be surface sealed.
 Fabricated Steel:
 Field connections, High Strength Bolts $\frac{3}{4}$ " ϕ ,
 holes $\frac{13}{16}$ " ϕ except as noted.



Note: In no case shall footings of Bents No. 2 and 3 be placed higher than elevation shown.

Note: For boring data see sheet No 5 of 6
 Ⓞ Indicates location of boring.

BENT NO.	FOOTING DATA			
	1	2	3	4
Foundation Material	Rock	Rock	Rock	Rock
Des. Brg. Tons/Sq. Ft.	4.3	3.4	3.4	4.3

ITEM	ESTIMATED QUANTITIES		
	SUBSTR.	SUPERSTR.	TOTAL
Class 1 Excavation for Structure	CU Yds.	40	40
Class 2 Excavation for Structure	CU Yds.	60	60
Class D Concrete	CU Yds.	58.4	58.4
Class B1 Concrete	CU Yds.	79.9	79.9
Reinforcing Steel	Lbs.	6760	20770
Fabricated Structural Carbon Steel	Lbs.	32,300	32,300
Bridge R.II (Single tube type)	Lin. Ft.	181	181

B.M. Elev. 866.55 N & W in root 30" Sycamore
 69' Lt. Sta. 49+90 (U.S.G.S. Datum)

BRIDGE OVER SADDLER BRANCH
 STATE ROAD FROM CEDAR CO. LINE EAST TO ROUTE MM
 ABOUT 7.5 MILES W. OF FLEMINGTON
 PROJECT NO. RTE. SN - SEC. 84. (1) STA. 50+72.0

POLK COUNTY

SUBMITTED BY: *D.B. Jenkins* DATE: 2/21/66
 BRIDGE ENGINEER
 APPROVED BY: *M.J. Miller* DATE: 2/21/66
 CHIEF ENGINEER

STD. 54.00
 A-1878

203

DESIGNED NOV. 1965 BY LESLIE
 DETAILED Dec. 1965 BY Woody
 CHECKED Feb. 1966 BY Johani

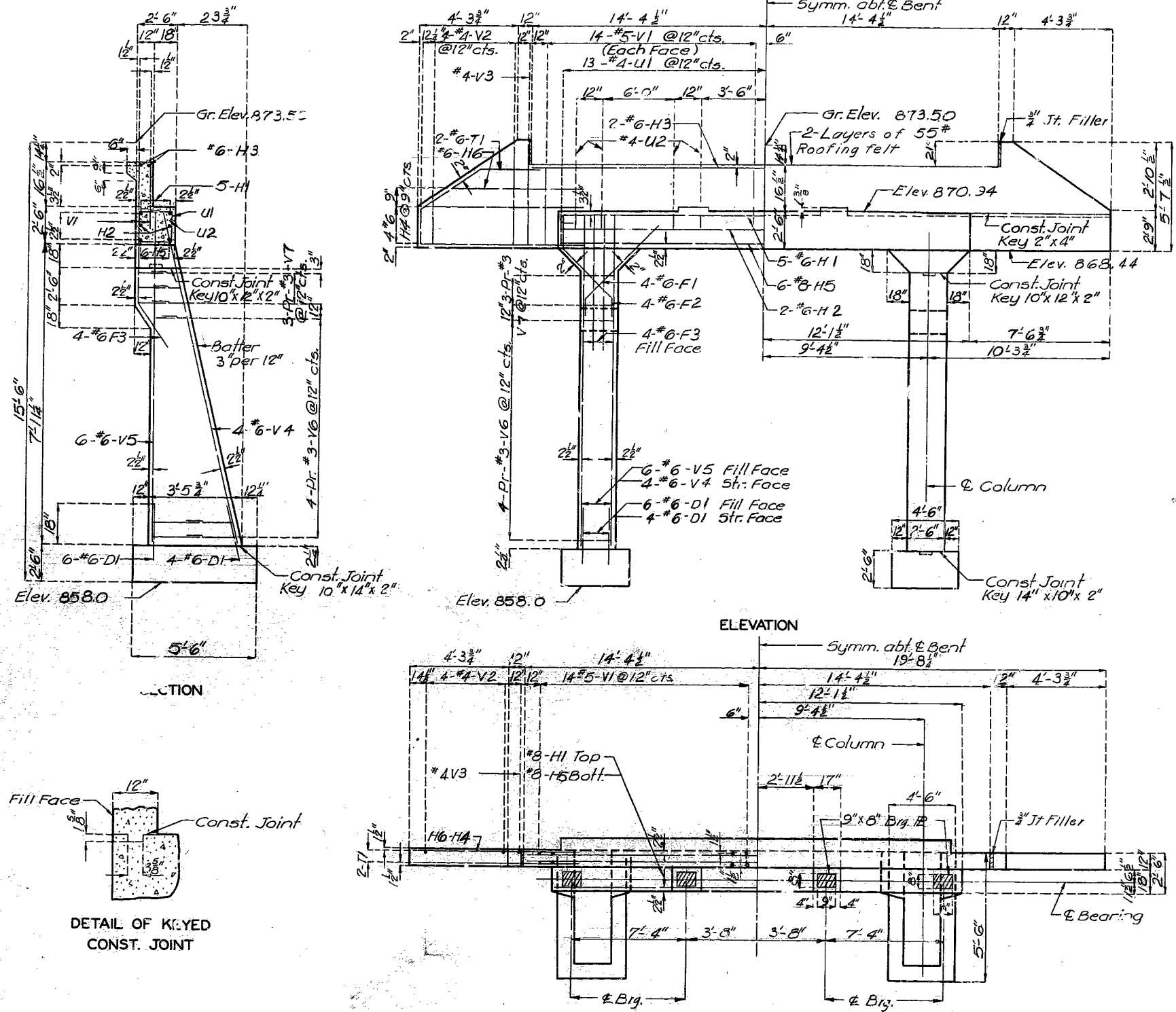
Note: This drawing is not to scale. Follow dimensions.

Sheet No. / of 6

SEE FINAL PLANS BROWN-LINES

MISSOURI STATE HIGHWAY DEPARTMENT

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



COMPLETE BILL OF REINFORCING STEEL											
NO.	SIZE	LENGTH	MARK	LOCATION	BENDING SKETCHES & CUTTING DIAGRAMS		NO.	SIZE	LENGTH	MARK	LOCATION
<i>End Bents NO. 1 & 4</i>											
40	#6	3'-0"	D1	Ftg			40A	#5	28'-6"	S1	5/16
16	#6	7'-6"	F1	Col. Hch.			60	#5	33'-9"	S2	"
16	#6	7'-9"	F2	"			58	#4	33'-9"	S3	"
16	#6	9'-3"	F3	"			30	#5	32'-9"	S4	"
10	#6	26'-0"	H1	Beam			29	#4	32'-9"	S5	"
4	#6	24'-0"	H2	"							
4	#6	28'-6"	H3	Backwall							
16	#6	9'-0"	H4	Wing							
12	#8	24'-0"	H5	Bedm							
4	#6	8'-3"	H6	Wing							
8	#6	9'-6"	T1	Wing							
50	#4	9'-9"	U1	Beam							
16	#4	3'-3"	U2	"							
11 1/2	#5	2'-6"	V1	Backwall							
8	#4	8'-6"	V2	Wing							
7	#4	5'-3"	V3	Backwall							
16	#6	10'-6"	V4	Col							
24	#6	10'-0"	V5	"							
16	#3	11'-3"	V6	"							
12	#3	12'-0"	V7	"							
<i>Int. Bent NO. 2 & 3</i>											
32	#7	3'-6"	D2	Col							
10	#8	23'-3"	H7	Beam							
4	#6	23'-3"	H8	"							
6	#7	25'-6"	H9	"							
8	#7	10'-0"	H10	"							
16	#7	5'-3"	H11	"							
32	#3	6'-0"	P1	Col.							
48	#4	9'-3"	U3	Beam							
12	#4	3'-0"	U4	"							
32	#7	10'-0"	V8	Col.							
<i>Superstructure</i>											
216	#5	3'-6"	C1	Curb							
8	#6	35'-0"	C2	"							
4	#6	32'-9"	C3	"							
8	#5	4'-9"	R1	End Post							
4	#5	5'-9"	R2	"							
4	#5	6'-6"	R3	"							
4	#5	7'-0"	R4	"							
4	#5	7'-3"	R5	"							
8	#5	7'-3"	R6	"							
218	#5	5'-6"	R7	Parapet							
16	#5	33'-6"	R8	"							
8	#5	32'-6"	R9	"							

204

No. 90.2 R-1550
 June 1961
 DETAILED Dec. 1965 BY Wood, J.
 CHECKED Feb. 1966 BY Jahani

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

Sheet No. 2 of 6

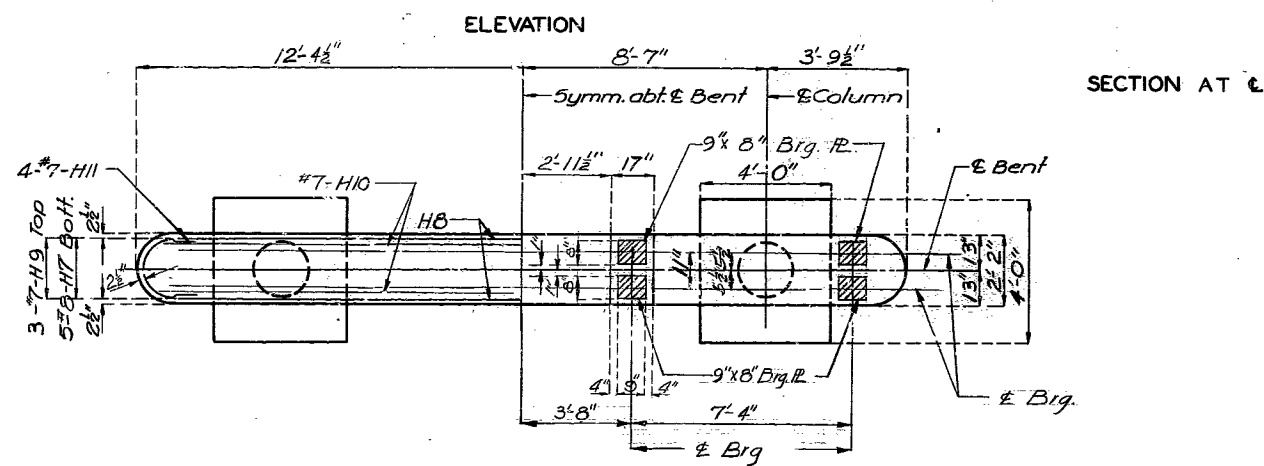
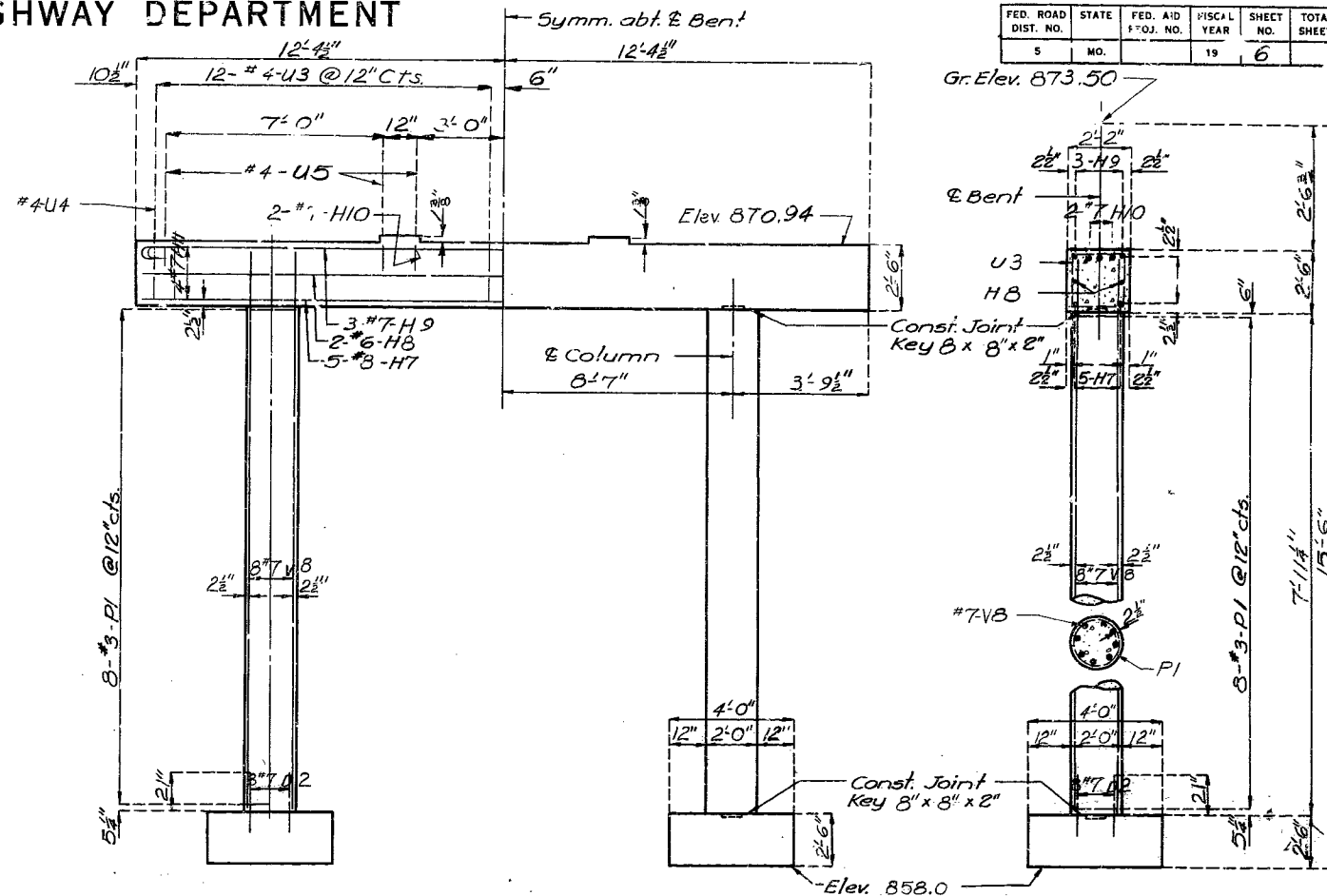
SEE FINAL PLANS BROWN-LINES

BRIDGE OVER SADDLER BRANCH
 STATE ROAD FROM CEDAR CO. LINE EAST TO ROUTE MM
 ABOUT 7.5 MILES W. OF FLEMINGTON
 PROJECT NO. RTE. SN- SEC. 84(D) STA. 50+72.0
 POLK COUNTY

A-1878

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	6	



PLAN
DETAILS OF INTERMEDIATE BENTS NO. 2 & 3

BRIDGE OVER SADDLER BRANCH
 STATE ROAD FROM CEDAR CO. LINE EAST TO ROUTE MM
 ABOUT 7.5 MILES W. OF FLEMINGTON
 PROJECT NO. R.T.E. SN-SE 134(C) STA. 50+72.0
 POLK COUNTY

205

No. 191 Revised
 Mar. 1964 Jan. 1965

DETAILED Dec. 1965 BY Woody
 CHECKED Feb. 1966 BY Jahani

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

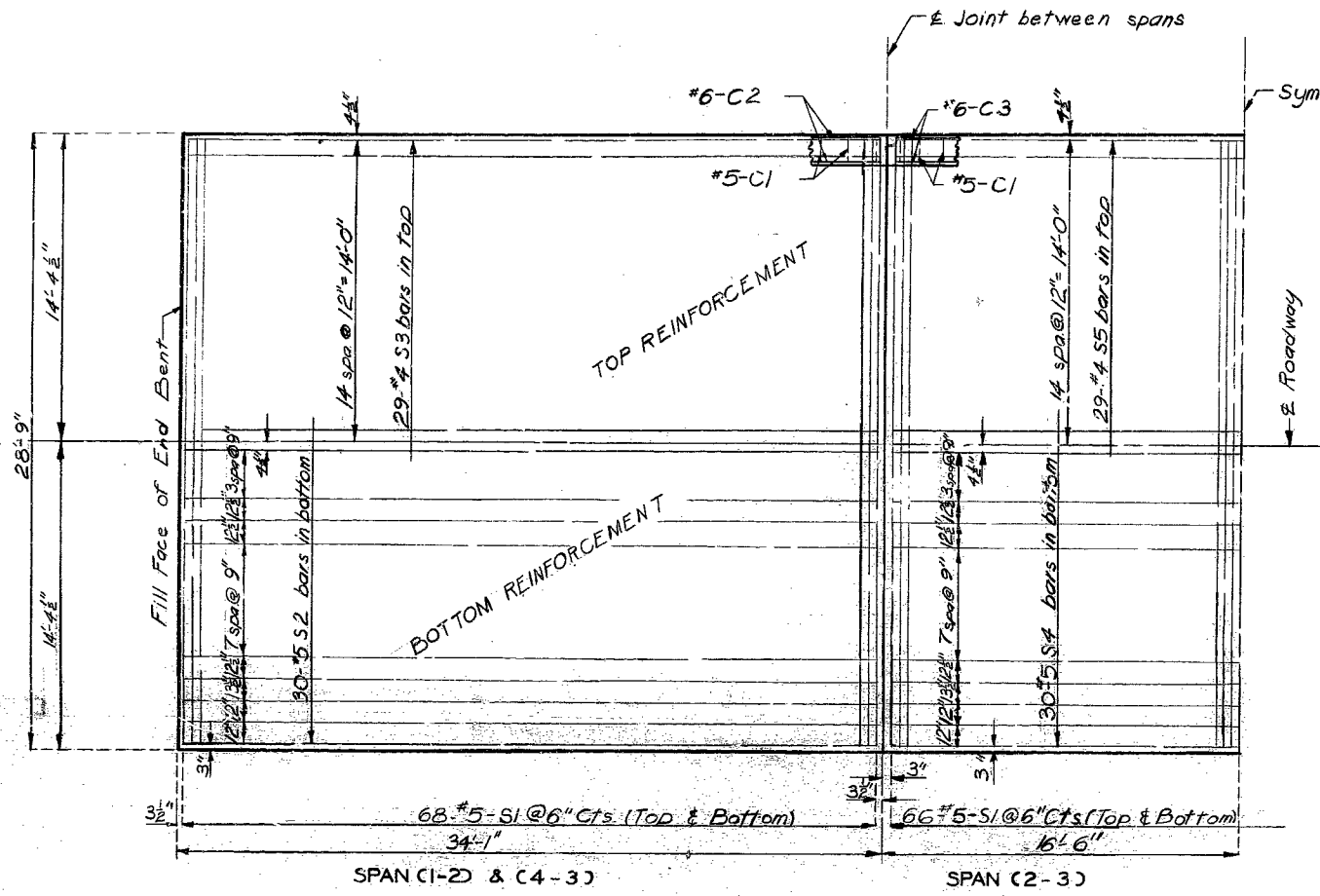
Sheet No. 3 of 6

NO CONSTRUCTION CHANGES

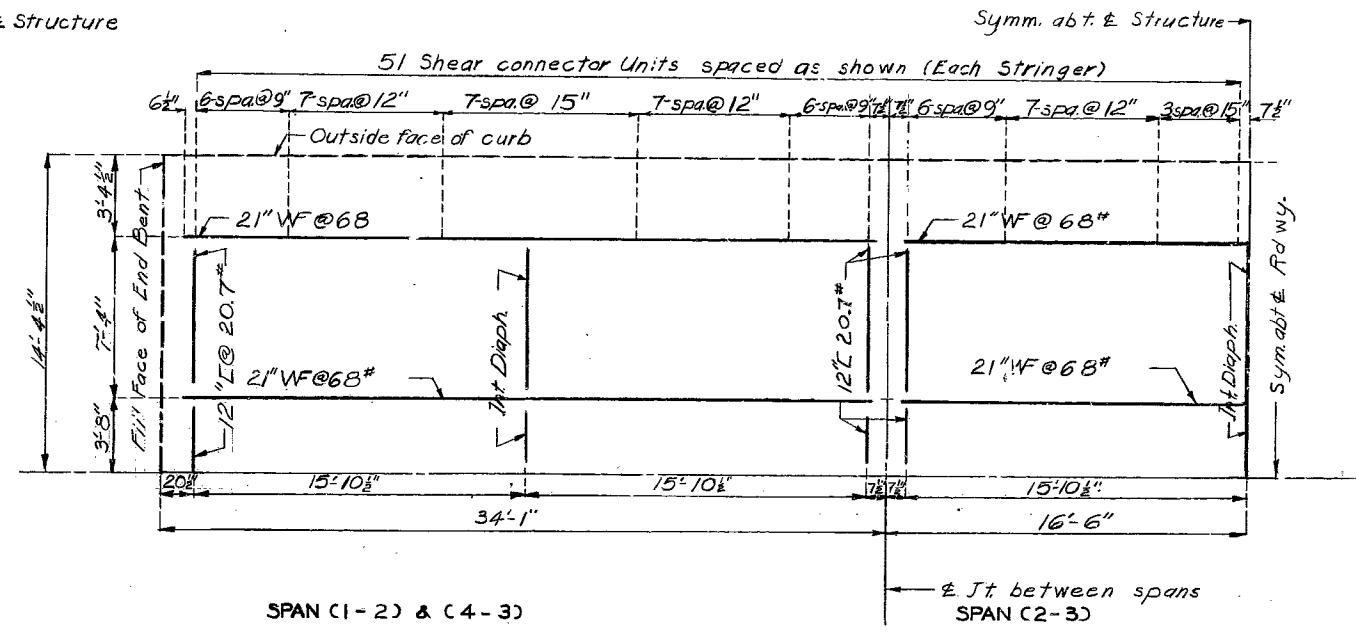
A-1878

MISSOURI STATE HIGHWAY DEPARTMENT

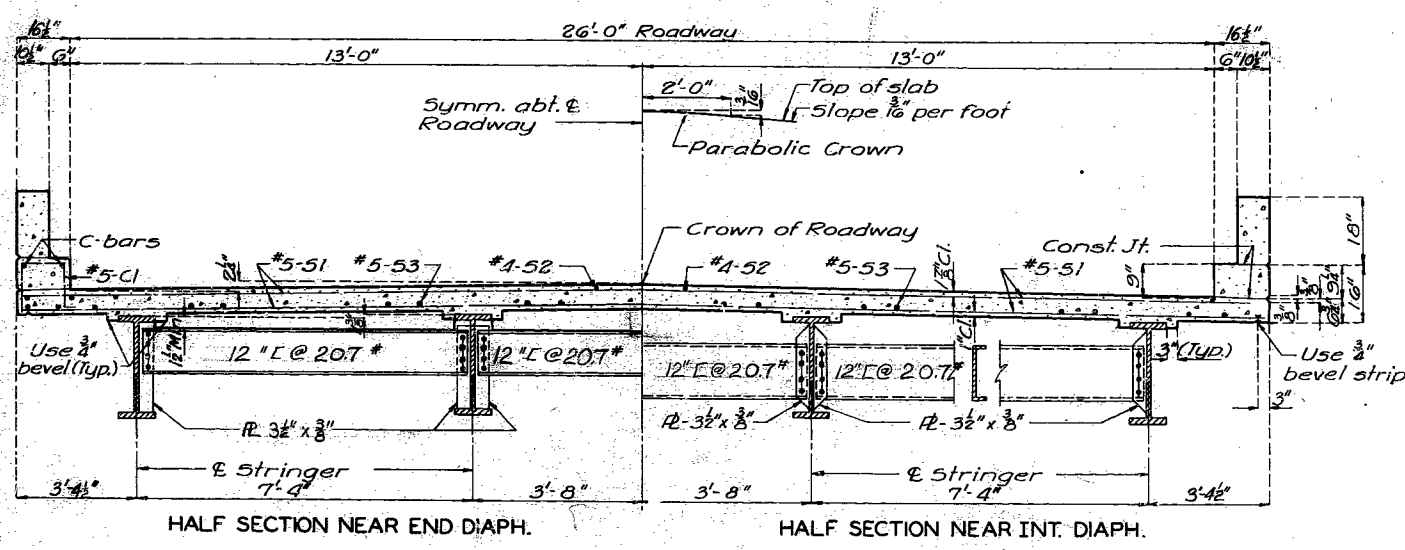
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	7	



PLAN OF SLAB SHOWING REINFORCEMENT

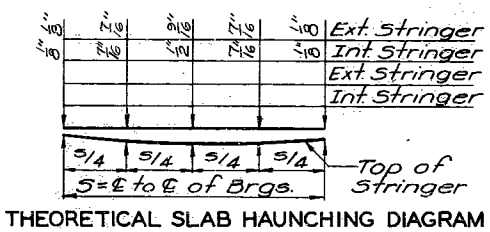


PLAN OF STRUCTURAL STEEL

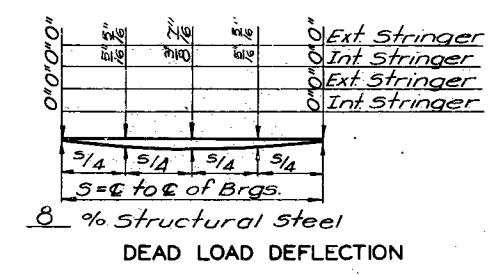


HALF SECTION NEAR END DIAPH.

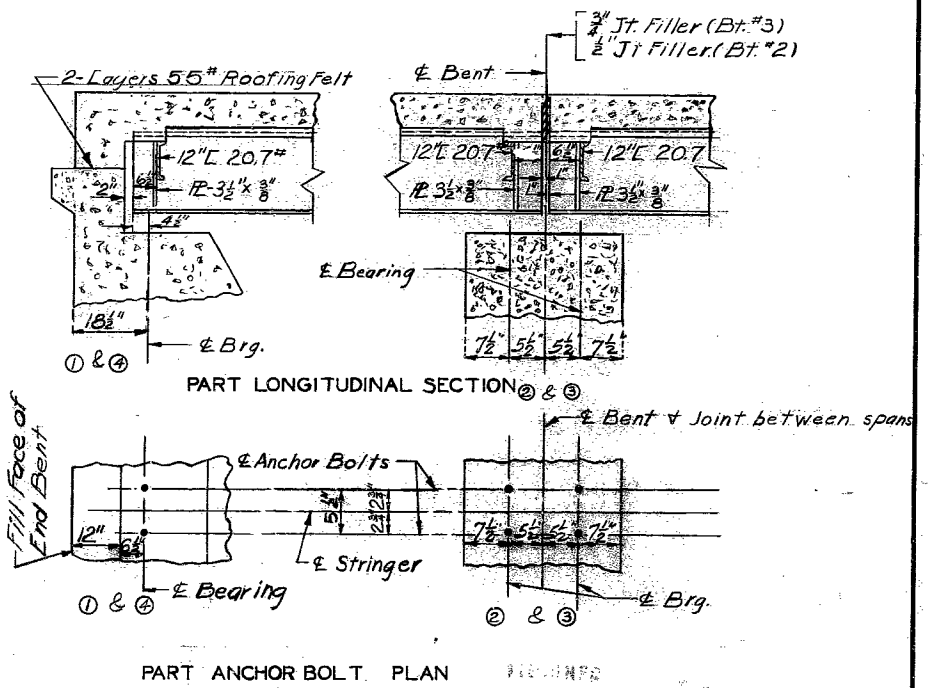
HALF SECTION NEAR INT. DIAPH.



THEORETICAL SLAB HAUNCHING DIAGRAM



DEAD LOAD DEFLECTION



PART LONGITUDINAL SECTION @ & @

PART ANCHOR BOLT PLAN

BRIDGE OVER SADDLER BRANCH
 STATE ROAD FROM CEDAR CO. LINE EAST TO ROUTE MM
 ABOUT 7.5 MILES W. OF FLEMINGTON
 PROJECT NO. RTE. SN-SEC. 84 (1) STA. 50+72.0
 POLK COUNTY

206

No. 40.26.1A Revised
 Dec. 1964 Aug. 1965

DETAILED Dec. 1965 BY Woody
 CHECKED Feb. 1966 BY Jahoni

Note: For details and reinforcement of curb and parapet not shown see sheet No. 6 of 6.

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

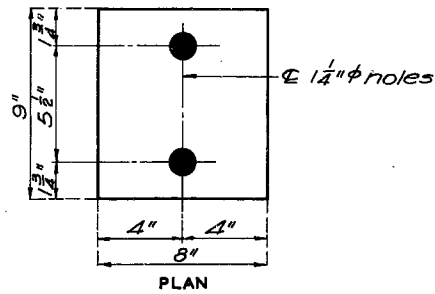
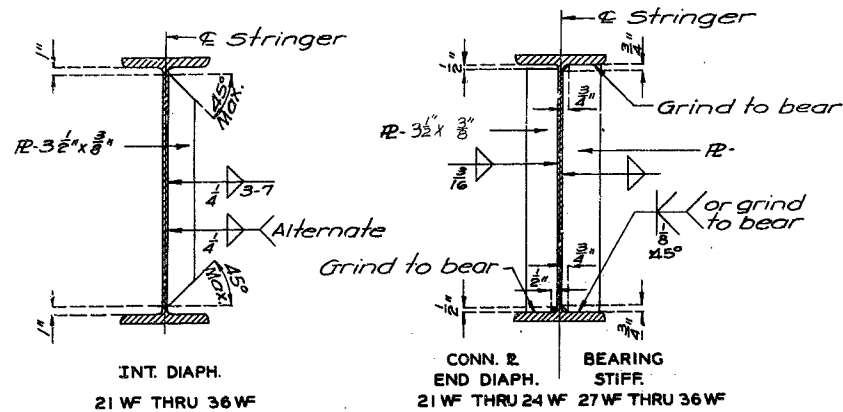
Sheet No. 4 of 6.

NO CONSTRUCTION CHANGES

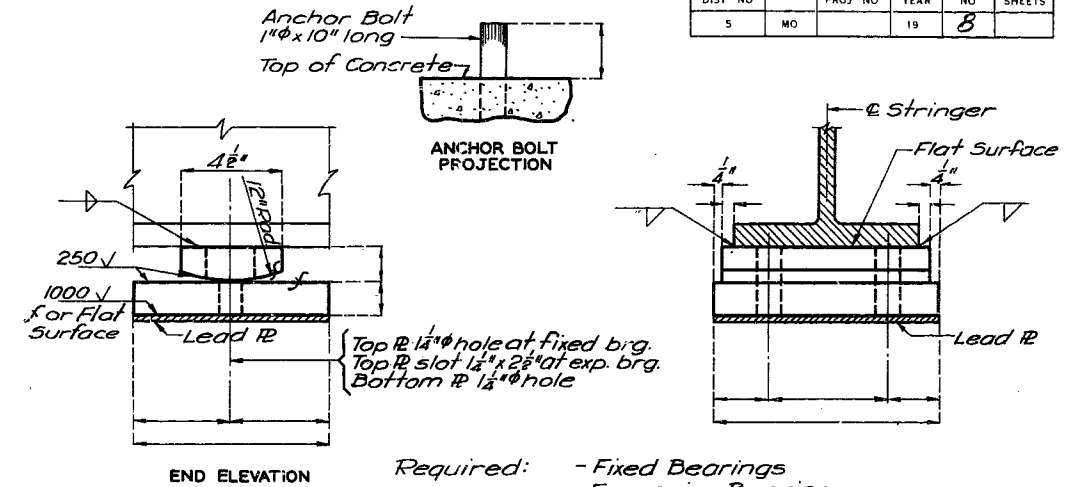
A-1878

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	8	



DETAILS OF FLAT PLATE BEARINGS-SPANS C (Estimated Weight 355 #)



TYPE "C" BEARINGS-SPAN C (Estimated Weight)

GENERAL NOTES:

Lead Plates under bearings shall be approximately 1/8" thickness and weigh 8#/sq ft. Cost of lead plates shall be included in price bid for other items. "Estimated Weight" does not include weight of anchor bolts. Where flat surface is indicated, tolerance shall be .003 in/in in any direction.

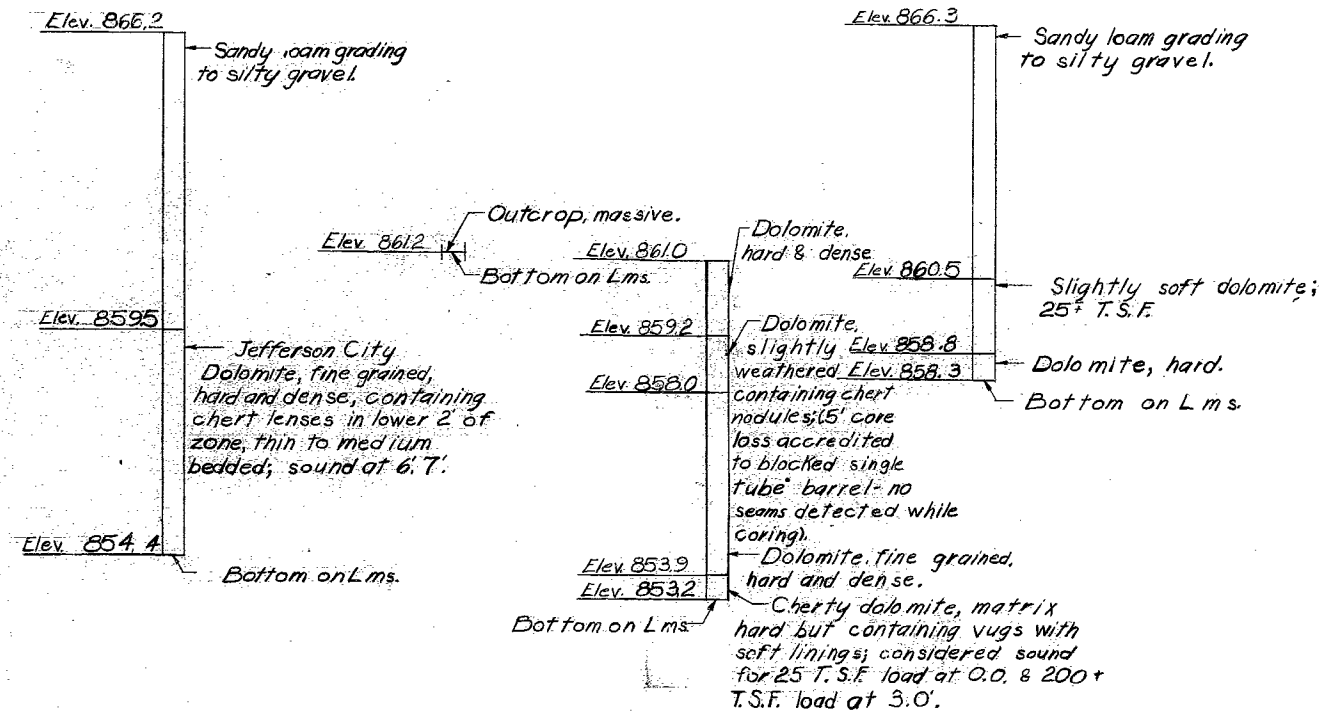
NOTES: TYPE "C" BEARINGS

Anchor Bolts for Type "C" Bearings shall be 1" diameter swaged bolts, 10" long with no heads or nuts. Top of Anchor Bolts shall be set approximately 1/4" below top of bearing.

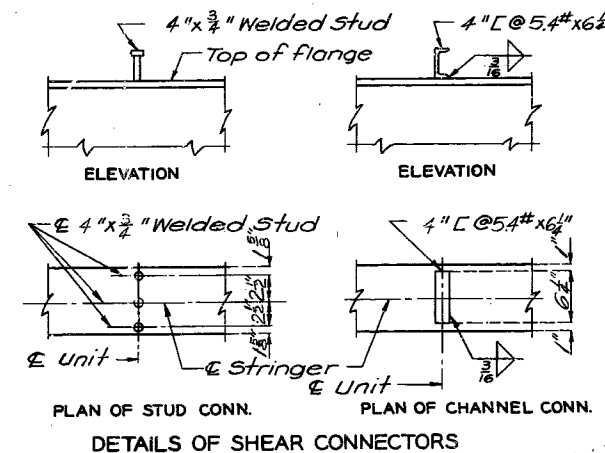
NOTES: FLAT PLATE BEARINGS

Flat plate bearing shall be Fabricated Structural Carbon Steel and straightened to plane surfaces. Anchor bolts shall be 1" diameter swaged bolts, 10" long with no heads or nuts. Top of anchor bolts shall be set approximately 1/2" above top of bottom flange. Bottom flange of beam to have 1 1/2" diameter holes at fixed end and 1 1/2" x 2 1/2" slots at expansion end.

Note: Locate channel connectors with backs toward ends of spans.



Note: For location of borings See Sheet No. 1 of 6.



BRIDGE OVER SADDLER BRANCH

STATE ROAD FROM GEDAR CO. LINE EAST TO ROUTE MM ABOUT 7.5 MILES W. OF FLEMINGTON PROJECT NO. RTE. SN- SEC. 84(C) STA. 50+72.0

POLK COUNTY

COUNTY

207

No. 4015g, Revised Aug. 1963 Feb. 1965

DETAILED Dec. 1965 BY Woody
CHECKED Feb. 1966 BY Johani

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

Sheet No. 5 of 6

A-1878

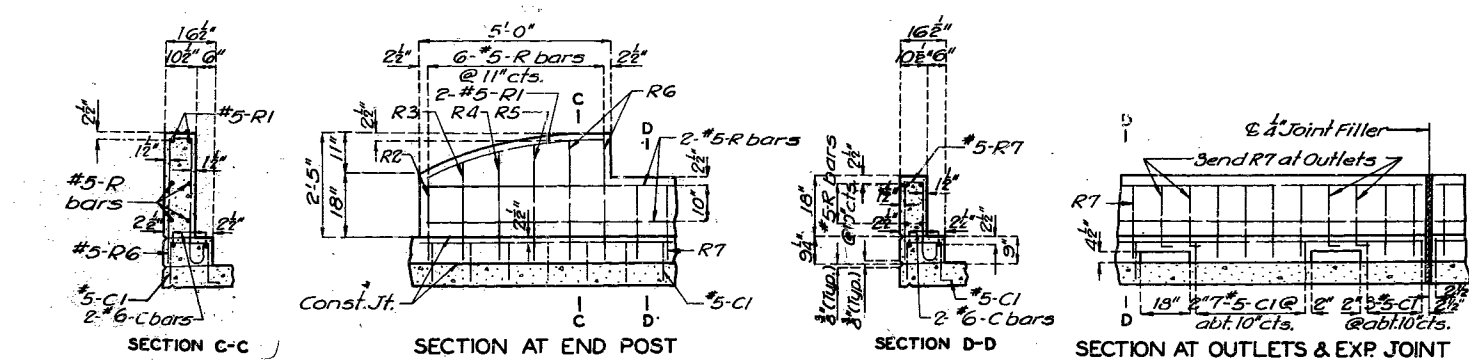
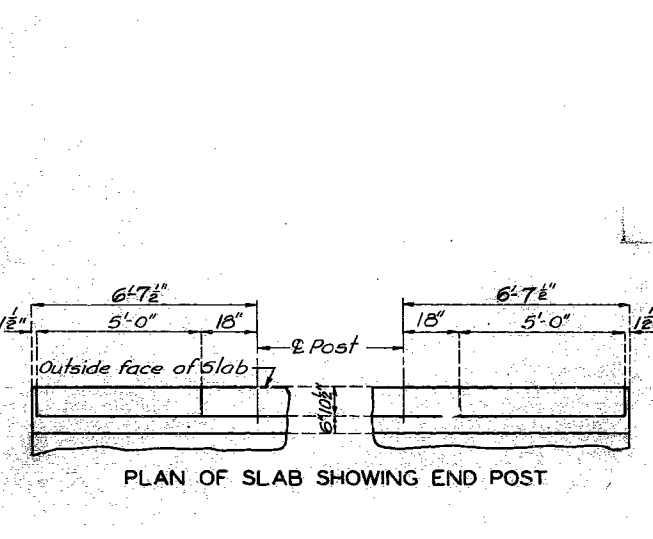
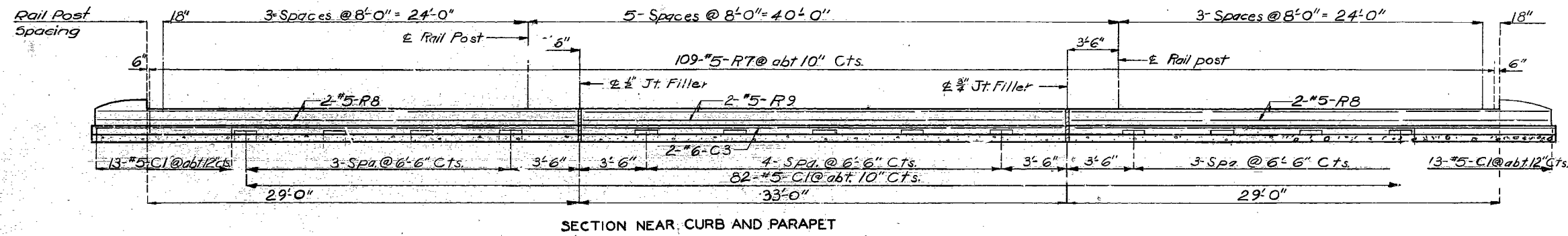
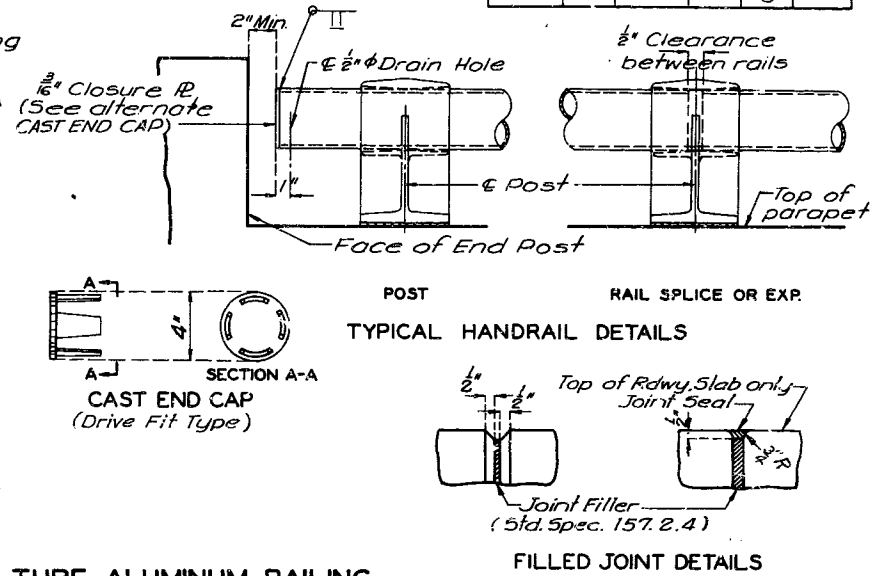
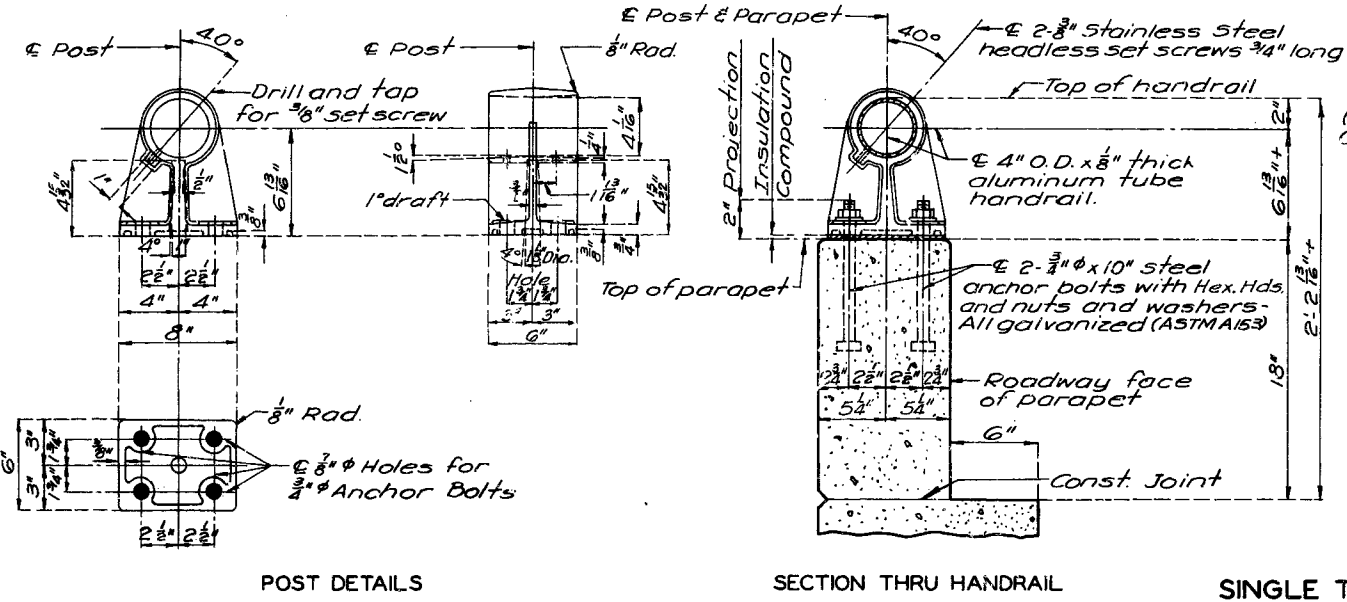
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

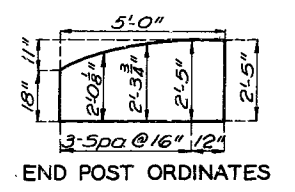
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	9	

GENERAL NOTES:

All handrail posts shall be set normal to grade.
 Aluminum tube handrail shall be bent to conform to vertical and horizontal alignment of parapet.
 Aluminum washer shims between top of parapet and post base may be used for adjusting handrail alignment. Maximum thickness of shims to be 1/8". Where more tilting of post is required for proper alignment, concrete bearing areas shall be ground down.
 All parts of handrail, except anchor bolts, nuts, washers, and set screws are to be of aluminum material.
 The contract unit price per linear foot of "Bridge Rail" shall include furnishing and erecting the handrail complete with anchor bolts, shims and insulating compound.
 All fillets 1/4" except as noted.
 All drafts 3° except as noted.
 Pipe rail to be fabricated in two or three panel lengths unless otherwise approved.
 Omit set screw on side near filled joint in parapet at all expansion posts.
 Top of curbs and parapets to be built parallel to grade with curb and parapet joints (except at end posts) normal to grade.
 All exposed edges of end posts shall have 1/2" bevel. All exposed edges of curbs and parapets shall have 1/4" radius or 3" bevel.
 If the contractor desires, he may use drive fit cast aluminum end caps in lieu of welded aluminum closure plates.
 Integrally cast coupons and a coat of clear lacquer specified in Std. Spec. 56.2.4 and 56.3.5 respectively will not be required for these rail posts.
 Concrete end posts to be vertical.



Note: For horizontal curb and parapet bars use minimum lap of 15" for #5 and 18" for #6.



BRIDGE OVER SADDLER BRANCH
 STATE ROAD FROM CEDA'R CO. LINE EAST TO ROUTE MM
 ABOUT 7.5 MILES W. OF FLEMINGTON
 PROJECT NO. RTE. SN- SEC. 84(1) STA. 50+72.0
 POLK COUNTY

SECTION AT OUTLETS & EXP. JOINT
 Note: Where there are no outlets use #5-C1 @ abt. 12" cts.
 Sheet No. 6 of 6

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

NO CONSTRUCTION CHANGES

208

No. 1.5.2 Revised Nov. 1965
 Oct. 1965
 Nov. 1965

DETAILED Dec. 1965 BY Woody
 CHECKED Feb. 1966 BY Jahani

A-1878

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO			4	

GENERAL NOTES:

Design Specifications: A.A.S.H.O. - 1961

Design Loading:

H15-44 15 #/sq. ft. Future Wearing Surface
Earth 120 # Equivalent Fluid Pressure 30 #

Design Unit Stresses:

Class B Concrete (substructure) $f_c = 1,200$ psi
Class B1 Concrete (superstructure) $f_c = 1,600$ psi
Reinforcing Steel $f_s = 20,000$ psi
Structural Steel (A.S.T.M. A36-62T) $f_s = 20,000$ psi

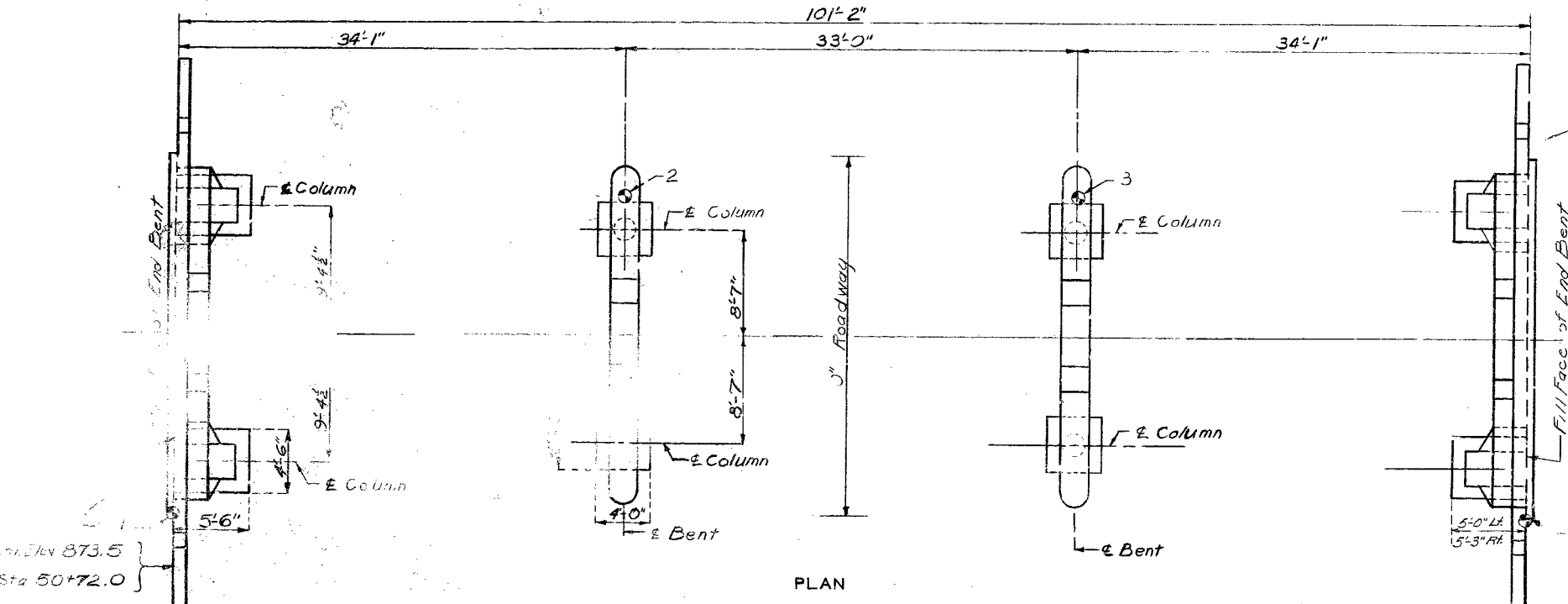
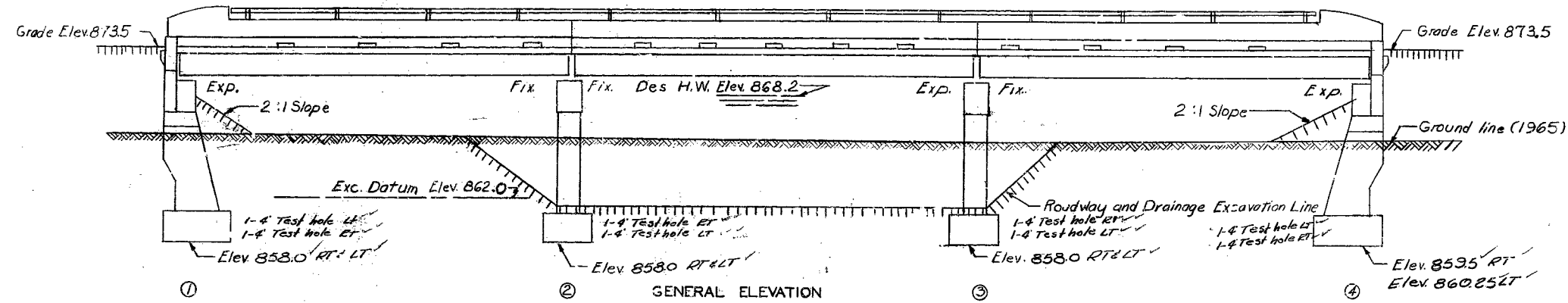
Surface Seal:

Superstructure deck surface sealed.

Fabricated Steel:

Field connections, High Strength Bolts $\frac{3}{4}$ " ϕ , holes $\frac{1}{16}$ " ϕ except as noted.

3 @ 33'-0" Simple W-Beam Spans (Composite)



Note: In no case footings of Bents No. 2 and 3 placed higher than elevation shown.

Note: For boring data see sheet No 5-F6
"O" Indicates location of boring.

FOOTING DATA				
BENT NO.	1	2	3	4
Foundation Material	Rock	Rock	Rock	Rock
Des. Brg. Tons/Sq. Ft.	4.3	3.4	3.4	4.3

ITEM	QUANTITIES		
	SUBSTR.	SUPERSTR.	TOTAL
Class 1 Excavation for Structure	Cu. Yds	38.0	38.0
Class 2 Excavation for Structure	Cu. Yds.	30.0	30.0
Class 2 Concrete	Cu. Yds.	57.0	57.0
Class B1 Concrete	Cu. Yds.		79.9
Reinforcing Steel	Lbs.	6760	27530
Fabricated Structural Carbon Steel	Lbs.	32500	32500
Bridge Rail (Single tube type)	Lin Ft.	181	181
Test Holes		32	32

B. M. Elev. 874.07 Bolt on N.W. Wing (Lt. Sta. 50+18)

BRIDGE OVER SADDLER BRANCH FINISHED
STATE ROAD FROM CEDAR CO. LINE EAST TO ROUTE MM
ABOUT 7.5 MILES W. OF FLEMINGTON
PROJECT NO. RTE. SN - SEC. 84. (D) STA. 50+72.0

POLK COUNTY

DESIGNED NOV. 1965 BY LESLIE
DETAILED Dec. 1965 BY Woody
CHECKED Feb. 1966 BY Janoni

SUBMITTED BY *D.B. Janssen* BRIDGE ENGINEER DATE 2/21/66
APPROVED BY *W.A. Miller* CHIEF ENGINEER DATE 2/21/66

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

Sheet No. 1A of 2

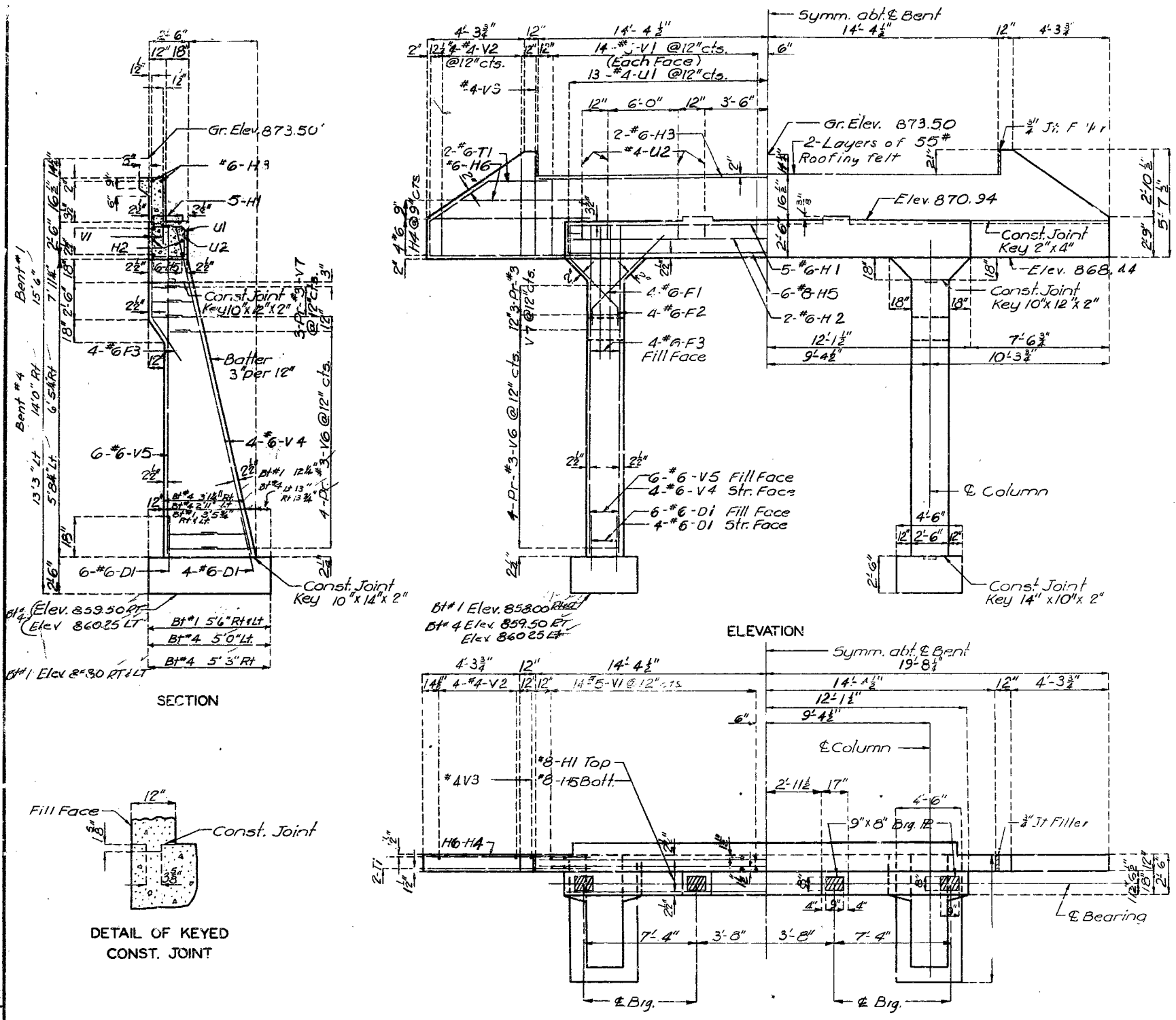
STD. 54.00
A-1878

FINAL PLANS

602

MISSOURI STATE HIGHWAY DEPARTMENT

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



COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION	BENDING SKETCHES & CUTTING DIAGRAMS	NO.	SIZE	LENGTH	MARK	LOCATION
End Bents NO. 1 & 4										
40	#6	3'-0"	D1	FTG.		404	#5	28'-6"	S1	Slab
16	"6	7'-6"	F1	Col. Hch.		60	#5	33'-9"	S2	"
16	"6	7'-9"	F2	"		58	#4	33'-9"	S3	"
16	"6	9'-3"	F3	"		30	#5	32'-9"	S4	"
10	"6	20'-0"	H1	Beam		29	#4	32'-9"	S5	"
4	"6	24'-0"	H2	"		4-V6-Cut 1/6 (Bend as shown)				
4	"6	23'-6"	H3	Backwall						
16	"6	9'-0"	H4	Wing		3-V7-Cut 1/2 (Bend as shown)				
12	"8	24'-0"	H5	Beam						
4	"6	8'-3"	H6	Wing		5-V2-Cut 8				
8	"6	9'-6"	T1	Wing						
50	"4	9'-9"	U1	Beam		4-V6-Cut 1/6 (Bend as shown)				
16	"4	3'-3"	U2	"						
11	"5	2'-6"	V1	Backwall		3-V7-Cut 1/2 (Bend as shown)				
8	"4	8'-6"	V2	Wing						
4	"4	5'-3"	V3	Backwall		5'-3" 3'-3" 8'-6" 11'-3"				
16	"6	10'-6"	V4	Col.						
24	"6	10'-0"	V5	"		6'-0" 5'-3" 11'-3"				
16	"3	11'-3"	V6	"						
12	"3	12'-0"	V7	"		6'-3" 5'-9" 12'-0"				
Int. Bent NO. 2 & 3										
32	"7	3'-6"	D2	Col.		23'-5" H1, H9				
10	"8	23'-3"	H7	Beam						
4	"6	23'-3"	H8	"		8'-7" H10				
6	"7	25'-6"	H9	"						
8	"7	10'-0"	H10	"		19" P1				
16	"7	5'-3"	H11	"						
32	"3	6'-0"	P1	Col.		13" U1, U3				
48	"4	9'-3"	U3	Beam						
12	"4	3'-0"	U4	"		2'-2" U1, U3				
32	"7	10'-0"	V8	Col.						
Superstructure										
216	#5	3'-6"	C1	Curb		2'-2" U1, U3				
8	#6	33'-6"	C2	"						
4	#6	32'-9"	C3	"		2'-2" U1, U3				
8	#5	4'-9"	R1	End Post						
4	#5	5'-9"	R2	"		2'-2" U1, U3				
4	#5	6'-6"	R3	"						
4	#5	7'-0"	R4	"		2'-2" U1, U3				
4	#5	7'-3"	R5	"						
8	#5	7'-3"	R6	"		2'-2" U1, U3				
218	#5	5'-6"	R7	Parapet						
16	#5	33'-6"	R8	"		2'-2" U1, U3				
8	#5	32'-6"	R9	"						

210

No. 80.2 Revised June 1961 Dec. 1964

DETAILED Dec 1965 BY Woody
CHECKED Feb 1966 BY Jahani

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

Sheet No. 2A of 2.

FINAL PLANS

BRIDGE OVER SADDLER BRANCH
STATE ROAD FROM CEDAR CO. LINE EAST TO ROUTE MM
ABOUT 7.5 MILES W. OF FLEMINGTON
PROJECT NO. RTE. SN- SEC. 84(C) STA. 50+72.0
POLK COUNTY

A-1878