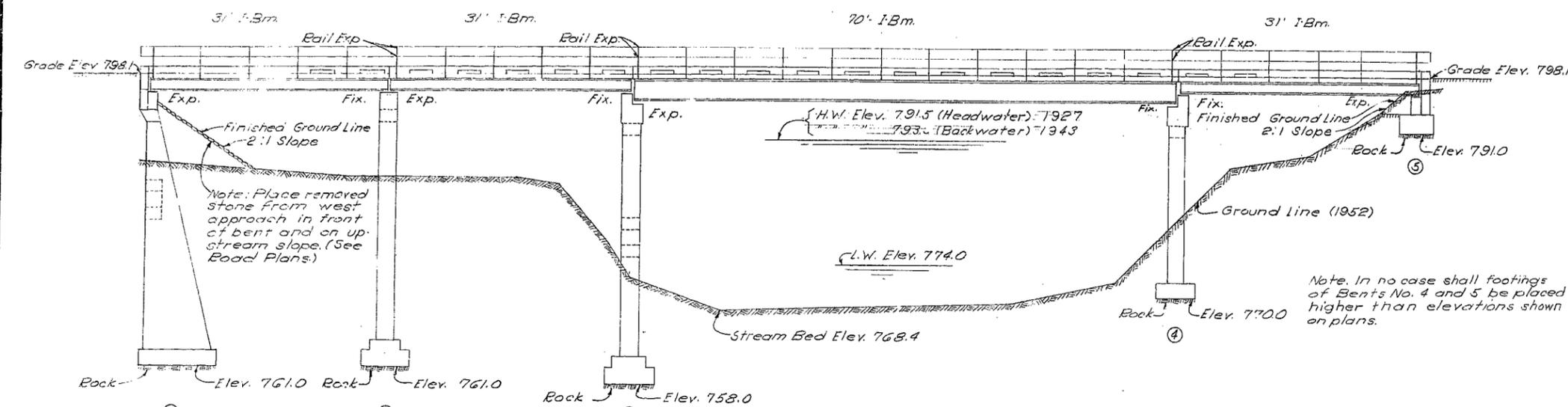


MISSOURI STATE HIGHWAY DEPARTMENT

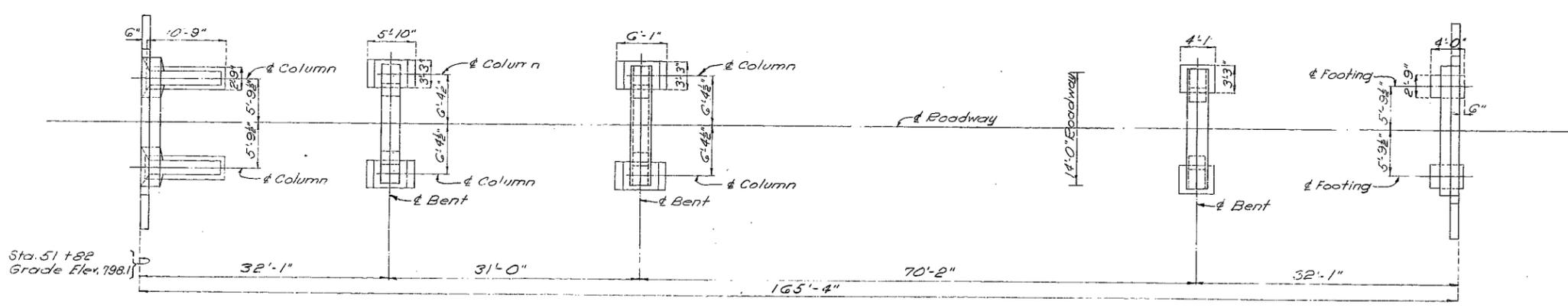
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	507301 Sec. 2 (S.M.)	19		



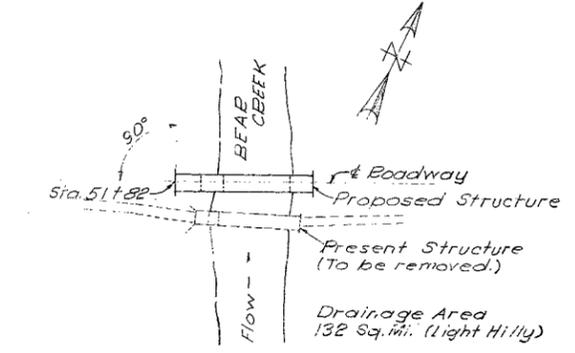
Note: Place removed stone from west approach in front of bent and on up-stream slope. (See Road Plans.)

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

GENERAL ELEVATION



PLAN



LOCATION SKETCH

GENERAL NOTES:
 Design Specifications: A.A.S.H.O. - 1953.
 Loading: H-10-44.
 Structural Steel Stress: 18,000 #/sq. in.
 Reinforcing Steel Stress: 18,000 #/sq. in.
 Concrete, Class "B" Stress: 1,000 #/sq. in.
 All concrete shall be Class "B".
 Rivets 3/8"; holes 1/2"; except in handrail where rivets shall be 5/8"; holes 3/4".
 Field connections shall be riveted except as noted in hand-rail details or if the Contractor desires to eliminate all field riveting on this project, he may use machine bolts except for the 3/8" button head bolts specified for handrail. Heads and nuts of machine bolts shall be 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 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 38-19A(11) of the Standard Specifications.
 All beams over 55' in length shall be shipped by rail to the specified shipping point.

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds. 150		150
Class 2 Excavation for Structures	Cu. Yds. 222		222
Class "B" Concrete	Cu. Yds. 94.9	60.8	155.7
Reinforcing Steel	Lbs. 9970	10510	20480
Fabricated Structural Steel	Lbs. 55450	55450	
Gray Iron Alloy Castings	Lbs. 630	630	

Note: Excavation for bridge made above Elev. 775.0 will be paid for as Class 1 Excavation for Structures. Excavation for bridge made below Elev. 775.0 will be paid for as Class 2 Excavation for Structures.

COMPLETE BILL OF REINFORCING STEEL					
No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams
Superstructure					
240	#5	2'-9"	C1	Curb	3'-4'-2 1/2" 8' 2'-9"
24	#6	17'-3"	C2	"	4'-2 1/2" 11'-6 1/2" 2'-9" 4'-9"
12	#6	16'-6"	C3	"	15'-9" 7'-6"
12	#6	36'-0"	C4	"	29-V5 CUT 58 & BEND AS SHOWN 4-V7 CUT 8
330	#4	16'-0"	S1	Slab	
165	#4	17'-9"	S2	"	
96	#4	16'-9"	S3	"	
48	#4	16'-3"	S4	"	
72	#4	24'-6"	S5	"	
End Bents No. 1 & 5					
20	#6	5'-3"	D1	Flg. Bt. No. 1	15'-5 1/2" H1-H2 3'-11 1/2" D1
8	#6	6'-0"	D4	" " " 5	12'-5 1/2" H7 5'-2 1/2" D2
6	#6	5'-6"	D5	" " " 5	14'-2 1/2" G1-G3-G5 5'-5 1/2" D3
6	#6	7'-9"	F1	Col. Hch. Bt. No. 1	13'-10 1/2" G4 4'-8 1/2" D4
6	#6	7'-9"	F2	" " " 1	G1-G3-G4-G5-H1-H2-H7 4'-2 1/2" D5
12	#8	8'-6"	F3	Tie Bm. " 1	D1-D2-D3-D4-D5
6	#7	18'-0"	H1	Brg. Bm.	
6	#6	18'-0"	H2	"	
8	#6	16'-0"	H3	"	
16	#5	10'-0"	H5	Wing	
8	#5	9'-6"	H6	"	
8	#8	15'-0"	H7	Tie Bm. Bt. No. 1	
8	#6	12'-6"	T1	Wing	
32	#4	10'-3"	U1	Brg. Bm.	
6	#4	3'-0"	U2	"	
10	#4	7'-9"	U3	Tie Bm. Bt. No. 1	
12	#6	25'-9"	V1	Col. Bt. No. 1	
8	#6	26'-6"	V2	" " " 1	
12	#4	25'-6"	V3	" " " 1	
12	#4	9'-6"	V4	" " " 1	
58	#3	15'-9"	V5	" " " 1	
32	#4	3'-6"	V6	Back wall	
8	#4	7'-6"	V7	Wing	
4	#4	4'-9"	V8	"	
12	#6	9'-6"	V9	Col. Bt. No. 1	
8	#6	9'-9"	V10	" " " 1	
Intermediate Bents No. 2, 3 & 4					
16	#6	5'-3"	D1	Flg. Bt. No. 4	
16	#6	6'-6"	D2	" " " 2	
16	#6	6'-9"	D3	" " " 3	
12	#8	9'-0"	F4	Tie Bm. Bt. No. 5	
24	#6	8'-6"	F5	Col. Hch.	
9	#6	16'-9"	G1	Brg. Bm.	
10	#6	14'-9"	G2	Brg. Bm. Bt. No. 2	
6	#7	16'-9"	G3	Brg. Bm. Bt. No. 2	
10	#9	17'-3"	G4	" " Bts. No. 3 & 4	
6	#8	15'-3"	G5	Tie Bm. Bt. No. 3	
154	#3	8'-9"	P1	Col. Bt. No. 1	
16	#6	31'-6"	P2	Col. Bt. No. 2	
16	#6	22'-9"	P3	" " " 3	
16	#6	12'-6"	P4	" " " 3	
16	#6	22'-0"	P5	" " " 4	
3	#4	3'-0"	U2	Brg. Bm. Bt. No. 2	
11	#4	8'-3"	U10	Tie Bm. Bt. No. 3	
16	#4	8'-9"	U4	Brg. Bm. Bt. No. 2	

B.M. No. 5, Elev. 795.40, " on top N.W. Cor. East Abut. of E. End of Bridge, 30' E. of Sta. 53+88.
BRIDGE OVER BEAR CREEK

STATE ROAD FROM ROUTE 64 EAST TO FOLK CO. LINE
 ABOUT 13 MILES S.W. OF FLEMINGTON
 PROJECT NO. 21013(1) SEC. 5, (S.M.) STA. 51+82
 CEDAR COUNTY

SUBMITTED BY: J.A. Williams DATE: 6/3/53
 APPROVED BY: Roy M. Nelson DATE: 6/3/53

FINISHED
 FINISHED
 P-360

398

Drawn Apr. 1953 by J.D.M.
 Checked May 1953 by C.S.H.

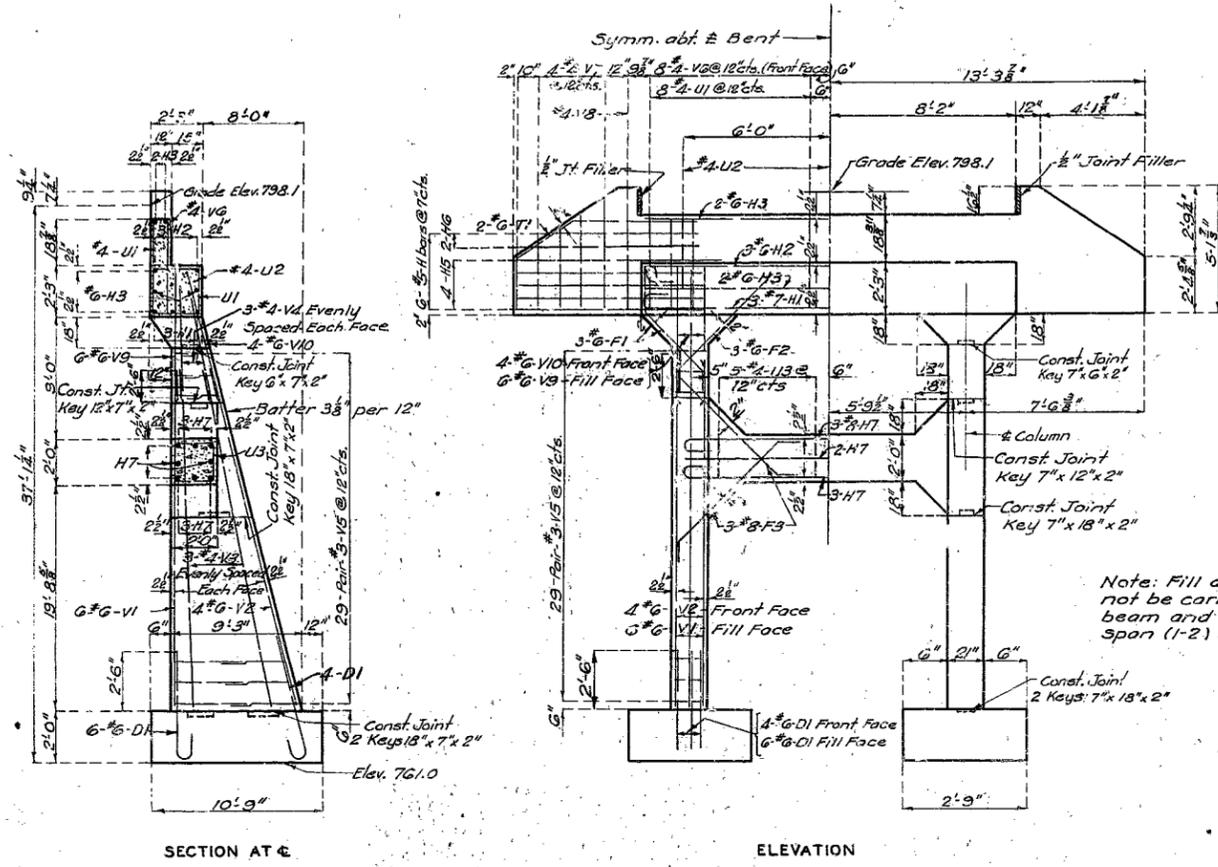
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 6.

SEE FINAL PLANS BROWN-LINES

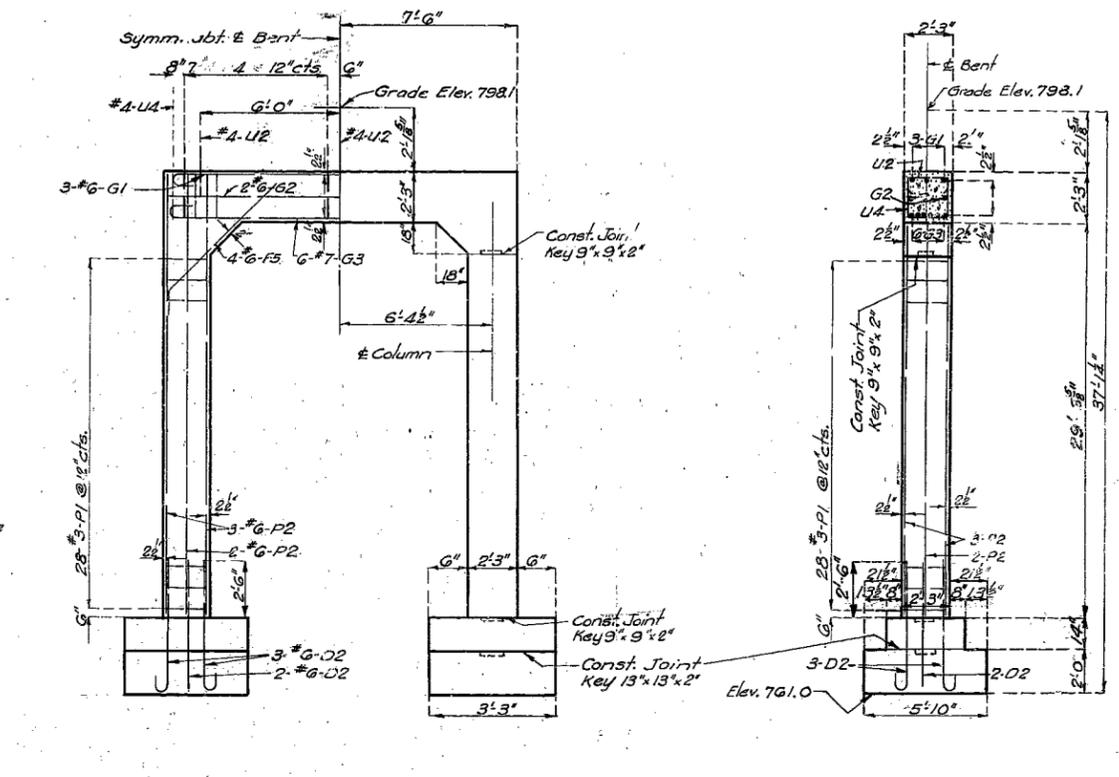
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-1013 (1) SEC. A (64)	19		



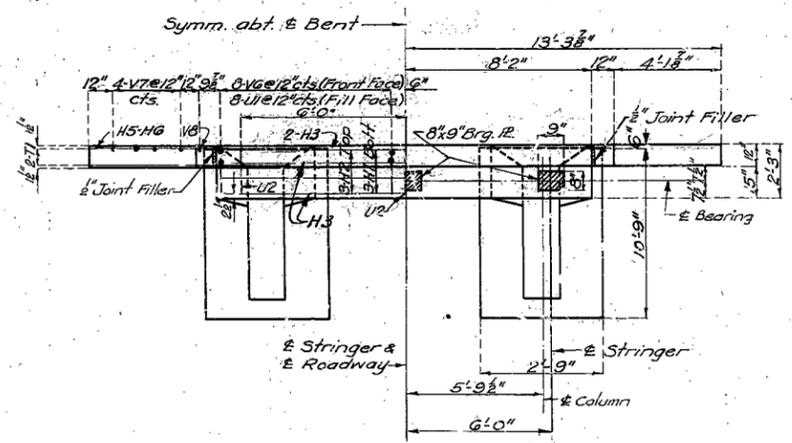
SECTION AT A

ELEVATION

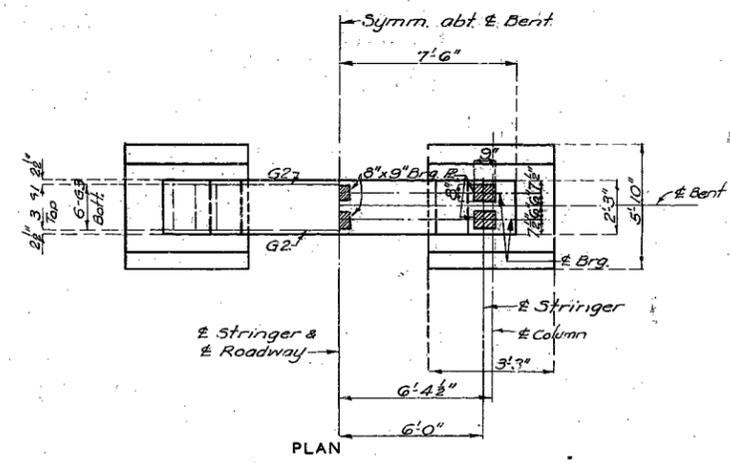


ELEVATION

SECTION AT A



PLAN
DETAILS OF END BENT NO. 1



PLAN
DETAILS OF INT. BENT NO. 2

BRIDGE OVER BEAR CREEK
 STATE ROAD FROM ROUTE 64 EAST TO POLK CO. LINE
 ABOUT 18 MILES S.W. OF FLEMINGTON
 PROJECT NO. S-1013 (1) SEC. A - CSM STA. 51+82
CEDAR COUNTY

FINISHED

399

Assembled April 1953 by J.D.M. GW
 Checked May 1953 by C.S.A.

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

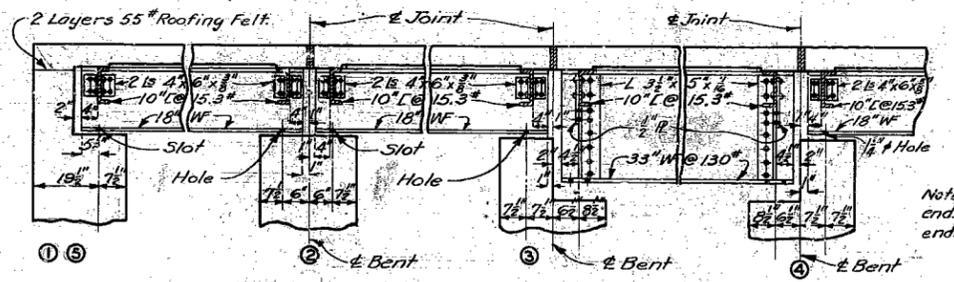
Sheet No. 2 of 6.

SEE FINAL PLANS BROWN LINES

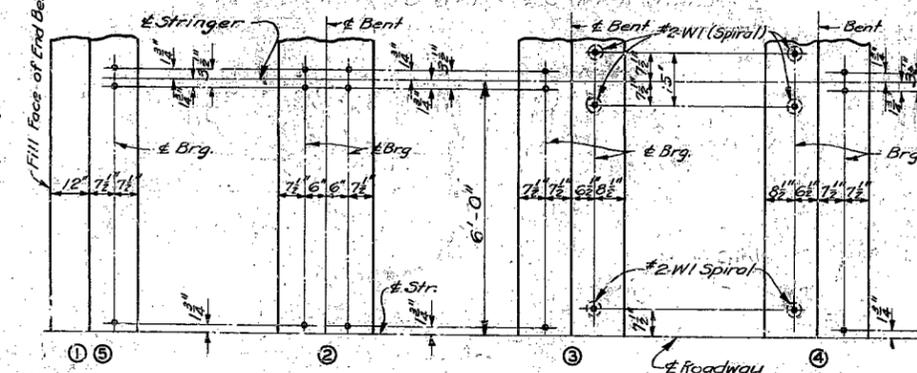
FINISHED

MISSOURI STATE HIGHWAY DEPARTMENT

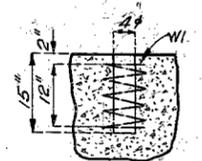
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	3-1013 (1) SEC. A (C.M.)	19		



PART LONGITUDINAL SECTION NEAR E

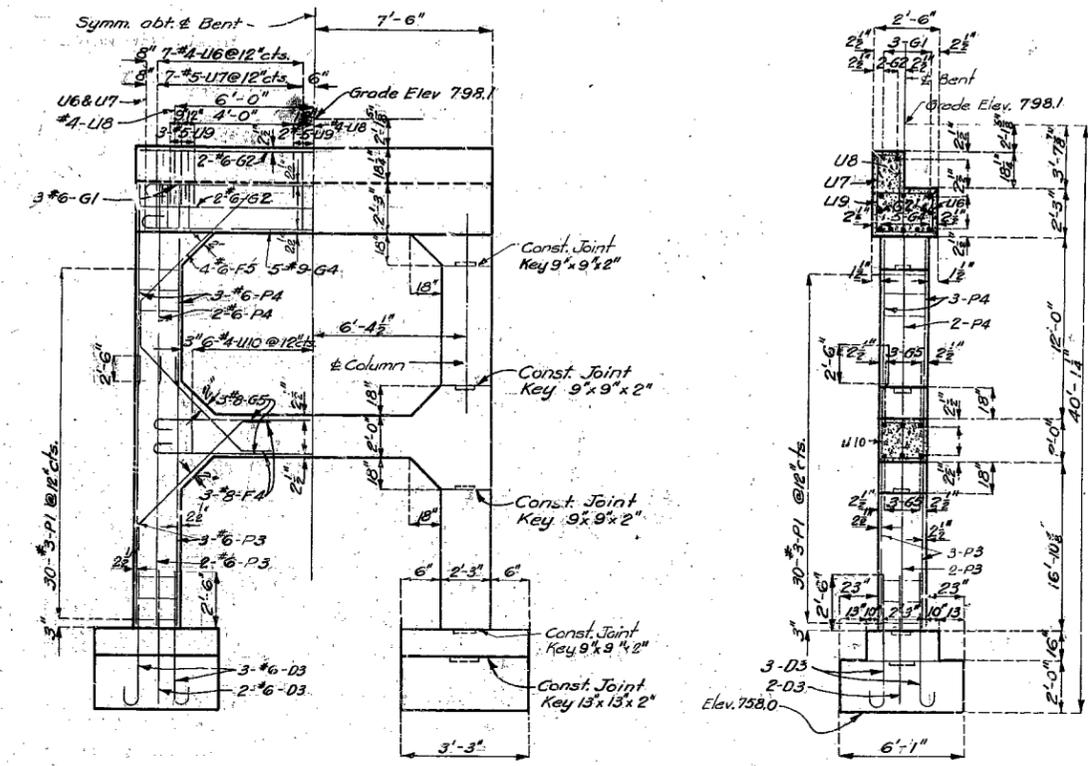


PART ANCHOR BOLT PLAN



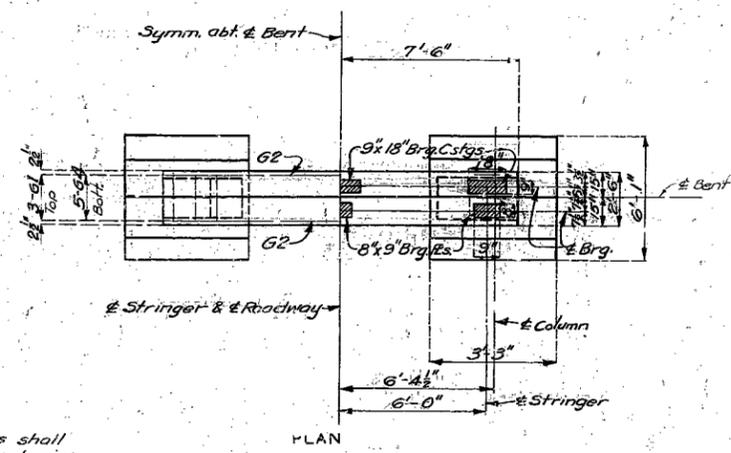
Note: Holes for all 1/2" anchor bolts shall be formed in substructure by placing and setting with template 4" wells of depth shown.
Grout for anchor bolts shall contain Iron Oxide (Embeco or an approved equivalent).

PART SECTION SHOWING ANCHOR BOLT PLAN



ELEVATION

SECTION AT E



DETAILS OF INT. BENT NO. 3.

BRIDGE OVER BEAR CREEK
STATE ROAD FROM ROUTE 64 EAST TO POLK CO. LINE
ABOUT 18 MILES S.W. OF FLEMINGTON
PROJECT NO. S-1013 (1) SEC. A (SMSTA. 51+82)

CEDAR COUNTY FINISHED

400

Assembled April 1953 by J.D.M. & J.C.G.
Checked May 1953 by C.S.P.

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

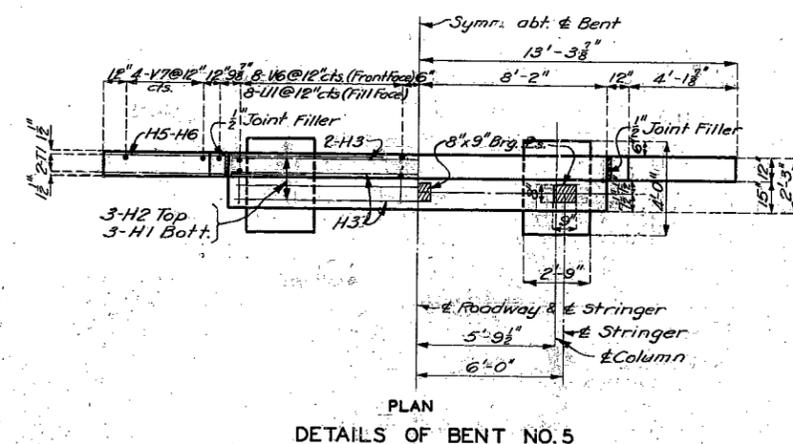
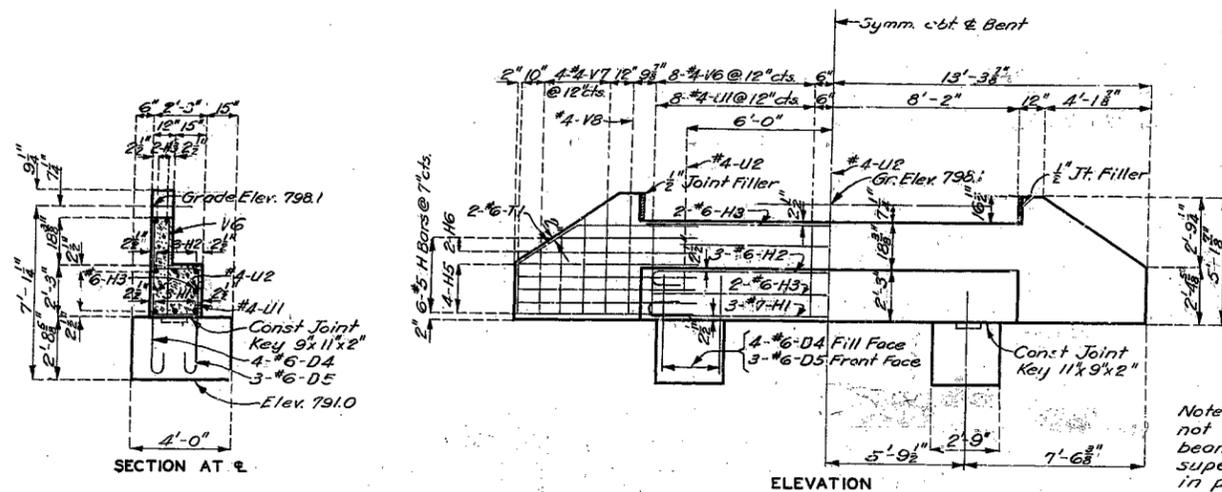
Sheet No. 3 of 6.

SEE FINAL PLANS BROWN-LINES

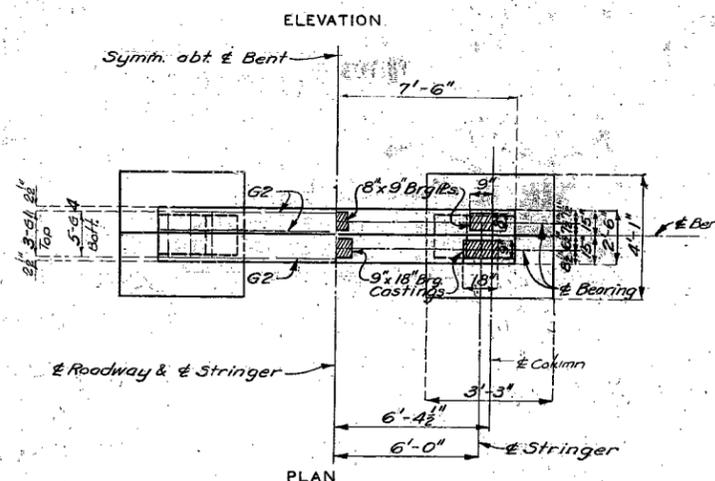
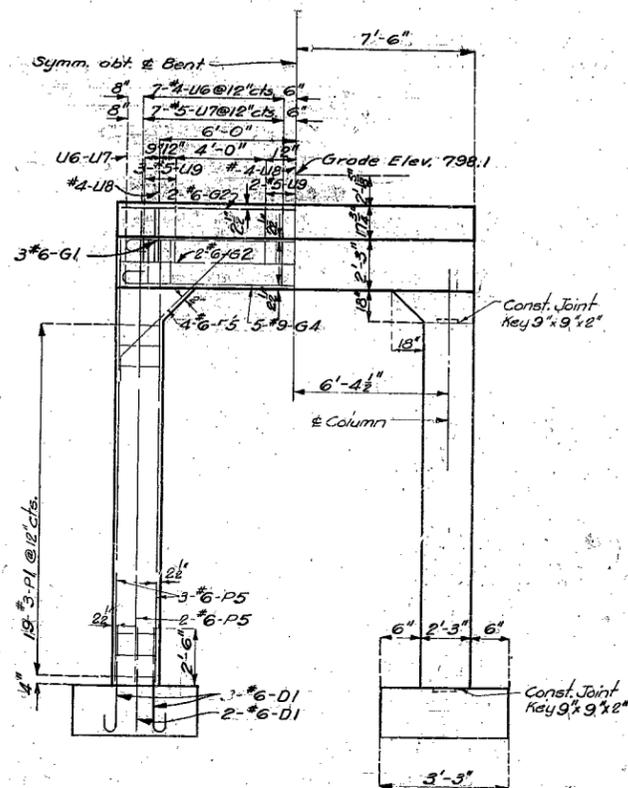
P-360

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE MO.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5		S-1013 (1) SEC. A (6M)	19		



PLAN
DETAILS OF BENT NO. 5



PLAN
DETAILS OF INT. BENT NO. 4.

BRIDGE OVER BEAR CREEK

STATE ROAD FROM ROUTE 64 EAST TO POLK CO. LINE
ABOUT 18 MILES S.W. FLEMINGTON
PROJECT NO. S-1013(1) SEC. A (SMSTA. 51+62)

CEDAR COUNTY

FINISHED

Assembled April 1953 by J.D.M. & J.C.G.
Checked May 1953 by C.S.A.

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

Sheet No. 4 of 6.

FINISHED

P-360

SEE FINAL PLANS BROWN-LINES

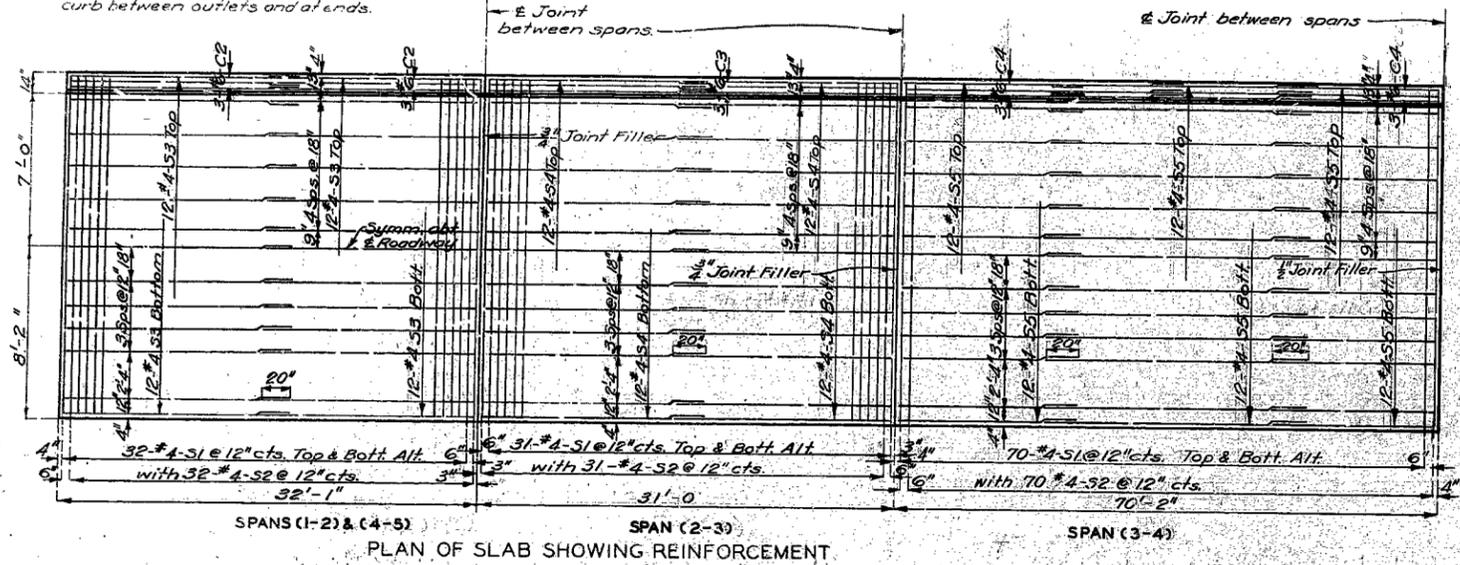
2 Col. Int. 141 Rdwy.

401

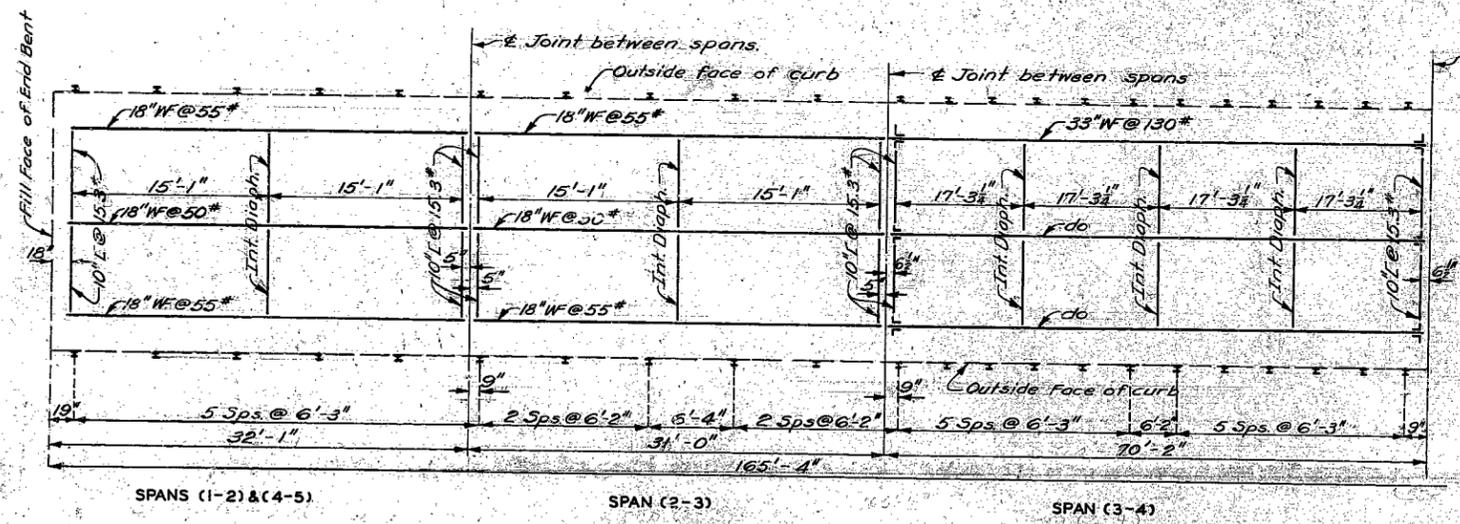
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MO	S-1013 (C) SEC. A (SM)	19		

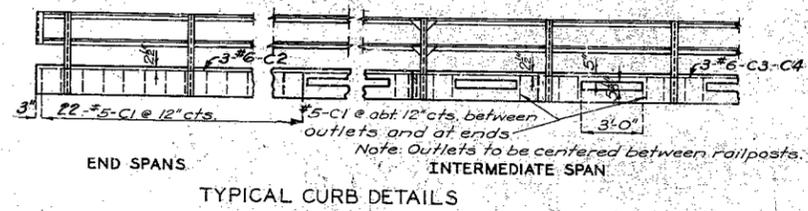
Note: Space dowel bars C1 at approximately 12" centers in curb between outlets and at ends.



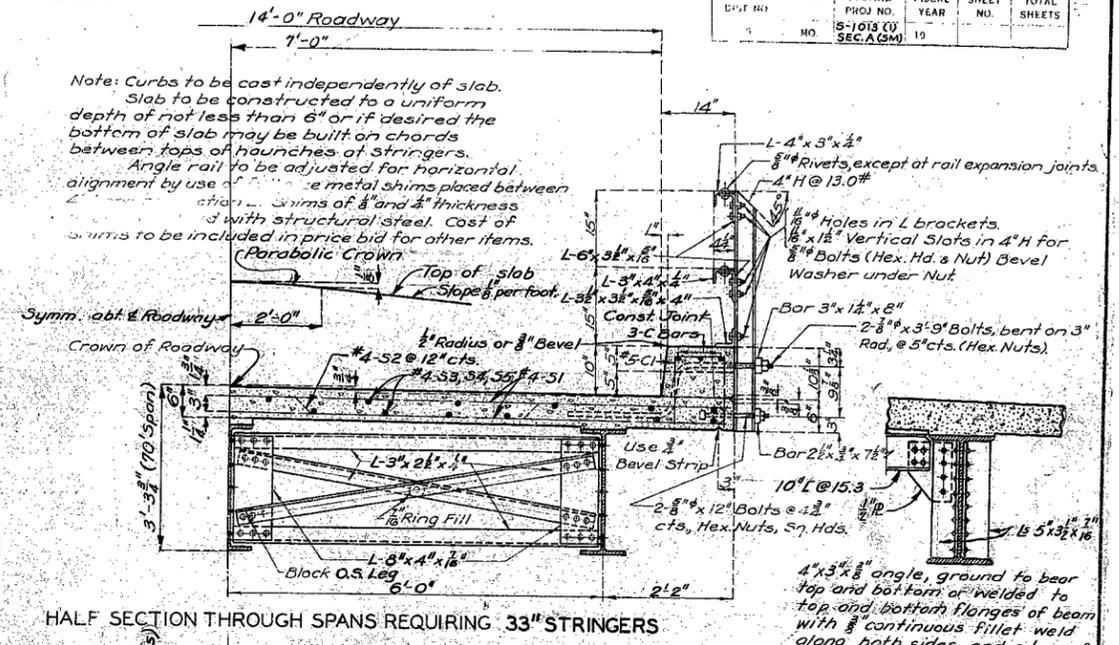
PLAN OF SLAB SHOWING REINFORCEMENT



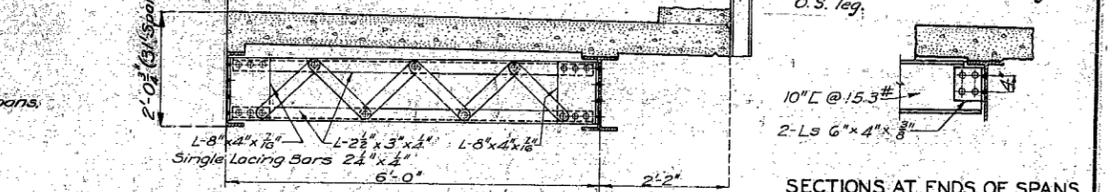
PLAN OF STRUCTURAL STEEL



TYPICAL CURB DETAILS



HALF SECTION THROUGH SPANS REQUIRING 33" STRINGERS



SECTIONS AT ENDS OF SPANS

HALF SECTION THROUGH SPANS REQUIRING 18" STRINGERS



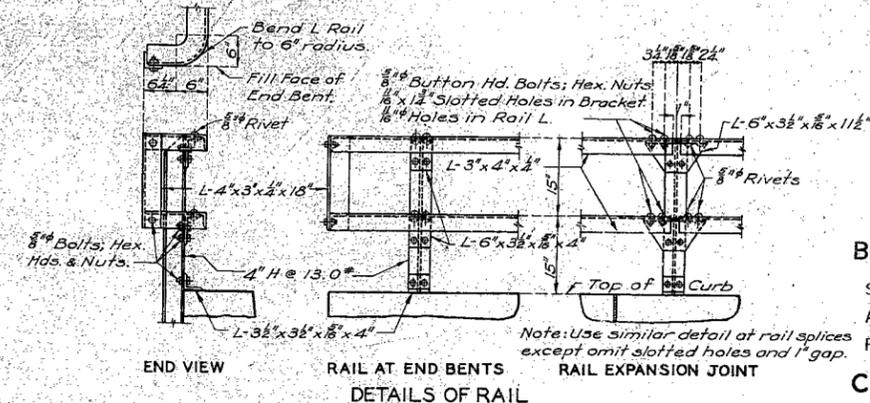
DETAILS OF BEVEL FOR FILLED JOINTS

31' Spans	0"	1/2"	1"	1 1/2"	2"	3"	0"	Outside Stringers
	3/8"	1/4"	1/2"	3/4"	1"	1 1/2"	1"	Inside Stringers
70' Span	0"	1/2"	1"	1 1/2"	2"	3"	0"	Outside Stringers
	3/8"	1/4"	1/2"	3/4"	1"	1 1/2"	1"	Inside Stringer

3" = Center to Center of Bearings

Note: Slab shall be built parallel to grade and to 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".

SLAB HAUNCHING DIAGRAM



RAIL AT END BENTS RAIL EXPANSION JOINT DETAILS OF RAIL

BRIDGE OVER BEAR CREEK
STATE ROAD FROM ROUTE 64 EAST TO POLK CO. LINE
ABOUT 18 MILES S.W. OF FLEMINGTON
PROJECT NO. S-1013(C) SEC. A (SM) STA. 51+82

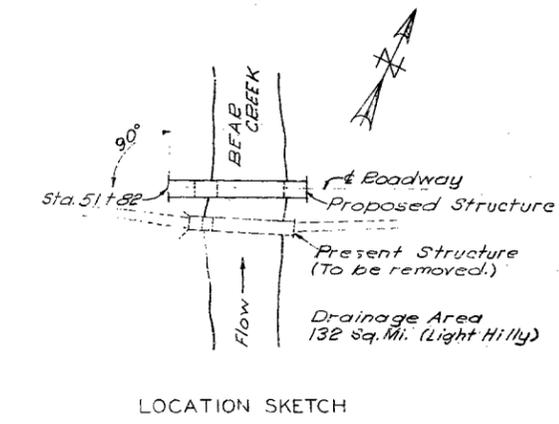
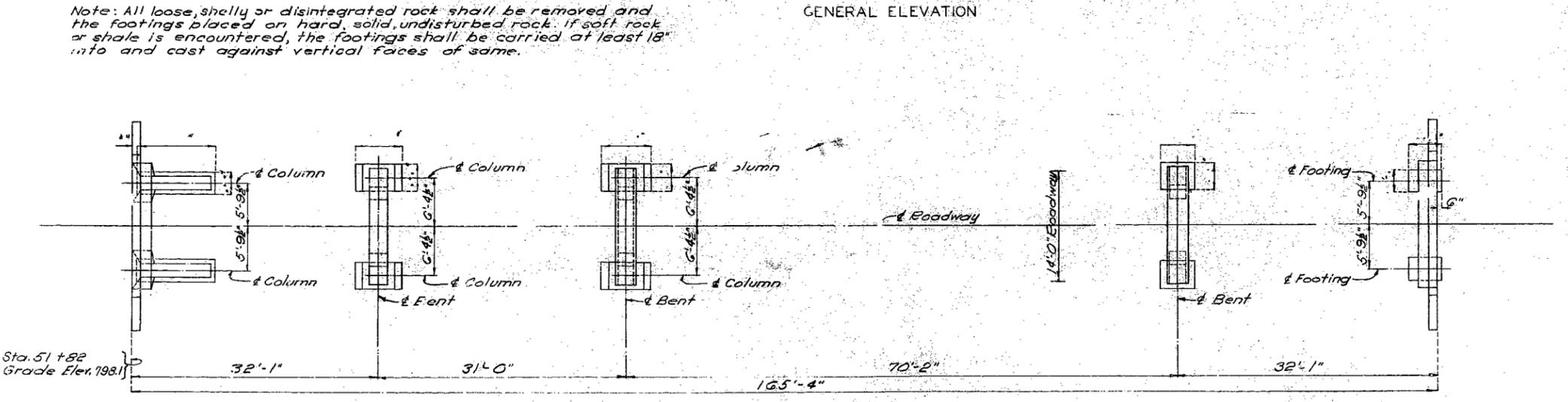
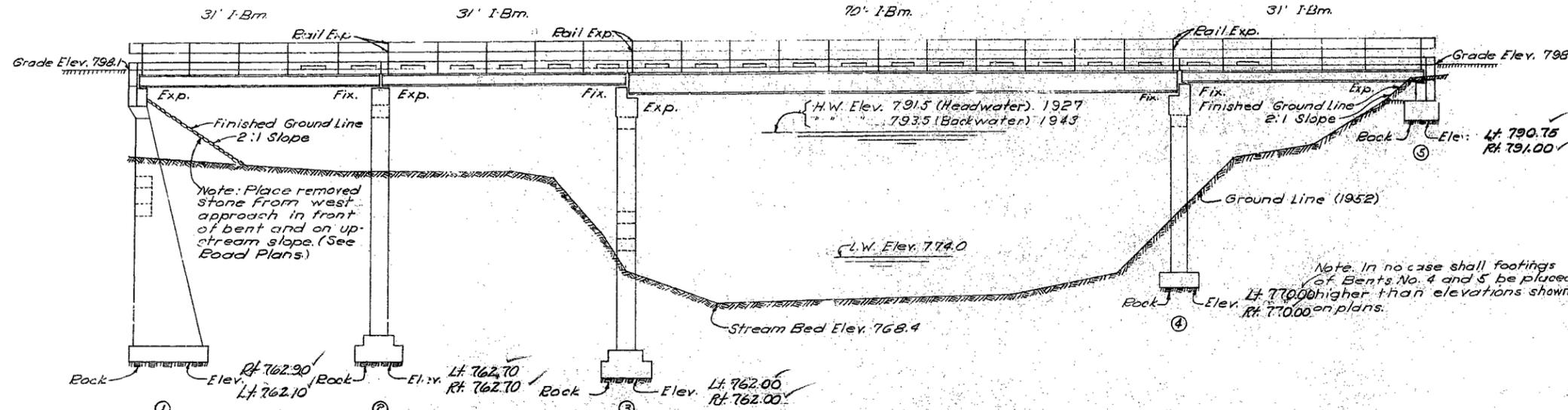
CEDAR COUNTY FINISHED

402

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	91073(1) Sec. A (GM)	19	19	19

FINAL PLANS

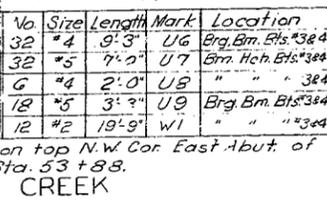


GENERAL NOTES:
 Design Specifications: A.A.S.H.O. - 1953.
 Loading: H10-44.
 Structural Steel Stress: 18,000 #/sq. in.
 Reinforcing Steel Stress: 18,000 #/sq. in.
 Concrete, Class "B" Stress: 1,000 #/sq. in.
 All concrete shall be Class "B".
 Rivets 3/4"; holes 1/2", except in handrail where rivets shall be 5/8"; holes 3/4".
 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 3/4" button head bolts specified for handrail. Heads and nuts of machine bolts shall be 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 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 Premoulded Material for Filler as given in Section 38-19A(11) of the Standard Specifications.
 All beams over 55' in length shall be shipped by rail to the specified shipping point.

FINAL QUANTITIES			
Item	Subst.	Superst.	Total
Class 1 Excavation for Structures	Cu. Yds.	138.5	138.5
Class 2 Excavation for Structures	Cu. Yds.	183.0	183.0
Class "B" Concrete	Cu. Yds.	91.1	151.9
Reinforcing Steel	Lbs.	10050	10510
Fabricated Structural Steel	Lbs.	55850	55850
Gray Iron Alloy Castings	Lbs.	630	630
Test Holes	L.F.	52	52

Note: Excavation for bridge made above Elev. 775.0 will be paid for as Class 1 Excavation for Structures. Excavation for bridge made below Elev. 775.0 will be paid for as Class 2 Excavation for Structures.

COMPLETE BILL OF REINFORCING STEEL				
No.	Size	Length	Mark	Location
Superstructure				
240	#5	2'-3"	C1	Curb
24	#6	17'-3"	C2	"
12	#6	16'-6"	C3	"
12	#6	36'-0"	C4	"
330	#4	16'-0"	"	Slab
165	#4	17'-9"	S2	"
96	#4	16'-9"	S3	"
48	#4	16'-3"	S4	"
72	#4	24'-6"	S5	"
End Bents No. 1 & 5				
20	#6	5'-3"	D1	Fig. B+ No. 1
8	#6	6'-0"	D4	" " " 5
6	#6	5'-6"	D5	" " " 5
6	#6	7'-9"	F1	Col. Hch. Bt. No. 1
6	#6	7'-9"	F2	" " " 1
12	#8	8'-6"	F3	Tie Br. " 1
6	#7	18'-0"	H1	Brg. Brm.
6	#6	18'-0"	H2	"
8	#6	16'-0"	H3	"
8	#6	3'-6"	H4	"
16	#5	10'-0"	H5	Wing
8	#5	9'-6"	H6	"
8	#8	15'-0"	H7	Tie Br. Bt. No. 1
8	#6	12'-6"	T1	Wing
32	#4	10'-3"	U1	Brg. Brm.
6	#4	3'-0"	U2	"
10	#4	7'-9"	U3	Tie Br. Bt. No. 1
12	#6	25'-9"	V1	Col. Bt. No. 1
8	#6	26'-6"	V2	" " " 1
12	#4	25'-6"	V3	" " " 1
12	#4	9'-6"	V4	" " " 1
58	#3	15'-8"	V5	" " " 1
32	#4	3'-6"	V6	Backwall
8	#4	7'-6"	V7	Wing
4	#4	4'-9"	V8	"
12	#6	9'-6"	V9	Col. Bt. No. 1
8	#6	9'-9"	V10	" " " 1
Intermediate Bents No. 2, 3 & 4				
16	#6	5'-3"	D1	Fig. Bt. No. 4
16	#6	6'-6"	D2	" " " 2
16	#6	6'-9"	D3	" " " 3
24	#8	9'-0"	F4	Tie Br. Bt. No. 3
24	#6	8'-6"	F5	Col. Hch.
9	#6	16'-9"	G1	Brg. Brm.
10	#6	14'-9"	G2	Brg. Brm. Bt. No. 2
6	#7	16'-9"	G3	Brg. Brm. Bt. No. 2
10	#9	17'-3"	G4	" " " 3
6	#8	16'-9"	G5	Tie Br. Bt. No. 3
154	#3	8'-9"	P1	Col. Bt. No. 2
16	#6	3'-6"	P2	Col. Bt. No. 2
16	#6	22'-9"	P3	" " " 3
16	#6	12'-6"	P4	" " " 3
16	#6	22'-0"	P5	" " " 4
3	#4	3'-0"	U2	Brg. Brm. Bt. No. 2
1	#4	8'-3"	U10	Tie Br. Bt. No. 3
16	#4	8'-9"	U4	Brg. Brm. Bt. No. 2



B.M. No. 5, Elev. 795.40, on top N.W. Cor. East Abut. of E. End of Bridge, 30' Rt. Sta. 53+88.

BRIDGE OVER BEAR CREEK

STATE ROAD FROM ROUTE 44 EAST TO FOLK CO. LINE
 ABOUT 18 MILES N.W. OF FLEMINGTON
 PROJECT NO. 1013(1) SEC. A (GM) STA. 51+82

CEDAR COUNTY

SUBMITTED BY: J.A. Williams DATE: 6/3/53
 APPROVED BY: Roy M. Nelson DATE: 6/3/53
 CHIEF ENGINEER

FINISHED
 STD. C-110R3
 P-360

404

Drawn Apr. 1953 by J.D.M.
 Checked May 1953 by C.S.A.

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

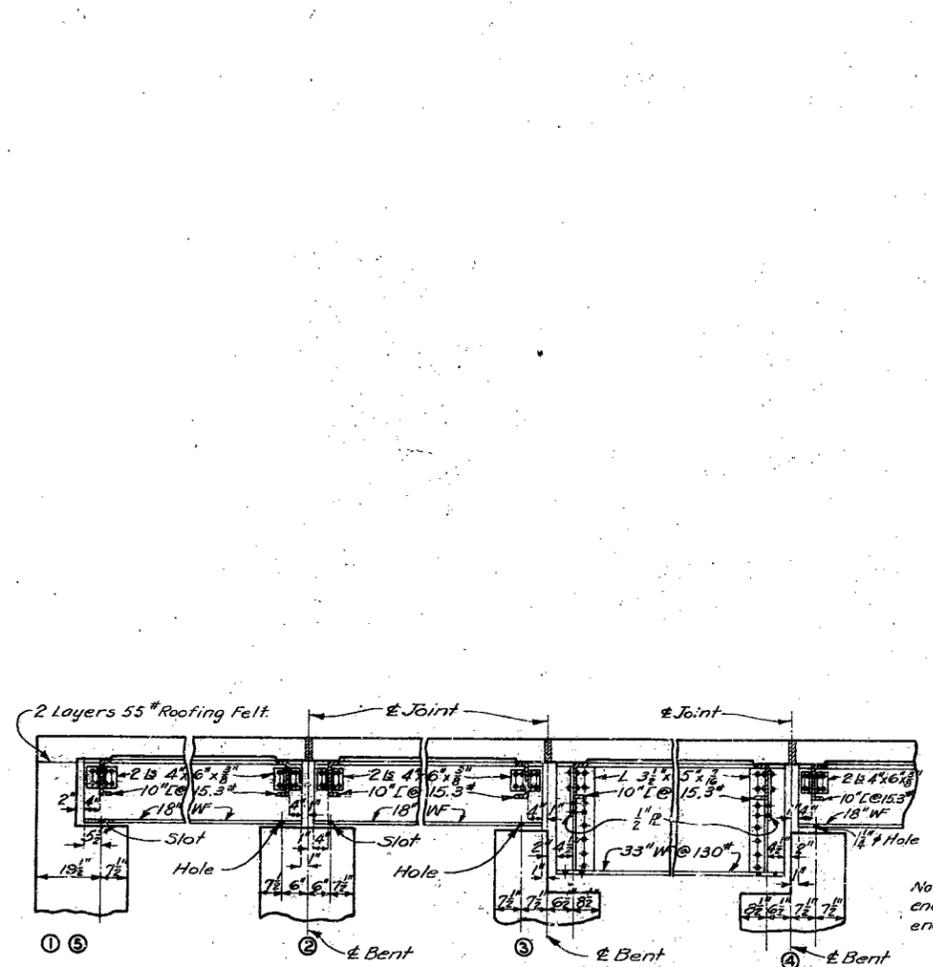
Sheet No. 1A of 4

FINAL PLANS

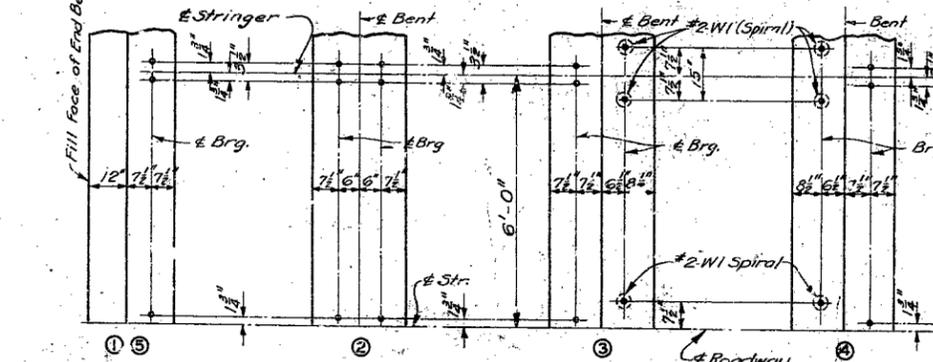
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	S-1013 (1) SEC. A (SM)	19		

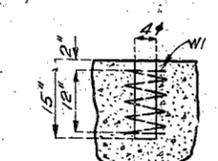
FINAL PLANS



PART LONGITUDINAL SECTION NEAR E



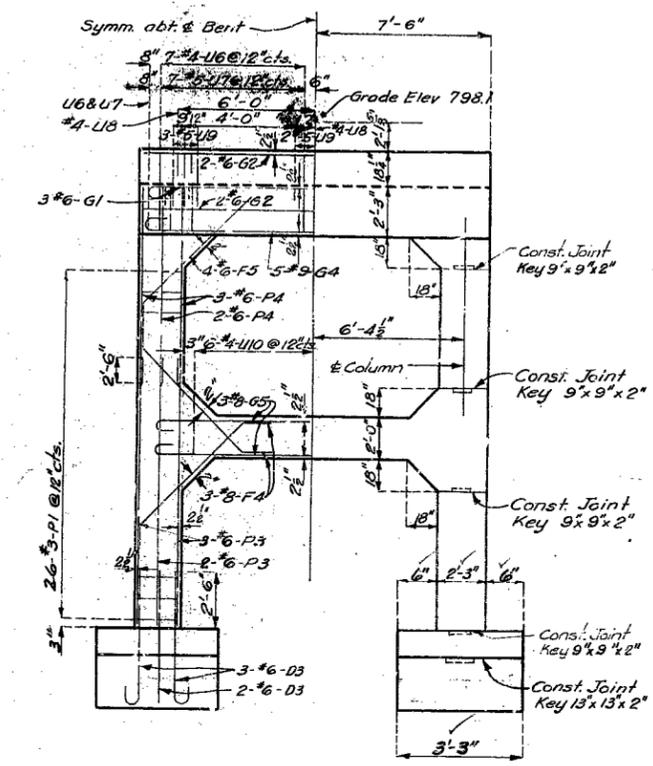
PART ANCHOR BOLT PLAN



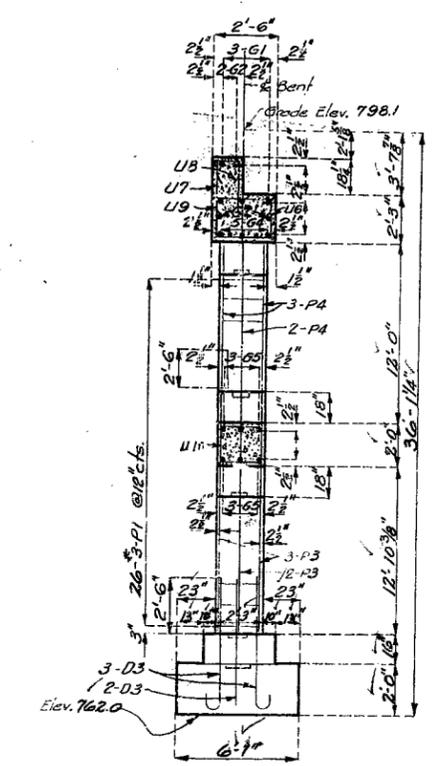
PART SECTION SHOWING ANCHOR BOLT PLAN

Note: 1/2" holes in beam flanges @ fixed end. 1 1/2" x 2 1/2" slots in beam flanges @ expansion end for 31' spans.

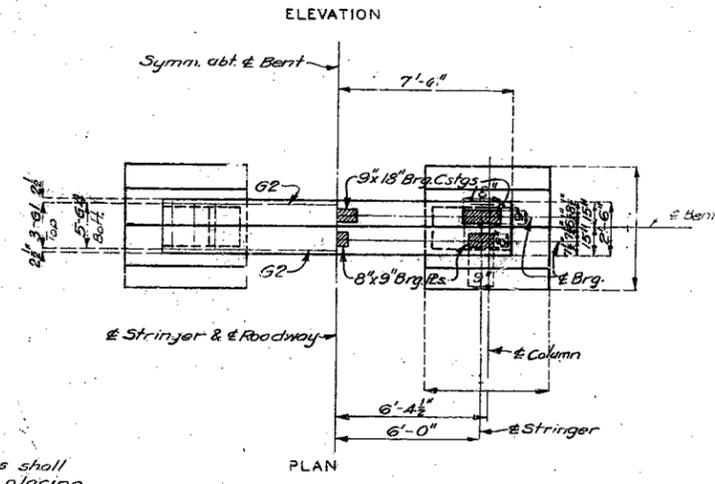
Note: Holes for all 1/2" anchor bolts shall be formed in substructure by placing and setting with template 4" wells of depth shown.
Grout for anchor bolts shall contain Iron Oxide (Embeco or an approved equivalent).



ELEVATION



SECTION AT E



DETAILS OF INT. BENT NO. 3.

BRIDGE OVER BEAR CREEK
STATE ROAD FROM ROUTE 64 EAST TO POLK CO. LINE
ABOUT 18 MILES S.W. OF FLEMINGTON
PROJECT NO. S-1013 (1) SEC. A (SMSTA. 51+82)

CEDAR COUNTY FINISHED

Assembled April 1953 by J.D.M. & J.C.G.
Checked May 1953 by C.S.A.

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

Sheet No. 3A of 4.

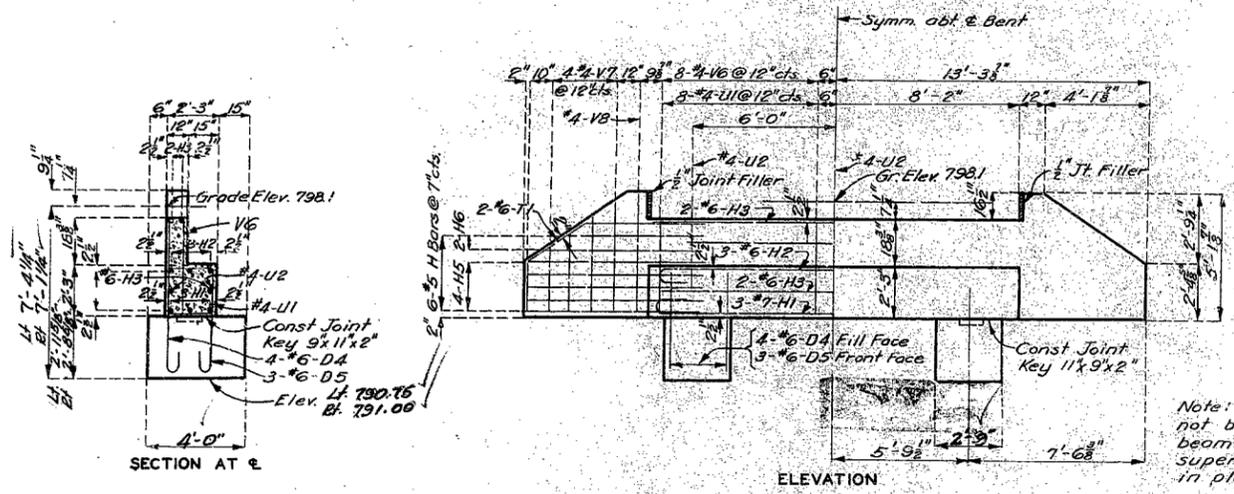
P-360

4006

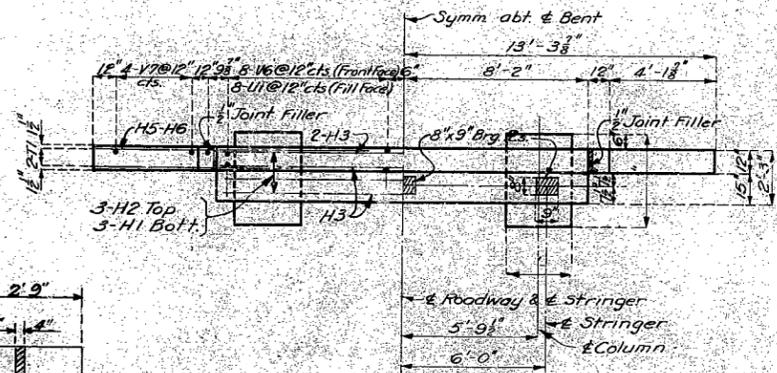
MISSOURI STATE HIGHWAY DEPARTMENT

FED ROAD DIST NO	STATE	FED # 5 PROJ NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	5-1013(1) SEC. A(6)A	19		

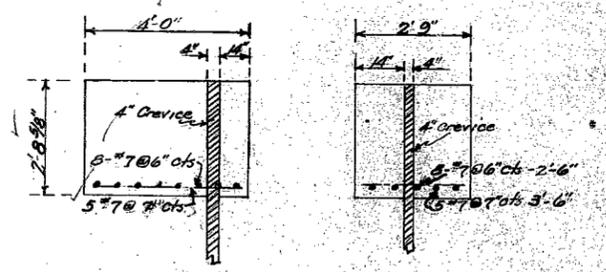
FINAL PLANS



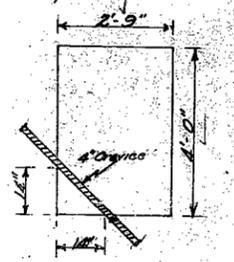
Note: Fill at end bent No. 5 shall not be carried above bottom of beam and wings until superstructure span (4-5) is in place.



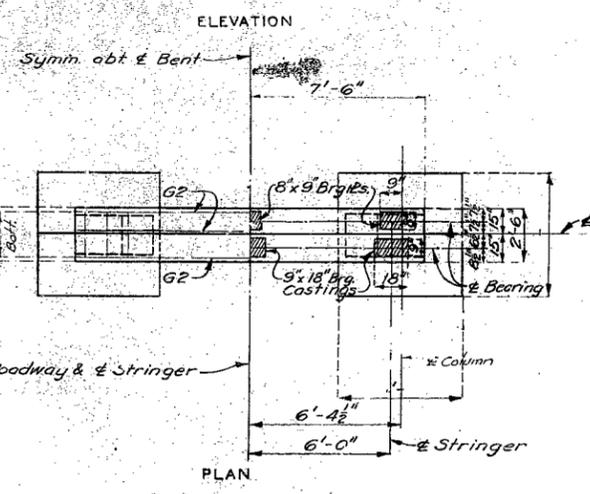
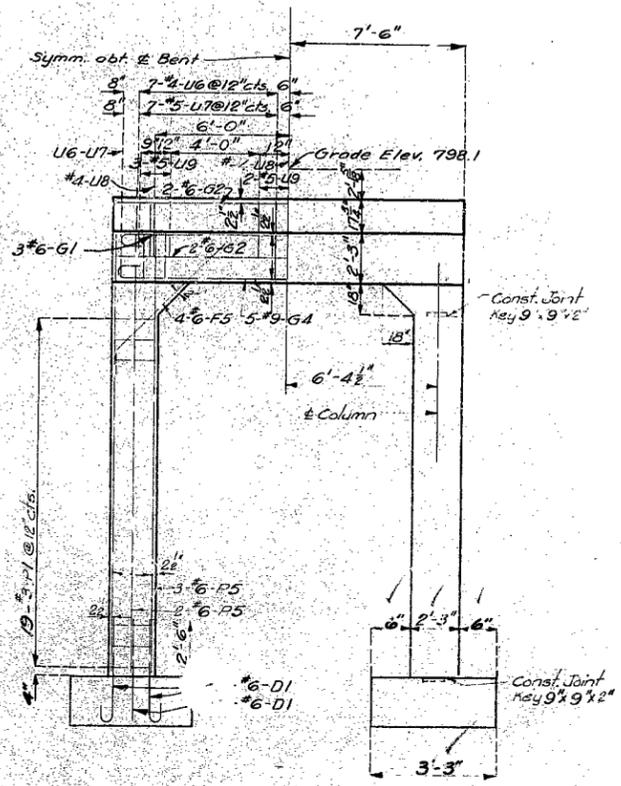
PLAN DETAILS OF BENT NO. 5



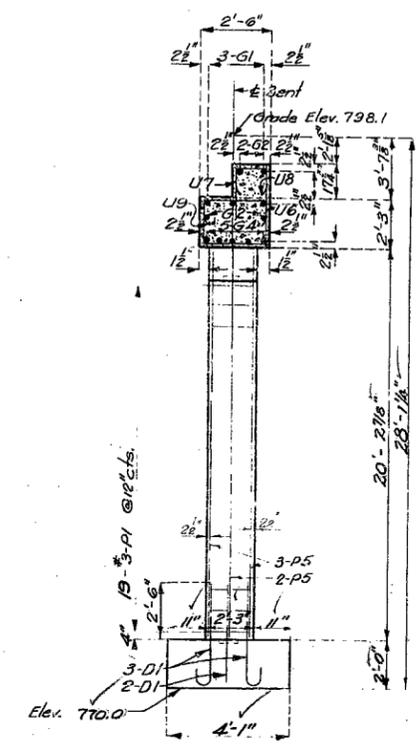
ELEVATION RT. FOOTING



PLAN RT. FOOTING



DETAILS OF INT. BENT NO. 4.



SECTION AT e

BRIDGE OVER BEAR CREEK
 STATE ROAD FROM ROUTE 64 EAST TO POLK CO. LINE
 ABOUT 18 MILES S.W. FLEMINGTON
 PROJECT NO. S-1013(1) SEC. A (6)A (SMSTA. 51+82)
 CEDAR COUNTY FINISHED

FINAL PLANS P-360

Assembled April 1953 by J.D.M. & J.C.G.
 Checked May 1953 by C.S.A.

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

Sheet No. 4A of 4

2 Col. Trk. 14' Rdwy. Square or Skewed H10

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