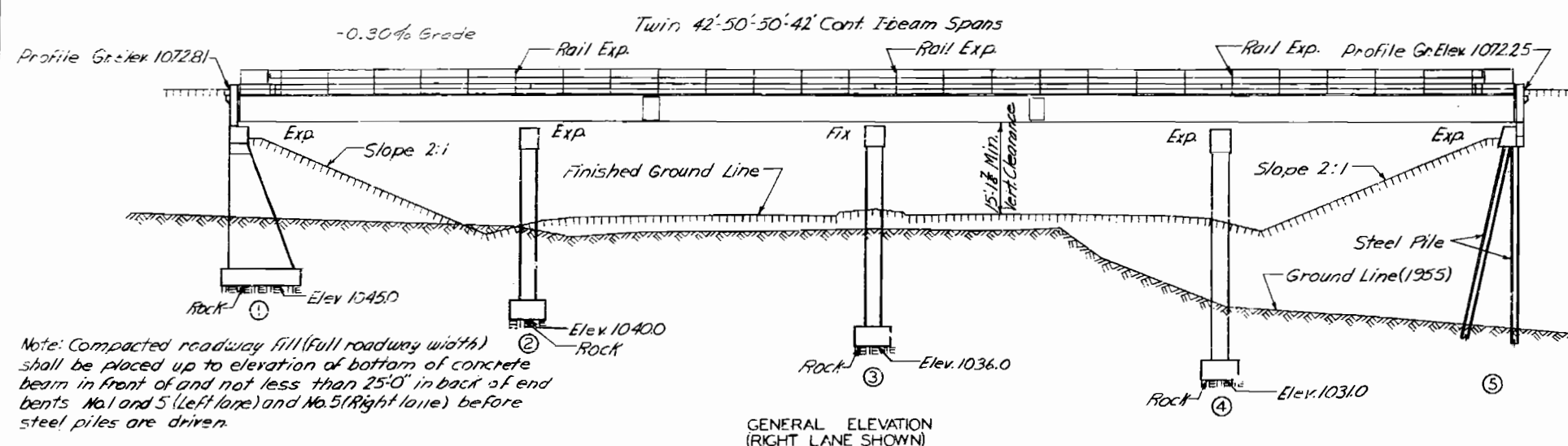


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	100	



Note: All loose, shelly or disintegrated rock shall be removed and the footings placed on or into 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. Bearing of 10.5 tons/sq. ft. used in design.

All piling shall be 10" bearing piles at 42" and shall conform with details and notes on sheet No. 4 of design plans.

All steel pile required for this structure will be furnished by the State. (See Special Provisions)

All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel; or to not less than full length authorized and to sustain a load of at least 37.0 ton per pile.

All piles shall be driven with a steam hammer.

GENERAL NOTES

Design Specifications: A.A.S.H.O. 1957

Loading: H20-516-44 (Modified 24,000 Tandem Axle) (15% Future Wearing Surface)

Structural Steel Stress: 18,000 %

Reinforcing Steel Stress: 20,000 %

Concrete, Class "B" Stress: 6,200 %

Concrete, Class "BI" Stress: 6,600 %

Superstructure concrete shall be Class "BI" (air-entrained).

Substructure concrete shall be Class "B" (air-entrained).

Rivets $\frac{3}{4}$ " ϕ ; holes $\frac{13}{16}$ " ϕ , except as noted.

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

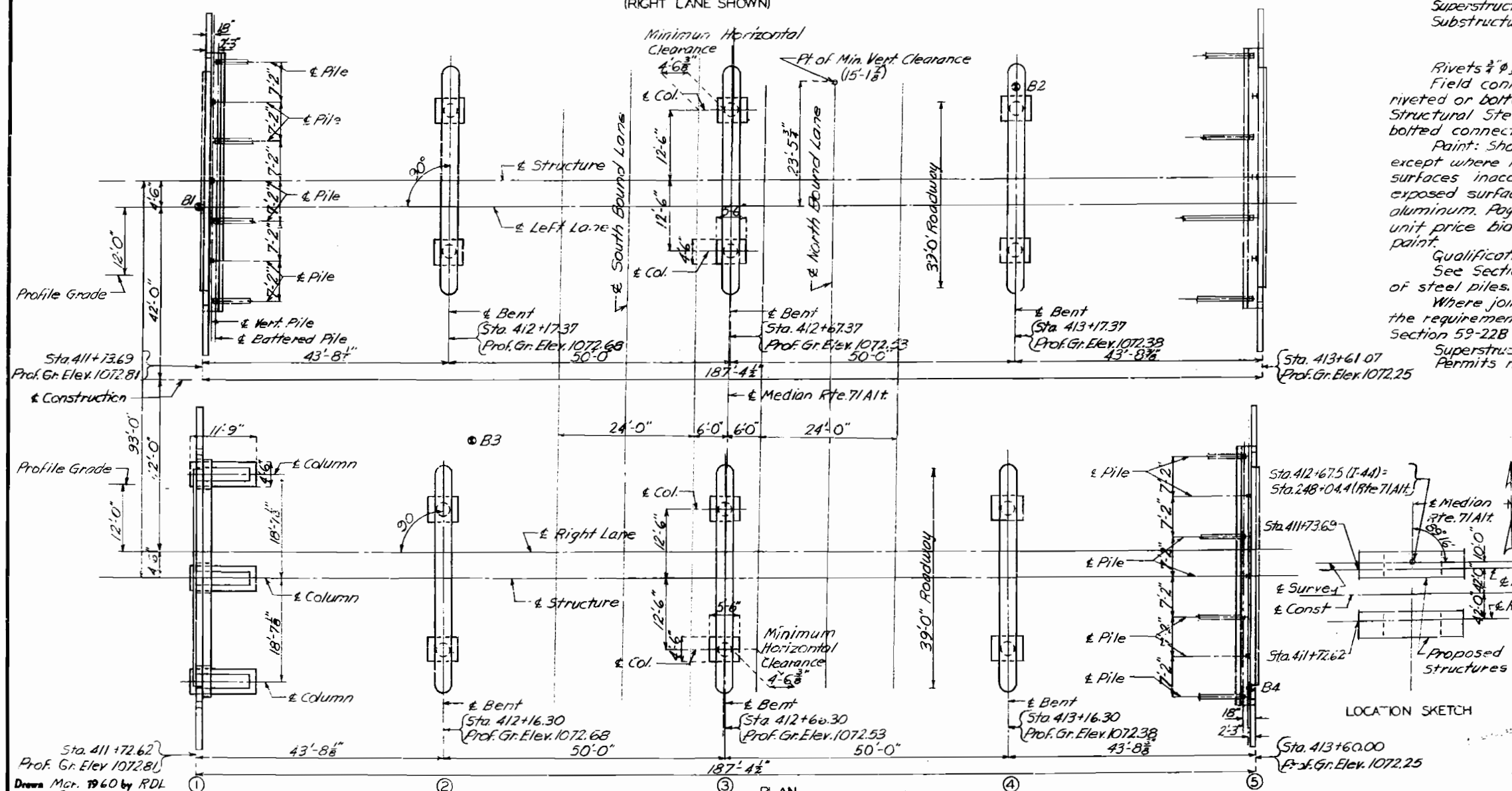
Paint: Shop, none; Field, contact surfaces of bolted field connections, except where high tensile bolts are used, one coat of red lead and surfaces inaccessible after erection three coats of red lead. All other exposed surfaces first coat red lead, second coat brown, third coat aluminum. Payment for cleaning and all painting will be made under unit price bid for painting. See Special Provisions for Aluminum paint.

Qualification of welding operators will be required. See Section 22-9C of Standard Specifications for required painting of steel piles.

Where joint filler is specified on the plans it shall conform with the requirements for Gray Rubber Compound Joints as given in Section 59-22B of the Standard Specifications.

Superstructure deck to be waterproofed. (See Special Provisions)

Permits must be obtained for all trucks loads over legal lengths.



LOCATION SKETCH

B.M. 57 Elev. 1041.27 Center South Hdwl. Culv. 87' Lt. Sta. 414+98

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY ABOUT 50 MILES S.E. OF ATLAS

PROJECT NO. I-44-K18 (RTE I-44) STA. 411+72.62 (RT LANE) STA. 411+73.69 (LT LANE)

JASPER

COUNTY

DESIGNED BY R.A. Currie DATE 9-2-60
APPROVED BY R.M. Corliss DATE 9-2-60

STDC-110R7
A-630

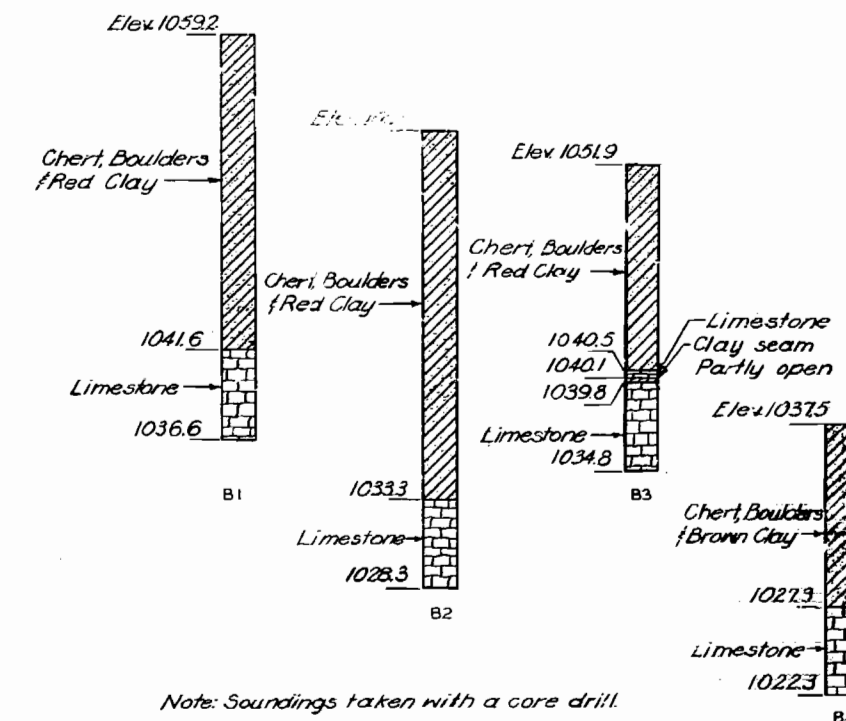
Note: This drawing is not to scale. Follow dimensions.

Note: Dimensions shown are horizontal dimensions Sheet No. 1 of 10

SEE PLAN PLANS SHOW LINES

517

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
5	MO.		19	101	

[illegible]

Note: Soundings taken with a core drill.

LOG OF SOUNDINGS

ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Class I Excavation for Structures	Cu Yds.	530		530
Class 'B' Concrete	Cu Yds.	334.8		334.8
Class 'B1' Concrete	Cu Yds.		493.5	493.5
Reinforcing Steel	Lbs	66,530	143,300	209,830
Fabricated Structural Steel	Lbs		326,500	326,500
Fabricated Structural Steel (Bearings)	Lbs		14,390	14,390
Steel Pile in Place (State furnished)	Lin Ft	792		792
Painting	Ton		170.4	170.4

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

Drawn Apr. 1960 by P.V.D.
Checked June 1960 by Q.F.K.

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

Sheet No. 2 of 10

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 5.0 MILES S.E. OF ATLAS

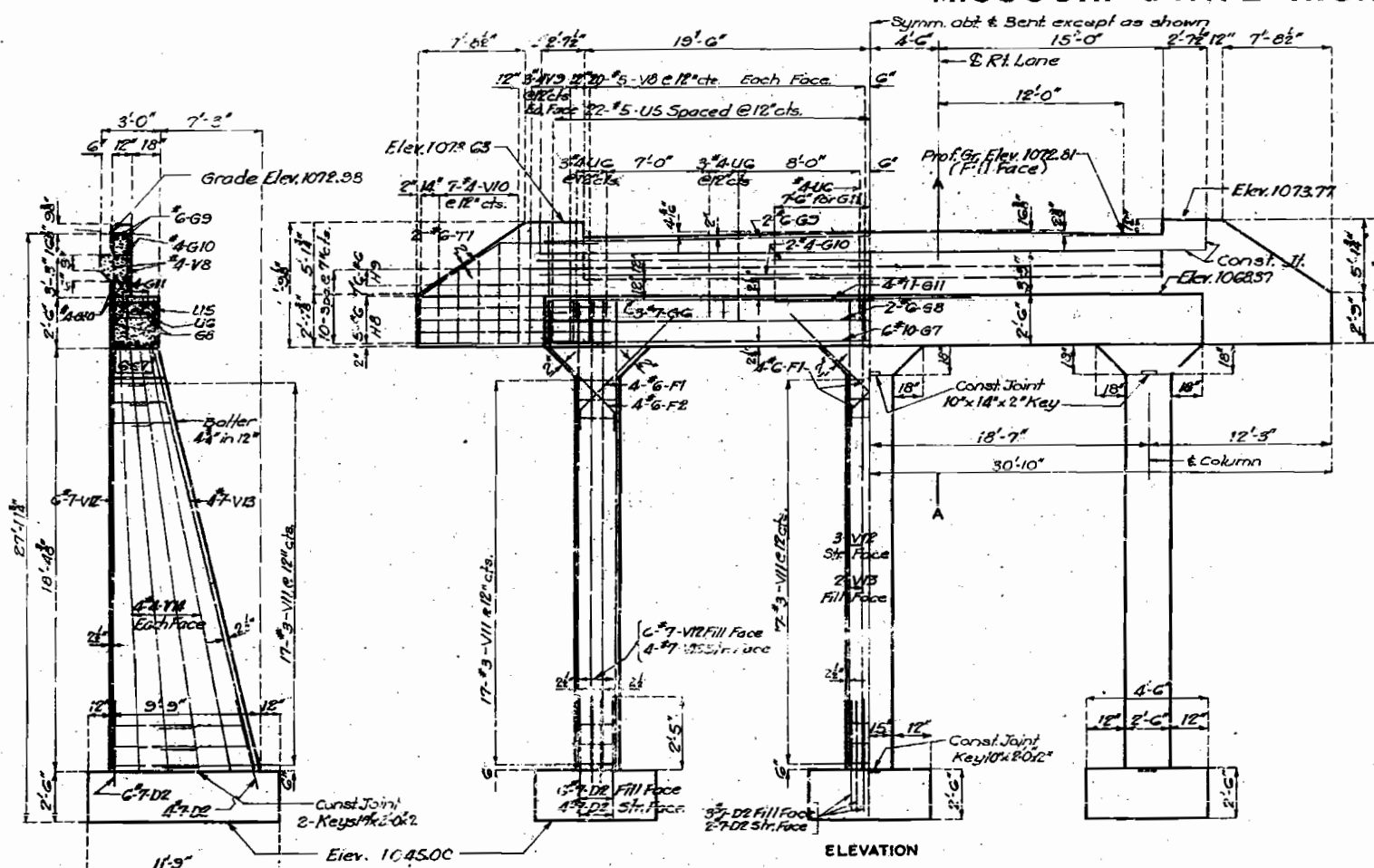
PROJECT NO. I-44-1(18) RTE. I-44) STA. 41+72.62 (RT. LANE)
STA. 41+73.69 (LT. LANE)

WASPER COUNTY

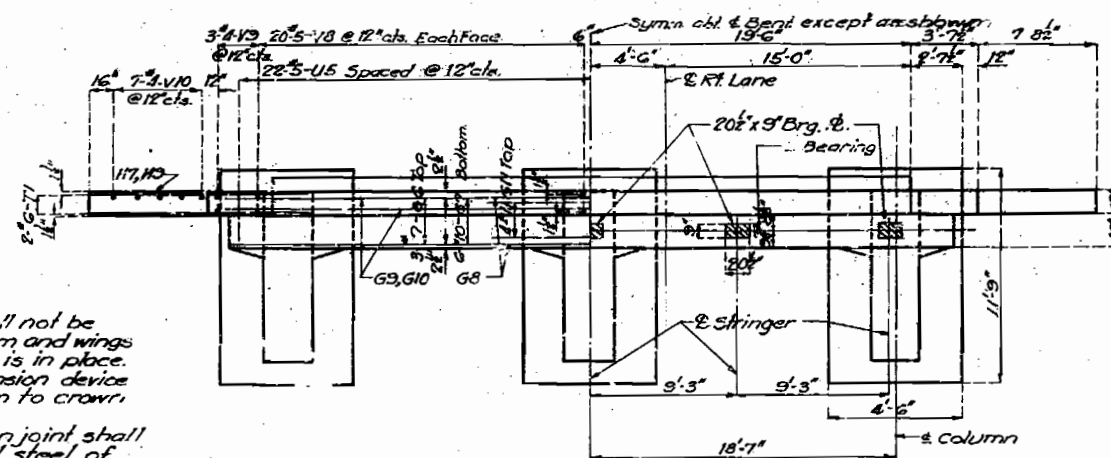
A-630

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	152	



SECTION A-A



PLAN

DETAILS OF END BENT NO. 1 RT. LANE

Note: Fill at end bent No. 1 shall not be carried above bottom of beam and wings until superstructure span (1-2) is in place. Top of backwall and expansion device for end bent No. 1 to conform to crown of roadway. Backwall above construction joint shall not be poured until structural steel of the expansion device has been installed and slab has been poured in adjacent span.

FINISHED

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY.
ABOUT 5.0 MILES S.E. OF ATLAS
PROJECT NO. 1-44-1(18)(RTE. I-44) STA. 411+72.62 (RT. LANE)
411+73.99 (LT. LANE)

JASPER

COUNTY

FINISHED

A-630

Assembled Mar. 1960 by R.D.L. & J.H.K.
checked June 1960 by J.F.K.

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

Sheet No. 3 of 10.

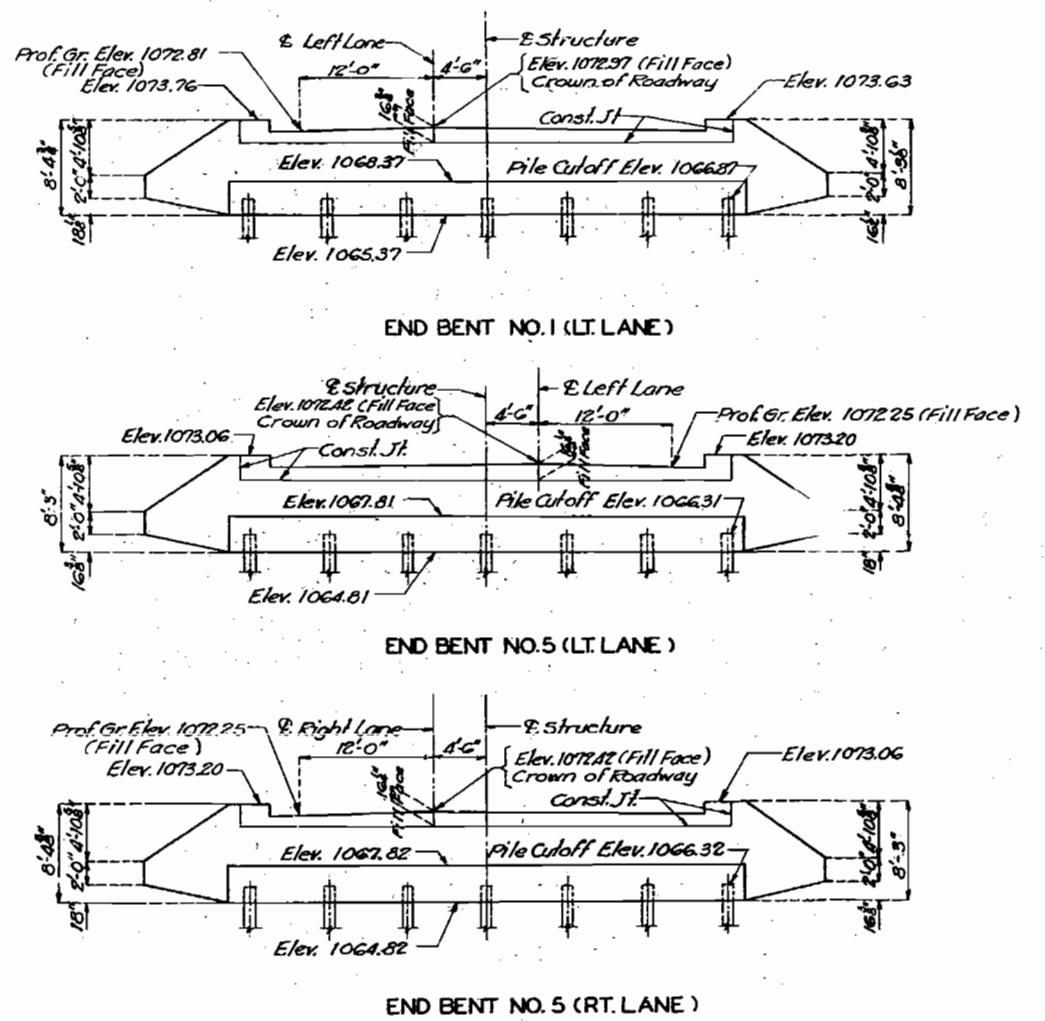
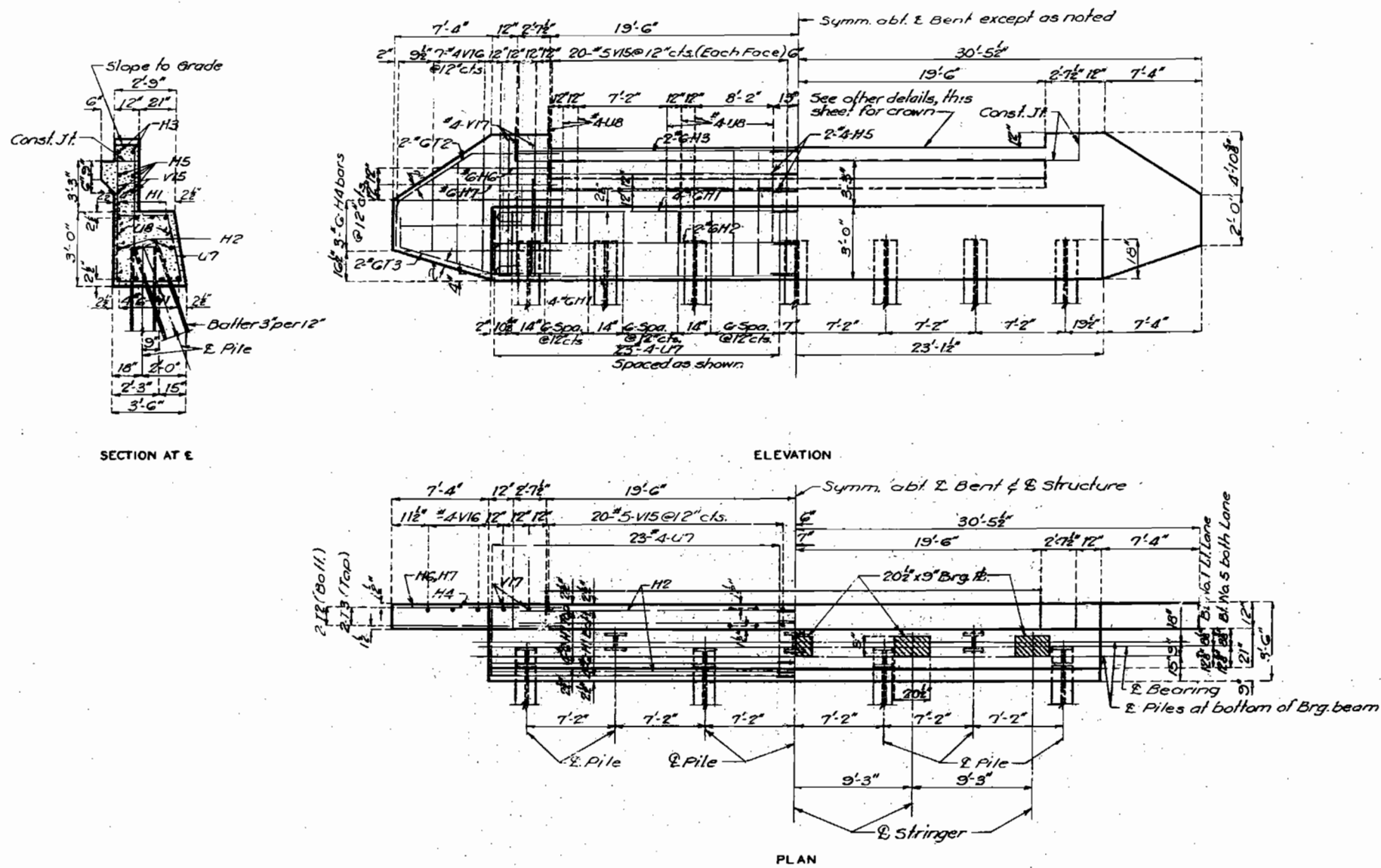
SEE FINAL PLANS BROWN-LINES

3 Col. End.
Square or Shaded } H/S, H/20
H/20-3/16

519

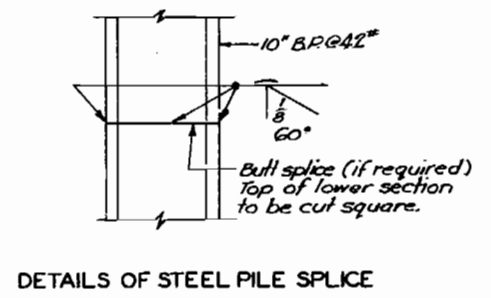
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	103	



Note: Top of backwall and expansion device for end bent No. 1 and No. 5, left lane and No. 5 right lane to conform to crown of roadway slab.
Backwall above construction joint shall not be poured until the structural steel of the expansion device has been installed and slab has been poured in adjacent span.
Fill at end bent No. 1 and 5 left lane and bent No. 5 right lane shall not be carried above bottom of beam and wings until superstructure spans (1-2) and (3-4) are in place.

DETAILS OF END BENTS NO. 1 & 5 LT. LANE NO. 5 RT. LANE



DETAILS OF STEEL PILE SPLICE

BRIDGE OVER ROUTE 71 ALTERNATE
STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 5.0 MILES S.E. OF ATLAS
PROJECT NO. I-44-1018 (RTE. I-44) STA. 411+72.62 (RT. LANE)
411+73.69 (LT. LANE)
JASPER COUNTY

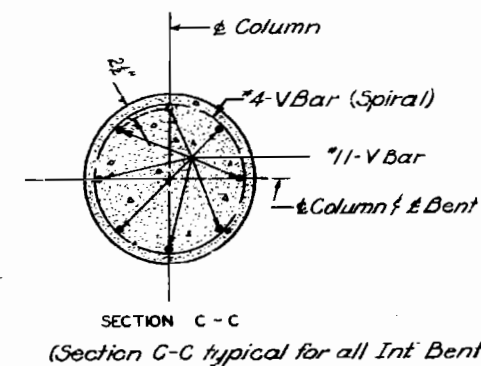
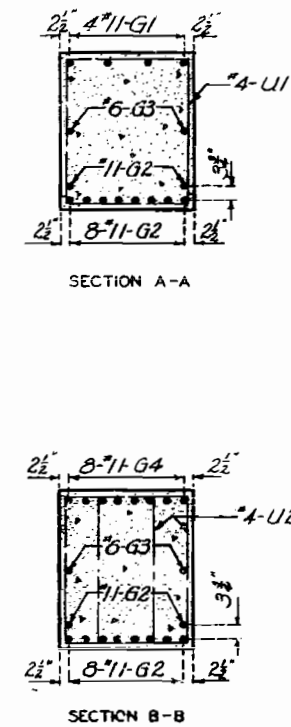
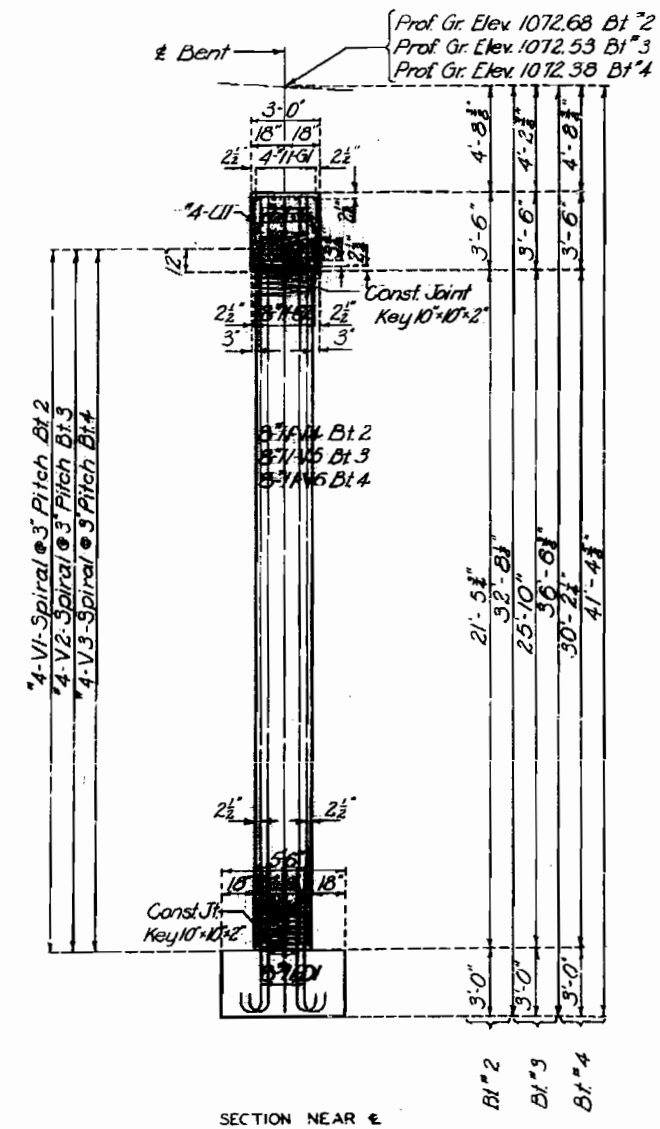
Assembled Mar. 1960 by R.D.L. & J.H.K.
Checked June 1960 by G.P.K.

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

Sheet No. 4 of 10
NO CONSTRUCTION CHANGES

Shored 1-5m. Conc. Cap Type End
No Conc. Appr. Slab at End Bl.

61 or Piles May 58



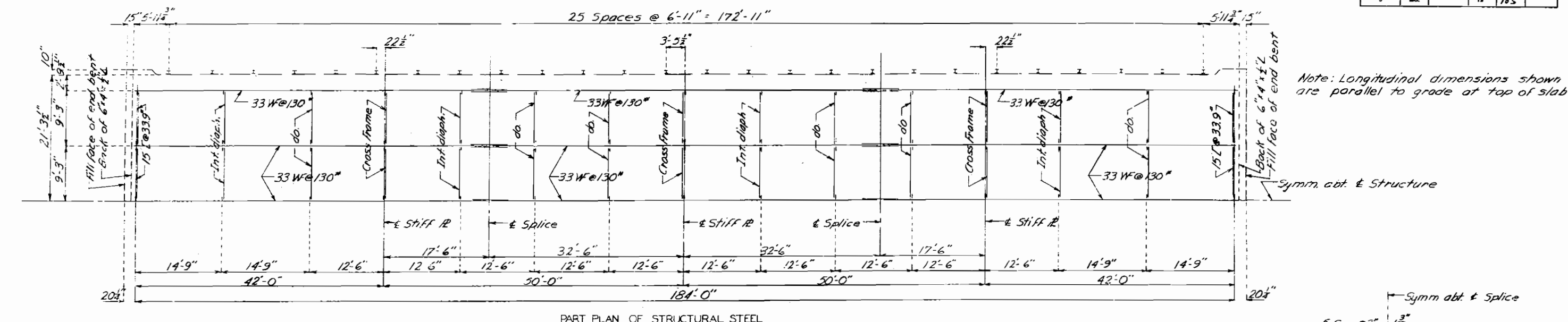
JASPER COUNTY

SEE FINAL PLANS AND EXHIBITS

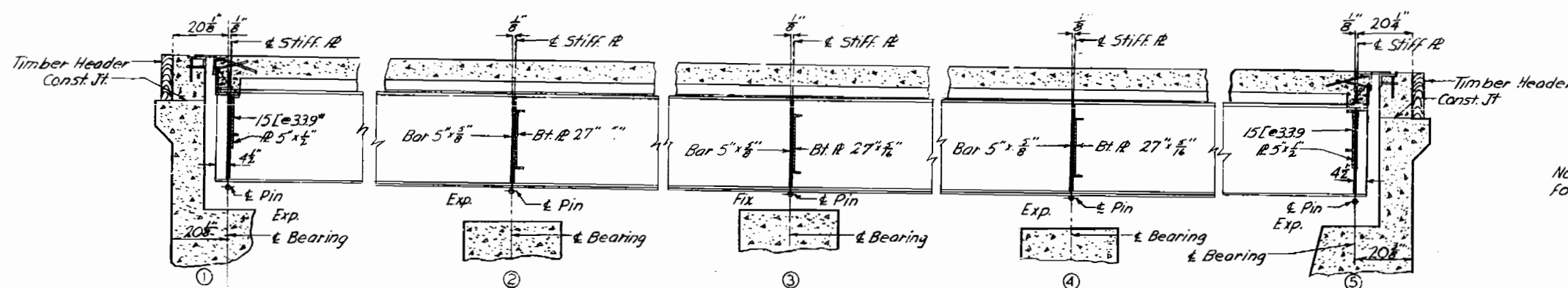
A-630

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	105	

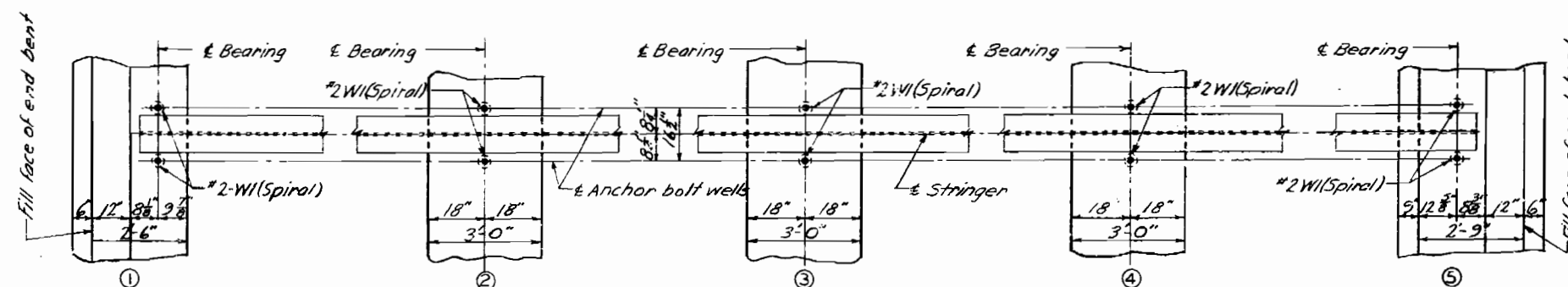


PART PLAN OF STRUCTURAL STEEL

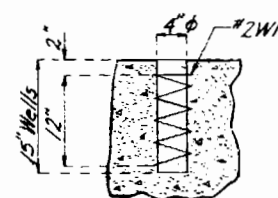


PART LONGITUDINAL SECTION

Note: All Stiffener R's to be ground to bear top & bottom.



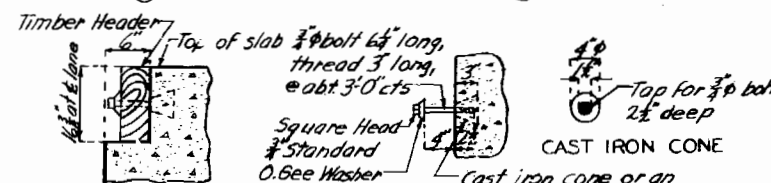
PART ANCHOR BOLT PLAN



DETAIL OF SPIRAL AROUND ANCHOR BOLT

Note: Anchor bolts may be set in wells as shown or in holes drilled into concrete substructure. See Special Provisions for setting anchor bolts.

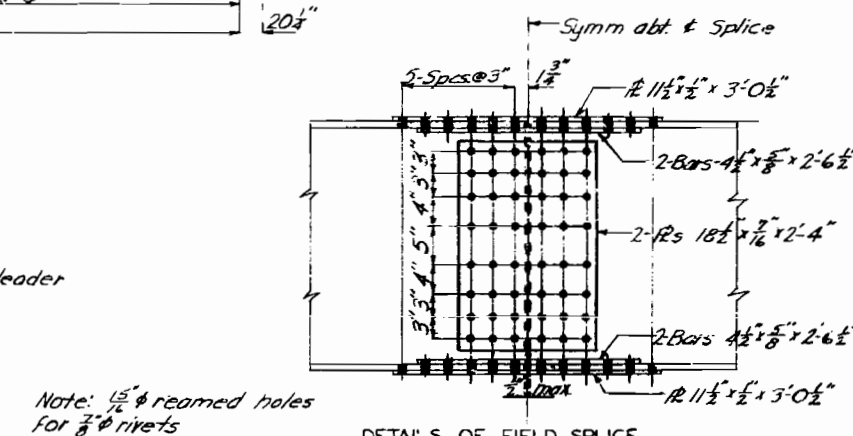
Note: This drawing is not to scale. Follow dimensions.



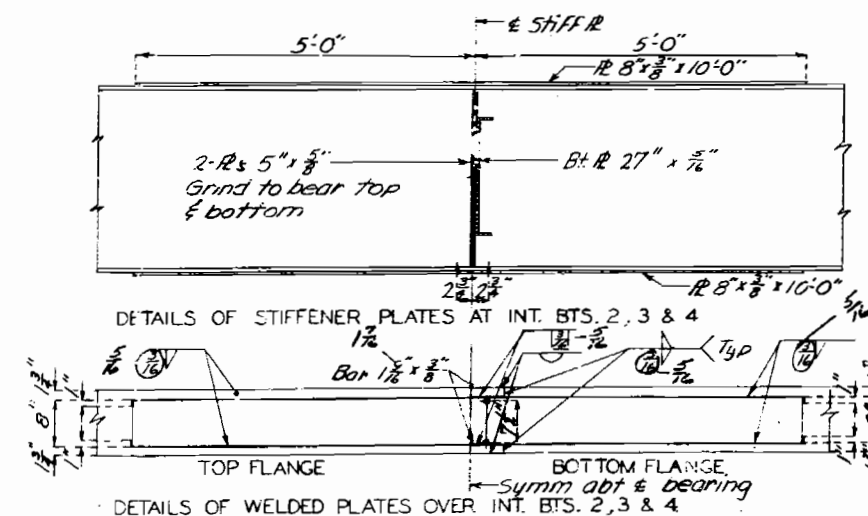
Note: Cost of timber headers complete in place to be included in price bid for concrete.

DETAILS OF TIMBER HEADER

Sheet No. 6 of 10



DETAILS OF FIELD SPICE



BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 5.0 MILES SE OF ATLAS

PROJECT NO. I-44-K18 (RTE. I-44) STA. 411+72.62 (RT. LANE)
STA. 411+73.69 (LT. LANE)

JASPER

COUNTY

A-630

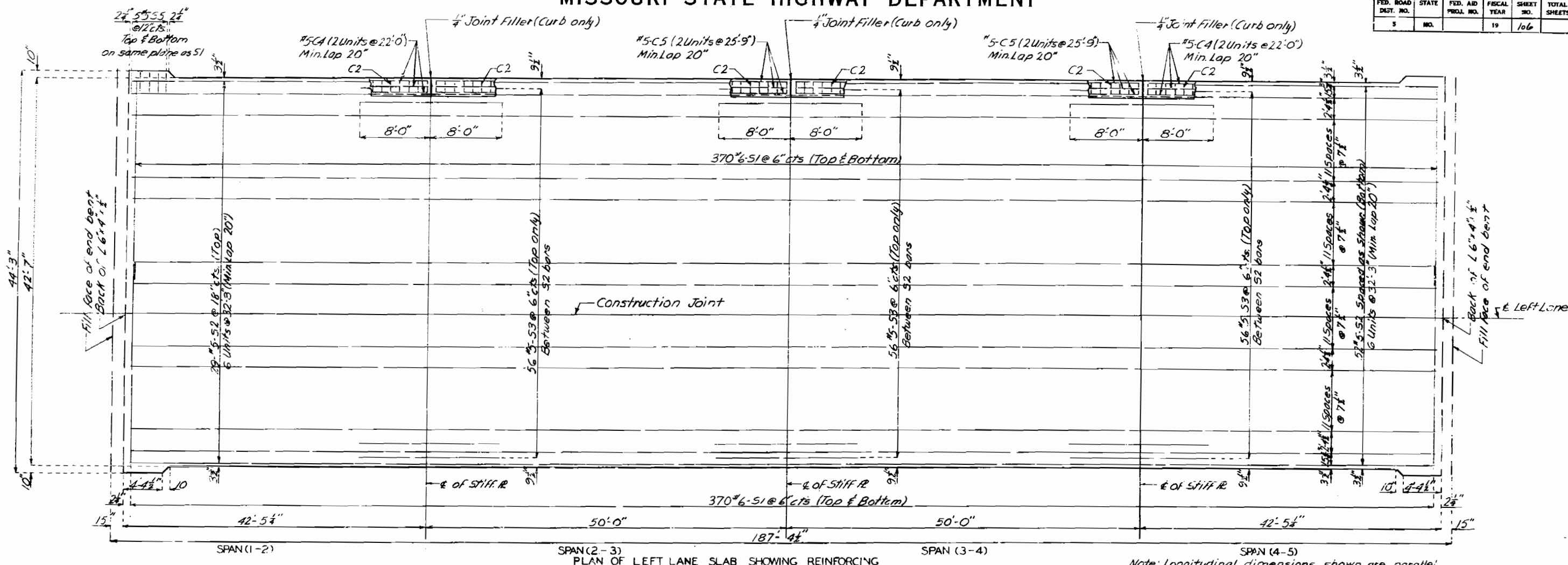
Drawn Mar. 1960 by RDL
Checked June 1960 by G.F.K.

NO CONSTRUCTION CHANGES

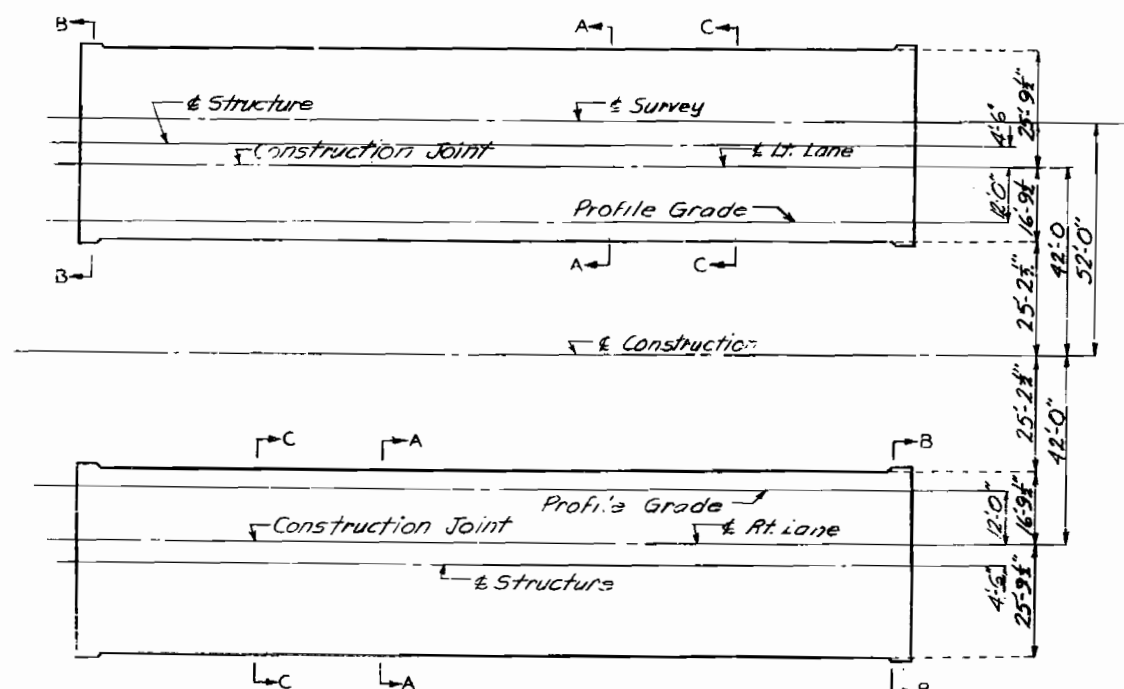
522

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	106	



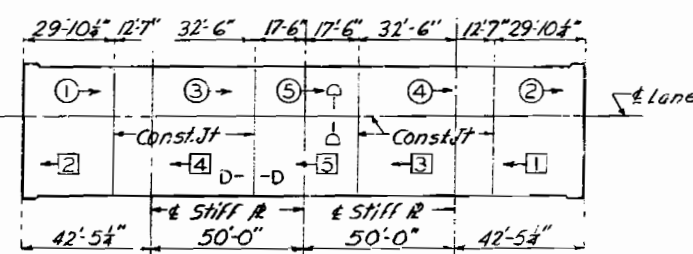
Note: Longitudinal dimensions shown are parallel to grade at top of slab.



PLAN OF SLAB
RIGHT & LEFT STRUCTURES

Note: See Sheet B of 10 For
Sections A-A, B-B, and C-C

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



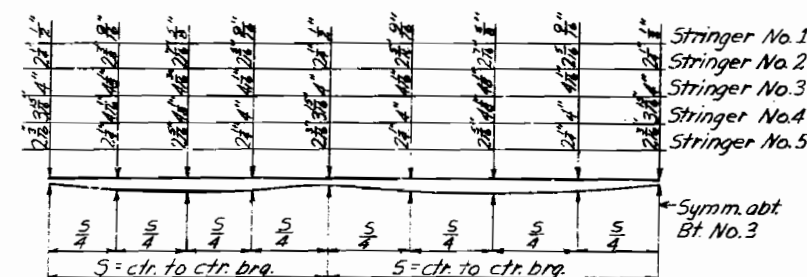
SLAB POURING SEQUENCE

Note: The slab shall be poured in sections of the lengths shown above and in the sequence indicated by the numbers ① ② ③ ④ ⑤ or, as an alternate, by the numbers 1 2 3 4 5. The separate pours shall progress in the direction indicated by the arrows. The above pouring sequence and the number of construction joints may be altered by the Engineer in order to obtain a more satisfactory surface finish. See Section 16-3E of the Supplemental Specifications.

Const. Jt. between sections. Finish each side of joint with 3/4" radius edging tool. Fill groove with joint seal.



SECTION D-D
Key to extend full width of roadway slab.



SLAB HAUNCHING DIAGRAM

Note: The slab shall be uniform parallel to grade and to a uniform thickness of 7 1/2". Dead load deflection, difference in depth of stringers, and crown shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in Estimated Quantities.

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD EAST OF SCOTLAND TO EAST OF FIDELITY

ABOUT 30 MILES S.E. OF ATLAS

PROJECT NO. I-44-108 (RTE-44) STA. 411+72.62 (RT. LANE)
STA. 411+70.69 (LT. LANE)

JASPER

COUNTY

Drawn Mar 1960 by RDL
Checked June 1960 by A.F.K.

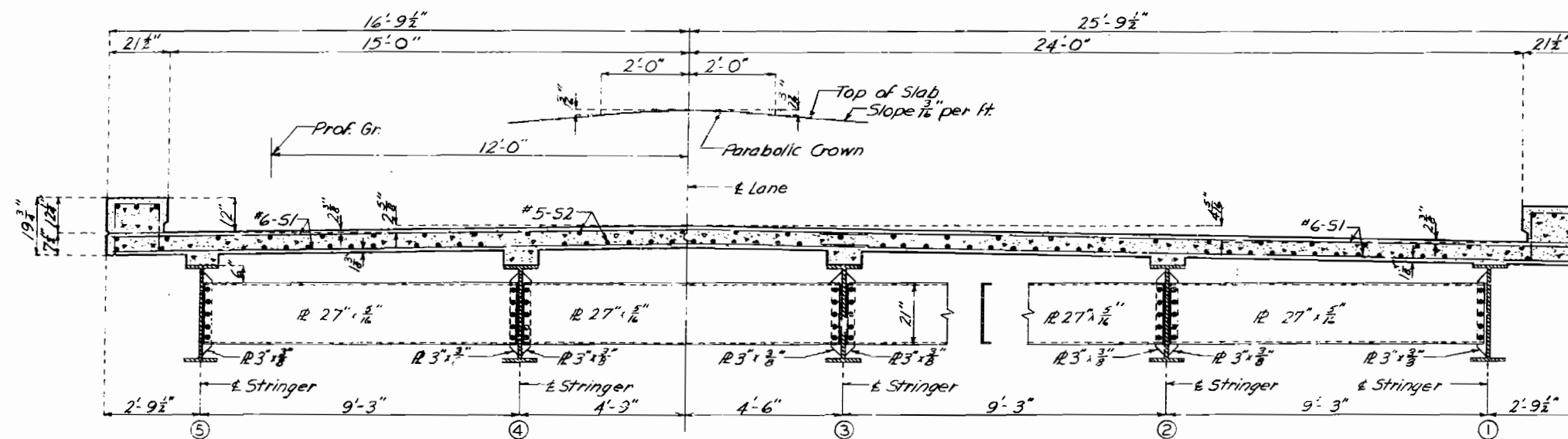
Sheet No. 7 of 10

NO CONSTRUCTION CHANGES

A-630

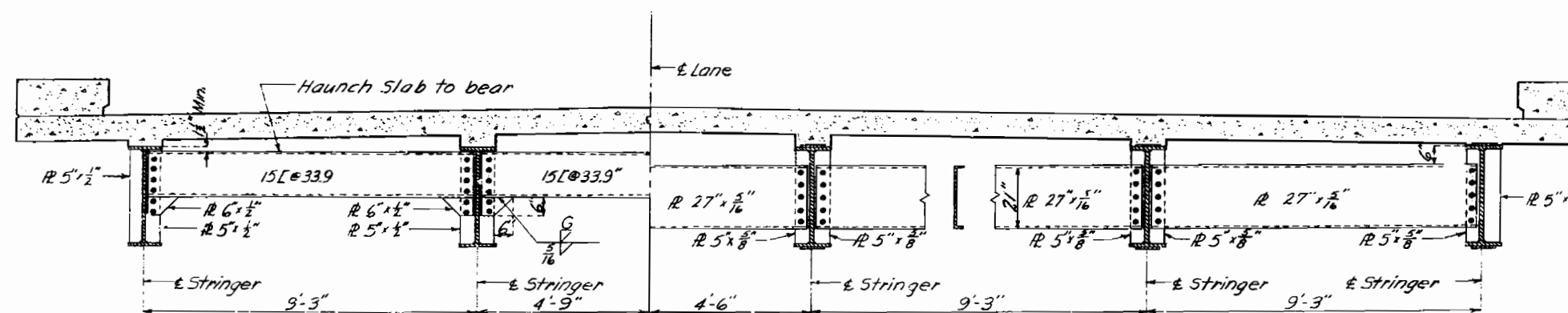
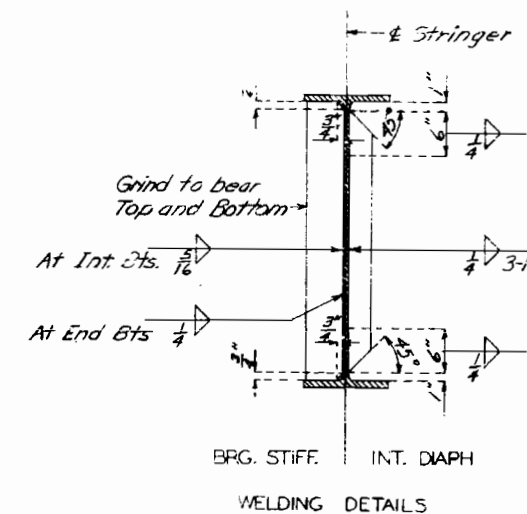
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	107	



SECTION A-A SHOWING INT. DIAPHRAGMS (See Sheet 7 of 10)

Note: Curbs to be cast independently of slab.
Slab to be constructed to a uniform depth of not less than 7 1/2" or, if desired, bottom of slab may be built on chords between top of haunches at stringers.
See Sheet 10 of 10 for details of curbs and handrail.



PART SECTION B-B NEAR END BENTS (See Sheet 7 of 10)

PART SECTION C-C SHOWING CROSS FRAMES (See Sheet 7 of 10)

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 5.0 MILES S.E. OF ATLAS

PROJECT NO. I-44-105 (RT. LANE) STA. 411+72.62 (RT. LANE)
STA. 411+73.69 (LT. LANE)

JASPER

COUNTY

Drawn Mar 1960 by RDL
Checked June 1960 by A.F.K.

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

Sheet No. 8 of 10

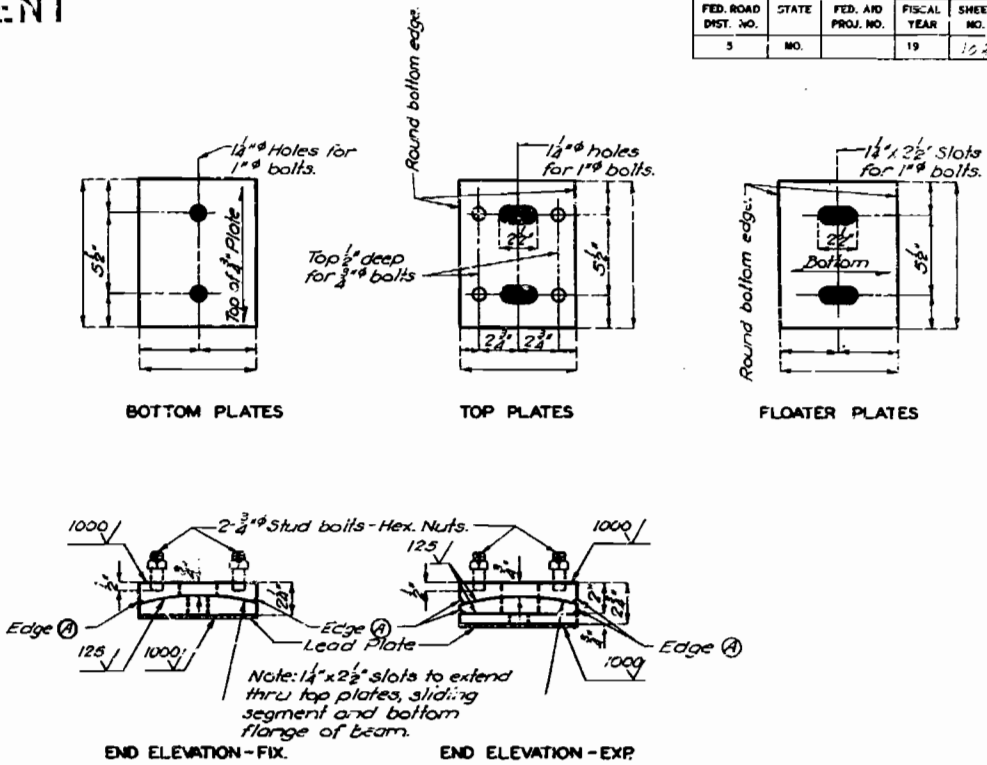
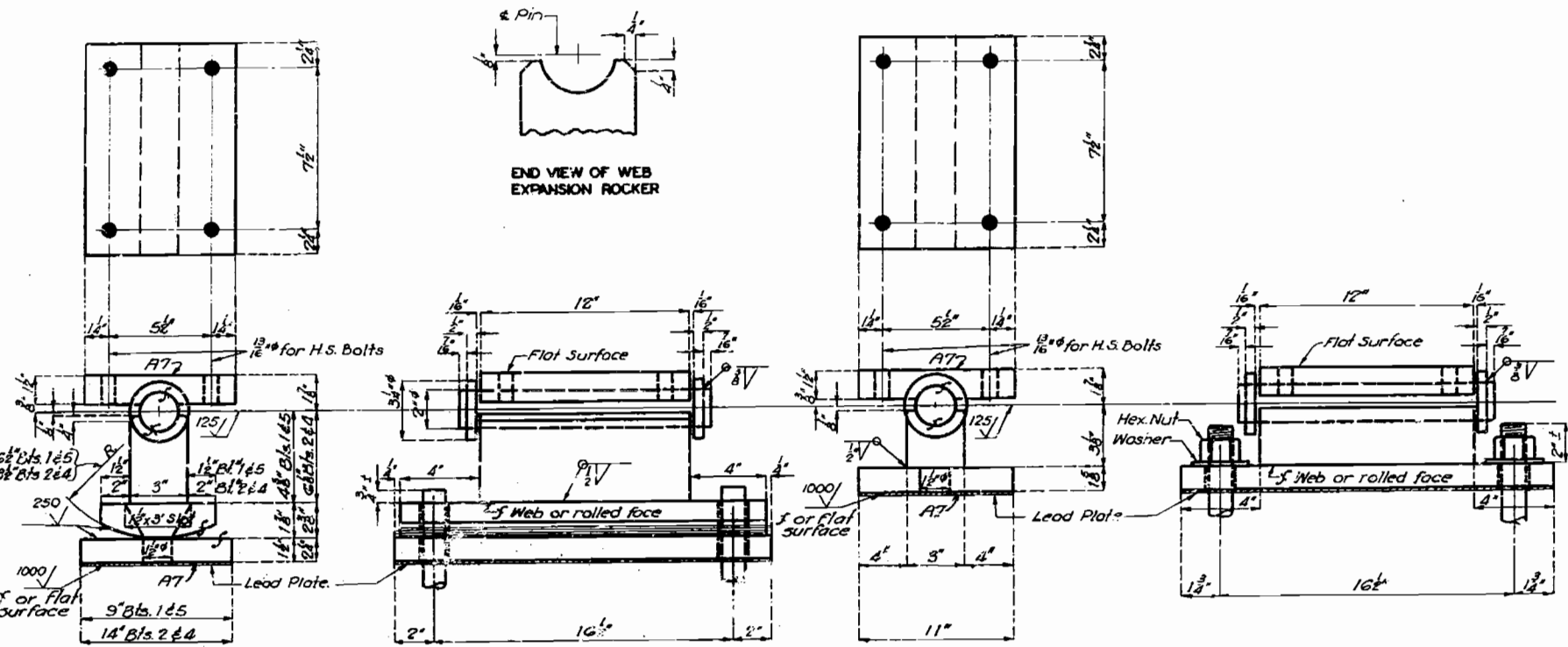
A-630

NO CONSTRUCTION CHANGES

524

MISSOURI STATE HIGHWAY DEPARTMENT

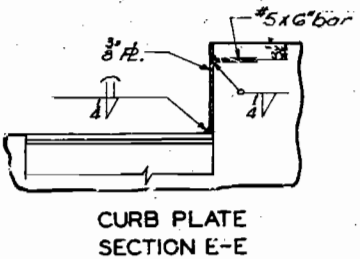
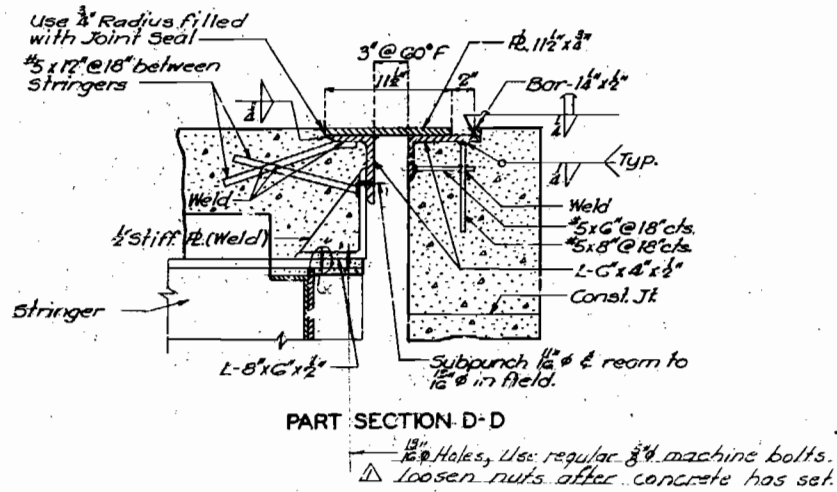
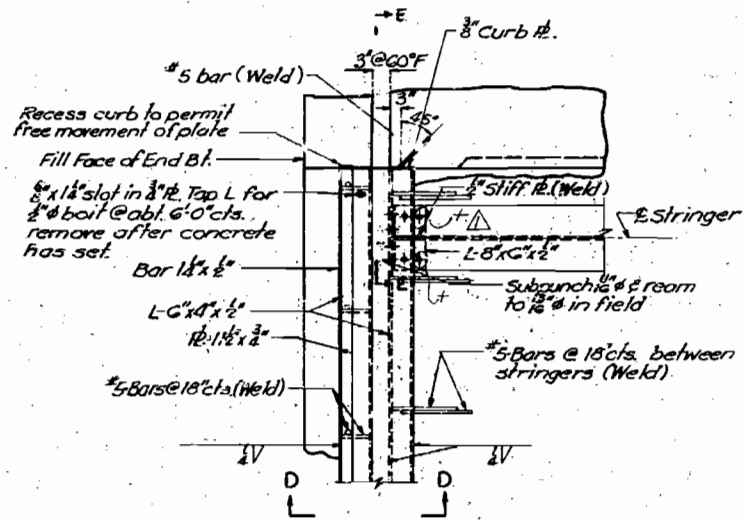
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	162	



Required: Sets Each set consists of 5 plates each.

GENERAL NOTES:

Material for Type "D" Bearings shall be A.S.T.M. A-373 Steel or A-7 meeting the carbon and manganese requirements of A-373, except as noted.
Material for Type "C" Bearings shall be Gray Iron Alloy or Cast Steel but payment will be made as Gray Iron Alloy.
Material for Pins shall be A.I.S.I. C-1018.
Anchor Bolts for Type "D" Bearings shall be 1 1/2" Swaged Bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for fixed Bearing.
Anchor Bolts for Type "C" Bearing shall be 1" Swaged Bolts, no heads or nuts and shall extend 10" into concrete. Top of Anchor Bolts shall be approximately 1/2" above top of Casting or Fill Plate.
Anchor Bolts and Studs for Type "C" Castings will be paid for as Fabricated Structural Steel.
Lead Plates under bearings shall be approximately 1/8" thickness and weigh 8#/sq. Foot. Cost of lead plates shall be included in price bid for other items.
Edge (A) to be rounded, (1/16" to 3/8" Radius).



BRIDGE OVER ROUTE 71 ALTERNATE
STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 5.0 MILES S.E. OF ATLAS
PROJECT NO. I-44-1(18)(RTE. I-44) STA. 411+72.82 (RT. LANE)
411+73.00 (LT. LANE)
JASPER COUNTY

Assembled Mar. 1960 by R.D.L. & J.M.K.
Checked June 1960 by G.F.K.

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

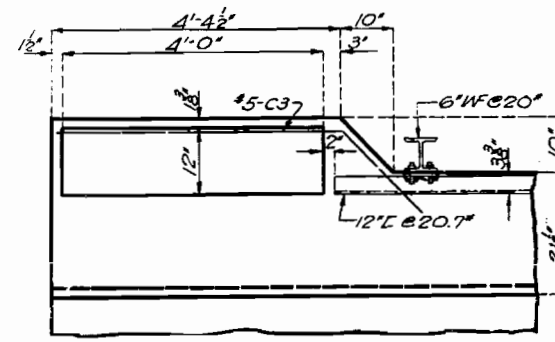
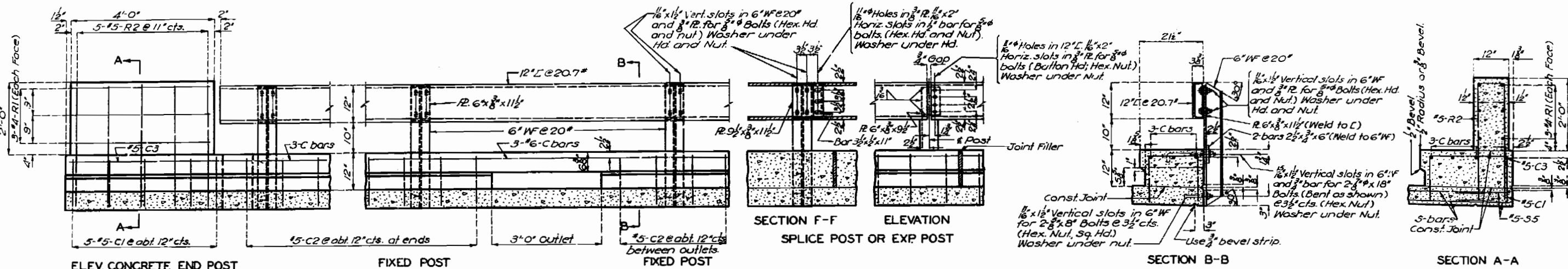
Sheet No. 9 of 10. Revised 1-5-61

NO CONSTRUCTION CHANGES

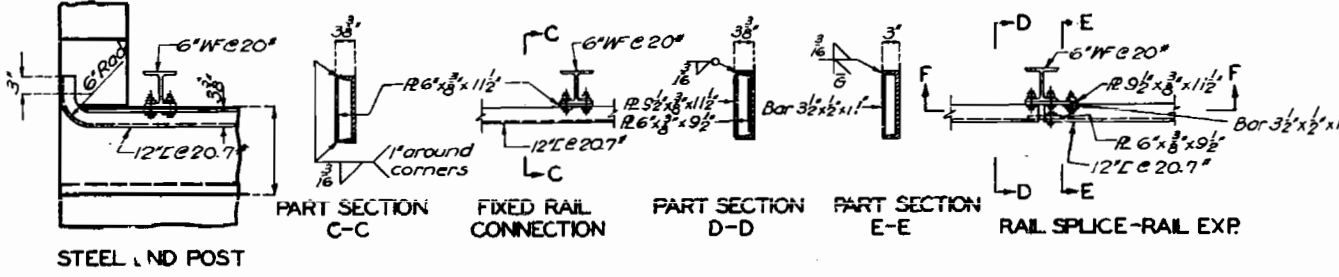
A-630

MISSOURI STATE HIGHWAY DEPARTMENT

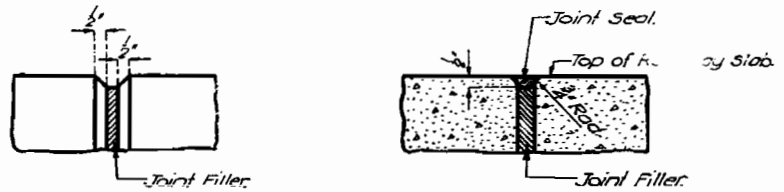
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5	MO		19	109	



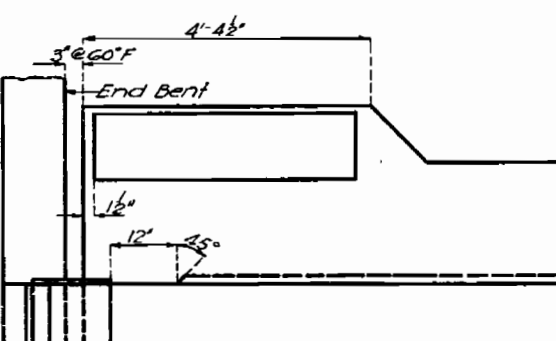
CONCRETE END POST



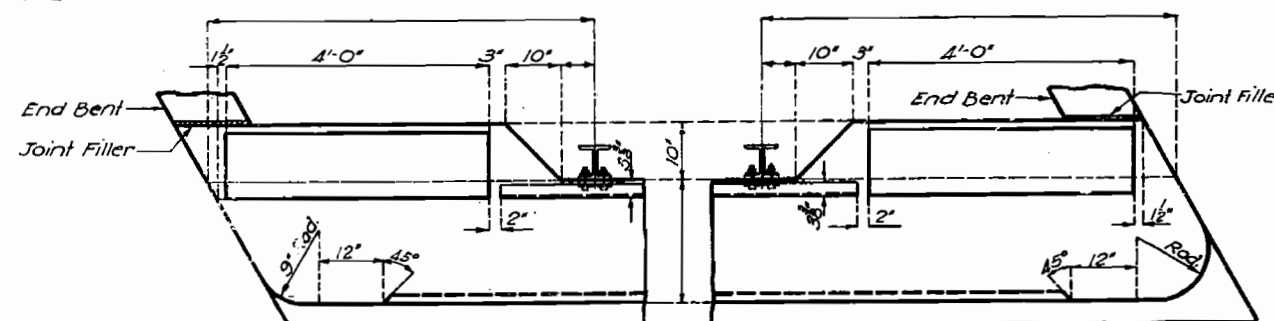
PLAN OF END POST (SQUARE SPANS)



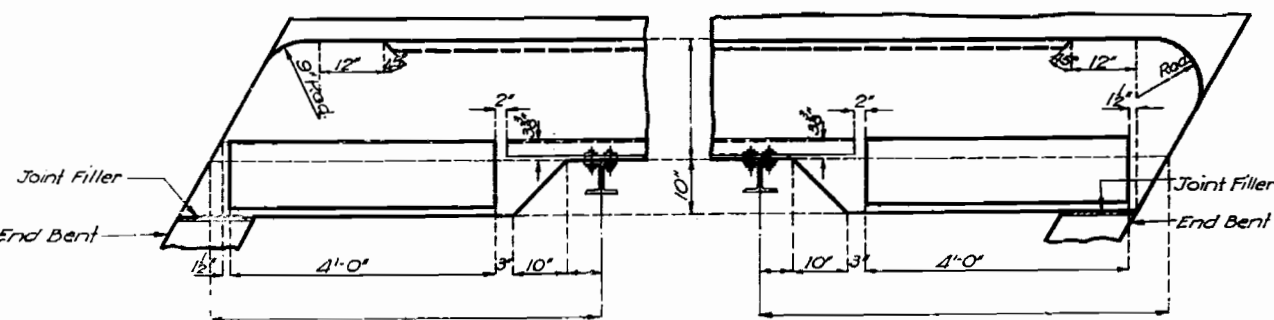
DETAILS OF BEVEL FOR FILLED JOINTS



PLAN OF END POST WITH EXPANSION DEVICE AT END BENT



PLAN OF END POSTS (SKEWED RIGHT ADVANCE)



PLAN OF END POSTS (SKEWED LEFT ADVANCE)

GENERAL NOTES:
Top of curbs and end posts to be built parallel to grade. Vertical faces of end posts to be vertical. All exposed edges of end posts to be beveled 1/2". 6" WF posts to be set normal to grade. 12" L rails shall be fabricated to conform to horizontal and vertical alignment of curb.

BRIDGE OVER ROUTE 71 ALTERNATE
STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 5.0 MILES S.E. OF ATLAS
PROJECT NO. I-44-108XRT-1-44 STA. 411+72.62 (RT. LANE)
411+73.69 (LT. LANE)
JASPER COUNTY

Assembled Mar. 1960 by R.D.L. & J.H.K.
Checked June 1960 by Q.F.K.

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

Sheet No. 10 of 10.

NO CONSTRUCTION CHANGES

A-630

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	100	

Note: All loose shelly or disintegrated rock was removed and the footings placed on hard solid undisturbed rock.

All piling was 10" bearing piles at 42" and did conform with details and notes on sheet No. 4 of design plans.

All steel pile required for this structure was furnished by the State.

All piles were driven to or into solid rock, boulders, shale, or cemented gravel.

All piles were driven with a steam hammer.

GENERAL NOTES

Design Specifications: A.A.S.H.O. 1957*

Loading: H20-516-44 (Modified 24,000 Tandem Axle) (15% Future Wearing Surface)

Structural Steel Stress: $18,000 \text{ psi}$.

Reinforcing Steel Stress: 20,000%
Concrete Stress: 1200%

Concrete, Class "B" Stress: 1,200 ψ /in.
Concrete, Class "B1" Stress: 1,400 ψ /in.

Concrete, Class B1 Stress: 1,600%
Superstructure concrete was Class

Superstructure concrete was Class "B" (air-entrained).
Substructure concrete was Class "B" (air-entrained).

Substructure concrete was Class "B" (air-entrained.)

B. 1/8 $\frac{3}{4}$ " ϕ ; holes $\frac{13}{16}$ " ϕ , except as noted.

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

Paint: Shop, none; Field, contact surfaces of bolted field connections, except where high tensile bolts were used, one coat of red lead and surfaces inaccessible after erection three coats of red lead. All other exposed surfaces first coat red lead, second coat brown third coat aluminum. Payment for cleaning and all painting was made under unit price bid for painting.

Qualification of welding operators was required.

Where joint filler was specified on the plans it did conform with the requirements for Gray Rubber Compound Joints as given in Section 59-22B of the Standard Specifications.

Superstructure deck was waterproofed.
Permits were obtained for all trucks loads over legal lengths.

BM* □ in center of Lt Wing Bldg #5
Sta 413+61.0 Elev. 1073.07

B.M. # 11 in center of Lt Wing St. #1
Sta 411 + 73.7 Elev. 1073.64

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 50 MILES S.E. OF ATLAS

PROJECT NO. I-44-10815 (RTE I-44) STA. 4+1+72.62 (RT. LANE)
STA. 4+1+73.69 (LT. LANE)

JASPER COUNTY

FINISHED

FINISHED

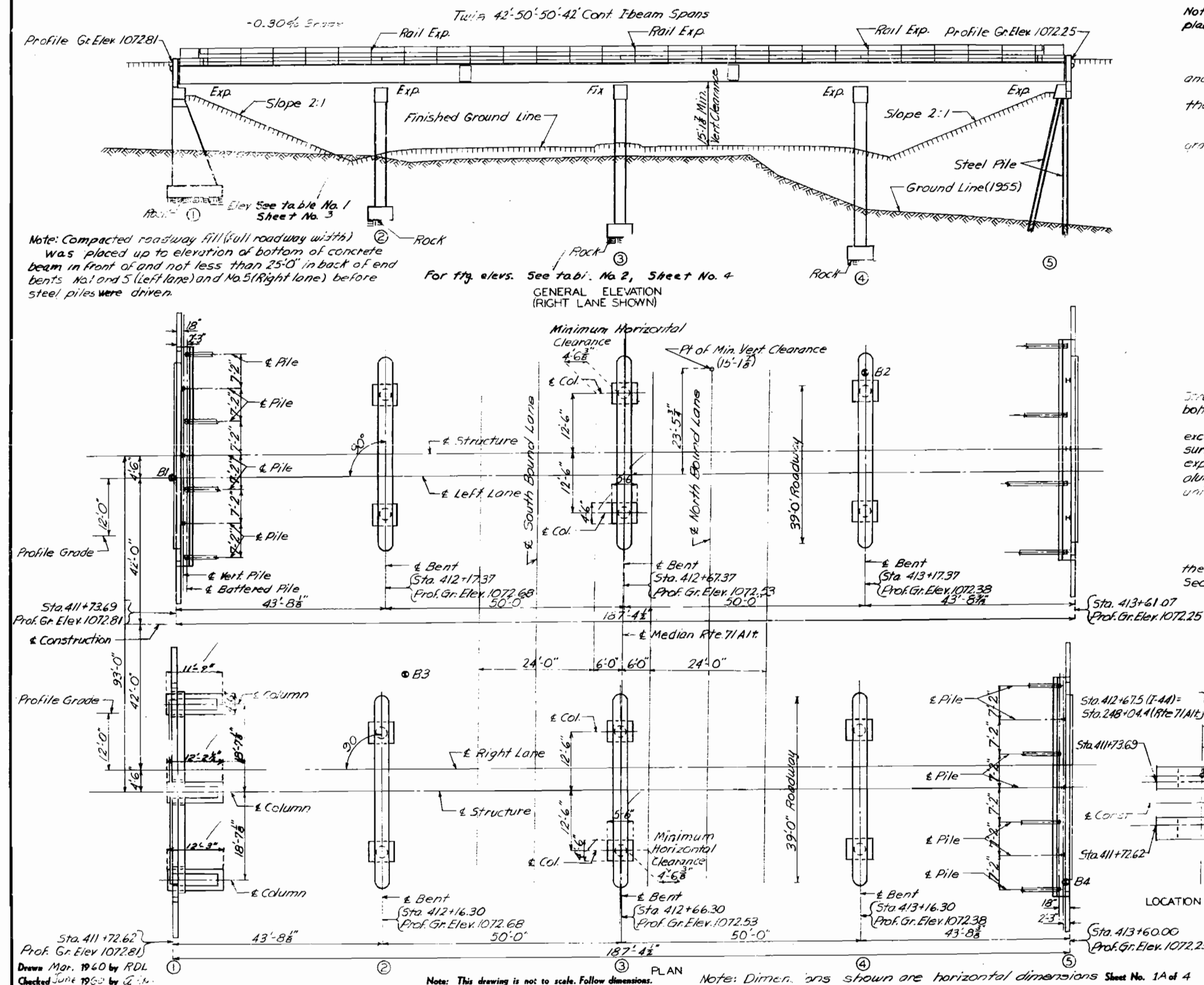
SUBMITTED BY R. A. Currie DATE 9-2-60

APPROVED BY Ray M. Cokilton DATE 9-2-60

FINISHED

STD.C-110R7

A-630



FINAL PLANS

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	101	

LEFT LANE

COMPLETE BILL OF REINFORCING STEEL

RIGHT LANE

Bending Sketches and Cutting Diagrams

No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location
Superstructure					Substructure				
486	"5	32'-3"	S2	Slab	123	"4	13'-0"	U1	Bm
168	"5	16'-0"	S3	"	156	"4	11'-3"	U2	"
40	"5	2'-6"	S5	"	12	"4	3'-9"	U3	"
1480	"6	22'-3"	S1	"	6	"4	4'-6"	U4	"
20	"5	4'-9"	C1	Curb	2	"4	659'-0"	V1	Col. Bt. 2
348	"5	3'-9"	C2	"	2	"4	78'-0"	V2	" Bt. 3
4	"5	6'-0"	C3	"	2	"4	904'-0"	V3	" Bt. 4
24	"5	22'-0"	C4	"	16	"11	24'-6"	V4	" Bt. 2
24	"5	25'-9"	C5	"	16	"11	28'-9"	V5	" Bt. 3
24	"5	3'-9"	R1	End Post	30	"2	19'-9"	W1	A.B. Wells
20	"5	7'-6"	R2	"					
End Bent No. 5					16	"6	25'-0"	H1	Bm
Substructure					4	"6	24'-0"	H2	"
End Bent No. 1					4	"6	23'-0"	H3	Bknll.
16	"6	25'-0"	H1	Bm	6	"6	9'-3"	H4	Wing
4	"6	24'-0"	H2	"	8	"4	24'-0"	H5	Bknll.
4	"6	23'-0"	H3	Bknll.	2	"6	6'-0"	H6	Wing
6	"6	9'-3"	H4	Wing	2	"6	7'-6"	H7	"
8	"4	24'-0"	H5	Bknll.					
2	"6	6'-0"	H6	Wing	4	"6	13'-0"	T2	Wing
2	"6	7'-6"	H7	"	4	"6	11'-0"	T3	"
4	"6	13'-0"	T2	Wing	80	"5	6'-6"	V15	Bknll.
4	"6	11'-0"	T3	"	7	"4	10'-0"	V16	"
					6	"4	7'-9"	V17	"
80	"5	6'-6"	V15	Bknll.					
7	"4	10'-0"	V16	"	46	"4	12'-0"	U7	Bm
6	"4	7'-9"	V17	"	14	"4	3'-6"	U8	"
46	"4	12'-0"	U7	Bm	10	"2	19'-9"	W1	A.B. Wells
14	"4	3'-6"	U8	"					
10	"2	19'-9"	W1	A.B. Wells					
Int. Bents No. 2, 3, 4									
48	"11	7'-6"	D1	Fig.					
12	"11	16'-3"	G1	3m					
30	"11	37'-9"	G2	"					
6	"6	40'-3"	G3	"					
48	"11	17'-0"	G4	"					
18	"6	8'-0"	G5	"					

T1-T2-T3

C1-C2-R2-U3-U4-U6-U8-VII

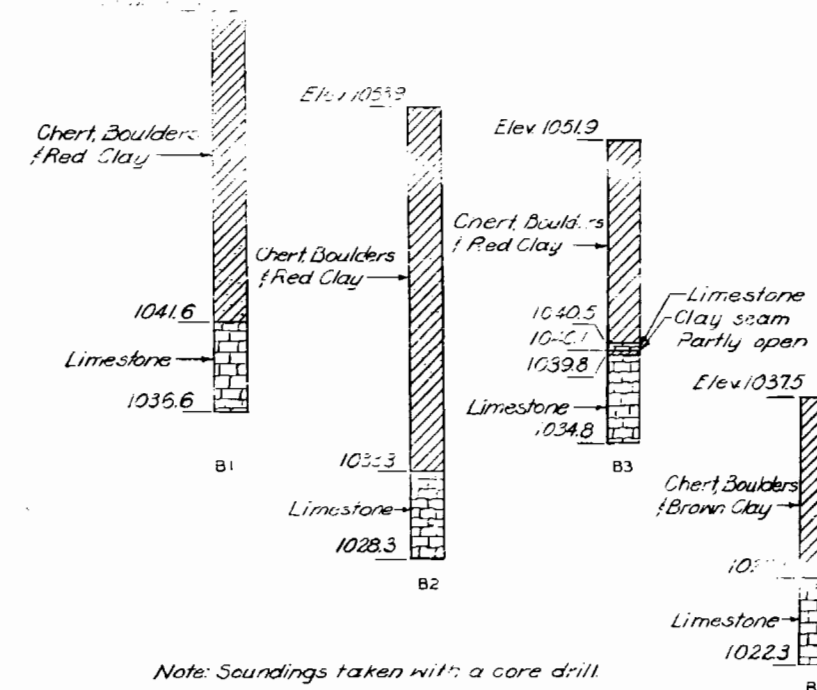
V1-V2-V3

Note: Make one and one half turns at top bottom and splayces.

No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location
Superstructure					Substructure				
1480	"6	22'-3"	S1	Slab	48	"11	7'-6"	D1	Fig.
486	"5	32'-3"	S2	"	12	"11	16'-3"	G1	Beam
168	"5	16'-0"	S3	"	30	"11	37'-9"	G2	"
40	"5	2'-6"	S5	"	6	"6	40'-5"	G3	"
20	"5	4'-9"	C1	Curb	48	"11	17'-0"	G4	"
348	"5	3'-9"	C2	"	18	"6	8'-0"	G5	"
4	"5	6'-0"	C3	"	123	"4	13'-0"	U1	"
24	"5	22'-0"	C4	"	156	"4	11'-3"	U2	"
24	"5	25'-9"	C5	"	12	"4	3'-9"	U3	"
24	"5	3'-9"	R1	End Post	6	"4	4'-6"	U4	"
20	"5	7'-6"	R2	"					
End Bent No. 5					2	"4	659'-0"	V1	Col. Bt. 2
Substructure					2	"4	78'-0"	V2	" Bt. 3
End Bent No. 1					2	"4	904'-0"	V3	" Bt. 4
16	"6	25'-0"	H1	Bm	16	"11	24'-6"	V4	" Bt. 2
4	"6	24'-0"	H2	"	16	"11	28'-9"	V5	" Bt. 3
4	"6	23'-0"	H3	Bknll.	30	"2	18'-9"	W1	A.B. Wells
6	"6	9'-3"	H4	Wing					
8	"4	24'-0"	H5	Bknll.					
2	"6	6'-0"	H6	Wing					
2	"6	7'-6"	H7	"					
4	"6	13'-0"	T2	Wing					
4	"6	11'-0"	T3	"					
80	"5	6'-6"	V15	Bknll.					
7	"4	10'-0"	V16	"					
6	"4	7'-9"	V17	"					
46	"4	12'-0"	U7	Bm					
14	"4	3'-6"	U8	"					
10	"2	19'-9"	W1	A.B. Wells					
Int. Bents No. 2, 3, 4									
48	"11	7'-6"	D1	Fig.					
12	"11	16'-3"	G1	3m					
30	"11	37'-9"	G2	"					
6	"6	40'-3"	G3	"					
48	"11	17'-0"	G4	"					
18	"6	8'-0"	G5	"					

Bending Sketches and Cutting Diagrams

No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location
Superstructure					Substructure				
1480	"6	22'-3"	S1	Slab	48	"11	7'-6"	D1	Fig.
486	"5	32'-3"	S2	"	12	"11	16'-3"	G1	Beam
168	"5	16'-0"	S3	"	30	"11	37'-9"	G2	"
40	"5	2'-6"	S5	"	6	"6	40'-5"	G3	"
20	"5	4'-9"	C1	Curb	48	"11	17'-0"	G4	"
348	"5	3'-9"	C2	"	18	"6	8'-0"	G5	"
4	"5	6'-0"	C3	"	123	"4	13'-0"	U1	"
24	"5	22'-0"	C4	"	156	"4	11'-3"	U2	"
24	"5	25'-9"	C5	"	12	"4	3'-9"	U3	"
24	"5	3'-9"	R1	End Post	6	"4	4'-6"	U4	"
20	"5	7'-6"	R2	"					
End Bent No. 5					2	"4	659'-0"	V1	Col. Bt. 2
Substructure					2	"4	78'-0"	V2	" Bt. 3
End Bent No. 1					2	"4	904'-0"	V3	" Bt. 4
16	"6	25'-0"	H1	Bm	16	"11	24'-6"	V4	" Bt. 2
4	"6	24'-0"	H2	"	16	"11	28'-9"	V5	" Bt. 3
4	"6	23'-0"	H3	Bknll.	30	"2	18'-9"	W1	A.B. Wells
6	"6	9'-3"	H4	Wing					
8	"4	24'-0"	H5	Bknll.					
2	"6	6'-0"	H6	Wing					
2	"6	7'-6"	H7	"					
4	"6	13'-0"	T2	Wing					
4	"6	11'-0"	T3	"					
80	"5	6'-6"	V15	Bknll.					
7	"4	10'-0"	V16	"					
6	"4	7'-9"	V17	"					
46	"4	12'-0"	U7	Bm					
14	"4	3'-6"	U8	"					
10	"2	19'-9"	W1	A.B. Wells					
Int. Bents No. 2, 3, 4									
48	"11	7'-6"	D1	Fig.					
12	"11	16'-3"	G1	3m					
30	"11	37'-9"	G2	"					
6	"6	40'-3"	G3	"					
48	"11	17'-0"	G4	"					
18	"6	8'-0"	G5	"					



LOG OF SOUNDINGS

FINAL QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds.	506	506
Class B Concrete	Cu. Yds.	337	337
Class B1 Concrete	Cu. Yds.	433.5	433.5
Reinforcing Steel	Lbs.	66,530	143,300
Fabricated Structural Steel	Lbs.	326,100	326,100
Fabricated Structural Steel (Bearings)	Lbs.	13,590	13,590
Steel Pile in Place (State furnished)	Lin. Ft.	634	634
Painting	Ton	169.8	169.8
Class I Excavation Below Plan		18.5	18.5
Foundation Test Holes		166.8	166.8

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

Drawn Apr. 1960 by P.V.D.
Checked Jan. 1960 by Q.F.K.

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

Sheet No. 2A.1.4

FINAL PLANS

BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY
ABOUT 30 MILES SE OF ATLAS

PROJECT NO. I-44-CORPTE. I-44 (STA. 41+72.62 RT. LANE)
STA. 41+73.69 (LT. LANE)

JASPER

COUNTY

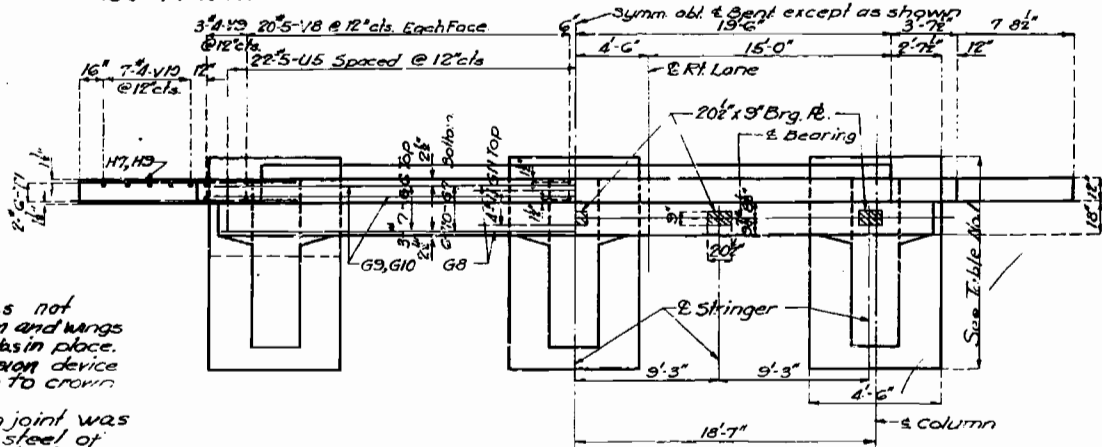
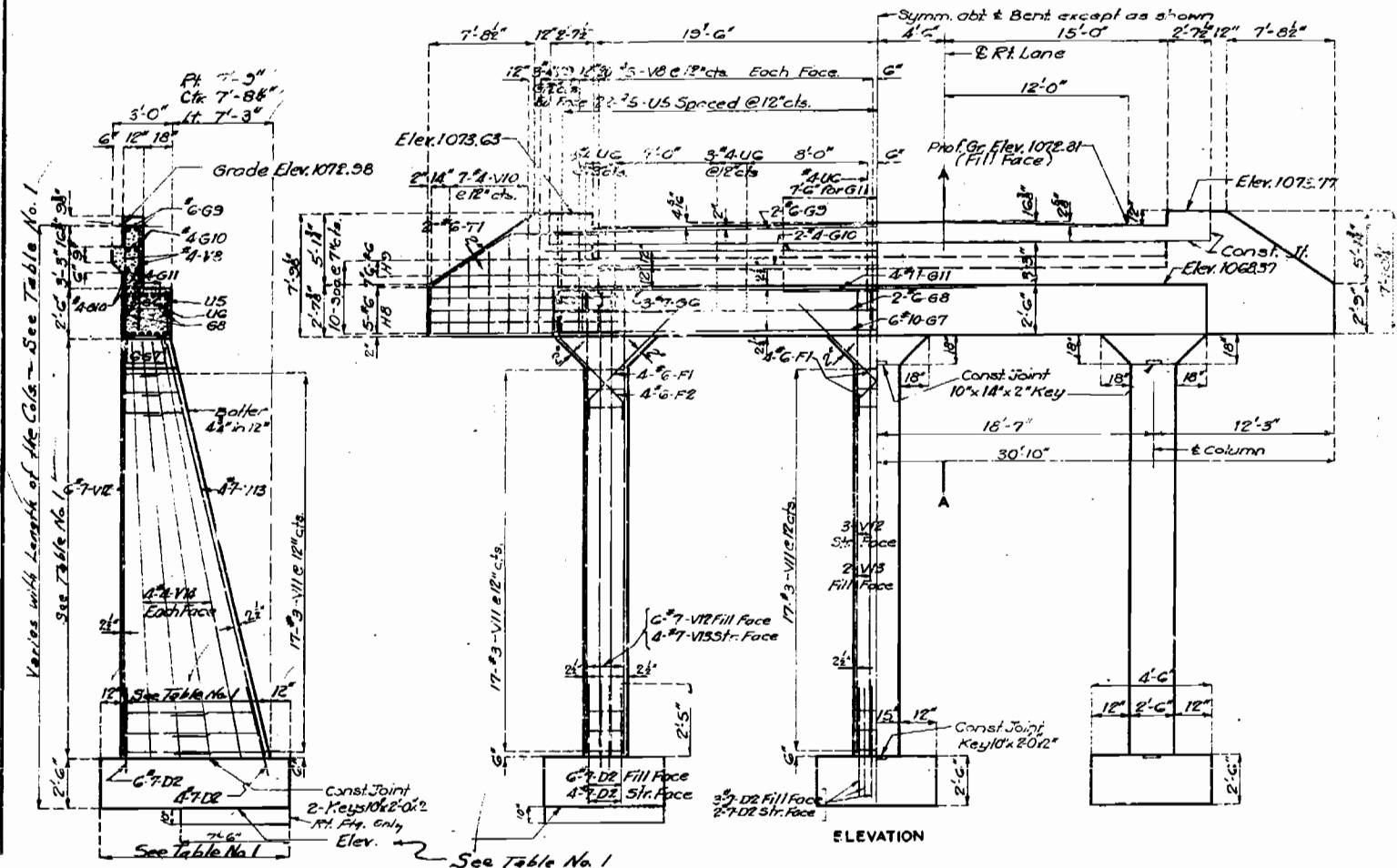
FINISHED

FINISHED

A-630

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	10	13



Note: Fill at end bent No. 1 was not carried above bottom of beam and wings until superstructure span (1-2) was in place. Tip of backwall and expansion device for end bent No. 1 did conform to crown of roadway. Backwall above construction joint was not poured until structural steel of the expansion device was installed and slab had been poured in adjacent span.

TABLE NO. 1					Total Lengths
Location	Elev	Length	Width	Depth	
Rt. Flg.	1063.61	12'-3"	4'-6"	2'-6"	Right
Rt. Col.		10'-9"	10'-3"	2'-6"	
					22'-4 1/2"
Ctr. Flg.	1043.81	12'-2 1/2"	4'-6"	2'-6"	Center
Ctr. Col.		10'-6 3/4"	10'-2 1/2"	2'-6"	
					29'-2 1/2"
Lt. Flg.	1045.01	11'-9"	4'-6"	2'-6"	Left
Lt. Col.		18'-4 3/4"	9'-0"	2'-6"	
					27'-11 1/4"

BRIDGE OVER ROUTE 11 ALTERNATE
STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY.
ABOUT 5.0 MILES S.E. OF ATLAS
PROJECT NO. I-44/1081/5 (RTE. I-44) STA. 411+72.62 (RT. LANE)
411+73.69 (LT. LANE)
JASPER COUNTY

Assembled Mar. 1960 by R.D.L. & J.H.K.
Checked June 1960 by G.F.K.

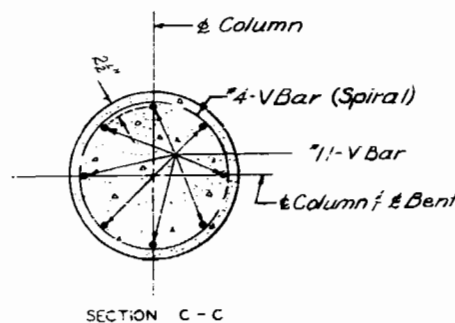
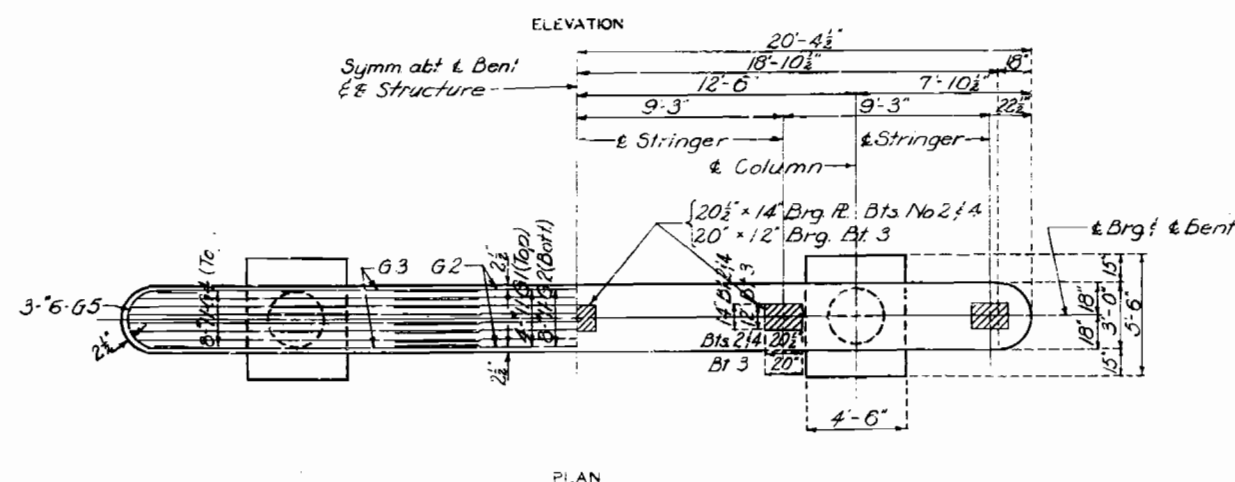
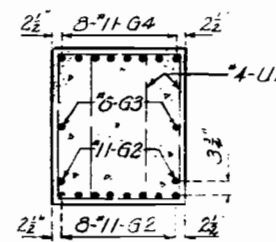
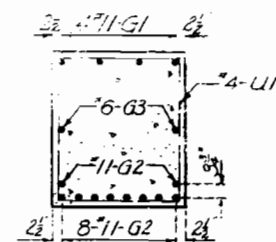
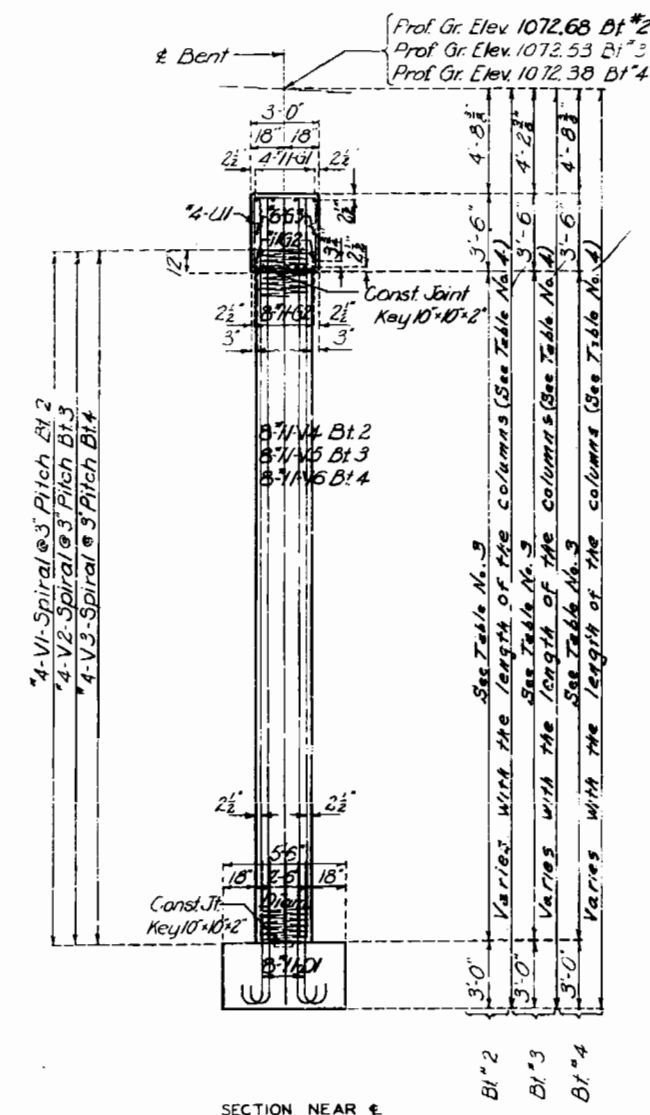
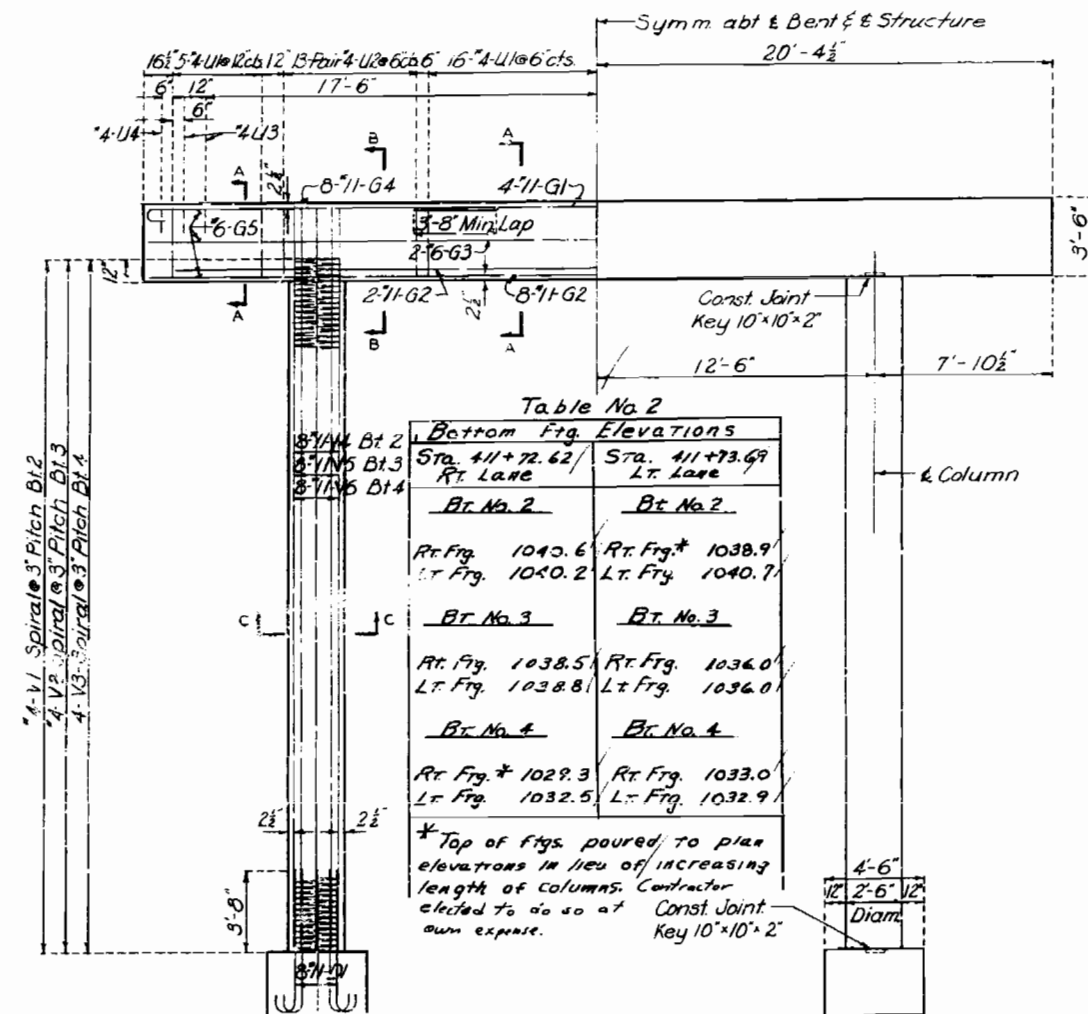
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3A of 4

FINAL PLANS

A-630

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	104	



BRIDGE OVER ROUTE 71 ALTERNATE

STATE ROAD FROM EAST OF SCOTLAND TO EAST OF FIDELITY ABOUT 5.0 MILES S.E. OF ATLAS

PROJECT NO. 1-44-108 (RTE 1-44) STA. 411+72.62 (RT. LANE) STA. 411+73.69 (LT. LANE)

JASPER

COUNTY

FINISHED

FINISHED

A-630

Drawn MAR 1960 by PVD
Checked June 1960 by Q.F.R.

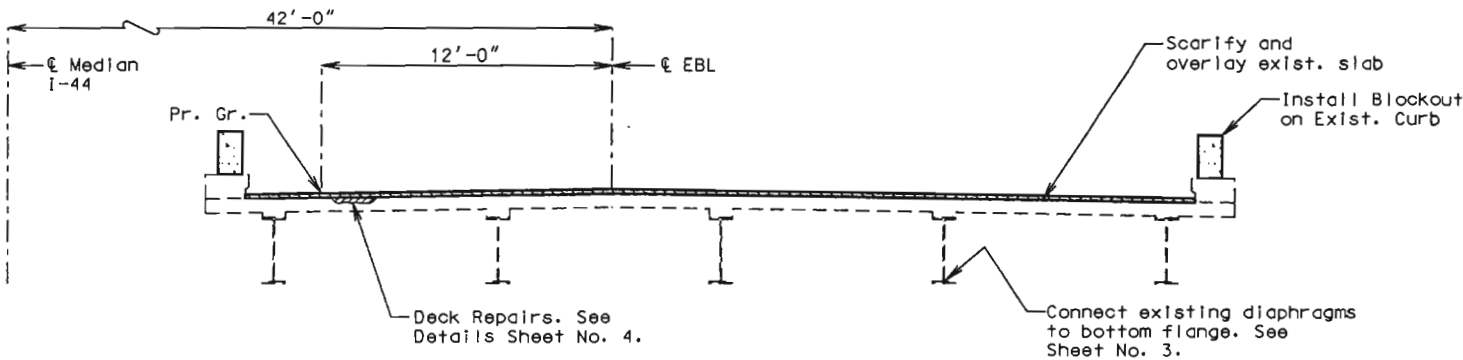
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5A of 4

FINAL PLANS

530

State	Proj. No.	Sheet No.
MO		852
SEC/SUR 9.10	TWP 27N	RGE 31W



SECTION THRU SLAB

Estimated Quantities		
Item		Total
Removal and Storage of Existing Bridge Rail	Lin. Ft.	353
Curb Removal (Bridges)	Lin. Ft.	16
Replacement of Expansion Device and Adjacent Concrete	Lin. Ft.	89
Bridge Approach Slab (Bridge)	Sq. Yd.	225
Substructure Repair (Formed)	Sq. Ft.	160
Substructure Repair (Unformed)	Sq. Ft.	10
Protective Coating for Concrete Bents and Concrete Piers under Expansion Devices	Lump Sum	1
Curb Blockout	Lin. Ft.	375
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	100
Full Depth Repair	Sq. Ft.	50
Low Slump Concrete Wearing Surface	Sq. Yd.	807
Strip Seal Expansion Device	Lin. Ft.	89
Reinforcing Steel (Epoxy Coated)	Lb.	2530
Cleaning and Coating Existing Bearings	Each	10
Transporting Residue to Storage Area	Lump Sum	1
Transporting Residue to the Smelter	Lump Sum	1
Disposal of Residue	Lump Sum	1

Cost of any required excavation for bridge shall be included in the contract unit price for other items.

All concrete above the upper construction joint in backwall and at the slab ends shall be Class B2.

The contract unit price for Curb Blockout shall include all concrete and reinforcement, complete in place.

General Notes:

Design Specifications:
AASHTO-1996 and Interims thru 2000

Design Unit Stresses:
Class B1 Concrete (Curb Blockout)
Class B2 Concrete (Slab and Top of Backwall)
Reinforcing Steel (Grade 60)

f'c = 4,000 psi
f'c = 4,000 psi
fy = 60,000 psi

Fabricated Steel Connections:
Field connections shall be made with 3/4" diameter high strength bolts and 13/16" diameter holes, except as noted.

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Standard Specification 106 and Field Section (FS-712) from Materials Manual.

Joint Filler:
All joint filler shall meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Old Work:
Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

Maintain Traffic:
See Roadway Plans for traffic control during construction.

Verify Dimensions:
Contractor shall verify all dimensions in field before ordering new material.

Roadway Surfacing:
Roadway surfacing adjacent to bridge ends to match top of concrete wearing surface. (See Roadway Plans)

Existing Bridge Rail:
Salvage and store existing bridge rail at the Missouri Department of Transportation Carthage Maintenance Facility. (See Special Provisions)

Maintain Grade:
In order to maintain grade and a minimum thickness of overlay as shown on the plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

Anchors:
The Contractor shall use one of the resin anchor systems listed in the job special provisions. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

Cost of furnishing and installing the anchor systems complete in place shall be included in the price bid for Curb Blockout.

The 7/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 27,500 lbs. in concrete with f'c = 4,000 psi, see Special Provisions.

An epoxy coated #7 Grade 60 reinforcing bar 2'-4" long shall be substituted for the 7/8" threaded rod stud.

Miscellaneous:
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved bituminous paint below the ground line and a special mortar above ground line.

Traffic Handling:
Bridge will be closed to traffic during repairs.

REPAIRS TO BRIDGE OVER ALTERNATE ROUTE 71 / ROUTE 59

STATE ROAD FROM ROUTE 66 TO ROUTE 37
ABOUT 9 MILES EAST OF ROUTE 71
PROJECT NO. STA. 411+72.62 EBL
(Match Exist.)

JOB NO. J7I0690 RTE. I-44 EBL

JASPER COUNTY

BUCHER, WILLIS & RATLIFF
CORPORATION

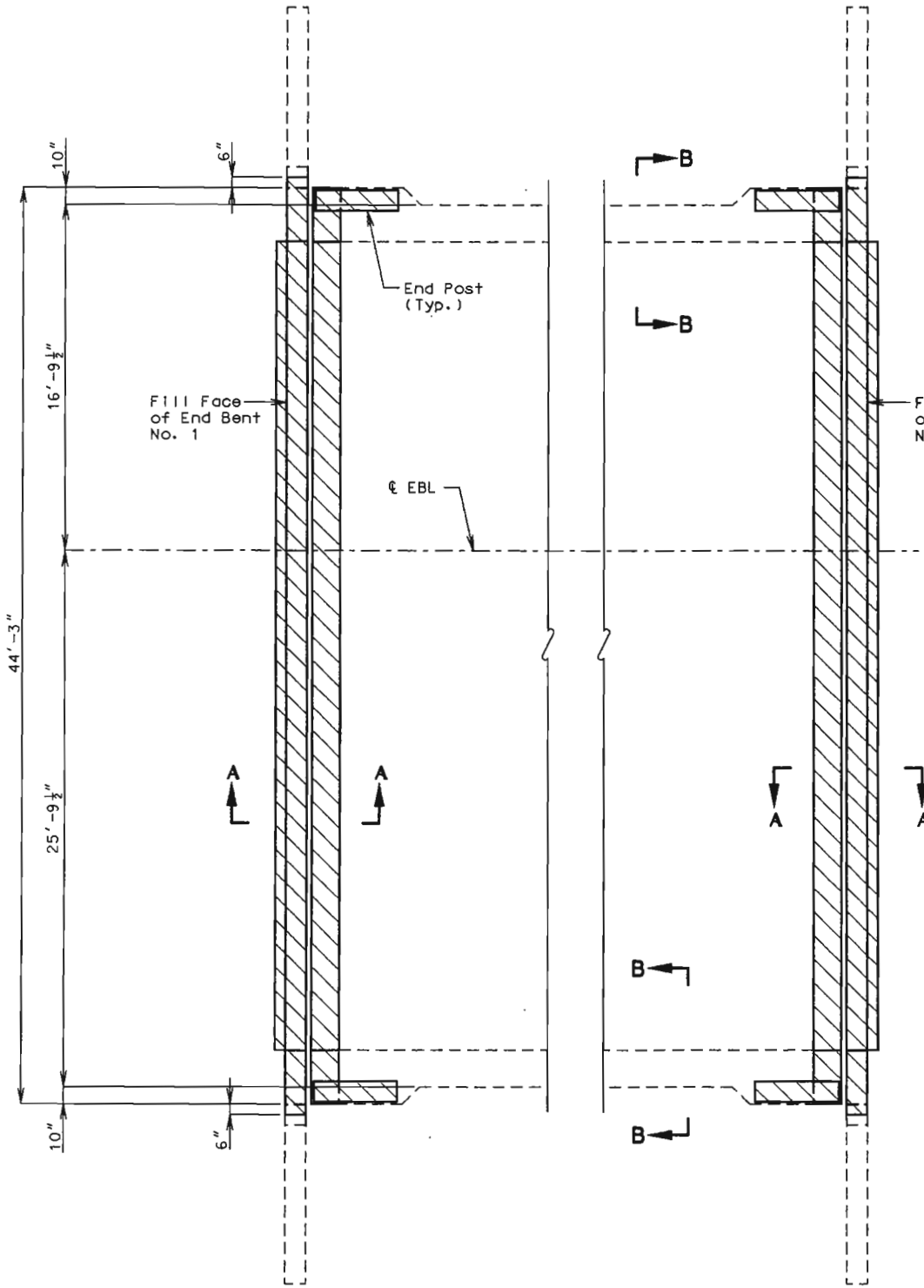
7920 WIND PARKWAY KANSAS CITY, MISSOURI 64114 (816) 363-2666

DRAWN BY:	RMH	APR. 2002
TRACED BY:	JTC	APR. 2002
CHECKED BY:	KLW	APR. 2002



STD. 609.00
STD. 706.35
A06301

State	Proj. No.	Sheet No.
MO		B 53



PLAN

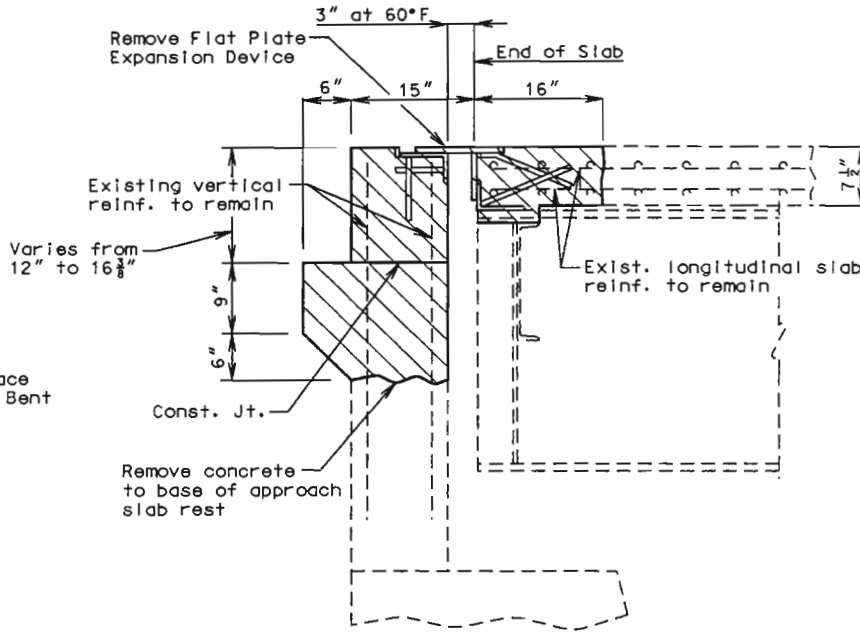
Notes:

Sawcut or chip vertically first 1/2" of all slab removal edges (top and bottom).

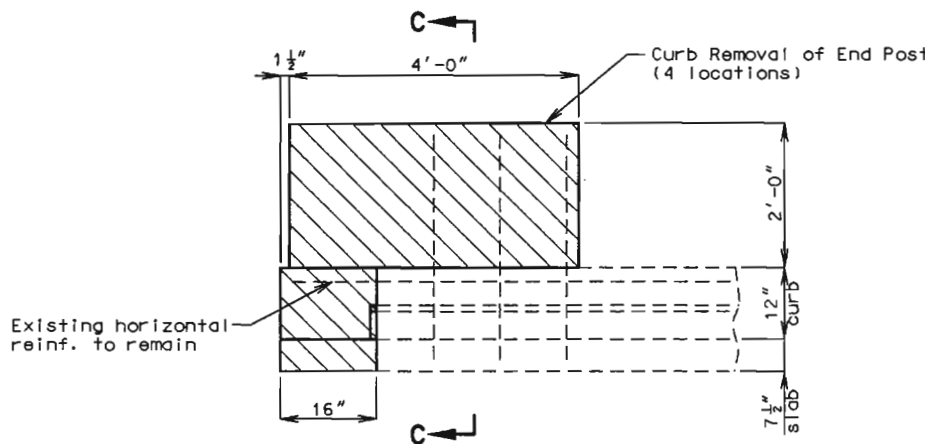
Removal of end posts is included with Curb Removal (Bridges).

Removal of ends of slab and top of end bent backwalls is included with Replacement of Expansion Device and Adjacent Concrete. (See Special Provisions)

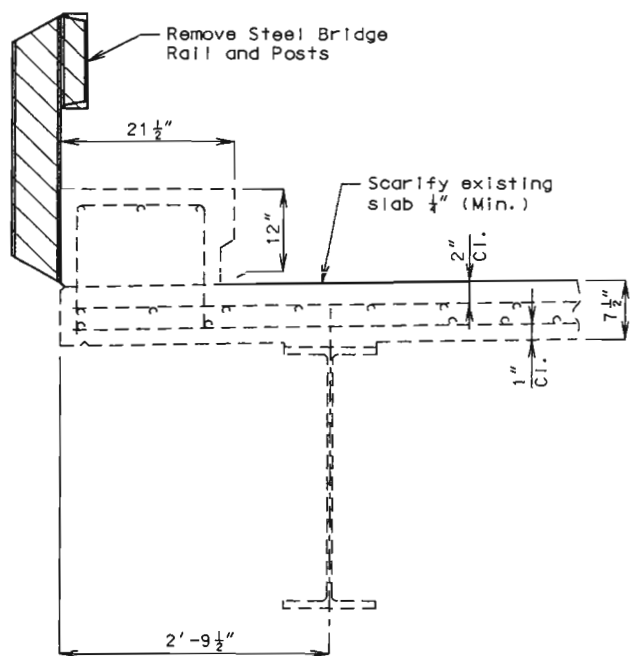
 Removal Limits



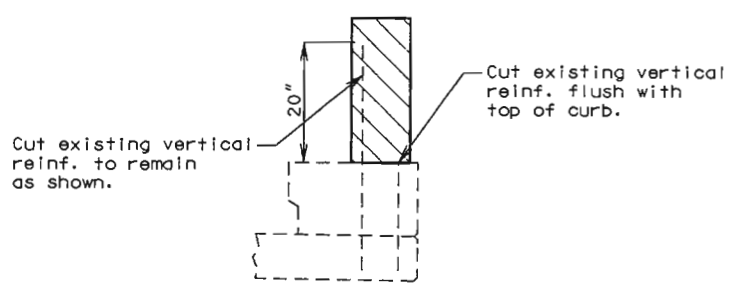
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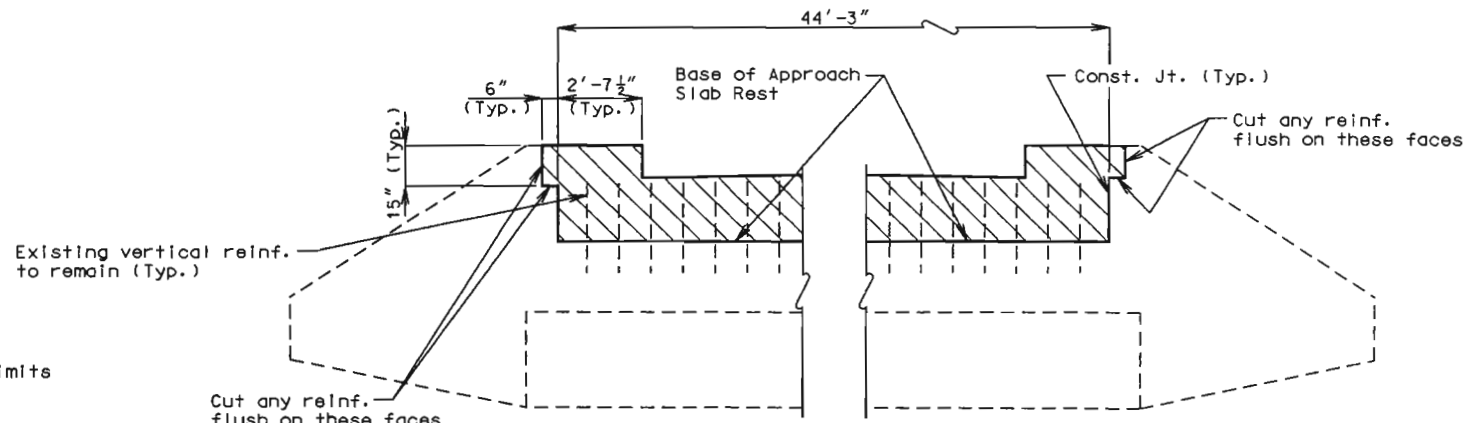
END POST ELEVATION



SECTION B-B



SECTION C-C

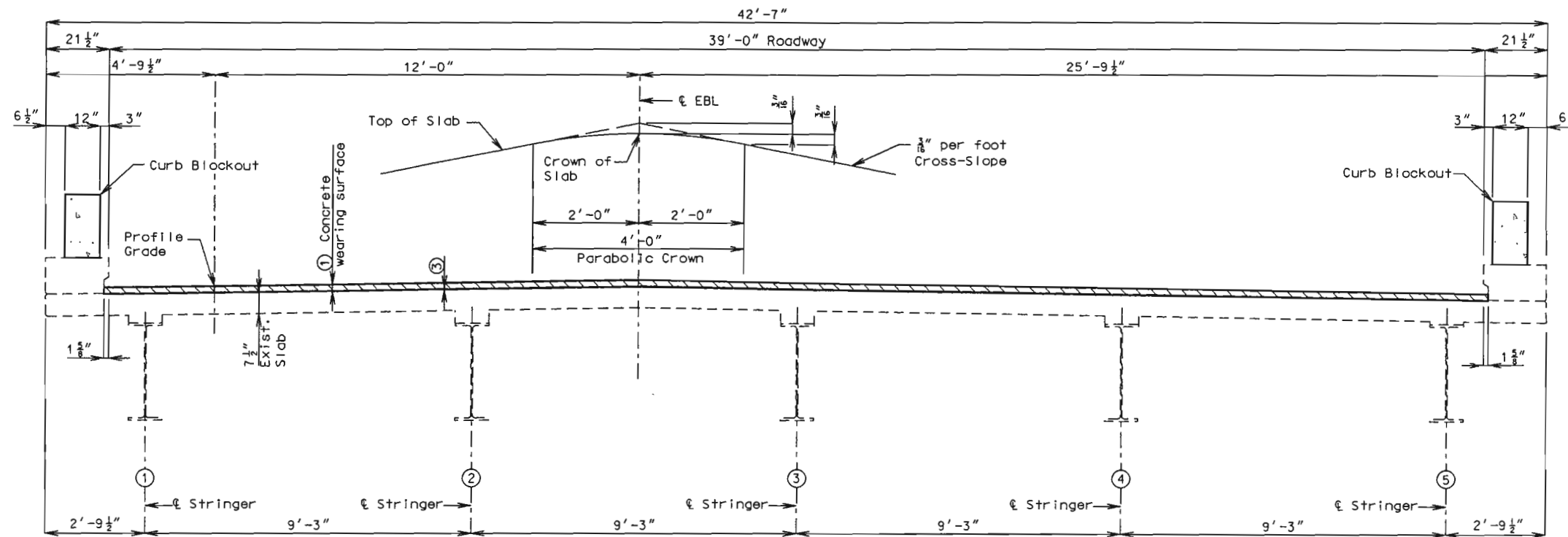


END BENT ELEVATION

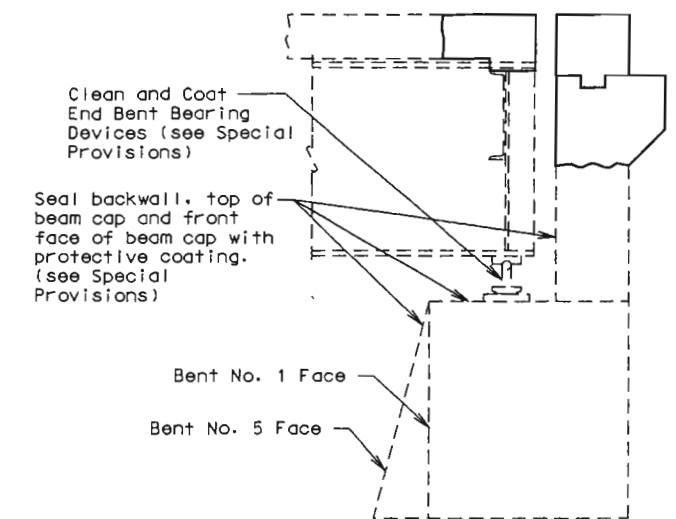
REMOVAL DETAILS



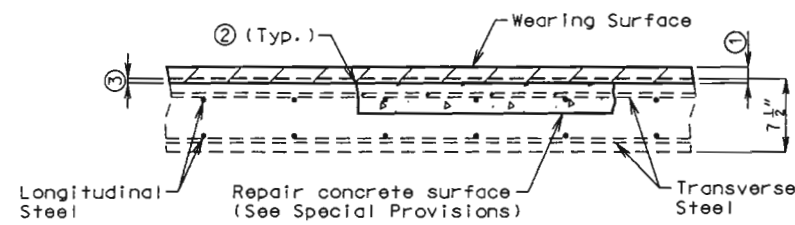
State	Proj. No.	Sheet No.
MO		B 54



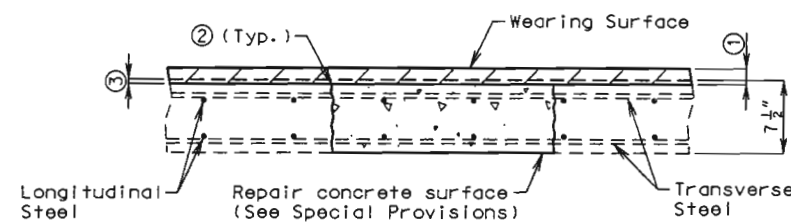
TYPICAL SECTION



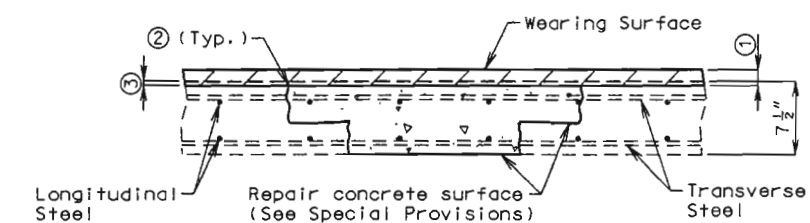
TYPICAL END BENT REPAIR



HALF-SOLED AREA

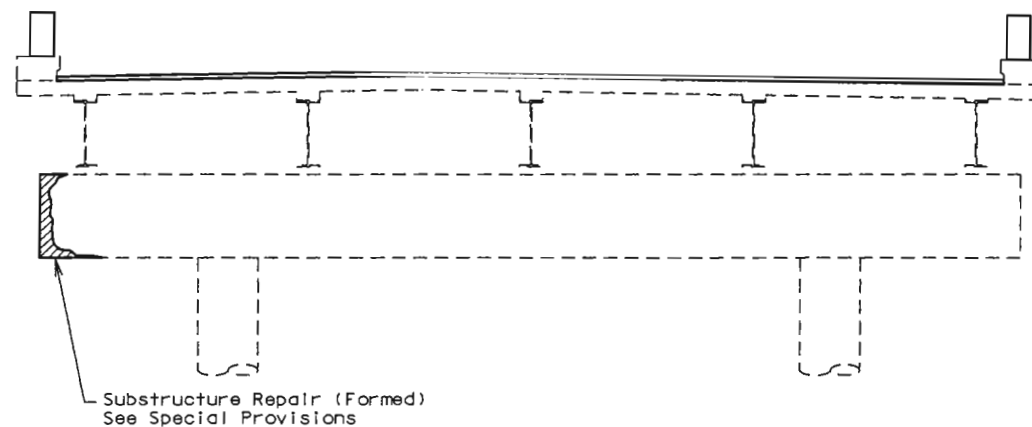


FULL DEPTH REPAIR

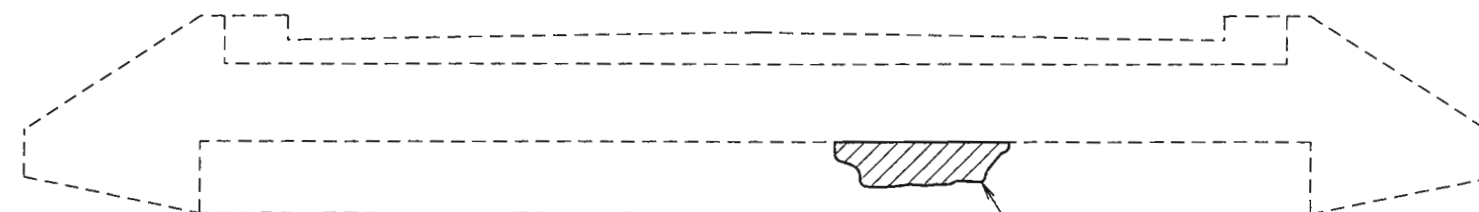


FULL DEPTH REPAIR
IN HALF-SOLED AREA

- ① 2-1/4" (min.) Low Slump Concrete
- ② Saw cut or chip vertically first 1/2" of all deck repair (Hydroblasting allowed by Special Provisions)
- ③ Scarify existing slab (1/4" min.)



INTERMEDIATE BENT CAP REPAIR
(Typical at Bent 2, 3 and 4)



END BENT NO. 5 REPAIR

Substructure Repair
(Unformed) see
Special Provisions



8-23-02

BUCHER, WILLIS & RATLIFF
CORPORATION
7920 WARD PARKWAY KANSAS CITY, MISSOURI 64114 816-263-7598

DRAWN BY: MAH APR. 2002
TRACED BY: MAH/TOK APR. 2002
CHECKED BY: KLV APR. 2002

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

SLAB CROSS SECTION AND
REPAIR DETAILS

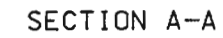
Sheet No. 3 of 8

JASPER COUNTY

A06301

2001-059-STR-A630-DGN-EASTBOUND-630EB-SLABSEC-DGN

304, SH. No. 18		Sheet No.
MO		B 55



8-23-2002

DRAWN BY: K LW		JUNE 2002
TRACED BY: JTC		JUNE 2002
CHECKED BY: DJS		JUNE 2002

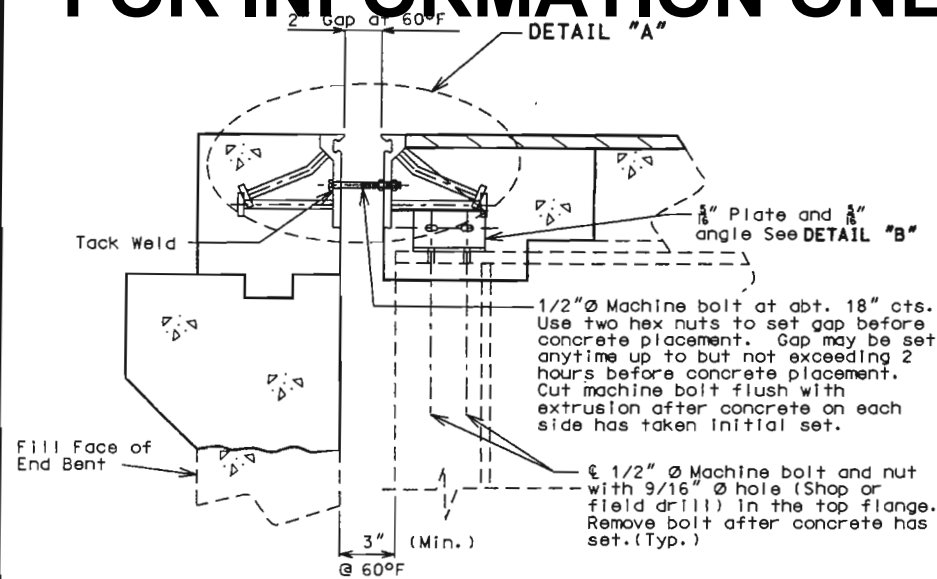
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 8

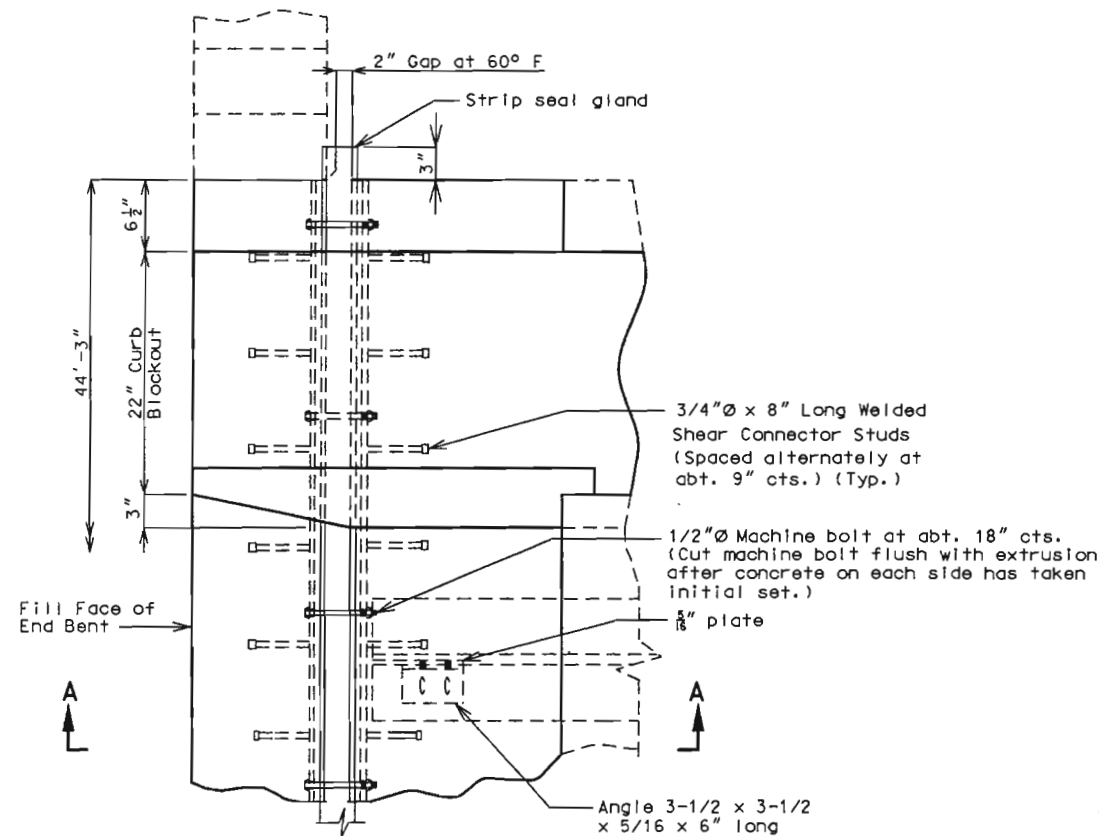
JASPER COUNTY

A06301

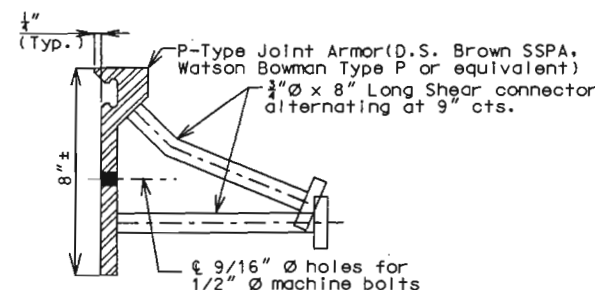
State	Proj. No.	Sheet No.
MO		B 56



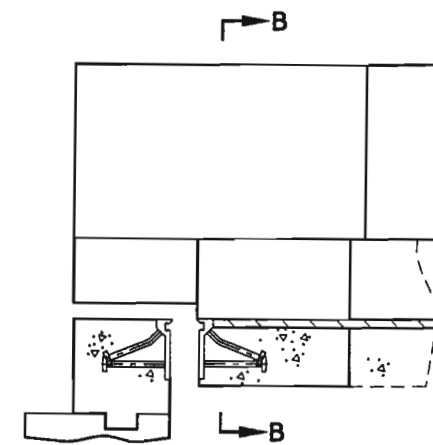
SECTION A-A



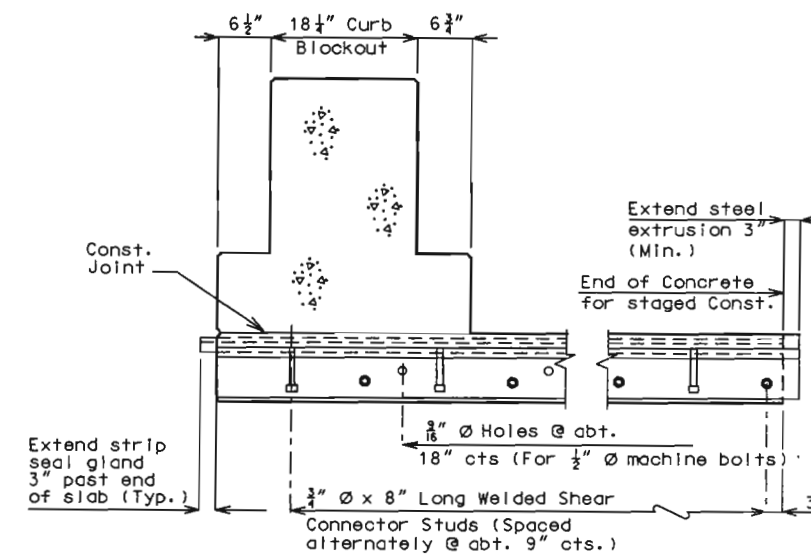
PART PLAN



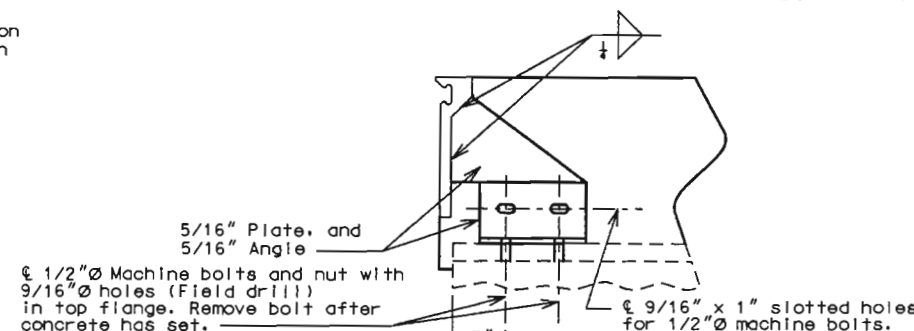
DETAIL OF JOINT ARMOR



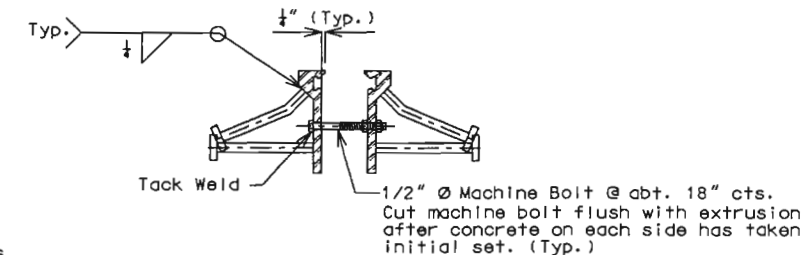
PART ELEVATION OF BARRIER CURB



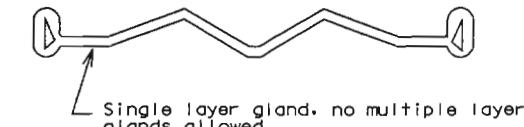
PART SECTION B-B



DETAIL "B"



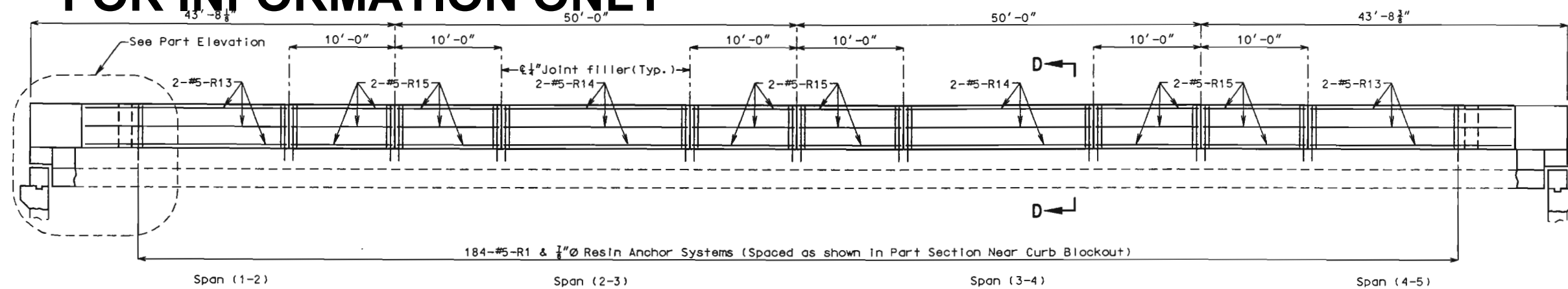
DETAIL "A"



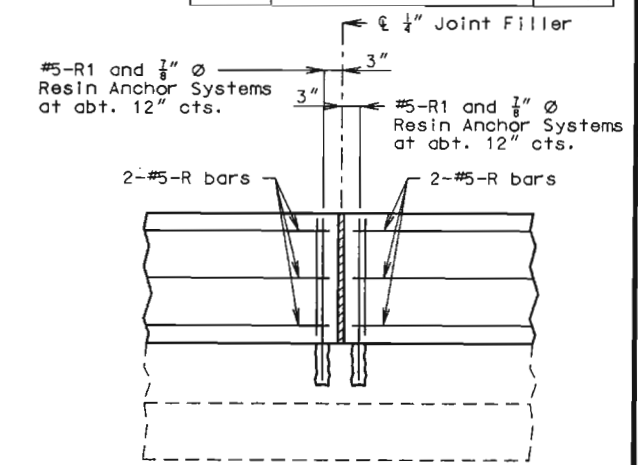
DETAIL OF GLAND

STRIP SEAL AT END BENTS

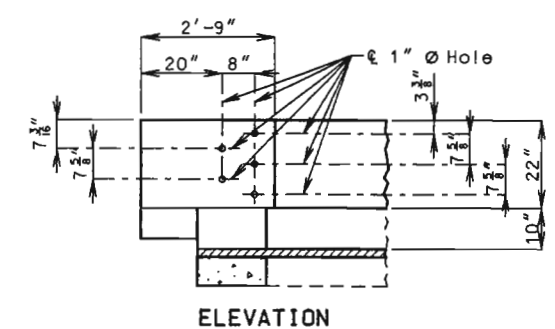
State	Proj. No.	Sheet No.
MO		857



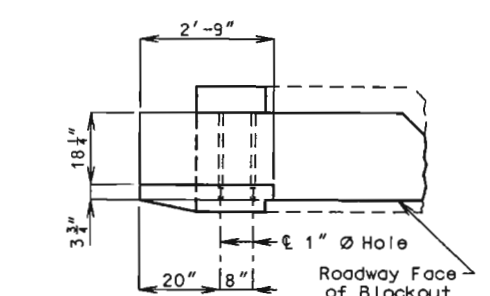
SECTION NEAR CURB BLOCKOUT



PART SECTION NEAR CURB BLOCKOUT

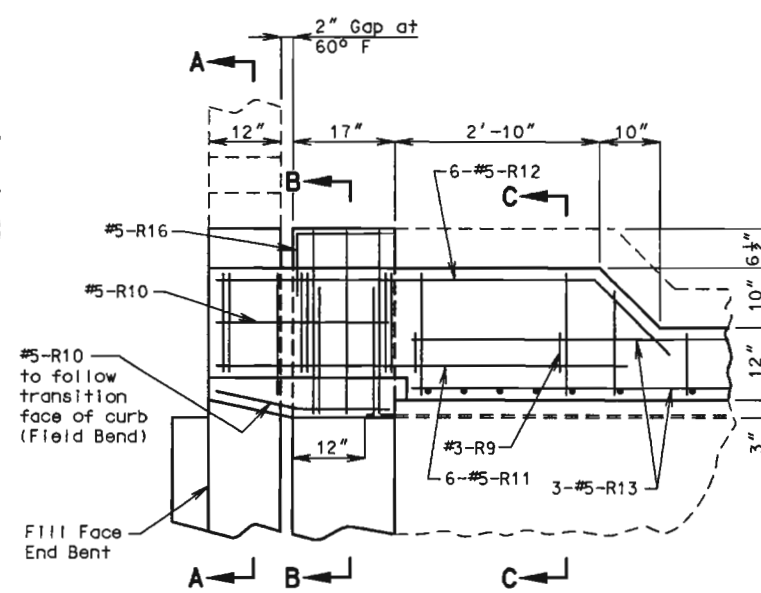


ELEVATION

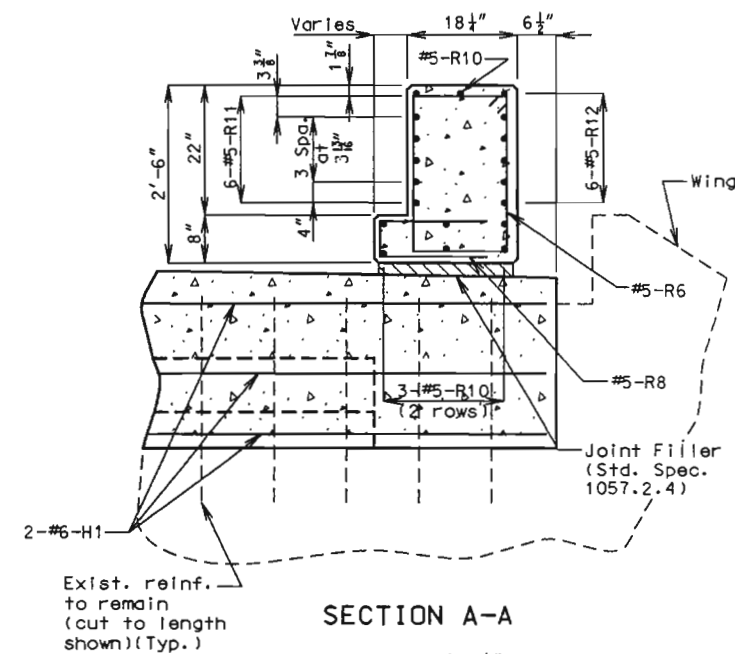


PLAN

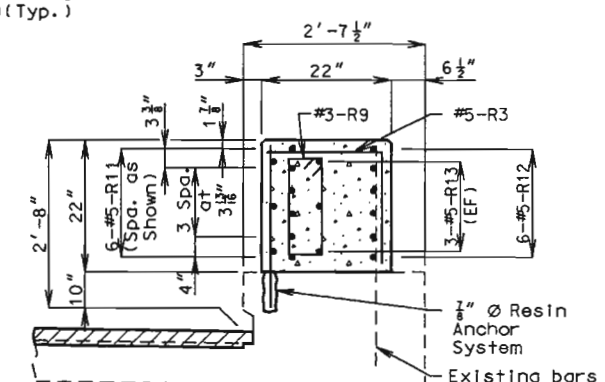
DETAILS OF GUARD RAIL ATTACHMENT



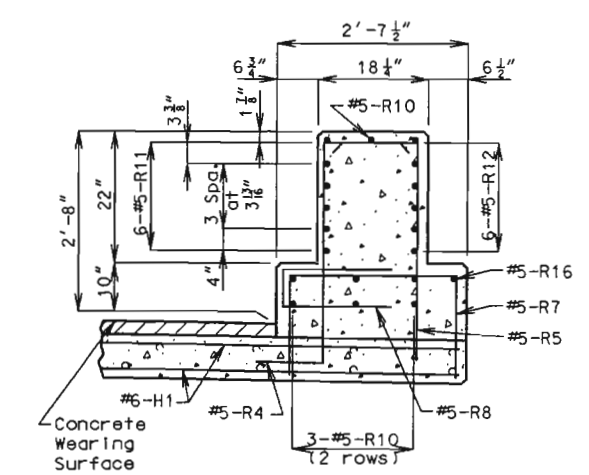
PART PLAN



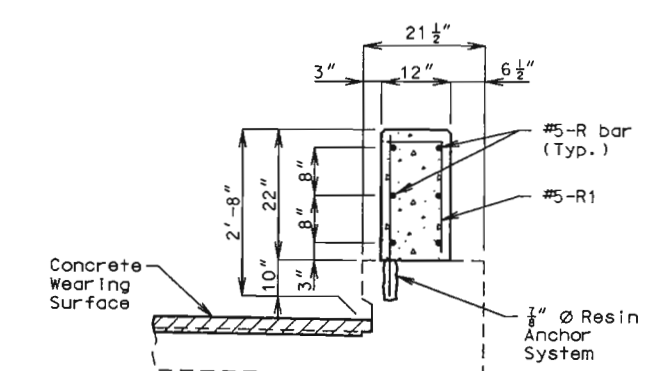
SECTION A-A



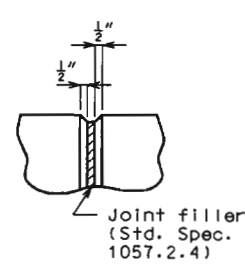
SECTION C-C



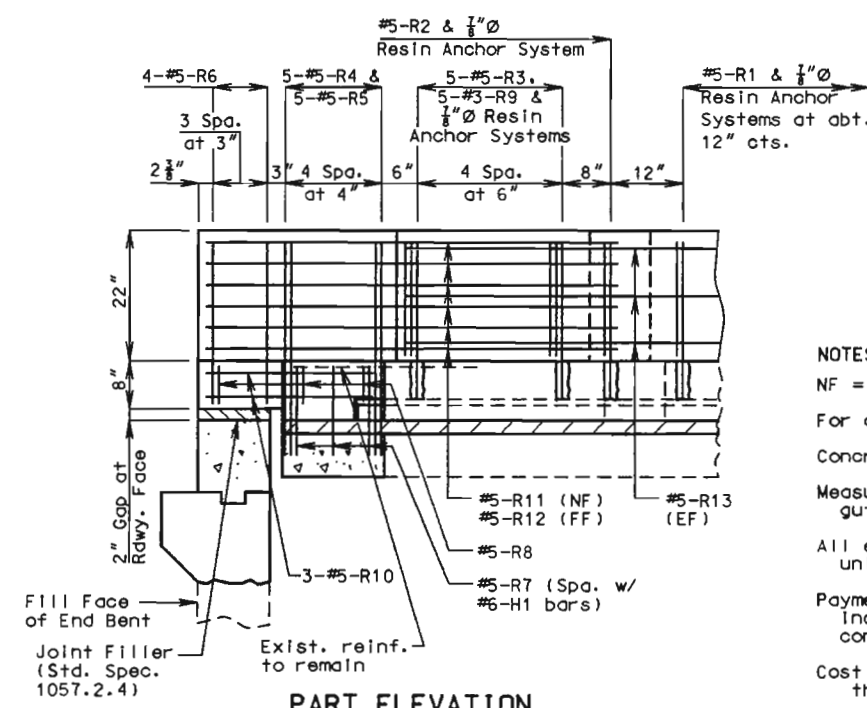
SECTION B-B



SECTION D-D



FILLED JOINT DETAIL



PART ELEVATION

NOTES FOR CURB BLOCKOUT:

NF = Near Face, FF = Far Face, EF = Each Face.

For details of strip seal expansion device, see Sheet No. 5.

Concrete in curb blockout shall be Class B1.

Measurement of curb blockout is to the nearest linear foot measured at the gutter line from end of curb blockout to end of curb blockout.

All exposed edges of curb blockout shall have 1/2 inch radius or 3/8 inch bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors and any other work incidental to the curb blockout complete in place shall be included in the contract unit price for the Curb Blockout per linear foot.

Cost of any concrete curb repair shall be considered completely covered in the unit price bid for Curb Blockout.

CURB BLOCKOUT DETAILS

Sheet No. 6 of 8

JASPER COUNTY

A06301

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

BUCHER, WILLIS & RATLIFF CORPORATION

DRAWN BY: MAH APR 2002
TRACED BY: MAH/TOK APR 2002
CHECKED BY: KLV APR 2002



GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Section 503 (f.c. = 4,000 psi) of the Missouri Standard Specifications.

All joint filler shall meet the requirements of Section 1057.2.5 of the Missouri Standard Specifications, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with $F_y = 60,000$ psi.

Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 26" respectively.

Mechanical bar splices will be permitted and shall develop at least 125 percent of the specified yield strength of the reinforcing bars being spliced. The contractor shall furnish the Engineer the manufacturer's certification that this requirement is met and is required to follow the manufacturer's recommendation for installation.

Mechanical bar splices shall be epoxy coated in accordance with Section 710 of the Missouri Standard Specifications.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures. Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab overlay.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base and all other appurtenances and incidental work as shown on this sheet, complete in place, shall be considered as completely covered under the contract unit price for Bridge Approach Slab (Bridge), per sq. yd.

For Concrete Approach Pavement details, see roadway plans.

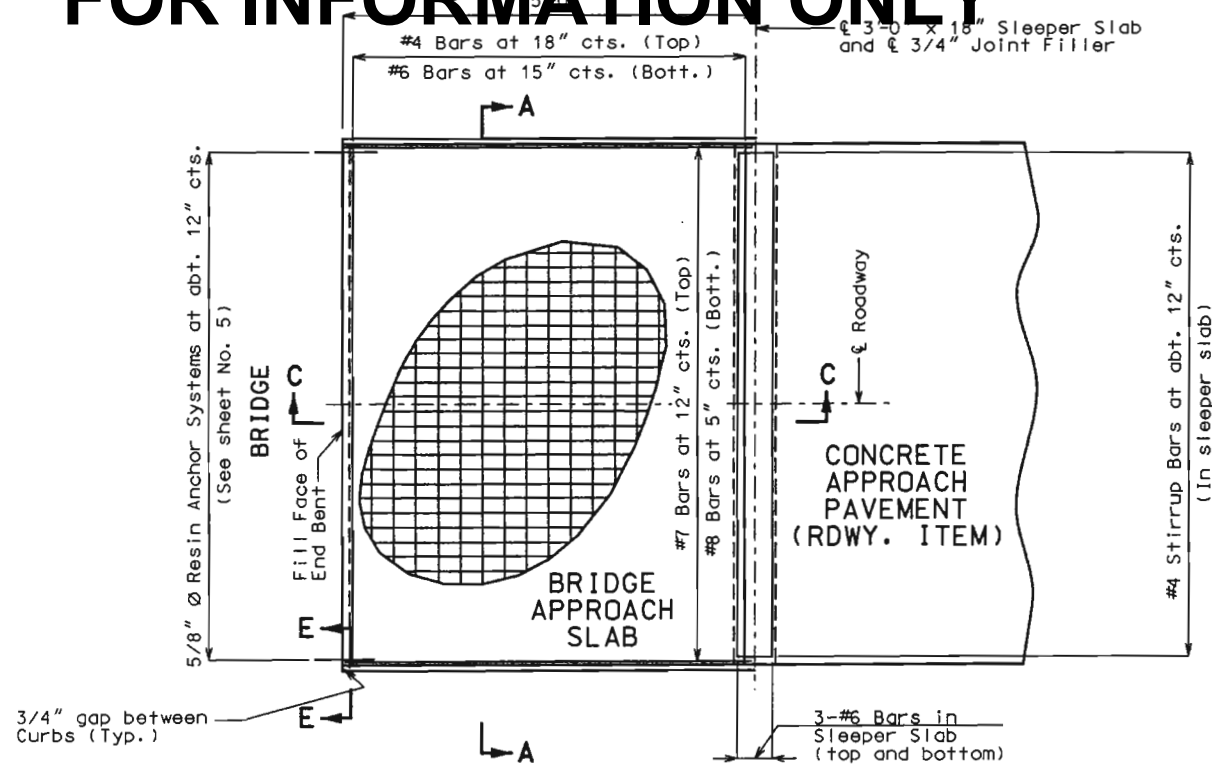
See Missouri Standard Plans Drawing 609.00 for details of Type A Barrier Curb.

When a lap splice is required for the use of a mechanical bar splice, the minimum lap length shall be 40" for transverse approach slab bar splices.

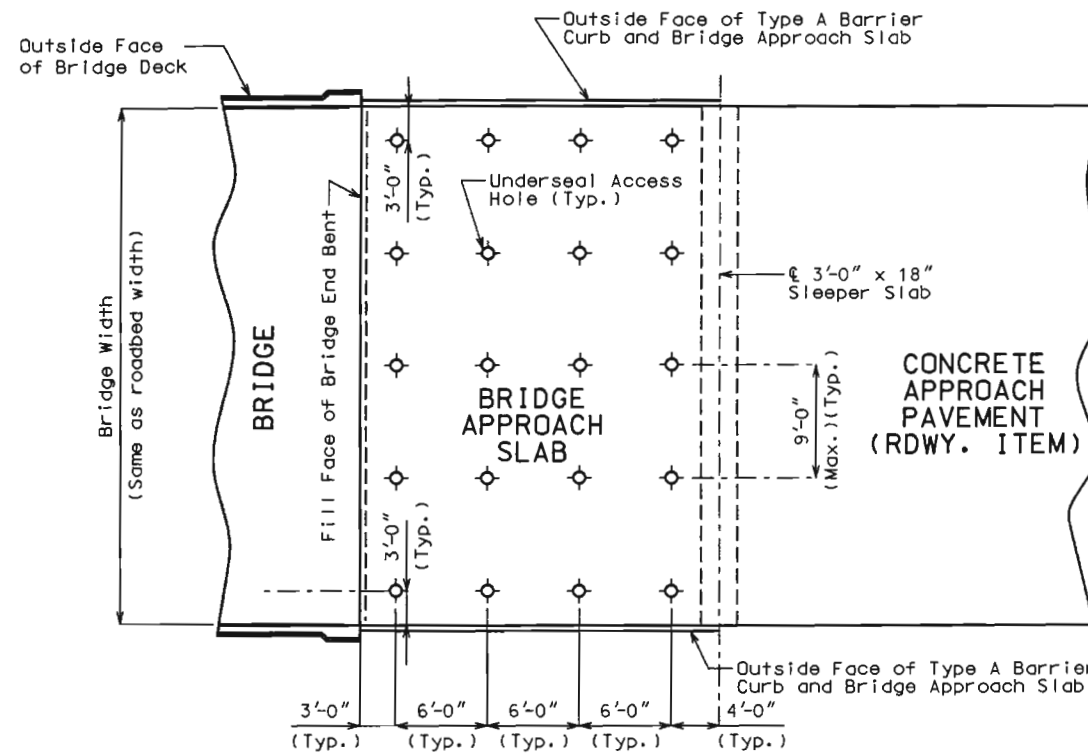
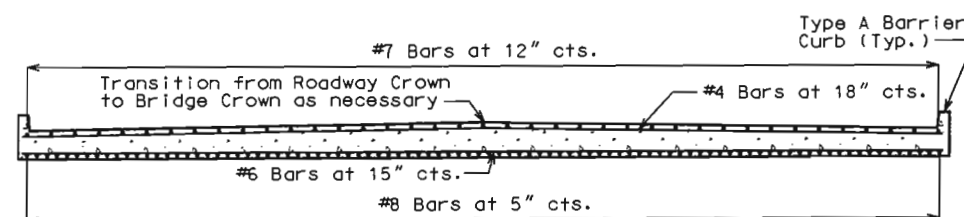
At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired according to Section 710.3.3 of the Missouri Standard Specifications.

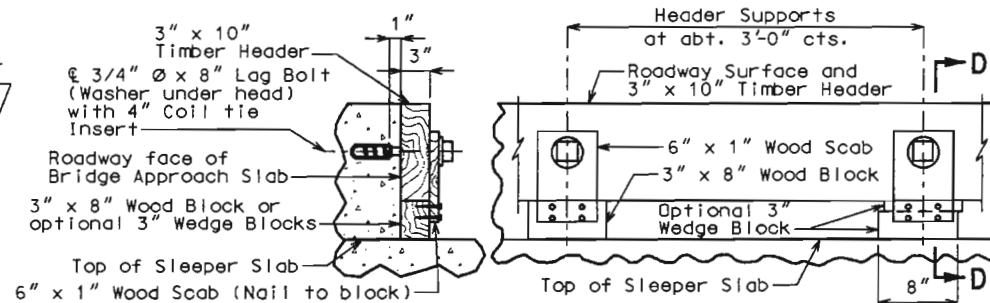
Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.



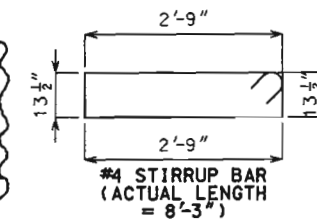
PART PLAN SHOWING REINFORCEMENT

PART PLAN
(SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)

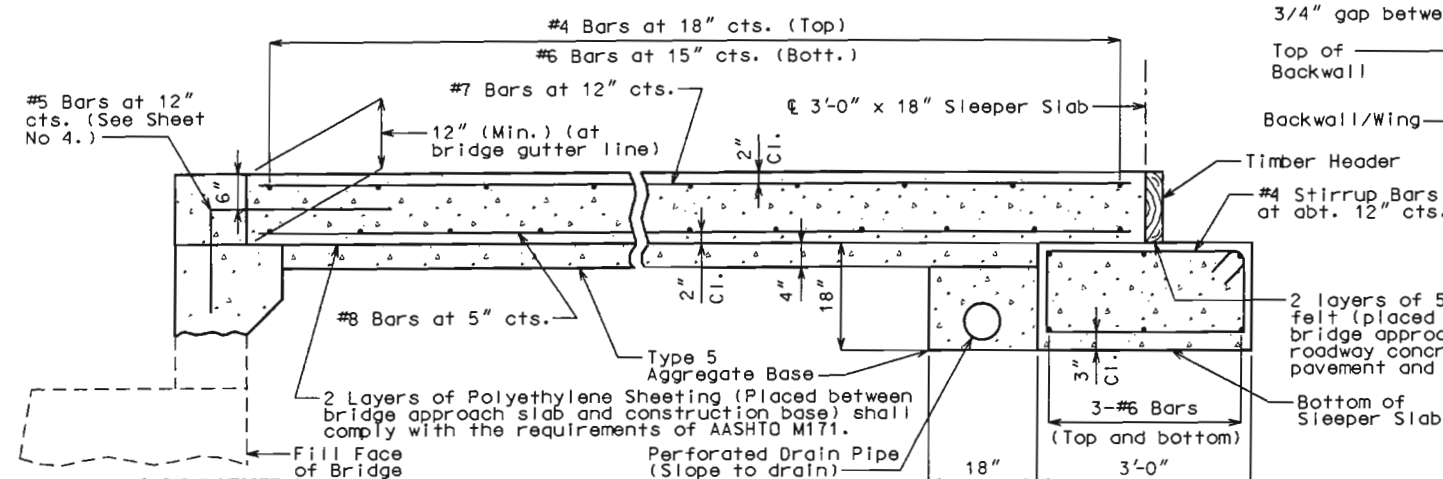
SECTION A-A

SECTION D-D
Note: Remove timber header when concrete pavement is placed.

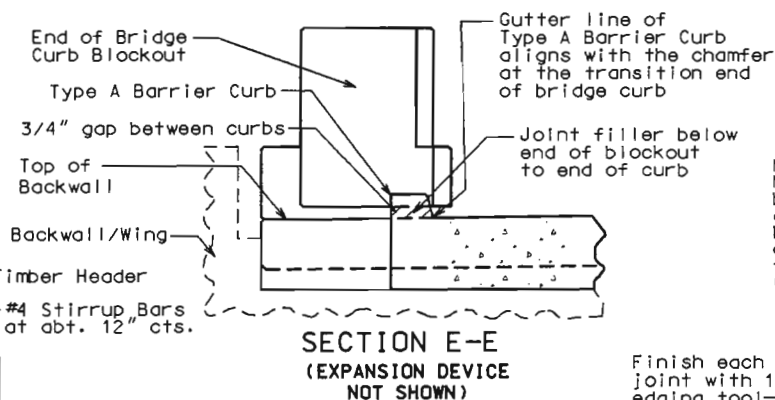
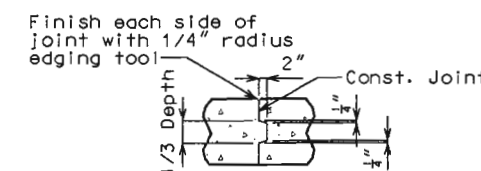
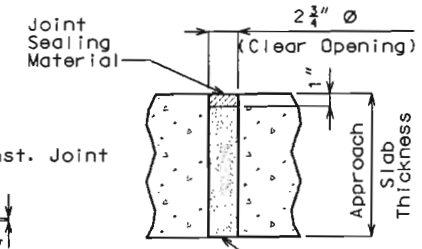
DETAILS OF TIMBER HEADER

TYPICAL 135° STIRRUP
BAR HOOK DIMENSIONS
BENDING DIAGRAM

Note: Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).



SECTION C-C

SECTION E-E
(EXPANSION DEVICE
NOT SHOWN)CONST. JOINT DETAIL
(IF REQUIRED)TYPICAL UNDERSEAL
ACCESS HOLE DETAIL

BUCHER, WILLIS & RATLIFF CORPORATION
7920 WARD PARKWAY, KANSAS CITY, MISSOURI 64114 816-383-2696

DRAWN BY: DJS NOV. 2001
TRACED BY: TOK NOV. 2001
CHECKED BY: KLW APR. 2002

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

BRIDGE APPROACH SLAB

Sheet No. 7 of 8

JASPER COUNTY

A06301



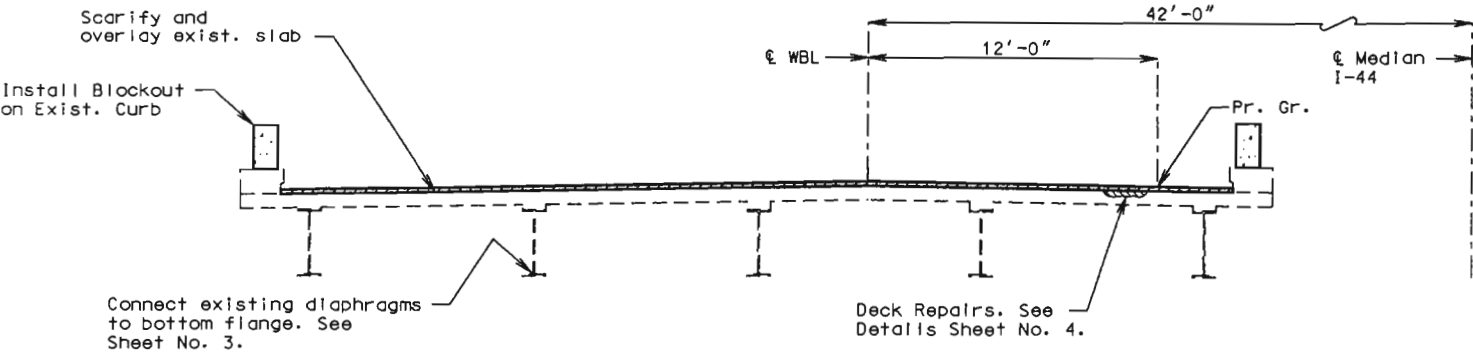
FOR INFORMATION ONLY

A06304, SH. 22

FOR INFORMATION ONLY																						
BILL OF REINFORCING STEEL																						
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT			
										B	C	D	E	F	H	K						
Superstructure																						
26	6-H1		Slab & Backwall	E	20					44	0.000							44	0	44	0	1718
2	4-H2		Appr. Haunch	E	20					38	9.000							38	9	38	9	52
118	5-U1		Slab	E	7					15.000	3.750							2	7	2	7	318
78	4-U2		Appr. Haunch	E	10						15.000	6.000						3	0	2	10	147
78	5-V1		Backwall	E	19					20.000	2	0.000						3	8	3	7	291
368	5-R1		Curb Blockout	E	19	S				20.000	9.000							2	5	2	4	894
4	5-R2		Curb Blockout	E	19	S				19.000	15.000							2	10	2	9	11
20	5-R3		Curb Blockout	E	19	S				19.000	19.000							3	2	3	1	64
20	5-R4		Curb Blockout	E	10	S				15.000	3	0.000	12.000					5	3	5	1	106
20	5-R5		Curb Blockout	E	19	S				3	0.000	15.000						4	3	4	2	87
16	5-R6		Curb Blockout	E	13	S				15.000	2	2.000	15.000	2	2.000			7	9	7	5	124
12	5-R7		Curb Blockout	E	10	S					17.000	2	4.000					5	2	5	0	63
12	5-R8		Curb Blockout	E	10	S					19.000	5.000						3	7	3	4	42
22	3-R9		Curb Blockout	E	13	S				6.000	18.000	6.000	18.000					4	8	4	6	37
28	5-R10		Curb Blockout	E	20					2	4.000							2	4	2	4	68
24	5-R11		Curb Blockout	E	20					6	0.000							6	0	6	0	150
24	5-R12		Curb Blockout	E	15					23.000	5	2.000				16.250	16.250	7	1	7	0	175
24	5-R13		Curb Blockout	E	20					30	8.000							30	8	30	8	768
26	5-R14		Curb Blockout	E	20					29	9.000							29	9	29	9	807
72	5-R15		Curb Blockout	E	20					9	9.000							9	9	9	9	732
4	5-R16		Curb Blockout	E	10						15.000	12.000						2	3	2	2	9
Totals																						
	3			E																		37
	4			E																		199
	5			E																		4709
	6			E																		1718
Reinforcing Steel (Epoxy Coated)																						
	4			E																		208
	5			E																		609
	6			E																		1835
Curb Blockout																						
	3			E																		37
	5			E																		4100

BILL OF REINFORCING STEEL																	A06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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SECTION THRU SLAB

Estimated Quantities		
Item		Total
Removal and Storage of Existing Bridge Rail	Lin. Ft.	353
Curb Removal (Bridges)	Lin. Ft.	16
Replacement of Expansion Device and Adjacent Concrete	Lin. Ft.	89
Bridge Approach Slab (Bridge)	Sq. Yd.	225
Substructure Repair (Formed)	Sq. Ft.	160
Protective Coating for Concrete Bents and Concrete Piers under Expansion Devices	Lump Sum	1
Curb Blockout	Lin. Ft.	375
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	100
Full Depth Repair	Sq. Ft.	50
Low Slump Concrete Wearing Surface	Sq. Yd.	807
Strip Seal Expansion Device	Lin. Ft.	89
Reinforcing Steel (Epoxy Coated)	Lb.	2530
Cleaning and Coating Existing Bearings	Each	10
Transporting Residue to Storage Area	Lump Sum	1
Transporting Residue to the Smelter	Lump Sum	1
Disposal of Residue	Lump Sum	1

Cost of any required excavation for bridge shall be included in the contract unit price for other items.

All concrete above the upper construction joint in backwall and at the slab ends shall be Class B2.

The contract unit price for Curb Blockout shall include all concrete and reinforcement, complete in place.

General Notes:

Design Specifications:
AASHTO-1996 and Interims thru 2000

Design Unit Stresses:
Class B1 Concrete (Curb Blockout)
Class B2 Concrete (Slab and Top of Backwall)
Reinforcing Steel (Grade 60)

f'c = 4,000 psi
f'c = 4,000 psi
fy = 60,000 psi

Fabricated Steel Connections:
Field connections shall be made with 3/4" diameter high strength bolts and 13/16" diameter holes, except as noted.

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Standard Specification 106 and Field Section (FS-712) from Materials Manual.

Joint Filler:
All joint filler shall meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Old Work:
Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

Maintain Traffic:
See Roadway Plans for traffic control during construction.

Verify Dimensions:
Contractor shall verify all dimensions in field before ordering new material.

Roadway Surfacing:
Roadway surfacing adjacent to bridge ends to match top of concrete wearing surface. (See Roadway Plans)

Existing Bridge Rail:
Salvage and store existing bridge rail at the Missouri Department of Transportation Carthage Maintenance Facility. (See Special Provisions)

Maintain Grade:
In order to maintain grade and a minimum thickness of overlay as shown on the plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

Anchors:
The Contractor shall use one of the resin anchor systems listed in the job special provisions. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

Cost of furnishing and installing the anchor systems complete in place shall be included in the price bid for Curb Blockout.

The 7/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 27,500 lbs. in concrete with f'c = 4,000 psi, see Special Provisions.

An epoxy coated #7 Grade 60 reinforcing bar 2'-4" long shall be substituted for the 7/8" threaded rod stud.

Miscellaneous:
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved bituminous paint below the ground line and a special mortar above ground line.

Traffic Handling:
Bridge will be closed to traffic during repairs.

REPAIRS TO BRIDGE OVER ALTERNATE ROUTE 71 / ROUTE 59

STATE ROAD FROM ROUTE 66 TO ROUTE 37
ABOUT 9 MILES EAST OF ROUTE 71
PROJECT NO. STA. 411+72.62 WBL
(Match Exist.)

JOB NO. J710690 RTE. I-44 WBL

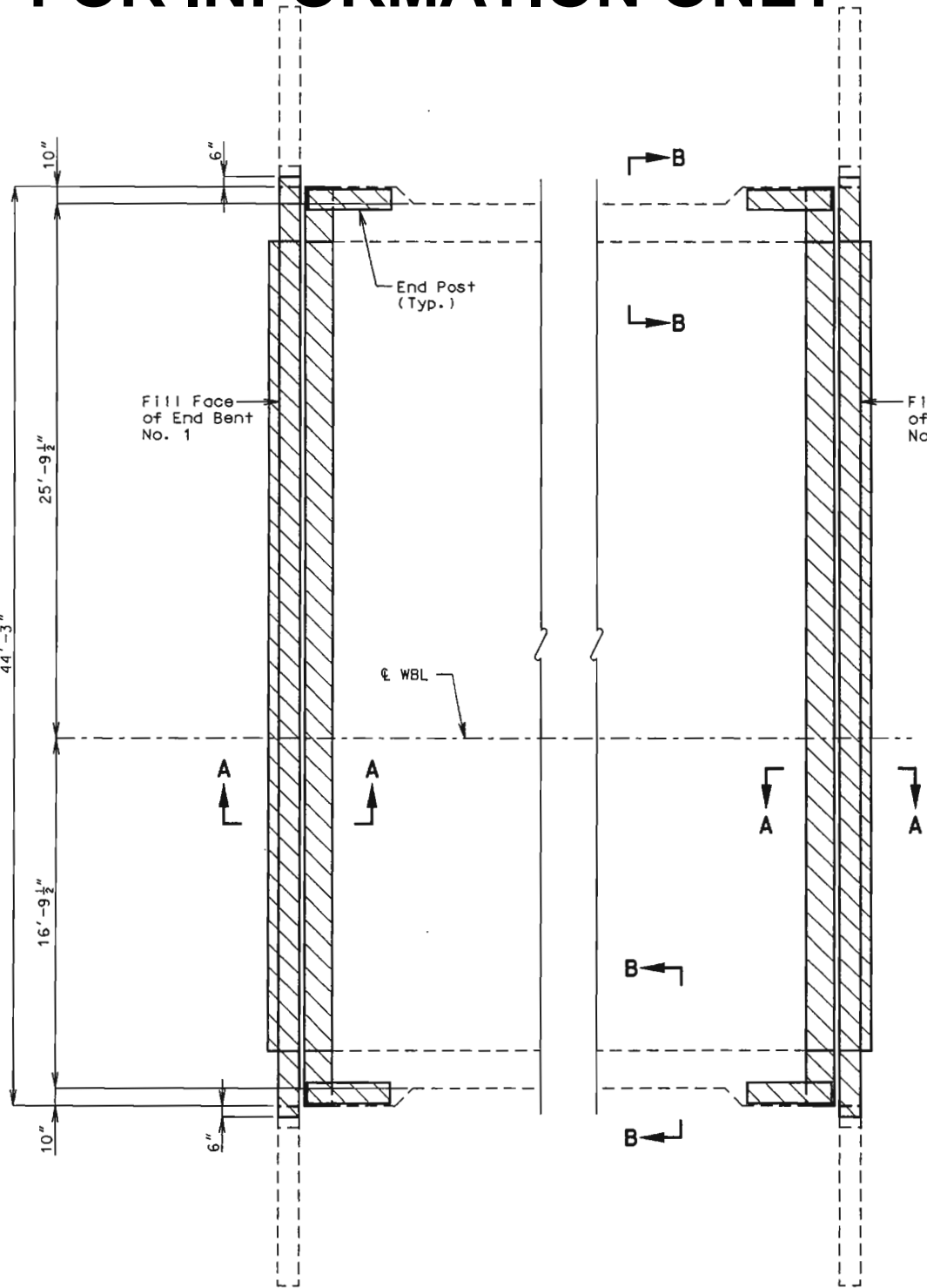
JASPER COUNTY

BUCHER, WILLIS & RATLIFF
CORPORATION

DRAWN BY:	RMH	APR. 2002
TRACED BY:	TWM	APR. 2002
CHECKED BY:	MAH	APR. 2002

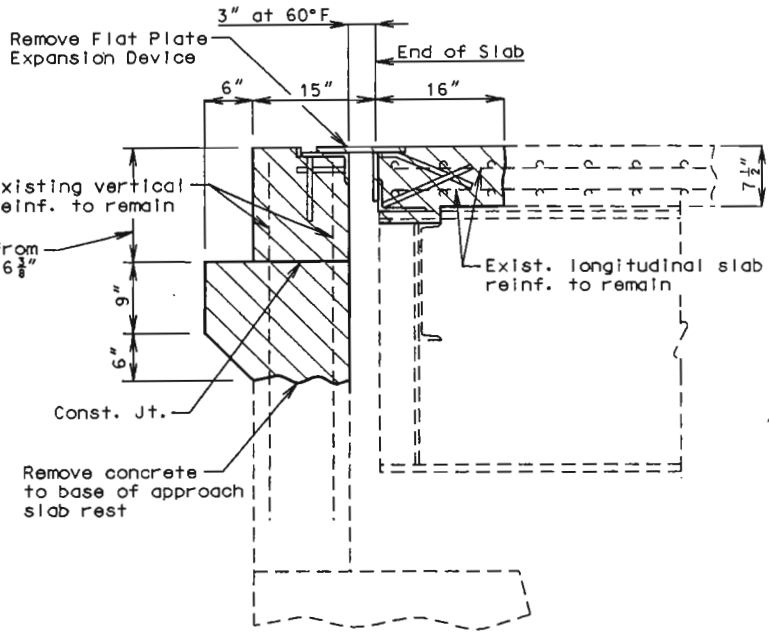


8-27-2002
STD. 609.00
STD. 706.35
A06302

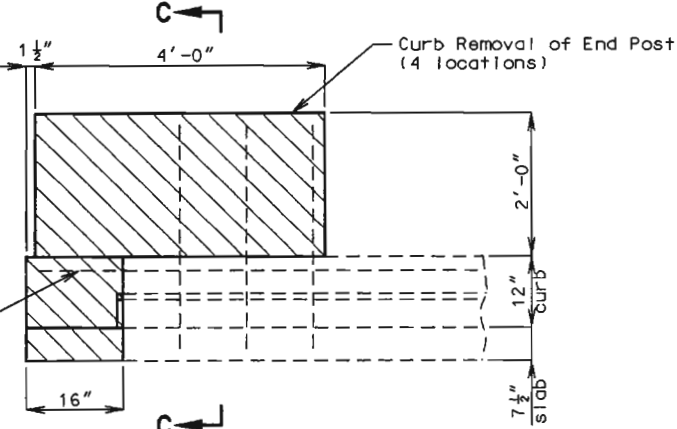


PLAN

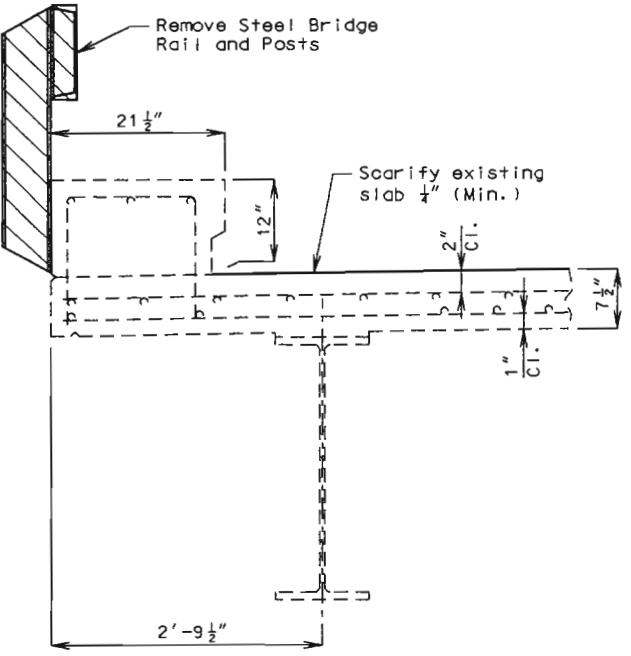
Notes:
Sawcut or chip vertically first 1/2" of all slab removal edges (top and bottom).
Removal of end posts is included with Curb Removal (Bridges).
Removal of ends of slab and top of end bent backwalls is included with Replacement of Expansion Device and Adjacent Concrete. (See Special Provisions)



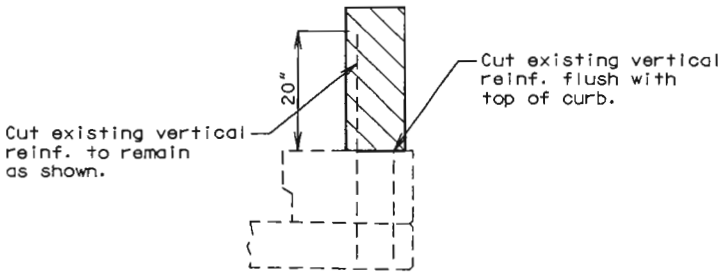
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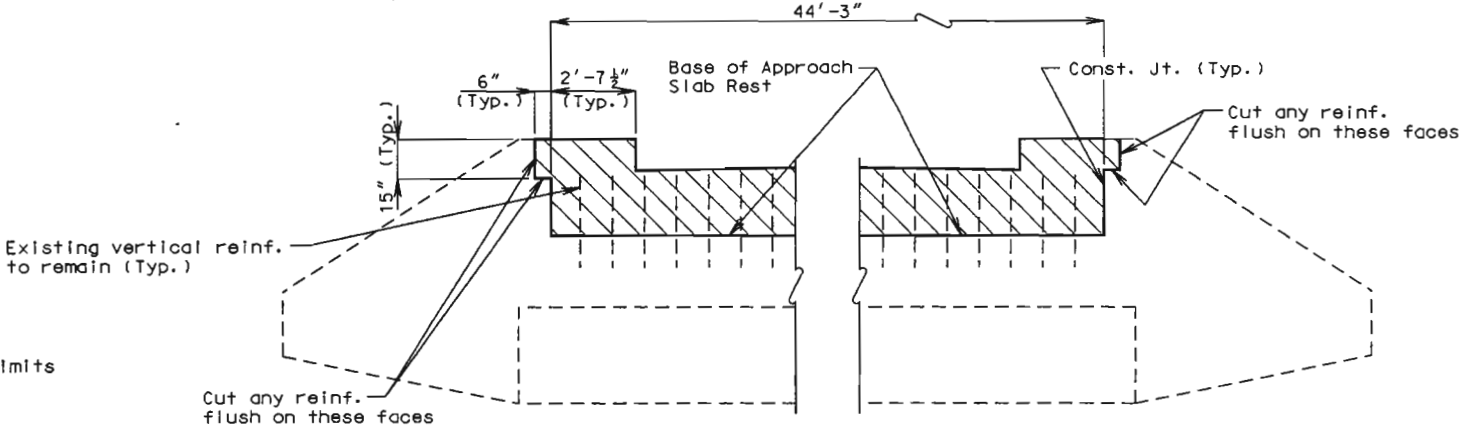
END POST ELEVATION



SECTION B-B



SECTION C-C



END BENT ELEVATION

REMOVAL DETAILS

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

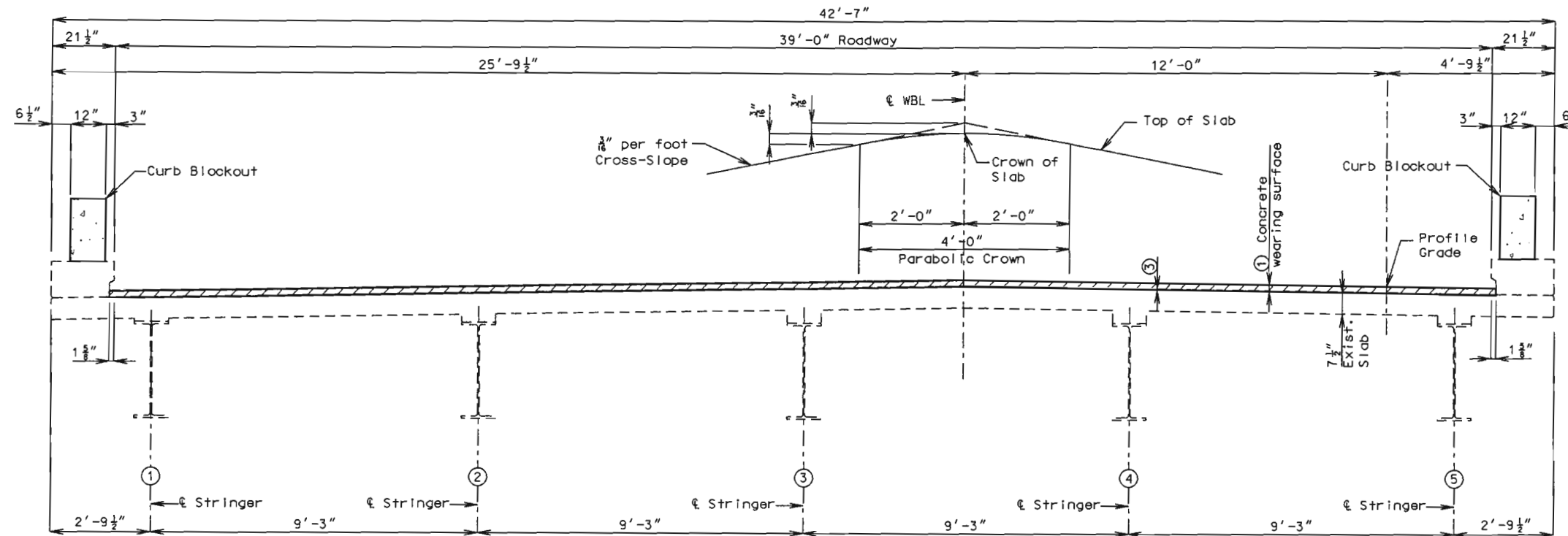


30--DGN--WESTBOUND--630WB-REMOVAL.DGN

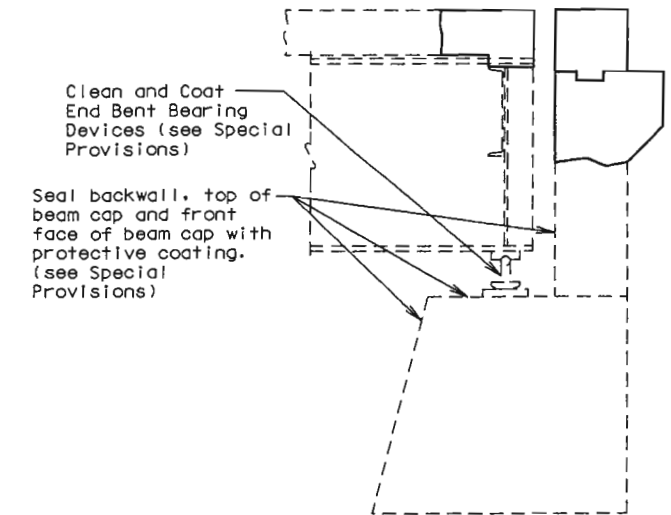
BUCHER, WILLIS & RATLIFF CORPORATION
7020 W. 20th Parkway, Kansas City, Missouri 64114 816-363-2896

DRAWN BY:	RMH	APR 2002
TRACED BY:	TWM	APR 2002
CHECKED BY:	MAH	APR 2002

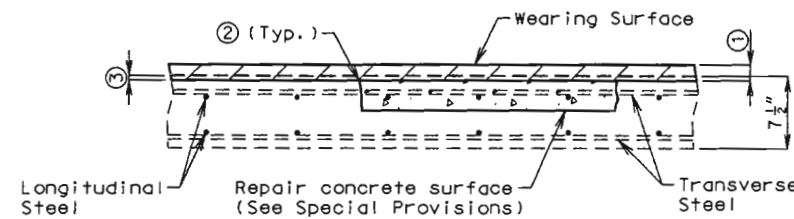
State	Proj. No.	Sheet No.
MO		B 62



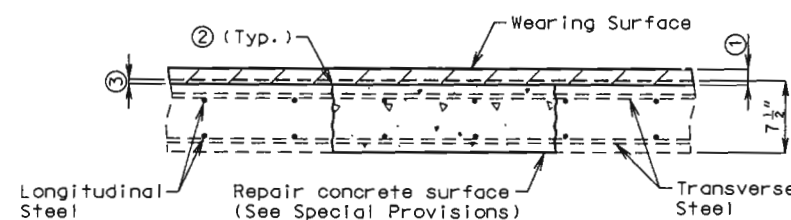
TYPICAL SECTION



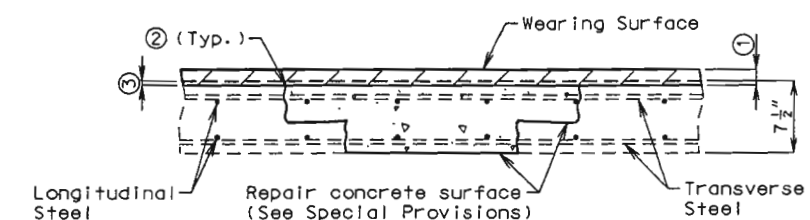
TYPICAL END BENT REPAIR



HALF-SOLED AREA

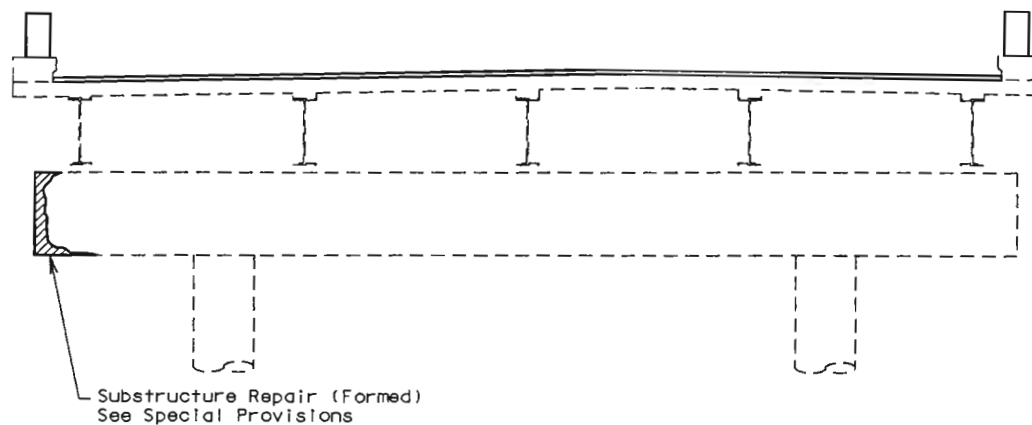


FULL DEPTH REPAIR



FULL DEPTH REPAIR IN HALF-SOLED AREA

- ① 2-1/4" (min.) Low Slump Concrete
- ② Saw cut or chip vertically first 1/2" of all deck repair (Hydroblasting allowed by Special Provisions)
- ③ Scarify existing slab (1/4" min.)



INTERMEDIATE BENT CAP REPAIR
(Typical at Bent 2, 3 and 4)

BUCHER, WILLIS & RATLIFF CORPORATION
7920 WARD PARKWAY KANSAS CITY, MISSOURI 64114 816-263-2686

DRAWN BY:	RMH	APR. 2002
TRACED BY:	TWM	APR. 2002
CHECKED BY:	MAH	APR. 2002

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

SLAB CROSS SECTION AND REPAIR DETAILS

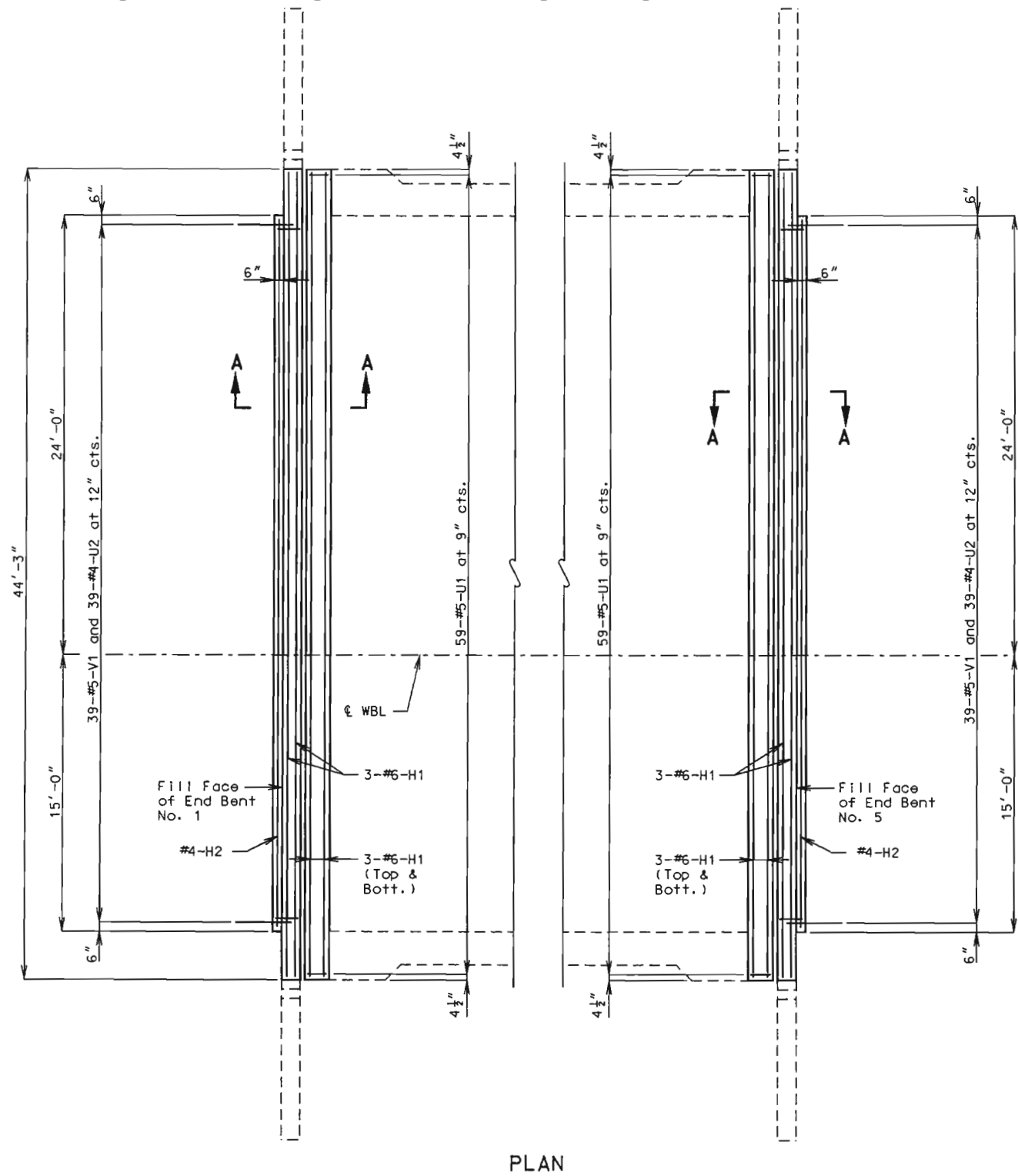
Sheet No. 3 of 8

JASPER COUNTY

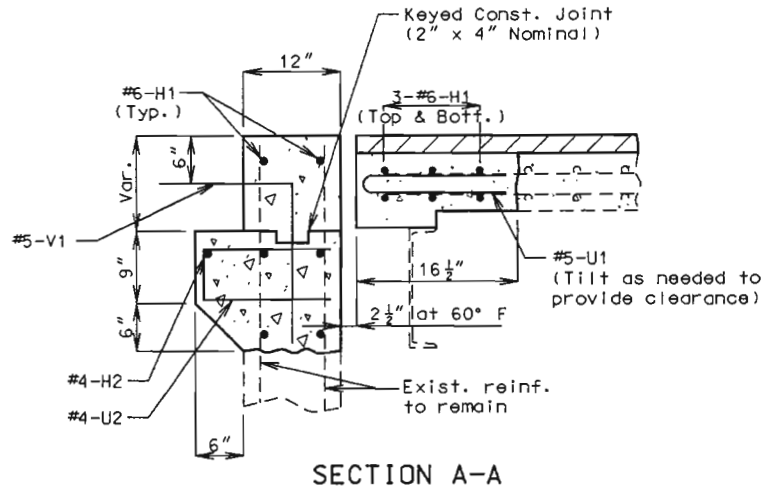
A06302



2001-059--STR--A630--DGN--WESTBOUND--630WB_SLABSEC.DGN



PLAN



SECTION A-A

Note:
For details and notes for strip seal expansion device, see Sheet No. 5.

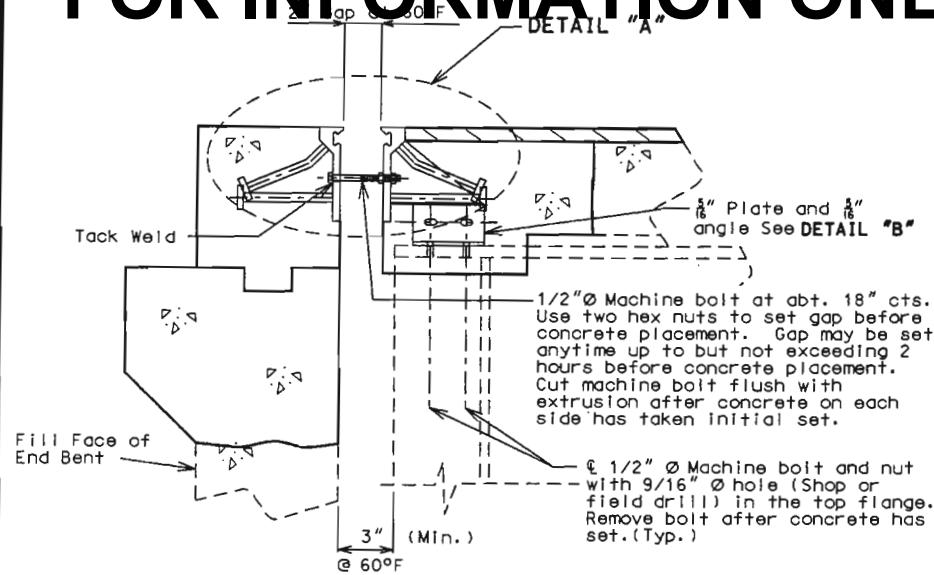


BUCHER, WILLIS & RATLIFF CORPORATION
7922 WARD PARKWAY, KANSAS CITY, MISSOURI 64114 816-353-2696
DRAWN BY: K LW JUNE 2002
TRACED BY: JTC JUNE 2002
CHECKED BY: DJS JUNE 2002

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

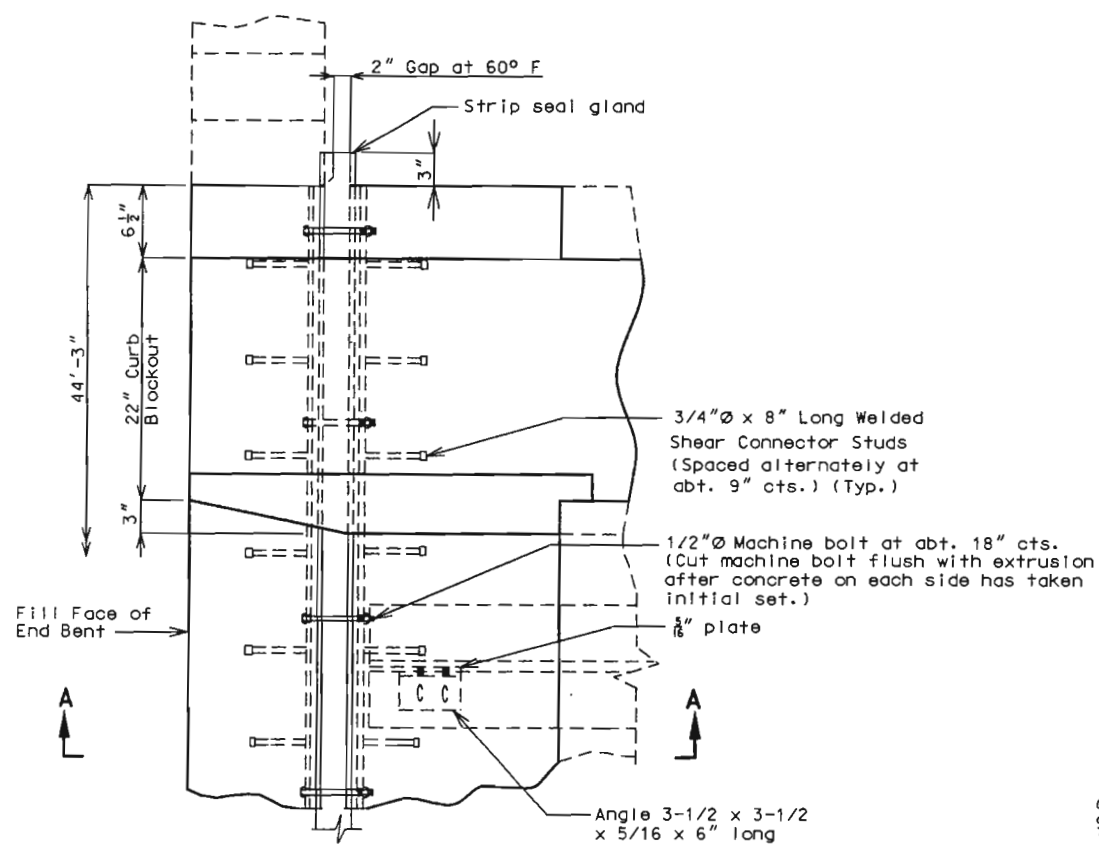
CONCRETE REPLACEMENT
AT EXPANSION DEVICES

State	Project No.	Sheet No.
MO		B64

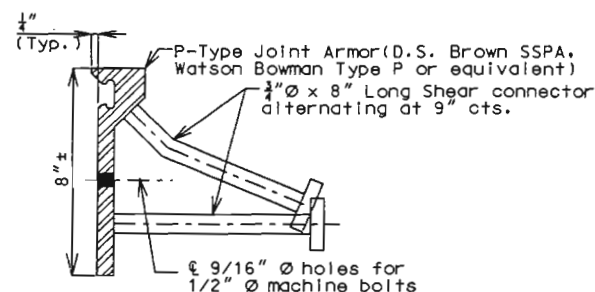


Note: Strip seal gland not shown for clarity.

SECTION A-A

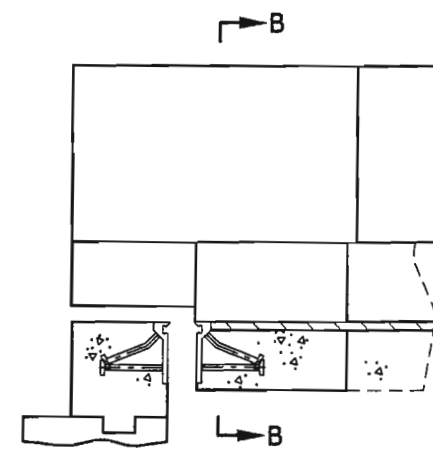


PART PLAN



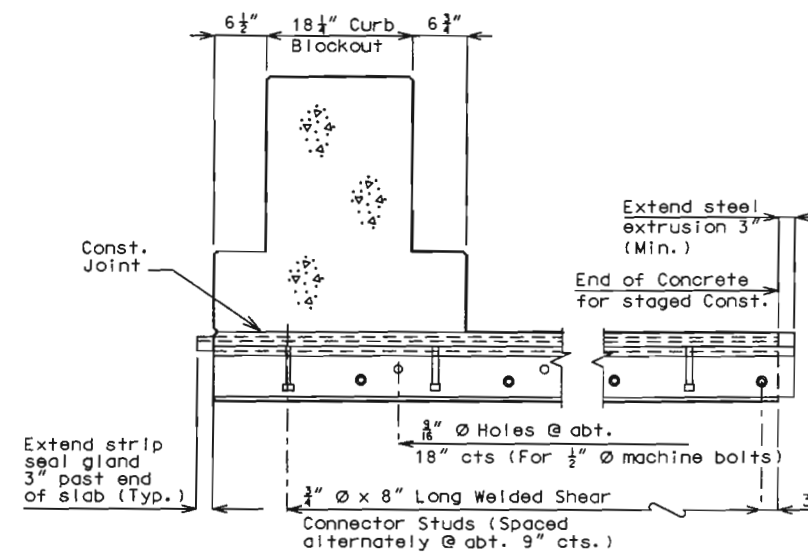
DETAIL OF JOINT ARMOR

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

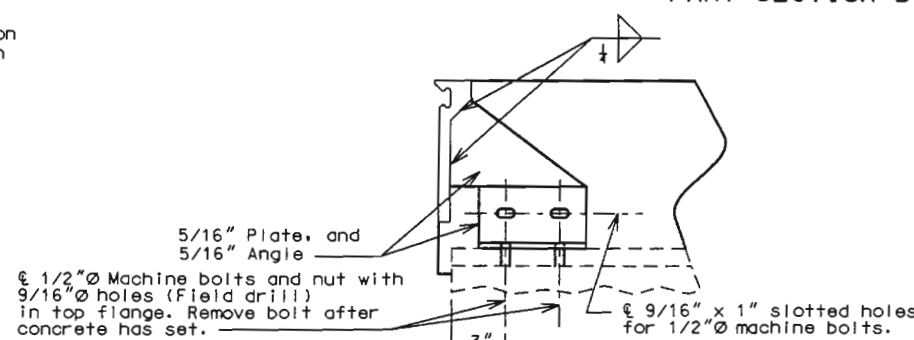


Note: Strip seal gland not shown for clarity.

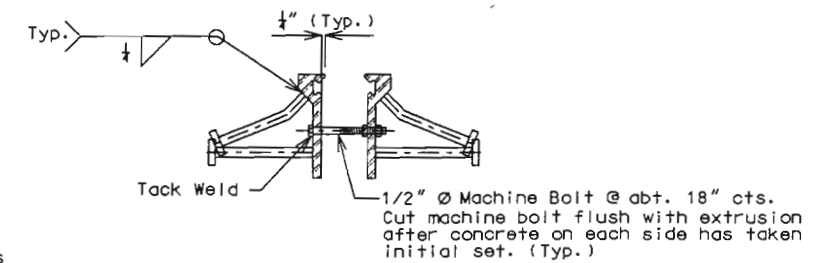
PART ELEVATION OF BARRIER CURB



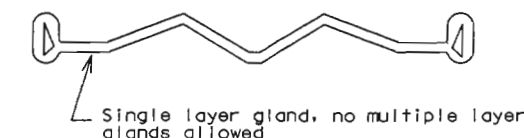
PART SECTION B-B



DETAIL "B"



DETAIL "A"



DETAIL OF GLAND

STRIP SEAL AT END BENTS

Sheet No. 5 of 8

JASPER COUNTY

A06302



BUCHER, WILLIS & RATLIFF CORPORATION

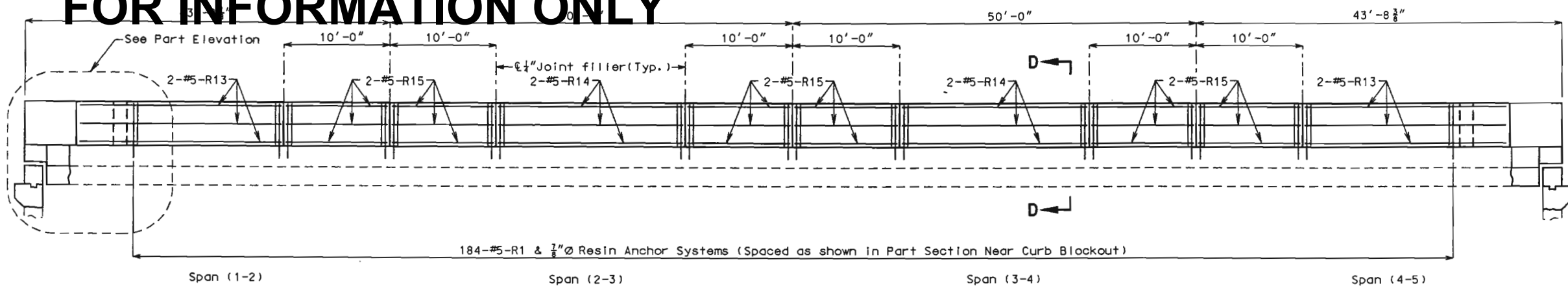
DRAWN BY:	RMH	APR 2002
TRACED BY:	TWM	APR 2002
CHECKED BY:	MAH	APR 2002

2001-059-STR-A630-WESTBOUND-630WB-STRIPSEAL.DGN

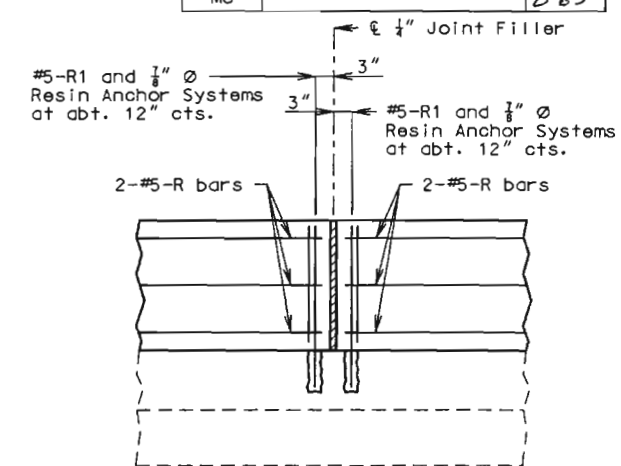
FOR INFORMATION ONLY

A06304, SH. 28

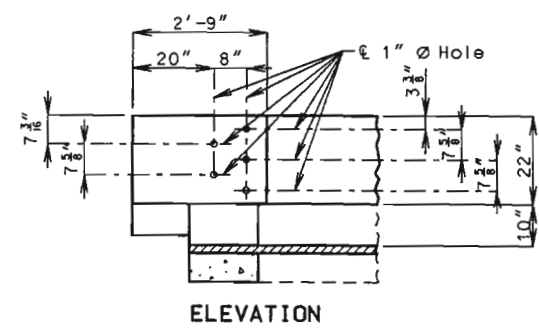
Sheet No. B 65



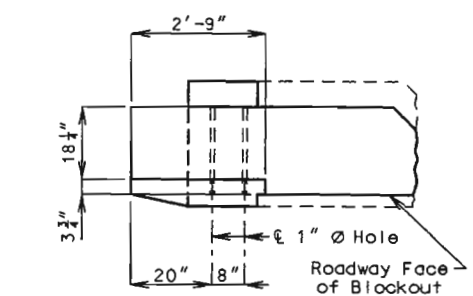
SECTION NEAR CURB BLOCKOUT



PART SECTION NEAR CURB BLOCKOUT

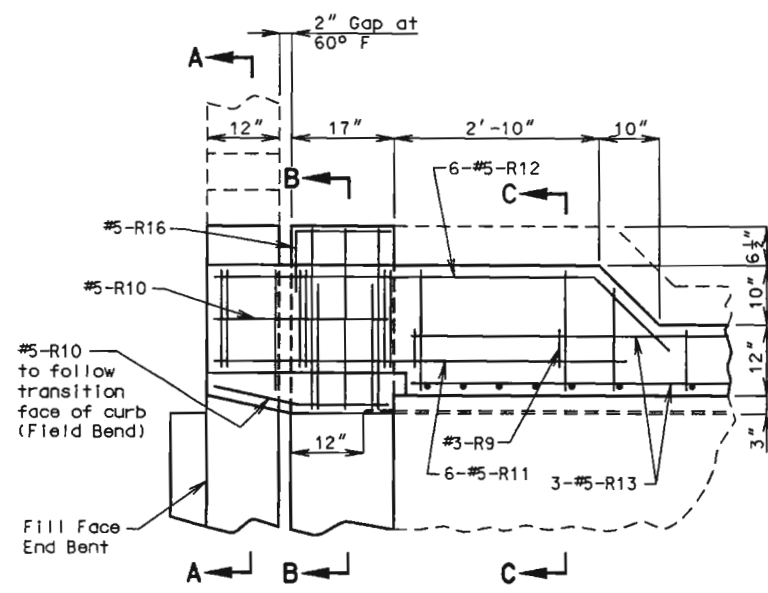


ELEVATION

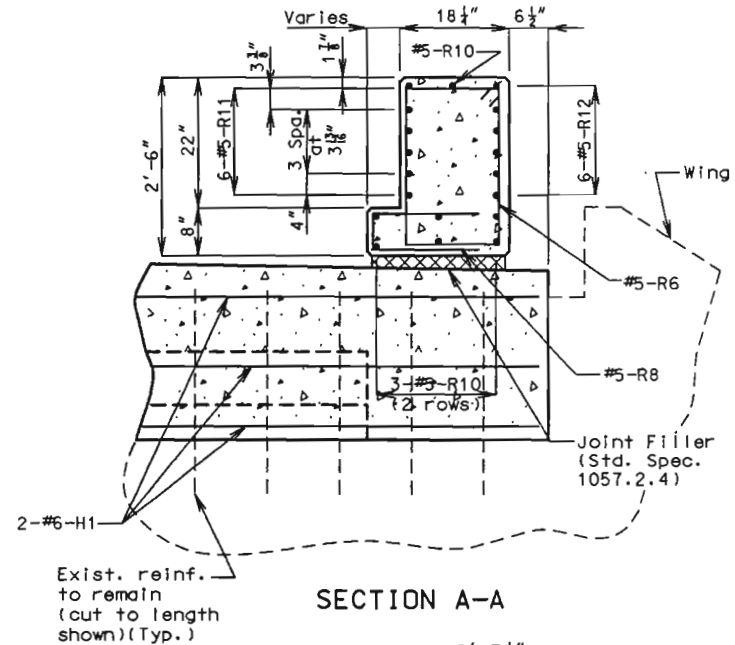


PLAN

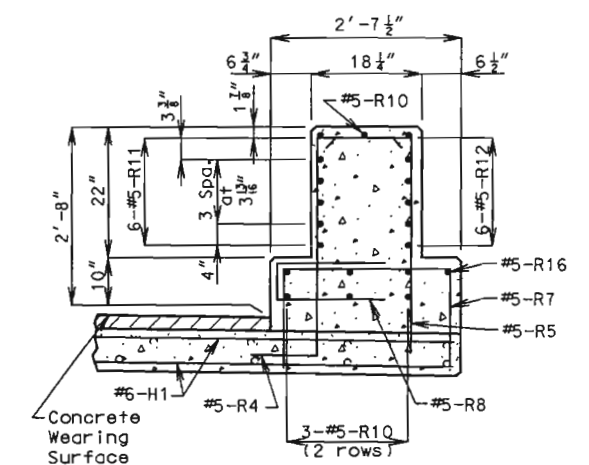
DETAILS OF GUARD RAIL ATTACHMENT



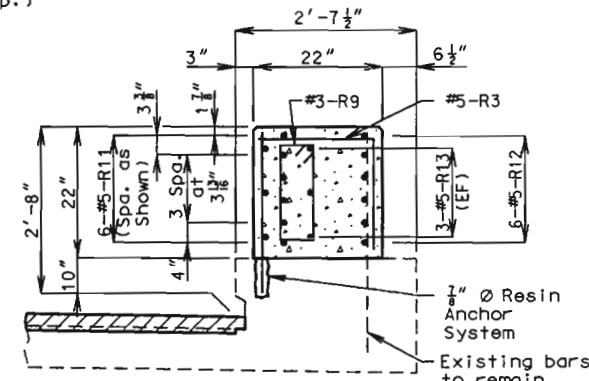
PART PLAN



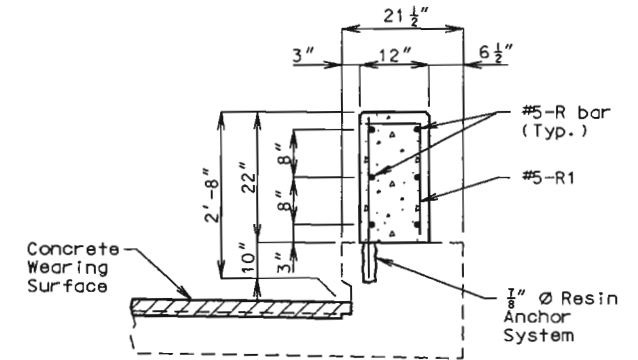
SECTION A-A



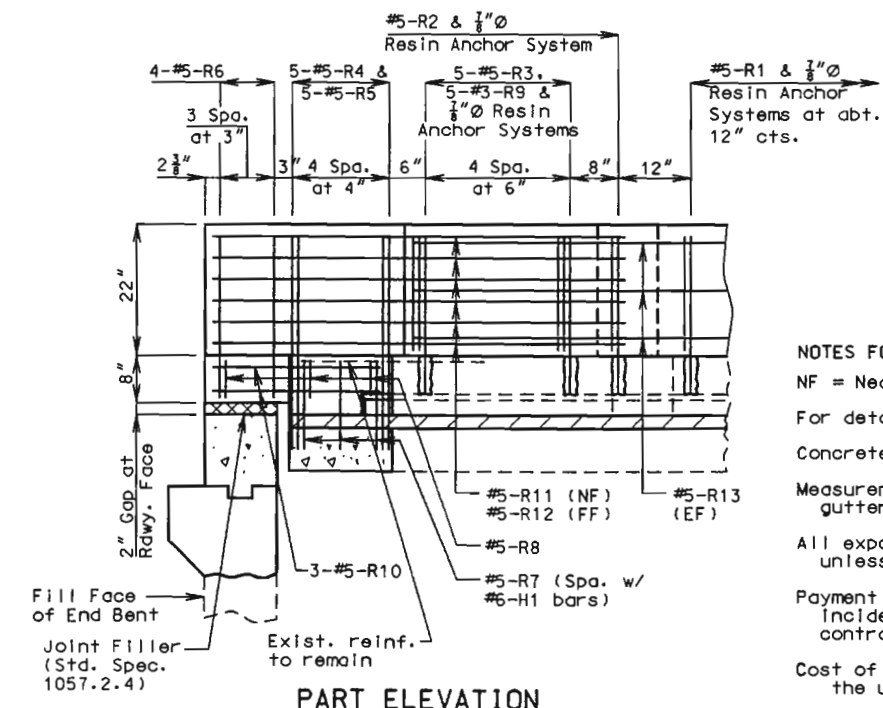
SECTION B-B



SECTION C-C



SECTION D-D



PART ELEVATION

NOTES FOR CURB BLOCKOUT:
 NF = Near Face, FF = Far Face, EF = Each Face.
 For details of strip seal expansion device, see Sheet No. 5.
 Concrete in curb blockout shall be Class B1.
 Measurement of curb blockout is to the nearest linear foot measured at the gutter line from end of curb blockout to end of curb blockout.
 All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.
 Payment for concrete, reinforcing steel, resin anchors and any other work incidental to the curb blockout complete in place shall be included in the contract unit price for the Curb Blockout per linear foot.
 Cost of any concrete curb repair shall be considered completely covered in the unit price bid for Curb Blockout.

CURB BLOCKOUT DETAILS

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

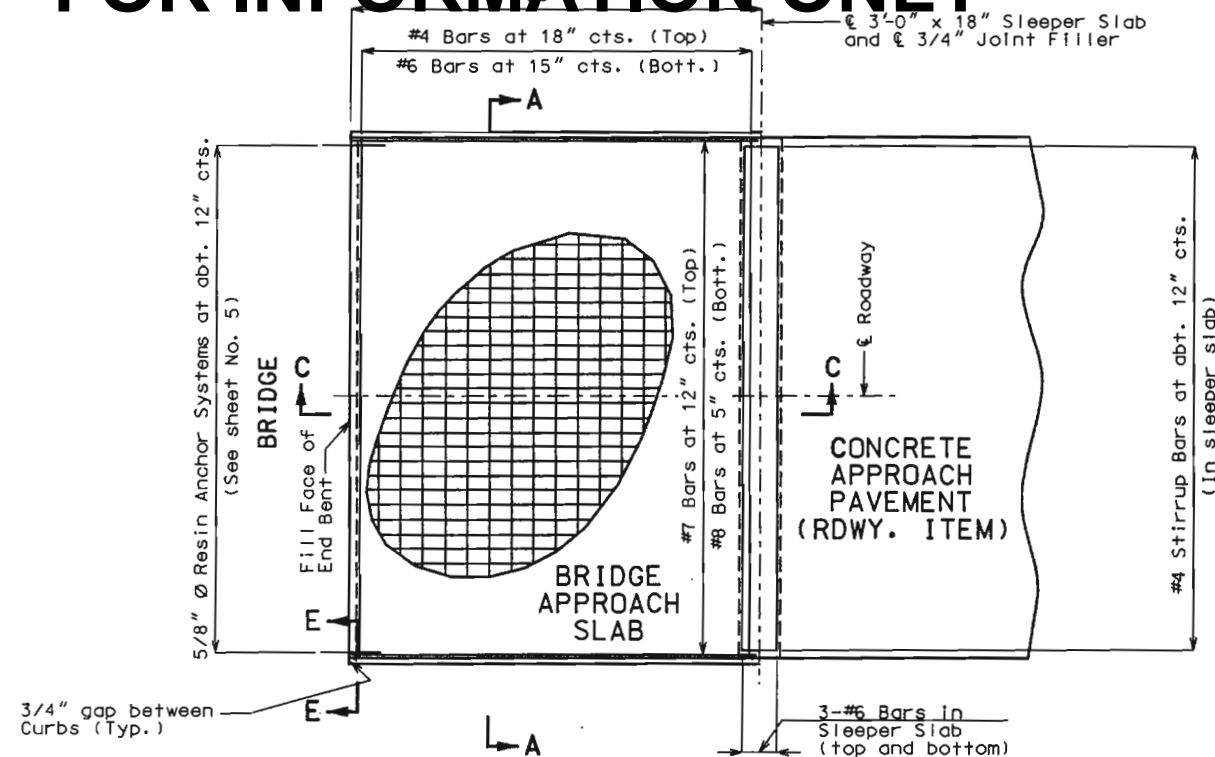
Sheet No. 6 of 8

JASPER COUNTY A06302

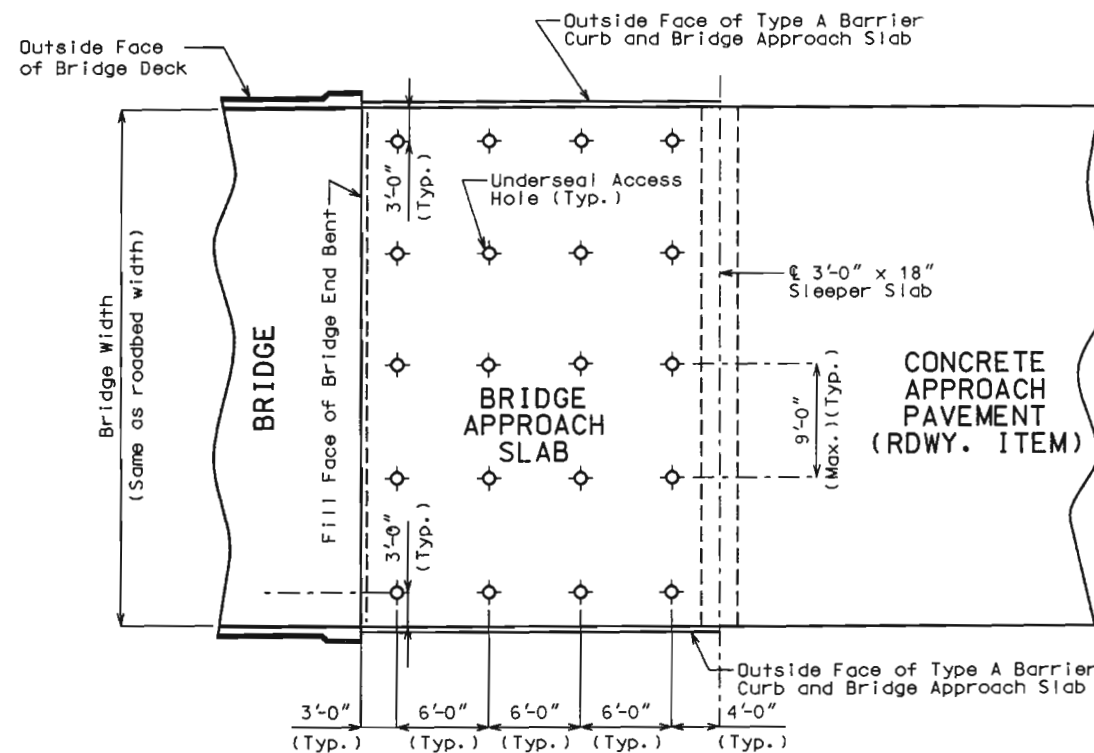
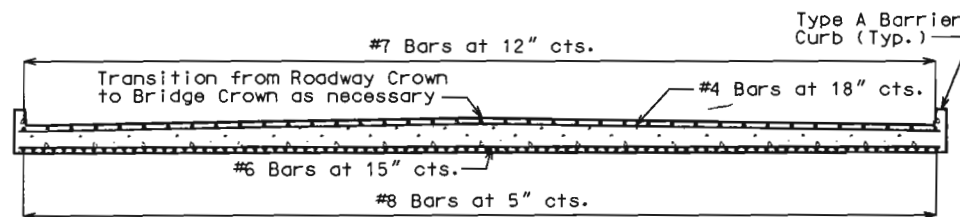


630--DCN--WESTBOUND--630WB_BLOCKOUT.DGN

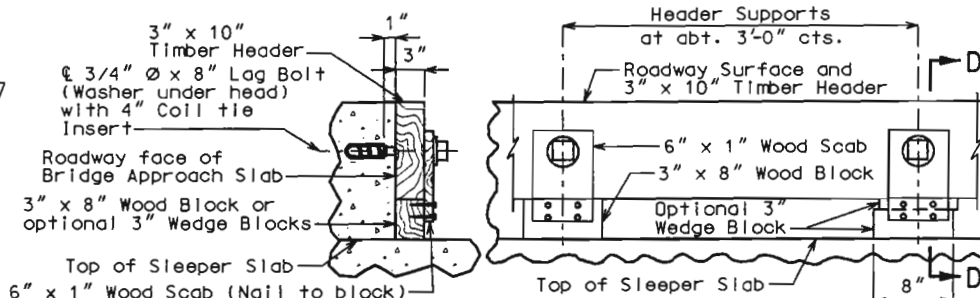
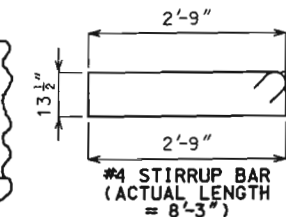
BUCHER, WILLIS & RATLIFF CORPORATION
 7320 DARD PARKWAY, KANSAS CITY, MISSOURI 64114, 816-363-2696
 DRAWN BY: RMH APR 2002
 TRACED BY: TWM APR 2002
 CHECKED BY: MAH APR 2002



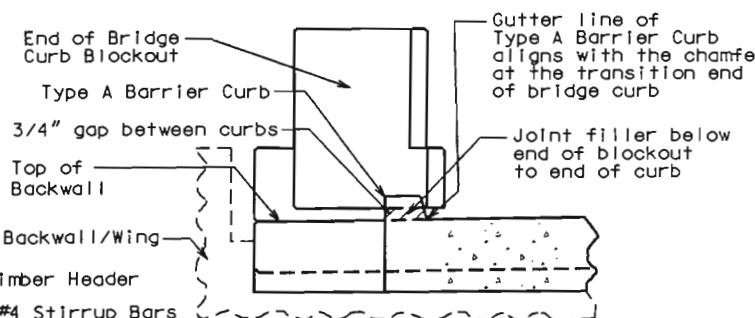
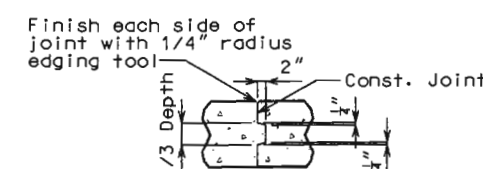
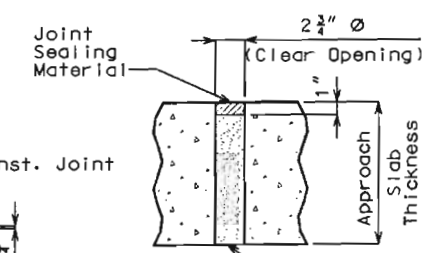
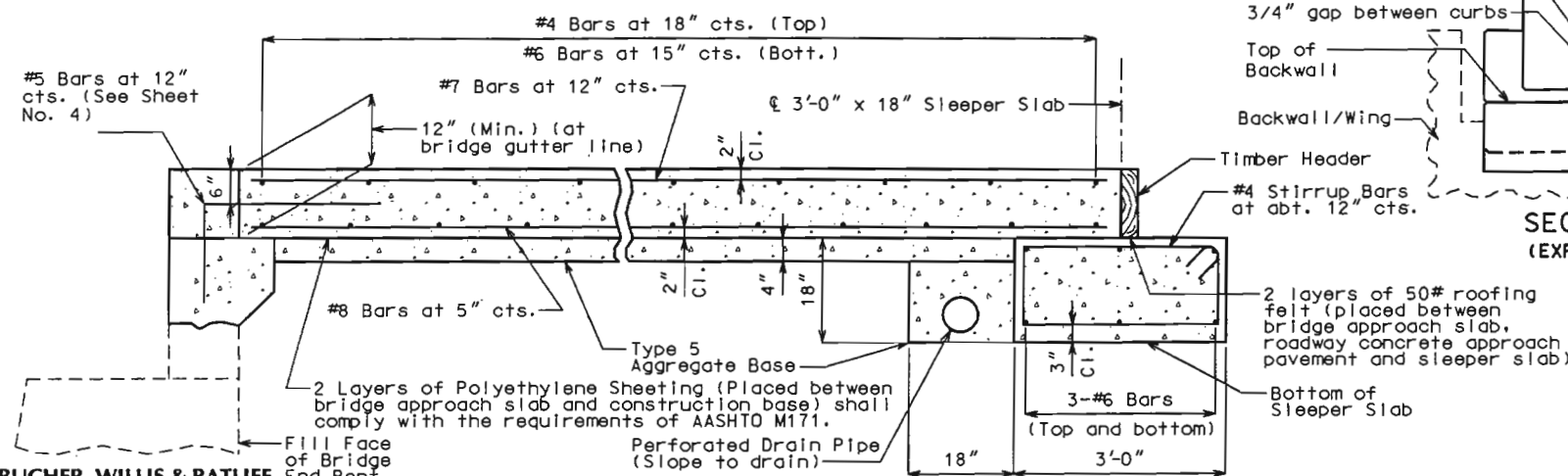
PART PLAN SHOWING REINFORCEMENT

PART PLAN
(SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)

SECTION A-A

SECTION D-D
Note: Remove timber header when concrete pavement is placed.
DETAILS OF TIMBER HEADERTYPICAL 135° STIRRUP
HOOK DIMENSIONS
BENDING DIAGRAM

Note: Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).

SECTION E-E
(EXPANSION DEVICE
NOT SHOWN)CONST. JOINT DETAIL
(IF REQUIRED)TYPICAL UNDERSEAL
ACCESS HOLE DETAIL

SECTION C-C

BRIDGE APPROACH SLAB

Sheet No. 7 of 8

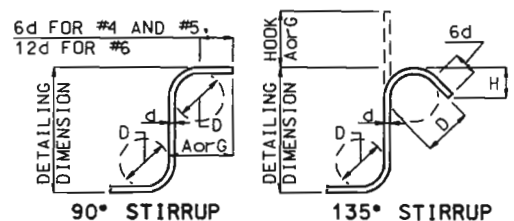
JASPER COUNTY

A06302

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

FOR INFORMATION ONLY

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B	C	D	E	F	H	K						
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.						
Superstructure																					
26	6-H1	Slab & Backwall	E	20					44	0.000							44	0	44	0	1718
2	4-H2	Appr. Haunch	E	20					38	9.000							38	9	38	9	52
118	5-U1	Slab	E	7					15.000	3.750							2	7	2	7	318
78	4-U2	Appr. Haunch	E	10						15.000	6.000						3	0	2	10	147
78	5-V1	Backwall	E	19					20.000	2	0.000						3	8	3	7	291
368	5-R1	Curb Blockout	E	19	S				20.000	9.000							2	5	2	4	894
4	5-R2	Curb Blockout	E	19	S				19.000	15.000							2	10	2	9	11
20	5-R3	Curb Blockout	E	19	S				19.000	19.000							3	2	3	1	64
20	5-R4	Curb Blockout	E	10	S				15.000	3	0.000	12.000					5	3	5	1	106
20	5-R5	Curb Blockout	E	19	S				3	0.000	15.000						4	3	4	2	87
16	5-R6	Curb Blockout	E	13	S				15.000	2	2.000	15.000	2	2.000			7	9	7	5	124
12	5-R7	Curb Blockout	E	10	S					17.000	2	4.000					5	2	5	0	63
12	5-R8	Curb Blockout	E	10	S					19.000	5.000						3	7	3	4	42
22	3-R9	Curb Blockout	E	13	S				6.000	18.000	6.000	18.000					4	8	4	6	37
28	5-R10	Curb Blockout	E	20					2	4.000							2	4	2	4	68
24	5-R11	Curb Blockout	E	20					6	0.000							6	0	6	0	150
24	5-R12	Curb Blockout	E	15					23.000	5	2.000			16.250	16.250		7	1	7	0	175
24	5-R13	Curb Blockout	E	20					30	8.000							30	8	30	8	768
26	5-R14	Curb Blockout	E	20					29	9.000							29	9	29	9	807
72	5-R15	Curb Blockout	E	20					9	9.000							9	9	9	9	732
4	5-R16	Curb Blockout	E	10						15.000	12.000						2	3	2	2	9
Totals																					
3			E																		37
4			E																		199
5			E																		4709
6			E																		1718
Reinforcing Steel (Epoxy Coated)																					
4			E																		208
5			E																		609
6			E																		1835
Curb Blockout																					
3			E																		37
5			E																		4100

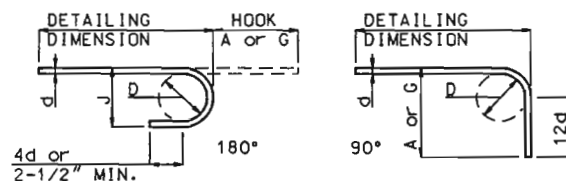


STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	APPROX. H
#3	1 1/2"	4"	4"	2 1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

BUCHER, WILLIS & RATLIFF
CORPORATION

7920 WARD PARKWAY • KANSAS CITY, MISSOURI 64114 816-383-2898		
DRAWN BY:	RMH	APR 2002
TRACED BY:	TWM	APR 2002
CHECKED BY:	MAH	APR 2002



END HOOK DIMENSIONS				
BAR SIZE	ALL GRADES			
	D	180° HOOKS		90° HOOKS
	(IN.)	A OR G	J	A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

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

BILL OF REINFORCING STEEL

[illegible]

Two additional H1, R9 and R14 are included in bar bill for testing.

Notes:

All standard hooks and bends other than 180 degree are to be bent with same procedure as for 90 degree standard hooks. Hooks and bends shall be in accordance with the procedures as shown on this sheet. Unless otherwise noted, diameter "D" is the same for all bends and hooks on a bar.

E = Epoxy coated reinforcement

S = Stirrup

X = Bar is included in substructure quantities

V = Bar dimensions vary in equal increments between dimensions shown on this line and the following line.

No. ea. = Number of bars of each length.

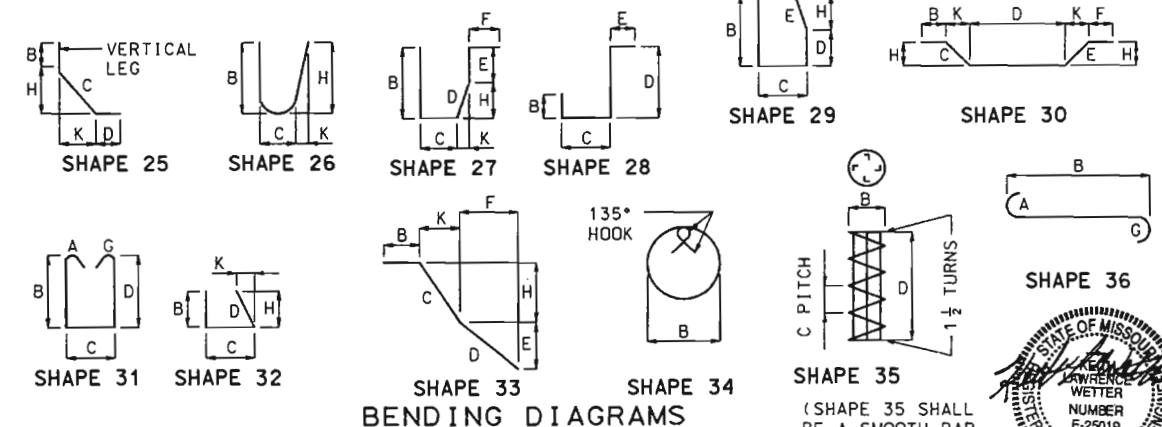
Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed for fabricator's use. (Nearest inch)

Actual lengths are measured along centerline bar to the nearest inch.

Payweights are based on actual lengths.

Four angle or channel spacers are required for each column spiral. Spacers are to be placed on inside of spirals. Length and weight of column spirals do not include splices or spacers.

Reinforcing steel (Grade 60) $f_y = 60,000$ psi.



(SHAPE 35 SHALL
BE A SMOOTH BAR
OR WIRE.)

SHAPE 36

STATE OF MISSOURI
REGISTERED
LAWRENCE
WETTER
NUMBER
E-25019
ENGINEER

8-23-2002

REINFORCING SCHEDULE

Sheet No. 8 of 8

JASPER COUNTY

A06302

GENERAL NOTES:

Design Specifications:

2002-AASHTO LFD (17th Ed.) Standard Specifications

Design Loading:

HS20 Modified (New Construction)
15lb/Sq. Ft. Wearing Surface
H20-S16-44 & Military 24,000 lb. Tandem Axle (1957)

Design Unit Stresses:

Structural Carbon Steel (ASTM A709 Grade 36) fy = 36,000 psi

Fabricated Steel Connections:

Field connections shall be made with 3/4" diameter ASTM F3125 Grade A325 Type 1 bolts and 13/16" diameter holes, except as noted.

Recoating Existing Steel:

Protective Coating: System G in accordance with Sec 1081.

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G). The cost of surface preparation will be considered completely covered by the contract lump sum price for Surface Preparation for Recoating Structural Steel.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract lump sum price for Field Application of Inorganic Zinc Primer.

Field Coat(s): The color of the field coat(s) shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract lump sum price for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract lump sum price for Finish Field Coat (System G).

Limits of Paint Overlap: System G shall overlap the existing coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system. The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required.

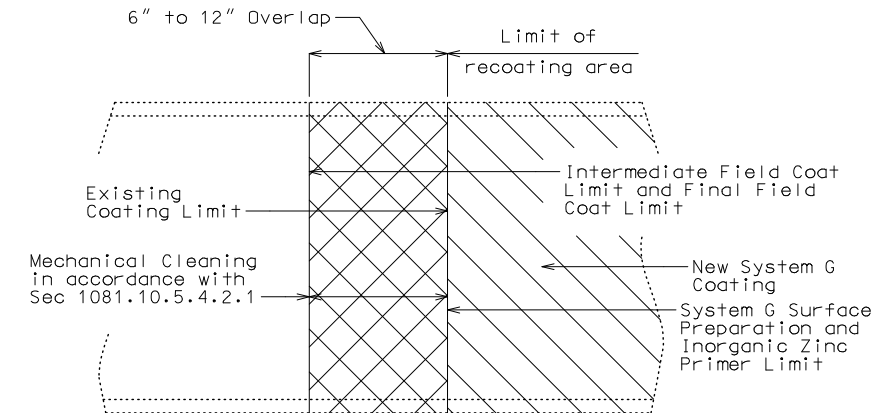
Coating New Steel:

Protective Coating: System G in accordance with Sec 1081.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price for the fabricated structural steel.

Field Coat(s): The color of the field coat(s) shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract lump sum price for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract lump sum price for Finish Field Coat (System G).

At the option of the contractor, the intermediate field coat and finish field coat may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.



PART ELEVATION SHOWING
LIMITS OF PAINT OVERLAP

(Vertical or horizontal paint limit.
Horizontal limit shown)

Miscellaneous:

The existing vertical clearance shall be maintained during construction when Route I-49 is open to traffic.

Lane closures on Route I-44 and Route I-49 shall be in accordance with traffic control plans.

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

The contractor shall verify all dimensions in field before ordering new material.

All existing dimensions shown were taken from as-built drawings, or limited field measurements.

All concrete repairs shall be in accordance with Sec 704, unless otherwise noted.

The contractor shall complete a non-destructive test on the connection plate welds at all beam(s) in damaged areas where connection plates will be re-used to confirm suitability of re-use before installing new diaphragm(s). The cost of this work will be considered completely covered by the contract lump sum price for Non-Destructive Testing. See Special Provisions. Required paint removal for this work will be considered completely covered by the lump sum price for Surface Preparation for Recoating Structural Steel.

The contractor shall heat straighten the damaged portions of beam(s). The cost of this work will be considered completely covered by the contract lump sum price for Heat Straightening. See Special Provisions.

Removal and reinstallation of sign and sign supports as needed will be considered completely covered by the contract lump sum price for Heat Straightening.

The contractor shall grind smooth surface deformities related to the damage such as gouges. The cost of this work will be considered completely covered by the contract lump sum price for Grind Surface Deformities. See Special Provisions.

The cost of removing loose and delaminated concrete and epoxy coating spalled concrete will be considered completely covered by the contract lump sum price for Cleaning and Epoxy Coating.

PHASES OF WORK

Prior to Heat Straightening:

1. Complete surface preparation of existing steel that will be subjected to Non-Destructive Testing (NDT) or heat from the heat straightening process.
2. Repair gouges and other deformities in collision damaged beams.
3. Remove the intermediate diaphragms and connection plates as indicated in the plans or directed by the engineer. As approved by the engineer, existing connection plates may be re-used. Non-Destructive Testing (NDT) of the connection plate welds are required to assure suitability for re-use; paint shall be removed prior to any NDT of welds. Existing connection plates not re-used shall be removed and the beams ground smooth.
4. Inspect beam in the area of repair for cracks by any non-destructive means. If cracks are identified, repair cracks as directed by the engineer.

Heat Straightening:

1. Heat straighten beams covering the length of the collision damaged beams. The beams shall be heat straightened to remove web and bottom flange twisting. See Special Provisions.
2. The shoulder and adjacent lane of I-44 shall remain closed, and no traffic shall be allowed over the beam(s) being straightened during the heat straightening process.

Post Heat Straightening:

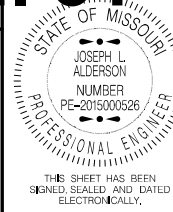
1. Install new connection plates and diaphragms.
2. Recoat beams over the length of damage and where paint was removed during the heat straightening process with System G (Gray).
3. Paint new diaphragms and connection plates with System G (Gray).

Estimated Quantities

Item	Quantity
Removal of Diaphragm	each 1
Cleaning and Epoxy Coating	lump sum 1
Fabricated Structural Carbon Steel (Misc.)	pound 300
Surface Preparation for Recoating Structural Steel	lump sum 1
Field Application of Inorganic Zinc Primer	lump sum 1
Intermediate Field Coat (System G)	lump sum 1
Finish Field Coat (System G)	lump sum 1
Non-Destructive Testing	lump sum 1
Heat Straightening	lump sum 1
Grind Surface Deformities	lump sum 1

REPAIRS TO BRIDGE: ROUTE I-44 WB
OVER ROUTE I-49

ROUTE I-44 WB FROM ROUTE 249 TO ROUTE 37
ABOUT 8.1 MILES WEST OF ROUTE 37
BEGINNING STATION 411+73.69± (Match Existing)



DATE PREPARED
12/2/2021

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
1

COUNTY
JASPER

JOB NO.
J7P3532B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A06303

DATE	DESCRIPTION

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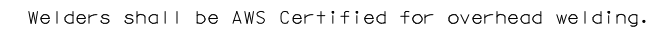
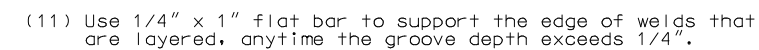
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MoDOT

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

GOUGE REPAIR TYPE 2 (CONT.)



Sheet No. 3 of 3

