

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	72	

COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION	BENDING SKETCHES & CUTTING DIAGRAMS	NO.	SIZE	LENGTH	MARK	LOCATION	NO.	SIZE	LENGTH	MARK	LOCATION					
Substructure Int. Bents #1, 2, 3, 4, 5																				
2	11	23'3"	F21	Footings		Superstructure End Bent #6										Superstructure (Cont.)				
6	11	15'6"	F22	"		3	3	12'0"	C11	Wing	964	5	5'3"	R7	Parapet					
2	14S	15'6"	F23	"		27	5	5'0"	C14	"	"	5	2'6"	R9	"					
12	6	7'0"	F24	"		2	6	15'9"	C61	"	"	23	5	9'9"	R10	"				
53	9	4'9"	F25	"		3	8	18'0"	C62	"	"	27	5	23'9"	R11	"				
24	11	17'3"	F31	"		8	9	37'0"	H11	Beam	8	5	26'9"	R13	"					
28	6	6'9"	F32	"		8	6	34'6"	H12	"	1	6	12'6"	H14	Wing					
18	11	20'3"	F51	"		3	7	16'0"	H17	"	8	5	29'3"	R16	"					
17	6	8'9"	F52	"		3	5	15'6"	H18	"	3	7	22'0"	H61	"					
24	11	5'9"	F26	"		3	6	21'6"	H62	"	3	6	21'6"	H62	"					
Substructure End Bent #6																				
18	9	4'9"	D61	Footings		12	6	8'3"	H19	"	22	11	19'6"	S1	Top Slab					
30	5	4'3"	D62	"		4	5	4'9"	R1	End Post	22	10	32'6"	S2	"					
18	9	4'9"	V61	Column		2	5	5'6"	R2	"	25	10	51'9"	S3	"					
8	9	12'3"	V62	"		2	5	6'3"	R3	"	22	11	19'9"	S4	"					
8	9	11'0"	V63	"		2	5	6'9"	R4	"	25	11	55'3"	S6	"					
8	9	9'9"	V64	"		4	5	7'0"	R6	"	22	10	19'6"	S7	"					
34	3	8'0"	V66	"		18	6	5'3"	R7	Parapet	22	11	35'3"	S8	"					
Superstructure End Bent #1																				
3	8	16'0"	C10	Wing		4	5	10'3"	R15	"	25	11	58'5"	S9	"					
3	8	15'0"	C11	"		4	5	15'3"	R14	"	22	10	18'9"	S10	"					
2	6	13'9"	C12	"		2	6	16'0"	T12	Wing	25	10	52'9"	S12	"					
2	6	10'9"	C13	"		2	6	20'6"	T61	"	70	4	21'0"	S13	"					
25	5	5'0"	C14	"		10	6	11'6"	U11	Beam	70	4	20'0"	S15	"					
8	9	37'0"	H11	Beam	10	4	8'9"	V12	Wing	70	4	19'9"	S17	"						
8	6	34'6"	H12	"	15	4	8'9"	V65	"	13	4	34'6"	S71	Top Slab						
1	6	15'6"	H13	Wing	Superstructure															
1	6	12'6"	H14	"	4	5	34'3"	C1	Curb	192	5	33'9"	S73	"						
3	7	19'9"	H15	"	12	5	32'0"	C2	"	192	5	35'6"	S74	"						
3	6	19'3"	H16	"	6	5	29'3"	C3	"	192	5	35'0"	S75	"						
3	7	16'0"	H17	"	4	5	33'0"	C4	"	21	8	54'0"	S81	Bottom Slab						
3	6	15'6"	H18	"	4	5	32'9"	C5	"	20	9	30'0"	S82	"						
12	6	8'3"	H19	"	6	6	28'0"	C7	"	18	9	33'9"	S83	"						
4	5	4'9"	R1	End Post	4	6	31'9"	C8	"	21	9	65'6"	S84	"						
2	5	5'6"	R2	"	18	5	4'0"	C9	"	20	10	59'3"	S85	"						
2	5	6'3"	R3	"	387	6	8'6"	G1	Girder	18	10	44'9"	S86	"						
2	5	6'9"	R4	"	1181	6	8'6"	G2	"	21	8	68'0"	S87	"						
2	5	7'0"	R5	"	1197	6	8'6"	G3	"	20	10	60'0"	S88	"						
4	5	7'0"	R6	"	403	6	8'6"	G4	"	18	10	44'3"	S89	"						
16	5	5'3"	R7	Parapet	12	8	42'3"	G12	"	20	8	51'0"	S811	"						
4	5	13'3"	R8	"	40	4	27'6"	G14	"	21	8	51'6"	S813	"						
4	5	10'3"	R15	"	16	4	31'6"	G15	"	20	9	49'0"	S814	"						
Superstructure Int. Bents #2, 3, 4, 5																				
68	14S	34'6"	H21	Beam	12	8	46'9"	G21	"	21	8	27'9"	S816	"						
42	14S	20'0"	H22	"	6	8	42'9"	G23	"	21	8	30'3"	S817	"						
24	6	29'6"	H23	"	40	4	27'9"	G24	"	21	8	28'6"	S818	"						
28	7	29'6"	H24	"	16	4	31'9"	G26	"	21	8	28'3"	S819	"						
158	4	12'9"	F21	Column	12	8	47'3"	G31	"	563	6	29'3"	S820	"						
340	6	18'9"	U21	Beam	6	8	43'3"	G33	"	4	6	5'9"	S821	"						
24	11	35'6"	V21	Column	40	4	28'3"	G34	"	126	4	5'0"	W1	Diagh.						
50	9	28'0"	V31	"	16	4	32'3"	G36	"	126	4	4'9"	W2	"						
56	9	27'0"	V41	"	12	8	47'9"	G41	"	126	4	4'6"	W3	"						
32	9	35'3"	V51	"	40	4	28'6"	G44	"	42	6	8'3"	W4	"						

ESTIMATED QUANTITIES			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Class A Excavation for Structures Cu Yds	430		430
Steel Piles in Place (10")	177		177
Steel Pile in Place (12")	193		193
Class B Concrete Cu Yds	313		313
Class B1 Concrete Cu Yds		1083.9	1083.9
Reinforcing Steel Lbs	9,290	369,210	378,500
Fabricated Structural Carbon Steel Lbs		297	297
Bridge Rail (Single Tube Type) Lin Ft.		617	617

Note: Concrete in end posts, parapets and curbs is included with superstructure concrete.
 All concrete and reinforcement above footings in intermediate bents is included in superstructure quantities.
 No payment for excavation will be allowed at End Bent No. 1.

GENERAL NOTES

Design Specifications: A. F. S. H. C. - 1961
 Design Loading:
 H-20-44
 15" sq. ft. Future Wearing Surface
 Modified 24,000# Tandem Axle
 Earth 120# Equivalent Fluid Pressure 30"
 Design Unit Stresses:
 Class B Concrete (substructure) $f_c = 1,200$ psi.
 Class B1 Concrete (superstructure) $f_c = 1,600$ psi.
 Reinforcing Steel $f_s = 20,000$ psi.
 Steel Pile (A.S.T.M. A36-G27) $f_b = 9,000$ psi.
 Superstructure deck to be surface sealed.
 Painting: Structural steel access doors shall be cleaned and painted in the field or may be cleaned and painted one coat of red lead in the shop with the two remaining coats applied in the field, except that final coat on access doors shall be gray. In lieu of painting, the contractor may, if he prefers, galvanize this material. All galvanizing shall be done after fabrication. Cost of painting or galvanizing to be included in price bid for other items.

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No. 20.3
 June 1961
 Revised
 Dec. 1964

BURGWIN & MARTIN
 CONSULTING ENGINEERS
 DESIGNED BY D. Foland
 CHECKED BY A. G. Latham
 DETAILED BY J. Carter
 CHECKED BY A. G. Latham

* Top bend may be made in field or shop.
 x May bend in field or shop.

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

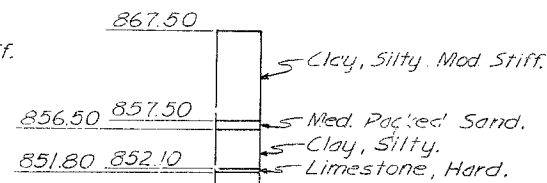
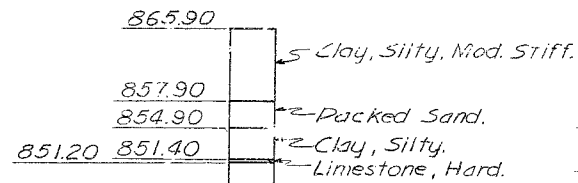
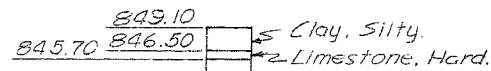
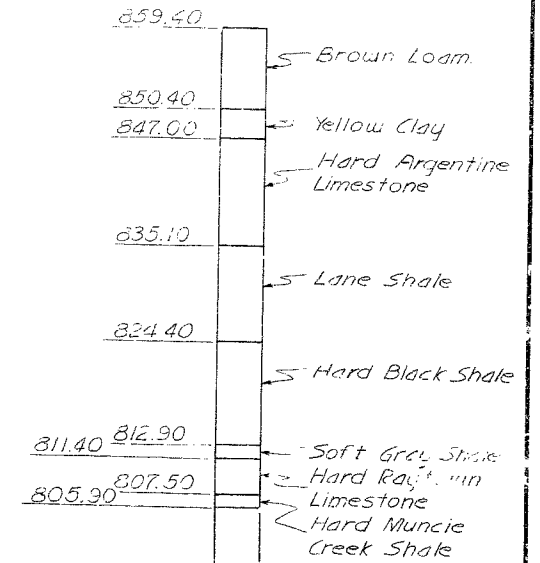
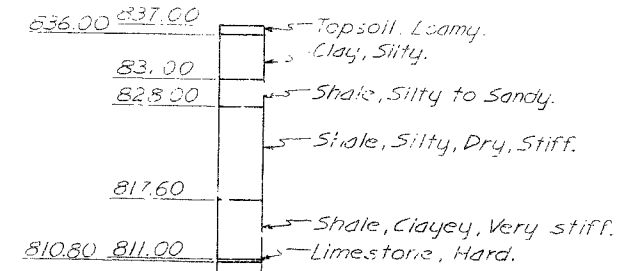
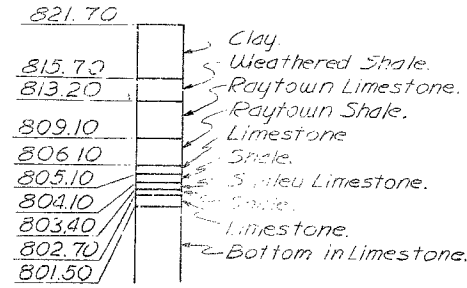
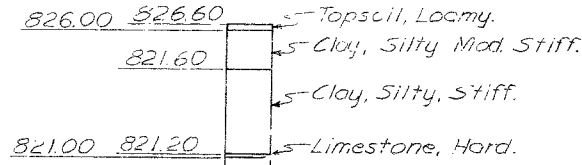
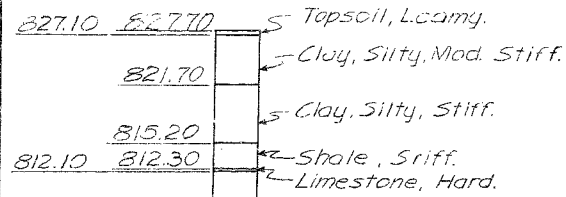
Sheet No. 2 of 22.

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36) (SEC. B) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	73	



Note: For Location of soundings see Sheet 1 of "S" Indicates location of soundings Elevations at top of hole as of 1965.

BORING DATA

Note: For location of borings see Sheet No. 1 of 21.

FOOTING AND PILE DATA							
BENT NO.		1	2	3	4	5	6
Speed Footings	Foundation Material			Rock	Rock	Shale	Rock
	Design Bearing Tons/sq ft.			9.5	9.0	5.6	7.3
	See Standard Specifications 50.4.2						
Bearing Piles	Pile Type and Size	108" x 28" x 25"					
	Number	5	1				
	Approximate Length Ft.	52	16				
	Design Bearing Value Tons	51	70				
Hammer Energy Req. FLD		11,300	15,100				

Note: Footings shall be carried 6" into hard, solid, undisturbed rock or 18" into soft rock or shale and cast against vertical faces of same.
 In no case shall footings of all Intermediate Bents be placed higher than elevations shown.
 * Minimum Energy Requirement of hammer based on plan length and design bearing value at piles. Increase by the factor (W+w)/2W when the weight of the ram (W) is less than the weight of the pile (w).
 All pile shall be driven to practical refusal.

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BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED BY: F.D. Foland	DETAILED BY: L. Henak
DESIGN CHECK: A.G. Latham	DETAIL CHECK: A.G. Latham

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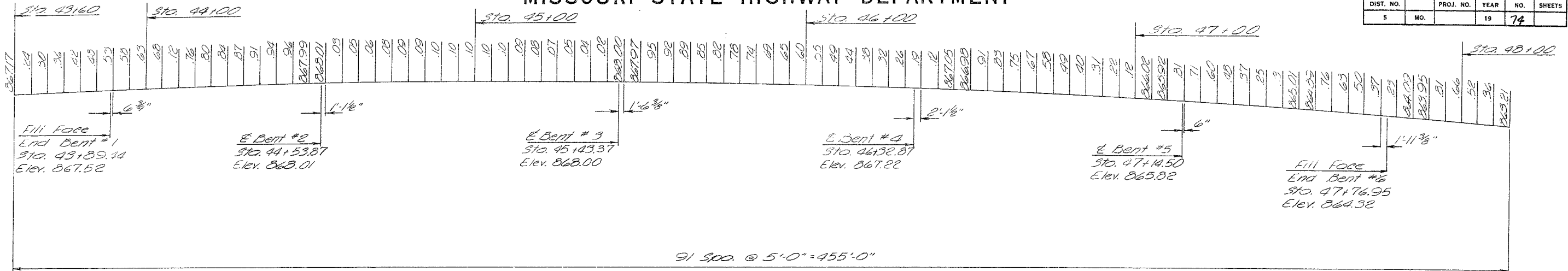
Sheet No. 3 of 22.

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

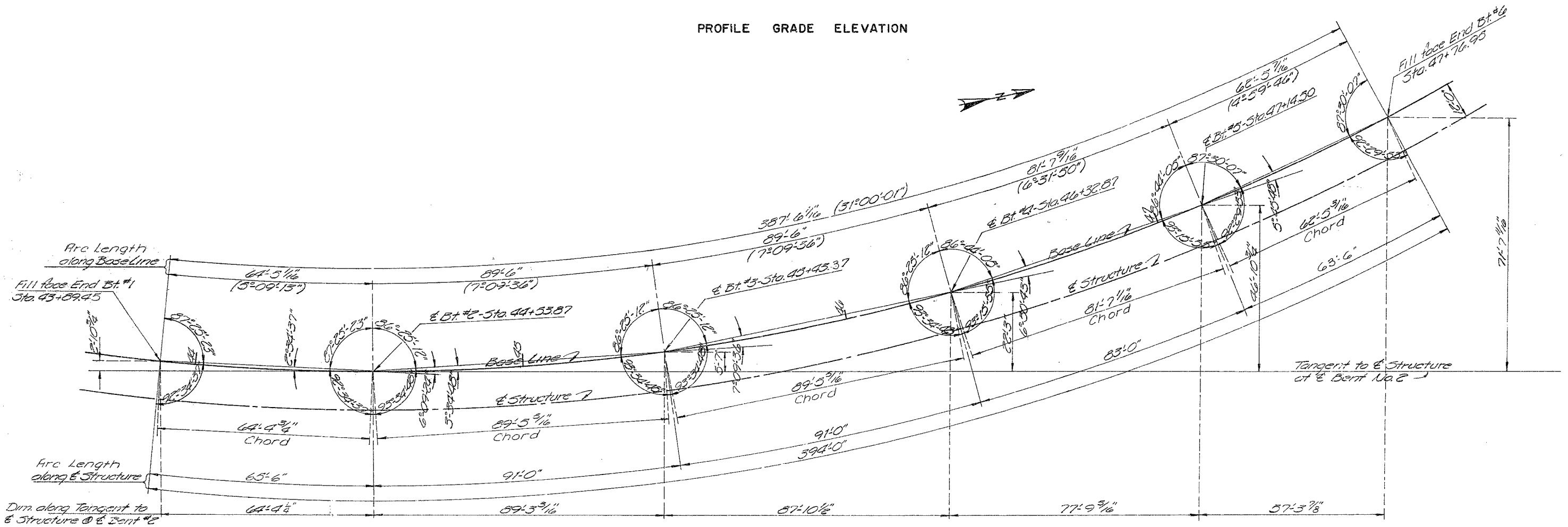
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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	74	



PROFILE GRADE ELEVATION



SUBSTRUCTURE LAYOUT

Note: Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords. (All bents are on radial lines.)

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36)(RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

BURGIN & MARTIN
 CONSULTING ENGINEERS

DESIGNED F.D. Foland DETAILED J. Kettler
 DESIGN CK. A.G. Isthom DETAIL CK. A.G. Isthom

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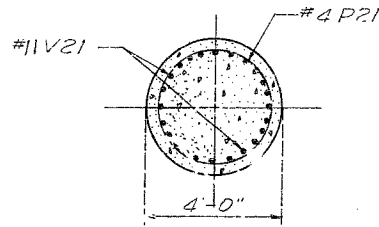
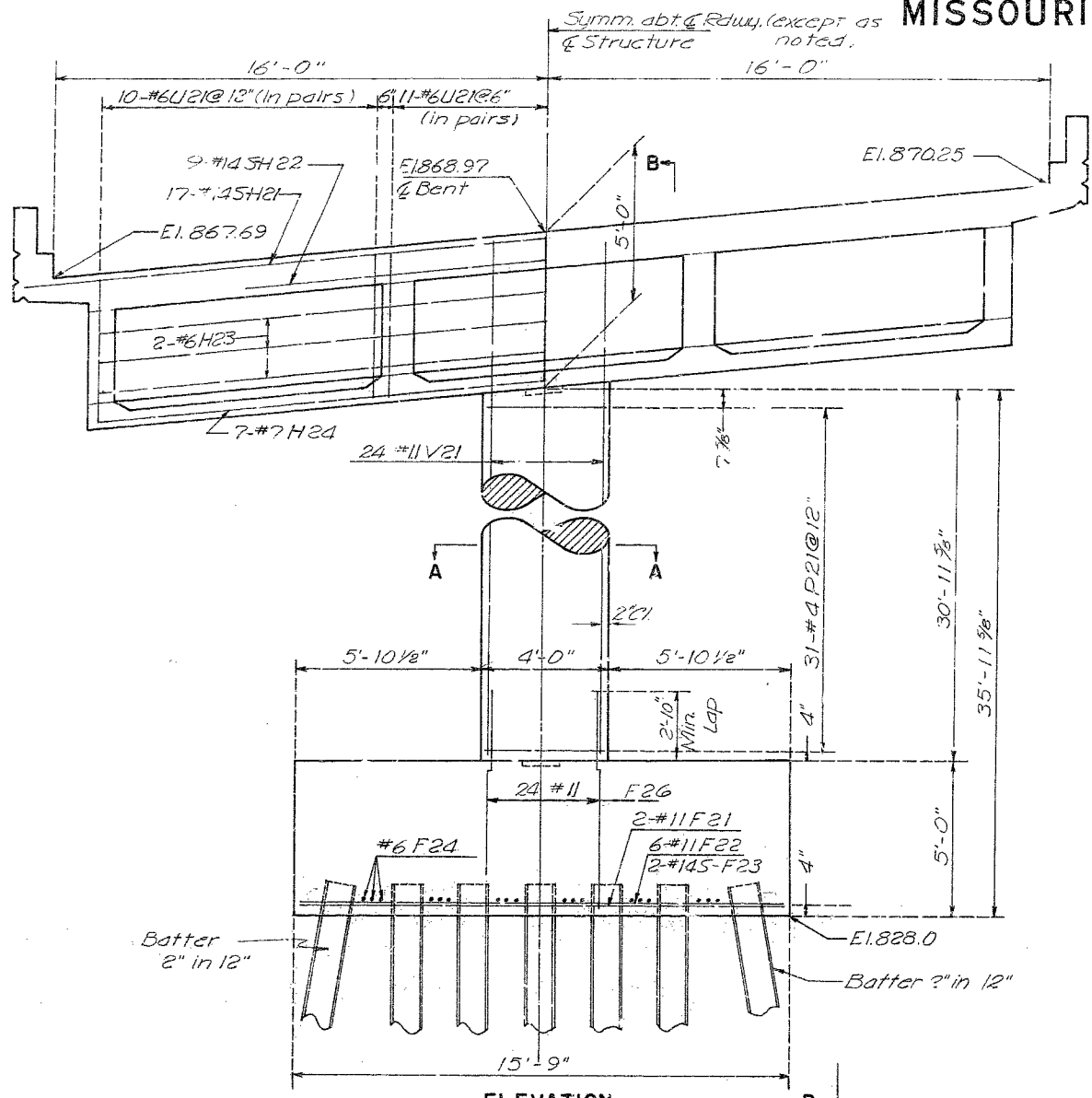
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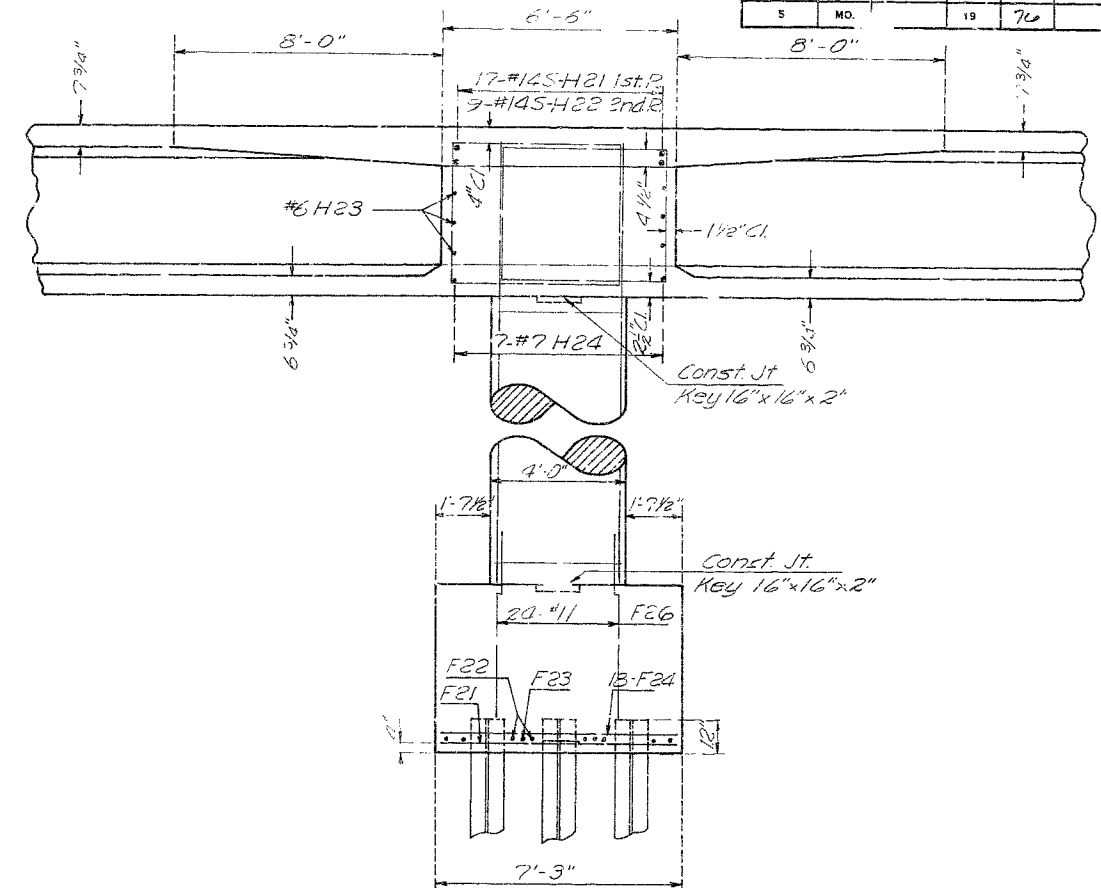
359

MISSOURI STATE HIGHWAY DEPARTMENT

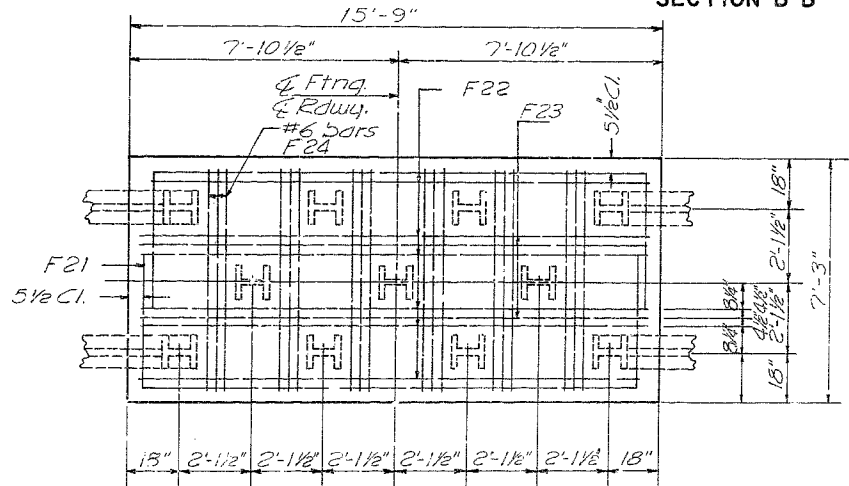
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5	MO.		19	76	



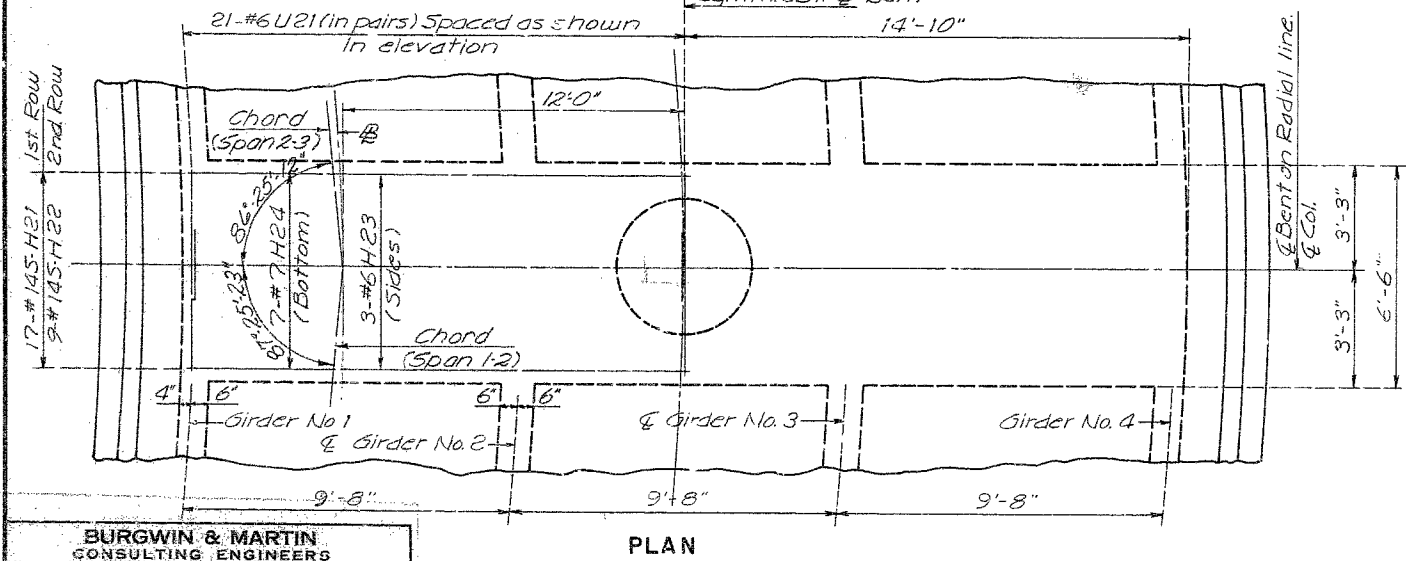
SECTION A-A



SECTION B-B



PLAN OF FOOTING STEEL



PLAN

DETAILS OF INT. BENT NO. 2

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36)(RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

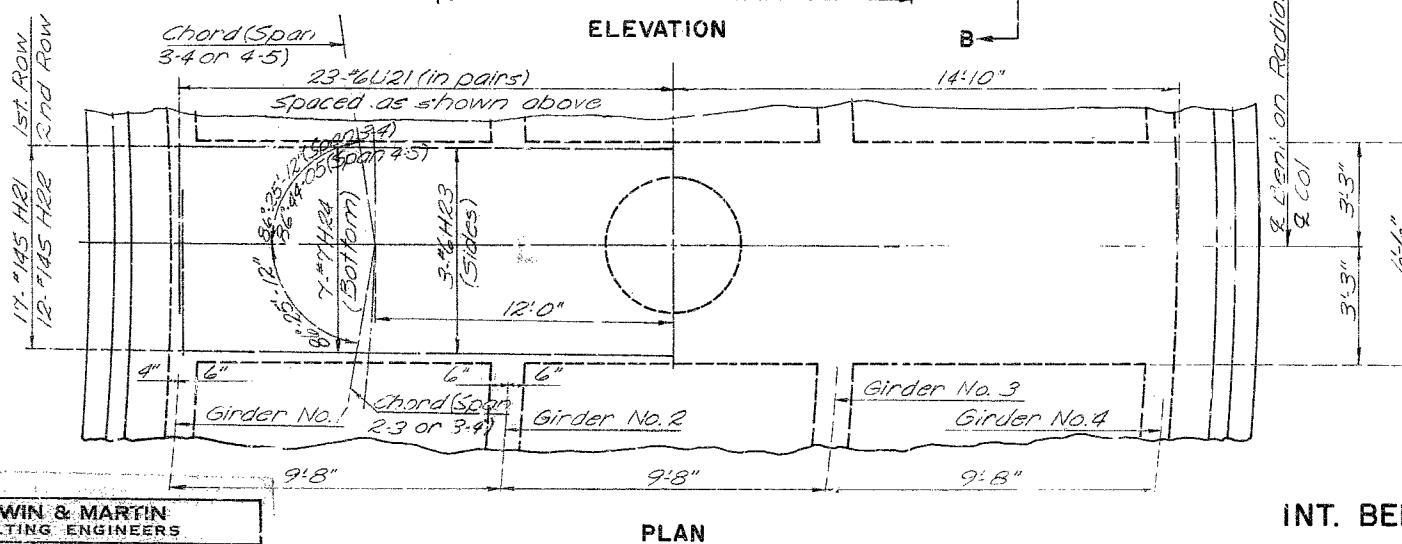
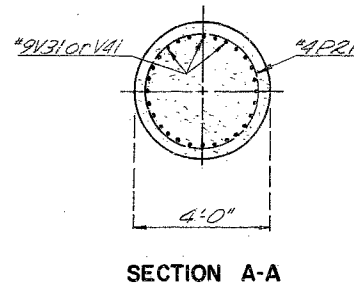
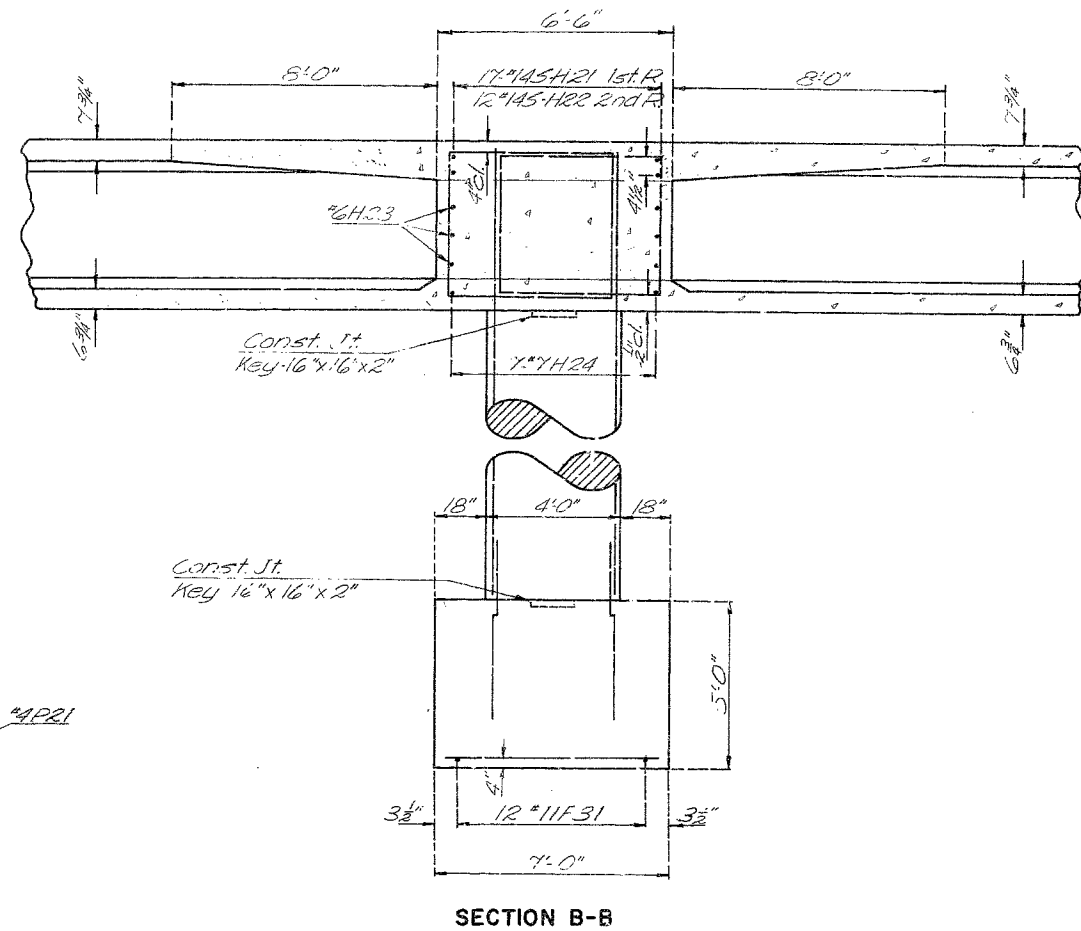
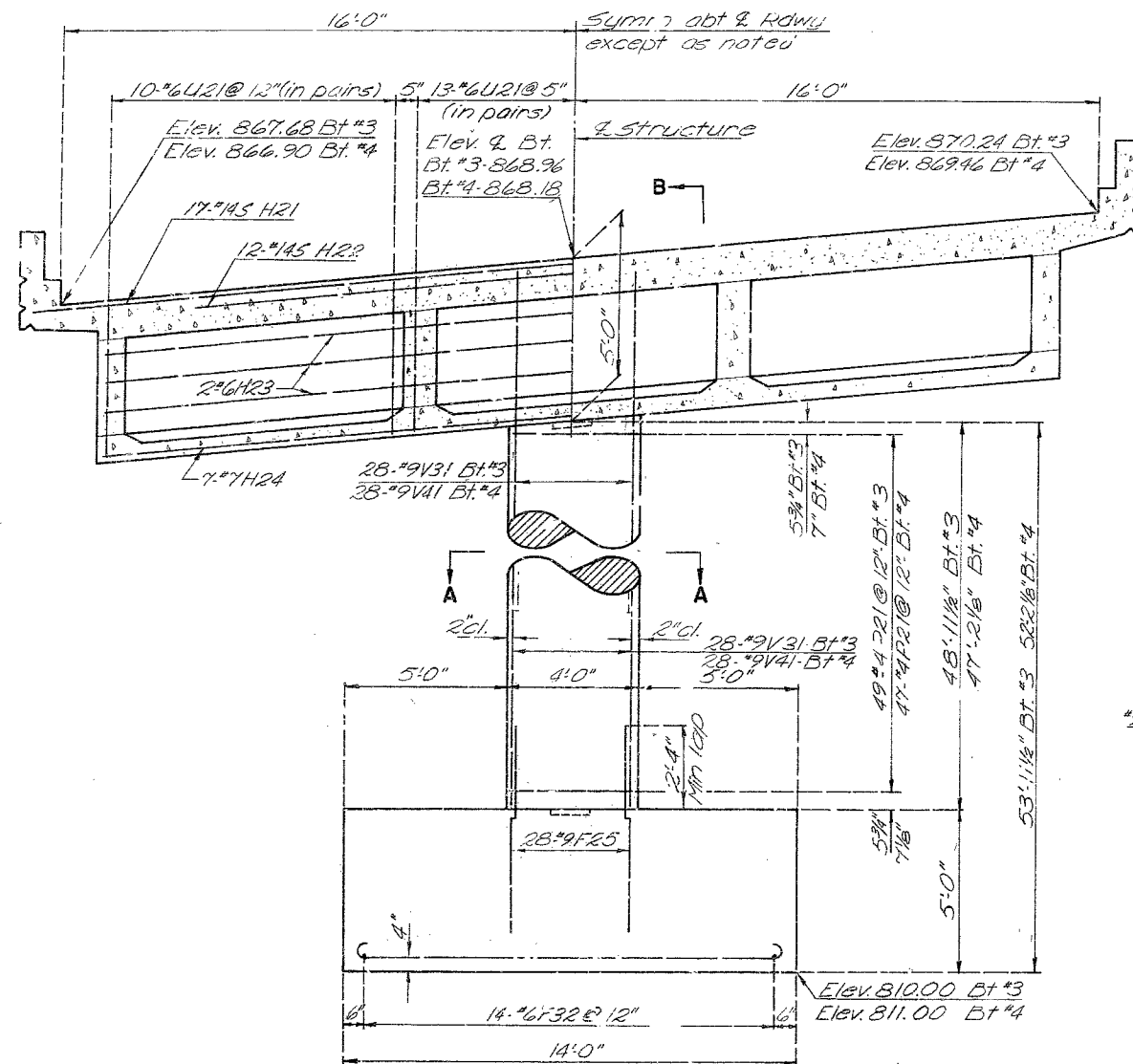
BURGWIN & MARTIN
 CONSULTING ENGINEERS
 DESIGNED F.D. Foland
 DETAILED L. Henak
 DESIGN CK. A.G. Latnam
 DETAIL CK. A.G. Latnam

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

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	77	



INT. BENTS NO. 3 & 4

BRIDGE OVER RAMP I & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY
PROJECT NO. I-29-1(36)(RTE. I-29) STA. 43+89.45 RAMP 4
PLATTE COUNTY

BURGWIN & MARTIN
CONSULTING ENGINEERS

DESIGNED: F.D. Foland
DETAILED: Hendrik Page

DESIGN CH: R.G. Latham
DETAIL CH: R.G. Latham

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

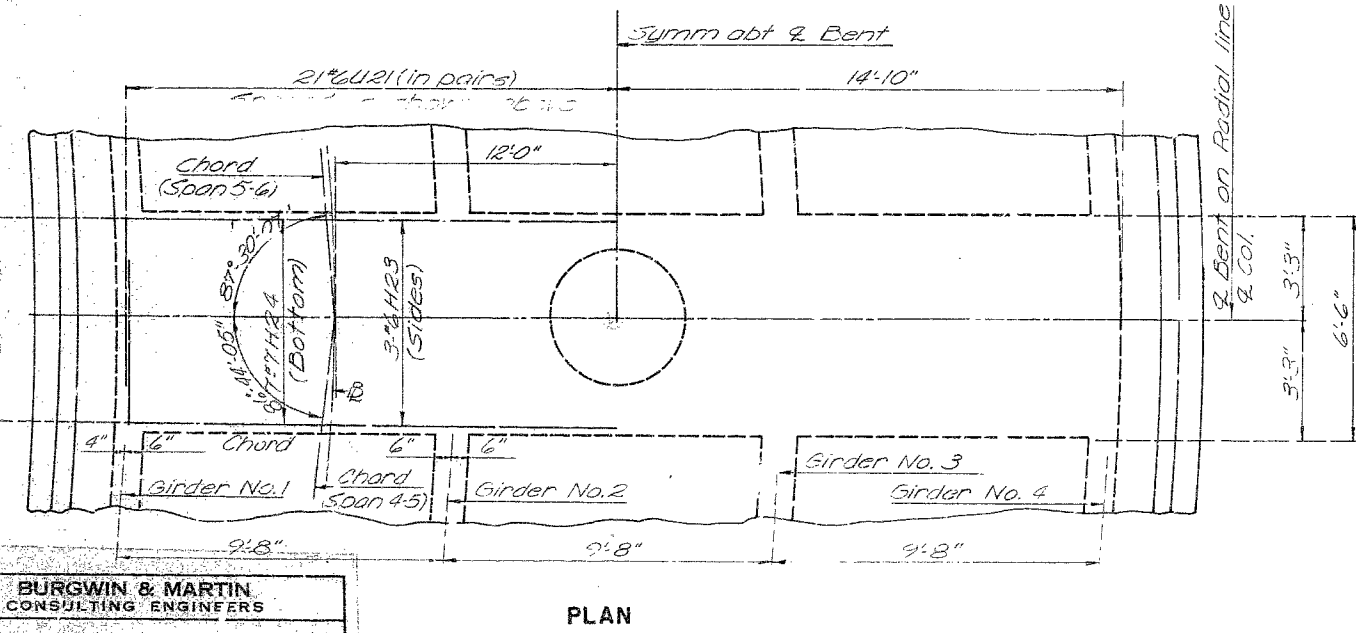
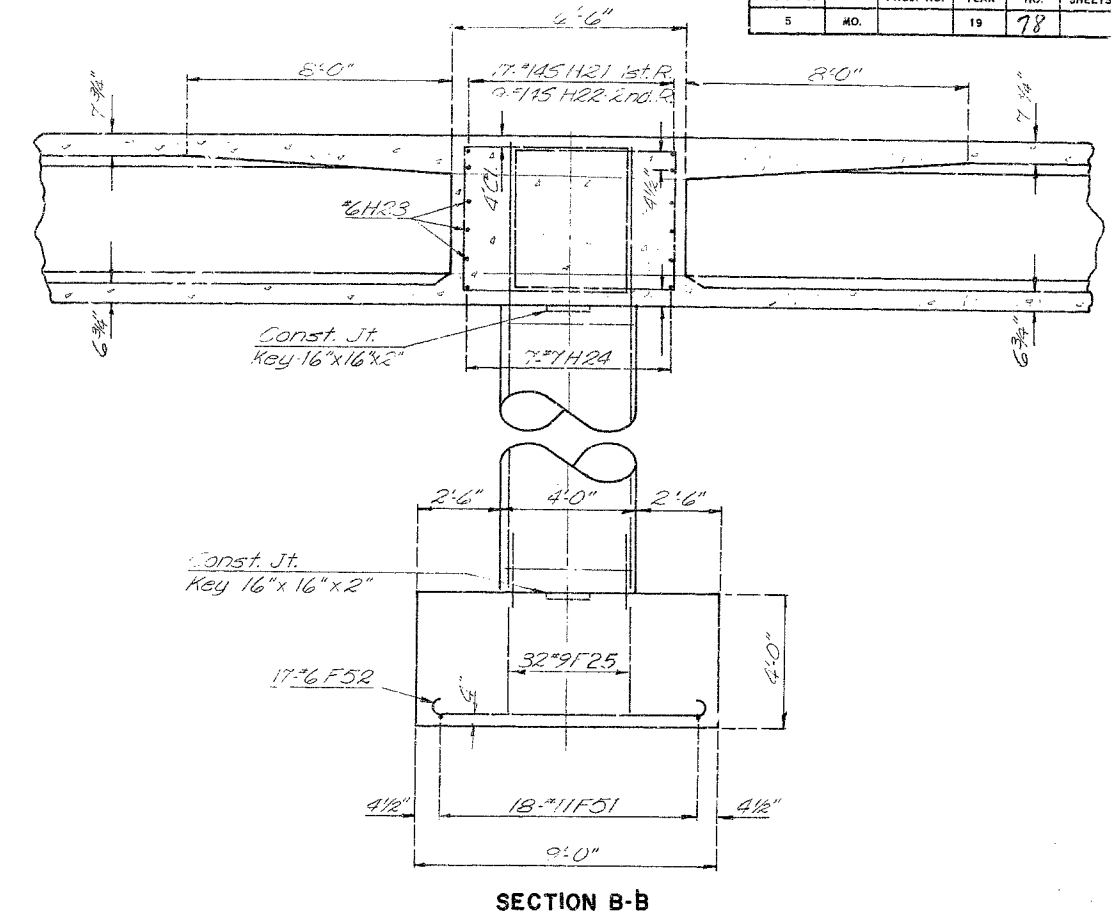
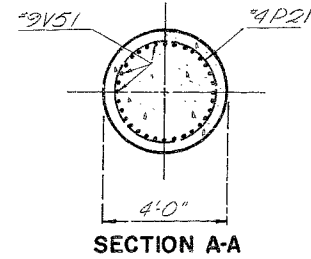
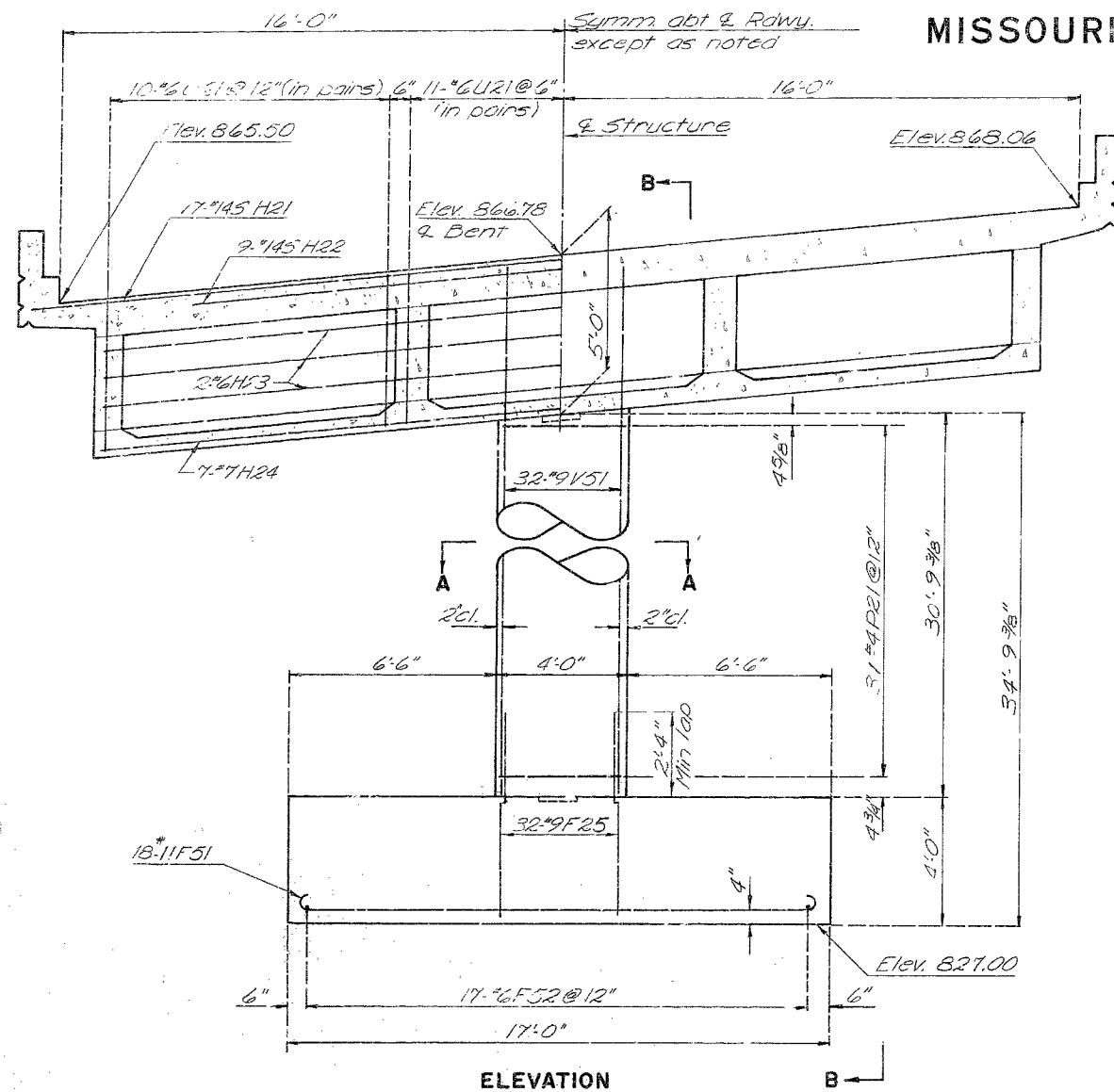
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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	78	



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BURGIN & MARTIN
CONSULTING ENGINEERS

DESIGNED F.D. Foland
DETAILS C. Page

DESIGN CK. P.G. Latham
DETAIL CK. A.G. Latham

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

BENT NO. 5

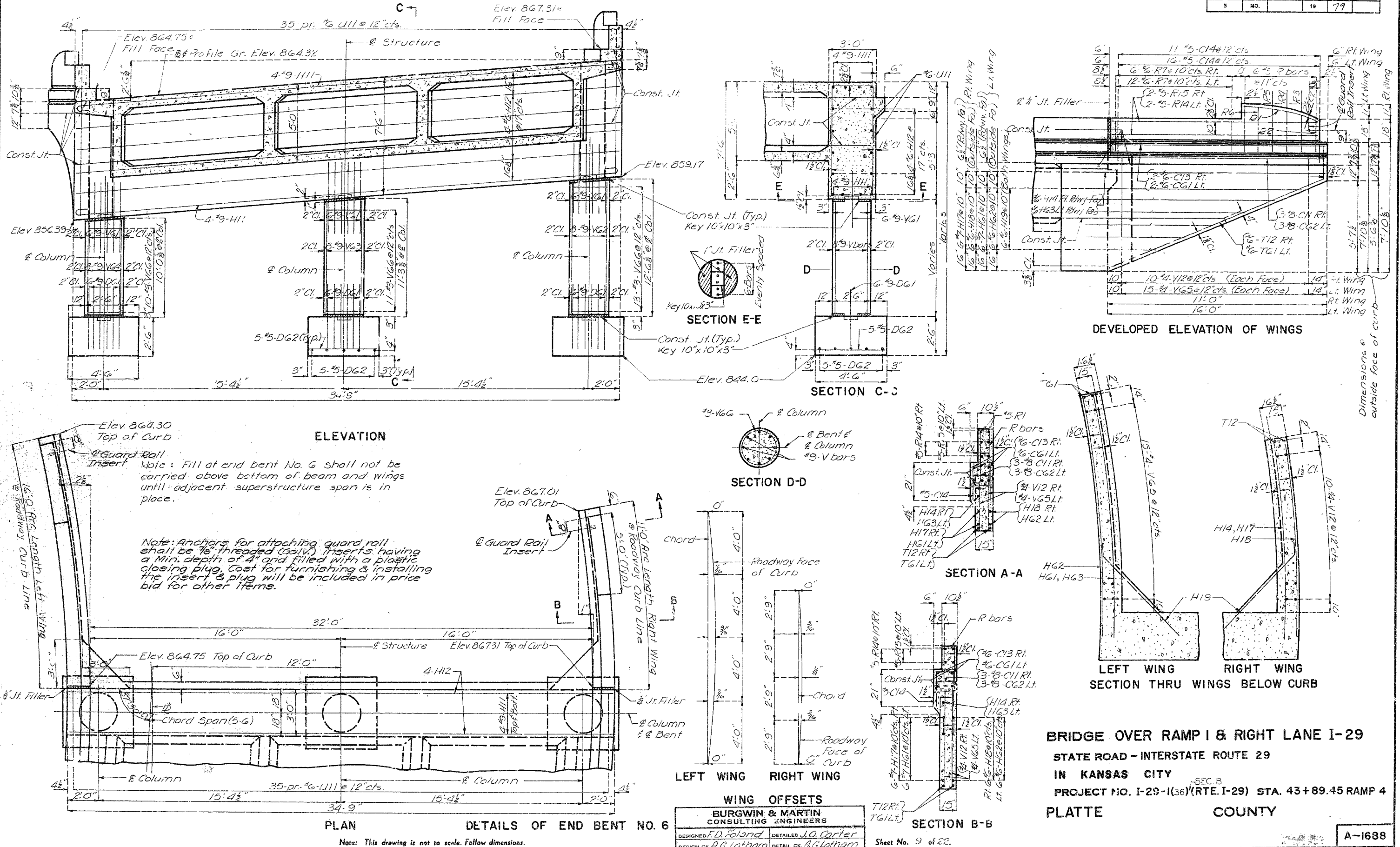
BRIDGE OVER RAMP I & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY - SEC. B
PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43 + 89.45 RAMP 4
PLATTE COUNTY

Sheet No. 8 of 22.

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	79	



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WING OFFSETS
BURGWIN & MARTIN
 CONSULTING ENGINEERS
 DESIGNED: F.D. Poland DETAILED: J.O. Carter
 DESIGN CK: A.G. Latham DETAIL CK: A.G. Latham

Sheet No. 9 of 22.

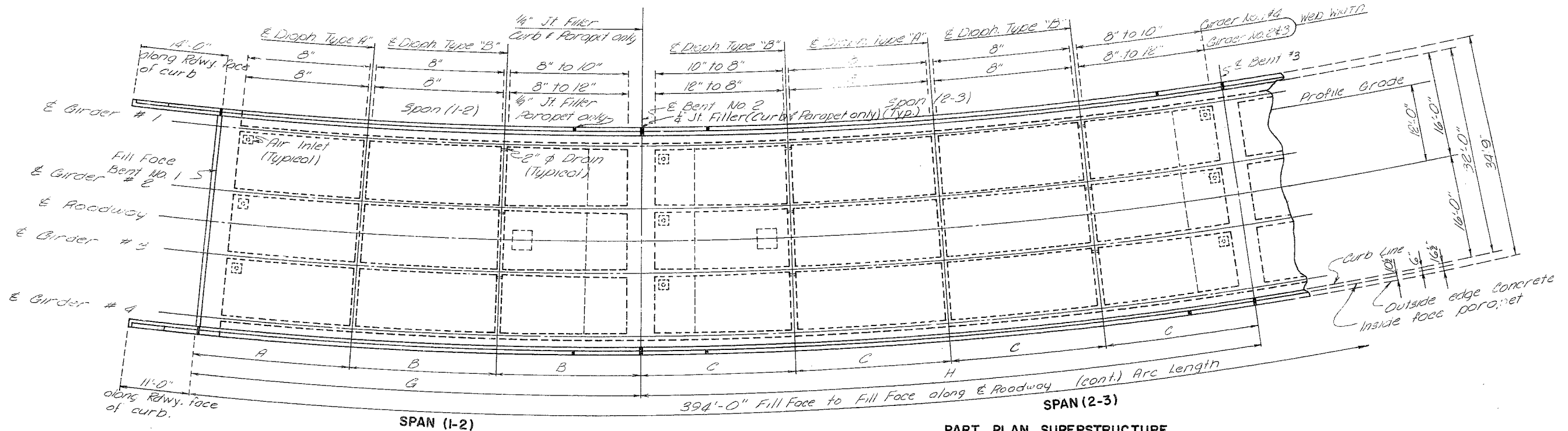
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 PROJECT NO. I-29-1(36)(RTE. I-29) STA. 43+89.45 RAMP 4
PLATTE COUNTY

A-1688

SEE FINAL PLANS FOR DETAILS

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	80	



PART PLAN SUPERSTRUCTURE

Note: See Sheets No. 20 & 21 of 22 for increased thickness of top slab at intermediate bents.

Curve Offsets

Span	Outside Edge Concrete Left Curb				Outside Edge Concrete Girder No. 1				Outside Edge Concrete Girder No. 4				Outside Edge Concrete Right Curb			
	1-2	2-3	4-5	5-6	1-2	2-3	4-5	5-6	1-2	2-3	4-5	5-6	1-2	2-3	4-5	5-6
a	63'-11"	88'-9 1/4"	80'-11 1/2"	61'-11 1/2"	64'-1 1/2"	89'-1"	81'-3 1/8"	62'-2"	66'-9 3/8"	92'-9 1/8"	84'-7 3/4"	64'-9 1/4"	67'-0 1/2"	93'-1 3/8"	84'-11 1/4"	64'-11 3/8"
b	6'-11 1/2"	4'-4 3/8"	5'-5 3/8"	5'-11 3/4"	7'-0 3/8"	4'-6 1/2"	5'-7 3/8"	6'-1"	3'-4 7/8"	6'-4 3/4"	7'-3 3/8"	7'-4 3/8"	3'-6 1/4"	6'-6 1/2"	7'-5 3/8"	7'-5 3/8"
c	10	16	14	10	10	16	14	10	12	16	14	10	12	16	14	10
Offset																
#1	3 3/8"	3 3/8"	3 1/2"	2 3/8"	3 3/8"	3 3/4"	3 3/8"	2 3/8"	1 3/4"	4 1/2"	4 5/8"	3 3/8"	1 3/8"	4 5/8"	4 3/8"	3 1/2"
#2	5 1/2"	6 1/4"	6 1/4"	4 3/8"	5 1/2"	6 3/8"	6 3/8"	4 3/8"	4"	7 3/8"	7 1/4"	5 3/8"	4"	7 3/8"	7 3/8"	5 3/8"
#3	6 3/4"	9"	8 3/8"	6 1/2"	6 3/4"	9 3/8"	8 3/8"	6 1/2"	5 3/8"	10 3/8"	9 3/8"	6 3/8"	5 3/8"	10 3/8"	9 3/8"	6 3/8"
#4	7 3/4"	11 3/8"	10 1/2"	7 1/2"	7 3/8"	11 1/2"	10 1/2"	7 1/2"	7 1/2"	12 3/8"	11 1/4"	7 3/8"	7 1/2"	12 3/8"	11 1/2"	7 3/8"
#5	8 3/8"	13 1/2"	1'-0"	7 3/8"	8 1/2"	13 3/8"	1'-0"	7 3/8"	8 3/8"	14 3/8"	12 3/8"	8 3/8"	8 3/8"	14 3/8"	12 3/8"	8 3/8"
#6	8 3/8"	14 3/8"	1'-1"	8 3/8"	8 3/8"	14 3/8"	1'-1 1/8"	8 3/8"	8 3/8"	15 3/8"	13 3/8"	8 3/8"	8 3/8"	15 3/8"	13 3/8"	8 3/8"
#7	8 3/8"	15 3/8"	1'-1 3/8"	7 3/8"	8 1/2"	15 3/8"	1'-1 3/4"	7 3/8"	9"	16 3/8"	14 3/8"	8 3/8"	9"	16 3/8"	14 3/8"	8 3/8"
#8	7 3/4"	16 3/8"	1'-1 3/8"	7 3/8"	7 3/8"	16 3/8"	1'-1 3/8"	7 3/8"	8 3/8"	17 3/8"	14 3/8"	7 3/8"	8 3/8"	17 3/8"	14 3/8"	7 3/8"
#9	6 3/4"	16 3/8"	1'-1 3/8"	6 3/8"	6 3/8"	16 3/8"	1'-1 3/4"	6 3/8"	8 3/8"	17 3/8"	14 3/8"	6 3/8"	8 3/8"	17 3/8"	14 3/8"	6 3/8"
#10	5 1/2"	16 3/8"	1'-1"	4 3/8"	5 1/4"	16 3/8"	1'-1 1/8"	4 3/8"	1 3/8"	17 3/8"	13 3/8"	5 3/8"	7 3/8"	17 3/8"	13 3/8"	5 3/8"
#11	3 3/8"	15 3/8"	1'-0"	2 3/8"	3 3/8"	15 3/8"	1'-0"	2 3/8"	5 3/8"	16 3/8"	12 3/8"	3 3/8"	5 3/8"	16 3/8"	12 3/8"	3 3/8"
#12		10 3/8"	10 1/2"			14 3/8"	10 1/2"		4"	15 3/8"	11 1/4"		4"	15 3/8"	11 1/4"	
#13		13 3/8"	8 3/8"			13 3/8"	8 3/8"		1 3/8"	14 3/8"	9 3/8"		1 3/8"	14 3/8"	9 3/8"	
#14		11 3/8"	6 1/4"			11 3/8"	6 3/8"			12 3/8"	7 1/4"			12 3/8"	7 1/4"	
#15		9"	3 1/2"			9 3/8"	3 3/8"			10 3/8"	4 5/8"			10 3/8"	4 3/8"	
#16		6 3/8"				6 3/8"				7 3/8"				7 3/8"		
#17		3 3/8"				3 3/8"				4 3/8"				4 3/8"		

DIMENSIONS ALONG ARC

	A	B	C	D	E	F	G	H	I	J
Lt. Edge Conc.	22'-3 1/2"	20'-9 3/4"	22'-2 1/4"	20'-3 1/4"	20'-2"	21'-7 3/8"	63'-11 1/4"	88'-10"	81'-0 1/4"	61'-11 3/8"
Lt. Curb Line	22'-4 1/4"	20'-10 1/4"	22'-3"	20'-3 3/4"	20'-2 1/4"	21'-8 1/4"	64'-0 3/8"	89'-0"	81'-2 1/8"	62'-1 1/4"
& Girder #1	22'-4 3/8"	20'-10 1/8"	22'-3 3/8"	20'-4 1/8"	20'-3"	21'-8 3/8"	64'-2 3/8"	89'-2 1/4"	81'-4 1/8"	62'-2 1/8"
& Girder #2	22'-5 1/4"	21'-2 1/4"	22'-7 3/8"	20'-7 3/8"	20'-6 1/4"	22'-0"	65'-0 3/8"	90'-4 3/8"	82'-5 3/8"	63'-0"
& Roadway	22'-10"	21'-9"	22'-9"	20'-9"	20'-8"	22'-2"	65'-6"	91'-0"	83'-0"	63'-6"
& Girder #3	22'-11 1/4"	21'-5 3/4"	22'-10 3/8"	20'-10 3/8"	20'-9 1/4"	22'-3 3/8"	65'-11 3/8"	91'-7 1/4"	83'-6 3/8"	63'-11 3/8"
& Girder #4	23'-3 3/8"	21'-9 1/4"	23'-2 3/8"	21'-7 1/4"	21'-1"	22'-7 3/8"	66'-5 3/8"	92'-9 3/8"	84'-7 3/8"	64'-9 3/8"
Rt. Curb Line	23'-4"	21'-9 3/4"	23'-3"	21'-2 1/4"	21'-1 1/4"	22'-7 3/8"	66'-11 1/4"	93'-0"	84'-9 3/8"	64'-10 3/8"
Rt. Edge Conc.	23'-4 1/2"	21'-10 1/4"	23'-3 1/4"	21'-2 3/4"	21'-2 1/4"	22'-8 3/8"	67'-0 3/8"	93'-2"	84'-11 1/4"	65'-0 3/8"

Note: All dimensions shown are horizontal.
 All diaphragms shall be placed radially. Fill face of end bents and & intermediate bents and diaphragms are on radial lines.
 Diaphragms width 8".
 For details of Air inlets and Access doors see sheet No. 12 of 22.
 Exterior girders shall be widened to inside only. Interior girders symmetrical about & girders.

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

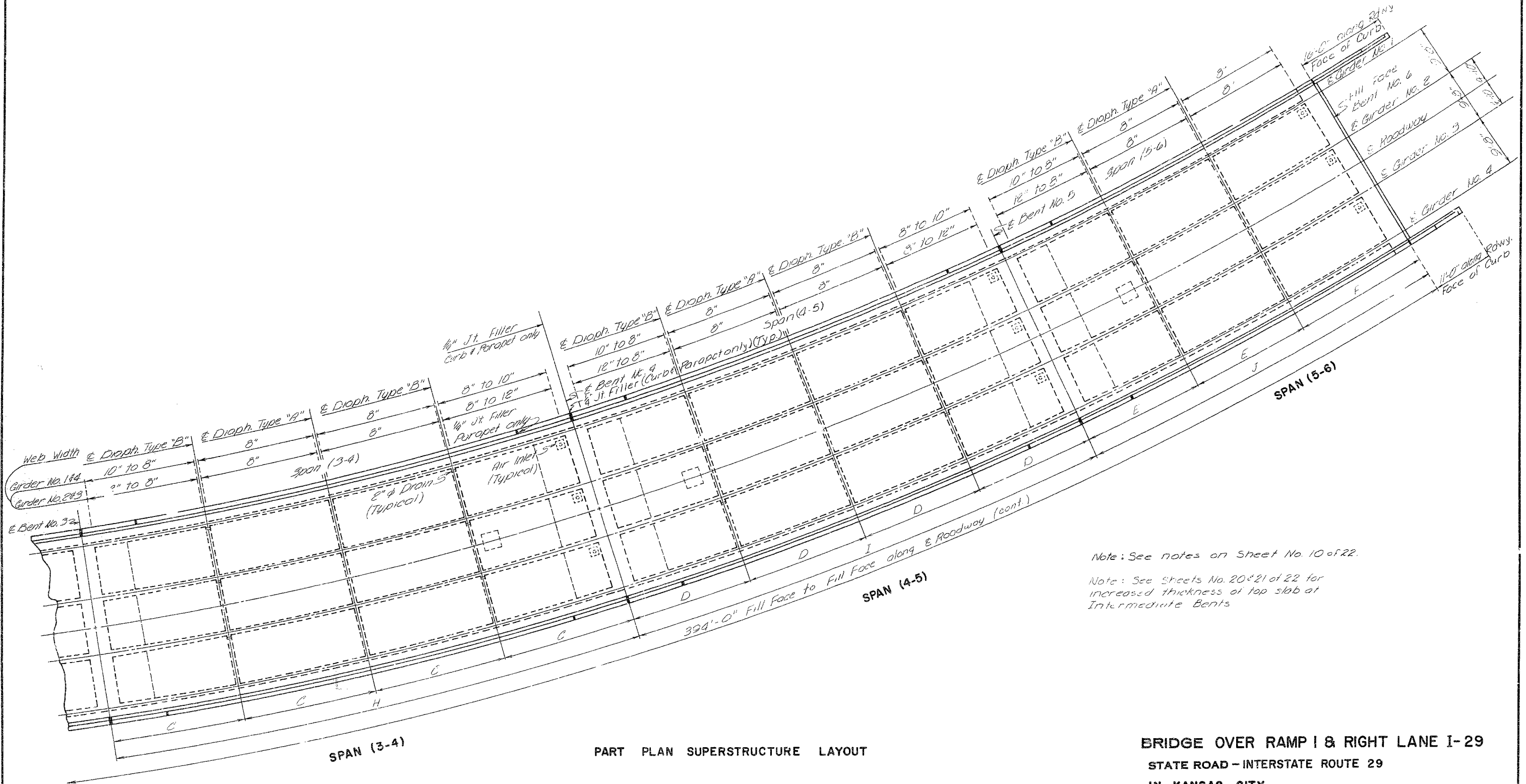
365

BURGWIN & MARTIN
 CONSULTING ENGINEERS
 DESIGNED: F.D. Foland
 DETAILED: Herakl Morris
 DESIGN CK: R.G. Lofstrom
 DETAIL CK: R.G. Lofstrom

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

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	17	



Note: See notes on Sheet No. 10 of R22.
 Note: See Sheets No. 20 & 21 of R22 for increased thickness of top slab at Intermediate Bents

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PART PLAN SUPERSTRUCTURE LAYOUT

BRIDGE OVER RAMP 1 & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED <i>F.D. Poland</i>	DETAILED <i>R.C. Morris</i>
DESIGN CK. <i>A.G. Latham</i>	DETAIL CK. <i>A.G. Latham</i>

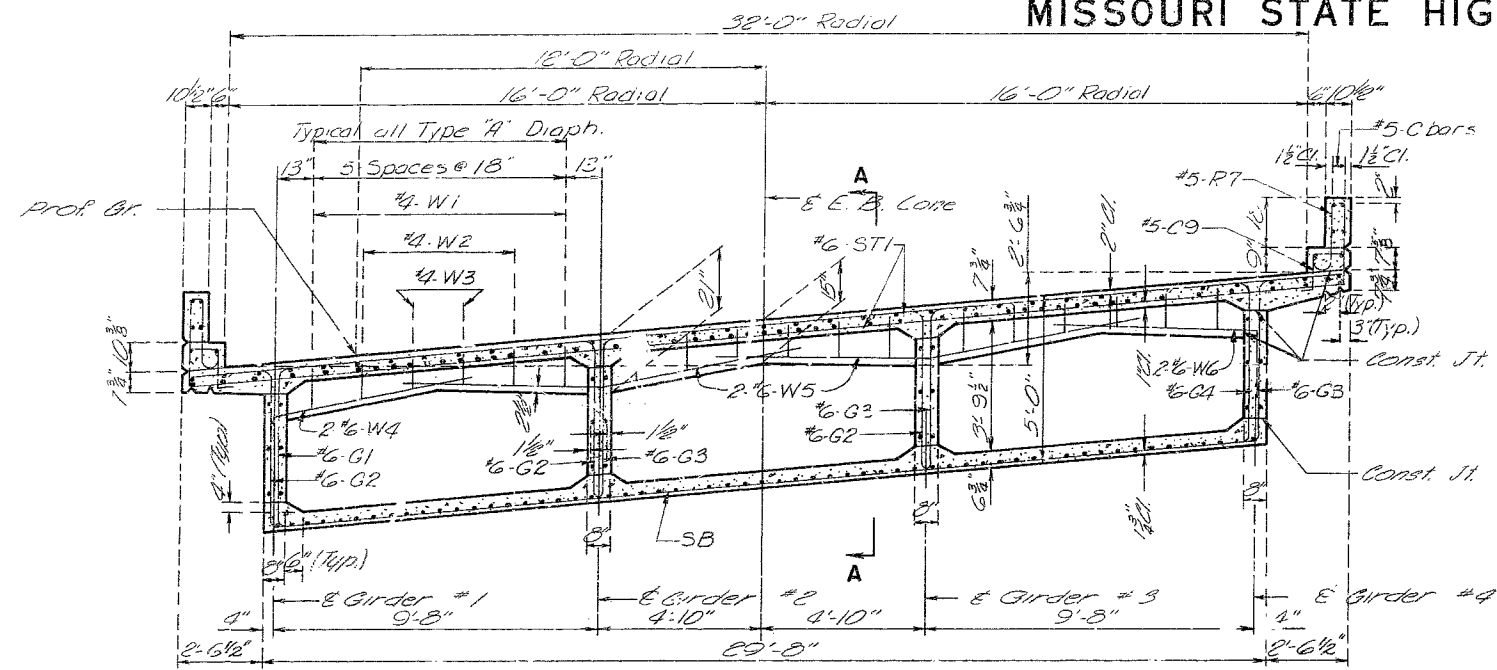
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 11 of 22

A-1688

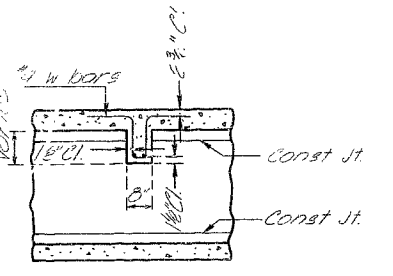
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	82	

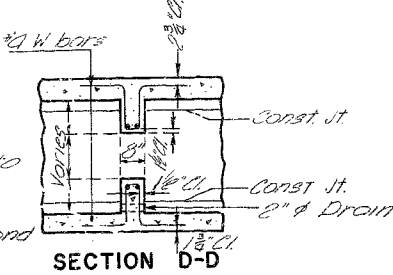


SECTION NEAR CENTER OF SPAN SHOWING TYPE "A" DIAPHRAGMS

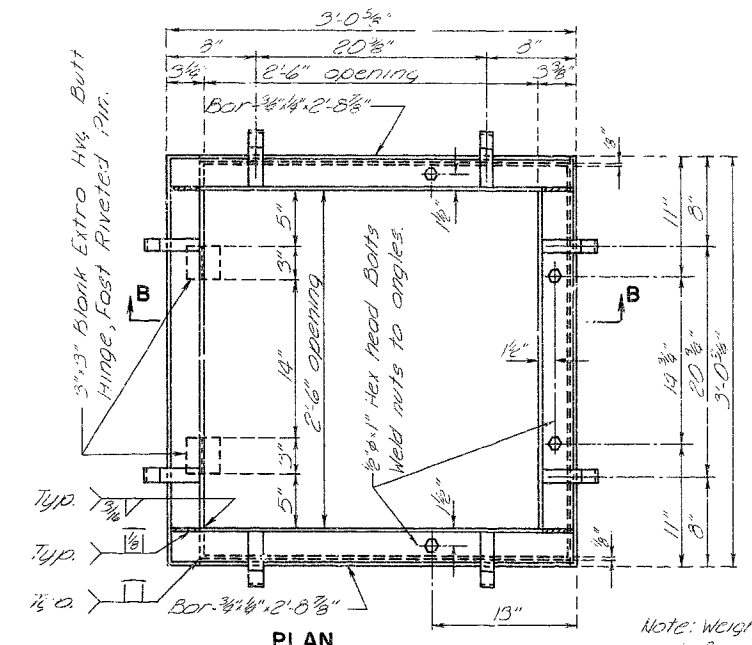
Note: Curbs and Parapets to be cast independently of slab.
For details of Curb and Parapet not shown, see Sheet No. 22 of 22.



SECTION A-A

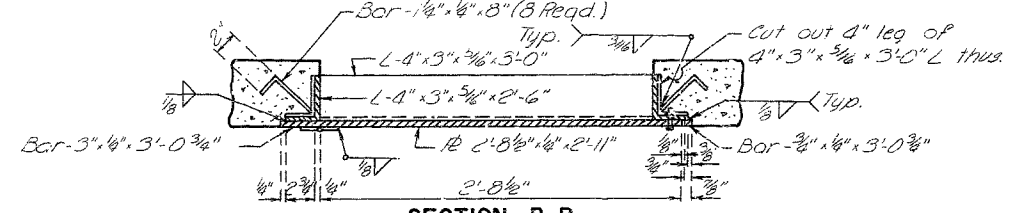


SECTION D-D



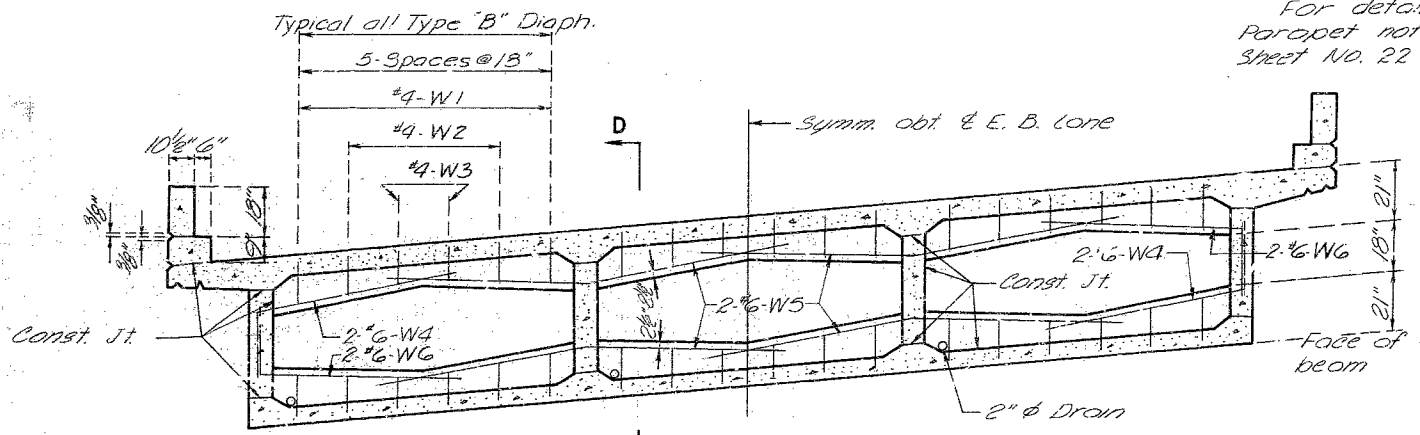
PLAN

Note: Weight of one door and frame is approx. 170 lbs.

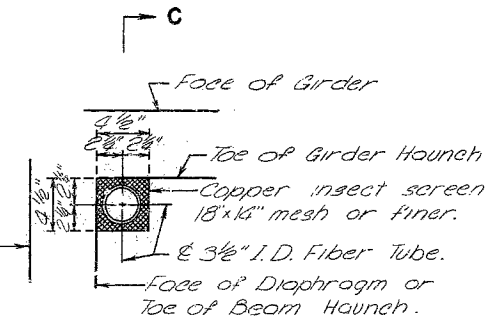


SECTION B-B

Note: Access doors to be assembled and in place while slab is being poured.
Bottom surface of door to be flush with bottom of slab.
Payment for furnishing and installing access doors and frames shall be made and considered fully covered under price bid for Fabricated Structural Steel.



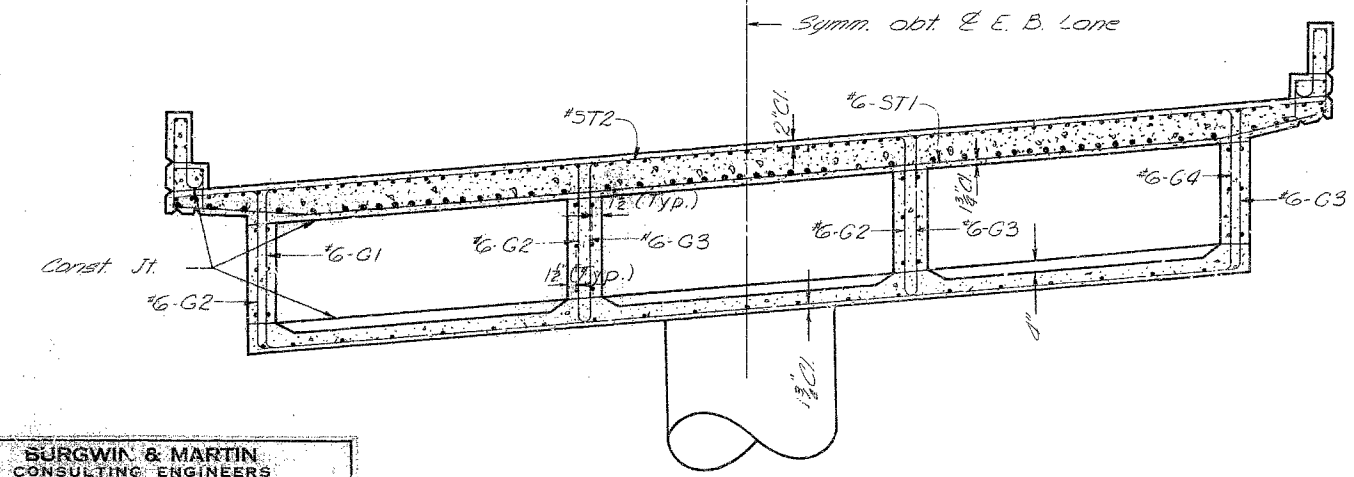
SECTION NEAR TYPE "B" DIAPHRAGMS



SECTION C-C

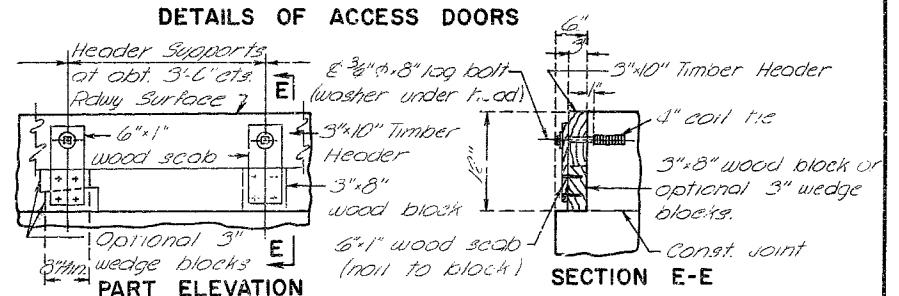
Note: Payment for furnishing and placing fiber tube, copper screen and caulking compound shall be included in price bid for other items of work.

DETAILS OF AIR INLET



SECTION NEAR INT. BENTS

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



PART ELEVATION

DETAILS OF TIMBER HEADER

BRIDGE OVER RAMP I & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY
PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
PLATTE COUNTY

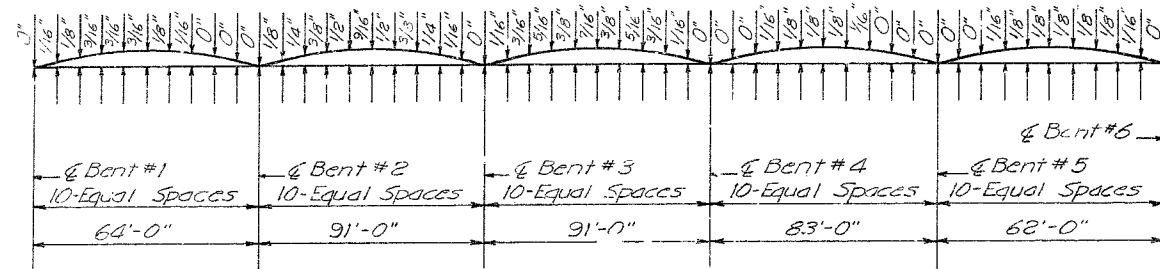
367

BURGWIN & MARTIN
CONSULTING ENGINEERS

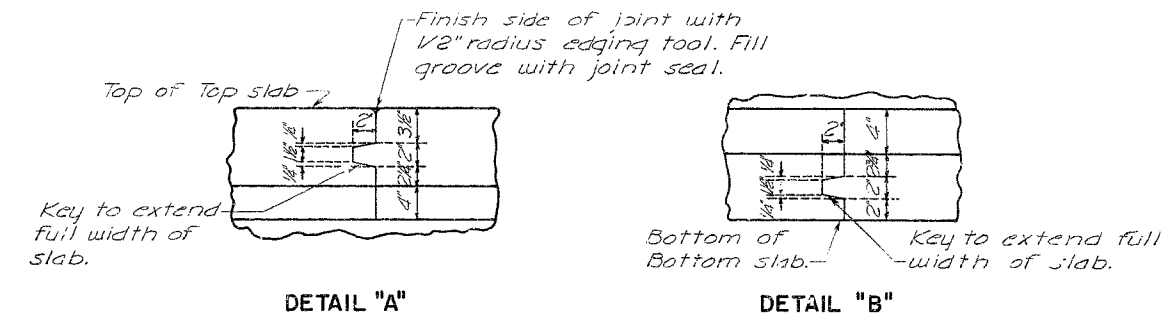
DESIGNED BY: F.D. Toland
CHECKED BY: R.C. Perry
DESIGN BY: A.G. Latham
DETAILS BY: A.G. Latham

MISSOURI STATE HIGHWAY DEPARTMENT

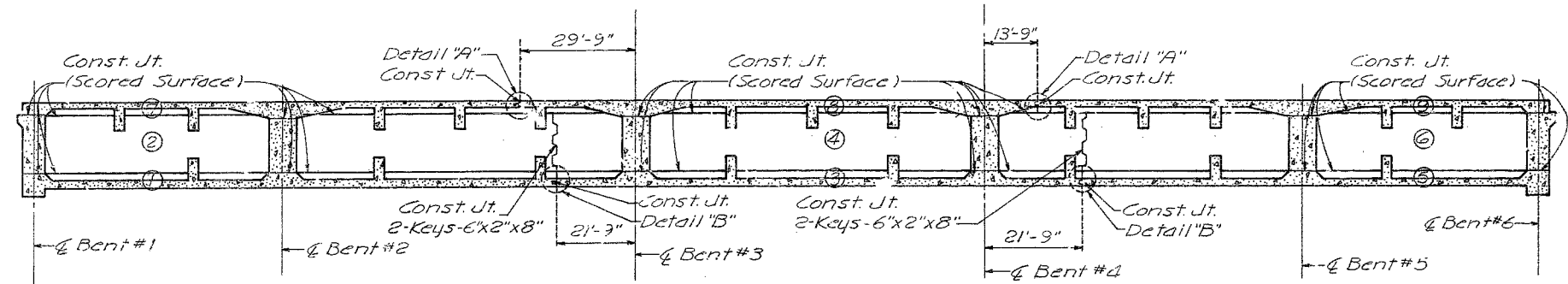
FED. ROAD DIST. NO.	STAT.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	83	



CAMBER DIAGRAM



Note: Longitudinal dimensions shown are arc lengths at center structure. All transverse construction joints are on radial lines.



LONGITUDINAL SECTION SHOWING POURING SEQUENCE

Note: Numbers in circles indicate the basic pouring sequence. Longitudinal joints in roadway slabs, unless specifically on plans, will not be permitted.

The contractor shall use an approved oscillating screed type, self-propelled mechanical finishing machine and shall pour roadway slabs at a rate of not less than 25 cubic yards per hour. He shall observe the basic pouring sequence unless he can demonstrate to the engineer that he can pour and satisfactorily

finish the superstructure concrete at a rate which will permit the combining of such of the basic pours as may be specifically designated by the engineer as being compatible with design. Finish machine loads will not be permitted on concrete less than 48 hours old.

With use of forms and basic falsework meeting the approval of the engineer, the girder webs and diaphragms may be poured with the bottom slab sections on which they bear.

All forms shall be removed from the interior of box girders except top slab forms which may be left in place.

368

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED E.D. Foland	DETAILED L. Henak
DESIGN CK. A.G. Latham	DETAIL CK. A.G. Latham

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

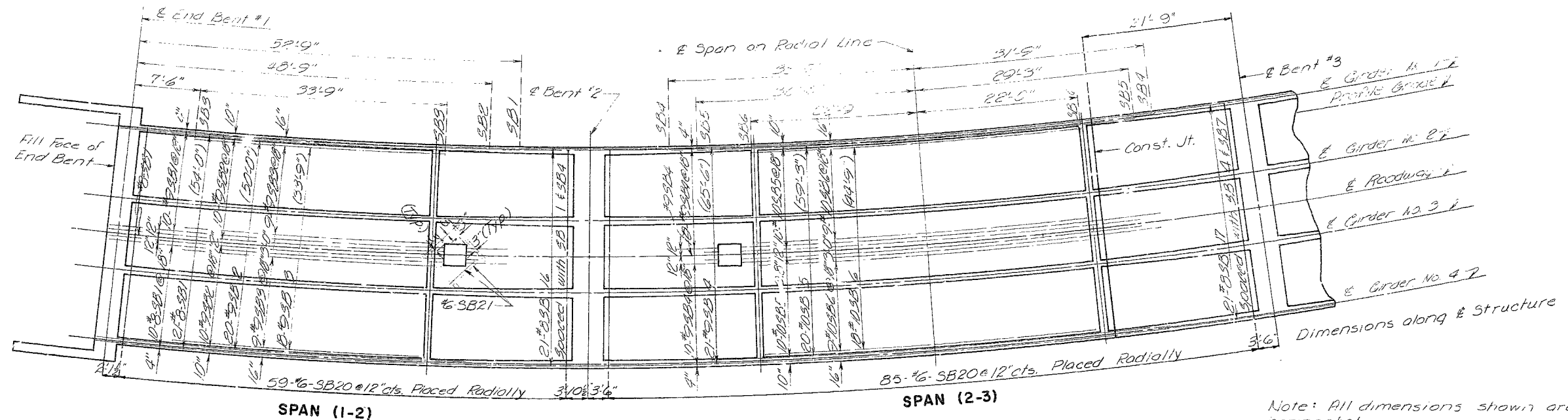
Sheet No. 13 of 22.

BRIDGE OVER RAMP I & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY
PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.25 RAMP 4
PLATTE COUNTY

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	84	



REINFORCING IN BOTTOM SLAB

369

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED: F.D. Foland	DETAILED: R.C. Norris
DESIGN CK: A.G. Lathorn	DETAIL CK: A.G. Lathorn

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

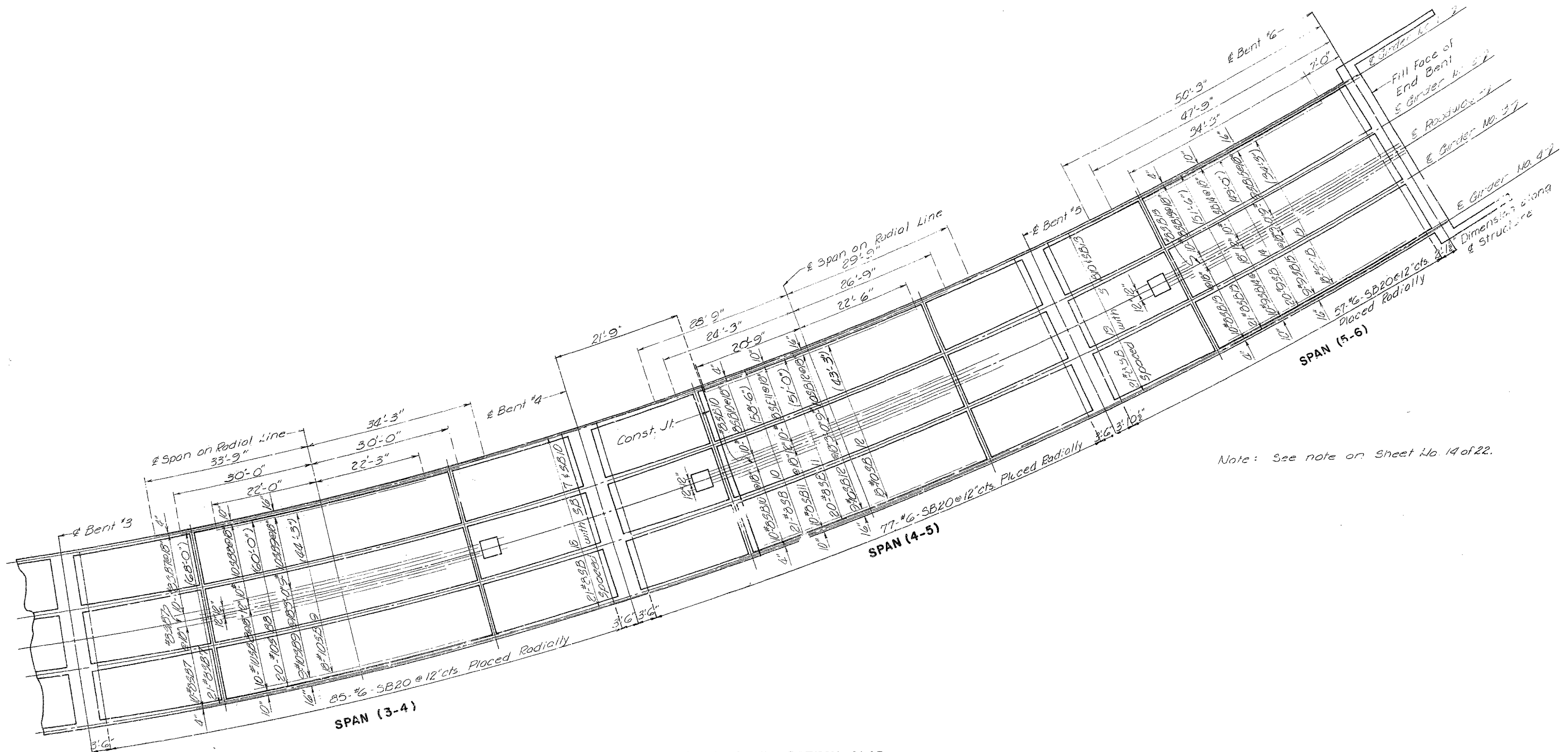
Sheet No. 14 of 22.

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36)(RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	23	



Note: See note on Sheet No. 14 of 22.

REINFORCING IN BOTTOM SLAB

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36)^{SEC.B} (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED F.D. Foland	DETAILED R.C. Norris
DESIGN CK. J.G. Latham	DETAIL CK. J.G. Latham

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

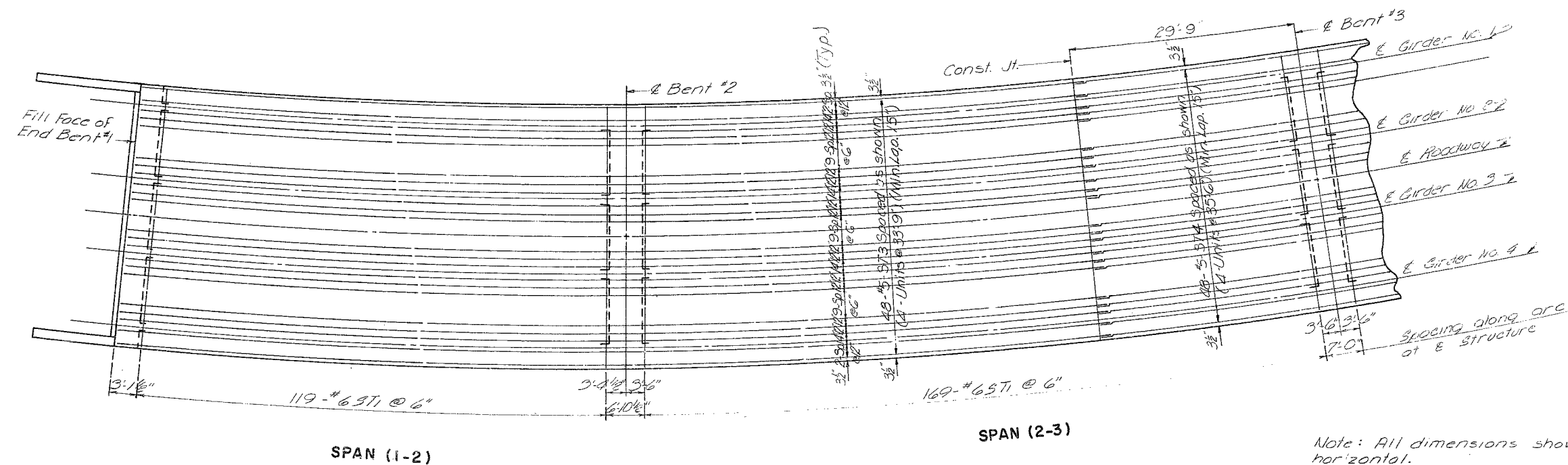
Sheet No. 15 of 22.

A-1688

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	86	



Note: All dimensions shown are horizontal.
 Longitudinal reinforcement to be placed on arc parallel to centerline.

REINFORCING IN BOTTOM OF TOP SLAB

371

BRIDGE OVER RAMP 1 & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36)^{-SEC. B}(RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED F.D. Foland	DETAILED J.O. Carter
DESIGN CK. R.G. Latham	DETAIL CK. R.G. Latham

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

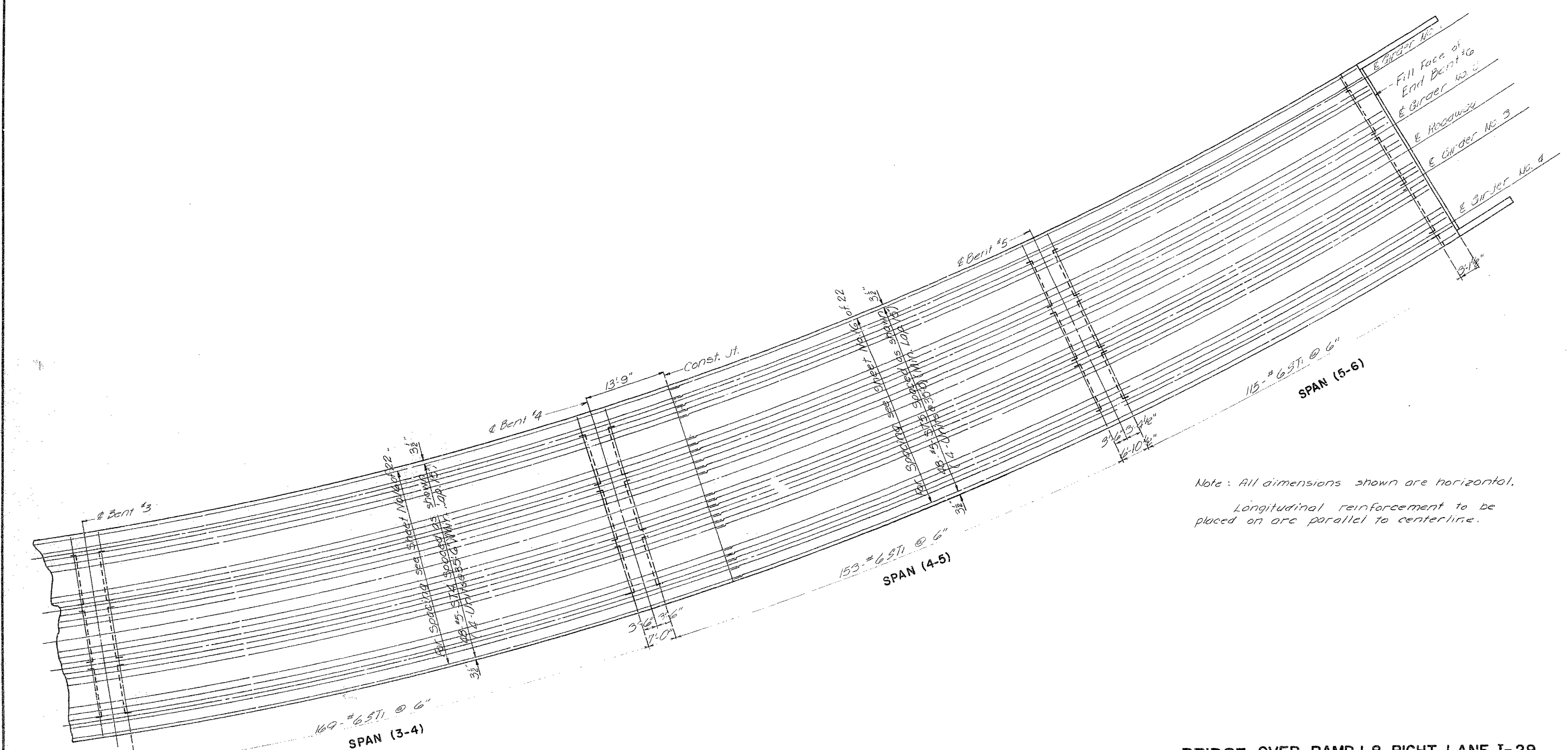
Sheet No. 16 of 22.

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	87	

372



Note: All dimensions shown are horizontal.
 Longitudinal reinforcement to be placed on arc parallel to centerline.

REINFORCING IN BOTTOM OF TOP SLAB

BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36) (SEC. B) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

BURGWIN & MARTIN
 CONSULTING ENGINEERS
 DESIGNED F.D. Foland DETAILED J.O. Carter
 DESIGN CK. A.G. Latham DETAIL CK. A.G. Latham

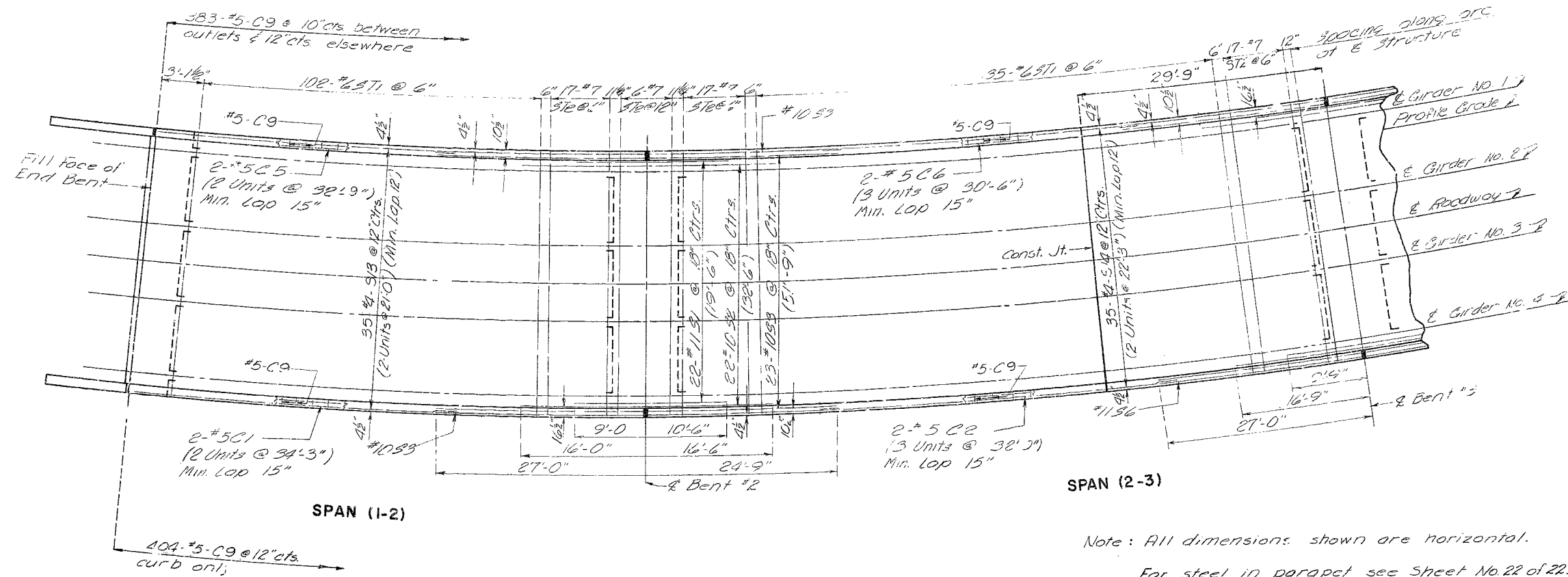
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 17 of 22.

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	17	



REINFORCING IN TOP OF TOP SLAB

373

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED: F.D. Poland	DETAILED: R.C. Norris
DESIGN CK: G. Latham	DETAIL CK: A.G. Latham

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

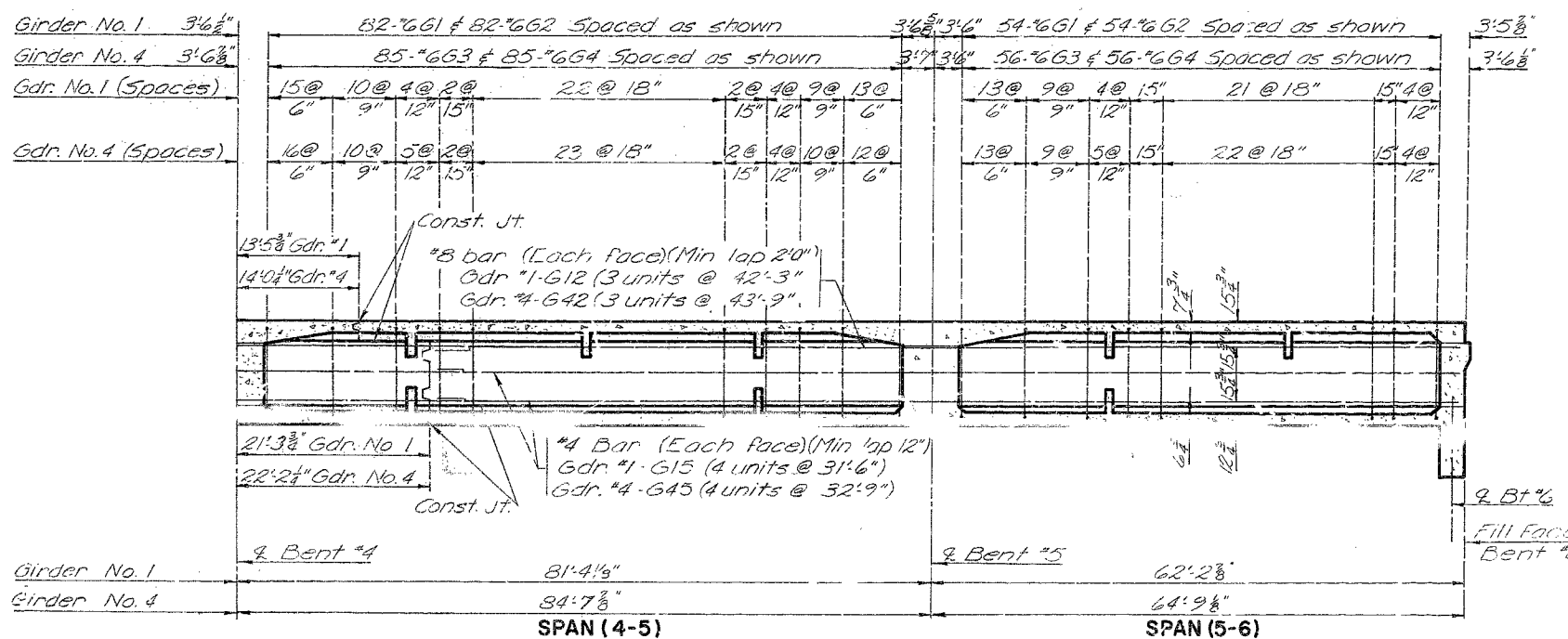
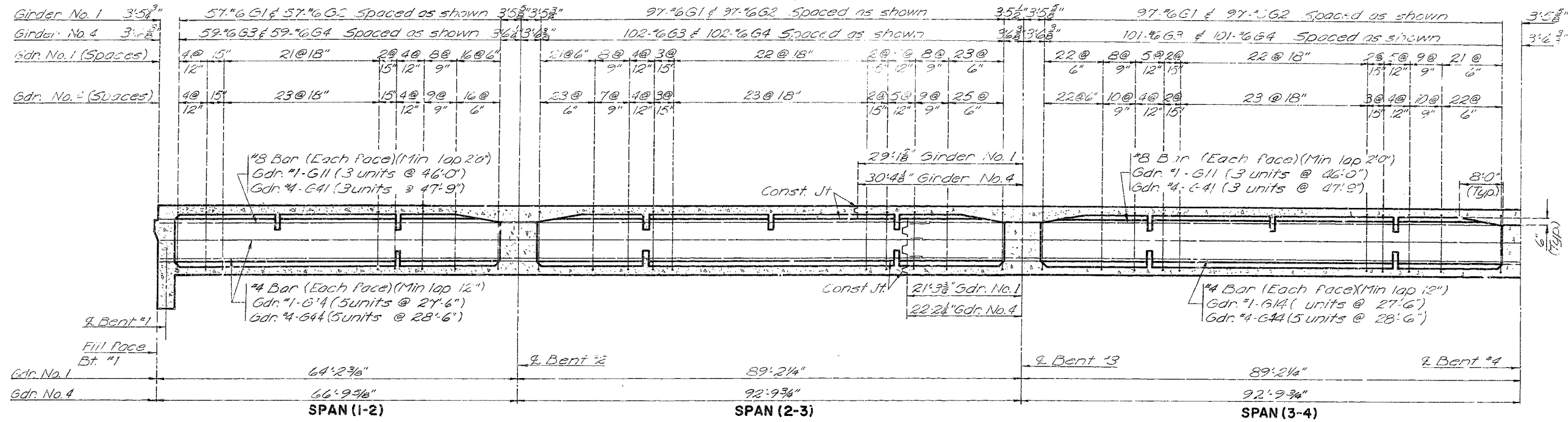
Sheet No. 18 of 22

BRIDGE OVER RAMP 1 & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	90	



3.75

BURGWIN & MARTIN
CONSULTING ENGINEERS

DESIGN BY: F.D. Foland DETAILED: C. Page
DESIGN CK: A.G. Latham DETAIL CK: A.G. Latham

Note: This drawing is not to scale. Follow dimensions

EXTERIOR GIRDER ELEVATIONS

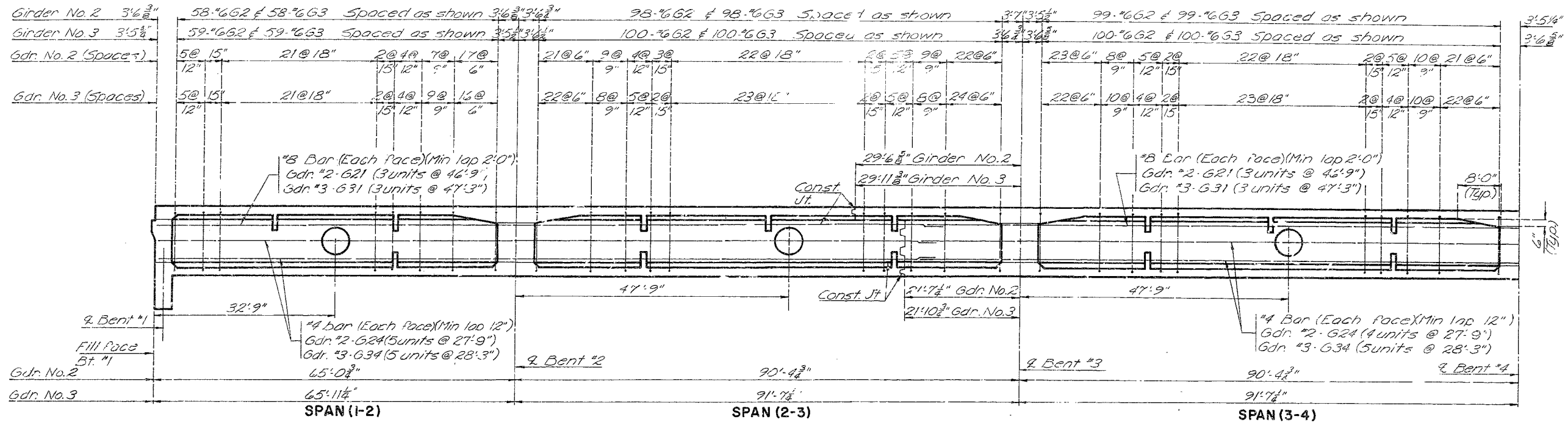
Sheet No. 20 of 22.

BRIDGE OVER RAMP 1 & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY
PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
PLATTE COUNTY

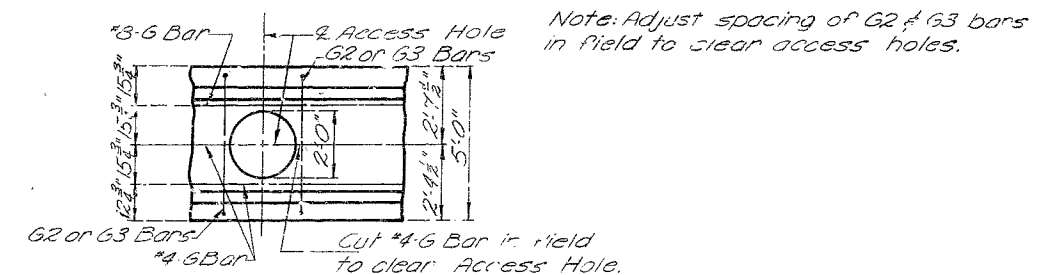
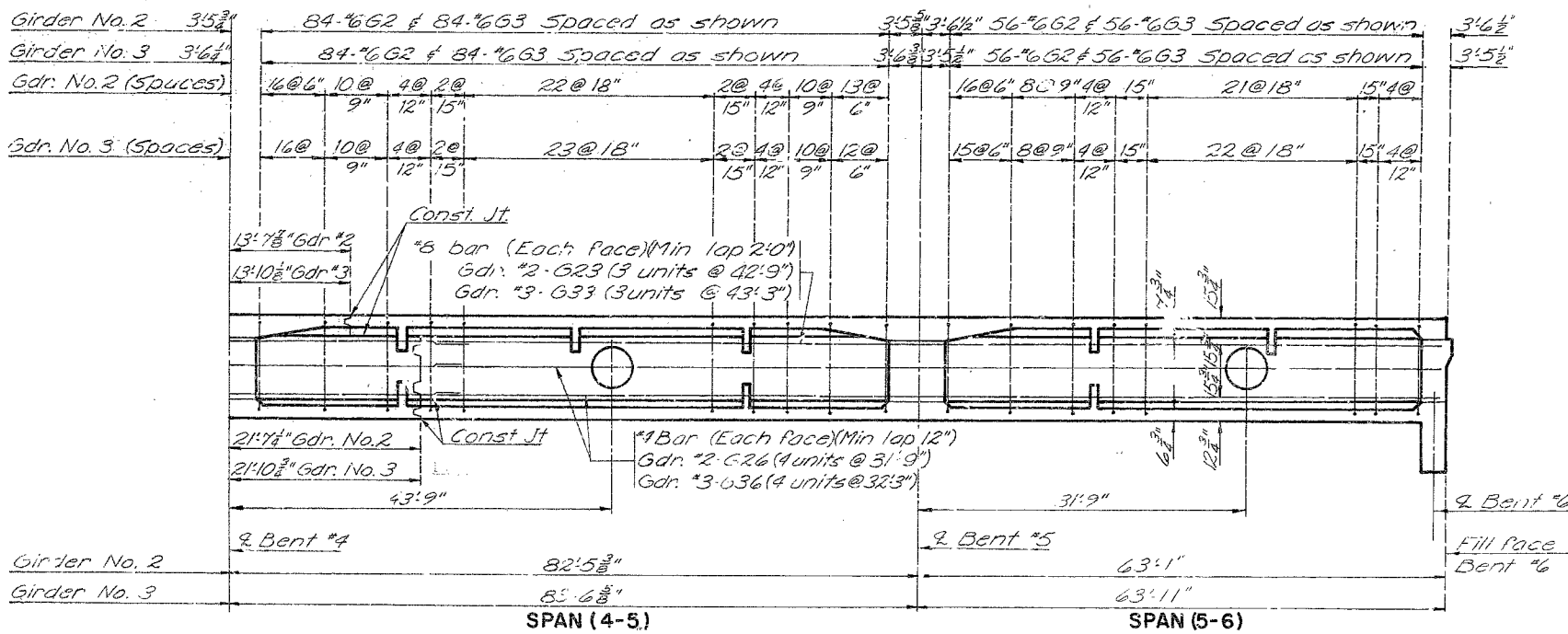
A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	91	



Note: Longitudinal dimensions shown are Horizontal Arc Lengths.



BRIDGE OVER RAMP I & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-(136) (SEC B) (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

INTERIOR GIRDER ELEVATIONS

BURGWIN & MARTIN CONSULTING ENGINEERS	
DESIGNED F. D. Folar	DETAILED C. Page
DESIGN CK. B. G. Larson	DETAIL CK. A. G. Latham

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

Sheet No. 21 of 22.

376

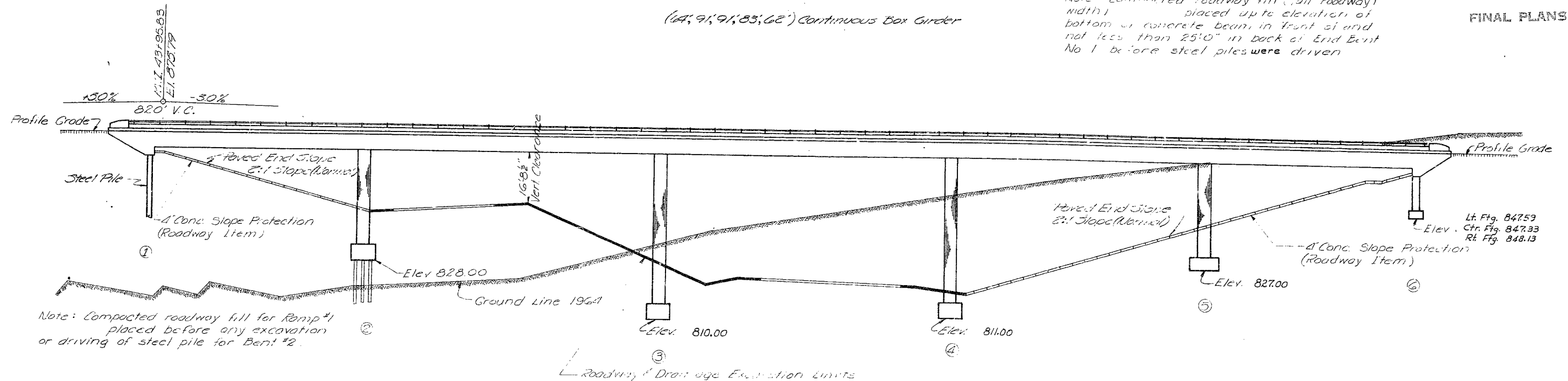
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	71	

FINAL PLANS

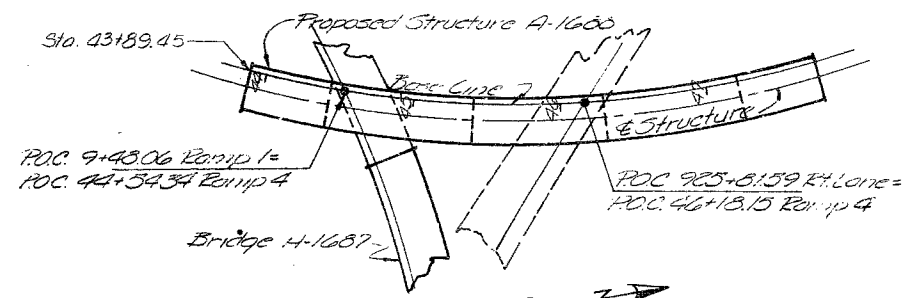
(44', 91', 91', 83', 62') Continuous Box Girder

Note: Compacted roadway fill (full roadway width) placed up to elevation of bottom of concrete beam, in front of and not less than 25'0" in back of End Bent No 1 before steel piles were driven



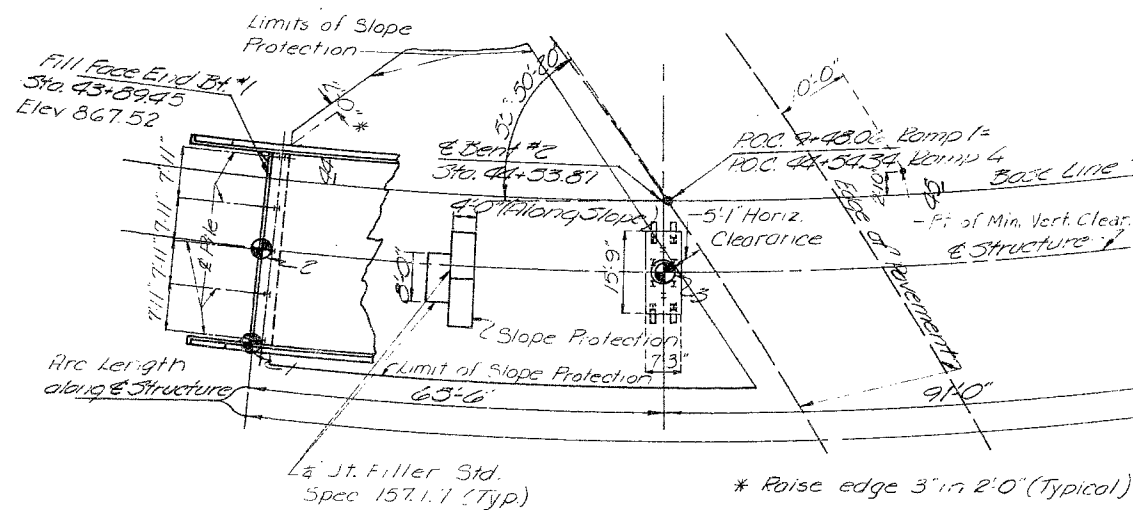
ELEVATION

Note: For General Notes and Estimated Quantities see Sheet No. 2 of 22.
For Footing and Pile Data see Sheet No. 3 of 22.



Curve Data:
P.I. Sta. 45+00.0
Δ 68°00'
D 8°00'
Tangent 483.08'
Length 850.0'
Radius 716.20'
S.E. 0.0874
LT 200'

LOCATION SKETCH



PLAN

Note: For Boring Data see Sheet No. 3 of 22.
⊕ Indicates location of borings.

B.M. Bolt in Top curb W.W. Rt. Bt #1 Elev. 870.46
B.M. Bolt in Top curb W.W. Rt. Bt #6 Elev. 867.15

BRIDGE OVER RAMP I & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY
PROJECT NO. I-29-1(36) (RTE. I-29) STA. 43+89.45 RAMP 4
PLATTE COUNTY

BURGWIN & MARTIN
CONSULTING ENGINEERS
DESIGNED: F.D. Roland
DETAILED: R. Kettner
DESIGN CK: A.G. Latham
DETAIL CK: A.G. Latham

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

Sheet No. 14 of 4

FINAL PLANS

STD. 54.00

A-1688

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	72	

FINAL PLANS

COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION	BENDING SKETCHES & CUTTING DIAGRAMS	NO.	SIZE	LENGTH	MARK	LOCATION	NO.	SIZE	LENGTH	MARK	LOCATION
Substructure Int. B's 2,3,4,5															
2	11	13	F21	Footing	2'0" 4'10"	3	8	13'0"	C11	Wing	Superstructure (Cont.)				
6	11	15'6"	F22	"	10'7 1/2"	36d	5	5'3"	R7	Parapet					
2	12.5	15'6"	F23	"	10'7 1/2"	27	5	5'0"	C14	"					
16	6	7'0"	F24	"	10'7 1/2"	2	6	15'9"	C61	"					
9	3	2'9"	F25	"	10'7 1/2"	3	8	13'0"	C62	"					
24	11	17'3"	F31	"	10'7 1/2"	8	9	37'0"	H11	Beam					
28	6	6'9"	F32	"	10'7 1/2"	8	6	34'6"	H12	"					
18	11	20'3"	F31	"	10'7 1/2"	1	6	12'6"	H14	Wing					
17	6	8'9"	F52	"	10'7 1/2"	3	7	16'0"	H17	"					
32	7	5'9"	F26	"	10'7 1/2"	3	6	15'6"	H18	"					
Substructure End Bent #6															
18	3	8'9"	D61	Footing	10'7 1/2"	3	7	22'0"	H61	"					
30	5	4'3"	D62	"	10'7 1/2"	3	6	21'6"	H62	"					
13	9	2'9"	V61	Column	10'7 1/2"	1	6	17'6"	H63	"					
8	3	6'2"	V62	"	10'7 1/2"	12	6	8'3"	H19	"					
3	9	7'8"	V63	"	10'7 1/2"	4	5	4'9"	R1	End Post					
8	9	6'2"	V64	"	10'7 1/2"	2	5	5'6"	R2	"					
24	5	8'0"	V66	"	10'7 1/2"	2	5	6'3"	R3	"					
Superstructure End Bent #1															
3	8	16'0"	C10	Wing	10'7 1/2"	2	5	6'3"	R4	"					
3	5	5'0"	C11	"	10'7 1/2"	2	5	7'0"	R6	"					
2	6	13'9"	C12	"	10'7 1/2"	18	6	5'3"	R7	Parapet					
2	6	10'9"	C13	"	10'7 1/2"	4	5	10'3"	R15	"					
25	5	5'7"	C14	"	10'7 1/2"	4	5	15'3"	R16	"					
8	9	37'0"	H11	Beam	10'7 1/2"	2	6	16'0"	T12	Wing					
8	6	34'6"	H12	"	10'7 1/2"	2	16	20'6"	T61	"					
1	6	15'6"	H13	Wing	10'7 1/2"	70	4	11'6"	U11	Beam					
1	6	12'6"	H14	"	10'7 1/2"	10	3	8'9"	V12	Wing					
3	7	15'3"	H15	"	10'7 1/2"	15	4	8'9"	V65	"					
3	6	19'3"	H16	"	10'7 1/2"	1314	6	34'6"	S71	Top Slab					
3	7	16'0"	H17	"	10'7 1/2"	4	5	34'3"	C1	Curb					
3	6	15'6"	H18	"	10'7 1/2"	12	5	32'0"	C2	"					
12	6	8'3"	H19	"	10'7 1/2"	6	5	29'3"	C3	"					
4	5	4'9"	R1	End Post	10'7 1/2"	2	5	33'0"	C4	"					
2	5	5'6"	R2	"	10'7 1/2"	4	5	32'9"	C5	"					
2	5	6'3"	R3	"	10'7 1/2"	12	5	30'6"	C6	"					
2	5	6'9"	R4	"	10'7 1/2"	6	6	28'0"	C7	"					
2	5	7'0"	R5	"	10'7 1/2"	4	6	31'9"	C8	"					
4	5	7'0"	R6	"	10'7 1/2"	187	5	4'0"	C9	"					
16	5	5'3"	R7	Parapet	10'7 1/2"	387	6	8'6"	G1	Girder					
4	5	13'3"	R8	"	10'7 1/2"	1181	6	8'6"	G2	"					
2	5	10'3"	R15	"	10'7 1/2"	1197	6	8'6"	G3	"					
Superstructure															
1314	6	34'6"	S71	Top Slab	10'7 1/2"	403	6	8'6"	G4	"					
160	7	34'6"	S72	"	10'7 1/2"	12	8	46'0"	G11	"					
192	5	33'9"	S73	"	10'7 1/2"	6	8	42'3"	G12	"					
192	5	35'6"	S74	"	10'7 1/2"	20	8	51'0"	S811	"					
192	5	35'0"	S75	"	10'7 1/2"	18	10	44'9"	S82	"					
2	5	33'0"	C4	"	10'7 1/2"	20	9	49'0"	S83	"					
4	5	32'9"	C5	"	10'7 1/2"	18	9	33'9"	S84	"					
12	5	30'6"	C6	"	10'7 1/2"	21	8	28'6"	S85	"					
6	6	28'0"	C7	"	10'7 1/2"	21	8	28'6"	S86	"					
4	6	31'9"	C8	"	10'7 1/2"	21	8	28'6"	S87	"					
187	5	4'0"	C9	"	10'7 1/2"	20	10	60'0"	S88	"					
387	6	8'6"	G1	Girder	10'7 1/2"	20	8	51'0"	S89	"					
1181	6	8'6"	G2	"	10'7 1/2"	20	8	51'0"	S90	"					
1197	6	8'6"	G3	"	10'7 1/2"	18	10	44'9"	S91	"					
403	6	8'6"	G4	"	10'7 1/2"	21	8	51'0"	S92	"					
12	8	46'0"	G11	"	10'7 1/2"	20	8	51'0"	S93	"					
6	8	42'3"	G12	"	10'7 1/2"	16	4	31'6"	T12	Wing					
20	4	27'6"	G14	"	10'7 1/2"	12	8	46'9"	G21	"					
16	4	31'6"	T12	Wing	10'7 1/2"	6	8	42'9"	G23	"					
12	8	46'9"	G21	"	10'7 1/2"	40	7	27'3"	G24	"					
6	8	42'9"	G23	"	10'7 1/2"	16	4	31'9"	G26	"					
40	7	27'3"	G24	"	10'7 1/2"	12	8	47'3"	G31	"					
16	4	31'9"	G26	"	10'7 1/2"	6	8	43'3"	G33	"					
12	8	47'3"	G31	"	10'7 1/2"	40	4	28'3"	G34	"					
6	8	43'3"	G33	"	10'7 1/2"	16	4	32'3"	G36	"					
40	4	28'3"	G34	"	10'7 1/2"	12	8	47'3"	G41	"					
16	4	32'3"	G36	"	10'7 1/2"	6	8	43'3"	G42	"					
12	8	47'3"	G41	"	10'7 1/2"	40	4	28'6"	G44	"					
6	8	43'3"	G42	"	10'7 1/2"	16	4	32'3"	G45	"					
40	4	28'6"	G44	"	10'7 1/2"	42	6	8'3"	W4	Diagn					
16	4	32'3"	G45	"	10'7 1/2"	126	4	5'0"	W1	Diagn					
					10'7 1/2"	126	4	4'9"	W2	"					
					10'7 1/2"	126	4	2'6"	W3	"					
					10'7 1/2"	42	6	8'3"	W4	"					
					10'7 1/2"	84	6	12'6"	W5	"					
					10'7 1/2"	42	6	8'3"	W6	"					

ESTIMATED QUANTITIES			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Class 1 Excavation for Structures Cu Yds	403.5		403.5
Steel Piles in Place (10") Lin Ft.	256		256
Steel Pile in Place (12") Lin Ft.	177		177
Class B Concrete Cu Yds	89.8		89.8
Class B Concrete Cu Yds		1083.9	1083.9
Reinforcing Steel Lbs	93.0	364,610	373,370
Fabricated Structural Carbon Steel Lbs		900	900
Bridge Rail/Single Tube Type Lin Ft.		817	817
Drilled Test Holes	24		24
12 in Steel Pile @ 50% of Bid Price	7		7

Note: Concrete in end posts, parapets and curbs is included with superstructure concrete.
 All concrete and reinforcement above footings in intermediate bents is included in superstructure quantities.
 No payment for excavation will be allowed at End Bent No. 1.

GENERAL NOTES
 Design Specifications: A. H. S. A. S. - 1961
 Design Loading:
 HS20-44
 15"sq. ft. Future Wearing Surface
 Modified 24,000# Tandem axle
 Forth 120# Equivalent Fluid Pressure 30"
 Design Unit Stresses:
 Class B Concrete (substructure) f_c = 1,200 psi.
 Class B Concrete (superstructure) f_c = 1,600 psi.
 Reinforcing Steel f_s = 20,000 psi.
 Steel Pile (A.S.T.M. A36-G2T) f_s = 9,000 psi.
 Superstructure deck to be surface sealed.
 Painting: All steelwork shall be cleaned and painted in the field or may be cleaned and painted one coat of red lead in the shop with the two remaining coats applied in the field, except that final coat on access doors shall be galvanized. In lieu of painting, the contractor may, if he prefers, galvanize this material. Oil galvanizing shall be done after fabrication. Cost of painting or galvanizing to be included in price bid for other items.

BRIDGE OVER RAMP 1 & RIGHT LANE I-29
 STATE ROAD - INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. I-29-1650 (RTE. I-29) STA. 43+89.45 RAMP 4
 PLATTE COUNTY

379

No. 20.3 Revised June 1961 Dec 1964
 BURGWIN & MARTIN CONSULTING ENGINEERS
 DESIGNED BY [Signature] DETAILED BY [Signature]
 DESIGN CHECKED BY [Signature] DETAIL CHECKED BY [Signature]

* Top bend may be made in field or shop.
 x May bend in field or shop.

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

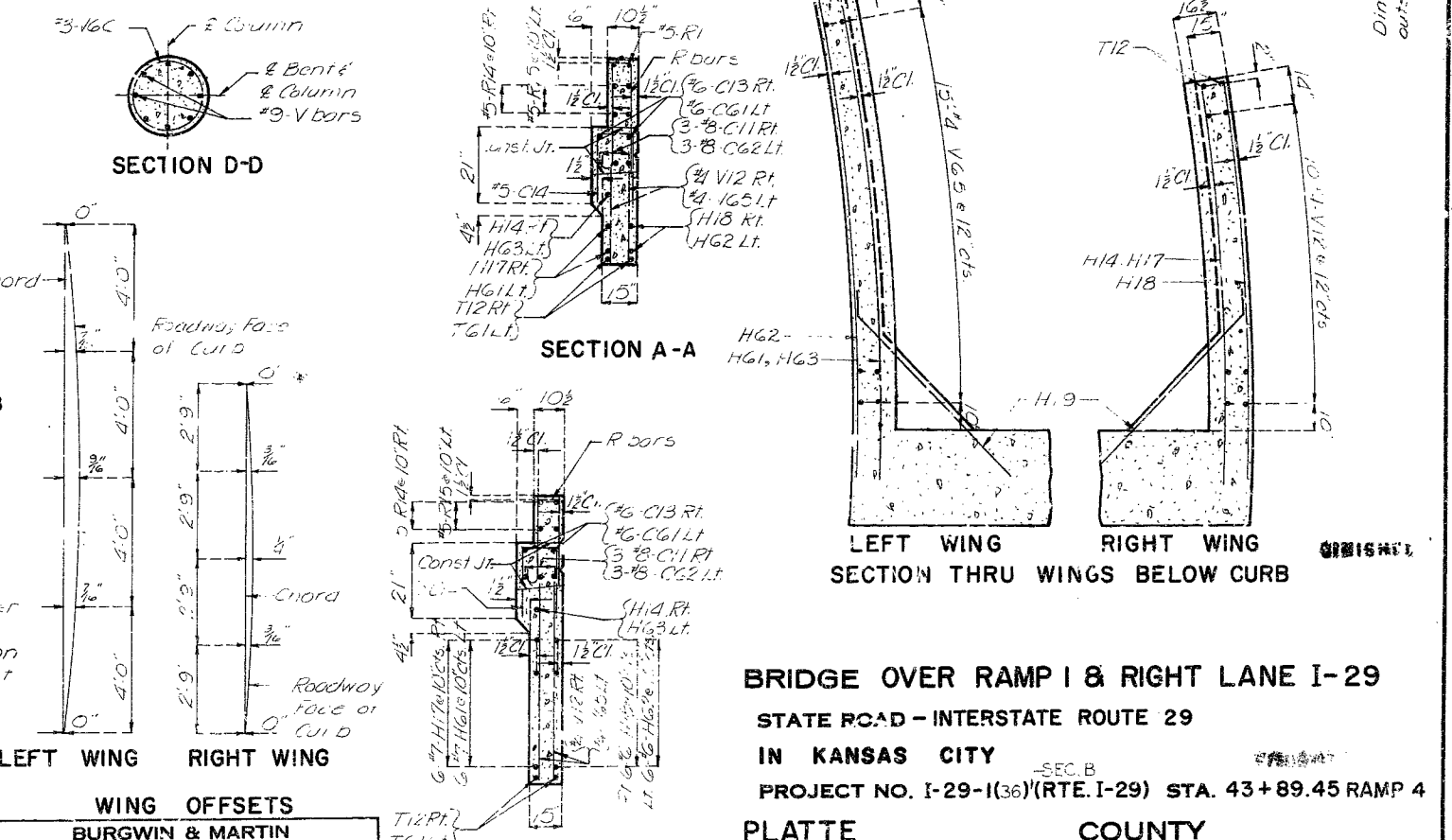
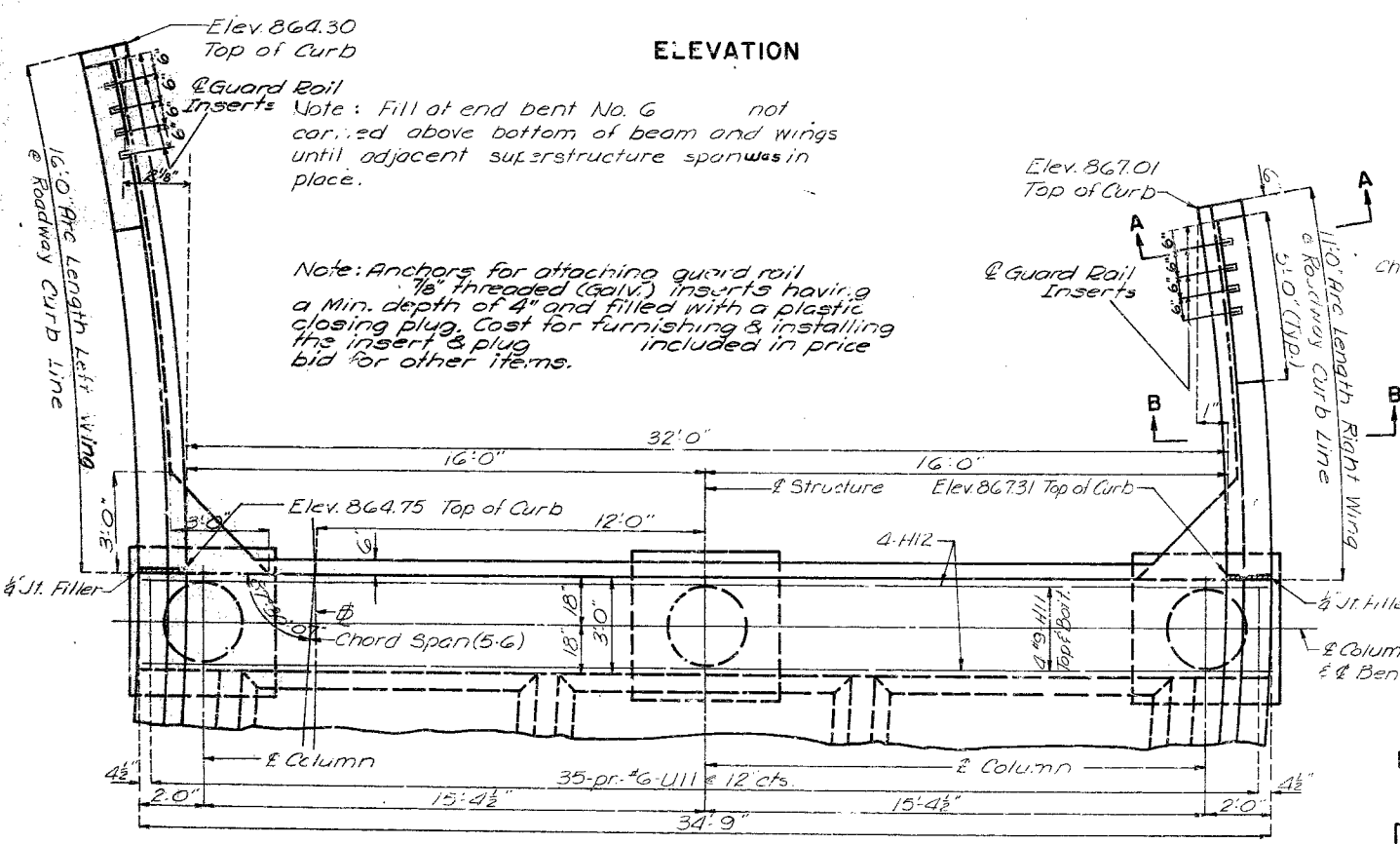
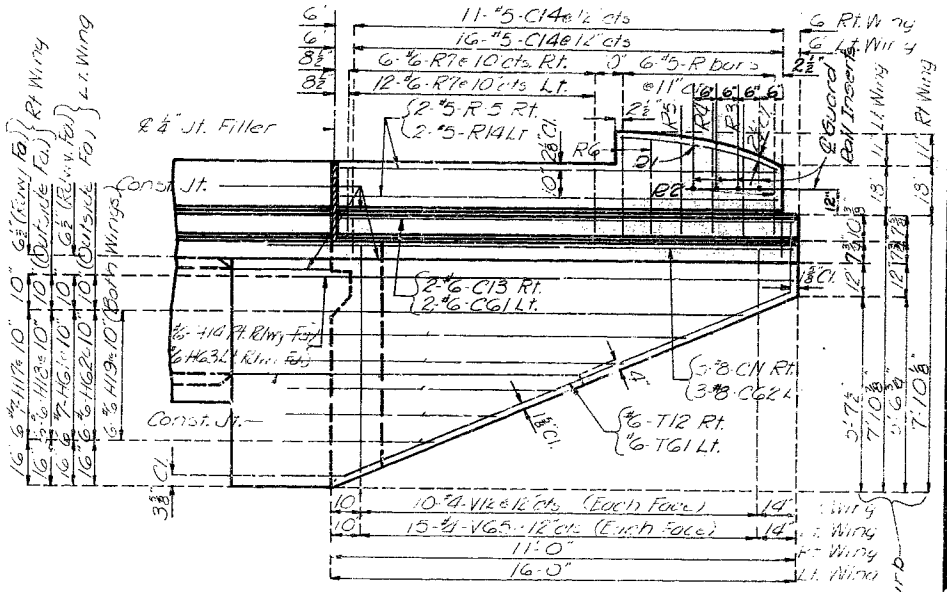
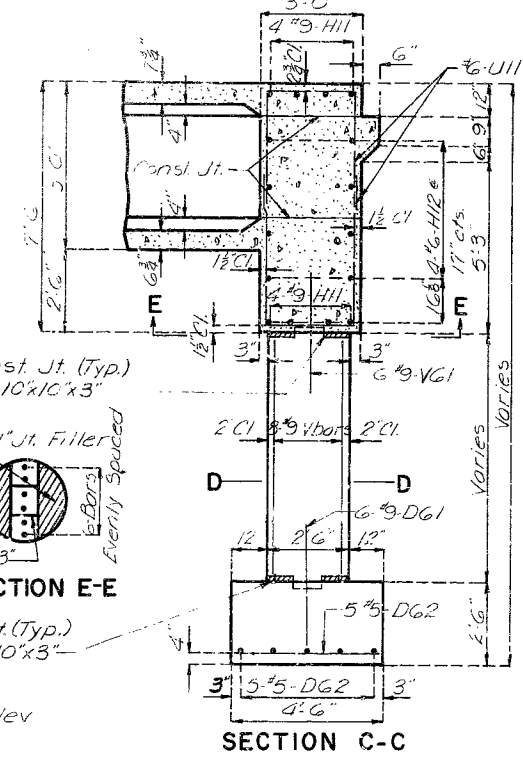
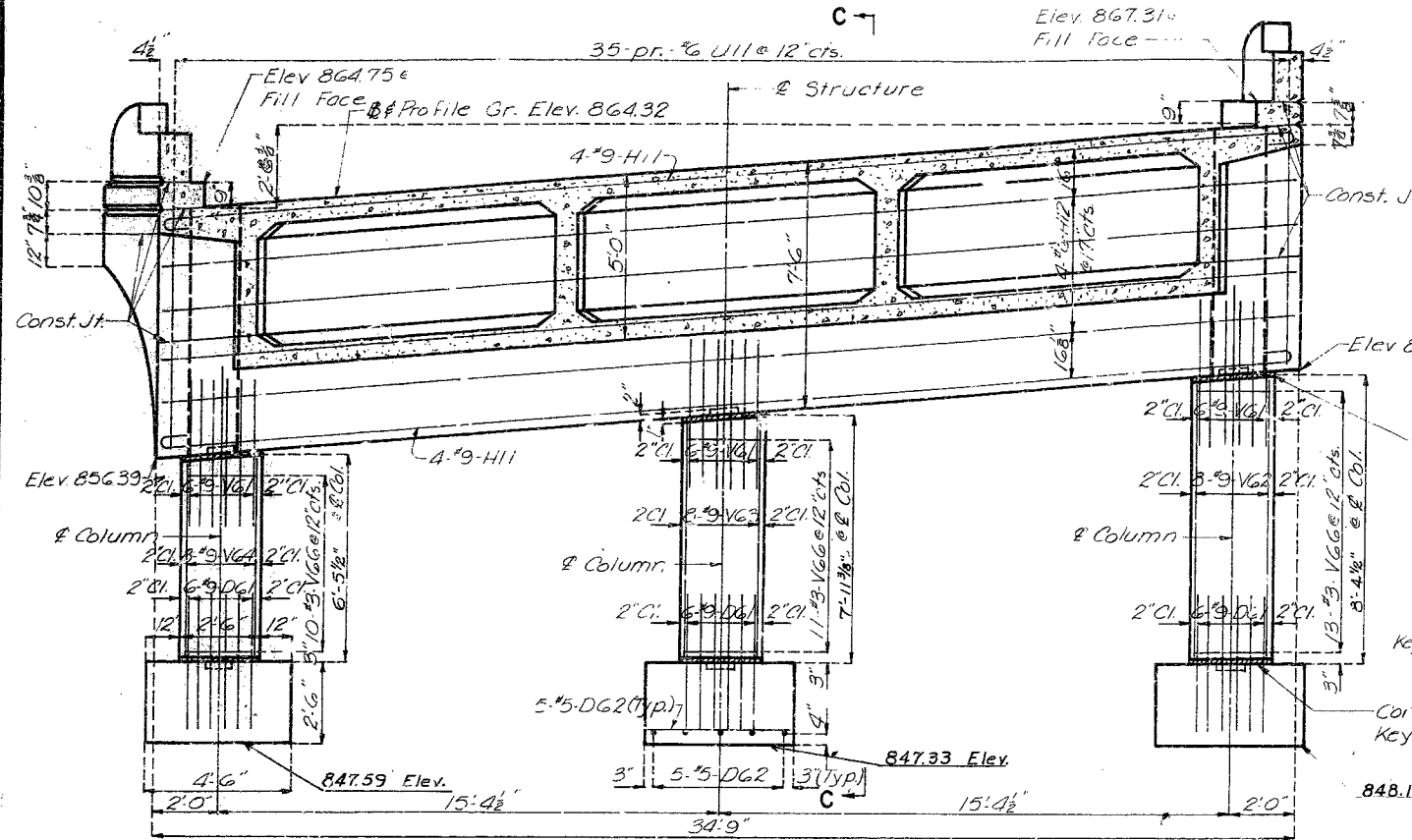
Sheet No. 24 of 24

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	79	

FINAL PLANS



185

PLAN DETAILS OF END BENT NO. 6

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

BURGWIN & MARTIN
CONSULTING ENGINEERS

DESIGNED *F.D. Foland* DETAILED *J.O. Carter*
DESIGN CK. *R.G. Latham* DETAIL CK. *R.G. Latham*

Sheet No. 94 of 4.

BRIDGE OVER RAMP I & RIGHT LANE I-29
STATE ROAD - INTERSTATE ROUTE 29
IN KANSAS CITY
PROJECT NO. I-29-1(36)(RTE. I-29) STA. 43+89.45 RAMP 4
PLATTE COUNTY

FINAL PLANS

A-1688

MISSOURI STATE HIGHWAY DEPARTMENT

TITLE SHEET

SEE

PLATTE A-1687R

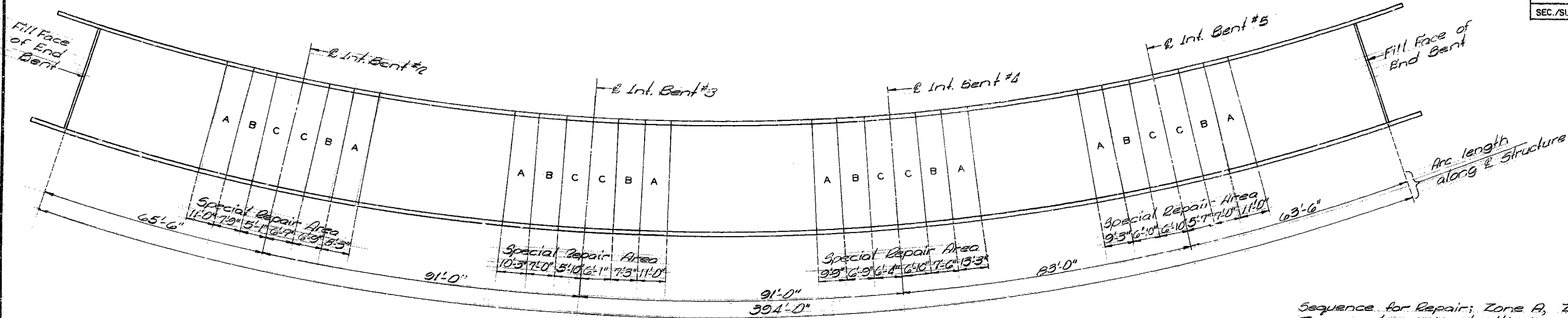
4-I-29-137

A-1688R

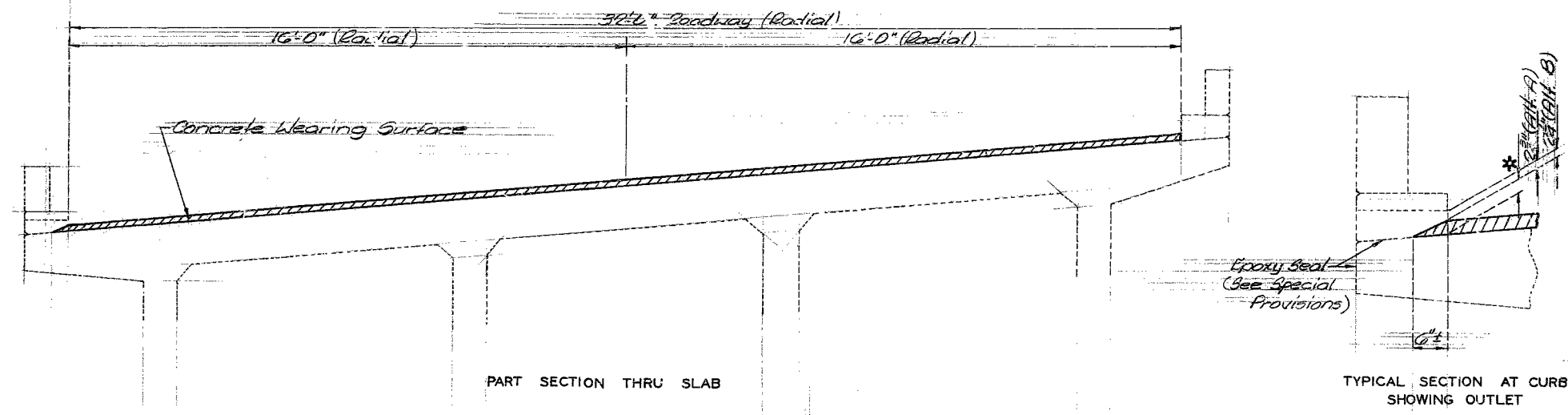
389

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MO.		19	33	
SEC./SUR. 33		TWP. 51N		RGE. 33W	



PLAN OF EXISTING SLAB

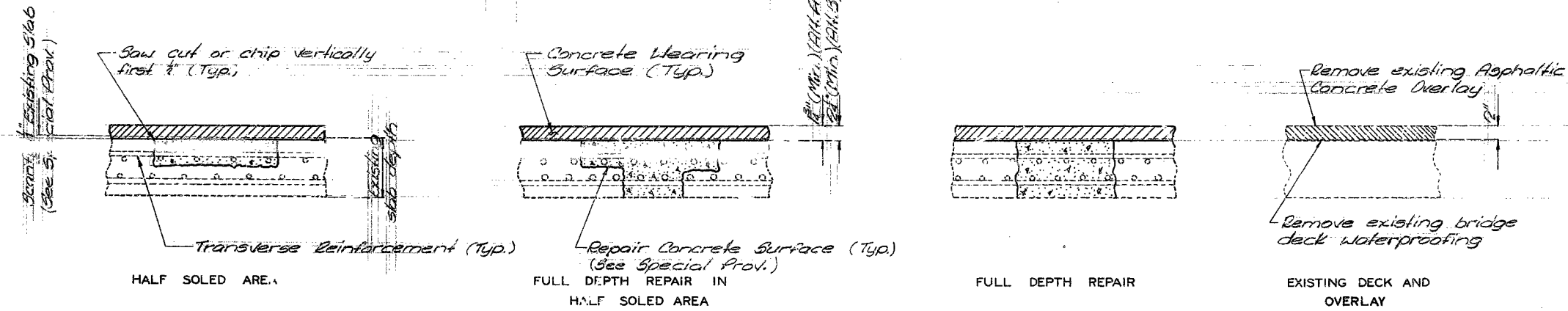


PART SECTION THRU SLAB

TYPICAL SECTION AT CURB SHOWING OUTLET

Sequence for Repair: Zone A, Zone B, then Zone C. Zones at one bent with the same letter designation may be repaired at the same time. **
 Any repair in the remainder of the bridge that is within 54" of Zone A shall be completed before removing old concrete in Zone A.
 * Alternate A: 1 1/2" (Min.) Later Modified Concrete
 Alternate B: 2 1/2" (Min.) Low Slump Concrete.
 Outline of old work is indicated by light dotted lines. Heavy lines indicate new work.
 Roadway surfacing adjacent to bridge ends to match either existing concrete deck + 1/8" or 2".
 One lane of traffic to be maintained during construction. (See Road Plans)

** Note: If any Zone "A" has a repair of over 4 sq. ft. or a total repair area of over 12 sq. ft. of Bent No. 2, 3, 4, or 5 that Zone "C" will be repaired before removing concrete in the other Zone "A" at that bent.



ESTIMATED QUANTITIES	
ITEM	TOTAL
Concrete Wearing Surface * () Sq. Yds.	1401
Repairing Concrete Deck (Half Soled) Sq. Ft.	504
Repairing Concrete Deck (Full Depth) Sq. Ft.	186
Asphalt Removal (Bridges) Lump Sum	1

See Job Special Provisions for alternate use of Concrete Wearing Surface.

REPAIRS TO BRIDGE OVER RAMP I & RIGHT LANE I-29

STATE ROAD INTERSTATE ROUTE 29
 IN KANSAS CITY
 PROJECT NO. IR-29-1(80) STA. 925+81.59± (RT. LANE)
 JOB NO. 4-I029-137C RTE. I-29
 PLATTE COUNTY

STD.
STD. 706.35

DATE December 17, 1984

-1688R1

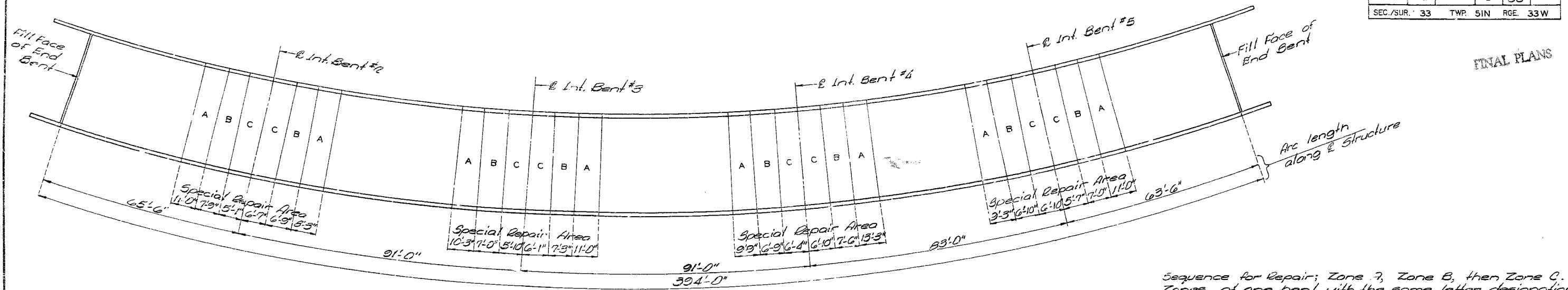
DESIGNED AUG. 1984
 DETAILED AUG. 1984
 CHECKED Sept. 1984

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

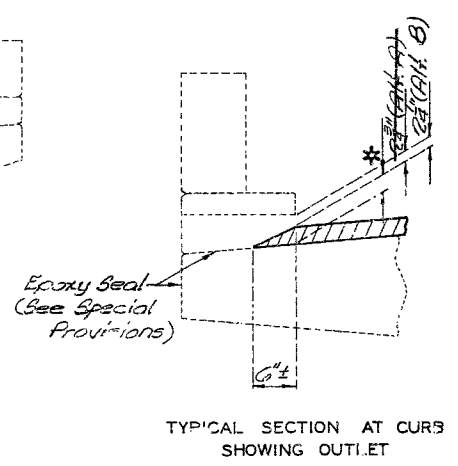
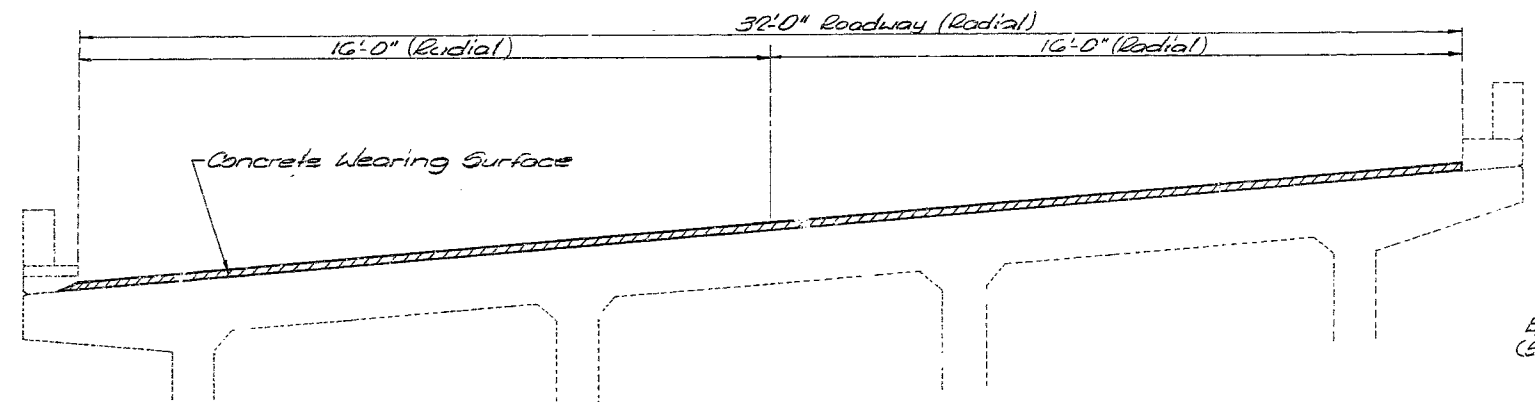
Sheet No. 1 of 1

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

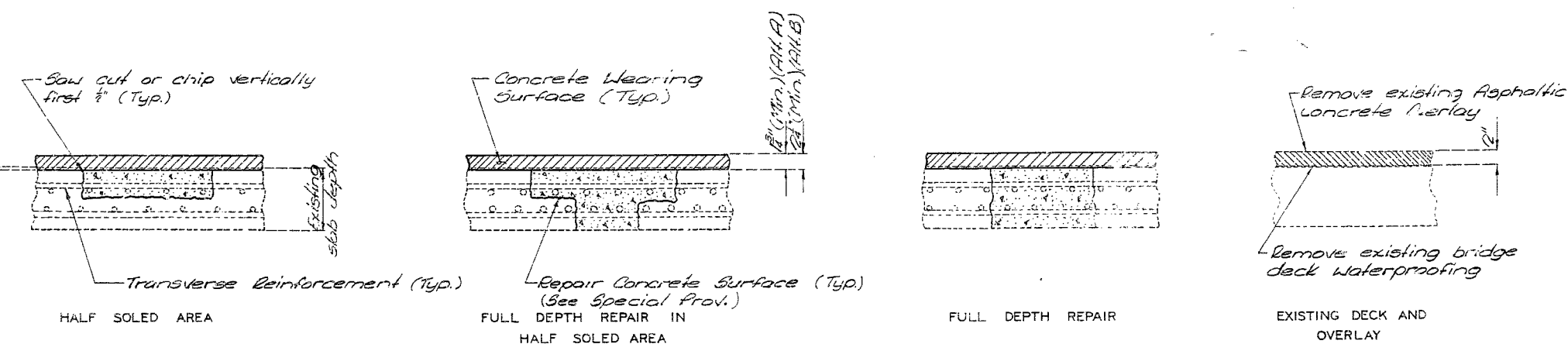
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		83	83	
SEC./SUR. 33		TWP. 51N RGE. 33W			



Sequence for Repair; Zone A, then Zone B, then Zone C. Zones at one bent with the same letter designation may be repaired at the same time. ** Any repair in the remainder of the bridge that is within 5' of Zone A shall be completed before removing old concrete in Zone A. * Alternate A = 1" (Min.) New Stump Concrete. Alternate B = 2" (Min.) New Stump Concrete. Outline of old work is indicated by light dotted lines. Heavy lines indicate new work. Roadway surfacing adjacent to bridge ends to match either existing concrete deck + 1 1/2" or 2". One lane of traffic to be maintained during construction. (See Road Plans)



** Note: If any Zone 'C' has a repair of over 4 sq. ft. or a total repair area of over 12 sq. ft. at Bent No. 2, 3, 4, or 5 that Zone 'C' will be repaired before removing concrete in the other Zone 'C' at that bent.



FINAL QUANTITIES	
ITEM	TOTAL
Concrete Wearing Surface * (Alt.B) Sq. Yd.	1401
Repairing Concrete Deck (Half Soled) Sq. Ft.	523
Repairing Concrete Deck (Full Depth) Sq. Ft.	0
Asphalt Removal (Bridges) Lump Sum	1

See Job Special Provisions for alternate use of Concrete Wearing Surfaces.

B.M.

REPAIRS TO BRIDGE OVER RAMP I & RIGHT LANE I-29

STATE ROAD INTERSTATE ROUTE 29
IN KANSAS CITY

PROJECT NO. IR-29-1(80) STA. 925+81.59± (RT. LANE)
JOB NO. 4-1029-137C RTE. 1-29

PLATTE COUNTY

STD.
STD. 706.35
A-1688RI

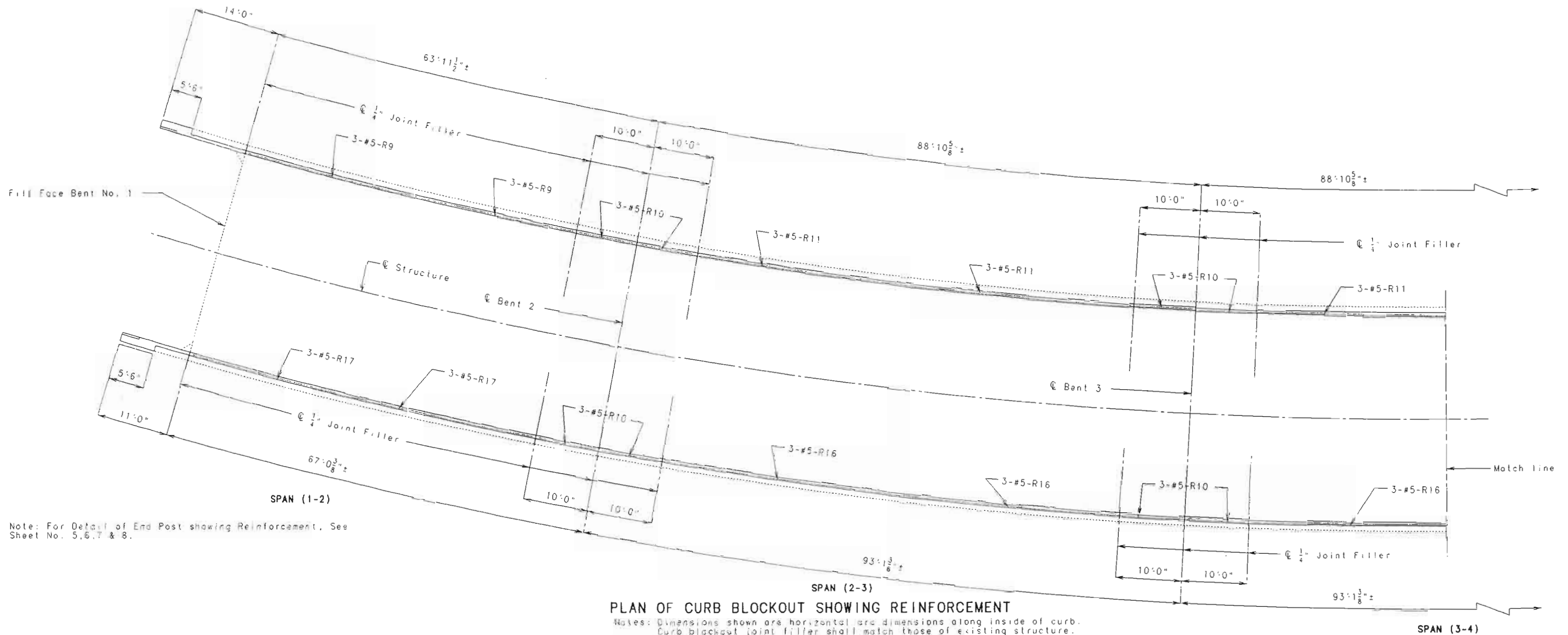
DESIGNED AUG. 1984
CHECKED AUG. 1984
CHECKED Sept. 1984

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

Sheet No. 1A of 1

DATE: December 17, 1984

STATE	PROJ. NO.	SHEET NO.
MO.		199
SEC./SUR. 33 TWP. 51N RGE. 33W		



PLAN OF CURB BLOCKOUT SHOWING REINFORCEMENT

Notes: Dimensions shown are horizontal and dimensions along inside of curb.
Curb blockout joint filler shall match those of existing structure.
Use a minimum lap of 2'-11" for #5 horizontal bars.

NOTES FOR CURB BLOCKOUT

Concrete in curb blockout shall be B1.
Measurement of curb blockout is to the nearest linear foot measured at the gutter line from end of wing to end of wing.
All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.
Payment for concrete and reinforcing steel in curb blockout complete in place shall be included in the contract unit price for the curb blockout per linear foot.
Cost of any concrete end post removal shall be considered completely covered in unit prices bid for curb blockout.
Embedment depth of resin anchor systems (vertical and horizontal) shall be a maximum of 6" into existing curb & parapet.
Adjust resin anchors in field, if necessary, to miss curb outlets.

ESTIMATED QUANTITIES		
ITEM	LIN. FT.	TOTAL
CURB BLOCKOUT		840

NOTES:

Bars bonded in old concrete not removed shall be clearly 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.

The contractor shall use one of the resin anchor systems listed in the job special provisions for the curb blockout. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions and that an epoxy coated #5 grade 60 reinforcing bar as shown shall be substituted for the 5/8" threaded rod stud.

Cost of furnishing and installing the anchor systems complete in place shall be included in the price bid per linear foot of curb blockout.

The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 18,800 lbs. in concrete with f'c = 4000 psi. See special provisions.

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

GENERAL NOTES:

- DESIGN SPECIFICATIONS: A.A.S.H.T.O., -1996
- DESIGN UNIT STRESSES: Class B1 Concrete (Curb Blockout) f'c=4000 psi; Reinforcing Steel (Grade 60) fy=60,000 psi
- JOINT FILLER: All joint filler shall meet the requirements of Std. Spec. 1057.2.4, except as noted.
- REINFORCING STEEL: Minimum clearance to reinforcing steel shall be 1-1/2" unless otherwise shown.
- OLD WORK: Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
- VERIFY DIMENSIONS: Contractor shall verify dimensions in field before ordering new materials. Note new work.
- TRAFFIC HANDLING: See roadway plans for traffic control during construction.



DATE 1/9/98

REPAIR TO: BRIDGE OVER RAMP 1 & RT. LANE 1-29

STATE ROAD AT RTE. 1-29 & 1-635 INTERCHANGE

PROJECT NO. J411246

PLATTE

STA. 43+89.45 (MATCH EXIST.)

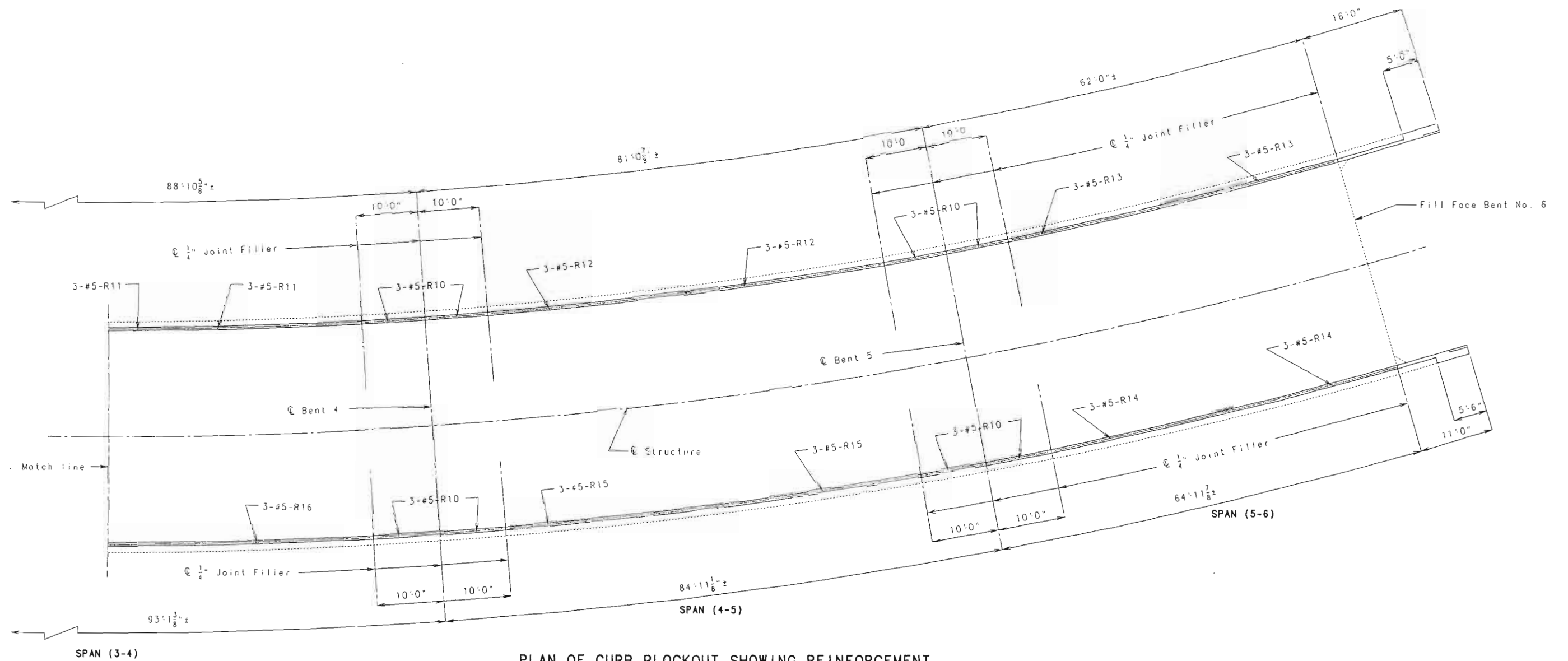
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DATE 1/27/98

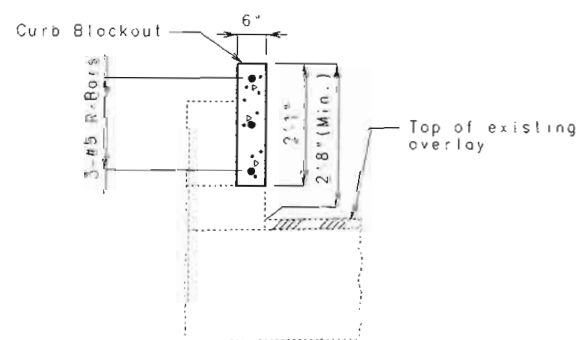
STD.
STD.
A16883

DESIGNED May 1997
DETAILED May 1997
CHECKED Oct. 1997

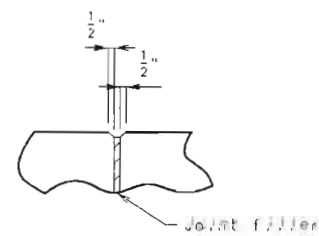
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		200



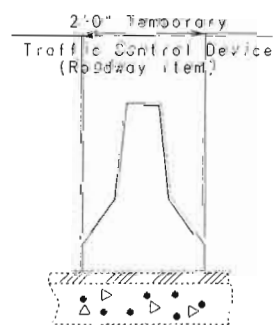
PLAN OF CURB BLOCKOUT SHOWING REINFORCEMENT



TYPICAL SECTION THRU CURB BLOCKOUT



FILLED JOINT DETAIL



DETAIL OF TEMPORARY TRAFFIC BARRIER



DATE 11/9/93

DETAILED: May 1997
CHECKED: Oct. 1997

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

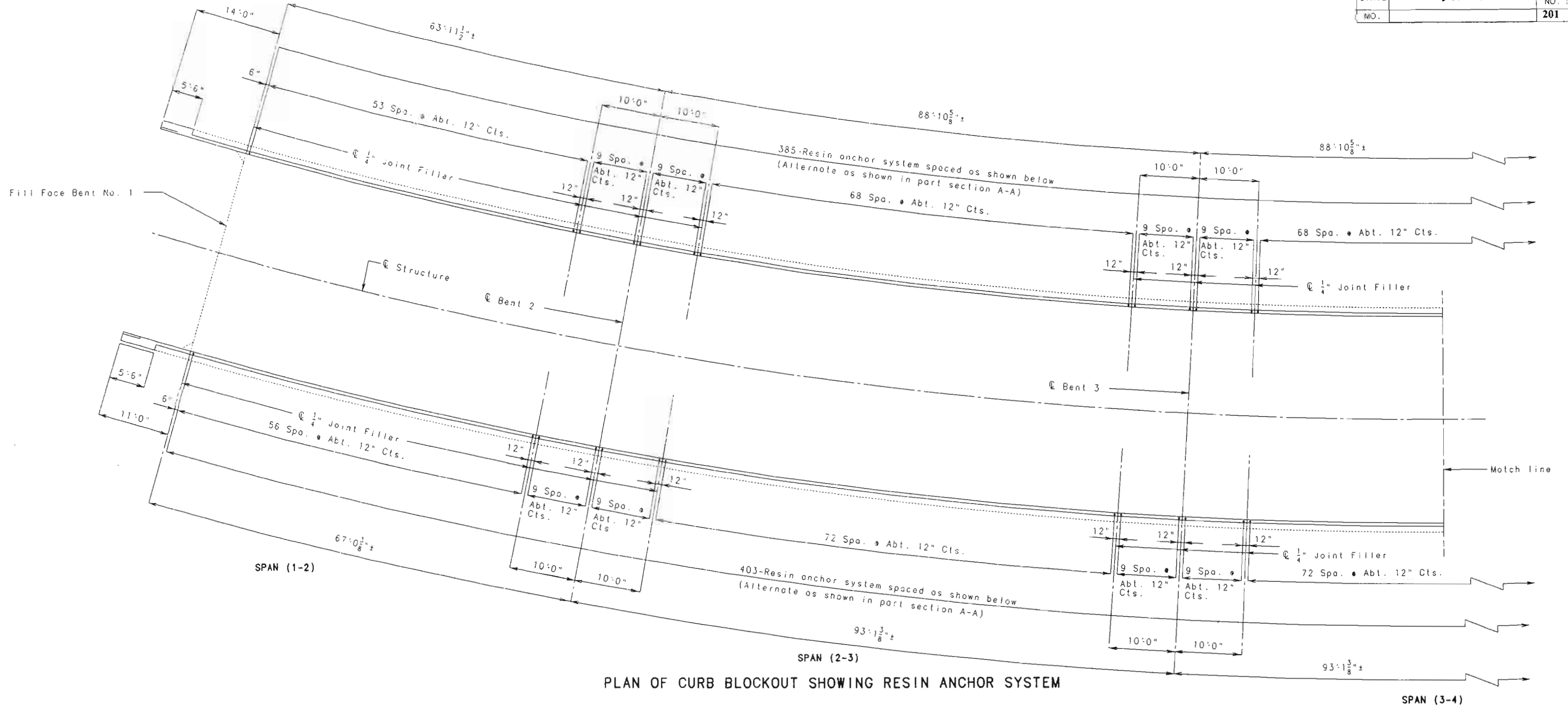
SHEET NO. 2 OF 9

PLATTE

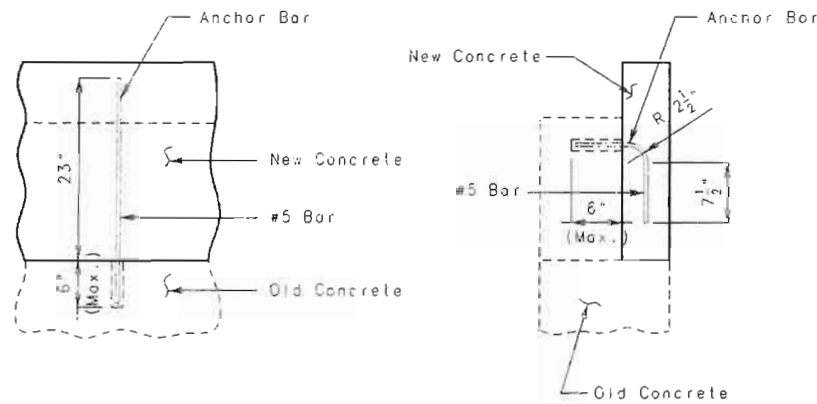
COUNTY

A16883

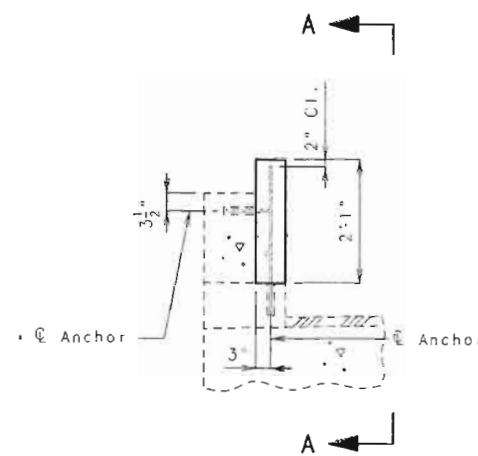
STATE	PROJ. NO.	NO.
MO.		201



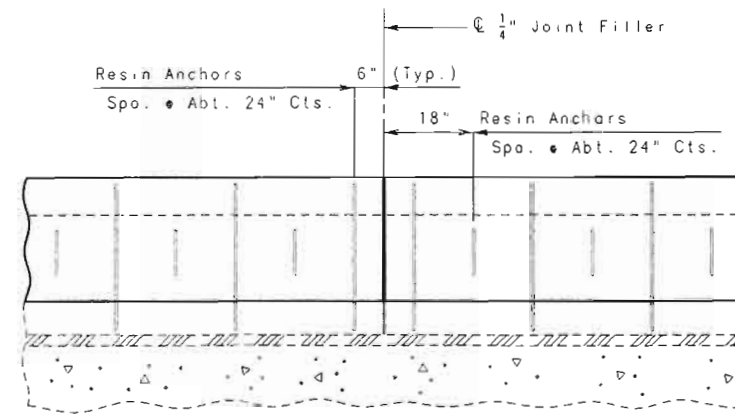
PLAN OF CURB BLOCKOUT SHOWING RESIN ANCHOR SYSTEM



RESIN ANCHOR SYSTEMS DETAILS



TYPICAL SECTION THRU CURB



PART SECTION A-A

* Shift resin anchors to clear existing steel anchor bolts for tube roll.



DATE 1/3/98

DETAILED: June 1997
CHECKED: Oct. 1997

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

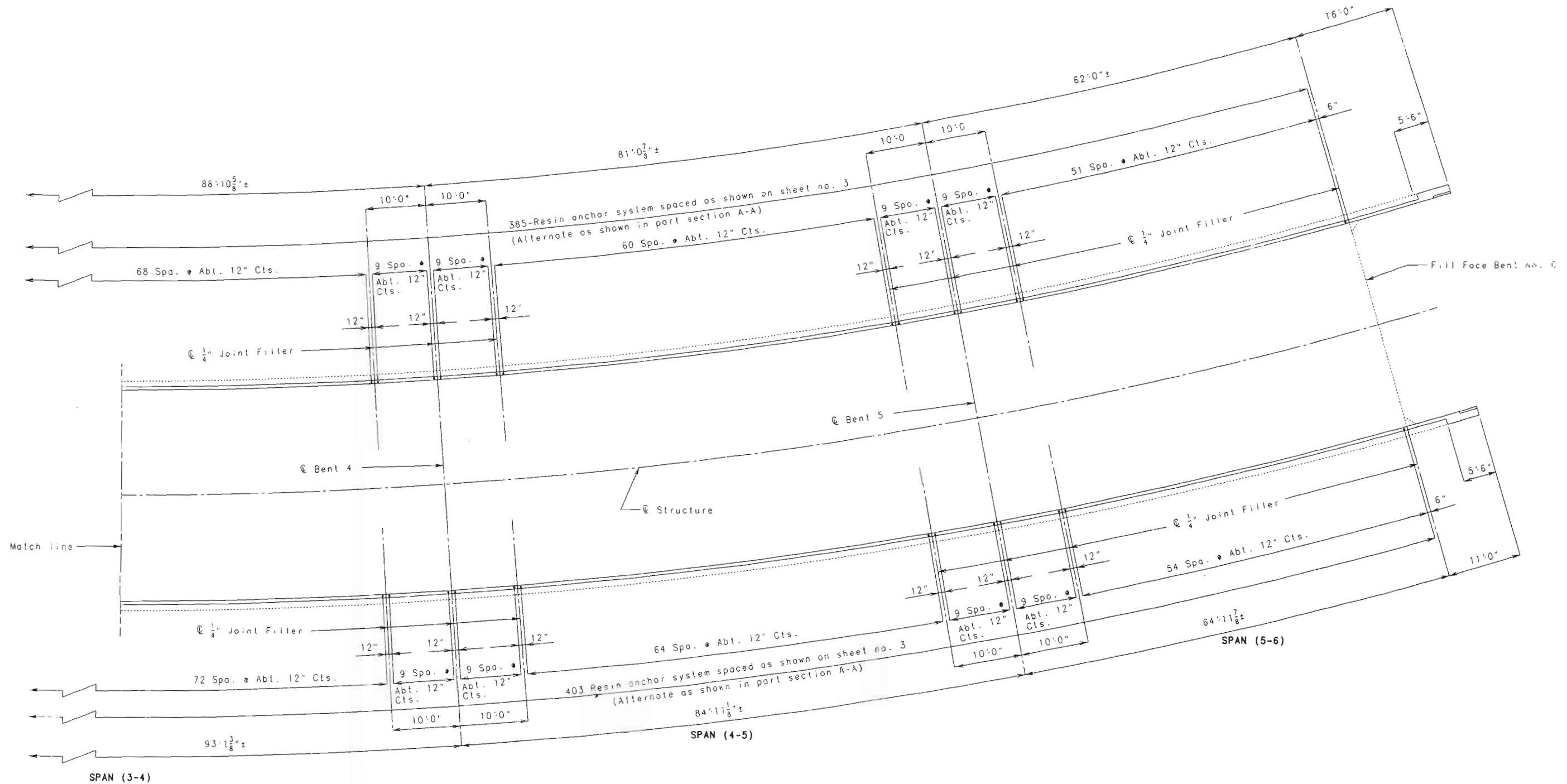
SHEET NO. 3 OF 9

PLATTE

COUNTY

A16883

STATE	PROJ. NO.	SHEET NO.
MO.		202



PLAN OF CURB BLOCKOUT SHOWING RESIN ANCHOR SYSTEM



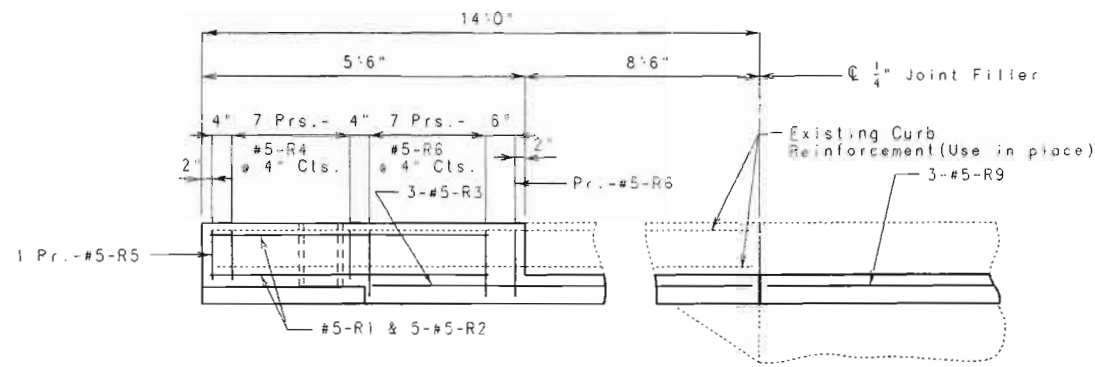
DETAILED: June 1997
CHECKED: Oct. 1997

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

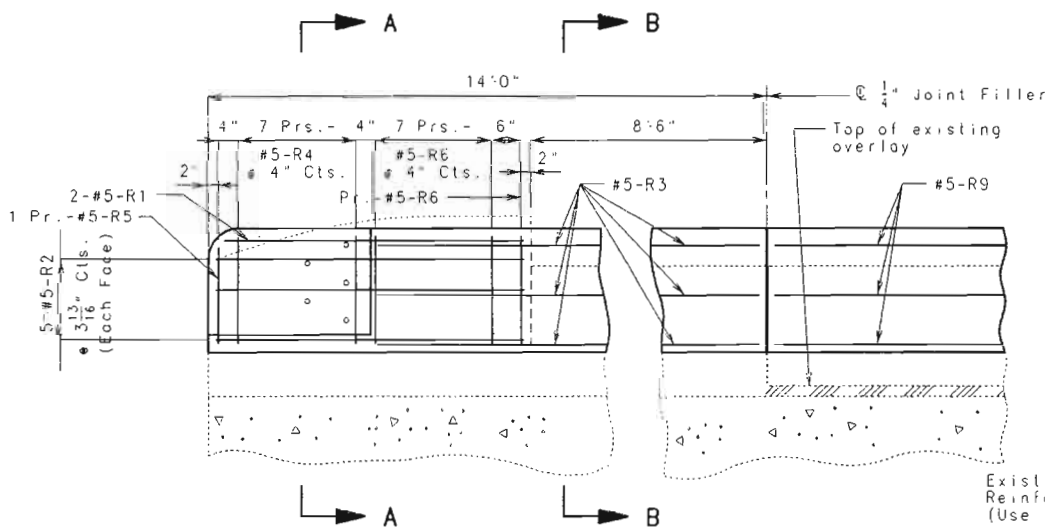
SHEET NO. 4 OF 9

PLATTE COUNTY A16883

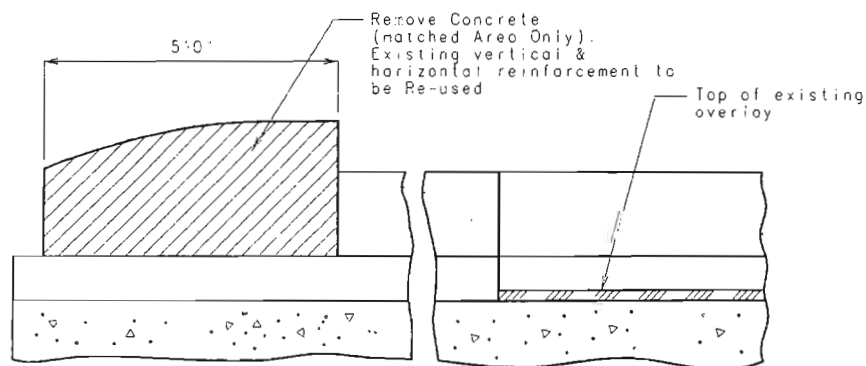
STATE	PROJ. NO.	NO.
MO.		203



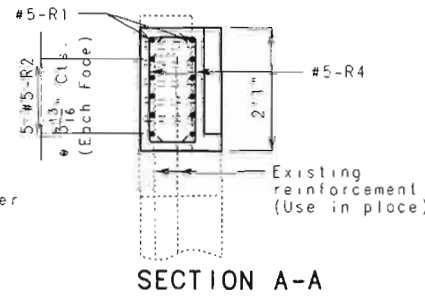
PLAN SHOWING END POST REINFORCEMENT



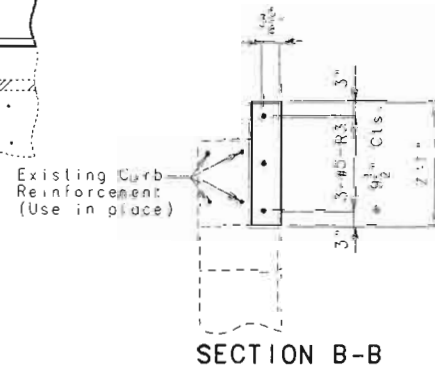
ELEVATION SHOWING END POST REINFORCEMENT



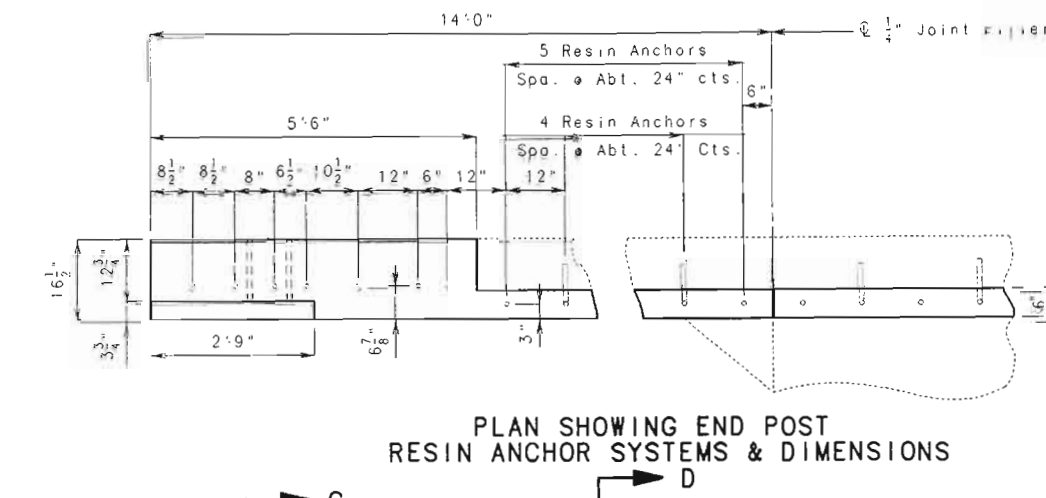
ELEVATION OF EXISTING END POST SHOWING CONCRETE REMOVAL



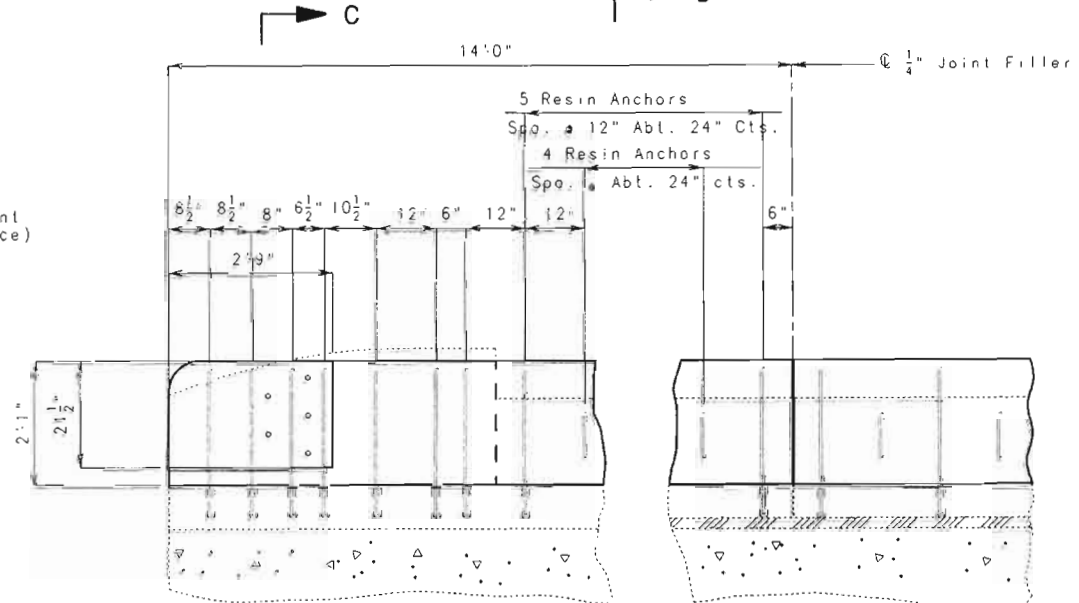
SECTION A-A



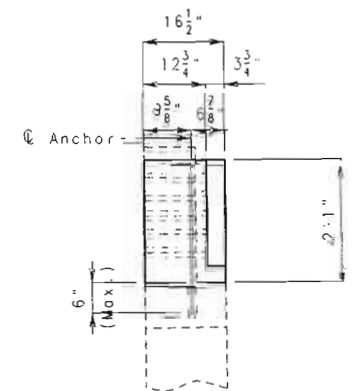
SECTION B-B



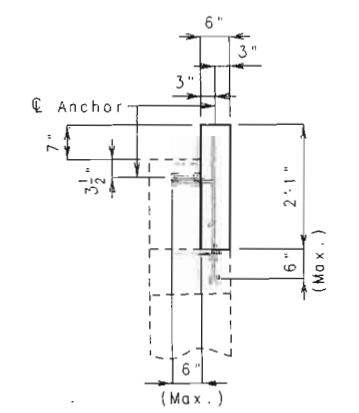
PLAN SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS



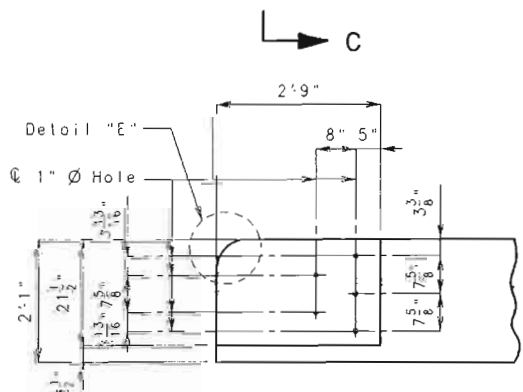
ELEVATION SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS



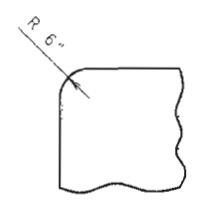
SECTION C-C



SECTION D-D



DETAILS OF GUARD RAIL ATTACHMENT



DETAIL "E"

DETAILS OF END POST FOR BENT NO. 1 (LEFT WING)

DETAILED June 1997
CHECKED Oct. 1997

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

SHEET NO. 5 OF 9

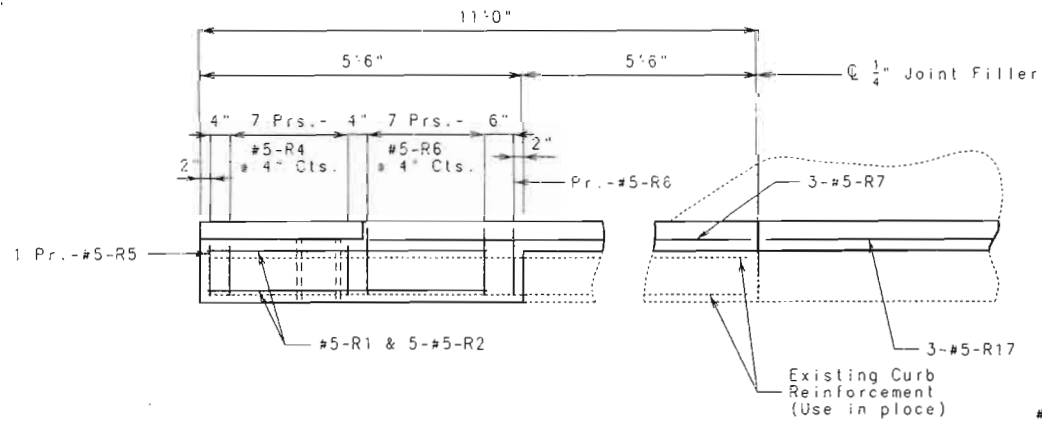
PLATTE COUNTY

A16883

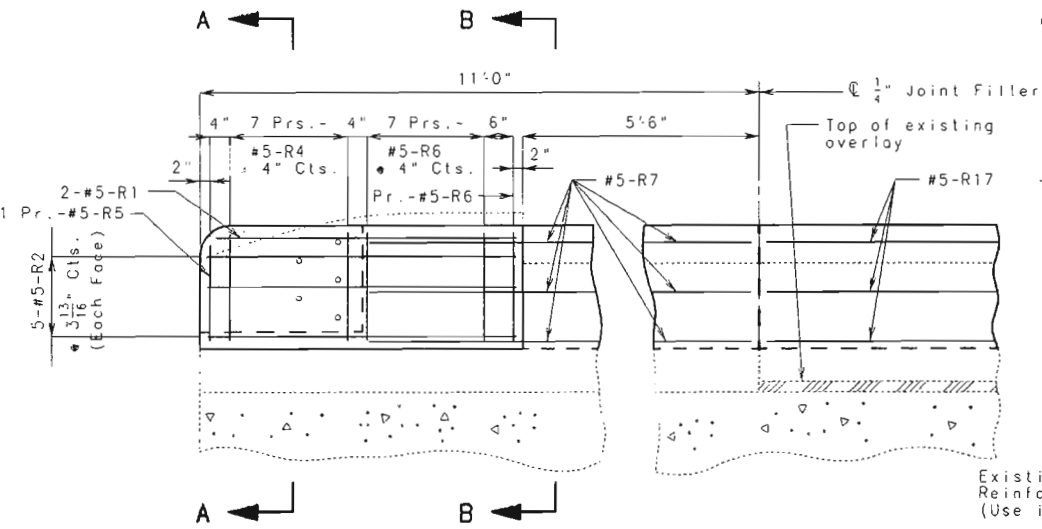


DATE 1/8/98

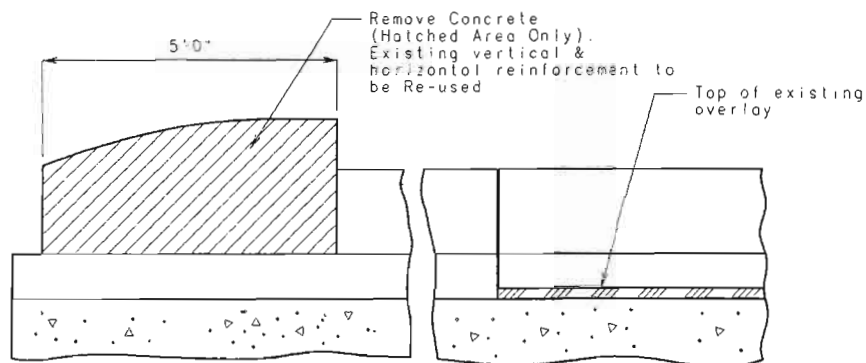
STATE	PROJ. NO.	SHEET NO.
MO.		204



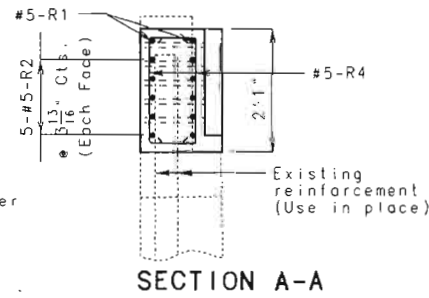
PLAN SHOWING END POST REINFORCEMENT



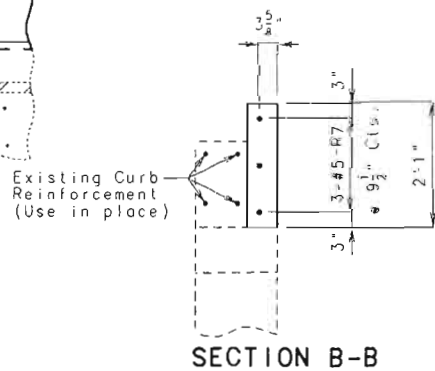
ELEVATION SHOWING END POST REINFORCEMENT



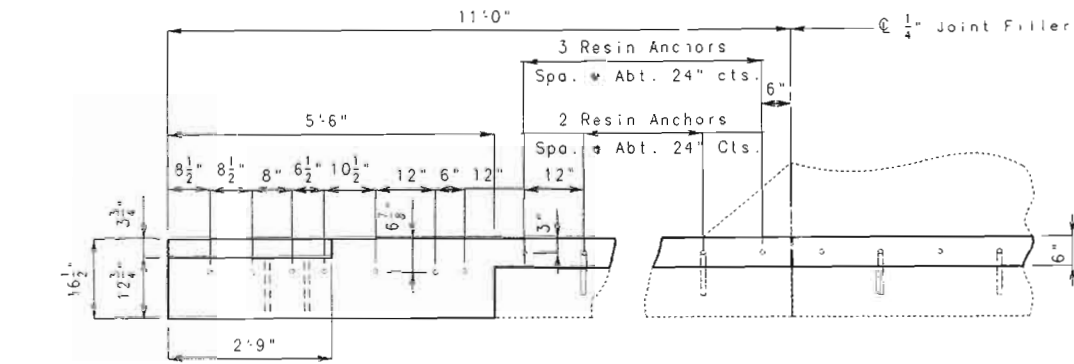
ELEVATION OF EXISTING END POST SHOWING CONCRETE REMOVAL



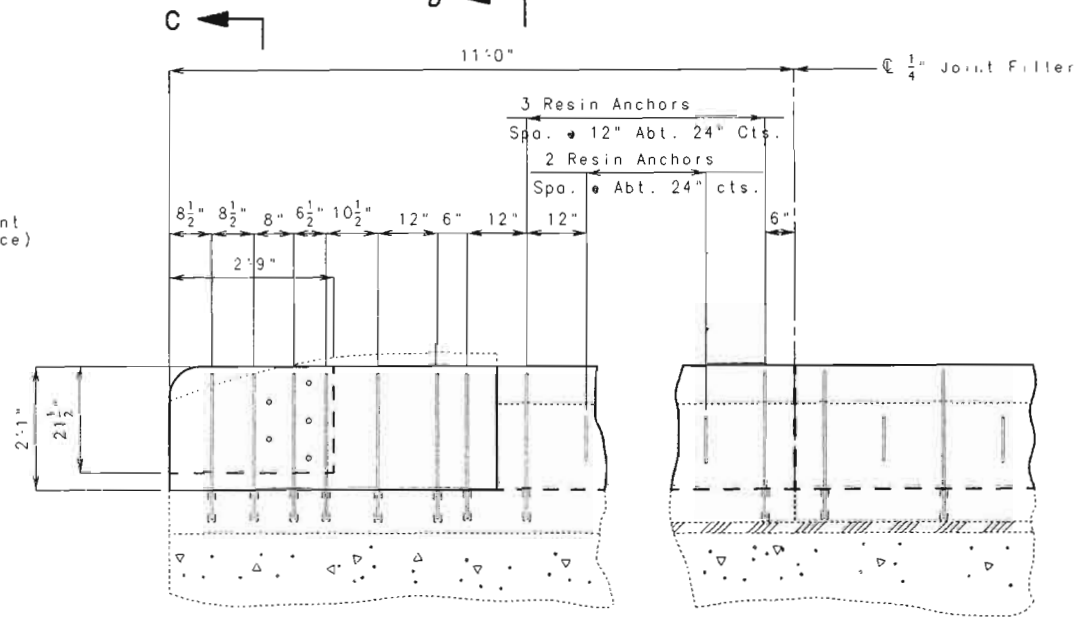
SECTION A-A



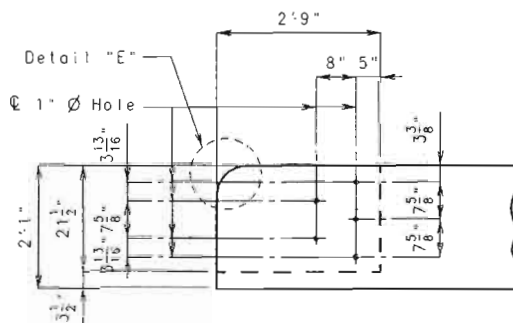
SECTION B-B



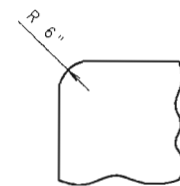
PLAN SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS



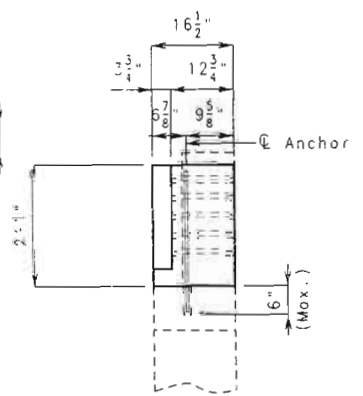
ELEVATION SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS



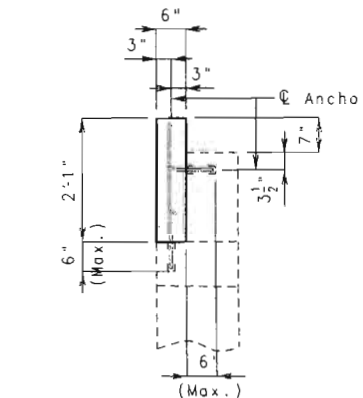
DETAILS OF GUARD RAIL ATTACHMENT



DETAIL "E"



SECTION C-C



SECTION D-D

DETAILS OF END POST FOR BENT NO. 1 (RIGHT WING)

DETAILED June 1997
CHECKED Oct. 1997

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

SHEET NO. 6 OF 9

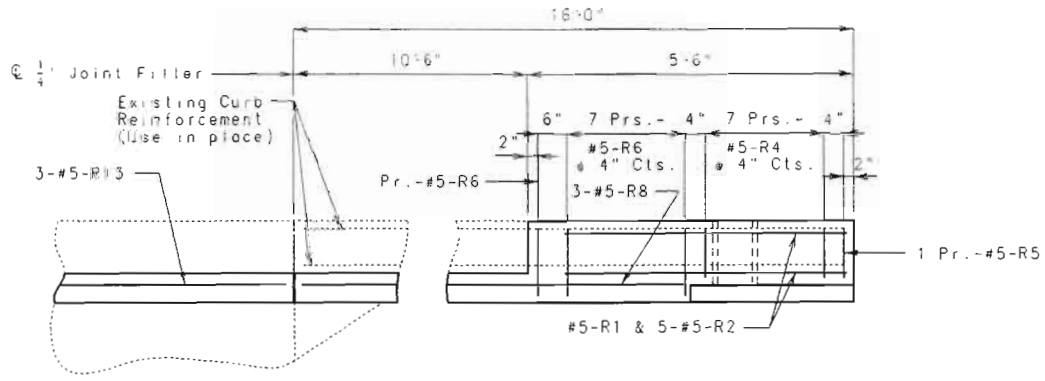
PLATTE COUNTY

A16883



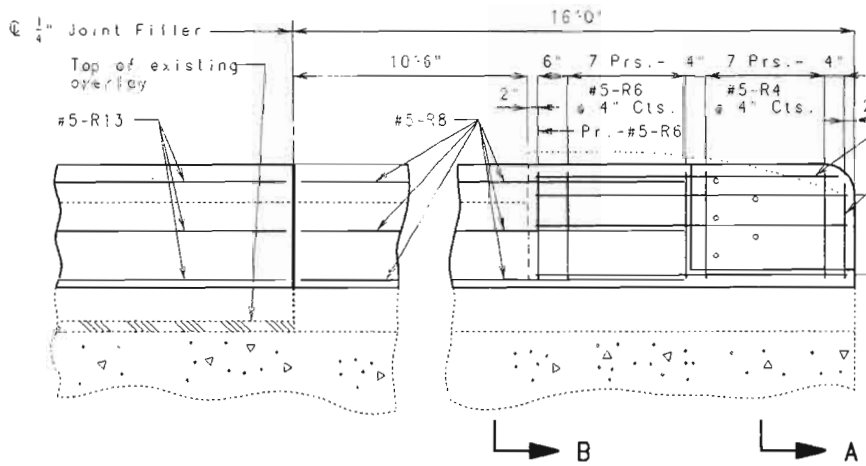
DATE 1/8/98

STATE	PROJ. NO.	SEE NO.
MO.		205



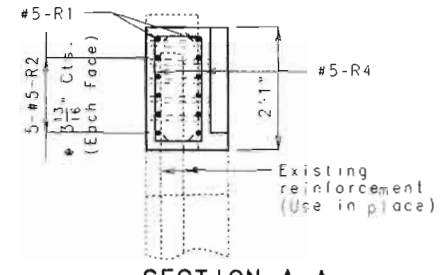
PLAN SHOWING END POST REINFORCEMENT

→ B → A

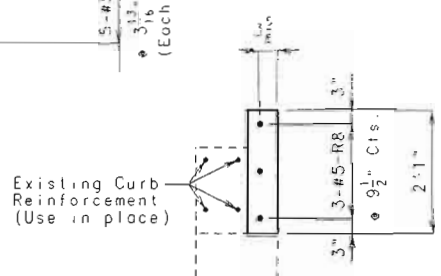


ELEVATION SHOWING END POST REINFORCEMENT

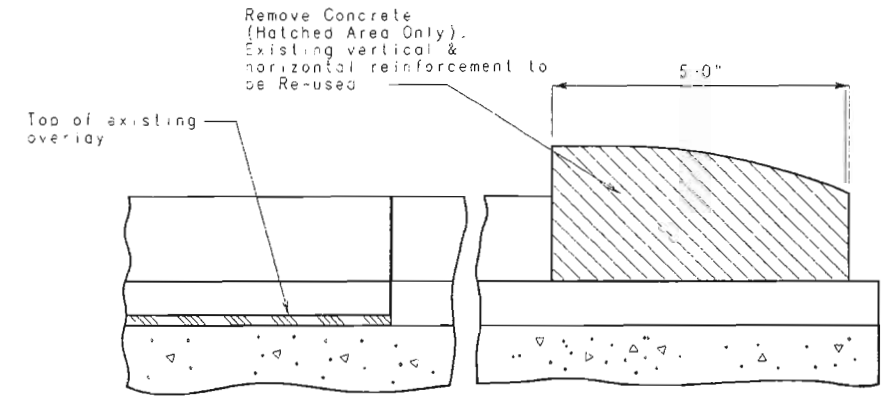
→ B → A



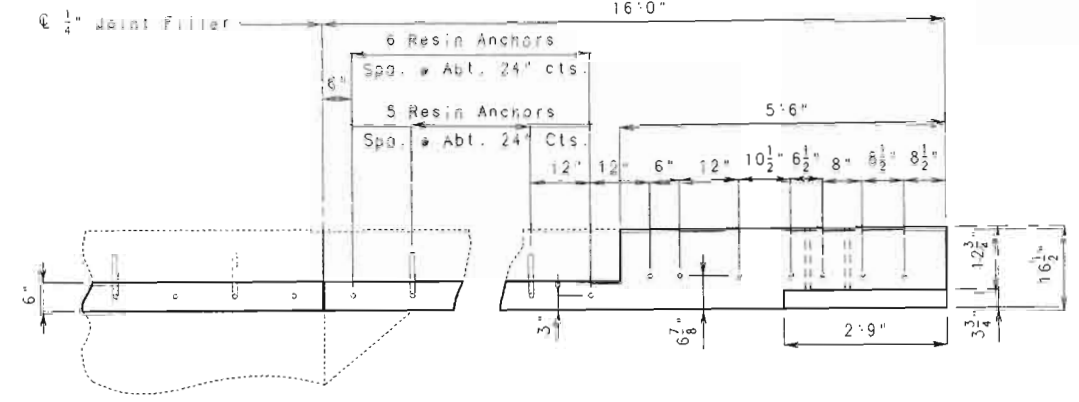
SECTION A-A



SECTION B-B

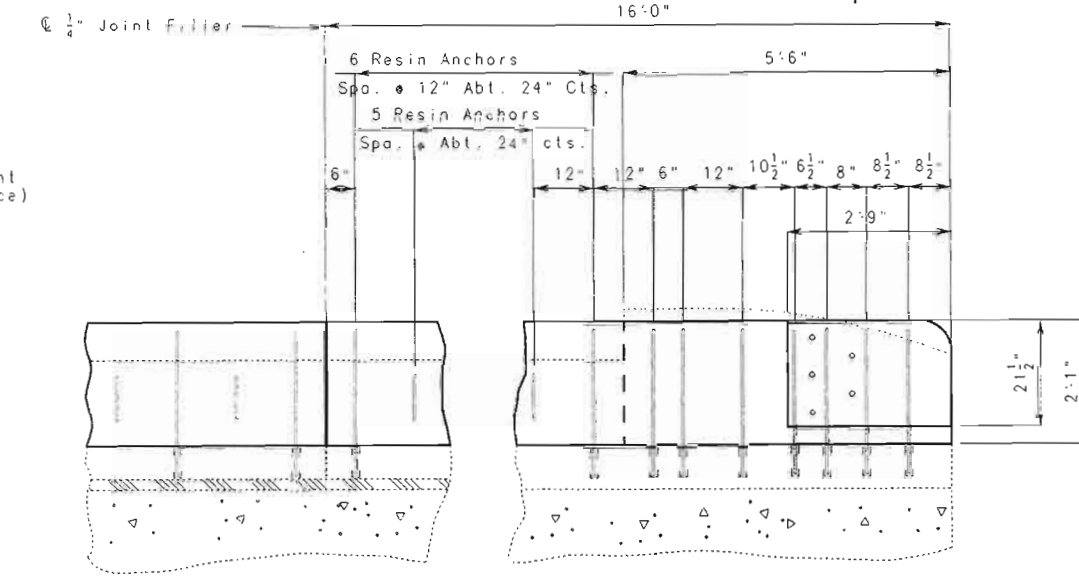


ELEVATION OF EXISTING END POST SHOWING CONCRETE REMOVAL



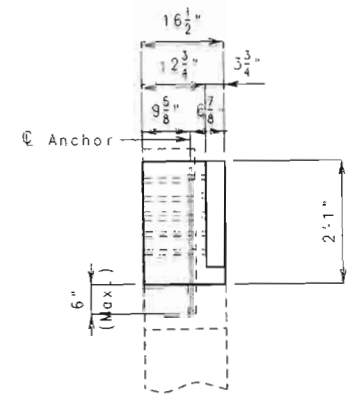
PLAN SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS

→ D → C

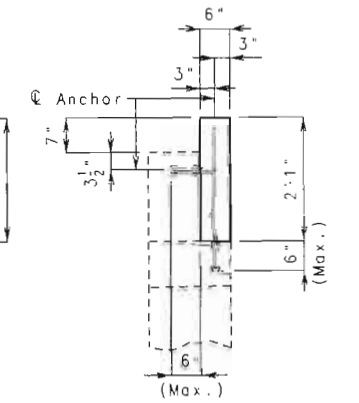


ELEVATION SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS

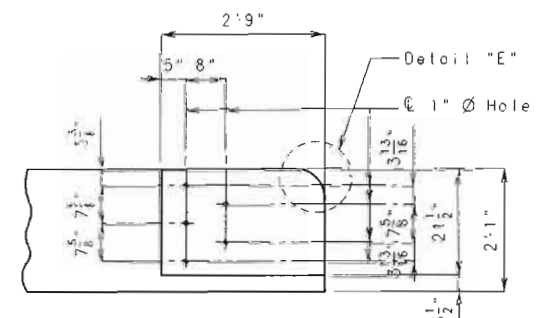
→ D → C



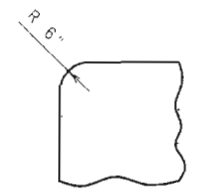
SECTION C-C



SECTION D-D



DETAILS OF GUARD RAIL ATTACHMENT



DETAIL "E"

DETAILS OF END POST FOR BENT NO. 6 (LEFT WING)



DATE 1/3/99

DATE: June 1997
CHECKED: Oct. 1997

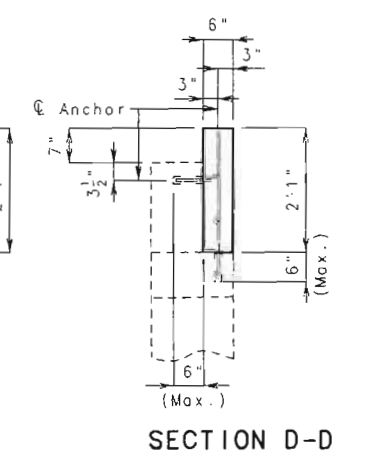
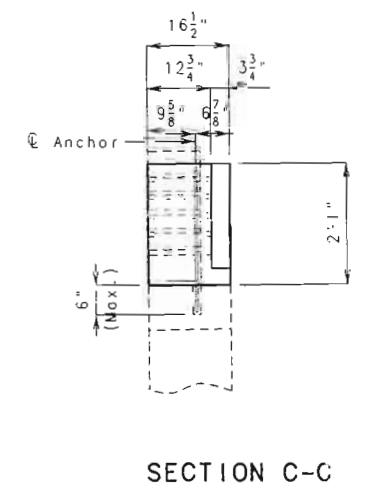
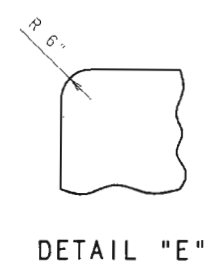
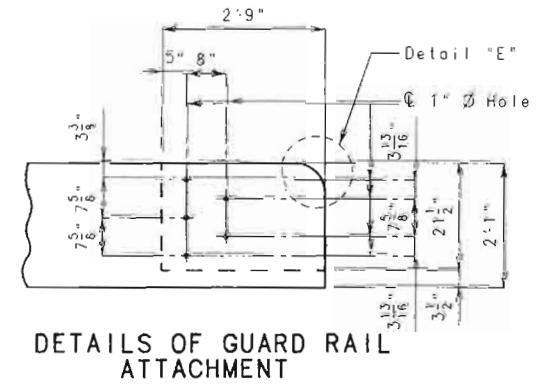
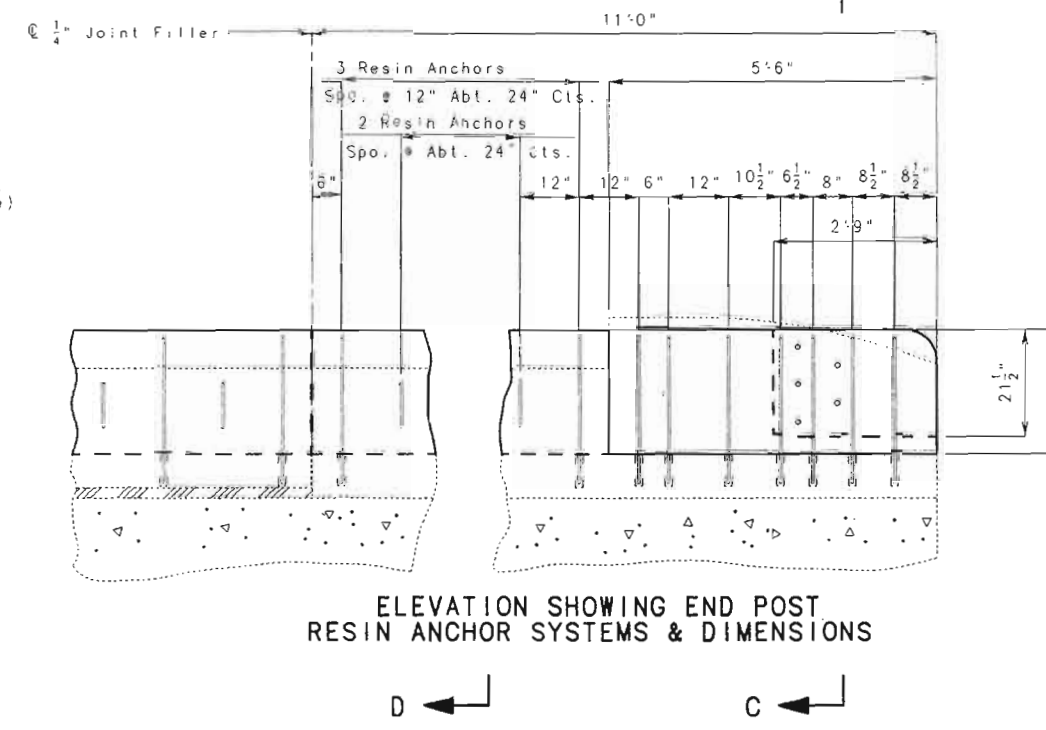
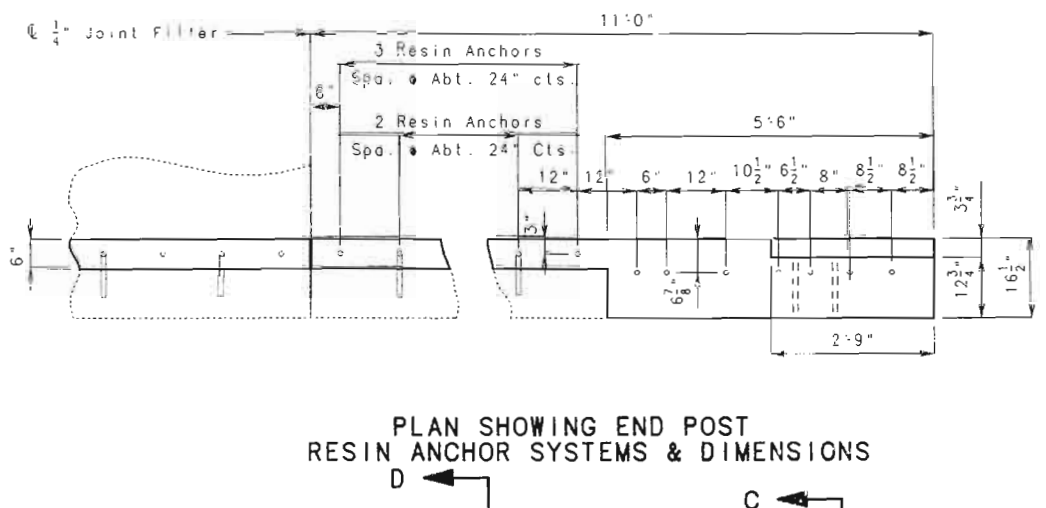
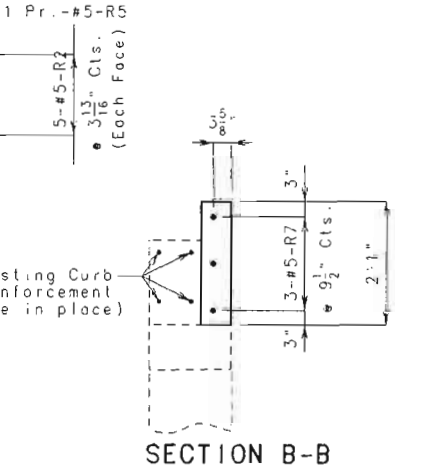
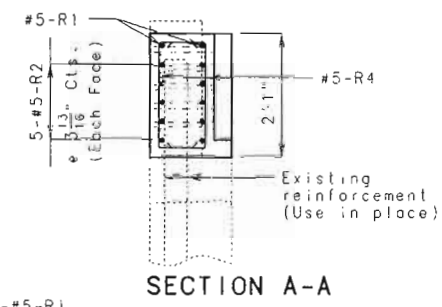
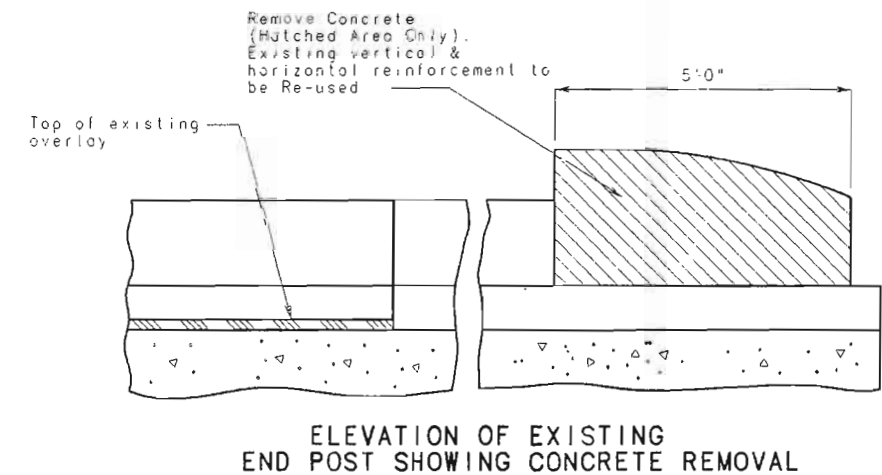
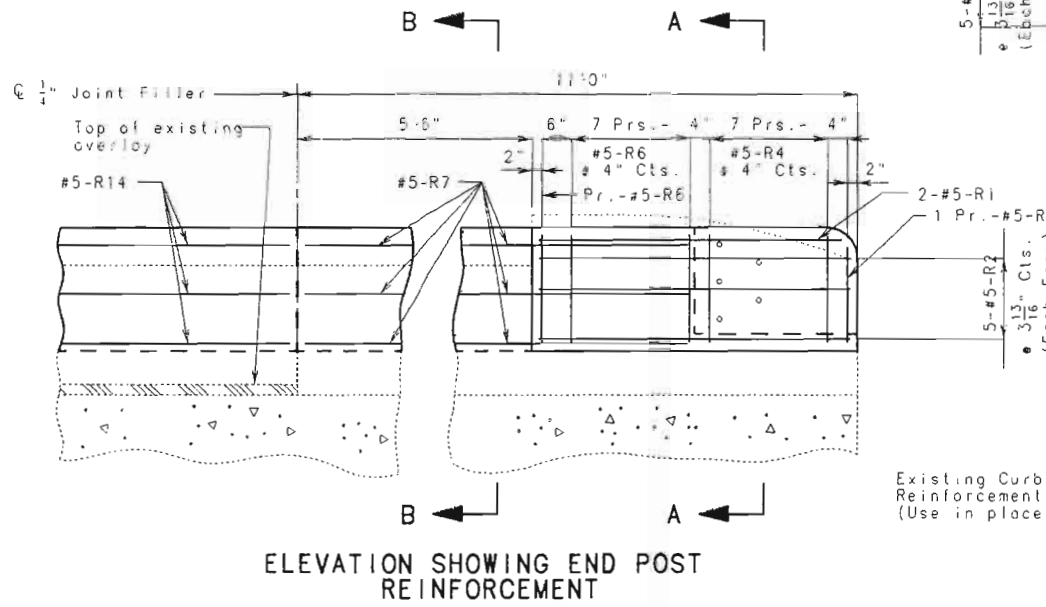
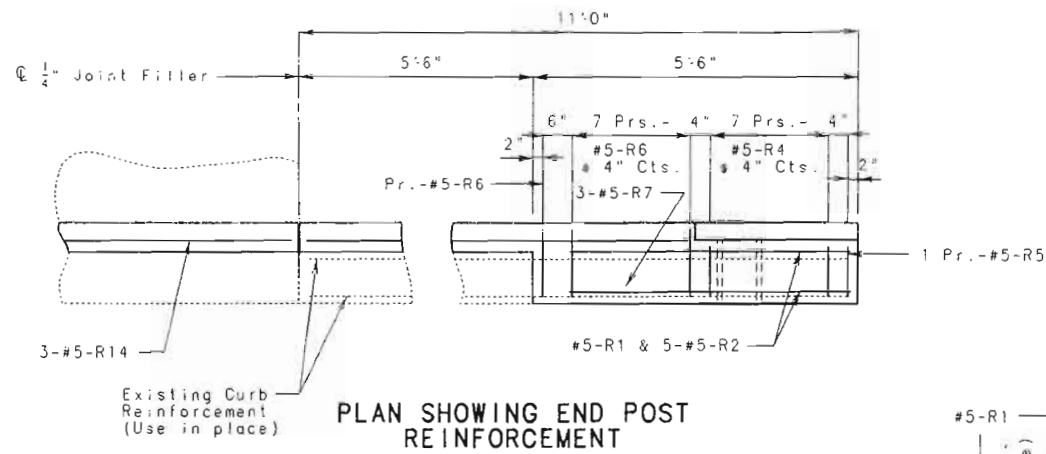
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 7 OF 9

PLATTE COUNTY

A16883

STATE	PROJ. NO.	SHEET NO.
MO.		206



DETAILS OF END POST FOR BENT NO. 6 (RIGHT WING)



DATE 1/9/93

DETAILED June 1997
CHECKED Dec. 1997

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

SHEET NO. 8 OF 9

PLATTE COUNTY

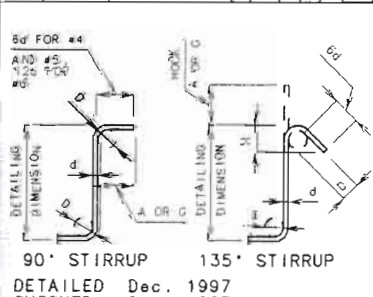
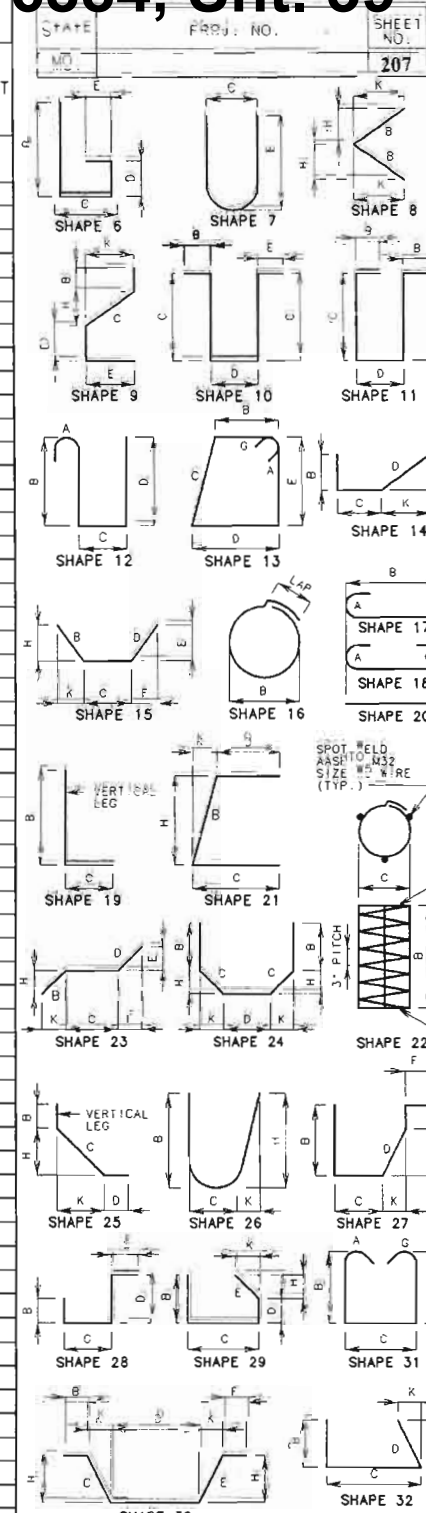
A16883

BILL OF REINFORCING STEEL

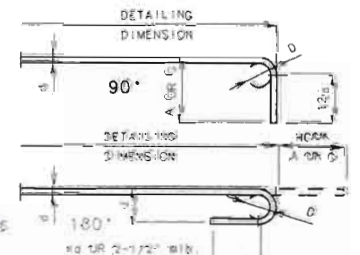
BILL OF REINFORCING STEEL

Table with columns: NO. REQ'D., MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Contains 17 rows of data for BLOCKOUT shapes.

Table with columns: NO. REQ'D., MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Contains 17 rows of data for various reinforcement shapes.

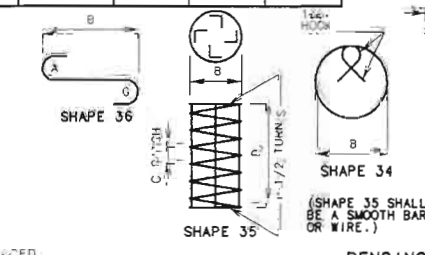


STIRRUP HOOK DIMENSIONS table with columns: BAR SIZE, D (IN.), 90° HOOK, 135° HOOK, APPROX. H.



END HOOK DIMENSIONS table with columns: BAR SIZE, D (IN.), 180° HOOKS, 90° HOOKS.

TWO ADDITIONAL #5-R10 ARE INCLUDED IN THE BAR #11 FOR TESTING. NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 450 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

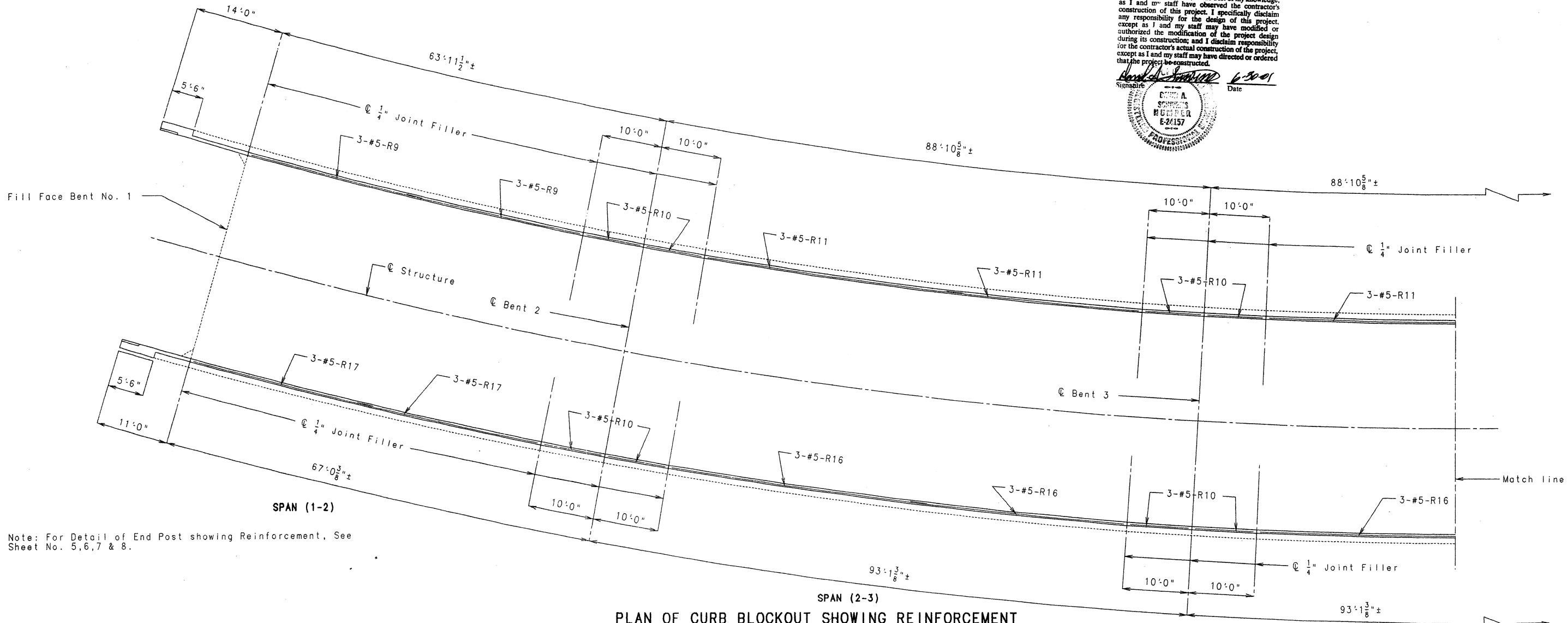


STATE	PROJ. NO.	SHEET NO.
MO.	ACIM-ACIMG-29-1(99)	199
SEC./SUR. 33 TWP. 51N RGE. 33W		

Contract ID: 980424-09-OVK

DESIGNER'S CERTIFICATION
 I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.

Signature: *[Signature]* Date: 6-30-01
 DANA A. SPENCER
 REGISTERED PROFESSIONAL ENGINEER
 NO. E-24157



PLAN OF CURB BLOCKOUT SHOWING REINFORCEMENT

Notes: Dimensions shown are horizontal arc dimensions along inside of curb. Curb blockout joint filler shall match those of existing structure. Use a minimum lap of 2'-11" for #5 horizontal bars.

Note: For Detail of End Post showing Reinforcement, See Sheet No. 5, 6, 7 & 8.

NOTES FOR CURB BLOCKOUT

Concrete in curb blockout shall be B1. Measurement of curb blockout is to the nearest linear foot measured at the gutter line from end of wing to end of wing. All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown. Payment for concrete and reinforcing steel in curb blockout complete in place shall be included in the contract unit price for the curb blockout per linear foot. Cost of any concrete end post removal shall be considered completely covered in unit prices bid for curb blockout. Embedment depth of resin anchor systems (vertical and horizontal) shall be a maximum of 6" into existing curb & parapet. Adjust resin anchors in field, if necessary, to miss curb outlets.

FINAL QUANTITIES		
ITEM	LIN. FT.	TOTAL
CURB BLOCKOUT		840

NOTES:

Bars bonded in old concrete not removed shall be clearly 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.

The contractor shall use one of the resin anchor systems listed in the job special provisions for the curb blockout. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions and that an epoxy coated #5 grade 60 reinforcing bar as shown shall be substituted for the 5/8" threaded rod stud.

Cost of furnishing and installing the anchor systems complete in place shall be included in the price bid per linear foot of curb blockout.

The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 18,800 lbs. in concrete with f'c = 4000 si. See special provisions.

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

GENERAL NOTES:

DESIGN SPECIFICATIONS:
 A.A.S.H.T.O.-1996
DESIGN UNIT STRESSES:
 Class B1 Concrete (Curb Blockout) f'c=4000 psi
 Reinforcing Steel (Grade 60) fy=60,000 psi
JOINT FILLER:
 All joint filler shall meet the requirements of Std. Spec. 1057.2.4, except as noted.
REINFORCING STEEL:
 Minimum clearance to reinforcing steel shall be 1-1/2" unless otherwise shown.
OLD WORK:
 Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
VERIFY DIMENSIONS:
 Contractor shall verify dimensions in field before ordering new materials.
TRAFFIC HANDLING:
 See roadway plans for traffic control during construction.



REPAIR TO: BRIDGE OVER RAMP 1 & RT. LANE 1-29

STATE ROAD AT RTE. 1-29 & 1-635 INTERCHANGE

PROJECT NO. J411246
 JOB NO. J411246

PLATTE COUNTY

STA. 43+89.45 (MATCH EXIST.)
 RTE. RAMP 1-29

COUNTY

DATE 1/27/98

STD.
STD.
A16883