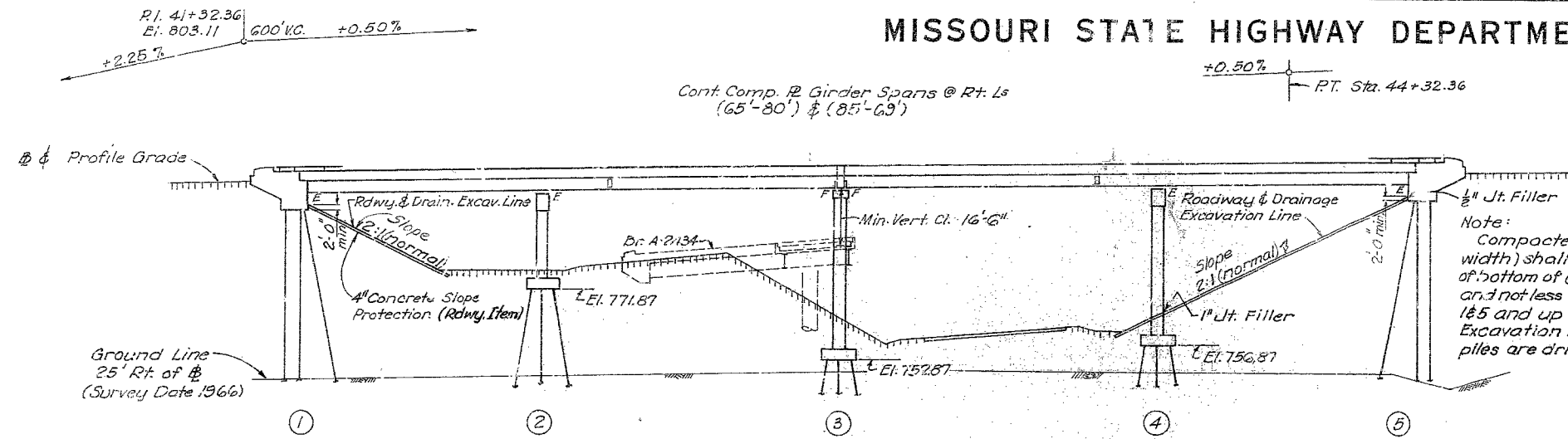


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	14	

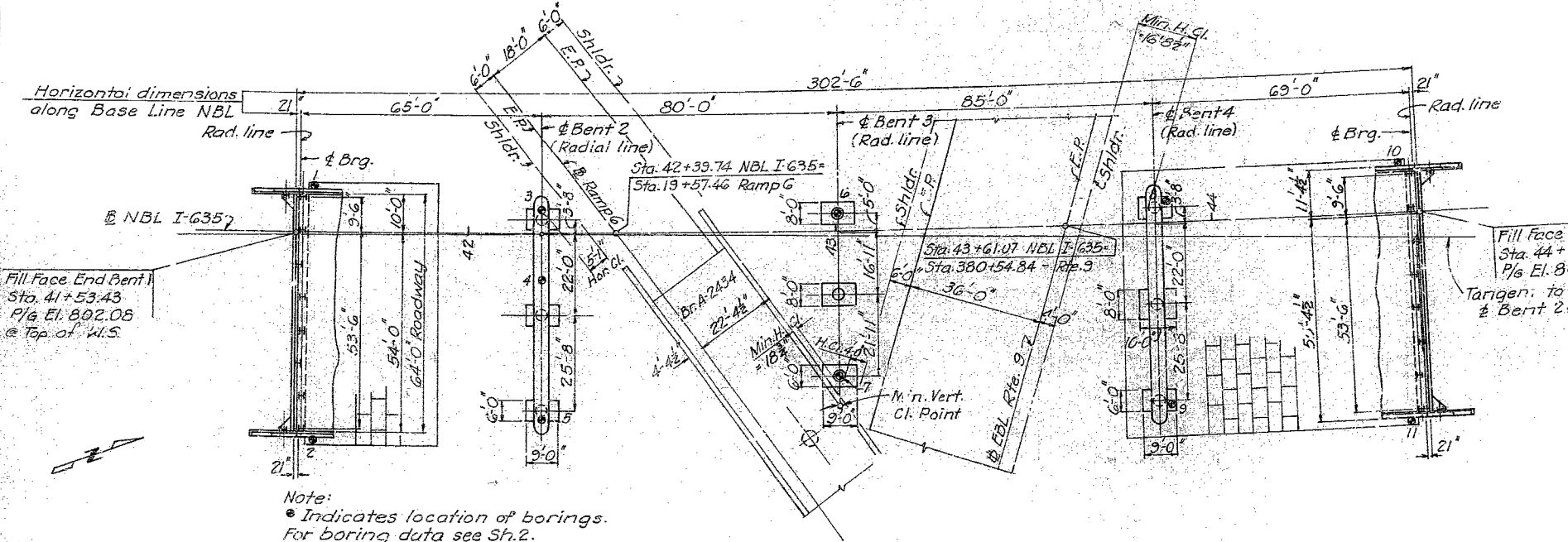


Note:
Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of bent and not less than 25' in back of End Bents 1&5 and up to Roadway & Drainage Excavation Line at Bents 2,3&4 before piles are driven.

Bent No.	1	2	3	4	5
Pile Type & Size	10BP42				10BP42
Number	10	13	16	20	10
Approximate Length	Ft. 96	76	54	52	78
Design Bearing	Tons 38	53	48	48	38
Hammer Energy	Ft. Lbs. 12,100	11,900	10,800	10,800	9,800

Minimum energy requirement of hammer based on plan length and design bearing value of piles.
All pile shall be driven to practical refusal.

ELEVATION



PLAN

GENERAL NOTES

- Design Specifications: AASHO 1969
- Design Loading: HS20-44
- Modified 24,000* Tandem Axle Earth 120* Equivalent Fluid Pressure 30# Fatigue Stress - Case 1
- 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
 - Structural Steel (ASTM A36) $f_s = 20,000$ psi
 - Structural Steel (ASTM A572) Grade 50 $f_s = 27,000$ psi
 - Steel Pile $f_b = 9,000$ psi

- Field connections, High Strength Bolts $\frac{3}{4}$ " holes $\frac{1}{2}$ " except as noted.
- Paint: Shop, none; Field, by contractor in accordance with Std. Spec. 712.12.
- Minimum clearance to reinforcing steel shall be 12" unless otherwise shown.
- All reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least 12".
- Profile grade elevations are taken at top of wearing surface

Note: Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.
For substructure layout see Sheet 5.

I-635 NBL Curve Data:
P.I. = 47+57.18
 $\Delta = 14^\circ 15' Lt.$
D = 0'-45"
T = 354.93'
L = 1900.00'
P = 7639.44'
S.E. = .025'/ft

Items	Substr.	Superstr.	Totals
Class I Excavation	Cu. Yd. 350		350
Structural Steel Pile (10")	Lin. Ft. 5,012		5,012
Class B Concrete	Cu. Yd. 298.2		298.2
Class B Concrete	Cu. Yd. 546.2		546.2
Reinforcing Steel	Lb. 50,300	171,230	221,530
Fabricated Structural Carbon Steel	Lb.	232,030	232,030
Fabricated Structural Low Alloy Steel	Lb.	98,160	98,160
Painting	Ton	134	134
Bridge Rail (one tube)	Lin. Ft.	632	632
Steel Reinf. Elastomeric Exp. Joint Seal	Lin. Ft.	264	264
Coal for Interlayer Protective Coat	Sq. Yd.	2127	2127
Special Type "D" Mixture (Asphaltic Concrete)	Ton	147	147

Payment for fabricated Structural Steel is based on welded field splices regardless of type actually used.
All concrete and reinforcement in end posts, parapets, and curbs is included with superstructure quantities.

- Bench Marks:
 - B.M. 11 Elev. 751.71 Top center bolt in motor car set off & E. end S. track 70' Rt. 20+28 SB I-635.
 - B.M. 12 Elev. 750.96 Chisled \square on N.W. cor. culvert rd w/ll. 25' Lt. 45+45 NB I-635.

BRIDGE: N.B.L. I-635 OVER RTE. 9 E.B.L. & RAMP 6
STATE ROAD-INTERSTATE ROUTE 635
IN RIVERSIDE
PROJECT NO. IG-635-1(75) (RTE. I-635) STA. 41+53.43

PLATTE COUNTY



SUBMITTED BY: *W.D. Carney* DATE: 1-24-72
APPROVED BY: *Robert M. ...* DATE: 1-24-72
HARRINGTON AND CORTELYOU CONSULTING ENGINEERS KANSAS CITY, MO.

DWG. 611.60
DWG. 706.30A
A-2435

216

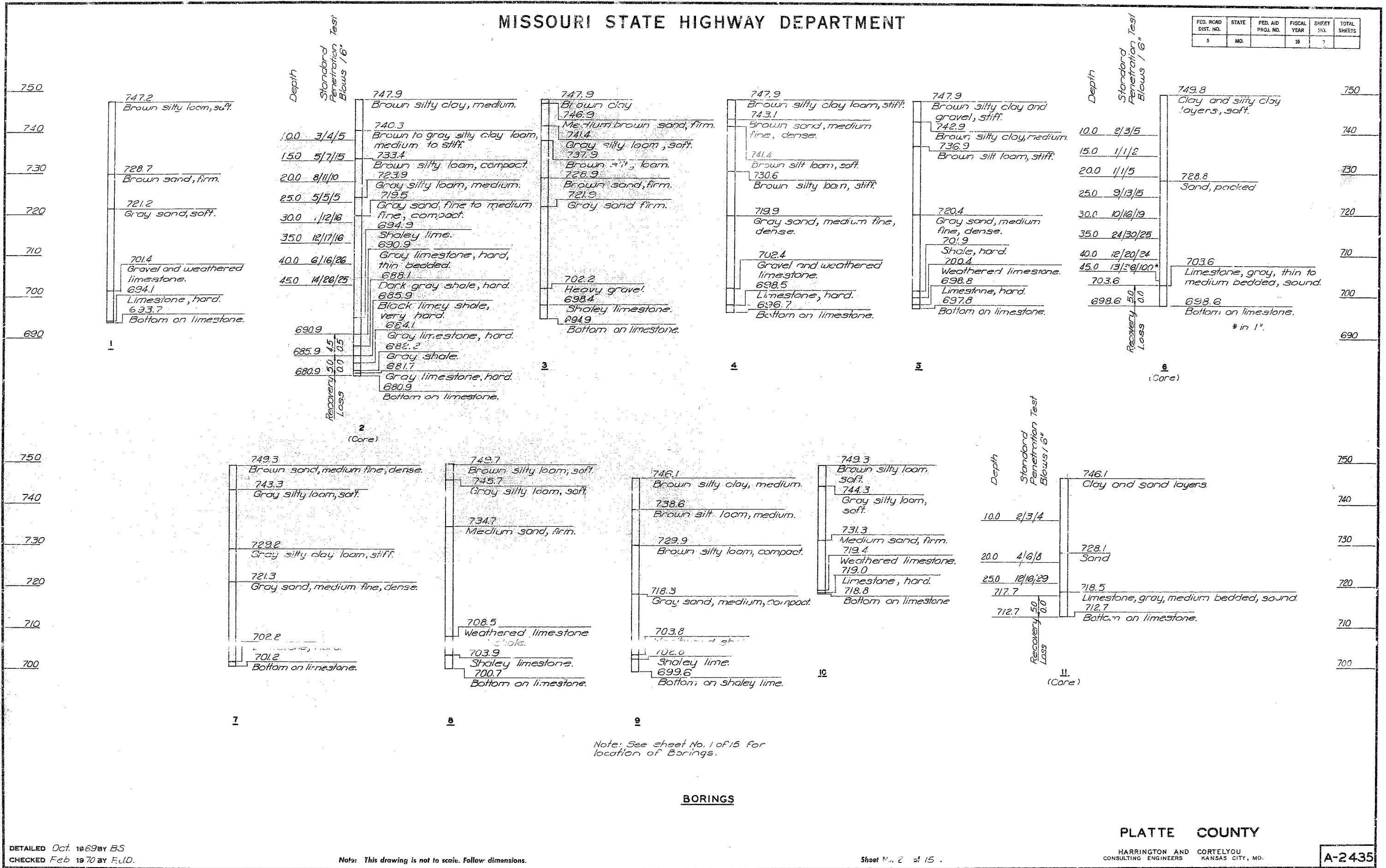
DESIGNED OCT. 1963 BY H&C
DETAILED NOV. 1963 BY JER
CHECKED FEB. 1970 BY FJD

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

Sheet No. 1 of 15.

MISSOURI STATE HIGHWAY DEPARTMENT

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



Note: See sheet No. 1 of 15 for location of Borings.

BORINGS

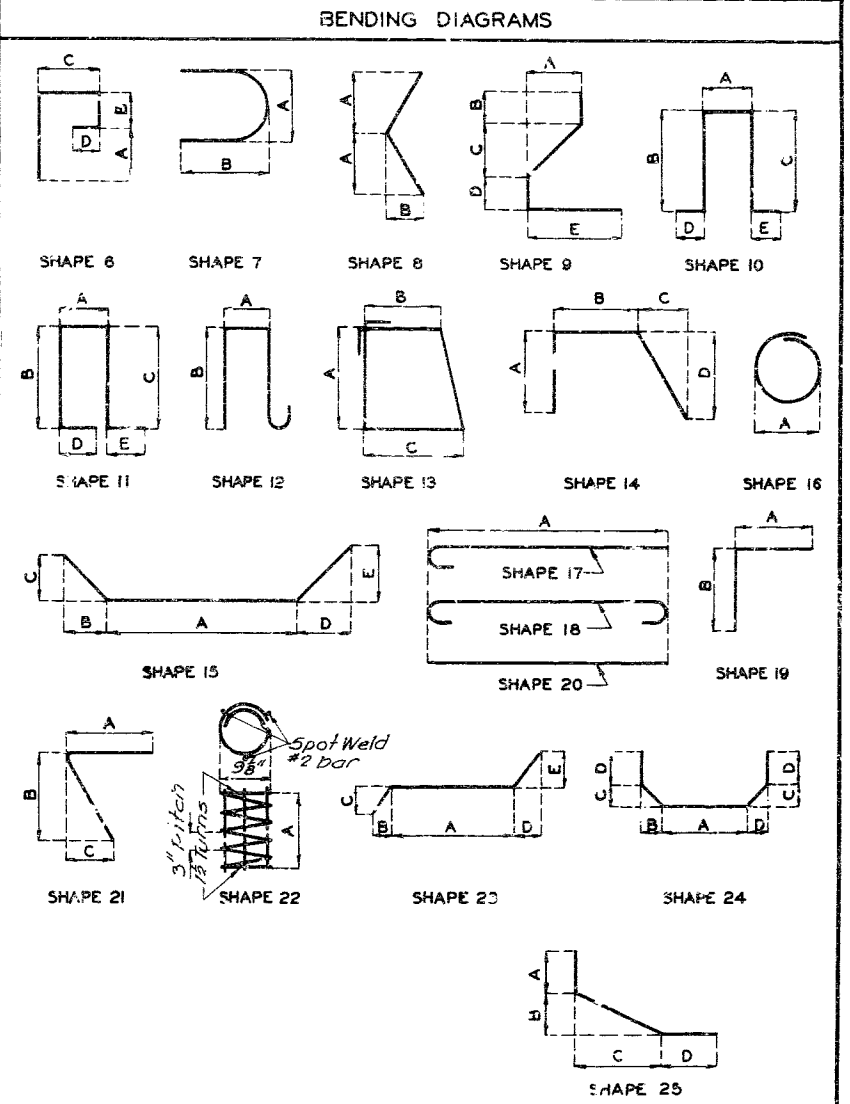
217

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	29	

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	TIE OR STIR. SUBSTR. VARIES	NO. EA.	DIMENSIONS					LENGTH	WEIGHT				
						A	B	C	D	E						
SIZE MARK						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
END BENTS 1 & 5																
16	6F1	Backwall	15	S		4'-4"	0'-8 $\frac{1}{2}$ "	0'-8 $\frac{1}{2}$ "	0'-8 $\frac{1}{2}$ "	0'-8 $\frac{1}{2}$ "	8'-2"					
16	9H1	Beam	17	S		31'-0"					32'-0"					
16	9H2	"	17	S		37'-7"					38'-7"					
8	6H3	"	20	S		31'-0"					31'-0"					
8	6H4	"	20	S		38'-9"					38'-9"					
12	4H5	Backwall	20	S		31'-0"					31'-0"					
12	4H6	"	20	S		38'-3"					38'-3"					
8	6H8	"	20	S		12'-9"					12'-9"					
8	6T1	Wing	19			3'-6"	6'-0"				9'-4"					
134	4U1	Beam	13	T	S	2'-8"	2'-9"	3'-2 $\frac{1}{2}$ "			11'-10"					
56	4U2	"	10	T	S	2'-9"	0'-6"	0'-6"			3'-7"					
16	4U3	Wings	10	T	S	0'-6"	3'-4 $\frac{1}{2}$ "	3'-4 $\frac{1}{2}$ "			7'-1"					
20	7U4	Beam	14	S		5'-7 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	5'-1 $\frac{1}{2}$ "	5'-1 $\frac{1}{2}$ "		14'-6"					
130	5U6	Backwall	10	S		0'-9"	2'-1 $\frac{1}{2}$ "	2'-1 $\frac{1}{2}$ "			4'-10"					
200	5V1	Backwall	20	S		6'-5"					6'-5"					
40	5V2	Wings	20	S		6'-8"					6'-8"					
64	4V3	"	20	S	8	5'-6"					5'-6"					
		Increment = 5 $\frac{3}{4}$ " inches		S		2'-2"					2'-2"					
8	6V4	Beam	20	S		2'-9"					2'-9"					
8	4V5	Wings	20	S		5'-6"					5'-6"					
16	2W1	Beam	22	S		1'-0"					19'-9"					
16	6H7	Wings, E. Bent 1	20	S	4	12'-4"					12'-4"					
		Increment = 2 ft. - 3 in.		S		5'-7"					5'-7"					
4	6T2	Wings, E. Bent 1	25	S		1'-11"	3'-5"	7'-7"	1'-11"		12'-0"					
16	6H9	Wings, E. Bent 5	20	S	4	11'-9 $\frac{1}{2}$ "					11'-9 $\frac{1}{2}$ "					
		Increment = 2 ft. - 0 $\frac{1}{2}$ in.		S		5'-8"					5'-8"					
4	6T3	Wings, E. Bent 5	25	S		1'-11"	3'-8"	7'-7 $\frac{1}{2}$ "	1'-11"		12'-2"					

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	TIE OR STIR. SUBSTR. VARIES	NO. EA.	DIMENSIONS					LENGTH	WEIGHT				
						A	B	C	D	E						
SIZE MARK						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
BENTS 2 & 4																
16	11B1	Beam	17	S		41'-6"					42'-8"					
8	11B2	"	17	S		26'-5"					27'-7"					
4	11B3	"	17	S		25'-8"					26'-10"					
4	11B4	"	17	S		24'-8"					25'-10"					
12	5B5	"	13	T	S	4'-3"	3'-0"	3'-0"			15'-2"					
172	5B6	"	13	T	S	4'-3"	1'-9 $\frac{3}{4}$ "	1'-9 $\frac{3}{4}$ "			12'-10"					
8	6B7	"	20	S		60'-0"					60'-0"					
16	7B9	"	7	S		2'-10 $\frac{1}{2}$ "	4'-0"				9'-7"					
16	11B10	"	20	S		60'-0"					60'-0"					
4	4B11	"	10	S		2'-3"	0'-6"	0'-3"			2'-9"					
24	4B22	Beam	10	S		3'-0"	0'-6"	0'-6"			3'-10"					
32	2W1	Ancho-Bolt Wells	22	S		1'-0"					19'-9"					
4	8B8	Beam, Bent 2	20	S		21'-8"					21'-8"					
8	8B8	" , Bent 4	20	S		21'-8"					21'-8"					
4	8B12	" , Bent 2	20	S		21'-4"					21'-4"					
4	9B13	Beam, Bent 4	20	S		21'-4"					21'-4"					
6	10B14	Column, Bent 2	20	S		20'-3"					20'-3"					
8	10B15	" , Bent 2	20	S		20'-10"					20'-10"					
6	10B16	" , Bent 2	20	S		21'-6"					21'-6"					
8	10B17	" , Bent 4	20	S		38'-9"					38'-9"					
16	10B18	" , Bent 4	20	S		37'-4"					37'-4"					
8	10B19	Column, Bent 4	20	S		38'-0"					38'-0"					
24	10B20	Footing-Dowels, Bent 2	20	S		5'-2"					5'-2"					
32	10B20	Footing-Dowels, Bent 4	20	S		5'-2"					5'-2"					
56	3B21	Column, Bent 2	18	S		2'-9"					2'-5"					
106	3B21	Column, Bent 4	18	S		2'-9"					9'-5"					
21	8B23	Footing E, Bent 2	20	S		8'-8"					8'-8"					
14	8B23	Footing E, Bent 4	20	S		8'-8"					8'-8"					
18	5B24	Footing E, Bent 2	20	S		5'-8"					5'-8"					
12	5B24	Footing E, Bent 4	20	S		5'-8"					5'-8"					
8	8B25	Footing E, Bent 2	10	S		8'-4"	3'-8"	3'-8"			15'-3"					
4	8B25	Footing E, Bent 4	10	S		8'-4"	3'-8"	3'-8"			15'-3"					
8	8B26	Footing F, Bent 4	20	S		9'-0"					9'-8"					
10	8B27	Footing F, Bent 4	20	S		7'-8"					7'-8"					
2	8B28	Footing F, Bent 4	10	S		9'-4"	4'-8"	4'-8"			18'-3"					



Note: All bending dimensions are out to out.
 Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for detailing reinforced concrete structures.

T - tie or stirrup
 S - 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 measured along centerline bar to the nearest inch.

218

STD. 90.7
 JULY 1969
 REVISED
 SEPT 1969

Drawn Dec. 1969 by B.S.
 Checked Feb. 1970 by F.J.D.

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

Sheet No. 3 of 15

PLATTE COUNTY

HARRINGTON AND CORTELYOU
 CONSULTING ENGINEERS
 KANSAS CITY, MO.

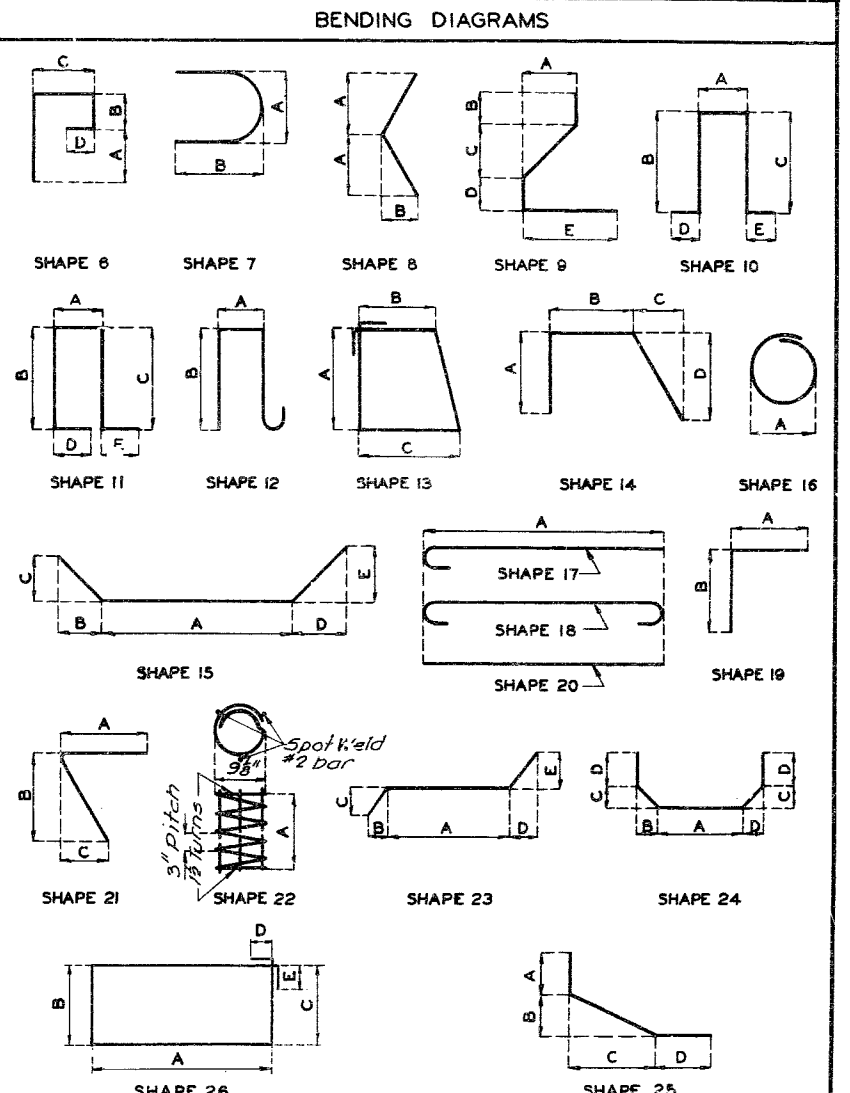
A-2435

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	98	

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	TIE OR STIR. SUBSTR. VARIES.	NO. EA.	DIMENSIONS					LENGTH	WEIGHT
						A	B	C	D	E		
FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.	
BENT 3												
48	10B20	Footing - Dowels	20	S	5'-2"						5-2	
119	3B21	Column	16	S	2-9						9-5	
7	8B23	Footing, E	20	S	8-8						8-8	
8	5B24	" , E	20	S	5-8						3-8	
2	8B25	Footing, E	10	S	8-4	3-8	3-8				15-3	
9	3B29	Column	16	S	3-3						11-2	
16	10B30	"	20	S	41-8						41-8	
16	10B31	"	20	S	42-2						42-2	
16	10B32	Column	20	S	42-9						42-9	
20	6B33	Footing, D	20	S	7-8						7-8	
12	4B34	Column	10	S	2-10	2-8	2-8				8-0	
12	4B35	"	10	S	3-1 $\frac{1}{2}$	2-8	2-8				8-3	
12	4B36	"	10	S	1-11	2-8	2-8				7-1	
20	7B37	Footing, D	20	S	8-8						8-8	
4	7B38	Footing, D	10	S	8-4	4-8	4-8				17-4	
12	2W2	Anchor Bolt Wells	22	S	1-3						23-0	

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	TIE OR STIR. SUBSTR. VARIES.	NO. EA.	DIMENSIONS					LENGTH	WEIGHT
						A	B	C	D	E		
FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.	
SUPERSTRUCTURE												
612	5C1	Curb	10	T	1'-1 $\frac{1}{2}$ "	1'-2 $\frac{1}{2}$ "	1'-2 $\frac{1}{2}$ "	0	0'-6"		3'-8	
52	5C2	End Bent Curb	10	T	1'-1 $\frac{1}{2}$ "	1'-1 $\frac{1}{2}$ "	1'-1 $\frac{1}{2}$ "				3-2	
8	6C3	End Bent Curb	20		12-8						12-8	
4	5C4	Left Curb, Span 1	20		33-2						33-2	
4	5C5	" " , Span 2	20		40-0						40-0	
4	5C6	" " , Span 3	20		42-5						42-5	
4	5C7	Left Curb, Span 4	20		35-3						35-3	
4	5C8	Right Curb, Span 1	20		33-6						33-6	
4	5C9	" " , Span 2	20		40-4						40-4	
4	5C10	" " , Span 3	20		42-10						42-10	
4	5C11	Right Curb, Span 4	20		35-6						35-6	
4	5C12	Rt. & Lt. Curb @ Bent 3	20		1-6						1-6	
8	5R1	End Post	20		4-9						4-9	
4	5R2	" "	12	T	0-9	2-8 $\frac{1}{2}$					5-11	
4	5R3	" "	10	T	0-9	2-10 $\frac{1}{2}$	2-10 $\frac{1}{2}$				6-4	
4	5R4	" "	10	T	0-9	3-1	3-1				6-9	
4	5R5	" "	10	T	0-9	3-2	3-2				6-11	
4	5R6	" "	10	T	0-9	3-2 $\frac{3}{8}$	3-2 $\frac{3}{8}$				7-0	
4	5R7	" "	10	T	0-9	3-3 $\frac{3}{8}$	3-3 $\frac{3}{8}$				7-1	
4	5R8	" "	10	T	0-9	3-4 $\frac{3}{8}$	3-4 $\frac{3}{8}$				7-3	
8	5R9	" "	10	T	0-9	3-4 $\frac{3}{8}$	3-4 $\frac{3}{8}$				7-4	
16	5R10	End Post	10	T	0-7 $\frac{3}{8}$	4-9	4-9				9-11	
612	5R11	Rt. & Lt. Parapet	12	T	0-8 $\frac{3}{8}$	2-0 $\frac{3}{8}$					5-1	
16	5R12	End Bent Parapet	20		8-7						8-7	
32	5R13	Lt. & Rt. Parapet	20		9-8						9-8	
8	5R14	Rt. & Lt. Parapet @ Bent 3	20		1-6						1-6	
8	5R15	Left Parapet, Span 1	20		28-3						28-3	
8	5R16	Left Parapet, Span 2	20		35-0						35-0	
8	5R17	Left Parapet, Span 3	20		37-5						37-5	
8	5R18	Left Parapet, Span 4	20		30-3						30-3	
8	5R19	Right Parapet, Span 1	20		28-6						28-6	
8	5R20	Right Parapet, Span 2	20		35-4						35-4	
8	5R21	Right Parapet, Span 3	20		37-10						37-10	
8	5R22	Right Parapet, Span 4	20		30-7						30-7	
1102	6S1	Slab	20		31-0						31-0	
1102	6S2	"	20		36-10						36-10	
272	4S3	"	20		37-1						37-1	
276	6S4	"	20		37-6						37-6	
272	4S5	"	20		39-4						39-4	
276	6S6	"	20		39-9						39-9	
8	4S7	"	20		31-2						31-2	
8	4S8	"	20		38-4						38-4	
132	4S9	Slab	20		16-0						16-0	
4	4S10	"	20		31-0						31-0	
4	4S11	"	20		36-10						36-10	
244	5S12	Slab	17		1-8						2-3	
68	4T4	Slab	26	T	1-7	0-5	0-5	0-4 $\frac{1}{2}$	0-4 $\frac{1}{2}$		4-6	



Note: All bending dimensions are out to out. Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for detailing reinforced concrete structures.

T-tie or stirrup 5-bar is included in substructure quantities. Length - Total lengths are measured along centerline bar to the nearest inch.

V-bar dimensions vary in equal increments between dimensions shown on this line and the following line. No. Ea. Number of bars of each 1/2 inch.

219

STD. 90.7
JULY 1969
REVISED
SEPT. 1969

Drawn Dec. 1969 by B.S.
Checked Feb. 1970 by F.J.D.

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

Sheet No. 4 of 15

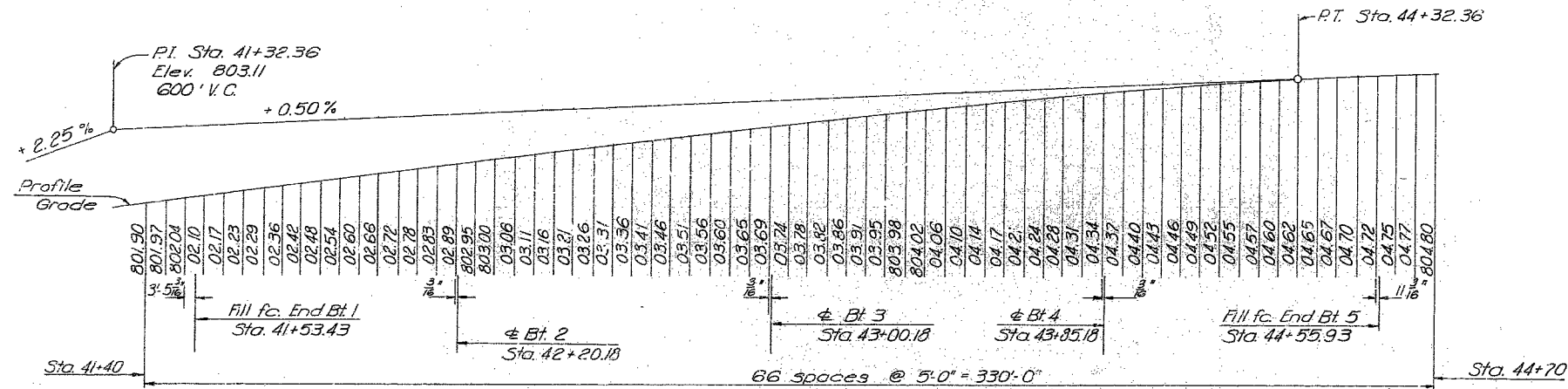
PLATTE COUNTY

HARRINGTON AND
CONSULTING ENGINEERS
CORTELYOU
KANSAS CITY, MO.

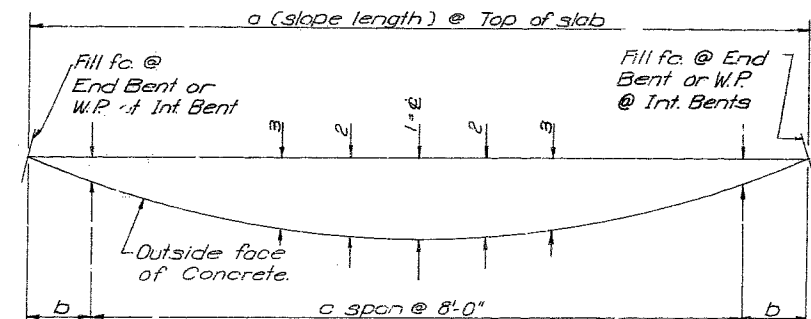
A 2435

MISSOURI STATE HIGHWAY DEPARTMENT

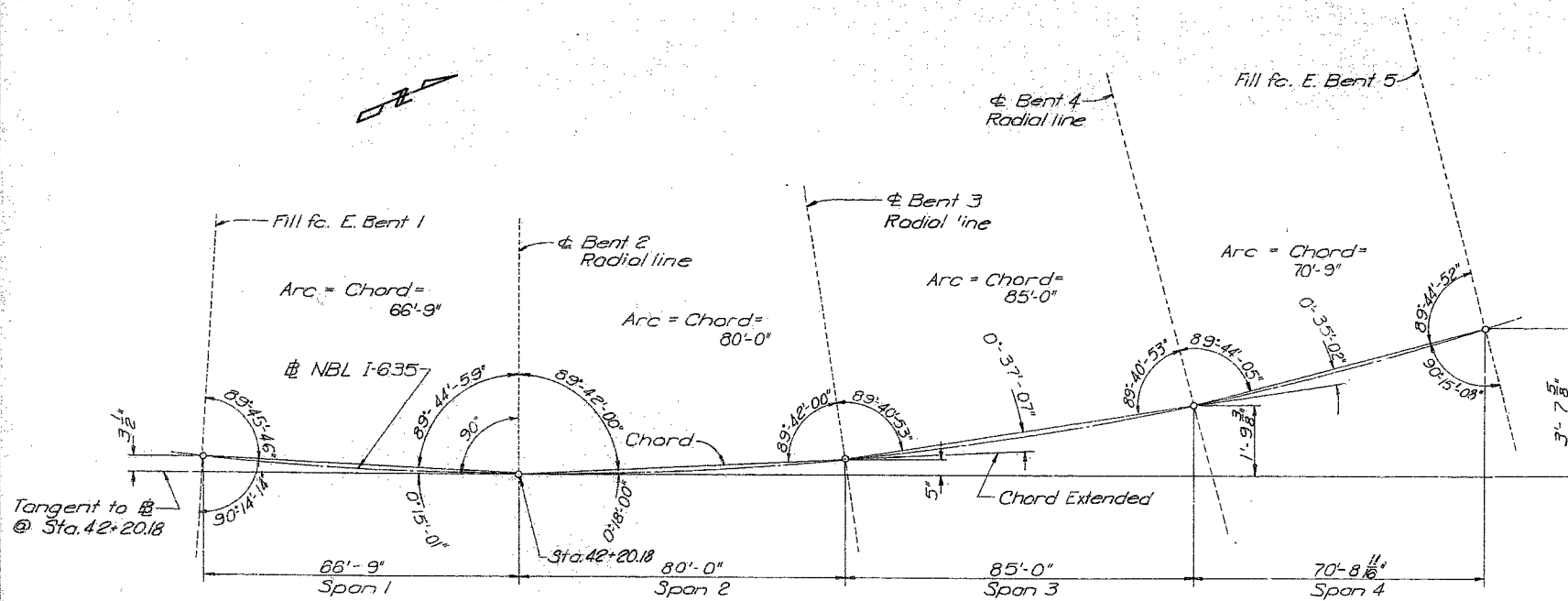
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.		19	46	



PROFILE GRADE ELEVATIONS
(At 5' intervals at top of wearing surface along E. NBL I-635)



220



SUBSTRUCTURE LAYOUT

Span	Left Outside Face of Concrete				Right Outside Face of Concrete			
	1	2	3	4	1	2	3	4
a	66'-7 1/4"	79'-11 1/4"	84'-10 1/4"	70'-8 1/4"	67'-2 1/4"	80'-7 1/4"	85'-7'-3 1/4"	71'-3 1/4"
b	9'-3 1/2"	7'-11 1/2"	2'-5 1/2"	3'-4 1/2"	4'-7 1/2"	8'-3 1/2"	2'-9 1/2"	3'-7 1/2"
c	6	8	10	8	6	8	10	8
1	3/8"	1 1/2"	1 1/2"	1"	3/8"	1 1/2"	1 1/2"	1"
2	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
3	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
4	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-

CURVE ORDINATES

DETAILED Oct. 1969 by B.S.
CHECKED Feb. 1970 by F.J.D.

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

Sheet No. 5 of 15

PLATTE COUNTY

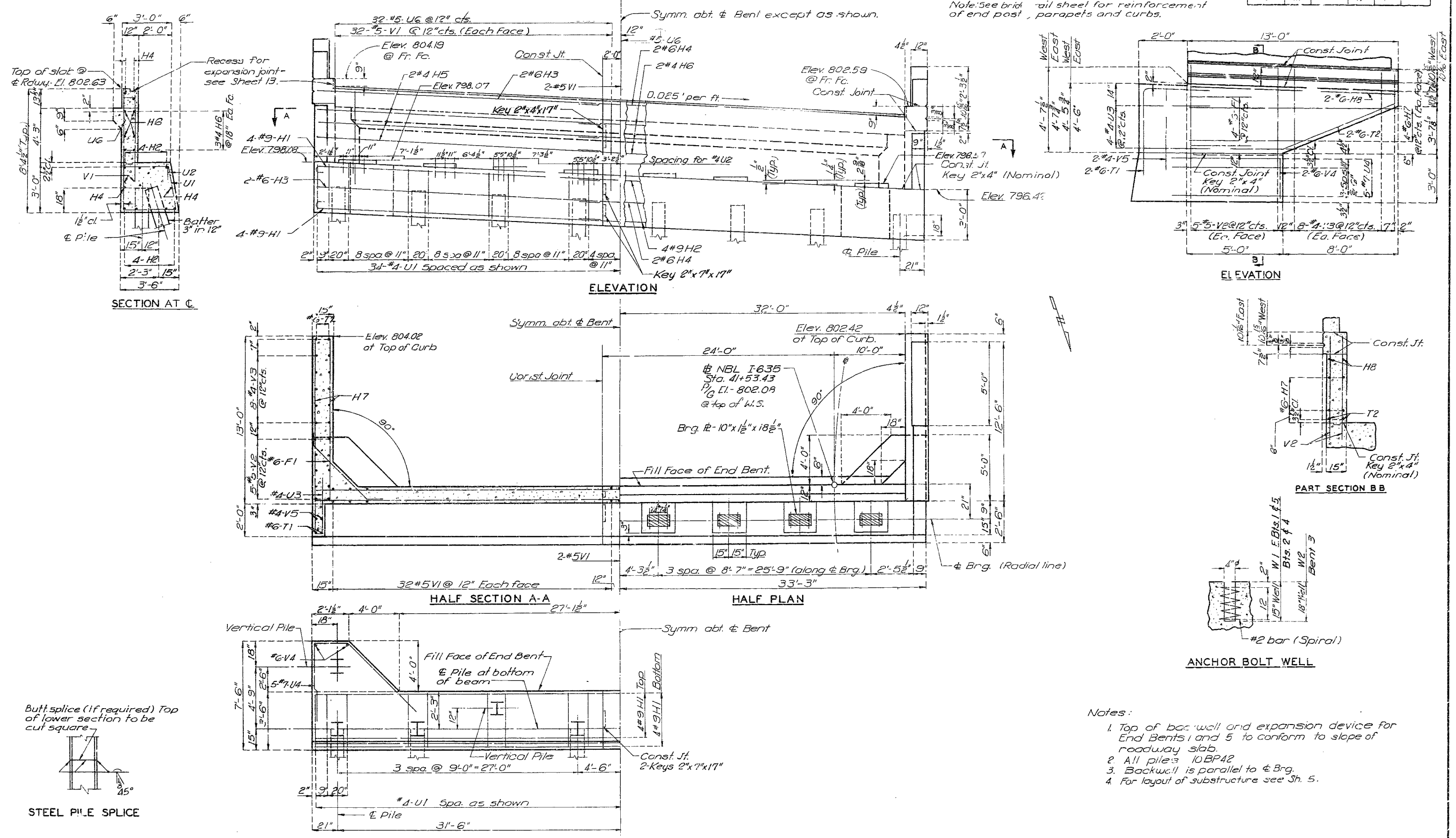
HARRINGTON AND CORTELYOU
CONSULTING ENGINEERS
KANSAS CITY, MO.

A-2435

MISSOURI STATE HIGHWAY DEPARTMENT

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

Note: See bridge rail sheet for reinforcement of end post, parapets and curbs.



- Notes:
1. Top of backwell and expansion device for End Bents 1 and 5 to conform to slope of roadway slab.
 2. All piles 10BP42
 3. Backwell is parallel to ϕ Brg.
 4. For layout of substructure see Sh. 5.

221

STD 121A REVISED APRIL 1965 APRIL 1969

DETAILED Oct 1969 BY B.S.
CHECKED Feb. 1970 BY F.L.D.

Note: This drawing is not to scale. Follow dimensions

DETAILS OF END BENT NO. 1

PLATTE COUNTY

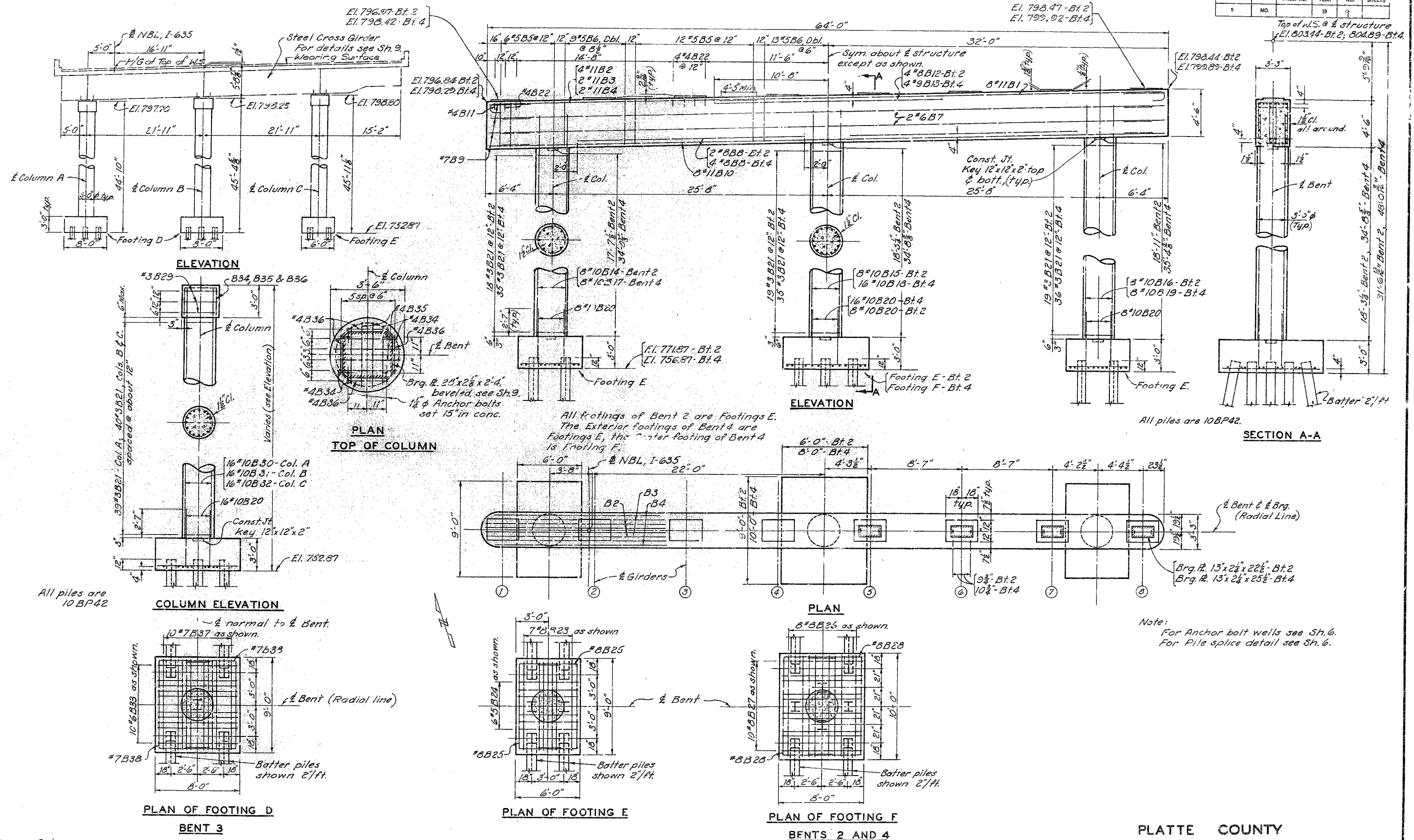
HARRINGTON AND CORTELYOU
CONSULTING ENGINEERS
KANSAS CITY, MO.

A-2435

Sheet No 6 of 15

MISSOURI STATE HIGHWAY DEPARTMENT

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



222

All piles are 10BP42

All piles are 10BP42.

Note: For Anchor bolt wells see Sh. 6. For Pile splice detail see Sh. 6.

DETAILED Oct. 1969 BY DHL
CHECKED Feb. 1970 BY F. J. D.

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

Sheet No. 7 of 15.

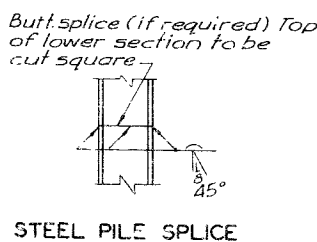
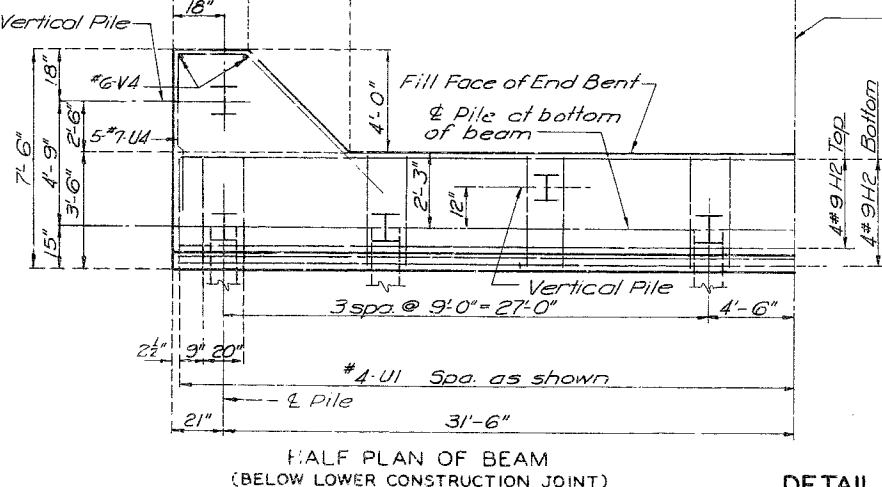
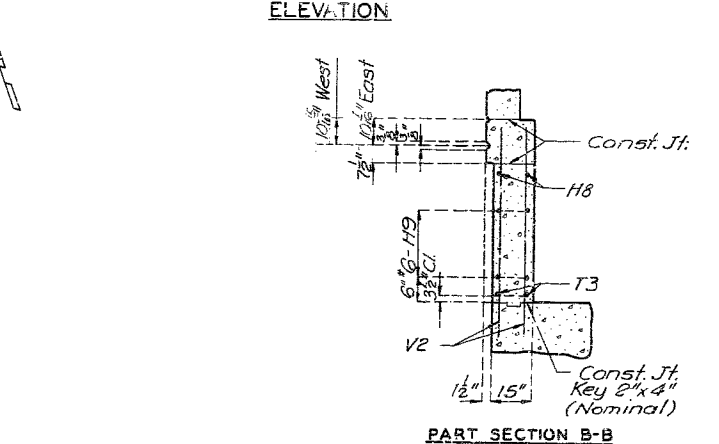
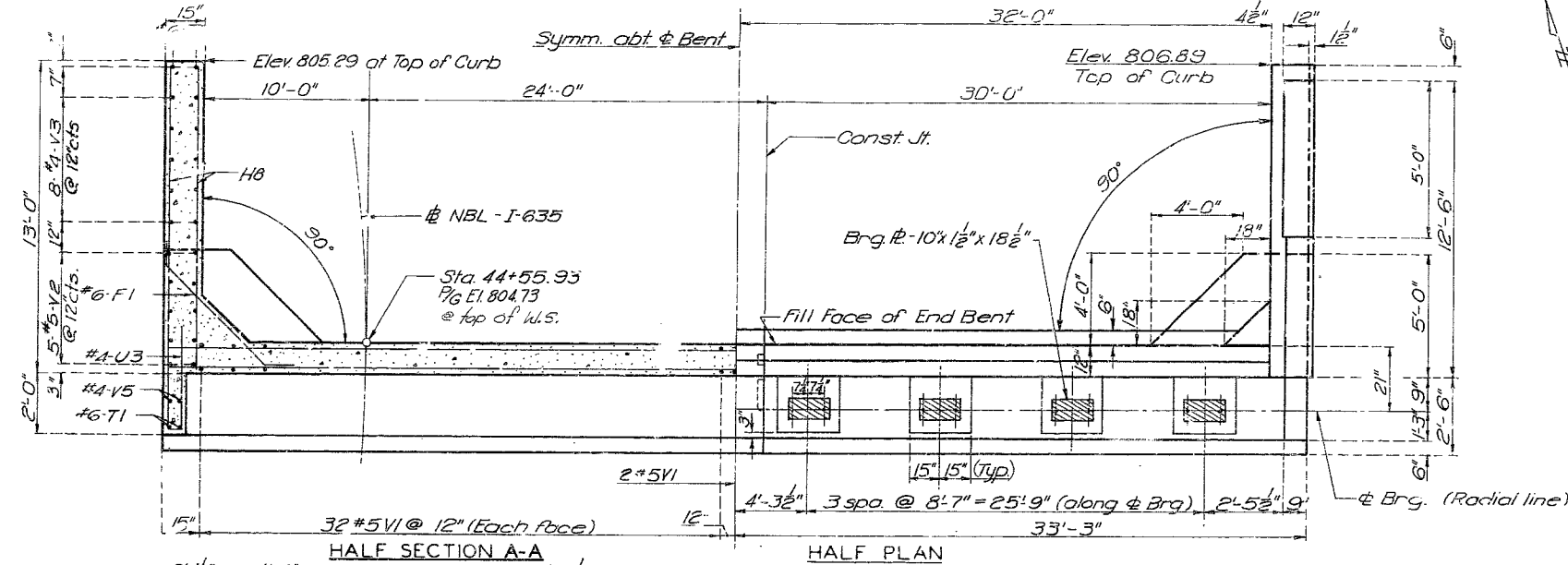
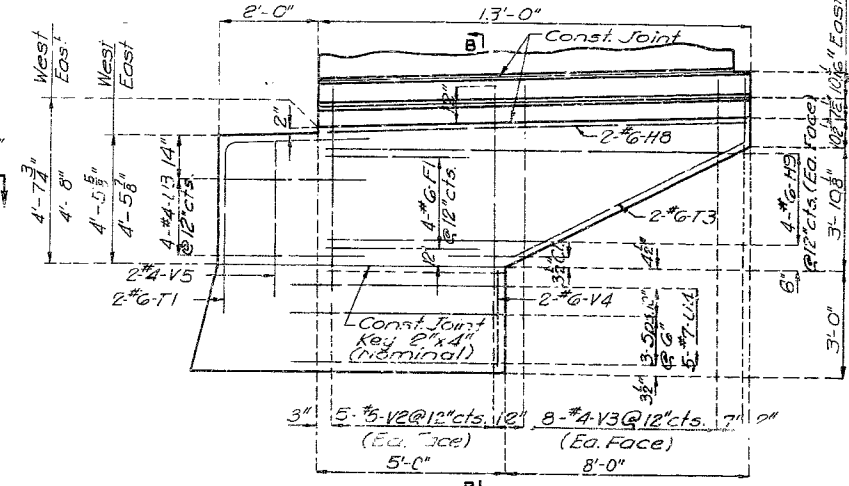
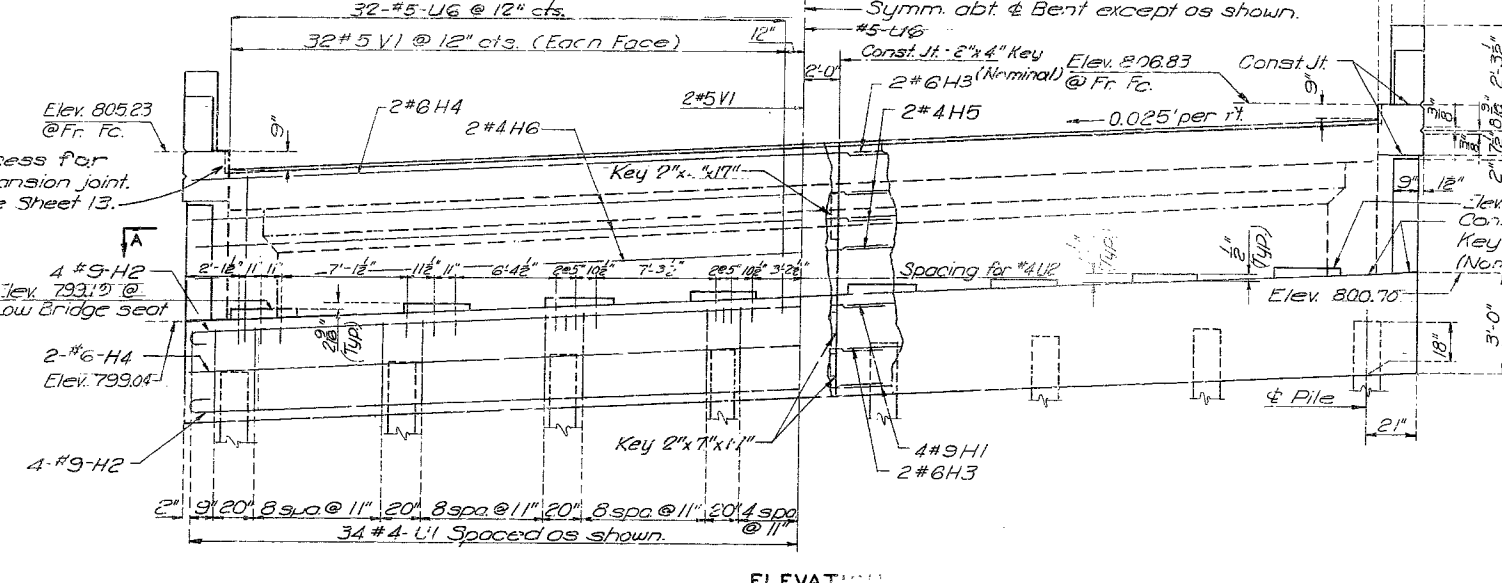
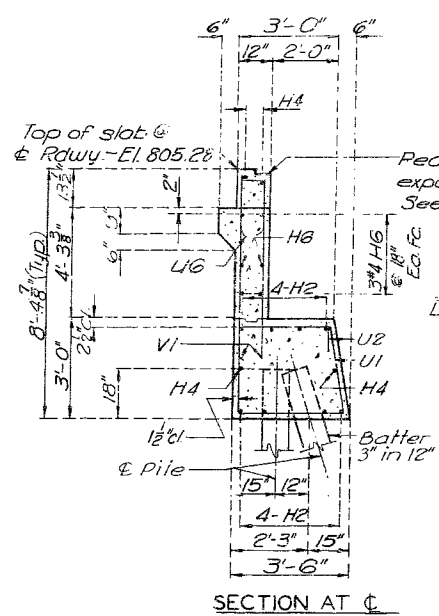
PLATTE COUNTY
HARRINGTON AND CORTELYOU
CONSULTING ENGINEERS
KANSAS CITY, MO.

A-2435

MISSOURI STATE HIGHWAY DEPARTMENT

Note: See bridge rail sheet for reinforcement of end posts, parapets and curbs.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	14	



223

Notes
See Sh. 8 for Anchor Bolt Well.
See Sh. 8 for notes.

STD. 12.1.A
APRIL 1965

REVISED
APRIL 1969
DETAILED Nov. 1969 by BS
CHECKED Feb. '97 by F.J.D.

Note: This drawing is not to scale Follow dimensions.

DETAILS OF END BENT NO. 5

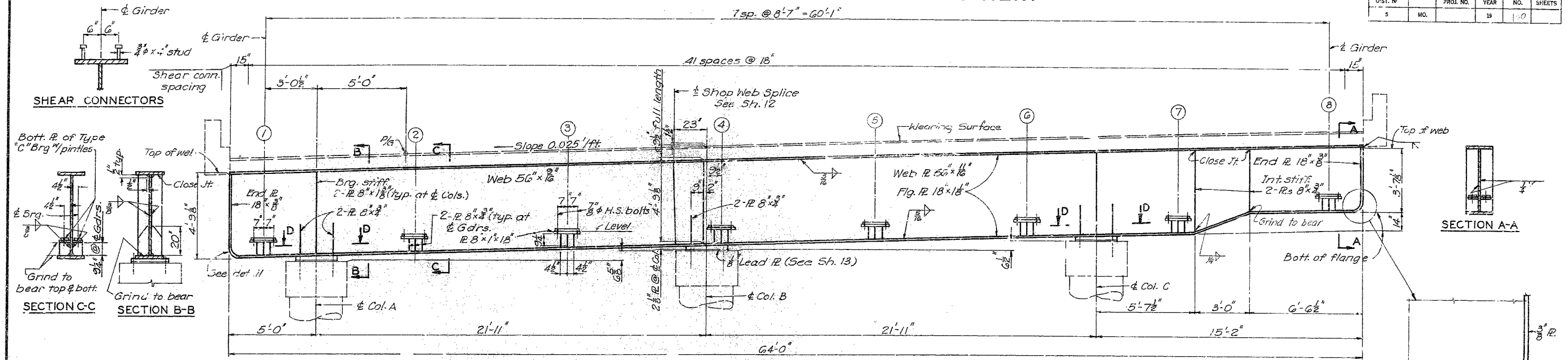
PLATTE COUNTY

HARRINGTON AND CORTELYOU
CONSULTING ENGINEERS
KANSAS CITY, MO.

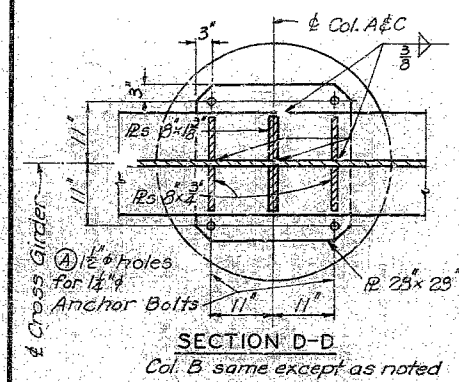
A-2435

MISSOURI STATE HIGHWAY DEPARTMENT

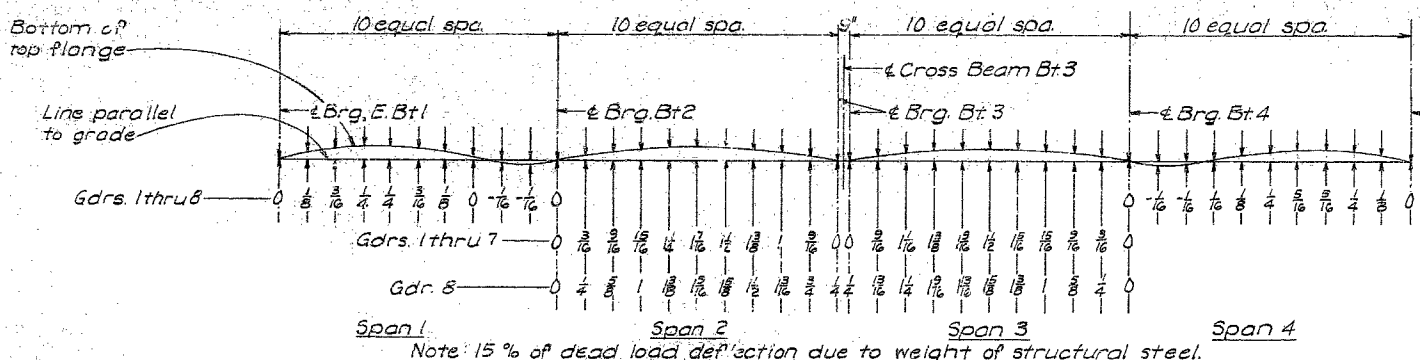
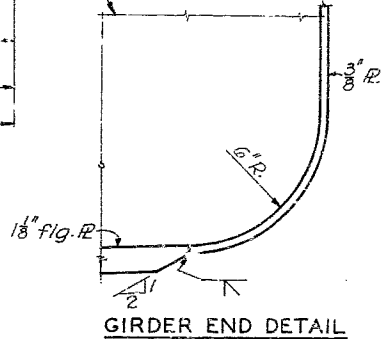
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	10	



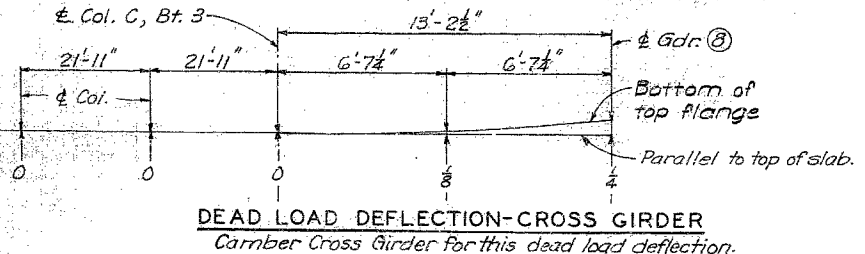
CROSS GIRDER ELEVATION-BENT 3



(A) Anchor bolts at Bent 3 shall be 1 1/2" swaged bolts with hex nuts and plain washers and shall extend 15" into concrete.



DEAD LOAD DEFLECTION



DEAD LOAD DEFLECTION-CROSS GIRDER
Camber Cross Girder for this dead load deflection.

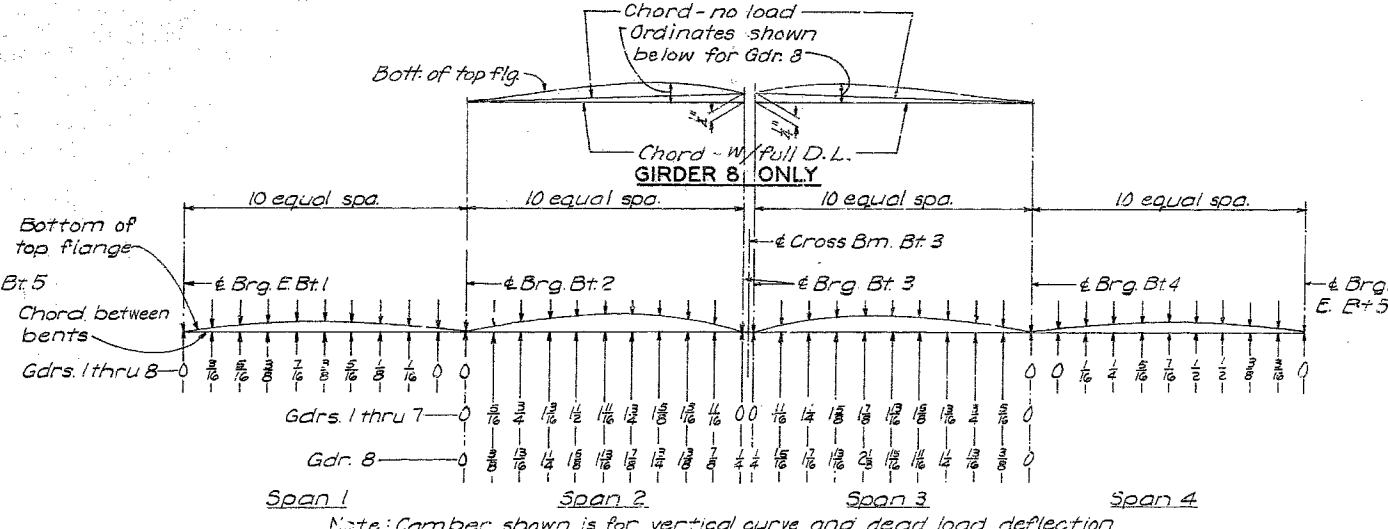
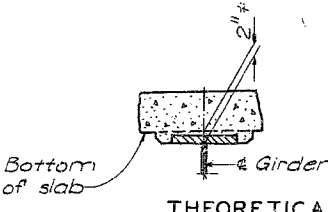


PLATE GIRDER CAMBER DIAGRAM



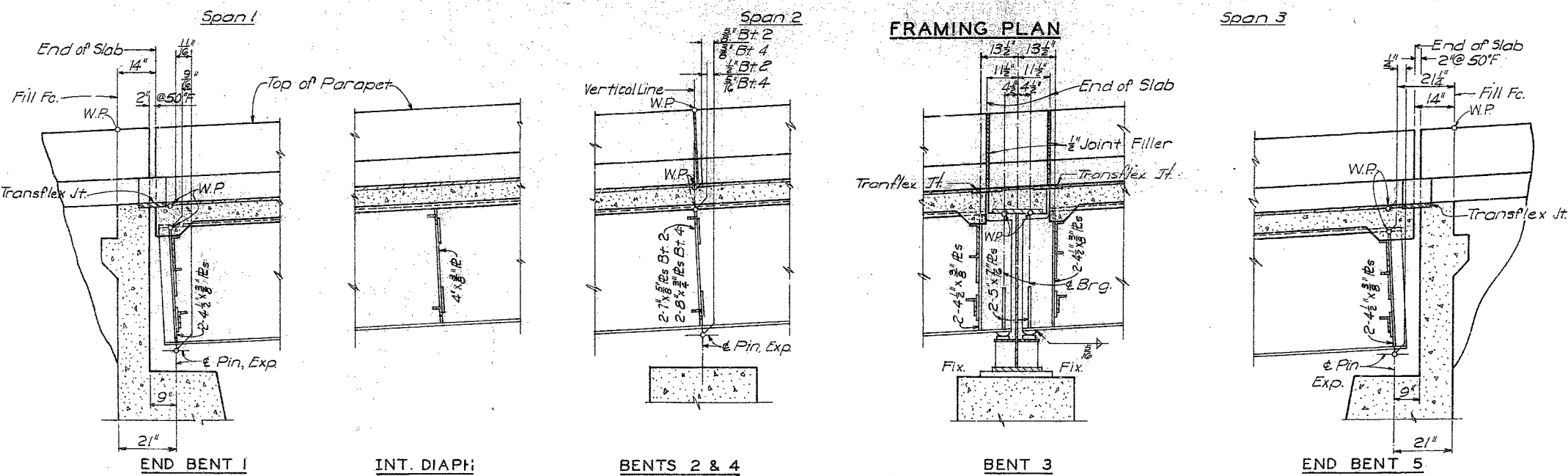
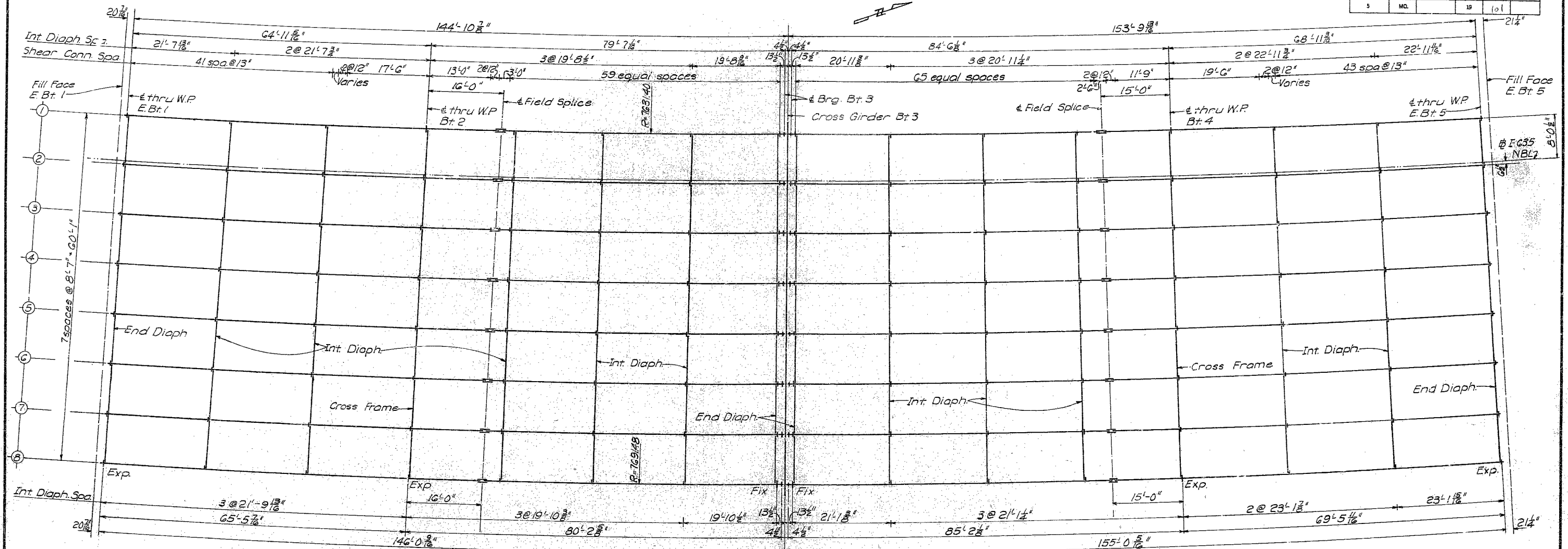
THEORETICAL SLAB HAUNCH

* Dimension may vary if girder camber after erection differs from plan camber by more than the % of D.L. deflection due to weight of structural steel. No payment will be made for additional forming or concrete required for variable haunching.

224

MISSOURI STATE HIGHWAY DEPARTMENT

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



Note:
Longitudinal dimensions shown are taken parallel to grade at top of girder web.

PART LONGITUDINAL SECTIONS

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

DETAILED Oct. 1969 BY KKD
CHECKED Feb. 1970 BY FJD

Sheet No. 10 of 15.

PLATTE COUNTY

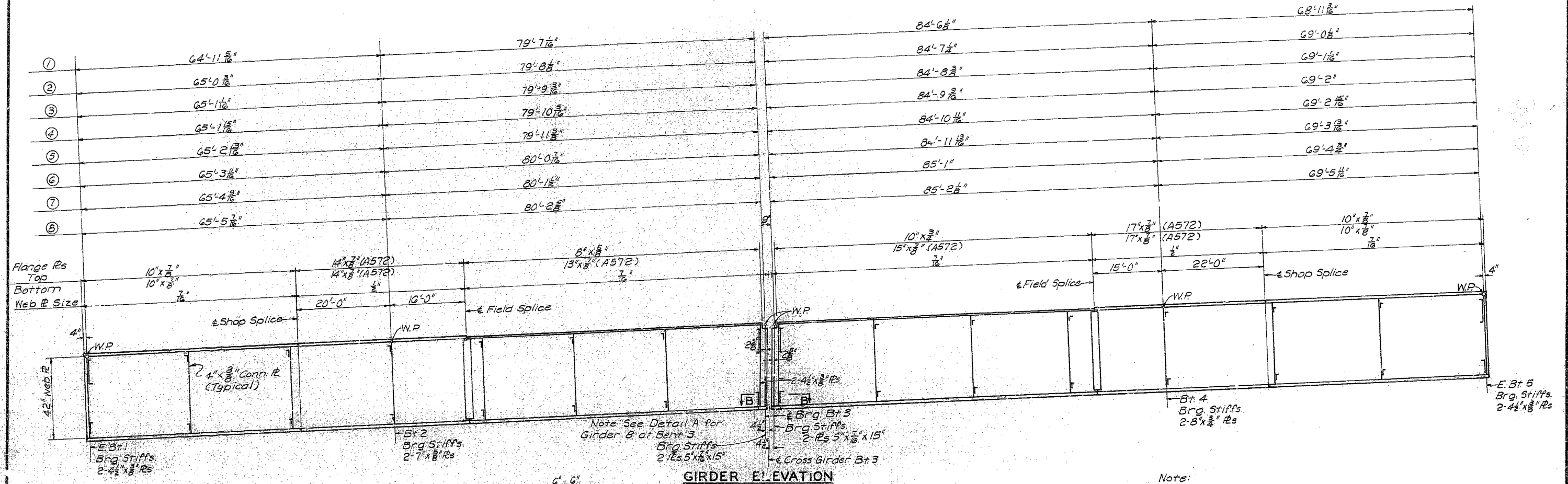
HARRINGTON AND CORTELYOU
CONSULTING ENGINEERS
KANSAS CITY, MO.

A-2435

225

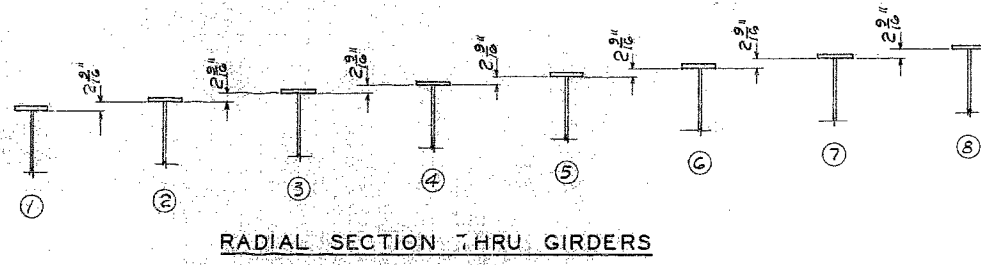
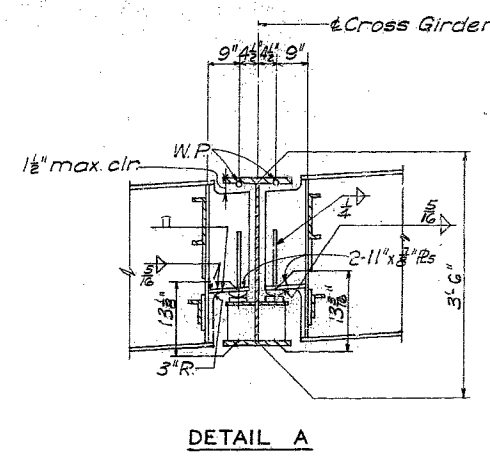
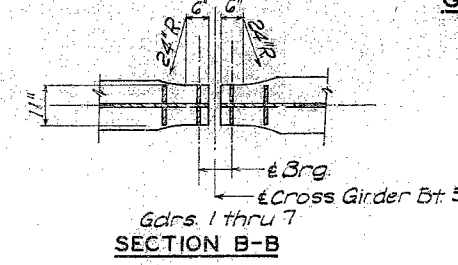
MISSOURI STATE HIGHWAY DEPARTMENT

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



GIRDER ELEVATION

Note:
 Plate girders shall be fabricated to conform with Camber Diagram shown on Sheet 9 and to horizontal curvature shown on Sh. 10.
 All steel A36 except as noted.
 All A572 steel is Grade 50.



220

DETAILED Nov. 1969 BY KKD
 CHECKED Nov. 1970 BY FJD

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

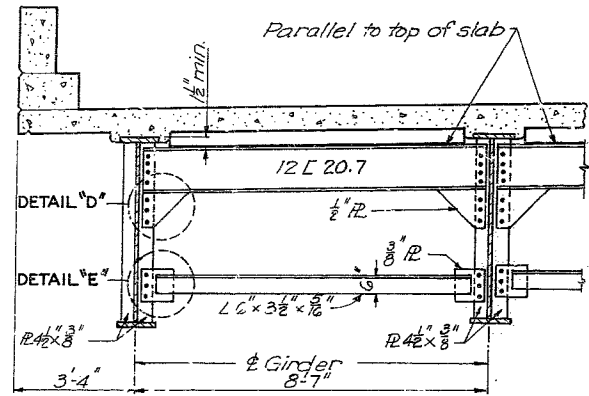
Sheet No. 11 of 15.

PLATTE COUNTY
 HARRINGTON AND CORTELYOU
 CONSULTING ENGINEERS KANSAS CITY, MO.

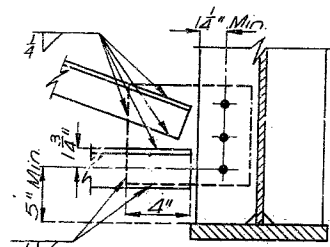
A-2435

MISSOURI STATE HIGHWAY DEPARTMENT

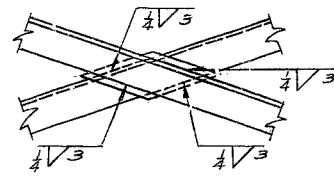
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	103	



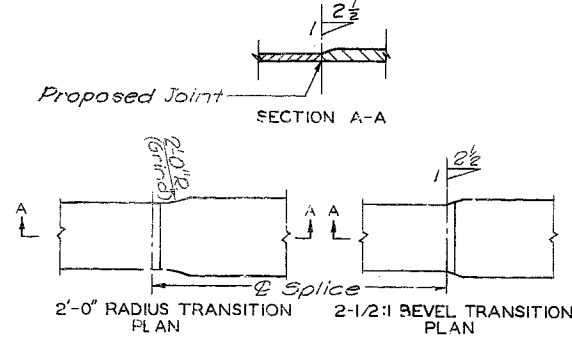
PART SECTION SHOWING END DIAPHRAGMS



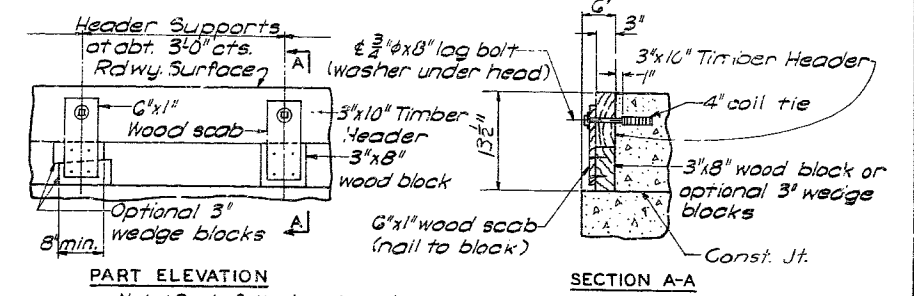
DETAIL "A"



DETAIL "B"



FIELD OR SHOP FLANGE SPLICE

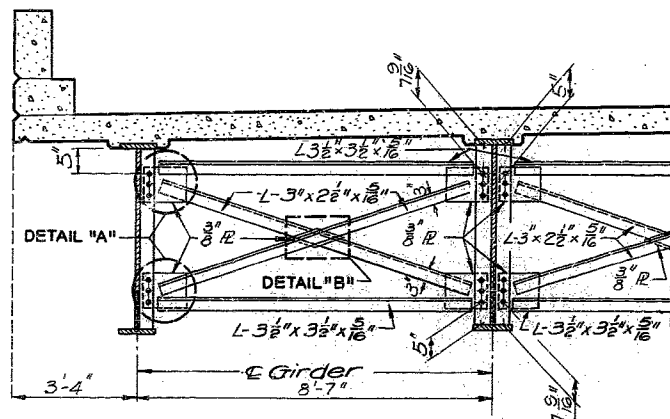


PART ELEVATION

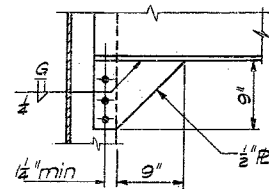
SECTION A-A

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

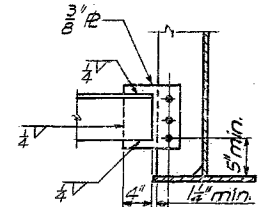
DETAILS OF TIMBER HEADER



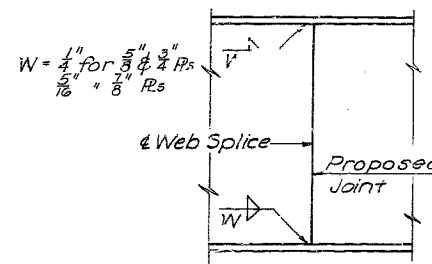
HALF SECTION SHOWING INT. DIAPHRAGMS & CROSSFRAMES



DETAIL D

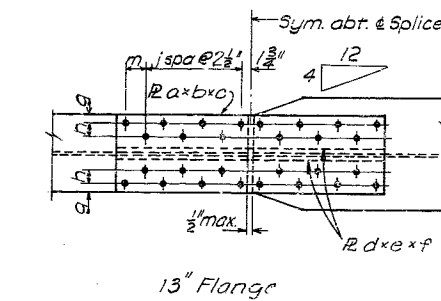


DETAIL E

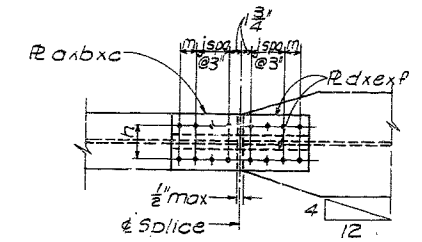


SHOP WEB SPLICE AND GIRDER WELDING

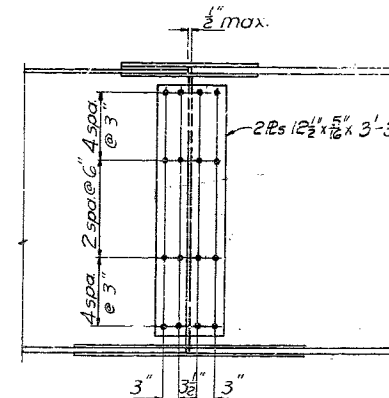
Shop welded web splices may be fabricated by the contractor when detailed on the shop drawings and approved by the engineer. No additional payment will be made for optional shop welded web splices.



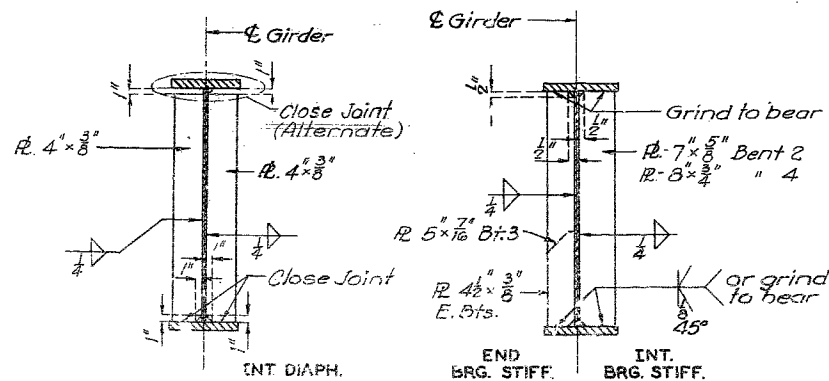
13" Flange



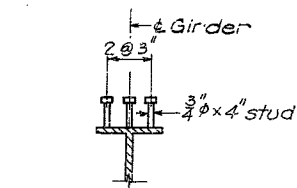
8" & 10" Flanges



15" Flanges

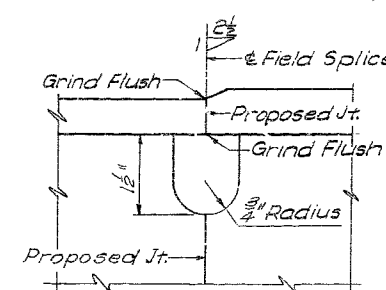


STIFFENER DETAILS



SHEAR CONNECTORS

Note: Weight of 3,353 lbs. of shear connectors, is included in weight of Fabricated Structural Carbon Steel.



WELDED FIELD SPLICES

Flange	a	b	c	d	e	f	h	j	g	m	Open Holes		Fill R
											One	Two	
8 x 8	8	8	10 1/2	5	3	12 1/2	5	1	-	3	12	4	8" x 4" x 9"
10 x 8	10	8	2-0 1/2	4	1/2	2-0 1/2	6	2	-	3	16	8	10 x 1/2 x 12
13 x 8	13	11/2	4-0 1/2	5 1/2	3/4	4-0 1/2	2 1/2	7	1 1/2	3 1/2	36	18	
15 x 8	15	3	3-2 1/2	6 1/2	1 1/2	3-2 1/2	3	3	1 1/2	3 1/2	40	20	

Field Splices: Use 3/4" high strength bolts with 1/2" φ reamed holes. All splice material is A36.

FIELD SPLICES

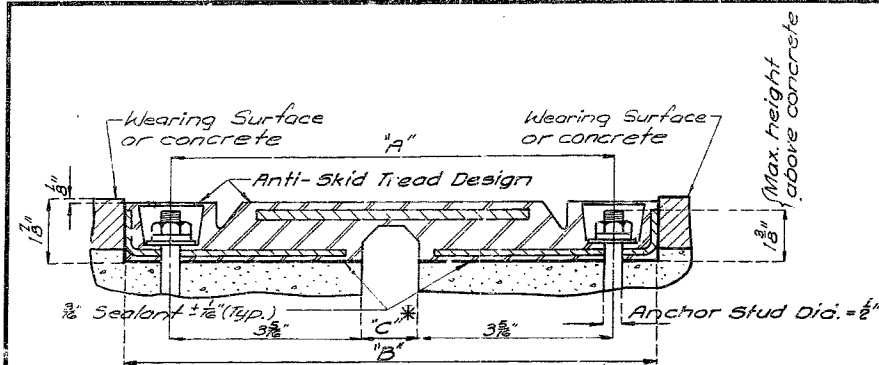
Note: Field splices may be welded or field bolted.

PLATTE COUNTY

227

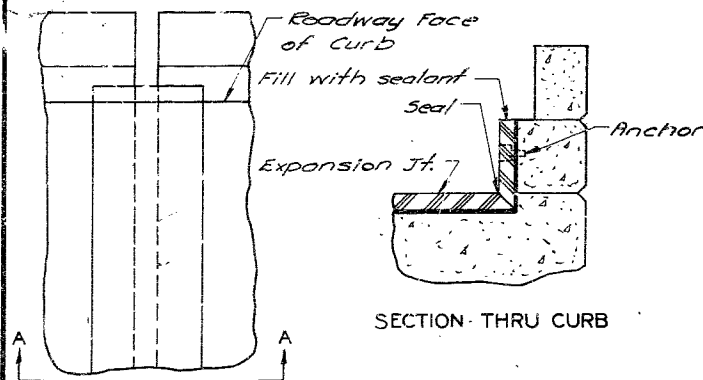
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	10	

MISSOURI STATE HIGHWAY DEPARTMENT



SECTION A-A

* Dimension "C" applies to Bents No. 1 and 5. Installation of Bent No. 3 is centered over a 1/2" open joint.



PART PLAN

Temp.	Dim. "A"	Dim. "B"	Dim. "C" (Max.)
110°F	7 3/8"	9 3/8"	1"
90	8"	9 3/8"	1 3/8"
70	8 1/2"	10"	1 3/8"
60	8 3/4"	10 1/2"	1 3/8"
50	8 3/4"	10 3/4"	2"
40	8 3/4"	10 3/4"	2 1/2"
30	9"	10 3/4"	2 3/8"
10	9 1/2"	11"	2 3/8"
-10°F	9 3/4"	11 3/8"	3"

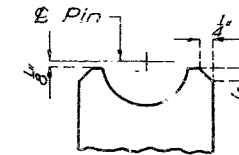
Joint Seal for 2" movement

Note: Plan dimensions are based on installation at 60°F. Expansion joint width shall be adjusted during installation for compliance with the above table. See Special Provisions.

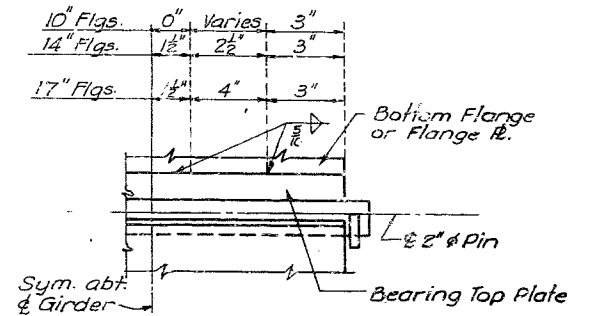
NOTES: TYPE "D" BEARINGS

Lead plates under bearings shall be approximately 3" thickness and weigh 8#/sq. ft. Cost of lead plates shall be included in price bid for other items. Estimated weight does not include weight of anchor bolts.

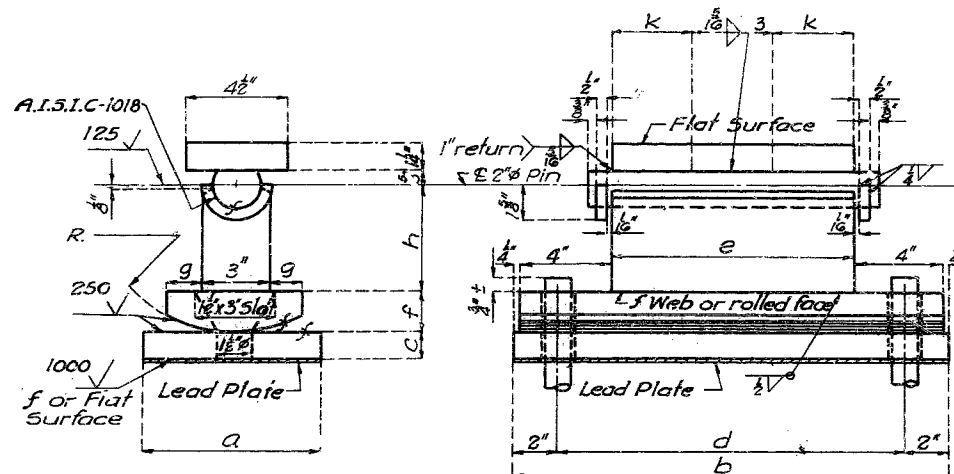
Anchor Bolts for Type "D" Bearings shall be 1 1/2" diameter swaged bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for Fixed Bearings, no nuts for Expansion Bearings.



END VIEW OF WEB EXPANSION BEARING



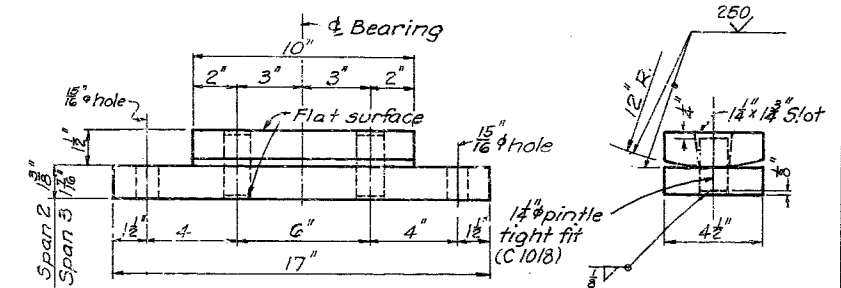
WELDING DETAILS



EXPANSION

Required:
3 each, E. Bents 1 & 5
8 - Bent 2
8 - Bent 4

TYPE "D" BEARINGS
(Estimated Weight 9,670#)



Required: 8 - Bent 3, Span 2
8 - Bent 3, Span 3

TYPE "C" MODIFIED BEARINGS
(Estimated Weight 770#)
H. S. bolts not included

Note: Anchor bolts for Type "C" Modified Bearings shall be 1/2" diameter with hex head and nut, washer under nut.

	a	b	c	d	e	f	g	h	k	R
E. Bents 1 & 5	10"	18 1/2"	12"	14 1/2"	10"	1 1/2"	1 1/2"	4 3/8"	3 1/2"	6 1/2"
Bent 2	13"	22 1/2"	2 1/4"	18 1/2"	14"	2"	2"	8 1/2"	5 1/4"	10 1/2"
Bent 4	13"	25 1/2"	2 1/4"	21 1/2"	17"	2"	2"	8 1/2"	7"	10 1/2"

Note: The expansion joint shall be set, anchored, bonded and sealed as recommended by the manufacturer and as set forth in the Special Provisions. Anchors shall be cone expansion type. Payment for furnishing and installing the expansion joint, including anchor bolt assembly, shall be made under unit price bid per lineal foot of joint.

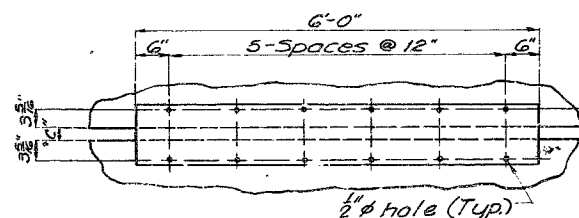
Accurately locate the hole spacing for 1/2" studs (expanding anchor type), on both sides of the expansion void at a distance of 3 3/8" from the edge of the concrete and snap a chalk line on both sides of the expansion void. Layout transverse hole spacing along the chalk line in accordance with the shop drawings and the Typical Layout as shown on this sheet. Insure that the holes are directly opposite each other (square). Drill holes 1/2" diameter x 2 1/2" deep.

Holes shall not be drilled nor anchor bolts set until the concrete is at least 7 days old.

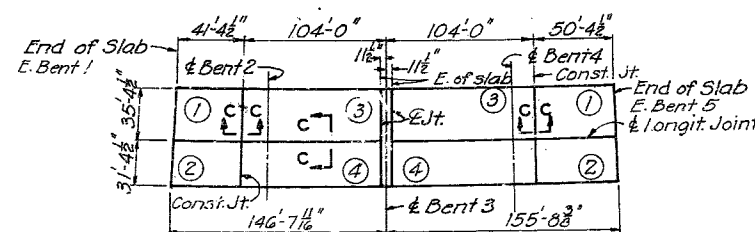
First section of expansion joint shall be installed starting at E of roadway.

Tighten all nuts to 40 foot pounds. Retighten to 50 foot pounds 30 minutes after initial tightening.

Wire brush bolt cavity and coat with sealant. Fill cavity with sealant to a depth of 1/2" and push plug down to snap lock. Scrape off all excess sealant.

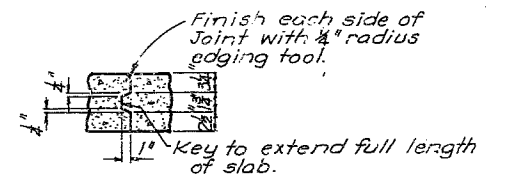


PART PLAN SHOWING TYPICAL LAYOUT FOR HOLE SPACING



	Sequence of Pours	
	Direction	
Basic Sequence	1 or 2	3 or 4
Alt. "A" Pours	End to 3 or 4	1 or 2 to Bent 3
	1 + 2	or 3 + 4

SLAB POURING SEQUENCE



SECTION C-C

Notes: The contractor shall pour and satisfactorily finish the slab pours at a rate of not less than 4.3 cubic yards per hour unless he elects to use an approved retarder to retard the set of the concrete to 2.5 hours in which case he may reduce his pouring and finishing rate to not less than 2.6 cubic yards per hour.

DETAILS OF STEEL REINFORCED ELASTOMERIC EXPANSION JOINT SEAL

DETAILED OCT 1969 BY JER
CHECKED FEB 1970 BY FTD

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

Sheet No. 13 of 15

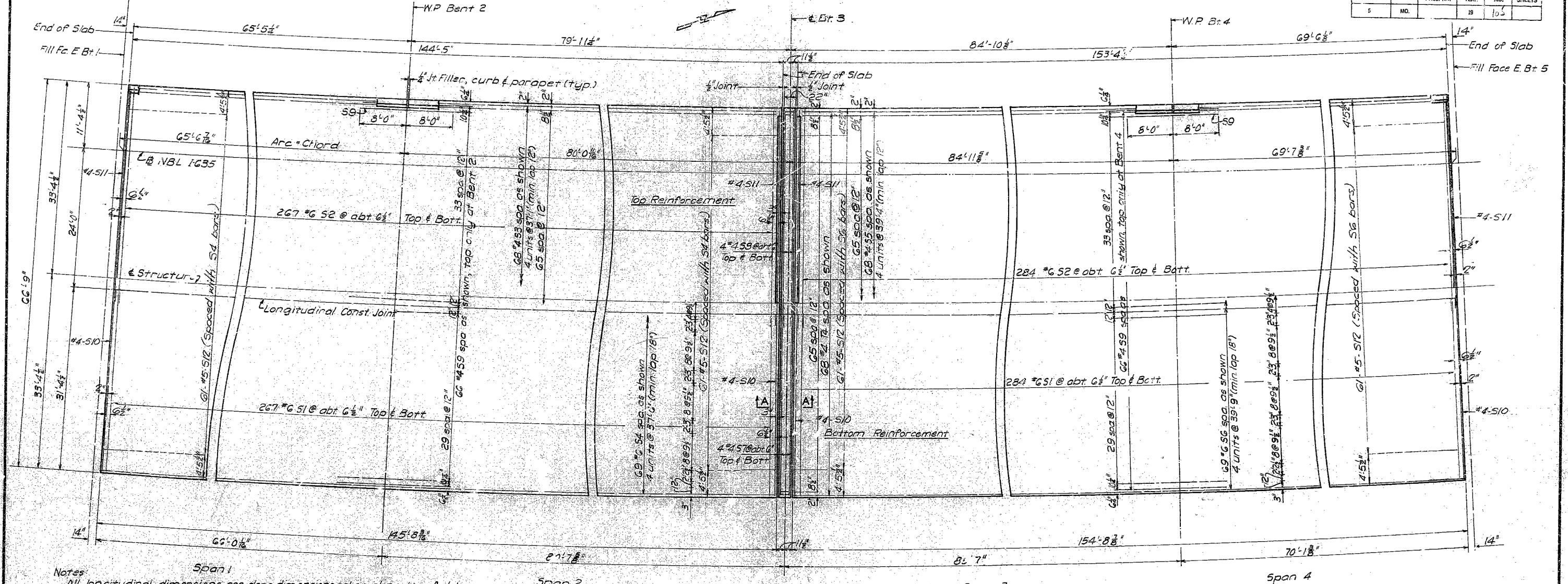
PLATTE COUNTY

HARRINGTON AND CORTELYOU
CONSULTING ENGINEERS KANSAS CITY, MO.

A-2435

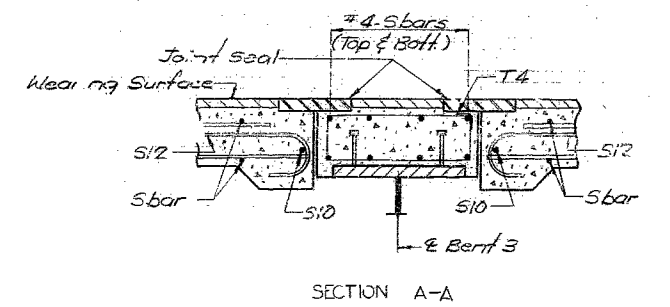
MISSOURI STATE HIGHWAY DEPARTMENT

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

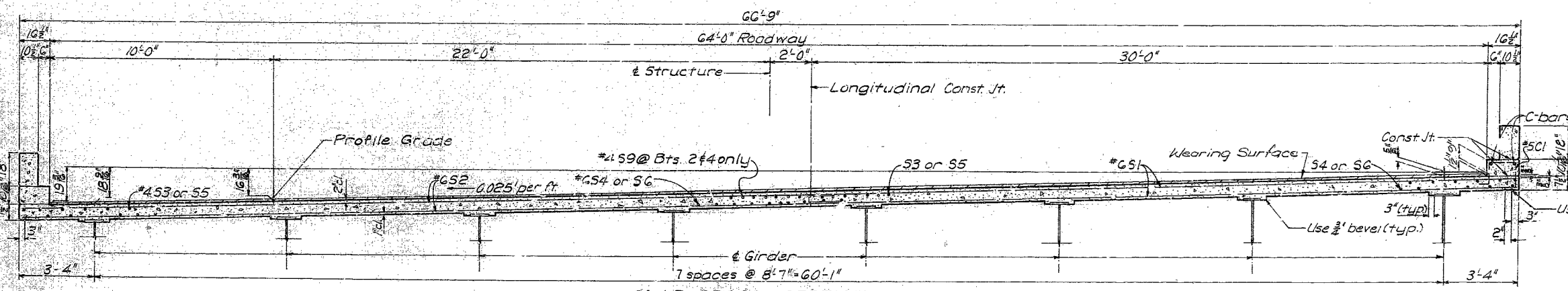


SLAB PLAN

Notes:
 All longitudinal dimensions are slope dimensions taken along top of slab.
 All longitudinal reinforcement shall be placed parallel to beams.
 Spacing of transverse reinforcing is measured along outside edge of slab.
 All transverse reinforcing shall be placed radially.
 For details of curb, parapet and rail not shown see Sh. 15.
 For detail of longitudinal construction joint see Sh. 13.



SECTION A-A



SLAB CROSS SECTION (Radial)

225

DETAILED Oct 1969 BY KKD
 CHECKED Feb. 1970 BY FJD

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

Sheet No. 14 of 15

PLATTE COUNTY
 HARRINGTON AND CORTELYOU
 CONSULTING ENGINEERS
 KANSAS CITY, MO.

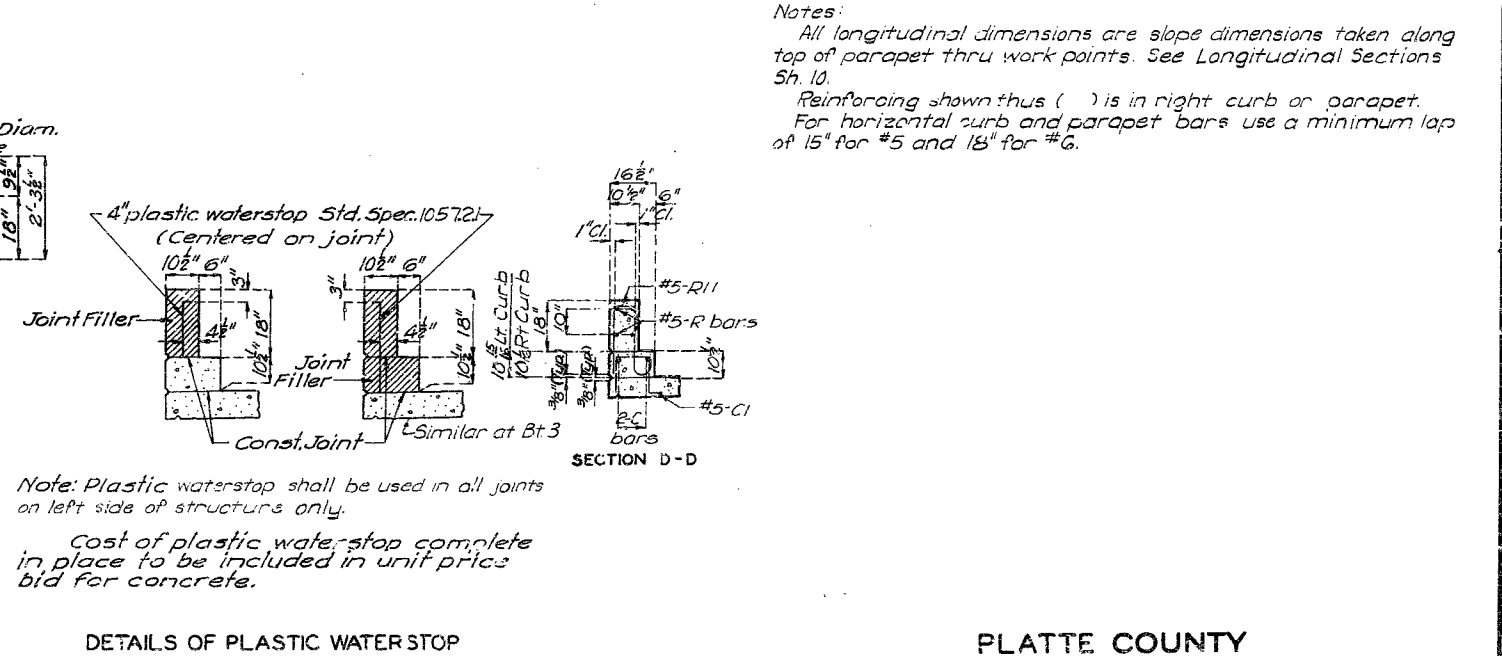
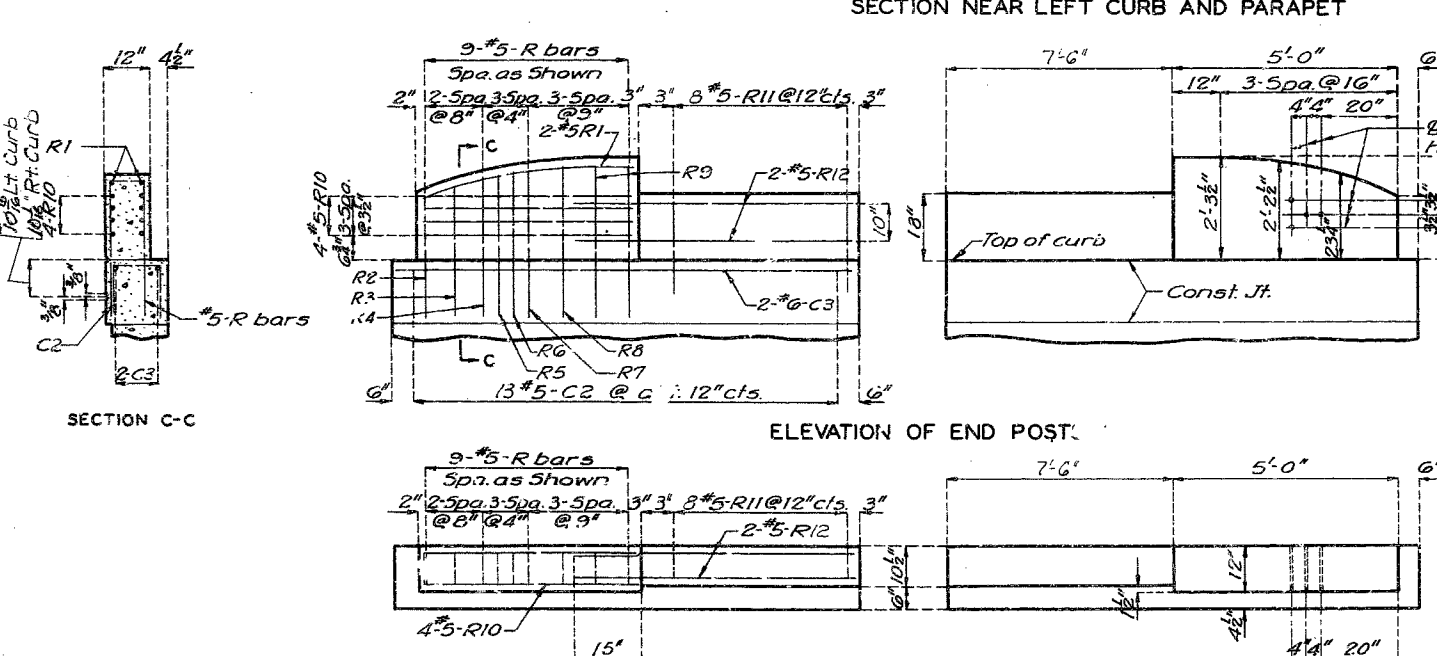
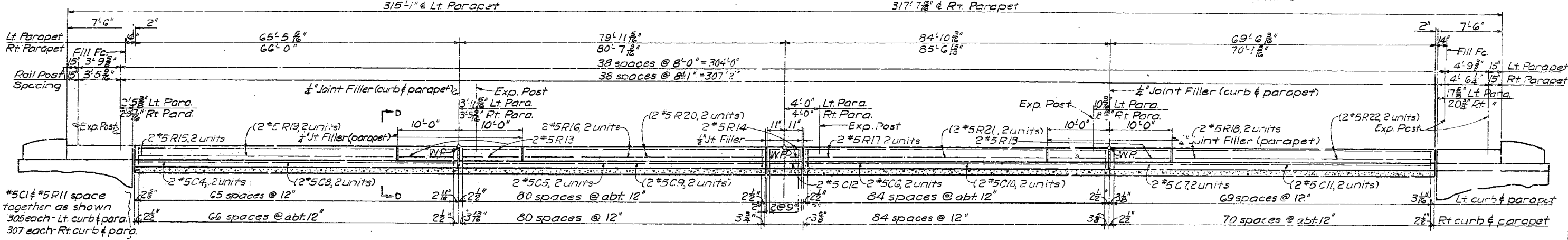
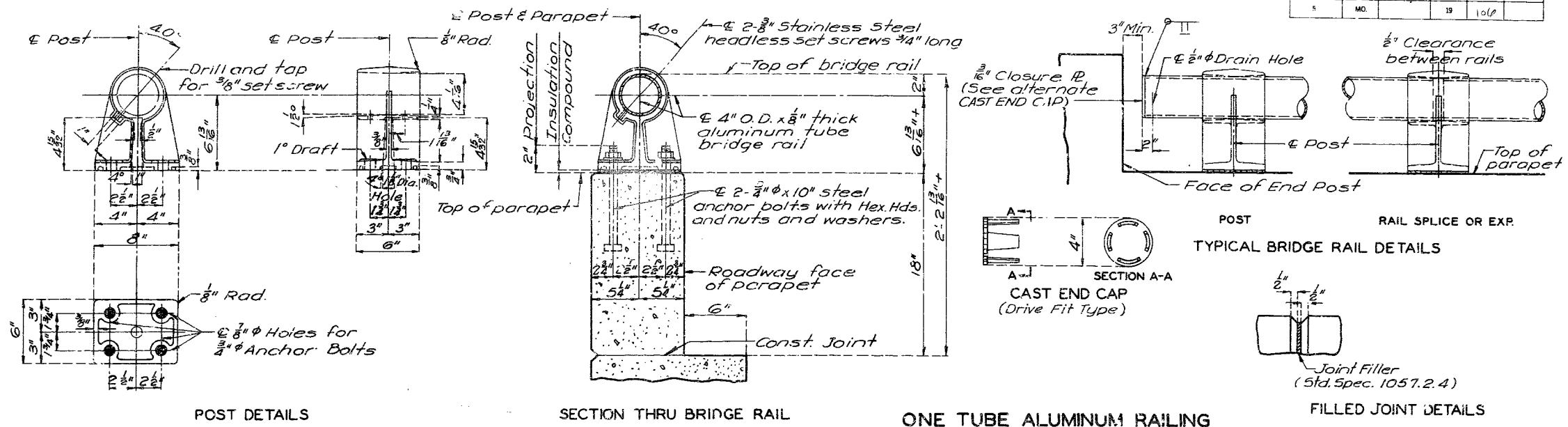
A-2435

MISSOURI STATE HIGHWAY DEPARTMENT

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

GENERAL BRIDGE RAIL NOTES:

All bridge rail posts shall be set normal to grade. Aluminum tube bridge rail shall be bent to conform to vertical and horizontal alignment of parapet.
 Aluminum washer shims between top of parapet and post base may be used for adjusting bridge rail alignment. Maximum thickness of shims to be 3". Where more tilting of post is required for proper alignment, concrete bearing areas shall be ground down.
 All parts of bridge rail, except anchor bolts, nuts, washers, and set screws are to be of aluminum material.
 All fillets 1/2" except as noted.
 All drafts 3" except as noted.
 Omit set screw in side of rail posts adjacent to filled joints in curb and parapet at rail expansion points. Omit set screw in each side of rail post on end bents except where a gap is shown in rail over an expansion device.
 Top of curbs and parapet to be built parallel to grade with curb and parapet joints (except at end bents) normal to grade.
 Concrete end posts to be vertical.
 All exposed edges of end posts shall have 1/4" bevel. All exposed edges of curbs and parapets shall have 1/2" radius or 3" bevel unless otherwise noted.



Notes:
 All longitudinal dimensions are slope dimensions taken along top of parapet thru work points. See Longitudinal Sections Sh. 10.
 Reinforcing shown thus () is in right curb or parapet.
 For horizontal curb and parapet bars use a minimum lap of 15" for #5 and 18" for #6.

PLAN OF END POSTS
 Note: This drawing is not to scale. Follow dimensions.

DETAILS OF PLASTIC WATERSTOP

PLATTE COUNTY

230

REVISED OCT. 1968
 MAR. 1964
 STD. I.5.2

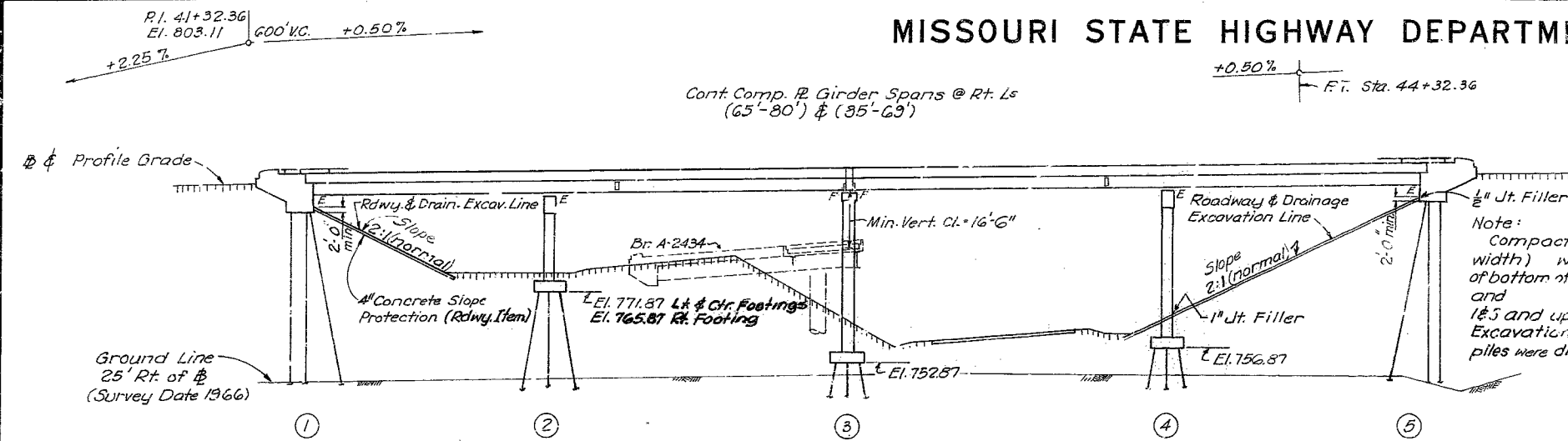
DETAILED Oct. 1968 BY KKD
 CHECKED Feb. 1970 BY FJD

HARRINGTON AND CORTELYOU
 CONSULTING ENGINEERS
 KANSAS CITY, MO.

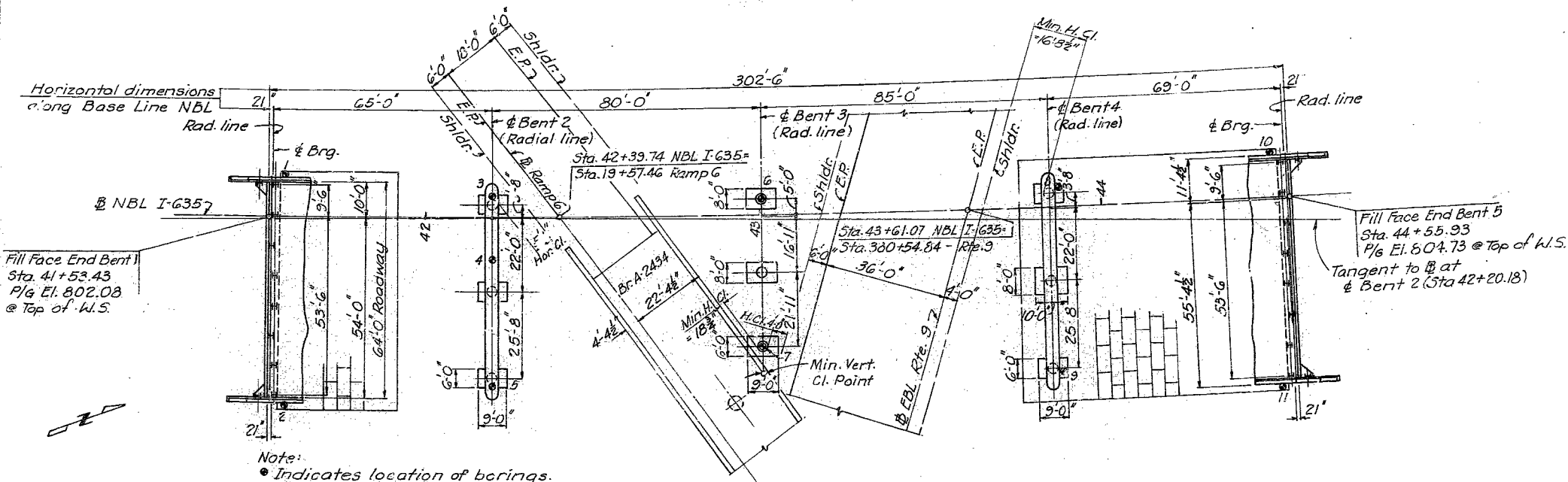
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PRC. NO.	FISC. Y.	SHEET NO.	TOTAL SHEETS
5	MO.		19	42	

FINAL PLANS



ELEVATION



PLAN

PILE DATA					
Bent No.	1	2	3	4	5
Pile Type & Size	10BP42				10BP42
Number	10	18	16	20	10
Final Length	Ft. 97-134	59-77	50-53	49-57	76-87
Design Bearing	Tons 38	53	45	48	38
Hammer Energy	Ft. Lbs. 12,100	11,900	10,800	10,800	9,800

Minimum energy requirement of hammer based on plan length and design bearing value of piles. All piles were driven to practical refusal.

GENERAL NOTES

- Design Specifications: AASHTO 1969
- Design Loading: HS20-44
- Modified 24,000* Tandem Axle Earth 120* Equivalent Fluid Pressure 30# Fatigue Stress - Case 1
- Design Unit Stresses:
 - Class B Concrete (substructure) $f_c = 1,200$ psi
 - Class B1 Concrete (superstructure) $f_c = 1,600$ psi
 - Reinforcing Steel $f_s = 20,000$ psi
 - Structural Steel (ASTM A36) $f_s = 20,000$ psi
 - Structural Steel (ASTM A572) Grade 50 $f_s = 27,000$ psi
 - Steel Pile $f_b = 3,000$ psi
- Field connections, High Strength Bolts $\frac{3}{4}$ " holes $\frac{1}{2}$ " except as noted.
- Paint: Shop, none; Field, by contractor in accordance with Std. Spec. 712.12.
- Minimum clearance to reinforcing steel $\frac{1}{2}$ " unless otherwise shown.
- All reinforcing bars in tops of substructure beams or caps spaced to clear anchor bolts for bearings by at least $\frac{1}{2}$ ".
- Profile grade elevations are taken at top of wearing surface.

Items	QUANTITIES		
	Substr.	Superstr.	Totals
Class I Excavation	Cu. Yd. 824.5		524.5 *
Structural Steel Pile (10")	Lin. Ft. 5066		5066 *
Class B Concrete	Cu. Yd. 293.8		293.8 *
Class B1 Concrete	Cu. Yd.	546.9	546.9 *
Reinforcing Steel	Lb. 50680	171230	221910 *
Fabricated Structural Carbon Steel	Lb.	291250	291250 *
Fabricated Structural Low Alloy Steel	Lb.	98270	98270 *
Painting	Ton	193.0	193.0 *
Bridge Rail (one tube)	Lin. Ft.	632	632 *
Steel Reinf. Elastomeric Exp. Joint Seal	Lin. Ft.	264	264 *
Coal for Interlayer Protective Coat	Sq. Yd.	2127	2127 *
Special Type "D" Mixture (Asphaltic Concrete)	Ton	147	147 *
Contingent Items			
Class B Concrete (Substr.)	6.0		6.0 *

All concrete and reinforcement in end posts, parapets, and curbs is included with superstructure quantities.

Bench Marks:
 B.M. Bolt in curb at SW end Br. A-2435 Elev. 802.48
 B.M. Bolt in curb at NE end Br. A-2435 Elev. 806.86

BRIDGE: N.B.L. I-635 OVER RTE. 9 E.B.L. & RAMP 6
 STATE ROAD-INTERSTATE ROUTE 635
 IN RIVERSIDE
 PROJECT NO. IIG-635-1(75)(RTE. I-635) STA. 41+53.43

PLATTE COUNTY

SUBMITTED BY: *W.D. Carney* DATE: 1-24-72
 BRIDGE ENGINEER
 APPROVED BY: *Robert D. Hunt* DATE: 1-27-72
 CHIEF ENGINEER
 HARRING CONSULTING ENGR.
 JOU CITY, MO.



DESIGNED OCT. 1968 BY H&C
 DETAILED NOV. 1969 BY JER
 CHECKED FEB. 1970 BY FJD

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

FINAL PLAN

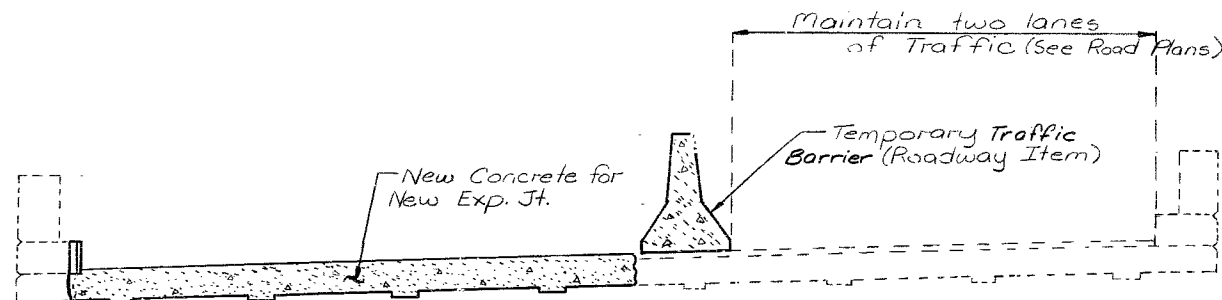
Sheet No. 1A of 15.

DWG. 611.60
 DWG. 706.30A
 A-2435

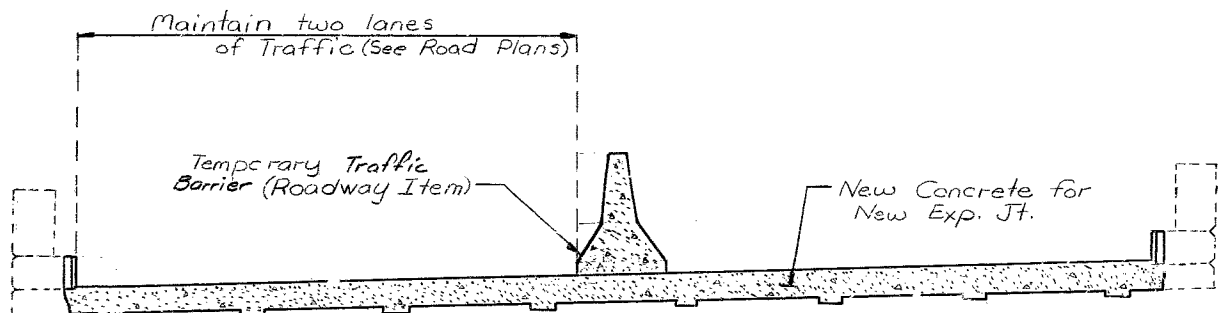
231

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

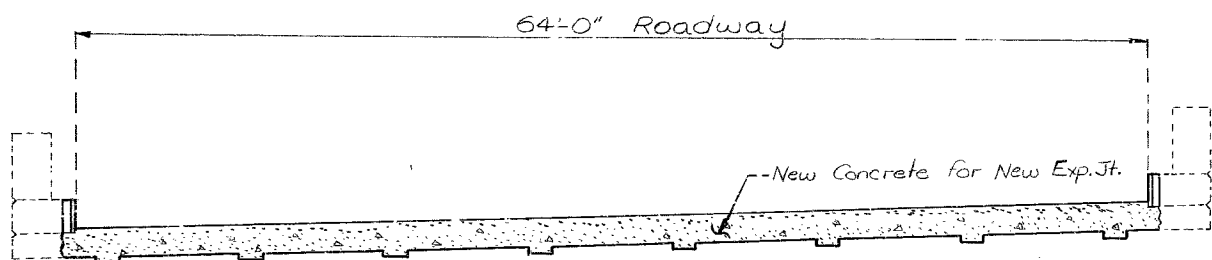
STATE	PROJ. NO.	SHEET NO.
	IR-635-1(208)	25
SEC./SUR.	TWP. 50N	RGE. 33W



STAGE ONE



STAGE TWO



FINAL STAGE

ESTIMATED QUANTITIES		TOTAL
ITEM		
Special Work	Lump Sum	1
Elastomeric Exp. Jt. Seal (2.0 in.)	Lin. Ft.	128
Prefo. med Compression Exp. Jt. Seal (2.0 in.)	Lin. Ft.	128

Note: Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

155

DESIGNED Oct. 1934
 DETAILED Oct. 1934
 CHECKED Nov. 1934

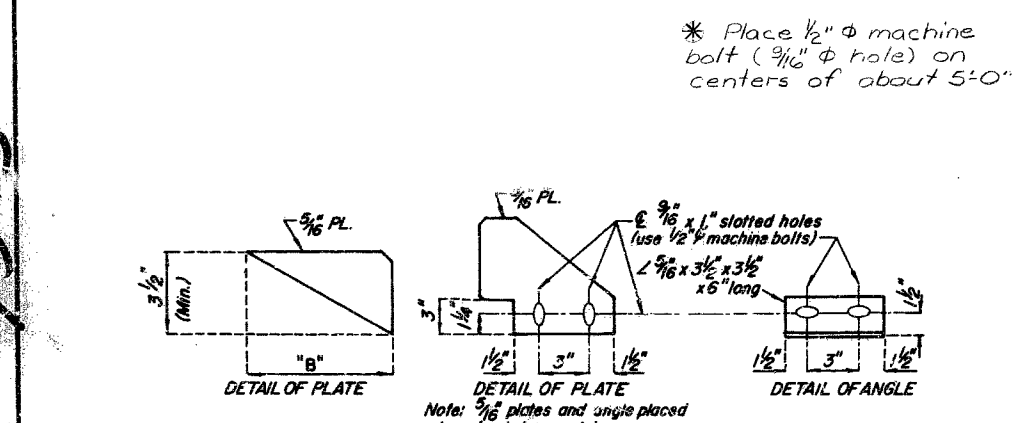
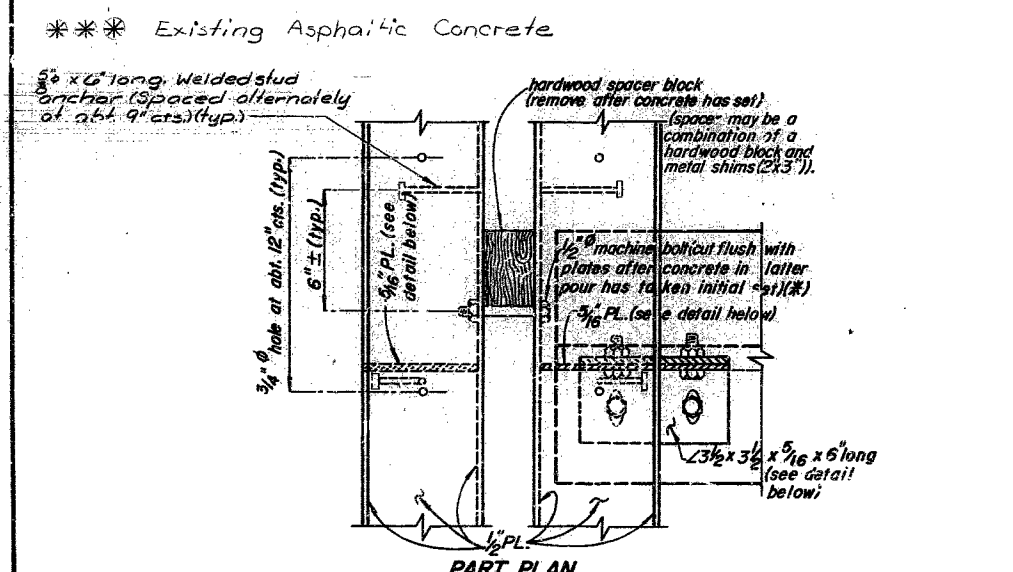
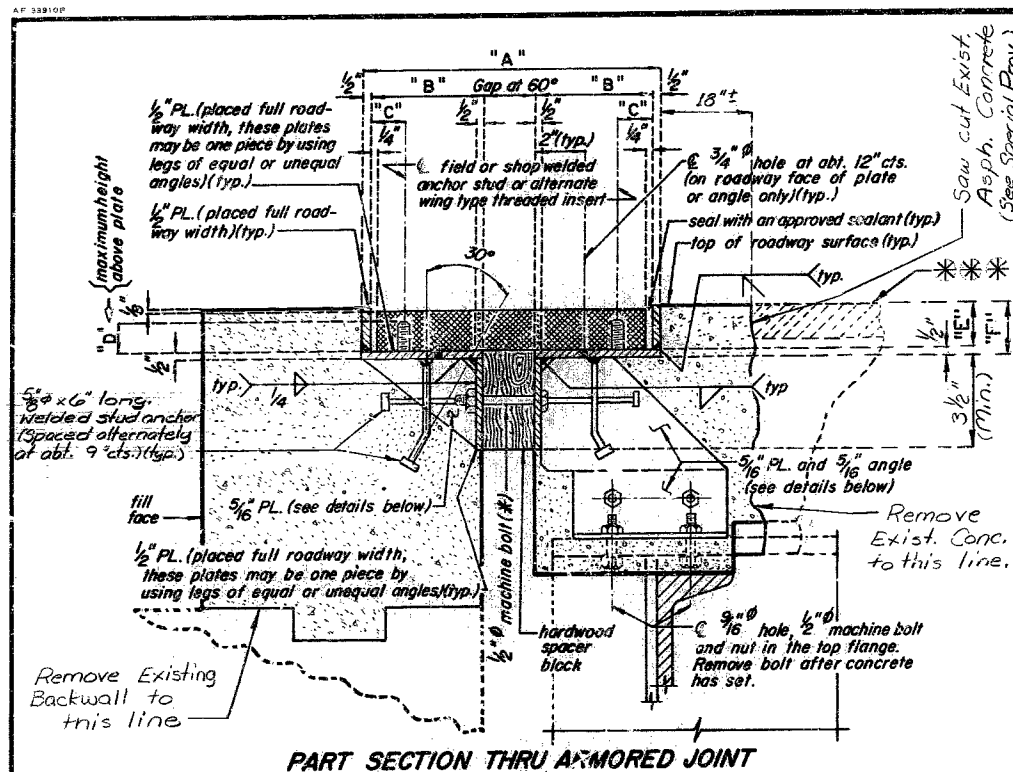
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 3.

REPAIRS TO:
BRIDGE N.B.L. I-635 OVER RTE. 9 E.B.L. & RAMP 6
 STATE ROAD-INTERSTATE ROUTE 635
~~ABOUT~~ IN RIVERSIDE
 PROJECT NO. IR-635-1(208) STA. 41+53.43±
 JOB NO. 4-I-635-763 RTE. I-635 N.B.L.
 PLATTE COUNTY

STD.
STD.
A-2435R

DATE JAN. 22, 1985



LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE "G"
End Bents No. 1 & No. 5	Acme Trojan TR300	2"	11 1/2"	4 1/4"	1 3/4"	1 1/2"	1 3/4"	2 1/4"	1/2" 40
	DelastiFlex LM200	1 1/2"	11 7/8"	4 1/4"	2 3/4"	7/8"	2 1/4"	2 3/8"	1/2" 45
	Gen-Strip CCL 2"	2 1/4"	11 3/4"	4 1/4"	1 3/4"	1 1/2"	1 3/4"	2 1/4"	3/8" 65
	On-Flex 25	1 1/2"	11"	4 1/4"	1 3/8"	1 1/2"	1 5/8"	2 1/8"	3/8" 65
	Fel-Span T20 CS	1 1/4"	11 1/4"	4 1/8"	1 5/8"	1"	1 3/8"	1 7/8"	1/2" 50
	Wabo Bendoflex 250	2"	11 1/2"	4 1/4"	1 5/8"	1 1/4"	1 7/8"	2 3/8"	1/2" 50

NOTE: All dimensions are at right angles. Expansion gap and dimension "A" shall be increased 1/8" for each 10° fall in temperature and decreased 1/8" for each 10° rise in temperature.

GENERAL NOTES:

THE EXPANSION JOINT SEAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS SHOWN ON THE SHOP DRAWINGS AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE.

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL APPROVED STUD WELDED ANCHORS (C-1010 THRU C-1020) SHALL BE USED. SEE SPECIAL PROVISIONS FOR PAINTING.

ANCHOR BOLTS IN THE BRUSH CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE-EXPANSION TYPE. HOLES IN THE BRUSH CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD.

PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

FURNISHING AND INSTALLING THE ELASTOMERIC EXPANSION JOINT SEAL WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR OTHER ITEMS.

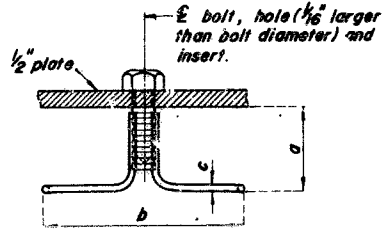
PLATES SHALL BE FIELD ADJUSTED BY ADDING OR REMOVING METAL SHIMS (2" x 3"), AS REQUIRED FOR TEMPERATURE CORRECTION. THE EXPANSION GAP SHALL BE ADJUSTED FOR ANY TEMPERATURE CORRECTION PRIOR TO POURING TOP OF END BENT BACKWALL.

All methods of supporting Exp. Device during installation may be submitted to the engineer for approval.

Details and location of field splice for armor shall be shown on Shop drawings.

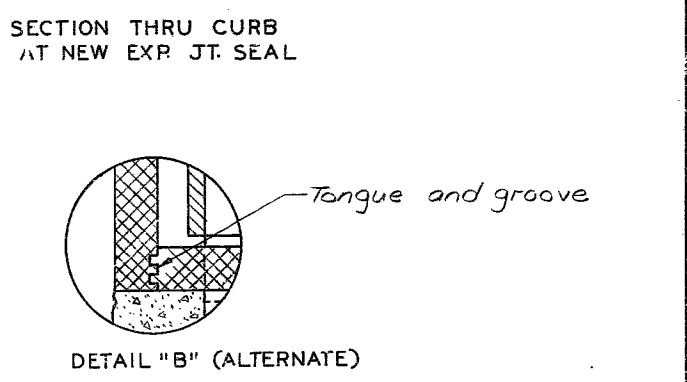
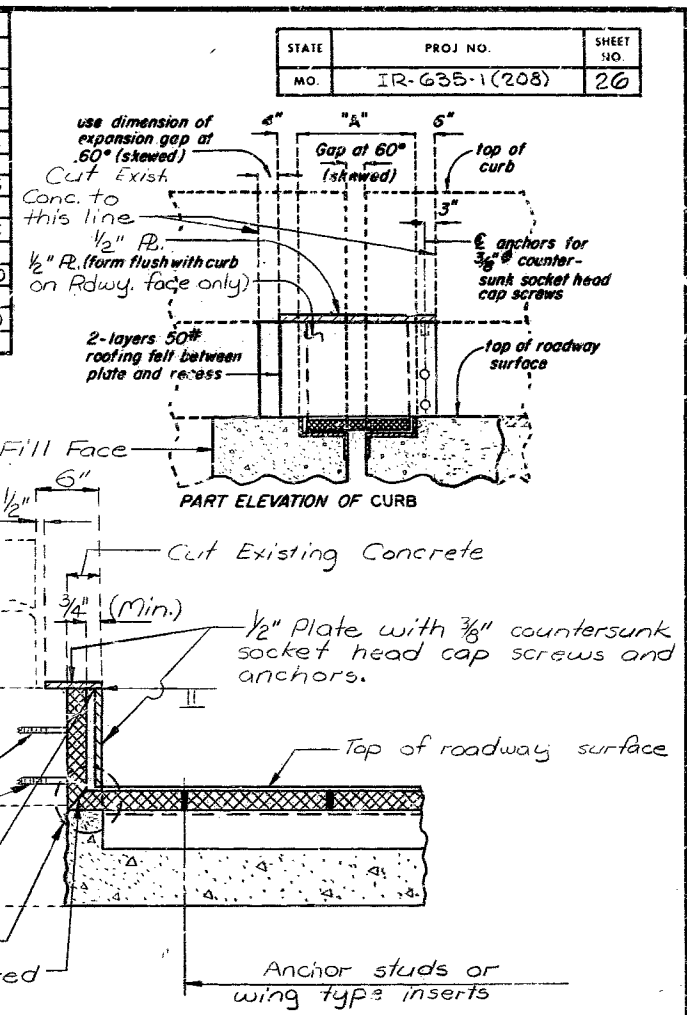
Existing reinforcement exposed shall be cleanly stripped and reused. Where reinforcement interferes with installation of Exp. Joint Seal it shall be shifted or removed for clearance. Minimum clearance to reinforcement shall be 1 1/2".

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



Bolt Diameter	Safe Load Tension (lbs.) (min.)	Approx. Ult. Cap. Tension (lbs.) (min.)	Dimensions (min.)		
			a	b	c
1/2"	800	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,200	2-1/4"	6"	.262"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

(Machine bolts need only be used to secure the Wing Type Threaded Inserts to the steel plate until the concrete has attained 3,000 p.s.i.)



156

DETAILED Oct. 1984
CHECKED Nov. 1984

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

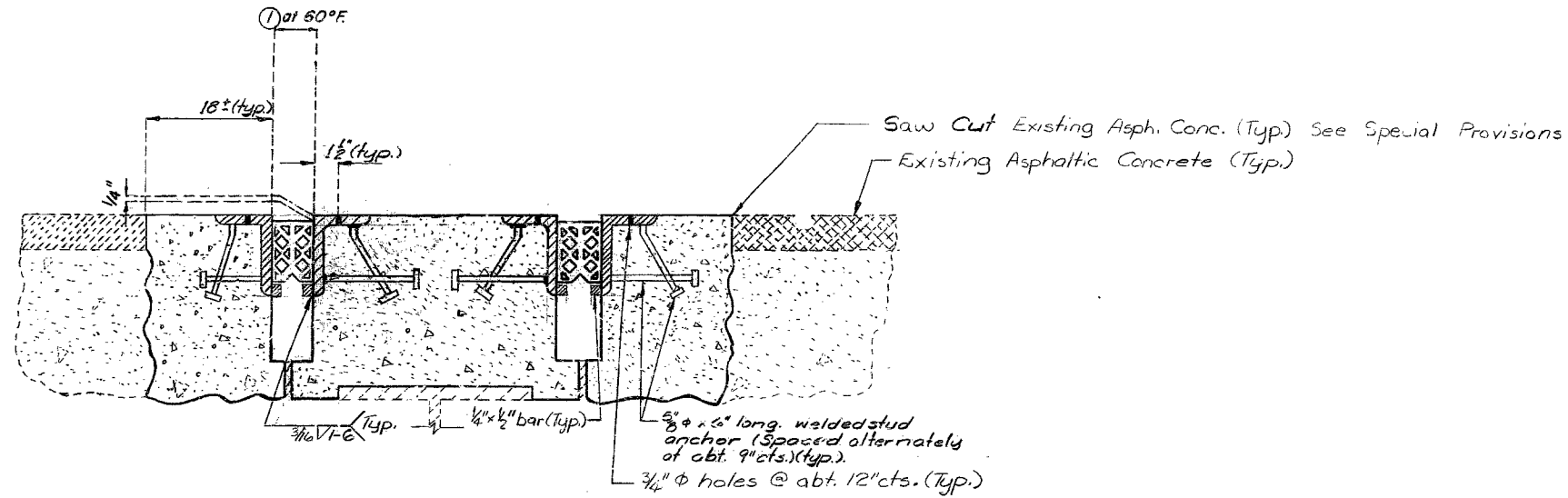
DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 1 & 5

Sheet No. 2 of 3

PLATTE COUNTY

A-2435R

STATE	PROJ NO	SHEET NO
MO	IR-635-1(208)	27



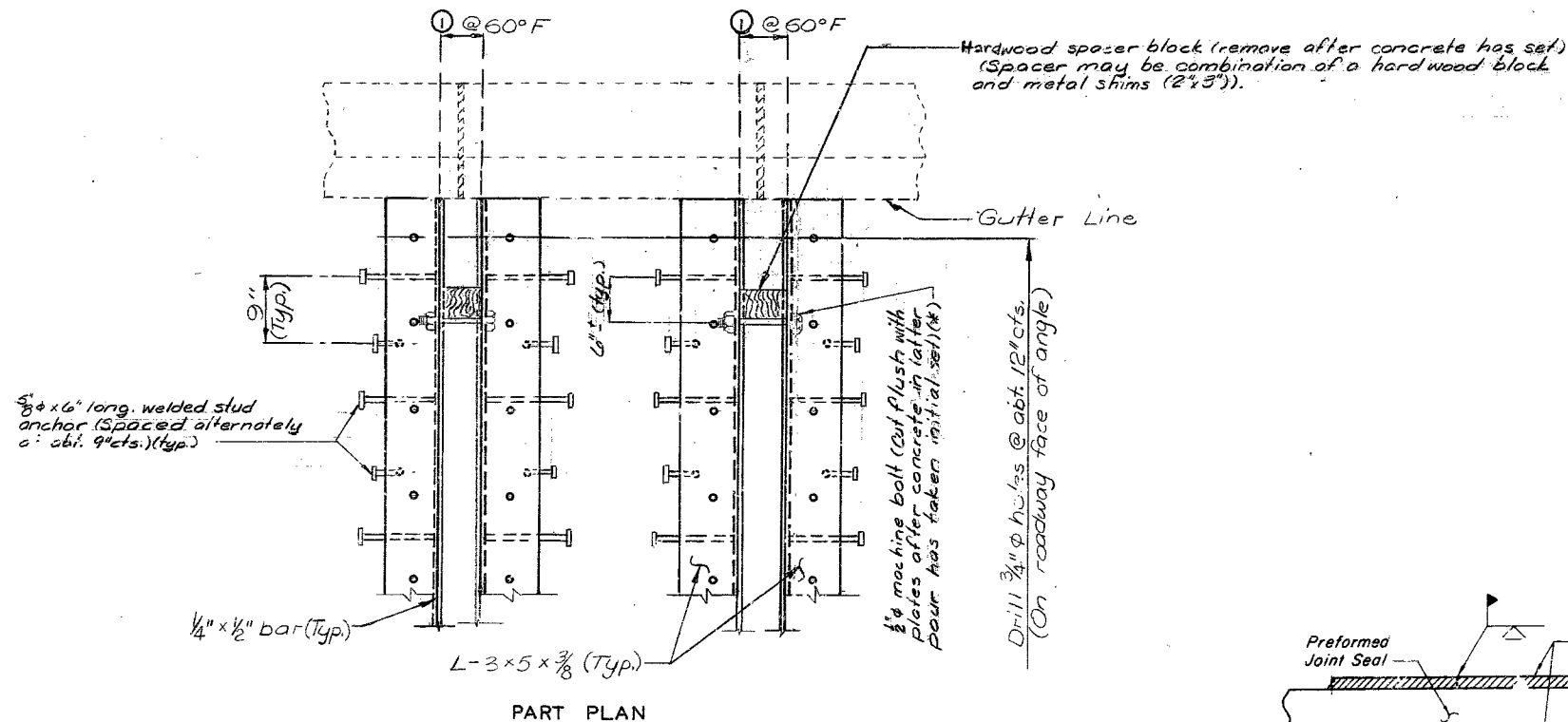
PART CROSS SECTION THRU ARMORED EXPANSION JOINT AT INT. BENT NO. 3

NOTES:

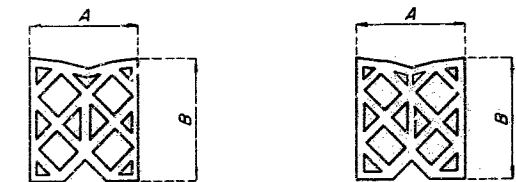
Plan dimensions are based on right angles.
 Compression seal and plates shall be bent to conform to new crown and grade of roadway.
 See special provisions for the requirements of compression joint seal.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
 Existing reinforcement exposed shall be cleanly stripped and reused. Where reinforcement interferes with installation of Exp. Joint seal it shall be shifted or removed for clearance.
 Minimum clearance to reinforcement shall be 1/2 inch.

Note: A method of supporting Exp. Device during installation shall be submitted to the Engineer for approval.



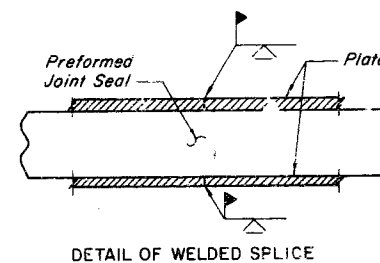
PART PLAN



TYPE A1 TYPE B3

TYPE	"A" (WIDTH)	"B" (HEIGHT)	Ⓢ	MAX. LIMIT OF COMPRESSIBILITY
AI OR B3	2.0"	NOT LESS THAN "A"	1 3/8"	46%
AI OR B3	2.5"	NOT LESS THAN "A"	1 5/8"	46%
AI OR B3	3.0"	NOT LESS THAN "A"	1 7/8"	43%
AI OR B3	3.5"	NOT LESS THAN "A"	2 1/4"	42%
A OR B3	4.0"	NOT LESS THAN "A"	2 3/8"	42%
AI OR B3	4.5"	NOT LESS THAN "A"	2 3/4"	40%
AI OR B3	5.0"	NOT LESS THAN "A"	2 7/8"	40%

Int. Bt. No. 3



DETAIL OF WELDED SPLICE

In lieu of the specified seal, the next larger seal may be substituted. Dimensions and limits shall correspond to the actual seal installed.

157

PREFORMED-EXISTING BARRIER CURB
 REVISED JAN. 1984
 08-80

DETAILED Oct. 1984
 CHECKED Nov. 1984

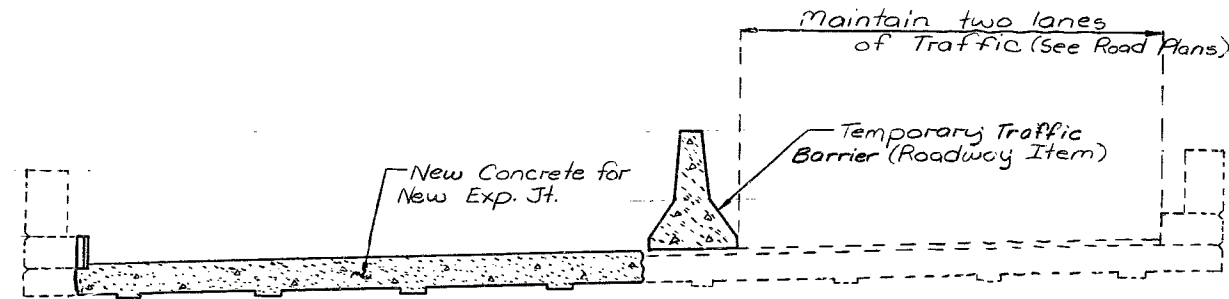
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 3

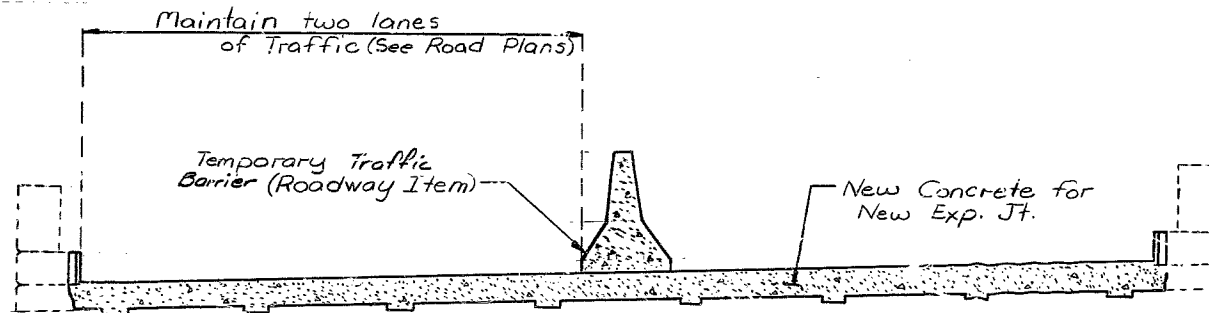
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	IR-635-1(208)	13
SEC./SUR.	5 TWP. 50N RGE. 33W	

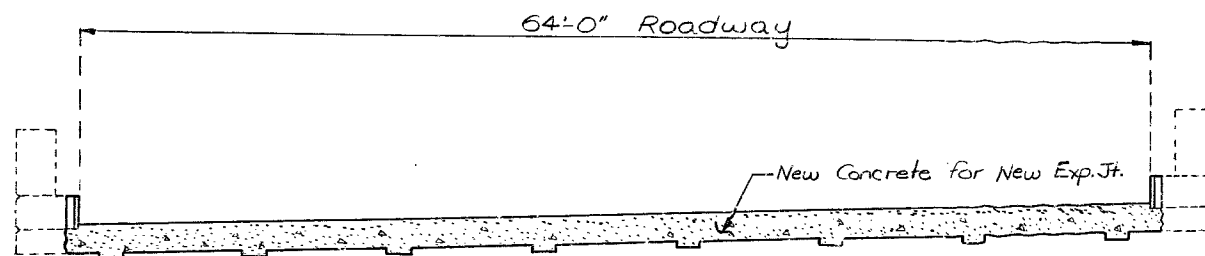
FINAL DESIGN



STAGE ONE



STAGE TWO



FINAL STAGE

ESTIMATED QUANTITIES		
ITEM		TOTAL
Special Work	Lump Sum	1.00
Elastomeric Exp. Jt. Seal (2.0 in.)	Lin. Ft.	128.00
Preformed Compression Exp. Jt. Seal (2.0 in.)	Lin. Ft.	128.00

Note: Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

158

DESIGNED Oct. 1984
 DETAILED Oct. 1984
 CHECKED Nov. 1984

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

Sheet No. 1A of 3.

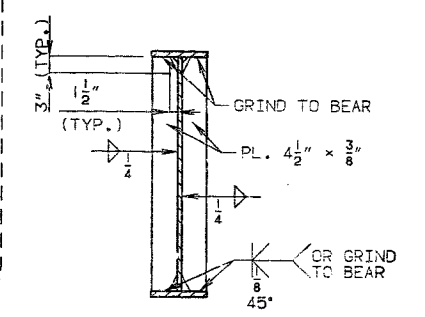
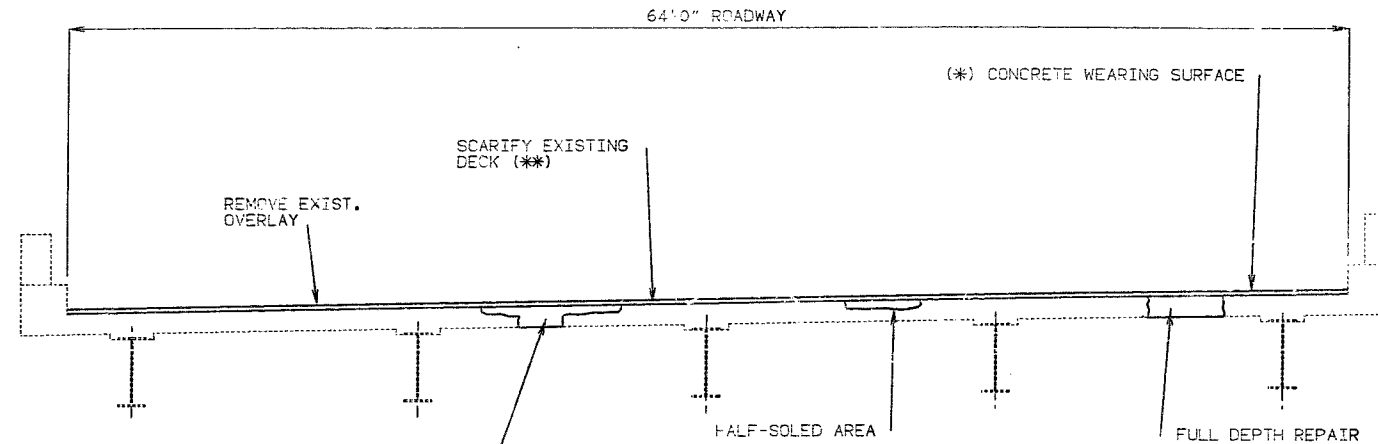
REPAIRS TO:
BRIDGE N.B.L. I-635 OVER RTE. 9 E.B.L. & RAMP 6
 STATE ROAD-INTERSTATE ROUTE 635
~~ABOUT~~ IN RIVERSIDE
 PROJECT NO. IR-635-1(208) STA. 41+53.43±
 JOB NO. 4-I-635-763 RTE. I-635 N.B.L.
 PLATTE COUNTY

DATE JAN. 22, 1985

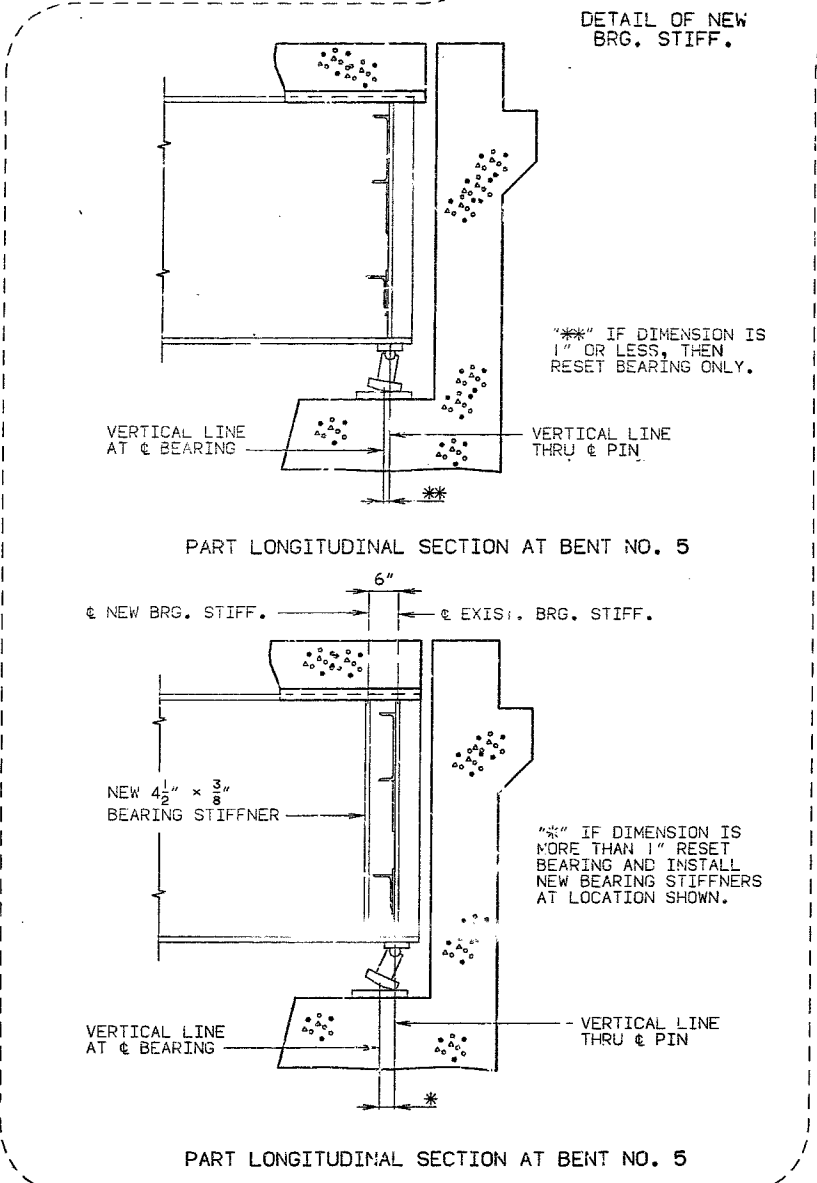
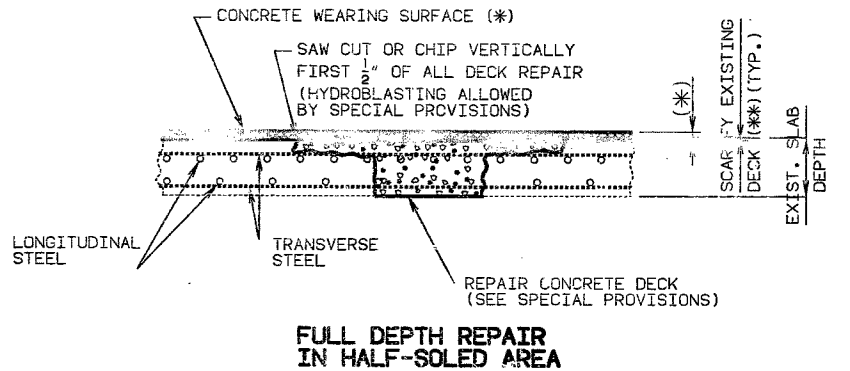
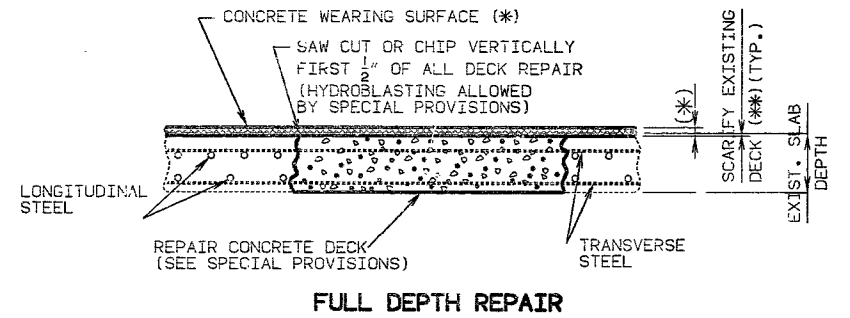
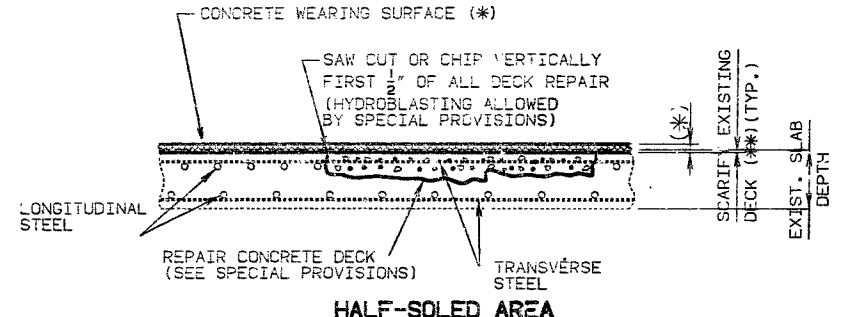
ISTD.
 ISTD.
 A-2435R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		
SEC./SUP. 5	TWP. 50N	RGE. 33W



TYPICAL SECTION THRU SLAB



GENERAL NOTES:

OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATES NEW WORK. MAINTAIN TRAFFIC ON STRUCTURE DURING CONSTRUCTION. (SEE ROADWAY PLANS.) ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH EXISTING CONCRETE DECK PLUS 1/2"±. PAINT: SYSTEM C BY CONTRACTOR IN ACCORDANCE WITH STD, SPEC. 712.13. (COLOR OF FINAL FIELD COAT SHALL BE ALUMINUM).

ESTIMATED QUANTITIES		
ITEM		TOTAL
ASPHALT REMOVAL (BRIDGES)	SQ. FT.	18,700
REPAIRING CONCRETE DECK (HALF-SOLING)	SQ. FT.	400
FULL DEPTH REPAIR	SQ. FT.	200
() CONCRETE WEARING SURFACE	SQ. YD.	2,078
RESET EXISTING BEARINGS	LUMP SUM	1

* SEE JOB SPECIAL PROVISIONS FOR ALTERNATE USE OF 1 3/4" (MIN.) LATEX MODIFIED CONCRETE OR 2" (MIN.) LOW SLUMP CONCRETE WEARING SURFACE.

** SCARIFY EXIST. DECK 1/4" (MIN.) IF LATEX MODIFIED CONCRETE IS USED, OR 1/2" (MIN.) IF LOW SLUMP CONCRETE IS USED.

REPAIRS TO BRIDGE: N.B.L. I-635 OVER RTE. 9 E.B.L. & RAMP 6

STATE ROAD FROM STATE LINE TO RTE. I-29 IN RIVERSIDE
 PROJECT NO. FA-635-1(047) STA. 41+53.43±
 JOB NO. 4I 990-635 RTE. I-635

PLATTE COUNTY

STD.
STD.
A-2435R1

DESIGNED AUG. 1990
 DETAILED AUG. 1990
 CHECKED AUG. 1990

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

SEE TYPICAL PLANS
 SHEET NO. 1 OF 1, REVISED 9-30-91

Date 2/4/91

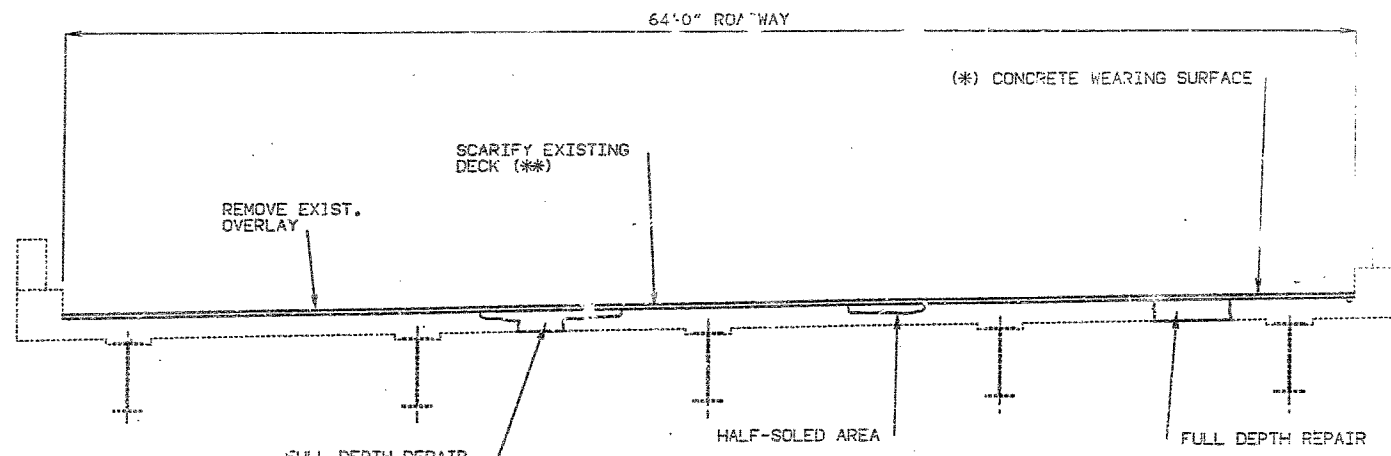
417

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

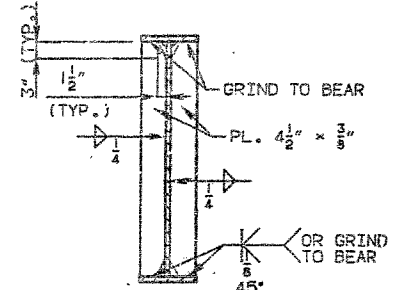
STATE	PROJ. NO.	SHEET NO.
MO.	FA-685-1(247)	37
SEC./SUR. 5	TWP. 50N	REF. 33.

34

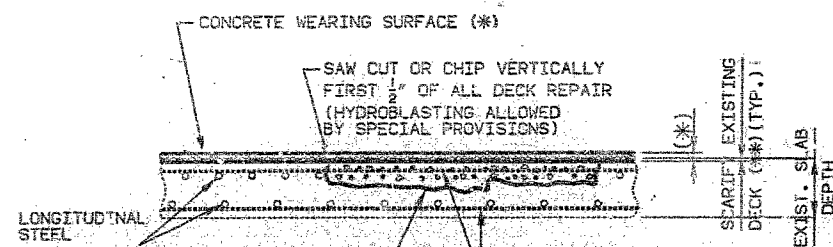
FINAL PLANS



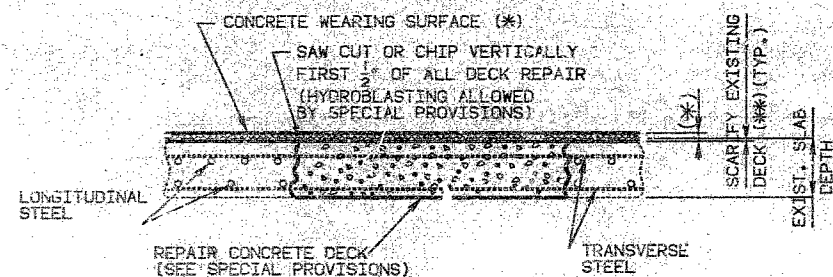
TYPICAL SECTION THRU SLAB



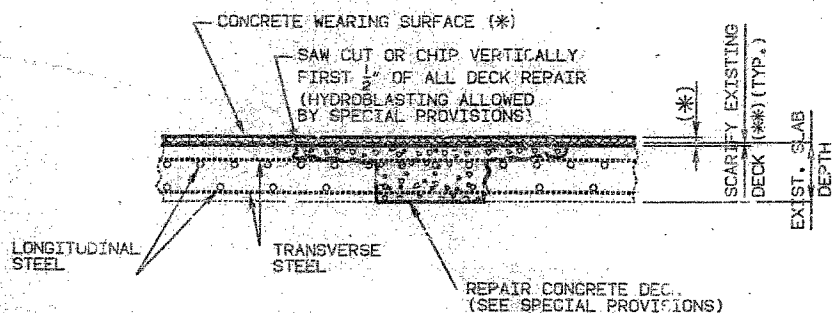
DETAIL OF NEW BRG. STIFF.



HALF-SOLED AREA

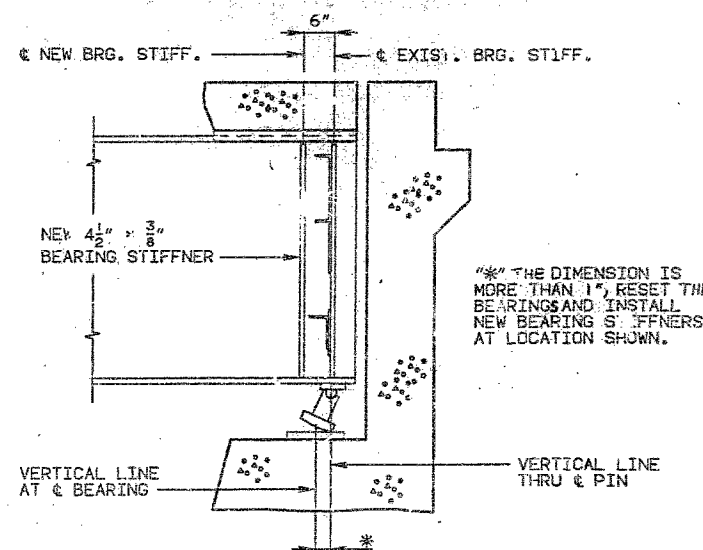


FULL DEPTH REPAIR



FULL DEPTH REPAIR IN HALF-SOLED AREA

PART LONGITUDINAL SECTION AT BENT NO. 5



PART LONGITUDINAL SECTION AT BENT NO. 5

GENERAL NOTES:

- OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATES NEW WORK.
- MAINTAIN TRAFFIC ON STRUCTURE DURING CONSTRUCTION. (SEE ROADWAY PLANS.)
- ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH EXISTING CONCRETE DECK PLUS 1/8"±.
- PAINT: SYSTEM C BY CONTRACTOR IN ACCORDANCE WITH STD. SPEC. 712.13. (COLOR OF FINAL FIELD COAT SHALL BE ALUMINUM).

FINAL QUANTITIES

ITEM	UNIT	TOTAL
ASPHALT REMOVAL (BRIDGES)	SQ. FT.	18,700
REPAIRING CONCRETE DECK (HALF-SOLING)	SQ. FT.	28
FULL DEPTH REPAIR	SQ. FT.	0
(*) CONCRETE WEARING SURFACE - LOW SLUMP	SQ. YD.	2,078
RESET EXISTING BEARINGS	LUMP SUM	1
INSTALL BEAM STIFFENERS (est. \$500.00)	FL.	17,3586.00

* SEE JOB SPECIAL PROVISIONS FOR 2" (MIN.) LOW SLUMP CONCRETE WEARING SURFACE.

** SCARIFY EXIST. DECK 1/2" (MIN.) FOR LOW SLUMP CONCRETE

REPAIRS TO BRIDGE: N.B.L. I-635 OVER RTE. 9 E.B.L. & RAMP 6

STATE ROAD FROM STATE LINE TO RTE. I-29 IN RIVERSIDE

PROJECT NO. FA-685-1(247) STA. 41+53.43±
JOB NO. 41 9" 635 RTE. I-635

PLATTE COUNTY

COUNTY

STD.
STD.
A-2435R1

DESIGNED AUG. 1990
DETAILED AUG. 1990
CHECKED AUG. 1990

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

SHEET NO. 1 A OF 1. REVISED 9-30-91

418