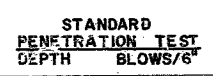


[illegible]

$\frac{1}{\text{STA. } 889+22}$ 30' LT.	$\frac{2}{\text{STA. } 889+22}$ 25' LT.	$\frac{3}{\text{STA. } 889+22}$ 5' LT.	$\frac{4}{\text{STA. } 889+22}$ ℄	$\frac{5}{\text{STA. } 889+22}$ 5' RT.	$\frac{6}{\text{STA. } 889+22}$ 22' RT.	$\frac{7}{\text{STA. } 889+22}$ 27' RT.	$\frac{8}{\text{STA. } 889+27}$ 27' RT.	$\frac{9}{\text{STA. } 889+87}$ 24' LT.
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A-3100

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	56	

18
STA. 892 + 03
5' LT.

STANDARD
PENETRATION TEST
DEPTH BLOWS/6"

19
STA. 892 + 03
1' (CORE)

20
STA. 892 + 03
5' RT.

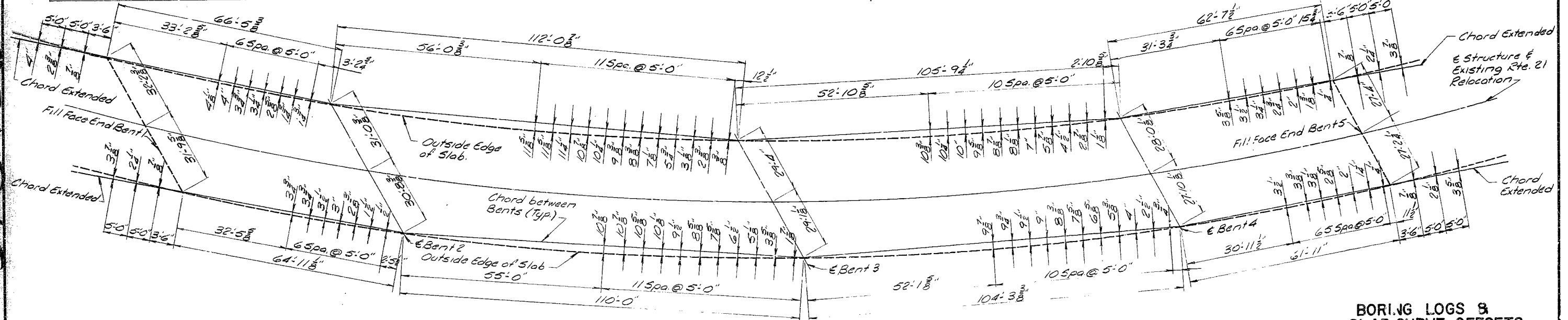
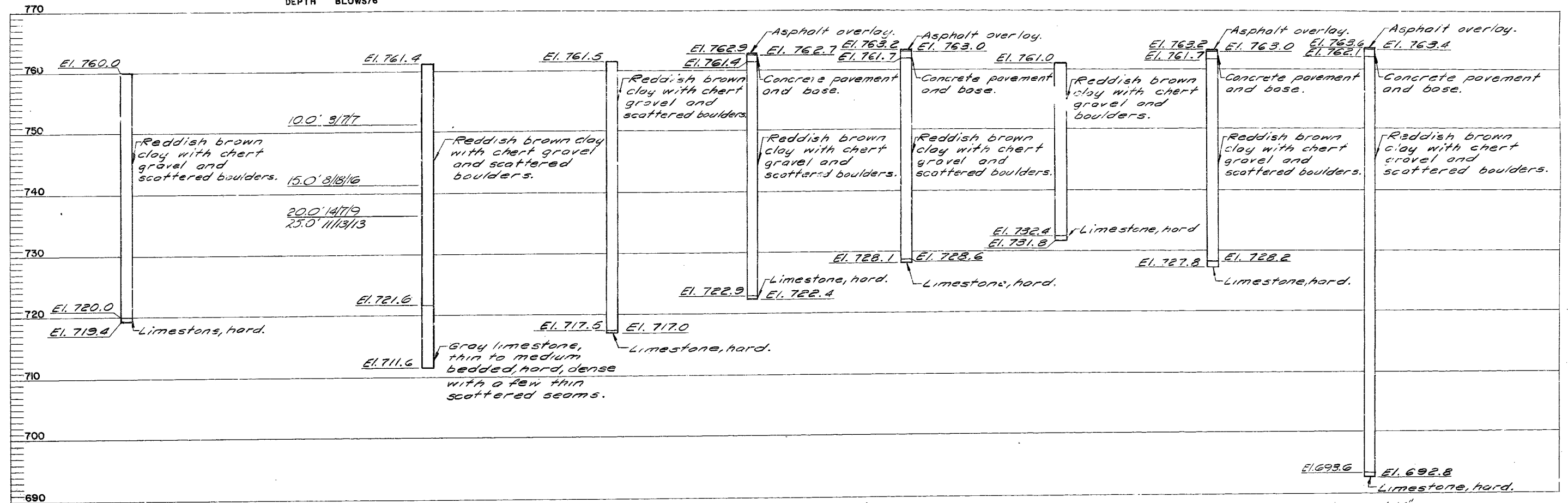
21
STA. 892 + 03
16' RT.

22
STA. 892 + 03
22' RT.

23
STA. 892 + 08
21' LT.

24
STA. 892 + 08
23' RT.

25
STA. 892 + 60
23' RT.



PLAN OF SLAB SHOWING SLAB CURVE ORDINATES

BORING LOGS &
SLAB CURVE OFFSETS

DETAILED Jan. 19 79 Bishop
CHECKED Feb. 19 79 Steib

Booker
Engineers, Architects, Planners

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

Sheet No. 3 of 26.

JEFFERSON COUNTY

A-3100

MISSOURI STATE HIGHWAY DEPARTMENT

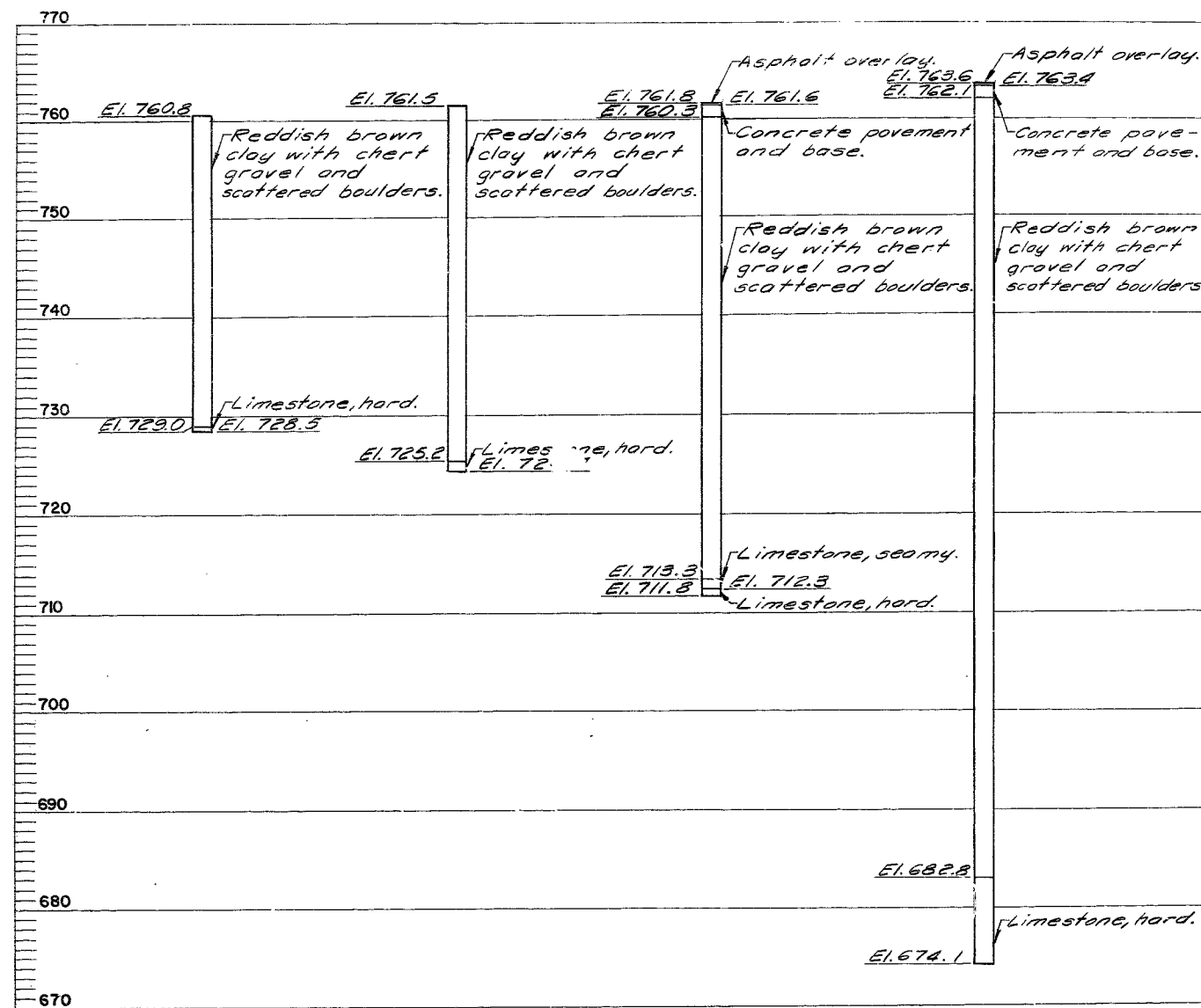
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	57	

26
STA. 892 + 65
26' LT.

27
STA. 892 + 65
0

28
STA. 892 + 65
12' LT

29
STA. 892 + 65
22' RT.



347 183

BORING LOGS

DETAILED Jan. 19 79 Bishop
CHECKED Feb. 19 79 Steib

Booker
Engineers Architects Planners

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

Sheet No. 4 of 26.

JEFFERSON COUNTY

A-3100

MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

COMPLETE BILL OF REINFORCING STEEL

NO. REQ.	MARK NO.	MARK	LOCATION	GRADE/CH	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS																NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B		C		D		E		F		H		K						
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.			
END BENT I																												
12	2	PI	AB Well	H22	X				1	3																230	46	
1	6	H1	** Backwall	H20	X				30	9																	309	46
3	6	H2	** "	H20	X				29	9																	299	135
1	6	H3	** "	H20	X				34	9																	349	52
1	6	H4	** "	H20	X				33	9																	339	53
4	4	H5	"	H20	X				30	9																	309	82
4	4	H6	"	H20	X				29	9																	299	79
4	4	H7	"	H20	X				33	3																	333	89
4	4	H8	"	H20	X				34	3																	343	92
2	4	H9	Bearing Seat	H20	X				5	0																	50	7
6	4	H10	"	H20	X				12	9																	129	51
2	4	H11	"	H20	X				6	2																	62	8
2	4	H12	"	H20	X				8	6																	86	11
8	9	H13	"	H17	X				30	7																	310	866
8	9	H14	"	H17	X				37	0																	383	1040
2	6	H15	"	H20	X				30	6																	306	92
2	6	H16	"	H20	X				35	0																	350	105
2	4	H17	Apron wall	H20	X				33	6																	336	45
2	4	H18	"	H20	X				29	6																	296	39
8	6	H19	Wingwall	H20	X				14	7																	147	175
8	6	H20	"	H20	X	V	2		14	0																	140	190
			Incr. = 3'-0"						5	0																	50	
8	6	H21	Wingwall	H20	X	V	2		14	0																	140	203
			Incr. = 2'-7"						6	3																	63	
4	6	H22	Backwall	H15	X				1	0	6	9	1	0	4	3	11	4	3	11	8	9	53				52	31
4	6	H23	"	H15	X				1	0	3	2	1	0	11	4	3	11	4	3	11	5	2	31			62	33
8	4	H24	"	H20	X				6	2																	46	24
8	4	H25	"	H20	X				4	6																	62	33
120	5	V1	** "	H20	X				6	11																	611	866
12	6	V2	Wingwall	H20	X	V	1		5	3																	537	79
			Incr. = 3"						2	6																	26	
12	6	V3	Wingwall	H17	X	V	1		5	1																	598	9
			Incr. = 3"						2	4																	30	
3	6	V4	Wingwall	H20	X				6	6																	66	29
3	6	V5	"	H17	X				6	4																	70	32
2	4	V6	"	H20	X				5	3																	53	7
2	4	V7	"	H19	X				5	9	5	0															109	107
2	6	V8	Bearing Seat	H20	X				3	9																	39	11
12	6	V9	Wingwall	H20	X	V	1		5	5																	558	1
			Incr. = 3"						2	8																	28	
12	6	V10	Wingwall	H17	X	V	1		5	3																	511	9
			Incr. = 3"						2	6																	32	
4	6	V11	Wingwall	H20	X				6	9																	69	41
4	6	V12	"	H17	X				6	7																	73	44
2	4	V13	"	H20	X				5	6																	56	7
2	4	V14	"	H19	X				6	9	6	10															137	13
2	6	V15	Bearing Seat	H20	X				6	0																	60	18
60	5	V16	** Backwall	H10	X						1	8															4	13
30	4	V17	Bearing Seat	H10	X							6	3	2													4	23
54	6	V18	"	H13	X				4	2	3	9	5	1	3	8											175	17
54	4	V19	"	H33	X				2	3	0	9	2	3	2	21	62										545	1
9	6	V15	"	H10	X					1	11	3	3														71	69
5	6	V16	"	H16	X				5	9	2	9	5	0													136	13
5	6	V17	"	H14	X				4	11	2	9	2	0													69	8
2	6	V1	Wingwall	H25	X				1	3	11	4	2	2														

NO. REQD.	MARK NO.	MARK	LOCATION	GRADE 60 (H)	SHAPE NO.	STIRRUP (S)	SUBSTR. (Y)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
										B		C		D		E		F		H					K	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
BENT 2																										
12	2	PI	A.B. Well	H22	X				1	3		9 1/2						230	46							
104	4	U10	Beam	H13	S	X			1	10	3	0	1	10	3	0		10 5	10 1	701						
32	4	U11	"	H10		X					1	0	2	11			3 11	3 8	82							
2	4	U19	"	H10		X					1	0	2	7 1/2			3 7/8	3 4 1/2	5							
8	7	H24	Beam	H17		X			3	11	2	10					9 5	9 4	153							
4	5	H25	"	H20		X			10	9							10 9	10 9	45							
16	5	H26	"	H20		X			12	4							12 4	12 4	206							
4	5	H27	"	H20		X			2	3							2 3	2 3	9							
2	11	H28	"	H18		X			54	4							576	576	611							
2	11	H29	"	H20		X			18	0							18 0	18 0	191							
2	11	H30	"	H18		X			57	0							60 2	60 2	639							
2	6	H31	"	H20		X			54	4							54 4	54 4	163							
6	10	H32	"	H20		X			54	4							54 4	54 4	1403							
29	4	V16	Column	H16		X			2	9							9 8	9 6	438							
13	8	V17	"	H20		X			24	3							24 3	24 3	842							
13	8	V18	"	H20		X			25	3							25 3	25 3	876							
13	8	V19	"	H20		X			26	3							26 3	26 3	911							
39	8	O1	Column	H20		X			6	4								6 4	6 4	659						
15	5	F1	Footing	H18		X			5	6								6 8	6 8	104						
15	5	F2	"	H20		X			4	6								4 6	4 6	70						
																	Total Bent 2 =			8,154						
BENT 3																										
12	2	PI	A.B. Well	H22	X				1	3		9 1/2						230	46							
116	4	U10	Beam	H13	S	X			1	10	3	0	1	10	3	0		10 5	10 1	701						
32	4	U11	"	H10		X					1	0	2	11			4 0	3 10	82							
2	4	U19	"	H10		X					1	0	2	7 1/2			3 7/8	3 4 1/2	5							
8	7	H24	Beam	H17		X			3	11	2	10					9 5	9 4	153							
4	5	H27	"	H20		X			2	3							2 3	2 3	9							
4	5	H33	"	H20		X			10	4							10 4	10 4	113							
16	5	H34	"	H20		X			11	9							11 9	11 9	196							
2	11	H35	"	H18		X			51	6							548	548	581							
2	11	H36	"	H20		X			17	0							17 0	17 0	181							
2	11	H37	"	H18		X			54	2							57 4	57 4	609							
2	6	H38	"	H20		X			51	6							51 6	51 6	155							
6	10	H39	"	H20		X			51	6							51 6	51 6	1330							
65	4	V16	Column	H16		X			2	9							9 8	9 6	412							
13	9	V20	"	H20		X			22	3							22 3	22 3	983							
13	9	V21	"	H20		X			23	3							23 3	23 3	1028							
13	9	V22	"	H20		X			26	3							26 3	26 3	1160							
39	9	O2	Column	H20		X			7	11								7 11	7 11	1050						
18	5	F1	Footing	H18		X			5	6								6 8	6 8	125						
15	5	F3	"	H20		X			5	6								5 6	5 6	86						
																	Total Bent 3 =			9015						

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	58	

BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	8"	7"	4-1/2"

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

DETAILING DIMENSION	HOOK A OR G	DETAILING DIMENSION	HOOK A OR G
4d or 2 1/2" MIN.	180°	90°	90°

SIZE OF 180° HOOKS (GRADE 40 KSI)
D = 5d for #3 THRU #11
D = 10d for #14 AND #18

SIZE OF 90° HOOKS (ALL GRADES)
D = 6d for #3 THRU #8
D = 8d for #9, #10 AND #11
D = 10d for #14 AND #18

END HOOK DIMENSIONS						
BAR SIZE	180° HOOKS					90° HOOKS
	GRADE 40		GRADE 60		ALL GRADES	
	A OR G	J	A OR G	J	A OR G	
# 3	5"	2-3/4"	5"	3"	6"	
# 4	6"	3-1/2"	6"	4"	8"	
# 5	7"	4-1/2"	7"	5"	10"	
# 6	8"	5-1/4"	8"	6"	12"	
# 7	9"	6-1/4"	10"	7"	14"	
# 8	10"	7"	11"	8"	16"	
# 9	12"	8"	15"	11-1/4"	19"	
# 10	13"	9"	17"	12-3/4"	22"	
# 11	14"	10"	19"	14-1/4"	21-0"	
# 14	21-2"	20-1/2"	21-2"	20-1/2"	21-7"	
# 18	21-11"	21-3"	21-11"	21-3"	31-5"	

MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	GRADE	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B	C	D	E	F	H	K				
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
BENT 4																			
122	P1	A.B. Well	H22	X				1	3	9 1/2							230	46	
404	U10	Beam	H13	S	X			1	10	3	0	1	10	3	0		105	10	21
324	U11	"	H10	X				1	0	2	11						40	3	82
24	U9	"	H10	X				1	0	2	7 1/2						378	34 1/2	5
87	H24	Beam	H7	X				3	11	2	10						959	4	153
45	H27	"	H20	X				2	3								23	9	
45	H28	"	H20	X				10	0								10	0	42
165	H41	"	H20	X				1	3								11	3	188
210	H42	"	H18	X				49	4								522	449	
210	H43	"	H20	X				16	6								16	6	142
210	H44	"	H18	X				52	0								5410	472	
26	H45	"	H20	X				49	4								494	148	
69	H46	"	H20	X				49	4								494	1006	
844	V16	Column	H16	X				2	9								989	6	533
138	V23	"	H20	X				23	6								236	816	
268	V24	"	H20	X				32	7								327	2262	
398	D1	Column	H20	X				6	4								64	659	
155	F1	Footing	H18	X				5	6								68	104	
155	F2	"	H20	X				4	6								46	70	
155	F3	"	H20	X				5	6								56	28	

Total Bent 4 = 7833

NO. REQD.	MARK NO.	LOCATION	GRADE BOTH	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
END BENT 5																									
122	P1	A.B. Well	H22	X				1	3	9 1/2									230	46					
84	H48	Backwall	H20	X				53	6									536	286						
84	H49	Bearing Seat	H20	X				11	1									11	1	59					
24	H50	"	H20	X				3	11									3	11	5					
89	H51	"	H18	X				52	7									551	498						
26	H52	"	H20	X				52	7									527	158						
44	H53	"	H20	X				52	7									527	141						
86	H54	Wingwall	H20	X				14	5									14	5	173					
86	H55	"	H20	X				13	9 1/2									13	10	234					
		Incr. = 2'-8 3/8"						5	8 1/2									5	8						
86	H56	Wingwall	H20	X				13	9									13	9	222					
		Incr. = 3'-0"						4	9									4	9						
46	H57	Backwall	H15	X				1	0	6	2	1	0	5 1/2	10 1/2	5 1/2	10 1/2	8	28	149					
46	H58	"	H15	X				1	0	3	7	1	0	9 1/2	7	9 1/2	7	5	7	33					
26	H47	**	H20	X				51	3									51	3	154					
1035	V17	** Backwall	H20	X				6	11									6	11	743					
24	V16	Wingwall	H20	X				5	3									5	3	7					
24	V13	"	H20	X				5	6									5	6	7					
126	V25	"	H20	X				1	5	4								5	4	143					
		Incr. = 3"						2	7									2	7						
126	V26	Wingwall	H17	X				1	5	2								5	10	161					
		Incr. = 3"						2	5									3	1						
46	V27	Wingwall	H20	X				6	10									6	10	41					
46	V28	"	H17	X				6	8									6	8	44					
24	V29	"	H14	X				6	0	4	6							10	6	14					
26	V30	Brg. Seat	H20	X				5	4									5	4	16					
126	V31	Wingwall	H20	X				1	5	1 1/2								5	17	138					
		Incr. = 2 3/4"						2	6 1/2									2	7						
126	V32	Wingwall	H17	X				1	4	1 1/2								5	8	156					
		Incr. = 2 3/4"						2	4 1/2									3	1						
46	V33	Wingwall	H17	X				6	4									6	4	42					
24	V34	"	H19	X				5	7	5	6							11	10	15					
26	V35	Bearing Seat	H20	X				3	0									3	0	9					
46	V36	Wingwall	H20	X				6	6									6	6	39					
515	U11	** Backwall	H10	X					1	8	9							4	13	204					
304	U11	Bearing Seat	H10	X					6	2	11							3	11	8					
48	U12	"	H13	S	X			3	11	3	1	4	8	3	0			10	5	1087					
484	U13	Apronwall	H33	X				2	8	0	9	2	8	2	7	7 1/2		6	1	187					
76	U16	Bearing Seat	H10	X					1	11	4	11						8	9	85					
58	U17	"	H16	X				5	7	2	9	4	8					13	0	127					
58	U18	"	H14	X				4	6	2	9	2	7					1	2 1/2	128					
76	U100	"	H10	X					3	9	3	0						10	6	107					
26	T5	Wingwall	H25	X				1	3	11	3	2	2					3	0 1/2	10					
26	T4	"	H25	X				1	3	10	10	2	2					2	8	10					
84	H1	Wingwall	H20	X				4	0									4	0	21					
84	H2	"	H20	X				5	0									5	0	27					
76	H100	Beam Seat	H20	X				7	9									7	9	81					
Total End Bent 5																									
Total Epoxy Coated																					1101				
Total Non-Epoxy Coated																					56015				

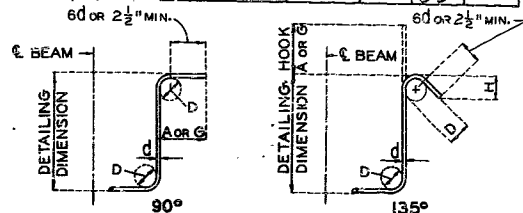
Total End Bent 5

Total Epoxy Coated

Total Non Epoxy Coated

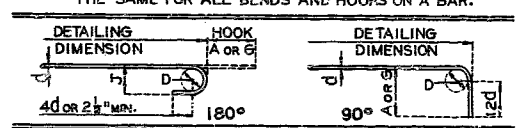
BAR LIST
BENT 4 & END BENT 5
** Indicates epoxy coated bars.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	59	



STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	8"	7"	4-1/2"

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



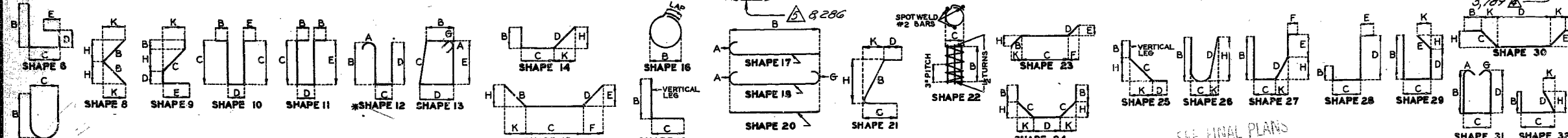
SIZE OF 180° HOOKS (GRADE 40 KSI) AND 180° HOOKS (GRADE 60 KSI)
D=5d FOR #3 THRU #11
D=10d FOR #14 AND #18

SIZE OF 90° HOOKS (ALL GRADES) AND 90° HOOKS (GRADE 60 KSI)
D=6d FOR #3 THRU #8
D=8d FOR #9, #10 AND #11
D=10d FOR #14 AND #18

END HOOK DIMENSIONS				
BAR SIZE	180° HOOKS			90° HOOKS
	GRADE 40	GRADE 60	ALL GRADES	
	A OR S	J	A OR G	J
#3	5"	2-3/4"	5"	3"
#4	6"	3-1/2"	6"	4"
#5	7"	4-1/2"	7"	5"
#6	8"	5-1/4"	8"	6"
#7	9"	6-1/4"	10"	7"
#8	10"	7"	11"	8"
#9	12"	8"	15"	11-1/4"
#10	13"	9"	17"	12-3/4"
#11	14"	10"	19"	14-1/4"
#14	21-2"	20-1/2"	21-2"	20-1/2"
#18	21-11"	21-3"	21-11"	21-3"

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
H-HIGH STRENGTH (ASTM A-615 GRADE 60).
S-STIRRUP.
X-BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V-BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. "A."- NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS-ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS-ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

* ALL HOOKS AND BENDS FOR SHAPE NO. 12 - GRADE 40 (ONLY) ARE BASED ON D=5d.



BENDING DIAGRAMS

Booker
Engineers-Architects-Planners

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

STANDARD 90.8
REVISED JULY 1978
MAY 1974
DETAILED Mar. 1979 Cooper
CHECKED May 1979 Steib

Revised Nov 19/1987
Sheet No. 6 of 26
Revised 10-16-87

JEFFERSON COUNTY
A-3100

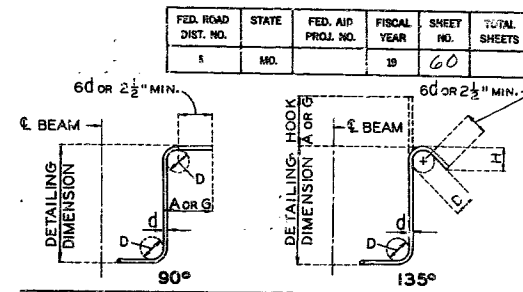
MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	GRADE 60 (H)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
SLAB REINFORCING																									
707	5 51	** 5/ab	H20						27	5								27	5	120217					
699	5 52	** "	H20						21	2								21	2	15432					
484	5 53	** "	H20						27	1								27	1	13672					
482	5 54	** "	H20						21	2								21	2	10641					
52	5 55	** " Incr. = 5 3/4"	H20				V	1	27	2 1/2								27	3	1627					
									2	9 1/4								2	9						
36	5 56	** 5/ab Incr. = 6"	H20				V	1	20	1								20	1	851					
									2	7								2	7						
38	5 57	** 5/ab Incr. = 8 3/8"	H20				V	1	27	5								27	5	149					
									1	7								1	7						
24	5 58	** 5/ab Incr. = 5 1/4"	H20				V	1	19	6 1/4								19	7	563					
									2	11 1/4								2	11						
30	5 59	** 5/ab Incr. = 9 1/2"	H20				V	1	25	8 3/8								25	9	910					
									3	4 3/8								3	4						
26	5 60	** 5/ab Incr. = 9 1/8"	H20				V	1	21	0 1/4								21	0	624					
									1	11 1/2								2	0						
20	5 61	** 5/ab Incr. = 1'-1 3/8"	H20				V	1	25	1 1/4								25	1	605					
									3	10 1/4								3	11						
18	5 62	** 5/ab Incr. = 1'-1 1/8"	H20				V	1	21	0 1/4								21	0	5440					
									2	4 1/2								2	5						
74	5 63	** 5/ab	H20						18	1								18	1	1396					
74	5 64	** "	H20						33	5								33	5	2579					
342	5 65	** "	H20						40	2								40	2	14328					
74	5 66	** 5/ab	H20						36	4								36	4	2804					
74	5 67	** "	H20						40	0								40	0	3087					
74	5 68	** "	H20						16	11								16	11	1306					
74	5 69	** "	H20						33	10								33	10	2611					
27	5 70	** "	H20						39	9								39	9	1119					
72	5 71	** "	H20						39	9								39	9	2985					
72	5 72	** "	H20						39	7								39	7	2973					
72	5 73	** "	H20						39	5								39	5	2960					
72	5 74	** "	H20						39	5								39	5	2960					
72	5 75	** "	H20						39	3								39	3	2948					
27	5 76	** "	H20						39	2								39	2	1103					
Total Epoxy Coated																	111820								
Total Non Epoxy Coated																	0								

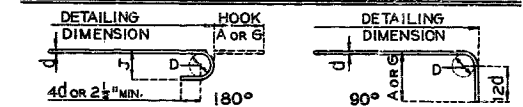
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	GRADE 60 (H)	SHAPE NO.	STIRRUP (S)	SUBSTR. (V)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
BARRIER REINFORCING																									
775	5	R1	**	Barrier	H13				2	5		3 1/2						2	5		3	2 8 1/2	2	7	2088
775	5	R2	**	"	H19				2	5		3 1/2									2 8 1/2	2	7	2088	
775	5	R3	**	"	H19				1	4		6									1 10	1	8	1347	
703	5	R4	**	"	H27							6		11 1/2		7	1	0			9 1/2	6 1/2	3	0	2077
56	5	R5	**	"	H27				1	0		7		11 1/2		6					6 3/4	9 1/2	3	0	210
24	5	R6	**	"	H20				14	4															165
22	5	R7	**	"	H20				14	7															359
4	5	R8	**	"	H20				12	7															335
2	5	R9	**	"	H20				14	2															53
4	5	R10	**	"	H20				12	5															30
6	5	R11	**	"	H20				54	7															52
6	5	R12	**	"	H20				53	2															342
72	5	R13	**	"	H20				9	8															333
12	5	R14	**	"	H20				46	8															726
12	5	R15	**	"	H20				45	9															584
12	5	R16	**	"	H20				43	7															573
12	5	R17	**	"	H20				42	10															545
6	5	R18	**	"	H20				51	0															536
6	5	R19	**	"	H20				50	4															319
																									315



STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	8"	7"	4-1/2"

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



SIZE OF 180° HOOKS (GRADE 40 KSI) SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D = 5d for #3 THRU #11
D = 10d for #14 AND #18
D = 6d for #3 THRU #9
D = 8d for #9, #10 AND #11
D = 10d for #14 AND #18

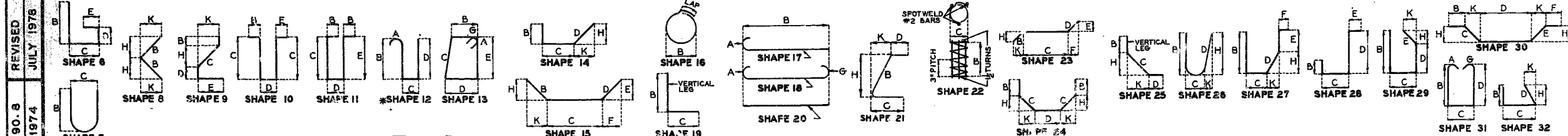
BAR SIZE	180° HOOKS				90° HOOKS
	GRADE 40	GRADE 60	GRADE 60	GRADE 60	
#3	5"	2-3/4"	5"	3"	6"
#4	6"	3-1/2"	6"	4"	8"
#5	7"	4-1/2"	7"	5"	10"
#6	8"	5-1/4"	8"	6"	12"
#7	9"	6-1/4"	10"	7"	14"
#8	10"	7"	11"	8"	16"
#9	12"	8"	15"	11-1/4"	19"
#10	13"	9"	17"	12-3/4"	22"
#11	14"	10"	19"	14-1/4"	25"
#14	21-2"	20-1/2"	21-2"	20-1/2"	21-7"
#18	21-11"	21-3"	21-11"	21-3"	31-5"

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
H - HIGH STRENGTH (ASTM A-315 GRADE 60).
S - STIRRUP.
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAM AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

* ALL HOOKS AND BENDS FOR SHAPE NO. 1 - GRADE 40 (ONLY) ARE BASED ON D = 5d.

** Indicates epoxy coated bars. Two additional (S) are included in bar bill for testing.



BENDING DIAGRAMS

SUPERSTRUCTURE BAR LIST

JEFFERSON COUNTY

A-3100

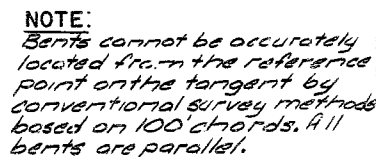
REVISED JULY 1978
STO. 90.8 MAY 1974
DETAILED Mar. 1979 Cooper
CHK. 20 May 1979 Stab

Booker
Engineers Architects Planners

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

Sheet No. 7 of 26

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	61	

[illegible]

(See table below, for additional information)

Hand-drawn diagram of a spiral spring assembly. The diagram shows a rectangular block with a spiral spring inside. Dimensions are given: 13 1/4 inches for the total height, 15 inches for the height of the block, and 2 inches for the height of the spring. The spring is labeled '#2 DI (Spiral)'.

Diagram illustrating the cutting of a square butt joint. The top of the lower section is to be cut square, and a 45-degree angle is indicated for the cut. A note specifies: "Butt Splice (if required) Top of Lower Section to Be Cut Square".

BENT NO.	ANGLE "A"						DIMENSION "B"						DIMENSION "C"					
	GIRDER LINE						GIRDER LINE						GIRDER LINE					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1	40°38'4"	40°28'56"	40°19'25"	39°55'05"	39°40'37"	39°26'59"	4 3/4"	4 3/4"	4 1/2"	4 3/8"	4 1/2"	4 1/2"	5 1/2"	5 1/2"	5 1/2"	5 3/8"	5 3/8"	5 3/8"
2	39°31'00"	39°16'54"	39°02'58"	38°49'13"	38°35'40"	38°22'17"	7 1/2"	7 1/2"	7 1/2"	7"	7"	7"	8 3/8"	8 3/4"	8 3/4"	8 3/4"	8 3/4"	8 7/8"
3	37°31'59"	37°18'52"	37°05'55"	36°53'08"	36°40'30"	36°28'02"	5 3/4"	5 3/4"	5 3/4"	5 3/4"	5 3/8"	5 3/8"	7 1/2"	7 1/2"	7 3/8"	7 3/8"	7 3/8"	7 3/8"
4	35°39'35"	35°27'21"	35°15'14"	35°03'16"	34°51'27"	34°39'46"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 3/8"	6 3/8"	9 1/8"	9 1/8"	9 1/8"	9 1/8"	9 1/8"	9 1/4"
5	34°35'31"	34°23'41"	34°12'01"	34°00'29"	33°49'04"	33°37'49"	4 1/2"	4 1/2"	4 1/2"	4"	4"	4"	6"	6"	6"	6"	6"	6"

DETAILED Jan. 1979 Cooper
CHECKED Feb. 1979 Stieb.

Booker

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

Sheet No. 8 of 26.

JEFFERSON COUNTY

A-3100

552/800

[illegible]

Sheet No. 10 of 26.
Orientation
Bolt Plan and

Minimum lap splice length of H1 & H2 with H3 & H4 Bars and H5 with H6 Bars to be 3'-1"

Minimum lap splice length of H5 & H6 with H7 & H8 Bars and H17 with H18 Bars to be 2'-0"

Minimum lap splice length of H11 with H12 Bars to be 2'-2"

Minimum lap splice length of H13 with H14 Bars to be 5'-0"

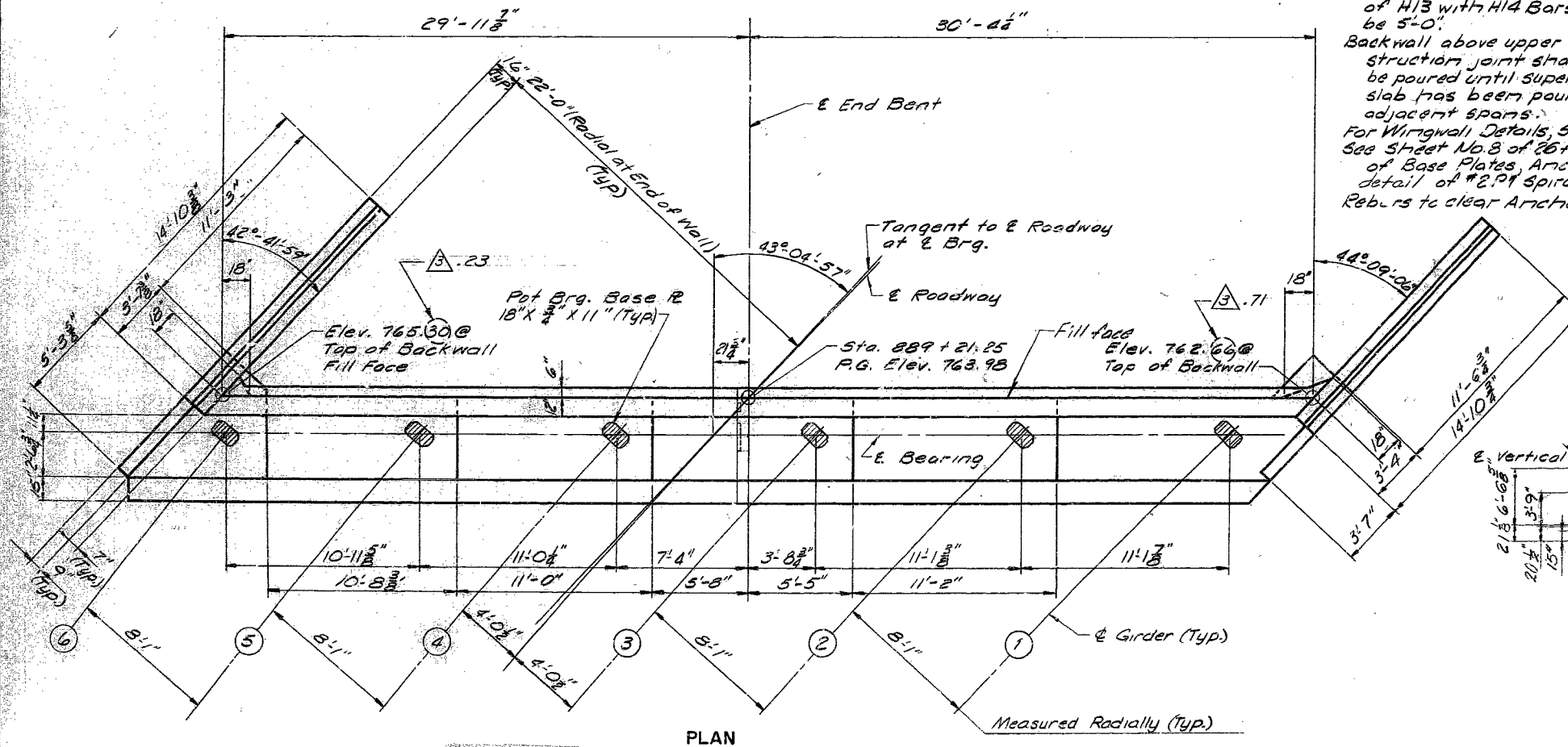
Backwall above upper construction joint shall not be poured until superstructure slab has been poured in adjacent spans.

For Wingwall Details, See Sheet No. 10 of 26.

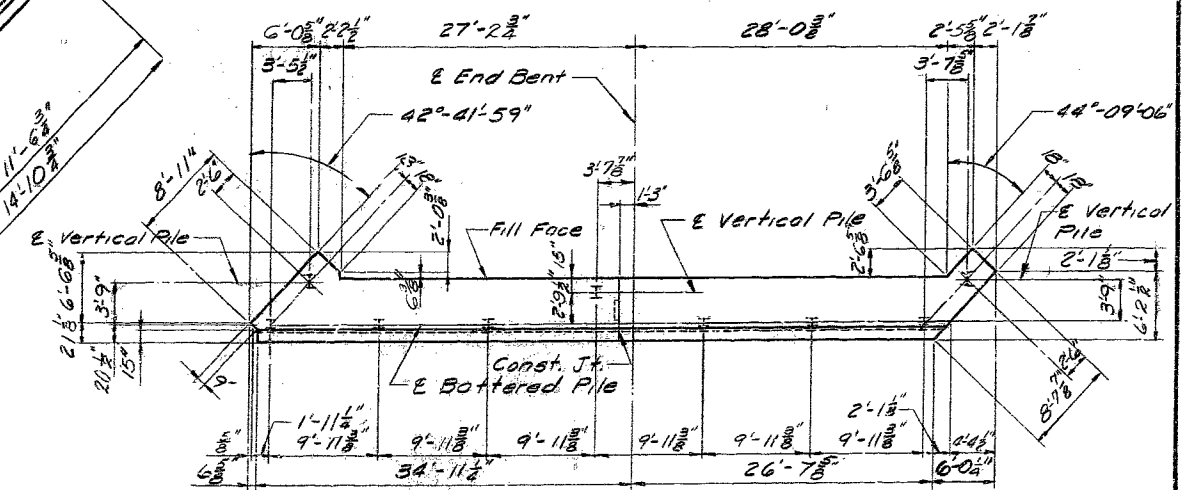
See Sheet No. 8 of 26 for orientation of Base Plates, Anchor Bolt Plan and detail of #2.0" spiral Bars.

Reburs to clear Anchor bolt by 1/2".

SECTION A-A



PLAN

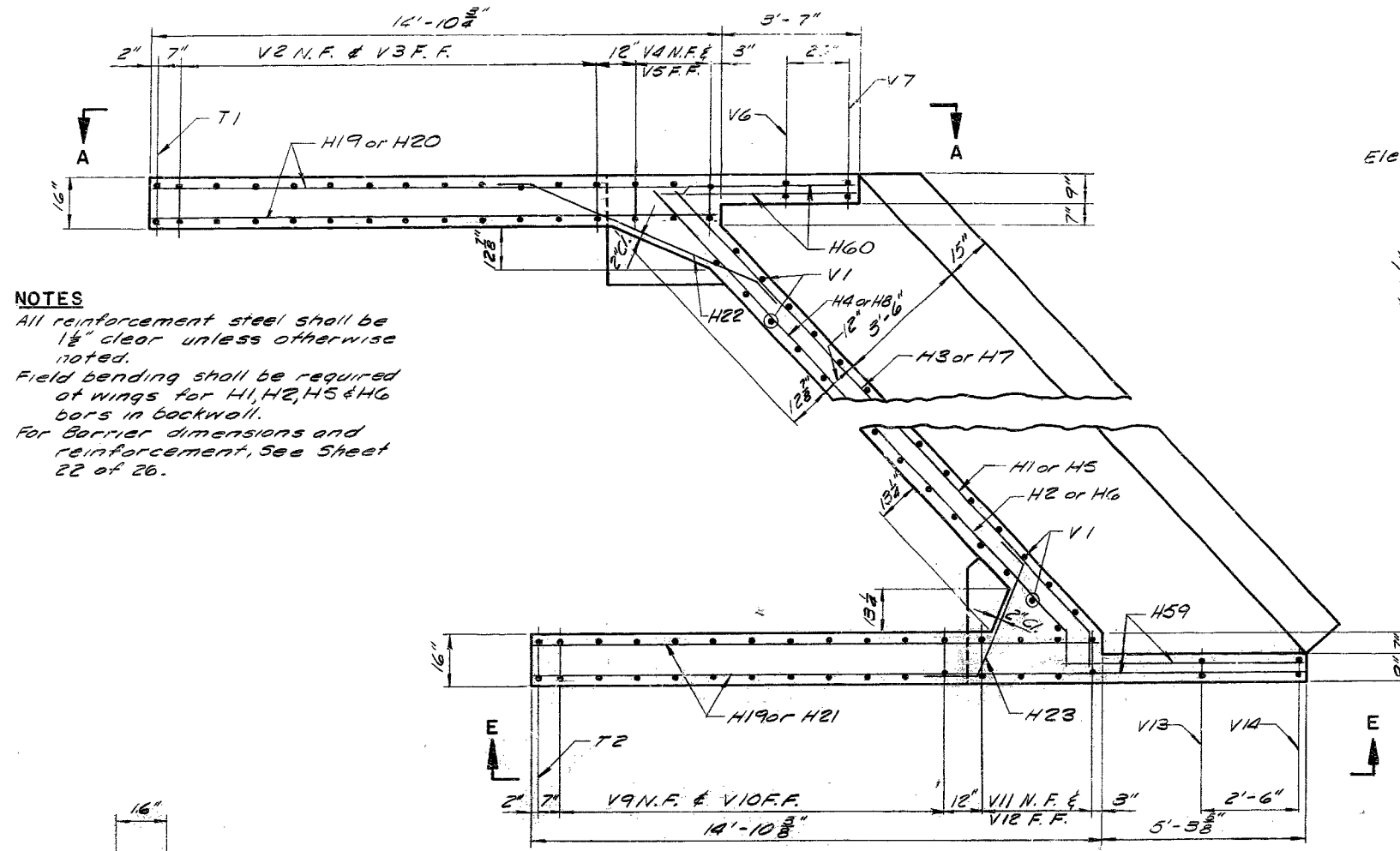


PLAN OF FOOTING

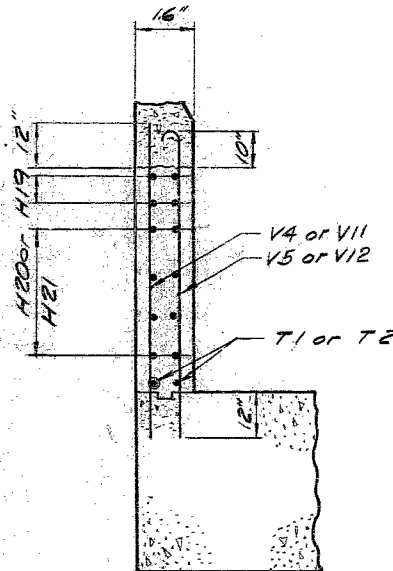
END BENT 1 DETAILS

MISSOURI STATE HIGHWAY DEPARTMENT

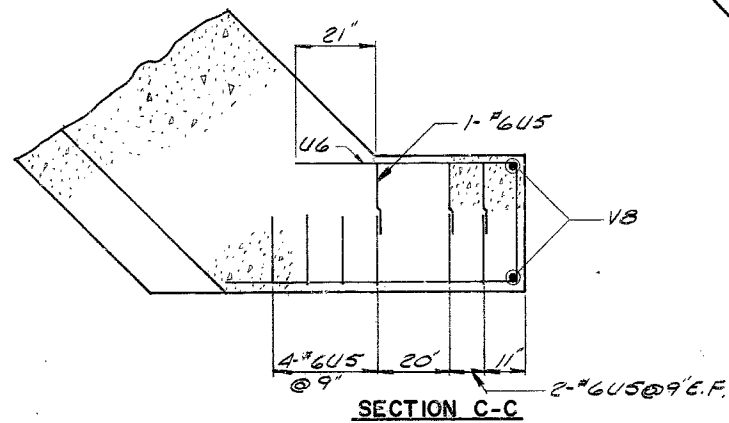
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	63	



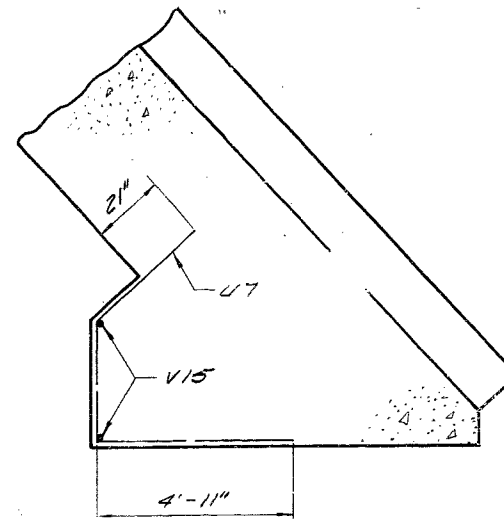
WINGWALL PLAN



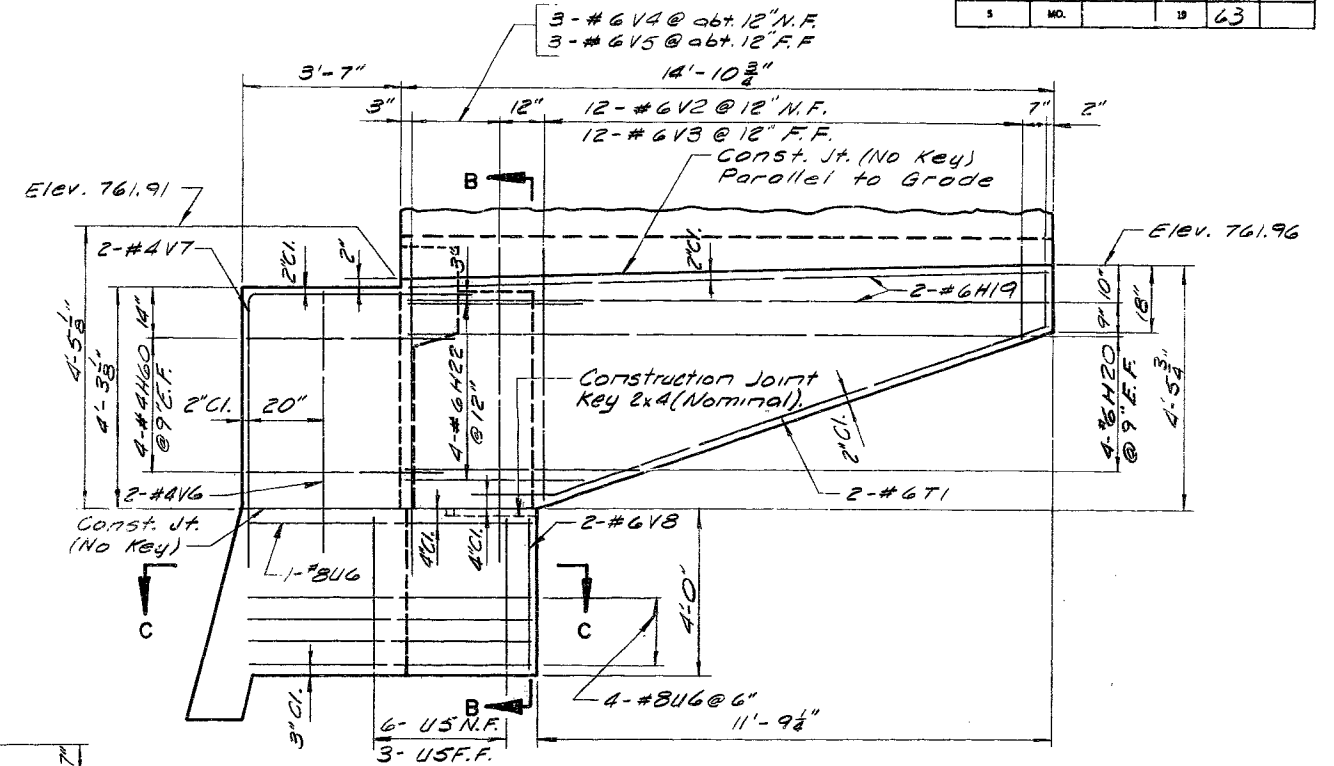
SECTION B-B



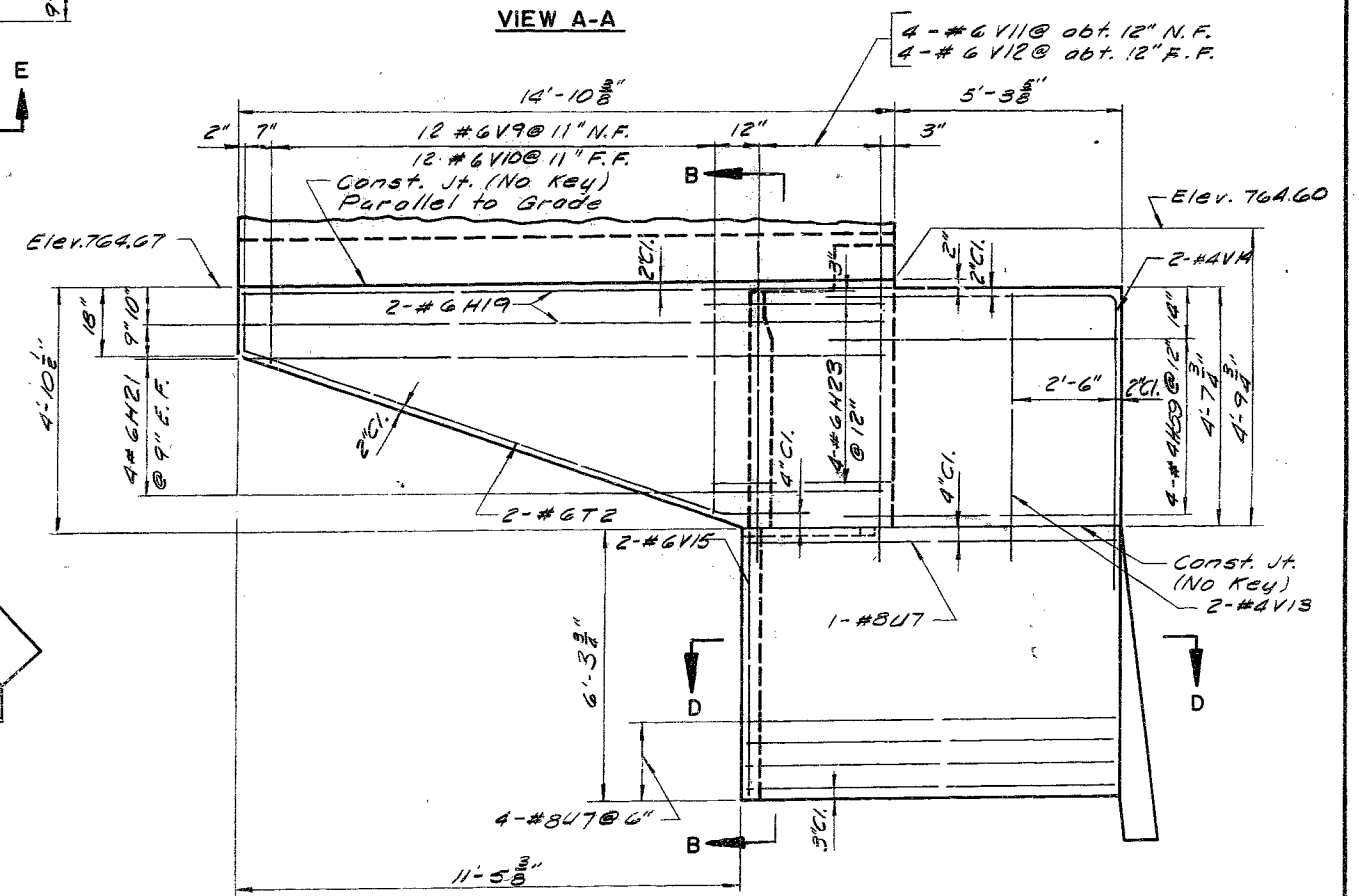
SECTION C-C



SECTION D-D



VIEW A-A



VIEW E-E

WINGWALL DETAILS END BENT I

DETAILED Mar. 19 79 Bishop
CHECKED Mar. 19 79 Steib

Booker
Engineers, Architects, Planners

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

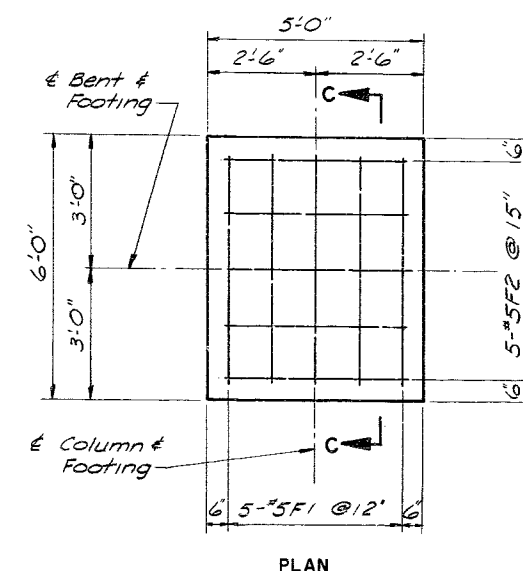
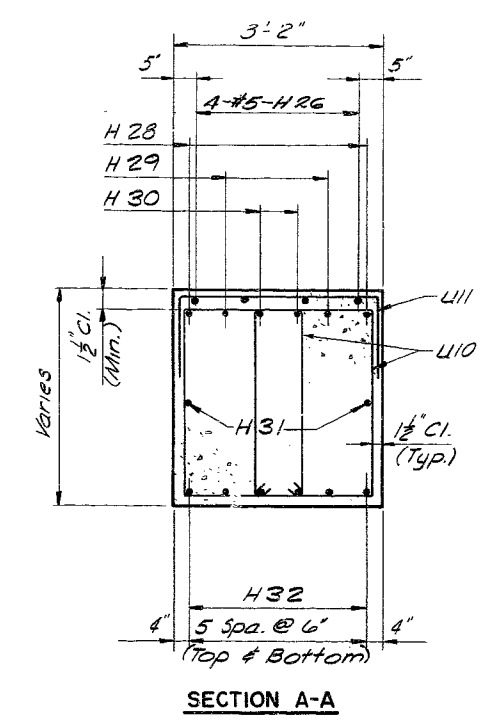
Sheet No. 10 of 26.

JEFFERSON COUNTY

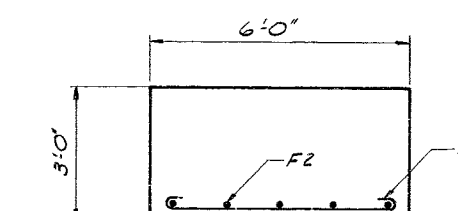
A-3100

~~354/90~~

DETAILED Jan. 19 79 Ball
CHECKED Feb 19 79 Steib

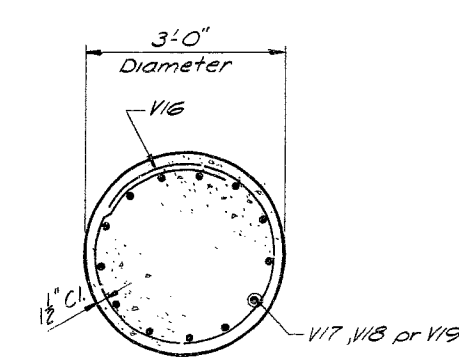


PLAN



SECTION C-C

FOOTING DETAILS



SECTION B-B

NOTES
For orientation of Base Plates see
Anchor Bolt Layout, Sheet No. 8 of 26.
See sheet No. 8 of 26 for Anchor Bolt Plan
and detail of "2PI Spiral Bars".
All Reinforcing bars in tops of bent caps
shall be spaced to clear anchor bolts
for bearings by at least $\frac{1}{2}$ "



Bocker
Engineers Architects Planners

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

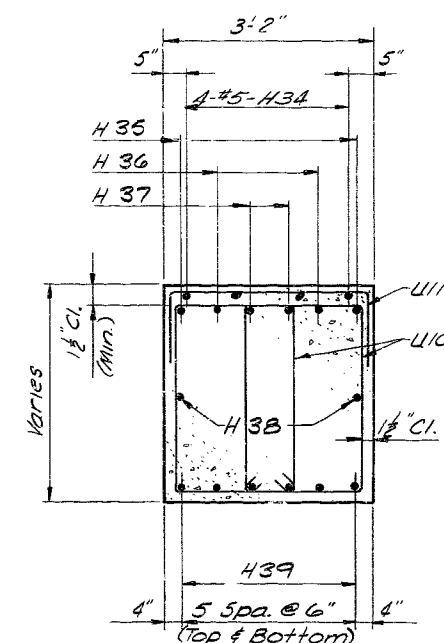
THE FINAL PLANS

Sheet No. 11 of 26. 5 Revised Nov. 10, 1987

JEFFERSON COUNTY

A-3100

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT SHE
3	MO.		19	65	



6'-0"

3'-0" 3'-0"

6'-0"

3'-0" 3'-0"

5 #5F3 @ 15"

6'-0"

6'-0"

6 #5F1 @ 12"

6'-0"

6'-0"

FOOTING DETAILS

Technical drawing of a bridge girder showing dimensions, reinforcement, and structural details. The drawing includes the following elements:

- Dimensions:**
 - Overall length: 27'-4"
 - Segment lengths: 10'-2", 10'-2", 7'-0", 3'-1", 10'-1", 10'-1", 5'-10", 4'-1"
 - Clearance under bearings: 1'-9"
 - Clearance under bent: 5'-10"
 - Clearance under footing: 4'-1"
 - Clearance under bearing base: 17'-1/2" x 3/4" x 22'-2" (Typ.)
 - Clearance under bent, footing, & bearing: 19'-19" x 3'-2" x 6'-0" (Typ.)
 - Clearance under girder: 2'-0 1/2"
 - Clearance under bent, footing, & bearing: 2'-0 1/2"
- Reinforcement:**
 - 16-#4 U/I
 - 3 Spa. @ 6'-18"
 - 5 Spa. @ 6'-30"
 - 4U9
 - 2-H35 2-H36
 - 2-H37 (Top)
 - 2-H38 (Side)
 - 6-H39 (Both)
- Structural Details:**
 - 27'-4" Symm. abt. & Bent, Column, & Footing except as shown
 - 27'-4" (Radius)
 - 36° 59' 30"
 - 4'-0" (Typ.)
 - 8'-1" (Typ.)
 - 6'-0"
 - 19'-19" x 3'-2" x 6'-0" (Typ.)
 - 2'-0 1/2"
 - 10'-2 7/16"
 - 10'-1 3/8"
 - 10'-1 3/8"
 - 10'-1 1/16"
 - 10'-0 3/4"
 - 2'-0 1/2"
- Notes:**
 - Under bearings Space as shown
 - Under bent, Column, & Footing except as shown
 - Under bearing base 17'-1/2" x 3/4" x 22'-2" (Typ.)
 - Under bent, footing, & bearing 19'-19" x 3'-2" x 6'-0" (Typ.)
 - Under girder (Typ.)

A hand-drawn diagram of a circular component. At the top, a horizontal dimension line with arrows at both ends is labeled "3'-0\"". Below this, the word "Diameter" is written. The diagram shows a circular cross-section with a thick outer ring and a thinner inner ring. The space between the rings is filled with small dots. A label "V16" with a leader line points to the outer ring. A label "1/2\" Cl." with a leader line points to the inner ring. A label "V20, V21 or V22" with a leader line points to a small circle on the outer ring.

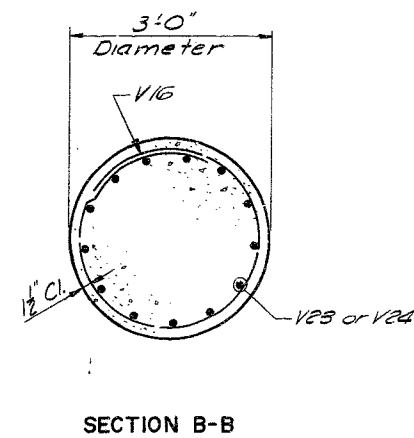
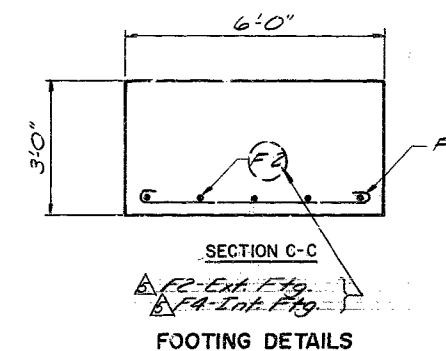
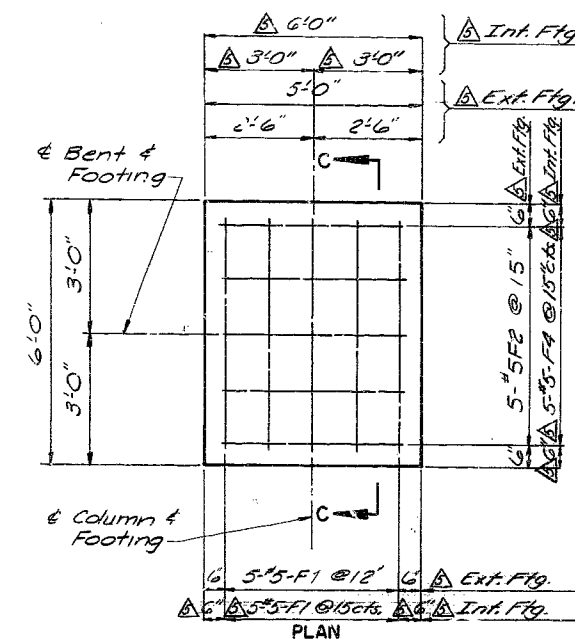
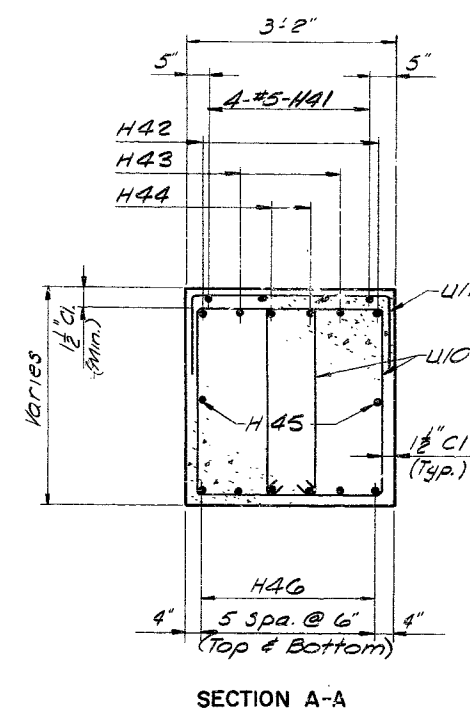
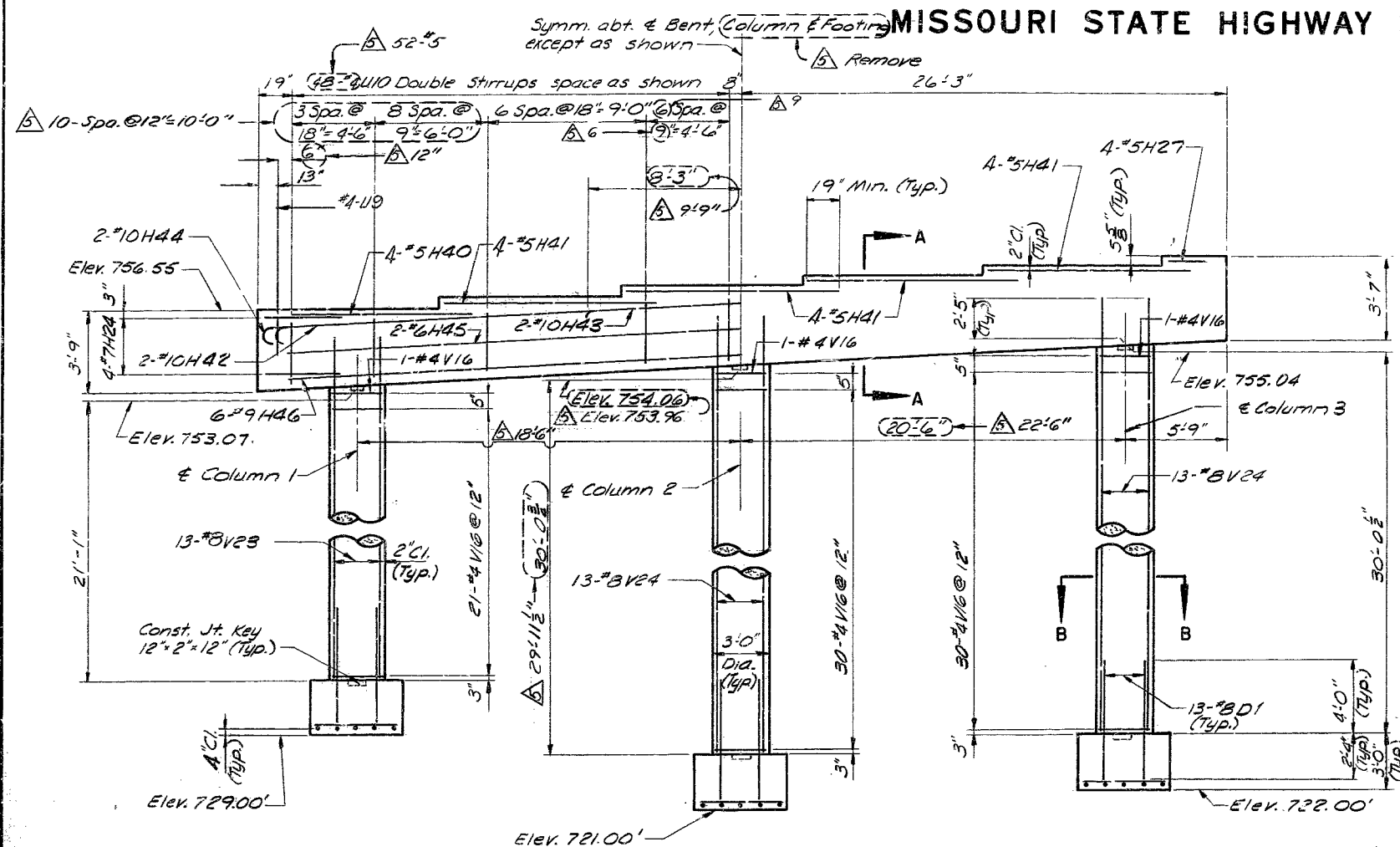
NOTES

For orientation of Base Plates see
Anchor Bolt Layout, Sheet No. 8 of 26.
See Sheet No. 8 of 26 for Anchor Bolt
Plan and detail of #2 Fl Spiral Bars.
All reinforcing bars in tops of Bent Caps
shall be spaced to clear Anchor Bolts
for bearings by at least $\frac{1}{2}$ ".

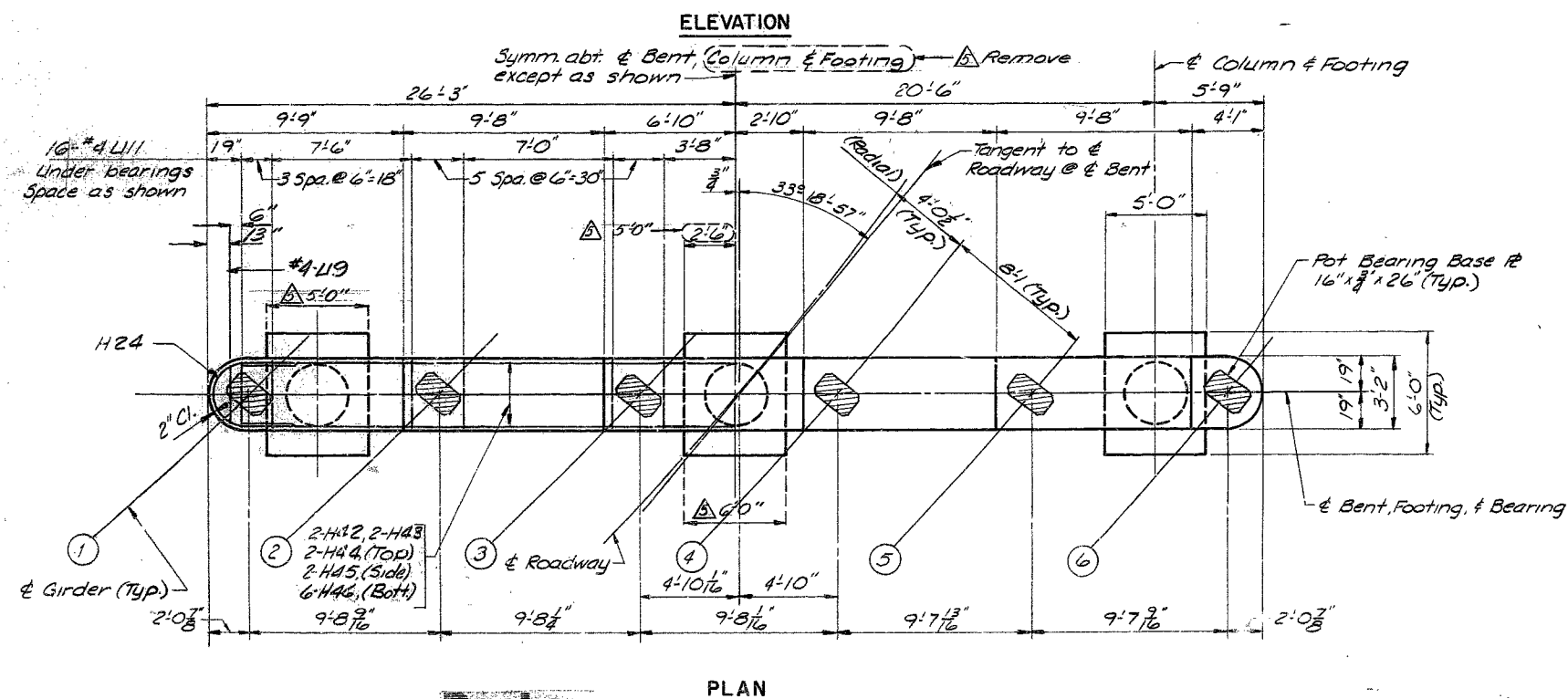
BENT 3

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
5	MO.		19	66	



NOTES
For orientation of Base Plates see
Anchor Bolt Layout, Sheet No. of 26.
See Sheet No. of 26 for Anchor Bolt
Plan and Detail of #2 PI Spiral Bars.
All reinforcing bars in tops of Bent
Caps shall be spaced to clear Anchor
Bolts & c/r bearings by at least 3".



BENT 4

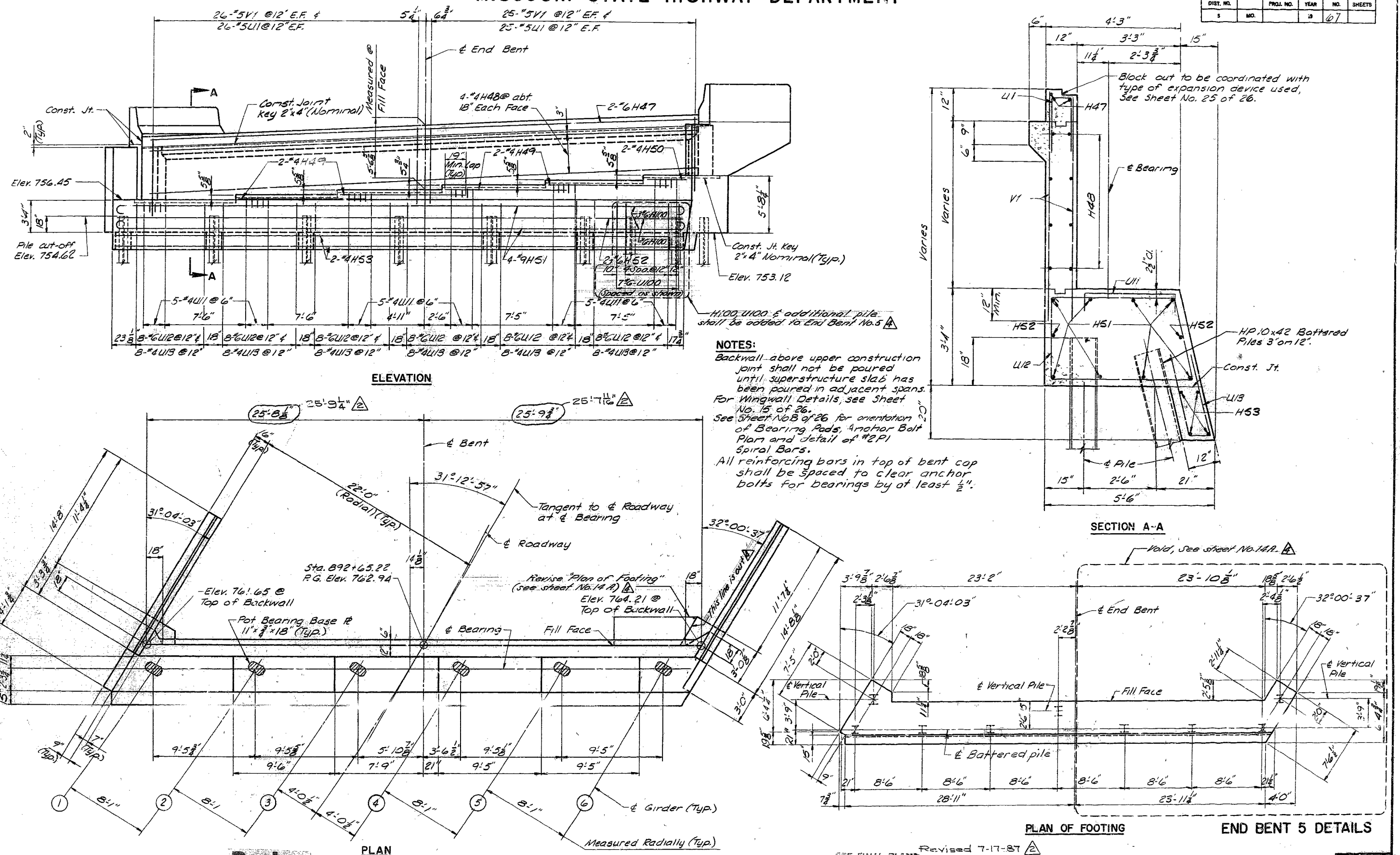
93/24/193

DETAILED Feb 1979 Ball
CHECKED Mar 1979 Steib

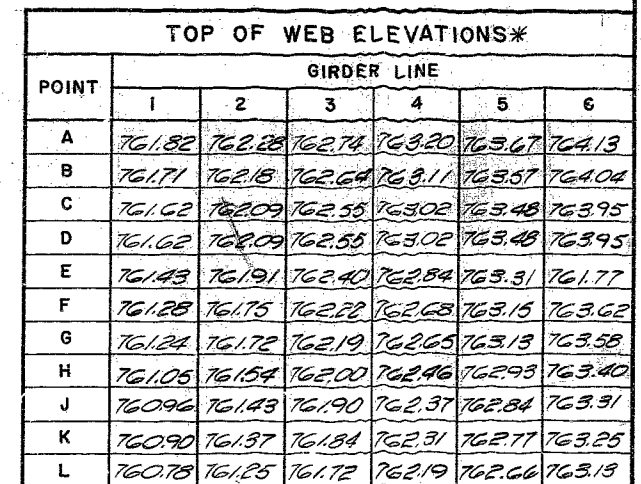
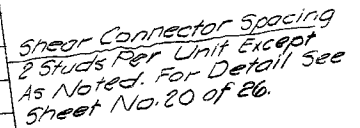
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Engineers Architects Planners

SEE FINAL PLANS
Sheet No. 14 of 26.

A-3100



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	69	



STEEL FRAMING PLAN &
LONGITUDINAL SECTION

MISSOURI STATE HIGHWAY DEPARTMENT

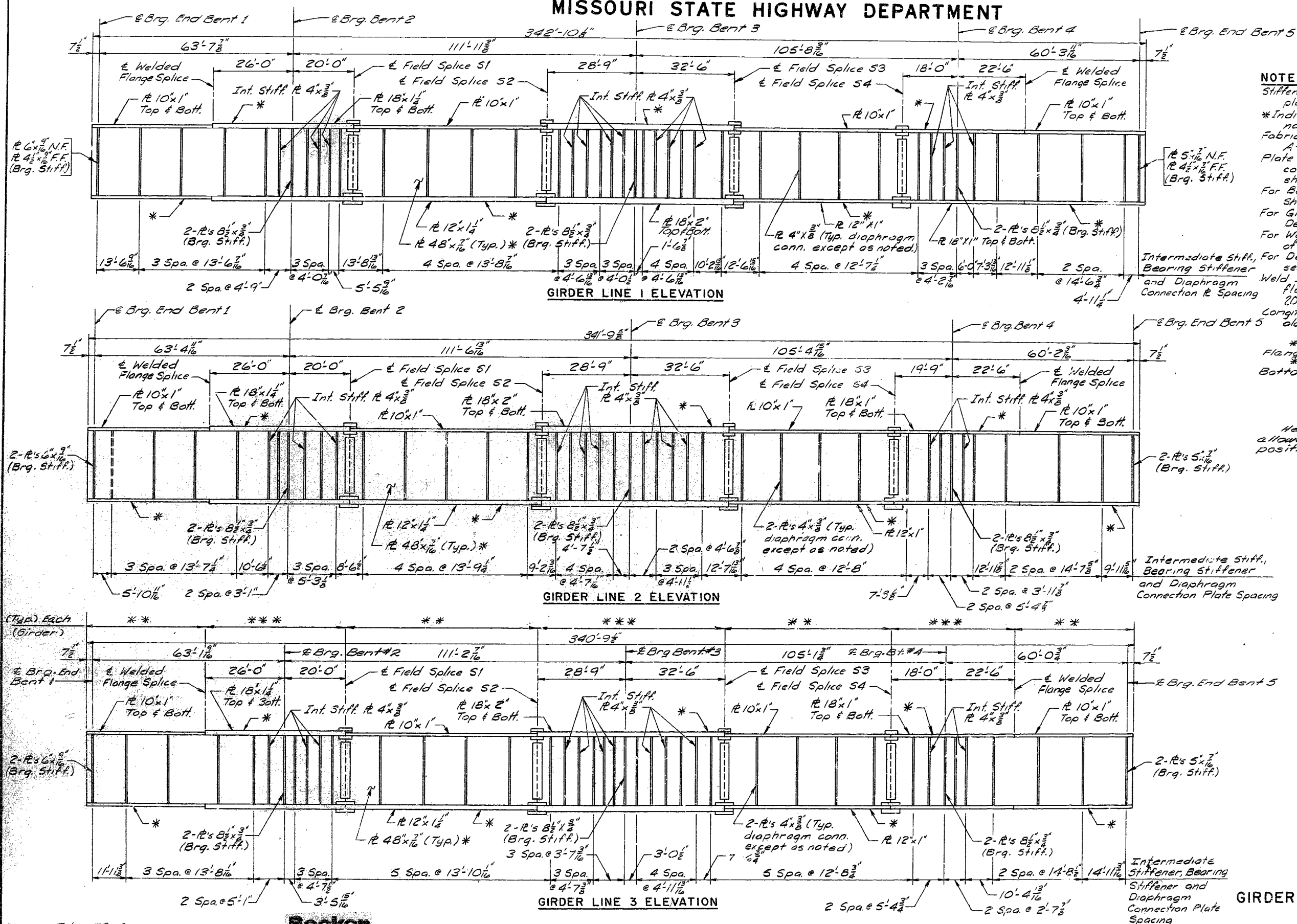
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		10	70	

NOTES:

Stiffeners and diaphragm connection plates shall be placed as detailed.
 * Indicates plates subject to notch toughness requirements.
 Fabricated structural steel shall be A-36 except as noted.
 Plate girders shall be fabricated to conform with Camber Diagram shown on Sheet No. 23 of 26.
 For Bolted Field Splice Details, see Sheet No. 18 of 26.
 For Girder Offsets and Diaphragm Details, see Sheet No. 19 of 26.
 For Welding Details, see Sheet No. 20 of 26.
 Intermediate Stiff., For Dead Load Deflection Diagram, see Sheet No. 23 of 26.
 Weld Intermediate Stiffeners to compression flange plate only, see Sheet No. 20 of 26 for welding detail.
 Longitudinal dimensions shown are along top of web at E girder.

** Indicates Compression Top Flange.
 *** Indicates Compression Bottom Flange.

Heat curving of girder will not be allowed while in the horizontal position.



GIRDER ELEVATIONS 1, 2 & 3

DETAILED Feb. 19 79 Cooper
 CHECKED Mar. 19 79 SFA/B

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

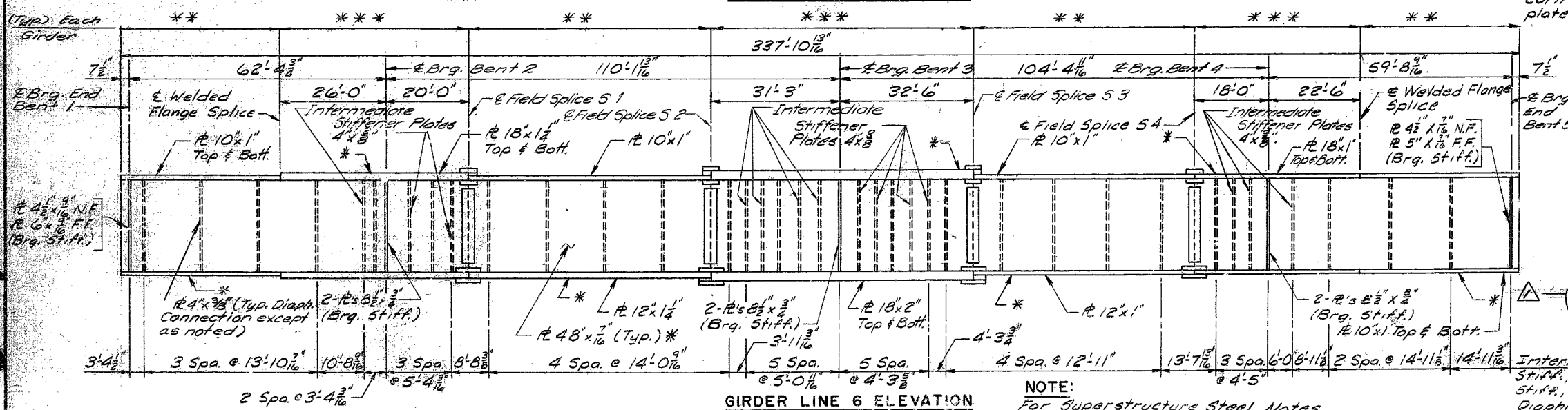
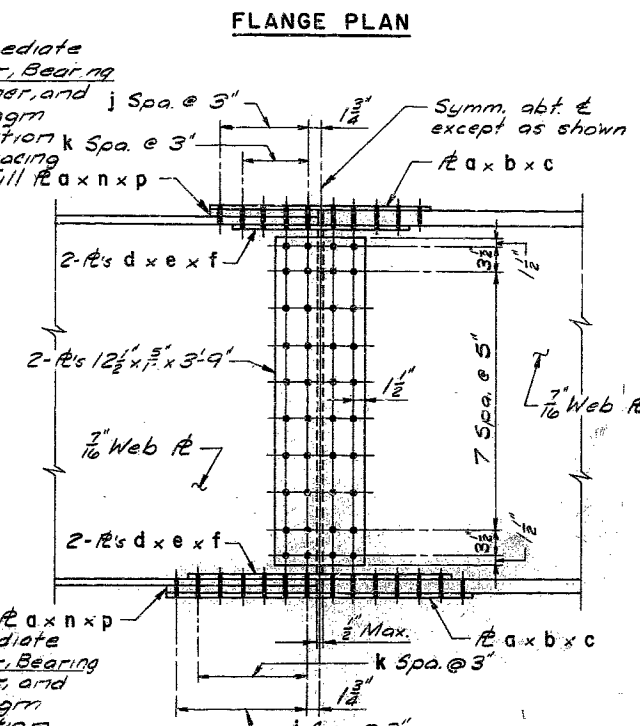
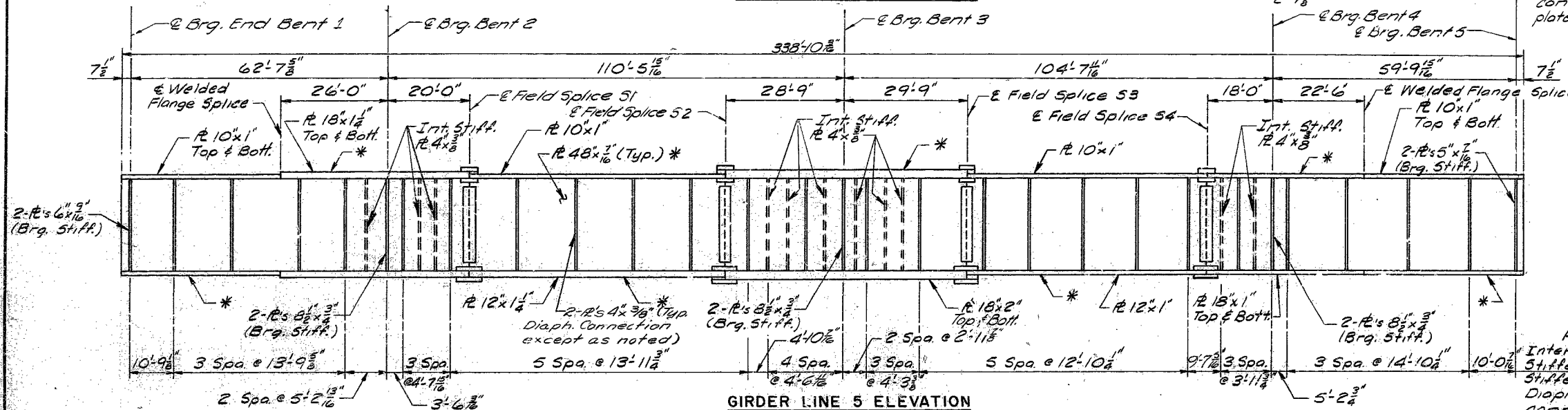
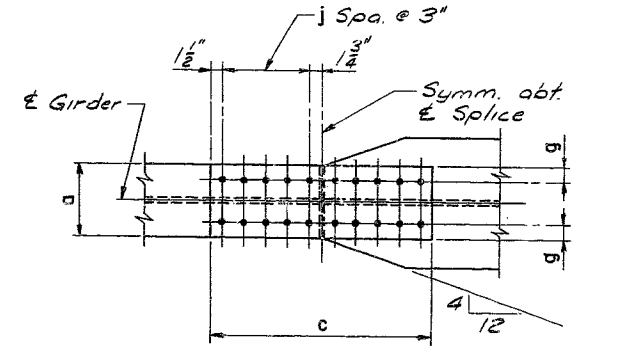
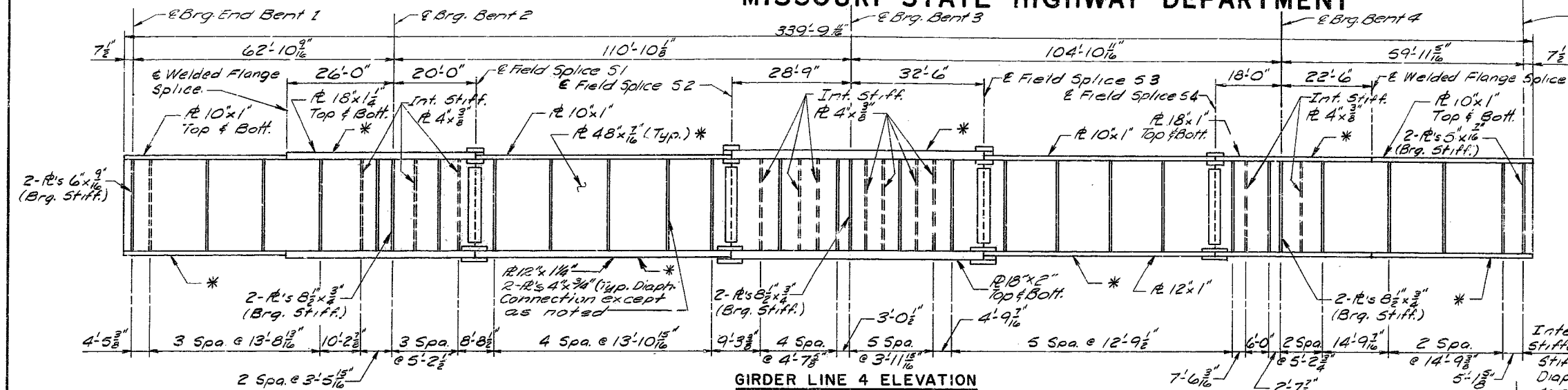
Sheet No. 17 of 26

JEFFERSON 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	71	



DIMENSIONS FOR BOLTED FIELD SPLICE

NO.	SPLICE REQ'D.	FLANGE TYPE	a	b	c	d	e	f	g	j	k	n	p
6	S1	Top	10	8	2	0	4	18	2	2	1	10	
		Bot.	10	8	2	0	4	18	2	2	1	10	
6	S2	Top	10	8	2	0	4	18	2	2	1	10	
		Bot.	10	8	2	0	4	18	2	2	1	10	
6	S3	Top	10	8	2	0	4	18	2	2	1	10	
		Bot.	10	8	2	0	4	18	2	2	1	10	
6	S4	Top	10	8	2	0	4	18	2	2	1	10	
		Bot.	10	8	2	0	4	18	2	2	1	10	

NOTE:
For Superstructure Steel Notes,
See Sheet No. 17 of 26.

SEE FINAL PLANS

Sheet No. 18 of 26. Revised June 18, 1987

GIRDER ELEVATIONS 4, 5, 6 & BOLTED FIELD SPLICE DETAILS

For revisions of June 18, 1987 see sheet No. 19.

JEFFERSON COUNTY

A-3100

DESIGNED Feb. 1979 Cooper
CHECKED Mar. 1979 Steib

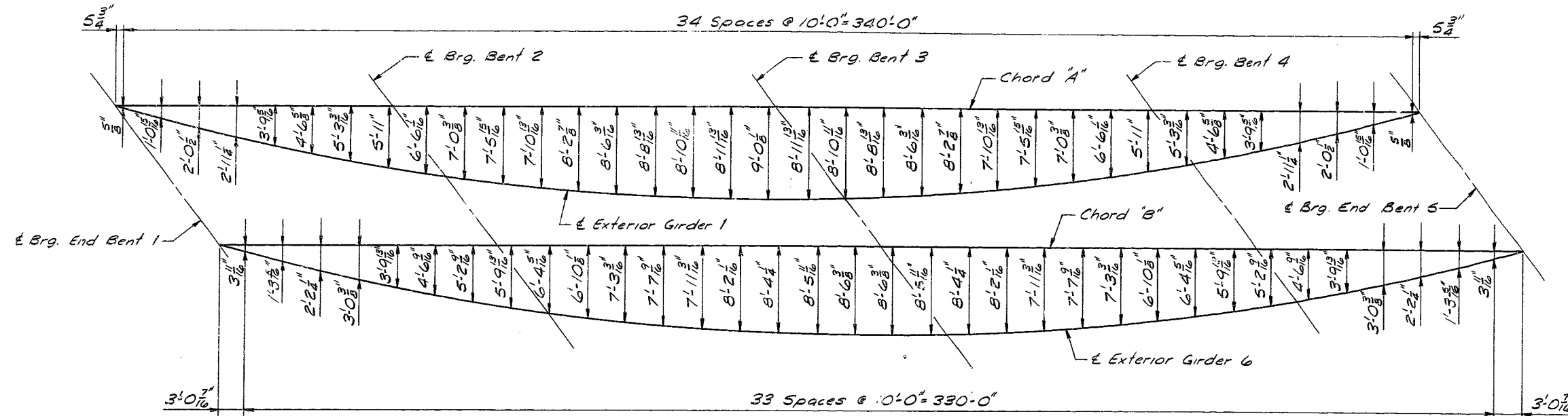
Booker
Engineers, Architects, Planners

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

364 198

MISSOURI STATE HIGHWAY DEPARTMENT

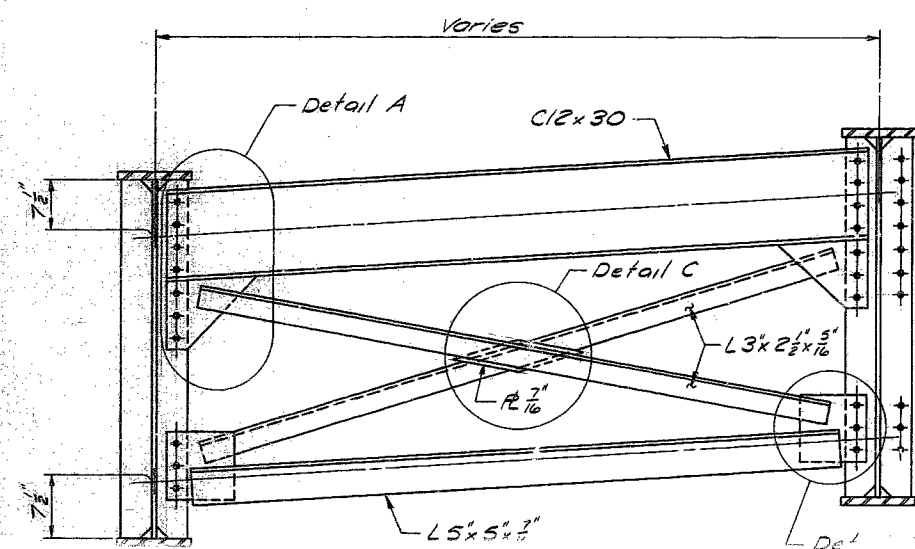
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	72	



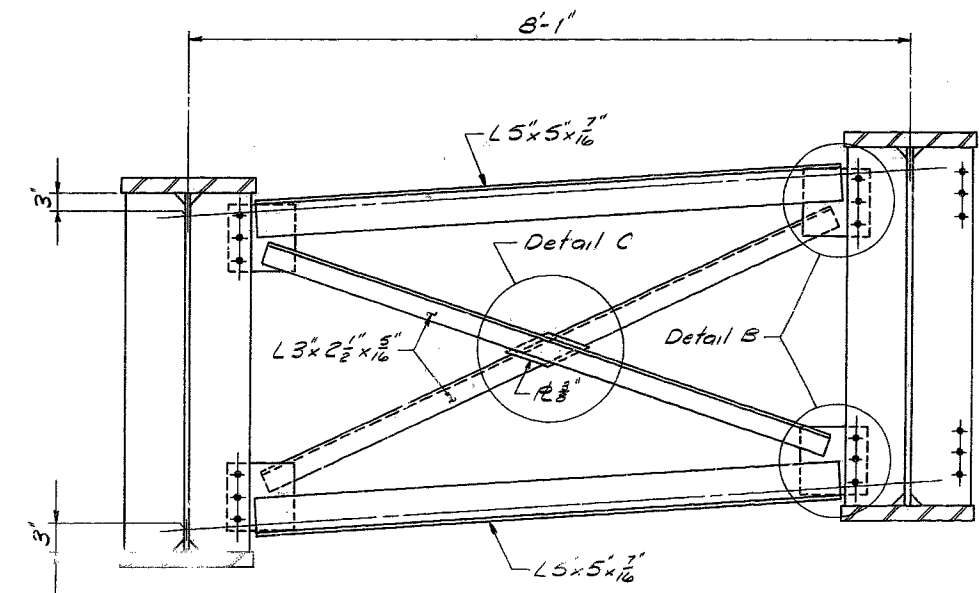
FLANGE	a	b	c	d	e	f	g	j	k	n	p
SP	Both	12"	1/2"	2'-6 1/2"	5"	8"	2'-0 1/2"	2 1/2"	4	3	1" 15"
SA	Both	12"	1/2"	2'-6 1/2"	5"	8"	2'-0 1/2"	2 1/2"	4	3	

For location of this revision see sheet No. 18.

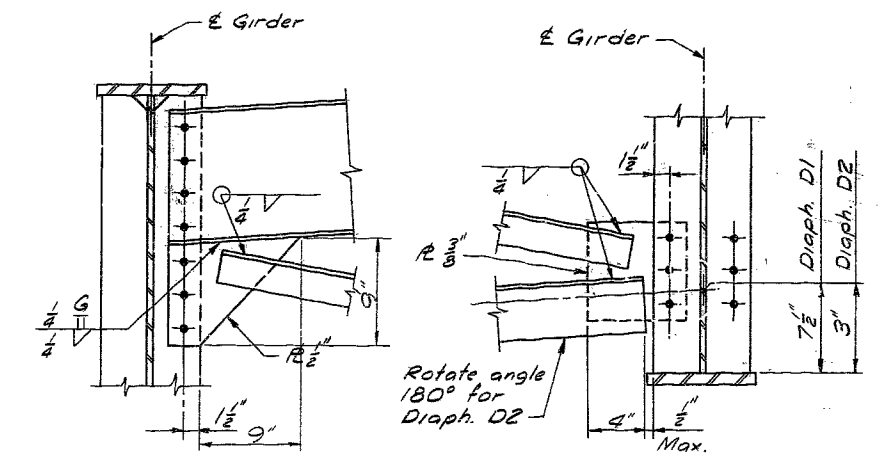
OFFSETS FOR CURVED PLATE GIRDERS (All dimensions horizontal)



DIAPHRAGM D1



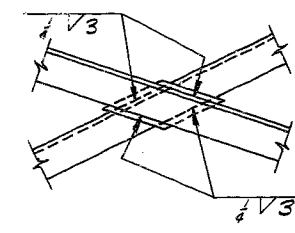
DIAPHRAGM D2



DETAIL A

DETAIL B

NOTES:
Slab drains may be fabricated of either 1/2" Welded Sheets of A.S.T.M. A36 steel or from 1/2" Structural Steel Tubing A.S.T.M. A500 or A501.
Outside dimensions of Drains are 8"x4".
The drains shall be cast in the concrete with the top of the drains being 1/2" below the finished concrete line.
See Sheet No. 21 of 26 for deck drain locations.
Shift reinforcing in field where necessary to clear drains.
The Drains shall be galvanized in accordance with A.S.T.M. A123.
Shop drawings will not be required for Slab Drains.



DETAIL C

GIRDER OFFSETS & DIAPHRAGM DETAILS

DETAILED Jan. 19 Cooper
CHECKED Feb. 19 Steib

Booker
Engineers Architects Planners

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

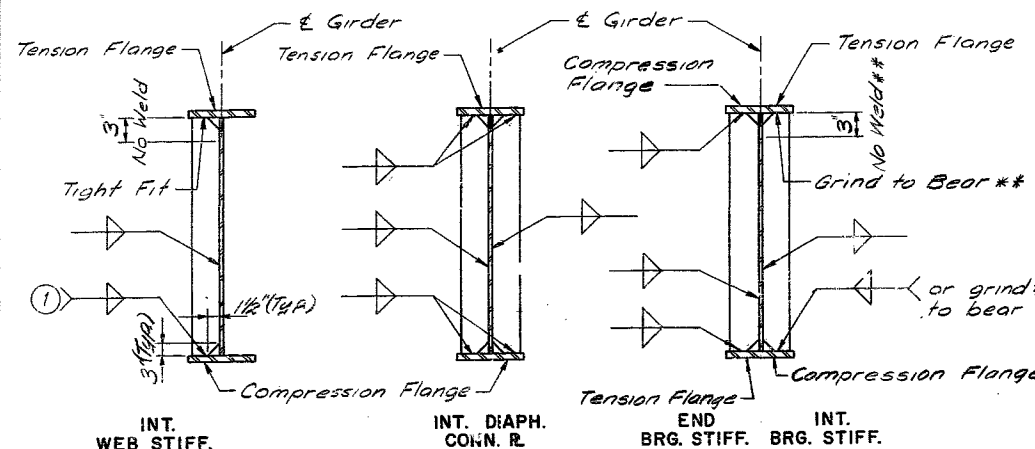
Sheet No. 19 of 26. Revised June 18, 1987

JEFFERSON COUNTY

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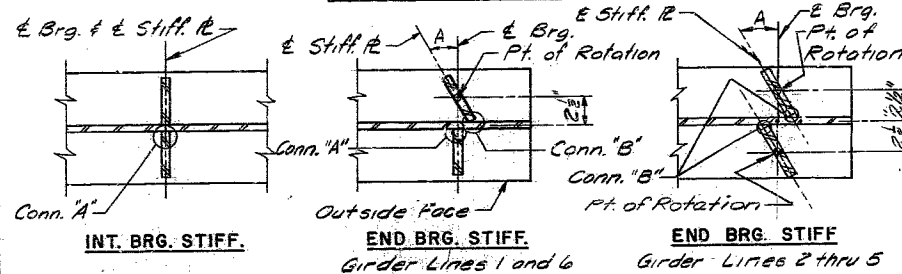
MISSOURI STATE HIGHWAY DEPARTMENT

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

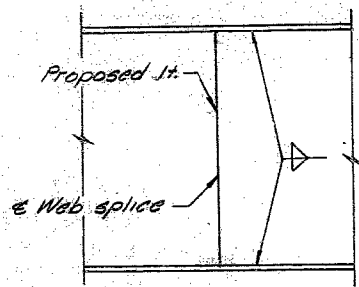


① Weld to flange plate as noted on Girder Elev.

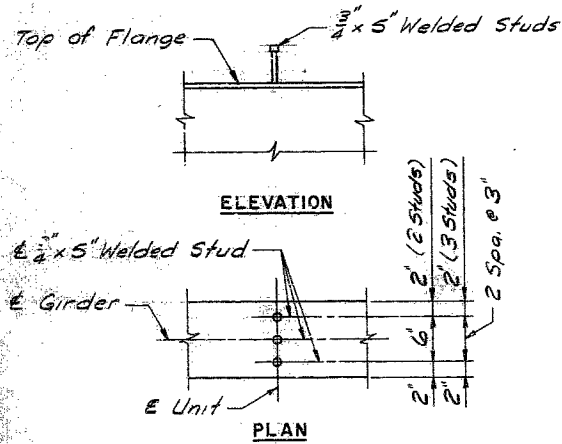
GIRDER WELDING DETAILS



BEARING STIFFENER LOCATION DETAILS

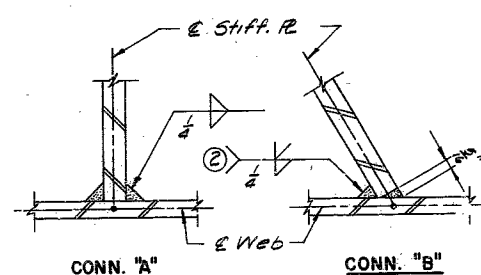


SHOP WEB SPLICE



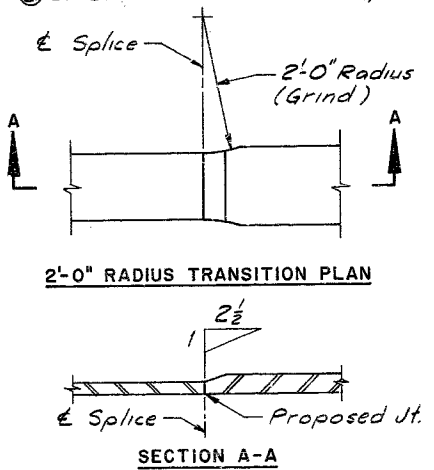
SHEAR CONNECTOR DETAILS

Weight of 1649 # of Shear Connectors included in weight of fabricated structural steel.
 Detailed Feb. 1974 Cooper
 Checked Mar. 1979 5/16



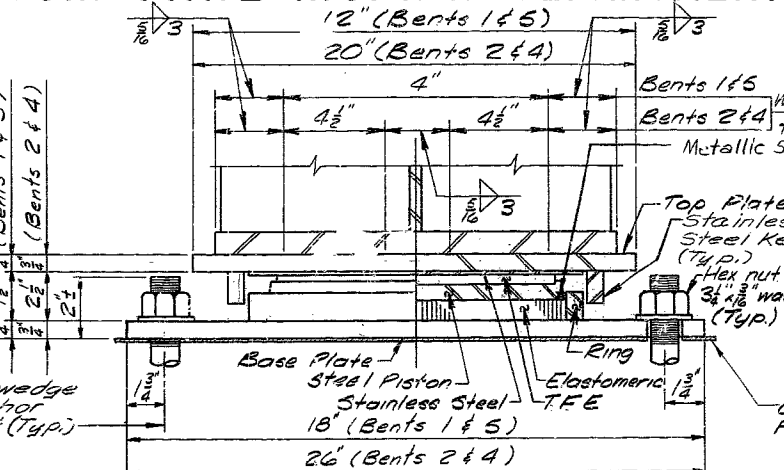
BEARING STIFFENER WELDING DETAILS

② Groove Weld Penetration = 1/4" Min.



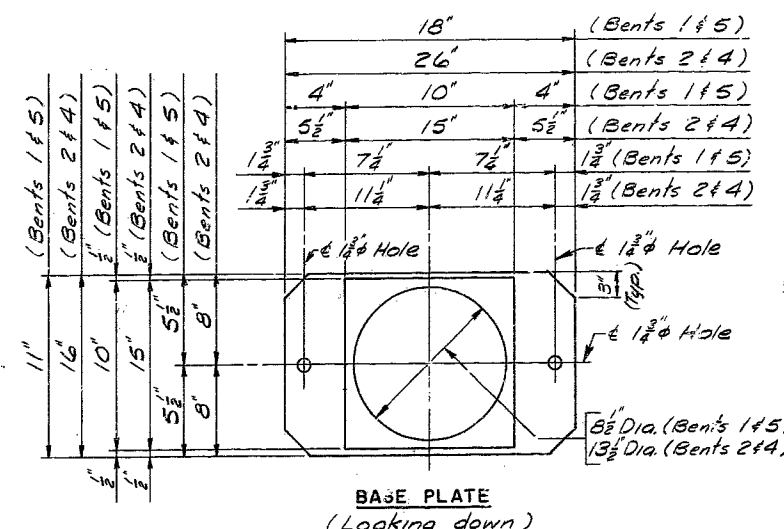
WELDED SHOP FLANGE SPLICE

GIRDER LINE	ANGLE "A"	
	BENT NO. 1	BENT NO. 2
1	40°39'	34°36'
2	40°24'	34°24'
3	40°09'	34°12'
4	39°55'	34°00'
5	39°41'	33°49'
6	39°27'	33°38'

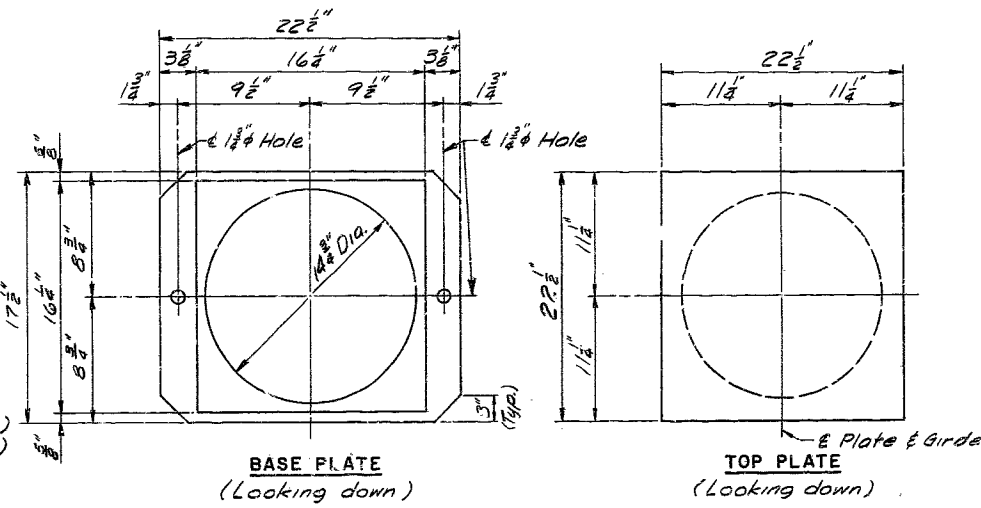


ELEVATION

SECTION



BASE PLATE (Looking down)



TOP PLATE (Looking down)

FIXED POT BEARING

(6 required, Bent 3 Cap-263°)

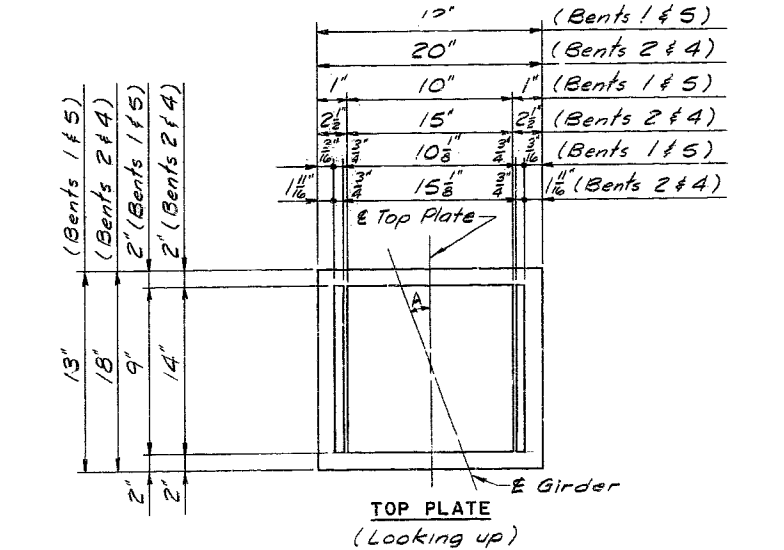
NOTES:

GIRDER LINE	ANGLE "A"			
	BENT NUMBER 1	BENT NUMBER 2	BENT NUMBER 4	BENT NUMBER 5
1	3°06'41"	1°59'01"	1°52'21"	2°56'28"
2	3°05'05"	1°58'01"	1°51'30"	2°55'10"
3	3°03'30"	1°57'03"	1°50'41"	2°53'54"
4	3°01'58"	1°56'06"	1°49'52"	2°52'39"
5	3°00'27"	1°55'10"	1°49'04"	2°51'25"
6	2°58'58"	1°54'15"	1°48'16"	2°50'13"

** When Bearing Stiffener is used as an Intermediate Diaphragm Connection Plate Weld Stiffener plate to both top and bottom flange plates as shown for an End Bearing Stiffener.
 Unless otherwise noted the minimum size fillet weld shall be 1/4".
 All anchor bolts shall be 1/2" dia swedge bolts and shall extend 15" into concrete with hexagon nuts and plain washers.
 Weight of anchor bolts for bearings shall be included in weight of fabricated structural steel.
 By approval of the engineer the contractor may omit any shop flange splice, if desired, by extending the heavier flange plate and providing approved modifications of details at field flange splice and elsewhere as required. All costs of any required design, plan revisions or rechecking of shop drawings shall be borne by the contractor. Payweight in any case will be based on material shown on design plans.
 Material shall be A.S.T.M. A-36.

LATERALLY RESTRICTED POT BEARING

(6 required each, Bent 1 & 5 - Cap 71°)
 (6 required each, Bent 2 & 4 - Cap 215°)



TOP PLATE (Looking up)

STEEL DETAILS & POT BEARINGS

JEFFERSON COUNTY

A-3100

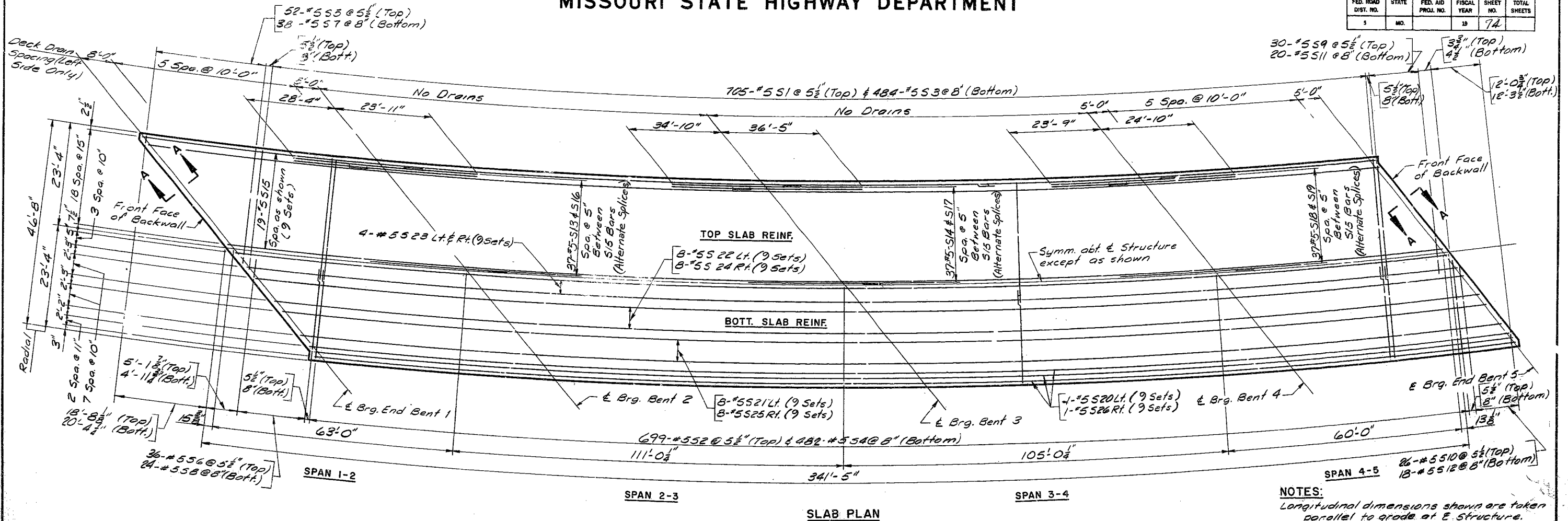
Sheet No. 20 of 26

Booker
 Engineers, Architects, Planners

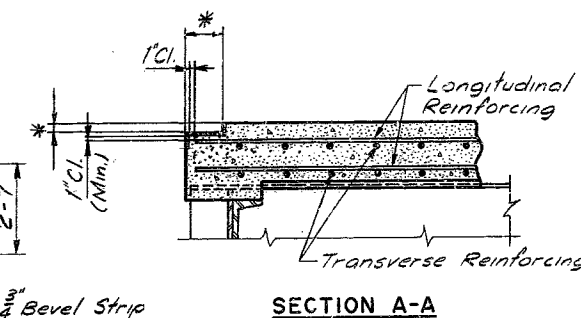
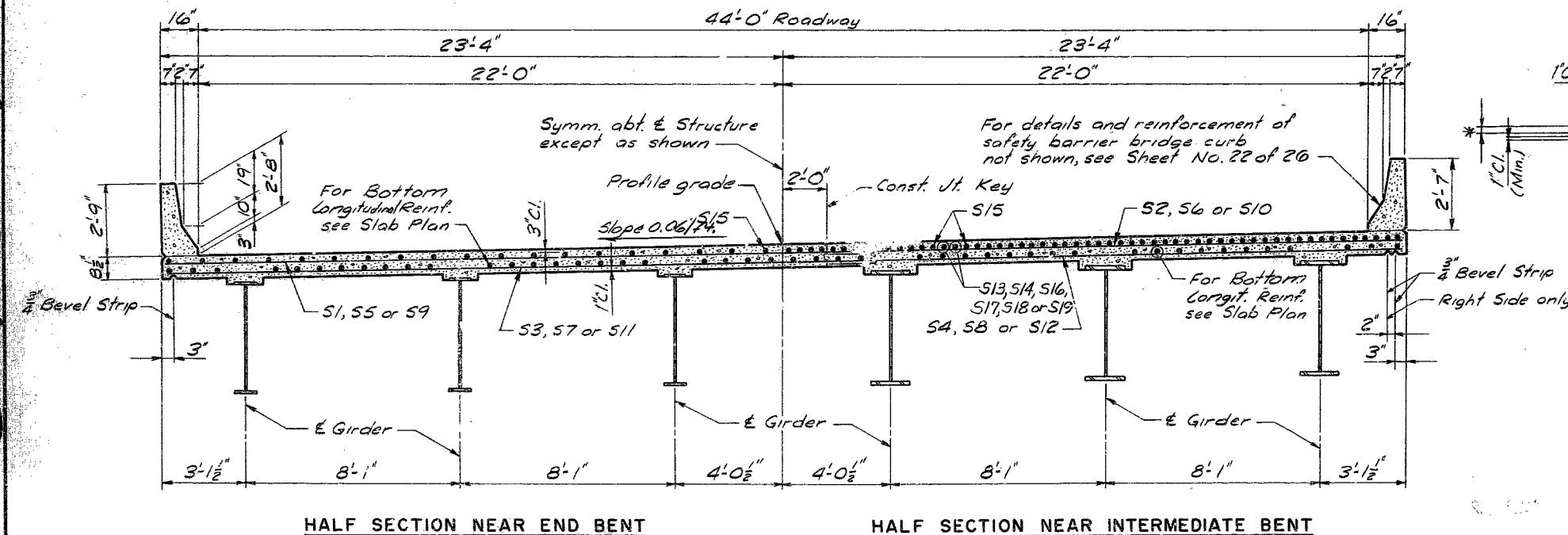
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

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



NOTES:
 Longitudinal dimensions shown are taken parallel to grade at E. Structure.
 Minimum lap for top slab transverse reinforcing bars is 2'-2" and for bottom slab reinforcing bars it is 21".
 Minimum lap for top slab longitudinal reinforcing bars is 2'-2" and for bottom slab longitudinal reinforcing bars is 21".



Dimensions marked thus (*) will vary depending on type of expansion joint used.
 Transverse dimensions and spacing are measured horizontally.
 Place S1, S2, S3 and S4 radially using outside of Slab as a reference.
 Bend longitudinal bars in field to fit horizontal alignment.
 For deck drain details, see Sheet No. 25 of 26.
 Cut or shift reinforcing in field to clear deck drains.
 Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" ± from lower vertical leg of joint armor at expansion device.

SLAB PLAN & SECTION

DETAILED Jan. 1979 Cooper
 CHECKED May 1979 Steib

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 Engineers Architects Planners

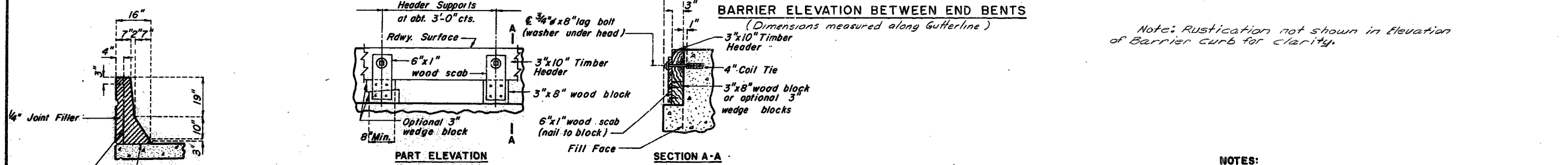
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 21 of 26.

JEFFERSON COUNTY

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.		19	75	



Const. Joint
4" plastic waterstop Std. Spec. 10572.1
(Centered on joint)

Note: Plastic waterstop shall be placed in all safety barrier curb filled joints.

Face
Note

2

14'-10" (Left) or 14'-10" (Right)

14'-8" (Left) or 14'-8" (Right)

Face
Note

2

DETAILS OF TIMBER HEADER AT END BENTS

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

TOP OF BARRIER CURB TO BE BUILT PARALLEL TO GRADE WITH BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE.
ALL EXPOSED EDGES OF BARRIER CURB SHALL HAVE 1/2" RADIUS OR 3/8" B UNLESS OTHERWISE NOTED.
Use a minimum lap of 17" for #5 horizontal bars.

Cost of plastic waterstop complete in place to be included in unit price bid for concrete, i.e. Side only.

DETAILS OF PLASTIC WATERSTOP

SECTION A-A

SECTION B-B

ELEVATION

ELEVATION C-C

PART ELEVATION

DETAILS OF GUARD RAIL ATTACHMENT

Top of Barrier Curb
 12" 2" 1 1/2" 1 1/2" 1 1/2"

DETAIL "E" (Typical)
 6" Radius
 1/2" 1/2" 1/2"

Joint Filler (Std)

PLAN
 14'-10 3/4" (Left) or 14'-10 3/4" (Right)
 14'-8" (Left) or 14'-8 1/2" (Right)
 14-#5-R1, R2, R3 & R5 (Spaced as shown)
 12-spaces at 12"
 2-spaces at 4"
 6-#5-R7 5-#5-R7
 4'-0" 7'-0" 4'-0"
 #5-R6 #5-R8
 #5-R10 #5-R9

END BENT 1 **END BENT 5**

SECTION D-D
 16" 7'-2 1/2" 10'-0" 10'-0" 2'-9" 2'-7" 2'-9" 2'-7"
 2-#5-R bars #5-R bar #5-R bar #5-R bar
 2-#5-R bars
 #5-R1, R2, R3 & R4 at abt. 12" cts. 2 1/2" 2 1/2"
 #5-R1, R2, R3 & R4
 #5-R2 #5-R3 #5-R4
 Const. Joint

SEE FINAL PLANS

REVISIONS: REVISIONS DETAIL Spec. 1057.2.4)
 DETAILED Feb. 1979 Cooper FILLED JOINT DETAIL
 CHECKED Mar. 1979 Staib
 Note: This drawing is not to scale. Follow dimensions.
DETAILS OF BARRIER CURB AT END BENTS
Booker
 Engineers Architects Planners
PART SECTION NEAR LEFT BARRIER CURB
 Sheet No. 22 of 26
 JEFFERSON COUNTY

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

Booker
Engineers Architects Planners

PART SECTION NEAR LEFT BARRIER CURB
Sheet No. 22 of 26.

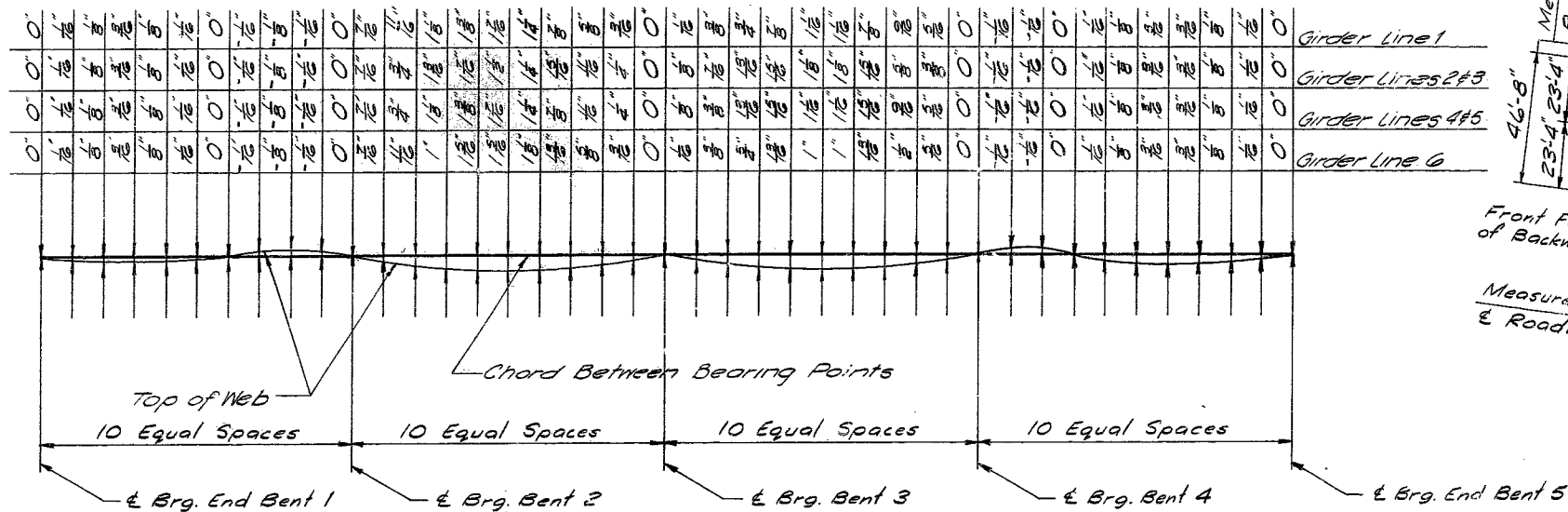
9 JEFFERSON COUNTY

A-3100

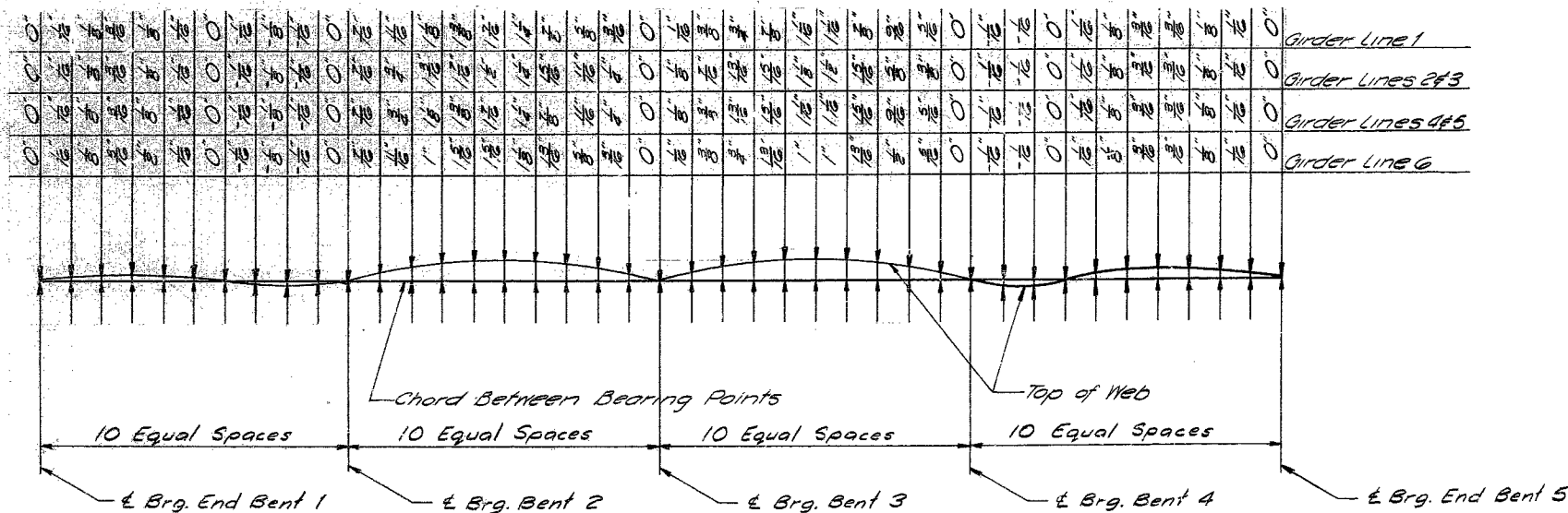
STD. 1.7.71N)	REVISED
AUG. 1978	SEPT. 1978

MISSOURI STATE HIGHWAY DEPARTMENT

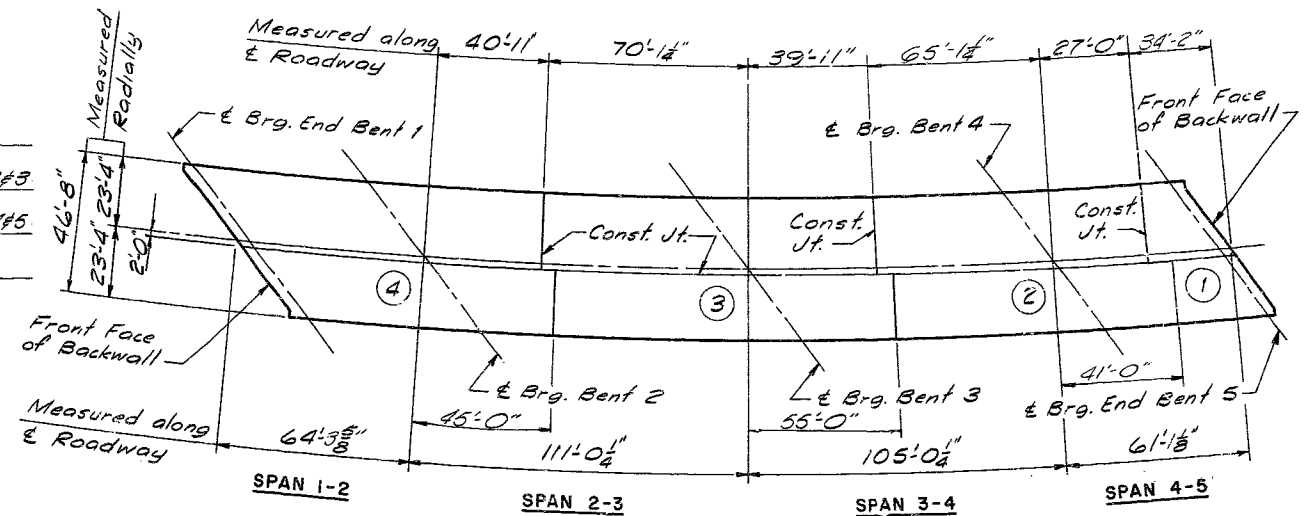
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5	MO.		19	76	



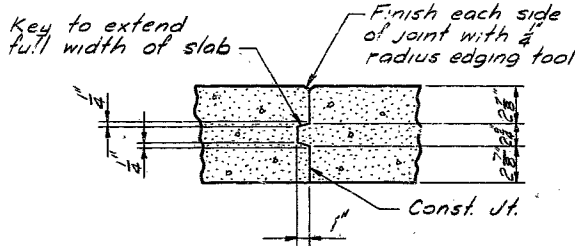
DEAD LOAD DEFLECTION DIAGRAM



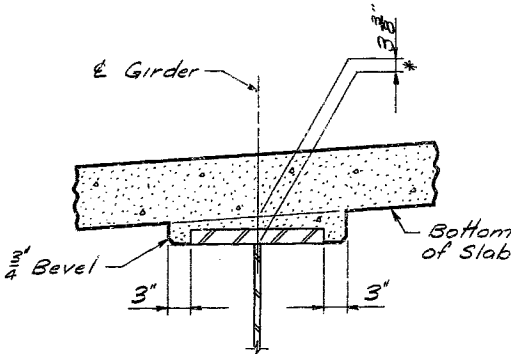
CAMBER DIAGRAM



SLAB POURING SEQUENCE



TYPICAL CONSTRUCTION JOINT



THEORETICAL SLAB HAUNCH

	SEQUENCE OF POURS			
	DIRECTION			
BASIC SEQUENCE	1	2	3	4
ALTERNATE "A" POURS	1 + 2	3	4	
ALTERNATE "B" POURS	1 + 2	3 + 4		
ALTERNATE "C" POURS	1 + 2 + 3 + 4			

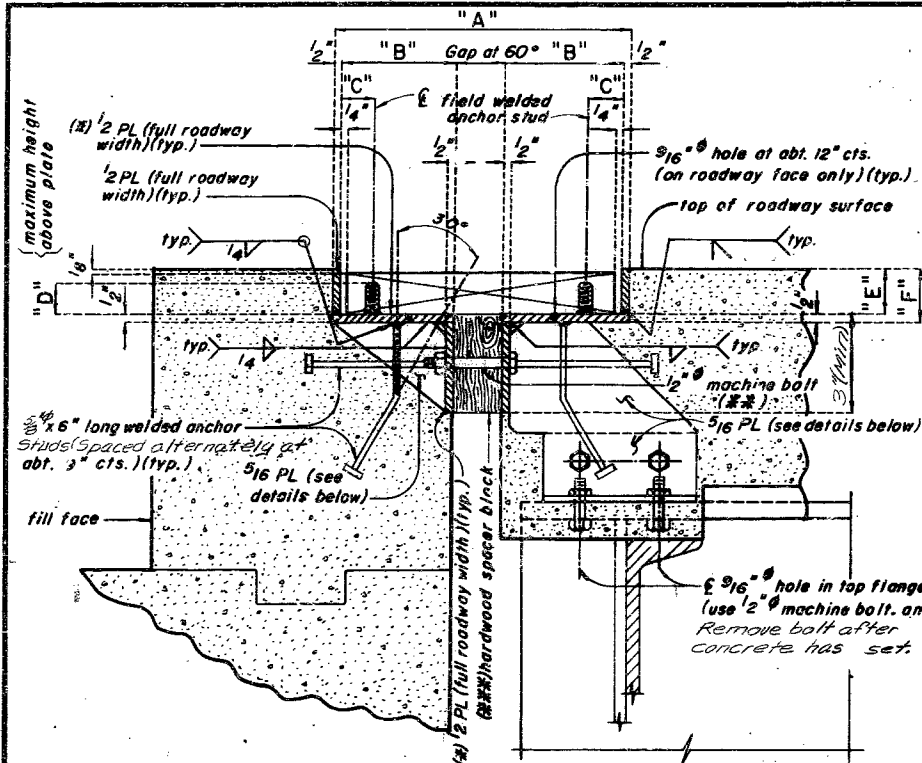
NOTES:
The contractor shall pour and satisfactorily finish the slab pours at a rate of not less than 37 cubic yards per hour unless he elects to use an approved retarder to retard the set of the concrete to 2.5 hours in which case he may reduce his pouring and finishing rate to not less than 25 cubic yards per hour.
* Dimension may vary if girder camber after erection differs from plan camber by more than the % of Dead Load Deflection due to the weight of Structural Steel. No payment will be made for additional forming on concrete required for variable haunching.
Camber includes allowance for dead load deflection due to concrete slab, curb, and structural steel.
24 % of dead load deflection due to weight of structural steel.

366203

MISSOURI STATE HIGHWAY DEPARTMENT

TABLE OF DIMENSIONS									
LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	FIELD WELDED ANCHOR STUDS SIZE SPA "G"
BENTS 1 & 5	Fel-Span T40 CS	2"	12"	4 1/2"	1 5/8"	1 1/2"	2 1/4"	2 3/4"	1/2" 12" 50
	On-Flex 35	2"	11 1/2"	4 1/4"	1 5/8"	1 1/4"	2 3/8"	2 7/8"	5/8" 12" 65
	Waco-Bendoflex 450	2"	11 1/2"	4 1/4"	1 5/8"	1 1/4"	2 3/4"	3 1/4"	1/2" 12" 50
	Acme Trojan TR400	2 1/2"	12"	4 1/4"	1 3/4"	1 1/8"	1 3/4"	2 1/4"	1/2" 12" 40
	Delastiflex LM300	2"	12 3/8"	4 1/4"	2 9/16"	1 1/8"	2 1/8"	2 5/8"	1/2" 9" 45
	Gen-Strip CCL 3	2 1/4"	11 3/4"	4 1/4"	1 3/4"	1 1/8"	1 3/4"	2 1/4"	5/8" 12" 65

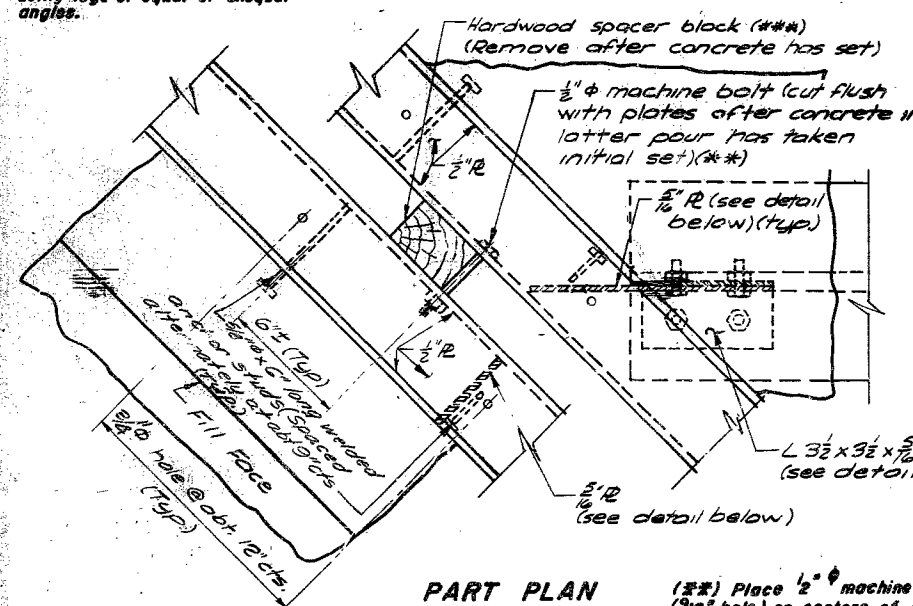
NOTE: All dimensions are at right angles. Expansion gap and dimension "A" shall be increased $\frac{1}{8}$ " for each 10° fall in temperature and decreased $\frac{1}{8}$ " for each 10° rise in temperature.



PART SECTION

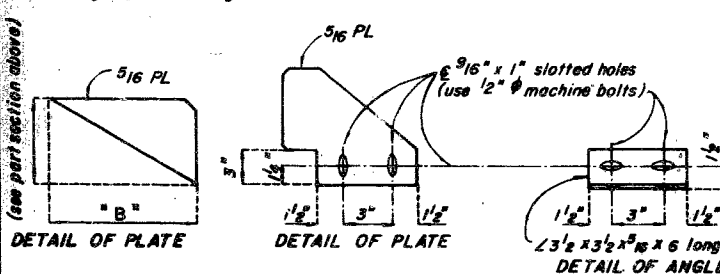
(*) these plates may be one piece by using legs of equal or unequal angles.

(***) (spacer may be a combination of a hardwood block and metal shims, (2"x3"))

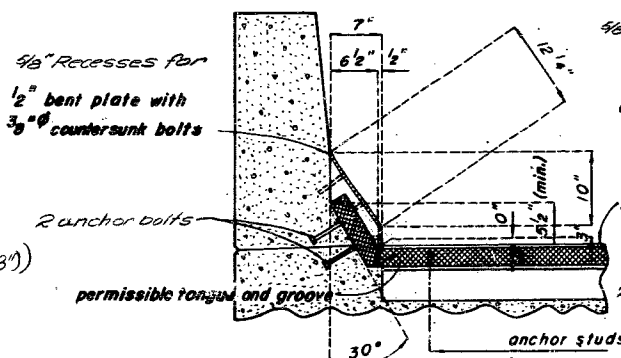


PART PLAN

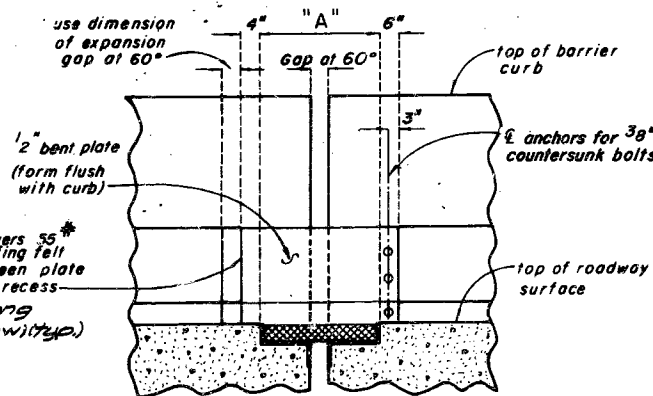
Note: 5/16 plates and angle placed at each girder or stringer.



DETAIL OF ANGLE



PART ELEVATION OF BARRIER CURB



NOTE: WHEN MODULAR UNITS ARE SPECIFIED AS IN ALTERNATE STEEL CURB PLATE TREATMENTS ARE REQUIRED.

ALTERNATE CURB TREATMENTS

General Notes:
The expansion joint shall be installed in accordance with the manufacturers instructions shown on the shop drawings and in accordance with the special provisions.

Anchor bolts in the barrier curb shall be cast in place, grouted or cone expansion type. Holes in the barrier 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.

Plates shall be field adjusted by adding or removing metal shims (2"x3") as required for temperature correction. The expansion gap shall be adjusted for any temperature correction prior to pouring top of bent backwall.

Contact surface of steel to aluminum shall be insulated with the material specified on the shop drawings.

Paint See 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 5 foot pounds a minimum of 30 minutes after initial tightening. The welded anchor studs shall be the reduced base type.

Material for the anchored joint shall be A-36 structural grade steel. Anchors for the armored joint shall be approved stud welded anchors (C1010 thru C1020).

Furnishing, painting and installing the structural steel armored joint and curb plates shall be included in the contract unit price for expansion joint seal.

Bolt cavities to be filled with approved sealant in compliance with manufacturers certification.

SEE FINAL PLANS

DETAILS OF EXPANSION JOINT SEAL AT BENTS NO. 1 & 5

Sheet No. 24 of 26

JEFFERSON COUNTY

A-3100

3670204

REVISIONS
SPS-ENR-BT
EB 1978

DETAILED Mar. 19 79, Balchaser
CHECKED Apr. 19 79, Steib

Booker
Engineers Architects Planners

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

368-205
 STEEL
 Gdr. Depth 40" and Over
 SPS-S.D.(MMS.)
 FEB. 1975
 REVISED
 SEPT. 1982

DETAILED Oct. 1985
 CHECKED 19

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

Sheet No. 25 of 26

STATE	PROJ NO	SHEET NO
MO		78

GENERAL NOTES:

SLAB DRAINS MAY BE FABRICATED OF EITHER 1/4" WELDED SHEETS OF A.S.T.M. A36 STEEL OR FROM 1/4" STRUCTURAL STEEL TUBING A.S.T.M. A500 OR A501.

OUTSIDE DIMENSIONS OF DRAINS ARE 8" x 4".

THE DRAINS SHALL BE CAST IN THE CONCRETE WITH THE TOP OF THE DRAINS BEING 1/4" BELOW THE FINISHED CONCRETE LINE.

LOCATE DRAINS IN THE SLAB BY DIMENSIONS SHOWN IN THE PART ELEVATION.

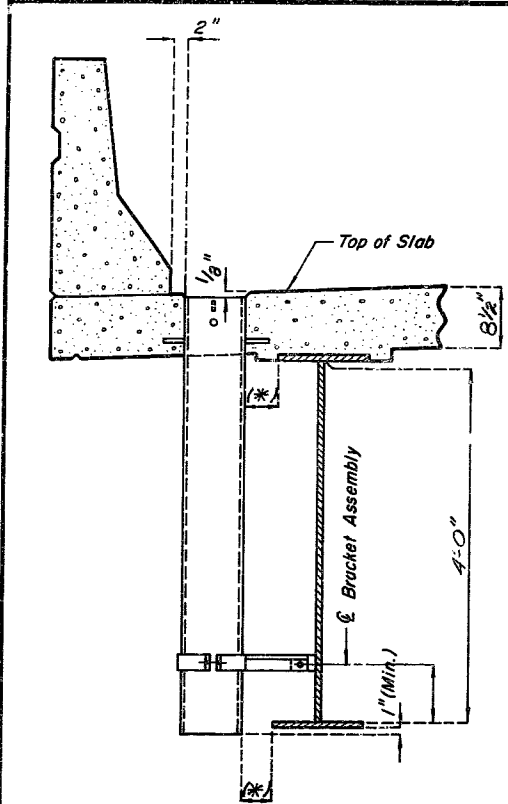
SHIFT REINFORCING IN FIELD WHERE NECESSARY TO CLEAR DRAINS.

THE DRAINS AND BRACKET ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A123.

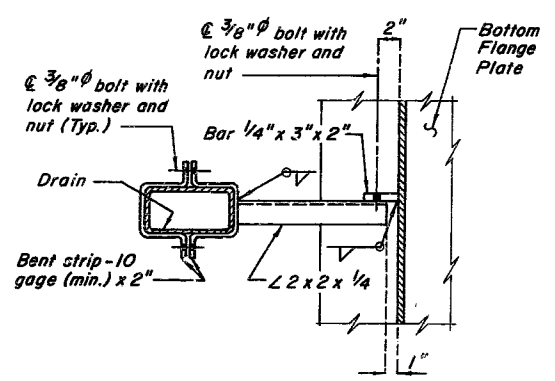
ALL BOLTS, LOCK WASHERS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

THE 1/4" x 3" x 2" BAP SHALL BE LOCATED ON THE PLATE GIRDER SHOP DRAWINGS.

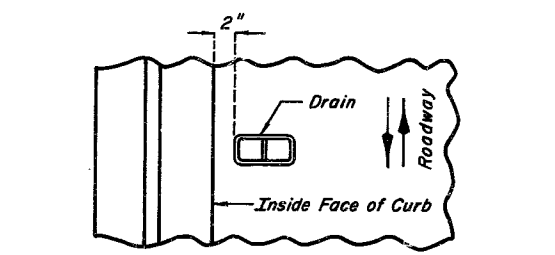
SHOP DRAWINGS WILL NOT BE REQUIRED FOR SLAB DRAINS AND BRACKET ASSEMBLY.



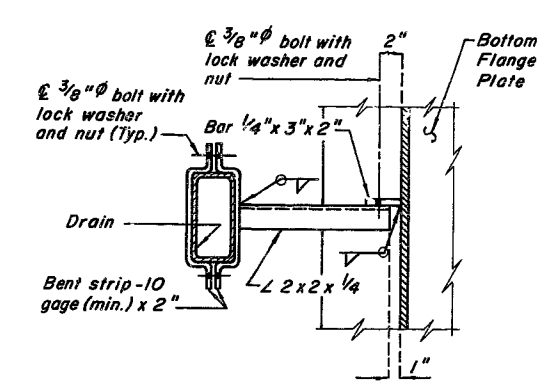
PART ELEVATION OF SLAB AT DRAIN
 (*) If dimension is less than 1", drains shall be placed parallel to roadway, otherwise place drains transverse to roadway.



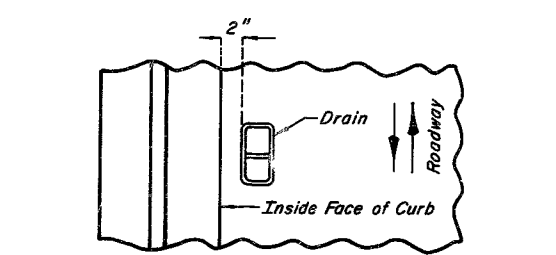
PART SECTION SHOWING BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN
DETAILS OF DRAINS TRANSVERSE TO ROADWAY

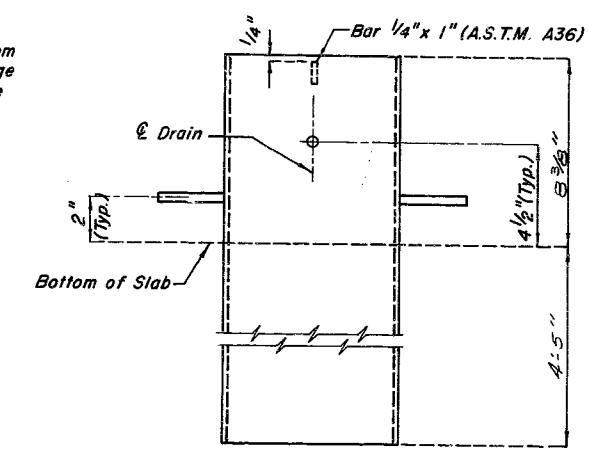


PART SECTION SHOWING BRACKET ASSEMBLY

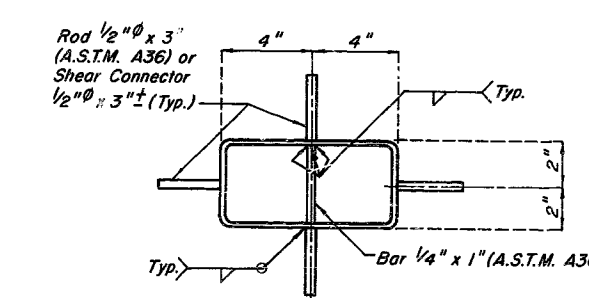


PART PLAN OF SLAB AT DRAIN
DETAILS OF DRAINS PARALLEL TO ROADWAY

SLAB DRAIN DETAILS

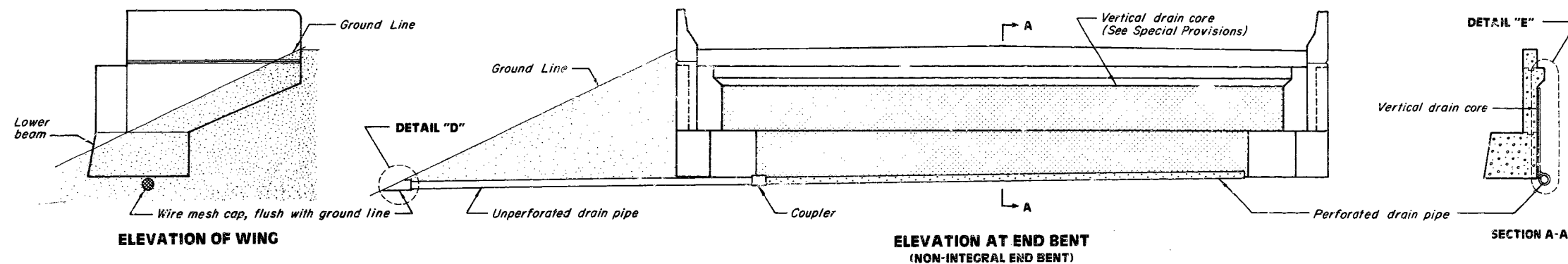


ELEVATION OF DRAIN



PLAN OF DRAIN

STATE	PROJ NO	SHEET NO
IAO		79

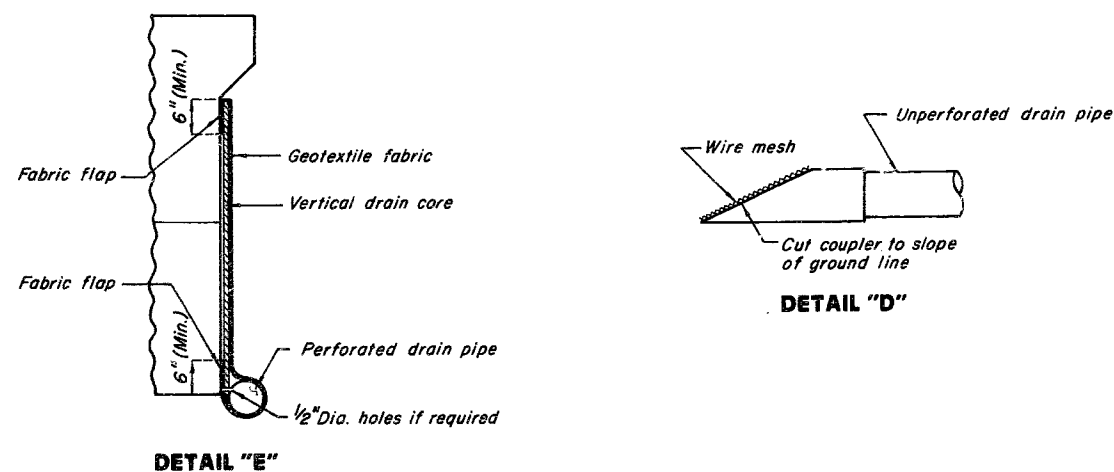
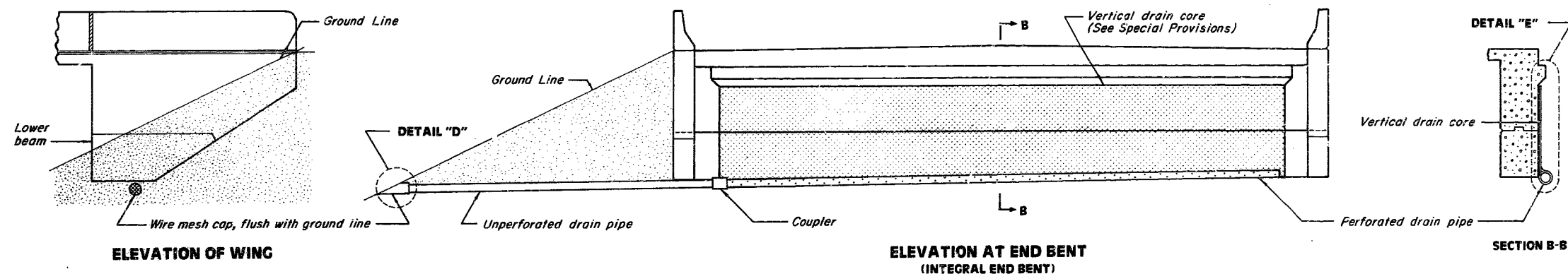


GENERAL NOTES:

DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC-COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1/4" (SEE ELEVATION AT END BENT)

PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.



ABUTMENT VERTICAL DRAIN

DETAILED FEB. 1987
CHECKED FEB. 1987

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

Sheet No. 26 of 26.

JEFFERSON COUNTY

A-3100

362 206

Revised
MARCH 1986
SEPT. 1986

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-2(23)	88	32	
SEC. 27	TWR. 43N.	RG. 5E.			

GENERAL NOTES:

DESIGN SPECIFICATIONS:

A.A.S.H.T.O. - 1983 and Interim Specifications thru 1985
Load Factor Design Substructure.

DESIGN LOADING:

H20-44
15#/Sq. Ft. Future Wearing Surface
Earth 120#/cu.ft. Equivalent Fluid Pressure 30#/cu.ft.
Fatigue Case II

DESIGN UNIT STRESSES:

Class B Concrete (Substructure) $f_c = 3,000$ psi
Class B2 Concrete (Superstructure except Safety Barrier Curb) $f_c = 4,000$ psi
Class B1 Concrete (Superstructure) $f_c = 4,000$ psi
Safety Barrier Curb $f_c = 4,000$ psi
Reinforcing Steel (Grade 60) $f_y = 60,000$ psi
Structural Steel (A57M, A-36) $f_y = 36,000$ psi
Steel Pipe Allowable End Bearing = 9,000 psi

JOINT FILLER:

All joint filler shall meet the requirements of Std Spec 1057.2.4, except as noted.

FIELD CONNECTIONS:

Field connections, High Strength Bolts $\frac{3}{4}"$ ϕ , holes $\frac{13}{16}"$ ϕ except as noted. "Turn of Nut Method of tensioning high PAINT: strength bolts will be permitted.

System B by contractor in accordance with Std Spec 712.12 (Color of final coat shall be green).

REINFORCING STEEL:

Minimum clearance to reinforcing steel shall be $1\frac{1}{2}"$, unless otherwise shown.

COMPACTED ROADWAY FILL:

Compacted roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25' in back of the fill face of the end bents before piles are driven for any bents falling within the embankment section.

EXISTING ROUTE 21 RELOCATION

CURVE DATA
PI Sta. 890+97.00
 $\Delta = 33^\circ 24' 00"$ LT.
 $R = 30^\circ 30' 00"$
 $R_c = 1637.02$ (Arc)
 $L = 804.29'$
 $E = 566.30'$
 $S.E. = 150.0'$
 $SE = 0.06/\text{ft.}$
 $W = \text{None}$

PROPOSED ROUTE 21

CURVE DATA
PI Sta. 144+52.37
 $\Delta = 16^\circ 00' 00"$ LT.
 $R = 1^\circ 00' 00"$
 $R_c = 5729.58'$
 $L = 805.24'$
 $E = 1600.00'$
 $S.E. = 0.025/\text{ft.}$
 $W = \text{None}$
 $PC = 136+47.13$
 $PT = 152+47.13$

BORING DATA

*Indicates location of Borings. For Boring Data, see Sheet No's 2 thru 40-26

BENCH MARKS

"Chisel Square" - Northwest corner of Bridge on top of Barrier Wall. Elev. 764.57

"Chisel Square" - Southeast corner of Bridge on top of Barrier Wall. Elev. 768.16

SUBMITTED BY:

Ronald D. Williams
REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. E-14673



BRIDGE: EXISTING RTE. 21 OVER RTE. 21

STATE ROAD FROM OTTO TO RTE 141

ABOUT 3 MILES SOUTH OF ROUTE 141

PROJECT NO: F-21-2(23) STA. 143+06.77

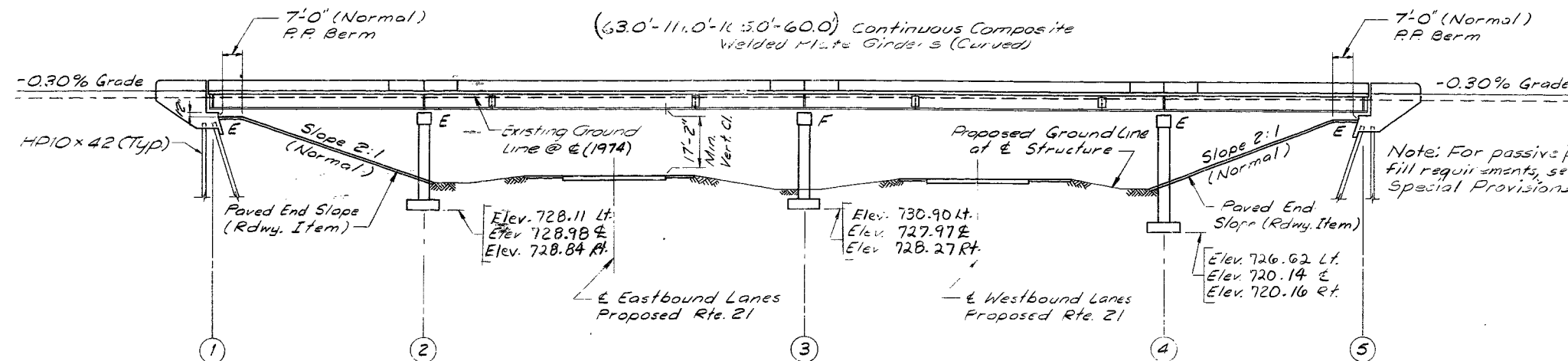
JOB NO. 6-U-21-256B RTE. 21

JEFFERSON COUNTY

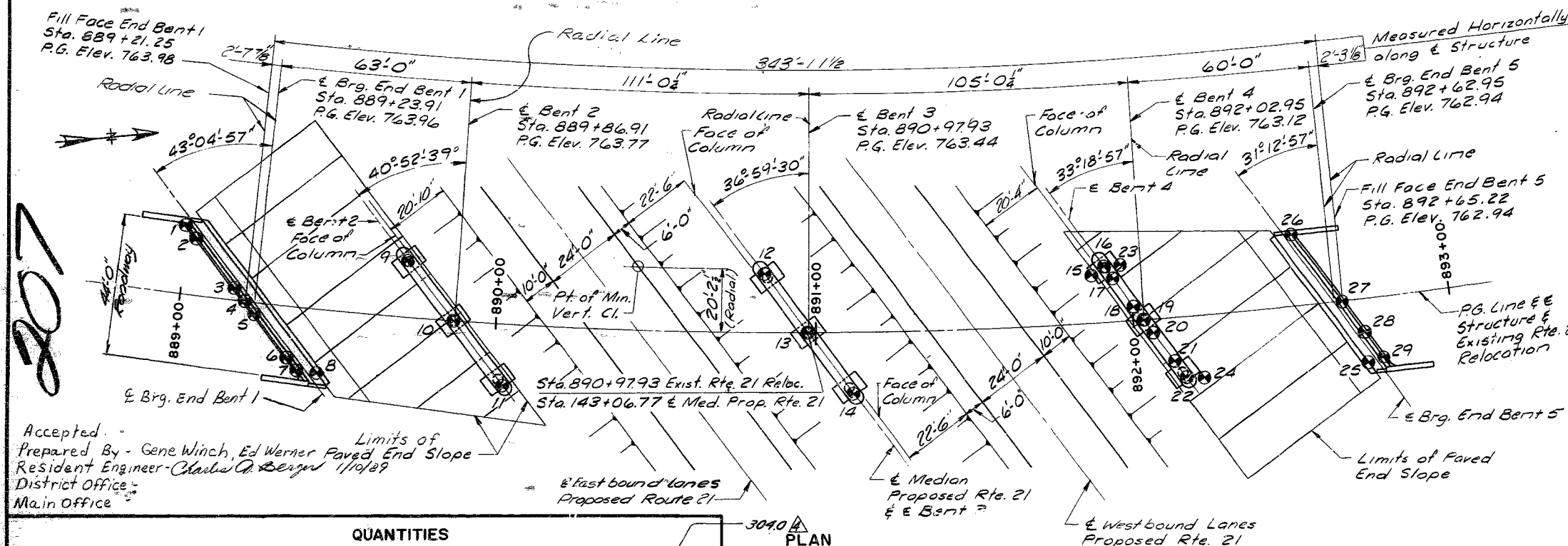
DATE 3/12/87

STD. 611.60
STD. 706.35
A-3100

Revised 11-10-87
Sheet No. 1A of 26, Revised 10-16-87



ELEVATION



PLAN

QUANTITIES

ITEM	UNIT	SUBSTR.	SUPERSTR.	TOTAL
Class I Excavation	CU YD	481.5		481.5
Sub Drains	Each		12	12
Structural Steel Piles (HPI0 x 42)	Unit	790		790
Class B Concrete (Substructure)	CU YD	307.7		307.7
Class B2 Concrete (Superstructure)	CU YD		443.4	443.4
Test Holes - (Cont.)	Line ft	36		36
Pot Bearings	Each		0	0
Elastomeric Expansion Joint	Lin. ft		112	112
Seal (3.0 inches)	Lin. ft		112	112
Reinforcing Steel (Grade 60)	Lbs	38,530		38,530
Reinforcing Steel (Grade 60) (Epoxy coated)	Lbs	2490	124,760	127,250
Fabricated Structural Carbon Steel (A-36)	Lbs		462,460	462,460
Painting (System B) Green	Sq. Yd		230.4	230.4
Class B1 Concrete (Barrier Curb)	CU YD		0	0
Abutment Vertical Drains	Unit		1	1
Class I Excavation + 25% (Cont.)	CU YD	21.0		21.0
SLIP FORM Barrier Curb (Class B1 Conc.) (CONT.)	CU YD		70.8	70.8

DESIGNED Jan. 19 79 Steib
DETAILED Jan. 19 79 Cooper
CHECKED Mar. 19 79 Steib

Booker
Engineers Architects Planners

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

QUANTITIES (CONT.)

ITEM		Unit	Substr.	Superstr.	Total
Pot Bearings - Special - (Cont.)		Each		30	30

PILE & FOOTING DATA TABLE						
BEARING PILES	BENT NO.	1	2	3	4	5
	PILE TYPE & SIZE	HP10 X 42	_____	_____	_____	HP 10 X 42
	NUMBER	9	_____	_____	_____	9
	APPROXIMATE LENGTH FT.	31	_____	_____	_____	37
	DESIGN BEARING TONS	55.5	_____	_____	_____	53.6
	HAMMER ENERGY REQUIRED FT. LBS.	13,100	_____	_____	_____	12,600
	SPREAD FOOTINGS	FOUNDATION MATERIAL	_____	ROCK	ROCK	ROCK
	DESIGN BEARING TONS/SQ. FT.	_____	120	110	113	_____

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

MISSOURI STATE HIGHWAY DEPARTMENT

FINAL PLAN

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-1-2(23)	18	33	

COMPLETE BILL OF REINFORCING STEEL

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	GRADE (H)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
END BENT 1																									
12	2 P1	AB Well	H22	X				1	3									230	46						
1	G H1	** Backwall	H20	X				30	9									309	46						
3	G H2	** "	H20	X				29	9									299	135						
1	G H3	** "	H20	X				34	9									349	52						
1	G H4	** "	H20	X				35	9									359	53						
4	H5	"	H20	X				30	9									309	82						
4	H6	"	H20	X				29	9									299	79						
4	H7	"	H20	X				33	3									333	89						
4	H8	"	H20	X				34	3									343	92						
2	H9	Bearing Seat	H20	X				5	0									50	7						
6	H10	"	H20	X				12	9									129	51						
2	H11	"	H20	X				6	2									62	8						
2	H12	"	H20	X				8	6									86	11						
8	H13	"	H17	X				30	7									310	866						
8	H14	"	H17	X				37	0									383	1040						
2	H15	"	H20	X				30	6									306	92						
2	H16	"	H20	X				35	0									350	105						
2	H17	Apronwall	H20	X				33	6									336	45						
2	H18	"	H20	X				29	6									296	39						
8	H19	Wingwall	H20	X				14	7									147	175						
8	H20	"	H20	X	V	2		14	0								140	190	228						
		Incr. = 3'-0"						5	0									50							
8	H21	Wingwall	H20	X	V	2		14	0								140	203	243						
		Incr. = 2'-7"						6	3									63							
4	H22	Backwall	H15	X				1	0	6	9	1	0	4	11	4	118	98	53						
4	H23	"	H15	X				1	0	3	2	1	0	11	4	11	4	5	25						
8	H24	"	H20	X				6	2									62	33						
8	H25	"	H20	X				4	6									46	24						
120	SV1	** "	H20	X				6	11									611	866						
12	SV2	Wingwall	H20	X	V	1		5	3								537	9	140						
		Incr. = 3"						2	6									26							
12	SV3	Wingwall	H17	X	V	1		5	1								598	9	158						
		Incr. = 3"						2	4									30							
3	SV4	Wingwall	H20	X				6	6									66	29						
3	SV5	"	H17	X				6	4									70	32						
2	SV6	"	H20	X				5	3									53	7						
2	SV7	"	H19	X				5	9	5	0						109	10	7						
2	SV8	Bearing Seat	H20	X				3	9									39	11						
12	SV9	Wingwall	H20	X	V	1		5	5								558	1	146						
		Incr. = 3'						8										28							
12	SV10	Wingwall	H17	X	V	1		5	3								511	9	164						
		Incr. = 3"						2	6									32							
4	SV11	Wingwall	H20	X				6	9									69	41						
4	SV12	"	H17	X				6	7									73	44						
2	SV13	"	H20	X				5	6									56	7						
2	SV14	"	H19	X				6	9	6	10						137	13	5						
2	SV15	Bearing Seat	H20	X				6	0									60	18						
60	SV16	** Backwall	H10	X				1	8									4	13						
30	SV17	Bearing Seat	H10	X				6	3									4	23						
54	SV18	"	H13	X				4	2	3	9	5	1	3	8			175	17						
54	SV19	"	H13	X				2	3	0	9	2	3	2	24	62		545	1						
9	SV20	"	H10	X				1	11	3	3							7	16						
5	SV21	"	H6	X				5	9	2	9	5	0					136	13						
5	SV22	"	H14	X				4	11	2	9	2	0					69	8						
2	SV23	Wingwall	H25	X				1	3	11	4	2	2					2	9						
2	SV24	"	H25	X				1	3	11	2	2	2					3	1						
Total End Bent 1																									
Total Epoxy Coated																									
Total Non Epoxy Coated																									

NO. REQD.	MARK NO.	MARK	LOCATION	GRADE 60(H)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
										B		C		D		E		F		H					K	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
BENT 2																										
12	2	P1	A.B. Well	H22	X				1	3		9 1/2							230	46						
			Δ 5																							
104	4	U10	Beam	H13	S	X			1	10	3	0	1	10	3	0			10 5	10 1	701					
32	4	U11	"	H10	X						1	0	2	11					3 11	3 8	52					
2	4	U9	"	H10	X						1	0	2	7 1/2					3 7 1/2	3 4 1/2	5					
8	7	H24	Beam	H7	X				3	11	2	10							9 5	9 4	153					
4	5	H25	"	H20	X				10	9										10 9	45					
16	5	H26	"	H20	X				12	4										12 4	206					
4	5	H27	"	H20	X				2	3										2 3	9					
2	11	H28	"	H18	X				54	4										576	611					
2	11	H29	"	H20	X				18	0										18 0	191					
2	11	H30	"	H18	X				57	0										602	639					
2	6	H31	"	H20	X				54	4										54 4	163					
6	10	H32	"	H20	X				54	4										54 4	1403					
69	4	V16	Column	H16	X				2	9									9 8	9 6	438					
13	8	V17	"	H20	X				24	3										24 3	242					
13	8	V18	"	H20	X				25	3										25 3	876					
13	8	V19	"	H20	X				26	3										26 3	911					
39	8	O1	Column	H20	X				6	4										6 4	659					
15	5	F1	Footing	H18	X				5	6										6 8	104					
15	5	F2	"	H20	X				4	6										4 6	70					
Total Bent 2 =																		3547	5							
BENT 3																										
12	2	P1	A.B. Well	H22	X				1	3		9 1/2								230	46					
			Δ 5																							
116	4	U10	Beam	H13	S	X			1	10	3	0	1	10	3	0			10 5	10 1	731					
32	4	U11	"	H10	X						1	0	2	11					4 0	3 10	82					
2	4	U9	"	H10	X						1	0	2	7 1/2					3 7 1/2	3 4 1/2	5					
8	7	H24	Beam	H7	X				3	11	2	10							9 5	9 4	153					
4	5	H27	"	H20	X				2	3										2 3	9					
4	5	H33	"	H20	X				10	4										10 4	113					
16	5	H34	"	H20	X				11	9										11 9	196					
2	11	H35	"	H18	X				51	6										548	581					
2	11	H36	"	H20	X				17	0										17 0	181					
2	11	H37	"	H18	X				54	2										574	609					
2	6	H38	"	H20	X				51	6										51 6	155					
6	10	H39	"	H20	X				51	6										51 6	1330					
65	4	V16	Column	H16	X				2	9									9 8	9 6	412					
13	9	V20	"	H20	X				22	3										22 3	783					
13	9	V21	"	H20	X				23	3										23 3	1028					
13	9	V22	"	H20	X				26	3										26 3	1160					
39	9	O2	Column	H20	X				7	11										7 11	1050					
24	5	F1	Footing	H18	X				5	6										6 8	167					
15	5	F3	"	H20	X				5	6										5 6	86					
Total Bent 3 =																		9016								

MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

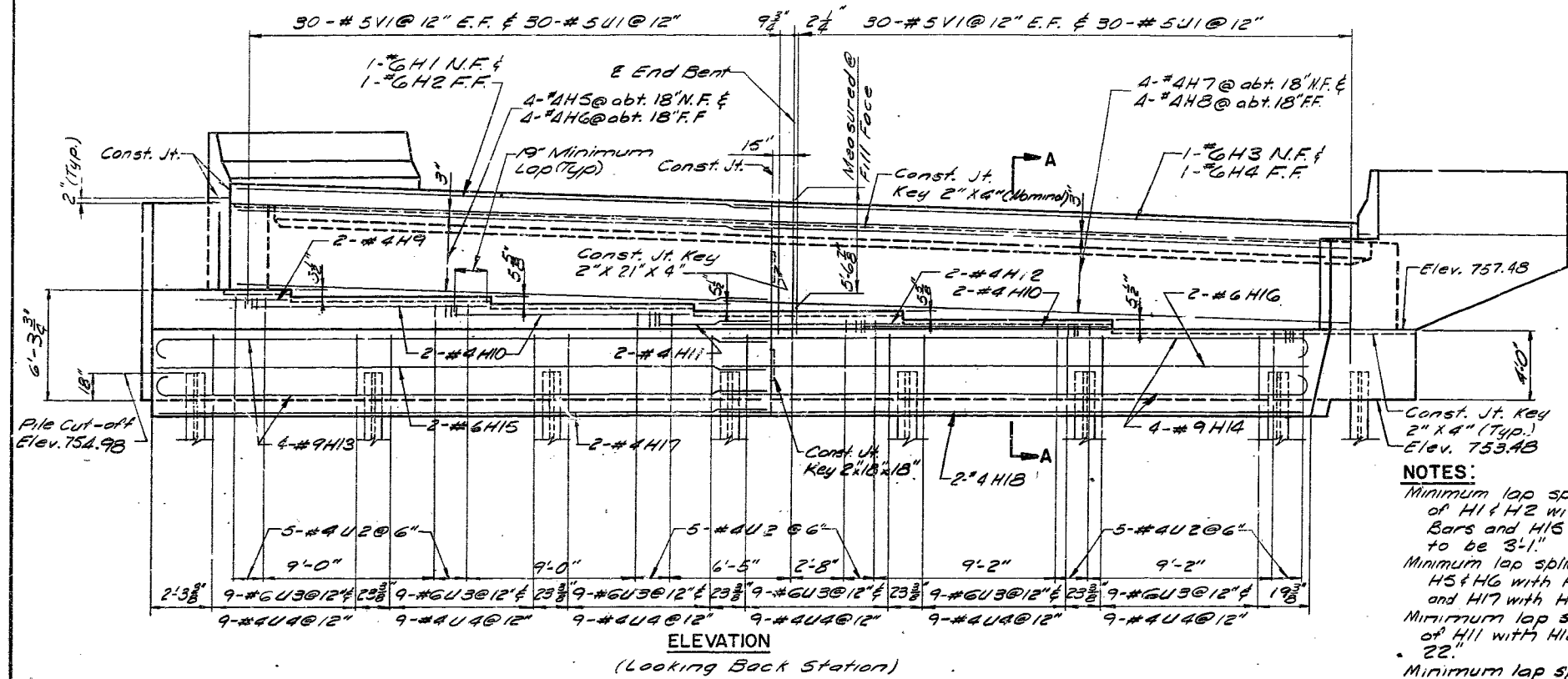
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	GRADE/SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS										NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT				
								B		C		D		E		F					H		K	
								FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.
BENT 4																								
12	2	P1	A.B. Well	H22	X		1	3	9 1/2									230	46					
96	4	U10	Beam	H13	S	X	1	10	3	0	1	10	3	0				10	5	10	1094			
32	4	U11	"	H10	X				1	0	2	11						4	0	3	10	82		
2	4	U9	"	H10	X				1	0	2	7 1/2						3	7 1/2	3	4 1/2	5		
8	7	H24	Beam	H7	X		3	11	2	10								9	5	9	4	153		
4	5	H27	"	H20	X		2	3										2	3			9		
4	5	H40	"	H20	X		10	0										10	0			42		
16	5	H41	"	H20	X		11	3										11	3			188		
2	10	H42	"	H18	X		49	4										52	2			449		
2	10	H43	"	H20	X		16	6										16	6			142		
2	10	H44	"	H18	X		52	0										54	0			472		
2	6	H45	"	H20	X		49	4										49	4			148		
6	9	H46	"	H20	X		49	4										49	4			1006		
8	4	V16	Column	H16	X		2	9										9	8	9	6	533		
13	8	V23	"	H20	X		23	6										23	6			816		
2	6	V24	"	H20	X		32	7										32	7			2262		
3	8	D1	Column	H20	X		6	4										6	4			659		
15	5	F1	Footing	H18	X		5	6														647		
13	5	F2	"	H20	X		4	6										4	6			104		
5	5	F4	"	H20	X		5	6										5	6			29		
																		Total Bent 4 = 7833						

NO. REQD.	MARK NO.	LOCATION	GRADE/SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS										NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT				
								B		C		D		E		F					H		K	
								FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.
END BENT 5																								
12	2	P1 A.B. Well	H22	X			1	3	9									230	46					
8	4	H48 Backwall	H20	X			53	6										536	286					
8	4	H49 Bearing Seat	H20	X			11	1										11	59					
2	4	H50 "	H20	X			3	11										3	11	5				
8	9	H51 "	H18	X			52	7										551	1498					
2	6	H52 "	H20	X			52	7										527	158					
4	4	H53 "	H20	X			52	7										527	141					
8	6	H54 Wingwall	H20	X			14	5										14	5	173				
8	6	H55 "	H20	XV	2		13	9 1/2										13	10	234				
		Incr. = 2'-8 3/4"					5	8 1/2										5	8					
8	6	H56 Wingwall	H20	XV	2		13	9										13	9	222				
		Incr. = 3'-0"					4	9										4	9					
4	6	H57 Backwall	H15	X			1	0	6	2	1	0	5 1/2	10 3/4	5 1/2	10 3/4	8	2	8	1	49			
4	6	H58 "	H15	X			1	0	3	7	1	0	9 1/2	7	9 1/2	7	5	7	5	6	33			
2	6	H47 **	H20	X			51	3										51	3	154				
10	3	V1 ** Backwall	H20	X			6	11										6	11	743				
2	4	V6 Wingwall	H20	X			5	3										5	3	7				
2	4	V13 "	H20	X			5	6										5	6	7				
12	6	V25 "	H20	XV	1		5	4										5	4	7	11	143		
		Incr. = 3"					2	7										2	7					
12	6	V26 Wingwall	H17	XV	1		5	2										5	10	8	11	161		
		Incr. = 3"					2	5										3	1					
4	6	V27 Wingwall	H20	X			6	10										6	10	41				
4	6	V28 "	H17	X			6	8										7	4	44				
2	4	V29 "	H19	X			6	0	4	6								10	6	10	4	14		
2	6	V30 Brg. Seat	H20	X			5	4										5	4	16				
12	6	V31 Wingwall	H20	XV	1		5	1 1/2										5	1	7	8	138		
		Incr. = 2'-3/4"					2	6 1/2										2	7					
12	6	V32 Wingwall	H17	XV	1		4	11 1/2										5	7	8	8	156		
		Incr. = 2'-1/2"					2	4 1/2										3	1					
4	6	V33 Wingwall	H17	X			6	4										7	0	42				
2	4	V34 "	H19	X			5	7	5	6								11	1	10	11	15		
2	6	V35 Bearing Seat	H20	X			3	0										3	0	9				
4	6	V36 Wingwall	H20	X			6	6										6	6	39				
5	1	U1 ** Backwall	H10	X				1	8	9								4	1	3	10	204		
30	4	U11 Bearing Seat	H10	X				6	2	11								3	1	3	8	73		
48	6	U12 "	H13	S	X		3	11	3	1	4	8	3	0				15	5	15	1	1087		
48	4	U13 Apronwall	H33	X			2	8	0	9	2	8	2	7	7 1/2			6	1	5	10	187		
7	6	U16 Bearing Seat	H10	X				1	11	4	11							8	9	8	5	83		
5	3	U17 "	H6	X			5	7	2	9	4	8						13	0	12	7	168		
5	3	U18 "	H14	X			4	6	2	9	2	7			1	2 1/2	2	3 1/2	9	10	9	7	128	
7	6	U100 "	H10	X				3	9	3	0							10	6	10	2	107		
2	6	T3 Wingwall	H25	X			1	3	11	3	2	2			3	0	3	10	10	14	8	14	6	44
2	6	T4 "	H25	X			1	3	10	10	2	2			2	8	10	6	14	3	14	1	42	
8	4	H61 Wingwall	H20	X			4	0										4	0	21				
8	4	H62 "	H20	X			5	0										5	0	27				
7	6	H100 Beam Seat	H20	X			7	9										7	9	8				
Total End Bent 5																								
Total Epoxy Coated																								
Total Non-Epoxy Coated																								

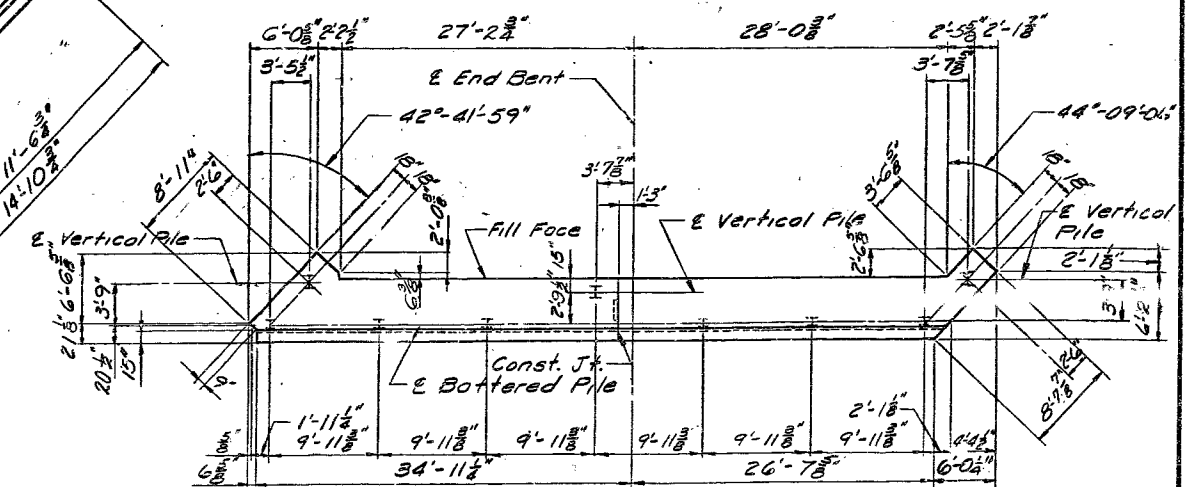
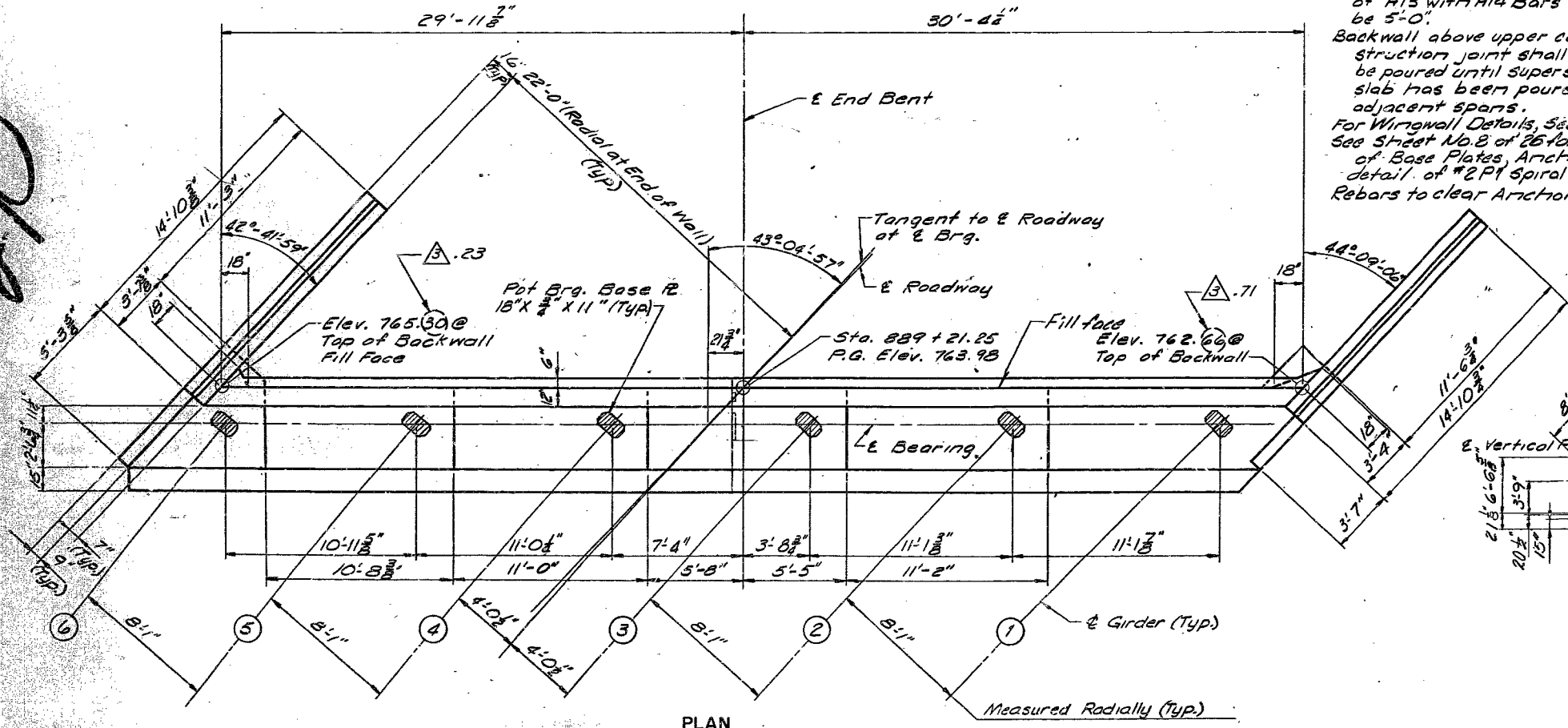
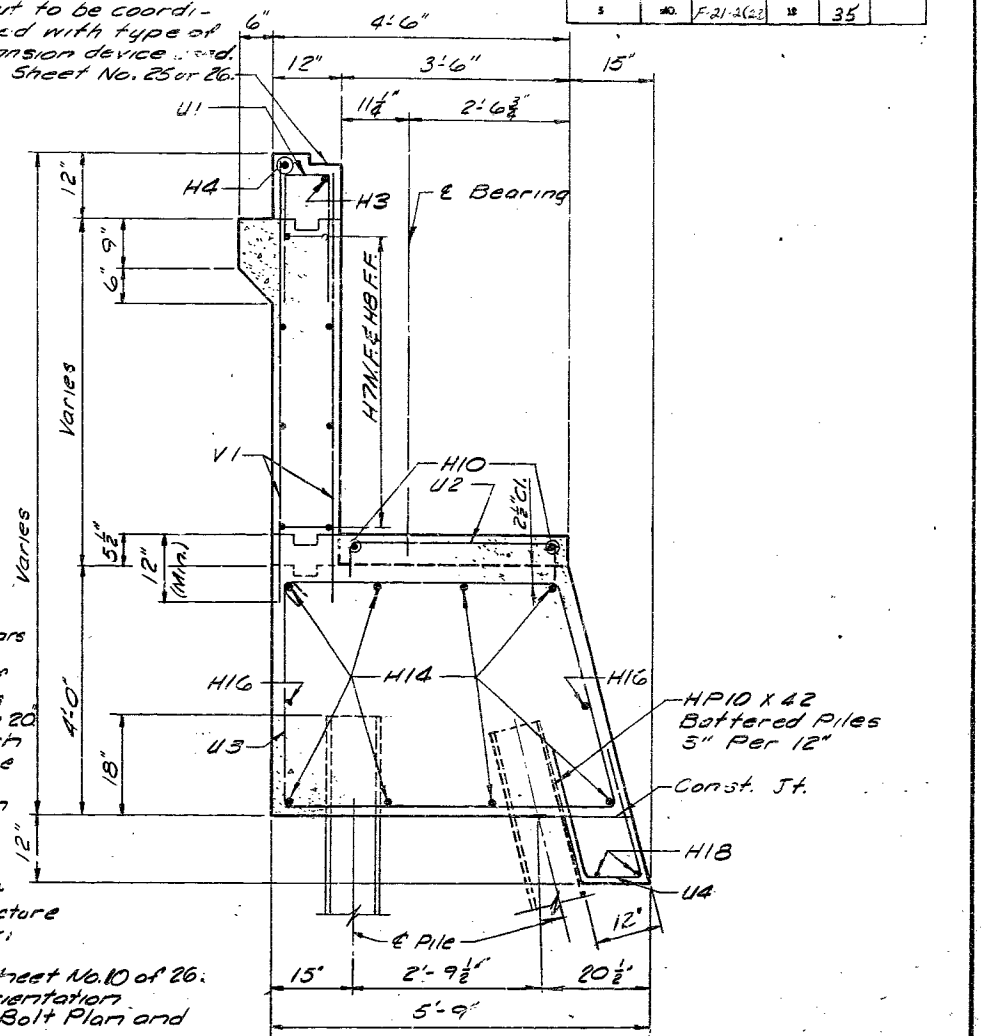
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-2(23)	18	35	



Blockout to be coordinated with type of expansion device used. See Sheet No. 25 or 26.

NOTES:
 Minimum lap splice length of H1 & H2 with H3 & H4 Bars and H15 with H16 Bars to be 3'-1".
 Minimum lap splice length of H5 & H6 with H7 & H8 Bars and H17 with H18 Bars to be 2'-0".
 Minimum lap splice length of H11 with H12 Bars to be 2'-0".
 Minimum lap splice length of H13 with H14 Bars to be 5'-0".
 Backwall above upper construction joint shall not be poured until superstructure slab has been poured in adjacent spans.
 For Wingwall Details, See Sheet No. 10 of 26.
 See Sheet No. 8 of 26 for orientation of Base Plates, Anchor Bolt Plan and detail of #2 Pl Spiral Bars.
 Rebars to clear Anchor bolt by 1/2".



END BENT I DETAILS

DETAILED Feb. 1979 Ball
 CHECKED Mar 1979 Steib

Booker
 Engineers Architects Planners

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

Sheet No. 9 of 26. Revised 9-15-87

JEFFERSON COUNTY

A-3100

FINAL PLANS

SECTION A-A

SECTION C-C

FOOTING DETAILS

3'-0"

Diameter

1/16"

1/2" C.C.

V20, V21 or V22

SECTION B-B

BENT 3

A-3100

Booker
Engineers Architects Planners

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

Sheet No. 12 of 26. Δ Revised Nov. 10, 1987

JEFFERSON COUNTY

[illegible]

Hand-drawn engineering plan view of a bridge girder and bent. The drawing shows a horizontal girder with various components labeled and dimensioned. Key features include:

- 1** Girder (Typ.) at the left end.
- 2** 2-H42, 2-H43, 2-H44 (Top), 2-H45 (Side), 6-H46 (Bottom) in the middle section.
- 3** Bent, Footing, & Bearing at the right end.
- 4** Pot. Bearing Base 16" x 4" x 26" (Typ.)
- 5** Remove & Column & Footing
- 6** & Bent, Footing, & Bearing

Dimensions and notes include:

- Overall length: 26'-3"
- Overall length: 20'-6"
- Dimensions: 9'-9", 7'-6", 9'-8", 7'-0", 6'-10", 2'-10", 9'-8", 9'-8", 4'-1", 5'-0", 1'-9", 3'-2", 6'-0" (Typ.)
- Notes: "Symm. abt. & Bent, (Column & Footing) except as shown", "16" x 4" L111 Under bearings Space as shown", "Pot. Bearing Base 16" x 4" x 26" (Typ.)", "& Bent, Footing, & Bearing"

Hand-drawn structural drawing of a column section showing reinforcement details. The drawing includes dimensions for overall width (3'-2"), height (Varies), and reinforcement layout. Key labels include H42, H43, H44, H45, H46, 5 Sp. @ 6", 1/2" C.I. (Min.), 1/2" C.I. (Typ.), and 4" dimensions for top and bottom reinforcement.

A hand-drawn diagram of a circular component, likely a wheel or a disk. The diagram includes the following labels and dimensions:

- 3'-0"**: A dimension at the top indicating the overall diameter.
- Diameter**: A label pointing to the top dimension line.
- V16**: A label pointing to a small feature on the upper left rim.
- 1/2" Cl.**: A label pointing to a small feature on the lower left rim.
- V23 or V24**: A label pointing to a small feature on the lower right rim.

The circular component has a textured interior and a series of small dots along its circumference.

Foundation Plan of a building. The plan shows a central column and footing, surrounded by various beams and footings. The dimensions and structural details are as follows:

- Central Column and Footing:** A square footing with a side length of 6'-0". The column is located at the center.
- Beams and Footings:**
 - Top Beams:** Two beams, each 3'-0" wide, separated by a 5'-0" gap. They are supported by 2'-6" wide footings.
 - Right Beams:** A series of beams labeled 5'-5-F2 @ 15", 5'-5-F4 @ 15", and 5'-5-F1 @ 15". They are supported by 6'-0" wide footings.
 - Bottom Beams:** A series of beams labeled 5'-5-F1 @ 12', 5'-5-F1 @ 15", and 5'-5-F1 @ 15". They are supported by 6'-0" wide footings.
- Structural Details:**
 - Bent & Footing:** Indicated by a line pointing to the central column and footing.
 - Column & Footing:** Indicated by a line pointing to the central column and footing.
- North Arrow:** A north arrow is located near the center of the plan, pointing towards the top right.

Diagram of a frame structure. The horizontal span is 6'-0". The vertical height is 5'-4 5/8" (1st floor), 3'-10 5/8" (2nd floor), and 4'-10 5/8" (3rd floor). A point load of 20 is applied at the top right corner. The structure is supported by a fixed base at the bottom left and a roller support at the bottom right.

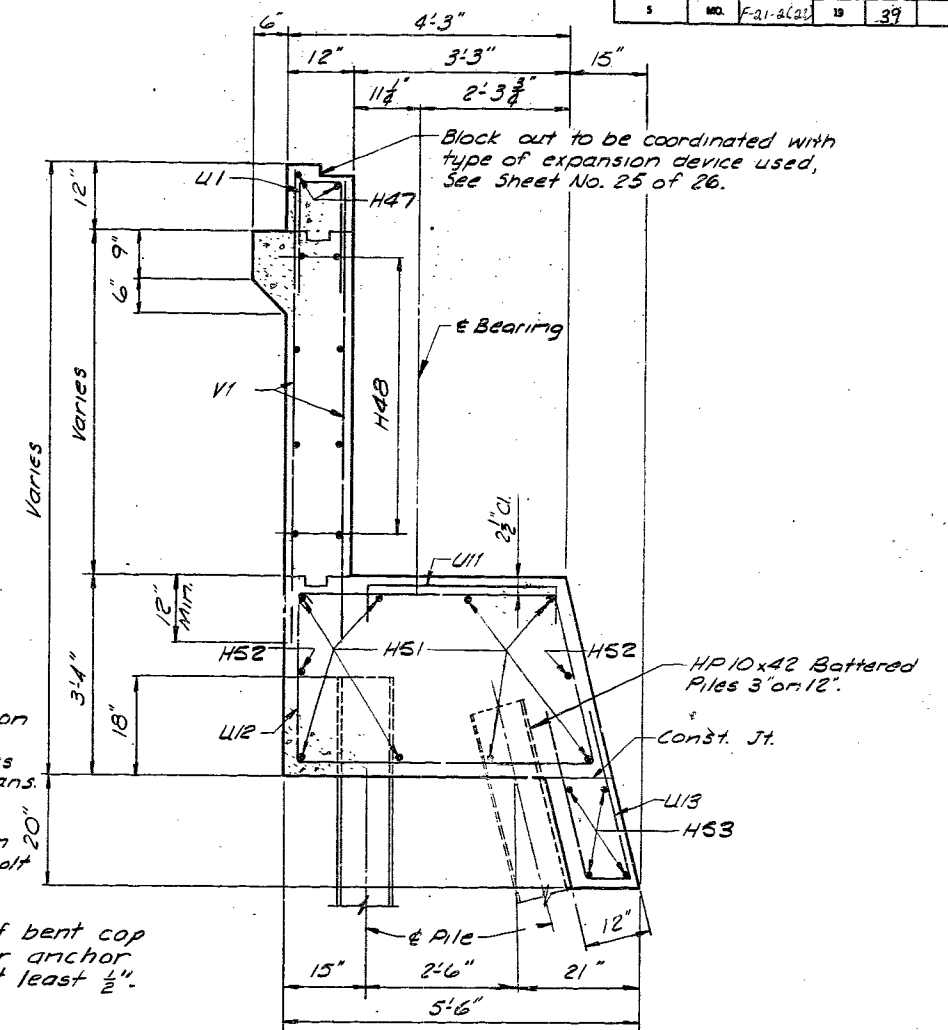
NOTES
For orientation of Base Plates see
Anchor Bolt Layout, Sheet No. 8 of 26.
See Sheet No. 8 of 26 for Anchor Bolt
Plan and detail of #2 F1 Spiral Bars.
All reinforcing bars in tops of Bent
Caps shall be spaced to clear Anchor
Bolts for bearings by at least $\frac{1}{2}$ ".

BENT 4

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

[illegible]

All reinforcing bars in top of bent cap shall be spaced to clear anchor bolts for bearings by at least $\frac{1}{2}$ ".

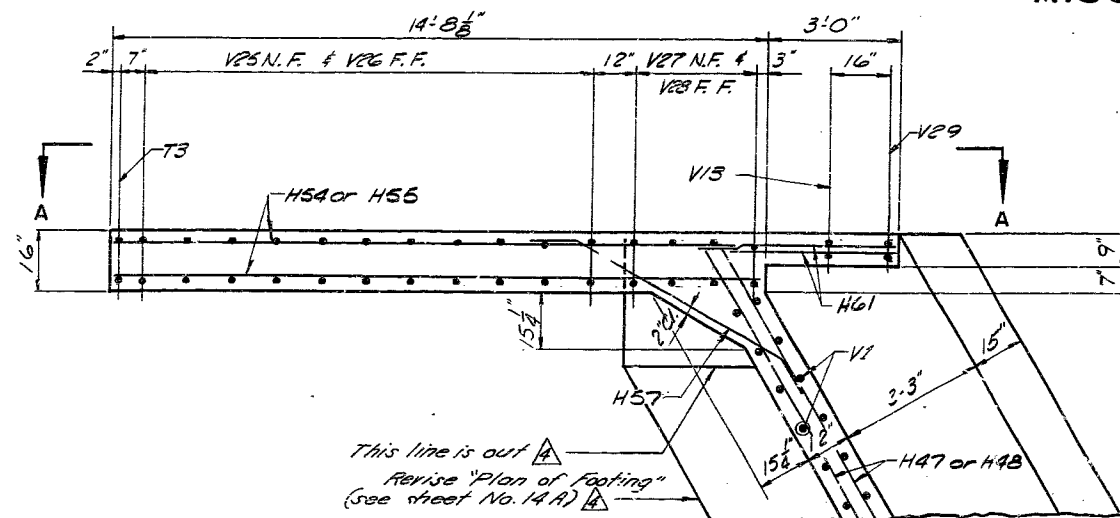
[illegible][illegible]

END BENT 5 DETAILS

A-3100

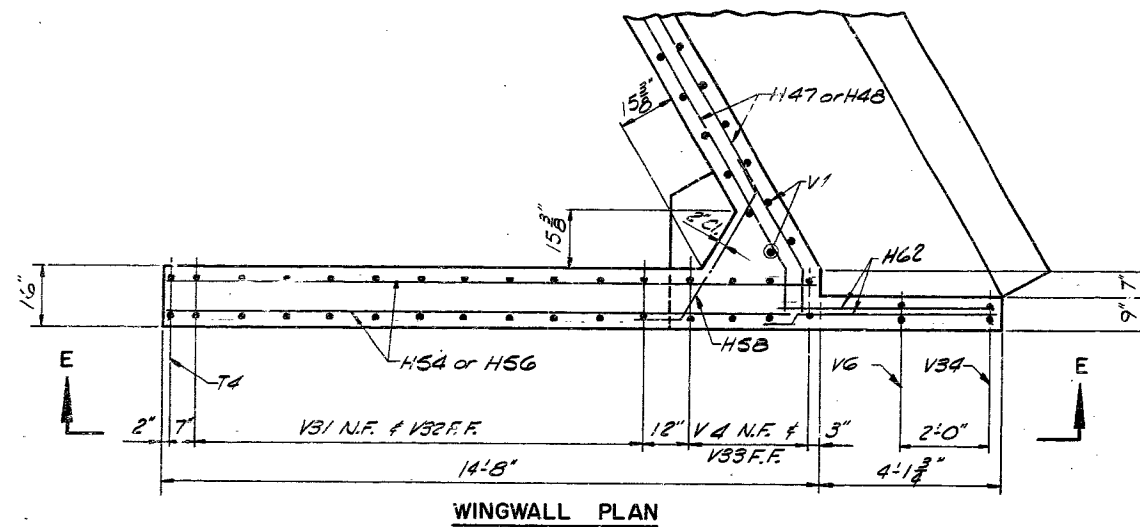
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-6(23)	8	41	

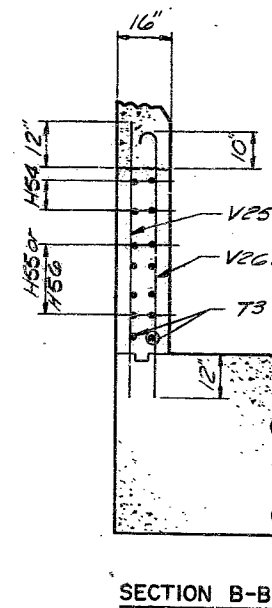


NOTES:
 All Reinforcement Steel shall be 1/2" clear unless otherwise noted.
 For Corner Dimensions and Reinforcement See Sheet No. 22 of 26.
 Field Bending shall be required at wings for H47 & H48 Bars in backwall.

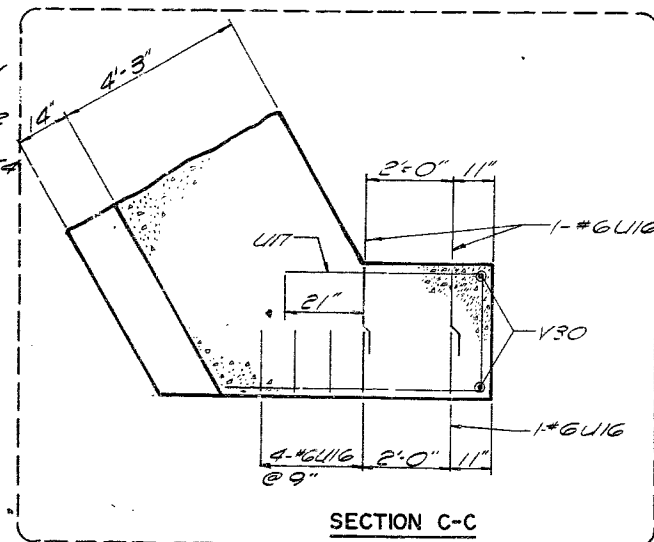
This line is out 1/4"
 Revise "Plan of Footing"
 (see sheet No. 14A)



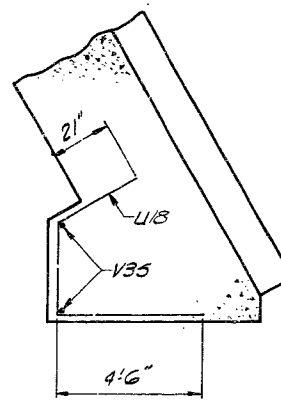
WINGWALL PLAN



SECTION B-B

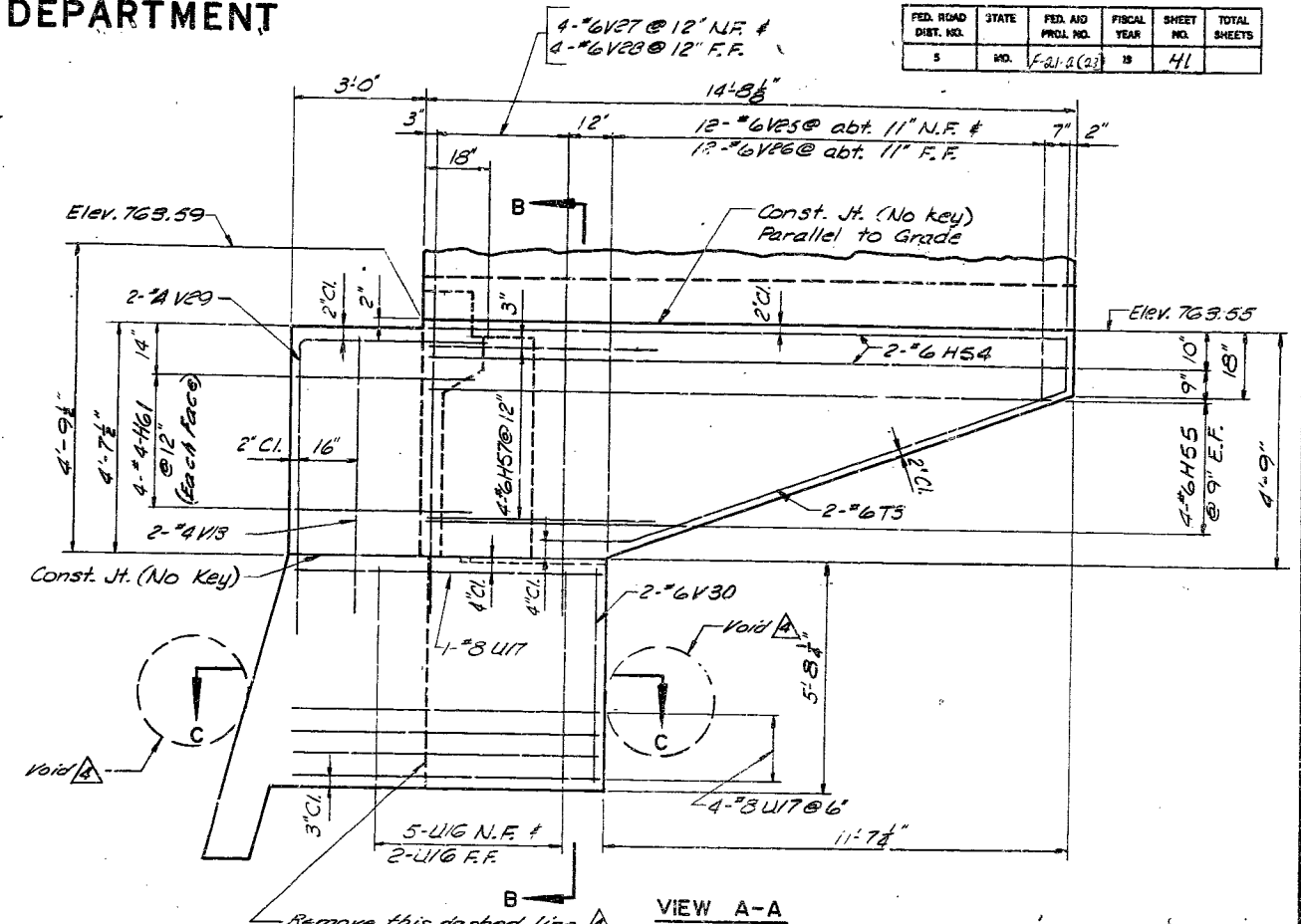


SECTION C-C

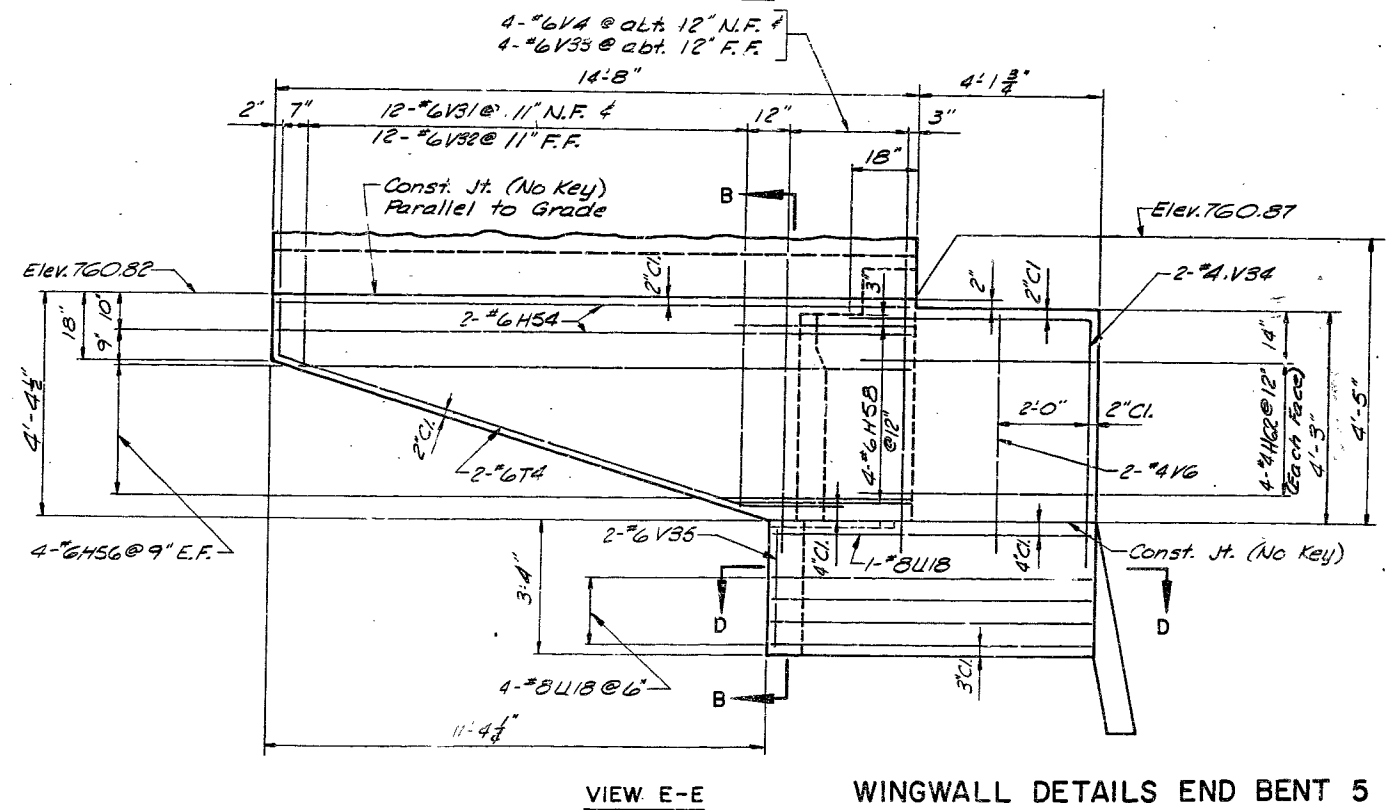


SECTION D-D

Void, See sheet 14A



VIEW A-A



VIEW E-E

WINGWALL DETAILS END BENT 5

DETAILED Mar. 1979 Ball
 CHECKED Mar. 1979 Steib

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 Engineers Architects Planners

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

Sheet No. 15 of 26. Revised 10-16-87

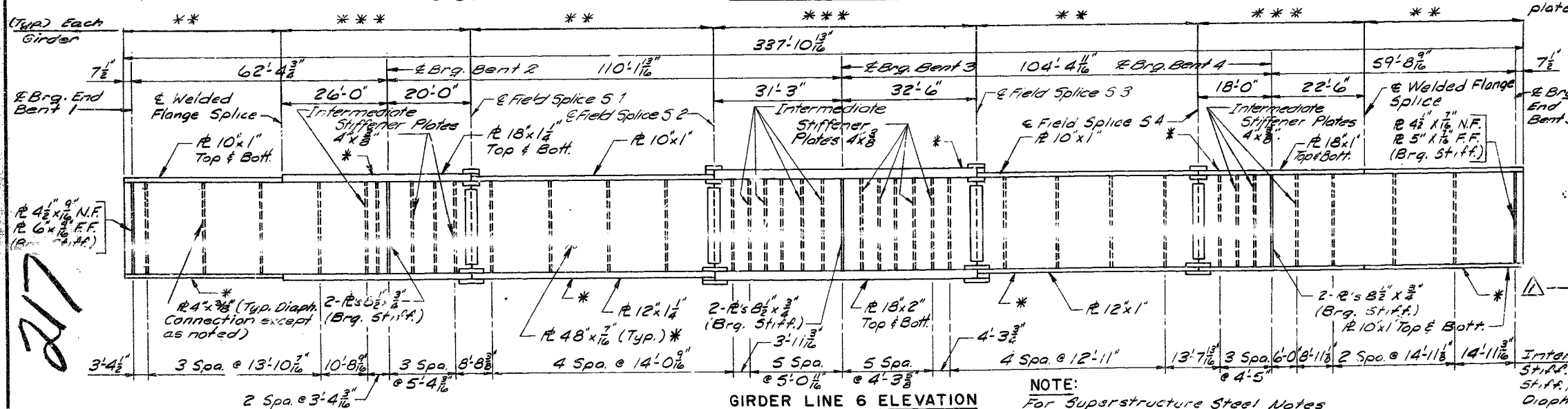
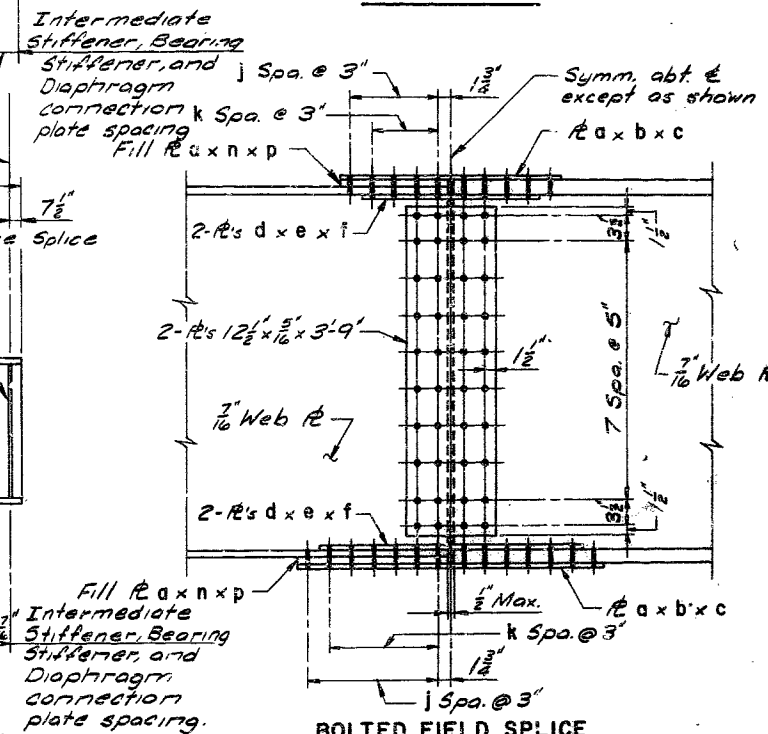
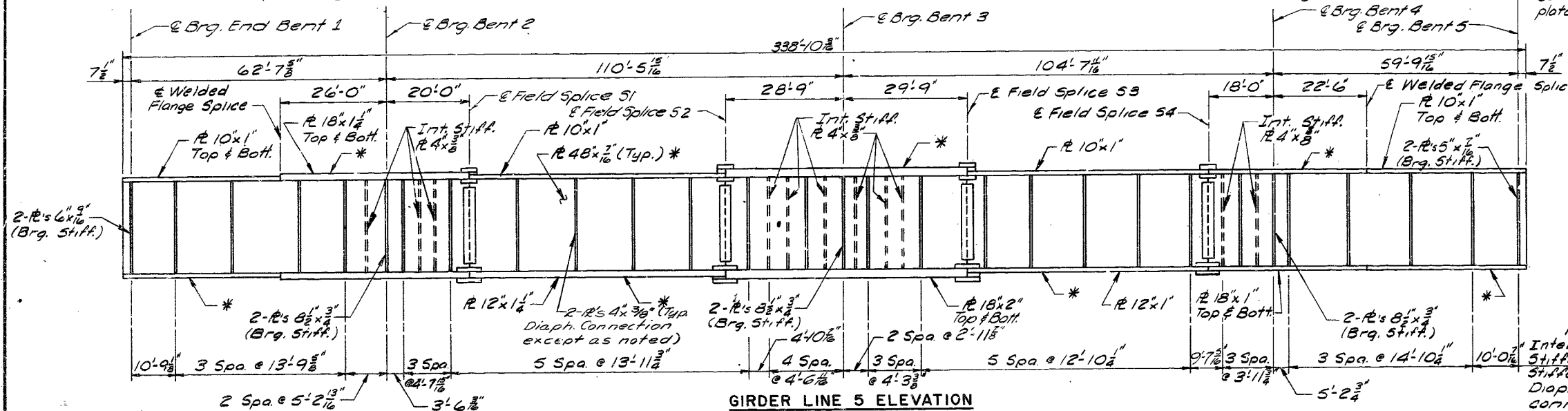
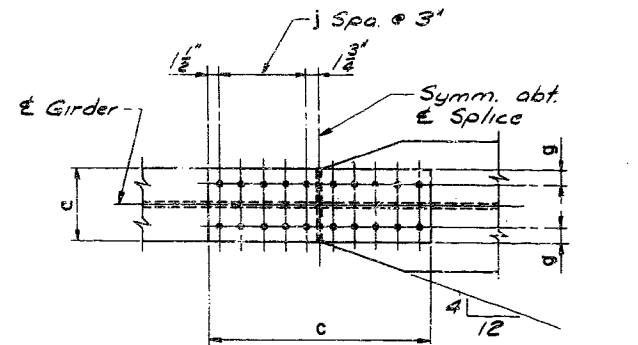
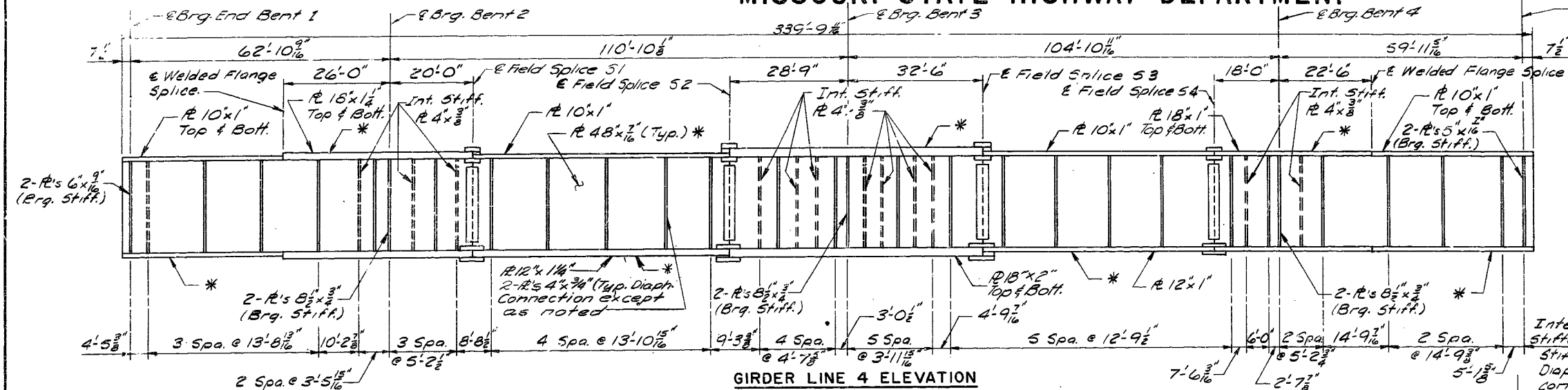
JEFFERSON COUNTY

A-3100

FINAL PLANS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-2(22)	20	42	

MISSOURI STATE HIGHWAY DEPARTMENT



NO. REQ'D.	SPLICE TYPE	FLANGE	a	b	c	d	e	f	g	j	k	n	p
6	S1	Top	10'	$2 \times \frac{1}{2}$	2'-0"	4'	$18 \frac{1}{2}$	2'	3	2	$\frac{1}{4}$ "	12"	
		Bot.	12'	$3 \times \frac{1}{2}$	5'	$2 \times 6 \frac{1}{2}$	2'	5	4	-	-		
6	S2	Top	10'	$2 \times \frac{1}{2}$	2'-0"	4'	$18 \frac{1}{2}$	2'	3	2	1"	12"	
		Bot.	12'	$3 \times \frac{1}{2}$	5'	$2 \times 6 \frac{1}{2}$	2'	5	4	$\frac{3}{4}$ "	18"		
6	S3	Top	10'	$2 \times \frac{1}{2}$	2'-0"	4'	$18 \frac{1}{2}$	2'	3	2	1"	12"	
		Bot.	12'	$3 \times \frac{1}{2}$	5'	$2 \times 6 \frac{1}{2}$	2'	5	4	1"	15"		
6	S4	Top	10'	$2 \times \frac{1}{2}$	2'-0"	4'	$18 \frac{1}{2}$	2'	3	2	-	-	
		Bot.	10'	$2 \times \frac{1}{2}$	2'-0"	4'	$18 \frac{1}{2}$	2'	3	2	-	-	

GIRDER ELEVATIONS 4,5,6 &
BOLTED FIELD SPLICE DETAILS

▲ For revisions of June 18, 1987 see sheet No. 19

JEFFERSON COUNTY

A-3100

NOTE:
For Superstructure Steel Notes.
See Sheet No. 17 of 26.

Sheet No. 18 of 26. Δ Revised June 18, 1987

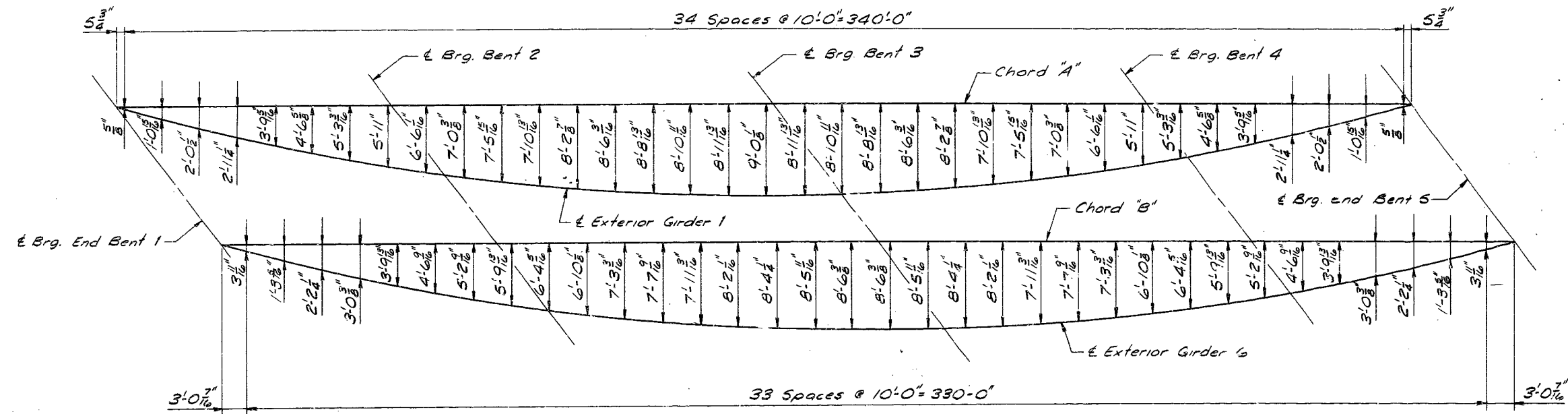
DETAILED Feb. 1979 Cooper
CHECKED Mar. 1979 Steib

Booker
Engineers Architects Planners

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

MISSOURI STATE HIGHWAY DEPARTMENT

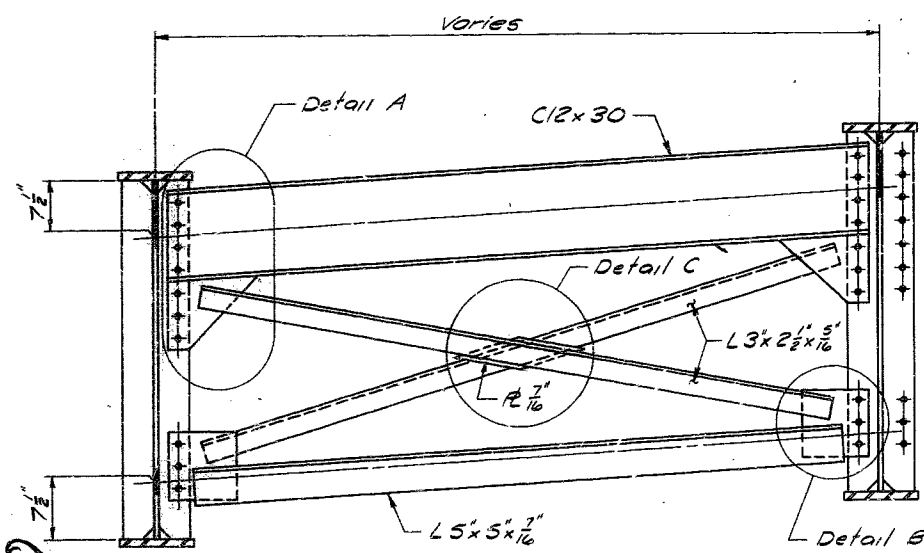
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	481-2(23)	18	43	



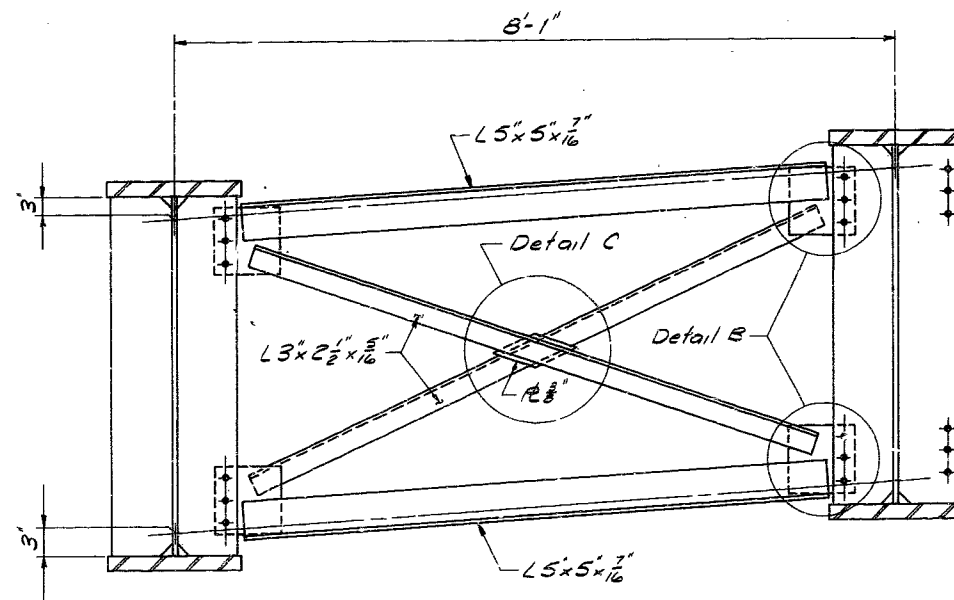
	FLANGE	a	b	c	d	e	f	g	j	k	n	p
S3	Boff.	12"	$\frac{1}{2}$ "	2'-6 $\frac{1}{2}$ "	5"	$\frac{5}{8}$ "	2'-0 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	4	3	1"	15"
S4	Boff.	12"	$\frac{1}{2}$ "	2'-6 $\frac{1}{2}$ "	5"	$\frac{5}{8}$ "	2'-0 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	4	3		

For location of this revision see sheet No. 18.

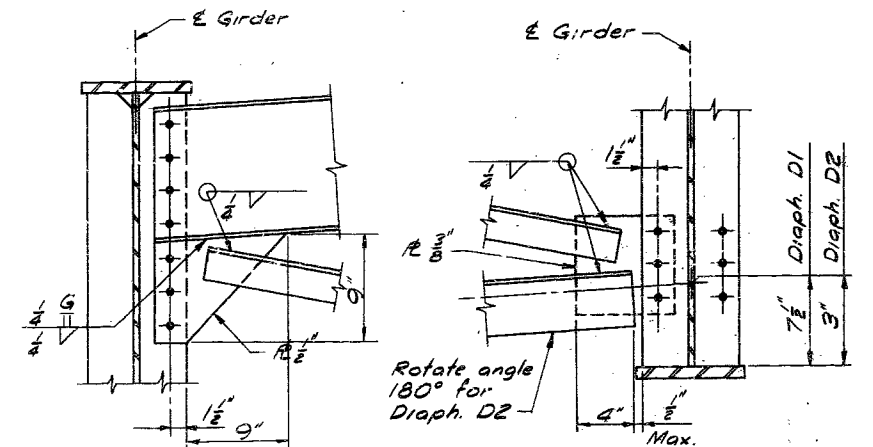
OFFSETS FOR CURVED PLATE GIRDERS (All dimensions horizontal)



DIAPHRAGM D1



DIAPHRAGM D2

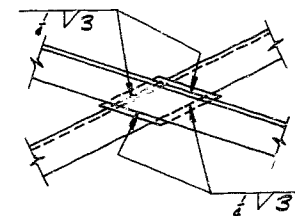


DETAIL A

DETAIL B

NOTES:

Slab drains may be fabricated of either 1/4" Welded Sheets of A.S.T.M. A36 steel or from 1/4" Structural Steel Tubing A.S.T.M. A500 or A501.
Outside dimensions of Drains are 8"x4".
The drains shall be cast in the concrete with the top of the drains being 1/4" below the finished concrete line.
See Sheet No. 21 of 26 for deck drain locations.
Shift reinforcing in field where necessary to clear drains.
The Drains shall be galvanized in accordance with A.S.T.M. A123.
Shop drawings will not be required for Slab Drains.



DETAIL C

GIRDER OFFSETS & DIAPHRAGM DETAILS

218
DETAILED Jan. 19 Cooper
CHECKED Feb. 19 Steib

Booker
Engineers Architects Planners

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

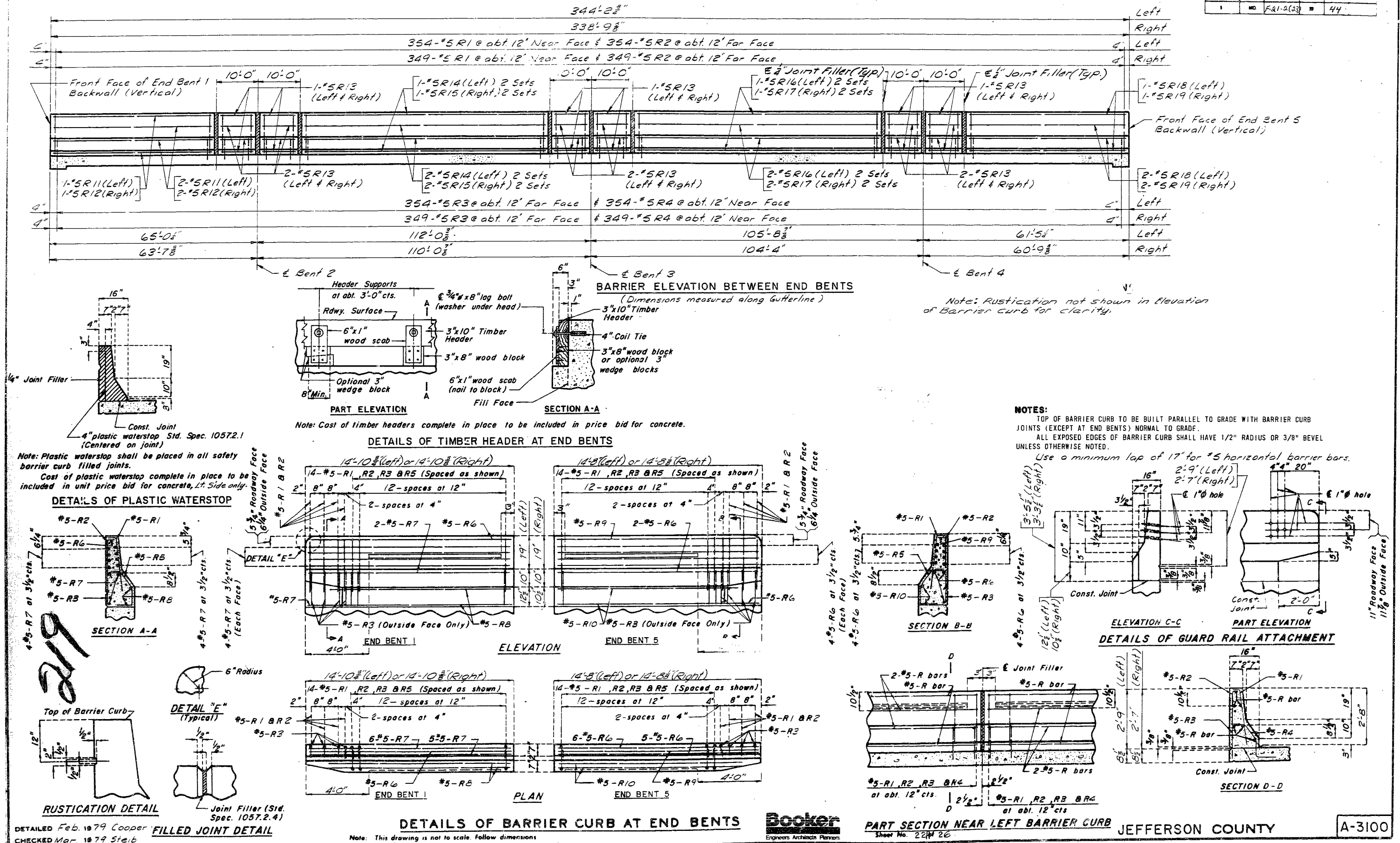
Sheet No. 19 of 26. Revised June 18, 1987

JEFFERSON COUNTY

A-5000

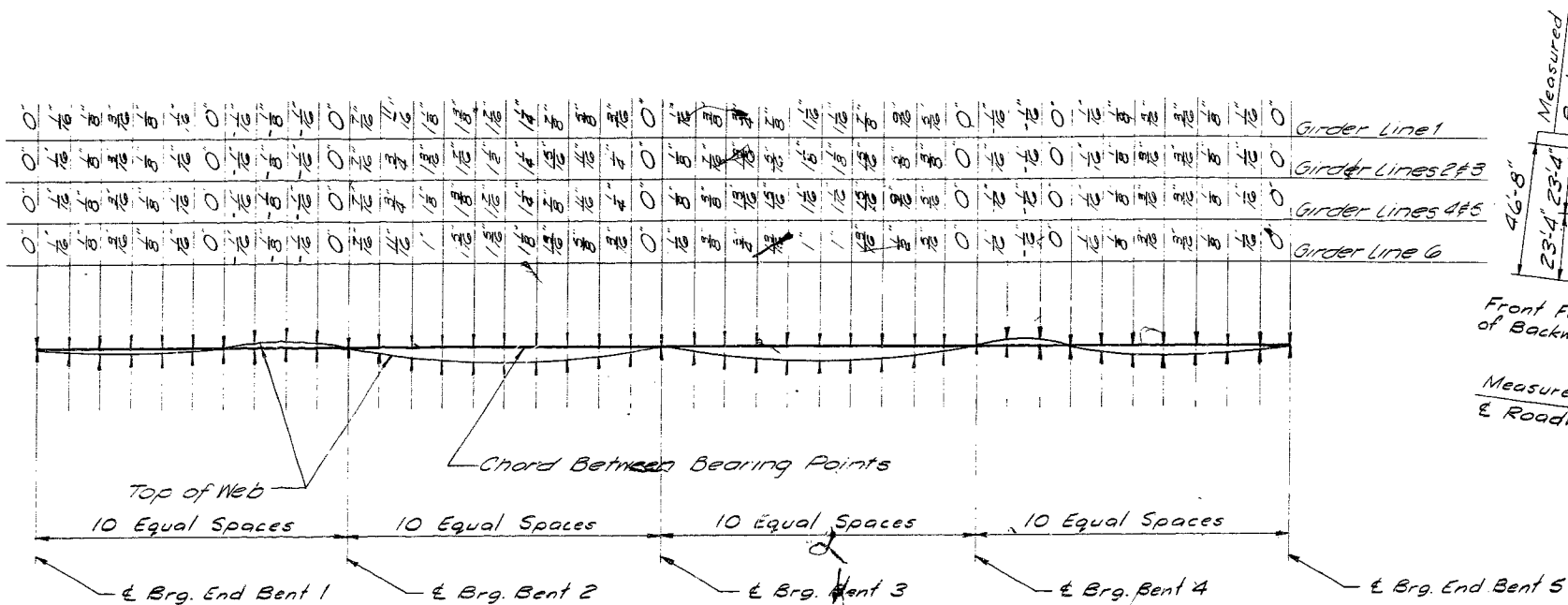
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-2(23)	70	44	

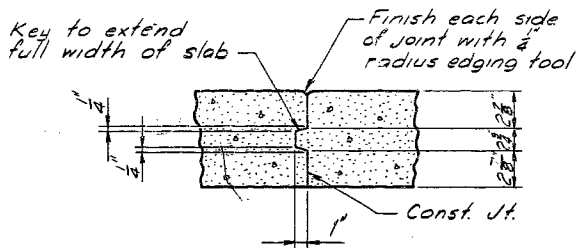
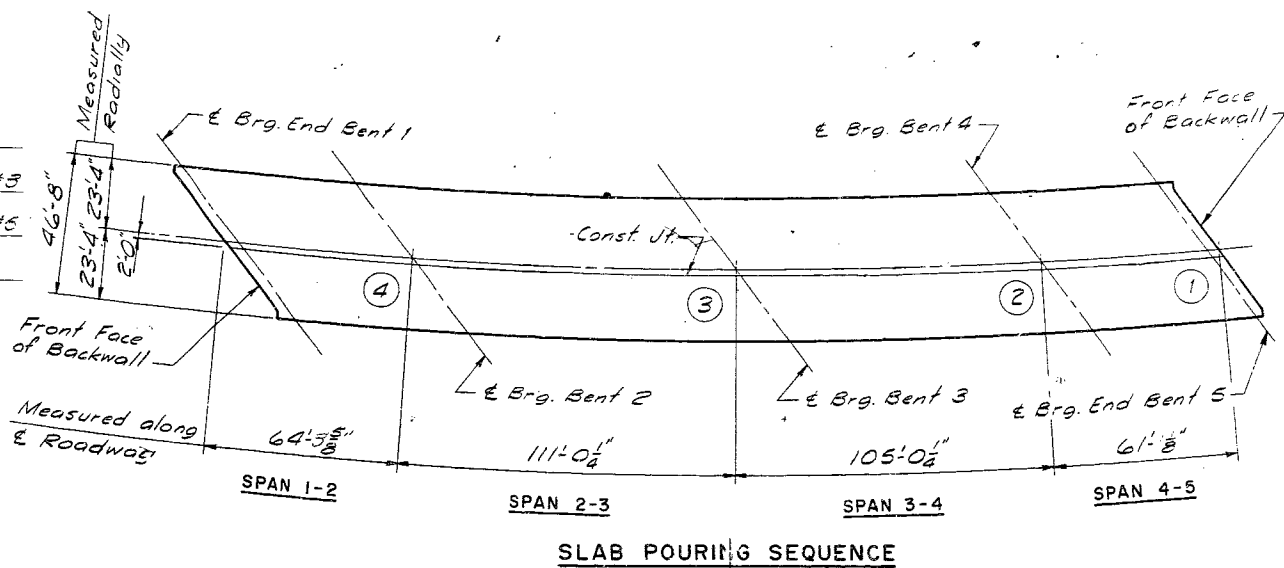


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-81-2(23)	18	45	

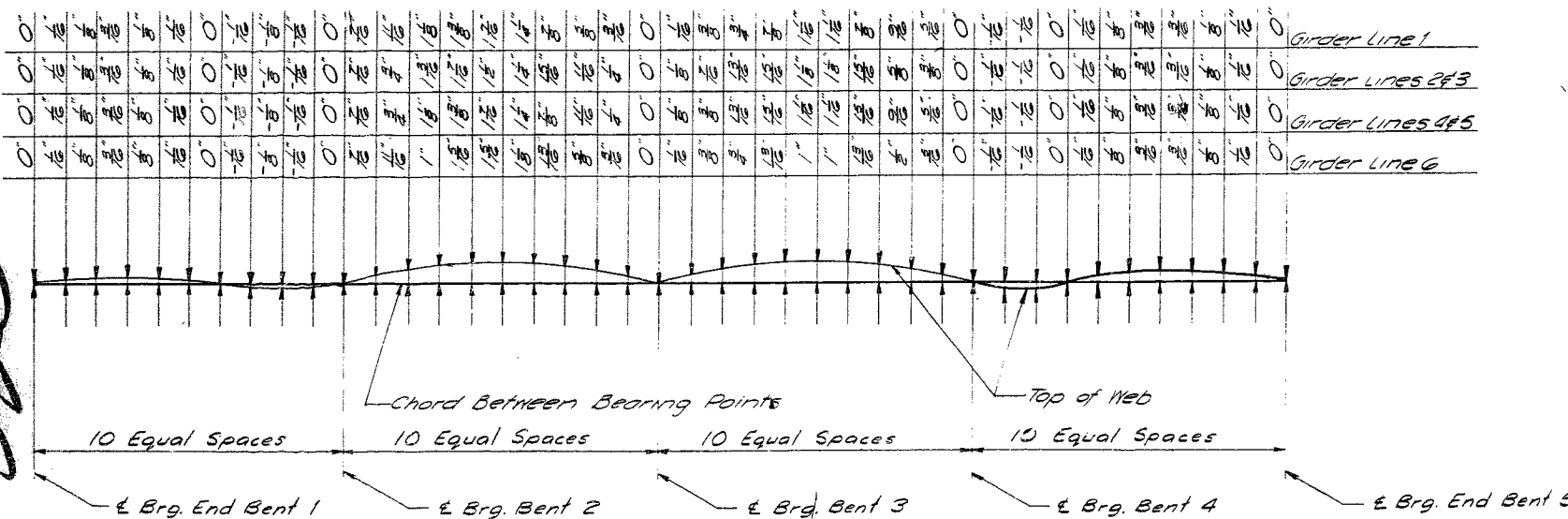


DEAD LOAD DEFLECTION DIAGRAM

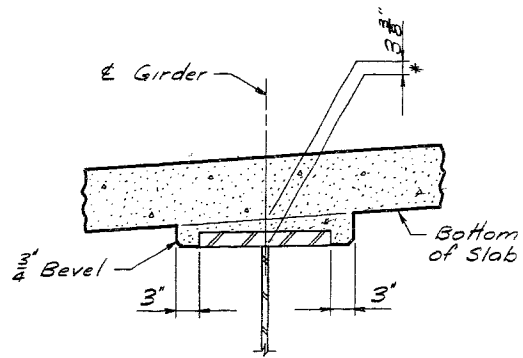


TYPICAL CONSTRUCTION JOINT

	SEQUENCE OF POURS			
	DIRECTION			
	1	2	3	4
ALTERNATE "C" POUR	END TO END			



CAMBER DIAGRAM



THEORETICAL SLAB HAUNCH

NOTES:

The contractor shall pour and satisfactorily finish the slab pours at a rate of not less than 37 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 25 cubic yards per hour.

* Dimension may vary if girder camber after erection differs from plan camber by more than the 70% of Dead Load Deflection due to the weight of Structural Steel. No payment will be made for additional forming on concrete required for variable haunching.

Camber includes allowance for dead load deflection due to concrete slab, curb, and structural steel.

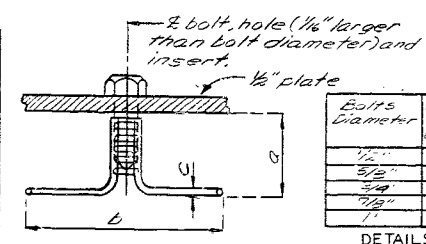
24% of dead load deflection due to weight of structural steel.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	F-A-1-2(23)	83	46	

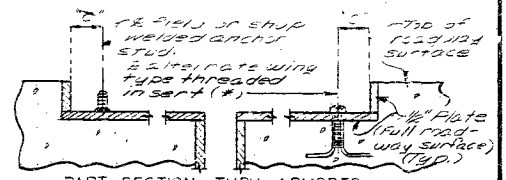
TABLE OF DIMENSIONS										FIELD WELDED ANCHOR STUDS SIZE SPA "G"
LOCATION	TYPE	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"		
BENTS 1 & 5	On-Flex 35	2"	11 1/2"	4 1/4"	1 5/8"	1 1/4"	2 3/8"	2 7/8"	3/8" 12"	65

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.

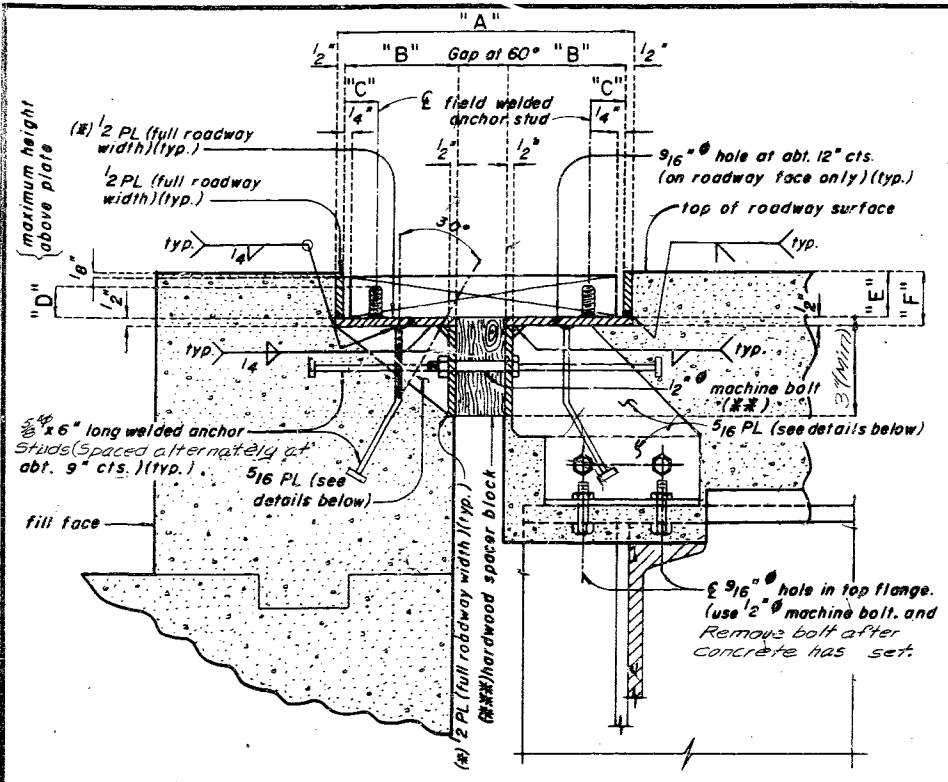


Bolts Diameter	Safe Load Tension (lbs.) (min.)	Approx. U.T. Cap. Tension (lbs.) (min.)	Dimensions (in.)		
1/2"	800	3,000	1 3/8"	5"	2 1/8"
5/8"	1,100	3,250	1 5/8"	5"	2 1/8"
3/4"	1,500	3,500	2"	5"	2 1/8"
7/8"	2,000	3,750	2 1/4"	5"	2 1/8"
1"	2,500	4,000	2 3/4"	5"	2 1/8"

DETAILS OF ALTERNATE WING TYPE THREADED INSERT



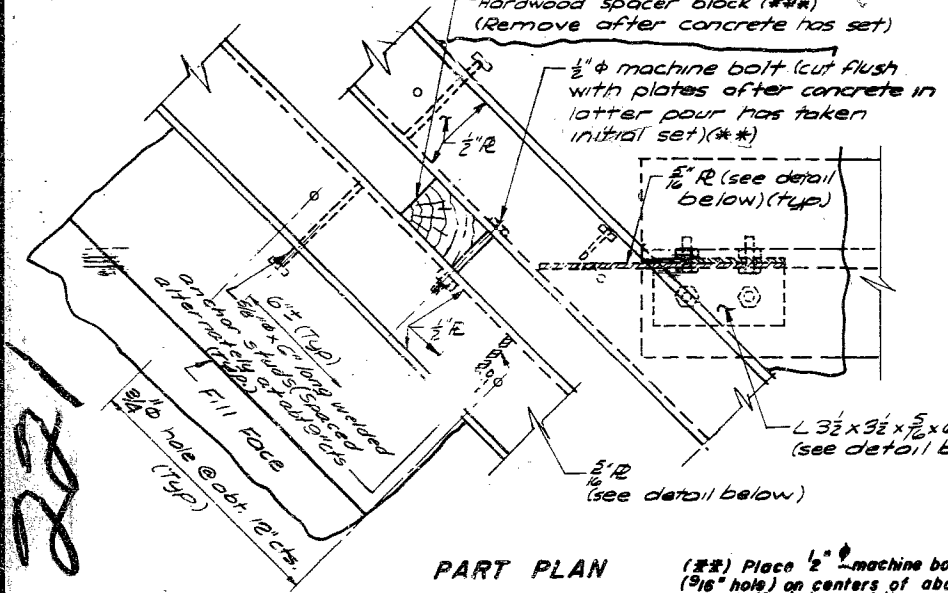
* Machine bolts need only be used to secure the wing type threaded insert to the steel plate until the concrete has attained 3000 P.S.I.



PART SECTION

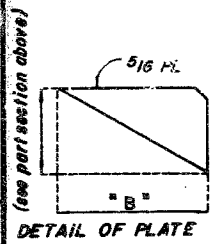
(*) these plates may be one piece by using legs of equal or unequal angles.

(***) (spacer may be a combination of a hardwood block and metal shims, 2"x3")

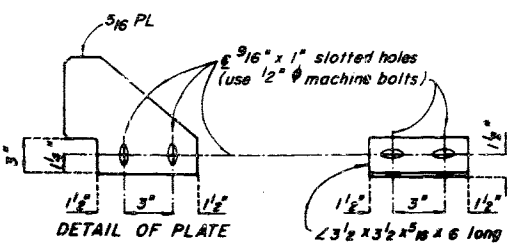


PART PLAN

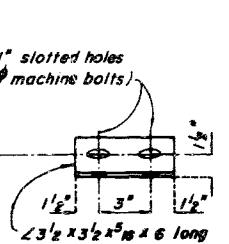
Note: 5/16 plates and angle placed at each girder or stringer.



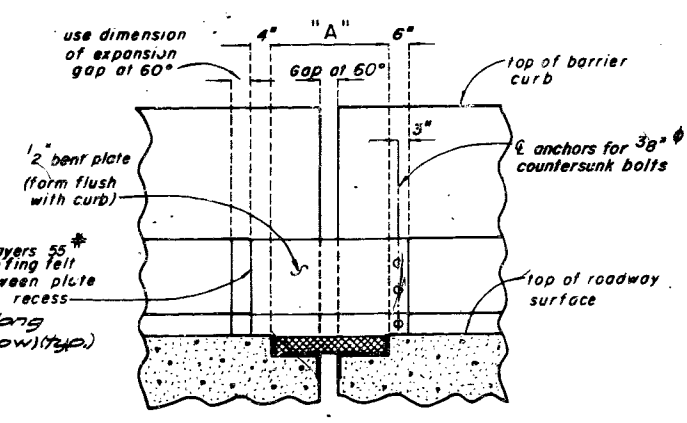
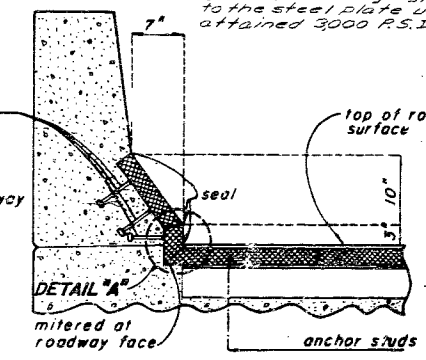
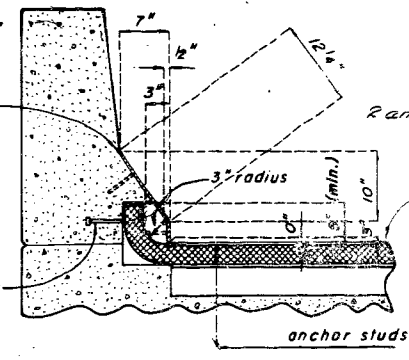
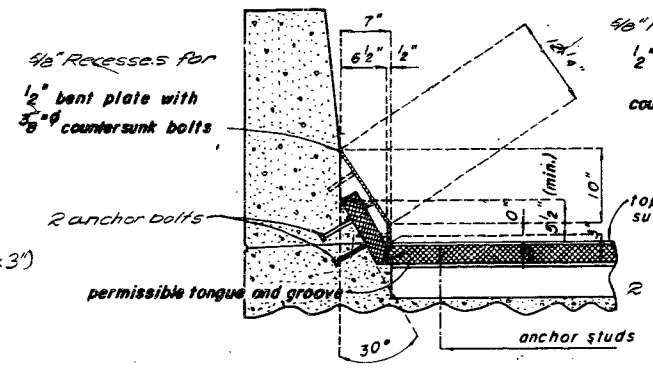
DETAIL OF PLATE



DETAIL OF PLATE



DETAIL OF ANGLE



PART ELEVATION OF BARRIER CURB

ALTERNATE CURB TREATMENTS

General Notes: The expansion joint seal shall be installed in accordance with the manufacturers instructions shown on the shop drawings and in accordance with the special provisions.

Anchor bolts in the barrier curb shall be cast-in-place, grouted or cone expansion type. Holes in the barrier 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.

Plates shall be field adjusted by adding or removing metal shims (2"x3") as required for temperature correction. The expansion gap shall be adjusted for any temperature correction prior to pouring top of end bent backwall.

Contact surface of steel to aluminum shall be insulated with the material specified on the shop drawings.

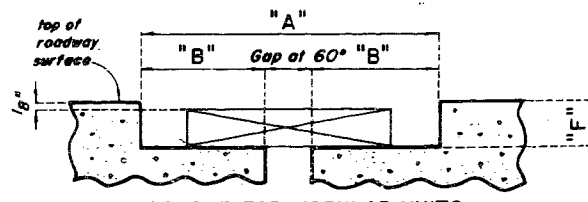
Paint See Special Provisions.

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 5 foot pounds a minimum of 30 minutes after initial tightening. The welded anchor studs shall be the reduced base type.

Material for the anchored joint shall be A-36 structural Grade steel. Anchors for the armored joint shall be approved stud welded anchors (C100 thru C120).

Furnishing, painting and installing the structural steel armored joint and curb plates shall be included in the contract unit price for expansion joint seal.

Bolt cavities to be filled with approved sealant in compliance with manufacturers certification.



BLOCKOUT FOR MODULAR UNITS
NOTE: WHEN MODULAR UNITS ARE SPECIFIED AS AN ALTERNATE STEEL CURB PLATE TREATMENTS ARE REQUIRED.

DETAILS OF EXPANSION JOINT SEAL AT BENTS NO. 1 & 5

DETAILED Mar. 19 79, Balthasar
CHECKED Apr. 19 79, Steib

Booker
Engineers Architects Planners

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

Sheet No. 24 of 26

JEFFERSON COUNTY

A-3100