

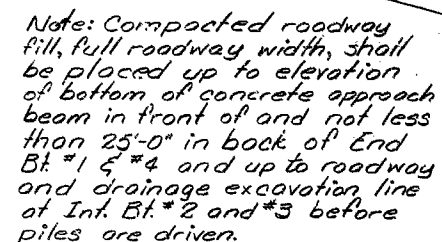
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	20	

Design Specification: A.A.S.H.T.O. 1973 Load Factor Design

Design Loading:
HS 20-44; 15' ¹³⁹ ft. Future Wearing Surface:
Earth 120#, Equivalent Fluid Pressure 30#
Superstructure: Simply supported
non-composite for Dead Load. Continuous
composite for Live Load.

Design Unit Stresses:
 Class B Concrete (substructure) $f_c = 1,200$ psi.
 Class B1 Concrete (superstructure, except
 Prestressed Girders) $f_c = 1,600$ psi.

Reinforcing Steel (Grade 60) $f_y = 60,000 \text{ psi}$
Steel Pile $f_b = 9,000 \text{ psi}$.
For Pre-stressed Girder Stresses see Sheet # 8 & 9
Bridge seat areas for P/S Girders shall be
given a smooth wood float finish. Finishing
& above Plan Elev. and grinding will not
be required.
Bearings shall be 50 durometer Elastomeric
bearing pads.
Minimum clearance to reinforcing steel shall
be 1" unless otherwise shown.
Joint Filler: All joint filler shall meet the
requirements of Std. Spec. 1057.2.4.



CURVE DATA - (S.B. Lanes)
P.I. Sta. 74+85.63
 $\Delta = 6^{\circ}00'00''$ Lt.
 $D = 0^{\circ}30'00''$
 $R = 11,459.16'$
 $T = 600.55'$
 $L = 1200.00'$
S.E. = None
W. None

B.M. Elev. 600.75 Spike in 24" White Oak Tree 345'± Rt. of Sta. 75+05± @ N.B.L.

**STATE ROAD FROM ROUTE J (41) TO SOUTH OF ROUTE MM
ABOUT 2 MILES S. OF ROUTE J**

PROJECT NO. 6-U-21-256A STA. 70+73.55

JOB NO. 6-U-21-256 A

RTE. 21

JEFFERSON COUNTY

DATE March 14, 1978

STD. 706.35

STD.

A-3097

DESIGNED *Dec. 19 77*
 DETAILED *Feb. 19 78*
 CHECKED *Feb. 19 78*

Note: This drawing is not to scale. Follow dimensions

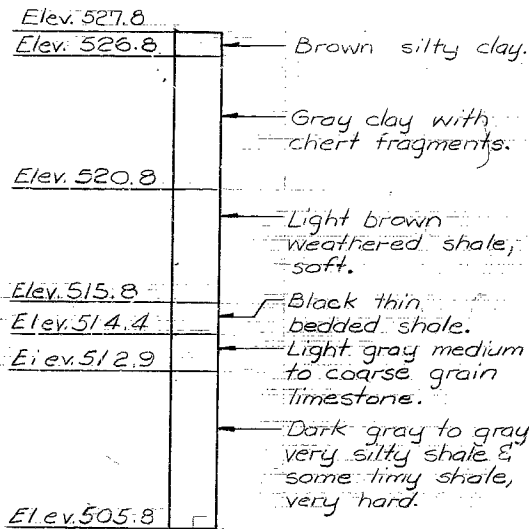
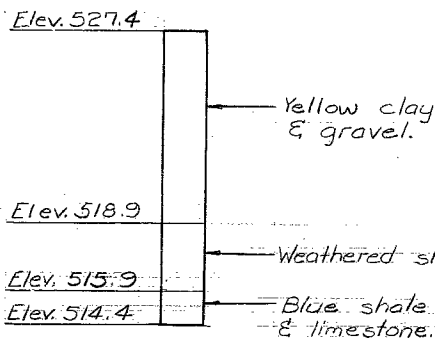
Sheet No. 1 of 17. Δ Revised Aug. 7, 1978

MISSOURI STATE HIGHWAY DEPARTMENT

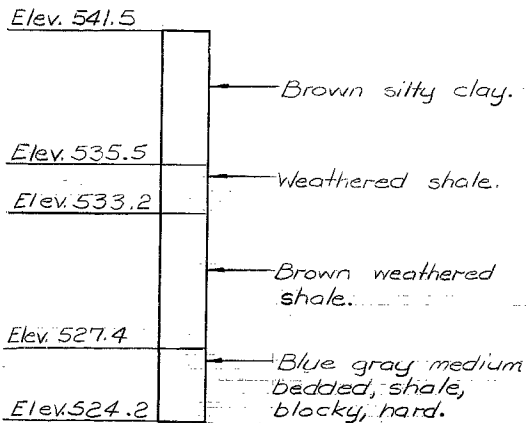
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	21	

PILE DATA					
BENT NUMBER		1	2	3	4
BEARING PILE	PILE TYPE AND SIZE	HP10x42	HP10x42	HP10x42	HP10x42
	NUMBER	9	13	13	9
	APPROXIMATE LENGTH (FT.)	55'	35'	25'	35'
	DESIGN BEARING (TONS)	55	52	52	55
	HAMMER ENERGY REQUIRED (FT. LBS.)	13,500	12,200	12,200	13,500

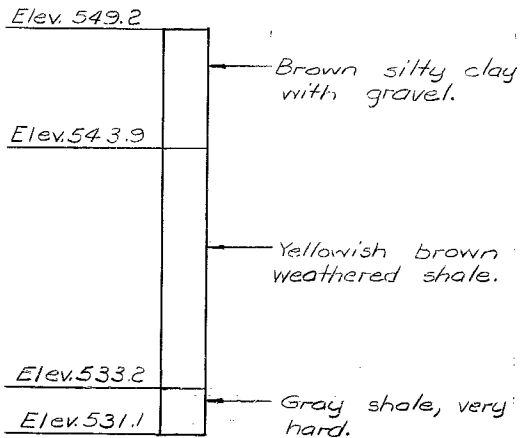
Minimum energy requirement of hammer based on piling length and design bearing value of piles. All pile shall be driven to practical refusal.



(Core)



(Core)



ESTIMATED QUANTITIES			
ITEM	Substr.	Superstr.	Total
CLASS I EXCAVATION (CU. YD.)	120		120
STRUCTURAL STEEL PILE (HP10 x 42) (LIN. FT.)	1590		1590
CLASS B CONCRETE (CU. YD.)	212.5		212.5
CLASS BI CONCRETE (CU. YD.)		378.4	378.4
REINF. ELAST. EXP. JT. SEAL (2 INCHES) (LIN. FT.)		69	69
PRESTRESSED CONCRETE MEMBERS 1-SEC. (73' SPAN) (EA.)		5	5
PRESTRESSED CONCRETE MEMBERS 1-SEC. (66' SPAN) (EA.)		5	5
PRESTRESSED CONCRETE MEMBERS 1-SEC. (72' SPAN) (EA.)		5	5
REINFORCING STEEL (GRADE 60) (POUND)	39,360	51,440	90,800
REINFORCING STEEL (EPOXY) (POUND)		36,170	36,170
BRIDGE RAIL (ONE TUBE) (LIN. FT.)		480	480
PLAIN NEOPRENE BEARING PADS (1/2") (EACH)		10	10
LAMINATED NEOPRENE BEARING PADS (2 1/8") (EACH)		5	5
LAMINATED NEOPRENE BEARING PADS (1 1/8") (EACH)		15	15

BORING DATA

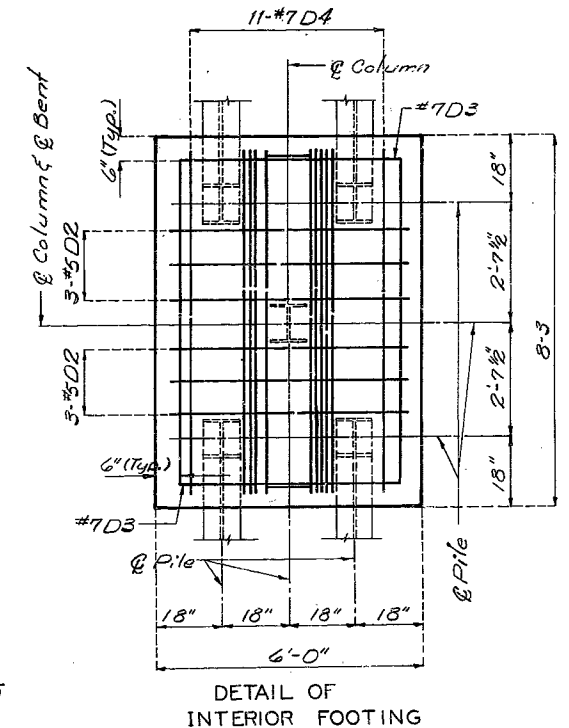
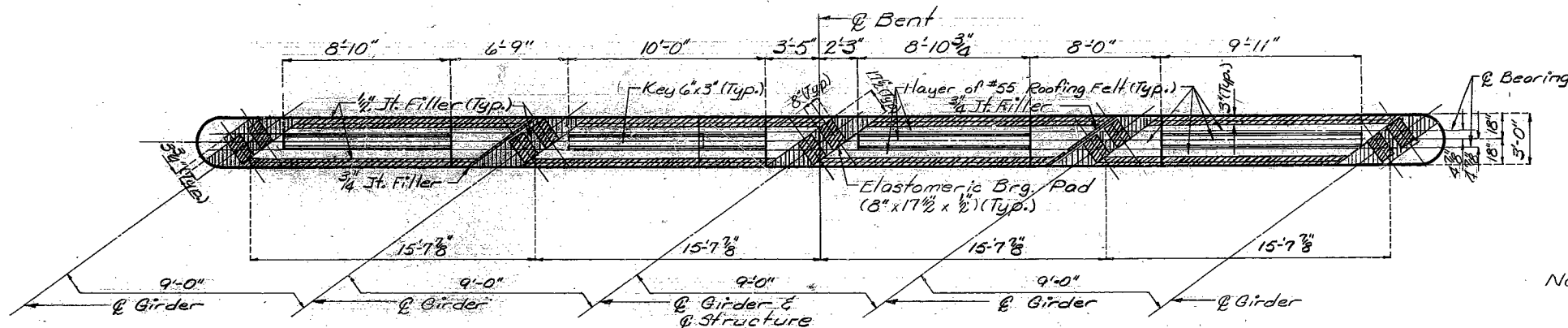
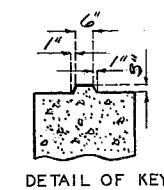
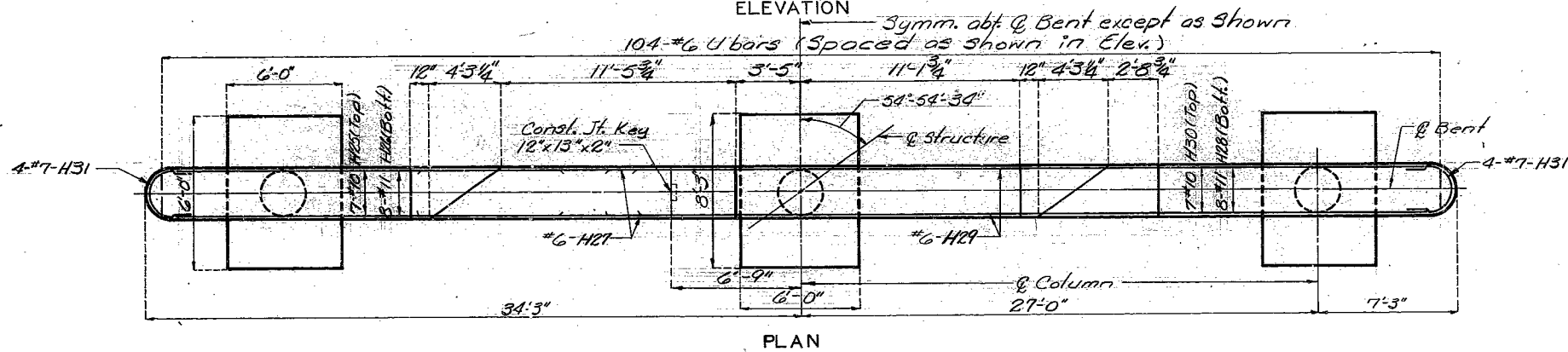
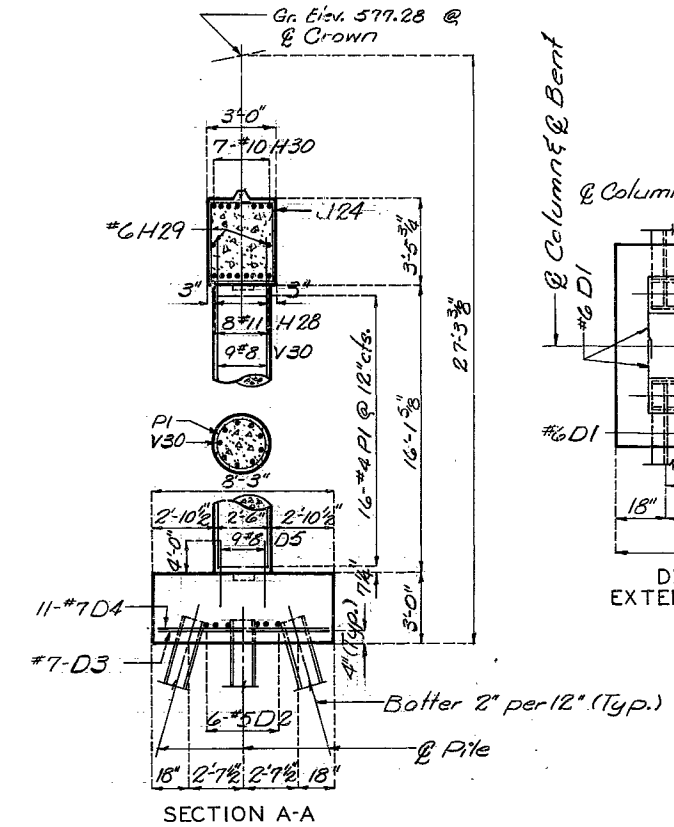
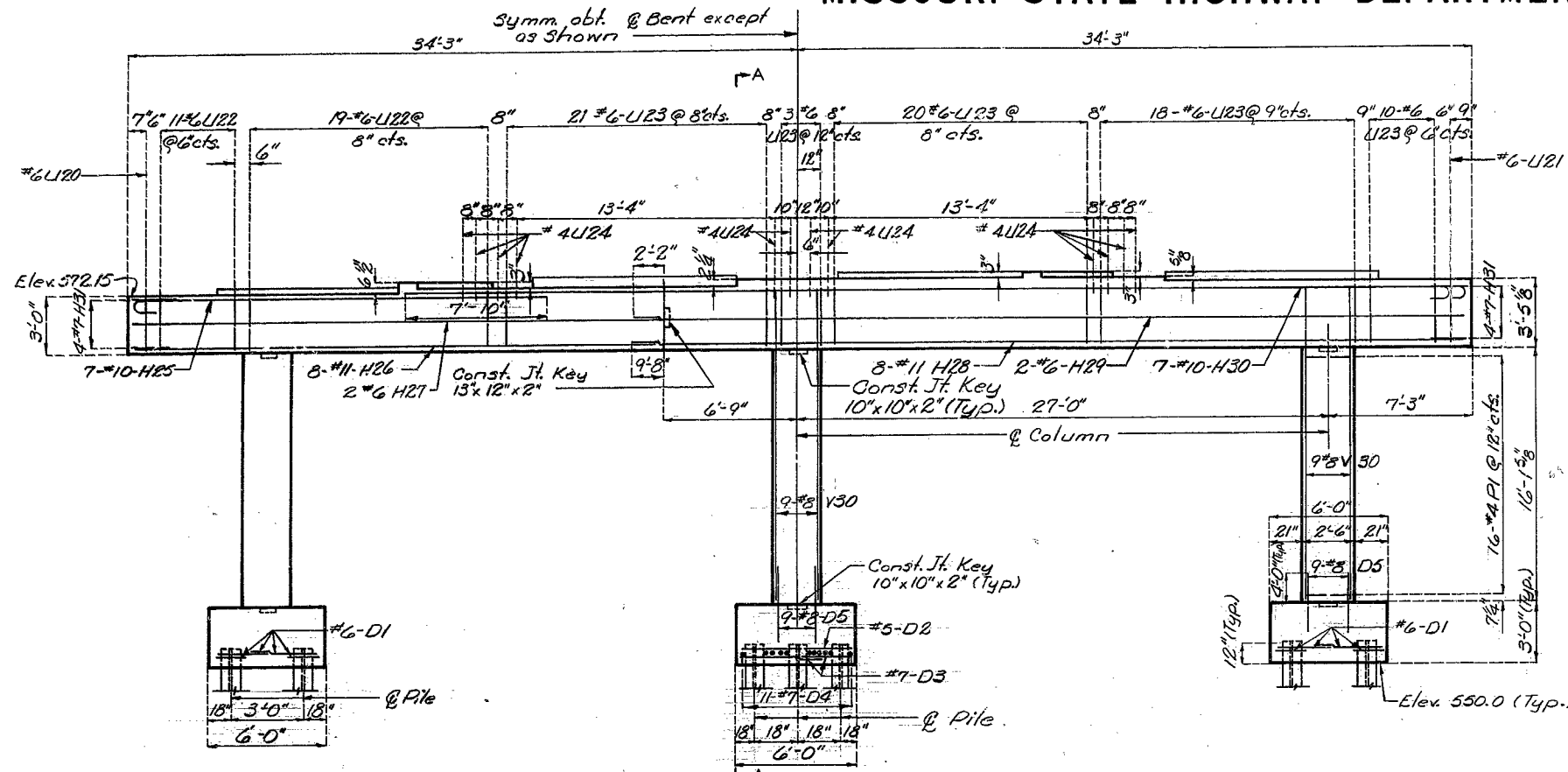
Note: For location of borings see sheet No. 1.

Note: All concrete and reinforcement in safety barrier curbs is included with superstructure quantities.

Note: Cost of 3/4" coil tie rods placed in diaphragms is included in price bid for PIS members.

MISSOURI STATE HIGHWAY DEPARTMENT

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



Note: For detail of steel pile splice see sheet No. 5

DETAILS OF INTERMEDIATE BENT NO. 2

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

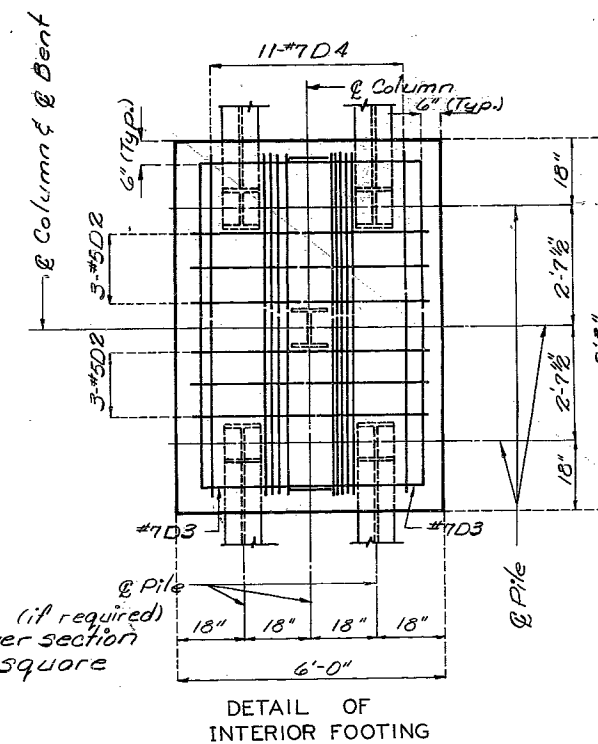
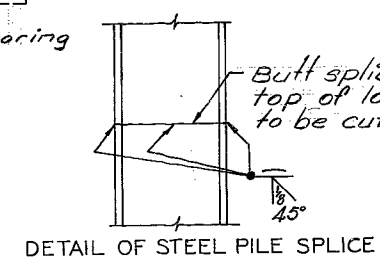
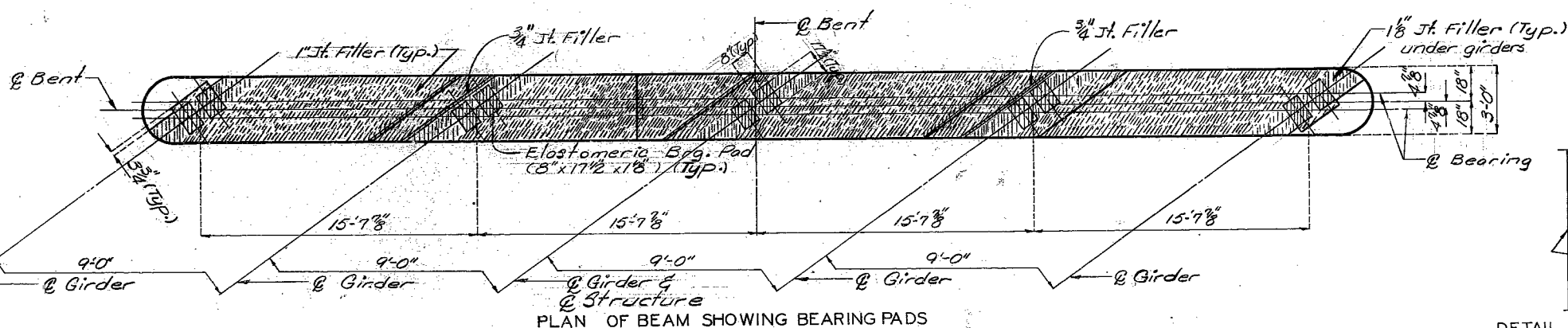
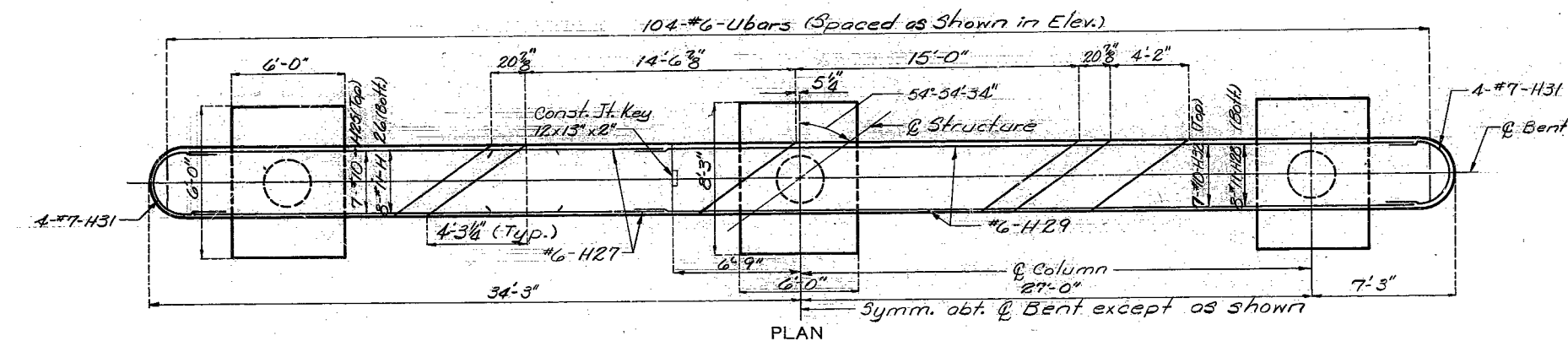
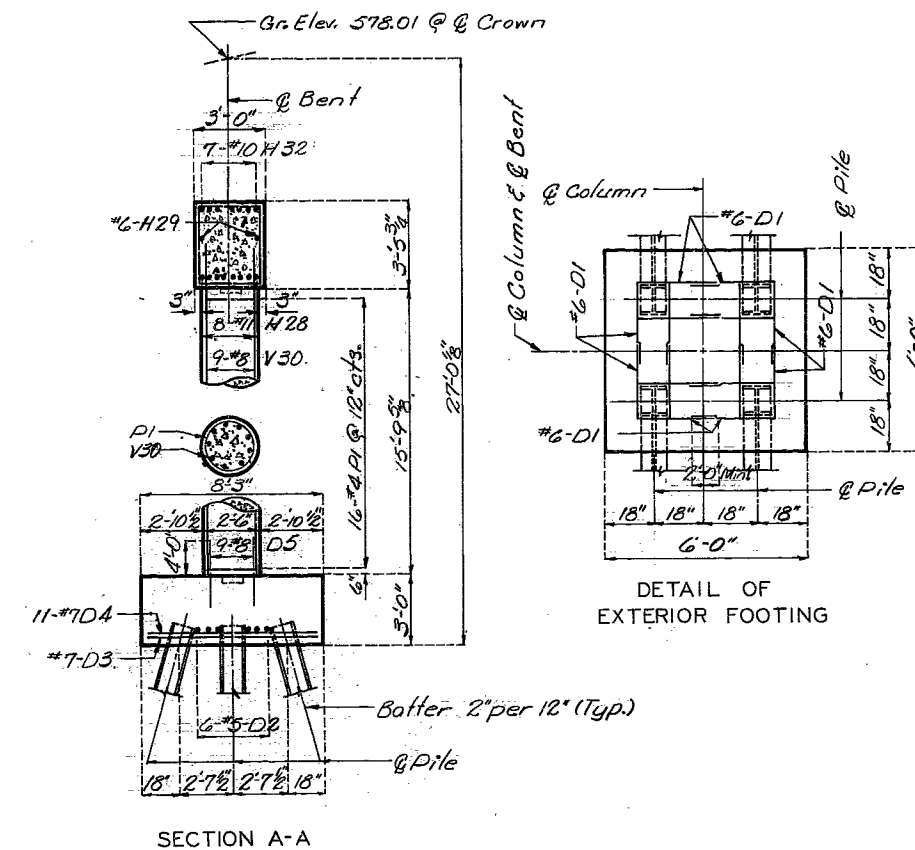
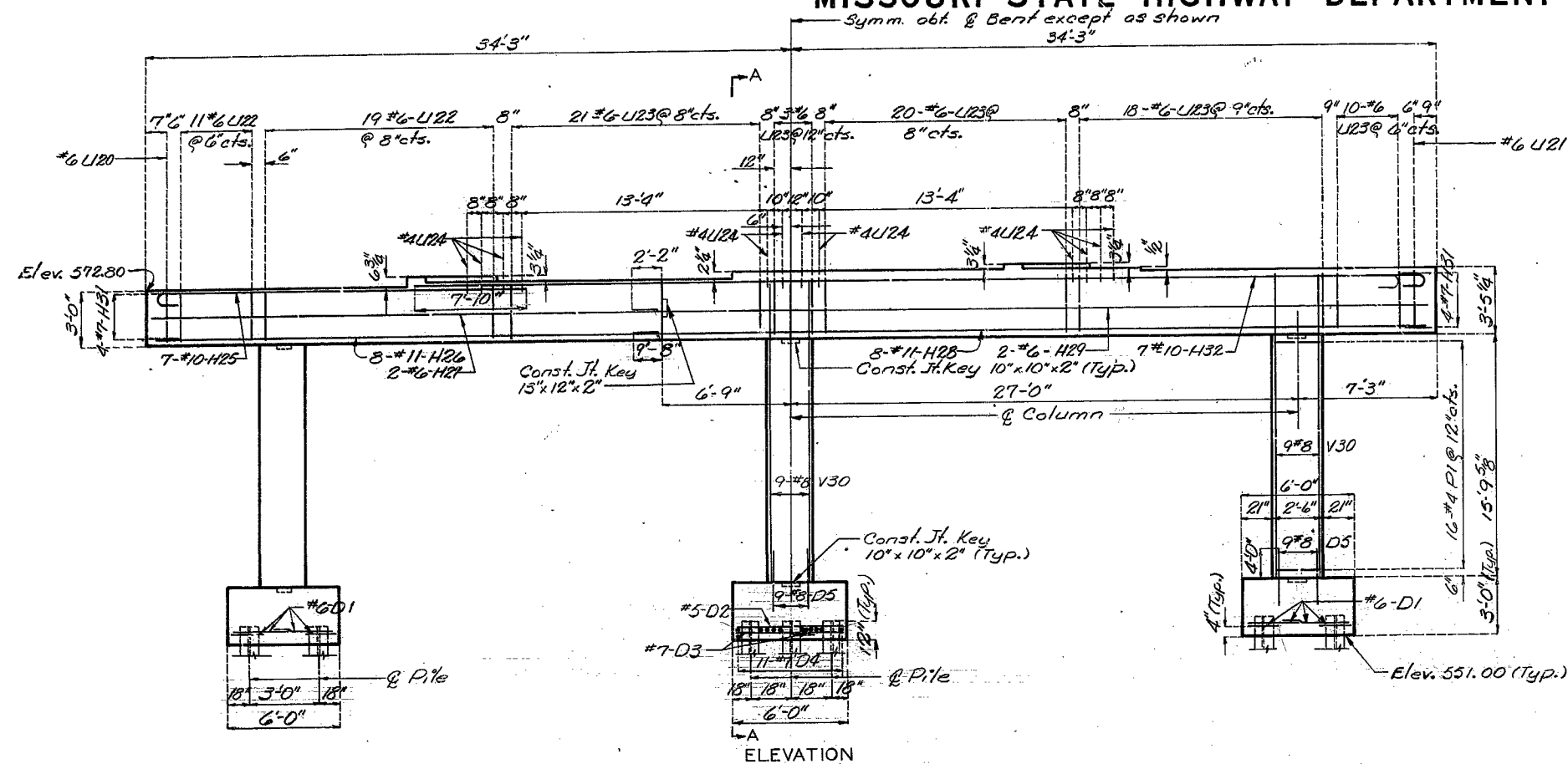
DETAILED Dec 19 77
CHECKED Jan 19 78

Sheet No. 4 of 17.

JEFFERSON COUNTY

A3097

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	24	



8/2/77

SPS-P/S-END	REVISED
FEB. 1978	

GENERAL NOTES:

THE EXPANSION JOINT SHALL BE SET, ANCHORED, BONDED AND SEALED AS RECOMMENDED BY THE MANUFACTURER AND AS SET FORTH IN THE SPECIAL PROVISIONS. PAYMENT FOR FURNISHING AND INSTALLING THE EXPANSION JOINT, INCLUDING ANCHOR BOLT ASSEMBLY, SHALL BE MADE UNDER UNIT PRICE BID PER LINEAL FOOT OF JOINT.

LAYOUT TRANSVERSE STUD SPACING IN ACCORDANCE WITH THE SHOP DRAWINGS AND AS SHOWN ON PLANS FOR ANCHOR STUDS. INSURE THAT THE STUDS ARE DIRECTLY OPPOSITE EACH OTHER (SQUARE). HOLES IN THE CURB FOR CONE EXP. ANCHORS SHALL NOT BE DRILLED NOR BOLTS SET UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD. TIGHTEN ALL NUTS TO "G" FOOT POUNDS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. WIRE BRUSH BOLT CAVITY AND COAT WITH SEALANT. FILL CAVITY WITH SEALANT OR TO A DEPTH OF $\frac{1}{2}$ " FROM TOP FOR UNITS USING PLUGS, PUSH PLUG DOWN TO SNAP LOCK. SCRAPE OFF ALL EXCESS SEALANT.

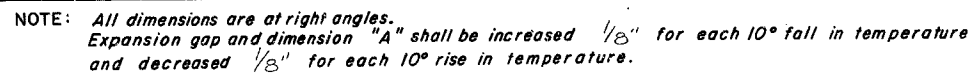
STRUCTURAL STEEL PLATE SPLICES ARE PERMITTED FOR SECTIONS OVER 50 FEET AND MAY BE MADE BY AN EXPERIENCED WELDER. THE PLATES SHALL BE BENT TO CONFORM TO THE CROWN AND GRADE OF ROADWAY.

NO. 4 BARS FOR ANCHORS SHALL BE STRUCTURAL GRADE STEEL. APPROVED STUD WELDED ANCHORS OR DEFORMED BAR ANCHORS (ASTM A496) MAY BE USED IN LIEU OF NO. 4 BARS SHOWN.

ANGLES, PLATES, BARS AND SHIMS SHALL BE A36 STRUCTURAL GRADE STEEL. PAINT SHALL BE 2 COATS OF SYSTEM "C" PRIMER. REMOVE PAINT AS NECESSARY FOR FIELD WELDED ANCHOR STUDS. PAYMENT FOR FURNISHING, PAINTING AND PLACING STRUCTURAL STEEL SHALL BE INCLUDED IN UNIT PRICE BID FOR OTHER ITEMS.

PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60° F. WIDTH'S AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

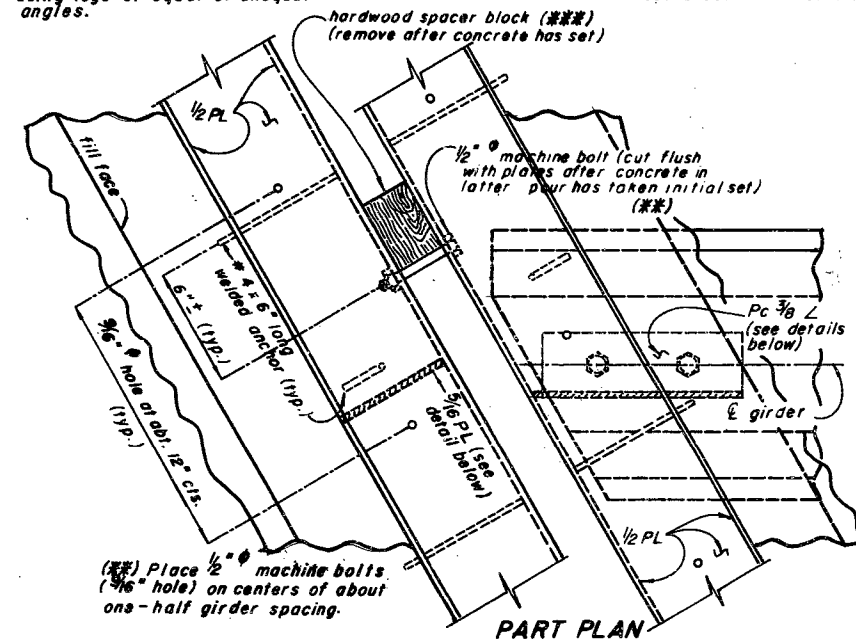
PLATES SHALL BE FIELD ADJUSTED BY ADDING OR REMOVING METAL SHIMS (2 x 3), AS REQUIRED FOR TEMPERATURE CORRECTION. THE EXPANSION GAP SHALL BE ADJUSTED FOR ANY TEMPERATURE CORRECTION PRIOR TO POURING TOP OF END BENT BACKWALL.



PART SECTION

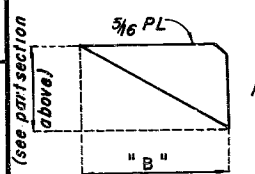
(*) these plates may be one piece by using legs of equal or unequal angles.

(***) spacer may be a combination of a hardwood block and metal shims.

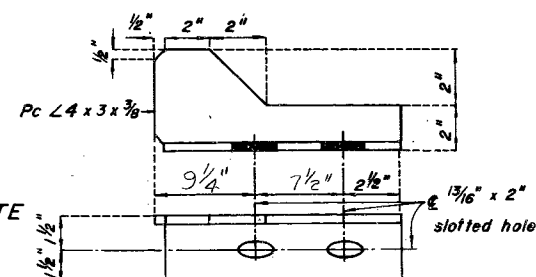


PART PLAN

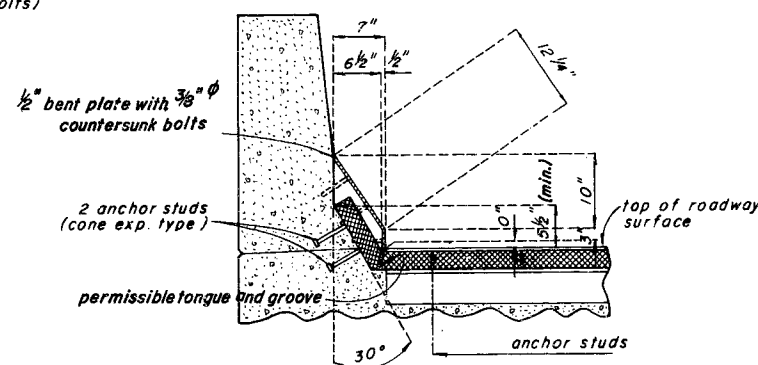
Note: $\frac{5}{16}$ PL and $\frac{3}{8}$ L placed at each girder.



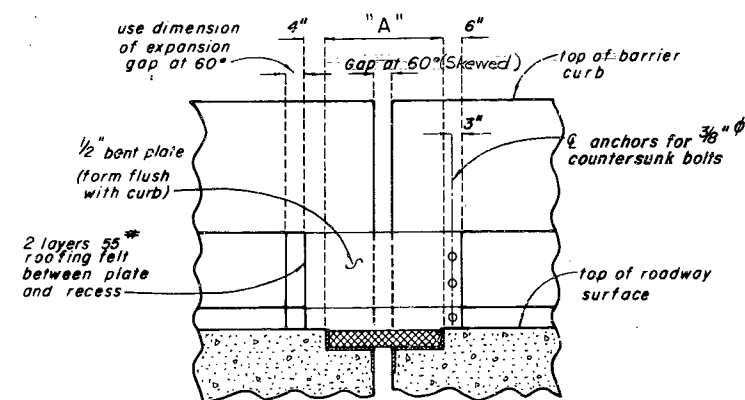
DETAIL OF PLATE



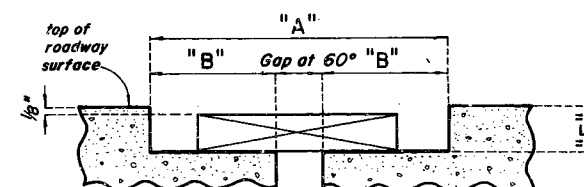
DETAIL OF ANGLE



ALTERNATE CURB TREATMENTS

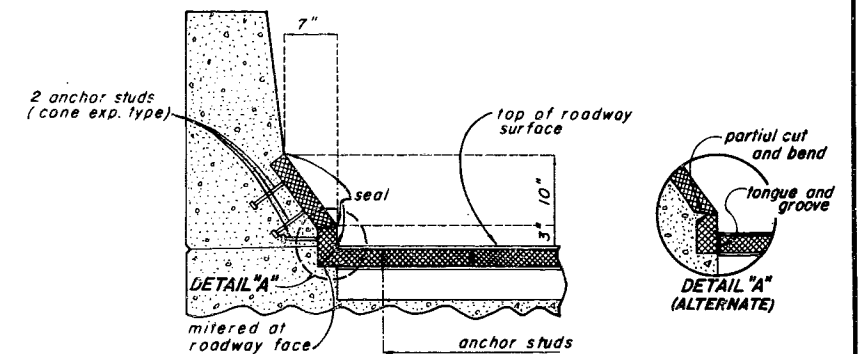


PART ELEVATION OF BARRIER CURB

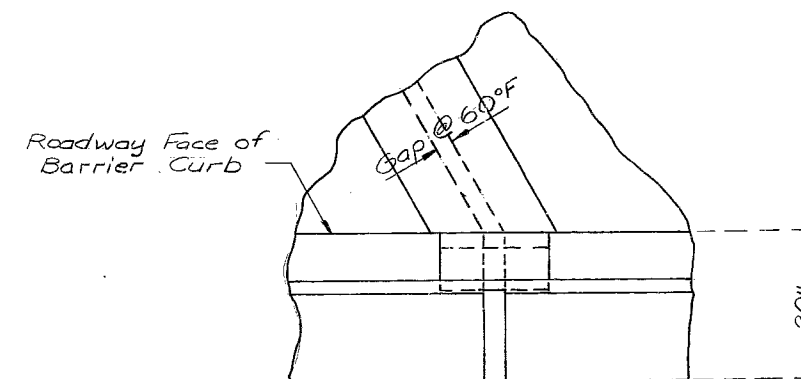


BLOCKOUT FOR MODULAR UNITS

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



DETAIL "A"
(ALTERNATE)



PART PLAN

DETAILS OF EXPANSION JOINT SEAL AT BENT NO. 4

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

Sheet No. 13 of 17 .

JEFFERSON

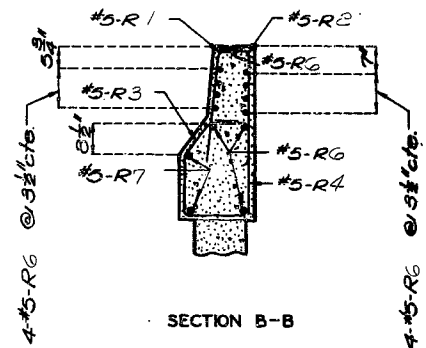
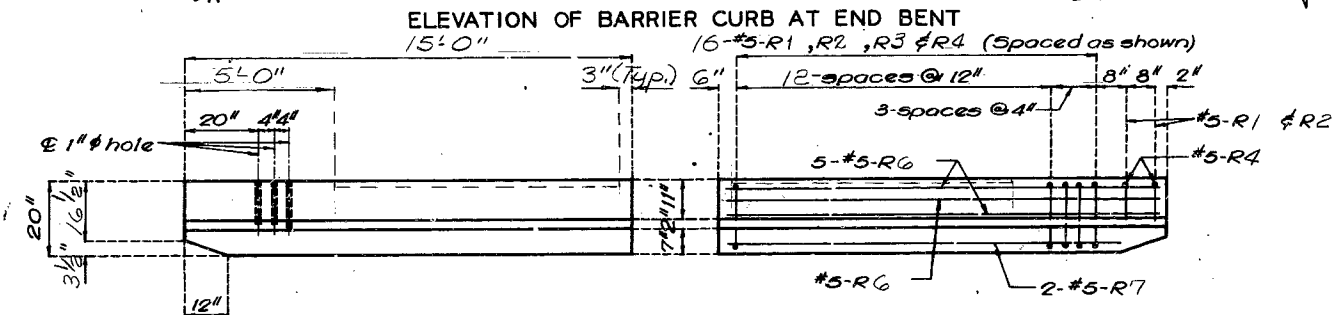
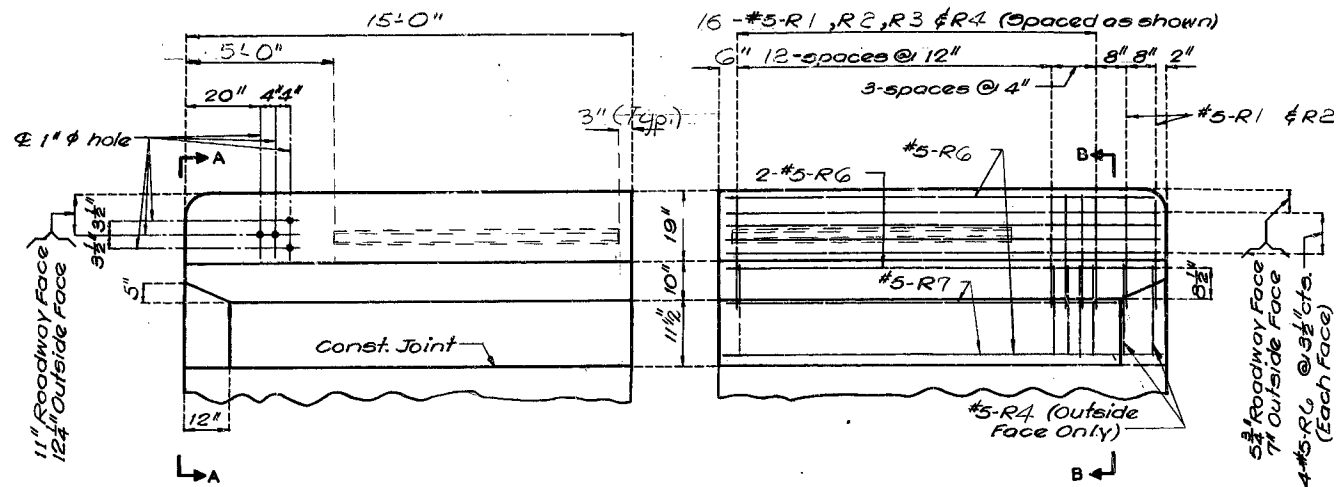
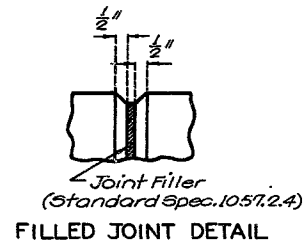
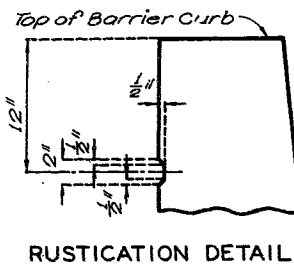
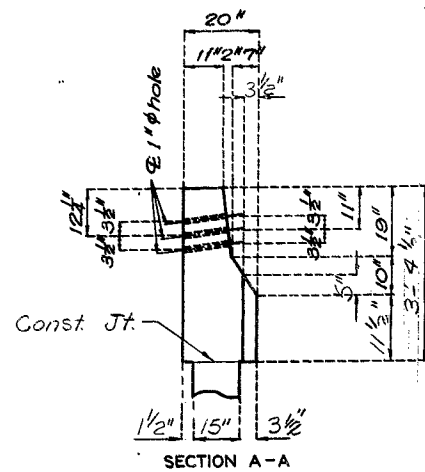
COUNTY

A-3097

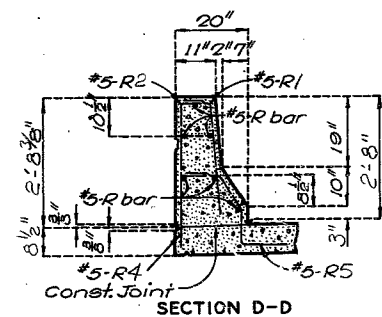
DETAILED March 1978
CHECKED March 1978

MISSOURI STATE HIGHWAY DEPARTMENT

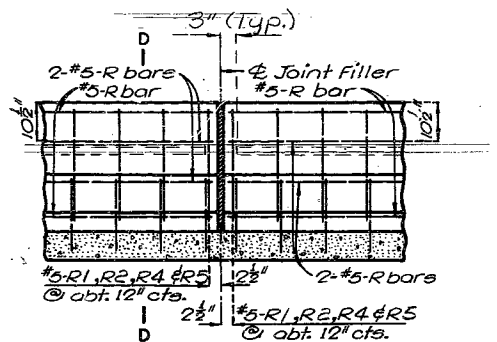
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		18	33	



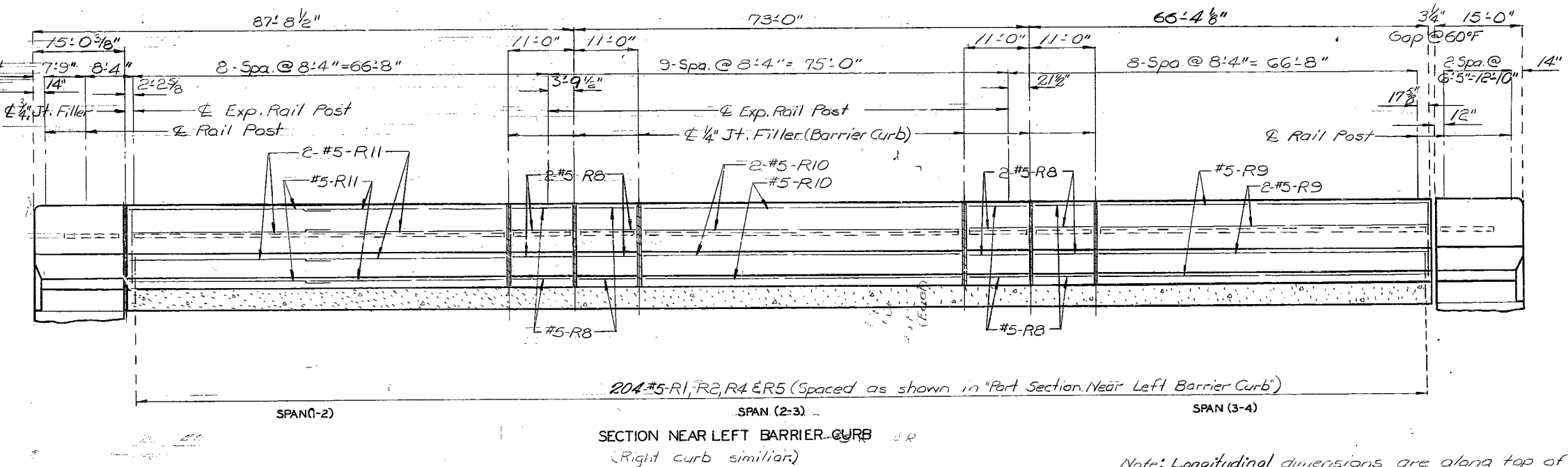
Note: Use a minimum lap of 15" for #5 horizontal barrier curb bars.



Note: Use a minimum lap of 15" for #5 horizontal barrier curb bars.



PART SECTION NEAR LEFT BARRIER CURB



SECTION NEAR LEFT BARRIER CURB (Right curb similar.)

Note: Longitudinal dimensions are along top of barrier curb parallel to grade.
Note: For details of barrier curb not shown see sheet No. 15.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	35	

STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
		HOOK A OR G	HOOK A OR G	
#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 80 KSI)
D = 5d FOR #3 THRU #11	D = 6d FOR #3 THRU #8
D = 10d FOR #14 AND #18	D = 8d FOR #9, #10 AND #11
	D = 10d FOR #14 AND #18

END HOOK DIMENSIONS						
BAR SIZE	180° HOOKS				30° HOOKS	
	GRADE 40		GRADE 60		ALL GRADES	
	A OR G	J	A OR G	J	A OR G	J
# 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"	

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. EA. - NUMBER OF BARS OF EACH LENGTH.

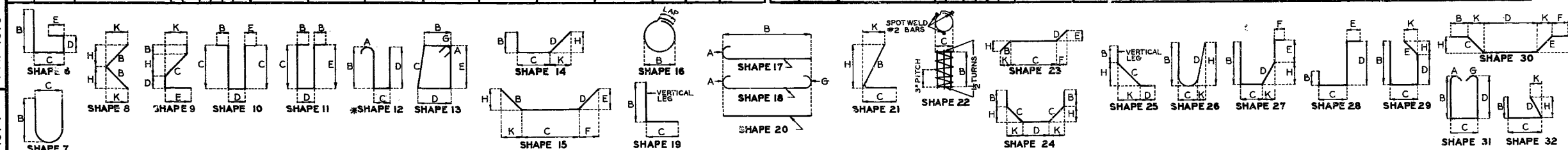
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

ACTUAL LENGTHS-ARE MEASURED ALONG CENTERLINE
BAR TO THE NEAREST INCH.

* ALL HOOKS AND BENDS FOR SHAPE NO. 12 - GRADE 4 (ONLY) ARE BASED ON $D = 5d$.

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.
		SUBSTRUCTURE																							
		BT.NO.1																							
3	6F1	WING	H 15	S X					14.000	3	1.500	14.000	13.250	4.500	13.250	4.500	5	6	5	3					
4	6F2	WING	H 15	S X					14.000	9	2.500	14.000	4.250	13.375	4.250	13.375	11	7	11	6					
2	6H1	BACKWALL	H 20	X					28	1.000							28	1	28	1					
2	6H2	BACKWALL	H 20	X					45	11.000							45	11	45	11					
2	4H3	BACKWALL	H 20	X					28	1.000							28	1	28	1					
4	4H4	BACKWALL	H 20	X					23	4.000							23	4	23	4					
10	11H5	BEAM	H 17	X V	2				33	8.000							35	3	35	3					
		INCR = 11.750 IN							29	9.000							31	4	31	4					
2	6H6	BEAM	H 20	X					40	5.000							40	5	40	5					
2	5H7	BEAM	H 20	X					39	0.000							39	0	39	0					
5	11H8	BEAM	H 17	X V	1				29	4.000							30	11	30	11					
		INCR = 14.750 IN							24	5.000							26	0	26	0					
2	5H19	BEAM	H 20	X					33	8.000							33	8	33	8					
5	11H22	BEAM	H 17	X V	1				53	3.000							54	10	54	10					
		INCR = 14.250 IN							48	6.000							50	1	50	1					
5	11H23	BEAM	H 17	X					36	3.000							37	10	37	10					
8	6H51	WING	H 20	X					14	9.000							14	9	14	9					
6	6H52	WING	H 20	X V	2				13	11.000							13	11	13	11					
		INCR = 39.000 IN							7	5.000							7	5	7	5					
6	6H54	WING	H 20	X V	2				13	10.000							13	10	13	10					
		INCR = 39.000 IN							7	4.000							7	4	7	4					
1	6H56	BEAM	H 20	X					33	8.000							33	8	33	8					
1	6H57	BEAM	H 20	X					29	9.000							29	9	29	9					
2	6T1	WING	H 25	S X					2	6.000	9	7.000	2	5.000			2	6	14	5					
2	6T2	WING	H 19	S X					5	4.000	4	0.000					9	4	9	2					
2	6T3	WING	H 25	S X					2	6.000	9	8.500	2	4.000			2	0.000	9	6.000	14	7	14	5	4
2	6T4	WING	H 19	S X					5	4.000	7	3.000					12	7	12	5					
54	4U1	BEAM	H 13	S X					3	6.000	3	1.125	4	3.000	3	0.000		14	7	14	4				
12	4U2	BEAM	H 13	S X					3	6.000	2	10.250	4	3.000	2	9.000		14	1	13	10				
12	6U3	BEAM	H 10	S X							2	5.000	2	9.000				7	7	7	3				
13	4U4	BEAM	H 10	S X								6.000	2	6.000				4	6	4	4				
3	4U5	WING	H 10	S X							3	7.000	6.000					7	8	7	6				
3	4U6	WING	H 10	S X							6	10.000	6.000					14	2	14	0				
5	7U7	BEAM	H 14	X					8	0.000	2	9.000	2	0.375			14.000	20.000	12	9	12	7			
5	7U8	BEAM	H 10	X					6	6.750	2	7.500						15	9	15	5				
1	4U9	BEAM	H 13	S X					21.000	3	1.125	2	6.000	3	0.000			11	1	10	10				
1	4U10	BEAM	H 13	S X					2	9.000	3	1.125	3	6.000	3	0.000		13	1	12	10				
134	5V1	BACKWALL	H 20	X					4	8.000							4	8	4	8					
114	5V2	APRON	H 20	X					20.000								20	20	20						
10	6V3	WING	H 20	X V	1				4	6.000							4	6	4	6					
		INCR = 2.625 IN							2	6.000							2	6	2	6					
10	6V4	WING	H 17	X V	1				4	4.000							5	0	5	0					
		INCR = 2.625 IN							2	4.000							3	0	3	0					
5	6V5	WING	H 20	X					8	2.000							8	2	8	2					
5	6V6	WING	H 17	X					8	0.000							8	8	8	8					
6	4V7	WING	H 20	X					4	9.000							4	9	4	9					
2	6V8	WING	H 20	X					2	9.000							2	9	2	9					
2	6V9	WING	H 20	X					3	2.000							3	2	3	2					
5	6V20	WING	H 20	X					8	0.000							8	0	8	0					
5	6V21	WING	H 17	X					7	10.000							8	6	8	6					
10	6V22	WING	H 20	X V	1				4	6.000							4	6	4	6					
		INCR = 2.625 IN							2	6.000							2	6	2	6					

NO. REQD.	MARK NO.	LOCATION	GRADE (GTH)	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.
10	6V23	WING	H 17	X	V			1	4	4.000								5 0	5 0						
		INCR = 2.625 IN							2	4.000								3 0	3 0						
		BT-NO. 2																							
16	6D1	FOOTING	H 10	S	X					3	2.000	18.000						7 10	7 6	18					
6	5D2	FOOTING	H 20	X				5	9.000									5 9	5 9	3					
2	7D3	FOOTING	H 10	X						3	11.000	7 3.000						15 1	14 9	6					
11	7D4	FOOTING	H 20	X				8	0.000									8 0	8 0	18					
27	8D5	FOOTING	H 20	X				6	4.000									6 4	6 4	45					
27	8V30	COLUMN	H 20	X				18	6.000									18 6	18 6	133					
48	4P1	COLUMN	H 16	X				2	3.000									7 11	7 11	25					
1	6U20	BEAM	H 13	S	X			2	0.000	2	9.000	2 0.000	2 9.000					10 8	10 2	1					
1	6U21	BEAM	H 13	S	X			2	3.000	3	0.000	2 3.000	3 0.000					11 8	11 2	1					
30	6U22	BEAM	H 13	S	X			2	9.000	2	9.000	2 9.000	2 9.000					12 2	11 8	52					
72	6U23	BEAM	H 13	S	X			2	9.000	3	0.000	2 9.000	3 0.000					12 8	12 2	131					
12	4U24	BEAM	H 10	S	X					6.000	2 9.000							3 9	3 7	2					
7	10H25	BEAM	H 17	X				26	1.000									27 6	27 6	82					
8	11H26	BEAM	H 20	X				26	0.000									26 0	26 0	110					
2	6H27	BEAM	H 20	X				26	0.000									26 0	26 0	7					
8	11H28	BEAM	H 20	X				49	6.000									49 6	49 6	210					
2	6H29	BEAM	H 20	X				43	0.000									43 0	43 0	12					
7	10H30	BEAM	H 17	X				53	0.000									54 5	54 5	163					
8	7H31	BEAM	H 7	X				4	0.000	2	7.000							9 4	9 4	15					
		BT-NO. 3																							
16	6D1	FOOTING	H 10	S	X					3	2.000	18.000						7 10	7 6	18					
6	5D2	FOOTING	H 20	X				5	9.000									5 9	5 9	3					
2	7D3	FOOTING	H 10	X						3	11.000	7 3.000						15 1	14 9	6					
11	7D4	FOOTING	H 20	X				8	0.000									8 0	8 0	18					
27	8D5	FOOTING	H 20	X				6	4.000									6 4	6 4	45					
27	8V30	COLUMN	H 20	X				18	6.000									18 6	18 6	133					
48	4P1	COLUMN	H 16	X				2	3.000									7 11	7 11	25					
1	6U20	BEAM	H 13	S	X			2	0.000	2	9.000	2 0.000	2 9.000					10 8	10 2	1					
1	6U21	BEAM	H 13	S	X			2	3.000	3	0.000	2 3.000	3 0.000					11 8	11 2	1					
30	6U22	BEAM	H 13	S	X			2	9.000	2	9.000	2 9.000	2 9.000					12 2	11 8	52					
72	6U23	BEAM	H 13	S	X			2	9.000	3	0.000	2 9.000	3 0.000					12 8	12 2	131					
12	4U24	BEAM	H 10	S	X					6.000	2 9.000							3 9	3 7	2					
7	10H25	BEAM	H 17	X				26	1.000									27 6	27 6	82					
8	11H26	BEAM	H 20	X				26	0.000									26 0	26 0	110					
2	6H27	BEAM	H 20	X				26	0.000									26 0	26 0	7					
8	11H28	BEAM	H 20	X				49	6.000									49 6	49 6	210					
2	6H29	BEAM	H 20	X				43	0.000									43 0	43 0	12					
7	10H32	BEAM	H 17	X				49	7.000									51 0	51 0	153					
8	7H31	BEAM	H 7	X				4	0.000	2	7.000							9 4	9 4	15					
		SUBSTRUCTURE																							
		BT-NO. 4																							
4	6F1	WING	H 15	S	X				14.000	3	1.500	14.000	13.250	4.500	13.250	4.500		5 6	5 3	3					
4	6F2	WING	H 15	S	X				14.000	9	2.500	14.000	4.250	13.375	4.250	13.375		11 7	11 6	6					
2	6H9	BACKWALL	H 20	X				35	10.000									35 10	35 10	10					
2	6H10	BACKWALL	H 20	X				34	2.000									34 2	34 2	10					



BENDING DIAGRAMS

Sheet No. 16 of 17

JEFFERSON

COUNTY

A-3097

STD. 90.8	REVISED
MAY 1974	OCT. 1976

MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

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.	FT.	IN.	FT.	IN.	LBS.	
2		6H11	BACKWALL	H 20	X					37	3.000													37	3	37	3	11	
2		6H12	BACKWALL	H 20	X					35	8.000													35	8	35	8	10	
2		4H13	BACKWALL	H 20	X					36	0.000													36	0	36	0	4	
2		4H14	BACKWALL	H 20	X					35	8.000													35	8	35	8	4	
5		11H15	BEAM	H 17	X	V			1	50	3.000													51	10	51	10		
			INCR = 11.500 IN							46	5.000													48	0	48	0	132	
10		11H16	BEAM	H 17	X	V			2	38	0.000													37	7	39	7		
			INCR = 15.750 IN							32	9.000													34	4	34	4	196	
2		6H17	BEAM	H 20	X					42	4.000													42	4	42	4	12	
2		6H18	BEAM	H 20	X					32	9.000													32	9	32	9	99	
2		5H21	BEAM	H 20	X					41	2.000													41	2	41	2	86	
2		5H20	BEAM	H 20	X					31	7.000													31	7	31	7	66	
5		11H24	BEAM	H 17	X	V			1	38	2.000													39	9	39	9		
			INCR = 11.750 IN							34	3.000													35	10	35	10	1004	
5		11H50	BEAM	H 20	X					33	5.000													33	5	33	5	888	
8		6H51	WING	H 20	X					14	9.000													14	9	14	9	177	
6		6H53	WING	H 20	X	V			2	14	0.000													14	0	14	0		
			INCR = 34.000 IN							8	4.000													8	4	8	4	101	
6		6H55	WING	H 20	X	V			2	14	0.000													14	0	14	0		
			INCR = 34.500 IN							8	3.000													8	3	8	3	100	
2		6T5	WING	H 25	X					2	5.000	10	6.125	2	3.000					2	7.000	9	8.000		14	8	14	7	44
2		6T6	WING	H 19	S	X				5	4.000	7	3.000											12	7	12	5	37	
2		6T7	WING	H 25	X					2	5.000	9	8.875	2	5.000					2	6.000	9	5.000		14	7	14	6	44
2		6T8	WING	H 19	S	X				5	3.000	4	0.000											9	3	9	1	27	
13		4U4	BEAM	H 10	S	X						6.000	3	6.000										4	6	4	4	38	
3		4U5	WING	H 10	S	X						3	7.000	6.000										7	8	7	6	15	
3		4U6	WING	H 10	S	X						6	10.000	6.000										14	2	14	0	28	
5		7U7	BEAM	H 14	X					2	0.000	2	9.000	2	0.375					14.000	20.000			12	9	12	7	129	
5		7U8	BEAM	H 10	X					6	6.750	2	7.500											15	9	15	5	158	
12		6U3	BEAM	H 10	S	X				2	5.000	2	9.000											7	7	7	3	131	
20		4U14	BEAM	H 13	S	X				3	6.000	3	1.625	4	3.000	3	0.500							14	8	14	5	193	
34		4U16	BEAM	H 13	S	X				3	6.000	3	3.750	4	3.000	3	2.750							15	1	14	9	335	
13		4U17	BEAM	H 13	S	X				3	4.000	2	10.250	4	3.000	2	9.000							14	1	13	10	120	
1		4U18	BEAM	H 13	S	X				21.000	2	10.250	2	6.000	2	9.000								10	7	10	4	7	
1		4U19	BEAM	H 13	S	X				2	9.000	2	10.250	3	6.000	2	9.000							12	7	12	4	8	
67		5U26	BACKWALL	H 10	S	X						2	4.000	9.000										5	5	5	3	367	
2		6V6	Wing	H 20	X					2	9.000													2	9	2	9	8	
114		5V2	APRON	H 20	X					20.000														20		20		198	
5		6V10	WING	H 20	X					8	0.000													8	0	8	0	60	
5		6V11	WING	H 17	X					7	10.000													8	6	8	6	64	
10		6V12	WING	H 20	X	V			1	4	11.000													4	11	4	11		
			INCR = 3.250 IN							2	6.000													2	6	2	6	56	
10		6V13	WING	H 17	X	V			1	4	8.000													5	4	5	4		
			INCR = 3.125 IN							2	4.000													3	0	3	0	63	
10		6V14	WING	H 20	X	V			1	4	9.000													4	9	4	9		
			INCR = 3.000 IN							2	6.000													2	6	2	6	54	
10		6V15	WING	H 17	X	V			1	4	7.000													5	3	5	3		
			INCR = 3.000 IN							2	4.000													3	0	3	0	62	
5		6V16	WING	H 20	X					8	6.000													8	6	8	6	64	
5		6V17	WING	H 17	X					8	4.000													9	0	9	0	68	
8		4V18	WING	H 20	X					4	9.000													4	9	4	9	25	
134		5V24	BACKWALL	H 20	X					6	3.000													6	3	6	3	874	
2		6V9	Wing	H 20	X					5	2.000													3	2	3	2	10	
			Superstructure																										
480		5R1	BARRIER CURB	H 19	S					2	6.125	6.000							2	6.000	3.000			3	0	2	11	1460	
480		5R2	BARRIER CURB	H 19	S					2	6.000	6.000												3	0	2	11	1460	
64		5R3	BARRIER CURB	H 27	S					17.000	9.375	11.125	9.000						6.375	9.125	3	11	3	9			250		
480		5R4	BARRIER CURB	H 19	S					17.000	9.000													2	2	2	1	1043	

NO.	REQD.	MARK NO.	LOCATION	GRADE 60 (H)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT LBS						
										B		C		D		E					F		H		K	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	FT.	IN.
408	5R5	BARRIER CURB	H 27	S							9.000		11.125		7.000		12.000		9.125		6.375	3	3	3	1	131
48	5R6	BARRIER CURB	H 20							14	9.000											14	9	14	9	73
8	5R7	BARRIER CURB	H 20							13	10.000											13	10	13	10	11
48	5R8	BARRIER CURB	H 20							10	9.000											10	9	10	9	53
12	5R9	BARRIER CURB	H 20							55	1.000											55	1	55	1	68
12	5R10	BARRIER CURB	H 20							50	9.000											50	9	50	9	63
24	5R11	BARRIER CURB	H 20							31	4.000											31	4	31	4	78
136	5S1	*SLAB	H 20							54	9.000											54	9	54	9	776
425	5S2	*SLAB	H 20							25	11.000											25	11	25	11	1148
425	5S3	*SLAB	H 20							25	11.000											25	11	25	11	1148
82	5S4	*SLAB	H 20					V	1	25	7.000											25	7	25	7	
		INCR = 3.500 IN								22.000												22	22			
51	5S18	*SLAB	H 20					V	1	17	2.000											17	2	17	2	117
		INCR = 3.500 IN								2	6.000											2	6	2	6	52
1	4S6	*SLAB	H 20							40	0.000											40	0	40	0	2
1	4S11	*SLAB	H 20							30	10.000											30	10	30	10	2
52	5S7	*SLAB	H 19							6.000	2	5.000										2	11	2	10	15
82	5S5	*SLAB	H 20					V	1	25	7.000											25	7	25	7	
		INCR = 3.500 IN								22.000												22	22			117
134	7S8	*SLAB	H 20							16	0.000											16	0	16	0	438
5	5S9	*SLAB	H 20							24	2.000											24	2	24	2	121
5	5S10	*SLAB	H 20							24	2.000											24	2	24	2	121
8	5S12	*SLAB	H 20							54	9.000											54	9	54	9	451
216	5S13	*SLAB	H 20							54	9.000											54	9	54	9	1233
70	5S14	*SLAB	H 20					V	1	23	10.000											23	10	23	10	
		INCR = 3.500 IN								3	9.000											3	9	3	9	1007
70	5S15	*SLAB	H 20					V	1	23	10.000											23	10	23	10	
		INCR = 3.500 IN								3	9.000											3	9	3	9	1007
55	5S20	*SLAB	H 20					V	1	18	8.000											18	8	18	8	
		INCR = 3.500 IN								2	10.000											2	10	2	10	617
55	5S21	*SLAB	H 20					V	1	18	8.000											18	8	18	8	
		INCR = 3.500 IN								2	10.000											2	10	2	10	617
455	5S16	*SLAB	H 20							18	10.000											18	10	18	10	893
453	5S17	*SLAB	H 20							18	10.000											18	10	18	10	889
51	5S19	*SLAB	H 20					V	1	17	2.000											17	2	17	2	
		INCR = 3.500 IN								2	6.000											2	6	2	6	523
72	4H35	INT. DIAPH.	H 20							8	1.000											8	1	8	1	381
24	6H36	INT. DIAPH.	H 20							7	3.000											7	3	7	3	261
40	5H37	INT. BENT DIAPH	H 19	S						9.000	2	3.000										3	0	2	11	122
27	5H38	INT. BENT DIAPH	H 23	S						15.000	20.000	15.000	12.275	8.625	8.625	12.275	4	2	4	1		115				
32	4H39	INT. BENT DIAPH	H 20							14	0.000											14	0	14	0	295
48	6H40	INT. BENT DIAPH	H 20							12	10.000											12	10	12	10	926
2	5H41	END BENT DIAPH	H 20							28	10.000											28	10	28	10	60
24	9H42	END BENT DIAPH	H 20							14	0.000											14	0	14	0	1142
6	5H43	END BENT DIAPH	H 21							23.875	3	0.000					13.750	19.500	5	0	4	2			26	
18	5H44	END BENT DIAPH	H 23							15.000	20.000						12.275	8.625	2	11	2	10	53			
2	5H45	END BENT DIAPH	H 20							38	8.000											38	8	38	8	81
6	5H46	END BENT DIAPH	H 23							8.000	3	0.000					4.625	6.500	3	8	3	8	23			
24	6U36	END BENT DIAPH	H 28	S						15.000	3	5.000	12.000									5	8	5	4	192
8	6U35	END BENT DIAPH	H 11	S						15.000	3	5.000	12.000									5	8	5	4	64
40	4U34	END BENT DIAPH	H 11	S						15.000	22.000	12.000										4	1	3	11	105
120	4U33	END BENT DIAPH	H 28	S						15.000	22.000	12.000										4	1	3	11	314
96	4U32	INT. BENT DIAPH	H 28	S						3	2.000	3	11.000	12.000								8	1	7	11	508
32	6U31	INT. BENT DIAPH	H 28	S						3	5.000	3	11.000	12.000								8	4	8	0	385
96	6U30	INT. DIAPH	H 10	S						12.000	3	6.000	6.000	12.000								9	6	9	2	588
16	5V35	INT BENT DIAPH	H 20							4	0.000											4	0	4	0	67
8	5V36	END BENT DIAPH	H 20							3	5.000											3	5	3	5	

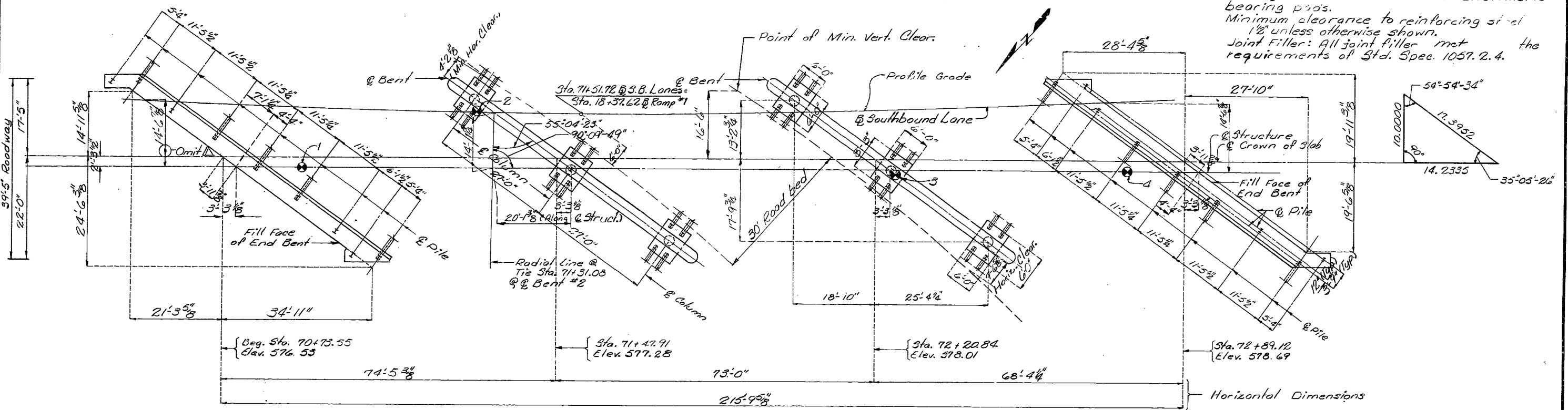
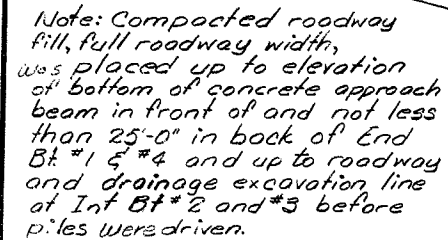
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	19	

FINAL PLANS

Design Loading:
HS 20-44; 15' ¹³⁹ ft. Future Wearing Surface:
Earth 120#, Equivalent Fluid Pressure 30#
Superstructure: Simply supported
non-composite for Dead Load. Continuous
composite for Live Load.

Design Unit Stresses:
Class B Concrete (substructure) $f_c = 1,200$ psi.
Class BI Concrete (superstructure except
Prestressed Girders) $f_c = 1,600$ psi.

Reinforcing Steel (Grade 60) $f_y = 60,000 \text{ psi}$
Steel Pile $f_b = 9,000 \text{ psi}$.
For Pre-stressed Girder Stresses see Sheet # 8 & 9
Bridge seat areas for P15 Girders shall be
given a smooth wood float finish. Finishing
& above Plan Elev. and grinding will not
be required.
Bearings were 50 durometer Elastomeric
bearing pads.
Minimum clearance to reinforcing steel
1/2" unless otherwise shown.
Joint Filler: All joint filler met the
requirements of Std. Spec. 1057.2.4.



Note: For Boring Data, see sheet No. 2 of 17
 "⊗" Indicates location of boring.

CURVE DATA - (S.B. Lanes)
 P.I. Sta. 74+85.63
 $\Delta = 6^{\circ}00'00''$ Lt.
 $D = 0^{\circ}30'00''$
 $R = 11,459.16'$
 $T = 600.55'$
 $L = 1200.00'$
 S.E. = None
 W. None

B.M. EI 581.36 □ on Top of S.W. Barrier Curb Abut. No. 4

STATE ROAD FROM ROUTE J (41) TO SOUTH OF ROUTE M M
ABOUT 2 MILES S. OF ROUTE J

PROJECT NO. 6-U-21-256A STA. 70+73.55

JOB NO. 6-U-21-256 A **RTE. 21**

JEFFERSON COUNTY

STD. 70 6.35

STD.

A-3097

DESIGNED *Dec. 19 77*
 DETAILED *Feb. 19 78*
 CHECKED *Feb 19 78*

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

Sheet No. 1A of 17. Δ Revised Aug. 7, 1978

DATE March 14, 1978

K&E 10 1255 3-77 MC 3936

11

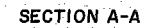


SECTION C-C SECTION D-D



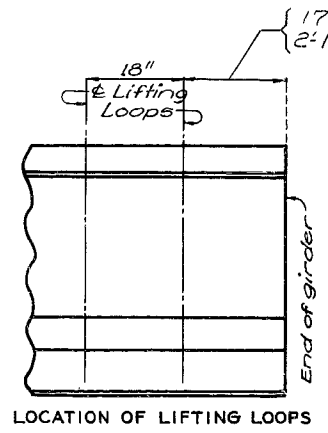
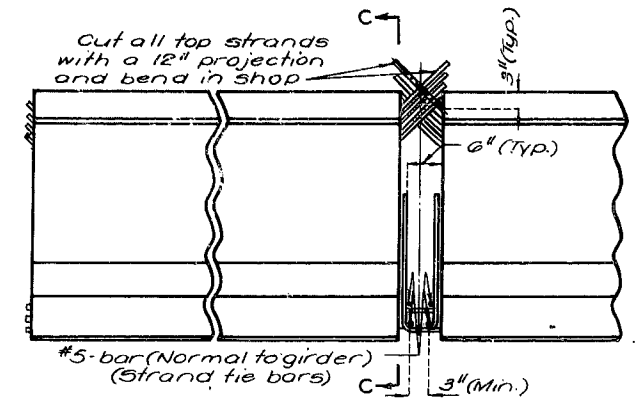
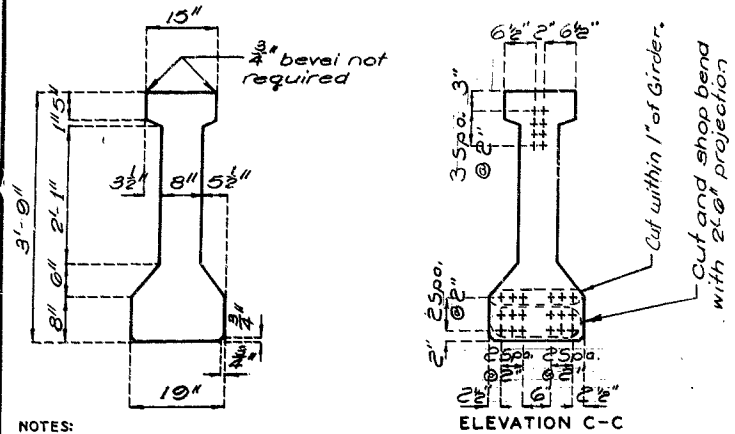
ELEVATION A-A

SECTION E-E



MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	27	



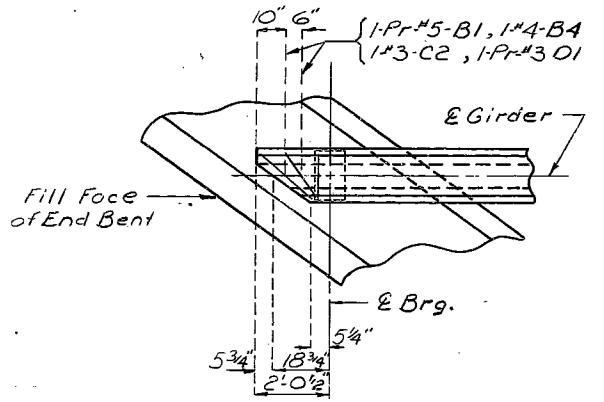
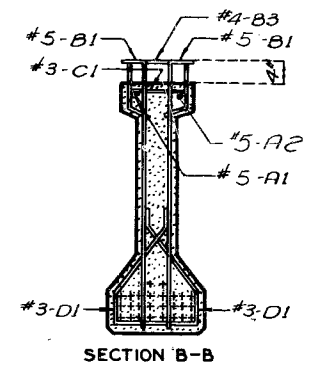
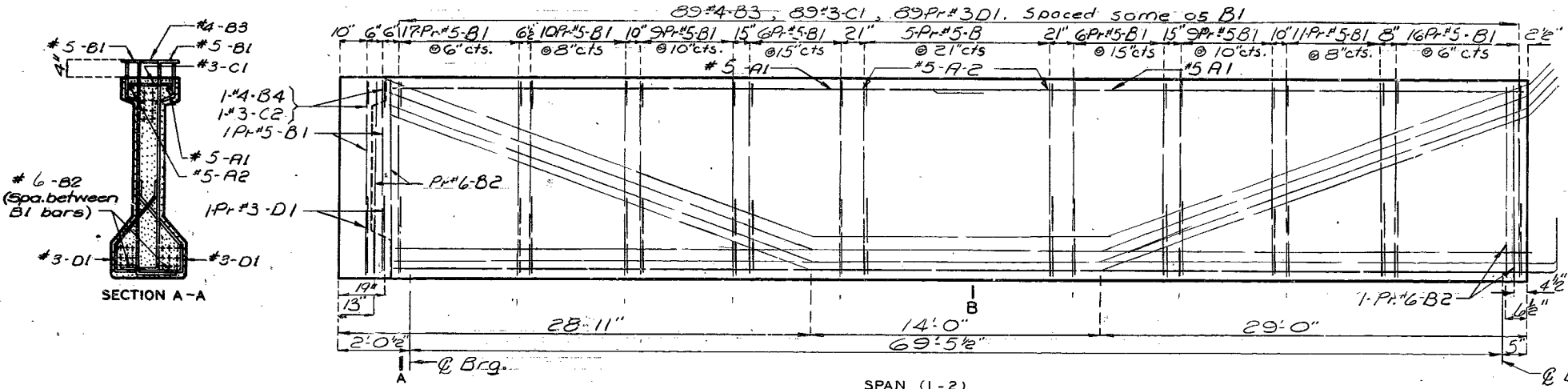
BILL OF REINFORCING STEEL-EACH GIRDER			
NO.	SIZE & MARK	LENGTH	SHAPE
2	5A1	35'-3"	20
2	5A2	36'-0"	20
182	5B1	4'-4"	19S
8	6B2	4'-3"	19S
89	4B3	2'-10"	50S
2	4B4	3'-7"	50S
89	3C1	15"	10
2	3C2	2'-0"	10
182	3D1	3'-3"	9S

BENDING DIAGRAMS

NOTES:
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH $f'c = 5,000$ psi.
(+) INDICATES PRESTRESSED STRAND.
USE 26 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 723 KIPS.
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUG UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

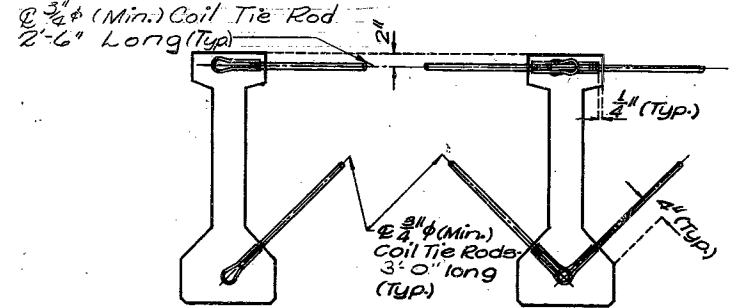
END BENT NO. 1 INTERMEDIATE BENT NO. 2
STRAND DETAILS AT GIRDER ENDS

NOTE: ALL DIMENSIONS ARE OUT TO OUT.
WHERE DEFLECTING STRANDS INTERFERE WITH PLACEMENT, SOME IN-PLACE BENDING MAY BE NECESSARY.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
THE LETTER S AFTER THE SHAPE NUMBER, IN BENDING SKETCHES, INDICATES BARS THAT ARE TO BE BENT ACCORDING TO CRSI STIRRUP AND TIE DIMENSIONS.
LENGTH - TOTAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".



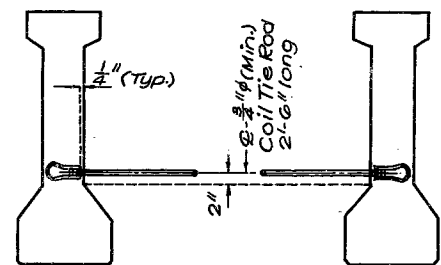
Note: Prestressing strands at End Bent No. 1 shall be trimmed to within 8" of concrete. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be enclosed in concrete diaphragms shall not be pointed.

Note: Exterior and interior girders are the same except for coil ties.



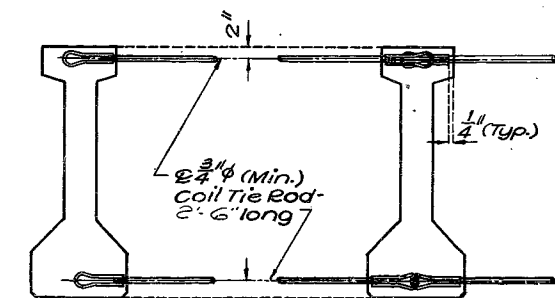
EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT END BENT NO. 1



EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT INTERMEDIATE DIAPHRAGMS



EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT INTERMEDIATE BENT

223

STD. 55.4.8 REVISED
APRIL 1973
AUG. 1977

DETAILED Dec 1977
CHECKED Jan 1978

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

Sheet No. 8 of 17.

JEFFERSON COUNTY

A-3097

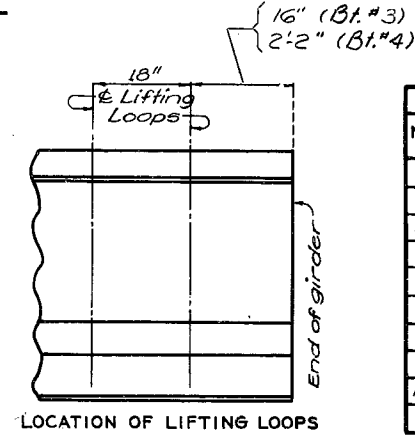
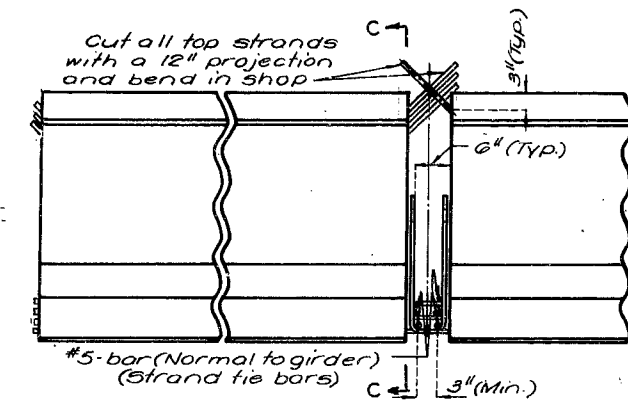
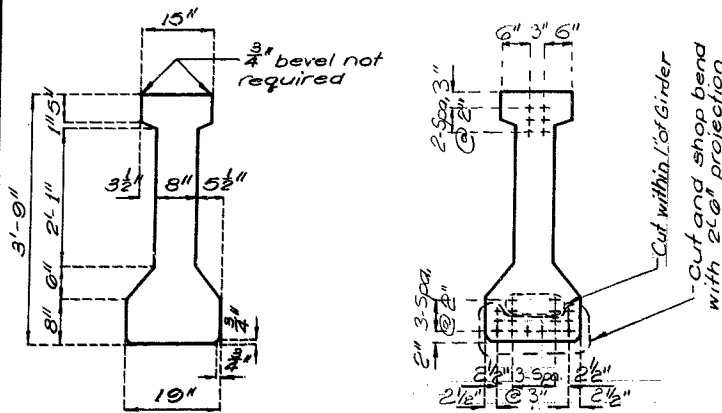
44

STD. 55.4.8	REVISED
APRIL 1973	AUG. 1977



MISSOURI STATE HIGHWAY DEPARTMENT

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



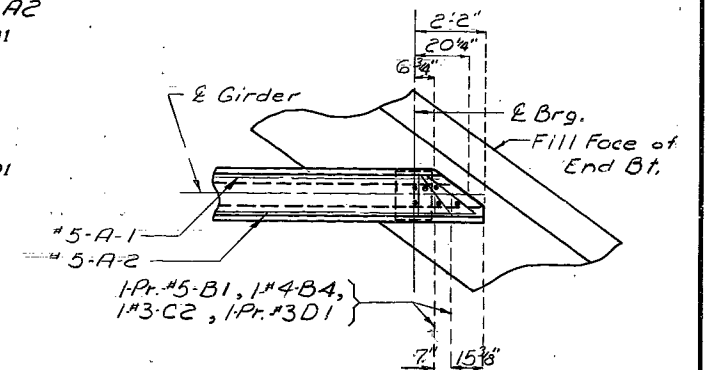
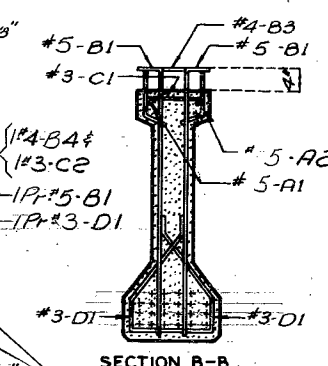
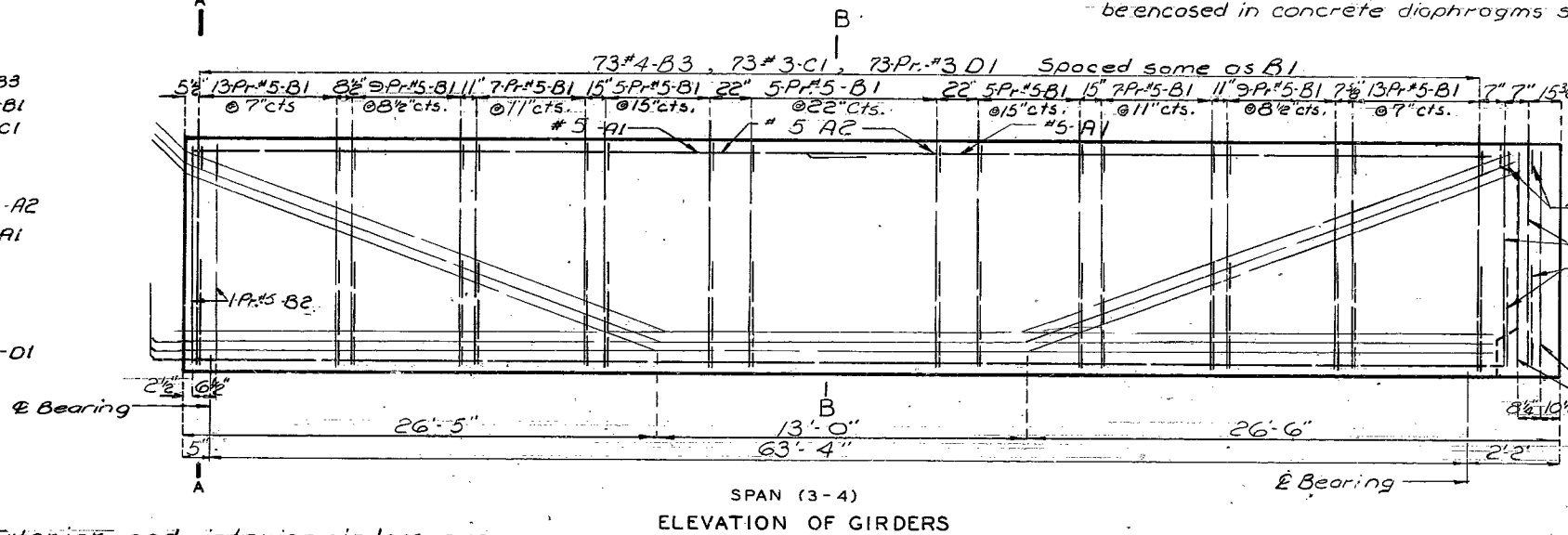
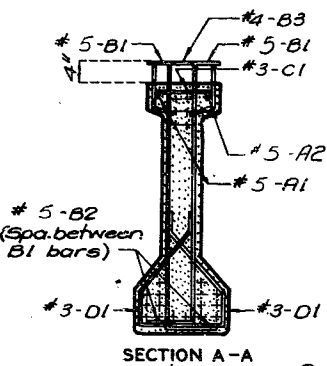
BILL OF REINFORCING STEEL-EACH GIRDER				
NO.	SIZE & MARK	LENGTH	SHAPE	BENDING DIAGRAMS
2	5 A1	32'-3"	20	SHAPE 10
2	5 A2	33'-10"	20	
150	5 B1	4'-4"	19S	
8	5 B2	4'-3"	19S	
73	4 B3	2'-10"	50S	SHAPE 9S
2	4 B4	3'-7"	50S	
73	3 C1	15"	10	SHAPE 50S
2	3 C2	2'-0"	10	
150	3 D1	3'-3"	9S	

NOTES:
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH $f'c = 5,000$ psi.
(+) INDICATES PRESTRESSED STRAND.
USE 22 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 637KIPS.
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUG UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

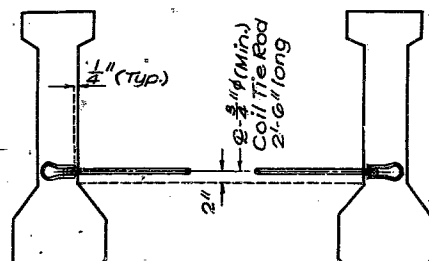
END BENT NO. 4 INTERMEDIATE BENT NO. 3
STRAND DETAILS AT GIRDER ENDS

Note: Prestressing strands at End Bent No. 4 shall be trimmed to within 1/8" of concrete. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be enclosed in concrete diaphragms shall not be painted.

NOTE: ALL DIMENSIONS ARE OUT TO OUT.
WHERE DEFLECTING STRANDS INTERFERE WITH PLACEMENT, SOME IN-PLACE BENDING MAY BE NECESSARY.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
THE LETTER S AFTER THE SHAPE NUMBER, IN BENDING SKETCHES, INDICATES BARS THAT ARE TO BE BENT ACCORDING TO CRSI STIRRUP AND TIE DIMENSIONS.
LENGTH - TOTAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".



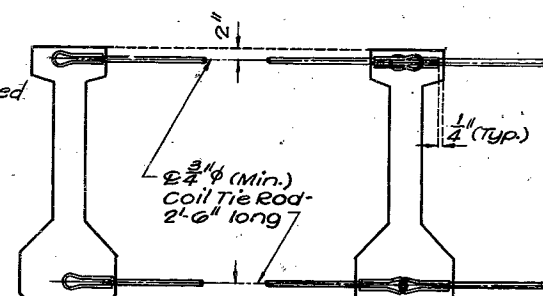
Note: Exterior and interior girders are the same except for coil ties.



EXTERIOR GIRDERS INTERIOR GIRDERS

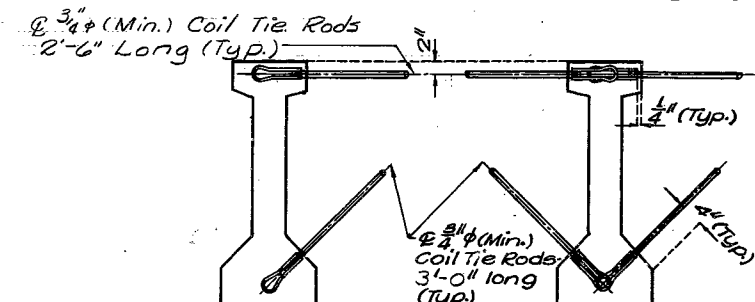
DETAILS OF COIL TIES AT INTERMEDIATE DIAPHRAGMS

Note: For details of slotted wells cast in tops of prestressed beams, see sh. No. 13.



EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT INT. BT. NO. 3



EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT END BENT NO. 4

STD. 55.4.8 REVISED
APRIL 1973 AUG. 1977

DETAILED Dec 1977
CHECKED Jan 1978

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

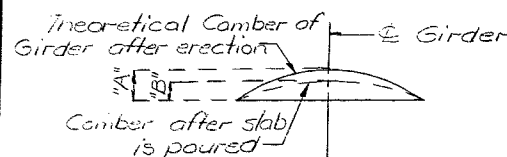
Sheet No. 10 of 17

JEFFERSON COUNTY

A-3097

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		18	30	



GIRDER CAMBER DIAGRAM

GIRDER	DIM.	SPAN		
		1-2	2-3	3-4
EXT.	"A"	2' 2"	2' 2"	1' 9"
	"B"	1' 7"	1' 7"	1' 6"
INT.	"A"	2' 2"	2' 2"	1' 9"
	"B"	1' 7"	1' 7"	1' 6"
E	"A"	2' 2"	2' 2"	1' 9"
	"B"	1' 7"	1' 7"	1' 6"

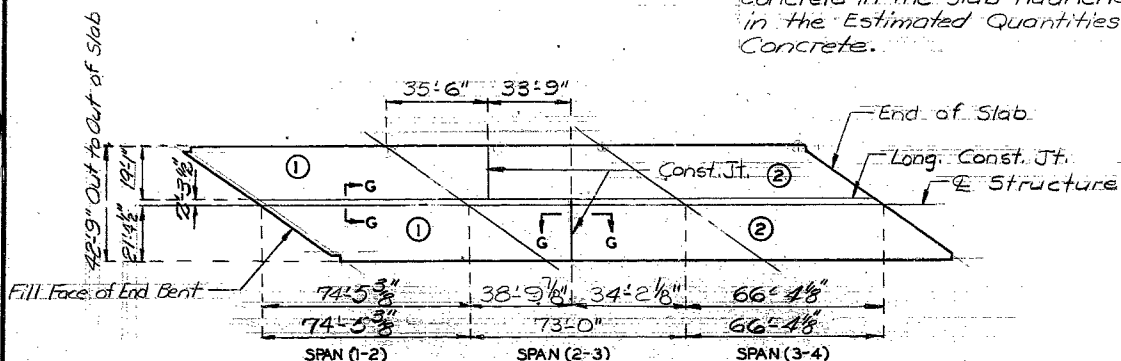
Girder #1	2' 2"	2' 2"	1' 9"
Girder #2	2' 2"	2' 2"	1' 9"
Girder #3	2' 2"	2' 2"	1' 9"
Girder #4	2' 2"	2' 2"	1' 9"
Girder #5	2' 2"	2' 2"	1' 9"

Note: Intermediate Diaphragms within spans may be poured with const. joint between diaphragm and slab or monolithic with slab.

Top of Girder	3' 6" 5/8"	3' 7" 7/8"	3' 6" 3/4"
Bottom of Slab	3' 6" 5/8"	3' 7" 7/8"	3' 6" 3/4"
SPAN (1-2)	SPAN (2-3)	SPAN (3-4)	

THEORETICAL SLAB HAUNCHING DIAGRAM

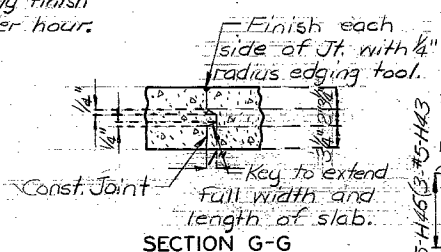
Note: Slab to be built parallel to grade and to a minimum thickness of 8 1/2". Slab haunches to be adjusted for any difference in girder camber from that shown in Camber Diagram. Concrete in the slab haunches is included in the Estimated Quantities as Class B1 Concrete.



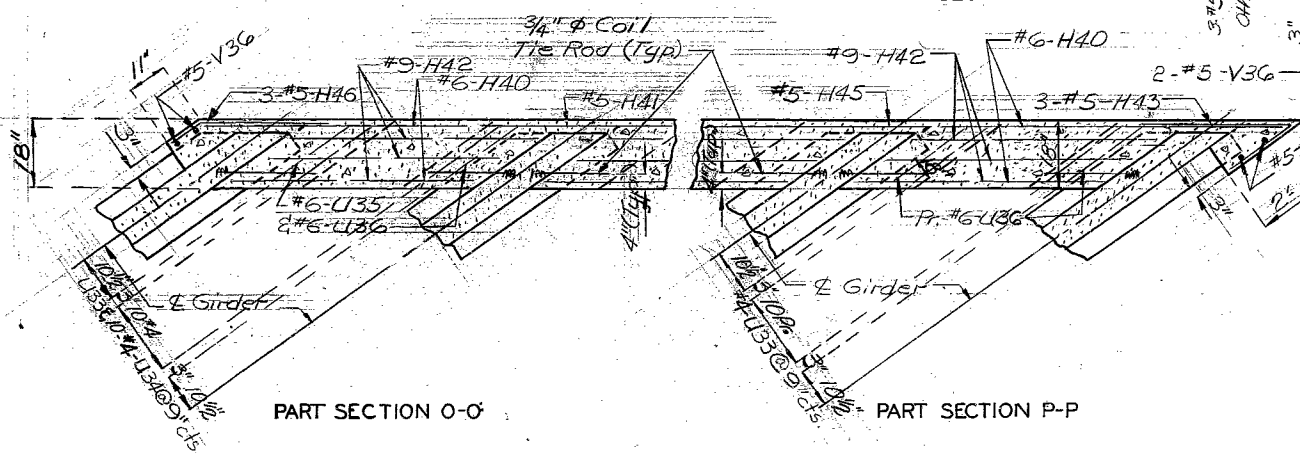
Note: The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at a rate of not less than 25 cubic yards per hour.

Basic Sequence	Sequence of Pours	
	Direction	
Alternate "A"	End to E	1 to End
	1 to 2	End to End

SLAB POURING SEQUENCE



SECTION G-G

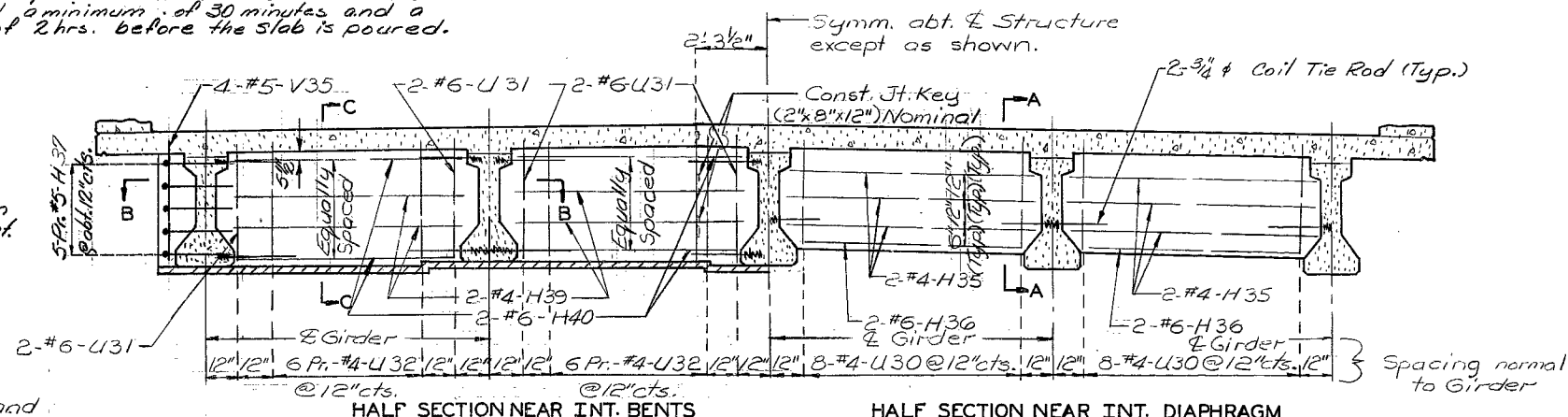


PART SECTION O-O

PART SECTION P-P

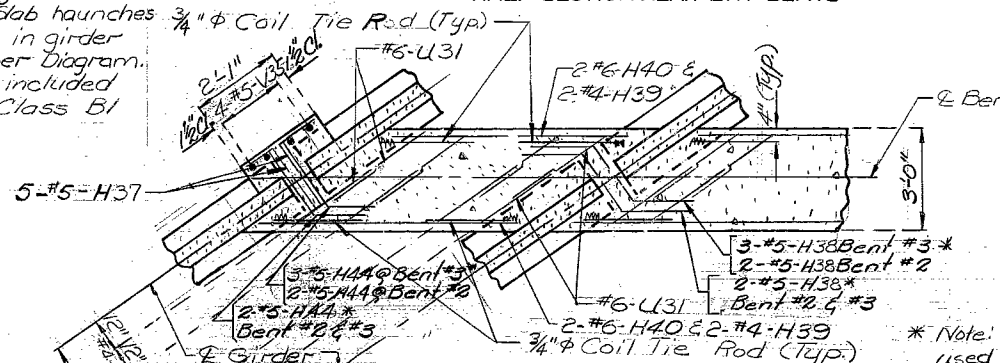
Note: Intermediate diaphragms are normal to grade. Diaphragms at bents are vertical. Note: The diaphragm at the intermediate bents shall be poured a minimum of 30 minutes and a maximum of 2 hrs. before the slab is poured.

Note: Cost of 3/4" coil tie rods placed in diaphragms is included in price bid for P/S members.

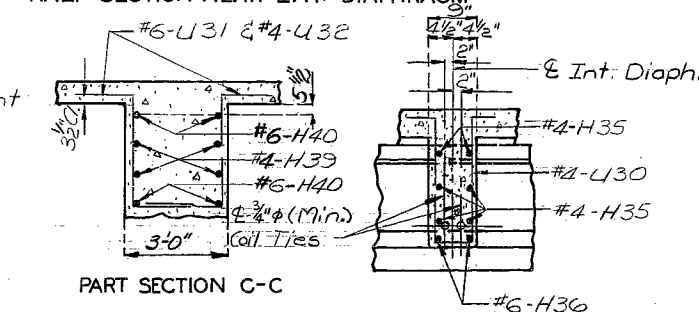


HALF SECTION NEAR INT. BENTS

HALF SECTION NEAR INT. DIAPHRAGM



PART SECTION B-B

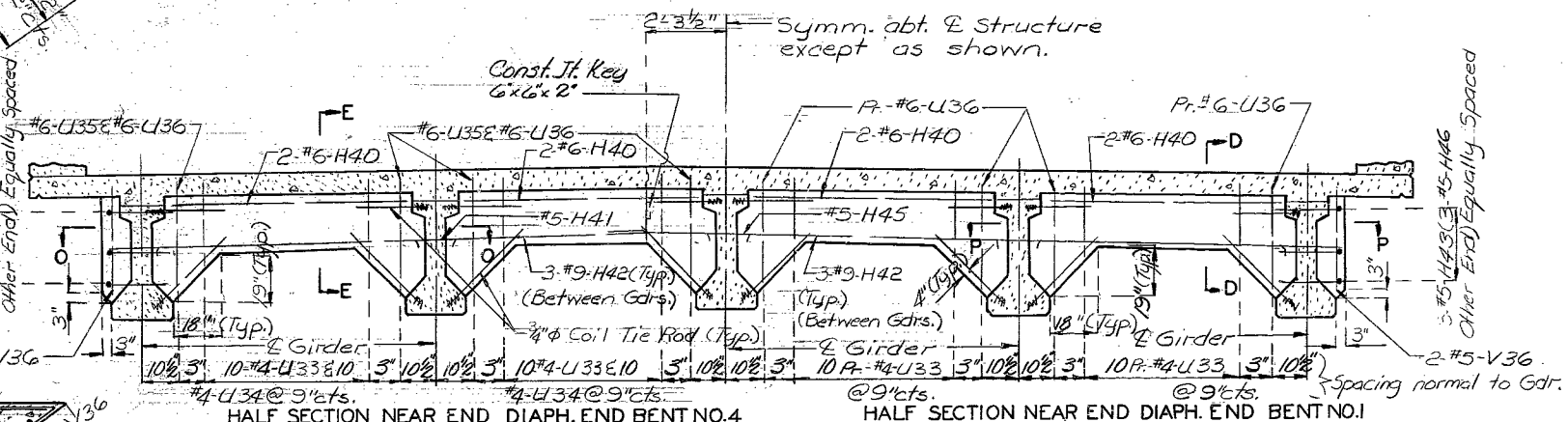


PART SECTION C-C

SECTION A-A

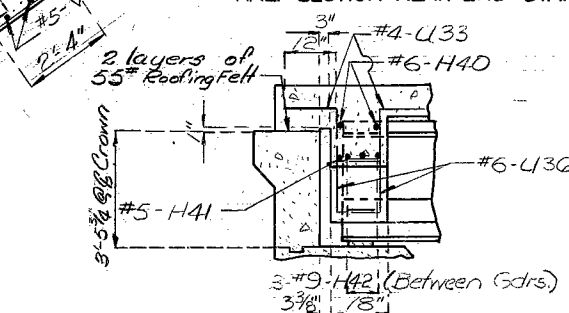
* Note: For location of #5-H44 & #5-H38 used as strand tie bars see sheets No. 8, 9, & 10.

Note: No splicing of Bars permitted in diaphragms.

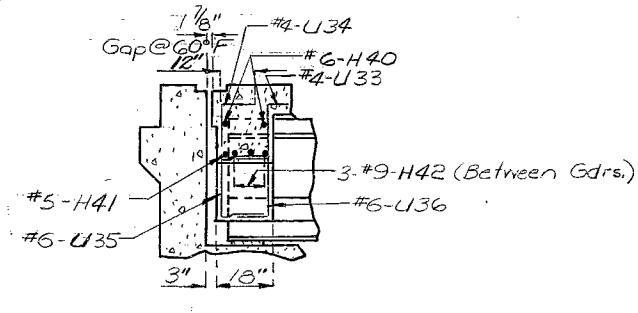


HALF SECTION NEAR END DIAPH. END BENT NO. 4

HALF SECTION NEAR END DIAPH. END BENT NO. 1



SECTION D-D



SECTION E-E

DETAILED Dec. 1977
CHECKED Jan. 1978

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

Sheet No. 11 of 17.

JEFFERSON COUNTY

A-3097

#5-516 as selected by the engineer for test system (See Special Provision)

Technical drawing of a mechanical assembly, likely a pump or motor component. The drawing shows a cross-section of the assembly with various dimensions and labels:

- #5-57**: Label for the top flange or cover.
- #4-56**: Label for the main body or housing.
- #4-511**: Label for the base or mounting flange.
- 1" Min.**: Dimension indicating a minimum height or clearance.
- 1" Cl.**: Dimension indicating a 1-inch clearance.



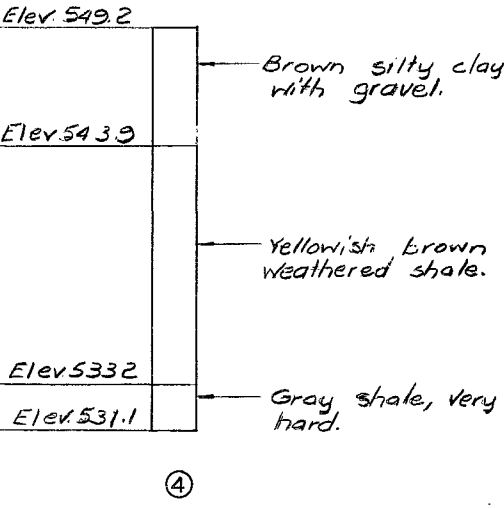
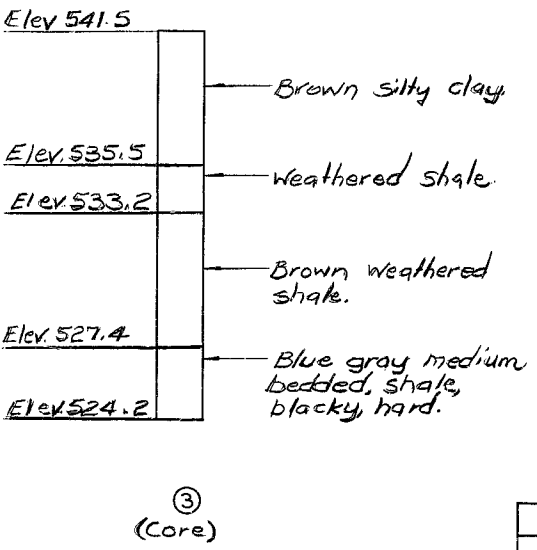
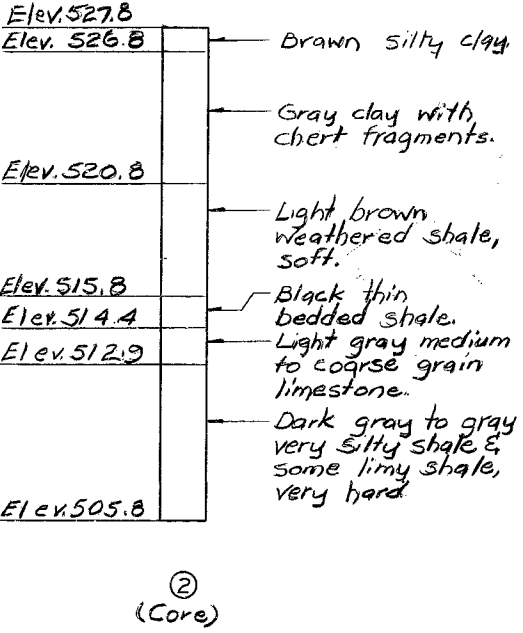
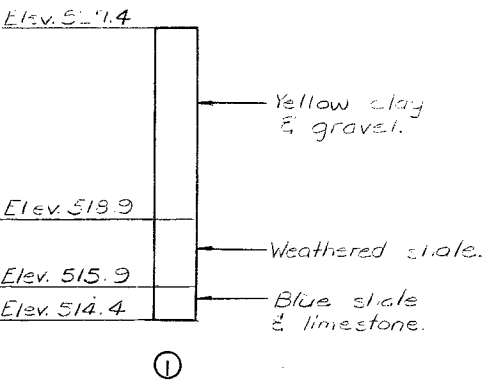
MISSOURI STATE HIGHWAY DEPARTMENT

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	20	

FINAL PLANS

PILE DATA					
BENT NUMBER		1	2	3	4
BEARING PILE	PILE TYPE AND SIZE	HP10x42	HP10x42	HP10x42	HP10x42
	NUMBER	9	13	13	9
	APPROXIMATE LENGTH (FT.)	55'	35'	25'	35'
	DESIGN BEARING (TONS)	55	52	52	55
HAMMER ENERGY REQUIRED (FT. LBS.)		13,500	12,200	12,200	13,500

Minimum energy requirement of hammer based on piling length and design bearing value of piles. All pile were driven to refusal on rock.



QUANTITIES			
ITEM	Substr	Superstr.	Total
CLASS I EXCAVATION (CU. YD.)	42		42
STRUCTURAL STEEL PILE (HP10 x 42) (LIN. FT.)	1611		1611
CLASS B CONCRETE (CU. YD.)	212.5		212.5
CLASS BI CONCRETE (CU. YD.)		378.4	378.4
REINF ELAST EXP JT SEAL (2 INCHES) (LIN. FT.)		69	69
PRESTRESSED CONCRETE MEMBERS I-SEC. (73' SPAN) (EA.)		5	5
PRESTRESSED CONCRETE MEMBERS I-SEC. (66' SPAN) (EA.)		5	5
PRESTRESSED CONCRETE MEMBERS I-SEC. (72' SPAN) (EA.)		5	5
REINFORCING STEEL (GRADE 60) (POUND)	39,360	51,440	90,800
REINFORCING STEEL (EPOXY) (POUND)		36,170	36,170
BRIDGE RAIL (ONE TUBE) (LIN. FT.)		480	480
PLAIN NEOPRENE BEARING PADS (1/2") (EACH)		10	10
LAMINATED NEOPRENE BEARING PADS (2 1/8") (EACH)		5	5
LAMINATED NEOPRENE BEARING PADS (1 1/8") (EACH)		15	15

502.01 Special Piling F.A. # 2317.41

BORING DATA

Note: For location of borings see sheet No. 1.

Note: All concrete and reinforcement in safety barrier curbs is included with superstructure quantities.

Note: Cost of 3/4" coil tie rods placed in diaphragms is included in price bid for P/S members.