

77.83'-101.0'-68.0' Welded Plate Girder

GENERAL NOTES:

DESIGN SPECIFICATIONS:

AA 5.1170 - 1983 and Interims thru 1984 & 1985

### Load Factor Design

DESIGN LOADING:

FS 20-44

15°/Sq. Ft. Future Wearing Surface  
Earth 120°/cu. ft., Equivalent Fluid Pressure 30°/cu. ft.  
Fatigue Stress Case II

DESIGN UNIT STRESSES:

Class B Concrete (Substructure)  $f_c = 3,000 \text{ psi}$   
 Class B1 Concrete (Safety Barrier Curb)  $f_c = 4,000 \text{ psi}$   
 Reinforcing Steel (Grade 60)  $f_y = 60,000 \text{ psi}$   
 Structural Carbon Steel  $f_y = 36,000 \text{ psi}$   
 Steel Pipe  $f_y = 9,000 \text{ psi}$   
 Class B2 Concrete (Superstructure except safety Barrier Curb)  $f_c = 4,000 \text{ psi}$

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  $\frac{3}{4}"$  holes  $\frac{13}{16}"$  & except as noted.

Turn of Nut Method of tensioning high strength bolts will be permitted.

## System

7/2.12. (Color of the final field coat for system B shall be green.)

## REINFORCING STEEL:

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

COMPACTED ROADWAY FILL:

Compacted roadway fill shall be completed to the final roadway section and shall be placed to 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 piers are driven for any bents falling within the embankment section.

For passive pressure requirements, See Special Provisions  
BORING DATA

 *Indicates*

See sheet No. 2 of 20.

## BENCH MARKS (USGS DATUM)

#139-80d spike in Power Pole @ Smaller Road. & Exit.  
Route 21, 162' W. of Sta. 205+48 @ N.B. Lanes.  
Elev. 586.30.

#139F - "C" Chiseled in W Edge @ Mid-stream of Low Water  
Crossing 500' East of Existing Bridge No. K-614  
Elev. 567.20

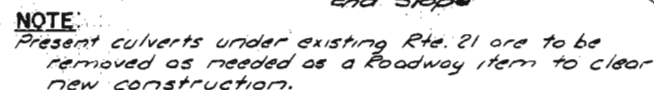
\*141-80d Spike in 18" Sycamore Tree 126' Lt. of  
Sta. 222+70 @ N.B. Jones  
Elev. 626.55

### CONSTRUCTION CLEARANCE

4. Minimum Vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 28'-0" centered on existing lanes shall be maintained during construction.

DATE 3 / 11 / 87

STD. 611.60
STD. 706.35
A-2956



NOTE: Conc. above upper const. ft. in backwall at end brnts No. 1 & 4 is included with class B. (Substructure) quantities.  
For Estimated Quantities for Alternate Slabs, see sheet No. 2.

DESIGNED Feb 1979 Ashrafzadeh  
 DETAILED Feb 1979 Schurman  
 CHECKED May 1979 Ashrafzadeh

Minimum energy requirement of hammer based on plan length and design bearing of piles:

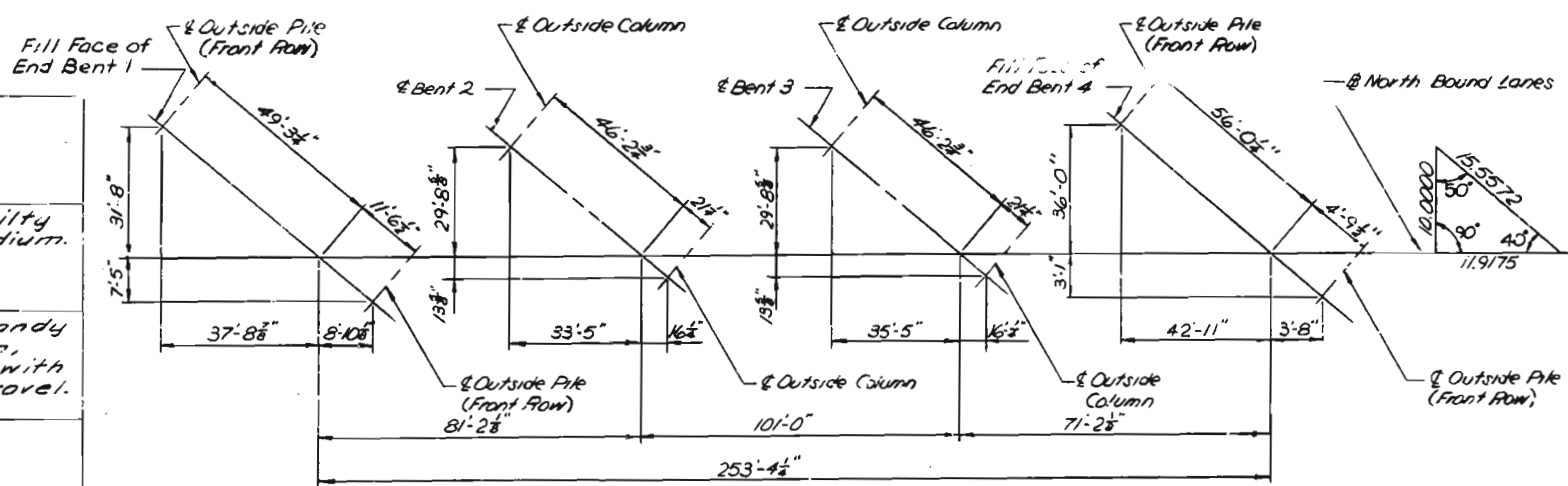
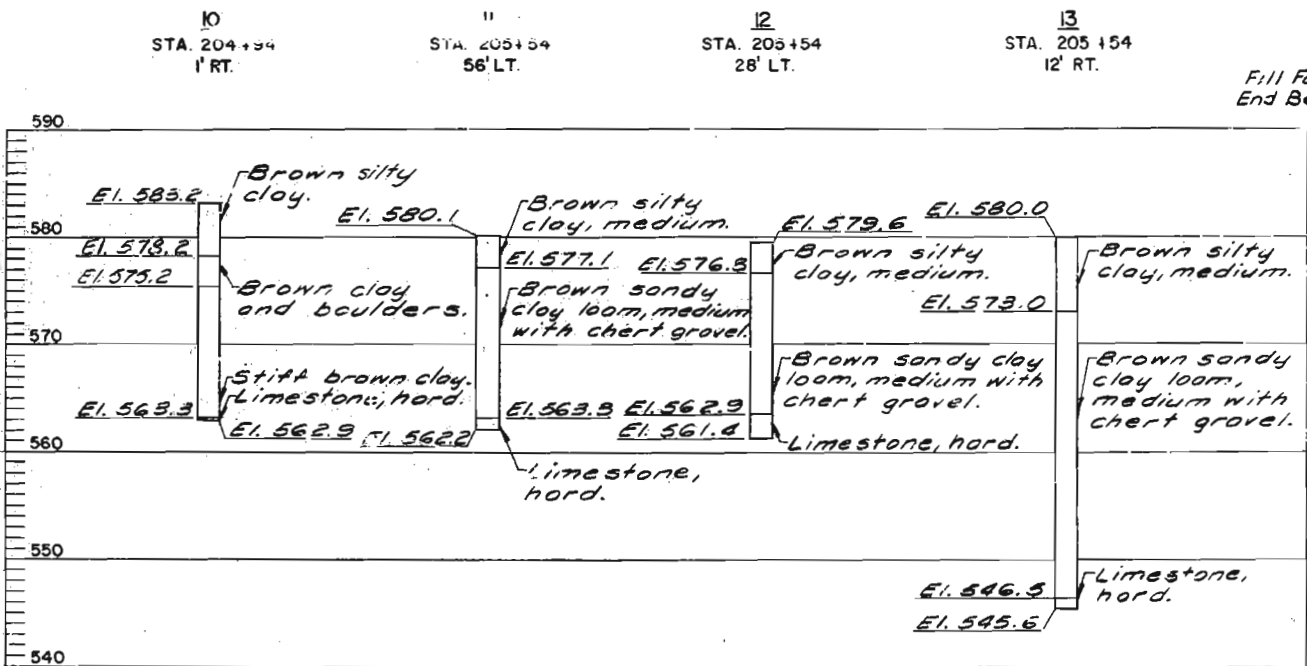
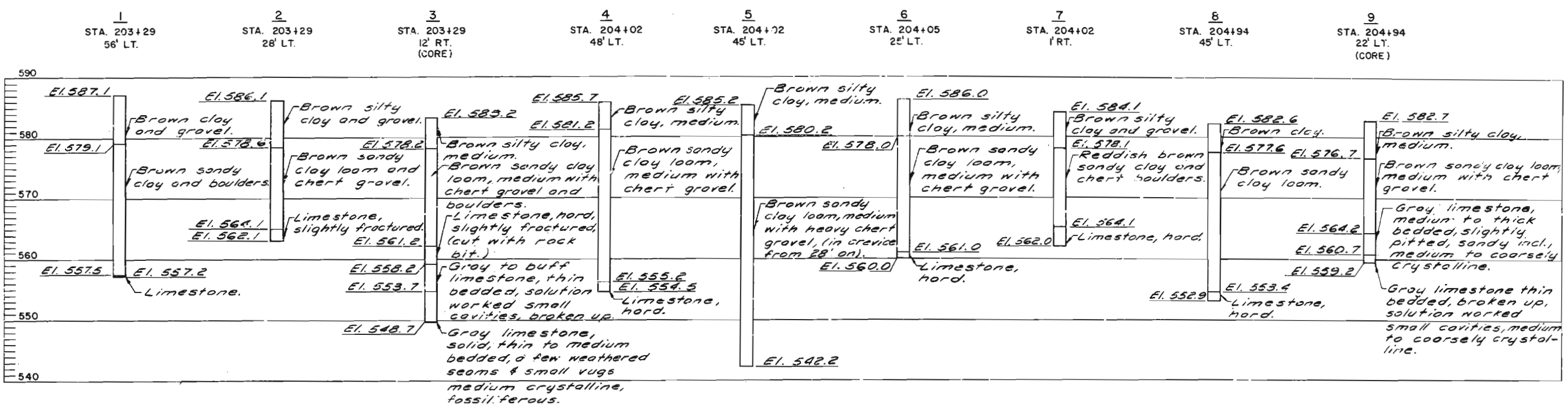
All piles shall be driven to practical refusal.  
Manufactured Pile point reinforcement shall be used  
on all piles in this structure. see special Provisions.

Sheet No. 1 of 22

**Booker**

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	42	



SUBSTRUCTURE LAYOUT

Estimated Quantities for Alternate Slabs		
TYPE OF SLAB	Slab on Steel	
	Reinf. (Lbs)	Conc. Cu. Yd.
Cast-In-Place Conventional Form	75,220	297.0
Pre-Cast Panel Form	49,080	212.1

Note: Precast panel quantities based on skewed end panels.  
See special Provisions for alternate methods of forming slabs.

SUBSTRUCTURE LAYOUT AND BORING LOGS

DETAILED Dec. 19 78 Bishop  
CHECKED May 12 79 Ashrafzadeh



Engineers Architects Planners Note: This drawing is not to scale. Follow dimensions.

4772 285

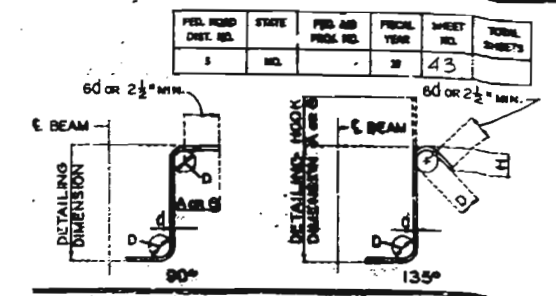
423 286

# COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	GRADE	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
						B		C		D		E		F		H					X	
						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
END BENT 1																						
10	2	PI A.B. Well	H22	X	1	3											33.0	38				
1	6	HL Backwall**	H20	X	35	0											35.0	53				
1	6	H2	H20	X	34	0											34.0	51				
1	6	H3	H20	X	32	3											32.3	48				
1	6	H4	H20	X	33	5											33.5	50				
4	4	H5	H20	X	30	0											30.0	91				
4	4	H6	H20	X	33	0											33.0	83				
4	4	H7	H20	X	32	3											32.3	86				
4	4	H8	H20	X	33	5											33.5	89				
2	4	H9 Bearing Seat	H20	X	4	0											4.0	5				
4	4	H10	H20	X	15	8											15.8	42				
2	4	H11	H20	X	12	6											12.6	7				
2	4	H12	H20	X	5	0											5.0	7				
8	10	H13	H17	X	23	3											23.3	138				
8	10	H14	H17	X	28	9											28.9	119				
2	6	H15	H20	X	39	7											39.7	87				
2	6	H16	H20	X	29	0											29.0	87				
4	4	H17	H20	X	38	1											38.1	75				
2	6	H18 Wingwall	H20	X	18	4											18.4	55				
10	6	H19	H20	X	17	6											17.6	187				
Incr = 2'-6"																						
4	6	H20 Wingwall	H15	X	1	2.7	5.1	0	4 1/2	1 1/4	4 1/4	13 1/2	9	3	6	57	74					
4	6	H21	H20	X	12	4											12.2	127				
10	6	H22	H20	X	12	2											12.4	8				
Incr = 2'-2 1/2"																						
4	6	H23 Wingwall	H15	X	1	0.3	0	2	13 1/4	4 1/4	1 1/4	4 1/2	2	5	1	30	43					
2	6	H24	H20	X	14	3											14.3	97				
4	4	H25 Apronwall	H20	X	36	5											36.5	16				
8	4	H26 Curtain Wall	H20	X	3	0											3.0	28				
8	4	H27	H20	X	5	3											5.3	28				
120	5	V1 Backwall	H20	X	8	8											8.8	1085				
10	6	V2 Wingwall**	H20	X	7	6											7.6	113				
10	6	V3	H17	X	7	4											7.4	88				
14	6	V4	H20	X	1	5	7										5.7	84				
Incr = 2'-0"																						
14	6	V5 Wingwall**	H17	X	1	5	5										6.1	94				
Incr = 2'-6"																						
6	6	V6 Wingwall	H20	X	3	6											3.6	32				
4	6	V7	H20	X	2	0											2.0	12				
4	4	V8	H20	X	6	3											6.3	17				
2	4	V9	H19	X	6	9	3	5									10.2	100				
8	6	V10	H20	X	1	5	3										5.3	70				
Incr = 4'-0"																						
8	6	V11 Wingwall**	H17	X	1	5	1										5.9	810				
Incr = 4'-2"																						
2	6	V12 Bearing Seat	H20	X	3	2											3.1	15				
2	4	V13 Wingwall	H19	X	6	5	5	8									12.1	131				
2	6	V14 Bearing Seat	H20	X	3	3											3.3	10				
60	5	U1 Backwall**	H10	X	2	0	3	1									4.9	46				
38	4	U2 Bearing Seat	H10	X	2	6	3	1									8.1	710				
30	5	U3	H13	X	3	0	3	5	3	10	3	4					13.7	132				
63	4	U4 Apronwall	H13	X	2	10		9	2	10	2	9	8 1/2				6.5	63				
3	4	U7 Wingwall	H13	X	2	3	2	3	2	3	2	3					9.9	95				
5	8	U8 Bearing Seat	H10	X	6	4	9										15.5	150				
12	6	U9	H10	X	2	2	5	3									9.7	93				
5	8	U10	H14	X	6	3	2	9	2	4							11.5	114				
2	6	T1 Wingwall	H25	X	1	2	13	7	2	7							3	8				
2	6	T2	H25	X	1	2	7	11	2	1							3	2				
Total End Bl. 1 Epoxy 1027 Total End Bl. 1 Non Epoxy 7250																						

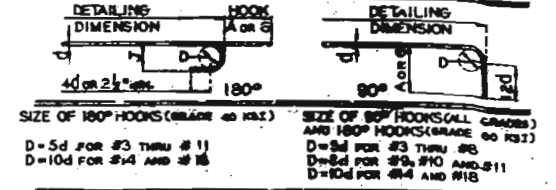
# COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	GRADE NO.	SHAPE NO.	STIRROPS (S)	STIRROPS (S)	STIRROPS (S)	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.
BENT 2																												
10	2 PI	A.B. Well	H22	X				1	3	9 1/2															230	38		
8	7 H25	Beam	H17	X				4	13	2															100	99	159	
4	5 H26	"	H20	X				2	3																	23	10	
5	10 H27	"	H17	X				17	3																	128	402	
2	4 H28	"	H20	X				16	6																	166	142	
4	5 H29	"	H20	X				16	7																	167	70	
7	10 H30	"	H20	X				36	9																	369	1107	
2	10 H31	"	H20	X				21	7																	217	186	
5	10 H32	"	H17	X				22	4																	239	511	
2	6 H33	"	H20	X				56	6																	566	170	
7	10 H34	"	H20	X				56	6																	566	1702	
BENT 2																												
60	4 V15	Column	H16	X				2	9																	98	95	377
24	10 V16	"	H17	X				21	8																	231	2384	
1	5 U5	Beam	H13	X				3	1	4	2	3	1	4	2											155	150	16
27	5 U11	"	H13	X				3	3	4	2	3	3	4	2											159	154	432
22	5 U12	"	H13	X				3	3	3	4	3	3	3	4											141	138	314
21	5 U13	"	H13	X				3	3	2	9	3	3	2	9											128	126	274
18	4 U15	"	H10	X							6	3	3													434	1	49
6	6 U16	Footing	H10	X						3	10	8	0													158	154	138
1	5 U17	Beam	H13	X				3	1	2	9		1	2	9											127	122	13
24	10 D1	Column	H17	X				3	3																	98	994	
18	5 F1	Footing	H20	X				5	6																	56	103	
9	10 F2	"	H20	X				8	6																	86	329	
Total Bent 2 9924																												



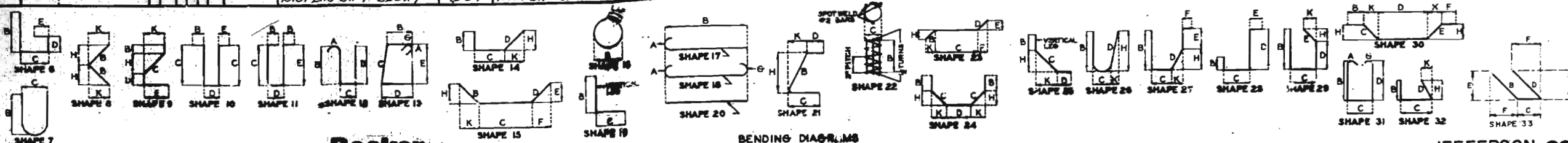
STIRRUP HOOK DIMENSIONS				
GRADES 40-50 TO K52				
BAR SIZE	D (#)	90° HOOK	135° HOOK	APPROX.
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	5"	5-1/2"	3-3/4"
#6	4-1/2"	6"	7"	4-1/2"

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



END HOOK DIMENSIONS				
180° HOOKS				
BAR SIZE	GRADE 40	GRADE 60	GRADE 80	ALL GRADES
#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"	9"	7"
#8	10"	7"	10"	8"
#9	12"	8"	11-1/4"	10"
#10	13"	9"	12-3/4"	11"
#11	14"	10"	14-1/4"	12"
#14	21-2"	20-1/2"	21-2"	20-1/2"
#18	21-11"	21-3"	21-11"	21-3"

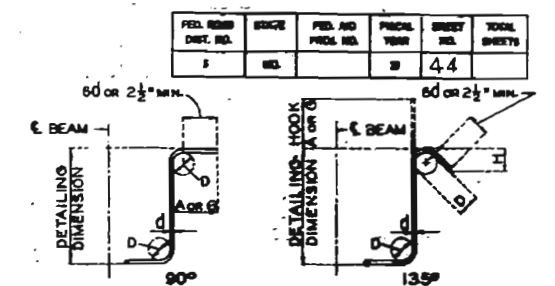
NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGS. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGS. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET. H-HIGH STRENGTH (ASTM A-615 GRADE 60). S-STIRRUP. X-BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES. V-BAR 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 40 (10#) ARE BASED ON C=5d. \*\* Indicates epoxy coated bars. Two additional 13 are included in bar bill for testing.



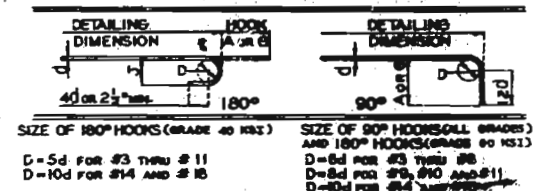


COMPLETE BILL OF REINFORCING STEEL																						
NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	STIRRUP NO.	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
						B		C		D		E		F		H					K	
						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
BENT 3																						
10	2 P1	A.B Well	H22	X	1	3		9 1/8										23 0	38			
3	7 H25	Beam	H22	X	4	13	2											10 0	9 9			
4	5 H26	"	H22	X	2	3												2 3	10			
5	1 H27	"	H22	X	17	3												18 8	402			
2	1 H28	"	H22	X	16	6												16 6	142			
4	5 H29	"	H22	X	16	7												16 7	10			
7	1 H30	"	H22	X	36	9												36 9	1107			
2	1 H31	"	H22	X	21	7												21 7	186			
5	1 H32	"	H22	X	22	4												23 9	511			
2	6 H33	"	H22	X	56	6												56 6	170			
7	1 H34	"	H22	X	56	6												56 6	170			
60	1 V15	Column	H16	X	2	9												9 8	9 5			
2	1 V17	"	H17	X	21	10												23 3	2401			
1	5 U6	Beam	H13	X	3	1 4	0 3	1 4	0									15 11	14 8			
2	2 U6	"	H13	X	3	3 3	3 3	3 3	3									13 11	13 6			
2	1 U13	"	H13	X	3	3 2	9 3	3 2	9									12 11	12 6			
2	7 U14	"	H13	X	3	3 4	0 3	3 4	0									15 5	15 0			
1	8 U15	"	H10	X			6 3	3										4 3	4 1			
6	6 U16	Footing	H10	X			3	10 8	0									15 8	15 4			
1	5 U18	Beam	H13	X	3	1 2	9 3	1 2	9									12 7	12 2			
2	1 V19	Column	H17	X	3													9 8	9 8			
1	8 SFI	Footing	H22	X	5	6												5 6	103			
9	1 DFE	"	H22	X	8	6												8 6	329			
																	Total Bent 3 9926					

COMPLETE BILL OF REINFORCING STEEL																								
NO. REQ.	MARK NO.	LOCATION	GRADE/SH	SHAPE NO.	STIRRUP NO.	VALVES	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 4																								
10	2 P1	A.B. Well	H22	X			1	3	9 1/8									23 0	38					
4	1 H5	Backwall	H22	X			34	0										34 0	91					
4	1 H6	"	H22	X			33	0										33 0	88					
4	1 H7	"	H22	X			32	3										32 3	86					
4	1 H8	"	H22	X			33	5										33 5	89					
2	1 H9	Bearing Seat	H22	X			4	0										4 0	5					
6	1 H10	"	H22	X			15	8										15 8	63					
8	1 H13	"	H17	X			43	3										44 8	1538					
8	1 H14	"	H17	X			28	9										30 2	1038					
2	6 H15	"	H22	X			39	7										39 7	119					
2	6 H16	"	H22	X			29	0										29 0	87					
4	1 H17	Apronwall	H22	X			28	1										28 1	75					
6	1 H18	Wingwall	H22	X			18	4										18 4	165					
4	6 H20	"	H15	X			1	2 7 5 1/2	1 0	4 1/8	1 1/4	4 3/4	13 1/8	9 7	9 6	57		12 4	111					
4	6 H21	"	H22	X			12	4										12 4	111					
4	6 H22	"	H15	X			1	0 3	0 1	2	13 1/8	4 3/4	1 1/4	4 1/8	5 2	5 1	31							
6	6 H23	"	H22	X			2 16	3 1/2										16 4	237					
		Incr. 4'-6"					7	3										7 3						
6	6 H26	Wingwall	H22	X			2 10	9 1/2										10 9	16 11					
		Incr. 2'-3 3/4"					6	1 1/4										6 2						
4	1 H37	Apronwall	H22	X			36	5										36 5	97					
8	1 H38	Curtainwall	H22	X			3	0										3 0	16					
8	1 H39	"	H22	X			5	3										5 3	28					
10	6 V2	Wingwall **	H20	X			7	6										7 6	113					
10	6 V3	" **	H17	X			7	4										8 0	120					
6	6 V6	"	H20	X			3	6										3 6	32					
4	6 V7	"	H20	X			2	0										2 0	12					
2	6 V14	Bearing Seat	H20	X			3	5										3 5	5					
120	5 V18	Backwall	H20	X			6	8										6 8	835					
2	6 V19	Bearing Seat	H20	X			4	10										4 10	15					
14	6 V20	Wingwall **	H20	X			1 5	0										5 0	7 8					
		Incr. 2' 1/2"					2 8 1/2											2 8						
14	6 V21	Wingwall **	H17	X			1 4	10										5 6	8 8					
		Incr. 2' 1/4"					2 6 3/4											3 2						
8	6 V22	Wingwall **	H20	X			1 4	10										4 10	7 7					
		Incr. 3' 3/4"					2 8 3/4											2 9						
8	6 V23	Wingwall **	H17	X			1 4	8										5 4	8 7					
		Incr. 3' 1/4"					2 6 1/4											3 3						
2	4 V24	Wingwall	H19	X			6	3 3	6									9 9	9 7					
2	4 V25	"	H20	X			5	9										5 9	8					
2	4 V26	"	H19	X			6	6 5	8									12 2	120					
2	4 V27	"	H20	X			5	11										5 11	8					
58	4 U2	Bearing Seat	H10	X				2	6 3	1								8 1	7 10					
60	5 U3	"	H13	X			3	0 3	5 3	10 3	4							14 7	14 2					
63	4 U4	Apronwall	H13	X			2	10	9 2	10 2	9	8 1/2						6 5	6 3					
3	4 U7	Wingwall	H13	X			2	3 2	3 2	3 2	3							9 9	9 5					
5	8 U8	Bearing Seat	H10	X				6 4	2 9									15 5	15 0					
5	8 U9	"	H14	X			4	9 2	9 2	4								11 5	11 4					
12	6 U17	"	H10	X				2 2 3	3									7 7	7 3					
2	6 T3	Wingwall	H25	X			1	2 1/3	6 1/2	2 3								2 0	13 4 1/2					
2	6 T4	"	H25	X			1	2 7	7 1/2	1 10								2 2	7 3 1/2					
Total End Bl. #4 Epoxy																	503	Total End Bl. #4 Non Epoxy			6903			



STIRRUP HOOK DIMENSIONS				
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"	5"	5-1/2"	3-3/4"
#6	3"	5-1/2"	6"	4-1/2"



END HOOK DIMENSIONS				
BAR SIZE	GRADE 40	GRADE 60	ALL GRADES	
#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"	9"	7"
#8	10"	7"	10"	8"
#9	12"	8"	12"	11-1/4"
#10	13"	9"	13"	12-3/4"
#11	14"	10"	14"	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-815 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. 12 - GRADE 40 (ONLY) ARE BASED ON D=5d.

\*\* Indicates epoxy coated bars.

REVISED JULY 1978

MAY 1974

DESIGNED BY: B. Ashraf Zaidi

CHECKED BY: B. Ashraf Zaidi

SHAPE 1

SHAPE 2

SHAPE 3

SHAPE 4

SHAPE 5

SHAPE 6

SHAPE 7

SHAPE 8

SHAPE 9

SHAPE 10

SHAPE 11

SHAPE 12

SHAPE 13

SHAPE 14

SHAPE 15

SHAPE 16

SHAPE 17

SHAPE 18

SHAPE 19

SHAPE 20

SHAPE 21

SHAPE 22

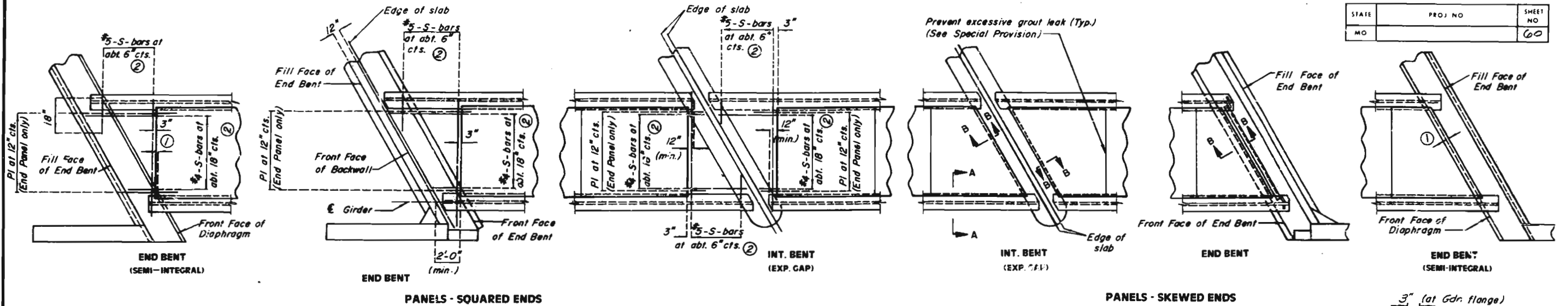
SHAPE 23

SHAPE 24

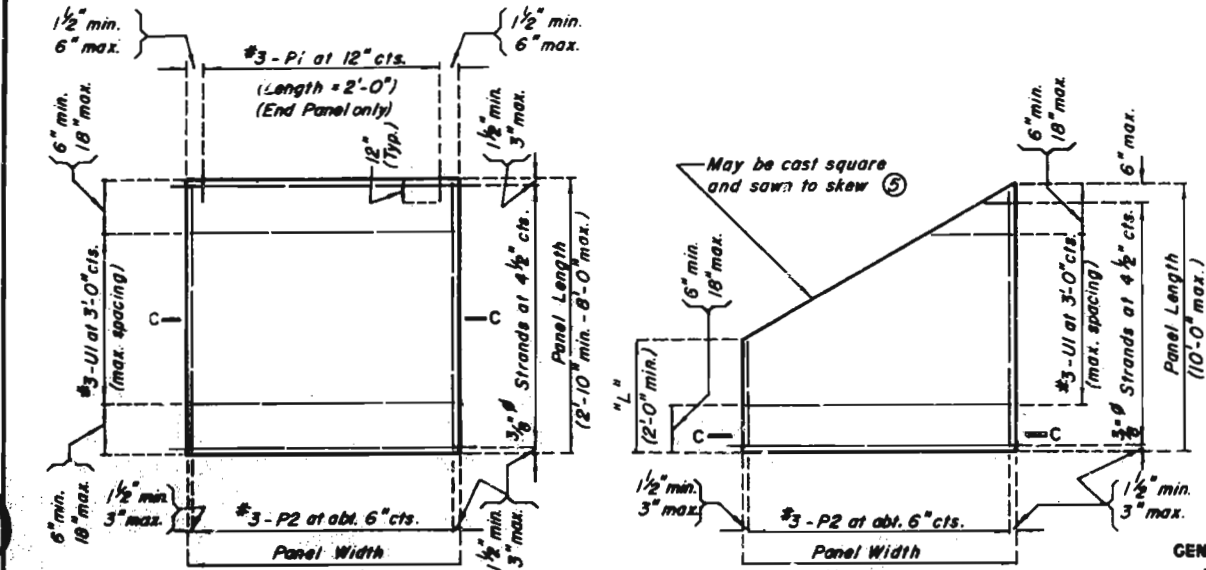
SHAPE 25

SHAPE 26

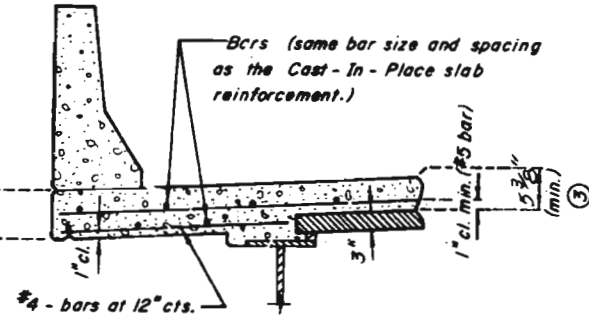
SHAPE 27



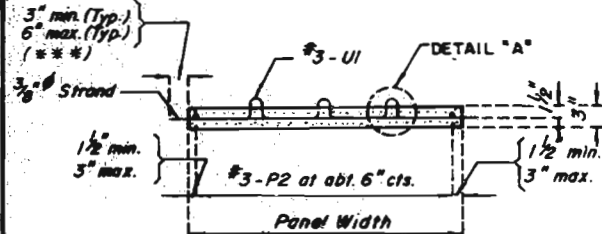
### PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



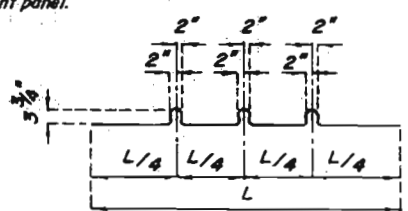
### SECTION THRU CANTILEVER



### PLAN OF PRECAST PRESTRESSED PANEL

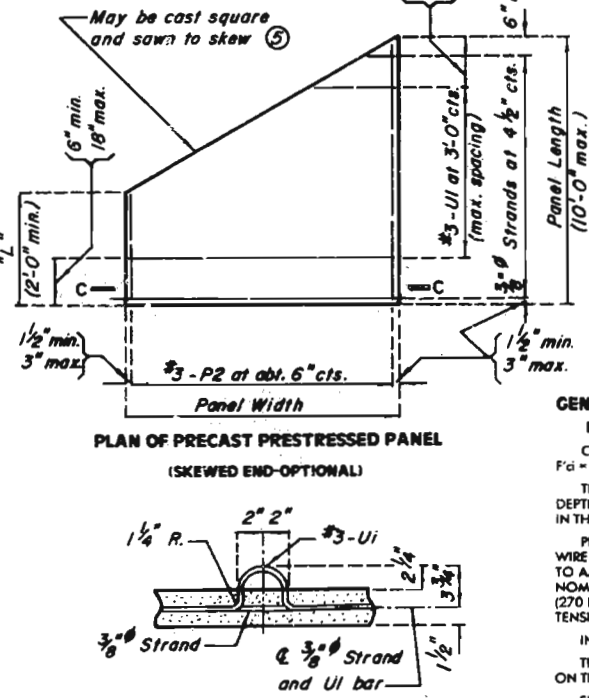


## SECTION C-C



**BENDING DIAGRAM FOR U1 BAR**

**PLAN OF PRECAST PRESTRESSED PANEL**  
**(SKEWED END-OPTIONAL)**



### DETAIL "A"

**GENERAL NOTES:**

**PRESTRESSED PANEL:**

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH  $f_c = 5,000$  PSI,  $f_d = 3,500$  PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/4 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANEL (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDON SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN-WIRE (7) LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203 EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 23,000 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 17.2 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH EXCEPT OVER SPICE PLATES WHERE MINIMUM THICKNESS SHALL BE 1/2 INCH. WHEN JOINT FILLER IS LESS THAN 1/4" THICK OVER SPICE PLATE, MAKE THE WIDTH OF JOINT FILLER AT SPICE THE SAME WIDTH AS PANEL ON SPICE. THICKER JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES, NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH TO CORRECT FOR VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS REQUIRED UNDER OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

**NOTES:**

① END PANEL TO BE DIMENSIONED 1½ INCH INSIDE FACE OF DIAPHRAGM.

② S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH S-SQUARED END PANELS ONLY.

③ ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR EXPANDED POLYSTYRENE BEDDING MATERIAL THICKNESS OR GRADE WILL BE NECESSARY IF THE ELEVATION AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE ½ OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

④ S-BARS SHOWN ARE USED WITH SKEWED END PANELS OR SQUARE END PANELS OF SQUARE STRUCTURES ONLY. #5 S-BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES.

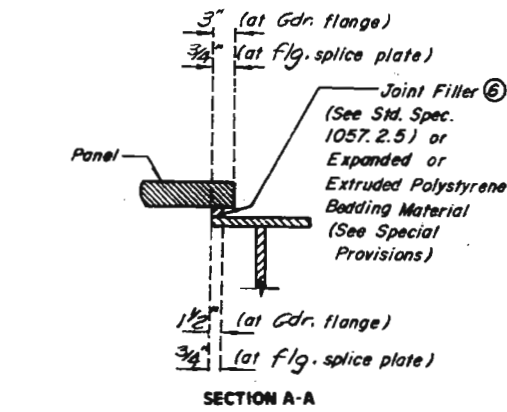
COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD.

S-BARS ARE NOT LISTED IN BILL OF REINFORCING.

SLAB EXTERIOR GIRDER HALUNCH TO BE THE SAME AS CAST-IN-PLACE.

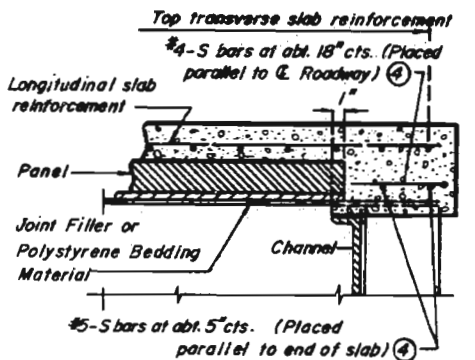
⑤ ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT FABRICATORS OPTION.

⑥ ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1½ INCH THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

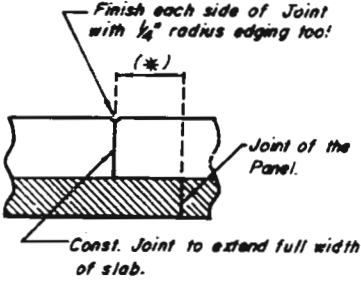


### SECTION A-A

NOTE: USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 19 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.



## PART SECTION B-B



### PERMISSIBLE CONST. JOINT

(3) ADJUST THE PERMISSIBLE CONST. JOINT TO A CLEARANCE OF 6 INCHES MIN FROM THE JOINTS OF THE PRESTRESSED PANELS.

## DETAILS OF PRECAST PRESTRESSED PANELS

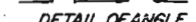
Sheet No. 20 of 22.

JEFFERSON COUNTY

**A-2956**

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

DETAILED *Aug. 1985*  
CHECKED *Sept. 1985*



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

**GENERAL NOTES:**

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

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 TO RC1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

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

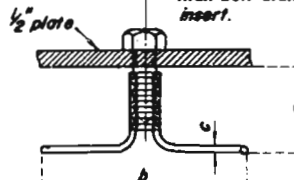
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

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

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 MANUFACTURER'S CERTIFICATION.

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.



### DETAILS OF ALTERNATE WING TYPE THREADED INSERT

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



## ALTERNATE CURB TREATMENTS

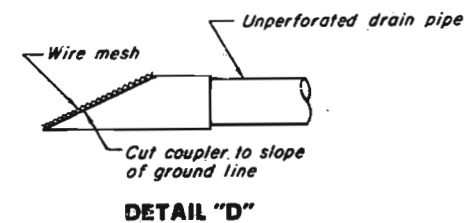
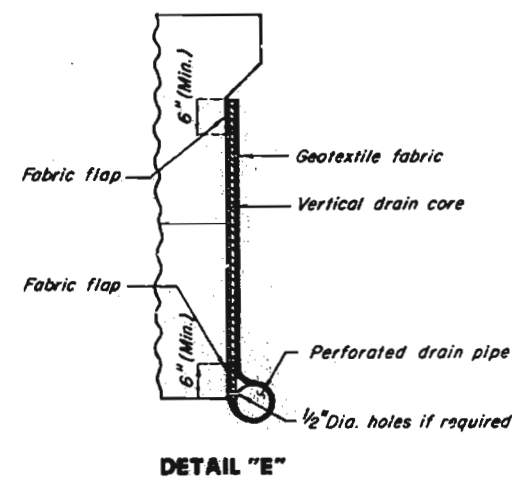
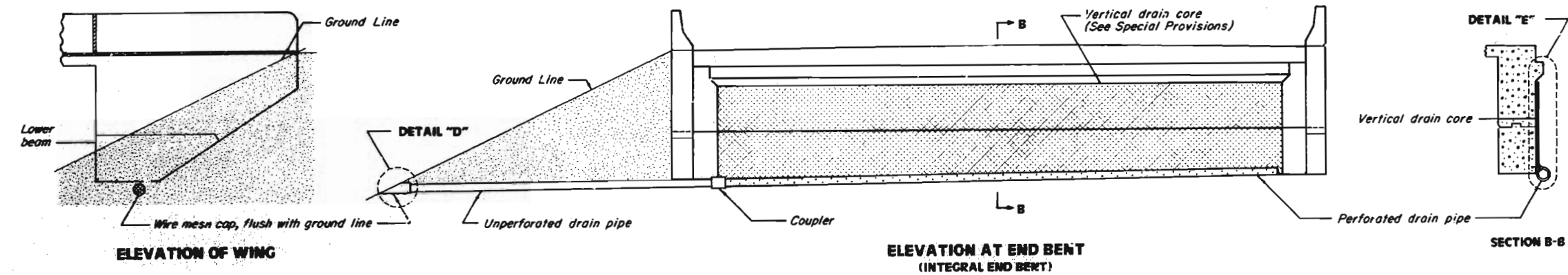
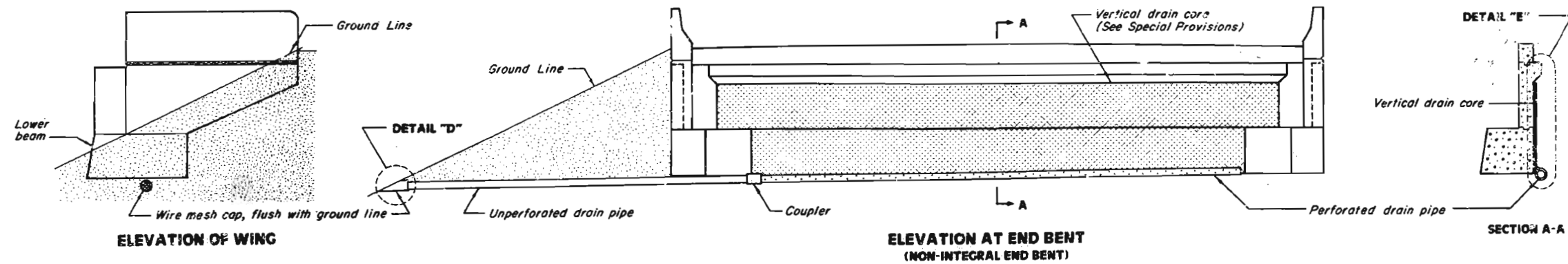


# GENERAL NOTES:

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 1/2". (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 Jan. 1987  
CHECKED Jan. 1987

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

Sheet No. 22 of 22.

JEFFERSON COUNTY

A-2956

4442 290  
Abut. Vert. Drain  
MARCH 1986  
Revised  
SEPT. 1986

# COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	STIRRUP NO.	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.
SLAB REINFORCING (C.I.P.)																
54	5	51	**	Slab	H20			18	10					18	10	1245
53	5	52	**	"	H20			25	1					25	1	13918
38	5	53	**	"	H20			18	10					18	10	1245
38	5	54	**	"	H20			24	8					24	8	9863
48	5	55	**	"	H20			18	6					18	6	511
				Incr. = 4 1/4"	H20			1	11					1	11	
54	5	56	**	Slab	H20			22	5					22	5	742
				Incr. = 4 3/4"	H20			3	11					3	11	
34	5	57	**	Slab	H20			18	4					18	4	361
				Incr. = 5 1/4"	H20			2	0					2	0	
38	5	58	**	Slab	H20			21	7					21	7	495
				Incr. = 5 1/8"	H20			3	5					3	5	
40	5	59	**	Slab	H20			17	3					17	3	433
				Incr. = 4 3/4"	H20			3	6					3	6	
68	5	60	**	Slab	H20			25	9					25	9	996
				Incr. = 4 3/4"	H20			2	4					2	4	
52	5	61	**	Slab	H20			17	2					17	2	320
				Incr. = 5 1/8"	H20			2	0					2	0	
44	5	62	**	Slab	H20			24	0					24	0	620
				Incr. = 5 1/8"	H20			3	0					3	0	
10	5	63	**	Slab	H20			3	5					3	5	536
160	5	64	**	"	H20			3	5					3	5	580
66	5	65	**	"	H20			50	6					50	6	3476
66	5	66	**	"	H20			48	4					48	4	3327
30	5	67	**	"	H20			51	8					51	8	12394
42	5	68	**	"	H17			3	2					3	2	139
45	5	69	**	"	H20			17	5					17	5	73
35	5	70	**	"	H20			17	5					17	5	55

Total Slab Epoxy 75215

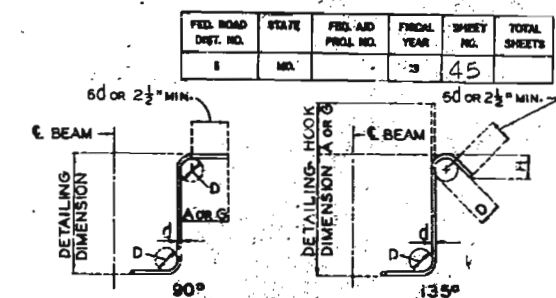
Slab Reinforcing (P.C. PIS Panel)																
34	5	71	**	Slab	H20			18	10					18	10	1245
53	5	72	**	"	H20			25	1					25	1	13918
38	5	73	**	"	H20			18	10					18	10	1245
				Incr. = 4 1/4"	H20			1	11					1	11	
54	5	74	**	Slab	H20			22	5					22	5	742
				Incr. = 4 3/4"	H20			3	11					3	11	
40	5	75	**	Slab	H20			17	3					17	3	433
				Incr. = 4 3/4"	H20			3	6					3	6	
68	5	76	**	Slab	H20			25	9					25	9	996
				Incr. = 4 3/4"	H20			2	4					2	4	
160	5	77	**	Slab	H20			3	5					3	5	580
66	5	78	**	"	H20			50	6					50	6	3476
66	5	79	**	"	H20			48	4					48	4	3327
30	5	80	**	"	H20			51	8					51	8	12394
42	5	81	**	"	H17			3	2					3	2	139
45	5	82	**	"	H20			17	5					17	5	73
35	5	83	**	"	H20			17	5					17	5	55

Total Slab Epoxy 49077

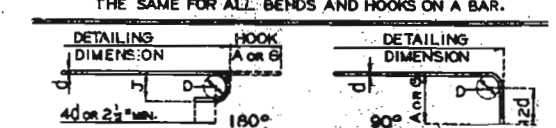
# COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	SHAPE NO.	STIRRUP NO.	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.
BARRIER REINFORCING																
58	5	R1	**	Barrier	H15			2	6					2	6	1624
58	5	R2	**	"	H19			2	6					2	6	1624
59	5	R3	**	"	H19			1	5					1	5	1050
51	5	R4	**	"	H17			6	11 1/2					6	11 1/2	1513
60	5	R5	**	"	H27			1	0					1	0	177
25	5	R6	**	"	H20			18	0					18	0	38
22	5	R7	**	"	H20			18	3					18	3	419
45	5	R8	**	"	H20			17	3					17	3	72
25	5	R9	**	"	H20			12	0					12	0	25
22	5	R10	**	"	H20			12	3					12	3	281
45	5	R11	**	"	H20			11	3					11	3	47
24	5	R12	**	"	H20			35	5					35	5	887
48	5	R13	**	"	H20			9	7					9	7	480
24	5	R14	**	"	H20			41	2					41	2	1030
12	5	R15	**	"	H20			59	4					59	4	743
16	5	R20	**	"	H10			2	8					2	8	95

Total Barrier Reinf. 10,114



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.

END HOOK DIMENSIONS				
180° HOOKS				
BAR SIZE	GRADE 40	GRADE 60	ALL GRADES	
#3	5"	2-3/4"	5"	6"
#4	7"	3-1/2"	6"	8"
#5	9"	4-1/2"	7"	10"
#6	11"	5-1/4"	8"	12"
#7	13"	6-1/4"	10"	14"
#8	15"	7"	11"	16"
#9	17"	8"	13"	18"
#10	19"	9"	15"	20"
#11	21"	10"	17"	22"
#12	23"	11"	19"	24"
#13	25"	12"	21"	26"
#14	27"	13"	23"	28"
#15	29"	14"	25"	30"
#16	31"	15"	27"	32"

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-815 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.

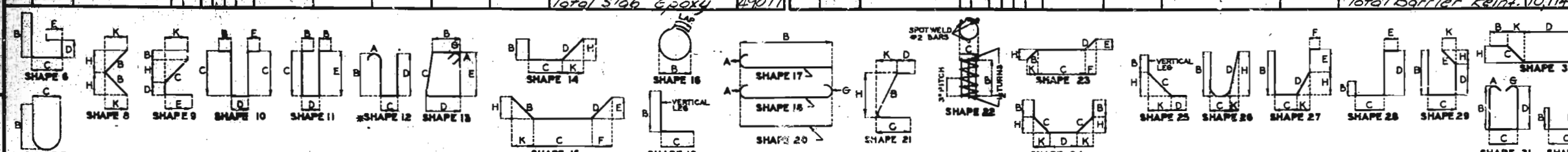
NO. EA. - NUMBER OF BARS OF EACH LENGTH.

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. 12 - GRADE 40 (ONLY) ARE BASED ON D=5d.

\*\* Indicates epoxy coated bars. Two additional (6) are included in bar bill for testing.



BENDING DIAGRAMS

# SUPERSTRUCTURE BAR LIST

REVISED JULY 1976  
 MAY 1974  
 DETAILED Apr. 19 79 Baithosor  
 CHECKED Apr. 19 79 Ashrafzadeh



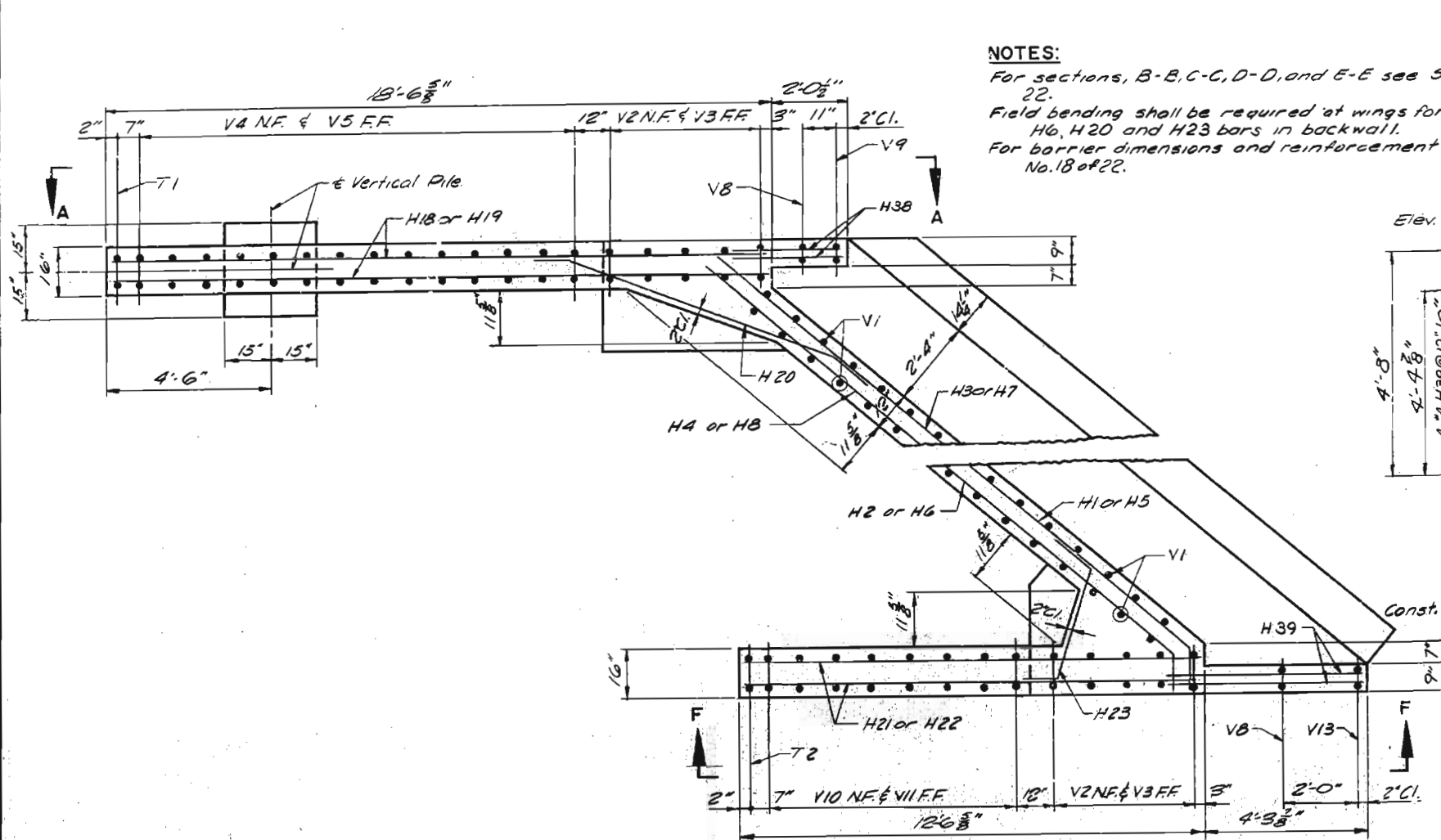
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5 of 22.



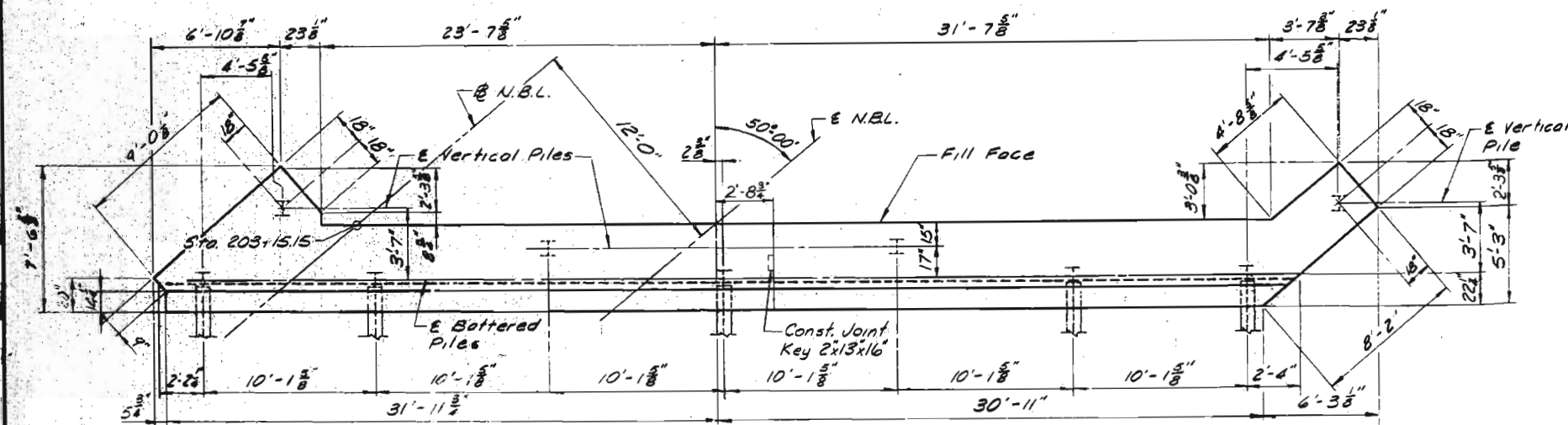


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	47	

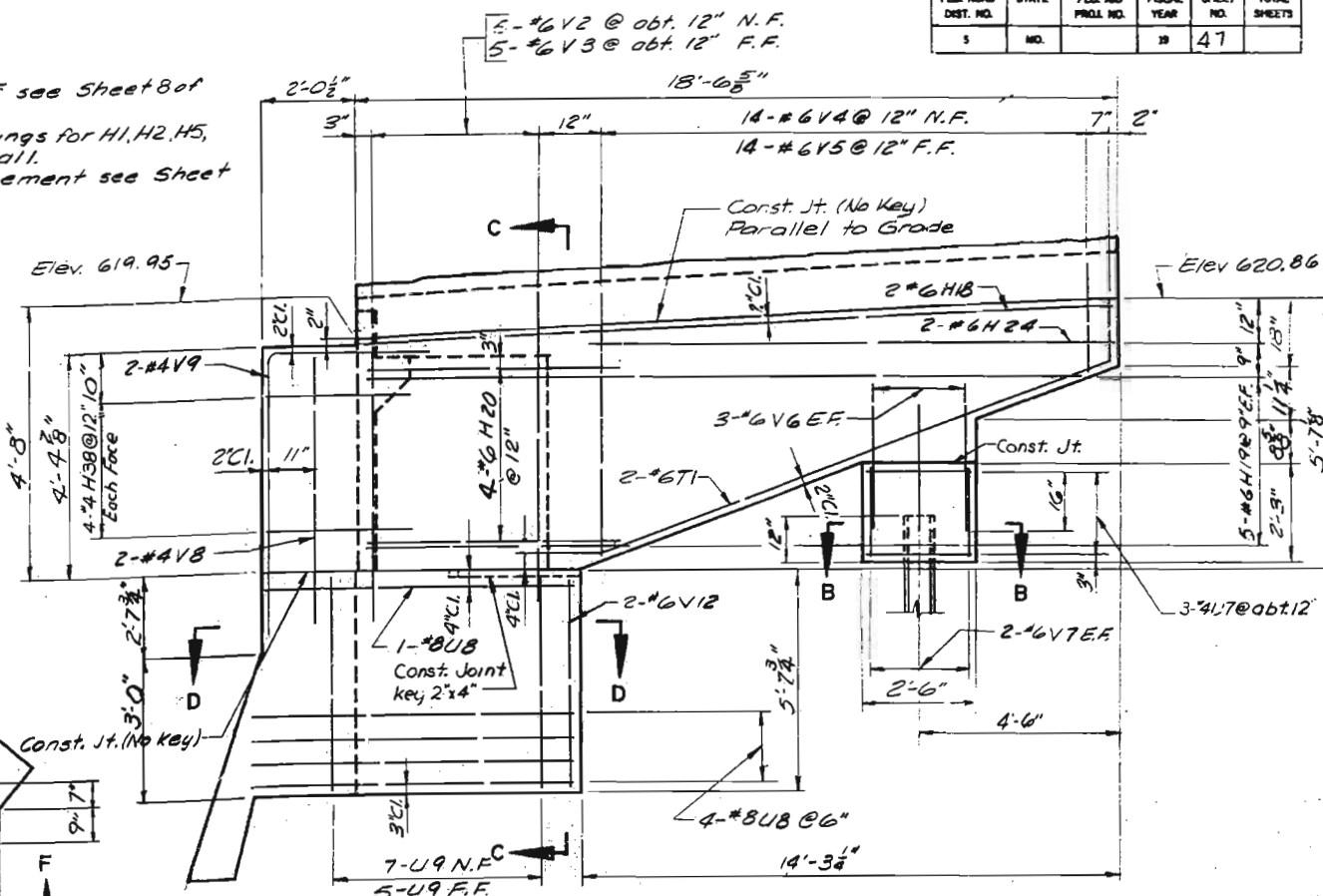


WINGWALL PLAN

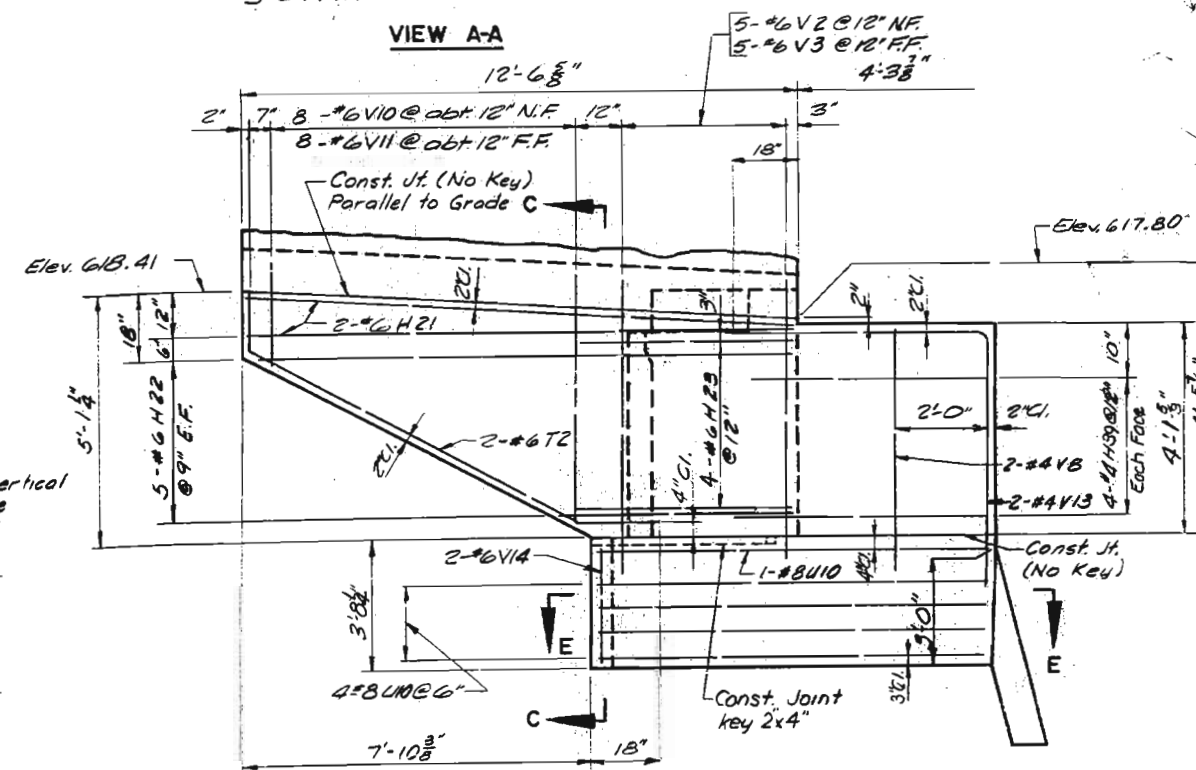
Note: Shift or cut V5 & V11 to maintain 1/2" clearance from face of barrier curb bevel at end of wings.



PLAN OF FOOTING



VIEW A-A



VIEW F-F

WINGWALL DETAILS END BENT I

JEFFERSON COUNTY

A-2956

DETAILED Apr. 18 79 Schurman  
CHECKED Apr. 18 79 Ashrafzadeh

**Booker**  
Civil Engineers

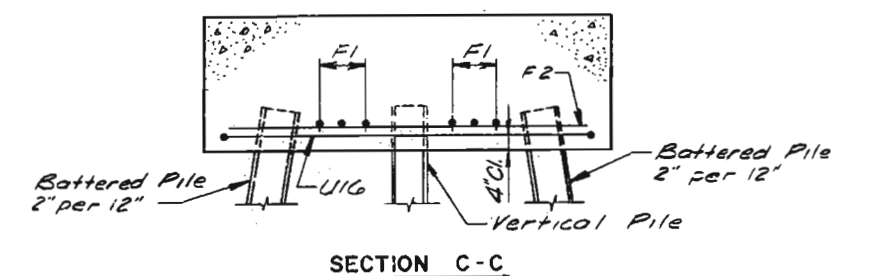
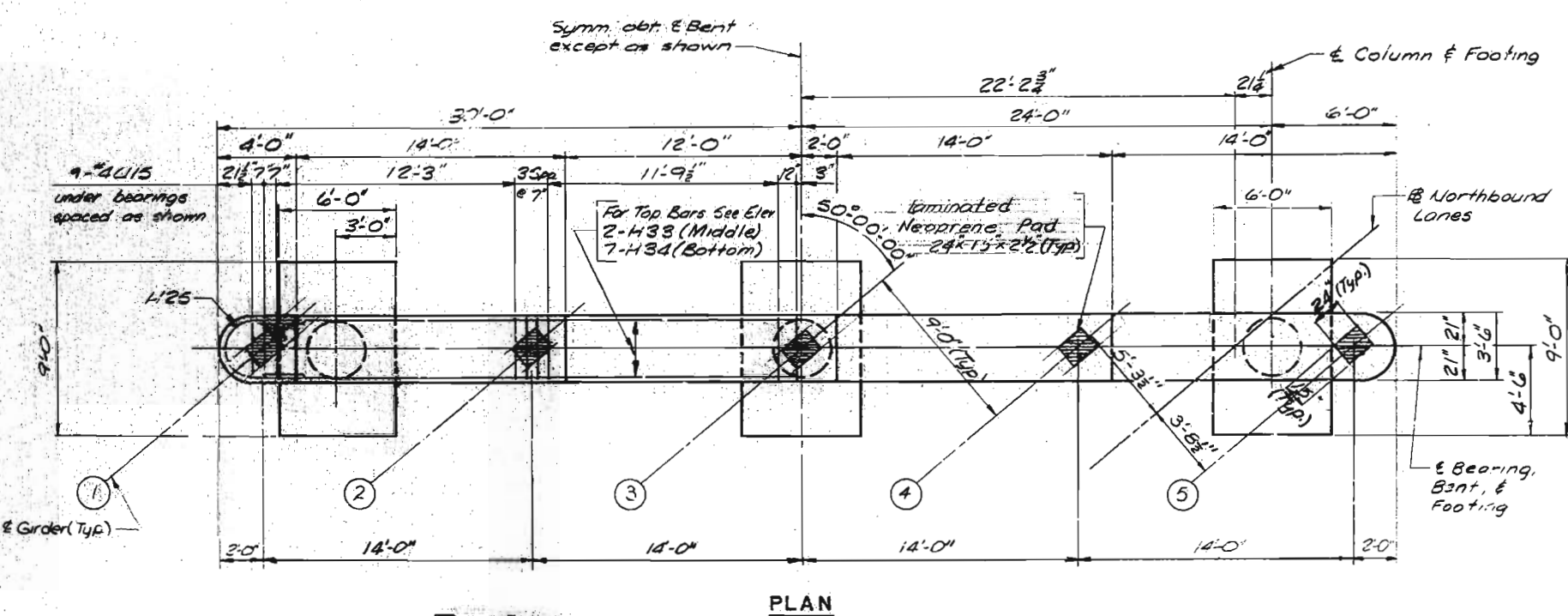
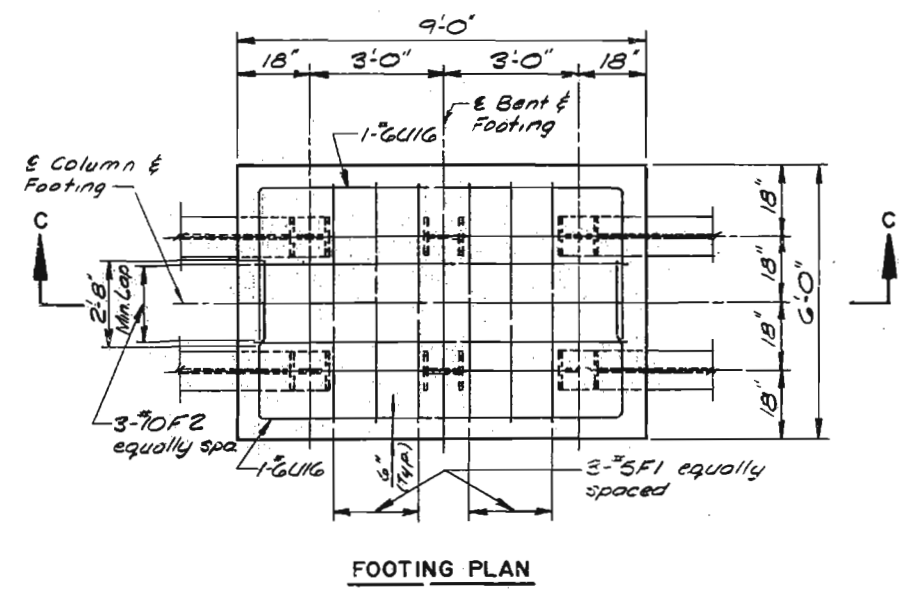
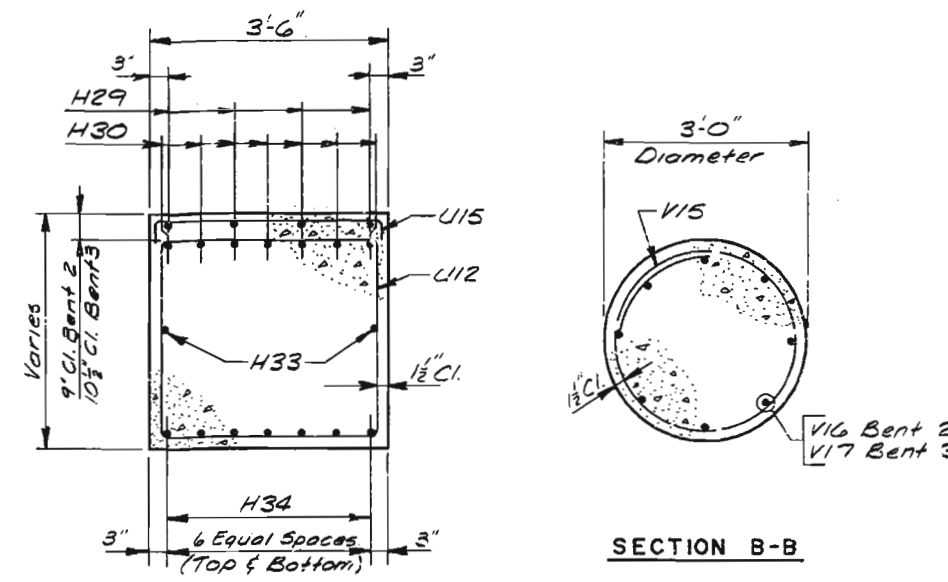
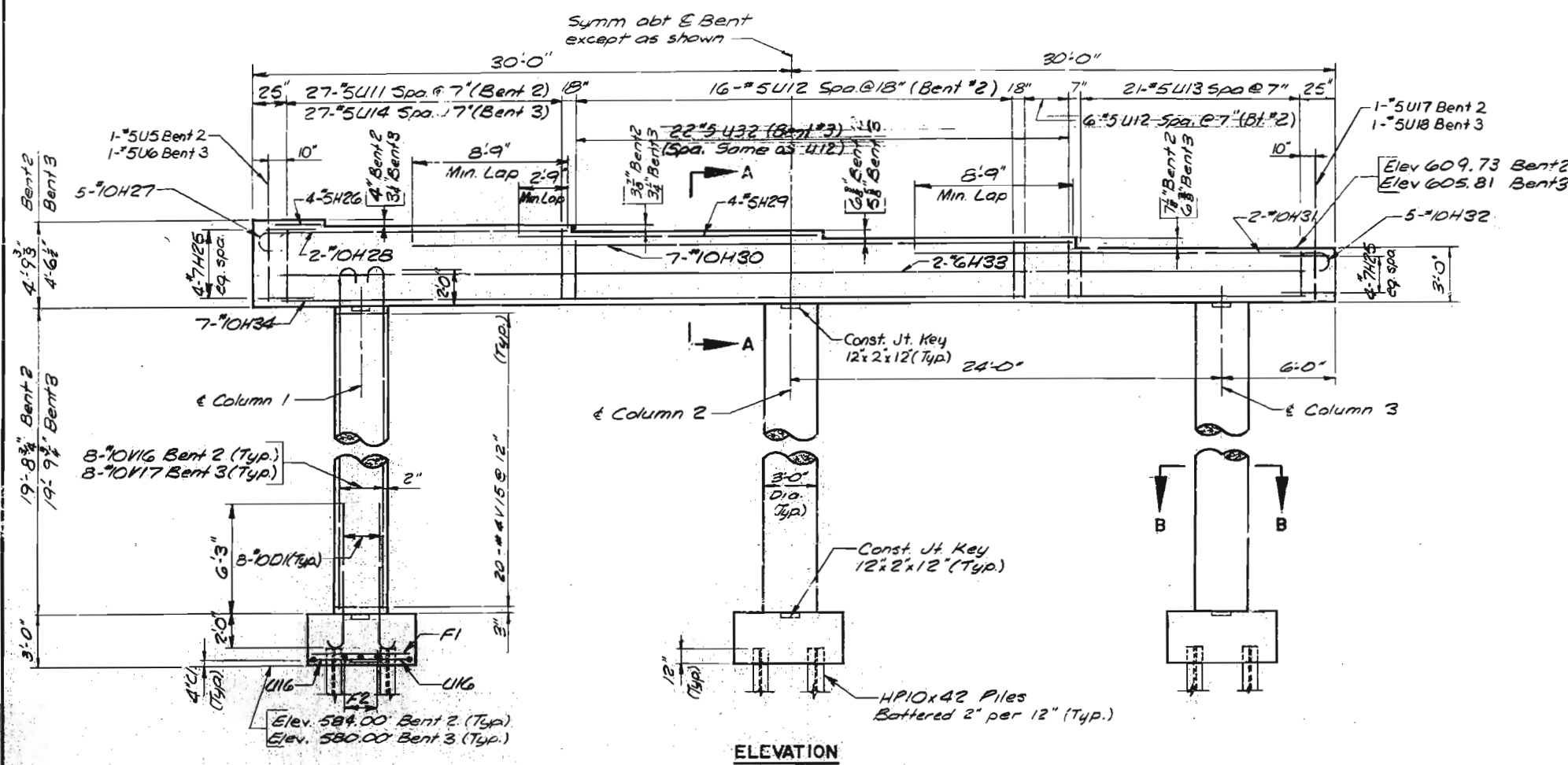
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 7 of 22.





FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	49	

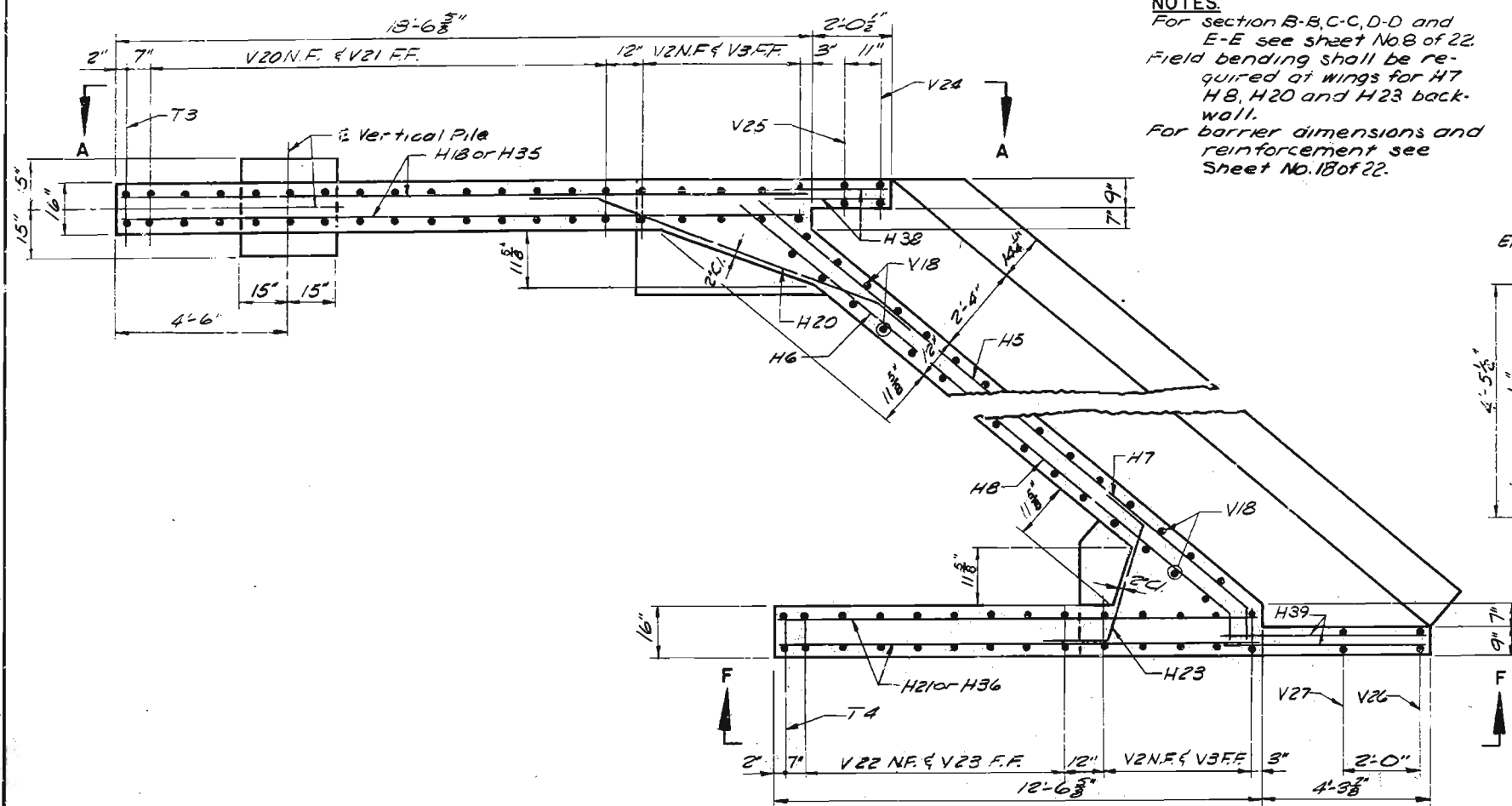


**NOTES:**  
 All reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least 1/2".  
 For Anchor Bolt Well details and Biling of #2Pl bars, see Sheet 8 of 22.

**BENTS 2 & 3**



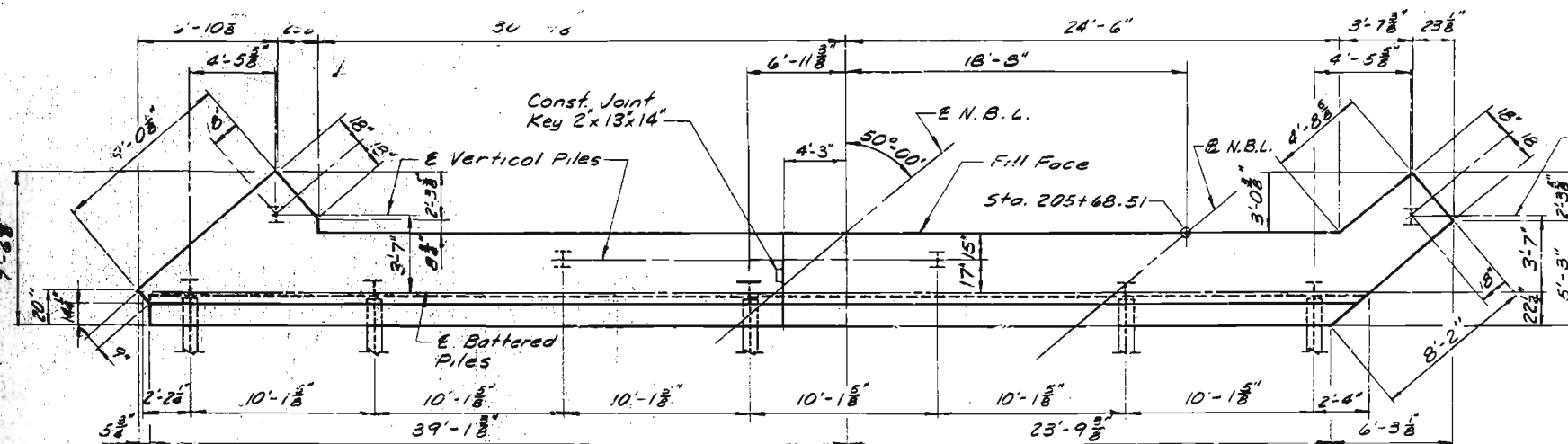
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5	MO.		19	51	



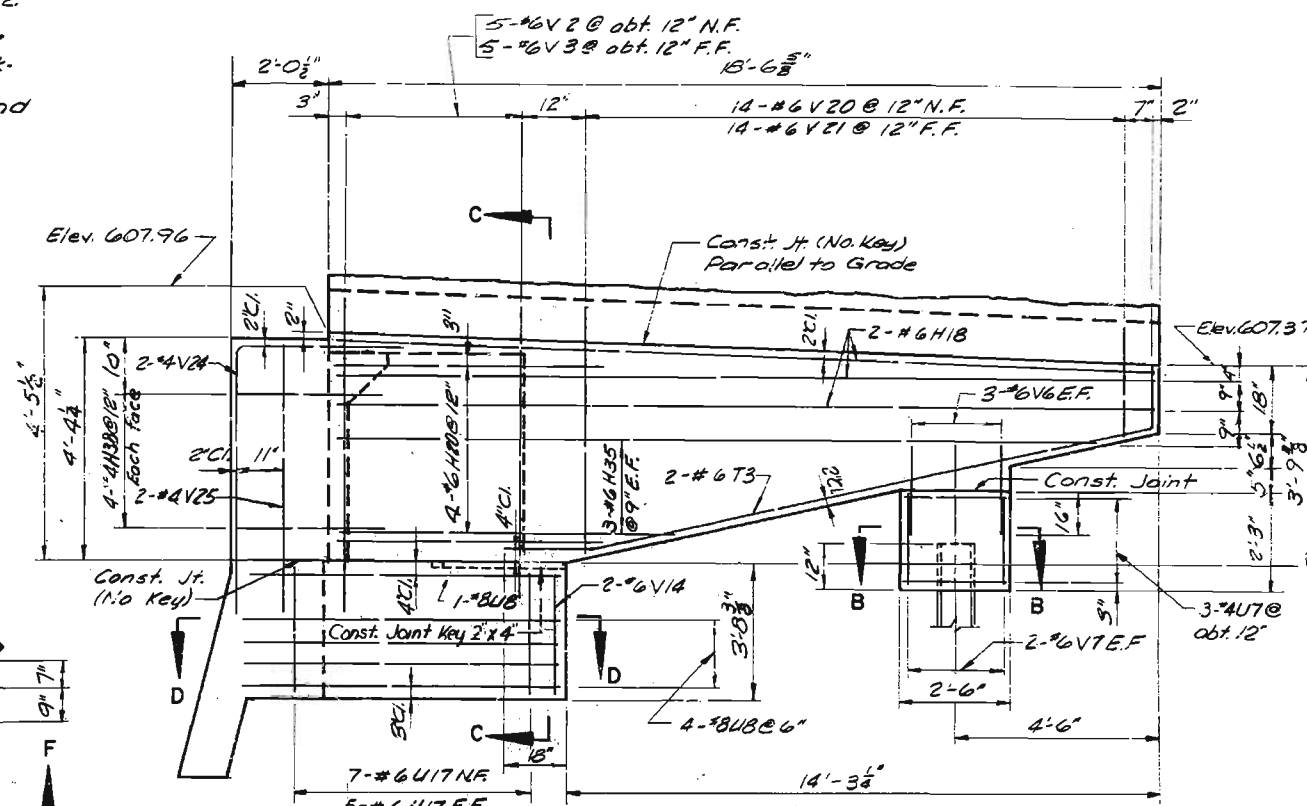
WINGWALL PLAN

NOTES:  
For section B-B, C-C, D-D and E-E see sheet No 8 of 22.  
Field bending shall be required at wings for H7, H8, H20 and H23 back wall.  
For barrier dimensions and reinforcement see Sheet No. 18 of 22.

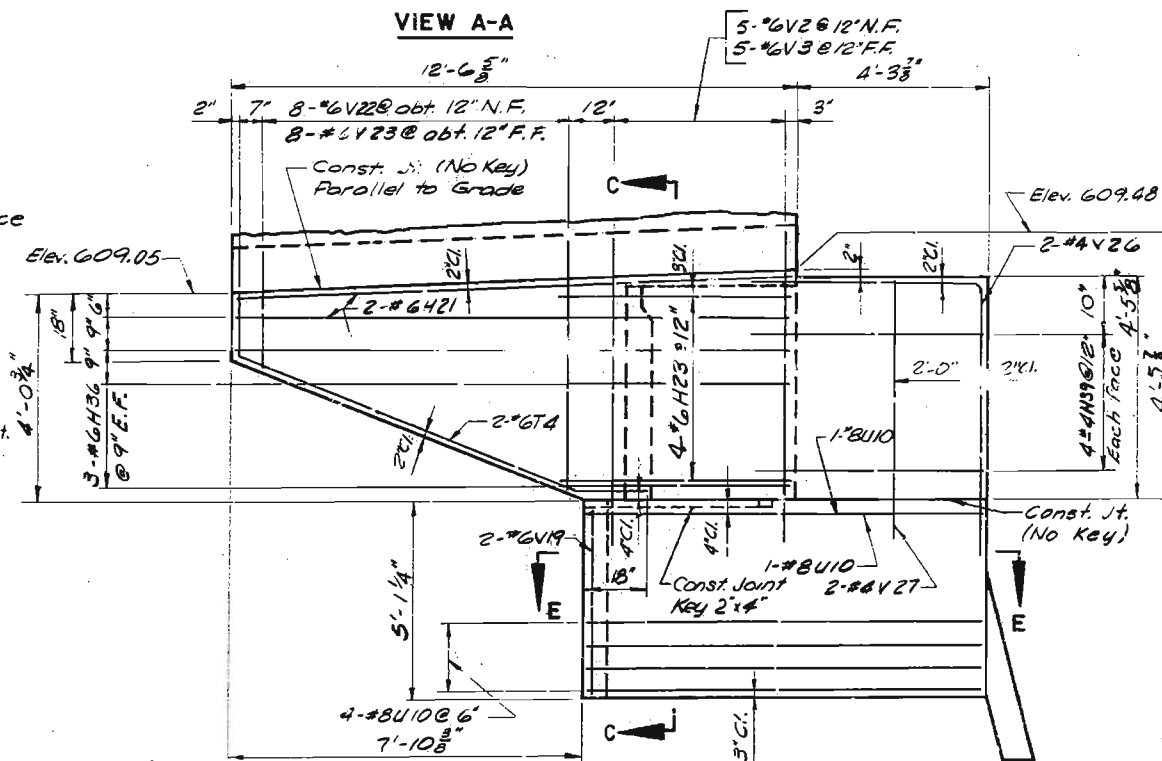
Note: Shift or cut V21 & V23 bars to maintain 1 1/2\" clearance from face of barrier curb level at end of wings.



PLAN OF FOOTING



VIEW A-A



VIEW F-F

WINGWALL DETAILS  
END BENT 4

DETAILED Apr. 19 79 Bishop  
CHECKED Apr. 19 79 Astrotzodeh

**Booker**  
Engineers Architects Planners

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

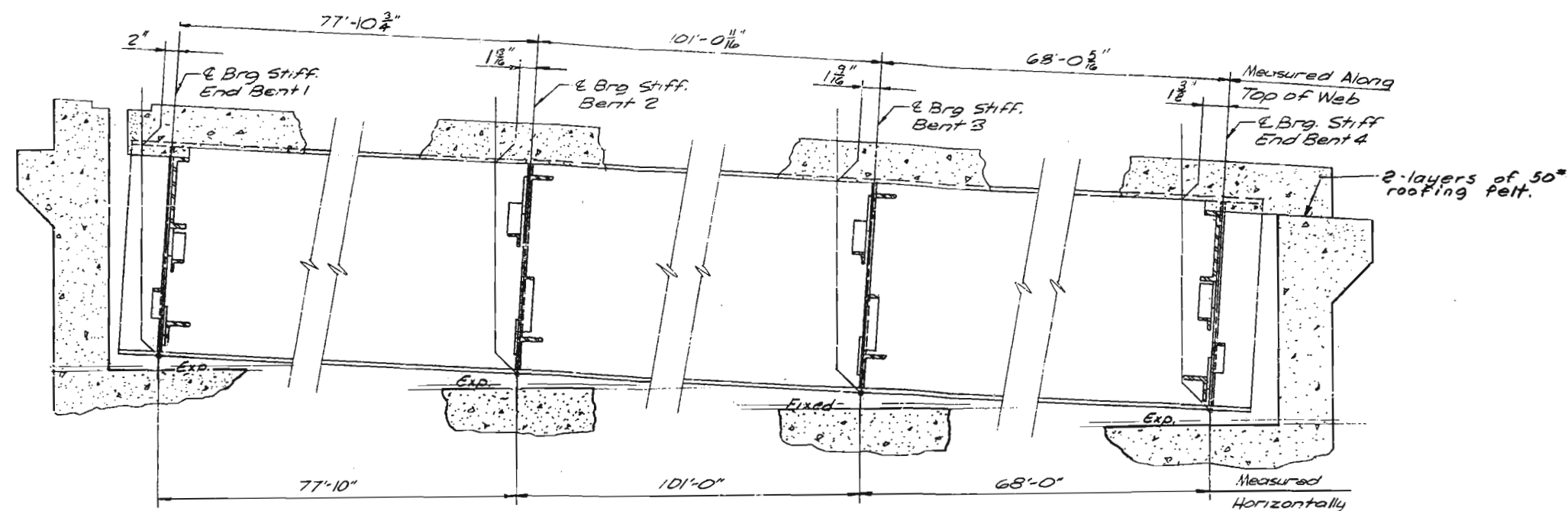
Sheet No. 11 of 22.

JEFFERSON COUNTY

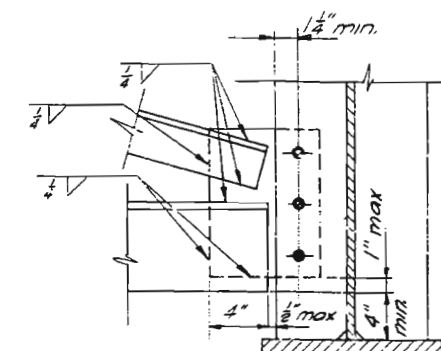
A-2956



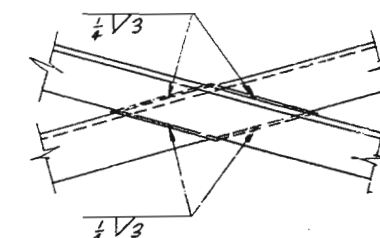
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	52	



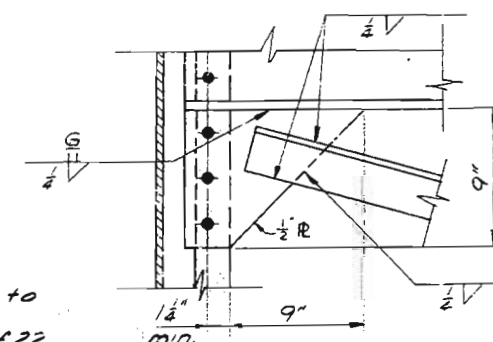
**LONGITUDINAL SECTION**  
Dimensions shown at Girder 5.



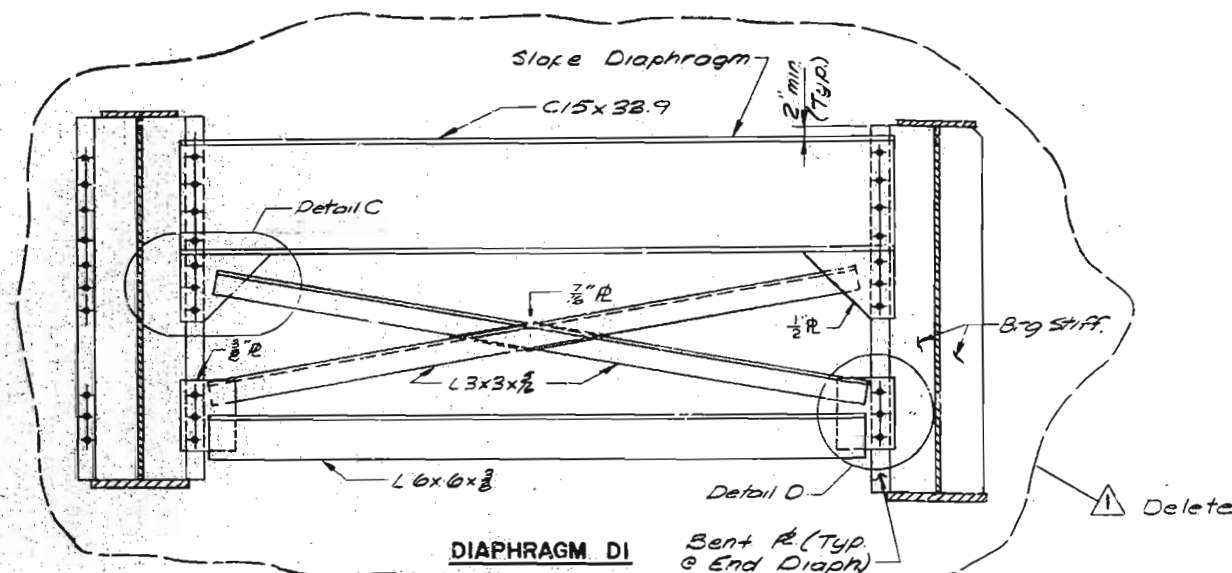
**DETAIL A**  
**DETAIL D (Similar)**  
Delete



**DETAIL B**

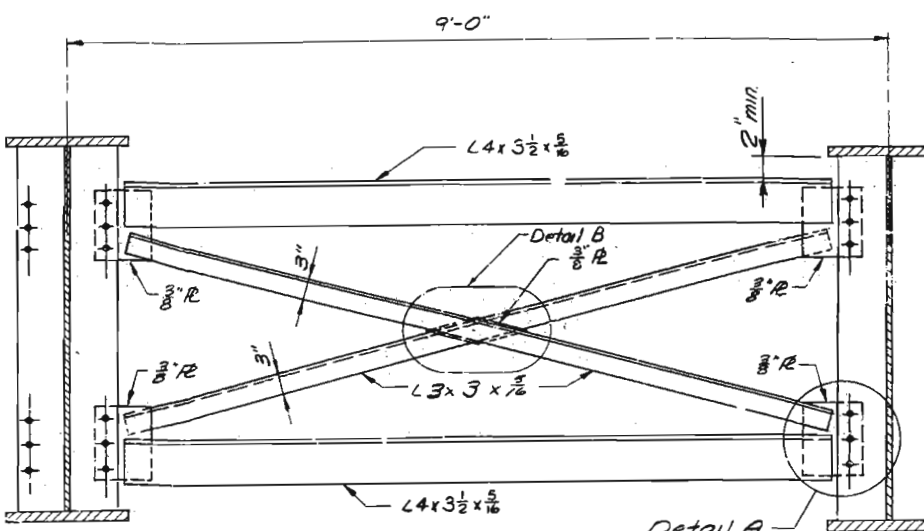


**DETAIL C**



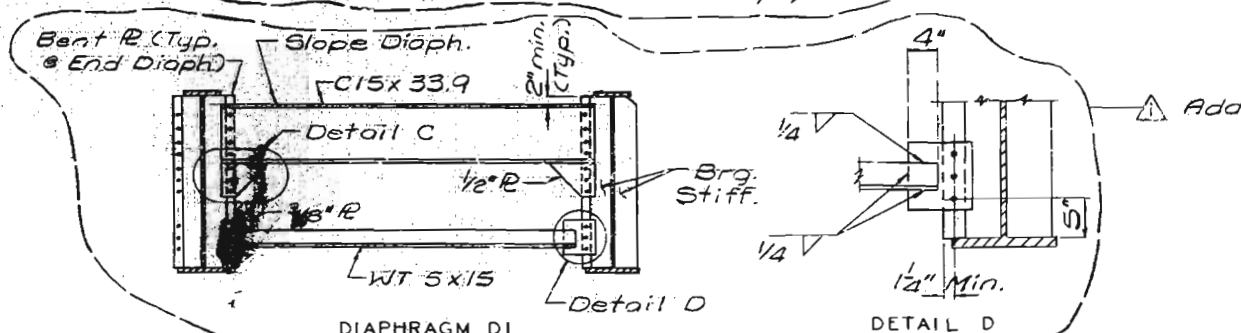
**DIAPHRAGM D1**

Bent R (Typ. & End Diaph)



**DIAPHRAGM D2**

**NOTES:**  
For location of diaphragms D1 and D2 refer to Sheet No. 13 of 22.  
For girder elevations refer to Sheets 13 of 22 and 14 of 22.



**DIAPHRAGM D1**

**DETAIL D**

4322 0278  
DATED April 1979 Balhazar  
CHECKED Apr. 1979 Ashrafzadeh

**Boeker**  
Engineers Architects Planners

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

Revised 6-11-87

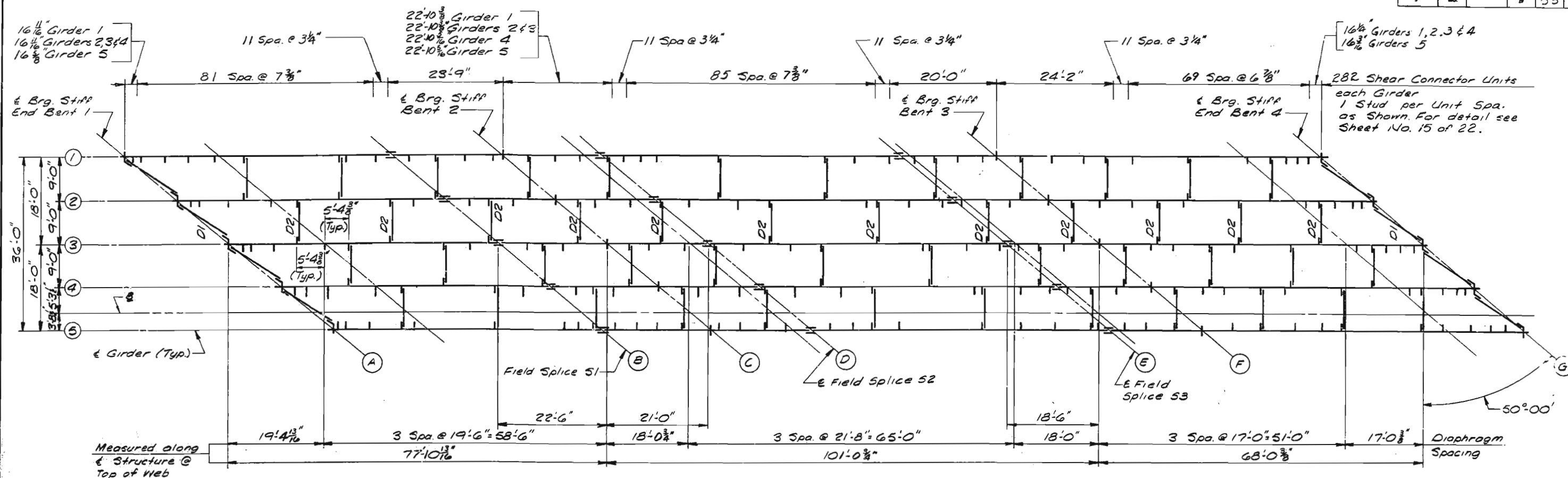
Sheet No. 12 of 22.

JEFFERSON COUNTY

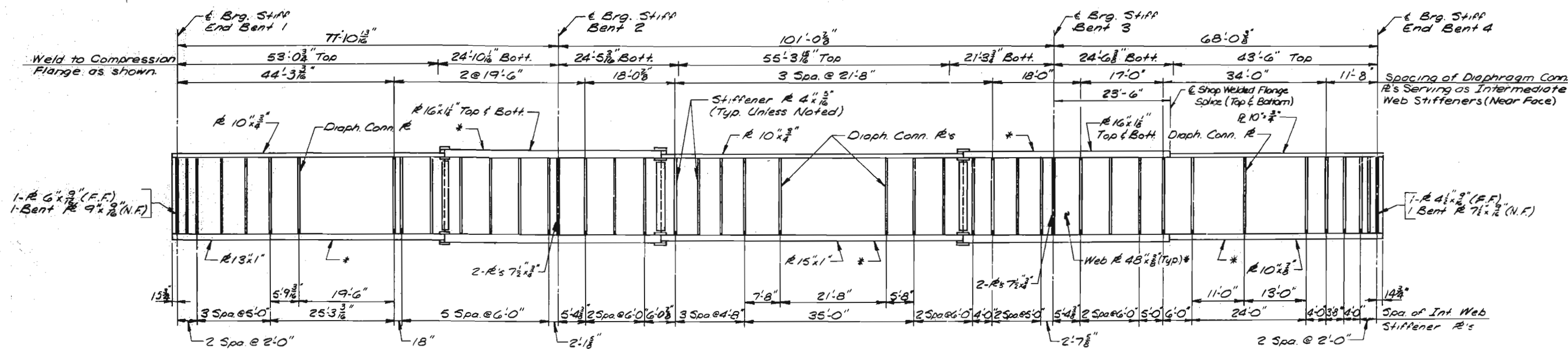
A-2956

**LONGITUDINAL SECTION &  
DIAPHRAGM DETAILS**

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	53	



FRAMING PLAN



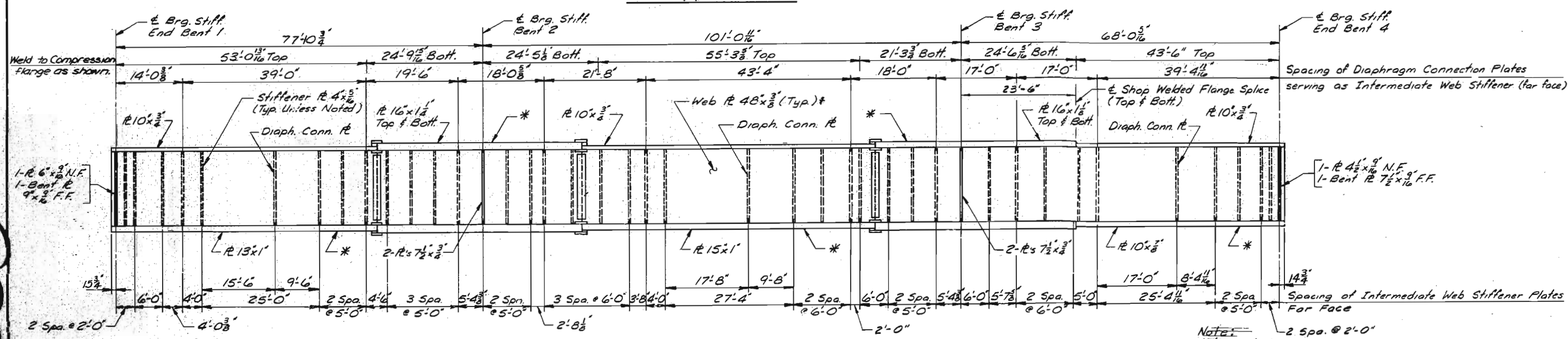
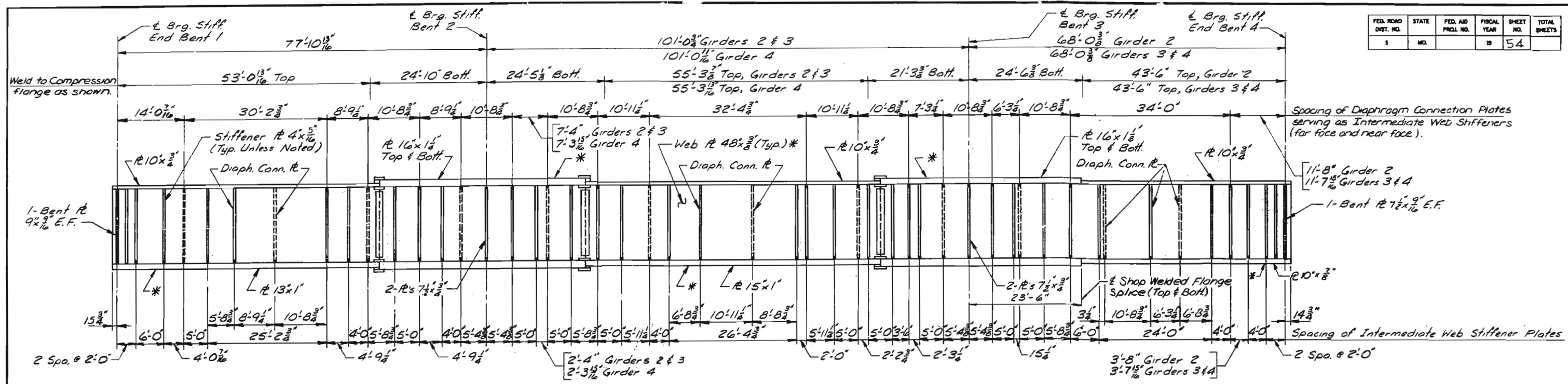
GIRDER 1 ELEVATION

NOTES:

For Additional Girder Elevations and Notes see Sheet 14 of 22.

STEEL PLAN & GIRDER 1 ELEVATION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	54	



**Notes:**

- Intermediate web stiffener plate and diaphragm spacings may vary from plan dimensions by a maximum of 3" for diaph. to connect to int. web stiff. plates.
- Longitudinal dimensions shown are measured along top of webs. See longitudinal section Sheet No. 12 of 22.
- Transverse web stiffeners and diaphragm connection plates to be placed as detailed.
- \* Indicates plates subject to notch toughness. Fabricated Structural Steel shall be A-36 except as noted.
- For Diaphragm Detail, see Sheet No. 12 of 22.
- For Welding Details, Bolted Field Splices, and Shop Splice see Sheet No. 15 of 22.
- Plate gtr. shall be fabricated to conform with Camber Diagram, shown on sheet No. 19.

**GIRDER 2 THRU 5 ELEVATIONS**

DETAILED Apr. 19 79 Cooper  
CHECKED Apr. 19 79 Ashrafzadeh



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

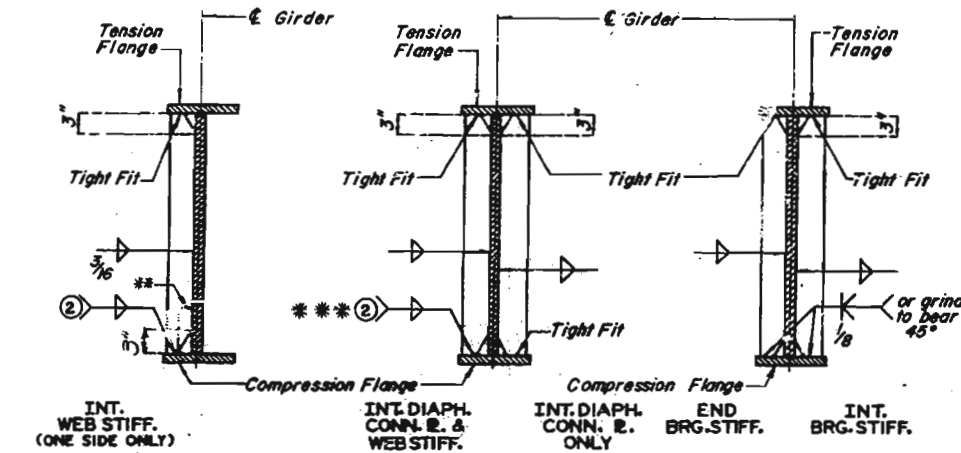
Sheet No. 14 of 22.

JEFFERSON COUNTY

A-2956

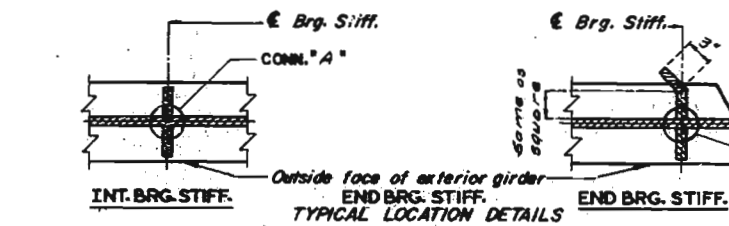


STATE	PROJ. NO.	SHEET NO.
MO.		55



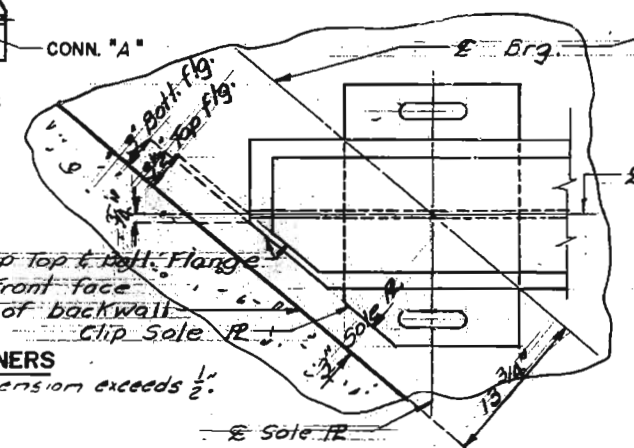
② Weld to compression flange as located on ELEVATION OF GIRDER.  
 \*\* 1/2" typical for all Int. Web Stiff., Int. Diaph. Conn. R. and Brg. Stiff.  
 \*\*\* Weld may be omitted on interior girders, and Tight Fit used when Int. Diaph. Conn. R. is required on both sides.

### WELDING DETAILS

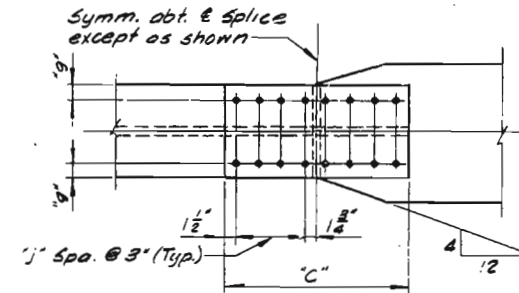


### DETAIL OF BEARING STIFFENERS

\*\*\* bevel Stiffener Plate when dimension exceeds 1/2".

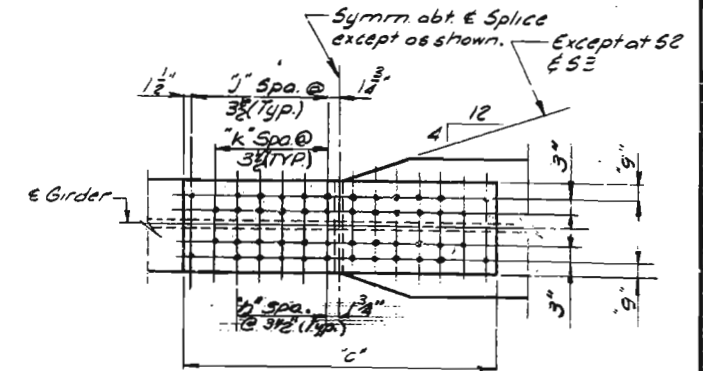


PART SECTION AT END BT. NO. 1  
 (Showing clips at end of Gdrs.)



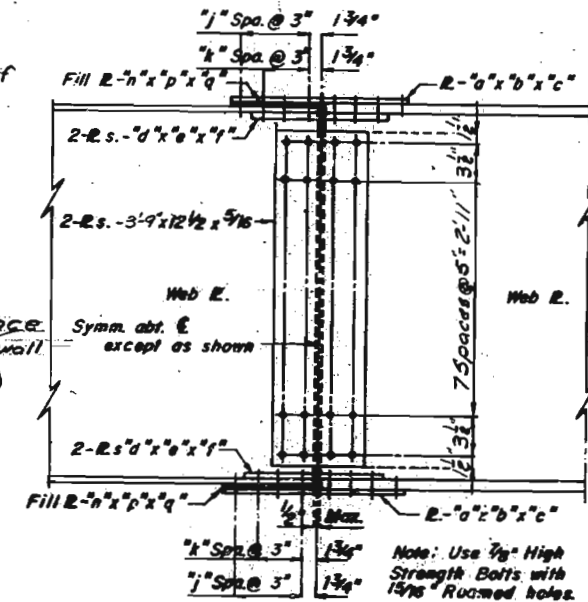
### FLANGE SPLICE PLAN

(Top Flange R. and Bottom Flange @ ST.)

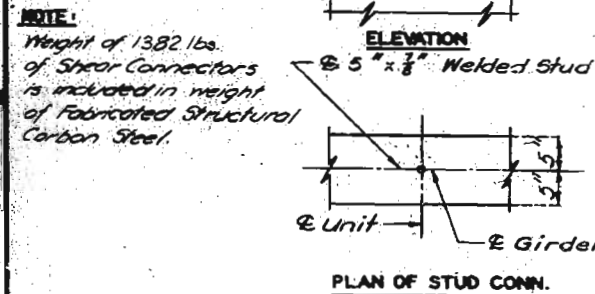


### FLANGE SPLICE PLAN

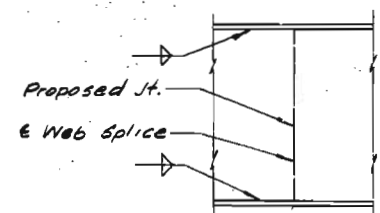
(Bottom Flange R. for S2 and S3)



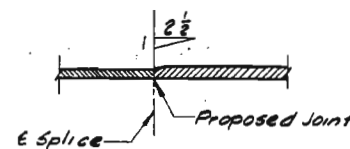
### FIELD SPLICE ELEVATION



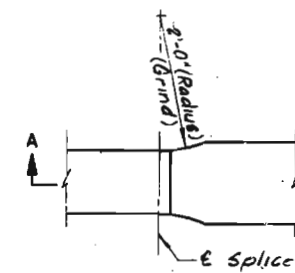
### DETAILS OF SHEAR CONNECTORS



### SHOP WEB SPLICE



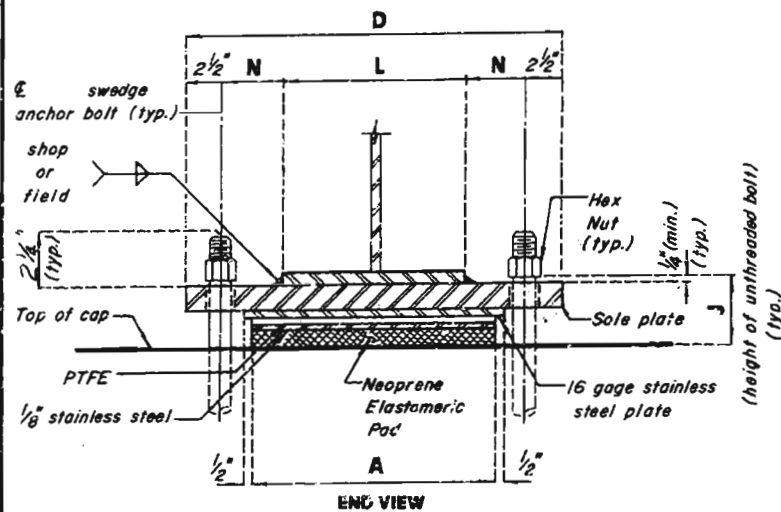
### SECTION A-A



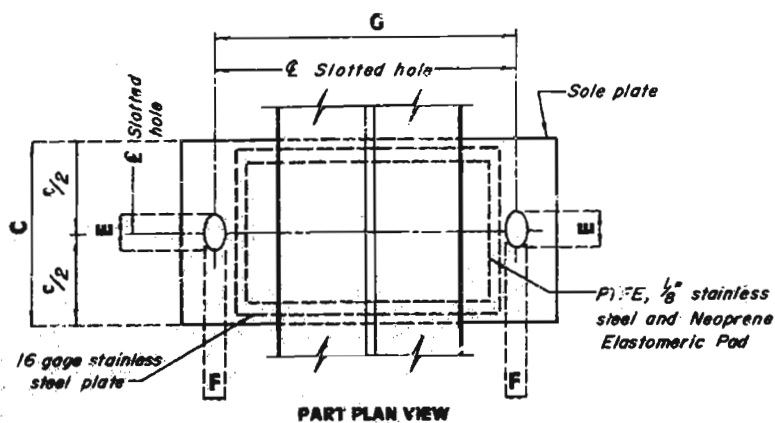
### 2'-0" RADIUS TRANSITION PLAN

SPICE LOCATION	FLANGE	NUMBER REQUIRED	TABLE OF DIMENSIONS BOLTED FIELD SPLICE														
			a	b	c	d	e	f	g	h	i	j	k	n	p	q	
S1	Top	5	10 1/2"	18 1/2"	4"	1/2"	18 1/2"	2"	0	2	2	10 1/2"	18 1/2"	4"	1/2"	9"	
S1	Bottom		13 1/2"	26 1/2"	5"	1/2"	26 1/2"	2 1/2"	0	4	4	13 1/2"	26 1/2"	5"	1/2"	15"	
S2	Top		5	10 1/2"	18 1/2"	4"	1/2"	18 1/2"	2"	0	2	2	10 1/2"	18 1/2"	4"	1/2"	9"
S2	Bottom	15 1/2"		26 1/2"	6"	1/2"	26 1/2"	2 3/4"	1 1/2"	3	3	15 1/2"	26 1/2"	6"	1/2"	13 1/2"	
S3	Top	5		10 1/2"	18 1/2"	4"	1/2"	18 1/2"	2"	0	2	2	10 1/2"	18 1/2"	4"	1/2"	9"
S3	Bottom		15 1/2"	26 1/2"	6"	1/2"	26 1/2"	2 3/4"	1 1/2"	3	3	15 1/2"	26 1/2"	6"	1/2"	13 1/2"	

STEEL  
TYPE 'N' BRGS.  
JANUARY 1980  
REVISED  
JULY 1983

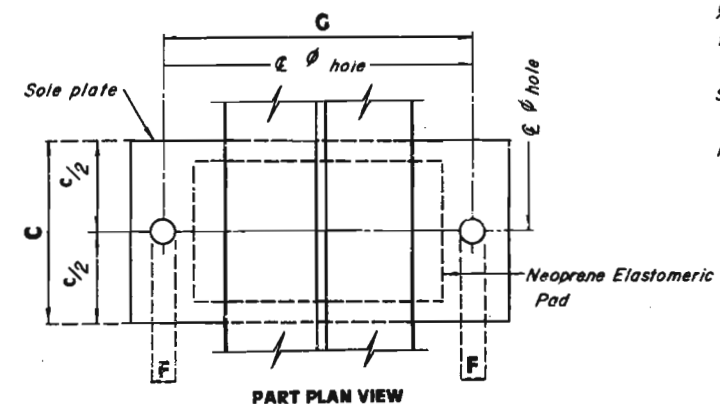
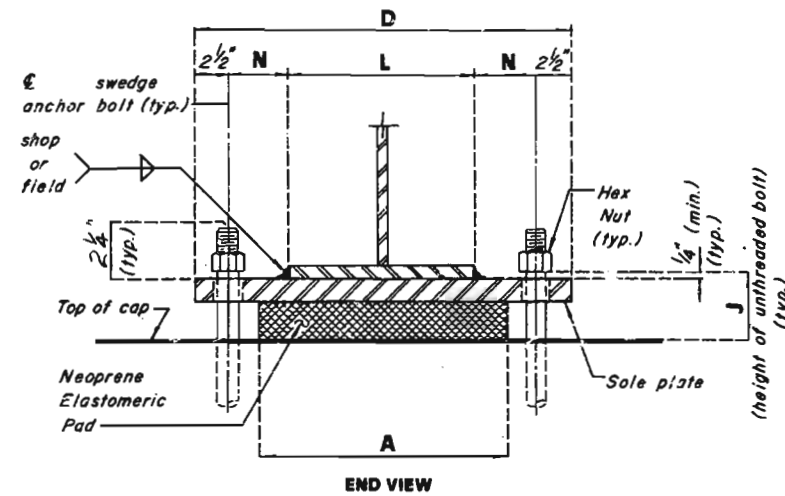
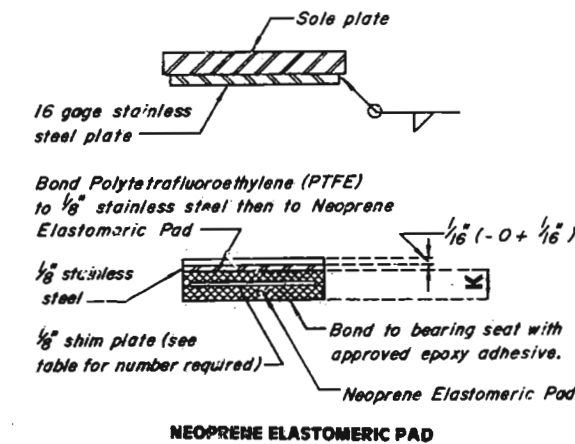


Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.



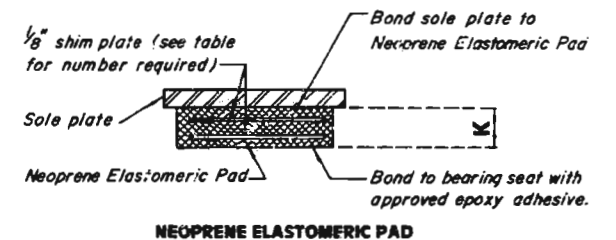
#### PTFE SLIDING BEARINGS

NUMBER REQUIRED = 5 @ Bt. #1  
5 @ Bt. #2  
5 @ Bt. #4



#### FIXED BEARINGS

NUMBER REQUIRED = 2 @ Bt. #3



Note: For details of clipping sole plates at end bents, see sheet No. 15.

BENT NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
1	14"	10"	15"	23"	5 1/2"	1 3/8"	18"	1 3/8"	3 1/2"	1 3/8"	13"	1 3/8"	2 1/2"	3 1/4"	1
2	15"	24"	28"	25"	4 1/2"	1 3/8"	20"	2 3/4"	5 1/4"	2 1/2"	16"	2 1/4"	2"	1 3/8"	2
4	14"	10"	15"	23"	4 1/2"	1 3/8"	18"	1 3/8"	3 1/2"	1 3/8"	10"	1 3/4"	4"	1 1/2"	1

(\*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

#### GENERAL NOTES:

ANCHOR BOLTS SHALL BE 1 1/2"  $\phi$  SWEDGED BOLTS AND SHALL EXTEND 15" INTO CONCRETE WITH HEXAGON NUTS.  
WEIGHT OF ANCHOR BOLTS AND HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN WEIGHT OF FABRICATED STRUCTURAL STEEL.  
NEOPRENE ELASTOMERIC PADS SHALL BE 70 DUROMETER.  
THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGERS OR GIRDERS.  
STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.  
PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.  
ALL ANCHOR BOLTS SHALL BE A-588 STEEL WITH A-563 (GRADE 50) HEXAGON NUTS.  
THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR TYPE "N" PTFE BEARINGS, EACH.  
ALL STRUCTURAL STEEL FOR SOLE PLATES, ANCHOR BOLTS AND HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS. MINIMUM) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
3	15"	24"	25"	25"	1 3/8"	20"	4 1/4"	2 1/2"	16"	1 1/2"	2"	1 3/8"	2

(\*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

#### DETAILS OF TYPE 'N' PTFE BEARINGS

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

Sheet No. 16 of 22.

JEFFERSON COUNTY

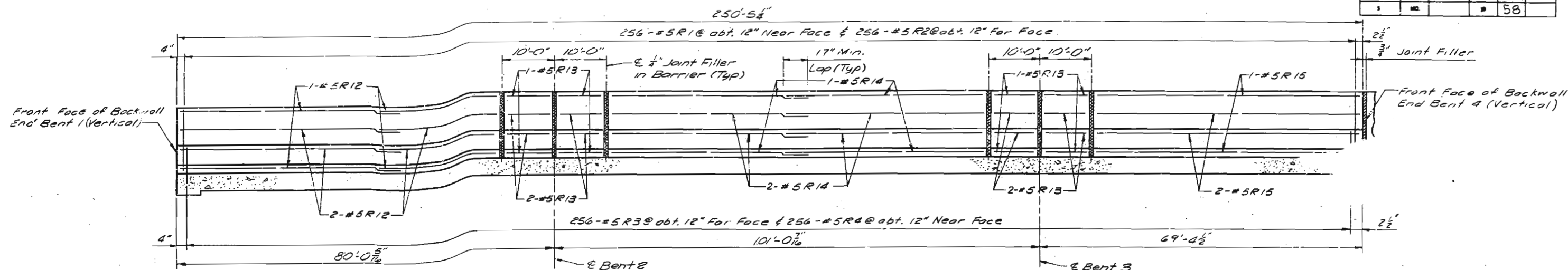
A-2956

DETAILED July 1983  
CHECKED Aug. 1985



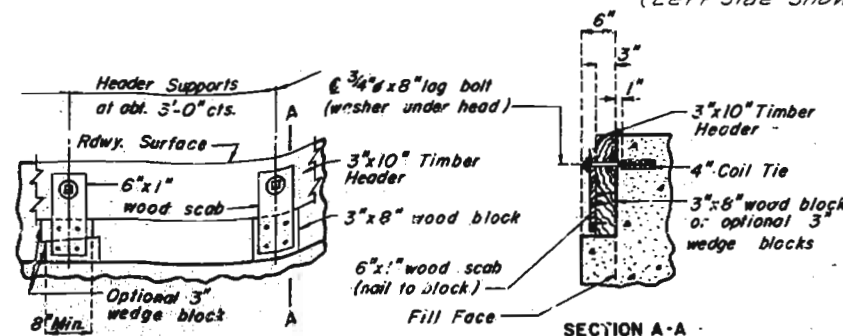


FED. ROAD DIST. NO.	STAT.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MC		19	58	

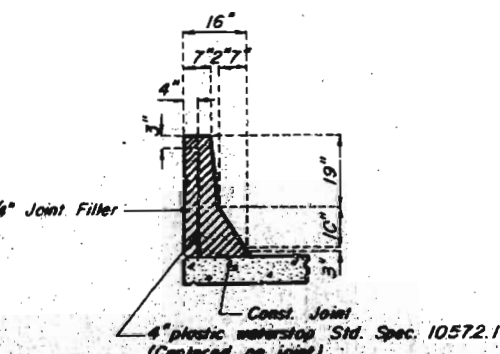


**BARRIER ELEVATION BETWEEN END BENTS**  
(Left Side Shown, Right Side Similar)

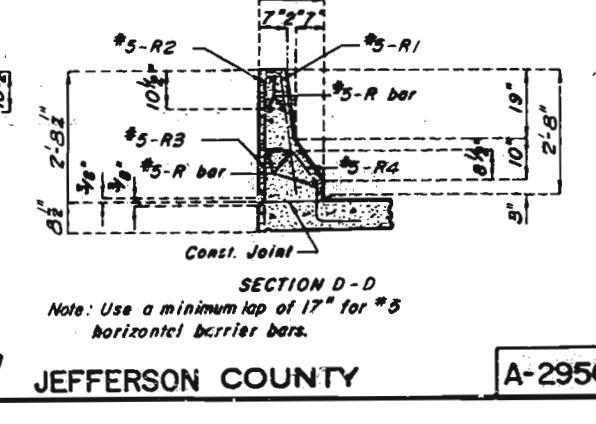
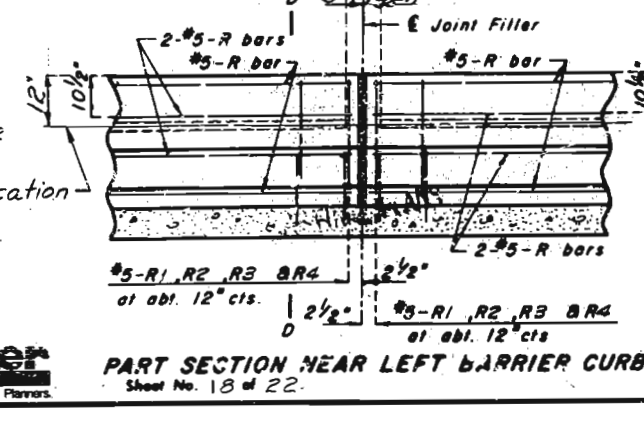
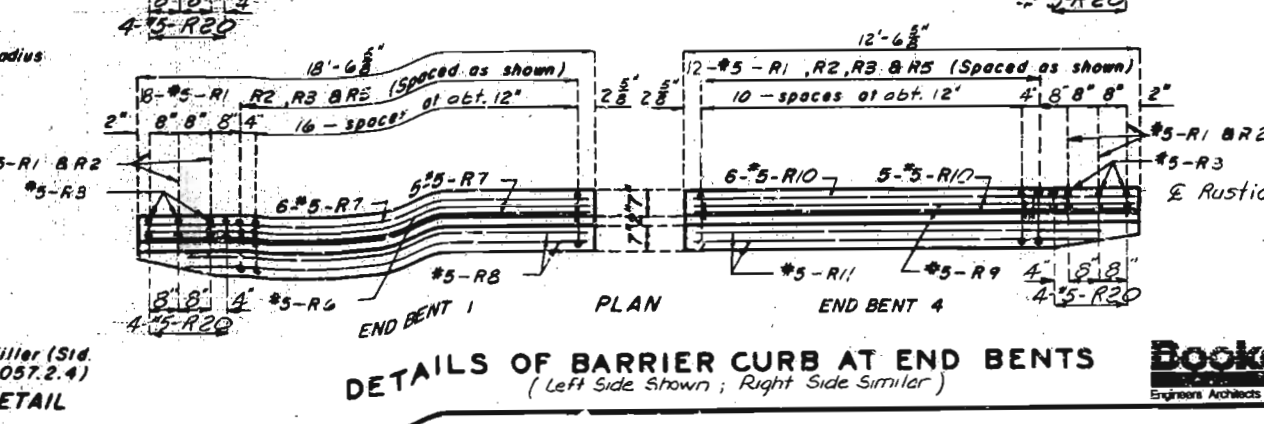
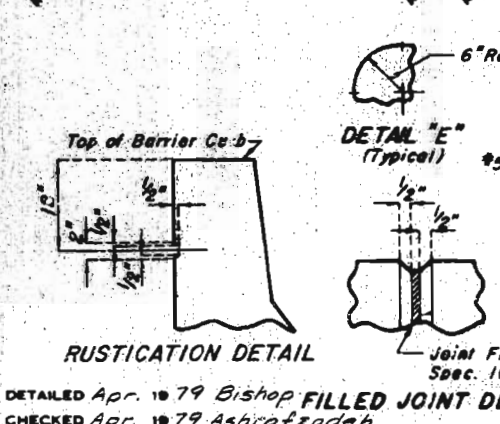
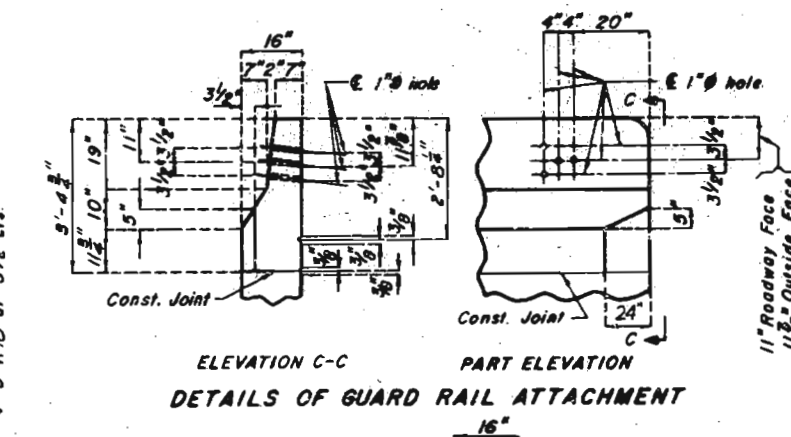
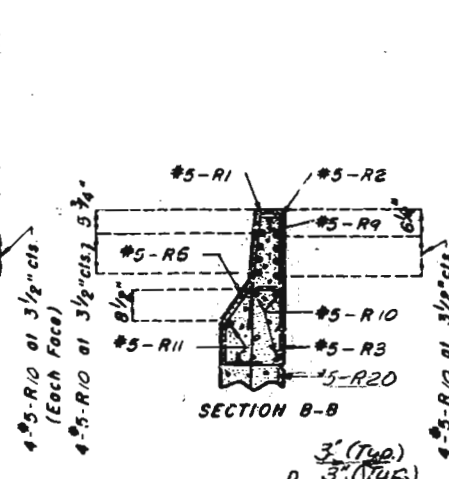
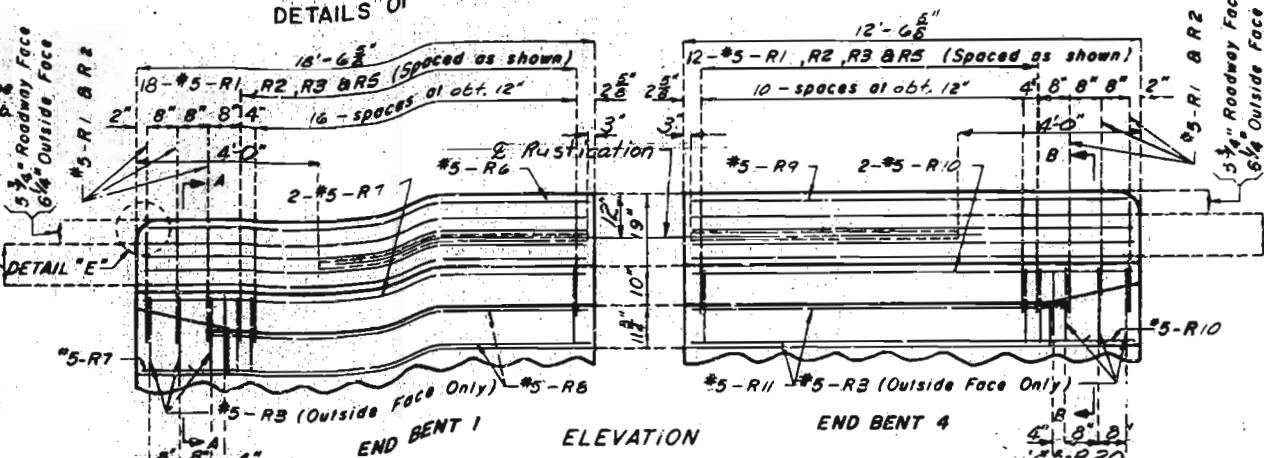
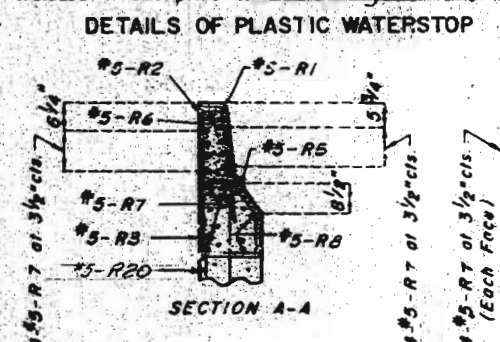
When the barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete in place. Concrete in the safety barrier curb shall be class B1. Measurement of safety barrier curb is to the nearest linear ft. for each str., measured along the outside top of slab from end of wing to end of wing. Longitudinal dimensions are taken parallel to grade at top of barrier curb. 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  $\frac{1}{4}$ " radius or  $\frac{3}{8}$ " bevel unless otherwise noted. The cross-sectional area above the slab = 2.27 sq. ft.



**PART ELEVATION DETAILS OF TIMBER HEADER AT END BENTS**  
Note: Cost of timber headers complete in place to be included in price bid for concrete.



**DETAILS OF PLASTIC WATERSTOP**  
Note: Plastic waterstop shall be placed in all safety barrier curb filled joints except at End Bt. 4. Cost of plastic waterstop complete in place to be included in unit price for Safety Barrier Curb.



**DETAILS OF BARRIER CURB AT END BENTS**  
(Left Side Shown, Right Side Similar)

**Booker**  
Engineers Architects Planners

**PART SECTION NEAR LEFT BARRIER CURB**  
Sheet No. 18 of 22.

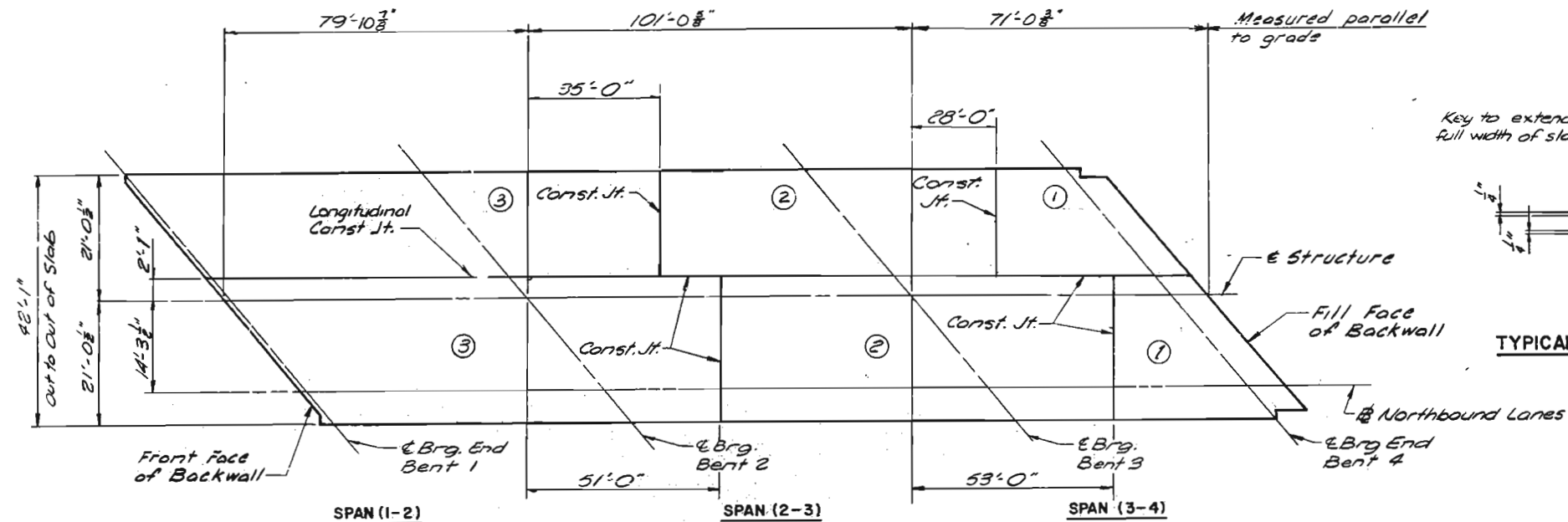
**JEFFERSON COUNTY**

**A-2956**

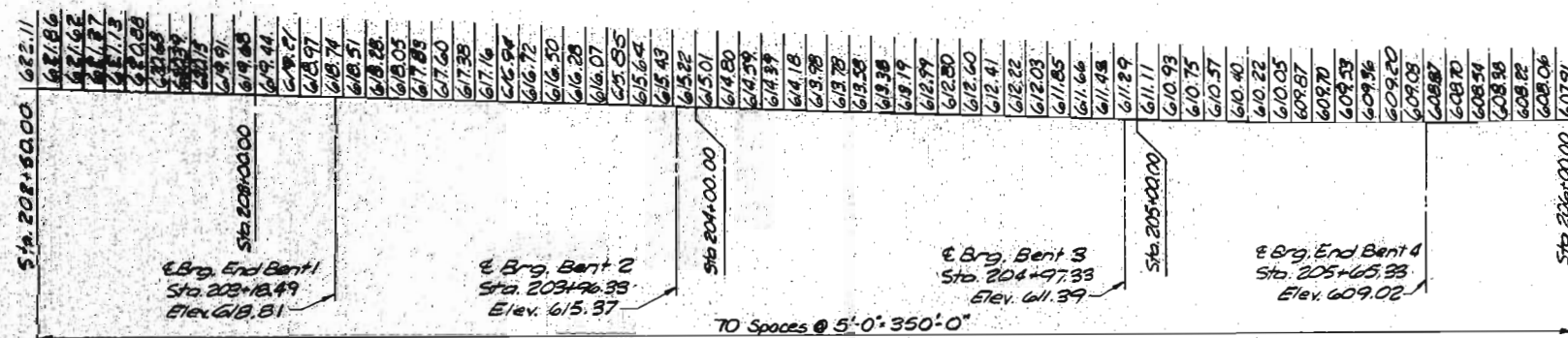
STD. 177N REVISED  
AUG. 1978  
308

DETAILED Apr. 1979 Bishop  
CHECKED Apr. 1979 Ashrafzadeh

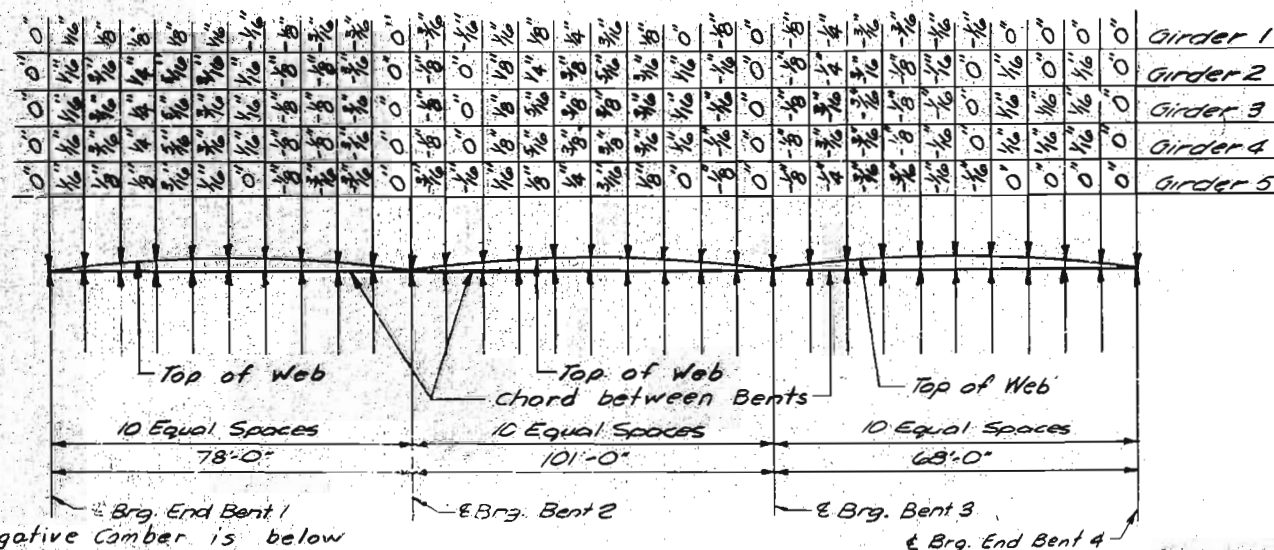
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		18	59	



SLAB POURING SEQUENCE



PROFILE GRADE ELEVATIONS

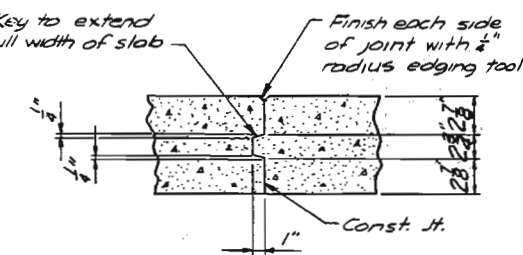


CAMBER DIAGRAM

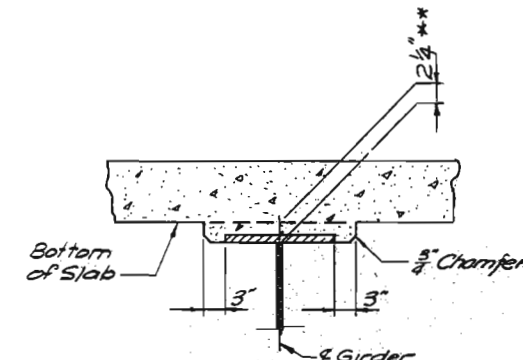
Note: Negative Camber is below chord between Bts.  
 DETAILED April 1979, Balthasar  
 CHECKED Apr. 18 79 Aehrafzadeh

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

**Boeker**  
 Engineers Architects Planners



TYPICAL CONSTRUCTION JOINT



THEORETICAL SLAB HAUNCH

BASIC SEQUENCE	SEQUENCE OF POURS		
	1	2	3
ALTERNATE "A" POURS	END TO 2	1 TO 3	2 TO END
ALTERNATE "B" POURS	END TO 3	2 TO END	1+2+3

GIRDER NO.	SPAN		
	1-2	2-3	3-4
1 & 5	12%	13%	11%
2, 3, 4	11%	11%	10%

\*PERCENT OF DEAD LOAD DEFLECTION due to weight of structural steel.

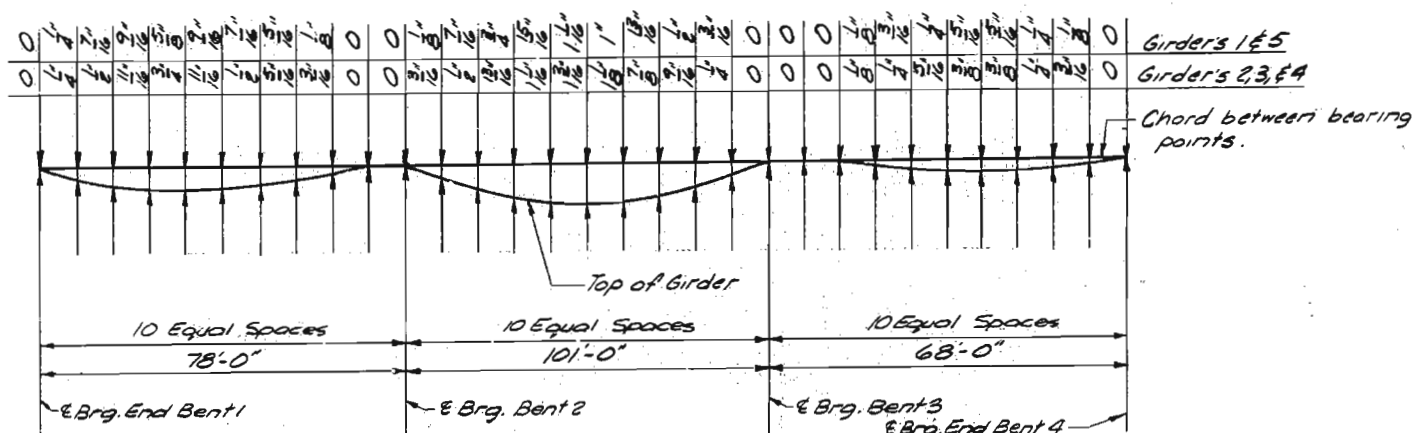
NOTES:

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

\*\* Dimensions may vary if Girder Camber after erection differs from plan. Camber by more than the % of D.L. deflection due to weight of structural steel. No payment will be made for additional forming or concrete required for variation in haunching.

The Contractor shall pour and satisfactorily finish the slab pours at a rate of not less than 31 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. The widest section of slab shall be poured first.

Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 703-3.12.4 of Missouri Std. Specifications.



DEAD LOAD DEFLECTION DIAGRAM

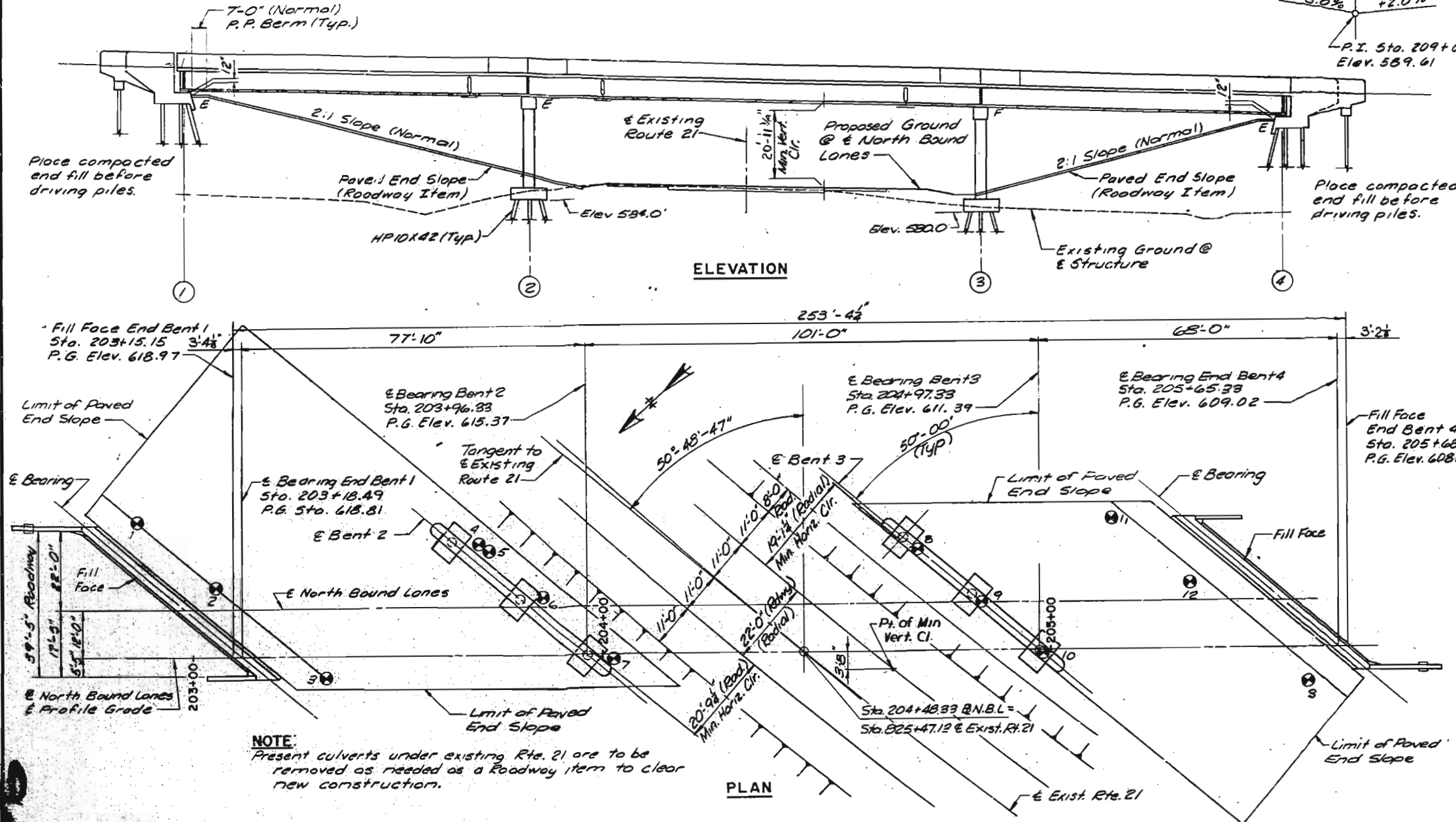
Sheet No. 19 of 22. SEE FINAL PLANS

JEFFERSON COUNTY

A-2956

# MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

77.83'-101.0'-68.0' Welded Plate Girder



## GENERAL NOTES:

### DESIGN SPECIFICATIONS:

A.A.S.H.T.O. - 1983 and Interims thru 1984 & 1985  
Load Factor Design

### DESIGN LOADING:

HS 20-44  
15" Sq. Ft. Future Wearing Surface  
Earth 120"/cu. ft. Equivalent Fluid Pressure 30"/cu. ft.  
Fatigue Stress Case II.

### DESIGN UNIT STRESSES:

Class B Concrete (Substructure)  $f'_c = 3,000$  psi  
Class B Concrete (Safety Barrier Curb)  $f'_c = 4,000$  psi  
Reinforcing Steel (Grade 60)  $f_y = 60,000$  psi  
Structural Carbon Steel  $f_y = 36,000$  psi  
Steel Pile  $f_y = 90,000$  psi  
Class B2 Concrete (Superstructure except safety Barrier Curb)  $f'_c = 4,000$  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  $\frac{3}{4}"$  holes  $\frac{13}{16}"$  & except as noted.

Turn of Nut Method of tensioning high strength bolts will be permitted.

### PAINT:

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

### REINFORCING STEEL:

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

For passive pressure requirements, See Special Provisions

### BORING DATA

Indicates Location of Borings. For Boring Data. See Sheet No. 2 of 20.

### BENCH MARKS (USGS DATUM)

Northwest corner of bridge on top of barrier wall (Chisel square)  
Elev. 624.40

### CONSTRUCTION CLEARANCE

A Minimum Vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 28'-0" centered on existing lanes shall be maintained during Construction.

Elastomeric Expansion Joint seal at Bent No. 1 - On-Flex 35

## BRIDGE N.B. LANE OVER EXISTING RTE. 21

STATE ROAD ROUTE 141 TO ROUTE M

ABOUT 4.2 MILES NORTH OF OTTO

PROJECT NO. F-21-2(24) STA. 203+15.15

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

JEFFERSON COUNTY

DATE 3/11/87

STD. 611.60

STD. 706.35

A-2956

QUANTITIES				
ITEM	UNIT	SUBSTR.	SUPERSTR.	TOTAL
Class I Excavation	Cu. Yd.	139.5		139.5
Structural Steel Piles (HP10x42)	Lin. Ft.	2029		2029
Class B Concrete (Substructure)	Cu. Yd.	255.4		255.4
( ) Slab on Steel, see special Provisions	Sq. Yd.		1163	1163
Elastomeric Expansion Joint Seal (3.0 inches)	Lin. Ft.		61	61
Reinforcing Steel (Grade 60)	Lbs.	34,000		34,000
Reinforcing Steel (Grade 60) (Epoxy Coated)	Lbs.	1,530		1,530
Fabricated Structural Carbon Steel (A-36)	Lbs.		219,280	219,280
Painting (System B) Green	Tons		109	109
Safety Barrier Curb	Lin. Ft.		0	0
Type N PTFE Bearings	Each		20	20
Abutment Vertical Drain	Lump Sum		1	1
Pile Point Reinforcement	Each	56		56
Slip form Safety Barrier Curb (Cont.)		563		563

For Estimated Quantities for Alternate Slabs, see sheet NO. 2.

DESIGNED Feb 1979 Ashrafzadeh

DETAILED Feb 1979 Schurman

CHECKED May 1979 Ashrafzadeh



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

PILE DATA TABLE										
HP10 x 42 PILES	BENT NUMBER									
	1		2		3		4			
	BEAM	WING- WALL	LT. CTR.	RT.	LT. CTR.	RT.	BEAM	WING- WALL		
NUMBER	9	1	6	6	6	6	9	1		
LENGTH FT.	48	60	37	33	27	25	21	24	46	45
DESIGN BEARING TONS	51	51	54		53		48		48	
HAMMER ENERGY LBS.	11,400	11,400	12,800		12,200		10,800		10,800	

Minimum energy requirement of hammer based on plan length and design bearing of piles.

All piles shall be driven to practical refusal. Manufactured Pile point reinforcement shall be used on all piles in this structure. see special Provisions.

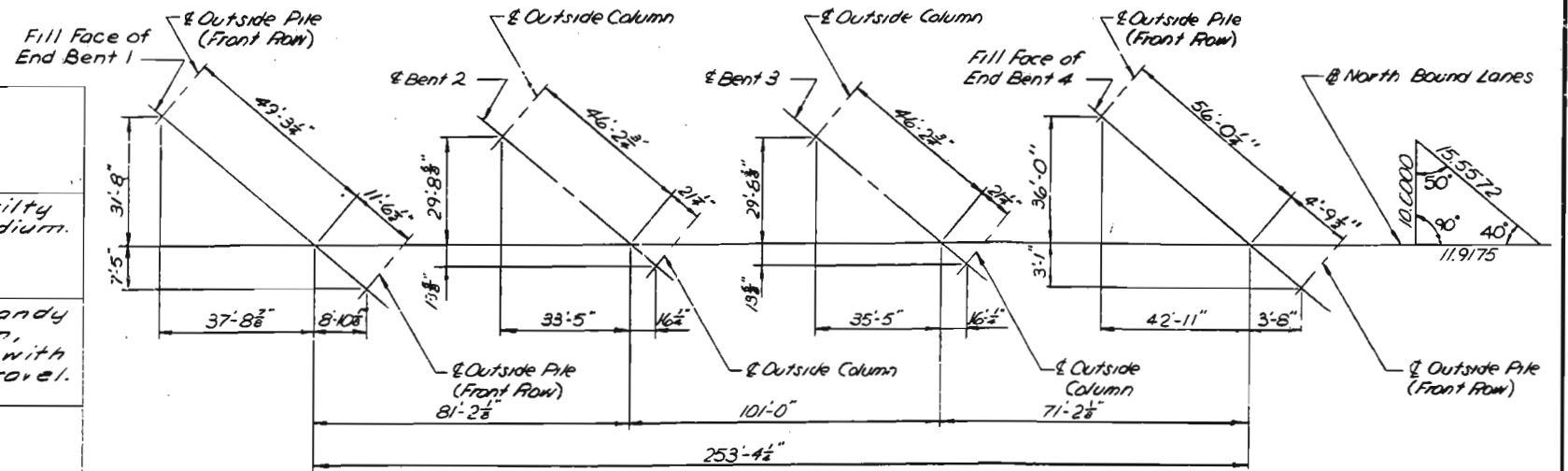
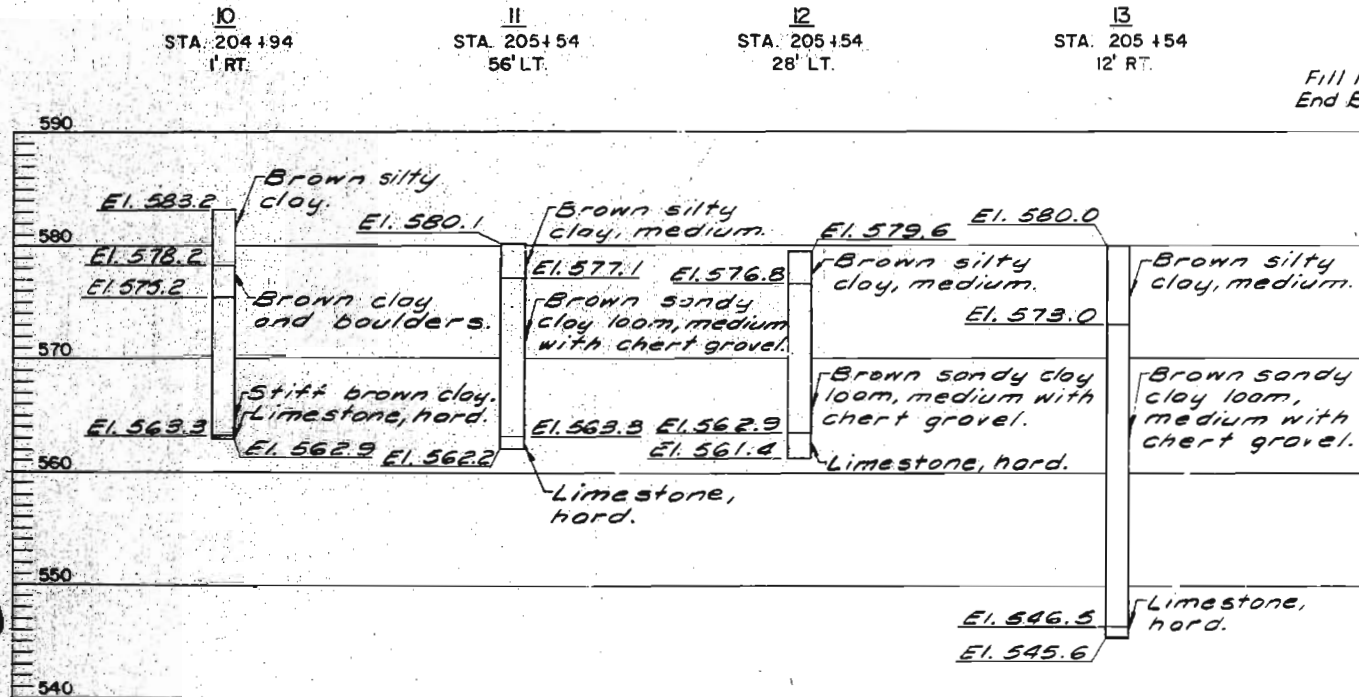
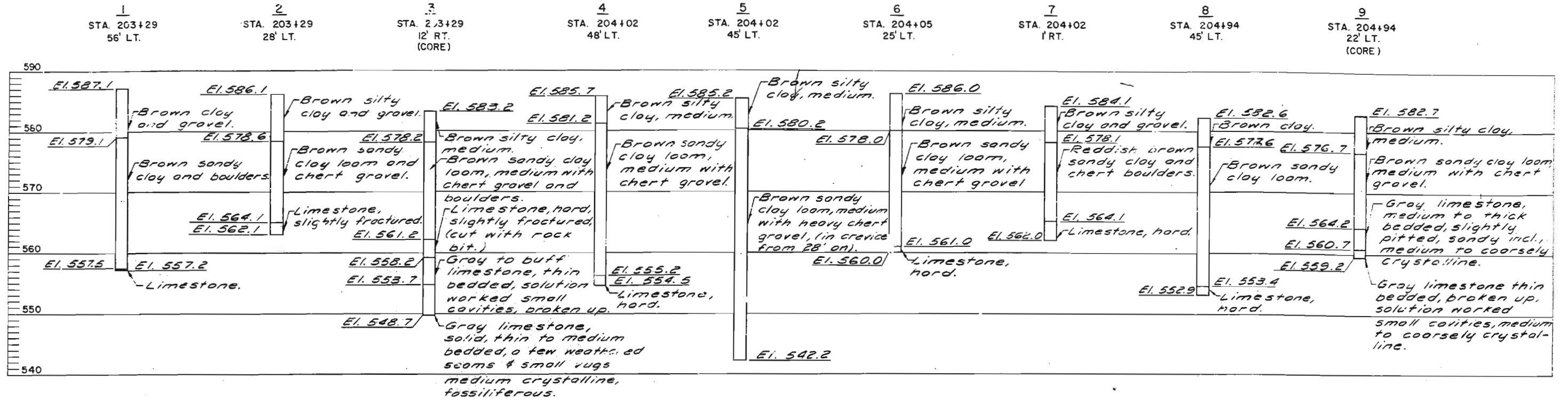
Note: Conc. above upper const. jt. in backfill at end bents No. 1 & 4 is included with class B (Substructure) quantities.



Sheet No. 1A of 22.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-2(24)	19	30	



SUBSTRUCTURE LAYOUT

TYPE OF SLAB	Quantities for Slab	
	Slab on Steel Reinf. Ubs)	Conc.
	Epoxy	Cu. Yd.
At P/S Panel Form	49,080	212.1

Note: Precast panel quantities based on skewed end panels.

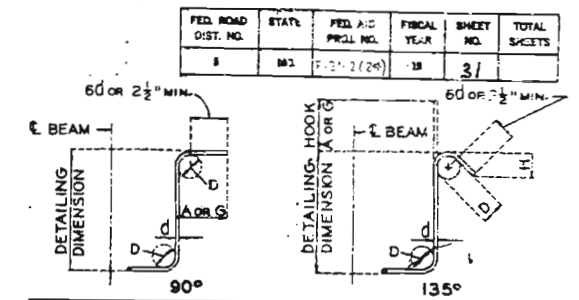
SUBSTRUCTURE LAYOUT AND BORING LOGS



[illegible]

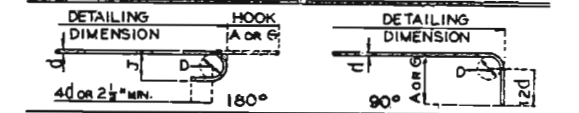
Slab Reinforcing (PIC PIS Panel)									
547	5	51	** Slab	H20					18 10 12 745
532	5	52	** "	H20					25 1 13,918
19	5	53	** "	H20	Y	1	18	6	18 6 20 3 511
			Incr. = 4 1/4"	H20	Y	1	1	10 1/2	1 11 -
54	5	56	** Slab	H20	Y	1	22	5	22 5 26 4 742
			Incr. = 4 3/16"	H20	Y	1	3	11	3 11
40	5	59	** Slab	H20	Y	1	17	2 1/2	17 3 20 9 433
			Incr. 4 3/16"	H20	Y	1	3	6 3/8	3 6
68	5	50	** Slab	H20	Y	1	25	8 3/4	25 9 28 1 996
				H20	Y	1	2	4 1/4	2 4
160	5	54	** Slab	H20					51 3 8580
66	6	525	** "	H20					50 6 3006
66	6	526	** "	H20					48 4 4791
30	5	517	** "	H20					51 8 1617
42	5	518	** "	H17					3 2 139
4	5	519	** "	H20					17 5 73
494	4	522	** "	H20					3 0 990
10	5	513	** "	H20					51 3 536
Total Slab Epoxy									49077

COMPLETE BILL OF REINFORCING STEEL																											
NO. RECD.	SIZE	MARK NO.	MARK	LOCATION	GRADE 60 TH	SHAPE NO.	STIRRUP (S)	SUBSTR. (Y)	VARIES (Y)	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																											
584	5	R1	**	Barrier	H13						2	2		3 1/2					2	6		3 1/2	10 2	8	162		
584	5	R2	**	"	H19						2	6		3 1/2								2 10	2	8	162		
580	5	R3	**	"	H19						7	5		6								1 11	7	9	105		
512	5	R5	**	"	H27								6	11 1/2		7	1	0		9 1/2	6 1/2	3	0	2	10	151	
60	5	R5	**	"	H27						1	0		7	11 1/2		6			6 1/2	9 1/2	3	0	2	10	177	
2	5	R6	**	"	H20						12	0															
22	5	R7	**	"	H20						18	3															
4	5	R8	**	"	H20						17	3															
2	5	R9	**	"	H20						12	0															
22	5	R10	**	"	H20						12	3															
4	5	R11	**	"	H20						11	3															
24	5	R12	**	"	H20						35	5															
18	5	R13	**	"	H20						9	7															
24	5	R14	**	"	H20						41	2															
12	5	R15	**	"	H20						59	4															
16	5	R20	**	"	H10								2	8		6						5	10	5	8	93	
Total Barrier Reinf.																			10	114							



STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (in.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	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 60 KSI)	SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 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				90° HOOKS
	GRADE 40		GRADE 60		ALL GRADES
	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-815 GRADE 80).

X- BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.

Y - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

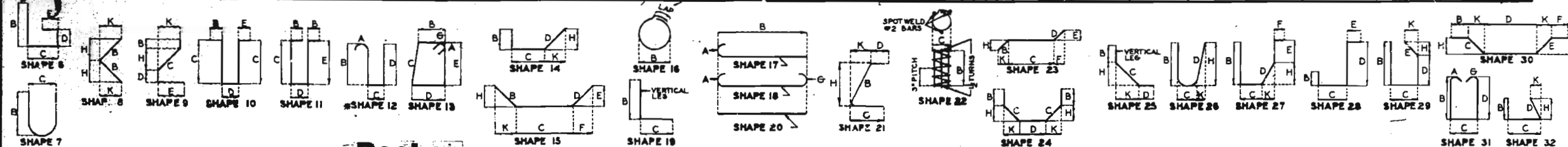
NO. EA. - NUMBER OF BARS OF EACH LENGTH.

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 40 (ONLY) ARE BASED ON  $D = 5d$ .

**\*\* Indicates epoxy coated bars.**  
Two additional (5) are included in bar bill for testing.



### BENDING DIAGRAMS

SUPERSTRUCTURE  
BAR LIST

Diagram 1: A U-shaped figure with a vertical line on the left labeled 'B', a horizontal line at the top labeled 'C', and a horizontal line at the bottom labeled 'D'. Below it is the label 'SHAPE 8'.

Diagram 2: A figure with a vertical line on the left labeled 'H', a horizontal line at the top labeled 'K', a horizontal line at the bottom labeled 'K', and a horizontal line on the right labeled 'B'. Below it is the label 'SHAPE 8'.

Diagram 3: A figure with a vertical line on the left labeled 'B', a horizontal line at the top labeled 'K', a horizontal line at the bottom labeled 'D', and a horizontal line on the right labeled 'C'. Below it is the label 'SHAPE 9'.

Diagram 4: A figure with a vertical line on the left labeled 'B', a horizontal line at the top labeled 'C', and a horizontal line at the bottom labeled 'D'. Below it is the label 'SHAPE 7'.

DETAILED Apr. 19 79 Bolthasar  
 CHECKED Apr. 19 79 Ashrafzaden

# Booker

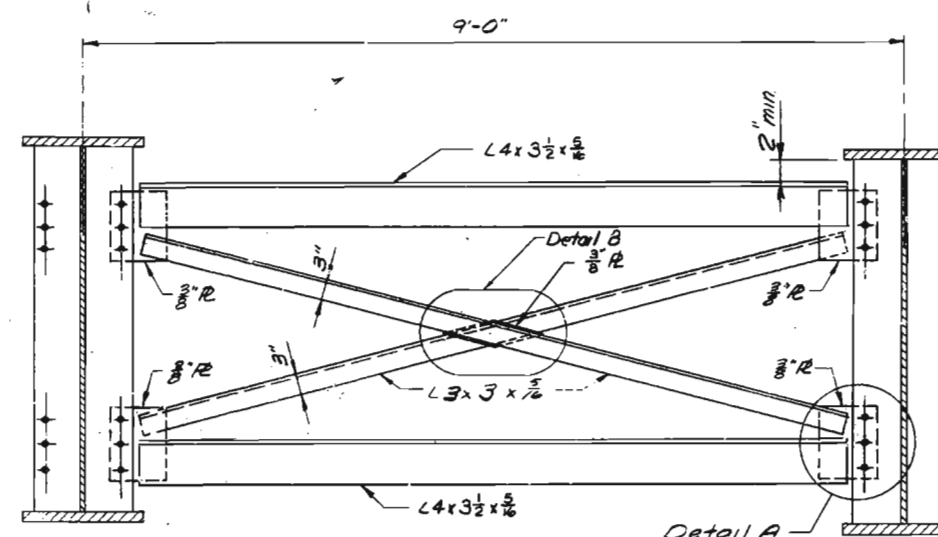
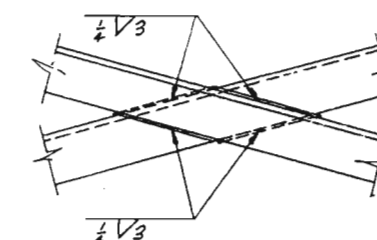
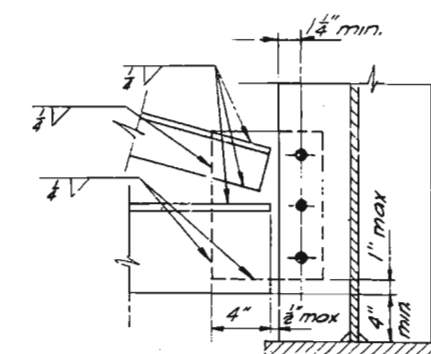
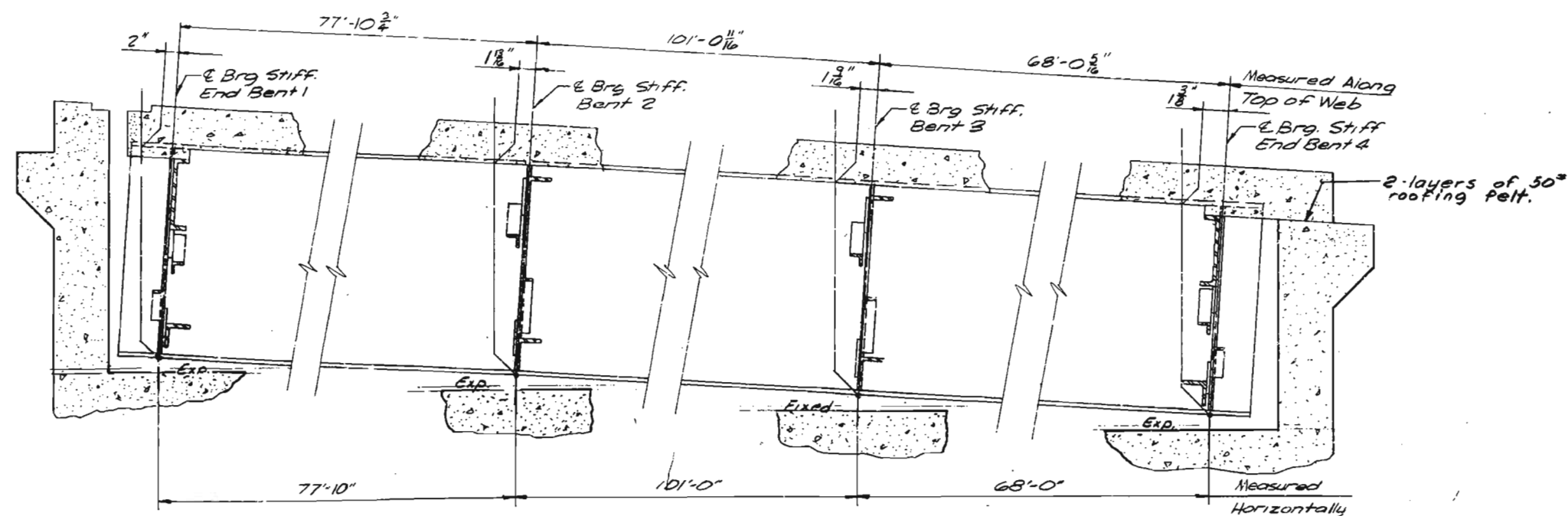
**Note:** This drawing is not to scale. Follow dimensions.

Sheet No. 5 Aug 22.

JEFFERSON COUNTY

A-2956

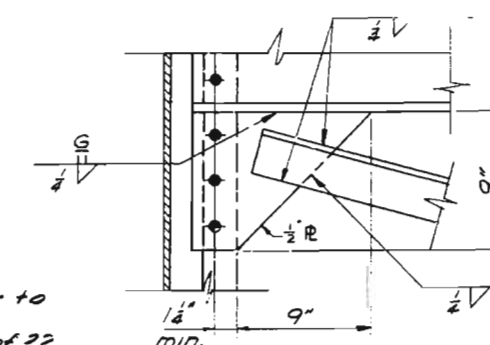
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	6-71-2(24)	70	32	



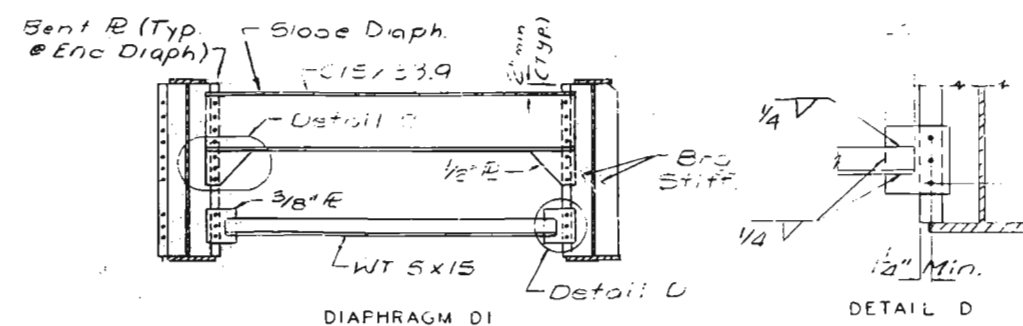
DIAPHRAGM: D2

**NOTES:**

For location of diaphragms D1 and D2 refer to Sheet No. 13 of 22.  
For girder elevations refer to Sheets 13 of 22 and 14 of 22.



**DETAIL C**



DETAILED April 1979 Calthosar  
CHECKED Apr. 1979 Ashraf - deh

**Booker**  
Engineers · Architects · Planners

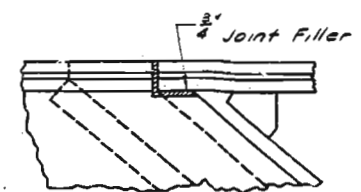
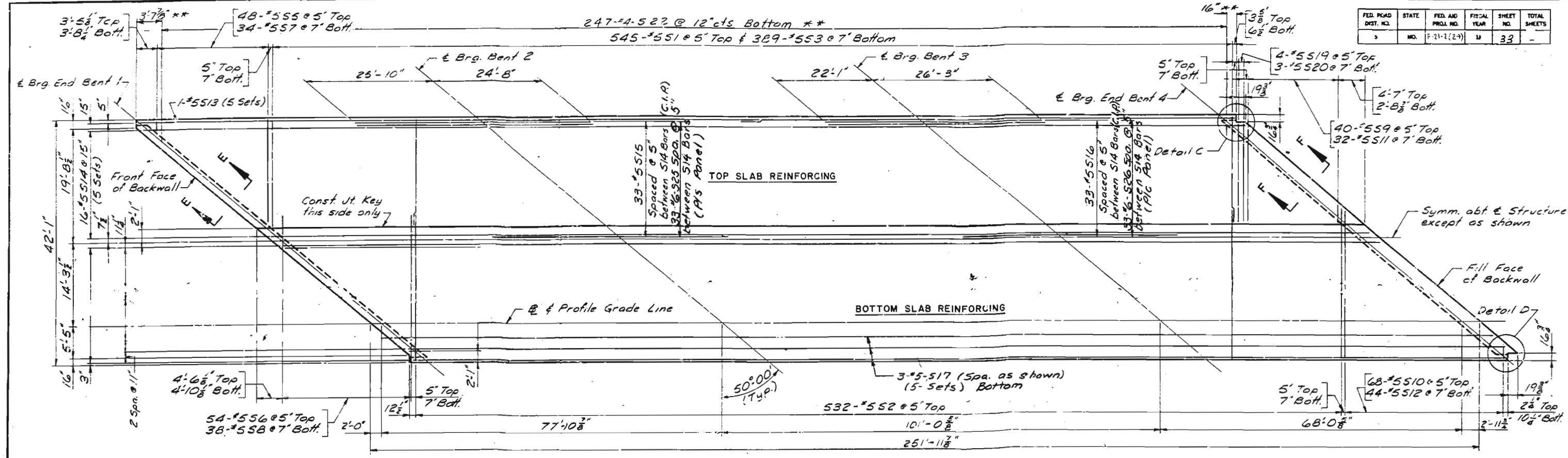
**Note:** This drawing is not to scale. Follow dimensions.

Sheet No. 12Aci 22.

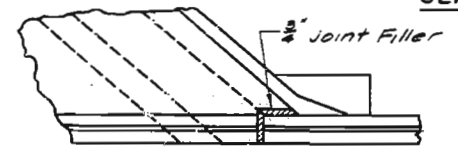
JEFFERSON COUNTY

**A-2956**

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-2(29)	11	33	-

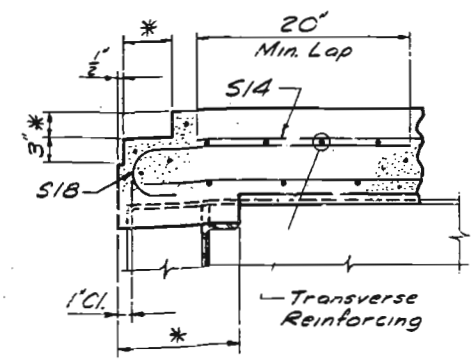


DETAIL C



DETAIL D

SLAB PLAN



SECTION E-E

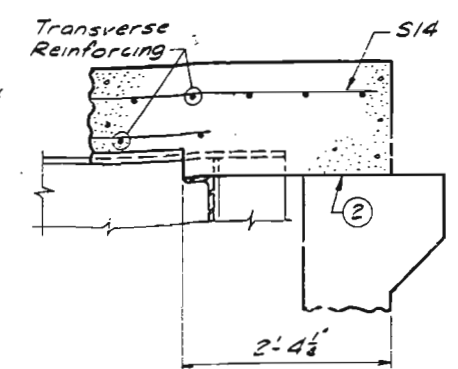
NOTES:

Longitudinal dimensions shown are taken parallel to grade at @ along top of slab. Transverse dimensions and spacing are measured horizontal. Bend transverse bars in field where needed to fit parabolic crown.

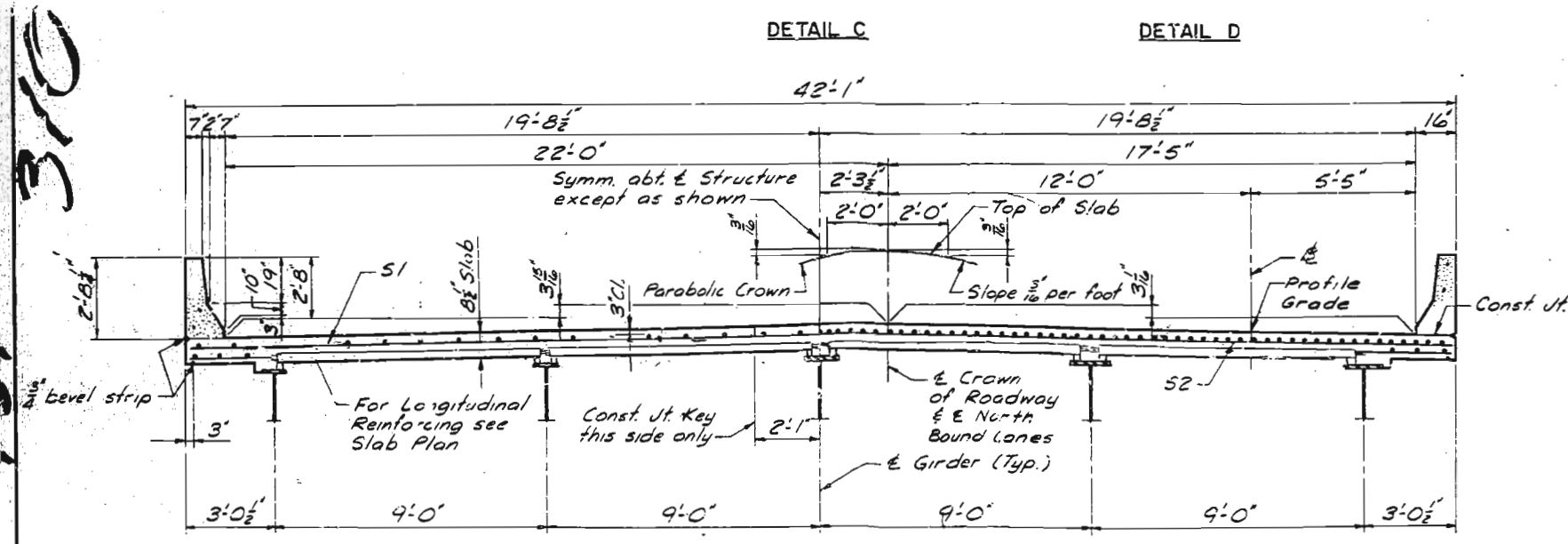
- Minimum lap for transverse reinforcing top slab 2'-2" and bottom slab 21".
- Minimum lap for longitudinal reinforcing top slab 21" and bottom slab 21".
- Dimensions marked thus (\*) will vary depending on type of expansion joint used.
- For details and reinforcement of safety barrier bridge curb not shown see sheet No. 17 of 22.
- Two layers of 50# Roofing Felt.

Top slab reinforcing steel use for C.I.P or P/C P/s Panel option.

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.



SECTION F-F

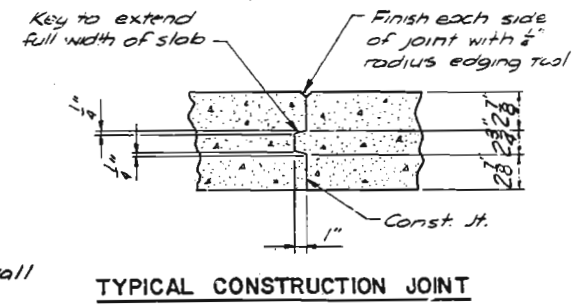
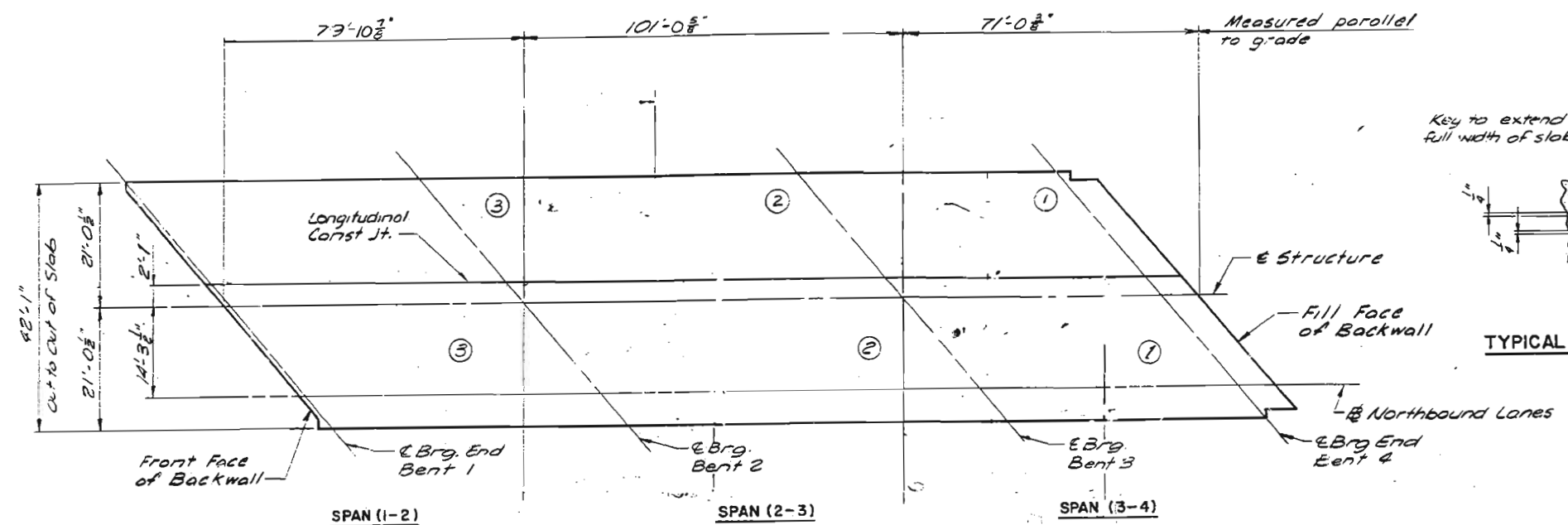


HALF SECTION NEAR END BENT

HALF SECTION NEAR INT. BENT

SLAB PLAN & SECTION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-21-1(24)	19	34	



	SEQUENCE OF POURS	
	DIRECTION	
ALTERNATE "B" POURS	1 + 2 + 3	END TO END

GIRDER NO.	SPAN		
	1-2	2-3	3-4
1 & 5	12%	13%	11%
2, 3, 4	11%	11%	10%

**\*PERCENT OF DEAD LOAD DEFLECTION**

\*Percent of dead load deflection due to weight of structural steel.

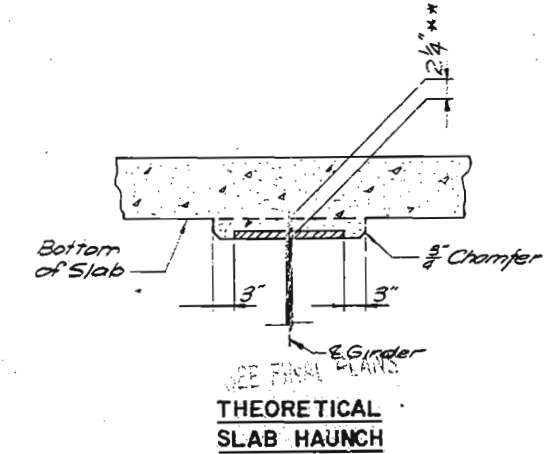
**NOTES:**

Camber includes allowance for vertical curve & dead load deflection due to conc. slab, curb and structural steel.

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

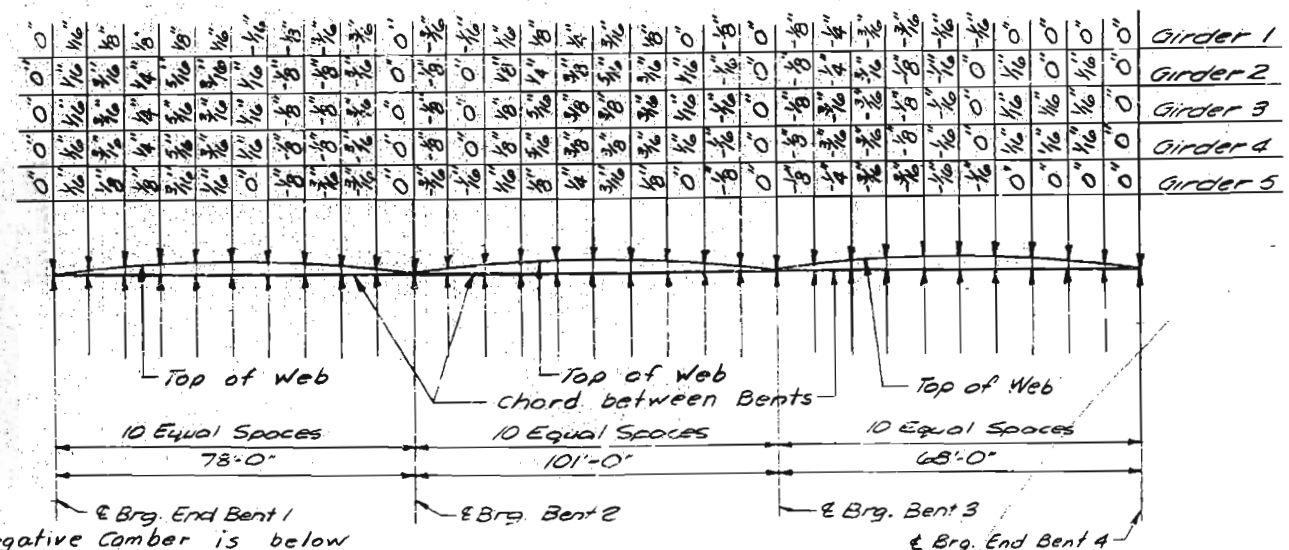
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Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 703.3.12.4 of Missouri S.D. Specifications.



Sta. 202+50.00	622.11	621.86	621.62	621.37	621.13	620.88	620.63	620.39	620.15	619.91	619.68	619.44	619.21	618.97	618.74	618.51	618.28	618.05	617.83	617.60	617.38	617.16	616.94	616.72	616.50	616.28	616.07	615.85	615.64	615.43	615.22	615.01	614.80	614.59	614.37	614.18	613.98	613.78	613.58	613.38	613.19	612.99	612.80	612.60	612.41	612.22	612.03	611.85	611.66	611.48	611.29	611.11	610.93	610.75	610.57	610.40	610.22	610.05	609.87	609.70	609.53	609.36	609.20	609.03	608.87	608.70	608.54	608.37	608.21	608.06	607.91	Sta. 206+00.00
E Brg. End Bent 1 Sta. 203+18.49 Elev. 618.81											E Brg. Bent 2 Sta. 203+96.39 Elev. 615.37											E Brg. Bent 3 Sta. 204+97.33 Elev. 611.39											E Brg. End Bent 4 Sta. 205+65.33 Elev. 609.02																																							
70 Spaces @ 5'-0"=350'-0"																																																																								

PROFILE GRADE ELEVATIONS



Note: Negative Camber is below chord between Bts.

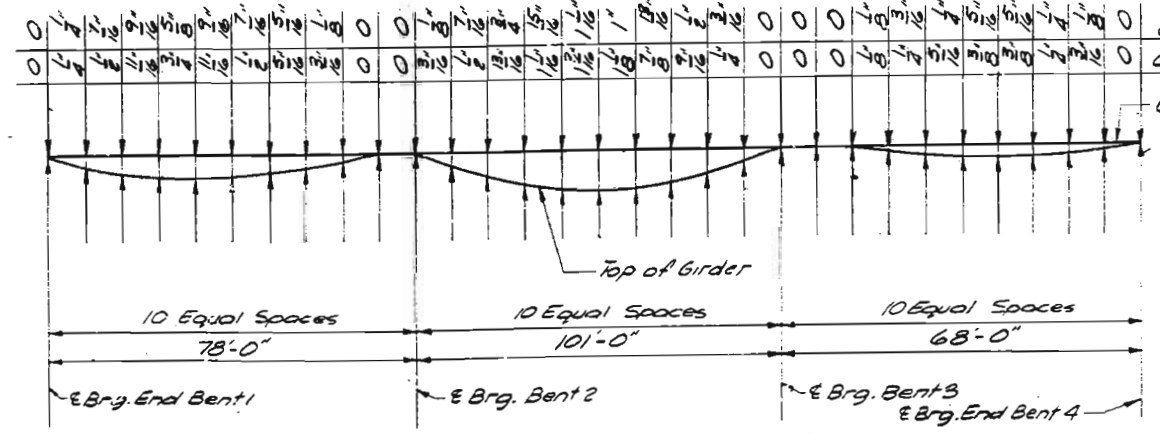
31

DETAILED April 1979 Baltrazar

CHECKED Apr. 1979 Ashrafzadeh

CAMBER DIAGRAM

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



DEAD LOAD DEFLECTION DIAGRAM

**Booker**  
Engineers Architects Planners