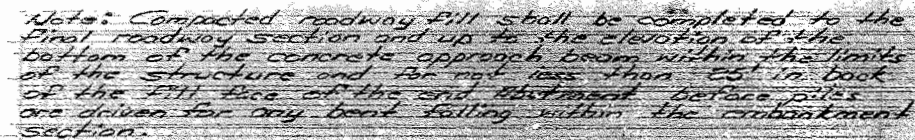


P.I. Sta. 21+20.00  
Elev. 936.20

+1.0%      -1.5%  
600' VC

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		59	25	
SEC./SUR. 7 TWP. 42.1 RGE. 5E					

[illegible]

Notes: All concrete and reinforcing steel below top of slab and above Const. Joint under slab in Semi-Deep Abutments are included in Superstructure Quantities for Slab on Semi-Deep Abutments.

For Estimated Quantities for Alternate Slab, see sheet No. 2.

DESIGNED *Mar 19 88*  
 DETAILED *Mar 19 88*  
 CHECKED *May 19 88*

GENERAL NOTES:

D-1gn Specifications: AASHTO 1983 and Interims thru 1987  
Load Factor Design

Design Allowables

15. Allowable 15' High 14' Vertical Working Surface  
for 100' High 15' Equivalent Fluid Pressure 45' / cu. ft.  
1. Allowable Stress = Class D

Design Allowables

Class D Concrete (Substructure)  $f_c = 3000$  psi  
Class B1 Concrete (Safety Barrier Curb)  $f_c = 4000$  psi  
Class C2 Concrete (Superstructure except  
Safety Barrier Curb)  $f_c = 4000$  psi  
Reinforced Steel (Grade 60)  $f_y = 60,000$  psi  
Structural Carbon Steel  $f_y = 90,000$  psi  
Structural Steel (A572 M-572) Grade 50  $f_y = 50,000$  psi  
Steel Pipe  $f_b = 3000$  psi

Joint Filler: All joint filler shall meet the requirement of Std. Spec. 1057.2.4, except as noted.

Fabricated Steel Connections: Field connections, High Strength Bolts  $\frac{3}{4}$ "  $\phi$ , holes  $\frac{19}{16}$ "  $\phi$ , except as noted.

Note: For Boring Data see sheet No. 3.  
"B" Indicates location of borings.  
For Pile Data, see sheet No. 2.

BM \*60 Elev. 929.18 Top of Steel Post 42' Lt.  
of Sta. 14 + 62 Four Ridge Rd (USGS Dat.)

**BRIDGE: FOUR RIDGE ROAD UNDERPASS**

**STATE ROAD** FROM RTE. 141 TO OTTO

**ABOUT 2 MILES NORTH OF OTTO**

**PROJECT NO. 6-U-21-17B**

**JOB NO. 6-U-21-17B**

JEFFERSON

**STA. 361+15.00**

RTE 21

COUNTY

STD. 611.60

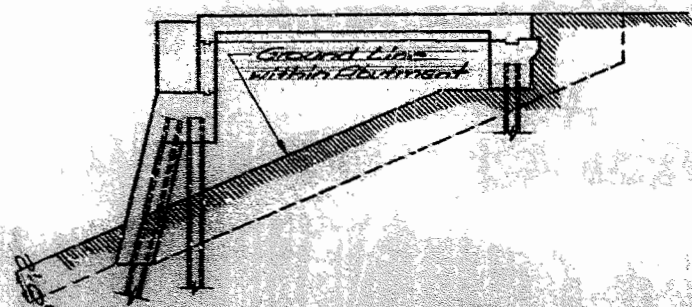
STD. 706.35

A-2943

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

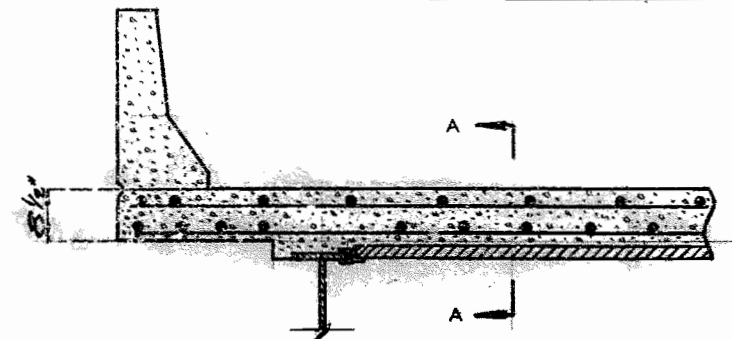
SEE FITAL PLANS



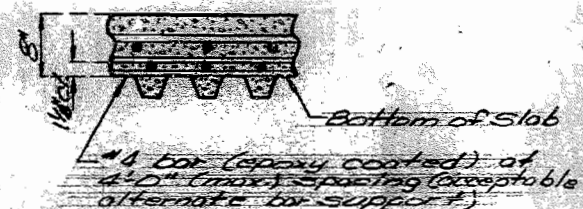


Notes: In no case shall the earth within abutments No. 1 & 2 be above the ground line shown. Forms supporting abutment slab may be left in place. The maximum variation of the height of the pile and the battered face of the pile from the position shown on the plans shall be no more than 8 inches for pile under abutment No. 1 & 2. Exposed steel pile within abutments to be coated with a heavy coating of an approved bituminous paint.

GROUND LINE AND PILING IN ABUTMENTS  
(ABUTMENT NO. 3 SHOWN, ABUTMENT NO. 1 AND 2)



PART SECTION THRU SLAB SHOWING  
STAY-IN-PLACE OPTION



SECTION A-A

Note: Bottom transverse reinforcing steel shall be placed to match form corrugation valleys. To determine haunch for the stay-in-place alternate add 1/4" to the haunch for the cast-in-place alternate.

Estimated Quantities for Alternate Slab			
Type of Slab		Sub on Sheet	
		Reinforcing Steel	Concrete
Cast-in-place Conventional Forms	47,370		376.1
Precast Reinforced Concrete	18,480		135.1
Stay-in-place Slab	47,370		338.1

The table of estimated quantities for alternate slabs represents the quantities use by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the Contract Unit Price per square yard of alternate slab used. See Special Provisions for alternate methods of forming slabs. Do not include concrete required to fill corrugation of S.P. forms. Do not include reinforcing bars used as supports. Precast panel quantities are based on skewed end panels.

PILE DATA		PILE DATA		PILE DATA		PILE DATA	
PILE NO.	TYPE	LENGTH	DIAMETER	AREA	PERIMETER	WEIGHT	VOLUME
1	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
2	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
3	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
4	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
5	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
6	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
7	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
8	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
9	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5
10	HP 10x42	11.600	10.75	113.4	33.5	136.0	13.5

Note: Manufactured pile point reinforcement shall be used on all piles in this structure. See Special Provisions.

Minimum energy requirements of hammer based on plan length and design bearing value of pile. All pile shall be driven to practical refusal. Prebore for piles at Cent 1 of App. Beam, Brg. Bm. Bk., and Brg. Bm. At elevations 873.0, 885.0 and 877.0 respectively.

DETAILED Mar 1988  
CHECKED May 1988

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

SEE FINAL PLANS

Sheet No. 2 of 16

JEFFERSON COUNTY

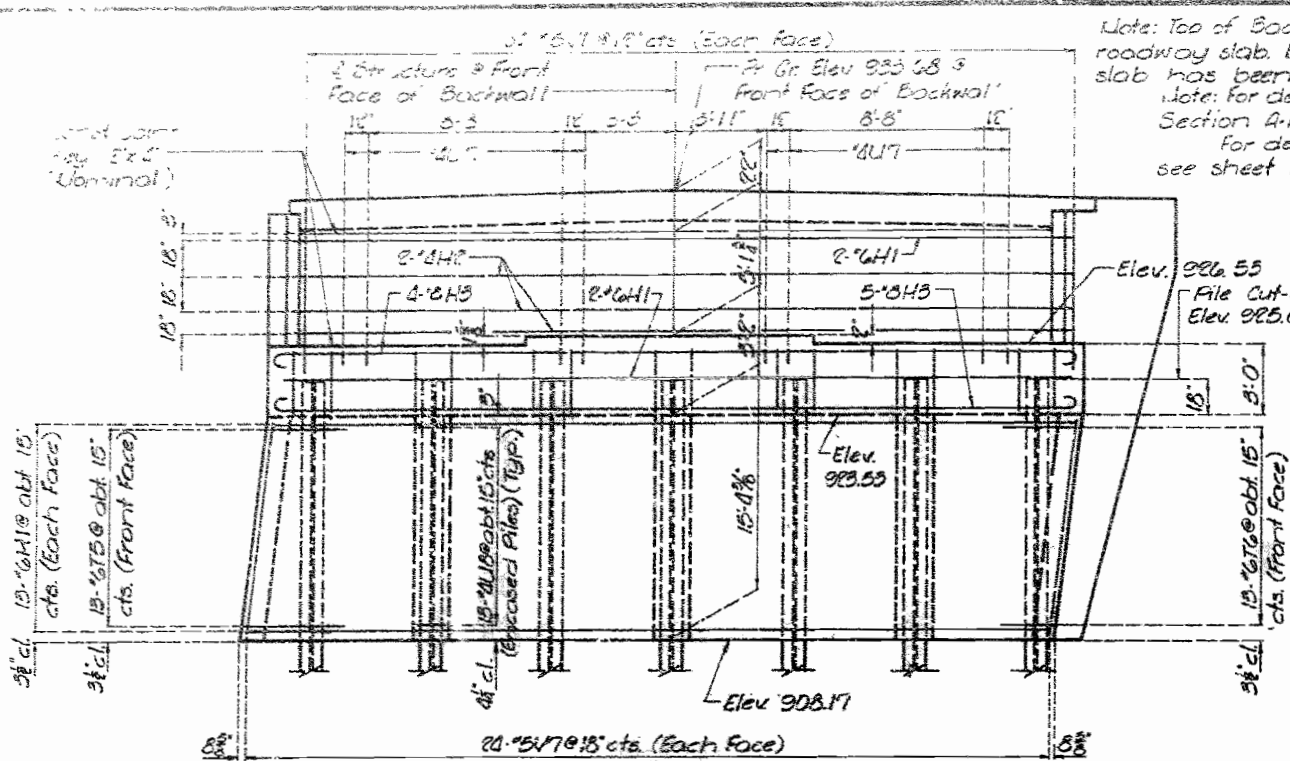
A-2943

398 66

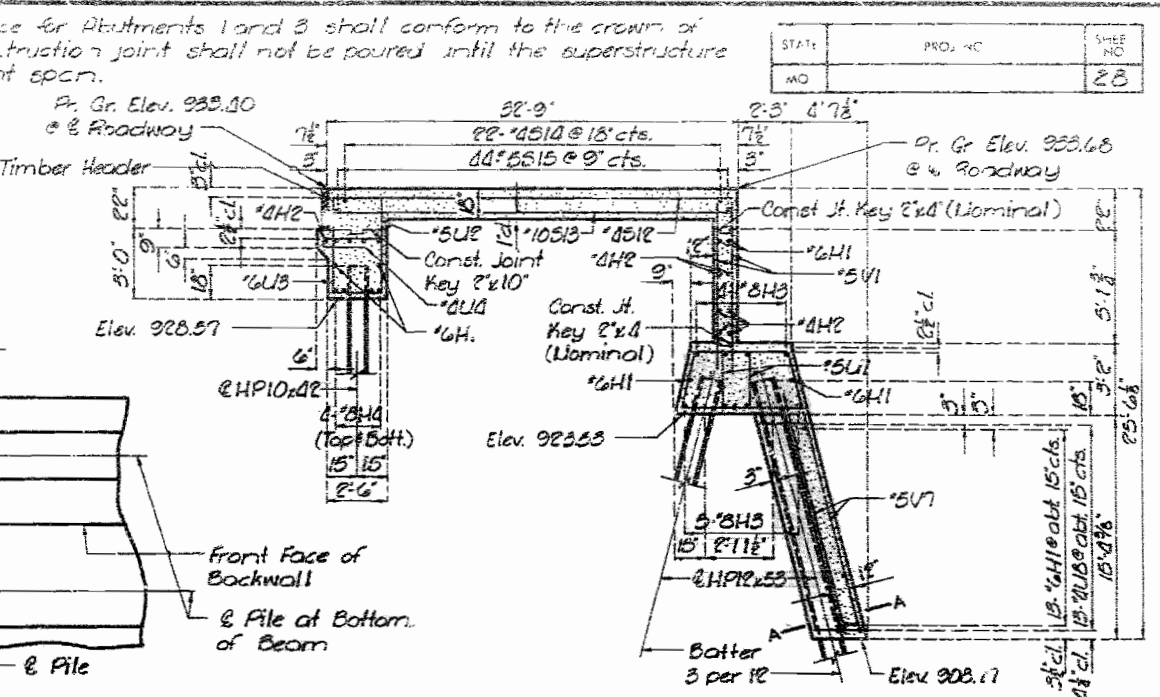




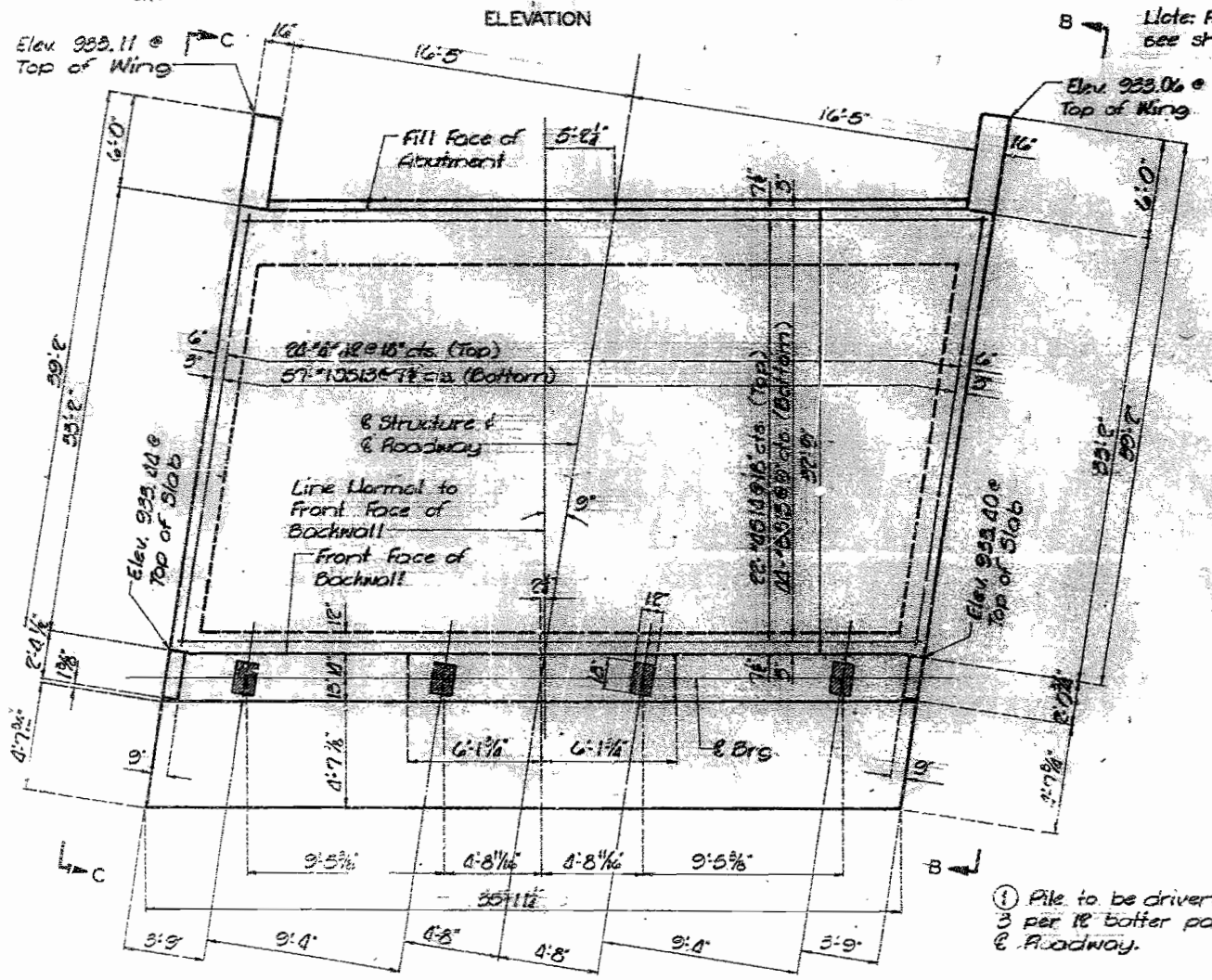
4082 68



Note: Top of Backwall and expansion device for Abutments 1 and 3 shall conform to the crown of roadway slab. Backwall above upper construction joint shall not be poured until the superstructure slab has been poured in the adjacent span.  
Note: For details of Anchor Bolts and Section A-A see sheet No. 6.  
For details of Steel Pile Splice see sheet No. 5

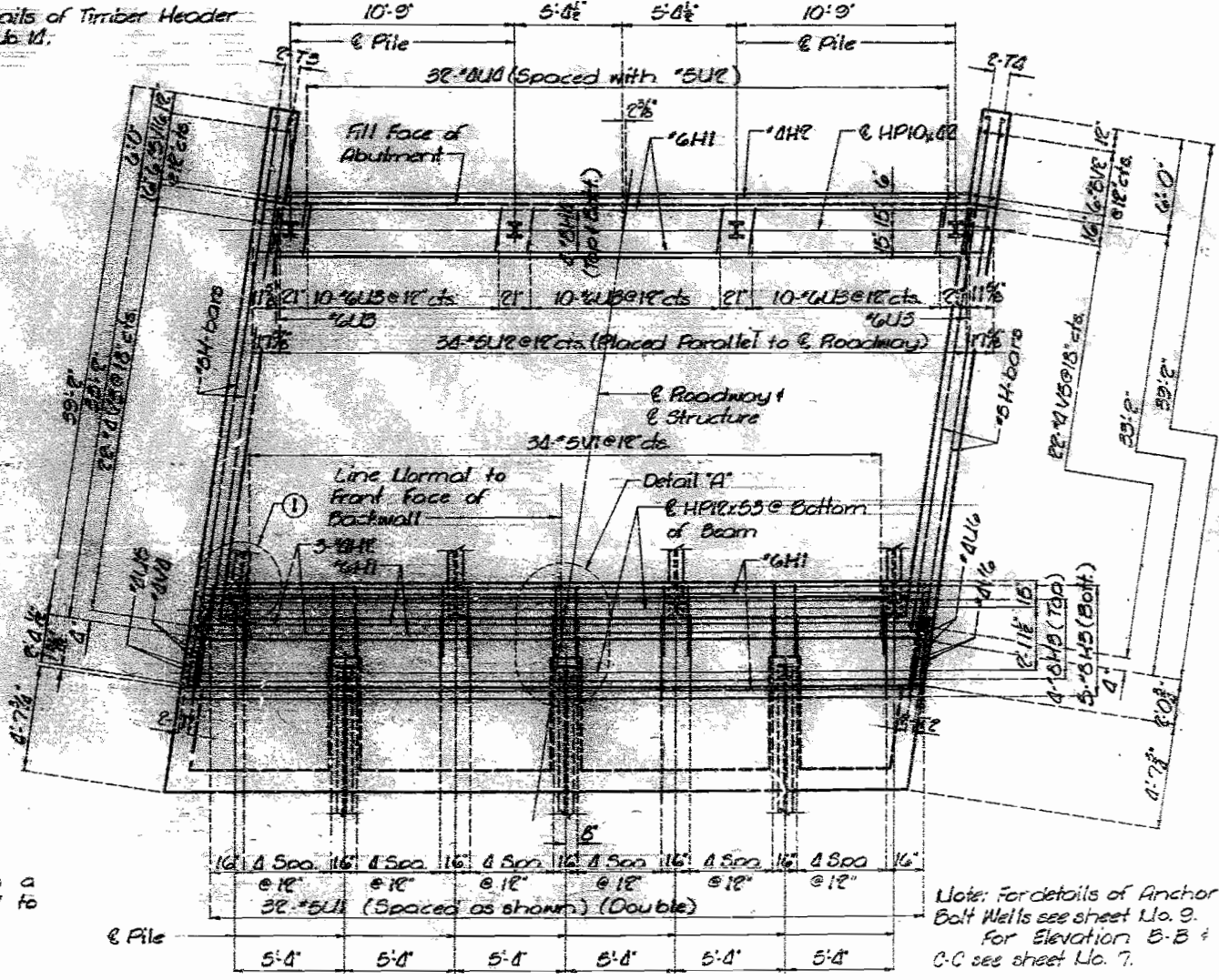


DETAIL 'A'



PLAN

DETAILS OF ABUTMENT NO. 1



PLAN BELOW SLAB

Note: For details of Anchor Bolt Wells see sheet No. 9. For Elevation B-B see sheet No. 7.

DETAILED M- 1956  
CHECKED M- 19 56

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

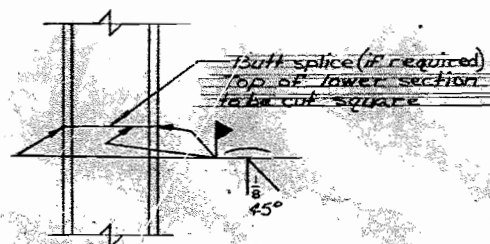
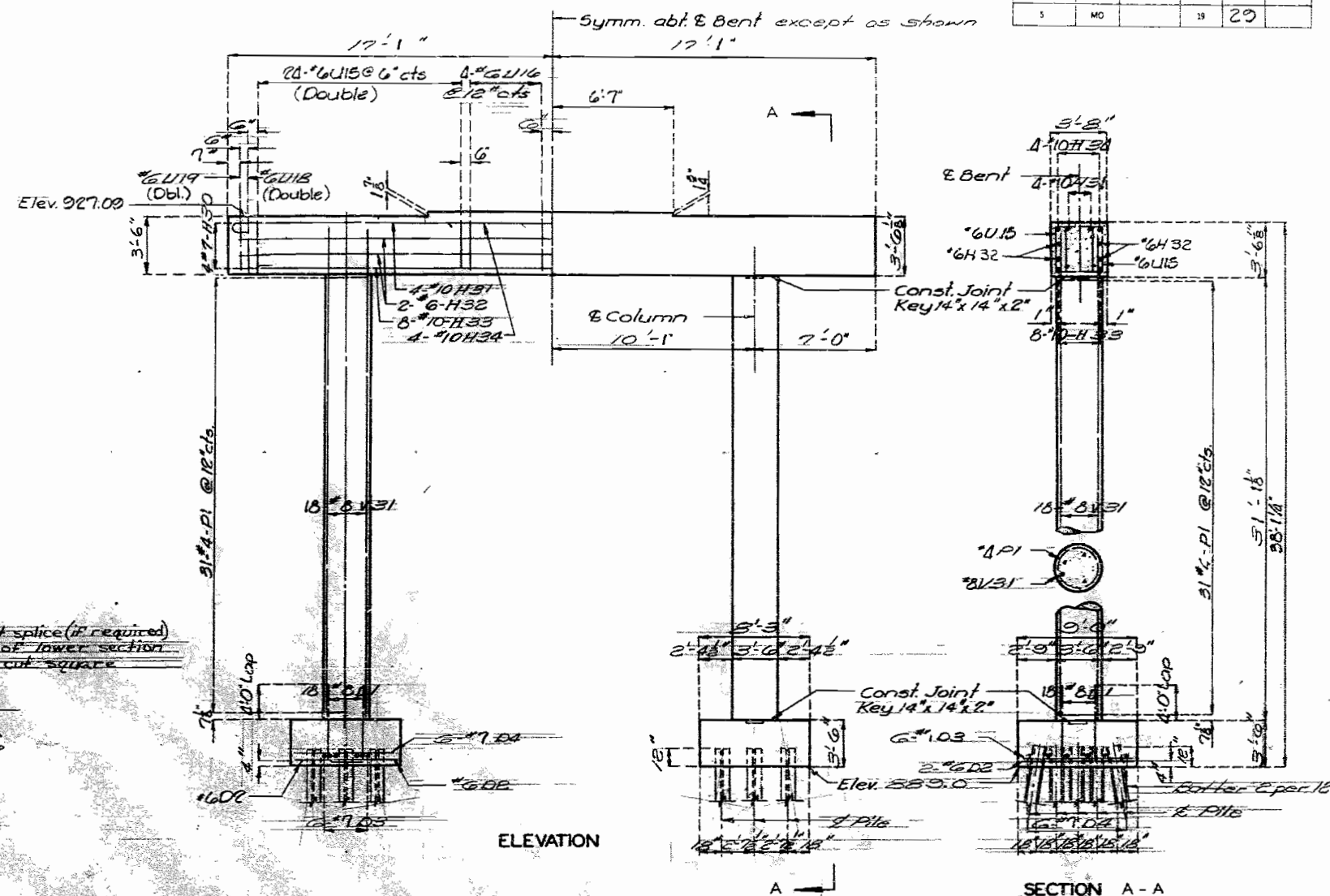
Sheet No. 4 of 16

JEFFERSON COUNTY

A-2943



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



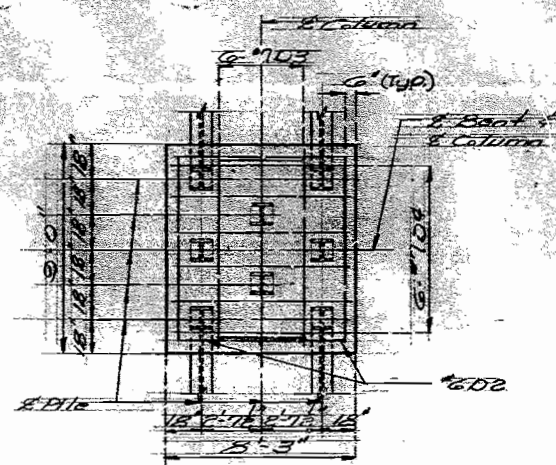
PILE SPLICE

ELEVATION

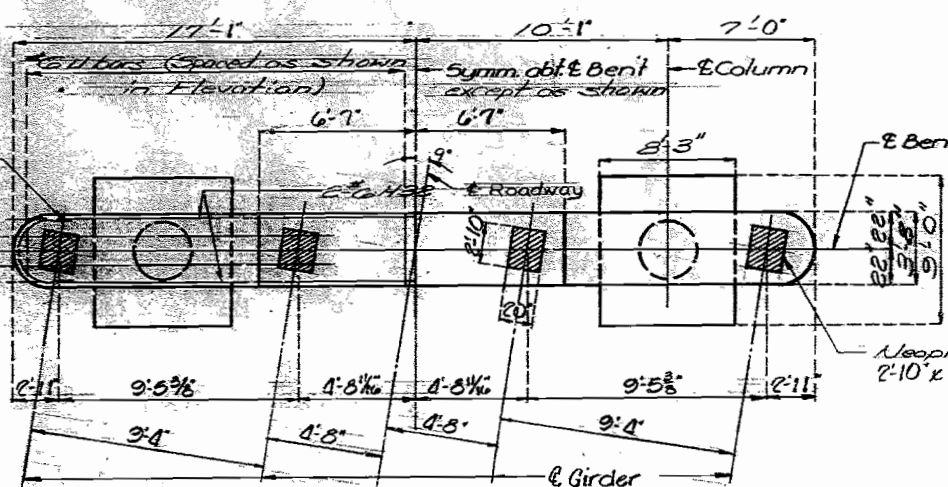
SECTION A-A

Note: All piles at Int. Bent No. 2 shall be HP12x53.

Note: For details of Anchor Bolt Well see sheet No. 9.



PLAN OF FOOTING



PLAN

DETAIL OF ANCHOR BOLT

DETAILS OF INTERMEDIATE BENT NO. 2

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

Sheet No. 5 of 16.

JEFFERSON COUNTY

A-2943

401 69

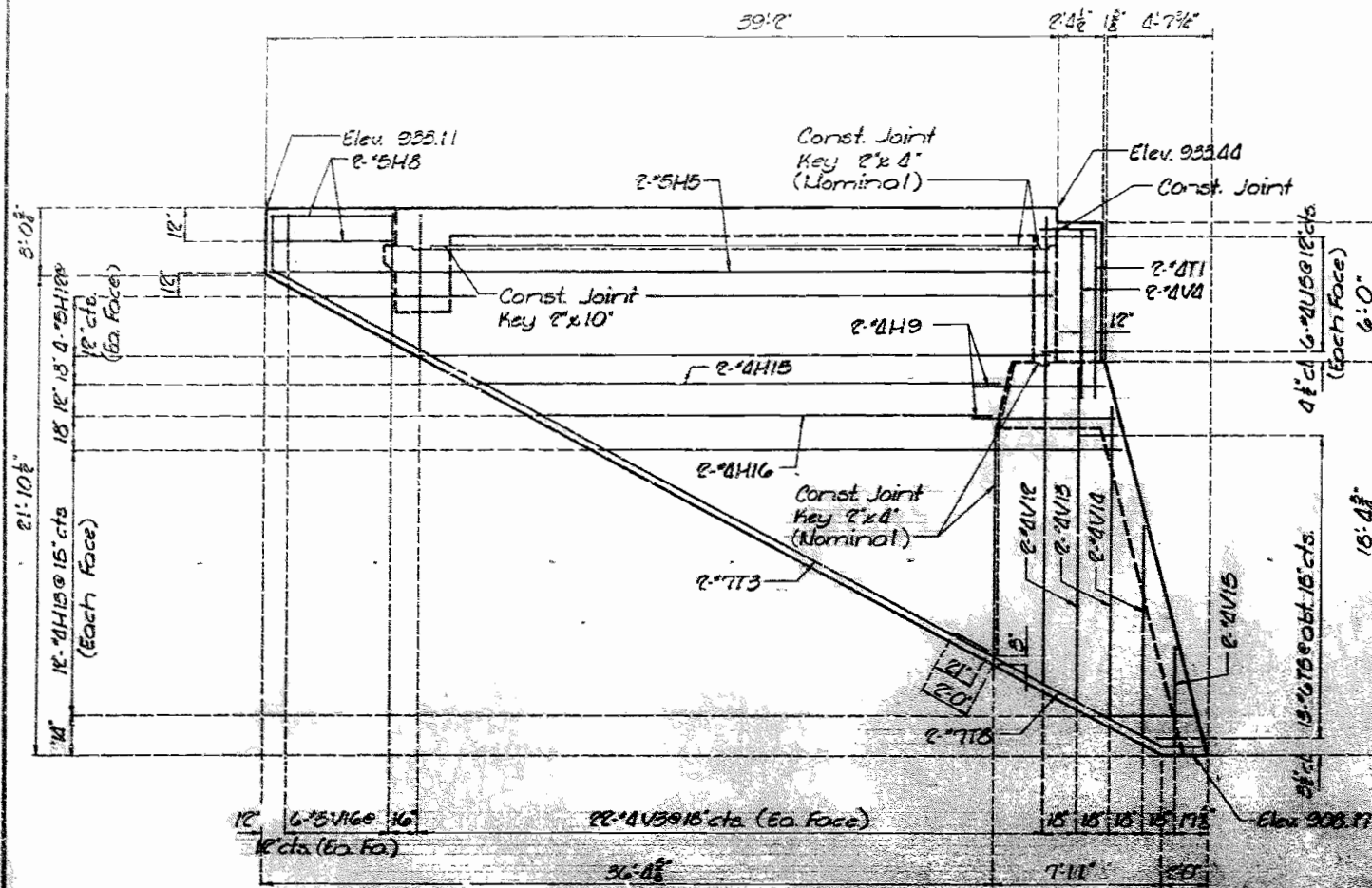
STD 191  
MARCH 1964  
REVISOR  
JUNE 1974

DETAILED May 1968  
CHECKED May 1968

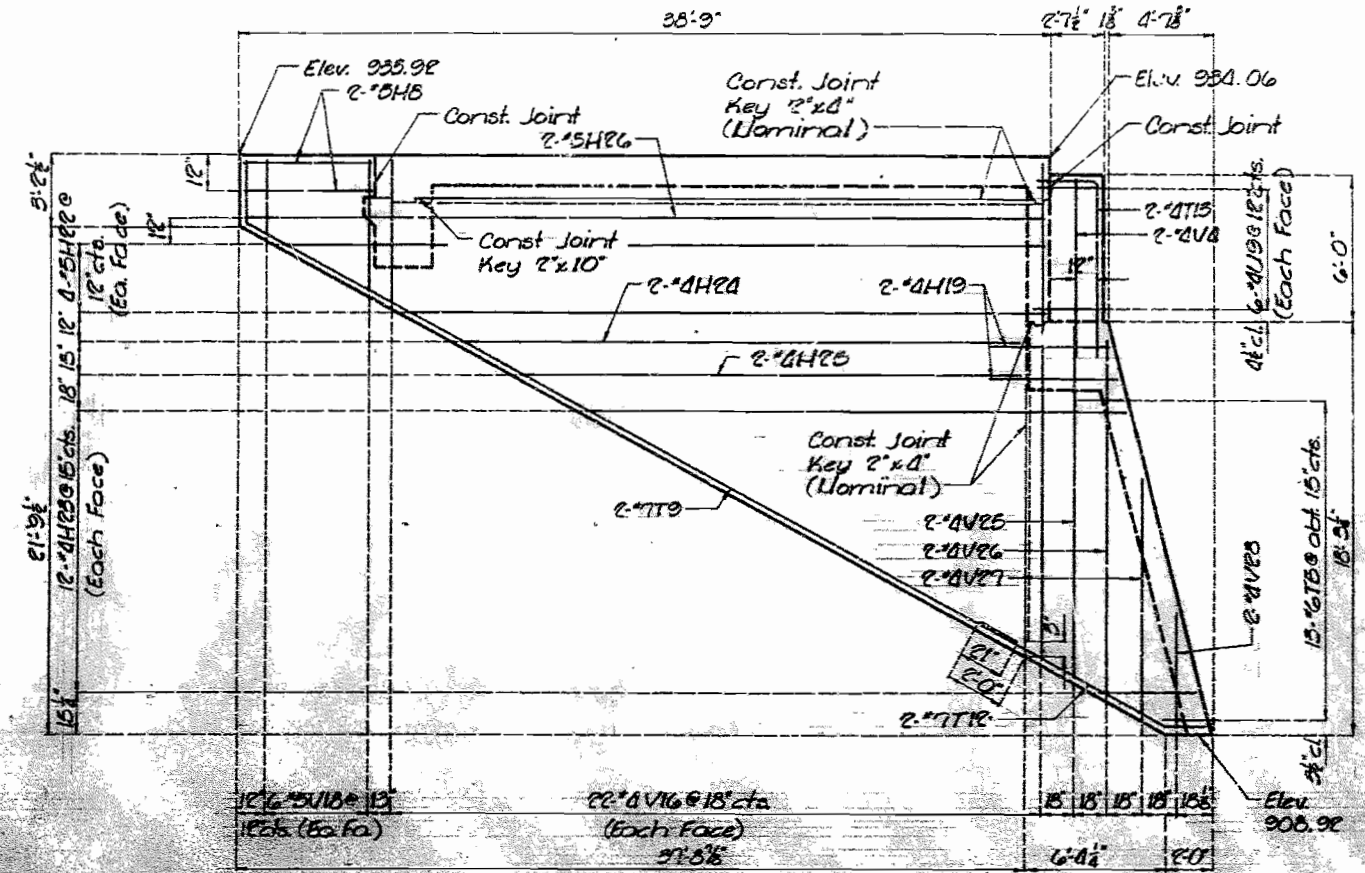




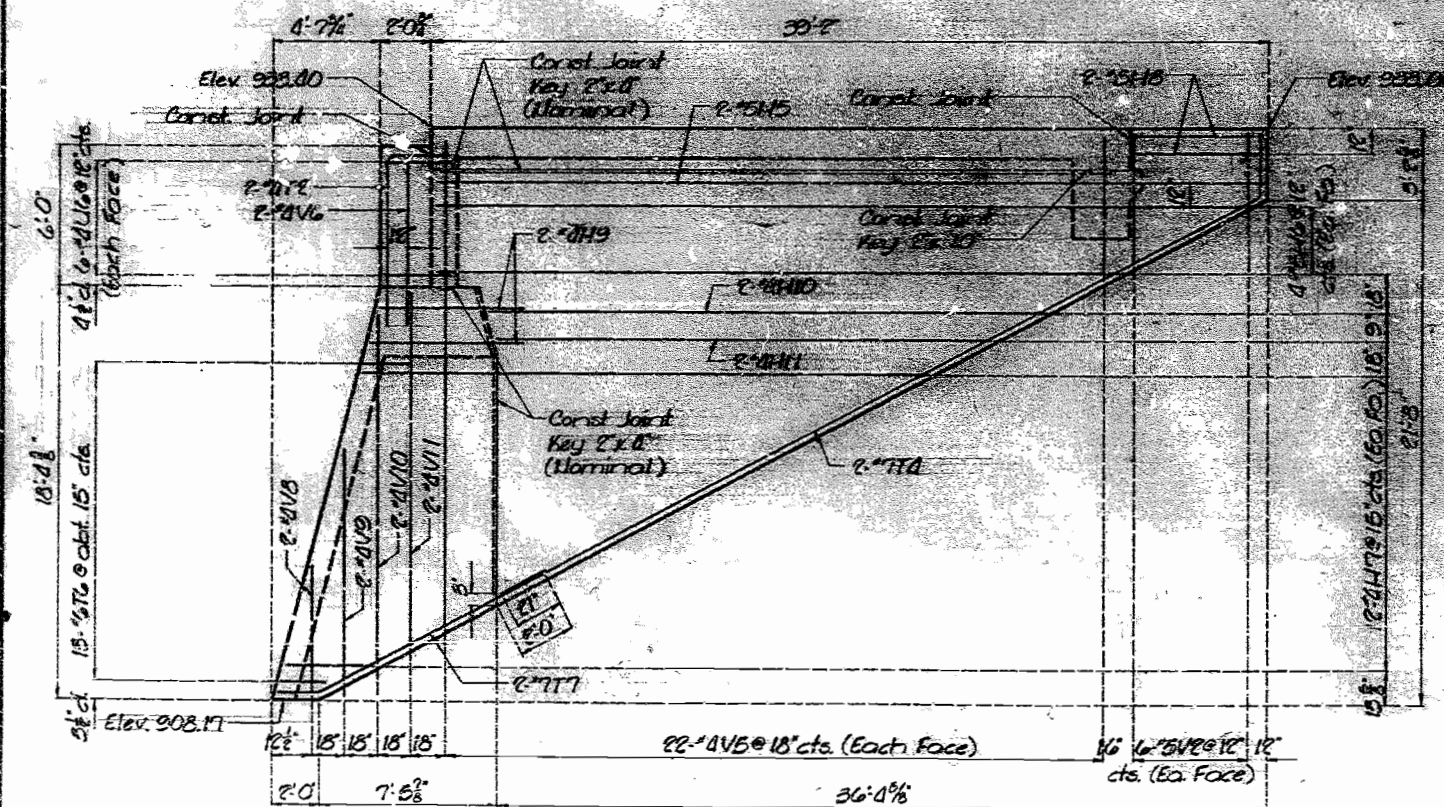




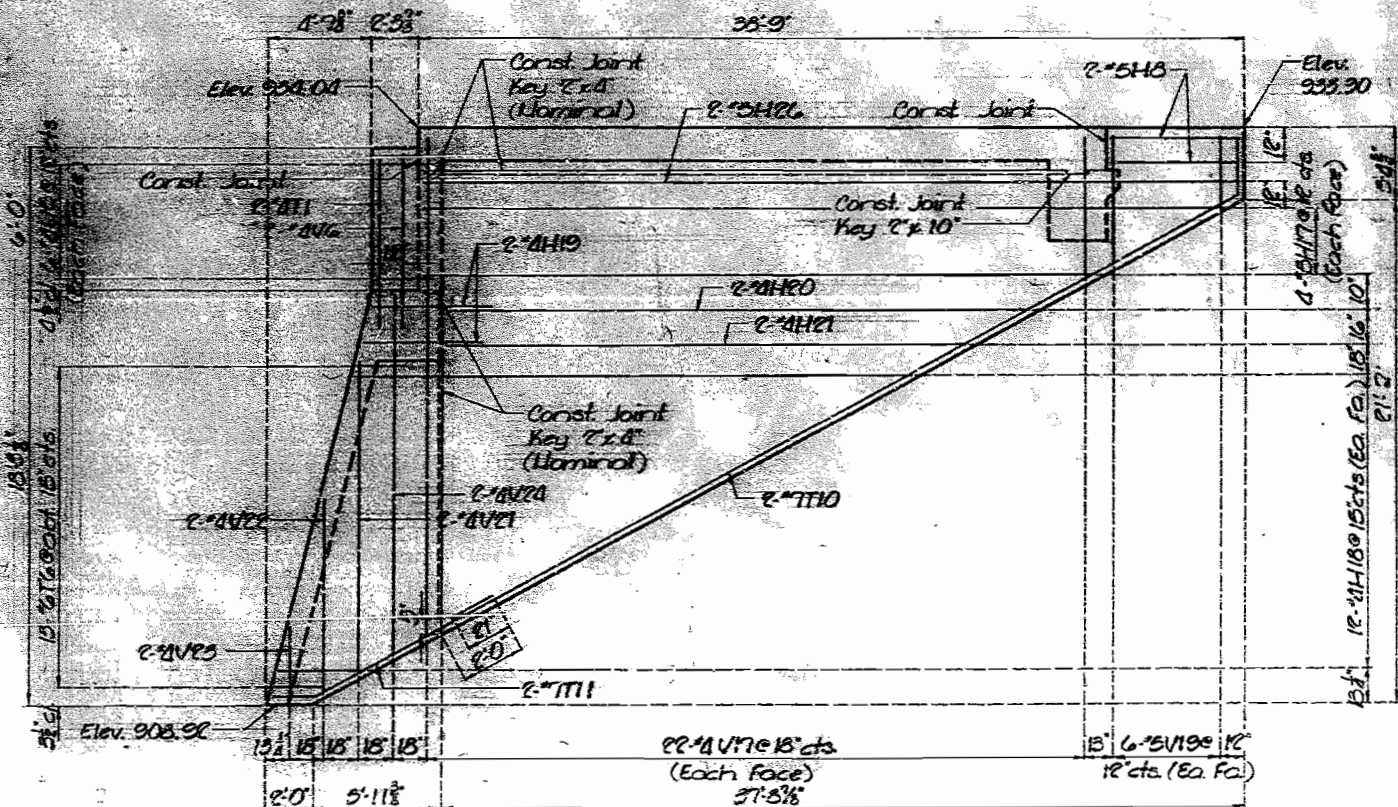
ELEVATION C-C



ELEVATION E-E



ELEVATION B-B



ELEVATION D-D

DETAILED March 1988  
 CHECKED May 1988

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

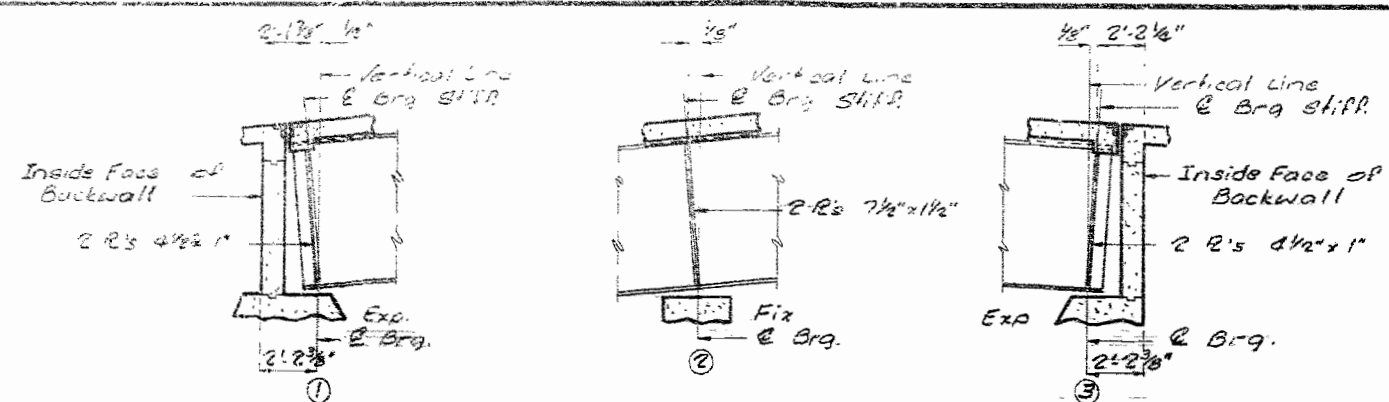
Sheet No. 7 of 16

JEFFERSON COUNTY

A-2943

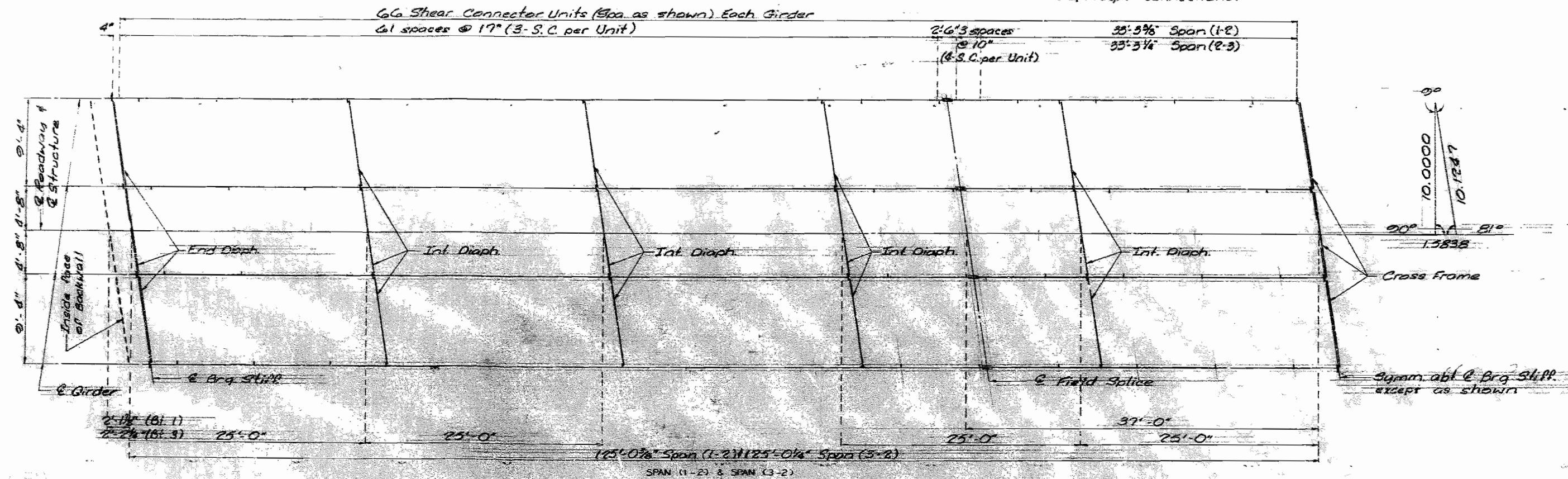
403





PART LONGITUDINAL SECTION

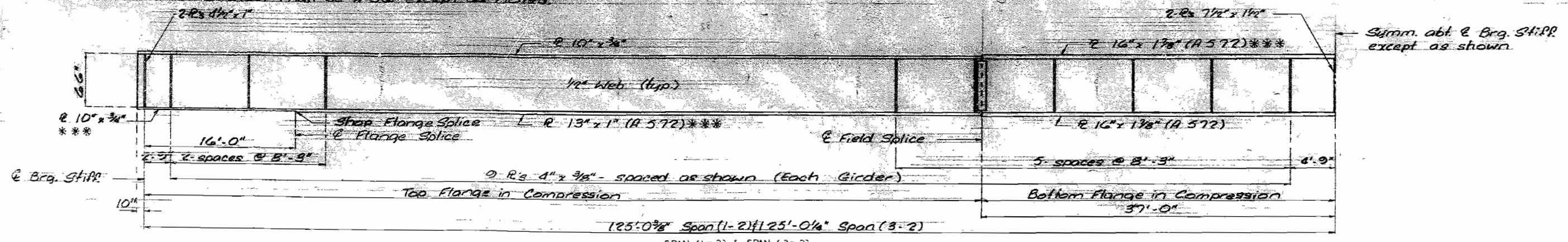
Note: Additional stiffener R's (4' x 3/8") shall be used for Intermediate Diaphragm Connections.



PLAN OF STRUCTURAL STEEL

Notes:  
 All web plates shall be subject to notch toughness requirements.  
 \*\*\* Indicates Flange Plates subject to notch toughness requirements.  
 Transverse web stiffeners shall be placed as detailed.  
 Fabricated structural steel shall be A-36 except as noted.

Longitudinal dimensions shown are along top of web.  
 Plate girders shall be fabricated to conform with Camber Diagram shown on sheet No. 11.



ELEVATION OF GIRDER

DETAILED Mar. 1988  
 CHECKED May 1988

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

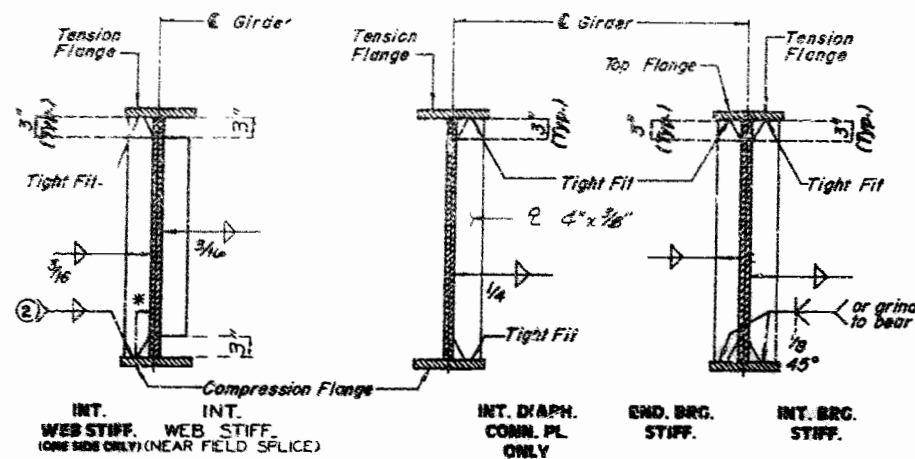
Sheet No. 8 of 16

JEFFERSON COUNTY

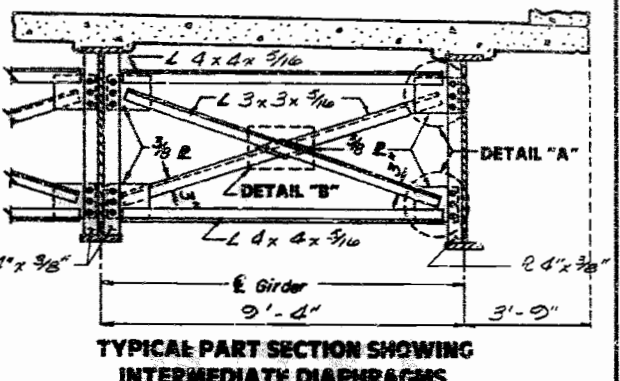
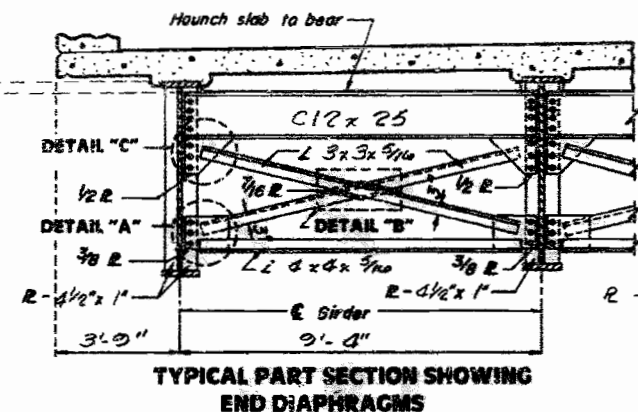
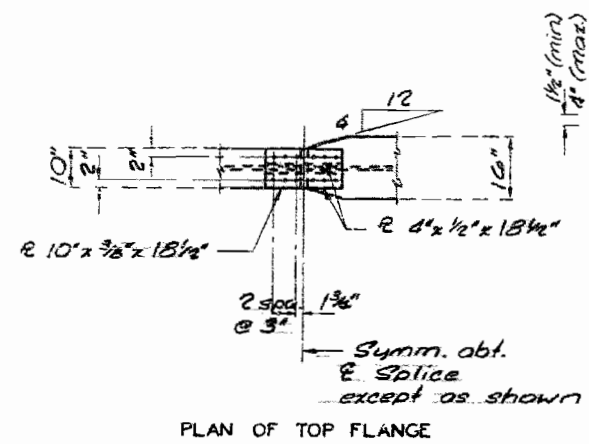
A-2943

404 72

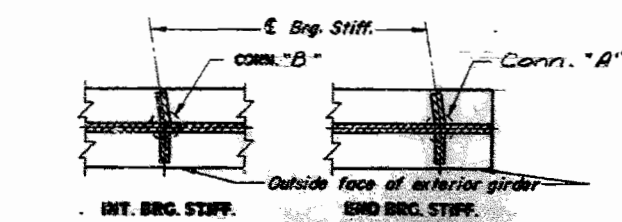




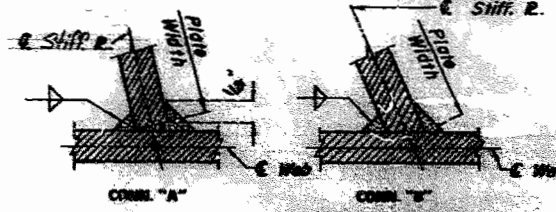
② Weld to compression flange as located on ELEVATION OF GIRDER.  
 \* 1/2" typical for all Int. Web Stiff., Int. Diaph. Conn. R. and Brg. Stiff.



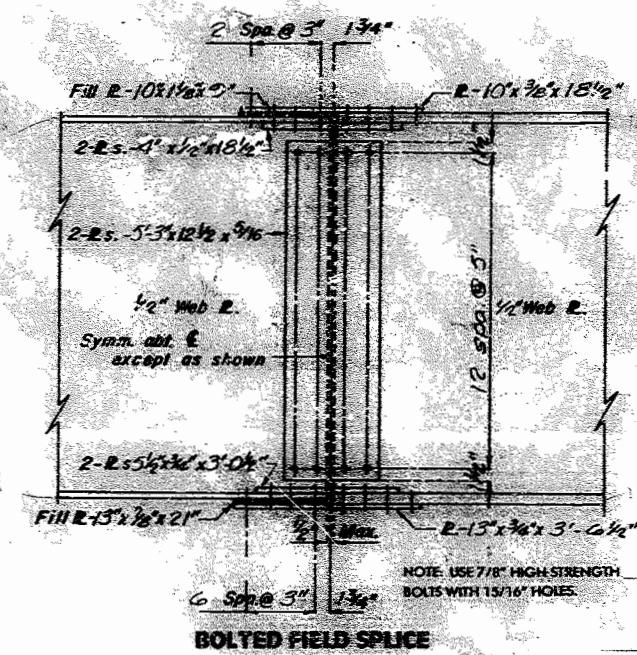
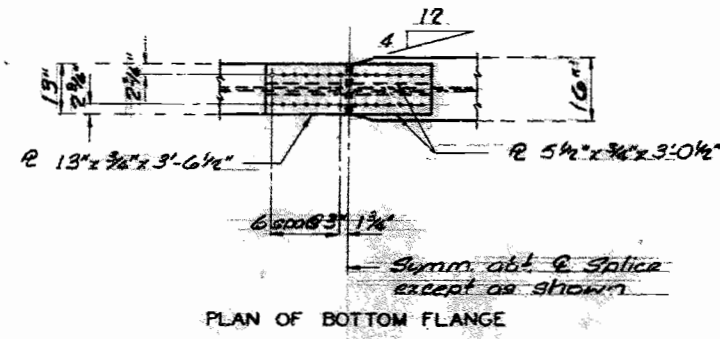
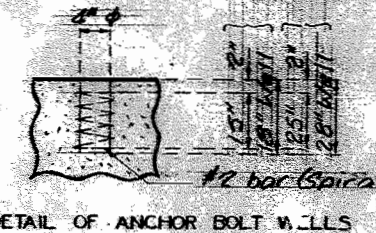
### WELDING DETAILS



### TYPICAL LOCATION DETAILS

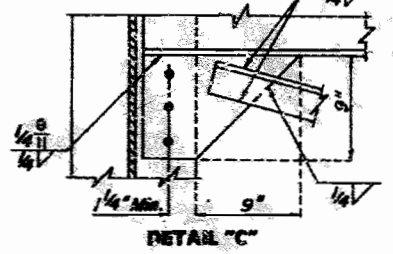
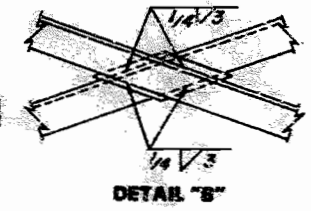
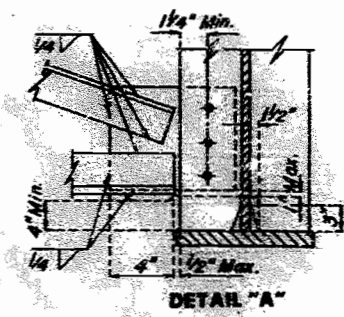


### WELDING DETAILS

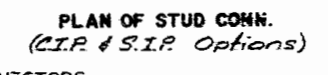
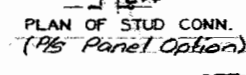
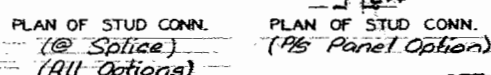
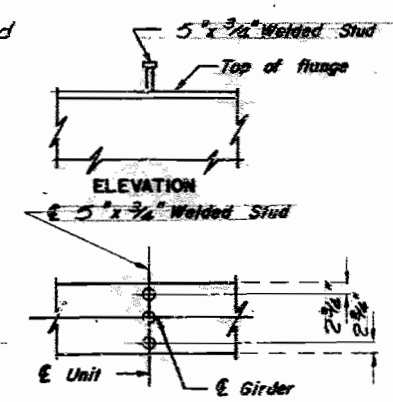
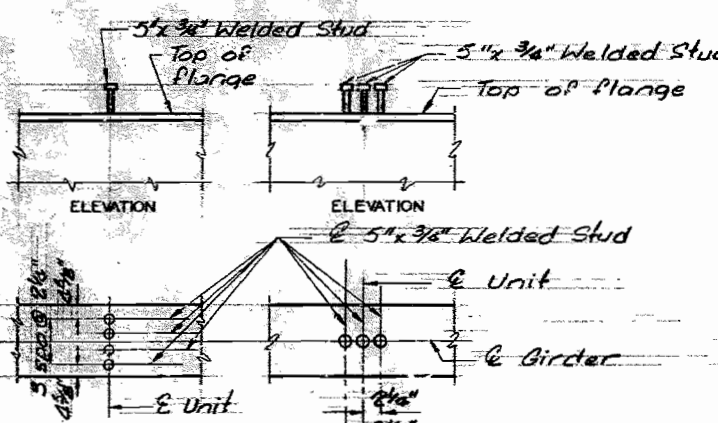


### BOLTED FIELD SPLICE

NOTE: USE 7/8" HIGH-STRENGTH BOLTS WITH 15/16" HOLES.

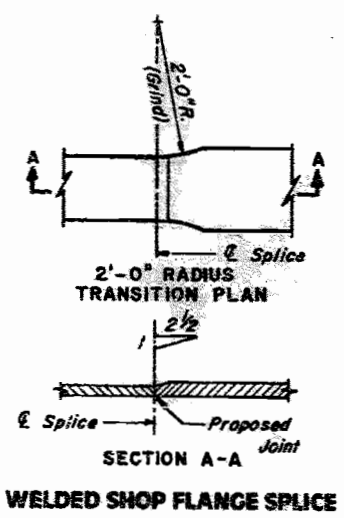


### TYPICAL PART SECTION SHOWING CROSS FRAMES

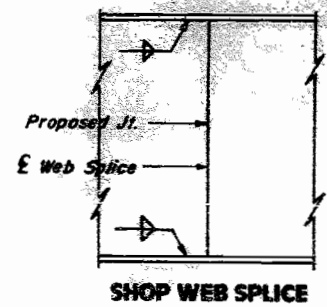


### DETAILS OF SHEAR CONNECTORS

Note: Weight of 1220 lbs. of shear connectors is included in the weight of fabricated structural carbon steel.



### WELDED SHOP FLANGE SPLICE



### SHOP WEB SPLICE

DETAILED Apr. 1988  
 CHECKED May 1988

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

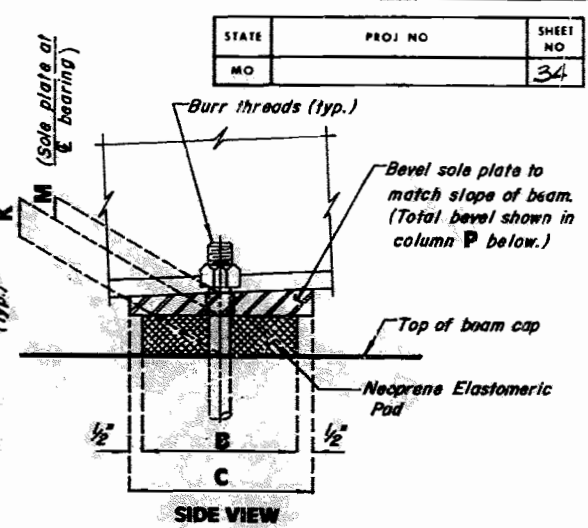
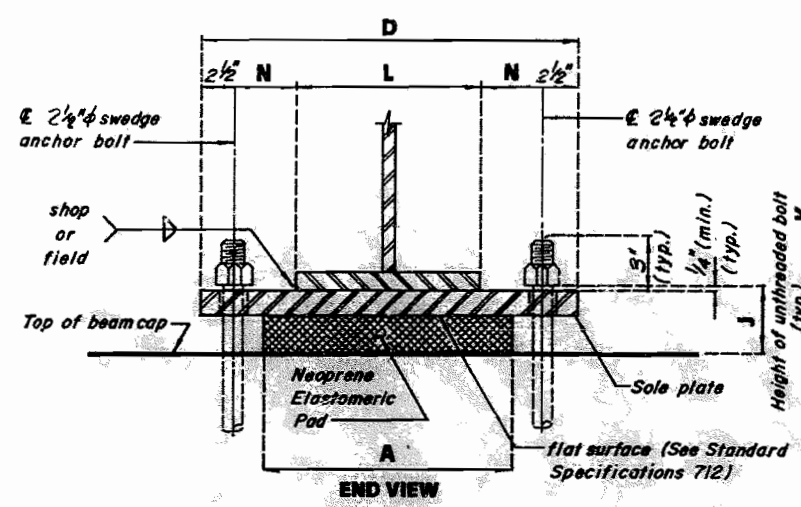
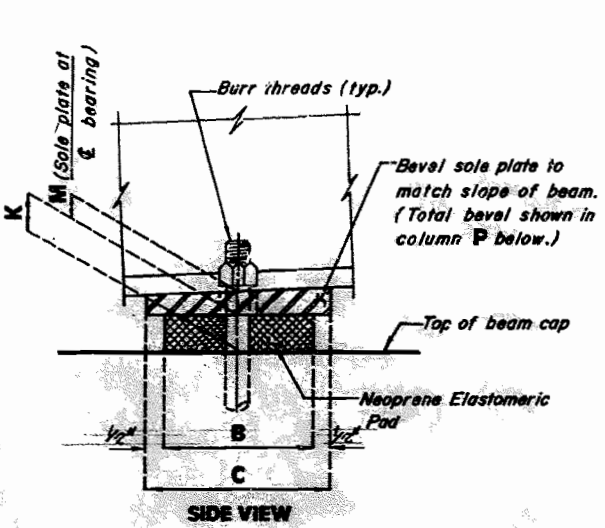
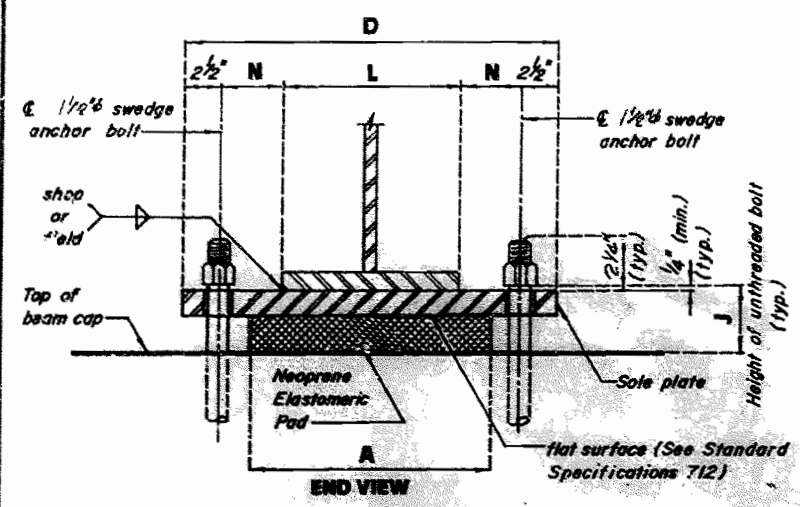
Sheet No. 9 of 16

JEFFERSON COUNTY

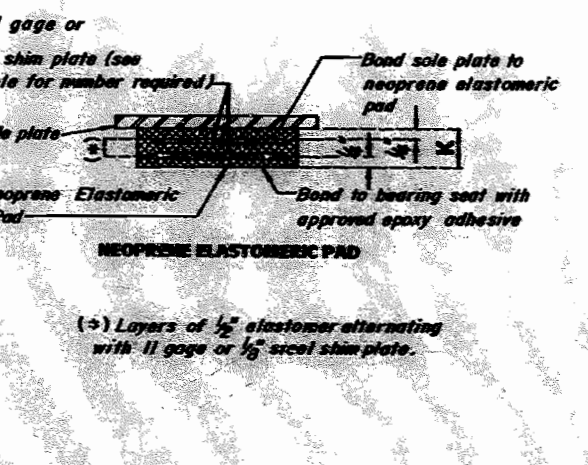
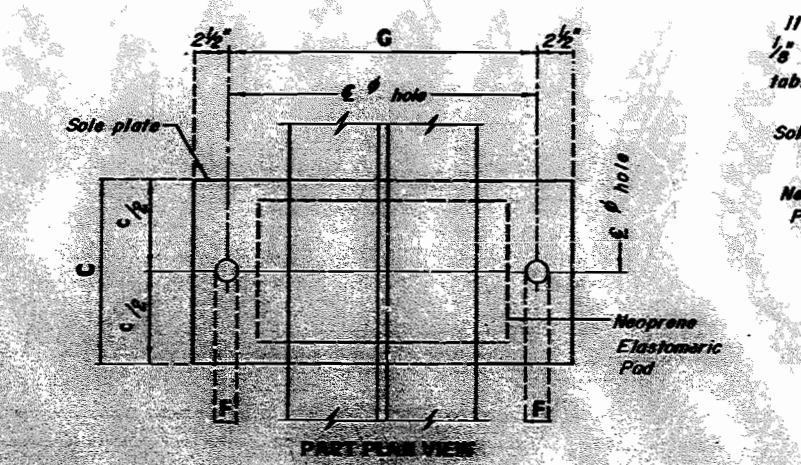
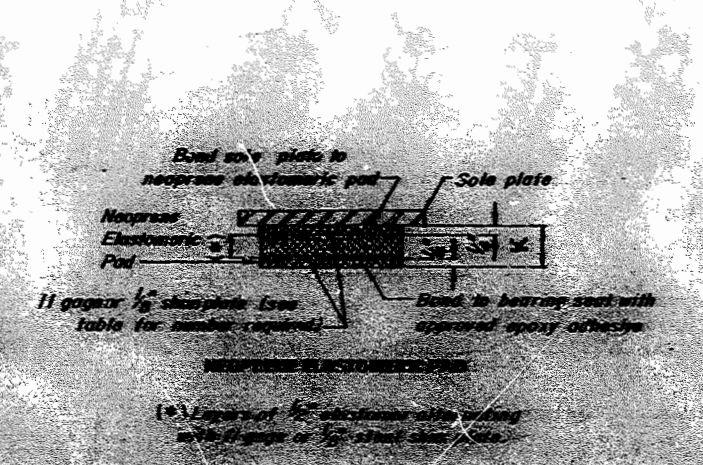
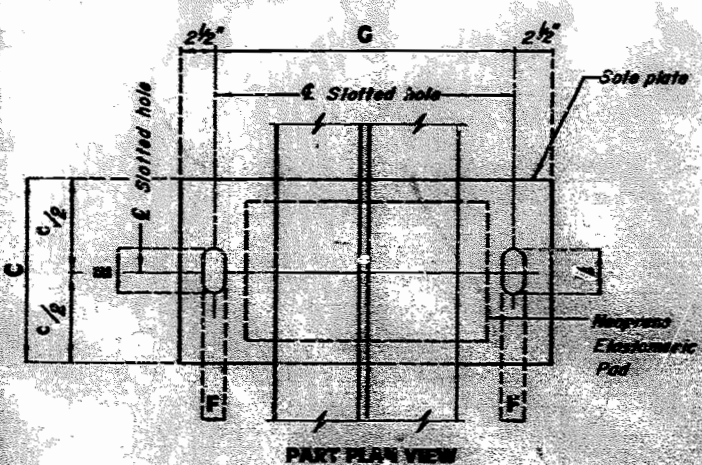
A-2943

4485 73





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.



### EXPANSION BEARINGS

NUMBER REQUIRED - 4 @ Bent 1  
4 @ Bent 3

### FIXED BEARINGS

NUMBER REQUIRED - 4 @ Bent 2

- ① 1 1/2" Beams 1 & 3  
2 1/2" Bent 2
- ② 1 1/2" Beams 1 & 3  
2 1/2" Bent 2

BENT NO.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	REMARKS
1	12"	18"	19"	20"	5"	19"	15"	5 1/2"	3 1/2"	10"	19"	15"	5 1/2"	3 1/2"	10"	6
3	12"	18"	19"	20"	5"	19"	15"	5 1/2"	3 1/2"	10"	19"	15"	5 1/2"	3 1/2"	10"	6

BENT NO.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	REMARKS
2	20"	2 10"	2 11"	2 4"	2 7 1/2"	2 3"	5 3/4"	3 3/4"	16"	1 1/2"	3 1/2"	1 1/2"	3 1/2"	1 1/2"	3 1/2"	6

GENERAL NOTES:  
1. ALL DIMENSIONS SHALL BE IN INCHES UNLESS OTHERWISE SPECIFIED.  
2. THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRUCTURE.  
3. THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.  
4. THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

## DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

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

Sheet No. 10 of 16.

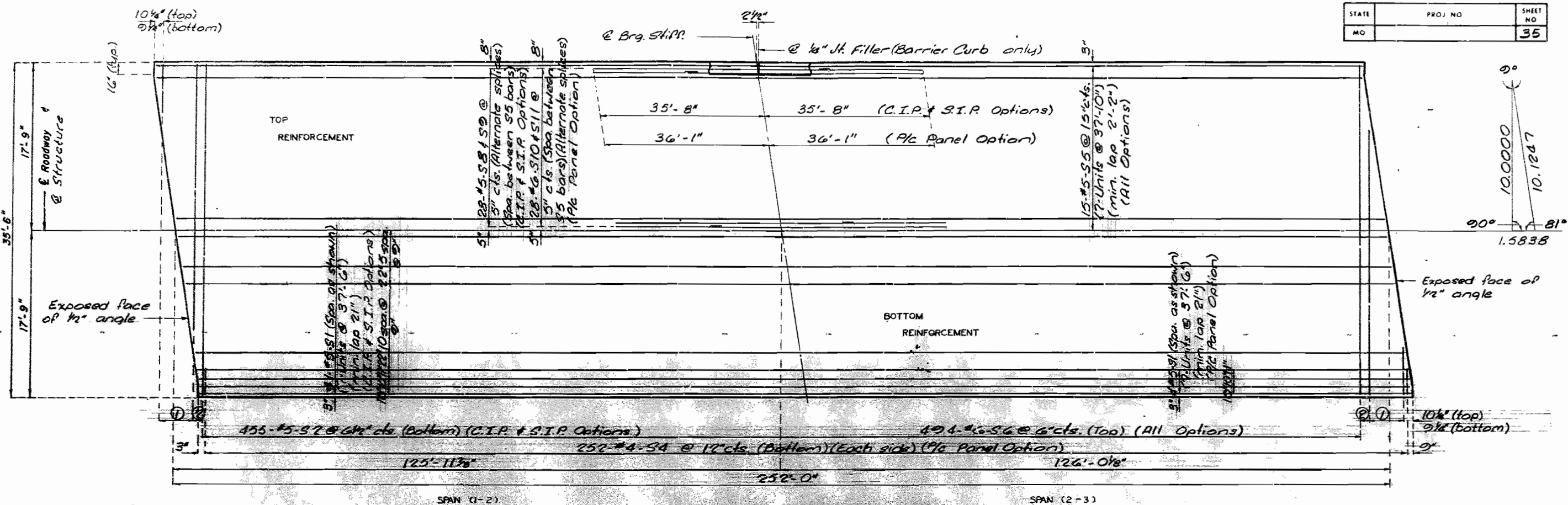
JEFFERSON COUNTY

A-2943

LAM. NEOP. BEAR. REVISED OCT. 1987  
 MARCH 1979  
 4065 74

DETAILED Apr. 1988  
 CHECKED May 1988



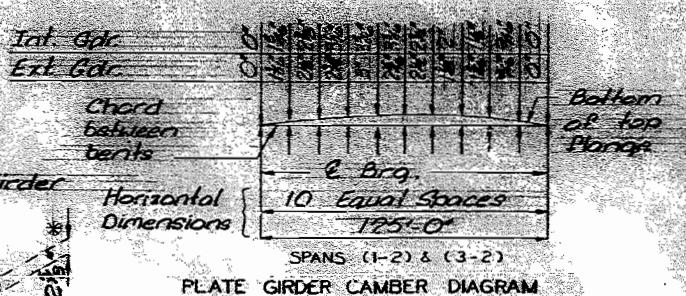
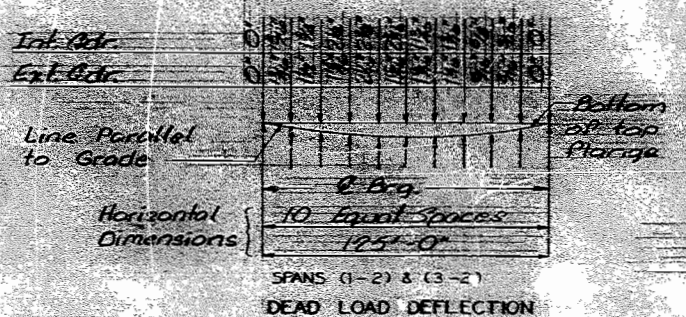
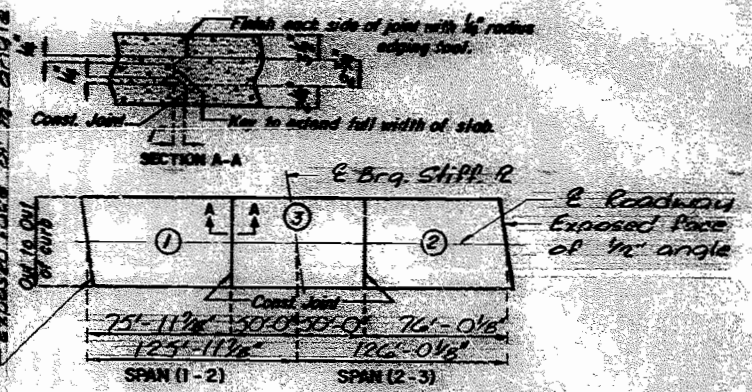


Note: Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" from vertical leg of angle of expansion device.

PLAN OF SLAB SHOWING REINFORCEMENT

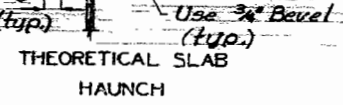
Notes: \* Dimension may vary if the girder camber after erection differs from plan camber by more than the % of D.L. deflection due to the weight of structural steel. No payment will be made for additional forming or concrete required for variation in haunching. Camber includes allowance for vertical curve and for dead load deflection due to concrete slab, curb, and structural steel. 14% of dead load deflection is due to the weight of structural steel. Longitudinal dimensions shown are along top of slab and are based on an expansion gap of 2 1/2" @ 60°F at Abutments No. 1 & 3.

- ① 9 #5-S3 @ 6 1/2 cts. (Bottom) (C.I.P. & S.I.P. Options)
- 9 #6-S7 @ 6 cts. (Top) (All Options)
- ② 6 1/2 (Bottom) (C.I.P. & S.I.P. Options)
- 6 (Top) (All Options)

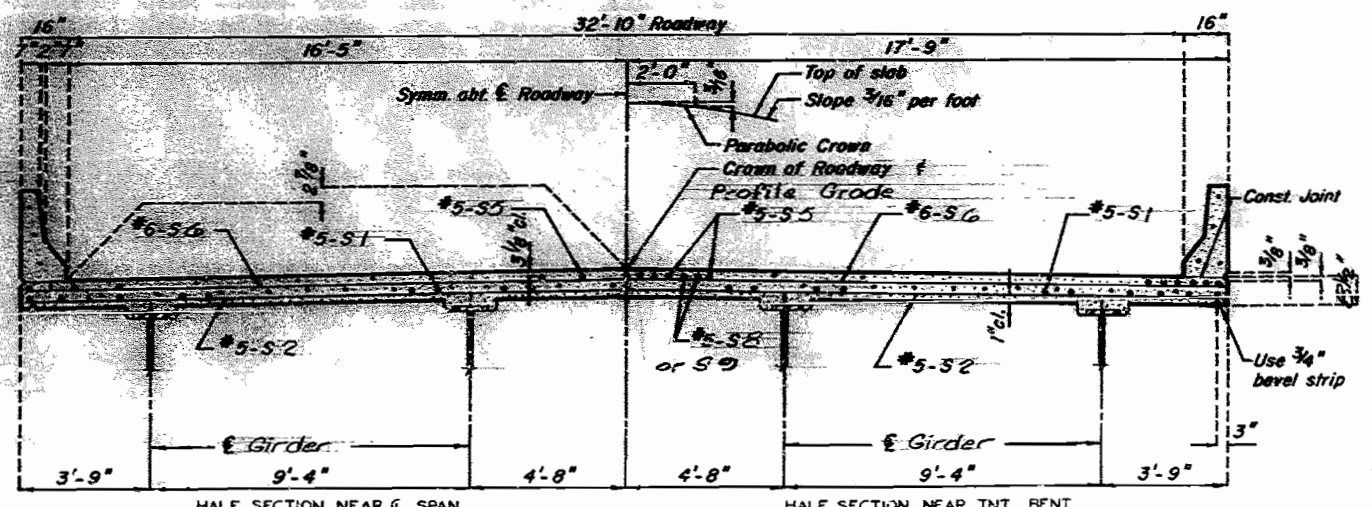


Basic Sequence	Sequence of Pours			Minimum Rate of Pour (cubic yards per hour)	
	Direction	1	2	25	25
Alternate A Pours	1	3 + 2	4	-	-
Alternate B Pours	1 + 3 + 2	1 to End	4	-	-

SLAB POURING SEQUENCE. The contractor shall pour, and satisfactorily finish the slab pours at the rate given above. Retarder, if used, shall be an approved type and retard the set of the concrete to 2.5 hours.



Note: For details and reinforcement of safety barrier bridge curb not shown see sheet No. 14. For sections of S.I.P. Option see sheet No. 2. For details of P/2 Panel Option see sheet No. 12.



HALF SECTION NEAR E SPAN. CAST IN PLACE OPTION.

407 75  
REVISED JAN 1981  
STD. 32.10(4) 16  
AUG. 1985

DETAILED FOR 1988  
CHECKED MAY 1988

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

Sheet No. 11 of 16.

JEFFERSON COUNTY

A2943



STEEL		
P/C-P/S PANEL (3")	REVISED	
MAY 1985	MAY 1987	

488 76



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











COMPLETE BILL OF REINFORCING STEEL																									
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO	STIRRUP	SUBSTR	VARIES	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.			
		SUBSTRUCTURE																							
		ABUTMENT NO. 1																							
32	6H1	BRM. BEAM APRON	20	X				35	8.000									35	8	35	8	171			
7	4H2	BACKWALL MAUNCH	20	X				35	8.000									35	8	35	8	161			
9	6H3	BEARING BEAM	18	X				35	8.000									37	6	37	6	902			
8	6H4	APPROACH BEAM	18	X				35	8.000									37	6	37	6	801			
4	5H5	WING	20	X				38	11.000									38	11	38	11	162			
8	5H6	WING	20	X	V			32	8.000									32	8	32	8				
		INCR = 24.000 IN						38	8.000									38	8	38	8	294			
24	6H7	WING	20	X	V			3	7.000									3	7	3	7				
		INCR = 26.625 IN						28	0.000									28	0	28	0	233			
6	5H8	WING	20	X				5	9.000									5	9	5	9	64			
8	6H9	WINGS	20	X				6	9.000									6	9	6	9	36			
2	6H10	WING	20	X				26	3.000									26	3	26	3	35			
2	6H11	WING	20	X				25	0.000									25	0	25	0	33			
8	5H12	WING	20	X	V			32	8.000									32	8	32	8				
		INCR = 25.900 IN						38	11.000									38	11	38	11	294			
24	6H13	WING	20	X	V			3	7.000									3	7	3	7				
		INCR = 26.625 IN						28	0.000									28	0	28	0	233			
2	6H15	WING	20	X				26	8.000									26	8	26	8	34			
2	6H16	WING	20	X				24	10.000									24	10	24	10	31			
2	5T1	CURTAIN WALL	E 19	X				6	11.000	3	2.000							10	1	10	0	13			
2	5T2	CURTAIN WALL	E 19	X				6	11.000	3	0.000							9	11	9	10	13			
2	7T3	WING	15	X				40	3.000	2	9.000							36	1.000						

6d FOR #3 THRU #5  
12d FOR #6 OR 2" MIN.

9 BEAM

DETAILING DIMENSION

90°

6d OR 2" MIN.

HOOK 9 BEAM

DETAILING DIMENSION

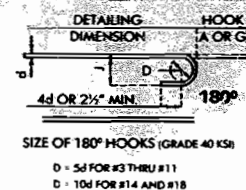
135°

DETAILED June 1988  
CHECKED June 1988

STRUTTING HOOD DIMENSIONS				
CHANGES TO 50, 55, 60, 65				
BAR SIZE	D (IN.)	90° HOOK:		135° HOOK:
		HOOK A OR G	HOOK A OR G	APPROX. H
#3	1 1/4"	4"	4"	2 1/4"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 1/4"
#6	4 1/4"	12"	7 3/4"	4 1/4"

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

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



DETAILING DIMENSION

90°

A.O.C.

D

12d

SIZE OF 90° HOOKS (ALL GRADES)  
AND 180° HOOKS (GRADE 60 KSI)

COMPLETE BILL OF REINFORCING STEEL																										
NO. REQD.	MARK NO.	LOCATION	E	S	N	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.			
		INT. BENT 2																								
36	801	FOOTING	20	X			7	2.000																		
4	602	FOOTING	10	X					4	9.000	8	0.000														
12	703	FOOTING	20	X			8	9.000																		
12	704	FOOTING	20	X			8	0.000																		
8	7H30	BEAM	7	X			4	3.000	3	3.500																
8	10H31	BEAM	17	X			15	6.000																		
4	6H32	BEAM	20	X			30	6.000																		
8	10H33	BEAM	28	X			30	6.000																		
4	10H34	BEAM	18	X			30	6.000																		
62	4P1	COLUMN	16	X			3	3.000																		
96	6U15	BEAM	13	S	X		2	3.000	3	3.000	2	3.000	3	3.000												
6	6U16	BEAM	13	S	X		3	5.000	3	3.000	3	5.000	3	3.000												
4	6U18	BEAM	13	S	X		2	2.000	3	3.000	2	2.000	3	3.000												
4	6U19	BEAM	13	S	X		19.000	3	3.000	19.000	3	3.000														
36	8V31	COLUMN	20	X			24	1.000																		
6	2V1	A B WELL	22	X			2	1.000	9.125																	
		ADJUTMENT NO. 3																								
32	4M1	DKML. BEAM APRON	20	X			35	8.000																		
7	4M2	BACKSILL. HANDBENCH	20	X			35	8.000																		
8	8M3	BEARING BEAM	18	X			35	8.000																		
8	8M5	APPROACH BEAM	18	X			35	8.000																		
8	5M6	WING	20	X			5	9.000																		
8	5M7	WING	20	X			2	32.2.000																		
		INCR = 26.375 IN					38	3.000																		
24	4M18	WING	20	X			2	3	6.000																	
		INCR = 26.500 IN					27	8.000					</													

Note: Two additional S16, S17, S16, & R16 are included in bar bill for testing.

END WOOD DIMENSIONS				
BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS
		ALL GRADES		ALL GRADES
		A OR G	J	A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/4"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/4"	15"	11 3/4"	19"
#10	10 1/4"	17"	13 3/4"	22"
#11	12"	19"	14 3/4"	2-0"
#14	18 1/4"	2-3"	21 1/4"	2-7"

**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.

E - EPOXY COATED REINFORCEMENT.

S - STIRRUP.

X - BARS INCLUDED IN SUBSTRUCTURE QUANTITIES.

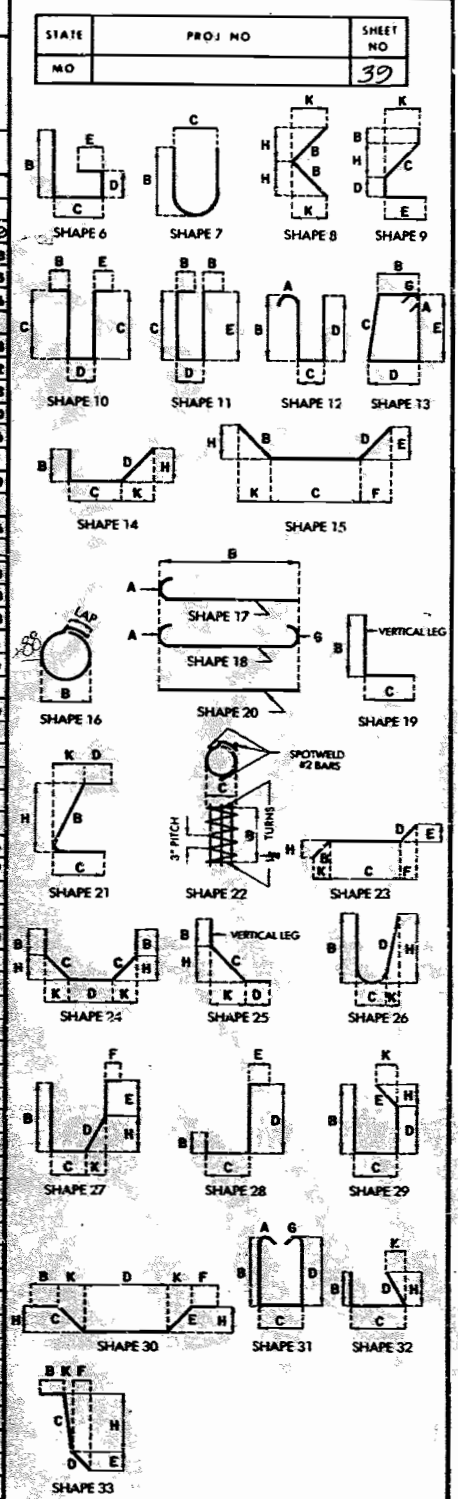
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

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.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.



## BENDING DIAGRAMS



442 80

# COMPLETE BILL OF REINFORCING STEEL

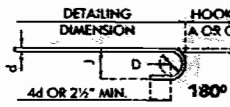
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT							
									B		C		D		E		F		H					K						
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.			
32	603	APPROACH BEAM		13	S	X			2	3.250	2	8.000	2	3.250	2	8.000					11	2	10	8	513					
32	404	APPROACH BEAM		10	S	X					17.500	6.000									3	9	3	3	69					
12	405	CURTAIN WALL		20	X				3	2.000											3	2	3	2	25					
8	4017	BEARING BEAM		10	S	X					6.000	5	8.875								4	3	4	1	22					
39	408	PILE ENCASEMENT		10	S	X					23.000	17.000									5	3	5	1	132					
12	409	CURTAIN WALL		20	X				3	6.000											3	6	3	6	28					
32	5010	BEARING BEAM		13	S	X			2	4.000	2	8.000	2	4.000	2	8.000					10	11	10	7	353					
68	501	BACKMALL		E 20	X				7	9.000											7	9	7	9	550					
2	404	CURTAIN WALL		20	X				6	11.000											6	11	6	11	9					
2	404	CURTAIN WALL		20	X				6	11.000											6	11	6	11	9					
44	4016	WING		E 20	X	V		2	6	5.000											6	5	6	5						
		INCR = 9.000 IN							22	1.000											22	1	22	1	419					
44	4017	WING		E 20	X	V		2	6	7.000											6	7	6	7						
		INCR = 9.000 IN							22	3.000											22	3	22	3	424					
12	5018	WING		20	X	V		2	3	5.000											3	5	3	5						
		INCR = 6.000 IN							5	11.000											5	11	5	11	58					
12	5019	WING		20	X	V		2	3	7.000											3	7	3	7						
		INCR = 6.000 IN							6	1.000											6	1	6	1	60					
48	5020	APRON		20	X				16	3.000											16	3	16	3	814					
2	4021	WING		20	X				14	7.000											14	7	14	7	19					
2	4022	WING		20	X				9	6.000											9	6	9	6	13					
2	4023	WING		20	X				3	6.000											3	6	3	6	5					
2	4024	WING		20	X				14	1.000											14	1	14	1	21					
2	4025	WING		20	X				14	0.000											14	0	14	0	21					
2	4026	WING		20	X				15	7.000											15	7	15	7	21					
2	4027	WING		20	X				10	6.000											10	6	10	6	14					
2	4028	WING		20	X				5	6.000											5	6	5	6	7					
8	202	A B WELL		22	X				15.000	9.125											23	0	23	0	31					
SUPERSTRUCTURE																														
SLAB ON SEMI-DEEP ABUTMENT																														
ABUTMENT NO. 1																														
24	4512	SLAB		E 20					32	11.000											32	11	32	11	528					
57	10513	SLAB		E 20					32	11.000											32	11	32	11	8023					
22	4514	WING		E 20					35	8.000											35	8	35	8	526					
44	5515	SLAB		E 20					35	8.000											35	8	35	8	1637					
ABUTMENT NO. 3																														
22	4516	SLAB		E 20					35	8.000											35	8	35	8	524					
43	5515	SLAB		E 20					35	8.000											35	8	35	8	1480					
26	4516	SLAB		E 20					32	6.000											32	6	32	6	564					
59	10517	SLAB		E 20					32	6.000											32	6	32	6	8251					
C I P SLAB																														
OPTION																														
287	551	SLAB		E 20					37	6.000											37	6	37	6	11229					
459	552	SLAB		E 20					35	3.000											35	3	35	3	16328					
18	553	SLAB		E 20		V		2	5	3.000											5	3	5	3						
		INCR = 41.125 IN							32	8.000											32	8	32	8	354					
203	555	SLAB		E 20					37	10.000											37	10	37	10	8810					
496	654	SLAB		E 20					35	3.000											35	3	35	3	26261					
18	657	SLAB		E 20		V		2	5	9.000											5	9	5	9						
		INCR = 37.875 IN							31	0.000											31	0	31	0	492					
56	558	SLAB		E 20					40	0.000											40	0	40	0	2336					
56	559	SLAB		E 20					33	6.000											33	6	33	6	1997					
SAFETY BARRIER CURB																														
480	581	BARRIER CURB		E 19	S				2	6.000	3.900										2	10	2	8	1893					
480	582	BARRIER CURB		E 19	S				2	6.125	3.900										2	10	2	9	1938					
464	583	BARRIER CURB		E 20	S				17.000	6.000											23	22			1270					
512	584	BARRIER CURB		E 22	S				6.000	11.125	7.000	12.000	9.125	6.375	3	0	2	10			9.125	6.375	2	8	2	7	418			
72	585	BARRIER CURB		E 20	S				39	6.000											39	6	39	6	2964					
2	5910	BARRIER CURB		E 20	S				37	2.000											37	2	37	2	78					
4	5911	BARRIER CURB		E 20	S				35	11.000											35	11	35	11	362					
2	5912	BARRIER CURB		E 20	S				38	5.000											38	5	38	5	80					
2	5913	BARRIER CURB		E 20	S				34	9.000											34	9	34	9	77					
4	5914	BARRIER CURB		E 20	S				38	6.000											38	6	38	6	161					

Note: Two additional 514, 517, 56 & 16 are included in bar bill for testing.

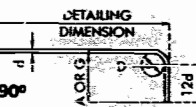
STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#3	1 1/8"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 1/2"
#6	4 1/8"	12"	7 1/2"	4 1/2"

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

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



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

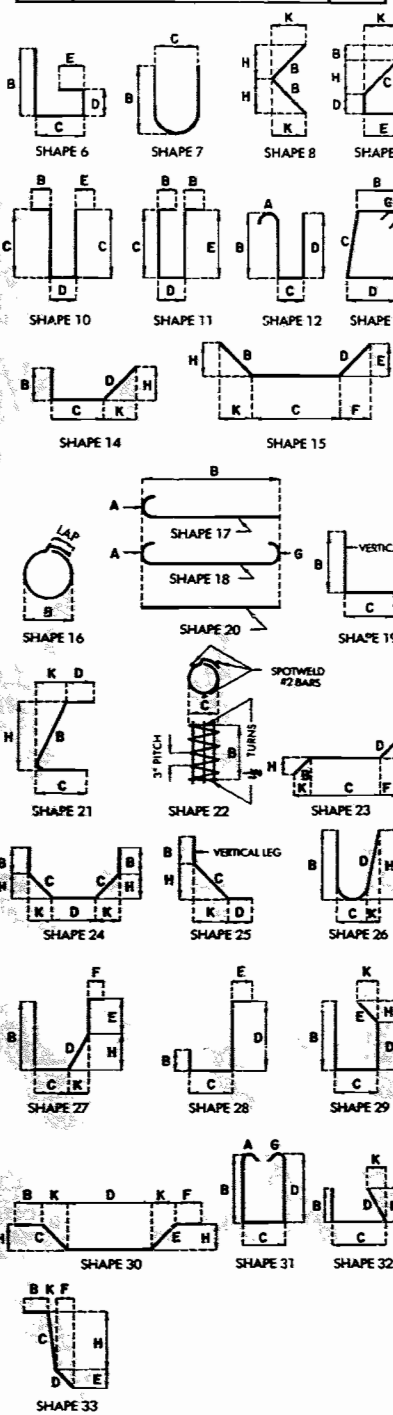


SIZE OF 90° HOOKS (ALL GRADES)  
AND 180° HOOKS (GRADE 40 KSI)  
D = 6d FOR #3 THRU #8  
D = 8d FOR #9, #10 AND #11  
D = 10d FOR #14 AND #18

BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS	
		ALL GRADES		ALL GRADES	
#3	2 1/8"	5"	3"	4"	6"
#4	3"	6"	4"	5"	8"
#5	3 1/2"	7"	5"	6"	10"
#6	4 1/2"	8"	6"	7"	12"
#7	5 1/2"	10"	7"	8"	14"
#8	6"	11"	8"	9"	16"
#9	6 1/2"	12"	9"	10"	18"
#10	7 1/2"	13"	10"	11"	20"
#11	8 1/2"	14"	11"	12"	22"
#14	11 1/2"	17"	14"	15"	27"

Sheet No. 16 of 16

STATE	PROJ. NO.	SHEET NO.
MO		40



BENDING DIAGRAMS

NOTES:  
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.  
HOOKS A/D BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.  
E - EPOXY COATED REINFORCEMENT.  
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.  
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.



## MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

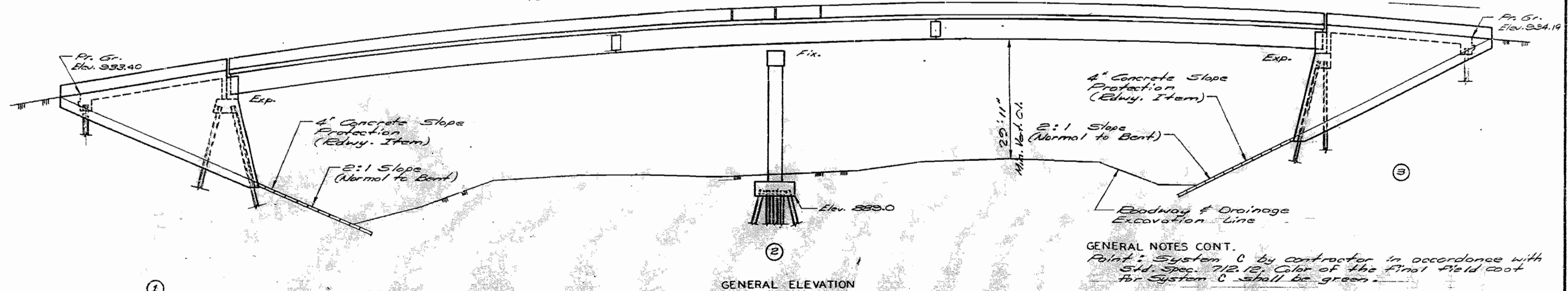
P.I. Sta. 21+20.00  
Elev. 936.20

+1.0%      -1.5%  
600' VC-

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		25	25	

SEC. 5 SUR. 7 TWP. 42N RGE. 5E

(125' - 125') Cont. Comp. R Gdr. Spons

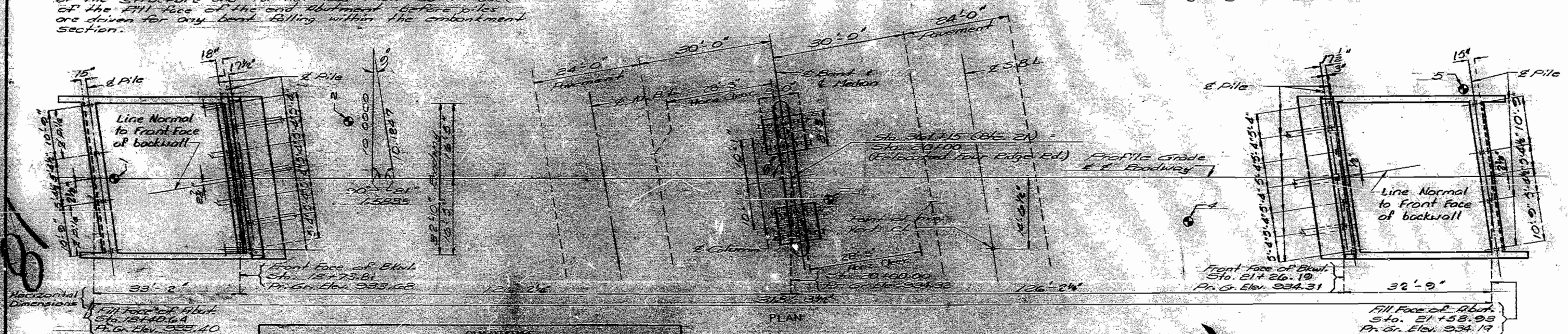


Note: Compacted roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete approach beam within the limits of the structure and for not less than 25' in back of the fill face of the end abutment before piles are driven for any bent falling within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

## GENERAL NOTES CONT.

Point: System C by contractor in accordance with Std. Spec. 712.12. Color of the final field coat for System C shall be green.

Reinforcing Steel: Minimum clearance to reinforcing steel shall be 18" unless otherwise shown.  
All reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least 2".



Notes: All concrete and reinforcing steel below top of slab and above Const. Joint under slab in Semi-Deep Abutments are included in Superstructure Quantities for Slab on Semi-Deep Abutments.  
For Estimated Quantities for Slab, see sheet No. 2.

Accepted -  
Prepared By - Mona Wines Date - Oct. 1958  
Resident Engineer - Conroy Date - 10/15/58  
District Office - Date -  
Main Office - Date -

ITEM		QUANTITIES	UNIT	UNIT PRICE	TOTAL
Class A Excavation	1	17.4	cu yd	\$1.74	\$17.40
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement	1	1.6	lb	1.60	\$1.60
Reinforcing Steel	1	1.6	lb	1.60	\$1.60
Structural Steel Pipe Weld	1	1.6	lb	1.60	\$1.60
Class B Concrete	1	2.8	cu yd	2.80	\$2.80
Slab on Steel 1/2" Panel	1	3.4	sq yd	3.40	\$3.40
Laminated Shear Plates	1	1.0	sq ft	1.00	\$1.00
Reinforcing Steel (Epoxy Coated)	1	1.6	lb	1.60	\$1.60
Pile Point Reinforcement					

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

## PLAN

GENERAL NOTES :

Design Specifications: AASHTO 1983 and Interims thru 1987  
Load Factor Design

Design Loadings

HS20	44	35	14 ft. Future Wearing Surface
5.46	120.1	0.6	5.46
			15.1
			84

Earth: 120 psi,  $\sigma_v$ , Eqs. 10, 11, Fluid Pressure: 85 / cu. ft.  
 Fatigue Stress: Case II  
 Design Soil Stress:

Design Unit Stresses:  
Class B Concrete (Substructure)  $f'_c = 3000$  psi  
Class B1 Concrete (Safety Barrier Curb)  $f'_c = 4000$  psi

Class B2 Concrete (Superstructure except  
Safety Barrier Curb)  $f_c = 4000$  psi

Reinforcing Steel (Grade 60)  $f_y = 60,000$  psi  
Structural Carbon Steel  $f_y = 36,000$   
Structural Steel (ASTM A500 Grade 30)  $f_y = 30,000$

Structural Steel (A515, A516 Grade 50 Fy 50,000)  
Steel Pile  $f_b = 9000$  psi

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

*Fabricated Steel Connections: Field connections, High Strength Bolts 3/4"  $\phi$ , Holes 13/16"  $\phi$ , except*

Note: For Boring Data see sheet No. 3.  
"O" Indicates location of borings.  
For Pile Data, see sheet No. 2.

**Box** Ekr. 936.72 Source on top of Northwest  
corner of Barrier Curb. /

**BRIDGE : FOUR RIDGE ROAD UNDERPASS**

**STATE ROAD FROM RTE. 141 TO OTTO**

**ABOUT 2 MILES NORTH OF OTTO**

PROJECT NO. 6-U-21-17B

**JOB NO. 6-U-21-176**

**JEFFERSON**

**STA. 361+15.00**

RTE. 21

COUNTY

**STD. 611.60**

**STD. 706.35**

A-2943

Sheet No. 1A of 16 .

DATE 3/3/86

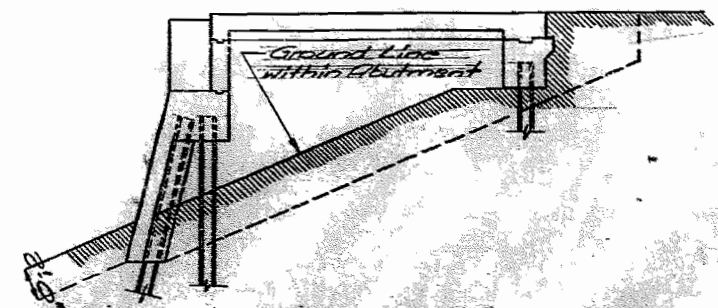
DESIGNED *Mar 19 88*

DETAILED Mar 19 EE

CHECKED May 19 88

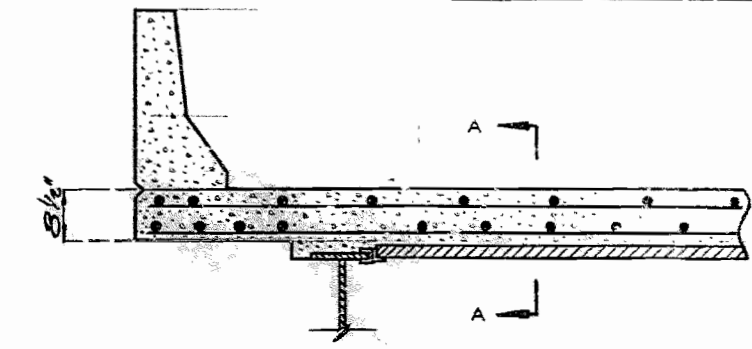


STATE	PROJ. NO.	SHEET NO.
MO		26

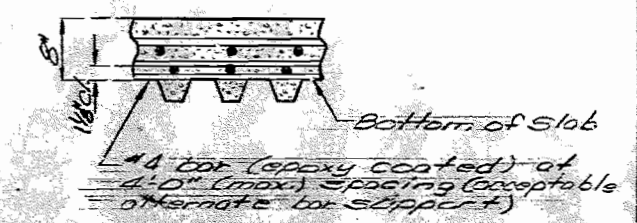


Notes: In no case shall the earth within Abutments No. 1 & 3 be above the Ground Line shown. Forms supporting abutment slab may be left in place.  
The maximum variation of the head of the pile and the battered face of the pile from the position shown on the plans shall be no more than 2 inches for pile under Abutment No. 1 & 3.  
Exposed steel pile within abutments to be coated with a heavy coating of an approved bituminous paint.

GROUND LINE AND PILING IN ABUTMENTS  
(ABUTMENT NO. 3 SHOWN; ABUTMENT NO. 1 SAME)



PART SECTION THRU SLAB SHOWING  
STAY-IN-PLACE OPTION



SECTION A-A

Note: Bottom transverse reinforcing steel shall be placed to match form corrugation valleys.  
To determine haunch for the stay-in-place alternate add 1/4" to the haunch for the cast in-place alternate.

Type of Slab	Estimated Quantities for Alternate Slab		
	Slab on Steel		
	Form (lbs)	Cons.	
	Epoxy	Plain	Grnd.
Cast in Place Concrete with Form	61,510		376.1
Formwork	14,480		313.1
Stay-In-Place Forms	67,370		358.1*

\* Built P/C Panel Slab

The table of Estimated Quantities for alternate slabs represents the quantities use by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the Contract Unit Price per square yard of alternate slab used.  
See Special Provisions for alternate methods of forming slabs.  
\* Does not include concrete required to fill corrugation of S.I.P. forms.  
\* Does not include reinforcing bars used as bar supports.  
Precast panel quantities are based on skewed end panels.

BENT NO.	PILE DATA					
	Pile Type	Length	Area	Volume	Weight	Remarks
1	1	133	146	136	17	17
2	2	133	146	136	17	17
3	3	133	146	136	17	17
4	4	133	146	136	17	17
5	5	133	146	136	17	17
6	6	133	146	136	17	17
7	7	133	146	136	17	17
8	8	133	146	136	17	17
9	9	133	146	136	17	17
10	10	133	146	136	17	17
11	11	133	146	136	17	17
12	12	133	146	136	17	17
13	13	133	146	136	17	17
14	14	133	146	136	17	17
15	15	133	146	136	17	17
16	16	133	146	136	17	17
17	17	133	146	136	17	17
18	18	133	146	136	17	17
19	19	133	146	136	17	17
20	20	133	146	136	17	17
21	21	133	146	136	17	17
22	22	133	146	136	17	17
23	23	133	146	136	17	17
24	24	133	146	136	17	17
25	25	133	146	136	17	17
26	26	133	146	136	17	17
27	27	133	146	136	17	17
28	28	133	146	136	17	17
29	29	133	146	136	17	17
30	30	133	146	136	17	17
31	31	133	146	136	17	17
32	32	133	146	136	17	17
33	33	133	146	136	17	17
34	34	133	146	136	17	17
35	35	133	146	136	17	17
36	36	133	146	136	17	17
37	37	133	146	136	17	17
38	38	133	146	136	17	17
39	39	133	146	136	17	17
40	40	133	146	136	17	17
41	41	133	146	136	17	17
42	42	133	146	136	17	17
43	43	133	146	136	17	17
44	44	133	146	136	17	17
45	45	133	146	136	17	17
46	46	133	146	136	17	17
47	47	133	146	136	17	17
48	48	133	146	136	17	17
49	49	133	146	136	17	17
50	50	133	146	136	17	17
51	51	133	146	136	17	17
52	52	133	146	136	17	17
53	53	133	146	136	17	17
54	54	133	146	136	17	17
55	55	133	146	136	17	17
56	56	133	146	136	17	17
57	57	133	146	136	17	17
58	58	133	146	136	17	17
59	59	133	146	136	17	17
60	60	133	146	136	17	17
61	61	133	146	136	17	17
62	62	133	146	136	17	17
63	63	133	146	136	17	17
64	64	133	146	136	17	17
65	65	133	146	136	17	17
66	66	133	146	136	17	17
67	67	133	146	136	17	17
68	68	133	146	136	17	17
69	69	133	146	136	17	17
70	70	133	146	136	17	17
71	71	133	146	136	17	17
72	72	133	146	136	17	17
73	73	133	146	136	17	17
74	74	133	146	136	17	17
75	75	133	146	136	17	17
76	76	133	146	136	17	17
77	77	133	146	136	17	17
78	78	133	146	136	17	17
79	79	133	146	136	17	17
80	80	133	146	136	17	17
81	81	133	146	136	17	17
82	82	133	146	136	17	17
83	83	133	146	136	17	17
84	84	133	146	136	17	17
85	85	133	146	136	17	17
86	86	133	146	136	17	17
87	87	133	146	136	17	17
88	88	133	146	136	17	17
89	89	133	146	136	17	17
90	90	133	146	136	17	17
91	91	133	146	136	17	17
92	92	133	146	136	17	17
93	93	133	146	136	17	17
94	94	133	146	136	17	17
95	95	133	146	136	17	17
96	96	133	146	136	17	17
97	97	133	146	136	17	17
98	98	133	146	136	17	17
99	99	133	146	136	17	17
100	100	133	146	136	17	17

Note: Manufactured pile point reinforcement shall be used on all piles in this structure. See Special Provisions.

Minimum energy requirements of hammer based on pile length and design bearing value of pile.  
All pile shall be driven to practical refusal.  
Prebore for piles at Bent 1 at App. Beam, Brq. Bm. Bk., and Brq. Bm. Ah. to elevations 873.0, 885.0 and 877.0 respectively.

DETAILED Mar 1988  
CHECKED May 1988

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

Sheet No. 2A of 16

JEFFERSON COUNTY

1A-204

398 82