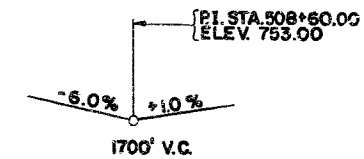


STATE	PROJ. NO	SHEET NO
MO.	F-21-2(27)	51
SEC./SUR. 19 TWP. 42N RGE. 5E		



## GENERAL ELEVATION

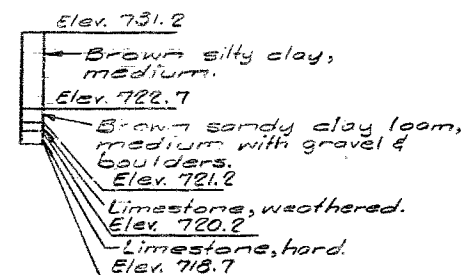
Note: Remove boulder in the vicinity of left footing of Bent No. 3. (See Special Provisions).



Boring data for all locations is available upon request from the district office. Boring data for numbered locations is detailed on sheet No. 2

A-2945

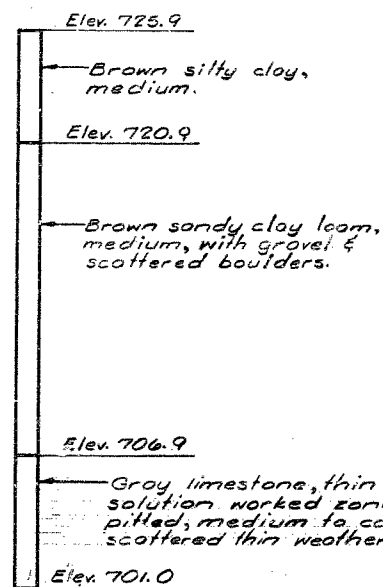
Sheet No. 1 of 27



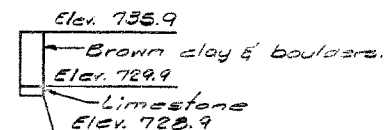
①

Note: For location of borings see sheet #1.  
Boring data for all locations is available upon request from the district office.

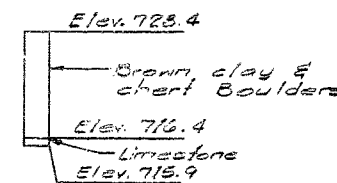
Note: Prebore for piles at Bents #1, 2, 3, 4, and 5, to elevations 738.0, 729.0, 735.0, 728.0, and 732.0 respectively.



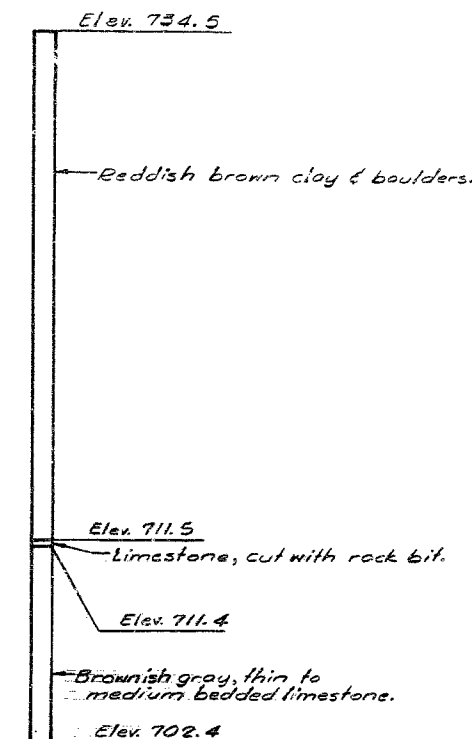
② Core



Note: Large limestone boulder between 24' Lt. & 50' Lt. that is 10' across & another boulder at 53' Lt. that is 5' across.



④



⑤ Core

#### BORING DATA

PILE DATA					
BENT NO.	1	2	3	4	5
Pile Type and Size	HP10x42	HP10x42	HP10x42	HP10x42	HP10x42
Number	7	12	12	12	7
Approximate Length	Fl. 60	② 52	③ 56	④ 56	60
Design Bearing	Tons 49	52	56	56	47
Hammer Energy Required	Fl. Lbs. 12,000	12,100	13,100	13,100	11,400

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

ESTIMATED QUANTITIES FOR ALTERNATE SLAB			
TYPE OF SLAB	Reinforcement		Concrete Cu. yds.
	Epoxy	Plain	
Cast-in-Place Conventional Forms	75,830	11,570	419.5
Precast Panel Forms	58,440	11,570	349.0***

Note: The table of Estimated Quantities for Alternate Slabs represents the quantities used 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 slab.  
Precast panel quantities based on skewed end panels.

\*\*\* Based on minimum top flange thickness and minimum joint filler thickness.

- ② 32' Lt., 35' Lt., 52' Rt.
- ③ 19' Lt., 35' Lt., 30' Rt.
- ④ 35' Lt., 34' Lt., 33' Rt.

#### ESTIMATED QUANTITIES

ITEM	SUBSTR.	SUPERSTR.	TOTAL
Class I Excavation	Cu.yd. 185		185
Str. Steel Pile (10 in.)	Lin.Ft. 2004		2004
Class B Concrete (Substr.)	Cu.yd. 213.3		213.3
1' Slab on Concrete I-Gdn. See Spec. Pro.	Sq.yd.	1175	1175
Safety Barrier Curb	Lin.Ft.	572	572
Plain Neoprene Brg. Pads	Each	10	10
Prestressed Concrete I-Gdn. (60' Span)	Each	10	10
Prestressed Concrete I-Gdn. (77' Span)	Each	5	5
Prestressed Concrete I-Gdn. (55' Span)	Each	5	5
Reinforcing Steel (Bridges)	Lbs. 35,330		35,330
Vertical Drain at End Bt.	Each	2	2
Prebore for Piling	Lin.Ft. 1253		1253
Cement	Each	50	50
Laminated Neoprene Bearing Pads	Each	30	30

All reinforcement in the end bents is included with superstructure quantities.  
Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, will be paid for at the contract unit price for Neoprene Bearing Pads per each.  
Manufactured pile point reinforcement shall be used on all piles in this structure. See Special Provisions.  
All concrete above the construction joint in the End Bents is included in the estimated superstructure quantities for Slab on Concrete I Girder, see Special Provisions.

DETAILED July 1985  
CHECKED Dec. 1985

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

Sheet No. 2 of 27

JEFFERSON

COUNTY

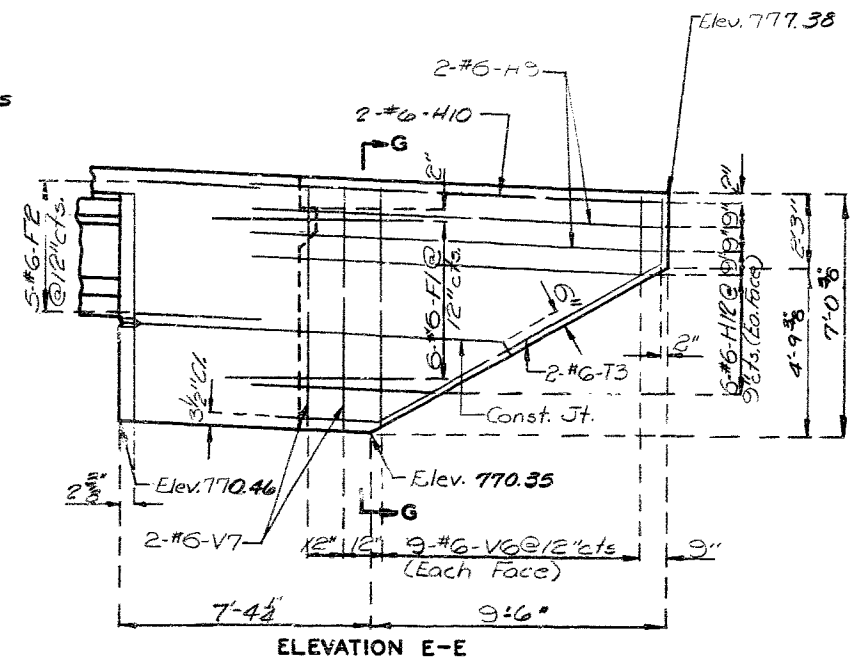
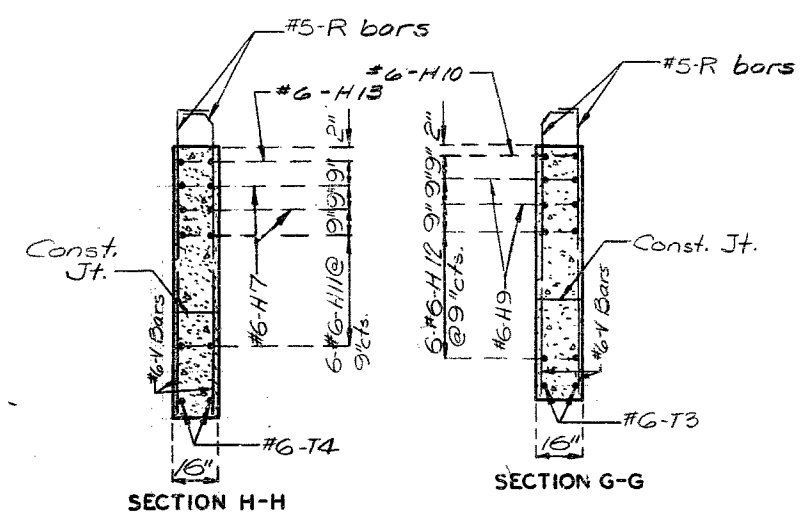
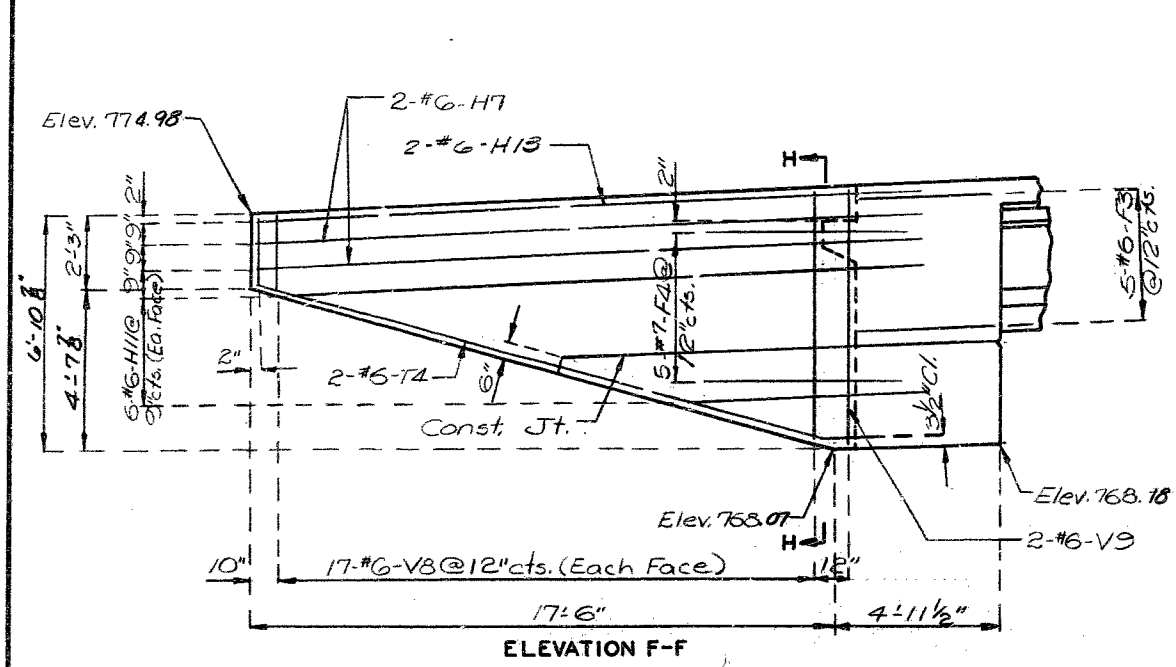
A-2945



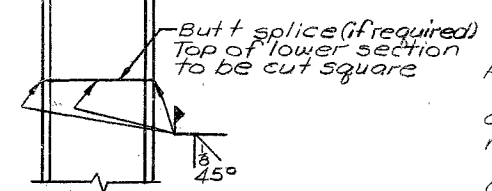
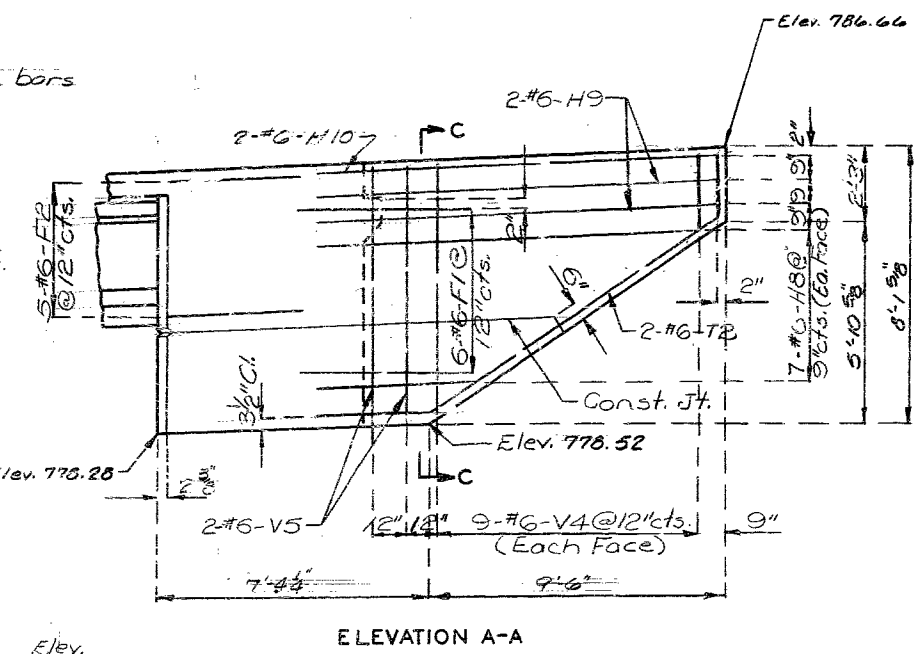
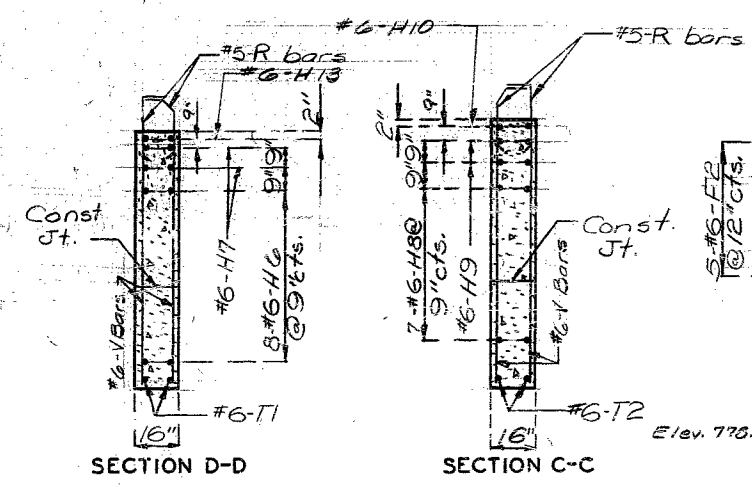
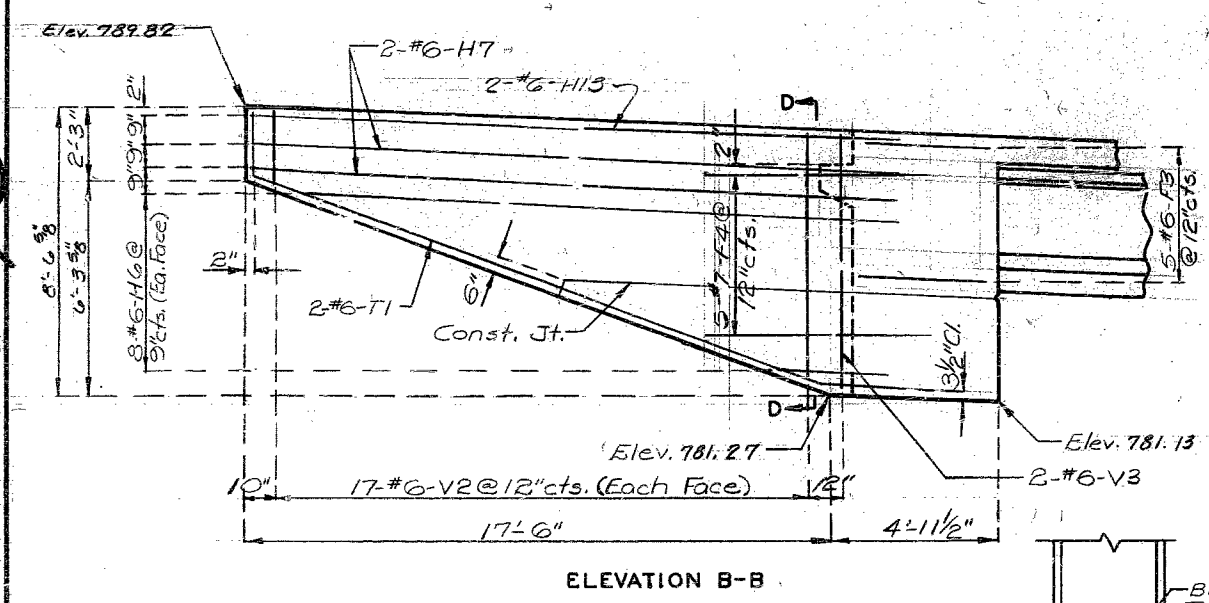




Note: For location of Elevation E-E & F-F see sheet No. 13.



DETAILS OF END BENT NO. 5



DETAIL OF STEEL PILE SPLICE

DETAILS OF END BENT NO. 1

Note: For location of Elev. A-A & B-B see sheet No. 4.  
Field bending shall be required at wings for F1 & F4 bars when necessary to conform to slope of wing.  
For details of Safety Barrier Curb see sheet No. 23.

DETAILED Aug. 1985  
CHECKED Dec. 1985

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

Sheet No. 6 of 27.

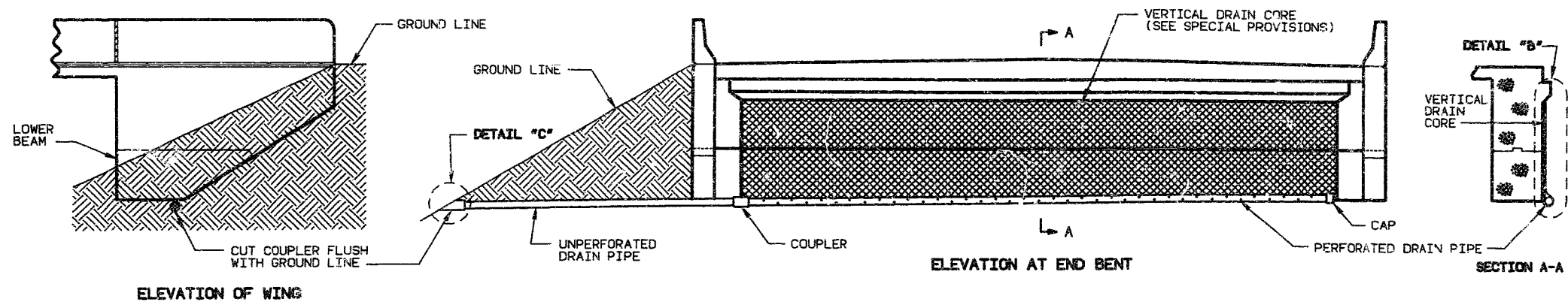
JEFFERSON COUNTY

A-2945

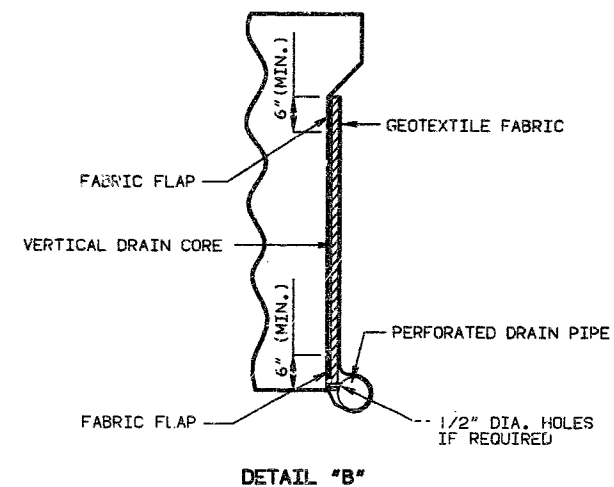
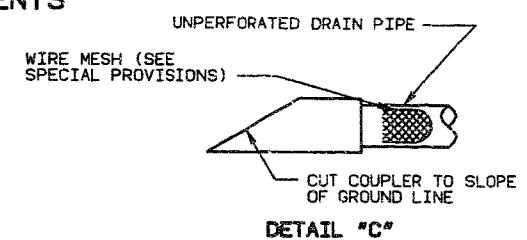
388 245

381246

STATE	PROJ. NO.	SHEET NO.
MD.		57



### VERTICAL DRAIN AT END BENTS



#### 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.

VERT. DRAIN (INT.)	REVISED
MARCH 1986	AUG. 1989

DETAILED APRIL 1990  
CHECKED APRIL 1990

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

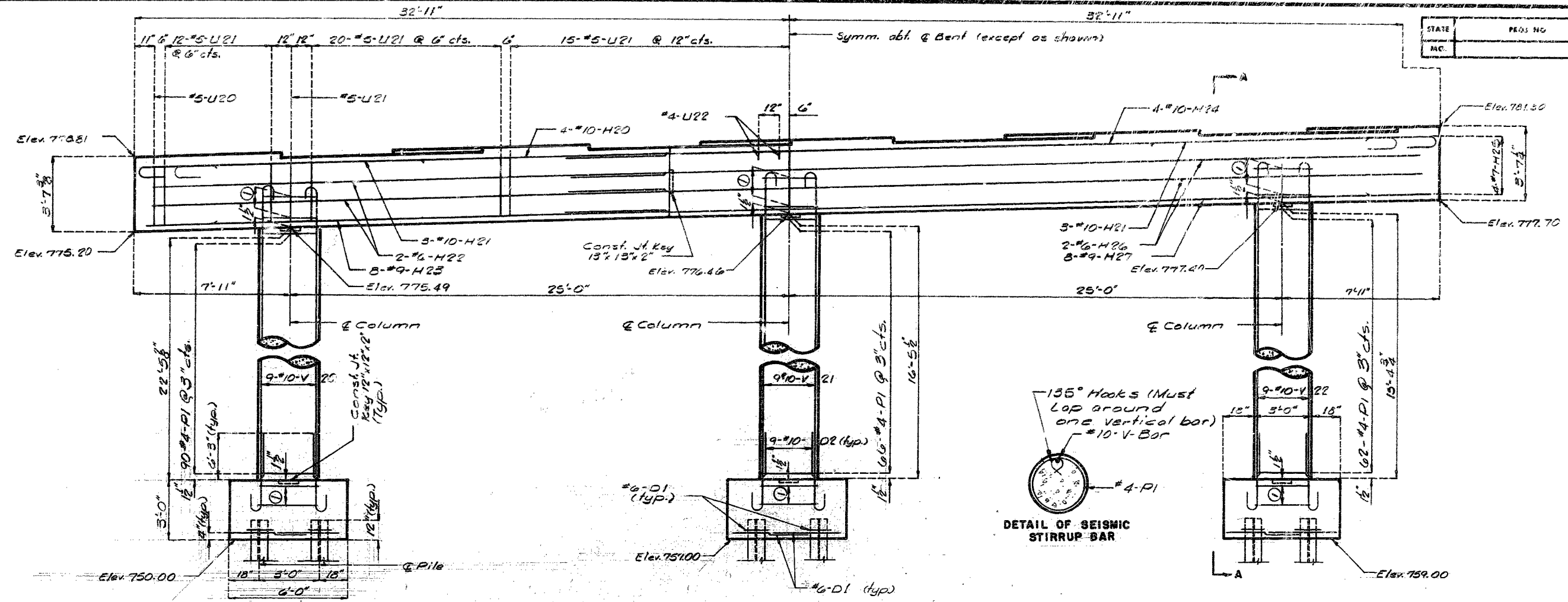
SHEET NO. 7 OF 27

JEFFERSON

COUNTY

A-2945

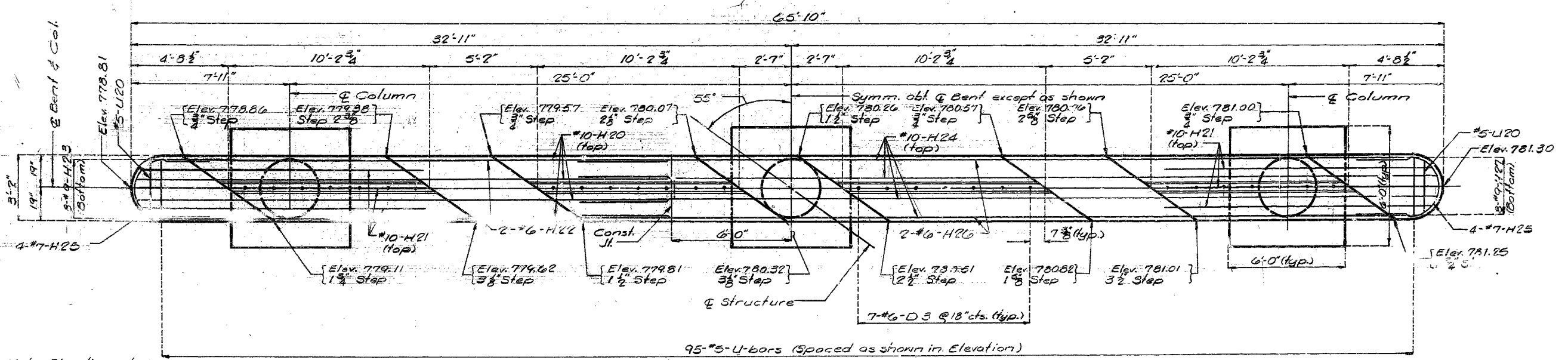




Note: All Footings Typ.

ELEVATION

Note: For Sec. A-A, Plan of Footing, Plan of Brg., & Detail of Key see sheet No. 9.



Note: Elevations shown are of top of step.

PLAN  
DETAILS OF INTERMEDIATE BENT NO. 2

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

Sheet No. 3 of 27.

JEFFERSON

COUNTY

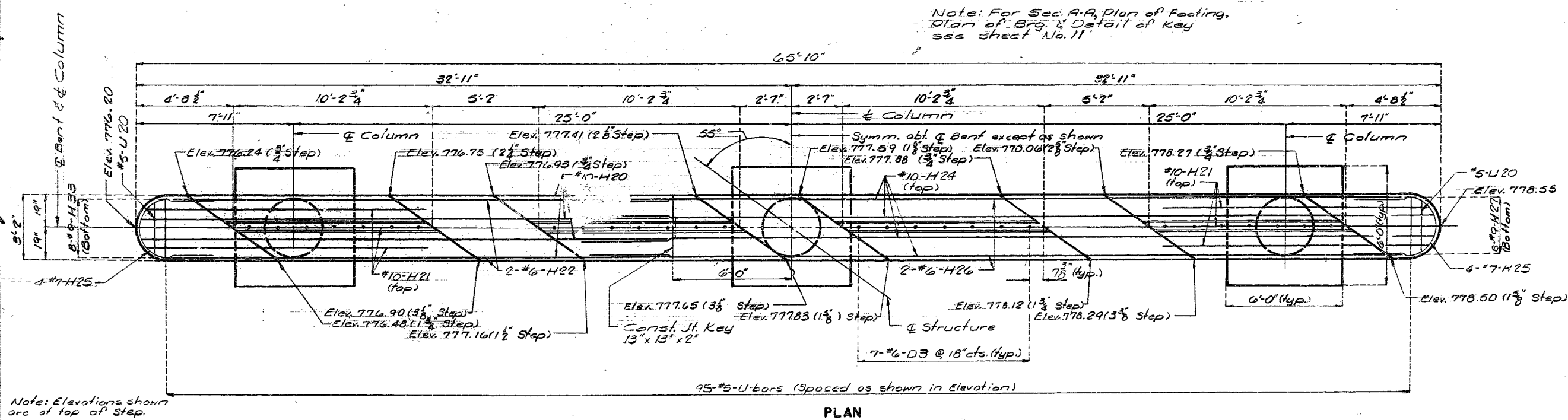
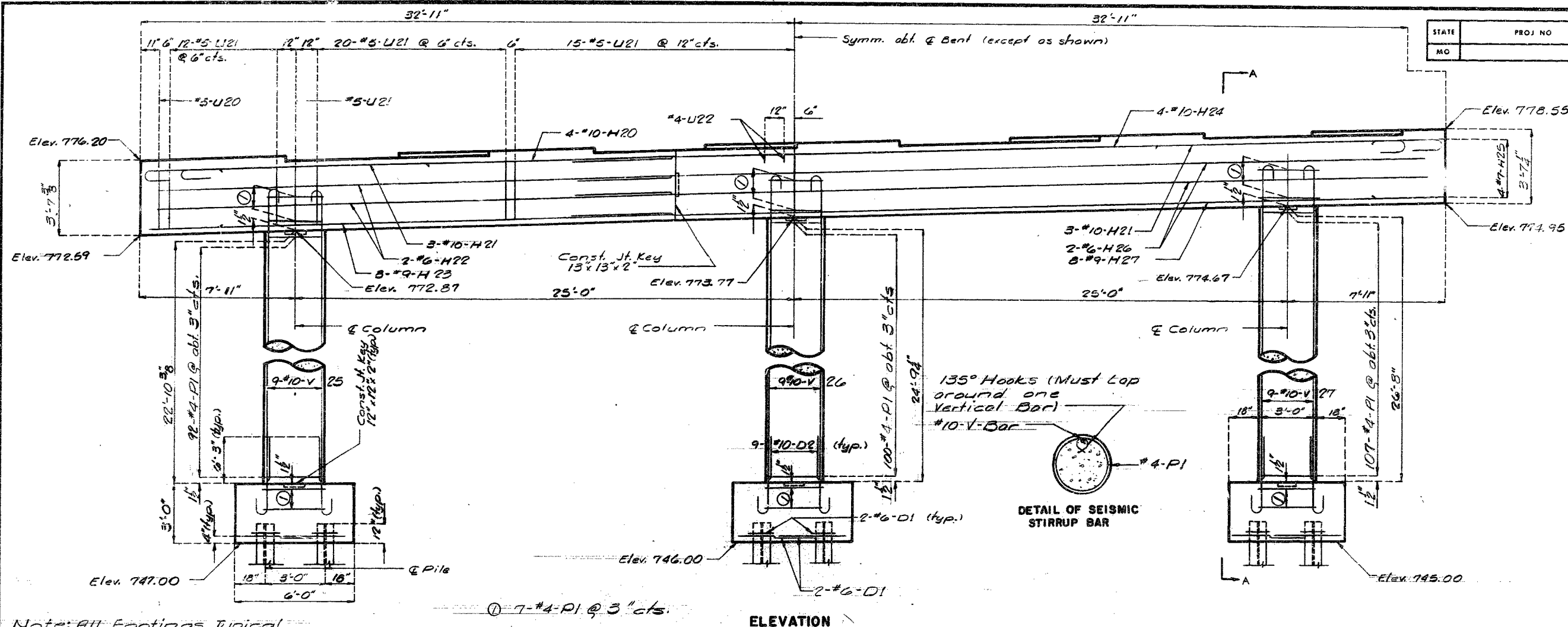
A-2945

328247

DETAILED Aug. 19 85  
CHECKED Nov. 19 85







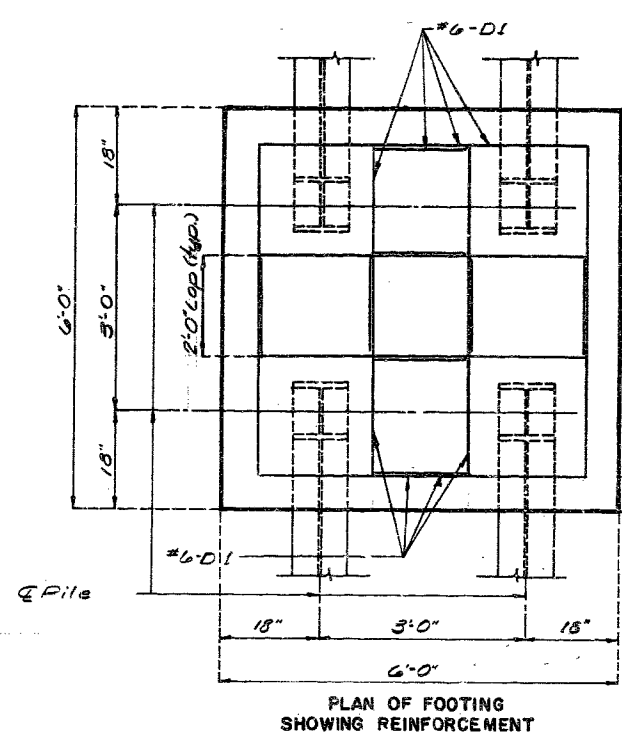
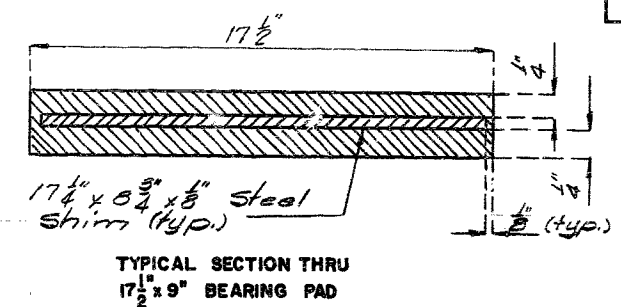
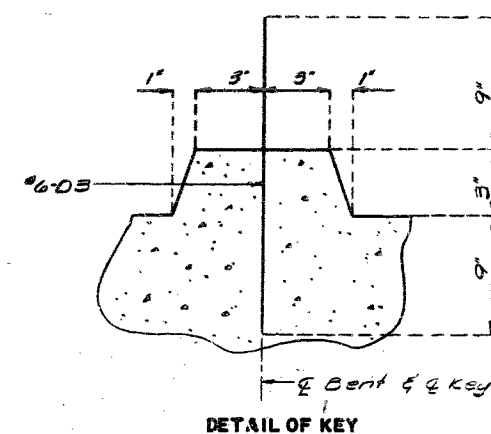
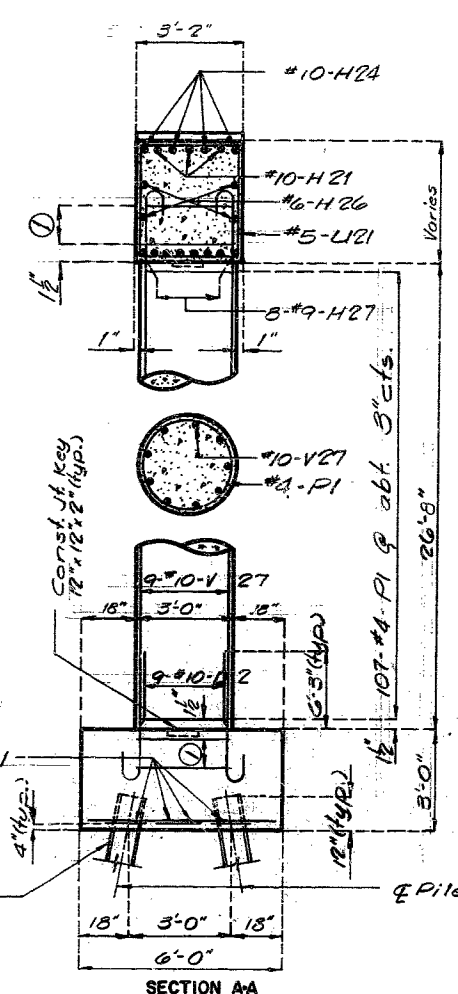
DETAILED AUG. 1985  
CHECKED NOV. 1985

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

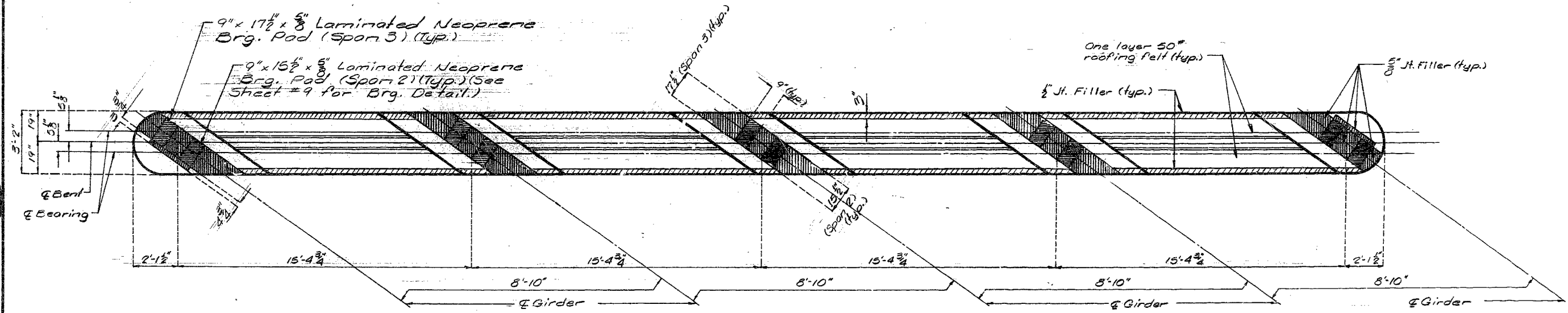
Sheet No. 10 of 27.

JEFFERSON COUNTY

A-2945



Note: For location of Sec. A-A & Key see sheet #10.



PLAN OF BEARING  
DETAILS OF INTERMEDIATE BENT NO. 3

DETAILED Aug. 1985  
CHECKED Nov. 1985

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

Sheet No. 11 of 27

JEFFERSON

COUNTY

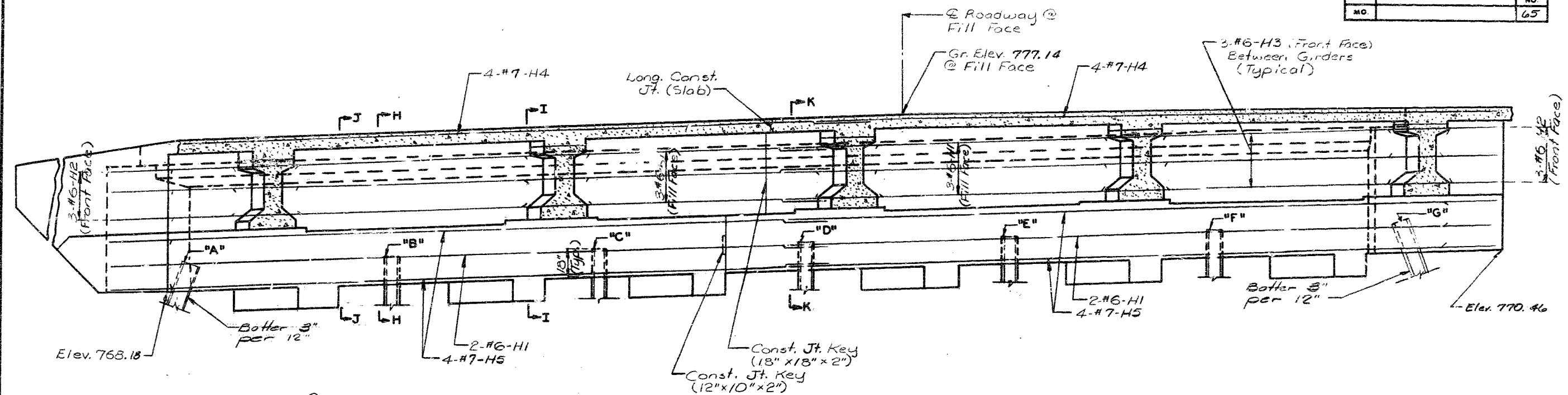
A-2945

305-250

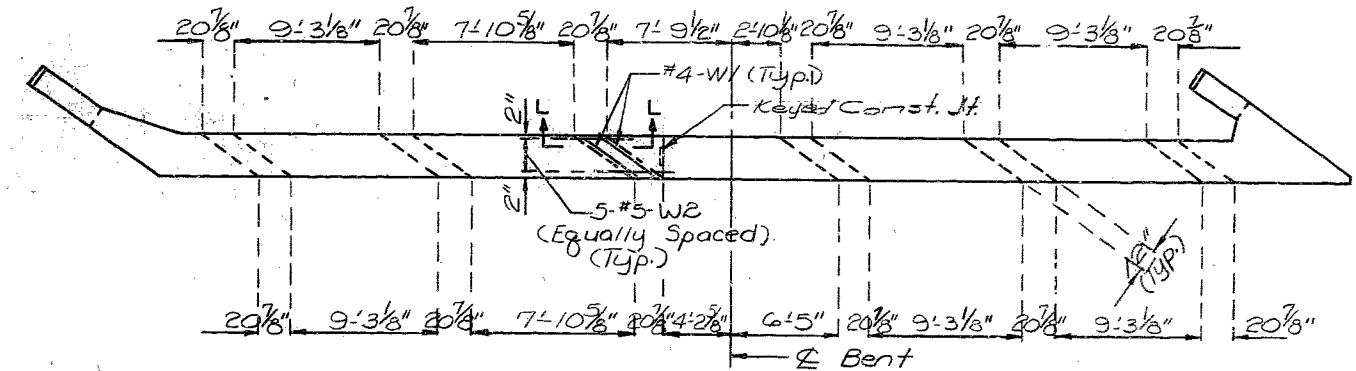




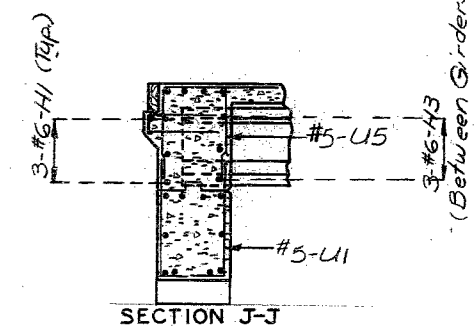




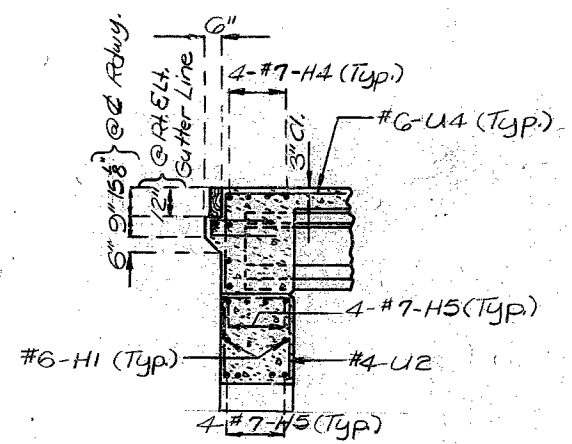
SECTION NEAR END BENT



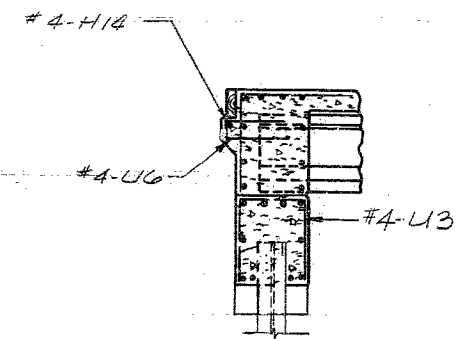
DETAILS OF BEAM SHEAR KEY



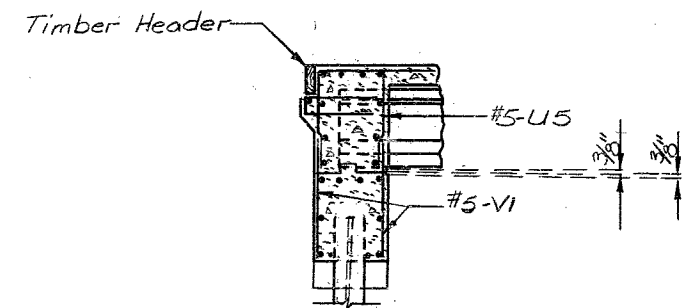
SECTION J-J



SECTION I-I



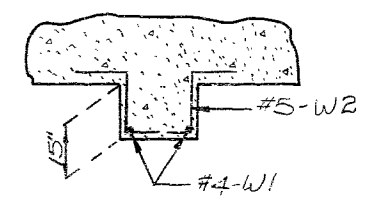
SECTION K-K



SECTION H-H

Note: For details of Timber Header see sheet No. 23.  
 For detail of Steel Pile Splice see sheet No. 6.  
 Note: All concrete in the End Bent above top of beam and below top of slab shall be class B2.  
 Strands of end of girder shall be field bent or, if necessary, cut in field to maintain 1 1/2" minimum clearance to fill face of End Bent.

PILE CUT-OFF ELEVATIONS	
"A"	769.74
"B"	770.09
"C"	770.43
"D"	770.77
"E"	771.12
"F"	771.46
"G"	771.80

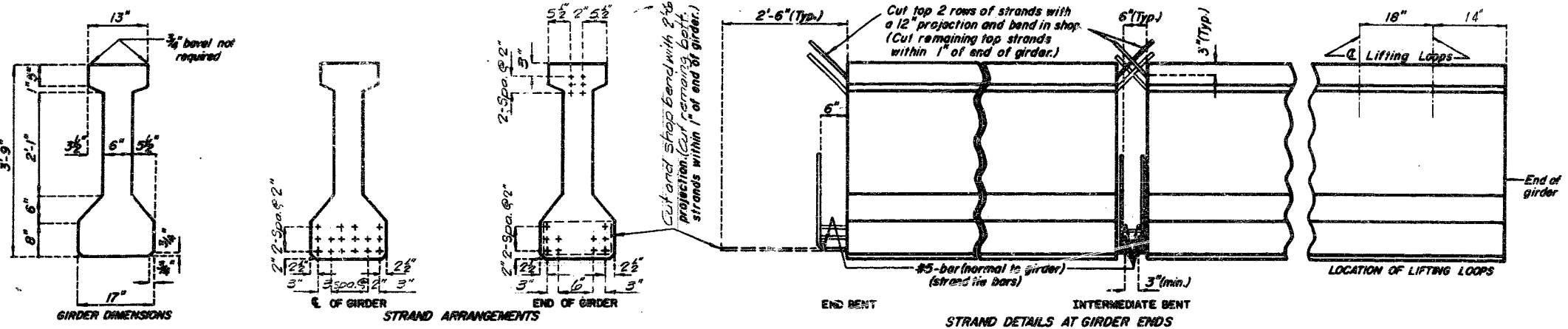


PART SECTION L-L

DETAILS OF END BENT NO. 5

389 254

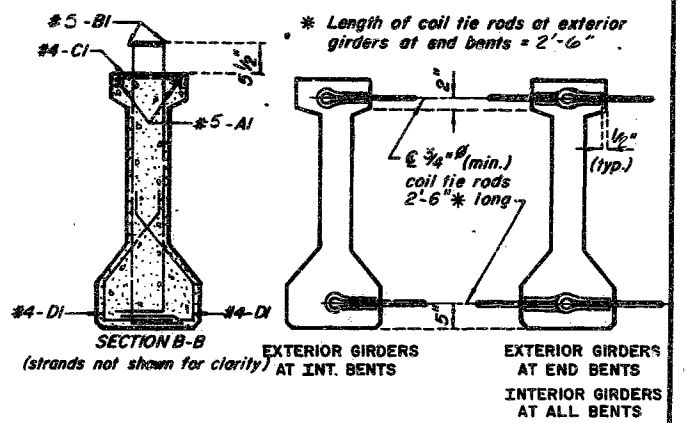
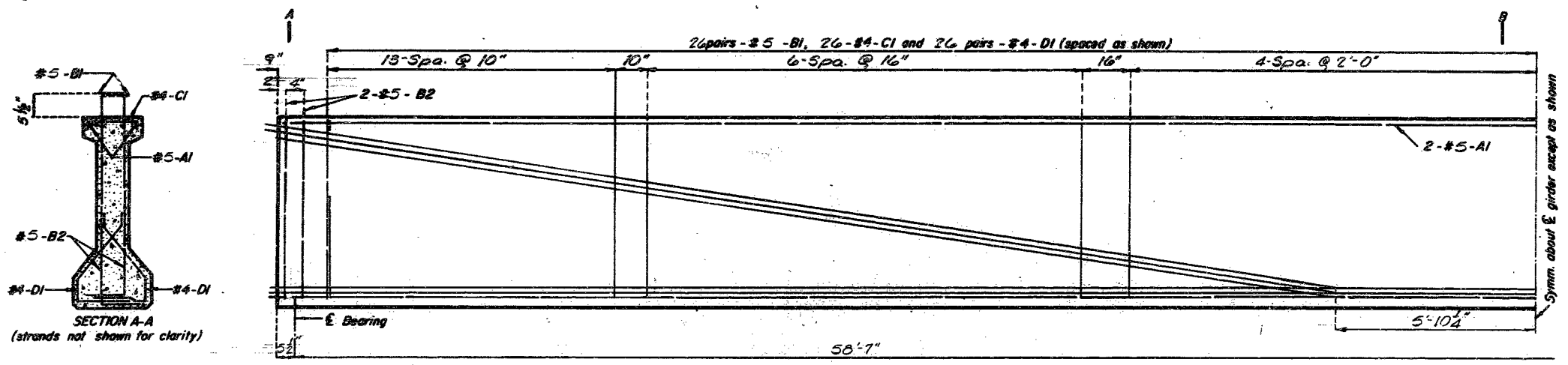




**NOTE:**  
 Concrete for prestressed girders shall be Class A1 with  $f'_c = 5,000$  psi.  
 (+) indicates prestressed strand.  
 Use 1/6 strands with an initial prestress force of 49k kips.  
 Prestressing tendons shall be uncoated seven-wire low relaxation strands,  
 1/2 inch diameter conforming to A.A.S.H.T.O. M203, Grade 270.

STATE		PROJ NO		SHEET NO	
MO				66	
<b>BILL OF REINFORCING STEEL - EACH GIRDER</b>					
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS	
2	5 A1	59'-3"	20	SHAPE 10	
102	5 B1	5'-2"	11	SHAPE 11	
8	5 B2	4'-3"	19	SHAPE 12	
51	4 C1	13"	10	SHAPE 13	
102	4 D1	3'-0"	9	SHAPE 14	

**NOTE:**  
 All dimensions are cut to cut.  
 Where deflecting strands interfere with placement, some in-place bending may be necessary.  
 Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrups and tie dimensions.  
 Actual lengths are measured along centerline bar to the nearest inch. Minimum clearance to reinforcing shall be 1".  
 All reinforcement shall be Grade 60.

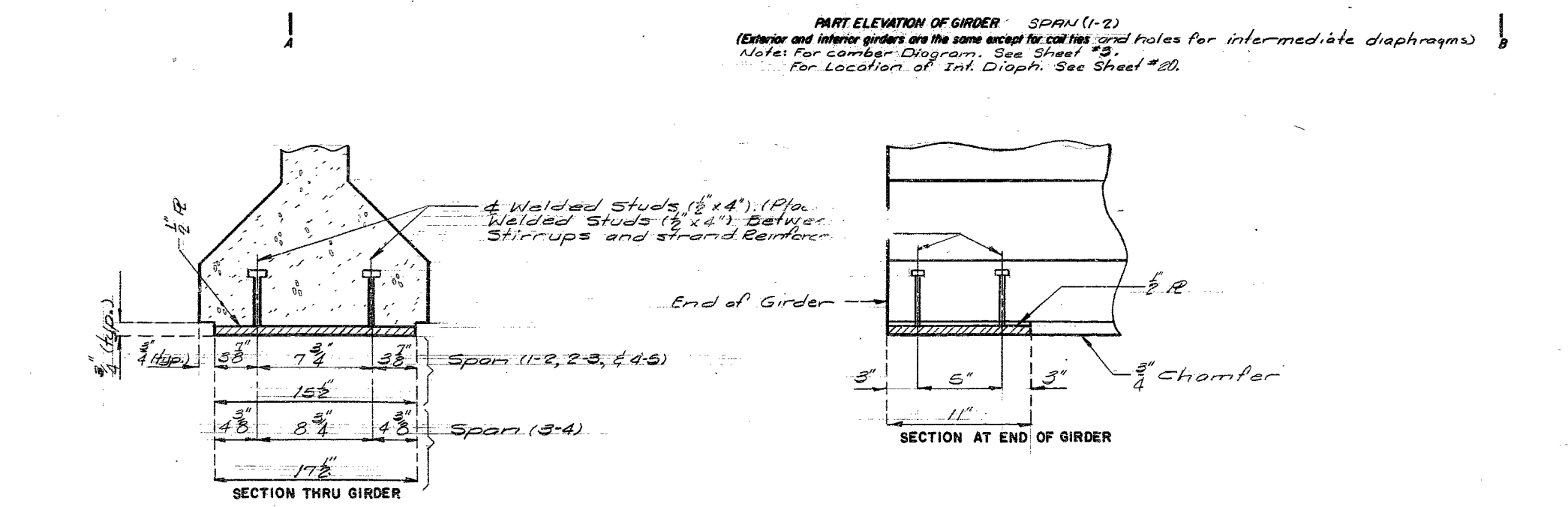


**NOTE:**  
 Cost of 3/4" coil tie rods placed in diaphragms is included in contract unit price for prestressed concrete members.  
 Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or re-placed with temporary plugs until girders are erected and then replaced by coil tie rods.

**NOTE:**  
 The 1 1/2" holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

The two D1 bars may be furnished as one bar at the Fabricator's option.

Note: Paint the 1/2" sole plate with 2 coats of inorganic zinc (5 mils min.) or galvanize in accordance with A.S.T.M. A-123.  
 Cost of furnishing, painting and installing the 1/2" sole plate and welded studs in the prestressed girder shall be included in the price bid for Prestressed Concrete I-Girder per each.



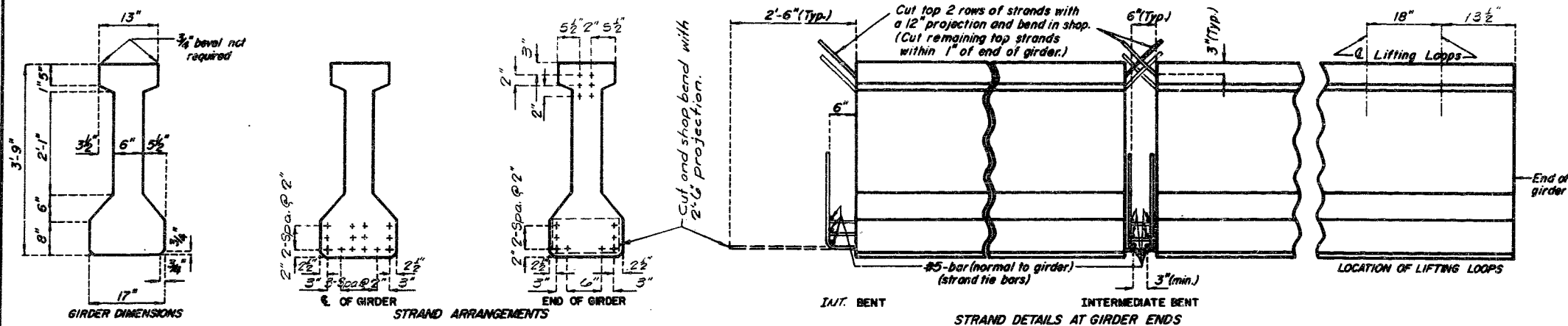
SOLE PLATE DETAILS

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

398 255

SPS 55.4.6  
 APR 1985  
 AUG. 1984

DETAILED July 19 85  
 CHECKED OCT. 1985



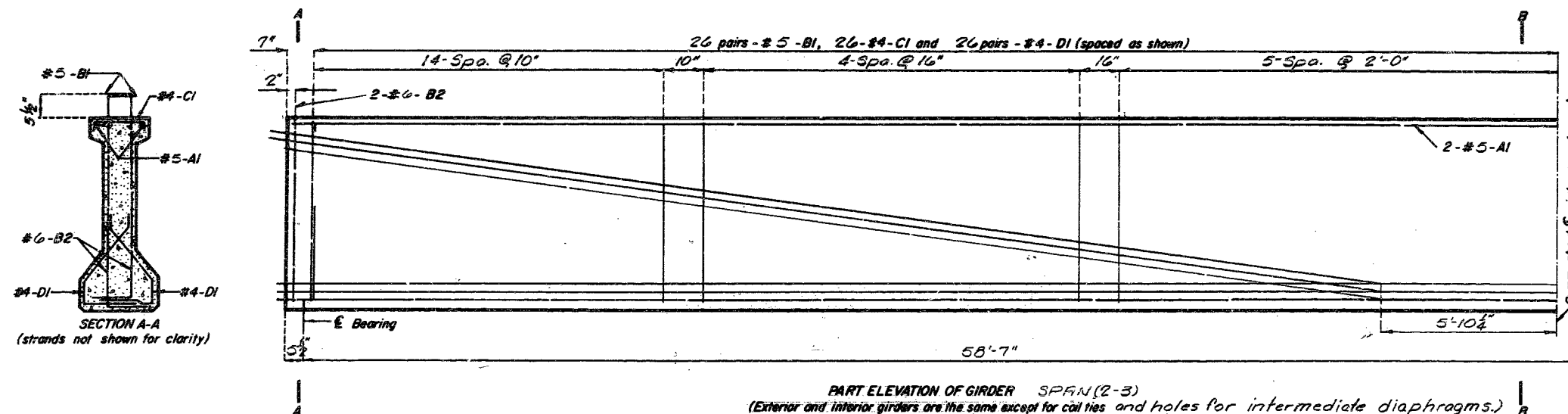
**NOTE:**

Concrete for prestressed girders shall be Class A1 with  $f'_c = 5,000$  psi.

(+) indicates prestressed strand.

Use 14 strands with an initial prestress force of 434 kips.

*Prestressing tendons shall be uncoated seven-wire low relaxation strands,  $\frac{1}{2}$  inch diameter conforming to A.A.S.H.T.O. M203, Grade 270.*



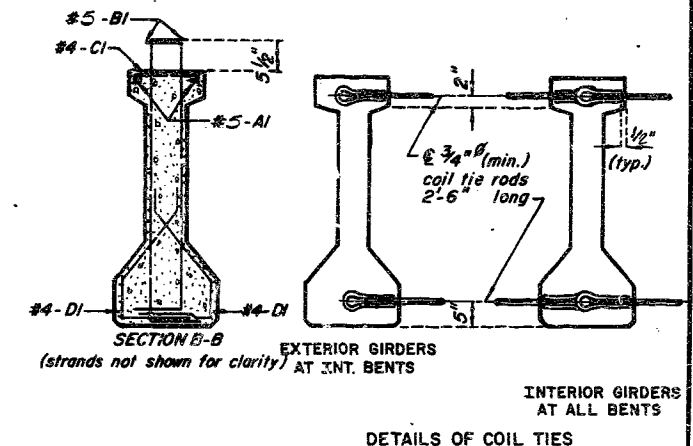
DATE		PROJ NO		SHEET NO	
MO				67	

BILL OF REINFORCING STEEL - EACH GIRDER					
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS	
2	5 A1	59'-3"	20		
102	5 B1	5'-2"	11		
4	6 B2	4'-3"	19		
51	4 C1	13"	10		
102	4 D1	3'-0"	9		

**NOTE:**

*All dimensions are out to out.  
Where deflecting strands interfere with placement, some in-place bending may be necessary.  
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and the dimensions.  
Actual lengths are measured along centerline bar to the nearest inch.  
Minimum clearance to reinforcing shall be 1".  
All reinforcement shall be Grade 60.*



**NOTE:**

**NOTE:** Cost of  $3/4"$  coil tie rods placed in diaphragms is included in contract unit price for prestressed concrete members.

Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plugs until girders are erected and then replaced by coil tie rods.

**NOTE:**

*The 1 1/2"  $\phi$  holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.*

The two DI bars may be furnished as one bar at the Fabricator's option.

-Note: See Sheet #16 for details of Sale 12.

SPS 55.4.6	Revised
April 1973	AUG. 1984

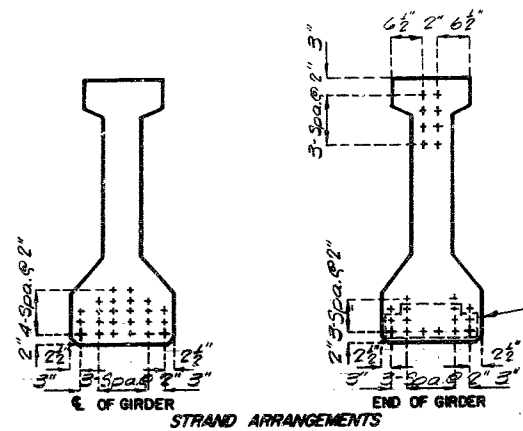
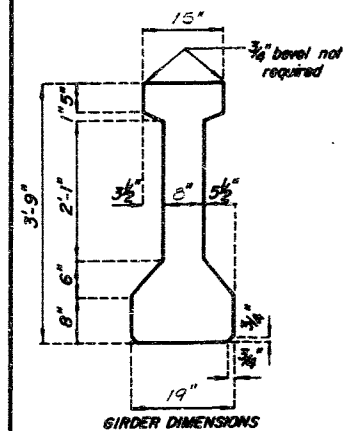
DETAILED *July 19 85*  
CHECKED *OCT 19 85*

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

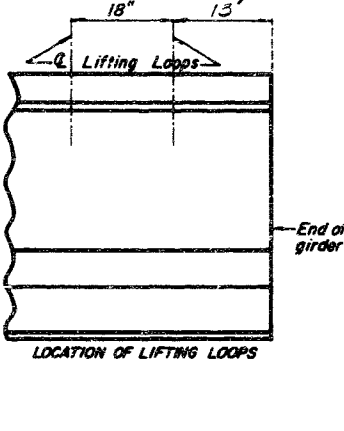
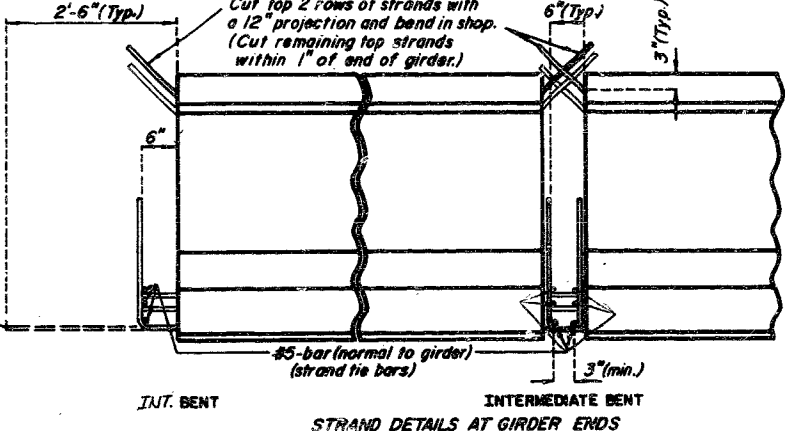
Sheet No. 17 of 27.

**JEFFERSON COUNTY**

**A-2945**



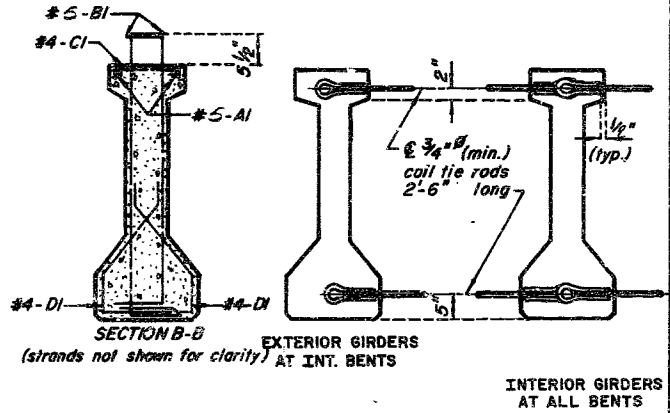
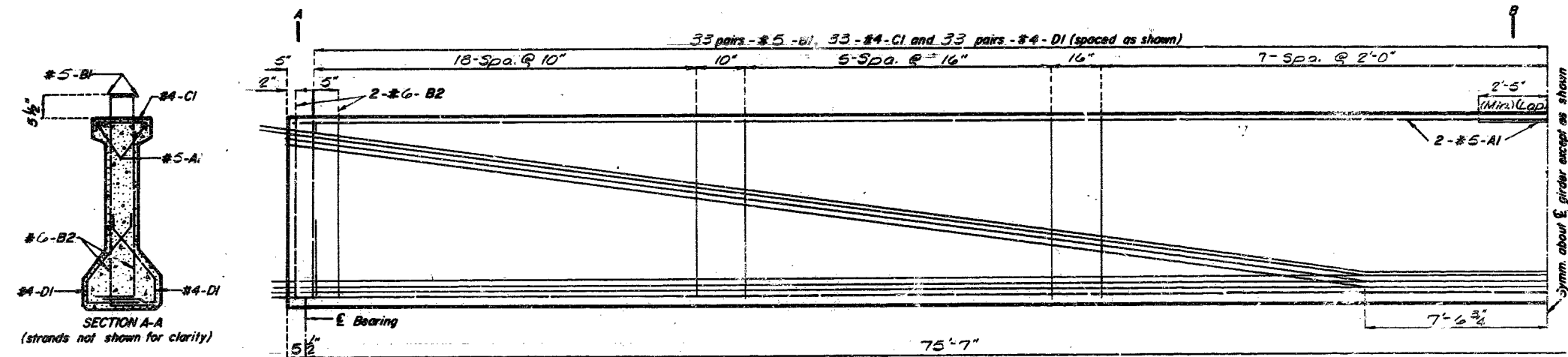
Cut and shop bend with 2'-6" projection. (Cut remaining bottom strands within 1" of end of girder.)



NOTE:  
Concrete for prestressed girders shall be Class A1 with  $f'_c = 6,000$  psi.  
(+) indicates prestressed strand.  
Use 24 strands with an initial prestress force of 744 kips.  
Prestressing tendons shall be uncoated seven-wire low relaxation strands,  
1/2 inch diameter conforming to A.A.S.H.T.O. M203, Grade 270.

BILL OF REINFORCING STEEL - EACH GIRDER			
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
4	5 A1	39'-4"	20
130	5 B1	5'-2"	11
8	6 B2	4'-3"	19
65	4 C1	15'	10
130	4 D1	3'-3"	9

NOTE:  
All dimensions are set to cut.  
Where deflecting strands interfere with placement, some in-place bending may be necessary.  
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrups and tie dimensions.  
Actual lengths are measured along centerline bar to the nearest inch. Minimum clearance to reinforcing shall be 1".  
All reinforcement shall be Grade 60.



Note: Comp. stress at strand release shall be 4500 psi.

NOTE: For camber Diagram. See Sheet #3.  
For Location of Int. Diaph. See Sheet #20.

NOTE:  
Cost of 3/4" coil tie rods placed in diaphragms is included in contract unit price for prestressed concrete members.  
Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plugs until girders are erected and then replaced by coil tie rods.

NOTE:  
The 1/2" holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.  
The two D1 bars may be furnished as one bar at the Fabricator's option.

Note: See Sheet #16 for details of Sole R.

392257

SPS 55.4.6  
APR 1973  
AUG. 1984

DETAILED July 1985  
CHECKED Oct. 1985

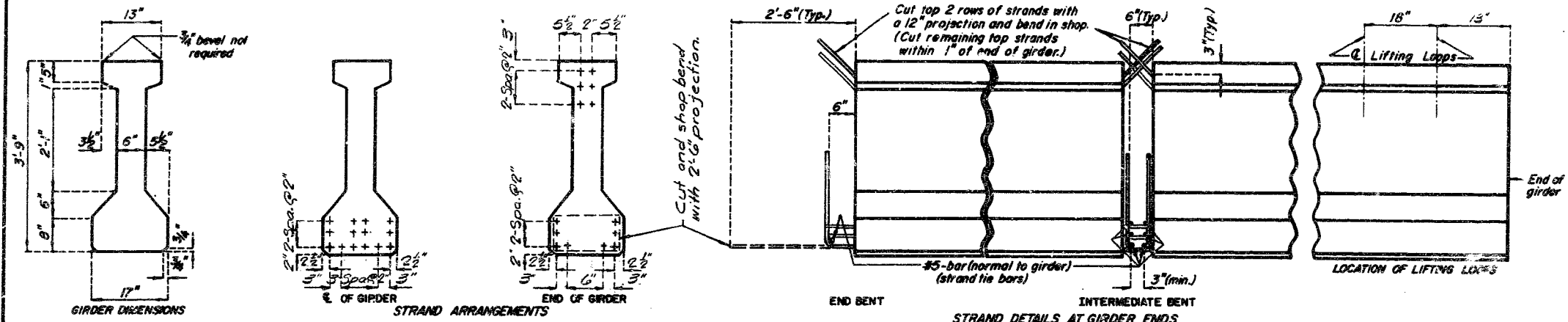
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 18 of 27.

JEFFERSON

COUNTY

A-2945



NOTE:

Concrete for prestressed girders shall be Class A1 with  $f'_c = 5,000$  psi.

(+) indicates prestressed strand.

Use 14 strands with an initial prestress force of 434 kips.

Prestressing tendons shall be uncoated seven-wire low relaxation strands, 1/2 inch diameter conforming to A.A.S.H.T.O. M203, Grade 270.

BILL OF REINFORCING STEEL - EACH GIRDER			
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
2	5 A1	54'-3"	20
94	5 B1	5'-2"	11
4	6 B2	4'-3"	19
47	4 C1	13"	10
94	4 D1	3'-0"	9

NOTE:

All dimensions are cut to cut.

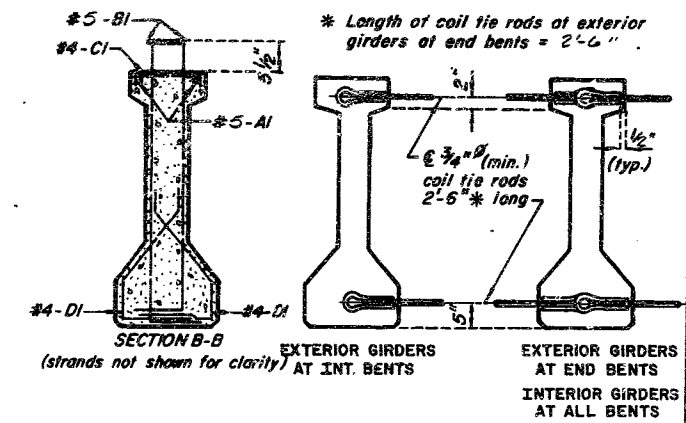
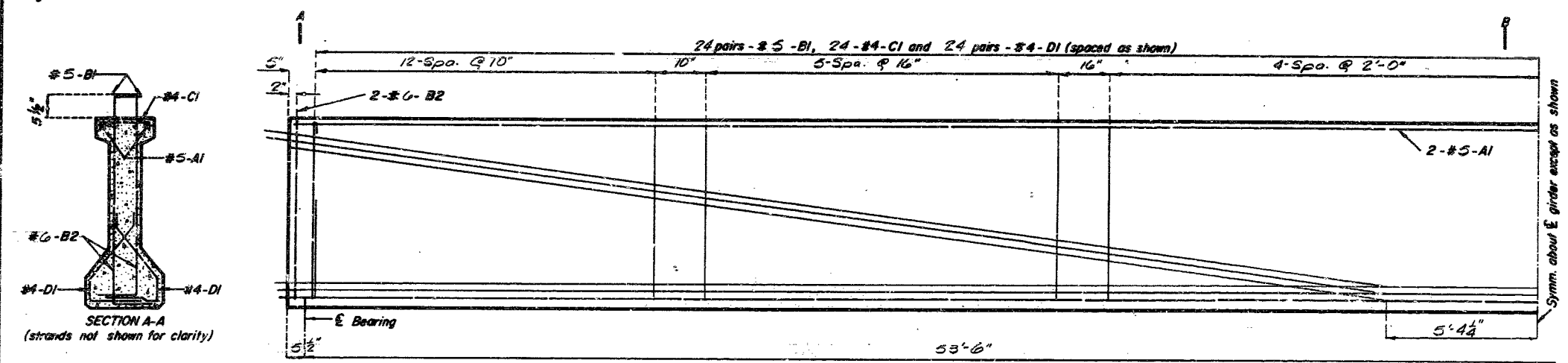
Where deflecting strands interfere with placement, some in-place bending may be necessary.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures.

Actual lengths are measured along centerline bar to the nearest inch.

Minimum clearance to reinforcing shall be 1".

All reinforcement shall be Grade 60.



NOTE:

Cost of 3/4" coil tie rods placed in diaphragms is included in contract unit price for prestressed concrete members.

Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plugs until girders are erected and then replaced by coil tie rods.

NOTE:

The 1/2" holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

The two D1 bars may be furnished at the fabricator's option.

Note: See sheet #16 for details of Sole 12

393 258

SPS 554.6  
April 1973  
Revised  
AUG. 1984

DETAILED July 1985  
CHECKED Oct. 1985

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

Sheet No. 19 of 27

DETAIL "A"

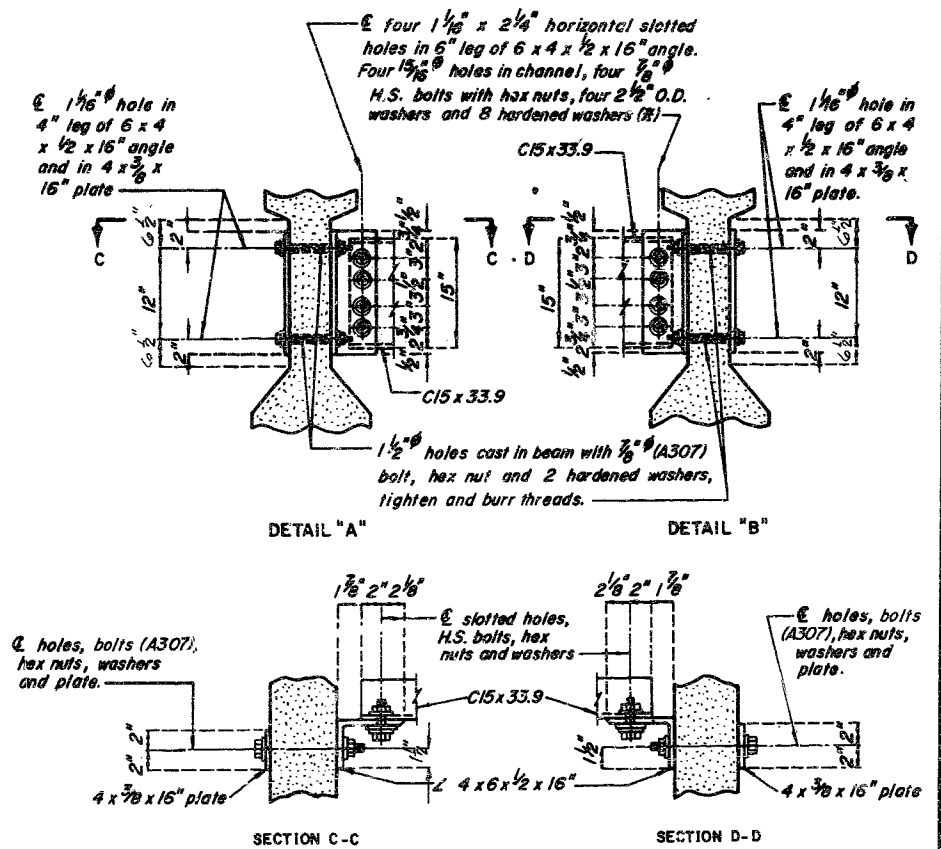
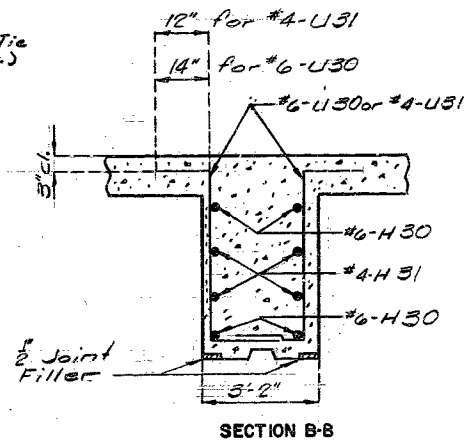
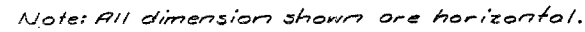
DETAIL "B"

C8 x 33.9 (Typ.)

I Girder

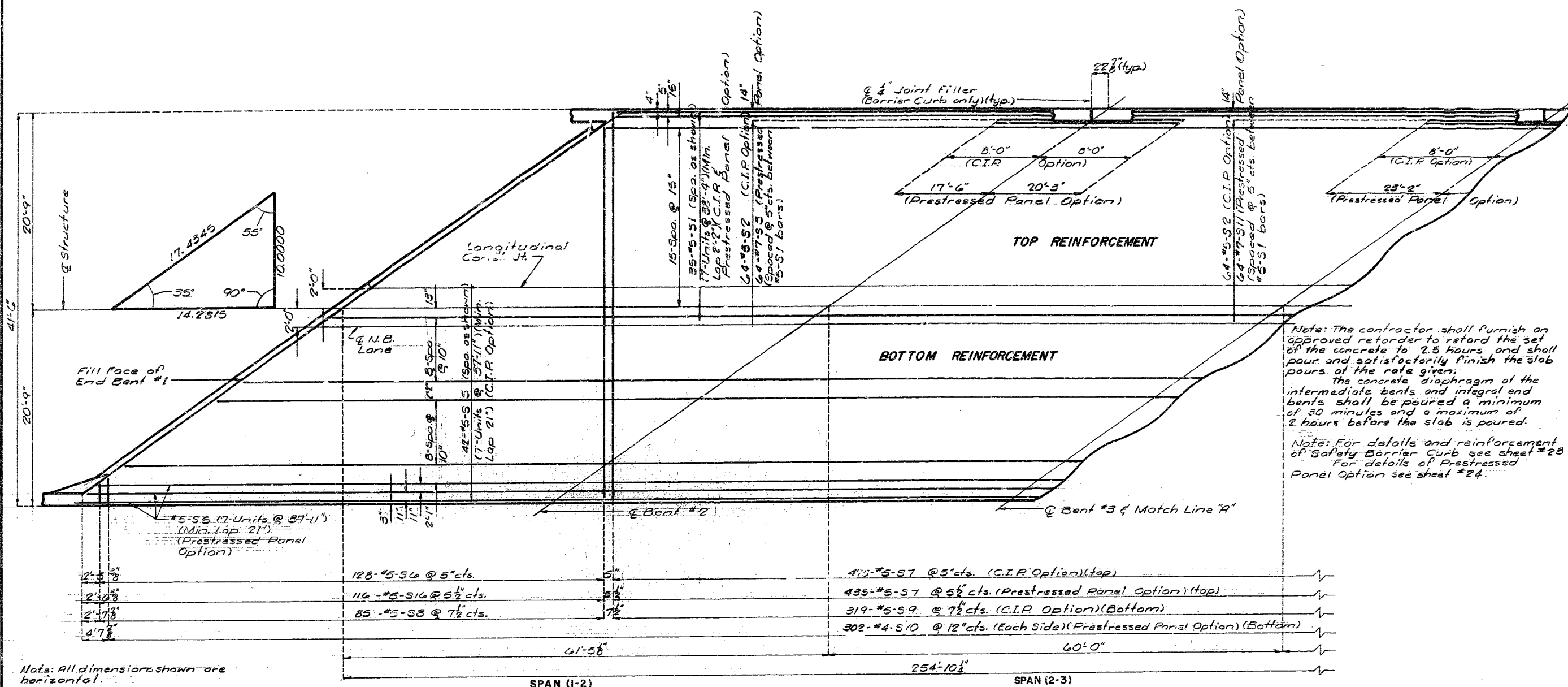
8' - 10"

PART SECTION SHOWING  
INTERMEDIATE DIAPHRAGMS

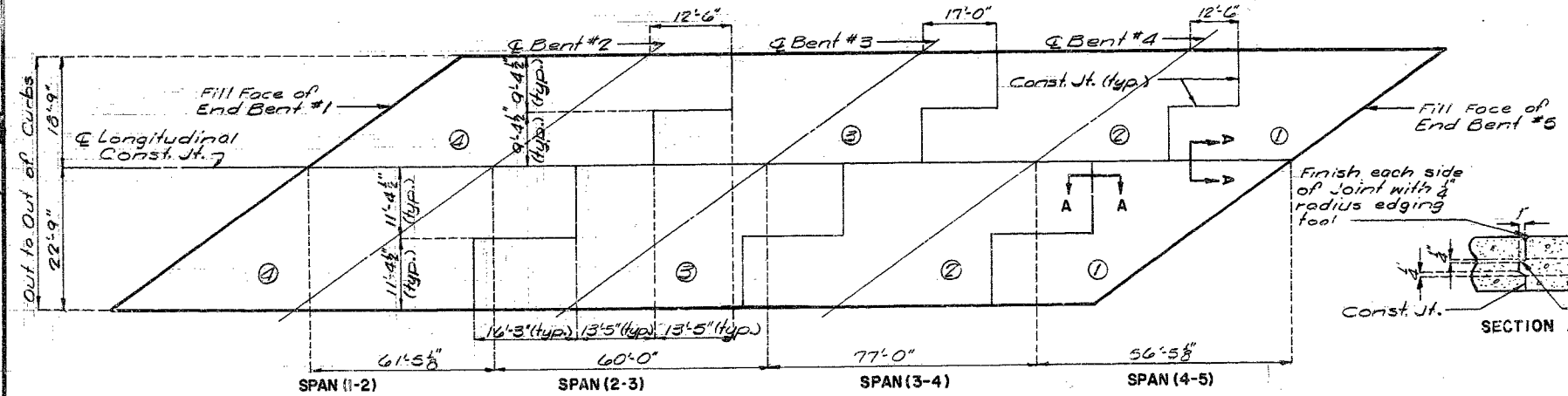


P/S -	INT. DIA. (SKE.)	Revised
AUGUST 1983		MAY 1985

**A-2945**



**PART PLAN OF SLAB SHOWING REINFORCEMENT**



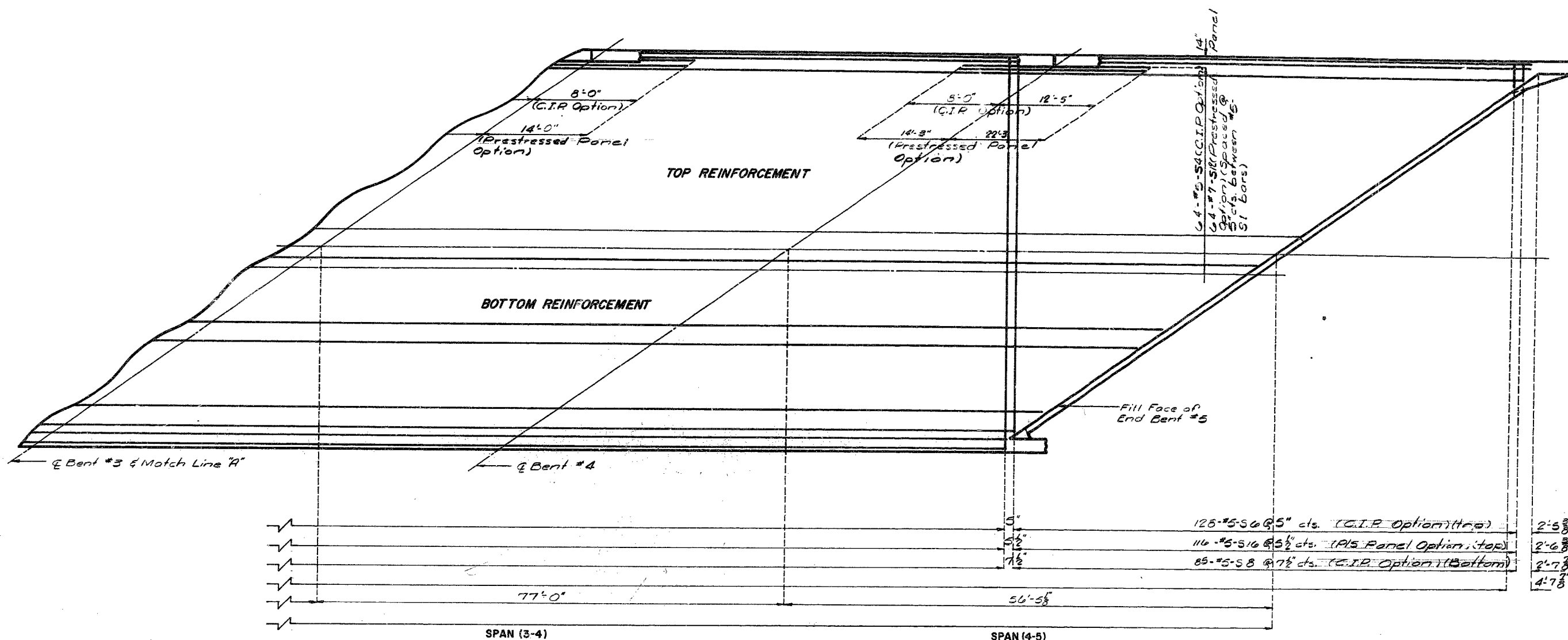
		SEQUENCE OF POURS				#
		DIRECTION				**
Basic Sequence	1	2	3	4	25	
	End To 2	1 To 3	2 To 4	3 To End		
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 705.5.124 of Missouri Standard Specifications.						
Alternate "A" Pours	1 + 2	3	4	25		
	End To 3	2 To 4	3 To End			
Alternate "B" Pours	1 + 2	3 + 4		25		
	End To 3	2 To End				
Alternate "C" Pours	1 + 2 + 3 + 4	25				
	End To End					

\* Min. Rate of Pour (Cu.Yds./Hr.)  
 \*\* With Retarder

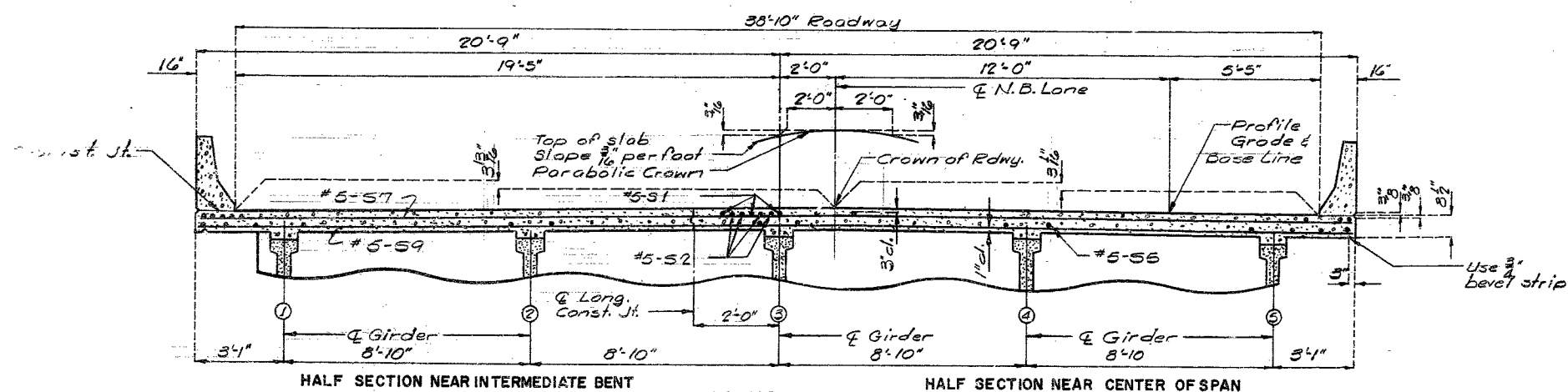
DETAILED July 1985  
 CHECKED Dec 1985

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

Sheet No. 21 of 27



PART PLAN OF SLAB SHOWING REINFORCEMENT



DETAILED July 19 85  
CHECKED Dec. 19 85

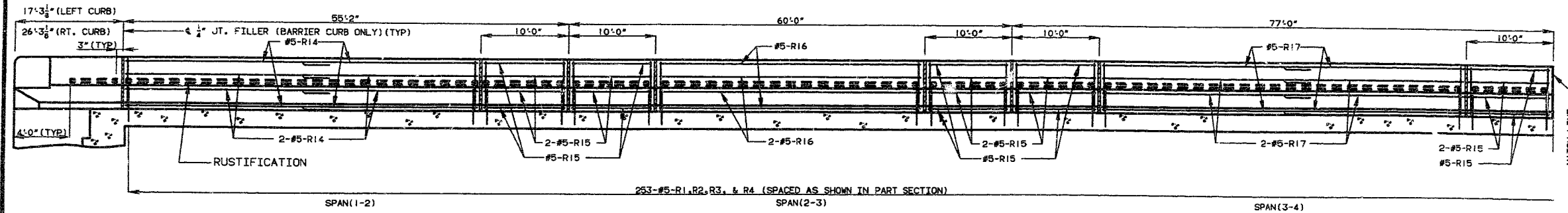
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 22 of 27

JEFFERSON COUNTY

A-2945

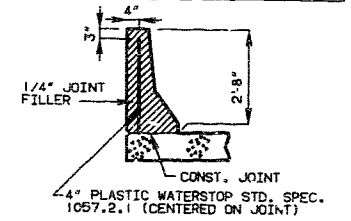




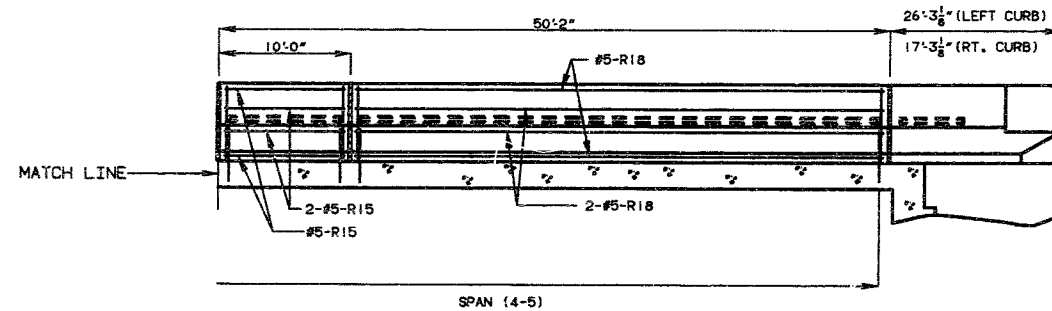
NOTE: ALL DIMENSIONS SHOWN ARE HORIZONTAL.

NOTE: RUSTICATION NOT SHOWN IN "DETAILS OF BARRIER CURB AT END BENTS" FOR CLARITY.

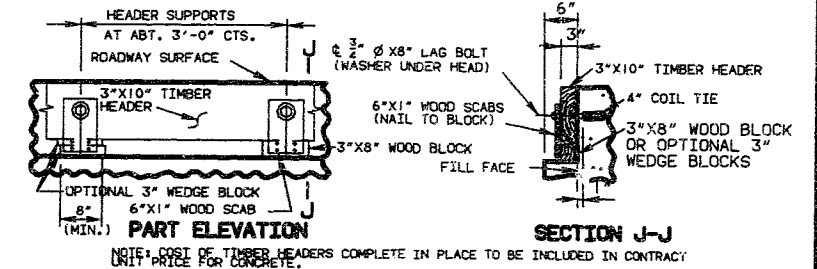
STATE	PROJ. NO.	SHEET NO.
MD.		73



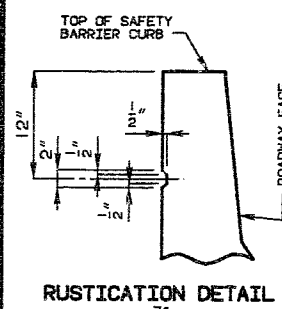
NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB FILLED JOINTS.  
COST OF PLASTIC WATERSTOP COMPLETE IN PLACE SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB.



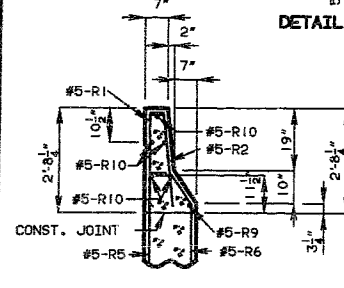
SECTION NEAR LEFT BARRIER CURB  
(RIGHT BARRIER CURB SIMILAR)



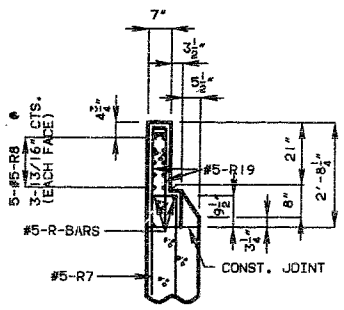
NOTE: COST OF TIMBER HEADERS COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONCRETE.



RUSTICATION DETAIL

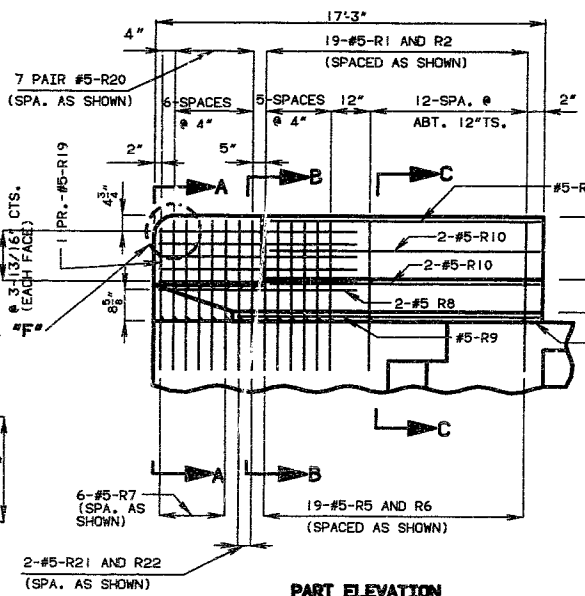


PART SECTION C-C

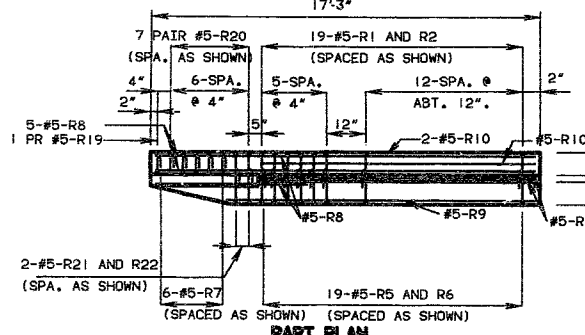


PART SECTION A-A

DETAILED APRIL 1990  
CHECKED APRIL 1990



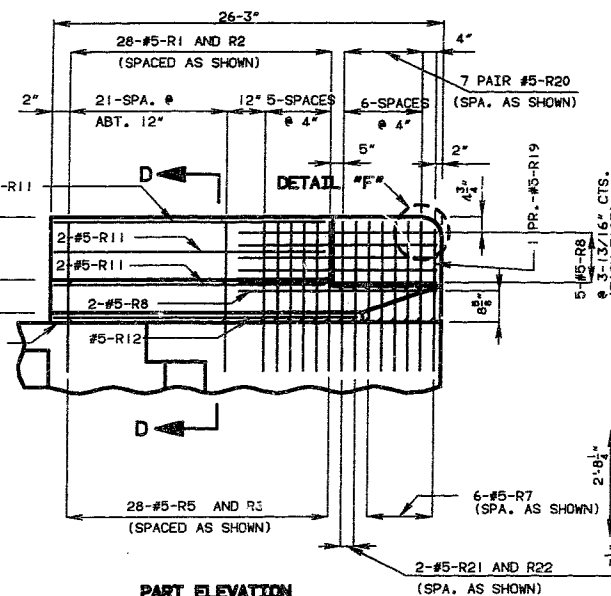
PART ELEVATION



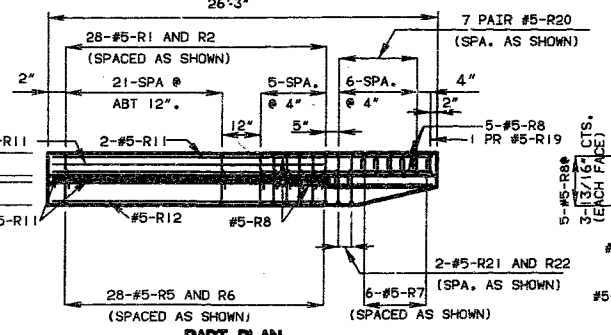
PART PLAN

DETAILS OF BARRIER CURB AT END BENTS

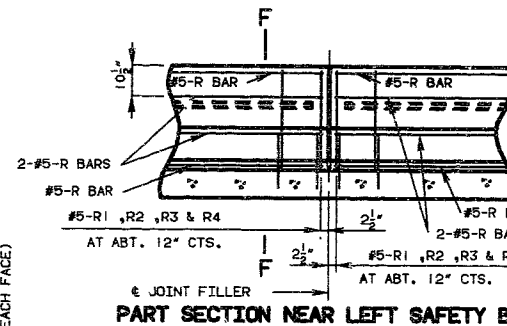
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.



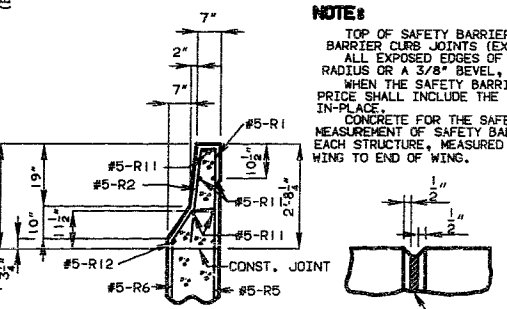
PART ELEVATION



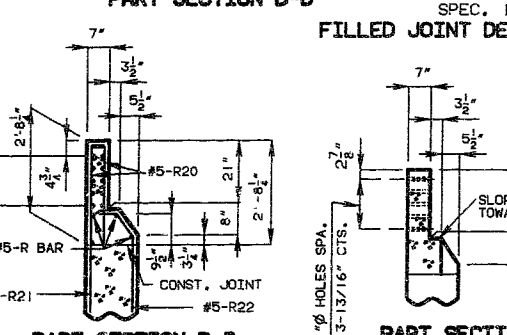
PART PLAN



PART SECTION NEAR LEFT SAFETY BARRIER CURB

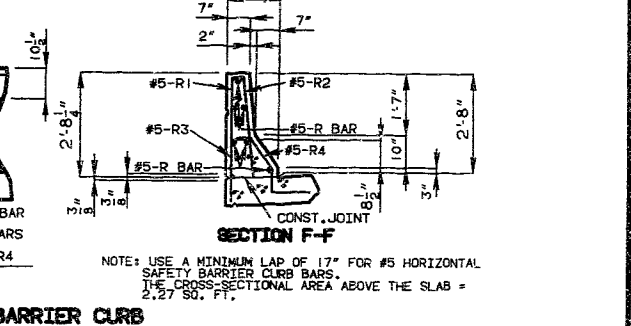


PART SECTION D-D

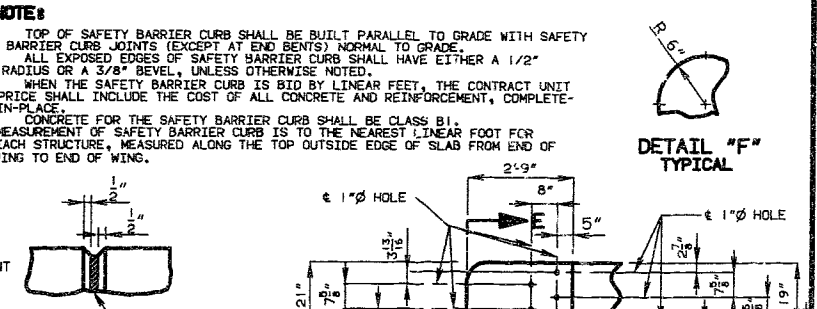


PART SECTION B-B

SHEET NO. 23 OF 27.



PART SECTION E-E  
JEFFERSON

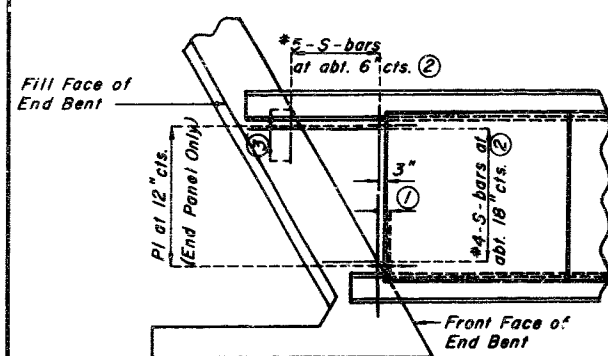


PART PLAN

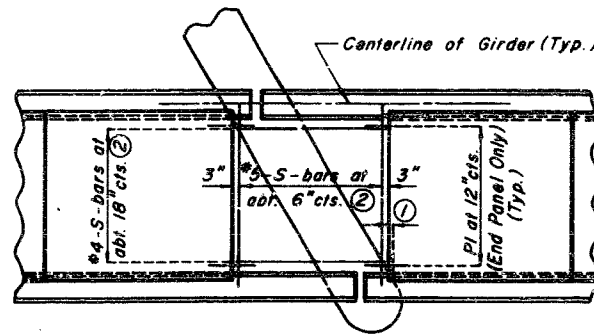
COUNTY A-2945

397 262

STATE	PROJ NO	SHEET NO
MO		74

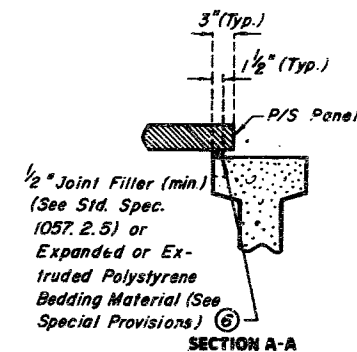
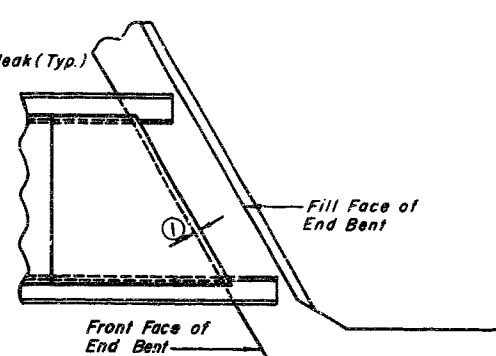
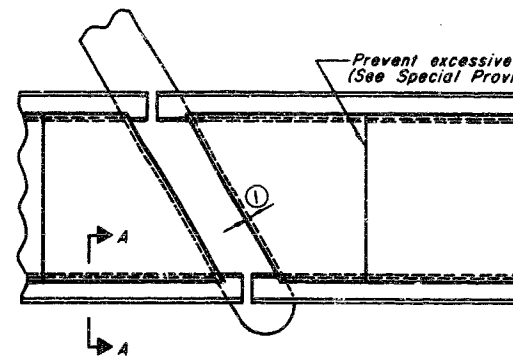


PANELS - SQUARED ENDS



PANELS - SKEWED ENDS

# PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



NOTE:  
USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 3 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:  
PRESTRESSED PANELS:  
CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH  $f'_c = 5,000$  PSI,  $f_{ci} = 3,500$  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 PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS 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 = 0.85 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 = 14.9 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 1/2 INCH. 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 AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

AT THE CONTRACTOR'S OPTION THE VARIATION IN SLAB THICKNESS OVER PRESTRESSED PANELS MAY BE ELIMINATED OR REDUCED BY INCREASING AND VARYING THE GIRDER TOP FLANGE THICKNESS. DIMENSIONS SHALL BE SHOWN ON THE SHOP DRAWINGS.

REINFORCING STEEL:  
ALL DIMENSIONS ARE OUT TO OUT.  
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2 INCH UNLESS OTHERWISE SHOWN.

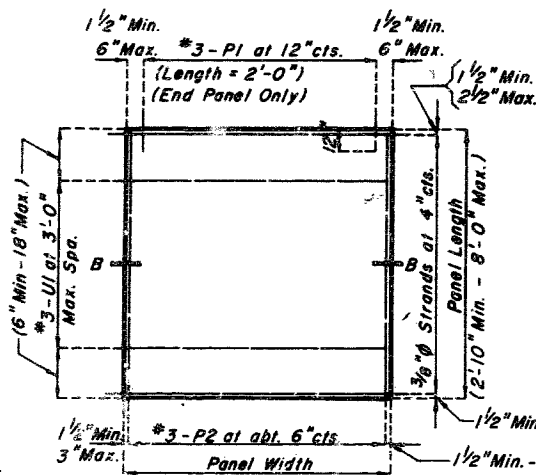
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

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

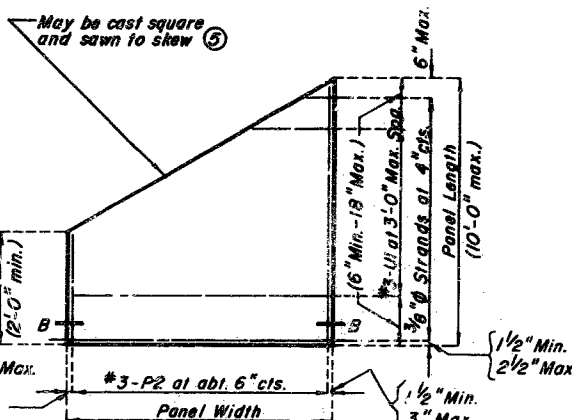
THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

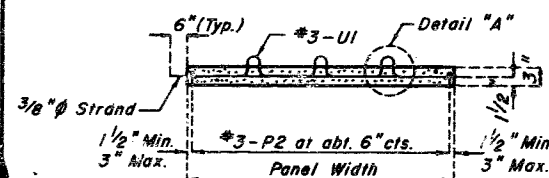
WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OF BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES.



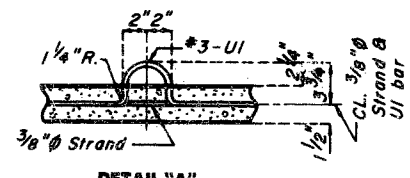
PLAN OF PRECAST PRESTRESSED PANEL



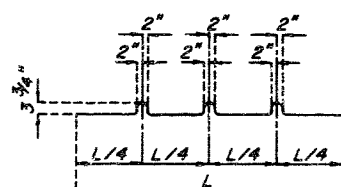
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END-OPTIONAL)



SECTION B-B

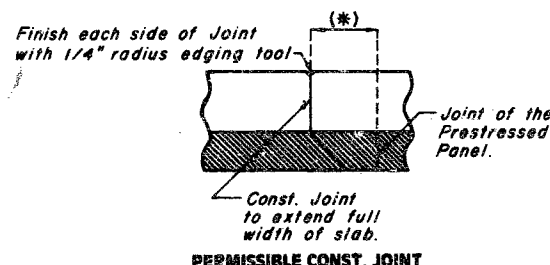


DETAIL "A"



BENDING DIAGRAM FOR U1 BAR

#3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.



PERMISSIBLE CONST. JOINT

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

- NOTE:
- END PANELS TO BE DIMENSIONED 1 1/4 INCHES FROM THE INSIDE FACE OF DIAPHRAGM.
  - S-BARS SHOWN ARE BOTTOM STEEL IN SLABS BETWEEN PANELS AND USED WITH SKEWED END PANELS ONLY.  
COST OF S-BARS SHALL BE INCLUDED IN THE PRICE BID FOR SLAB PER SQ. YD.  
S-BARS ARE NOT LISTED IN BILL OF REINFORCING.
  - SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI. COMPRESSIVE STRENGTH.
  - EXTEND S-BARS 18 INCHES BEYOND THE FRONT FACE OF END BENT ONLY.
  - SLAB EXTERIOR GIRDER HAUNCH SHALL BE THE SAME AS CAST-IN-PLACE.  
SLAB THICKNESS OVER PRESTRESSED PANELS VARIES DUE TO GIRDER CAMBER.
  - IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS IT MAY BE NECESSARY TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR NECESSARY GRADE ADJUSTMENT.
  - 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 THE FABRICATOR'S OPTION.
  - ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1 1/4 INCHES, THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

## DETAILS OF PRECAST PRESTRESSED PANELS

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

Sheet No. 24 of 27

JEFFERSON

COUNTY

A-2945

DETAILED FEB 1989  
CHECKED FEB 1989

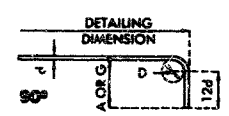
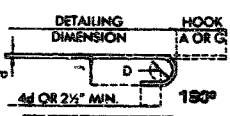
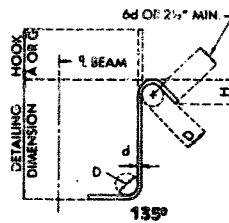
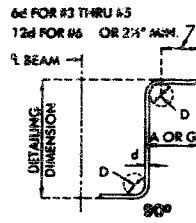
PRESTRESS  
P/C-P/S PANEL (3')  
REVISED  
AUG. 1984  
JAN. 1989

378-263

COMPLETE BILL OF REINFORCING STEEL																		
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO	STIRRUP	VARIES	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
								B	C	D	E	F	H	K				
								FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.			
		Substructure																
		INT. BENT NO. 1																
24	601	FOOTING		10	S	X			3	6.000		22.000			8 10	8 6	304	
27	1002	FOOTING		17	X			8	11.000						10 4	10 4	120	
28	603	BEAM		20	X			21.000							21	21	7	
4	10H20	BEAM		17	X			25	8.000						27 1	27 1	46	
4	10H21	BEAM		17	X			19	5.000						20 10	20 10	53	
4	6H22	BEAM		20	X			25	8.000						25 8	25 8	15	
8	9H23	BEAM		20	X			25	8.000						25 8	25 8	49	
4	10H24	BEAM		17	X			48	9.000						50 2	50 2	86	
8	7H25	BEAM		7	X			4	0.000	2	9.000				9 9	9 9	15	
4	6H26	BEAM		20	X			40	11.000						40 11	40 11	24	
8	9H27	BEAM		20	X			43	2.000						43 2	43 2	117	
340	4P1	COL		34S	X			2	9.000						9 6	9 6	1650	
2	5U20	BEAM		13	S	X		2	7.125	3	3.000	2	7.125	3	3.000			
95	5U21	BEAM		13	S	X		2	11.000	3	3.000	2	11.000	3	3.000			
4	4U22	BEAM		10	S	X			6.000	2	11.000				3 11	3 9	10	
9	10V20	COL		17	X			24	5.000						25 10	25 10	100	
9	10V21	COL		17	X			19	5.000						19 10	19 10	74	
9	10V22	COL		17	X			17	4.000						18 9	18 9	72	
		INT BENT NO 3																
24	601	FOOTING		10	S	X			3	6.000		22.000			8 10	8 6	304	
27	1002	FOOTING		17	X			8	11.000						10 4	10 4	120	
28	603	BEAM		20	X			21.000							21	21	7	
4	10H20	BEAM		17	X			25	8.000						27 1	27 1	46	
4	10H21	BEAM		17	X			19	5.000						20 10	20 10	53	
4	6H22	BEAM		20	X			25	8.000						25 8	25 8	15	
8	9H23	BEAM		20	X			25	8.000						25 8	25 8	49	
4	10H24	BEAM		17	X			48	9.000						50 2	50 2	86	
8	7H25	BEAM		7	X			4	0.000	2	9.000				9 9	9 9	15	
4	6H26	BEAM		20	X			40	11.000						40 11	40 11	24	
8	9H27	BEAM		20	X			43	2.000						43 2	43 2	117	
341	4P1	COL		34S	X			2	9.000						9 6	9 6	2164	
2	5U20	BEAM		13	S	X		2	7.125	3	3.000	2	7.125	3	3.000			
95	5U21	BEAM		13	S	X		2	11.000	3	3.000	2	11.000	3	3.000			
4	4U22	BEAM		10	S	X			6.000	2	11.000				3 11	3 9	10	
9	10V25	COL		17	X			24	6.000						25 11	25 11	1004	
9	10V26	COL		17	X			26	5.000						27 10	27 10	1078	
9	10V27	COL		17	X			28	4.000						29 9	29 9	1152	
		INT BENT NO 4																
24	601	FOOTING		10	S	X			3	6.000		22.000			8 10	8 6	304	
27	1002	FOOTING		17	X			8	11.000						10 4	10 4	120	

COMPLETE BILL OF REINFORCING STEEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
NO. REQ.	MARK NO.	LOCATION	EPOXY	SHAPE NO	STIRRUP	SUBSTR	VARIES	NO EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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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

STIRRLIP 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 1/2"
#6	4 1/2"	12"	7 1/2"	4 1/2"

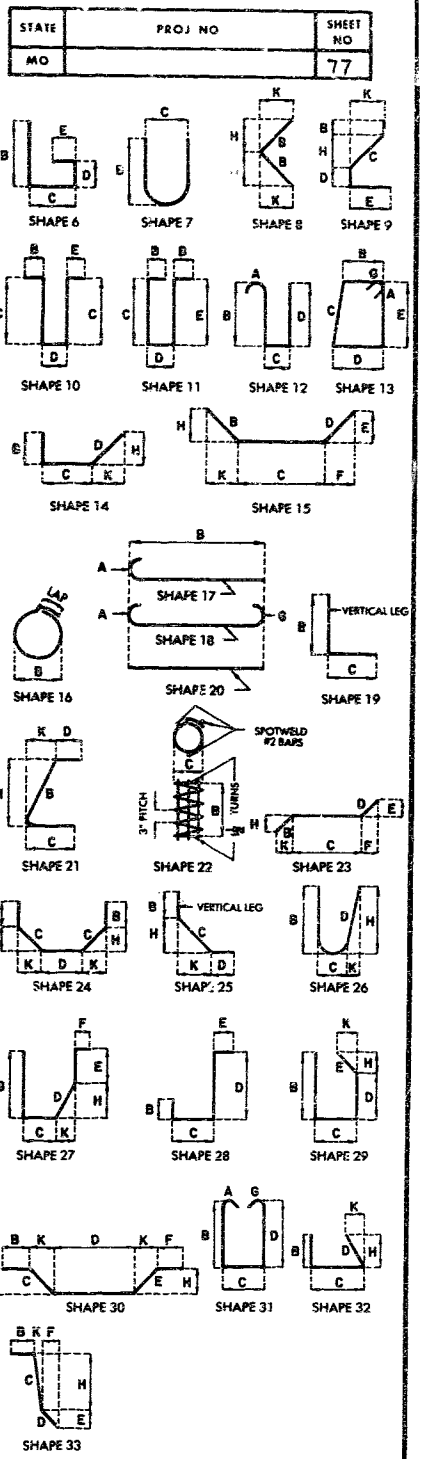
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK 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 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/4"	15"	11 1/2"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	24"
#14	18 1/4"	24 3/4"	21 1/4"	27"

**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 - STIRRLIP.  
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.

# COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRLIP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS										NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
									B	C	D	E	F	H	K						
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.			
24	SR14	BARRIER CURB	E	20					23	3.000									23	3	3
74	SR18	BARRIER CURB	E	20					9	9.000									9	9	9
12	SR16	BARRIER CURB	E	20					39	9.000									39	9	9
24	SR17	BARRIER CURB	E	20					29	1.000									29	1	1
12	SR18	BARRIER CURB	E	20					40	0.000									40	0	0
8	SR19	BARRIER CURB	E	19	S				2	4.000	3.500								2	7	26
8	SR20	BARRIER CURB	E	19	S				2	6.000	3.500								2	9	28
8	SR21	BARRIER CURB	E	19	S				2	1.000	6.000								2	7	26
8	SR22	BARRIER CURB	E	21	S					6.000	8.250	11.750			6.750	4.750			2	8	29
END OF BAR LIST																					



BENDING DIAGRAMS

Note: Two (2) additional #5-R15 are included in bar bill for testing.

481 266

STD. 90.8.5  
MAY 1974  
REVISED  
JUNE 1986

DETAILED FEB 1989  
CHECKED FEB 1989

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

Sheet No. 27 of 27.

JEFFERSON

COUNTY

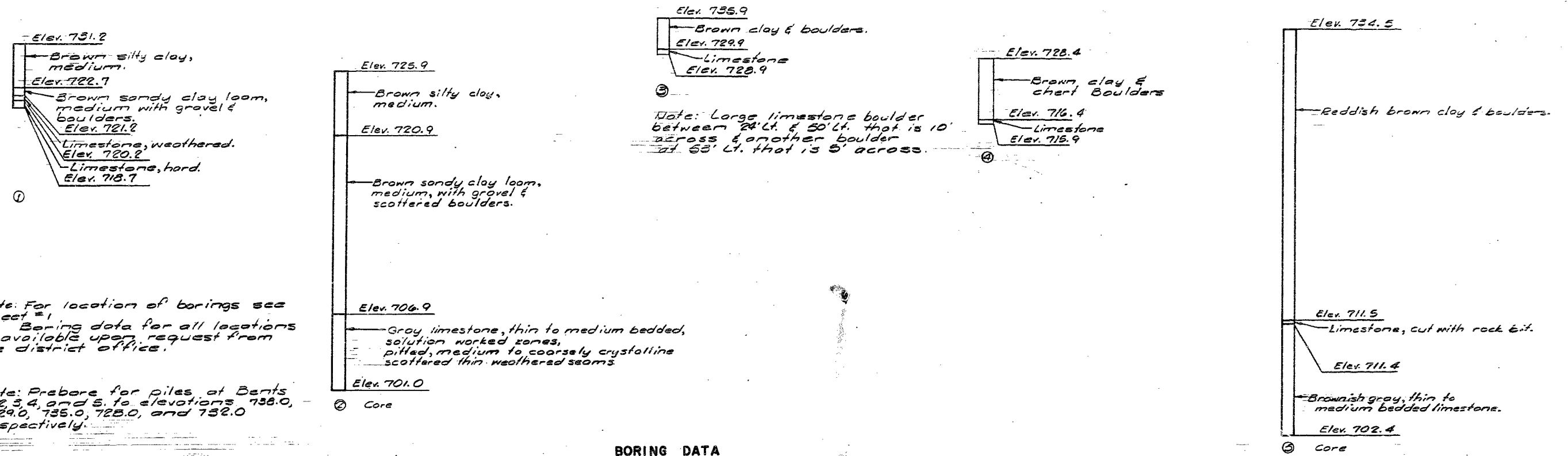
A-2945

A-2945

STATE	PROJ. NO.	SHEET NO.
MO	F-21-2 (29)	27

Job No J6P0017D

FINAL PLANS



Note: For location of borings see sheet #1  
Boring data for all locations is available upon request from the district office.

Note: Prebare for piles at Bents #1, 2, 3, 4, and 5, to elevations 736.0, 729.0, 735.0, 728.0, and 732.0 respectively.

BORING DATA

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. 1989  
Design Loading: HS20-44 35#/sq.ft. Future Wearing Surface.  
Modified 24,000\* Tandem Axle  
Earth 120#/cu.ft., Equivalent Fluid Pressure: 45#/cu.ft.  
Superstructure: Simply supported non-composite for Dead Load.  
Continuous composite for Live Load.  
Design Unit Stresses:  
Class B Concrete (Substructure) f'c=3,000psi  
Class B1 Concrete (Safety Barrier Curb) f'c=4,000psi  
Class B2 Concrete (Superstructure except Prestressed Girders and Safety Barrier Curb) f'c=4,000psi  
Reinforcing Steel (Grade 60) fy=60,000psi  
Steel Pile, fb=9,000psi  
For Prestressed Girder Stresses see Girder Sheet Nos. 16, 17, 18, & 19.  
Reinforcing Steel:  
Minimum clearance to reinforcing steel shall be 1 1/2" unless otherwise shown.  
Joint Filler: All joint filler shall meet the requirements of Std. Spec. 1057.2.4 except as noted.  
Bearings:  
Bearings shall be 60 durometer Neoprene Pads.

ESTIMATED QUANTITIES			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Class I Excavation	Cu.yd. 208.5		208.5
Str. Steel Pile (110 in.)	Lin.Ft. 2260		2260
Class B Concrete (Substr.)	Cu.yd. 213.3		213.3
( b ) Slab on Concrete I-Gdr. See Spec. Pro.	Sq.yd.	1175	1175
Safety Barrier Curb	Lin.Ft.	0	0
Plain Neoprene Brg. Pads	Each	10	10
Prestressed Concrete I-Gdr. (60' Span)	Each	10	10
Prestressed Concrete I-Gdr. (77' Span)	Each	5	5
Prestressed Concrete I-Gdr. (65' Span)	Each	5	5
Reinforcing Steel (Bridges)	Lbs. 35,330		35,330
Vertical Drain at End Bt.	Each	2	2
Prebare for Piling	Lin. Ft.	1260	1260
Pile Point Reinforcement	Each	50	50
Laminated Neoprene Bearing Pads	Each	30	30
Site Form Barrier Curb		572	572

All reinforcement in the end bents is included with superstructure quantities.  
Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, will be paid for of the contract unit price for Neoprene Bearing Pads per each.  
Manufactured pile point reinforcement shall be used on all piles in this structure. See Special Provisions  
All concrete above the construction joint in the End Bents is included in the estimated superstructure quantities for Slab on Concrete I-Girder, see Special Provisions.

PILE DATA					
BENT NO.	1	2	3	4	5
Pile Type and Size	HP10x42	HP10x42	HP10x42	HP10x42	HP10x42
Number	7	12	12	12	7
Approximate Length	Ft. 69	62	56	56	59
Design Bearing	Tons 49	52	56	56	47
Hammer Energy Required	Ft. Lbs. 12,000	12,100	13,100	13,100	11,400

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

ESTIMATED QUANTITIES FOR ALTERNATE SLAB		
TYPE OF SLAB	Reinforcement Lbs.	
	Epoxy	Plain
Cast in Place Conventional Forms	75,930	11,570
Precast Panel Forms*	58,440	11,570

Note: The table of Estimated Quantities for Alternate Slabs represents the quantities used 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 as an adjustment in the contract Unit Price per square yard of Alternate Slab used.  
See Special Provisions for alternate methods of forming slab.  
Precast panel quantities based on skewed end panels.

\*\*\* Based on minimum top flange thickness and minimum joint filler thickness.

- 34' Lt., 33' &, 51' Rt.
- 23' Lt., 36' &, 26' Rt.
- 38' Lt., 36' &, 34' Rt.

\* Bridge built with P/C Panels.

376 260

DETAILED July 1985  
CHECKED Dec 1985

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

Sheet No. 2A of 27

JEFFERSON

COUNTY

A-2945



## MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

## STANDARD PLANS

REV JUN 1, 1990

STATE	MO	JOB NO. J6P0017D	SHEET NO.
DIST. NO.	6	PROJECT NO. F-21-2(29)	28
COUNTY	Jefferson	ROUTE	21

✓	NO.	DESCRIPTION
✓	203.00E	EXCAVATION & EMBANKMENT
✓	203.02C	UNDERGRADING
	203.10A	TABULATED EARTHWORK & SECTION DATA
	203.20B	SUPERELEVATION SPIRALS & WIDENING (UNDIVIDED)
	203.21B	SUPERELEVATION SPIRALS & WIDENING (DIVIDED)
	203.30A	ENTRANCES & APPROACHES (LESS THAN 400 ADT)
	203.31B	ENTRANCES & APPROACHES (GREATER THAN 400 ADT - NO SAFETY ZONE)
	203.32D	ENTRANCES & APPROACHES (GREATER THAN 400 ADT - SAFETY ZONE)
	203.35A	MAILBOX TURNOUTS
	203.40E	TYPICAL DETAILS-RAMPS FOR INTERCHANGES (OTHER THAN 6:1 FORESLOPE)
	203.41E	TYPICAL DETAILS-RAMPS FOR INTERCHANGES (6:1 FORESLOPE)
	203.50J	TYPICAL CROSS-OVERS (DIVIDED HIGHWAYS)
	204.00D	EMBANKMENT CONTROL MEASURING DEVICES
	502.00M	CONCRETE PAVEMENT & BASE APPURTENANCES
	502.10E	DOWEL SUPPORTING UNITS
	503.00J	CONCRETE APPROACH SLABS TO BRIDGES (ALSO INCLUDE 502.00)
✓	602.00A	RIGHT-OF-WAY & DRAIN MARKERS
	604.05B	PIPE CULVERT HEADWALLS - TYPE S
	604.10B	HEADWALL-WITH ENERGY DISSIPATOR - 18"
	604.11B	HEADWALL-WITH ENERGY DISSIPATOR - 24"
	604.12B	HEADWALL-WITH ENERGY DISSIPATOR - 30"
	604.13B	HEADWALL-WITH ENERGY DISSIPATOR - 36"
	604.14B	HEADWALL-WITH ENERGY DISSIPATOR - 42"
	604.15B	HEADWALL-WITH ENERGY DISSIPATOR - 48"
	604.20B	DROP INLET - TYPE B
	604.21B	DROP INLET - TYPE C
	604.22B	DROP INLET - TYPE D
	604.23B	DROP INLET - TYPE E
	604.24B	DROP INLET - TYPE EE
	604.25C	DROP INLET - TYPE F
	604.26D	DROP INLET - TYPE G
	604.27C	DROP INLET - TYPE S (3 SHEETS)
	604.28E	DROP INLET - TYPE T (ALSO INCLUDE 614.30)
	604.29C	DROP INLET - TYPE X
	604.30F	CONCRETE MANHOLES (ALSO INCLUDE 614.30)
	604.40E	PIPE COLLARS
	605.10A	CLASS A UNDERDRAINS
✓	606.00U	GUARD RAIL (2 SHEETS)
✓	606.22F	BRIDGE ANCHOR SECTION (SAFETY BARRIER CURB ON BRIDGE) (ALSO INCLUDE 606.00)
	606.23	BRIDGE ANCHOR SECTION (THREE BEAM RAIL ON BRIDGE) (ALSO INCLUDE 606.00)
✓	606.30E	TERMINAL SECTION (ALSO INCLUDE 606.00)
	606.40A	GUARD CABLE
✓	607.10R	CHAIN LINK FENCE
	607.11B	CHAIN LINK FENCE FOR RETAINING WALLS
✓	607.20F	WOVEN WIRE FENCE (ALSO INCLUDE 607.10)

✓	NO.	DESCRIPTION
	608.00C	PAVED APPROACHES
	608.10G	CONCRETE SIDEWALK & WHEELCHAIR RAMPS
	608.20C	CONCRETE STEPS
	609.00G	CONCRETE CURB - CURB & GUTTER - GUTTER
	609.15B	PAVED DITCHES
	609.40D	DRAIN BASIN, SHOULDER PAVING & FILL SLOPE AT BRIDGE ENDS
✓	609.60B	DITCH LINER
	609.70C	ROCK LINING FOR CULVERT OUTLETS
	610.20E	BRICK MANHOLES (ALSO INCLUDE 614.30)
✓	611.60L	CONCRETE SLOPE PROTECTION
✓	612.10K	BARRICADES AND FLASHER SIGNS
	613.00B	PAVEMENT REPAIR
	614.10P	CURB INLETS, GRATES & BEARING PLATES
	614.30D	MANHOLE FRAMES & COVERS
	615.00A	OFFICE FOR ENGINEER
✓	616.10L	TRAFFIC CONTROL DEVICES (3 SHEETS) (ALSO INCLUDE 903.01)
	617.00V	CONCRETE TRAFFIC BARRIER (3 SHEETS)
	702.01F	16" CONCRETE PILES (APPROVED TYPES) (2 SHEETS)
	702.02B	CAST-IN-PLACE CONCRETE PILES (APPROVED TYPES)
✓	703.21D	CONCRETE BOX CULVERTS, H20 LOADING (3 SHEETS) (FLARED WINGS) (INCL 706.35)
✓	703.24E	CONCRETE BOX CULVERTS, SKEW DATA (703.30) (INCL 706.35)
✓	703.25E	CONCRETE BOX CULVERTS, SKEW DATA (703.21) (3 SHTS) (FLRD WINGS) (INCL 706.35)
	703.30E	CONCRETE BOX CULVERTS, 4' SPANS & LESS-ALL LOADING (INCL 706.35)
	703.35B	CONCRETE BOX CULVERTS, CUTTING DETAILS (STRAIGHT WINGS) (INCL 706.35)
	703.36A	CONCRETE BOX CULVERTS, CUTTING DETAILS (FLARED WINGS) (INCL 706.35)
	703.50G	CONCRETE DOUBLE BOX STRUCTURE-SQUARE (INCL 706.35)
	703.51F	CONCRETE DOUBLE BOX STRUCTURE-SKEWED (INCL 706.35)
	703.52C	CONCRETE DOUBLE BOX STRUCTURE-CUT SECTIONS (INCL 706.35)
	703.54D	DOUBLE BOX STRUCTURE REINFORCEMENT-H20 OR HS20 LOADING (8 SHEETS)
	703.55D	CONCRETE DOUBLE BOX STRUCTURE (FLARED WINGS) SQUARE (INCL 706.35)
	703.56D	CONCRETE DOUBLE BOX STRUCTURE (FLARED WINGS) SKEWED (INCL 706.35)
	703.60C	CONCRETE BOX STRUCTURE-PIPE INLET
	703.70C	CONCRETE TRIPLE BOX STRUCTURE-SQUARE (2 SHEETS) (INCL 706.35)
	703.71C	CONCRETE TRIPLE BOX STRUCTURE-SKEWED (2 SHEETS) (INCL 706.35)
	703.72C	CONCRETE TRIPLE BOX STRUCTURE-(FLARED WINGS) (SQUARE) (2 SHEETS) (INCL 706.35)
	703.73C	CONCRETE TRIPLE BOX STRUCTURE-(FLARED WINGS) (SKEWED) (2 SHEETS) (INCL 706.35)
	703.74C	CONCRETE TRIPLE BOX STRUCTURE-CUT SECTIONS (INCL 706.35)
	703.76B	CONCRETE TRIPLE BOX STRUCTURE REINFORCEMENT-H20 OR HS20 LOADING (5 SHEETS)
	706.30E	REINFORCING BAR SUPPORTS
✓	706.35E	BAR SUPPORTS FOR CONCRETE REINFORCEMENT
	712.40E	STEEL DAMS FOR BRIDGES (6" CHANNEL)
	725.31C	METAL CURTAIN WALL AND METAL INLETS
✓	726.30C	CULVERT INSTALLATION METHODS
	731.00S	PRECAST MANHOLES (ALSO INCL 614.30)
	731.10H	PRECAST DROP INLETS (4 SHTS) (ALSO INCL 614.30 & 614.10)

✓	NO.	DESCRIPTION
✓	732.00L	FLARED END SECTION (2 SHEETS)
	806.02A	STAPLE PLACEMENT FOR PLASTIC NETTING
		<b>HIGHWAY LIGHTING</b>
	901.00P	POLES & APPURTENANCES-30' (3 SHEETS)
	901.01U	POLES & APPURTENANCES-45' (3 SHEETS)
	901.05A	CONTROL PANEL CABINET DETAILS (2 SHEETS) (SEE NOTE)
	901.12C	POLE MOUNT CONT STA-SECONDARY SERV-480 V MULTI CIR (NOT METERED)
	901.15E	POLE MOUNT CONT STA-SEC SERV-120,240, & 480 V MULTI CIR
	901.16D	POLE MOUNT CONT STA-SEC SERV-480 V MULTI CIR (METERED)
	901.18D	POLE MOUNT CONT STA-SEC SERV-120/240 V MULTI CIR
	901.19D	POLE MOUNT CONT STA-SEC SERV-240 V MULTI CIR (NOT METERED)
	901.20D	POLE MOUNT CONT STA-SEC SERV-120/240 V MULTI CIR (SIG METERED)
	901.22E	POLE MOUNT CONT STA-SEC SERV-120/240 & 480 V MULTI CIR (BOTH METERED)
	901.23E	POLE MOUNT CONT STA-SEC SERV-240 V MULTI CIR (METERED)
	901.24D	POLE MOUNT CONT STA-SEC SERV-240 V MULTI CIR (LIGHTS & SIGNALS-BOTH METERED)
	901.25D	BASE MOUNT CONT STA-SEC SERV-120/240 V MULTI CIR
		NOTE: ALSO INCLUDE 901.05 WITH 901.12 THROUGH 901.25 EXCEPT 901.15
		<b>TRAFFIC SIGNALS</b>
	902.00F	SIGNAL HEADS, LENSES AND MOUNTING
	902.10J	PULL BOXES, CONTROLLERS, COND LOCATION
	902.15D	POWER SUPPLY ASSEMBLY
	902.21B	TELEPHONE INTERCONNECT
	902.30G	CONCRETE BASES
	902.40H	TUBULAR STEEL POST
	902.50E	DETECTORS
	902.60F	SPAN WIRE DETAILS-STEEL POST
	902.70C	SPAN WIRE DETAILS-WOOD POLE
	902.80A	TRAFFIC SIGNAL SYMBOLS
		<b>HIGHWAY SIGNING</b>
	903.01C	ALPHABETS (2 SHEETS)
	903.02X	HIGHWAY SIGNING (7 SHEETS)
	903.03AL	SIGN MOUNTING DETAILS (5 SHEETS)
	903.04D	WEIGH STATION SIGNING
	903.05C	TUBULAR SPAN SUPPORT-ONE TUBE, TYPE S
	903.06C	TUBULAR SPAN SUPPORT-TWO TUBE, TYPE S
	903.07C	TUBULAR CANTILEVER SUPPORTS, TYPE C
	903.08C	TUBULAR BUTTERFLY SUPPORTS, TYPE B
	903.09C	LIGHTING SUPPORT BRACKET
	903.10T	SIGN TRUSSES-OVERHEAD ALUMINUM (8 SHEETS) (INCL 903.03)
	903.12N	SIGN TRUSSES-BUTTERFLY & CANTILEVER-STEEL (7 SHEETS) (INCL 903.03)
	903.60S	SIGN TRUSSES-OVERHEAD STEEL (7 SHEETS) (INCL 903.03)

NOTES:  
PLANS FOR THIS PROJECT WERE DEVELOPED USING DRAWINGS FROM THIS INDEX