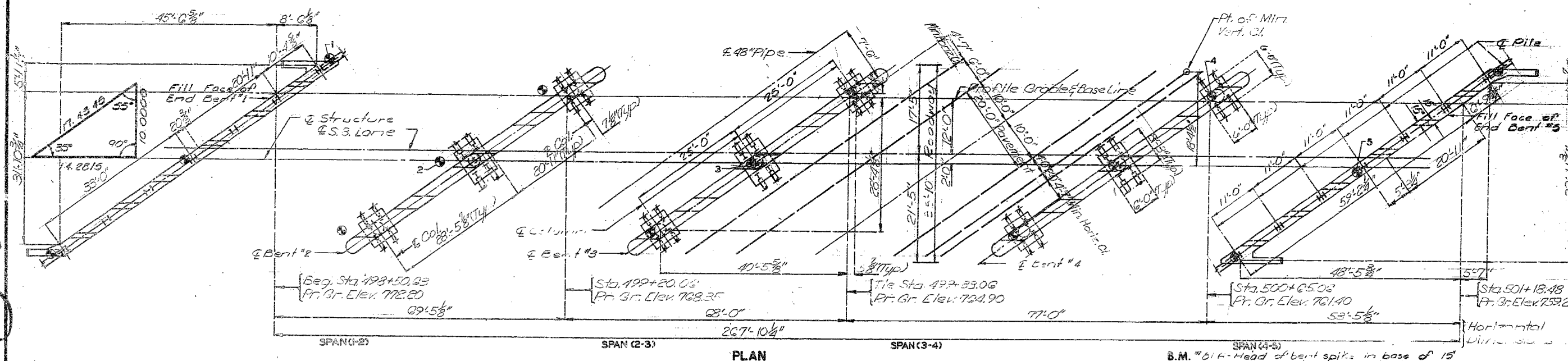
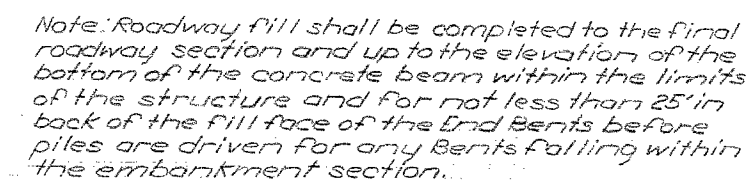


STATE	PROJ NO	SHE NO
MO.	F-21-2 (29)	24
SEC./SUB 19	TWP. 42N	RGE. 5E



Note: "Q" Indicates location of borings. Boring data for all locations is available upon request from the District Office. Boring data for numbered locations is detailed on sheet No. 3 of 27.

B.M. #614-Head of bent spike in base of 15'
P. Oak 21' Rt. of Stp. 505+614 of N.B.L. Elev. 737.01.

COUNTY

A-2941

Sheet No. 1 of 27

DATE 4/20/90

ESTIMATED QUANTITIES			
ITEM		SUBSTR.	SUPERSTR. TOTAL
Class I Excavation	Cu.yd.	180	180
Str. Steel Pile (10")	Lin.Ft.	2037	2037
Class B Concrete	Cu.yd.	215.6	215.6
() Slab on Concrete I-Gdr. See Spec. Prov.	Sq.yd.		1236
Safety Barrier Curb	Lin.Ft.		598
Plain Neoprene Brg. Pads	Each		10
Prestressed Concrete I-Gdr. (68' Span)	Each		10
Prestressed Concrete I-Gdr. (77' Span)	Each		5
Prestressed Concrete I-Gdr. (52' Span)	Each		5
Reinforcing Steel (Bridges)	Lbs.	31,620	31,620
Vertical Drain At End Bents	Ea.	2	2
Pile Point Reinforcement	Ea.	53	53
Pre-Bore For Piling	Lin.Ft.	1448	1448
Laminated Neoprene Brg. Pads	Each		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.

All concrete above the construction joint in the End Bents is included in the estimated superstructure quantities for Slab on Concrete I- Girders, see Special Provisions.

Note: Prebore for piles at Bents #1, #2, #3, #4 & #5 to elevations 719.00 (Bt. #1), 720.00 (Lt.)(Bt. #2), 712.00 (E.)(Bt. #2), 703.00 (Rt.)(Bt. #2), 708.00 (Lt.)(Bt. #3), 706.00 (E.)(Bt. #3), 701.00 (Rt.)(Bt. #3), 709.00 (Lt.)(Bt. #4), 713.00 (E.)(Bt. #4), 721.00 (Rt.)(Bt. #4) and 722.00 (Bt. #5), respectively.

PILE DATA					
BENT NO.	1	2	3	4	5
Pile Type and Size	HP10x42	HP10x42	HP10x42	HP10x42	HP10x42
Number	7	13	13	13	7
Approximate Length	Fl. 51	1	2	3	45
Design Bearing	Tonn. 49	4	4	4	49
Hammer Energy Required	Fl. Lbs. 12100	7	7	7	12100

Minimum energy requirement of hammer based on plan length and design bearing value of piles.
 All piles shall be driven to practical refusal.
 ① 41' Rt, 39' E & 24' Lt. ② 35' Rt, 36' E & 37' Lt. ③ 33' Rt, 34' E & 35' Lt.
 ④ Ext. 55, Int. 46 ⑤ Ext. 12900, Int. 10800

ESTIMATED QUANTITIES FOR ALTERNATE SLAB			
TYPE OF SLAB	Reinforcement Lbs.		Concrete Cu. yds.
	Epoxy	Plain	
Cast-in-Place Conventional Forms	19200	11630	432.5
Precast Panel Forms	65590	11630	356.7

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.

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

GENERAL NOTES:

Design Specifications: A.R.S.H.T.O. - 1989 Load Factor Design

Design Loading: HS20-44 35' x 1sq. ft. Future Heoring Surface.

Modified 24,000' Tondem Aile

Earth 120' 1cu. ft. Equivalent Fluid Pressure 45' 1cu. 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=9,000 psi

For Prestressed Girder Stresses see Girder Sheet No.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.

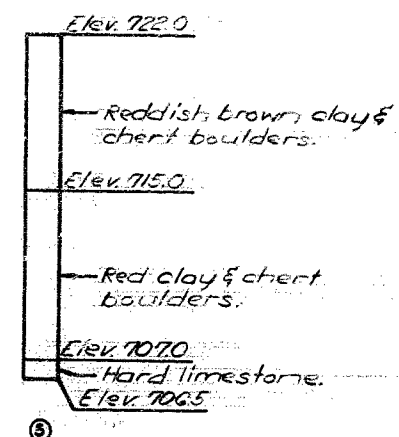
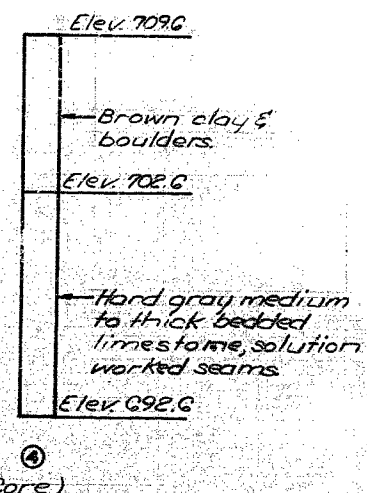
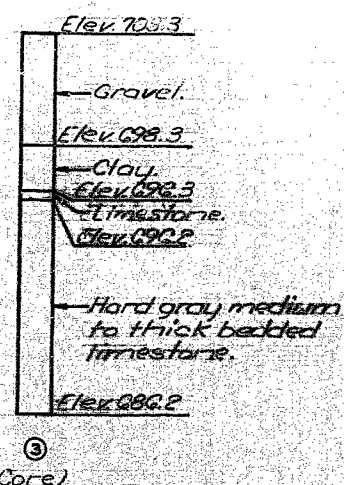
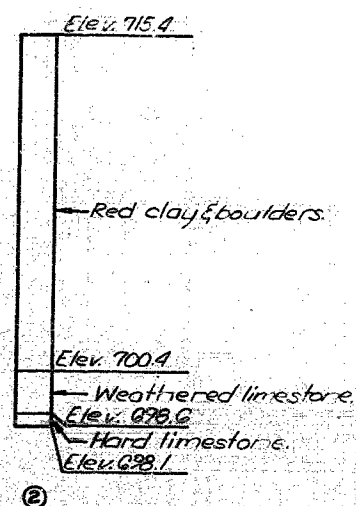
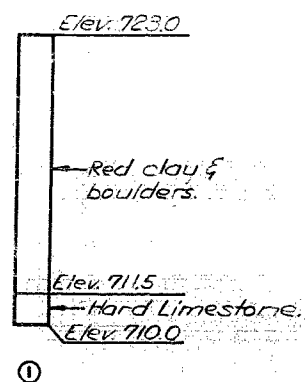
SEE FINAL PLANS

Sheet No. 2 of 27

JEFFERSON

COUNTY

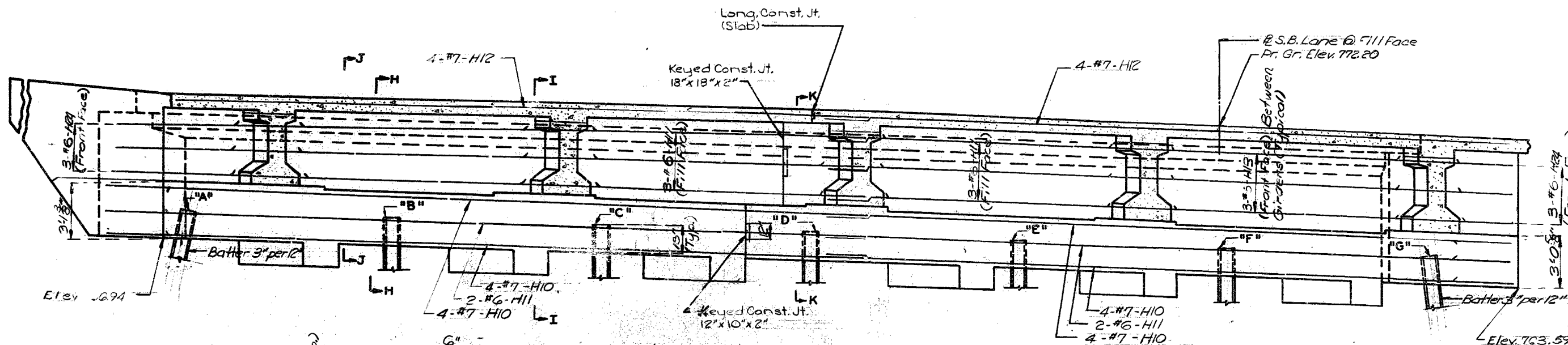
A-2944



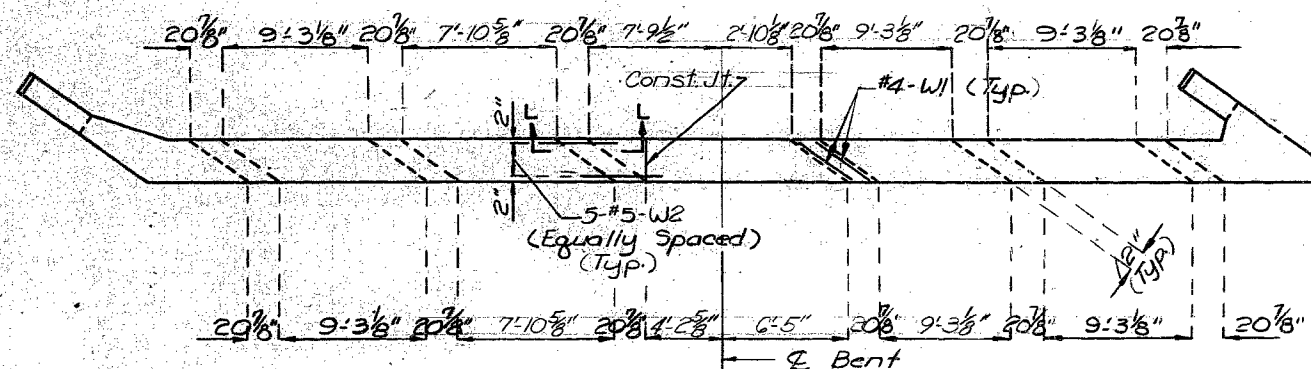
Note: For location of borings see sheet No. 1 of 27.
Boring data for all locations is available upon request from the District Office.

BORING DATA

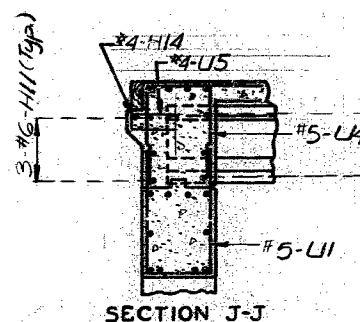
358 213



SECTION NEAR END BENT

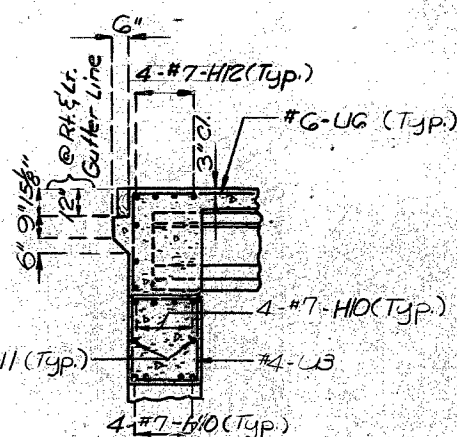


DETAILS OF BEAM SHEAR KEY

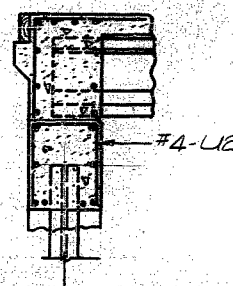


SECTION J-J

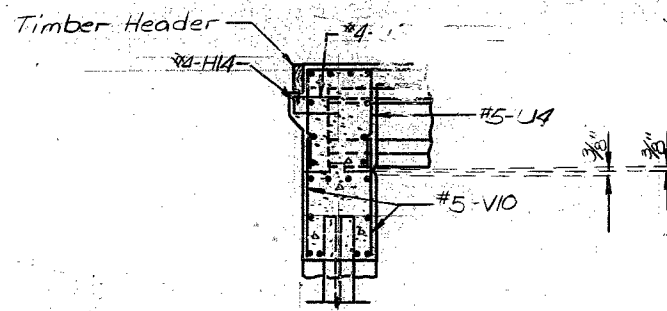
3\"/>



SECTION I-I



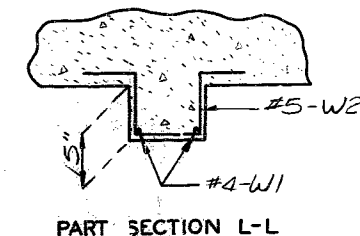
SECTION K-K



SECTION H-H

Note: For details of Timber Header see sheet No. 24.
For detail of Steel Pile Splice see sheet No. 6.

PILE CUT-OFF ELEVATIONS	
"A"	768.38
"B"	767.86
"C"	767.35
"D"	766.84
"E"	766.33
"F"	765.82
"G"	765.30



PART SECTION L-L

DETAILS OF END BENT NO.1

DETAILED AUG. 1987
CHECKED AUG. 1988

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

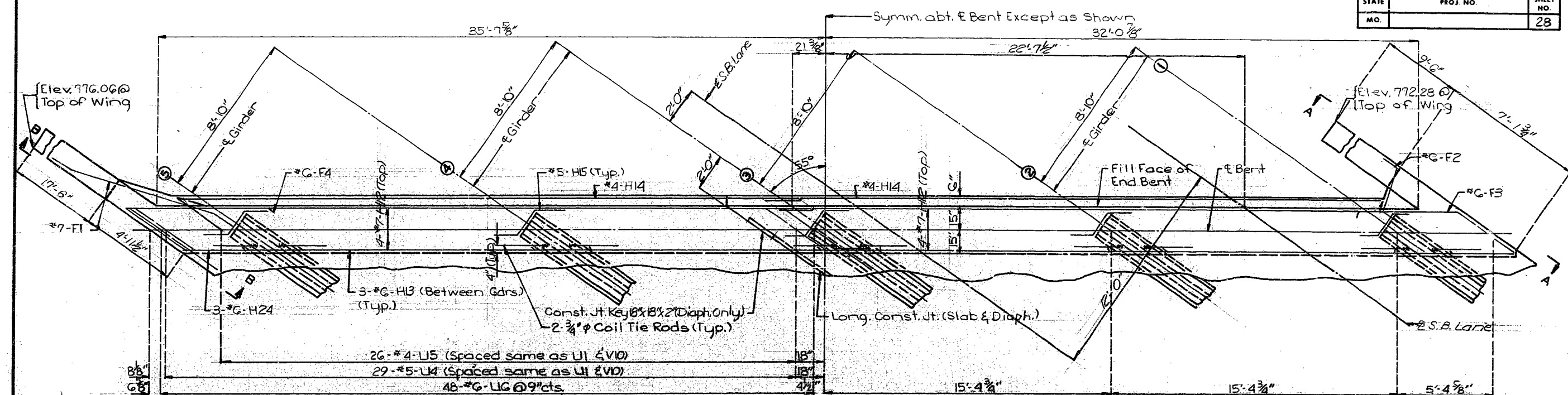
Sheet No. 4 of 27

JEFFERSON

COUNTY

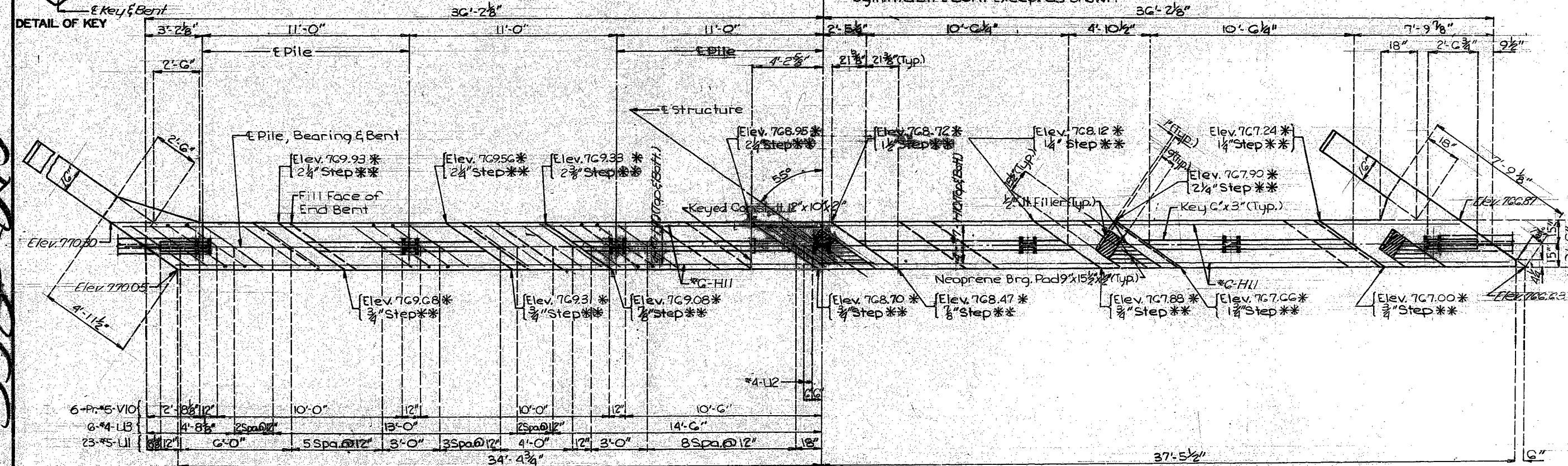
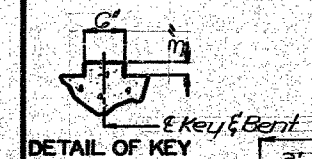
A-2944

357 214



Note: All U bars in end bent are to be placed parallel to E Roadway.
For Elevation A-A & B-B see sheet No. G.

Note: For reinforcement of the Safety Barrier Curb see Sheet No. 24.
Bent F1 & F2 bars in field to clear girders. Strands at end of girder shall be field bent or, if necessary, cut in field to maintain 1/2" minimum clearance to field face of end bent.



*At top of step at this point
**At this point

PLAN OF BEAM
(BELOW LOWER CONSTRUCTION JOINT)
DETAILS OF END BENT NO. I

DETAILED AUG. 1987
CHECKED AUG. 1988

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

Sheet No. 5 of 27

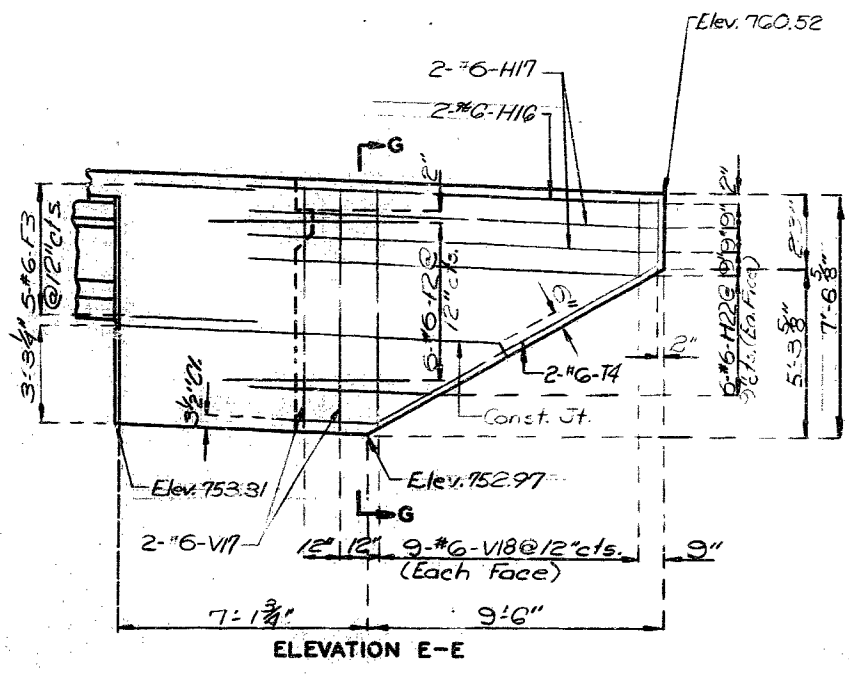
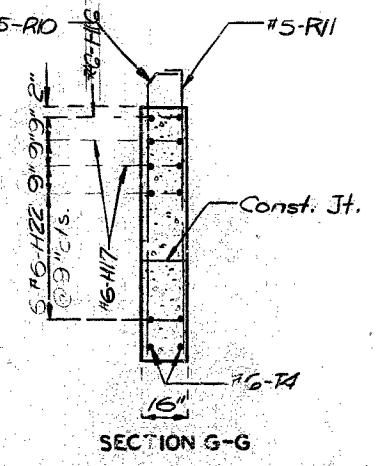
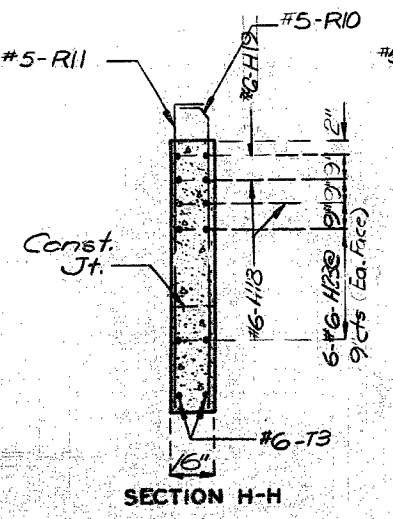
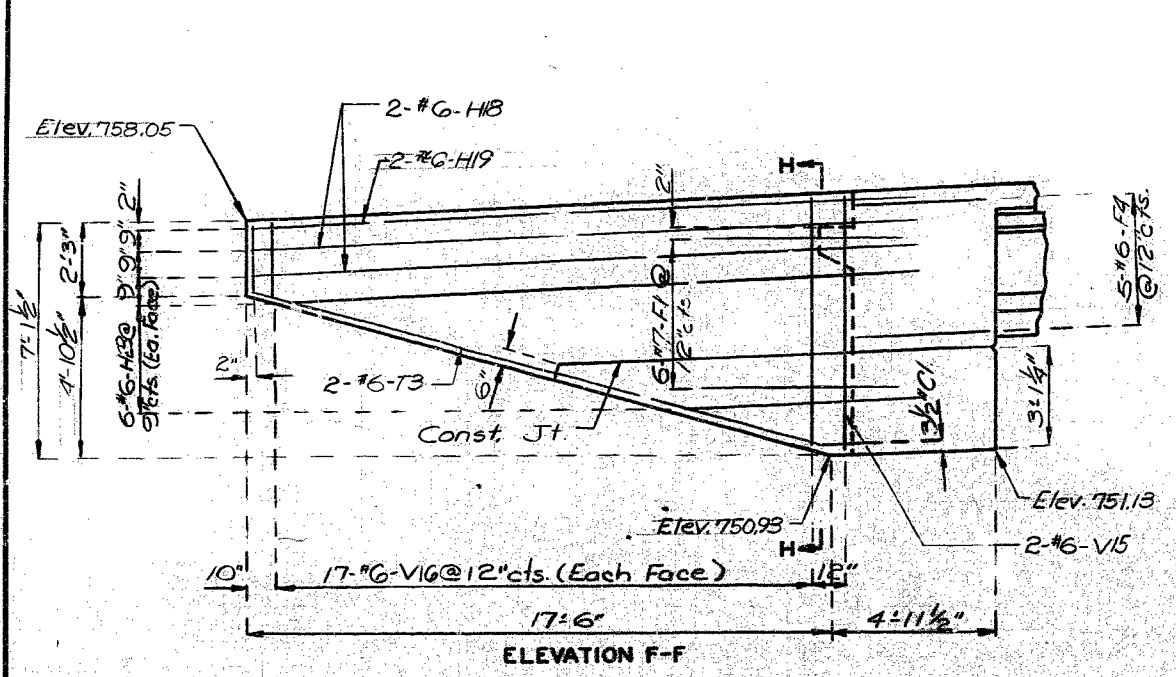
JEFFERSON COUNTY

A-2944

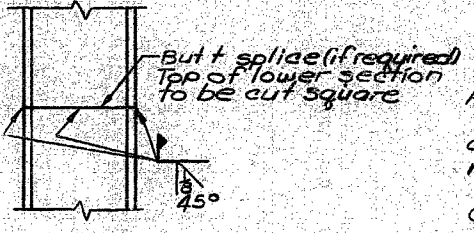
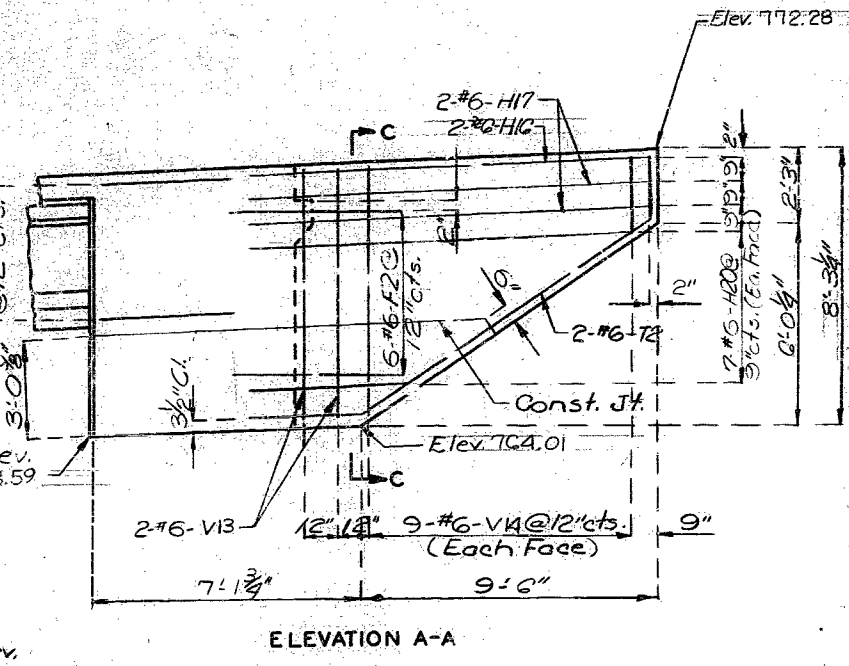
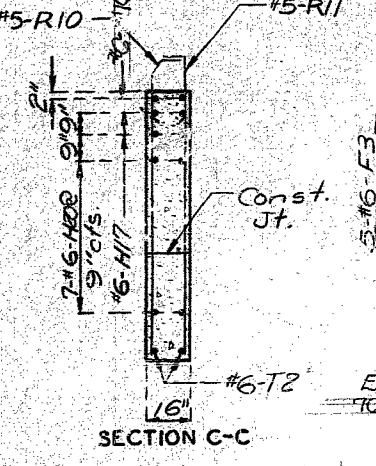
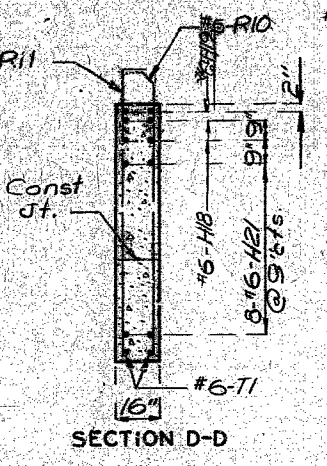
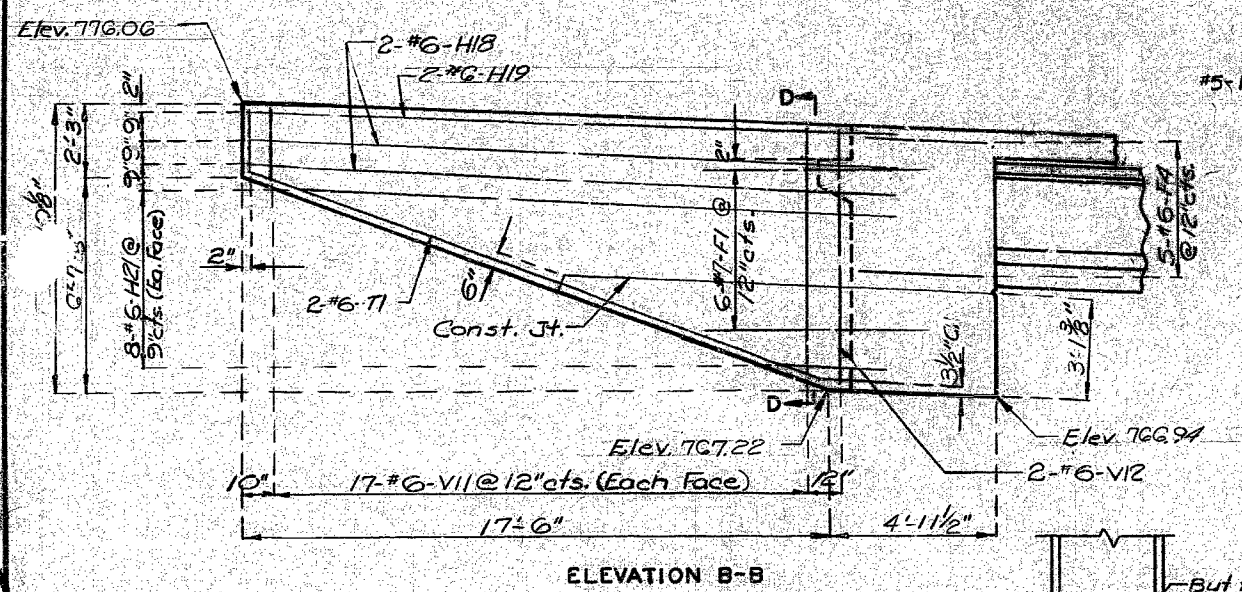
355-215

STATE	PROJ NO	SHEET NO
MO		29

Note: For location of Elevation E-E & F-F see sheet No. 5.



DETAILS OF END BENT NO. 5



DETAIL OF STEEL PILE SPLICE

Note: For location of Elev. A-A & B-B see sheet No. 5.
Field bending shall be required at wings for F1 & F2 bars when necessary to conform to slope of wing.
For details of Safety Barrier Curb see sheet No. 24.

DETAILS OF END BENT NO. 1

353 2/6

DETAILED AUG. 1987
CHECKED AUG. 1988

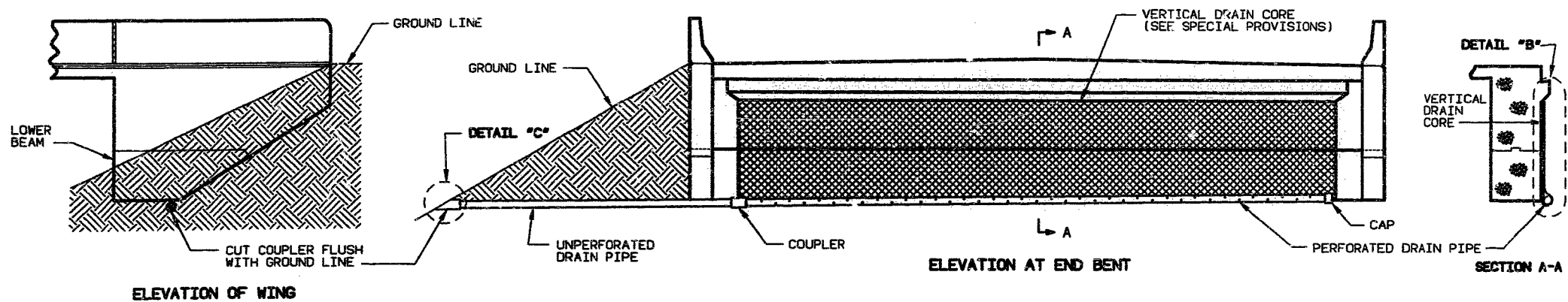
Note: This drawing is not to scale. Follow dimensions.

Sheet No. G of 27

JEFFERSON COUNTY

A-2944

STATE	PROJ. NO.	SHEET NO.
NO.		30



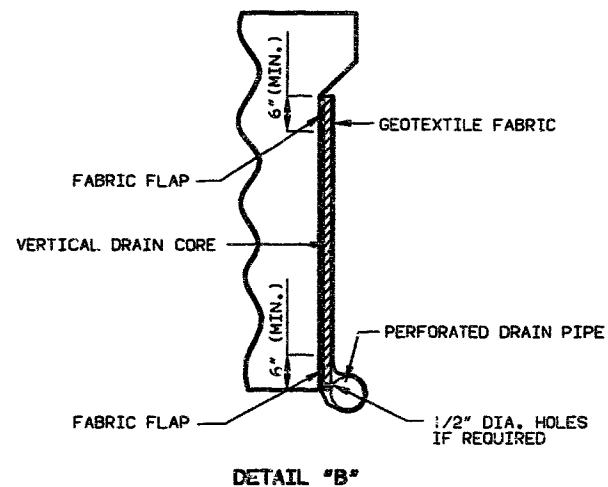
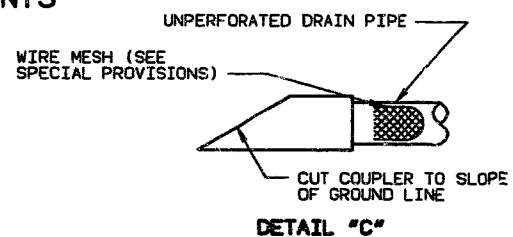
GENERAL NOTES:

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.

VERTICAL DRAIN AT END BENTS



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

DETAILED APRIL 1990
CHECKED APRIL 1990

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

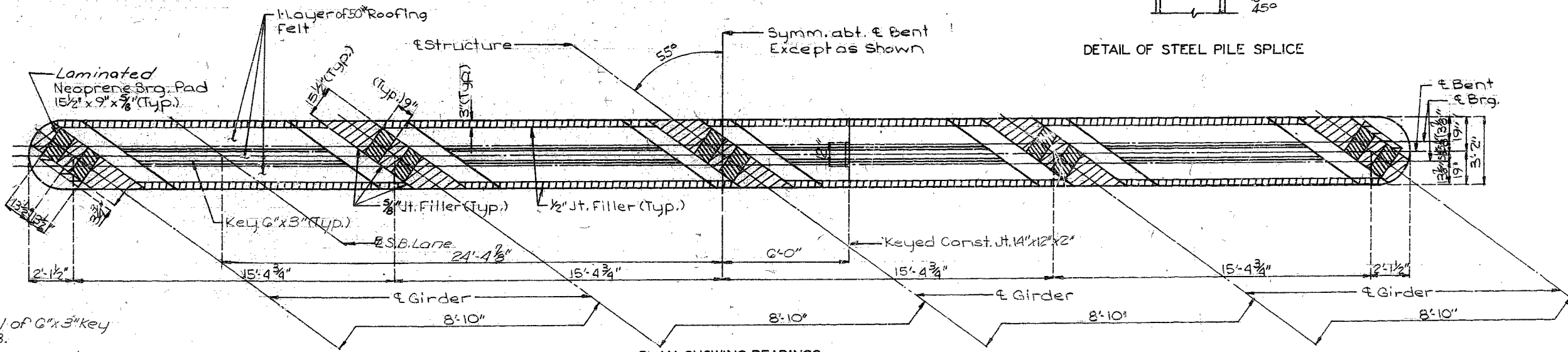
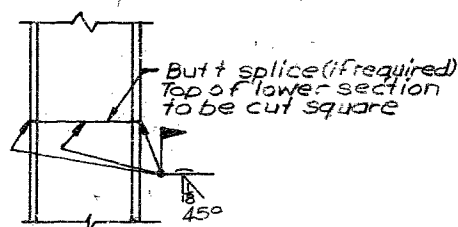
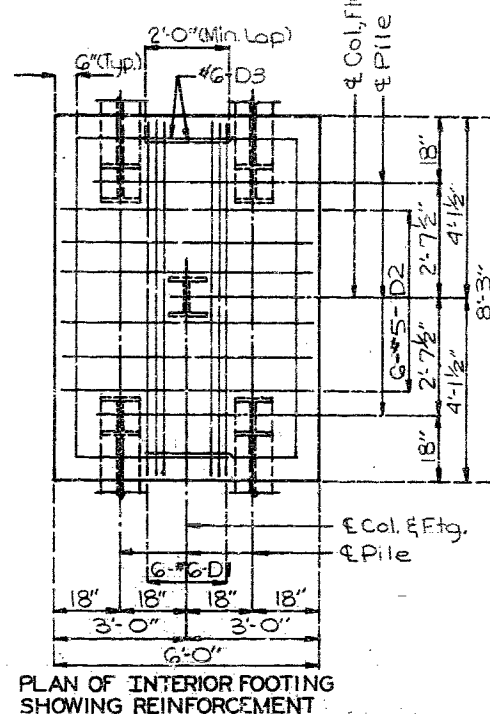
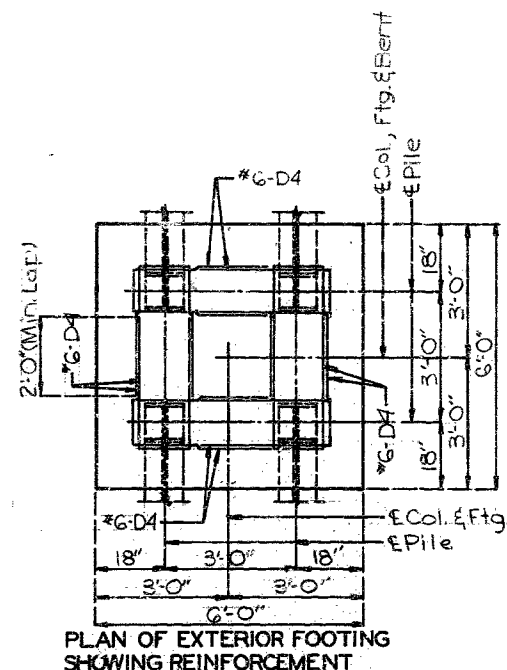
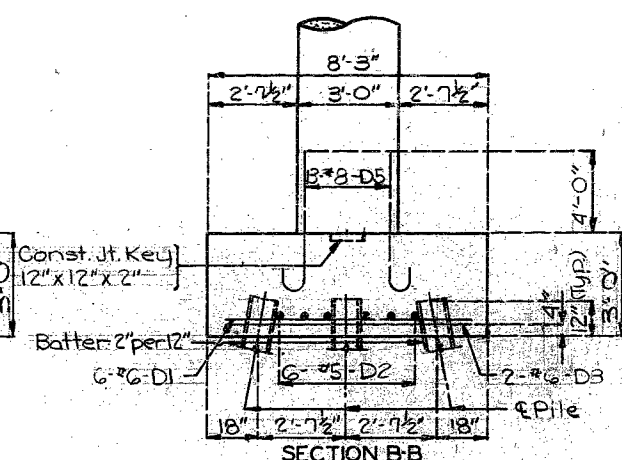
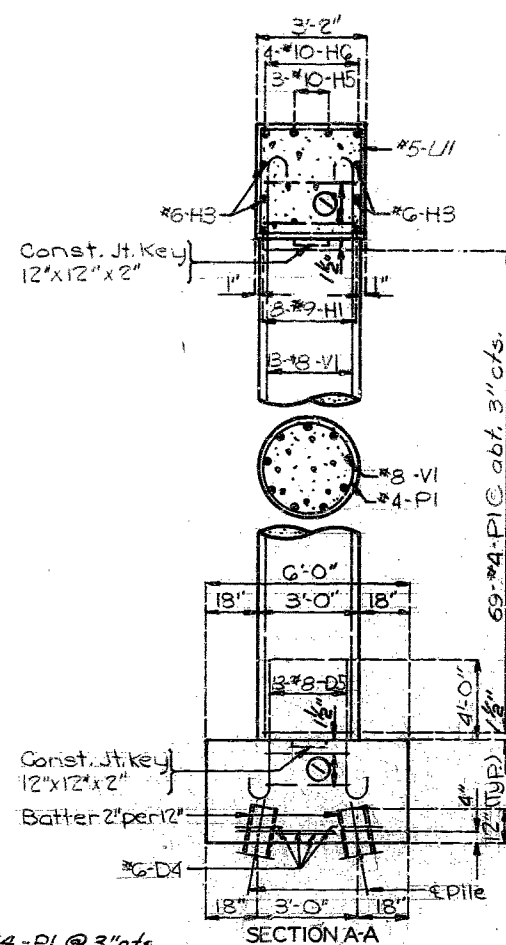
SHEET NO. 7 OF 27

JEFFERSON

COUNTY

A-2944

254 217



DETAILS OF INTERMEDIATE BENT NO. 2

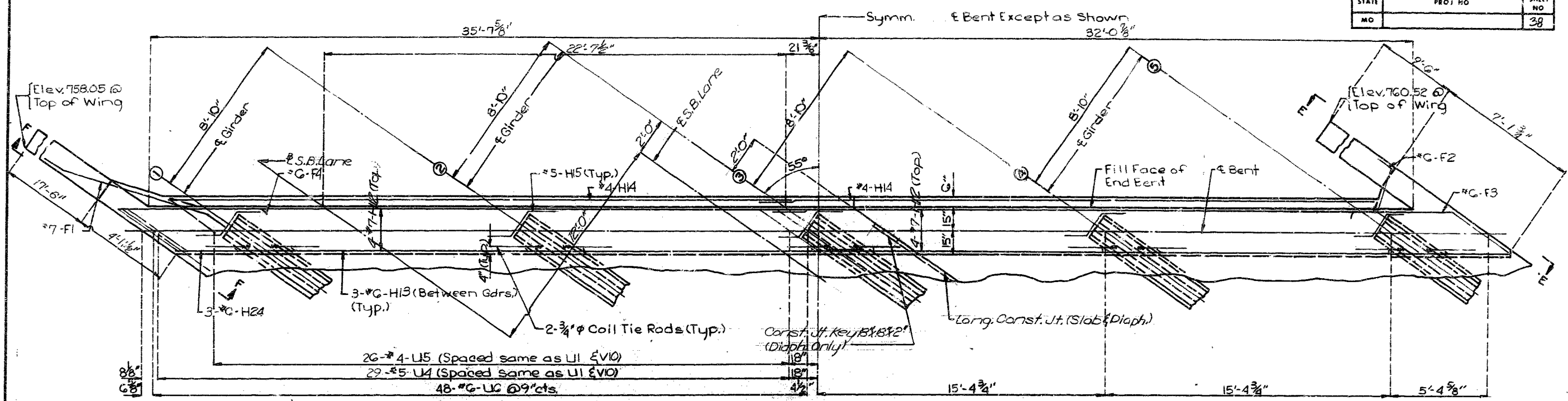
DETAILED AUG. 1985
CHECKED AUG. 1988

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

Sheet No. 9 of 27

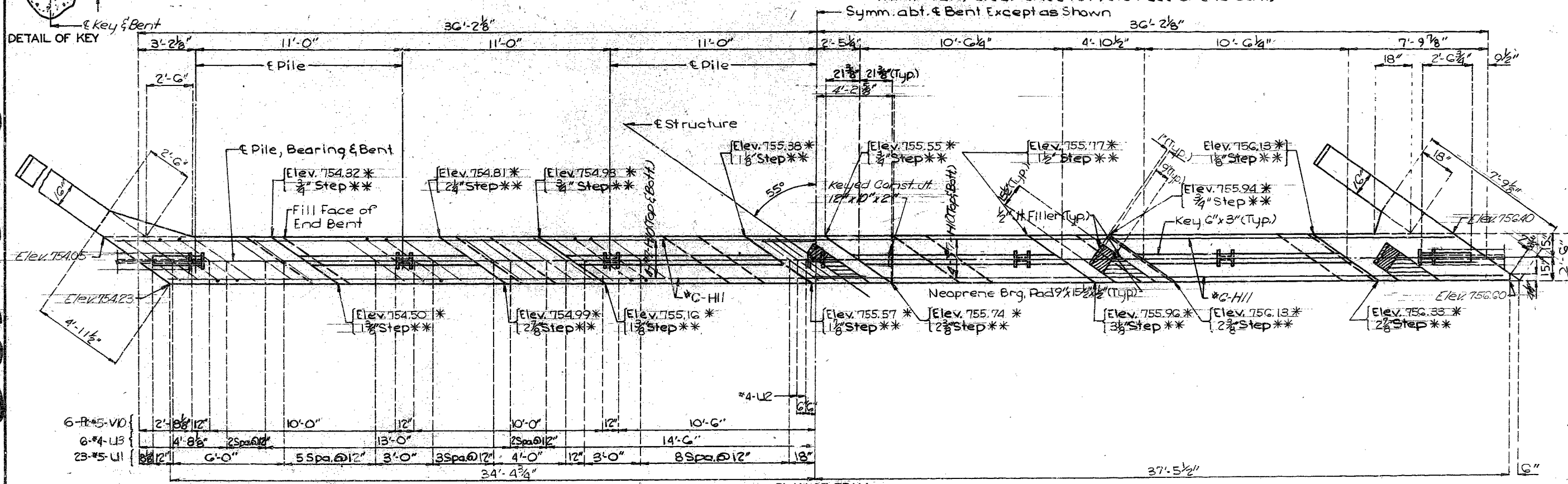
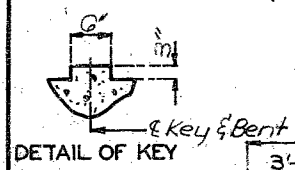
JEFFERSON COUNTY

A-2944



Note: All U-bars in end bent are to be placed parallel to & Roadway.
For Elevation EE & FF see sheet No. 6.

Note: For reinforcement of the Safety Barrier Curb see Sheet No. 24.
Bent F1 & F2 bars in field to clear girders. Strands at end of girder shall be field bent or, if necessary, cut in field to maintain 1 $\frac{1}{2}$ " minimum clearance to field face of End Bent.



*At top of step at this point
**At this point

PLAN OF BEAM
(BELOW LOWER CONSTRUCTION JOINT)
DETAILS OF END BENT NO. 5

DETAILED AUG. 1987
CHECKED AUG. 1988

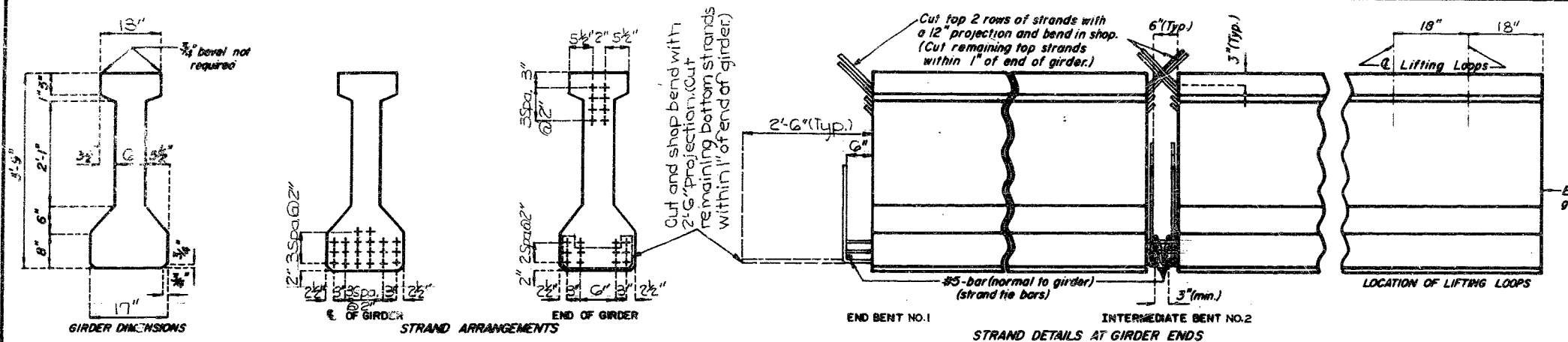
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 15 of 27

JEFFERSON COUNTY

A-2944

3622225



NOTE:

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

(+) indicates prestressed strand.

Use 20 strands with an initial prestress force of 620 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. See Mo. Std. Specifications 705.4.8.

STATE		PROJ NO		SHEET NO	
MO				39	
BILL OF REINFORCING STEEL - EACH GIRDER					
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS	
4	5 A1	34'-10"	20	SHAPE 11	
1A2	5 B1	5'-2"	11	SHAPE 12	
8	6 B2	4'-7"	19	SHAPE 13	
71	4 C1	13"	10	SHAPE 14	
1A2	4 D1	2'-7"	9	SHAPE 15	

NOTE:

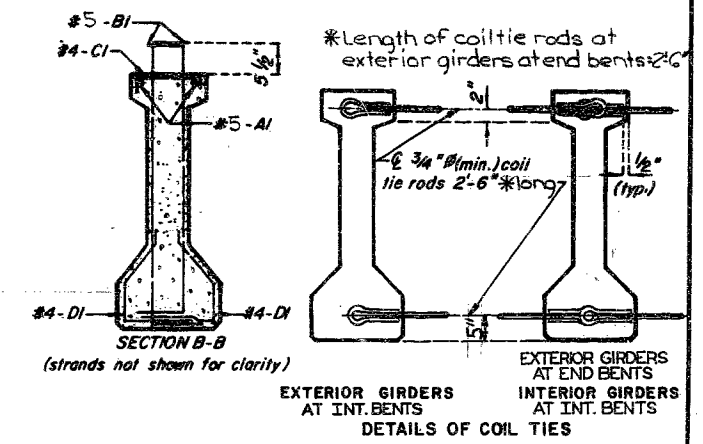
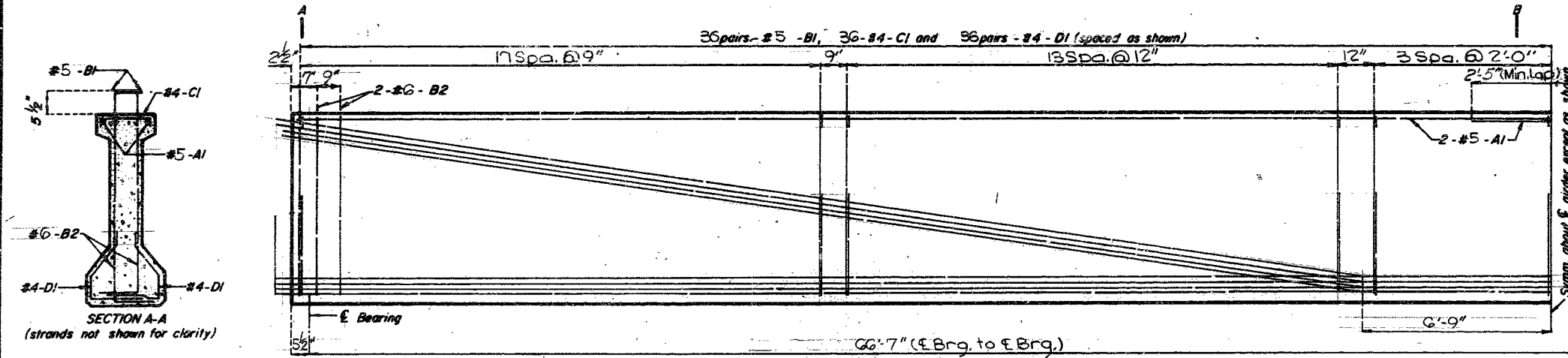
All dimensions are out to out.

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

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



NOTE:

Cost of $\frac{3}{4}$ " 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 $\frac{1}{2}$ " holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

363 226

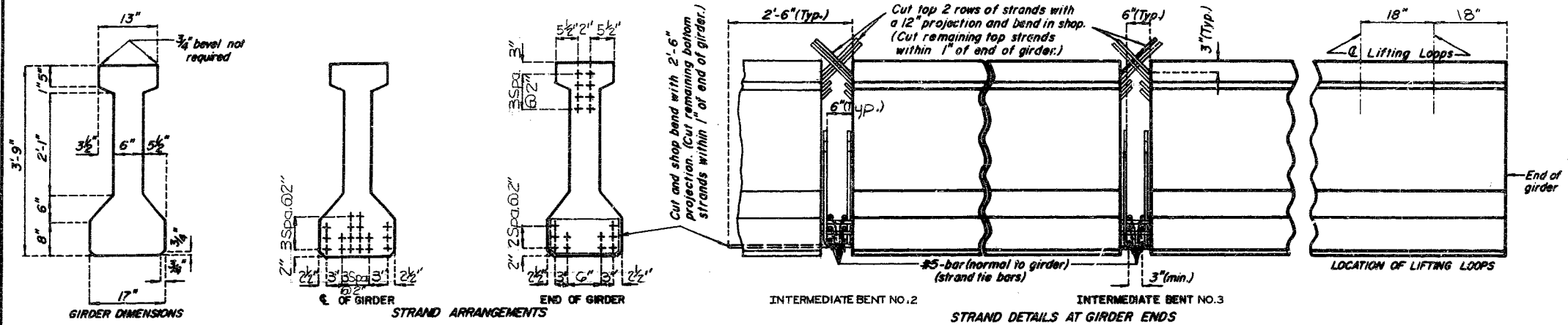
SPS 554.8
April 1993
AUG. 1984

DETAILED JUNE 1985
CHECKED AUG. 1988

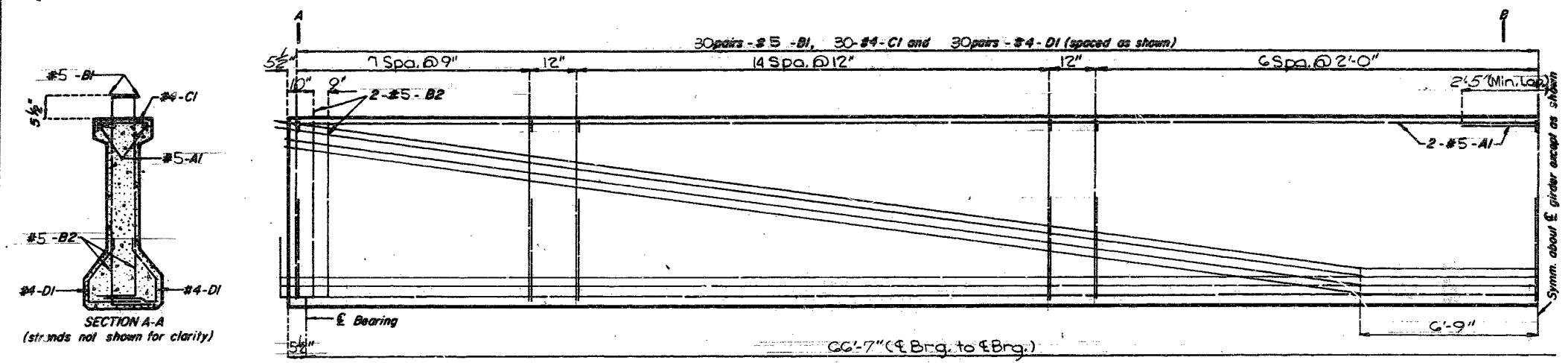
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 16 of 27

JEFFERSON COUNTY A-2944



NOTE:
Concrete for prestressed girders shall be Class A1 with $f'_c = 5,000$ psi.
(+) indicates prestressed strand.
Use 18 strands with an initial prestress force of 558 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. See Mo. Std. Specifications 705.4.8.



PART ELEVATION OF GIRDER SPAN (2-3)
(Exterior and interior girders are the same except for coil ties and holes for intermediate diaphragms)
Note: For Camber Diagram, See sheet No. 20.
For location of Int. Diaph. see sheet No. 20.

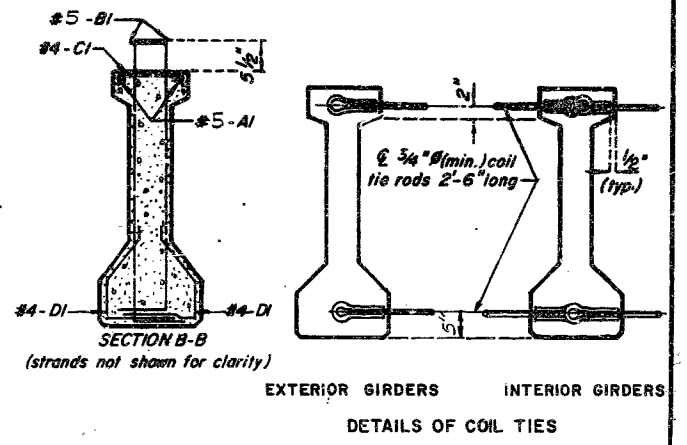
Note: See sheet No. 19 for details of Sole Plate.

STATE	PROJ NO	SHEET NO
MO		40

BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	5 A1	34'-10"	20	SHAPE 11
118	5 B1	5'-2"	11	SHAPE 12
8	5 B2	4'-7"	19	SHAPE 13
59	4 C1	13"	10	SHAPE 14
118	4 D1	2'-7"	9	SHAPE 15

NOTE:
All dimensions are cut to L.F.

Hooks and bands shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.
Actual lengths are measured along centerline bar to the nearest inch. Minimum clearance to reinforcing shall be 1/4".
All reinforcement shall be Grade 60.
The two D1 bars may be furnished as one bar at the fabricator's option.



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.

364 227

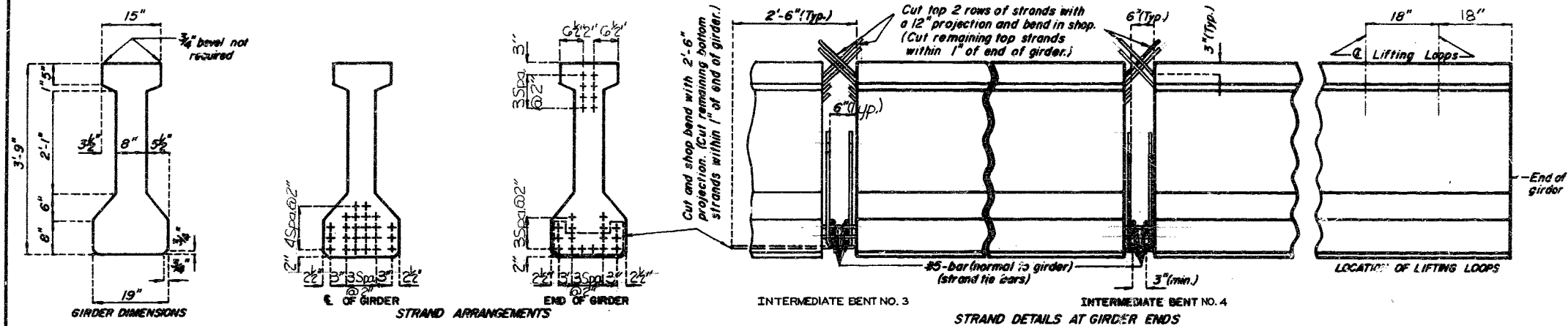
SPS 55.4.6
April 1973
Revised
AUG. 1984

DETAILED JUNE 1985
CHECKED AUG. 1988

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

Sheet No. 17 of 27

JEFFERSON COUNTY A-2944



NOTE:

Concrete for prestressed girders shall be Class A1 with $f'_c = 6,000$ psi.

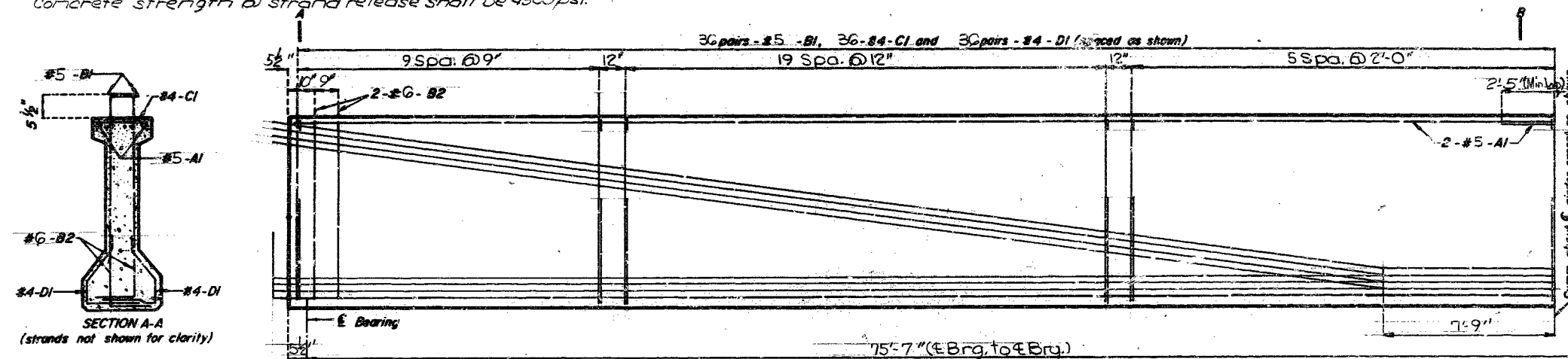
(+) indicates prestressed strand.

Use 24 strands with an initial prestress force of 744 kips.

Prestressing tendons shall be uncoated seven-wire low relaxation strands,

inch diameter conforming to A.A.S.H.T.O. M203, Grade 270. See Mo. Std. Specifications 705.4.8.

Concrete strength @ strand release shall be 4500 psi.



PART ELEVATION OF GIRDER SPAN (3-4)

(Exterior and interior girders are the same except for coil ties and holes for intermediate diaphragms)

Note: For Camber Diagram, See sheet No. 20.

For location of Int. Diaph. see sheet No. 20

Note: See sheet No. 19 for details of Sole Plate.

STATE	PROJ NO	SHEET NO
MO		41

BILL OF REINFORCING STEEL - EACH GIRDER					
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS	
4	5 A1	39'-4"	20		
142	5 B1	5'-2"	11		
8	6 B2	4'-7"	19		
71	4 C1	15"	10		
142	4 D1	2'-9"	9		

NOTE:

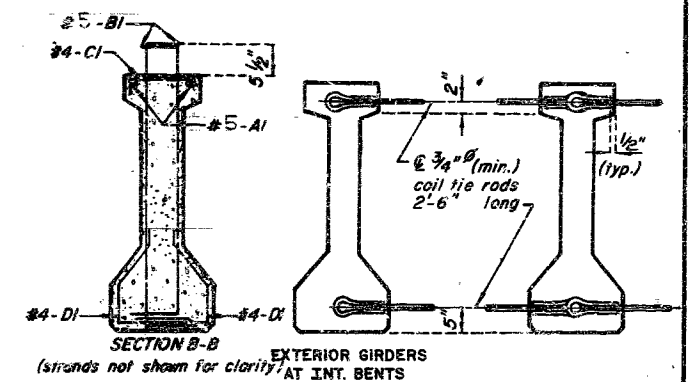
All dimensions are out to out.

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

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



DETAILS OF COIL TIES

NOTE:

Cost of $\frac{3}{4}$ " 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 clotted 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 $1\frac{1}{2}'' \phi$ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

DETAILED JUNE 1985
CHECKED AUG. 1988

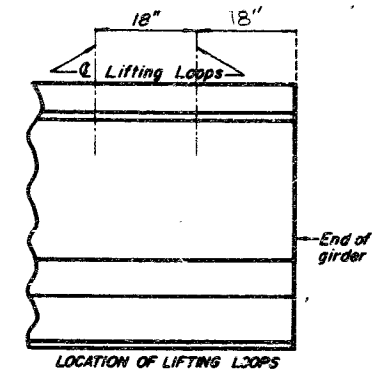
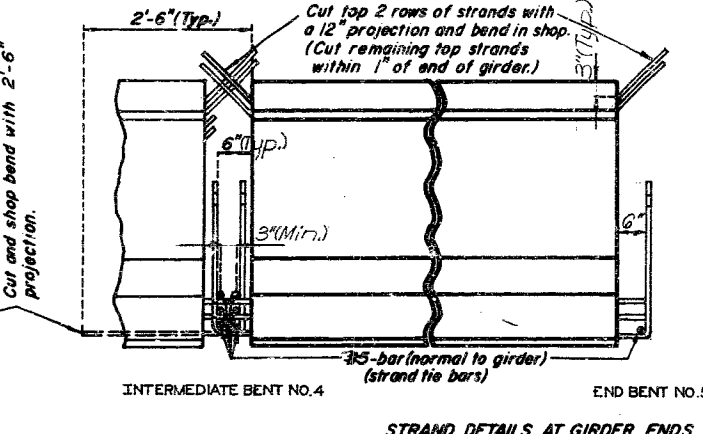
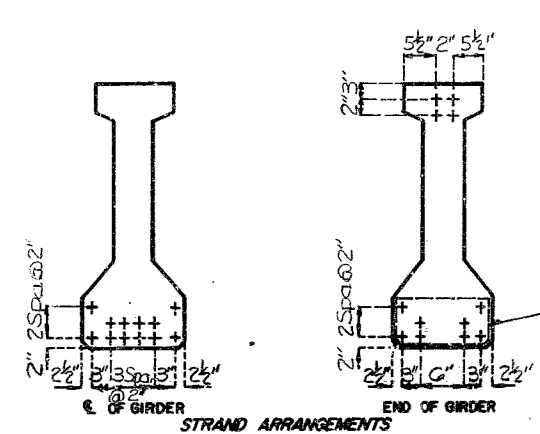
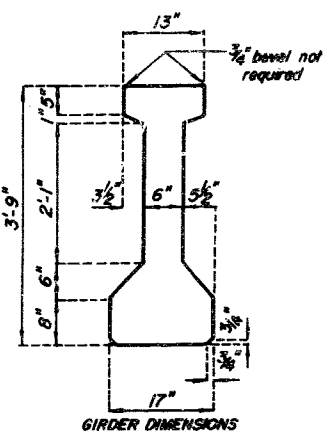
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 18 of 27

JEFFERSON

COUNTY

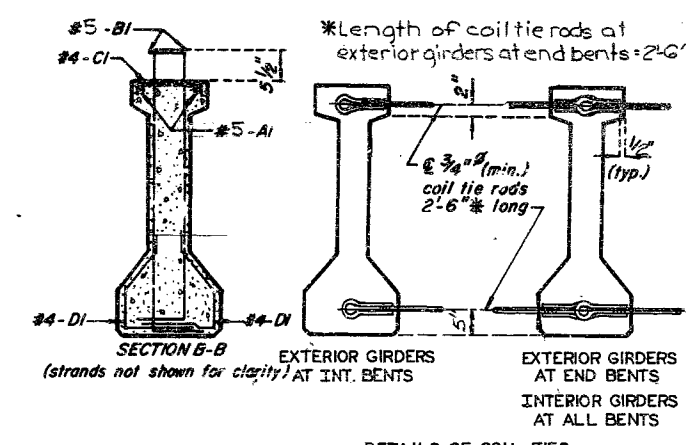
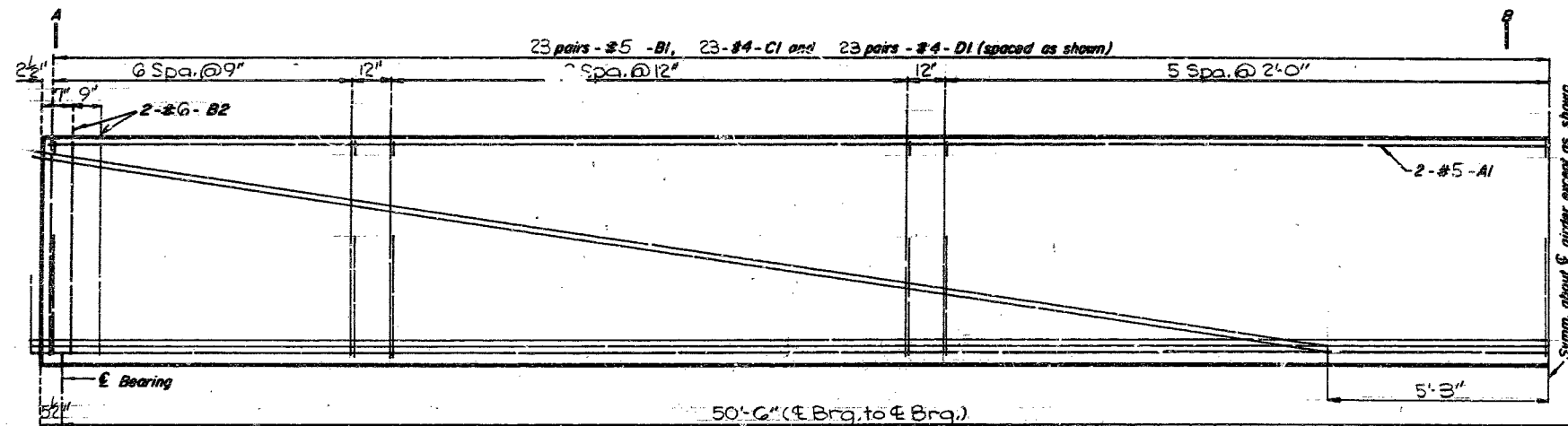
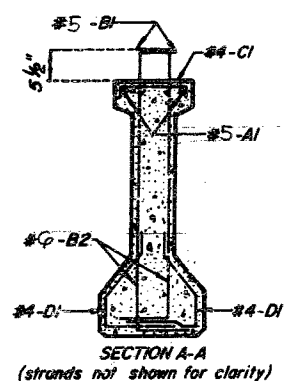
A-2944



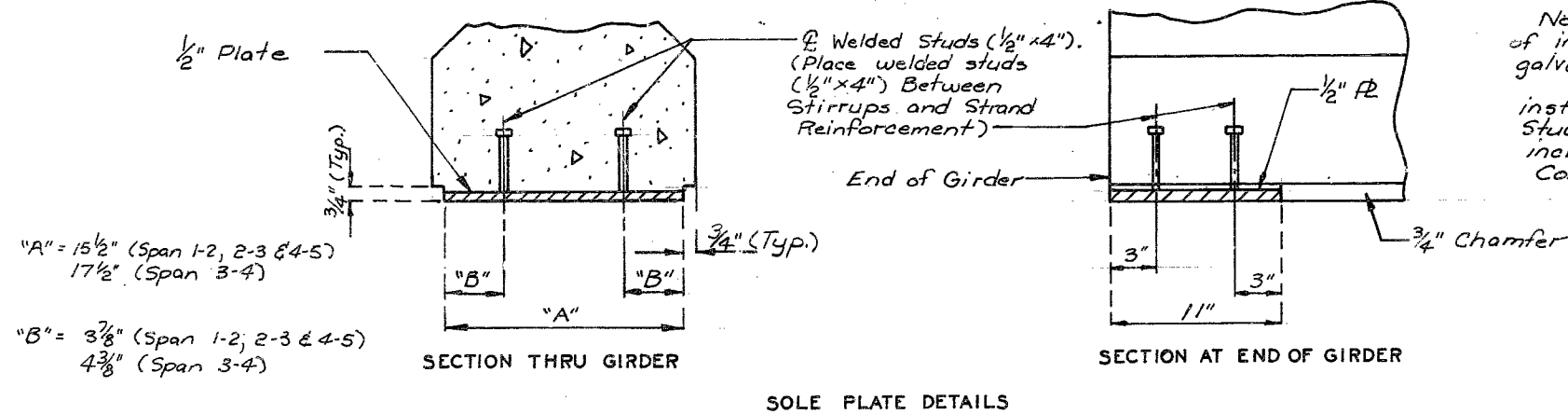
NOTE:
 Concrete for prestressed girders shall be Class A1 with $f'_c = 5,000$ psi.
 (+) indicates prestressed strand.
 Use 12 strands with an initial prestress force of 372 kips.
 Prestressing tendons shall be uncoated seven-wire low relaxation strands,
 1/2 inch diameter conforming to A.A.S.H.T.O. M203, Grade 270. See Mo. Std. Specifications 705.4.8.

BILL OF REINFORCING STEEL - EACH GIRDER				BENDING DIAGRAMS	
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE		
2	5 A1	51'-2"	20		
90	5 B1	5'-2"	11		
8	6 B2	4'-7"	19		
45	4 C1	13"	10		
90	4 D1	2'-7"	9		

NOTE:
 All dimensions are cut to cut.
 Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup 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.
 The two D1 bars may be furnished as one bar at the fabricator's option.



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



Note: Paint the 1/2" Sole Plate with 2 coats of inorganic zinc (5 mils minimum) or galvanize in accordance with A.S.T.M. A123.
 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.

366 229

SP-5 20.4.6
 April 1973
 AUG. 1984

DETAILED JUNE 1985
 CHECKED AUG. 1988

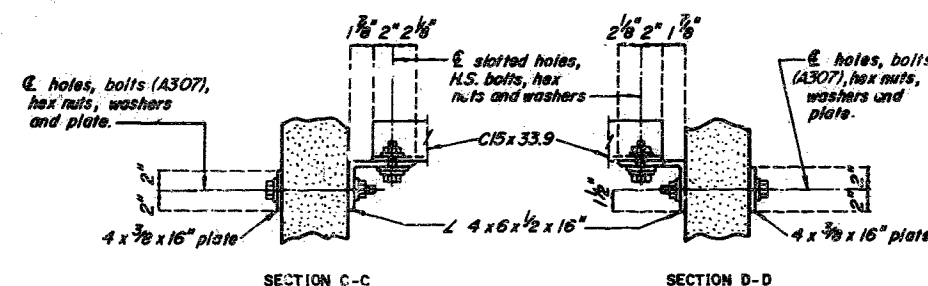
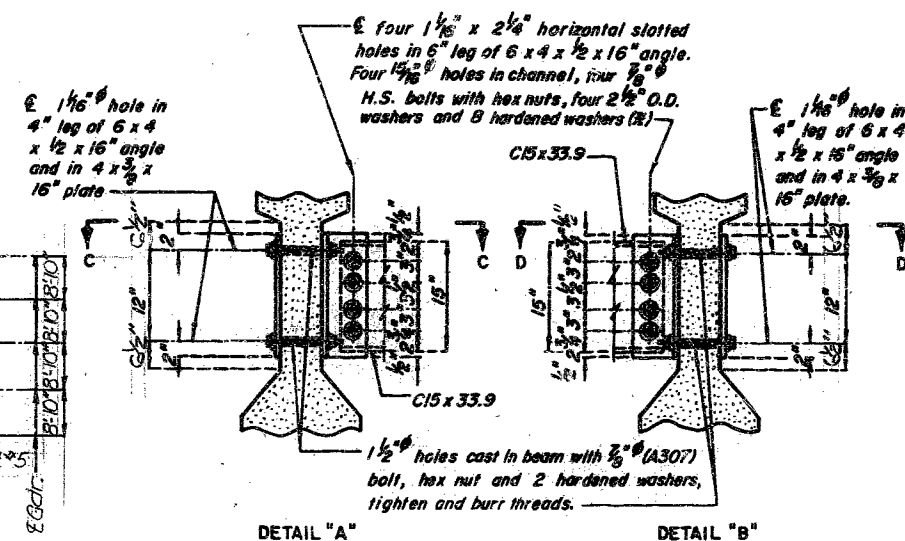
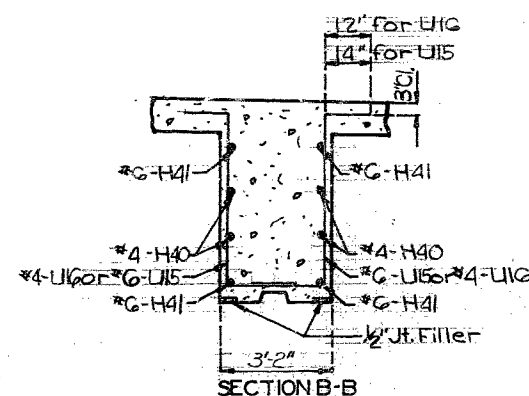
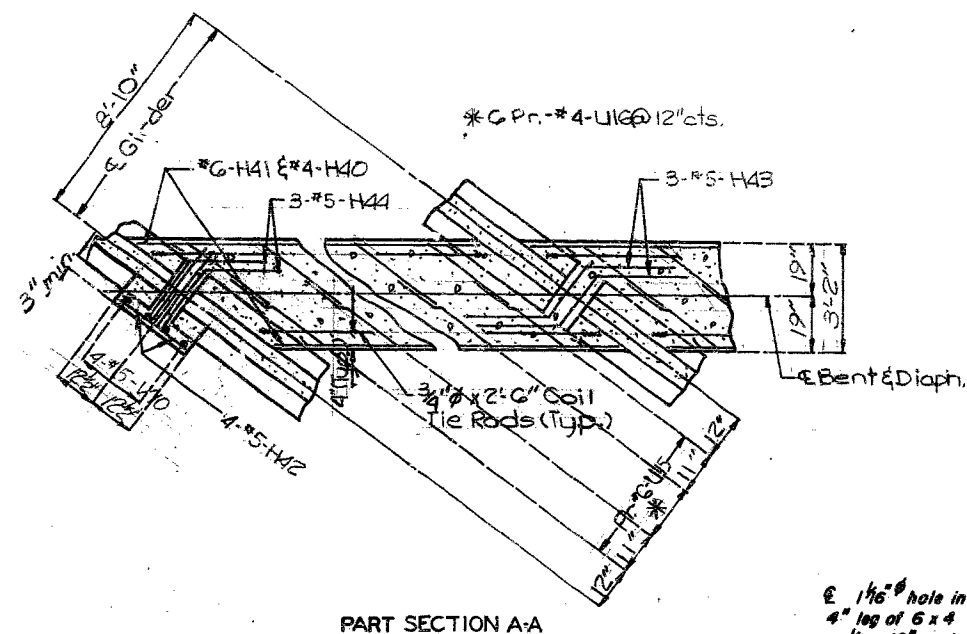
Note: This drawing is not to scale. Follow dimensions.

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JEFFERSON

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A-2944



Note: Dimensions shown are Horizontal.

Conversion Factors for Girder
Camber at Span (3-4):
 $0.1 \text{ pt.} = 0.314 \times 0.5 \text{ pt.}$
 $0.2 \text{ pt.} = 0.593 \times 0.5 \text{ pt.}$
 $0.3 \text{ pt.} = 0.813 \times 0.5 \text{ pt.}$
 $0.4 \text{ pt.} = 0.952 \times 0.5 \text{ pt.}$

Conversion Factor for Girder
Camber at Span (1-2)(2-3)(4-5):
 $0.25 \text{ pt.} = 0.7125 \times 0.5 \text{ pt.}$

Note: If girder camber is different from that shown in the Camber Diagram, it shall be necessary to adjust the slab haunches, increase the slab thickness or to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

STEEL DIAPHRAGM NOTES:

(*) IN LIEU OF 2"x O.D. WASHERS, CONTRACTOR MAY SUBSTITUTE A 3/16" (MIN. THICKNESS) PLATE WITH FOUR 13/16" HOLES AND 1 HARDENED WASHER PER BOLT.

ALL H.S. BOLTS MAY BE TENSIONED BY TURN-OF-NUT METHOD.

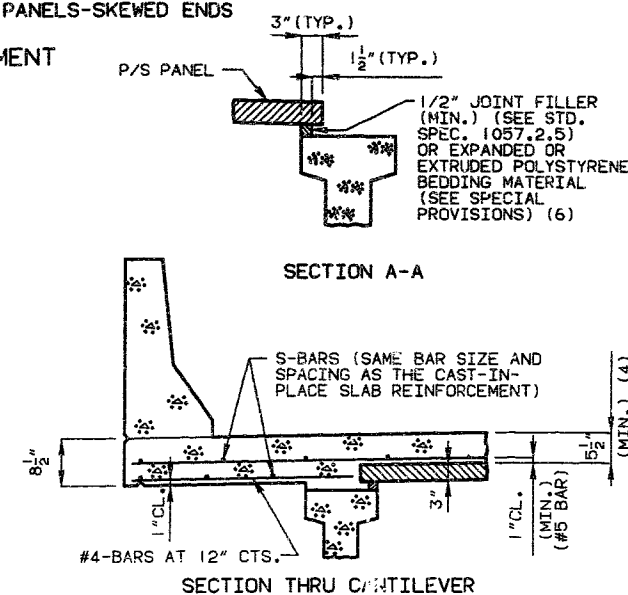
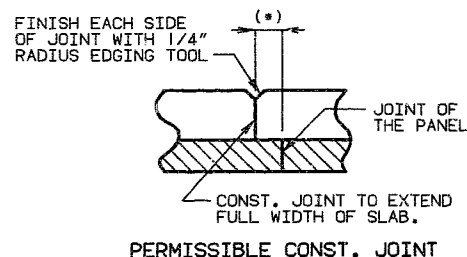
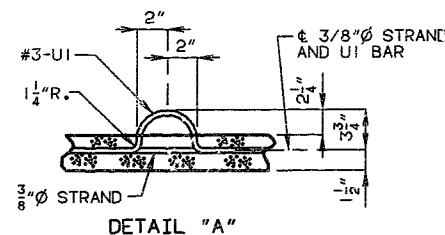
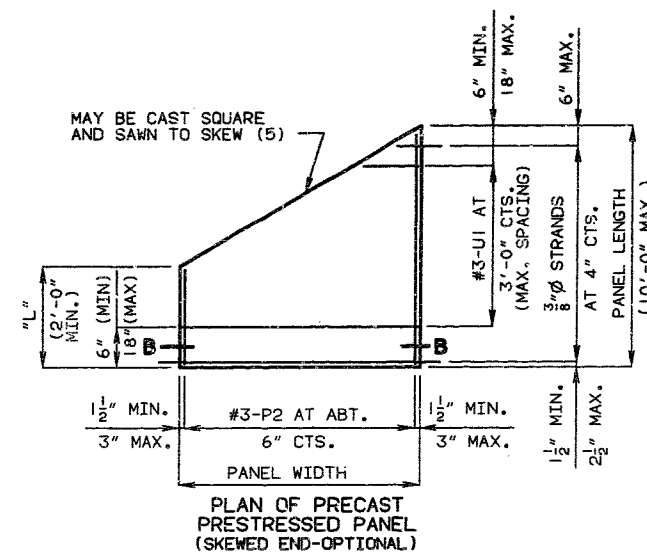
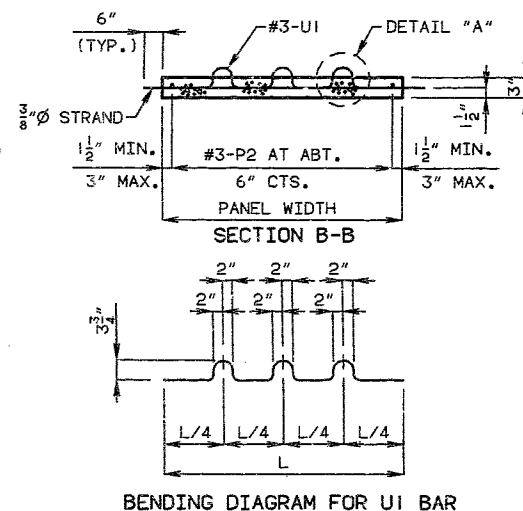
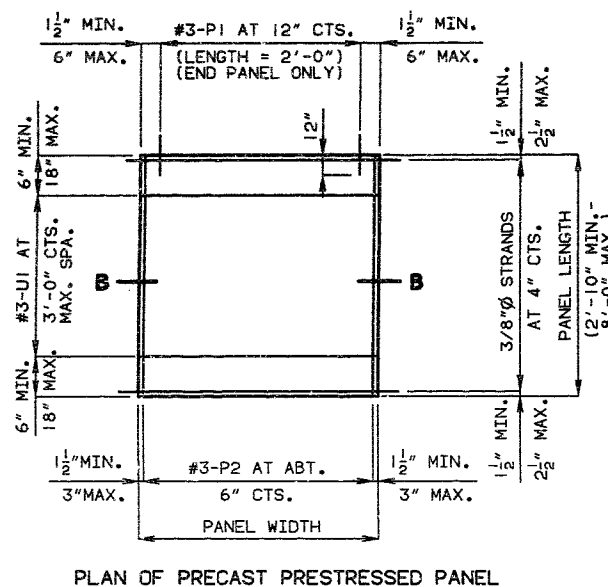
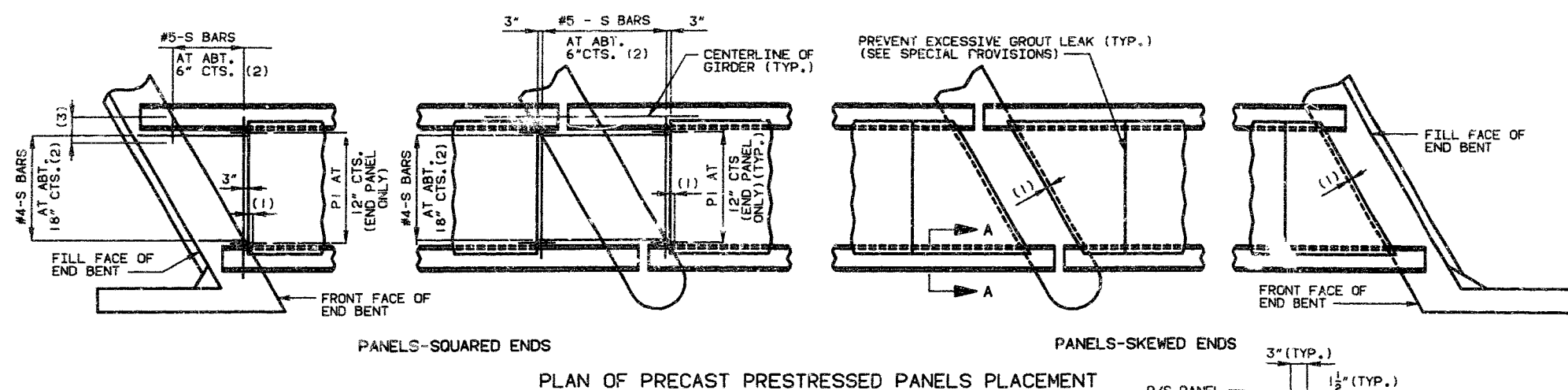
ALL DIAPHRAGM MATERIALS INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PAYMENT FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR STRESSED CONCRETE JOINTS.

SHOP DRAWINGS WILL NOT BE REQUIRED FOR STEEL INTERMEDIATE DIAPHRAGMS AND ANGLE CONNECTIONS.

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



NOTES:

- (1) END PANELS TO BE DIMENSIONED 1-1/2" INCHES FROM THE INSIDE FACE DIAPHRAGM.
- (2) S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY.
- COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD.
- S-BARS ARE NOT LISTED IN BILL OF REINFORCING.
- SLAB EXTERIOR GIRDER HAUNCH SHALL BE THE SAME AS CAST-IN-PLACE.
- SLAB THICKNESS OVER PRESTRESSED PANELS VARIES DUE TO GIRDER CAMBER.
- (3) EXTEND S-BARS 18 INCHES BEYOND THE FRONT FACE OF END BENTS ONLY.
- SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.
- (4) 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.
- (5) ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATORS OPTION.
- (6) ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1-1/2", THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 20 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

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 1/8 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 = 0.085 SQ. IN. AND MINIMUM UTS 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 CONTRACTORS 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.

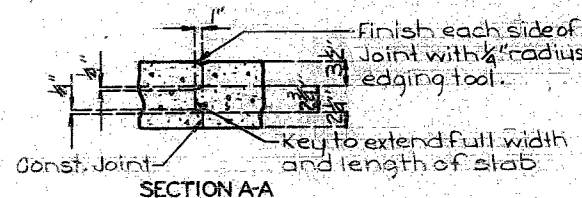
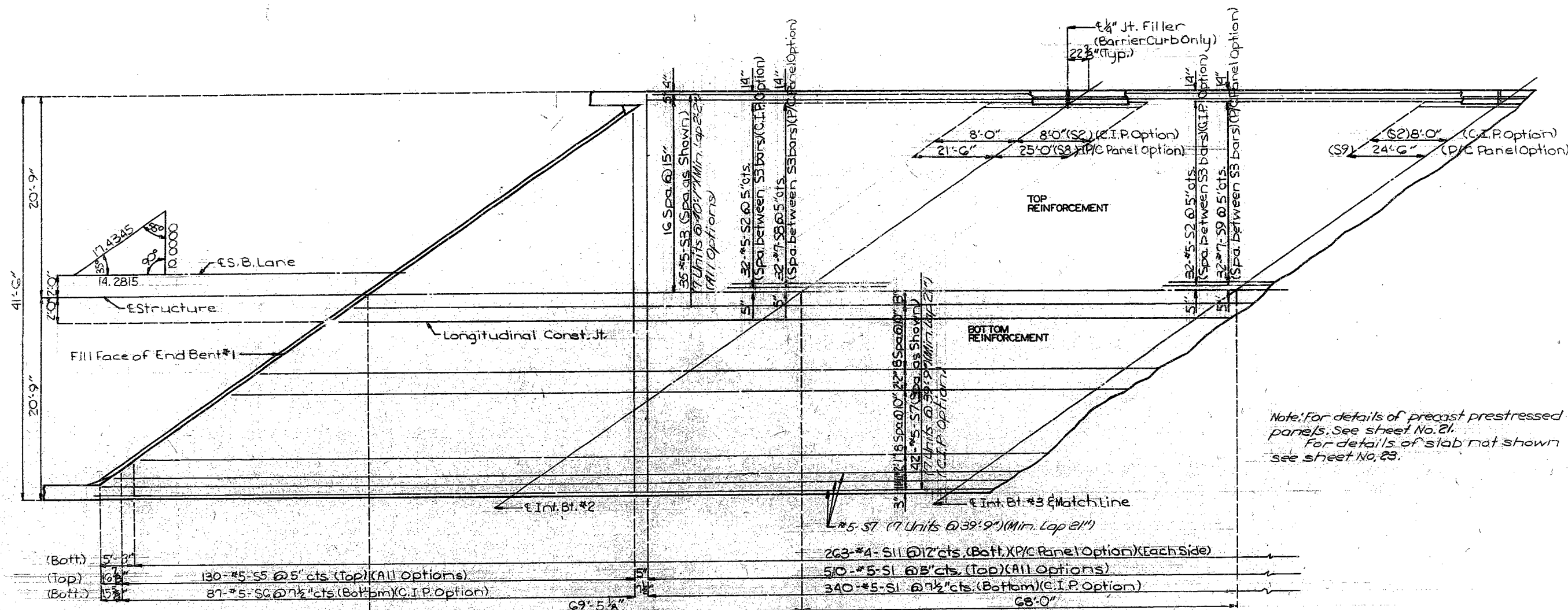
THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE
TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

IF UI BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, UI
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 OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES.

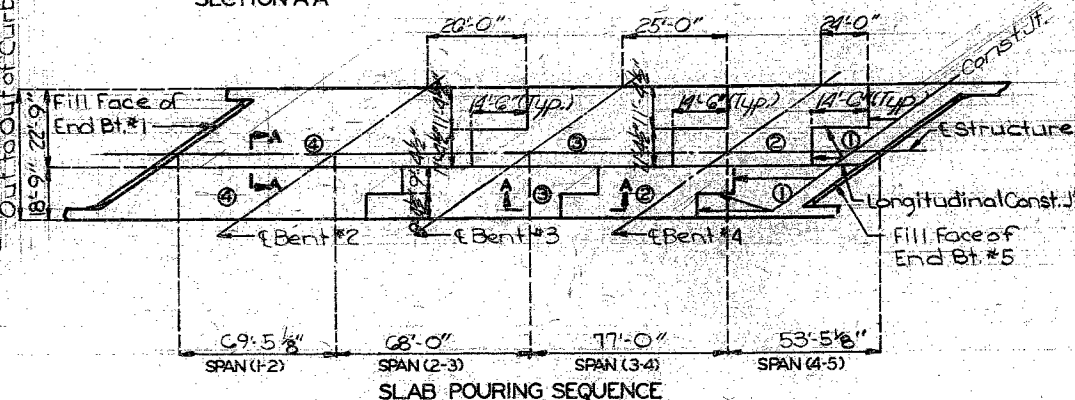
THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8"Ø STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
#3-P2 BARS AT 16 INCHES.

TIE THE #3-U1 BARS TO THE #3-P2 BARS, TO THE WELDED WIRE FABRIC OR THE WELDED DEFORMED BAR MATS AT ABOUT 36 INCH CENTERS.



PART PLAN OF SLAB SHOWING REINFORCEMENT

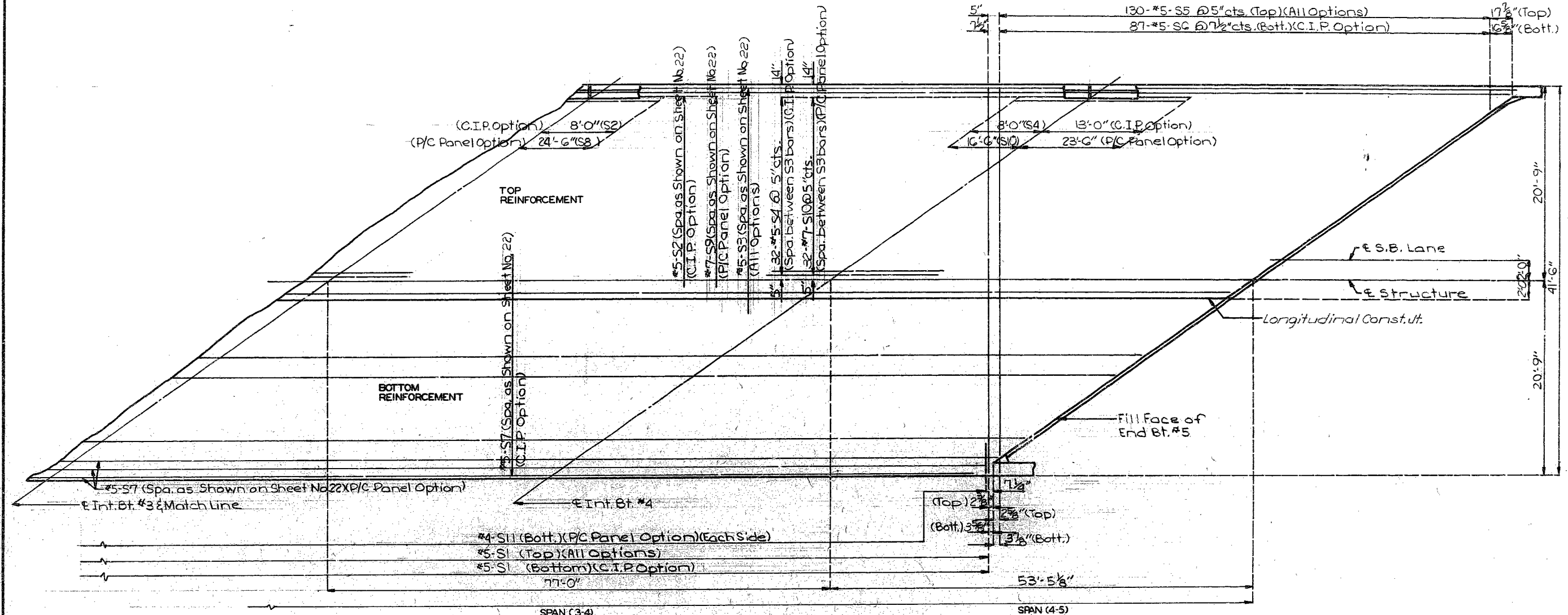
Note: Dimensions shown are horizontal.



SEQUENCE OF POURS					MIN. RATE OF POUR (CU. YDS. / HR.)
DIRECTION					WITH RETARDER
BASIC SEQUENCE	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 703.3.12.4 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				

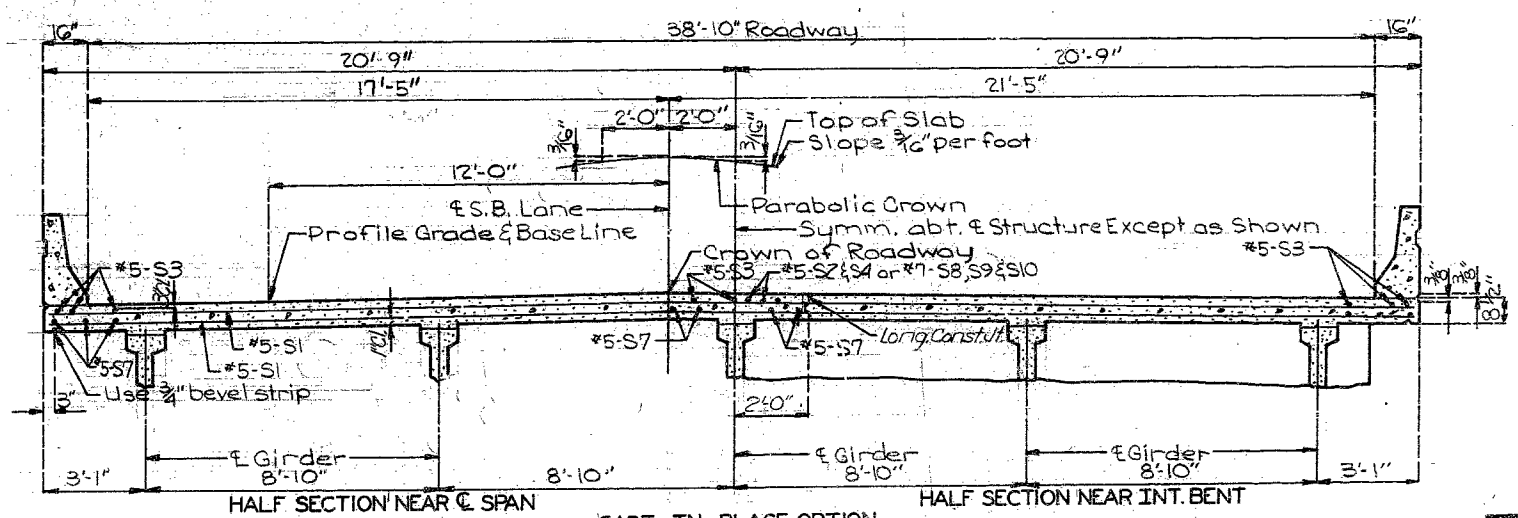
Note: The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at the rate given.

The concrete diaphragm at the intermediate bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before slab is poured.



PART PLAN OF SLAB SHOWING REINFORCEMENT
Note: Dimensions shown are horizontal.

Note: For details Precast Prestressed Panels see sheet No.21.
For details of slab not shown see sheet No.22.
For details of Barrier Curb see sheet No.24.



HALF SECTION NEAR C. SPAN CAST-IN-PLACE OPTION HALF SECTION NEAR INT. BENT

DETAILED JULY 1985
CHECKED AUG 1988

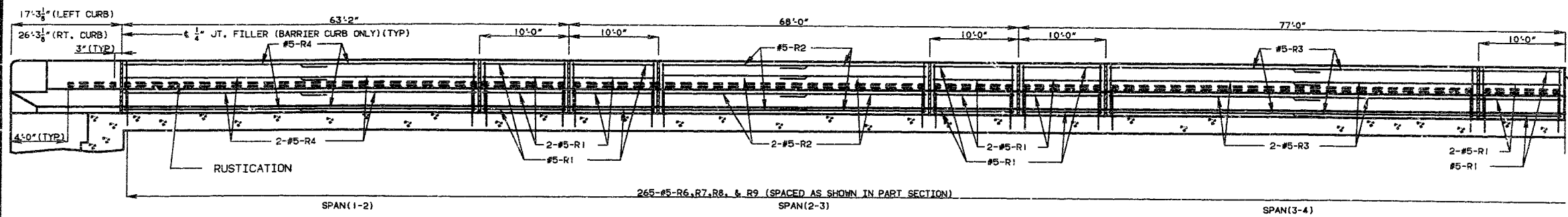
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 23 of 27

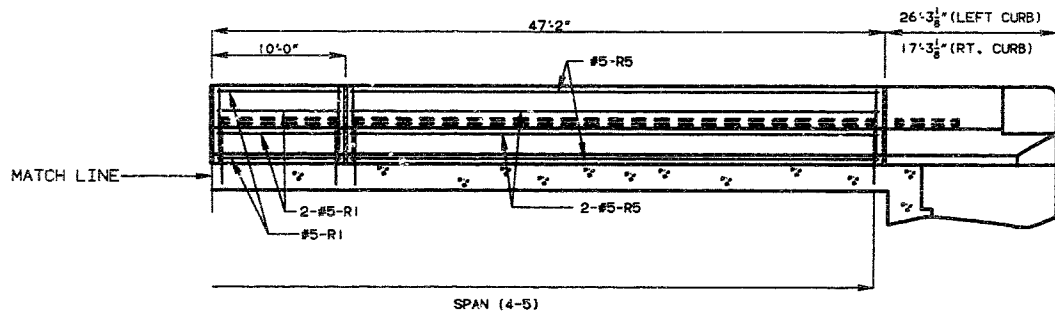
JEFFERSON COUNTY

A-2944

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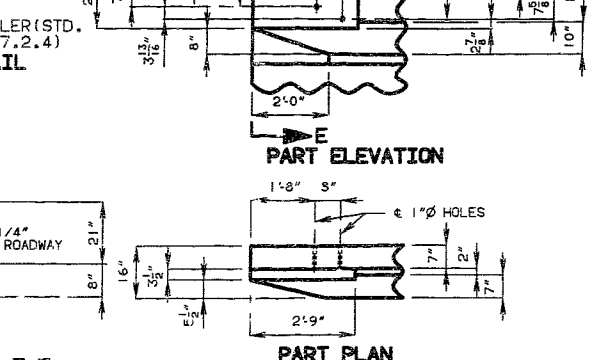
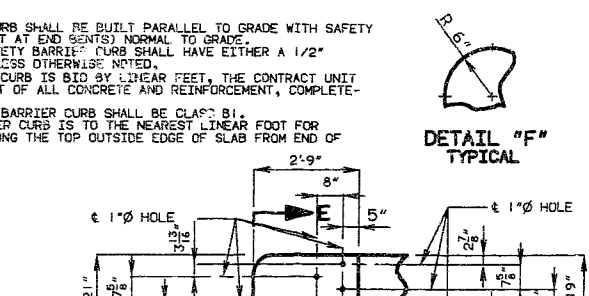
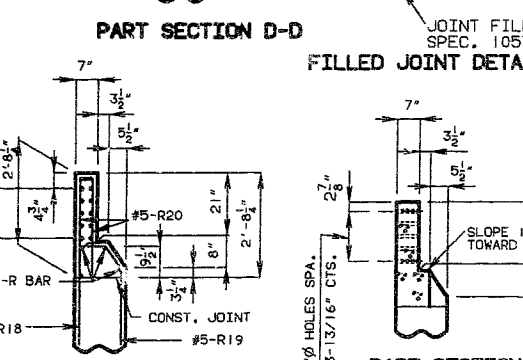
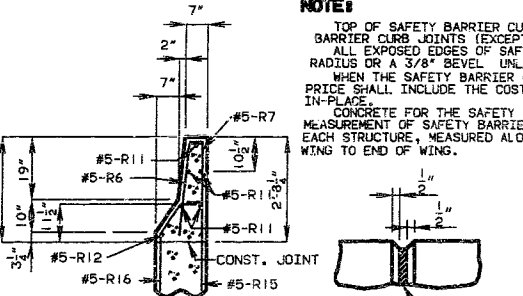
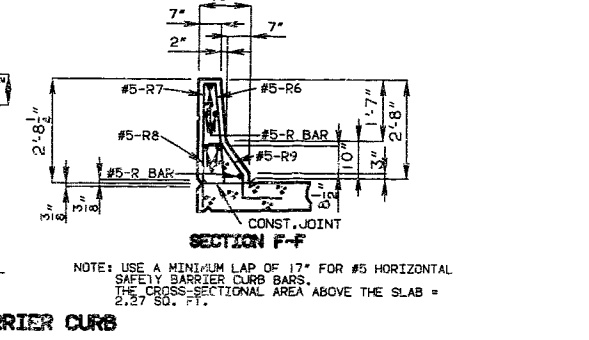
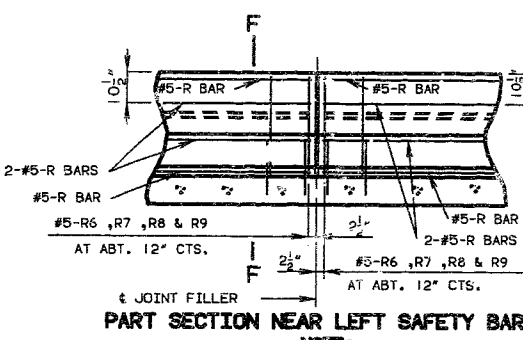
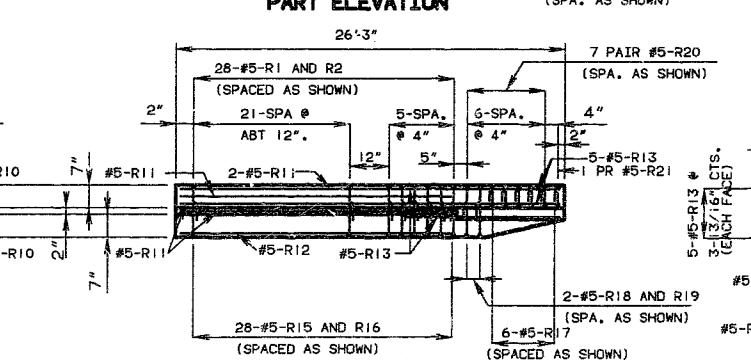
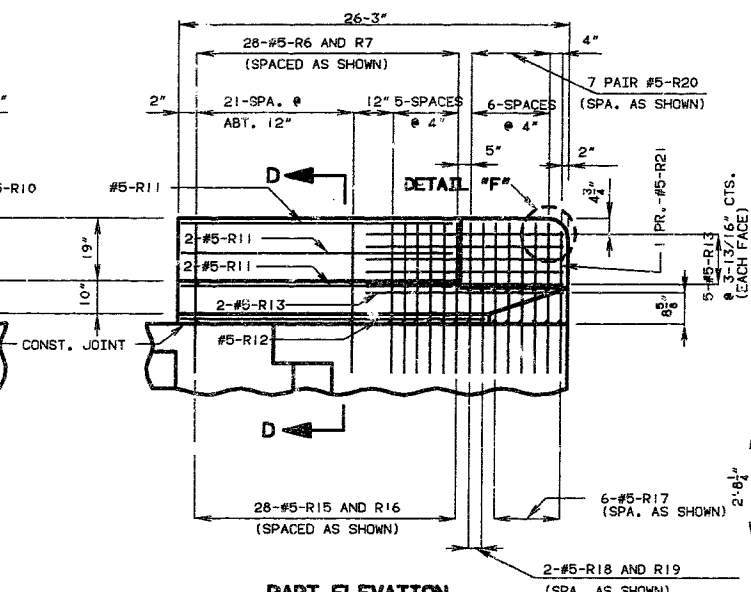
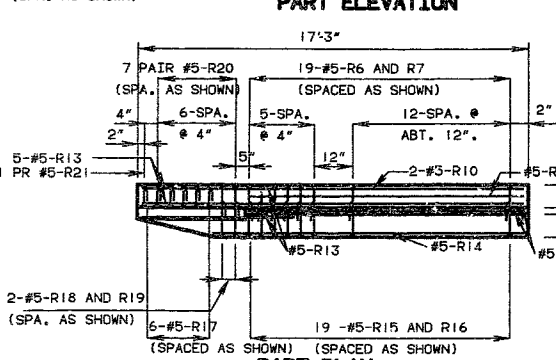
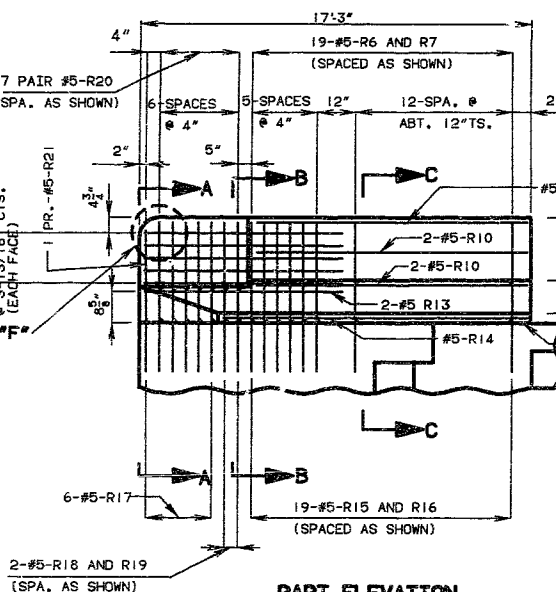
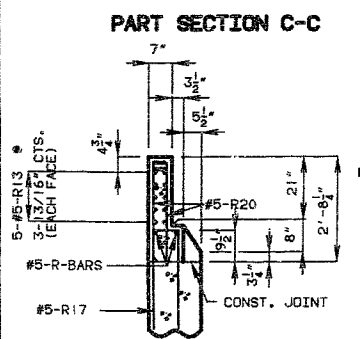
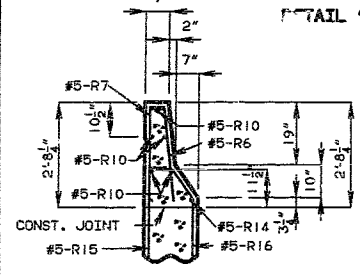
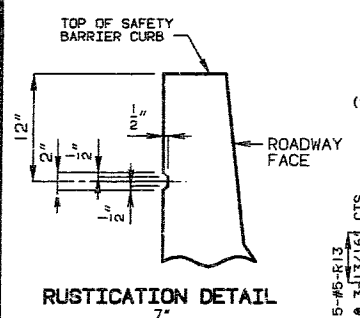
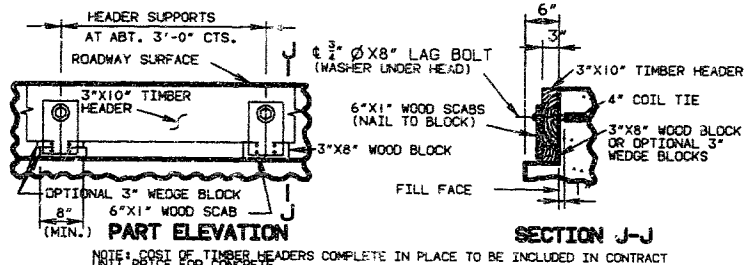
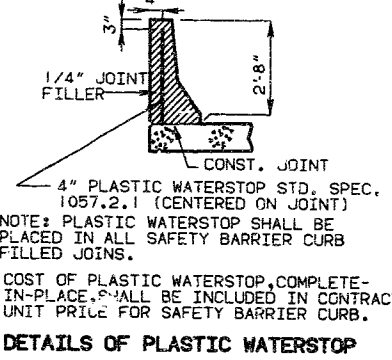
NOTE: DIMENSIONS SHOWN ARE HORIZONTAL.



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

SECTION NEAR LEFT BARRIER CURB (RIGHT BARRIER CURB SIMILAR)

STATE	PROJ. NO.	SHEET NO.
MO.		47



PART PLAN
JEFFERSON COUNTY
A-2944

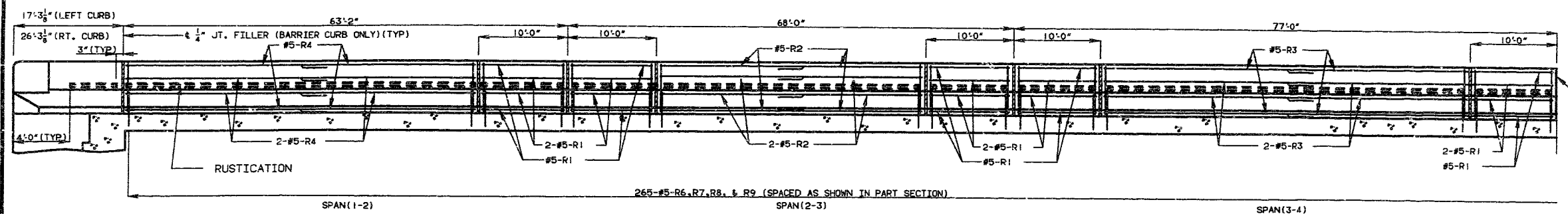
DETAILED APRIL 1990
CHECKED APRIL 1990

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

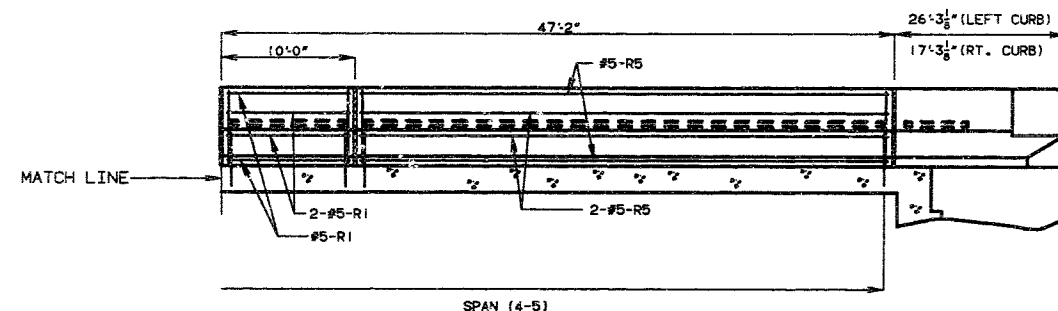
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SHEET NO. 24 OF 27.

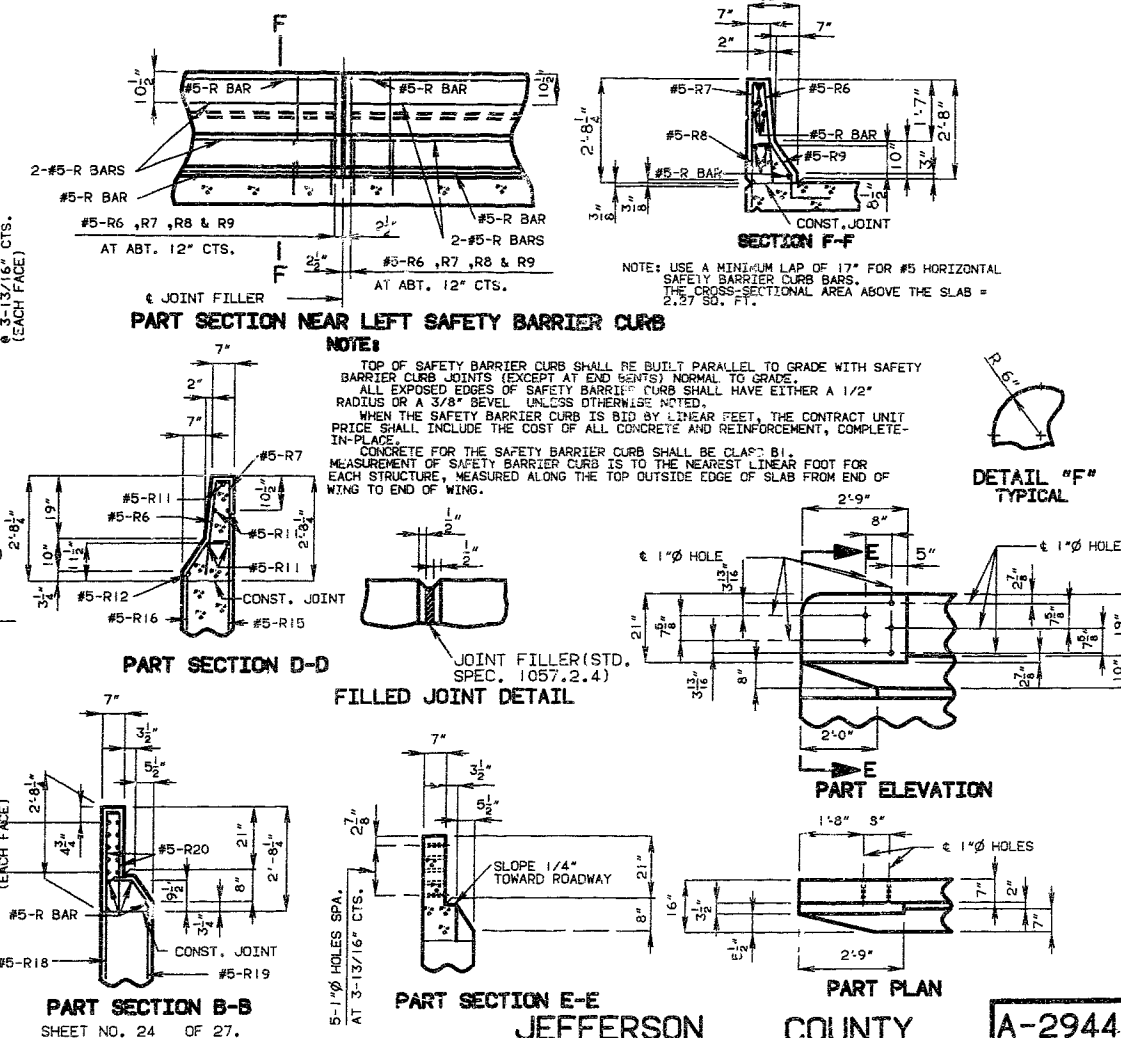
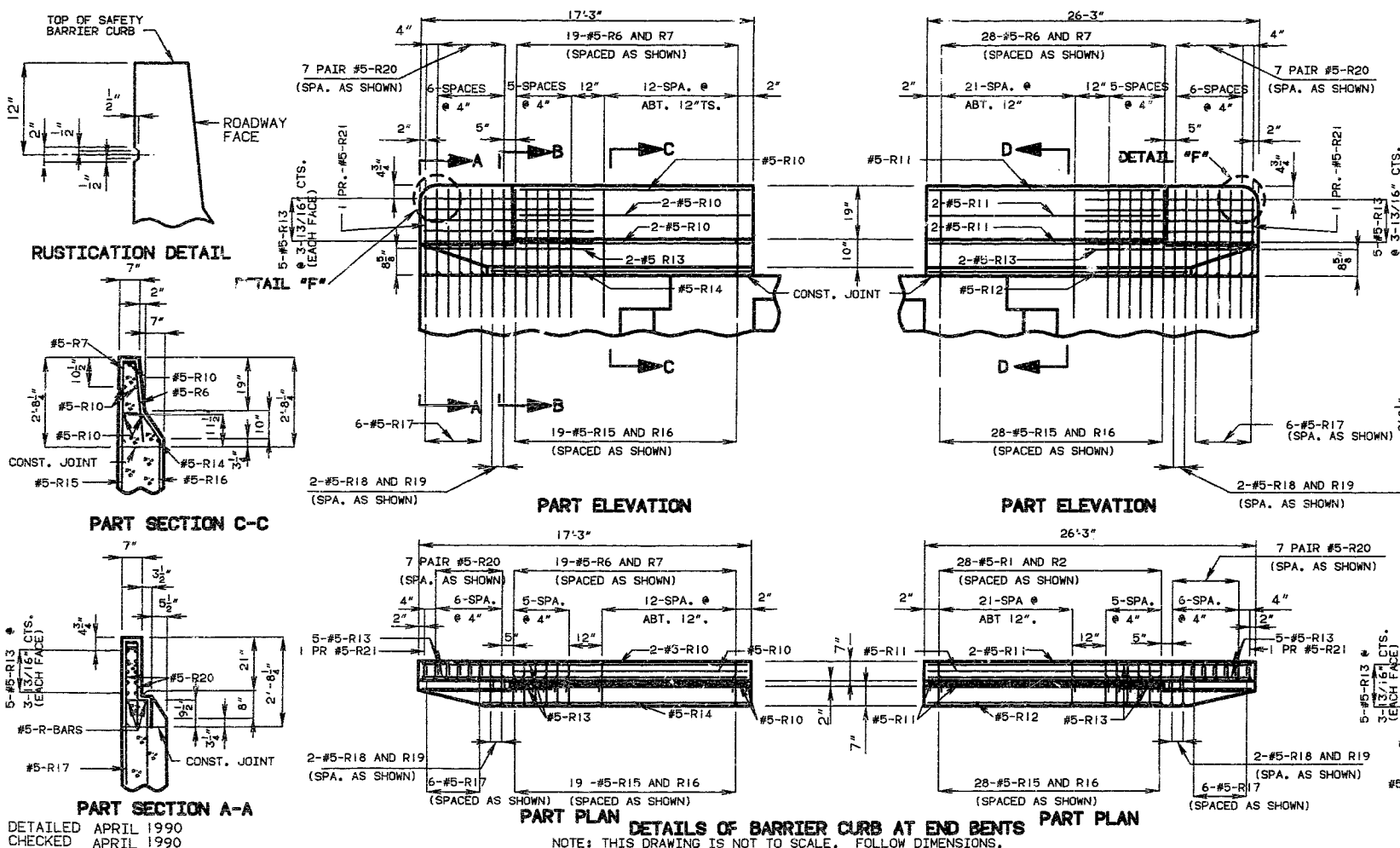
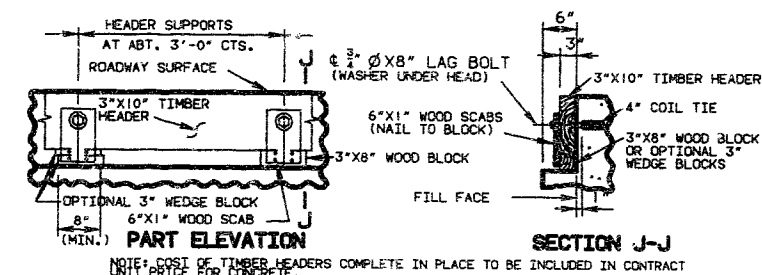
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NOTE: DIMENSIONS SHOWN ARE HORIZONTAL.

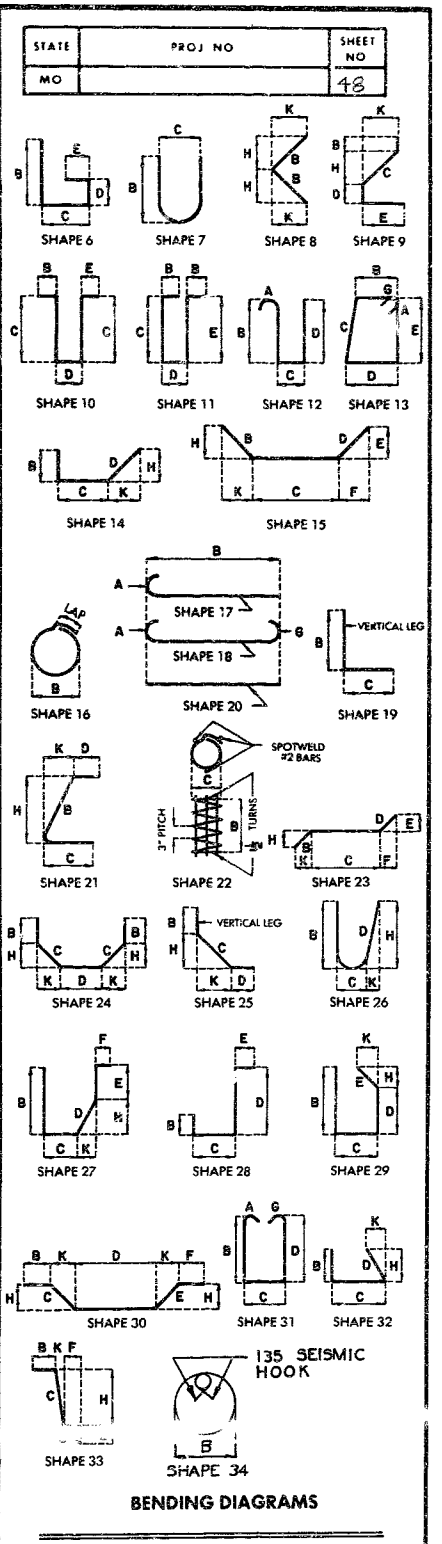


NOTE: RUSTICATION NOT SHOWN IN "DETAILS OF BARRIER CURB
AT END BENTS", FOR CLARITY.



COMPLETE BILL OF REINFORCING STEEL																
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS							
									B	C	D	E	F	H	K	NOMINAL
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
1		INT. BENT NO. 2														
6	401	INT. FOOTING		20	X				8	0.000						72
6	502	INT. FOOTING		20	X				5	9.000						36
2	603	INT. FOOTING		10	S	X				3	6.000	7	3.000			42
16	604	EXT. FOOTINGS		10	S	X				2	8.000	14	0.000			144
39	805	FOOTINGS&COLUMNS		17	X				5	10.000						703
8	9H1	BEAM		20	X				25	4.300						609
8	9H2	BEAM		20	X				43	7.000						1105
4	6H3	BEAM		20	X				25	4.000						152
4	6H4	BEAM		20	X				40	3.000						243
4	10H5	BEAM		17	X				17	4.000						404
4	10H6	BEAM		17	X				25	4.000						460
8	7H7	BEAM		7	X				4	0.000	2	9.750				155
4	10H8	BEAM		17	X				48	5.000						858
267	4P1	COLUMNS		34	S	X			2	9.000						1695
97	5U1	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000
2	5U2	BEAM		13	S	X			2	7.000	3	3.000	2	7.000	3	3.000
2	5U3	BEAM		13	S	X			2	10.000	3	3.000	2	10.000	3	3.000
4	4U4	BEAM		10	S	X				6.000	2	11.000				10
13	8V1	COLUMN		20	X				18	5.000						671
26	8V2	COLUMN		20	X				19	3.000						700
13	8V3	COLUMN		20	X				22	1.000						798
28	6V20	BEAM		20	X				21.000							74
4		INT BENT NO. 3														
6	601	INT. FOOTING		20	X				8	0.000						72
6	502	INT. FOOTING		20	X				5	9.000						36
2	603	INT. FOOTING		10	S	X				3	6.000	7	3.000			42
16	604	EXT. FOOTINGS		10	S	X				2	8.000	14	0.000			144
39	805	FOOTINGS&COLUMNS		17	X				5	10.000						703
8	9H1	BEAM		20	X				25	4.000						609
8	9H2	BEAM		20	X				43	7.000						1105
4	6H3	BEAM		20	X				25	4.000						152
4	6H4	BEAM		20	X				40	3.000						243
4	10H5	BEAM		17	X				17	4.000						404
4	10H6	BEAM		17	X				25	4.000						460
8	7H7	BEAM		7	X				4	0.000	2	9.750				155
4	10H8	BEAM		17	X				48	5.000						858
300	4P1	COLUMNS		34	S	X			2	9.000						1904
97	5U1	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000
2	5U2	BEAM		13	S	X			2	7.000	3	3.000	2	7.000	3	3.000
2	5U3	BEAM		13	S	X			2	10.000	3	3.000	2	10.000	3	3.000
4	4U4	BEAM		10	S	X				6.000	2	11.000				10
13	8V1	COLUMN		20	X				20	10.000						755
13	8V2	COLUMN		20	X				22	10.000						826
13	8V3	COLUMN		20	X				24	10.000						896
28	6V20	BEAM		20	X				21.000							74

COMPLETE BILL OF REINFORCING STEEL																
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS							
									B	C	D	E	F	H	K	NOMINAL
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
6	401	INT. FOOTING		20	X				8	0.000						72
6	502	INT. FOOTING		20	X				5	9.000						36
2	603	INT. FOOTING		10	S	X				3	6.000	7	3.000			42
16	604	EXT. FOOTINGS		10	S	X				2	8.000	14	0.000			144
39	805	FOOTINGS&COLUMNS		17	X				5	10.000						703
8	9H1	BEAM		20	X				25	4.300						609
8	9H2	BEAM		20	X				43	7.000						1105
4	6H3	BEAM		20	X				25	4.000						152
4	6H4	BEAM		20	X				40	3.000						243
4	10H5	BEAM		17	X				17	4.000						404
4	10H6	BEAM		17	X				25	4.000						460
8	7H7	BEAM		7	X				4	0.000	2	9.750				155
4	10H8	BEAM		17	X				48	5.000						858
233	4P1	COLUMNS		34	S	X			2	9.000						1479
97	5U1	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000
2	5U2	BEAM		13	S	X			2	7.000	3	3.000	2	7.000	3	3.000
2	5U3	BEAM		13	S	X			2	10.000	3	3.000	2	10.000	3	3.000
4	4U4	BEAM		10	S	X				6.000	2	11.000				10
13	8V1	COLUMN		20	X				15	4.000						564
13	8V2	COLUMN		20	X				17	3.000						631
13	8V3	COLUMN		20	X				19	1.000						700
26	6V20	BEAM		20	X				21.000							74
		SUPERSTRUCTURE														
		END BENT NO. 1														
6	7P1	DIAPH. CHING		23	S				14.125	4	0.000	14.125	4	0.000	13.500	4.000
6	6F2	DIAPH. CHING		23	S				14.125	2	9.000	14.125	13.500	4.000	13.500	5
5	6F3	DIAPH.		23	S				3	9.250	5	8.000		2	2.000	3
5	6F4	DIAPH.		21	S				3	9.250	7	9.000		2	2.000	3
16	7H10	BEAM		20					38	2.000						1248
10	6H11	BEAM		20					37	8.000						546
6	7H12	BEAM		20					37	11.000						620
12	6H13	DIAPH.		20					12	6.000						225
2	4H14	APPROACH HAUNCH		20					34	3.000						46
5	5H15	STRAND TIE BAR		23					10.875	18.000	14.875	12.250	8.500	12.750	8.500	4
2	6H16	HING		20					12	6.000						38
4	6H17	HING		20					12	6.000						75
4	6H18	HING		20					21	6.000						129
2	6H19	HING		20					21	6.000						65
14	6H20	HING		20					2	12	8.000					178
		INCR. = 14.125 IN.							4	11.000						
16	6H21	HING		20					2	20	9.000					
		INCR. = 23.875 IN.							6	10.000						331
6	6H24	DIAPH.		20					3	6.000						
2	6T1	HING		23	S				2	0.000	17	11.175	4	6.000	6	4.000
2	6T2	HING		23	S				2	1.000	10	7.875	3	3.000	9	8.500



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 - 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.

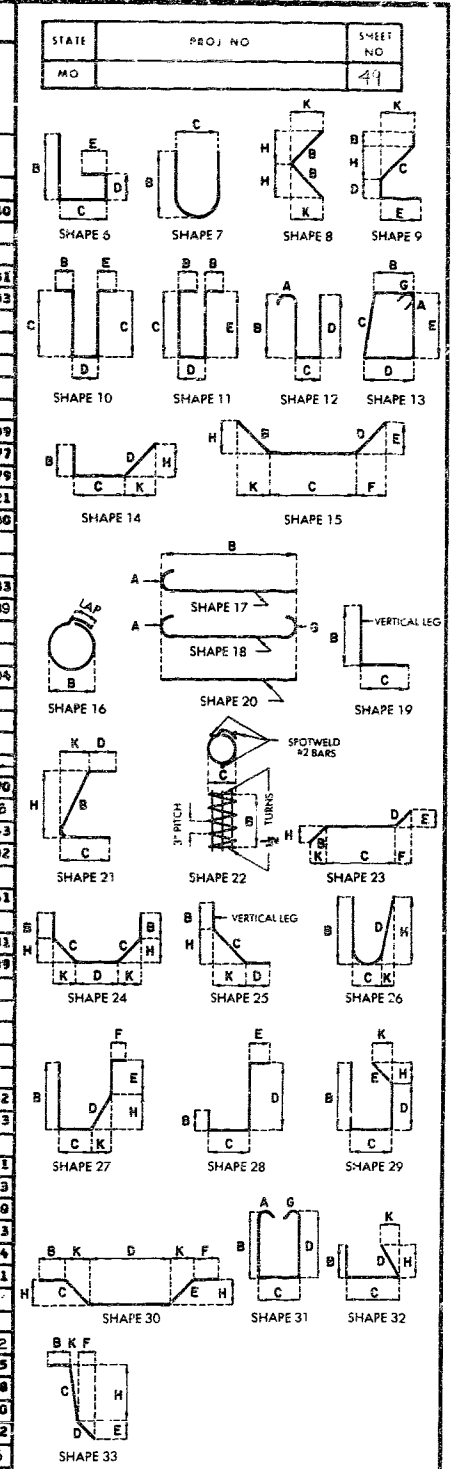
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

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

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

COMPLETE BILL OF REINFORCING STEEL																
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS							
									B	C	D	E	F	H	K	NOMINAL LENGTH
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	
44	5U1	BEAM		10	S				5	0.000	3	11.000				13 11 13 9
4	4U2	BEAM		10	S				2	9.000	3	11.000				9 9 9 3
12	4U3	BEAM		13	S				3	11.000	2	9.000	3	11.000	2	9.000
58	5U4	DIAPH.	E	10	S				4	2.000	3	11.000				12 3 12 1
52	4U5	DIAPH.		10	S					17.500	6.000					3 5 3 3
96	6U6	DIAPH.	E	19	S				4	0.000	5	4.000				9 4 9 2
24	5V10	BEAM		20					5	0.000						5 0 5 0
34	6V11	WING		20	V				2	7	5.000					7 5 7 5
		INCR = 3.875 IN							2	3.000						2 3 2 3
2	6V12	WING		20					7	6.000						7 6 7 6
4	6V13	WING		20					7	5.000						7 5 7 5
18	6V14	WING		20	V				2	7	0.000					7 0 7 0
		INCR = 6.875 IN							2	5.000						2 5 2 5
12	4H1	BEAM		20					3	11.000						3 11 3 11
30	5H2	BEAM		10	S				15.000	15.000	15.000	15.000				6 3 5 10
		END BENT NO. 5														
6	7F1	DIAPH. WING		23					14.125	8	0.000	14.125	4.000	13.500	4.000	10 4 10 4
6	6F2	DIAPH. WING		23	S				14.125	2	9.000	14.125	13.500	4.000	13.500	5 1 6 11
5	6F3	DIAPH.		23	S				3	9.250	5	6.050		2	2.000	9 3 9 3
5	6F4	DIAPH.		21	S				3	9.250	7	9.000		2	2.000	11 4 10 6
16	7H10	BEAM		20					38	2.000						38 2 38 2
10	6H11	BEAM		20					37	8.000						37 8 37 8
10	7H12	DIAPH.	E	20					37	11.000						37 11 37 11
12	6H13	DIAPH.		20					12	6.000						12 6 12 6
2	4H14	APPROACH HAUNCH		20					34	3.000						34 3 34 3
5	5H15	STAND TIE BAR		23					14.875	18.000	14.875	12.250	8.500	12.250	8.500	4 0 3 11
4	6H16	WING	E	20					12	6.000						12 6 12 6
4	6H17	WING		20					12	6.000						12 6 12 6
6	6H18	WING		20					21	6.000						21 6 21 6
2	6H19	WING	E	20					21	6.000						21 6 21 6
12	6H22	WING		20	V				2	11	10.000					11 10 11 10
		INCR = 15.750 IN							5	3.000						5 3 5 3
12	6H23	WING		20	V				2	20	4.000					20 4 20 4
		INCR = 32.625 IN							6	9.000						6 9 6 9
6	6H24	DIAPH.		20					3	3.000						3 3 3 3
2	6T3	WING		25	S				2	0.000	17	4.625	4	6.000		4 8.000
2	6T4	WING		25	S				2	1.000	10	2.500	3	4.000		4 11.750
44	5U1	BEAM		10	S				5	0.000	3	11.000				13 11 13 9
4	4U2	BEAM		10	S				2	9.000	3	11.000				9 9 9 3
12	4U3	BEAM		13	S				3	11.000	2	9.000	3	11.000	2	9.000
58	5U4	DIAPH.	E	10	S				4	2.000	3	11.000				12 3 12 1
52	4U5	DIAPH.		10	S					17.500	6.000					3 5 3 3
96	6U6	DIAPH.	E	19	S				4	0.000	5	4.000				9 4 9 2
24	5V10	BEAM		20					5	0.000						5 0 5 0
2	6V15	WING		20					7	6.000						7 6 7 6
34	6V16	WING		20	V				2	7	3.000					7 3 7 3
		INCR = 3.750 IN							2	2.000						2 2 2 2

COMPLETE BILL OF REINFORCING STEEL																
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS							
									B	C	D	E	F	H	K	NOMINAL LENGTH
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	
18	6V18	WING		20	V				2	7	3.000					7 3 7 3
		INCR = 7.875 IN							2	4.000						2 4 2 4
12	4H1	BEAM		20					3	11.000						3 11 3 11
30	5H2	BEAM		10	S				15.000	15.000	15.000	15.000				6 3 5 10
		INT. BT. DIAPH.														
48	4H40	DIAPH.		20					12	9.000						12 9 12 9
48	4H41	DIAPH.		20					12	2.000						12 2 12 2
48	5H42	DIAPH.		19	S				2	11.000	9.000					3 8 3 7
54	5H43	STRAND TIE BARS		23	S				14.875	18.000	14.875	12.250	8.500	12.250	8.500	4 0 3 11
36	5H44	STRAND TIE BARS		23	S				14.875	18.000				12.250	8.500	2 9 2 9
48	6U15	DIAPH.	E	28	S				3	1.000	4	2.000	14.000			8 3 8 1
146	4U16	DIAPH.	E	28	S				3	1.000	4	2.000	12.000			8 3 8 1
24	5V10	DIAPH.	E	20					4	2.000						4 2 4 2
		C.I.P. SLAB OPTION														
850	5S1	SLAB	E	20					41	3.000						41 3 41 3
128	5S2	SLAB	E	20					16	0.000						16 0 16 0
245	5S3	SLAB	E	20					40	1.000						40 1 40 1
64	5S4	SLAB	E	20					21	0.000						21 0 21 0
260	5S5	SLAB	E	20	V				2	1.000						2 1 2 1
		INCR = 3.500 IN							39	8.000						39 8 39 8
174	5S6	SLAB	E	20	V				2	0.000						2 0 2 0
		INCR = 9.250 IN							39	8.000						39 8 39 8
294	5S7	SLAB	E	20					39	9.000						39 9 39 9
		PRECAST PANEL OPTION														
510	5S1	SLAB	E	20					41	3.000						41 3 41 3
245	5S3	SLAB	E	20					40	1.000						40 1 40 1
260	5S5	SLAB	E	20	V				2	1.000						2 1 2 1
		INCR = 3.500 IN							39	8.000						39 8 39 8
64	7S8	SLAB	E	20					46	6.000						46 6 46 6
64	7S9	SLAB	E	20					49	0.000						49 0 49 0
64	7S10	SLAB	E	20					40	0.000						40 0 40 0
526	4S11	SLAB	E	20					3	0.000						3 0 3 0
42	5S7	SLAB	E	20					39	9.000						39 9 39 9
		BARRIER CURB														
74	5R1	BARRIER CURB	E	20					9	9.000						9 9 9 9
24	5R2	BARRIER CURB	E	20					24	7.000						24 7 24 7
24	5R3	BARRIER CURB	E	20					29	1.000						29 1 29 1
24	5R4	BARRIER CURB	E	20					21	2.000						21 2 21 2
12	5R5	BARRIER CURB	E	20					36	11.000						36 11 36 11
624	5R6	BARRIER CURB	E	15	S				2	6.125	3.500					2 10 2 6
624	5R7	BARRIER CURB	E	19	S				2	6.000	3.300					2 10 2 6
530	5R8	BARRIER CURB	E	19	S				17.000	4.000						23 22 1013
530	5R9	BARRIER CURB	E	27	S				6.000	11.125	7.000	12.000	9.125	6.375	3	0 2 10



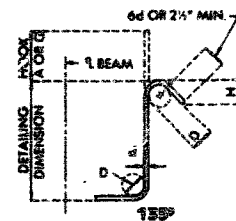
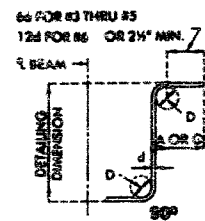
NOTES:
 ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
 HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
 E - EPOXY COATED REINFORCEMENT.
 S - STIRRUP.
 X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
 V - BAR 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.

END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS
		ALL GRADES		ALL GRADES
		A OR G	J	A OR G
#3	2 1/8"	5"	3"	5"
#4	3"	6"	4"	8"
#5	3 3/8"	7"	5"	10"
#6	4 1/8"	8"	6"	12"
#7	5 1/8"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/8"	15"	11 1/2"	19"
#10	10 1/8"	17"	13 1/2"	22"
#11	12"	19"	14 1/2"	24"
#14	18 1/8"	23 3/4"	21 1/2"	27"

STIRRUP HOOK DIMENSIONS				
GRADES 40-30-60 KSI				
BAR SIZE	D (IN.)	90° HOOK		135° HOOK
		HOOK A O & G	HOOK A O & G	APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3½"
#6	4¼"	12"	7¾"	4½"

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

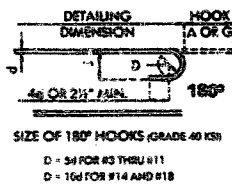
Note: This drawing is not to scale. Follow



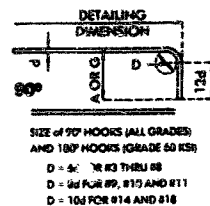
STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#3	1 1/8"	4"	4"	2 1/4"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/4"	6"	5 1/2"	3 1/2"
#6	4 1/4"	12"	7 1/2"	4 1/2"

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



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 60 KSI)
D = 4d: #12 THRU #18
D = 6d FOR #9, #13 AND #17
D = 10d FOR #14 AND #18

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 - 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.

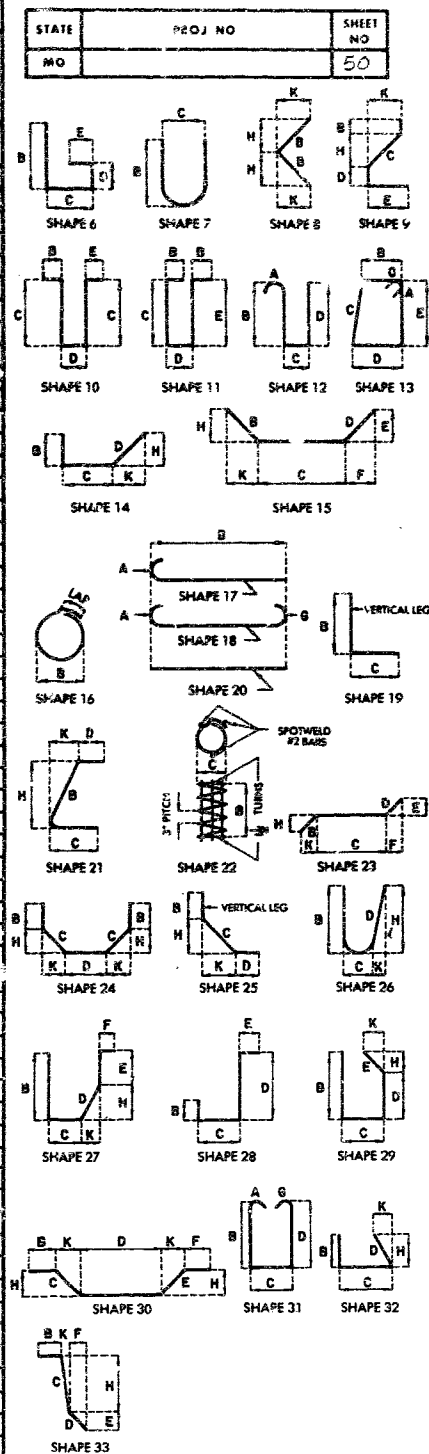
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH).

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.	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.
10	9818	BARRIER CURB	E	20					14	3.000									14	3	14	3	149		
10	9818	BARRIER CURB	E	20					23	3.000									23	3	23	3	243		
2	9812	BARRIER CURB	E	20					24	3.000									24	3	24	3	51		
48	9813	BARRIER CURB	E	20					1	0.000									13	0	5	0	250		
2	9814	BARRIER CURB	E	20					18	3.000									18	3	18	3	32		
94	9819	BARRIER CURB	E	19					2	3.000	6.000							2	9	2	8	281			
94	9816	BARRIER CURB	E	17						6.000	11.125	18.000				9.125	6.375	3	0	2	11	286			
24	9817	BARRIER CURB	E	10						2	1.000	7.500						4	10	4	7	115			
8	9818	BARRIER CURB	E	19					2	1.000	7.000							2	8	2	7	22			
8	9817	BARRIER CURB	E	27							7.000	8.425	18.000				7.125	4.875	2	10	2	9	23		
56	9822	BARRIER CURB	E	19					2	6.000	3.500							2	10	2	9	161			
8	9821	BARRIER CURB	E	19					2	1.000	3.500							2	5	2	4	20			



BENDING DIAGRAMS

NOTE: Two (2) additional H12, H16, R14, R18 are included in bar bill for testing.

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

Sheet No. 27 of 27

JEFFERSON

COUNTY

A-2944

STD. 90.0.5
MAY 1974

REVISED
JUNE 1986

DETAILED OCT. 1988
CHECKED OCT. 1988

374 237

STATE	PROJ NO	SHEET NO
MO	F-21-2 (29)	25

Job No JGP0017D

GENERAL NOTES:

Design Specifications: A.R.S.M.T.O.-1989 Load Factor Design

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 = 3,000 psi

Class B1 Concrete (Safety Barrier Curb) f'c = 4,000 psi

Class B2 Concrete (Superstructure except Prestressed Girders and Safety Barrier Curb) f'c = 4,000 psi

Reinforcing Steel (Grade 60) fy = 60,000 psi

Steel Pile fb = 9,000 psi

For Prestressed Girder Stresses see Girder Sheet No. 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.	TOTAL
Class I Excavation	Cu. yd.	162.0	162.0
Str. Steel Pile (10")	Lin. Ft.	2296	2296
Class B Concrete	Cu. yd.	215.6	215.6
(b) Slab on Concrete I-Gdr. See Spec. Prov.	Sq. yd.	1236	1236
Safety Barrier Curb	Lin. Ft.	0	0
Plain Neoprene Brg. Pads	Each	10	10
Prestressed Concrete I-Gdr. (68' Span)	Each	10	10
Prestressed Concrete I-Gdr. (77' Span)	Each	5	5
Prestressed Concrete I-Gdr. (82' Span)	Each	5	5
Reinforcing Steel (Bridges)	Lbs.	31,620	31,620
Vertical Drain At End Bents	EA	2	2
Pile Point Reinforcement	EA	53	53
Pre-Bore For Piling	Lin. Ft.	1500	1500
Laminated Neoprene Brg. Pads	Each	30	30
Slip Form Barrier Curb		598	598

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.

All concrete above the construction joint in the End Bents is included in the estimated superstructure quantities for Slab on Concrete I-Girders, see Special Provisions.

Note: Prebore for piles at Bents #1, #2, #3, #4 & #5 to elevations 719.00 (Bt. #1), 720.00 (Lt. #2), 712.00 (Lt. #3), 703.00 (Rt. #4), 708.00 (Lt. #5), 706.00 (Rt. #3), 701.00 (Rt. #4), 709.00 (Lt. #4), 713.00 (Lt. #5), 721.00 (Rt. #4) and 722.00 (Bt. #5) respectively.

PILE DATA					
BENT NO.	1	2	3	4	5
Pile Type and Size	HP10x42	HP10x42	HP10x42	HP10x42	HP10x42
Number	7	13	13	13	7
Approximate Length	Fl. 52	1	2	3	54
Design Bearing	Tons 49	4	4	4	49
Hammer Energy Required	Ft. Lbs. 12100	1	1	1	12100

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

All piles shall be driven to practical refusal.

138' Rt., 37' Lt. 26' Lt. 36' Rt., 37' Lt. 38' Lt. 36' Rt., 39' Lt. 38' Lt.

Ext. 55, Int. 42 Ext. 12900, Int. 10800

ESTIMATED QUANTITIES FOR ALTERNATE SLAB		
TYPE OF SLAB	Reinforcement Lbs.	Concrete Cu. yds.
Cash-in-Place Conventional Forms	19200	11630
Precast Panel Forms*	65590	11630

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.

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

* Bridge built with P/C Panels.

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