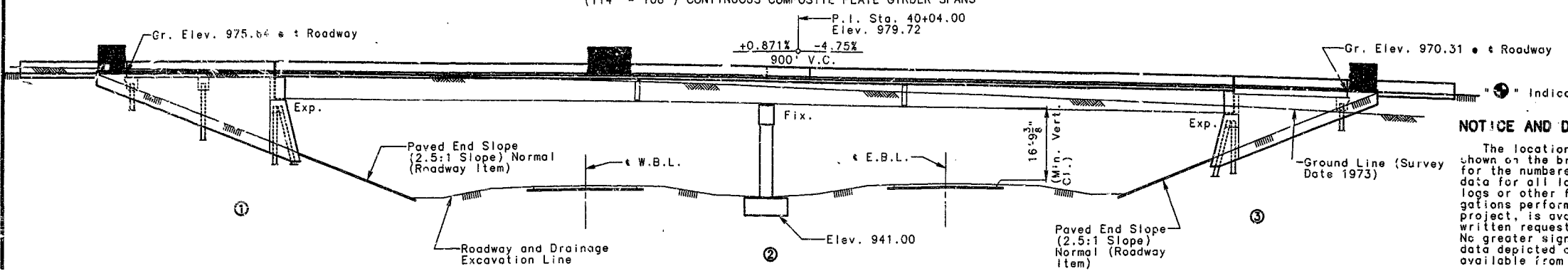


<b>FINAL PLANS</b>	
STATE	PROJ. NO.
W. No.	JOB No. J4U0029E
SEC./SUR. 2	TWP. 51N RGE. 33W
SHEET NO.	91

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

(114' - 108') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



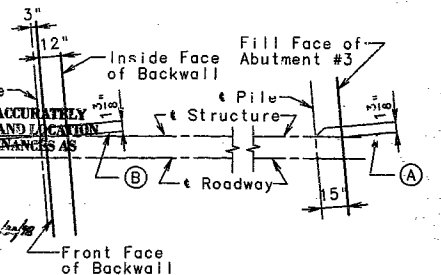
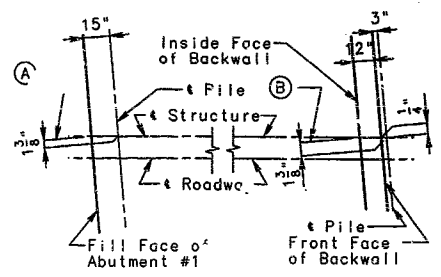
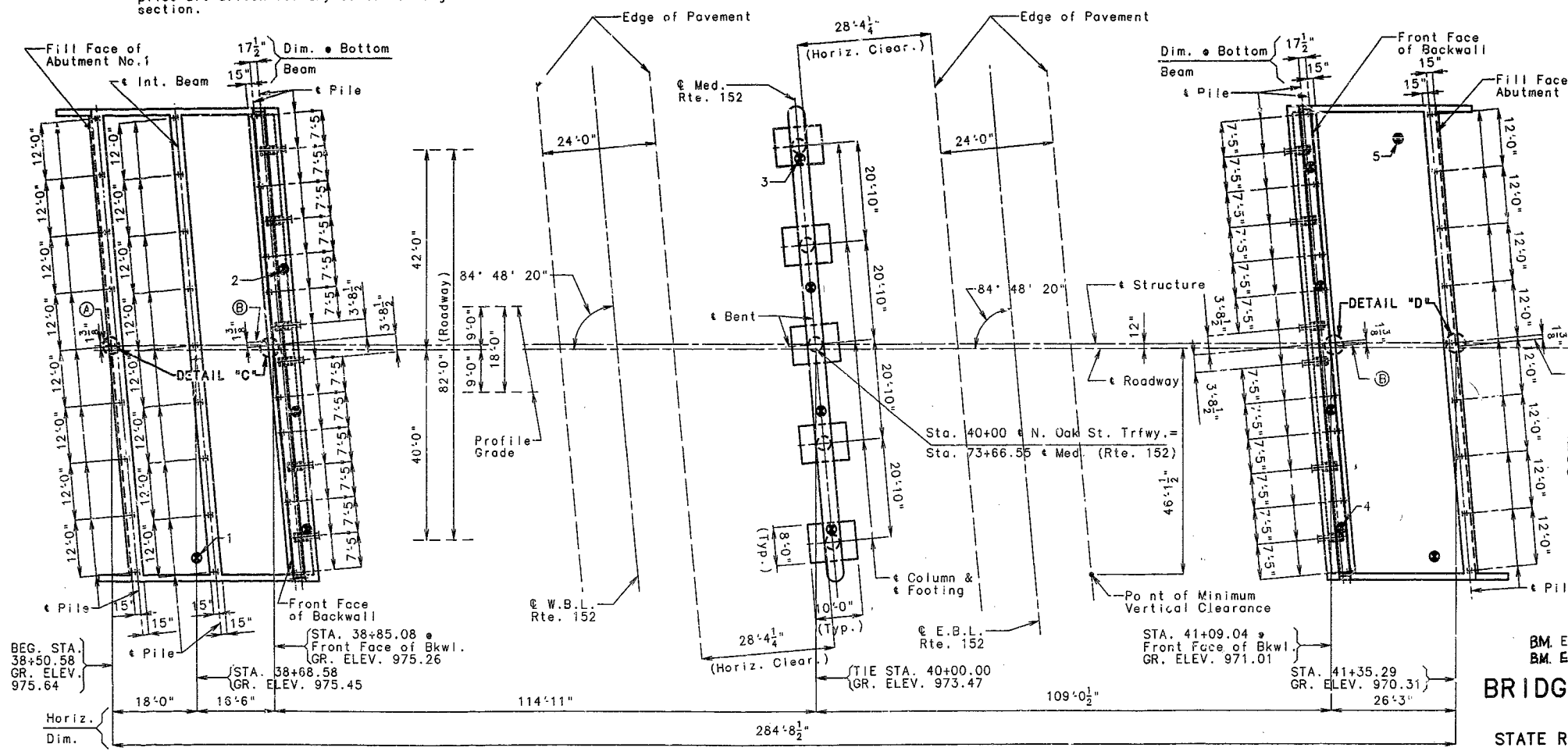
**NOTICE AND DISCLAIMER REGARDING BORING LOG DATA**

The locations of all subsurface boring for this structure are shown on the bridge plan sheet for this structure. Boring data for the numbered locations is shown on sheet no. 3. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, is available from the district materials engineer upon written request as outlined in the project special provisions. No greater significance or weight should be given to the boring data depicted on the plan sheets than to subsurface data available from the district or elsewhere.

The commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the commission.

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

GENERAL ELEVATION



STATE OF MISSOURI  
 THOMAS J. ...  
 REGISTERED PROFESSIONAL ENGINEER

BRIDGE: NORTH OAK ST. TRAFFICWAY OVER RTE. 152  
 STATE ROAD FROM RTE. 169 E. TO N. INDIANA AVE.  
 ABOUT 0.7 MILES EAST OF RTE. 169  
 PROJECT NO. STA. 73+66.55  
 JOB NO. J4U0029E RTE. 152  
 CLAY COUNTY

STD. 504.00
STD. 605.10
STD. 609.00
STD. 611.60
STD. 706.35
<b>A3530</b>

DESIGNED JUNE 1993  
 DETAILED APRIL 1994  
 CHECKED JUNE 1994

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

SHEET NO. 1 OF 35

DATE 8/9/1995

3526 363

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	JOB NO.	92

FINAL QUANTITIES			
ITEM	UNIT	SUBSTR.	SUPERSTR. TOTAL
CLASS 1 EXCAVATION	CU. YD.	243.5	243.5
BRIDGE APPROACH SLAB (BRIDGES)	SQ. YD.		549
472" PEDESTRIAN FENCE (STRUCTURES)	LIN. FT.		595
STRUCTURAL STEEL PILES (12")	LIN. FT.	1226	1226
PRE-BORE FOR PILING	LIN. FT.	784	784
CLASS B CONCRETE (SUBSTR.)	CU. YD.	522.0	522.0
SLAB ON STEEL	SQ. YD.		2472
SAFETY BARRIER CURB	LIN. FT.		669
PEDESTRIAN CURB	LIN. FT.		597
SLAB ON SEMI-DEEP ABUTMENT	SQ. YD.		672
RAISED MEDIAN BARRIER	SQ. FT.		1344
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		33
PREFORMED COMPRESSION EXPANSION JOINT SEAL (3.5 IN.)	LIN. FT.		194
REINFORCING STEEL (BRIDGES)	POUND	58,050	58,050
REINFORCING STEEL (EPOXY COATED)	POUND	7,490	7,490
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1
FABRICATED STRUCTURAL CARBON STEEL (PLT. GIR.)	POUND	353,150	353,150
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLT. GIR.) A-572	POUND	189,860	189,860
SLAB DRAINS	EACH		16
FIELD COAT (SYSTEM G) GREEN	SQ. FT.		6000
TEST HOLES	LIN. FT.	20	20

NOTE: All concrete and reinforcing steel below top of slab and above construction joint in Semi-Deep Abutments are included in Superstructure Quantities for Slab on Semi-Deep Abutments.  
 \*\* Safety Barrier Curb shall be Cast-In-Place Option or Slip-Form Option.

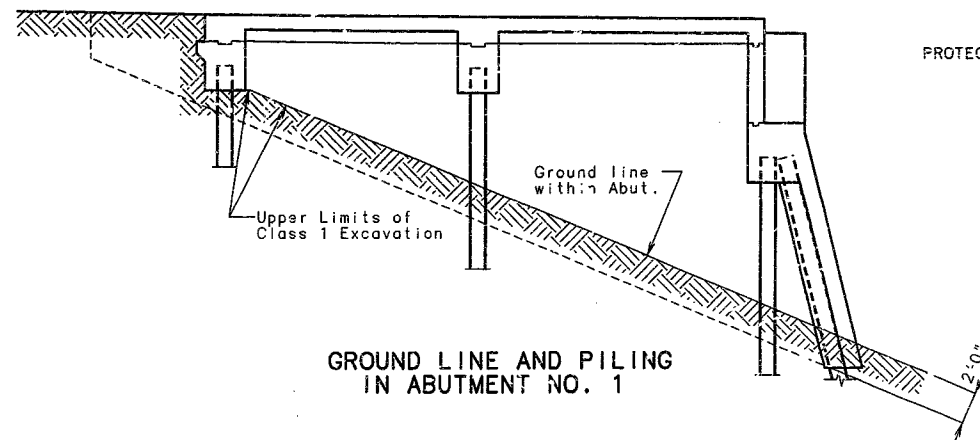
ESTIMATED QUANTITIES FOR SLAB ON STEEL		
ITEM	UNIT	TOTAL
REINFORCING STEEL (EPOXY COATED)	LBS.	118,060
CONCRETE	CU. YDS.	455.1

ESTIMATED QUANTITIES FOR SLAB ON SEMI-DEEP ABUTMENT		
ITEM	UNIT	TOTAL
REINFORCING STEEL (EPOXY COATED)	LBS.	52,730
CONCRETE	CU. YDS.	253.6

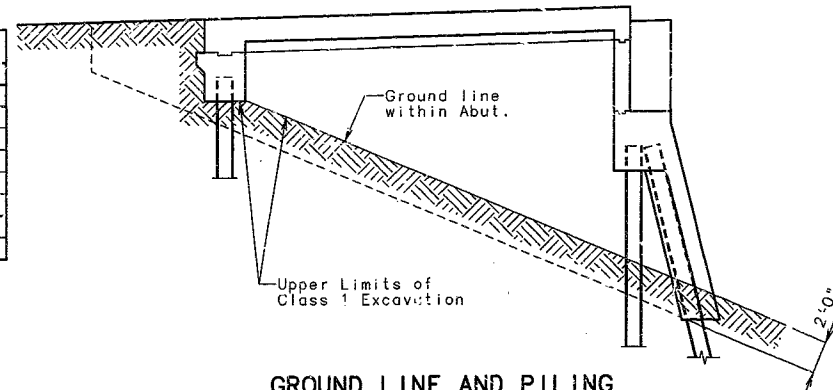
NOTE: The table of Estimated Quantities for Slab on Steel and Slab on Semi-Deep Abutment represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the contract unit price per square yard of Slab on Steel and Slab on Semi-Deep Abutment.  
 Slab on Steel Quantities are based on skewed precast end panels.  
 The Prestressed Panel Quantities are not included in the table of Estimated Quantities for Slab on Steel.

PILE & FOOTING DATA								
BENT NO.	PILE TYPE AND SIZE	ABUTMENT NO. 1			INT. BT. NO. 2	ABUTMENT NO. 3		
		APPR. BM.	INT. BM.	BRG. BM.		BRG. BM.	APPR. EM.	
		HP12X53					HP12X53	
BEARING PILE	NUMBER	9	9	14		14	9	
	APPROXIMATE LENGTH FT.	17	23	25		26	16	
	DESIGN BEARING TONS	43	47	66		69	58	
	HAMMER ENERGY REQUIRED FT.-LBS.	9,700	10,600	16,300		17,000	13,100	
SPREAD FOOTING	FOUNDATION MATERIAL					ROCK		
	DESIGN BEARING TON/SQ. FT.					5.9		

NOTE: Minimum energy requirement of hammer is based on plan length and design bearing value of piles.  
 All piles shall be driven to practical refusal.  
 Prebore for piles at Abutment No. 1, Appr. Bm. to Elev. 958.00, Int. Bm. to Elev. 950.00, Erg. Bm. to Elev. 942.00, and Abutment No. 3, Appr. Bm. to Elev. 953.00, Brg. Bm. to Elev. 938.00.



GROUND LINE AND PILING IN ABUTMENT NO. 1



GROUND LINE AND PILING IN ABUTMENT NO. 3

GENERAL NOTES:

DESIGN SPECIFICATIONS: A.A.S.H.T.O.-1992 LOAD FACTOR DESIGN & INTERIMS THROUGH 1994 SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:

HS20-44  
 35#/SQ. FT. FUTURE WEARING SURFACE  
 EARTH 120#/CU. FT., EQUIVALENT FLUID PRESSURE 45#/CU. FT.  
 FATIGUE STRESS - CASE II

DESIGN UNIT STRESSES:

CLASS B CONCRETE (SUBSTRUCTURE) F'C=3,000 PSI.  
 CLASS C CONCRETE (SAFETY BARRIER CURB) F'C=4,000 PSI.  
 CLASS B2 CONCRETE (SUPERSTRUCTURE EXCEPT SAFETY BARRIER CURB) F'C=4,000 PSI.  
 REINFORCING STEEL (GRAD. 60) F<sub>y</sub>=60,000 PSI.  
 STRUCTURAL CARBON STEEL: 50,000 PSI  
 STRUCTURAL STEEL (A.S. 572) GRADE 50 F<sub>y</sub>=50,000  
 STEEL PILE F<sub>b</sub>=9,000 PSI.  
 FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 23.

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.

NEOPRENE BEARINGS:

BEARINGS SHALL BE 30 DUROMETER NEOPRENE PADS. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:

FIELD CONNECTIONS, HIGH STRENGTH BOLTS 3/4" Ø, HOLES 13/16" EXCEPT AS NOTED.

PROTECTIVE COATING:

SYSTEM G BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS.

HIGH STRENGTH BOLTS, NUTS AND WASHERS SHALL BE SAMPLED FOR QUALITY IN ACCORDANCE WITH STANDARD SPECIFICATION 106 AND FIELD SECTION (FS-712) FROM MATERIALS MANUAL.

NOTE:

In no case shall the earth within Abutments No. 1 and 3 be above the ground line below. Forms supporting the Abutment Slab may be left in place.  
 The maximum variation of the head of the pile and the battered face of the pile from the position shown on the plans shall be not more than 2 inches for pile under Abutments No. 1 and 3.  
 Exposed steel piles within the abutment shall be coated with a heavy coating of an approved bituminous paint.

FINAL PLANS

I HEREBY CERTIFY THAT THIS DRAWING ACCURATELY REPRESENTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND STRUCTURES AS CONSTRUCTED ON THIS PROJECT.



DETAILED SEPT. 1993  
 CHECKED JUNE 1994

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

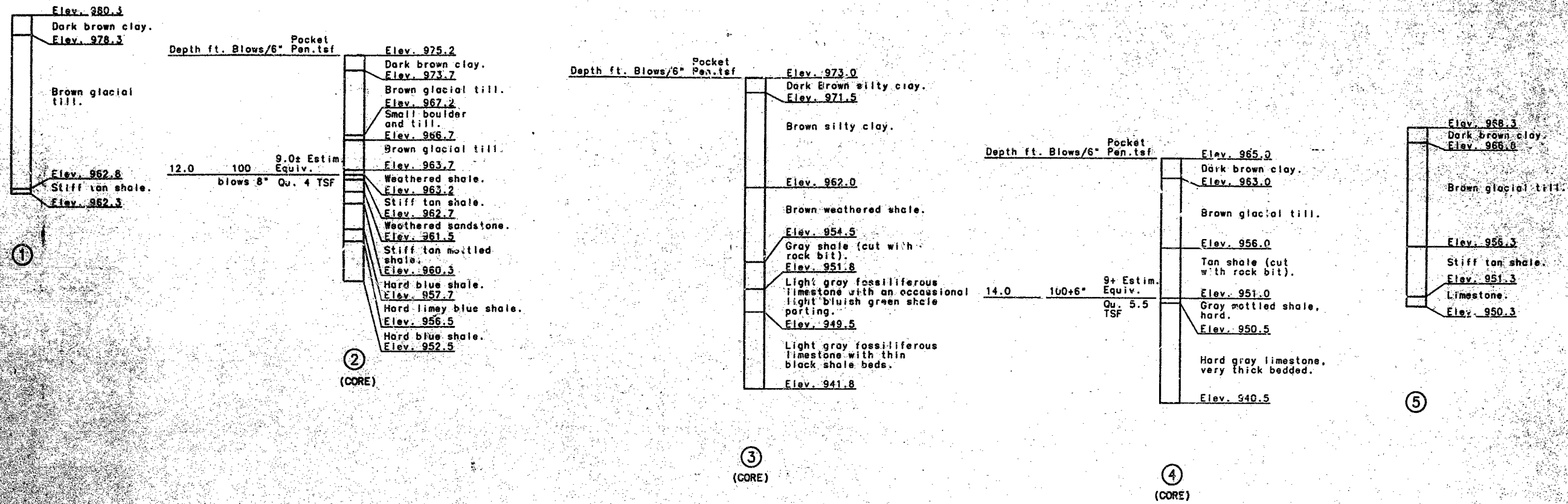
SHEET NO. 2 OF 35

CLAY

COUNTY

A3530

3557 364



365

BORING DATA

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

FINAL PLANS  
 I CERTIFY THAT THIS DRAWING ACCURATELY  
 REFLECTS THE CONFIGURATION AND LOCATION  
 OF THE ROAD AND APPURTENANCES AS  
 CONSTRUCTED ON THIS PROJECT.



DETAILED JAN. 1994  
 CHECKED JUNE 1994

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

SHEET NO. 5 OF 35

CLAY

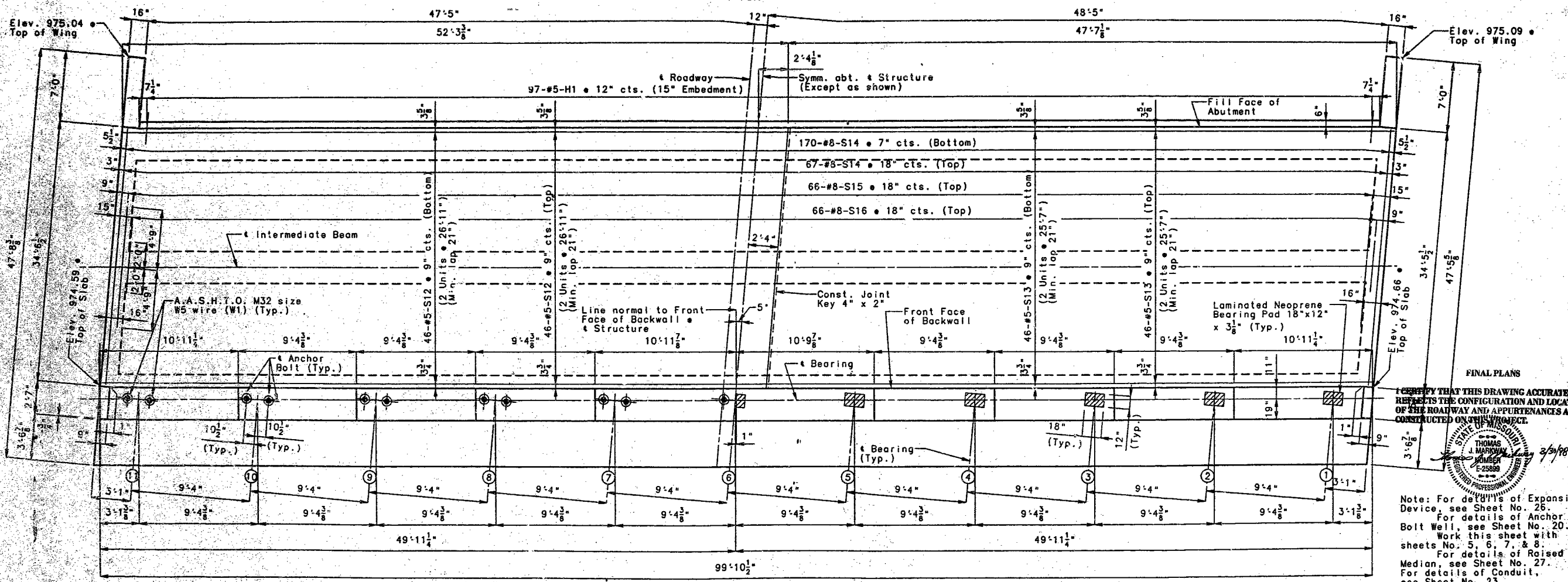
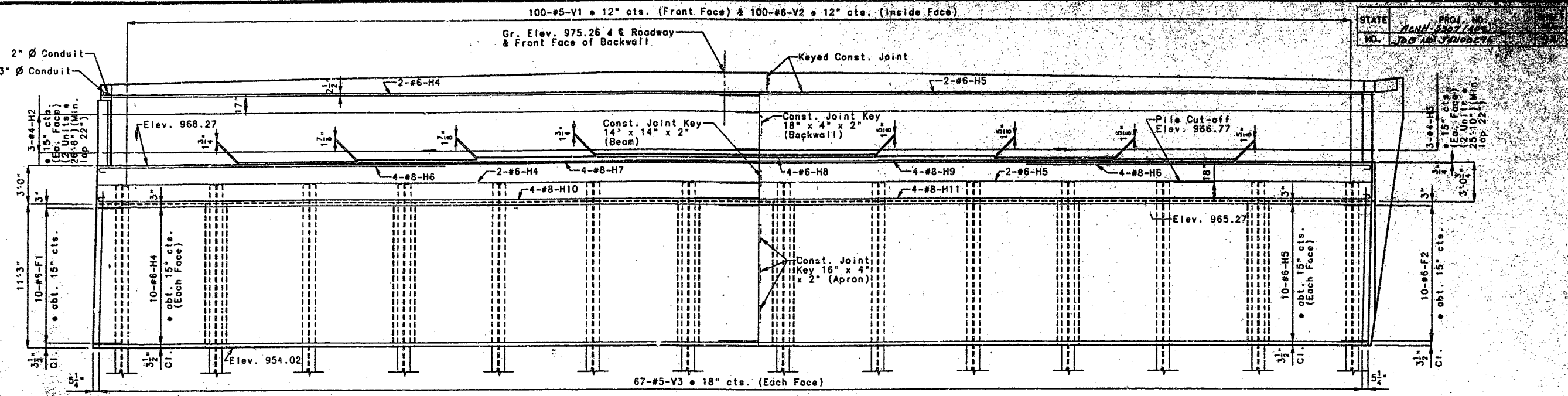
COUNTY

A3530



FINAL PLANS

STATE PROJ. NO.  
ANN. 2027 (2002)  
MO. TOP 107 2400275



CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

THOMAS J. MARKOW  
REGISTERED PROFESSIONAL ENGINEER  
NO. 25889  
3/29/98

Note: For details of Expansion Device, see Sheet No. 26.  
For details of Anchor Bolt Well, see Sheet No. 20.  
Work this sheet with sheets No. 5, 6, 7, & 8.  
For details of Raised Median, see Sheet No. 27.  
For details of Conduit, see Sheet No. 23.

Note: All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2".  
Conduit not shown in Plan view for clarity.  
Pedestrian Curb not shown for clarity.

Note: Abutment slab and expansion device for abutments to conform to crown of roadway slab.

366  
DETAILED JUNE 1994  
CHECKED JUNE 1994

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

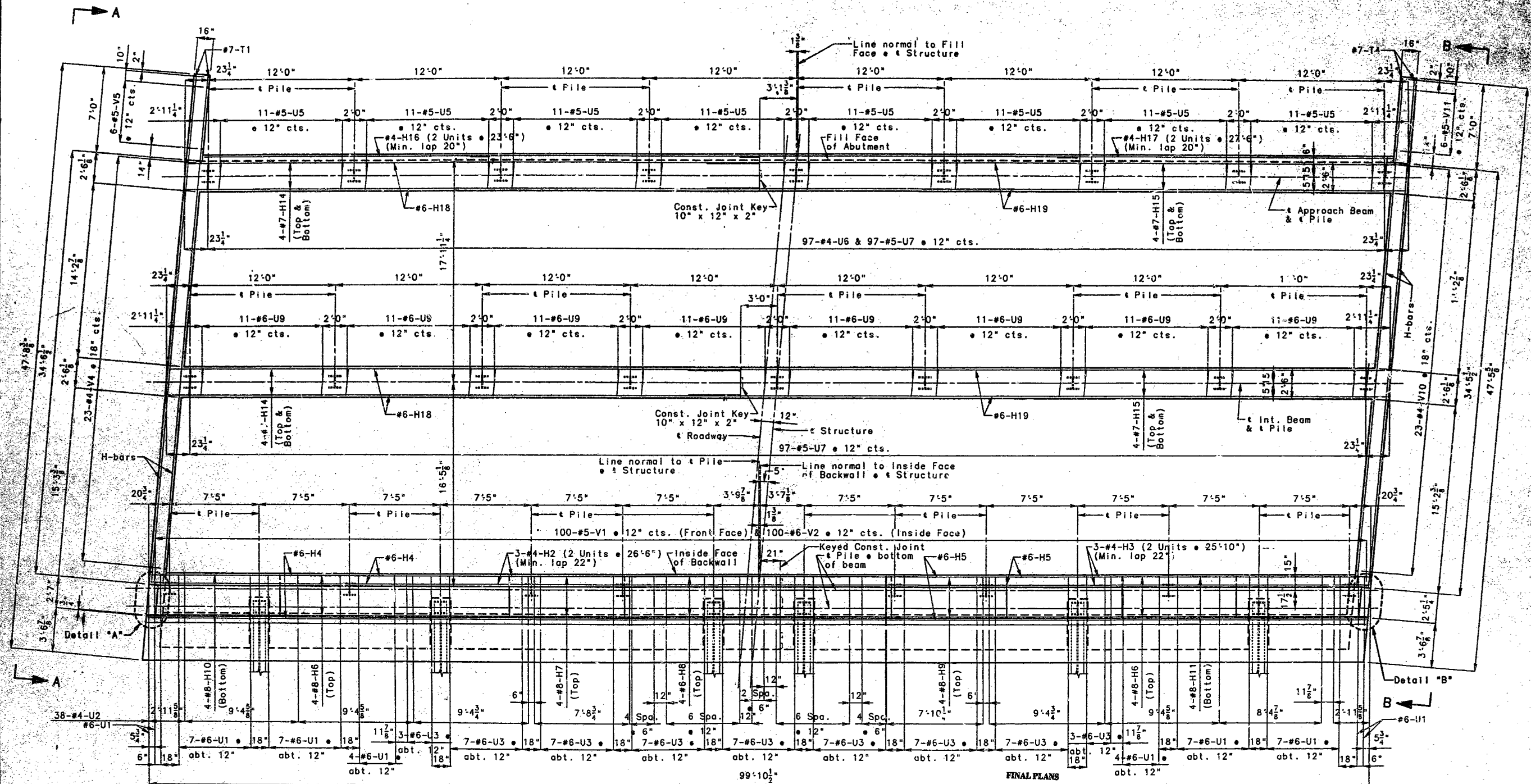
SHEET NO. 4 OF 35

CLAY COUNTY A3530



FINAL PLANS

STATE	PROJ. NO.	10
MO.	NO. 3907 (204)	35
	JOB NO. 7440022	



367

SECTION NEAR UPPER CONSTRUCTION JOINT

DETAILS OF ABUTMENT NO. 1

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



Note: Work this sheet with sheets No. 4, 6, 7, & 8.  
 All reinforcing bars in the top of substructure beams or caps shall be spaced to clear anchor bolt wells for bearing by at least 1/2".  
 Place all U-bars in the Int. & Approach Beams parallel to the Roadway.  
 Field bend, as required, the H-bars in backwall at wings.

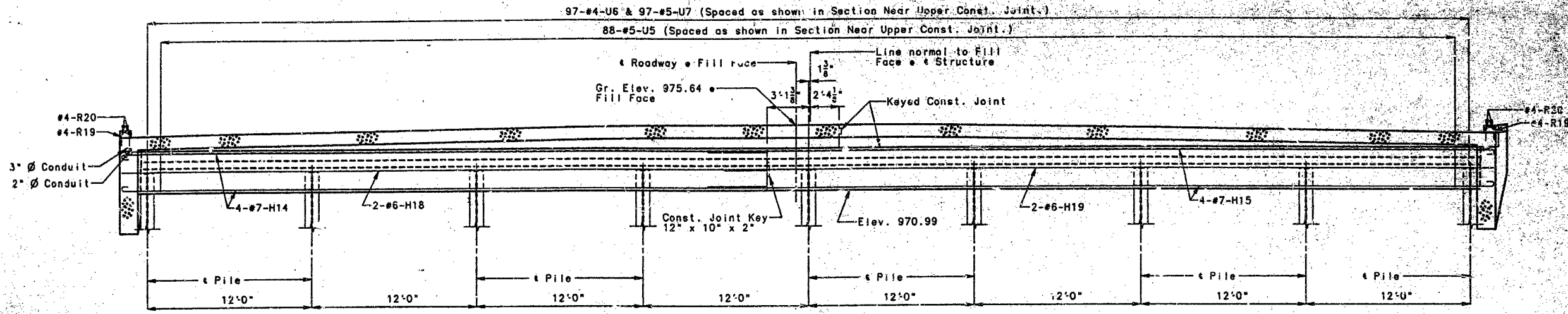
DETAILED CHECKED JUNE 1994  
 JUNE 1994

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

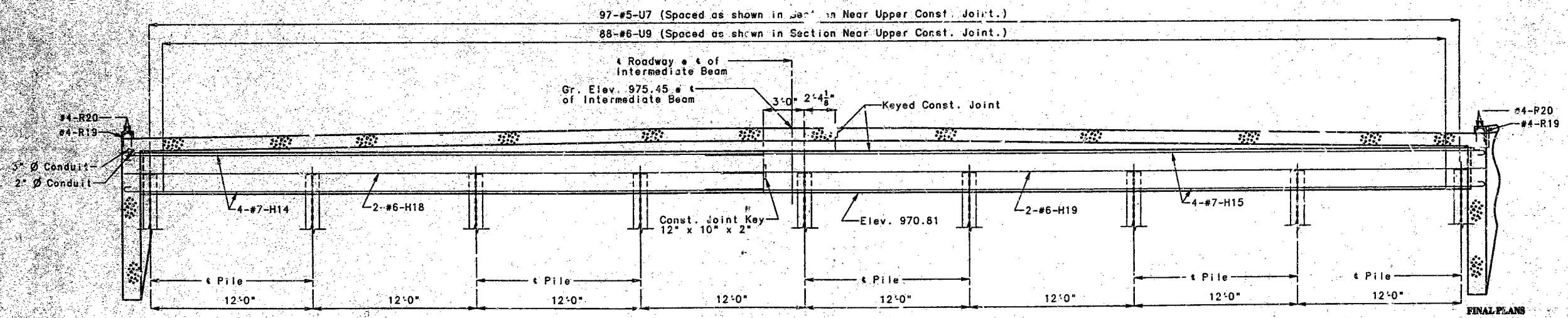
SHEET NO. 5 OF 35

CLAY COUNTY A3530

STATE	MO.	PROJ. NO.	1307-1001
ACORN		JOB NO.	TAUBORNA



SECTION NEAR APPROACH BEAM



SECTION NEAR INTERMEDIATE BEAM

DETAILS OF ABUTMENT NO. 1

758

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

THOMAS J. MULLER  
 E-25399  
 PROFESSIONAL ENGINEER  
 MISSOURI  
 2/20/98

Note: Work this sheet with sheets 7, & 8.

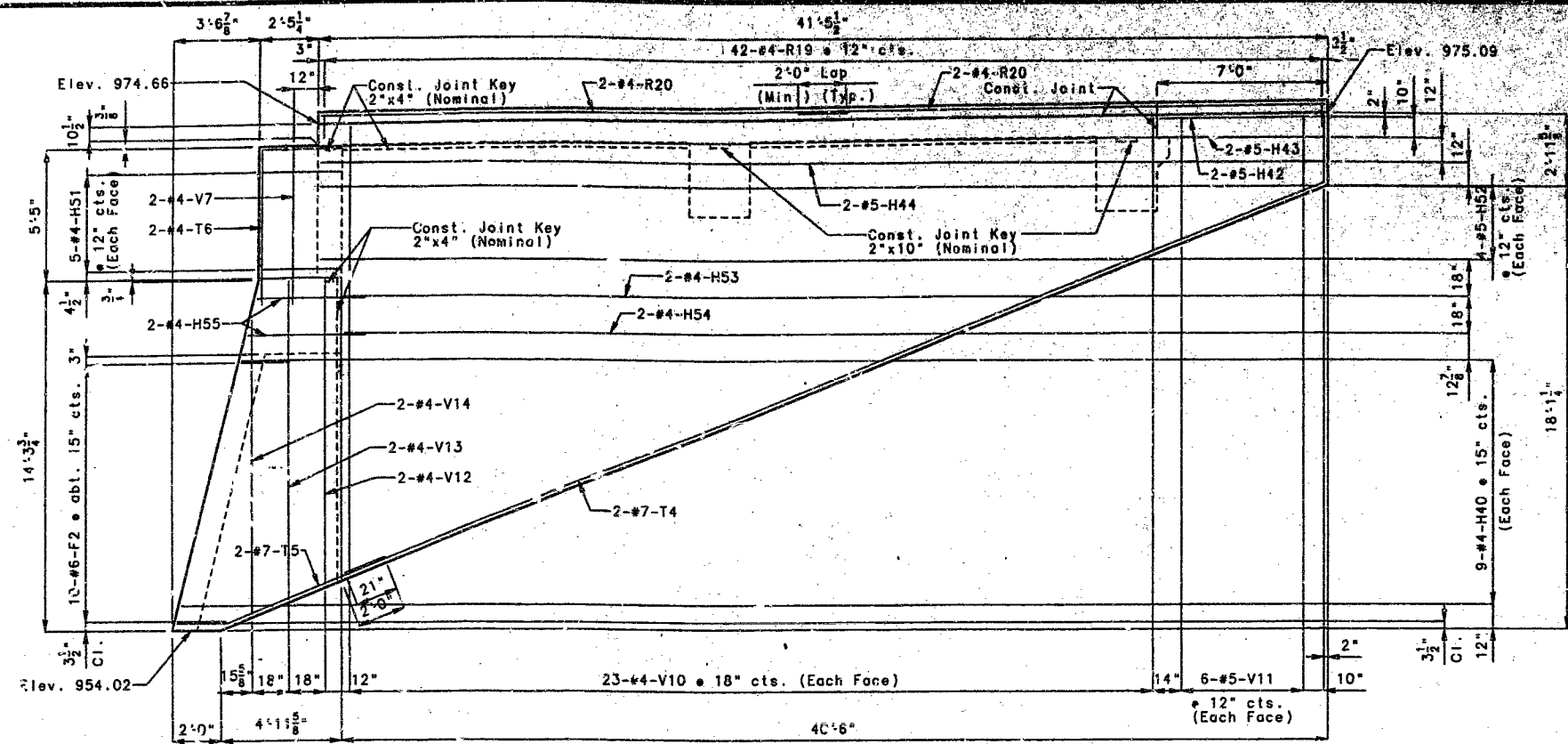
DETAILED JUNE 1994  
CHECKED JUNE 1994

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

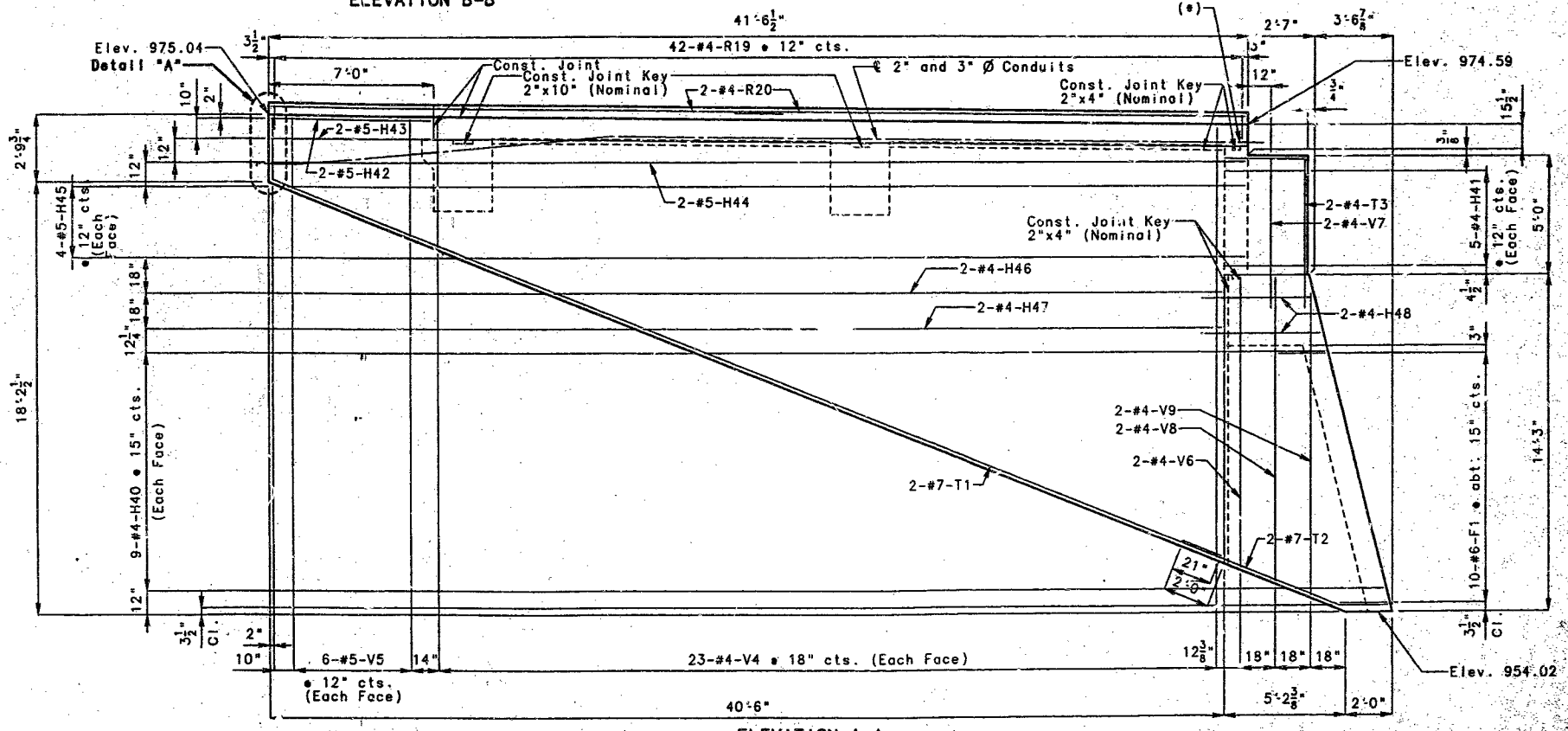
SHEET NO. 6 OF 35

CLAY COUNTY A3530

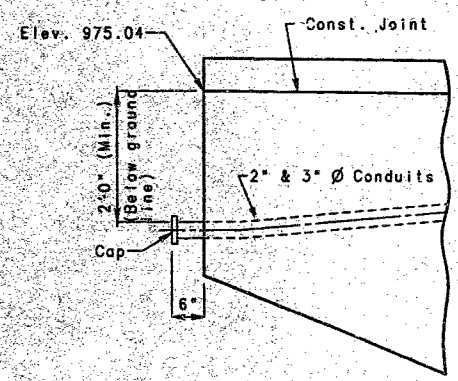




ELEVATION B-B



ELEVATION A-A



DETAIL "A"

STATE	MISSOURI
NO.	708 MISSOURI

FINAL PLANS  
 I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



(\*) Expansion fittings for conduit at span joint shall provide for a movement range of 1-1/2".

369

DETAILED JUNE 1994  
 CHECKED JUNE 1994

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

DETAILS OF ABUTMENT NO. 1

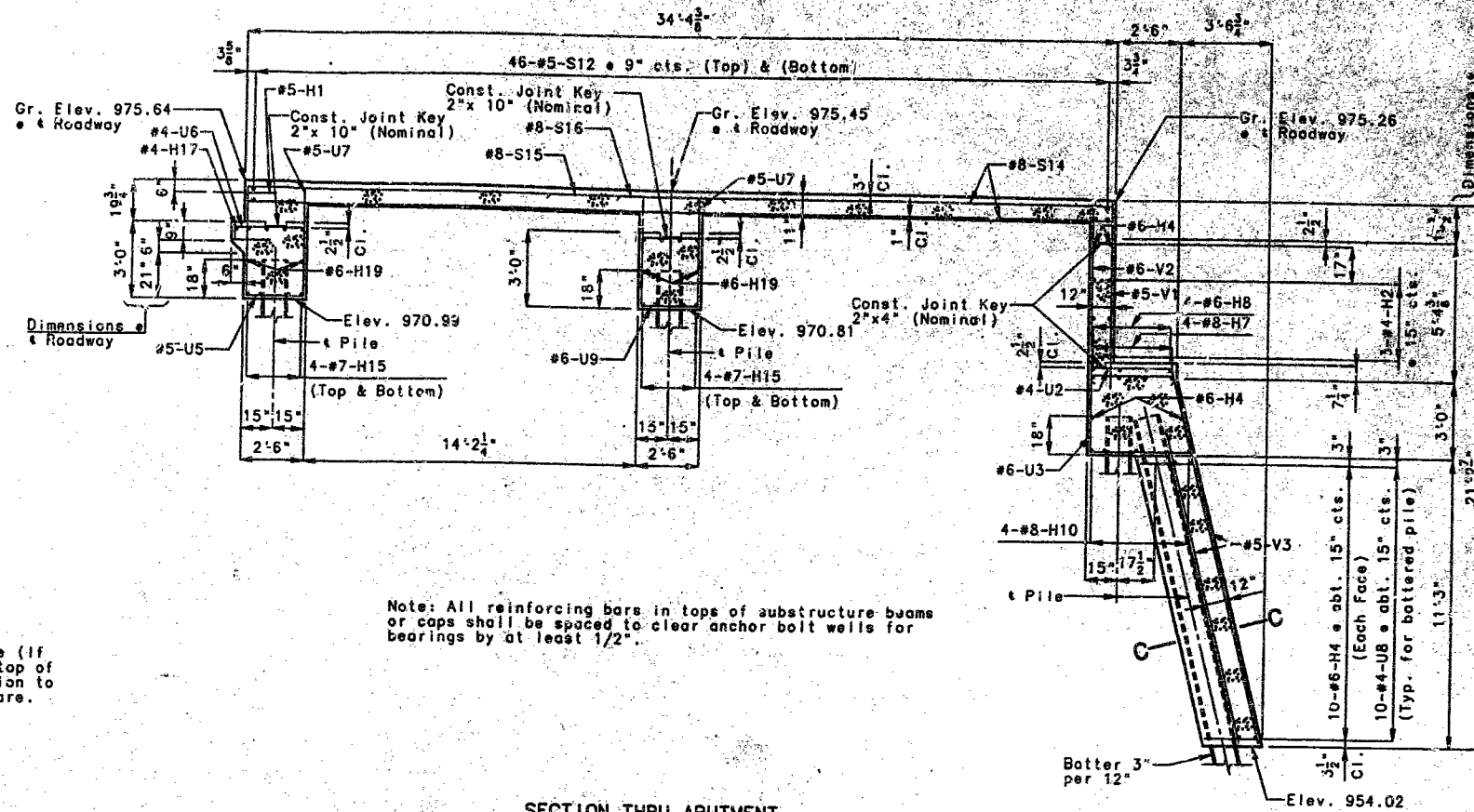
SHEET NO. 7 OF 35

Note: Work this sheet with sheets No. 4, 5, 6, & 8.

CLAY COUNTY

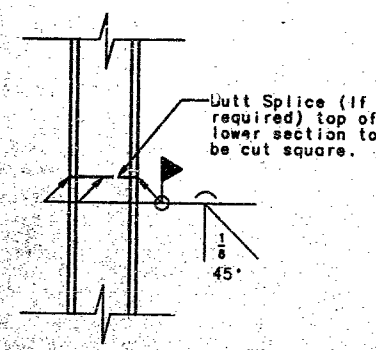
A3530



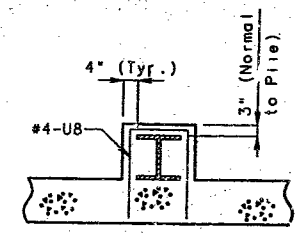


Note: All reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2\"

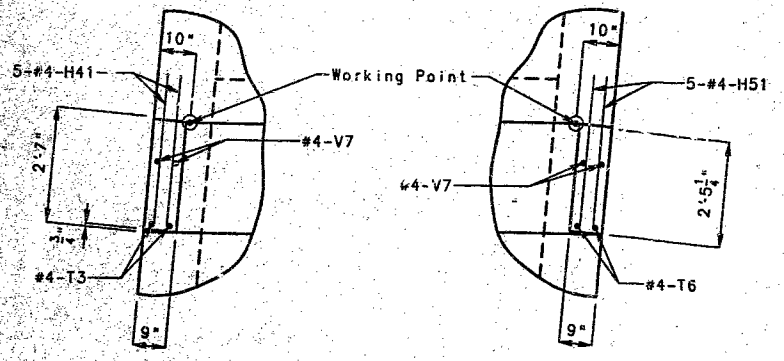
SECTION THRU ABUTMENT NEAR ROADWAY (NORMAL TO ABUTMENT)



DETAIL OF STEEL PILE SPLICE



SECTION C-C



DETAIL "A"

DETAIL "B"

Notes: Work this sheet with sheets No. 4, 5, 6, & 7.

FINAL PLANS  
I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



ITEM	QUANTITY
CLASS 1 EXCAVATION	CU. YD. 75.5
STRUCTURAL STEEL PILE (12")	LIN. FT. 716
PRE-BORE FOR PILING	LIN. FT. 451
CLASS B CONCRETE (SUBSTR.)	CU. YD. 214.3
REINFORCING STEEL (BRIDGES)	POUND 19,673
REINFORCING STEEL (EPOXY COATED)	POUND 4,270

NOTE: These quantities are included in the Quantities table on Sheet No. 2.

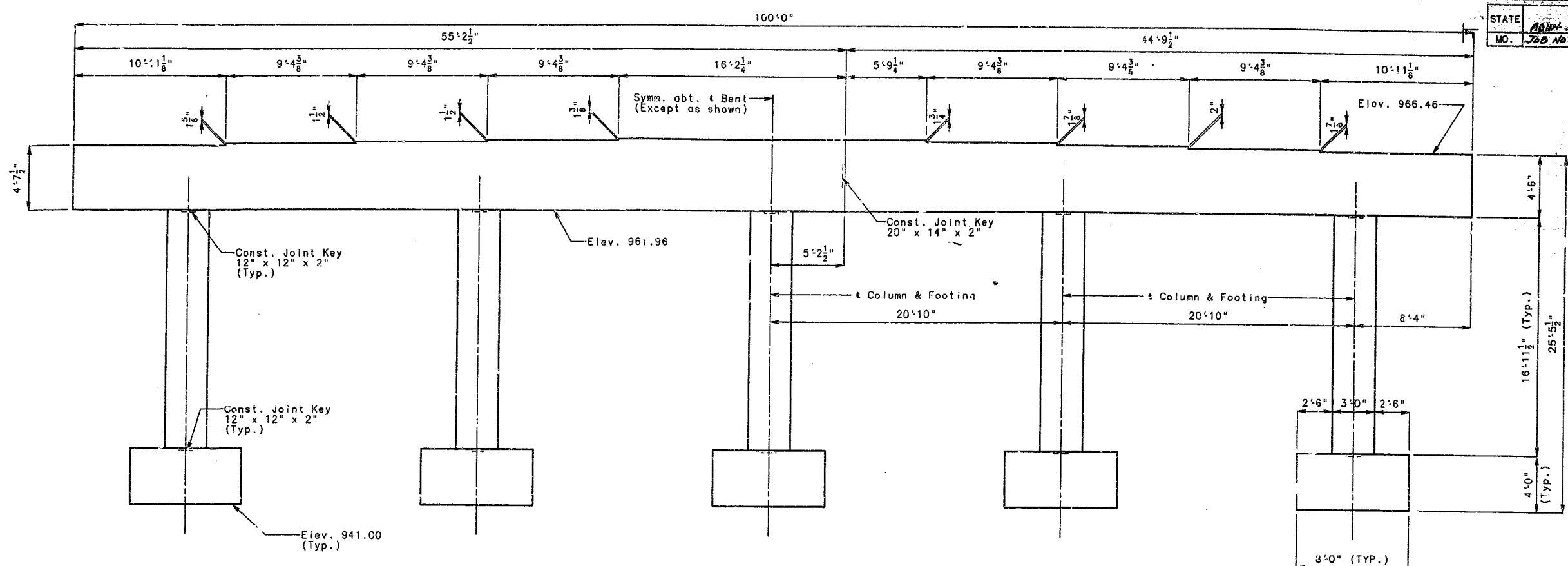
DETAILS OF ABUTMENT NO. 1

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

320  
 DET. ILED JUNE 1994  
 CHECKED JUNE 1994

FINAL PLANS

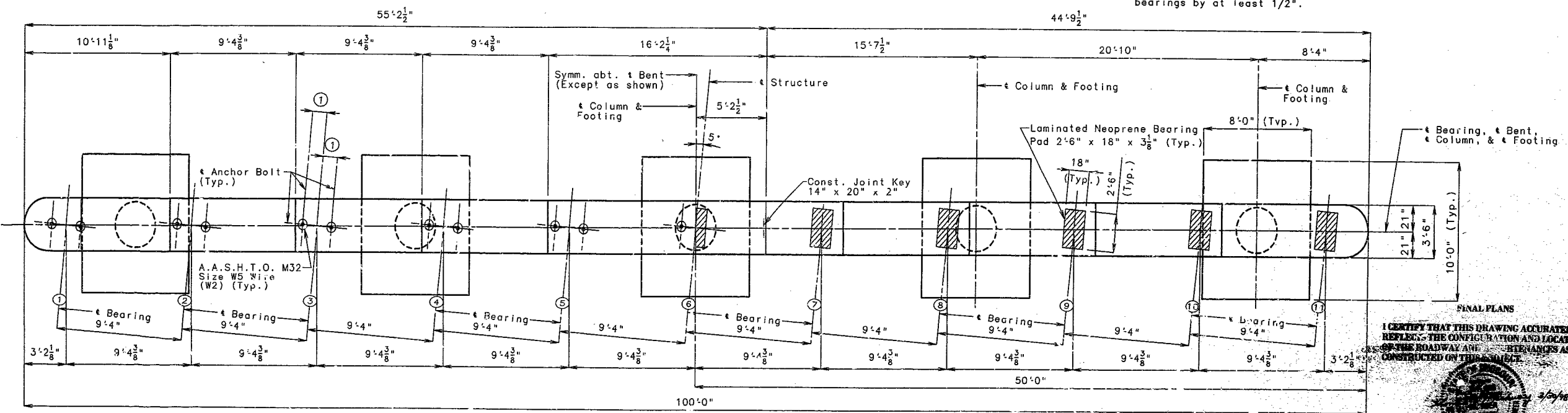
STATE	PROJ. NO.	SHEET NO.
MO.	JOB NO.	99



ELEVATION

Note: For details of Anchor Bolt Wells, see Sheet No. 20.  
 Work this sheet with sheets No. 10 & 11.  
 All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2".

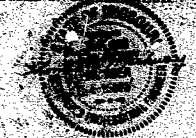
364 371



PLAN

DETAILS OF INTERMEDIATE BENT NO. 2

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND STRUCTURES AS CONSTRUCTED ON THIS PROJECT.



DETAILED APRIL 1994  
 CHECKED JUNE 1994

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENS.ONS.

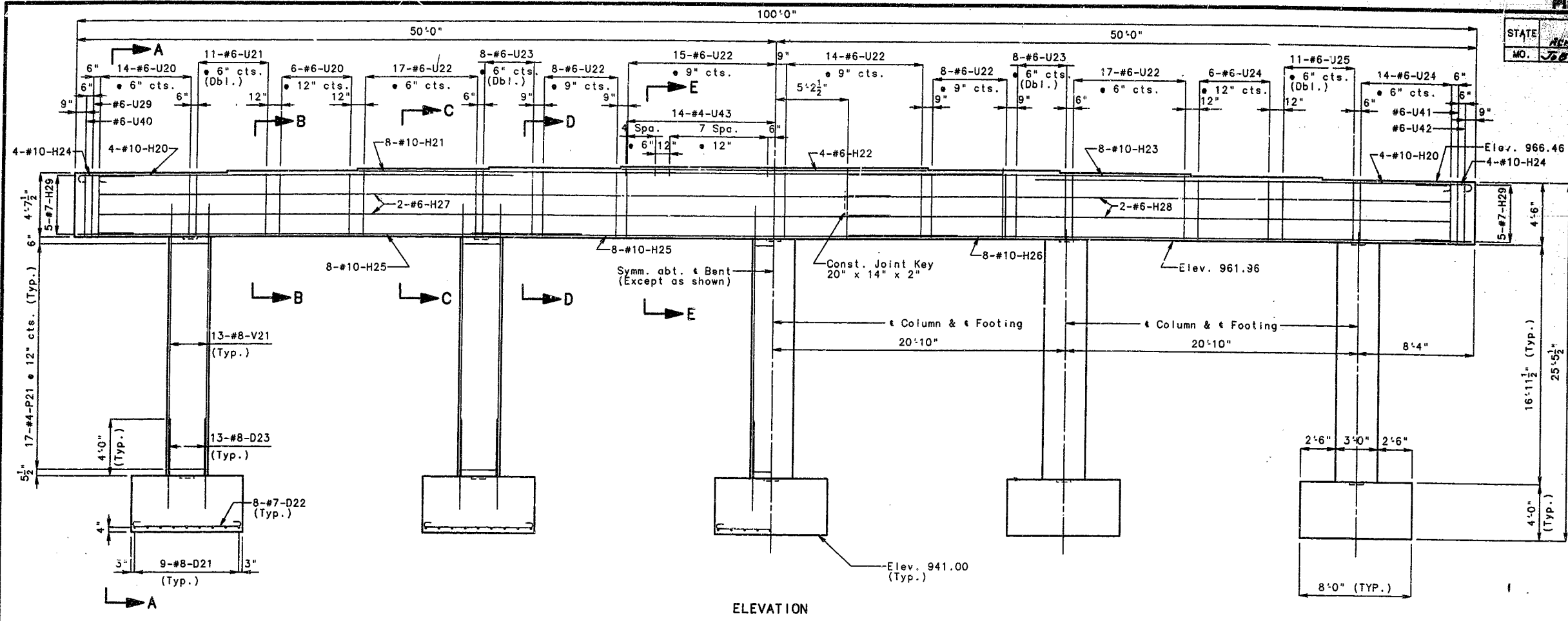
SHEET NO. 9 OF 35

CLAY

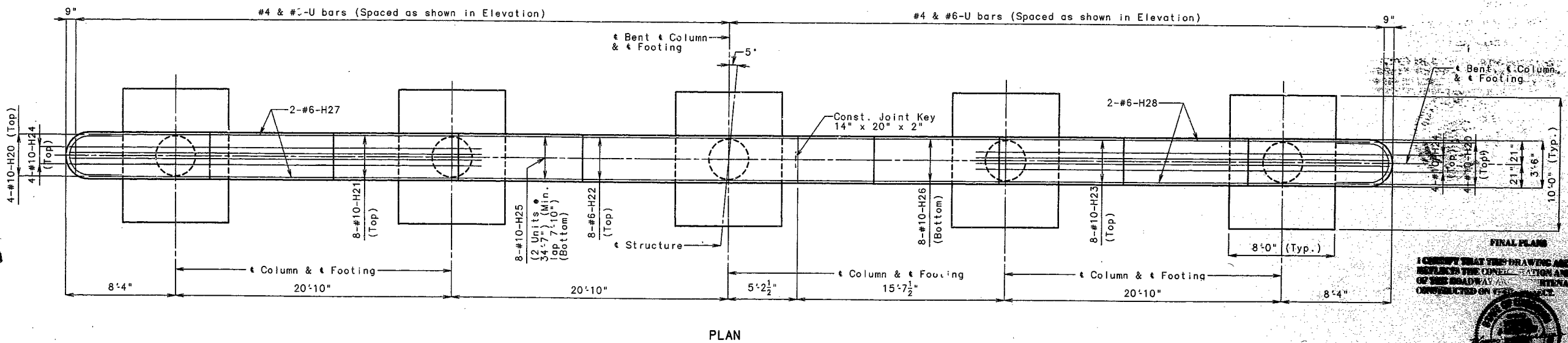
COUNTY

A3530

FINAL PLANS		
STATE	PROJ. NO.	SHEET NO.
MO.	JOB NO.	100



Note: For details of Anchor Bolt Wells, see Sheet No. 20.  
 Work this sheet with sheet No. 9 & 11.  
 All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2".



FINAL PLANS  
 I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONSTRUCTION AND LOCATION OF THIS ROADWAY AND THAT I WILL MAINTAIN AND CONDUCTED ON THIS PROJECT.



365 378

DETAILED APRIL 1994  
 CHECKED JUNE 1994

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

DETAILS OF INTERMEDIATE BENT NO. 2

SHEET NO. 10 OF 35

CLAY

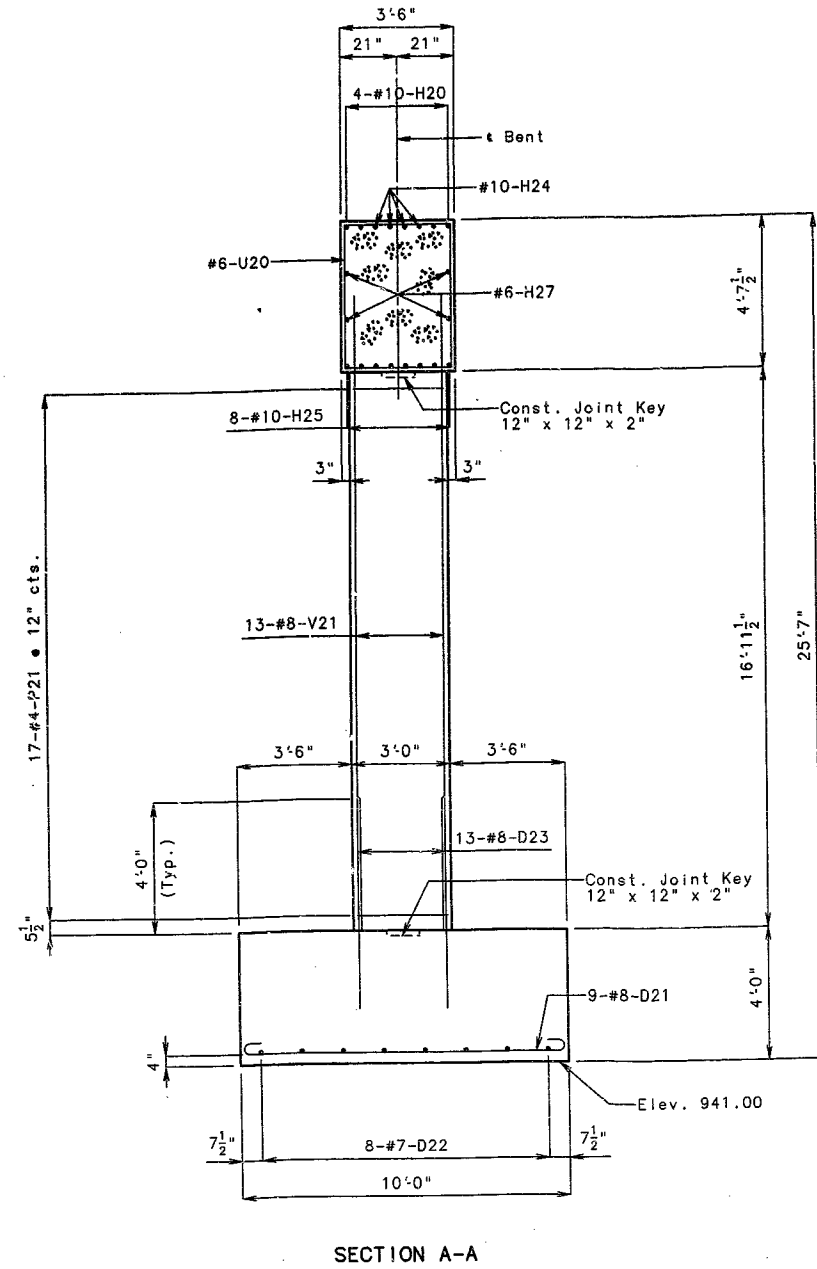
COUNTY

A3530



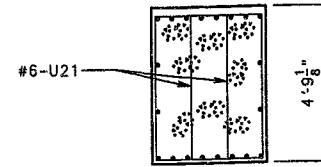
FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	JOB NO.	101

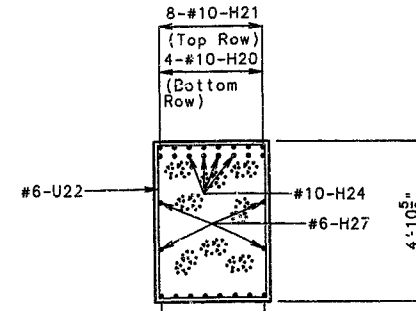


SECTION A-A

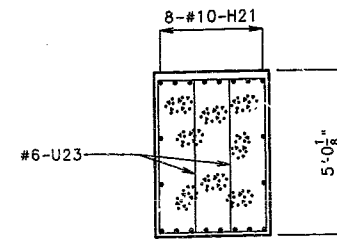
Note: Work this sheet with sheet No. 9 & 10.



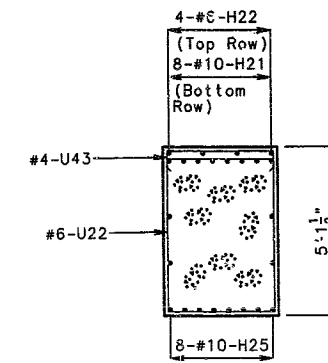
SECTION B-B



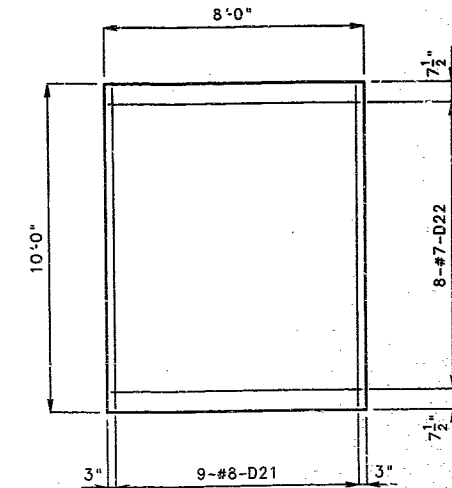
SECTION C-C



SECTION D-D

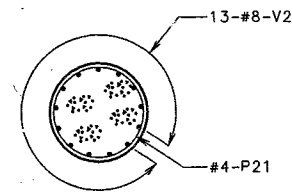


SECTION E-E



PLAN OF FOOTING

I CERTIFY THAT THIS DRAWING ACCURATELY REPRESENTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



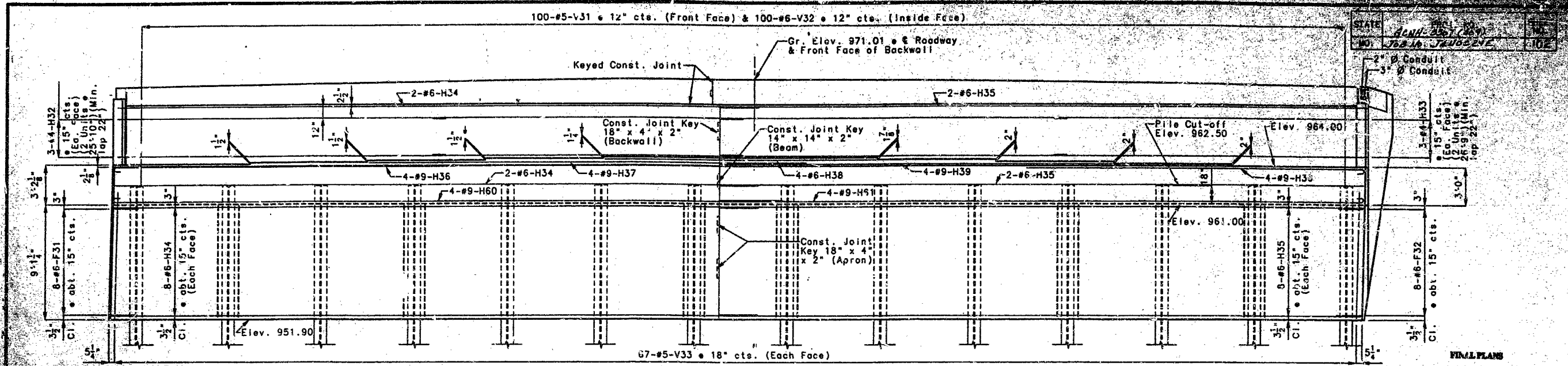
SECTION THRU COLUMN

ITEM	QUANTITY
CLASS 1 EXCAVATION	CU. YD. 114
CLASS B CONCRETE (SUBSTR.)	CU. YD. 142.3
REINFORCING STEEL (BRIDGES)	POU. LB. 21,360
TEST HOLES	Lin. Ft. 20

NOTE: These quantities are included in the quantities table on Sheet No. 2.

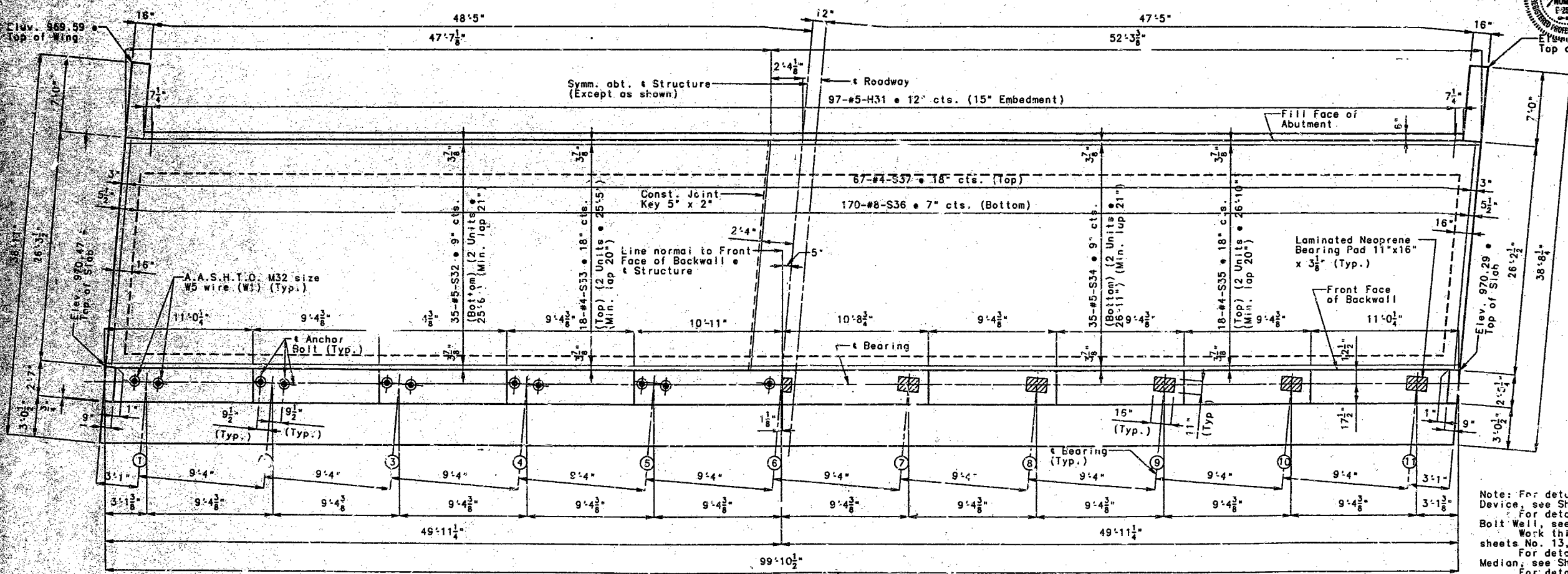
DETAILS OF INTERMEDIATE BENT NO. 2

366 373



ELEVATION

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND STRUCTURES AS CONSTRUCTED ON THIS PROJECT.



PLAN  
DETAILS OF ABUTMENT NO. 3

Note: For details of Expansion Device, see Sheet No. 26.  
For details of Anchor Bolt Well, see Sheet No. 20.  
Work this sheet with sheets No. 13, 14, & 15.  
For details of Raised Median, see Sheet No. 27.  
For details of Conduit, see Sheet No. 23.

Note: All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2".  
Conduit not shown in Plan view for clarity.  
Pedestrian Curb not shown for clarity.

Note: Abutment slab and expansion device for abutments to conform to crown of roadway slab.

DETAILED CHECKED: JUNE 1994  
JUNE 1994

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

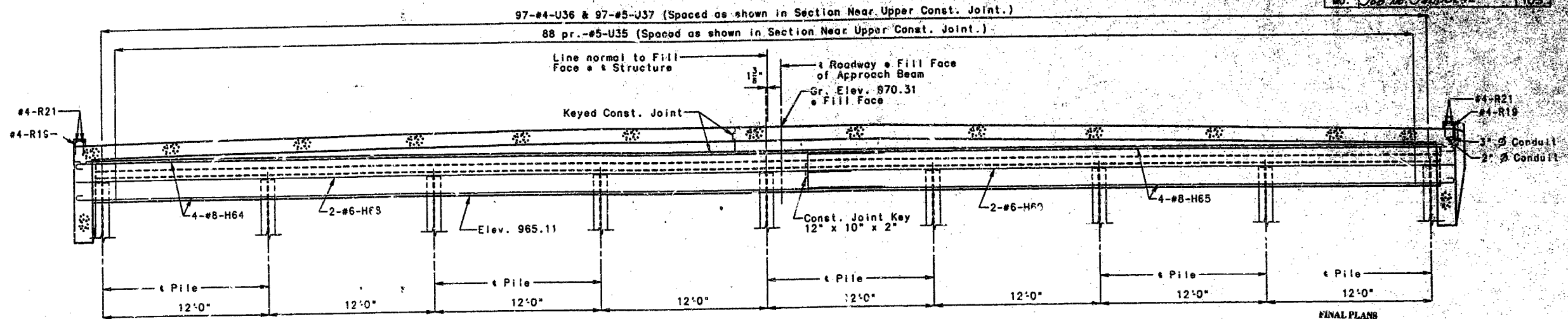
SHEET NO. 12 OF 35

CLAY COUNTY A3530

374

FINAL PLANS

DATE	REV. NO.	SHEET NO.
NOV. 1994		105
NO. 105		



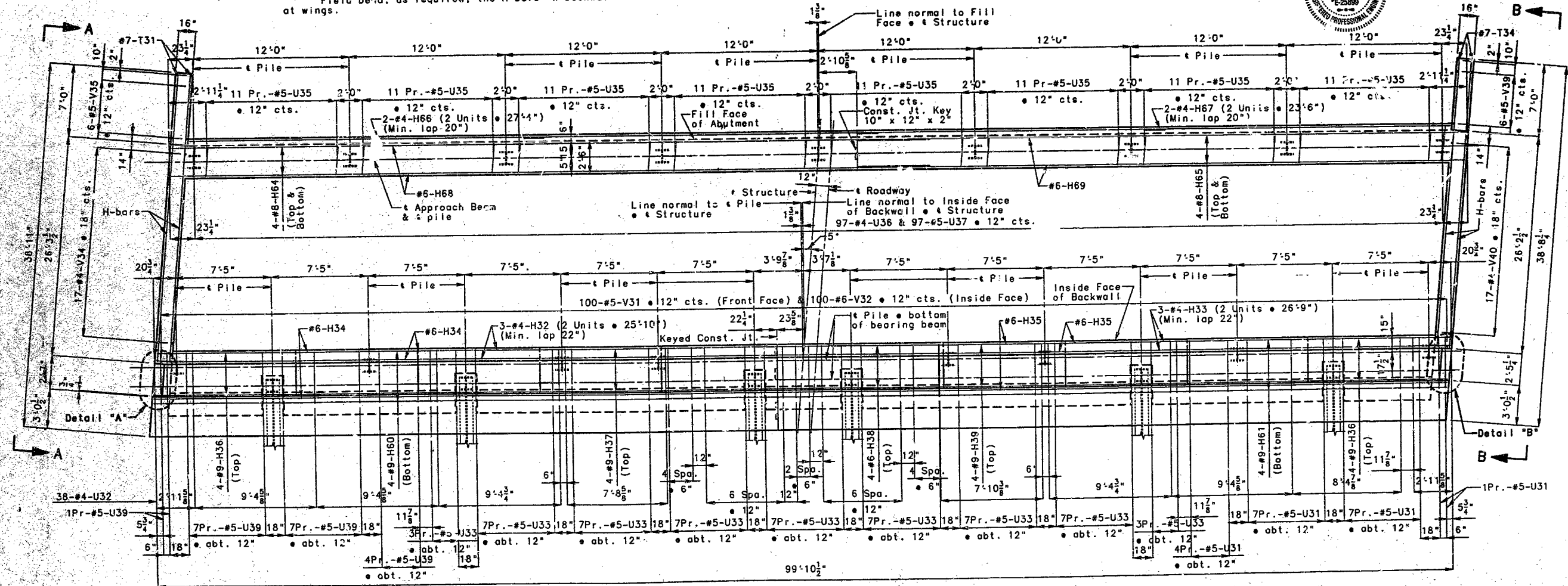
SECTION NEAR APPROACH BEAM

Note: All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2".

Place all U-bars in the Approach Beam parallel to roadway.

Field bend, as required, the H-bars in backwall at wings.

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND STRUCTURES AS CONSTRUCTED ON THIS PROJECT.



SECTION NEAR UPPER CONSTRUCTION JOINT

DETAILS OF ABUTMENT NO. 3

Note: Work this sheet with sheets No. 12, 14, & 15.

325

DETAILED JUNE 1994  
CHECKED JUNE 1994

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

SHEET NO. 13 OF 35

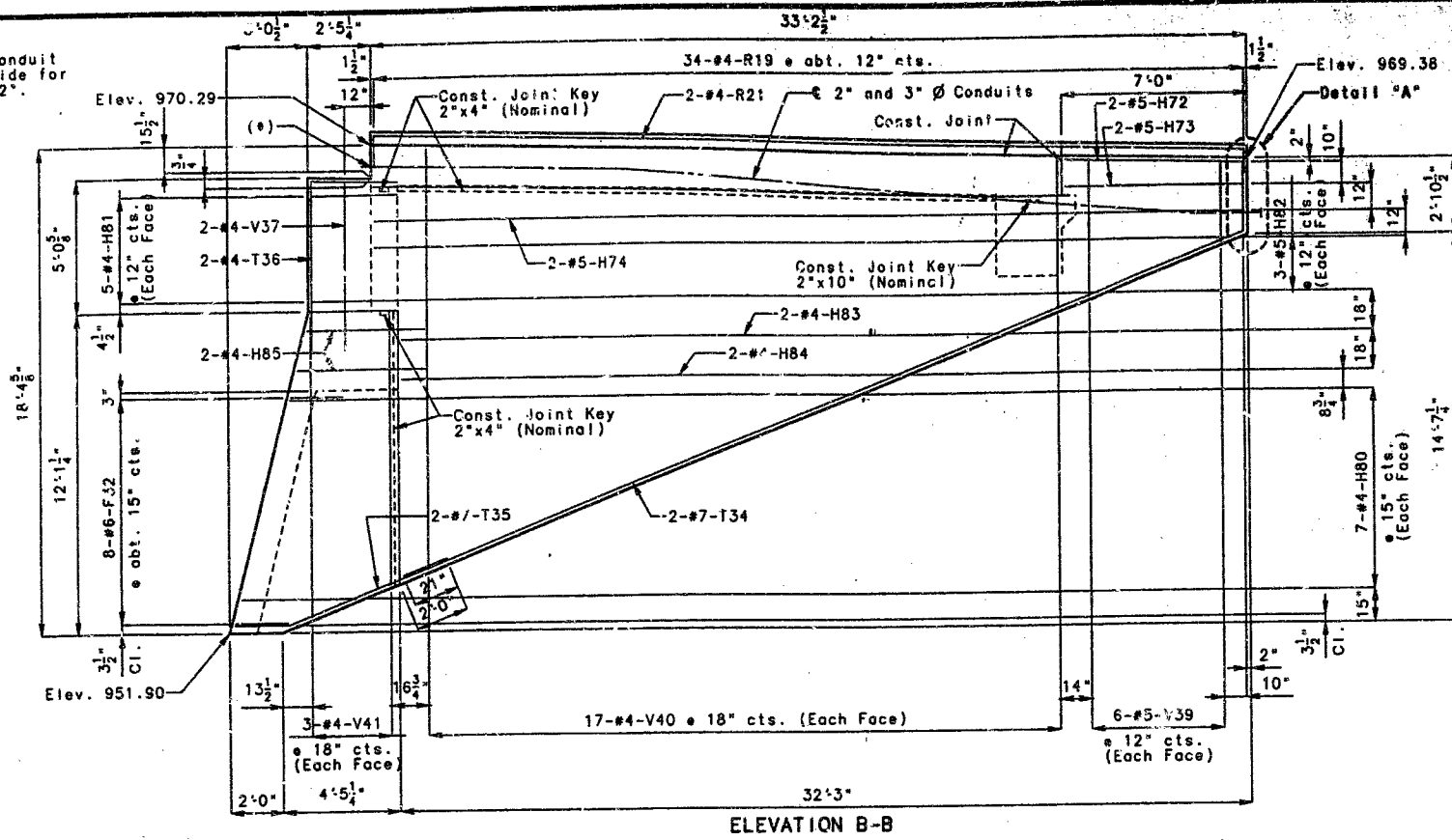
CLAY COUNTY A3530



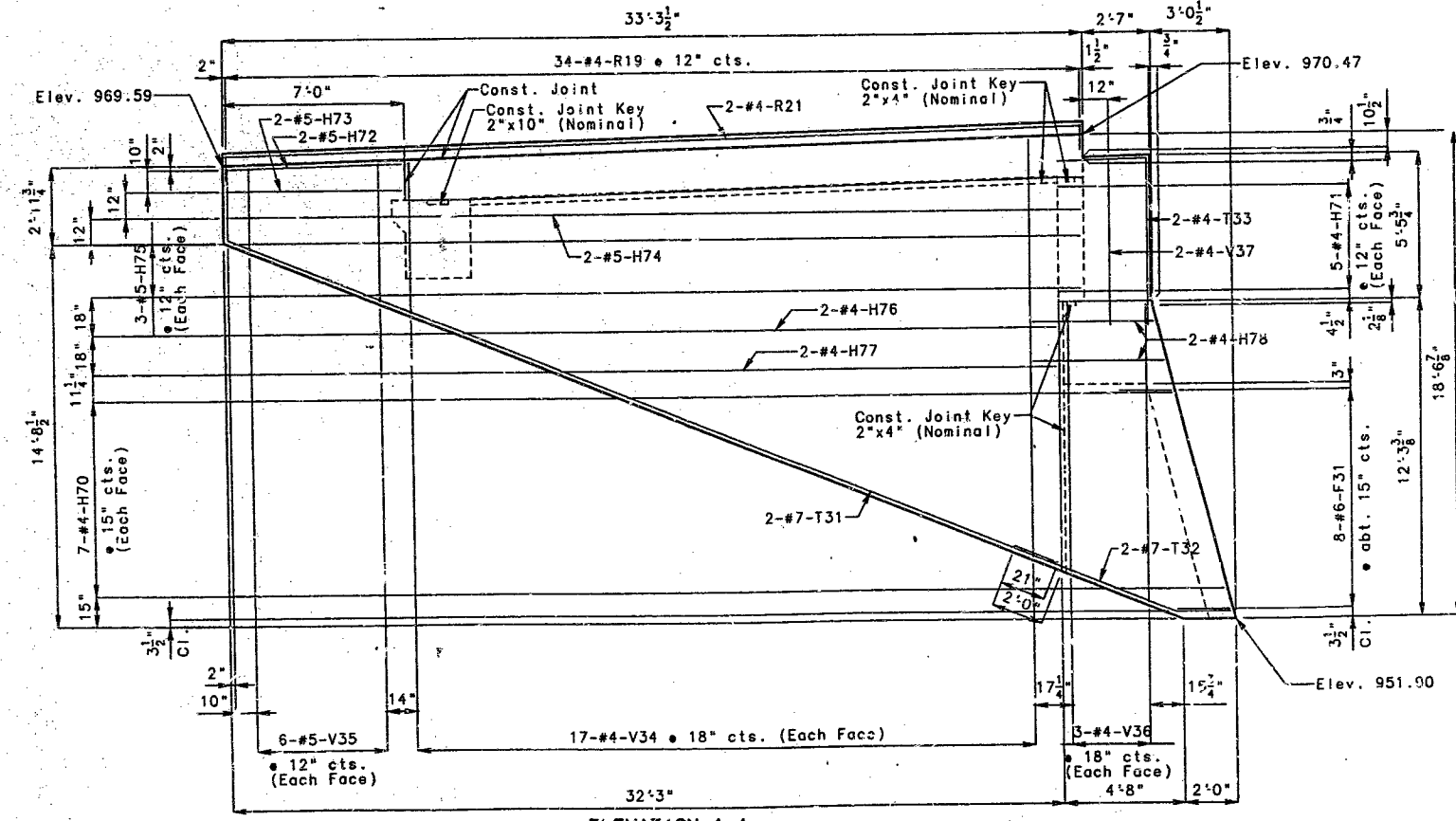
FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	MO. 207 (200)	104
	JOB NO. JUDGE	

(\*) Expansion fittings for conduit at open joint shall provide for a movement range of 1-1/2".

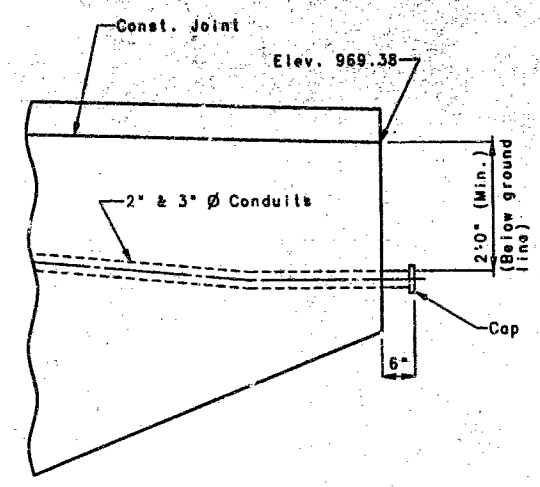


ELEVATION B-B



ELEVATION A-A

DETAILS OF ABUTMENT NO. 3



DETAIL "A"

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

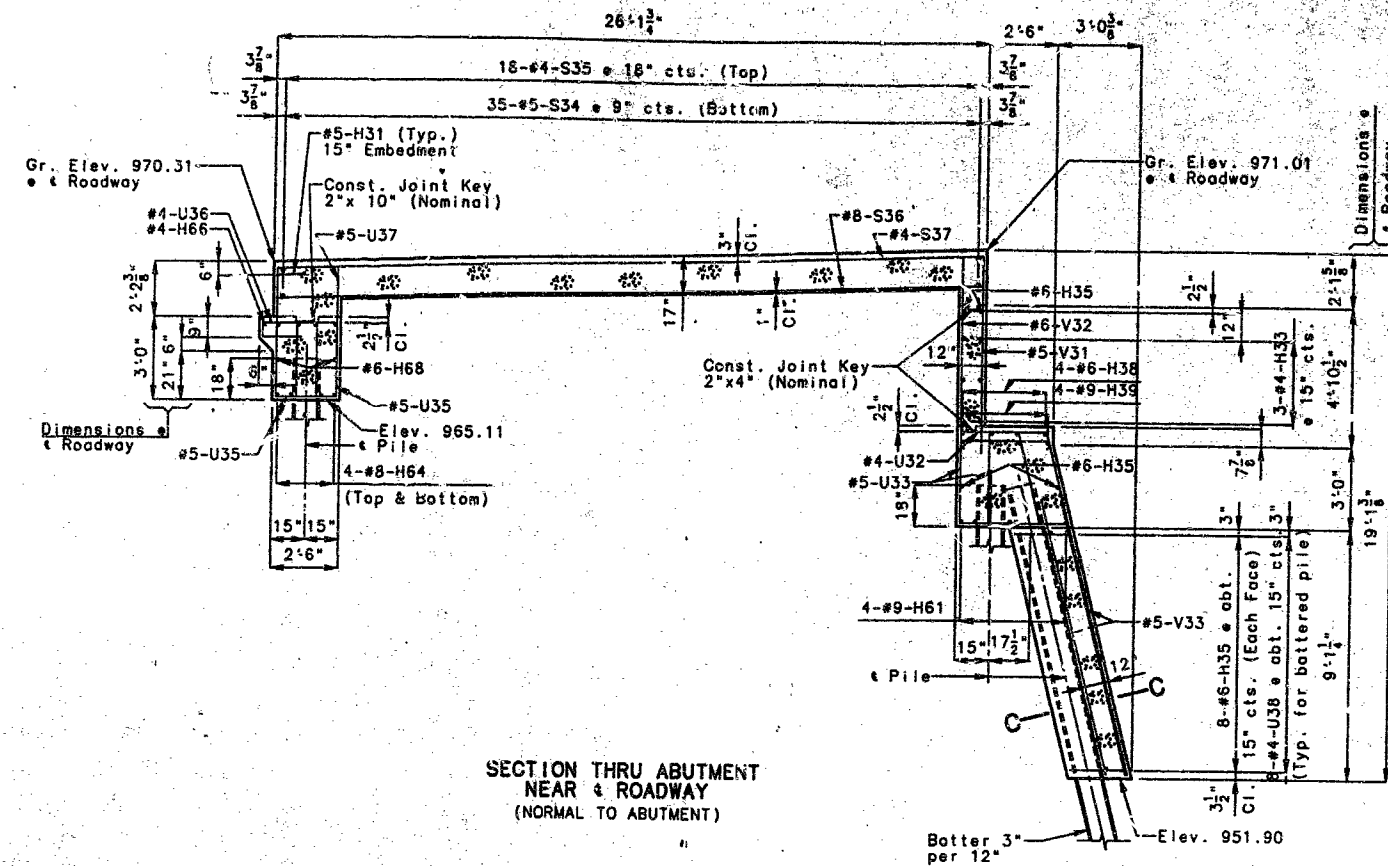


Note: Work this sheet with sheets No. 12, 13, & 15.

376

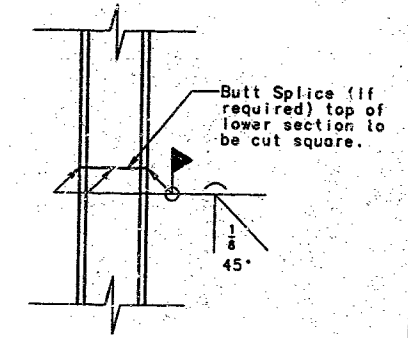
FINAL PLANS

STATE	MISSOURI
PROJECT	CLAY COUNTY BRIDGE
NO.	200 No. 200



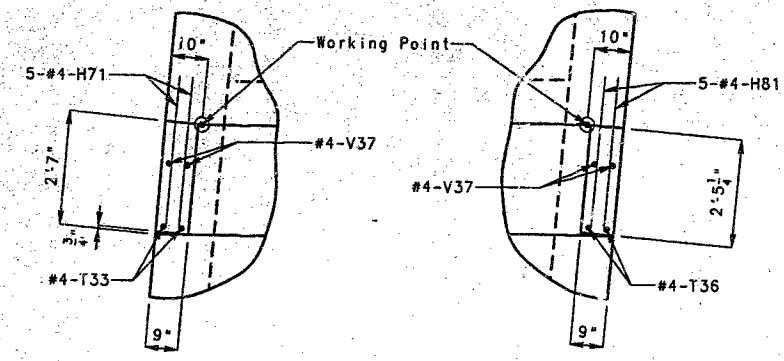
SECTION THRU ABUTMENT  
NEAR ROADWAY  
(NORMAL TO ABUTMENT)

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2\".



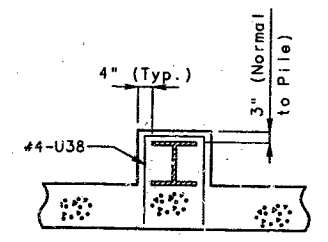
DETAIL OF STEEL PILE SPLICE

FINAL PLANS  
CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



DETAIL "A" DETAIL "B"

Note: Work this sheet with sheets No. 12, 13, & 14.



SECTION C-C

ITEM	QUANTITY
CLASS I EXCAVATION	CU. YD. 54
STRUCTURAL STEEL PILE (12")	LIN. FT. 510
PRE-BORE FOR PILING	LIN. FT. 333
CLASS B CONCRETE (SUBSTR.)	CU. YD. 165.4
REINFORCING STEEL (BRIDGES)	POUND 17,020
REINFORCING STEEL (EPOXY COATED)	POUND 3,220

NOTE: These quantities are included in the Quantities table on Sheet No. 2.

DETAILS OF ABUTMENT NO. 3

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

SHEET NO. 15 OF 15

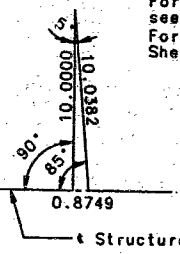
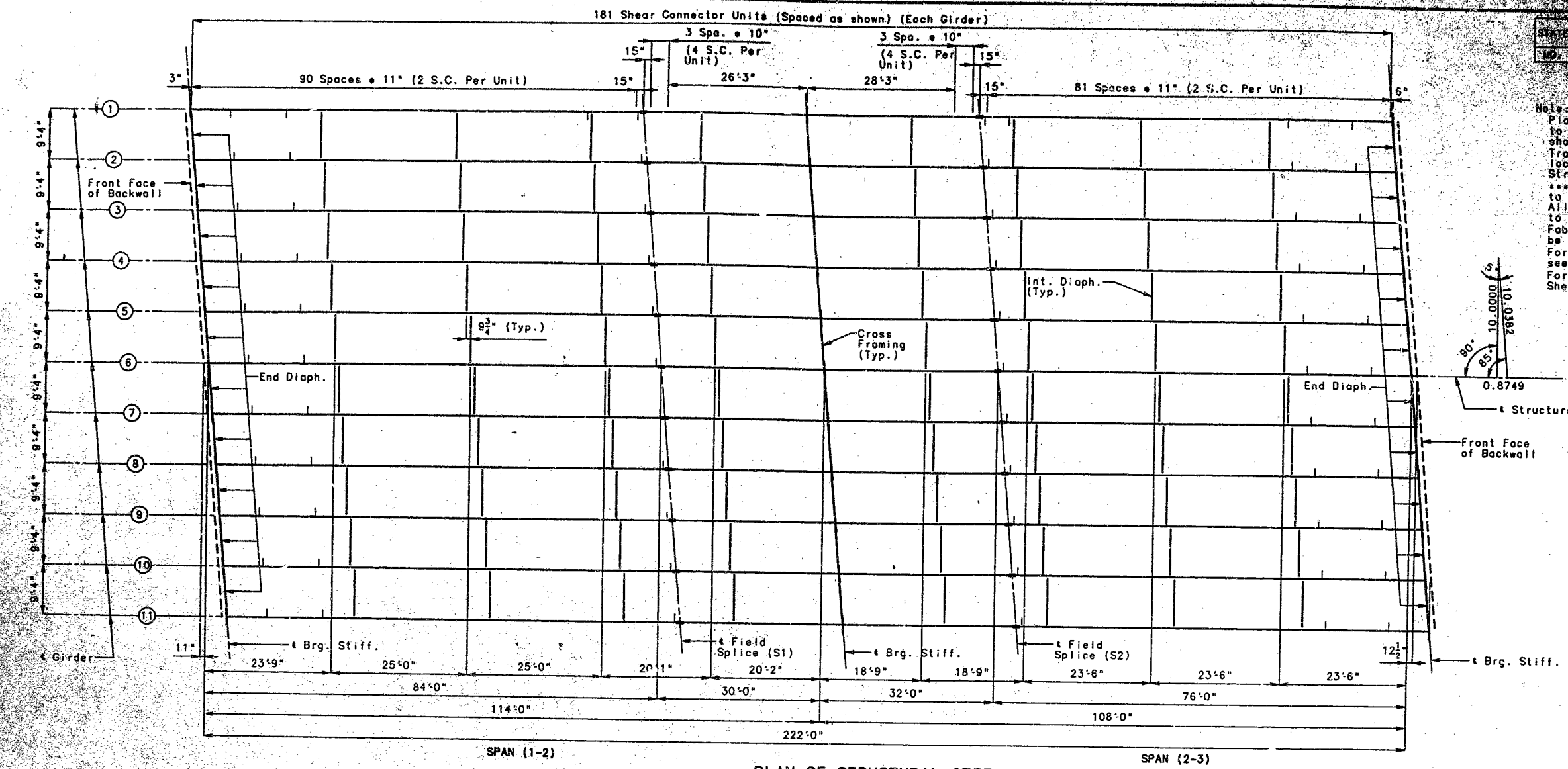
322

DETAILED JUNE 1994  
CHECKED JUNE 1994

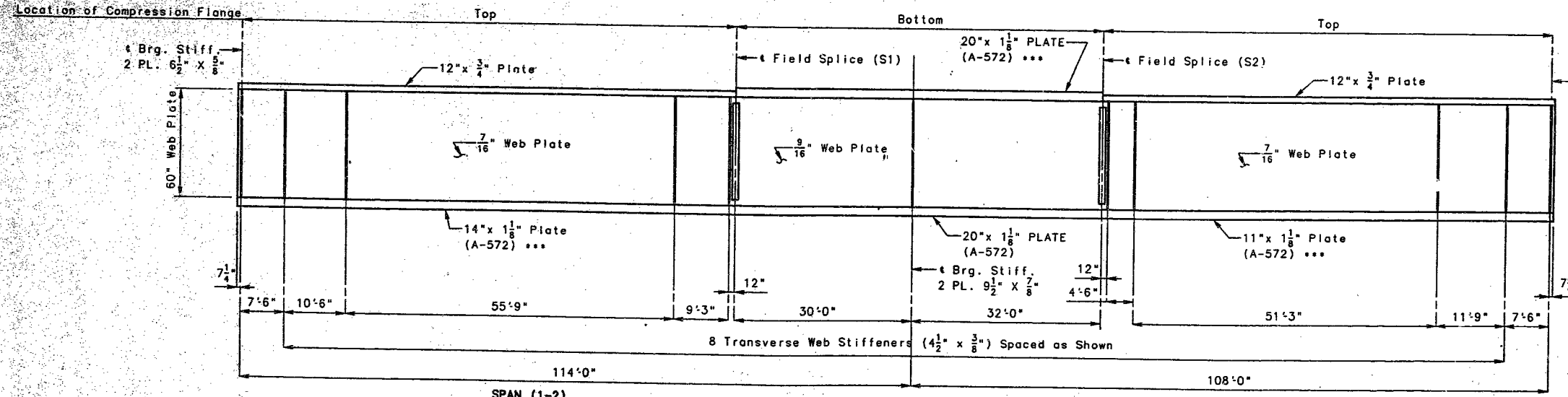
FINAL PLANS

STATE	MISSISSIPPI	SHEET NO.	108
NO.	3/26/1994	NO.	108

Note:  
 Plate Girders shall be fabricated to conform to the member diagram shown on Sheet No. 19.  
 Transverse Web Stiffeners shall be located as shown in Plan of Structural Steel.  
 \*\*\* Indicates flange plates subject to notch toughness requirements. All Web Plates shall be subject to notch toughness requirements. Fabricated Structural Steel shall be A36, except as noted.  
 For details of Shear Connectors, see Sheet No. 20.  
 For details of Slab Drains, see Sheet No. 25.



PLAN OF STRUCTURAL STEEL



Note: Longitudinal dimensions are horizontal from  $\epsilon$  Brg. to  $\epsilon$  Brg. See Part Longitudinal Section on Sheet No. 19.

FINAL PLANS

CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



ELEVATION OF GIRDER

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

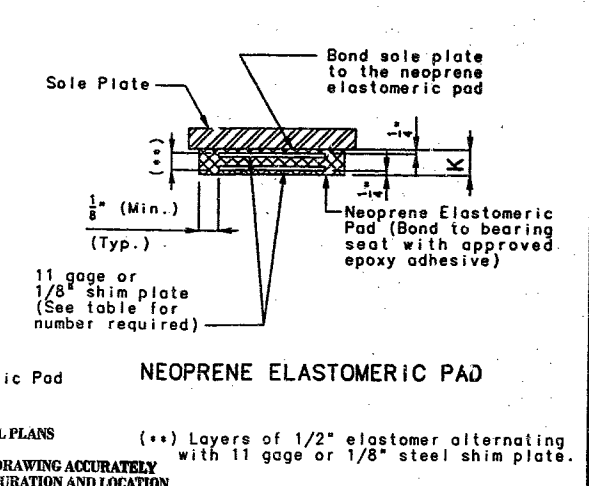
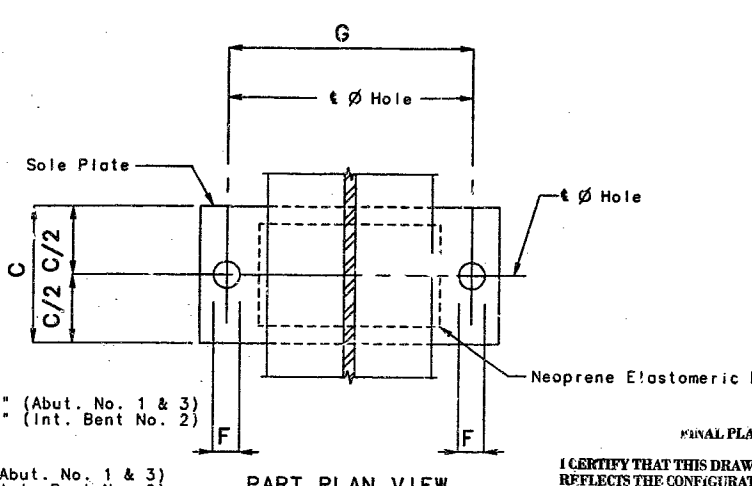
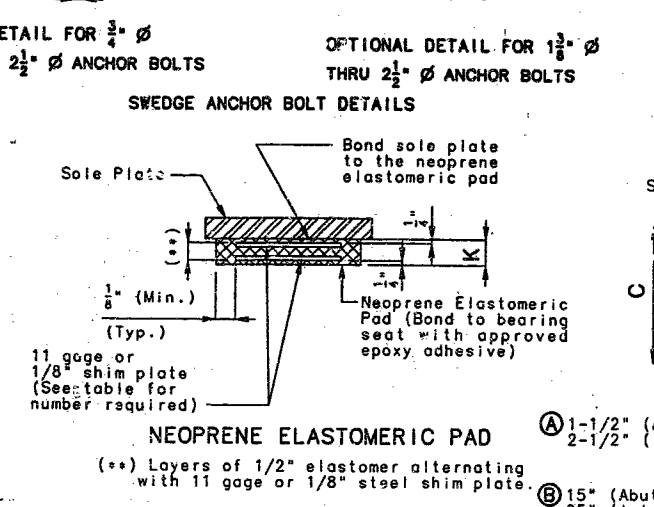
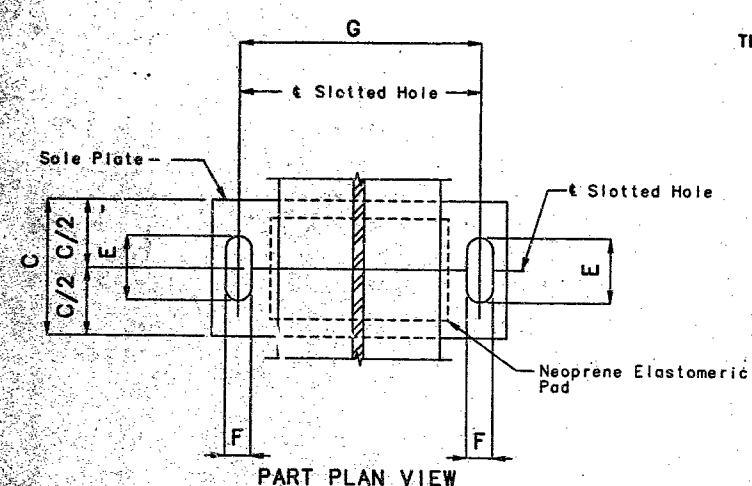
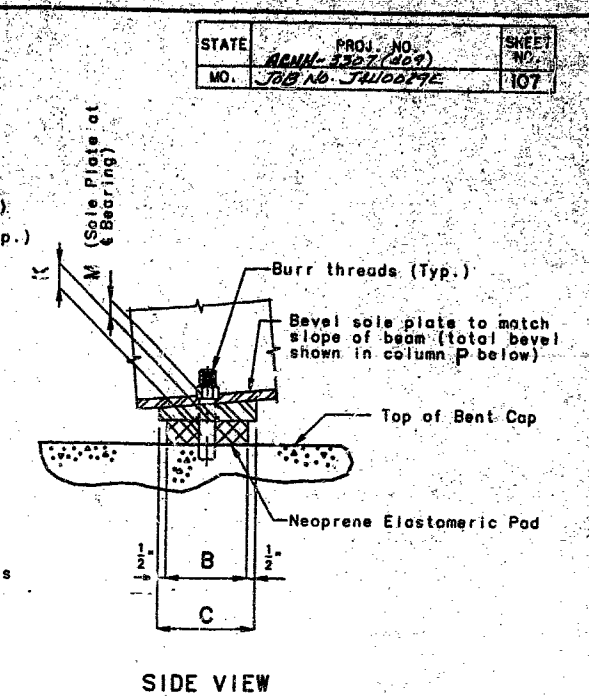
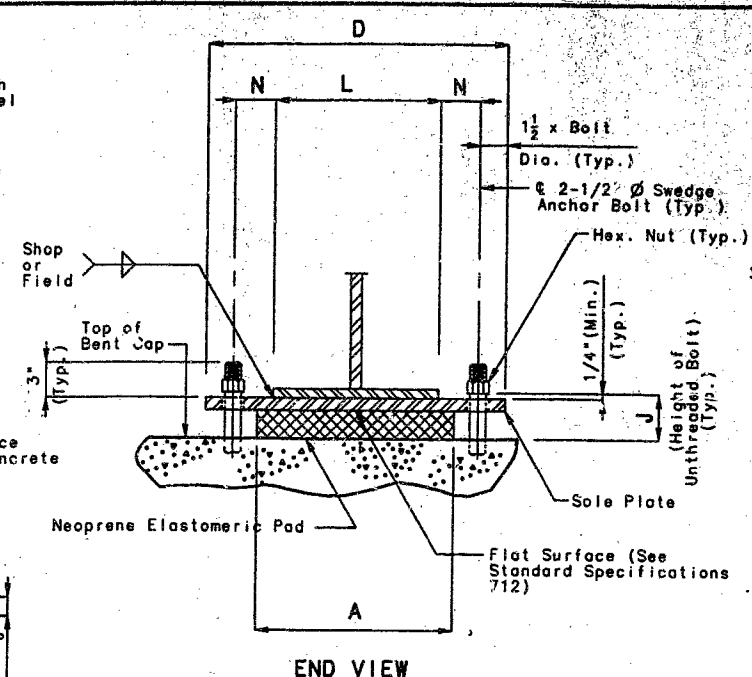
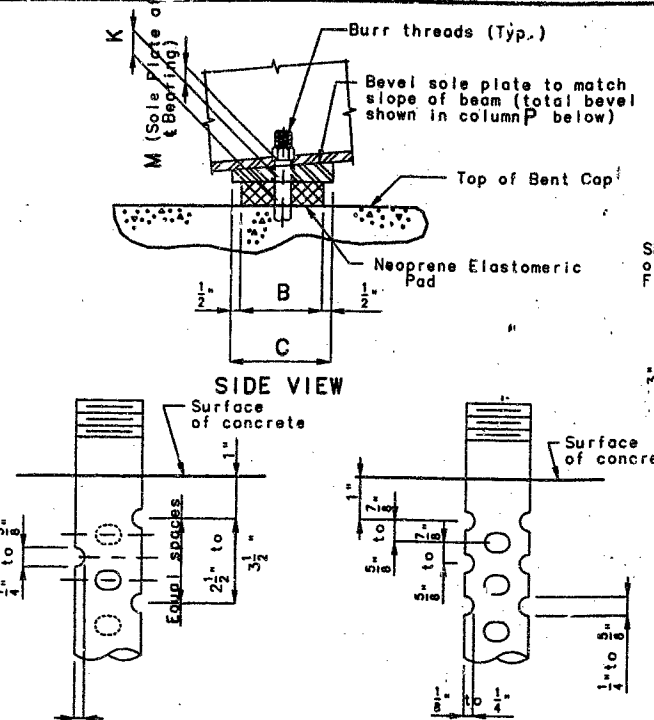
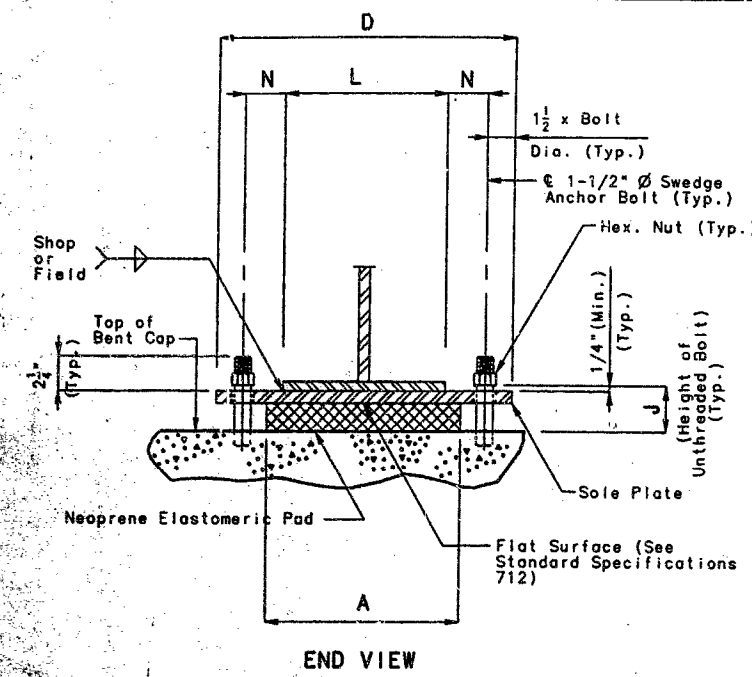
328

DETAILED SEPT. 1993  
 CHECKED JUNE 1994



FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	JOB NO.	107



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

BENT NO.	GRD. NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES(*)	NUMBER REQUIRED
1	1-3	18"	12"	13"	25 3/4"	4"	17 7/8"	21"	47 7/8"	3 3/8"	14"	1 1/2"	3 1/2"	1 7/8"	5	6
1	4-5	18"	12"	13"	25 1/2"	4"	15 5/8"	21"	47 7/8"	3 3/8"	14"	1 1/2"	3 1/2"	1 7/8"	5	5
3	1-3	16"	11"	12"	23 1/2"	4"	17 7/8"	19"	47 7/8"	3 3/8"	11"	1 1/2"	4"	1 1/4"	5	6
3	4,7,8	16"	11"	12"	23 1/2"	4"	15 5/8"	19"	47 7/8"	3 3/8"	11"	1 1/2"	4"	1 1/4"	5	3
3	5-6	16"	11"	12"	23 1/2"	4"	15 5/8"	19"	51 7/8"	3 3/8"	11"	1 1/2"	4"	1 1/4"	5	2
															TOTAL BEARINGS	22

(\*) The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.

GENERAL NOTES:

Anchor bolts shall be (A) 1/2" A588 steel swaged bolts and shall extend (B) into the concrete with A194-2, 2H or A563-C, C3, D, DH, DH3 heavy hexagon nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. (swedging shall be 1" less than the extension into the concrete.)

All structural steel for the sole plate, anchor bolts and heavy hexagon nuts shall be painted with a minimum of two coats of inorganic zinc primer (5 mills minimum) in accordance with the Special Provisions.

The neoprene elastomeric pads shall be 60 durometer. The sole plate shall be furnished with the bearing and field or shop welded to the girders.

Structural steel for the sole plate shall be A-36. Payment for the sole plate, anchor bolts and heavy hexagon nuts shall be included in the cost of the bearing assembly. See Special Provisions.

The accepted quantity of the elastomeric bearing assemblies, complete-in-place, will be paid for at the contract unit price for laminated neoprene bearing pads (Steel Structures), each.

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



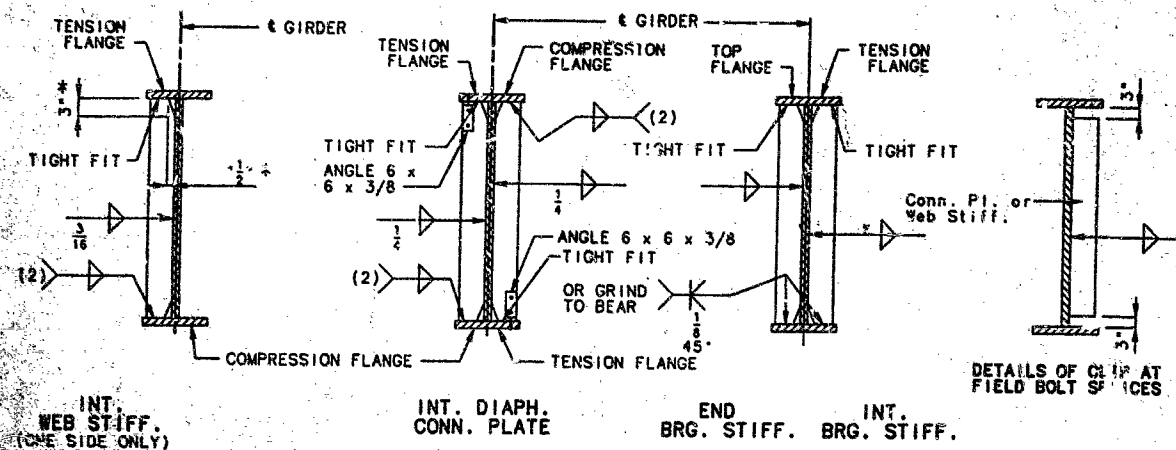
BENT NO.	GRD. NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES(*)	NUMBER REQUIRED	
2	1-3	18"	30"	31"	33 1/4"	2 7/8"	25 1/2"	4 1/2"	3 1/8"	20"	1 1/2"	2 3/4"	5 7/8"	5	6	
2	4,7,8	18"	30"	31"	32 3/4"	2 5/8"	25 1/4"	4 1/2"	3 1/8"	20"	1 1/2"	2 5/8"	5 7/8"	5	3	
2	5-6	18"	30"	31"	32 3/4"	2 5/8"	25 1/4"	5 1/8"	3 1/8"	20"	1 3/4"	2 3/8"	5 7/8"	5	2	
															TOTAL BEARINGS	11

(\*) The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

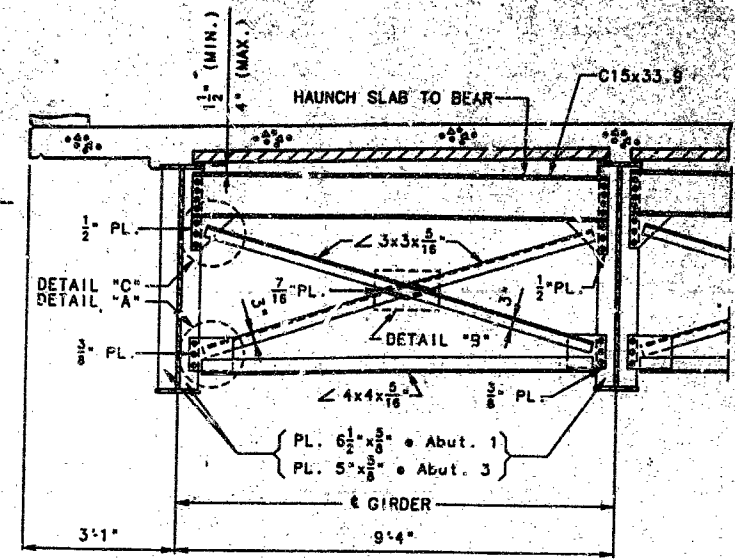
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

379

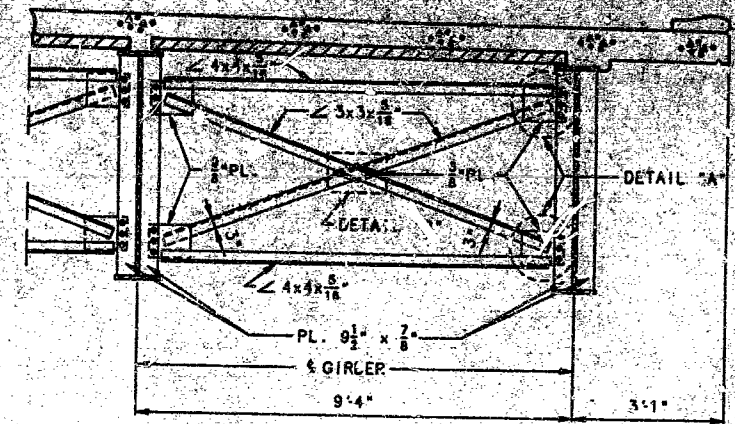


INT. WEB STIFF. (ONE SIDE ONLY)  
INT. DIAPH. CONN. PLATE  
END BRG. STIFF.  
INT. BRG. STIFF.  
(2) WELD TO COMPRESSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.  
\* TYPICAL FOR ALL INT. WEB STIFF., INT. DIAPH. CONN. PL. AND BRG. STIFF..

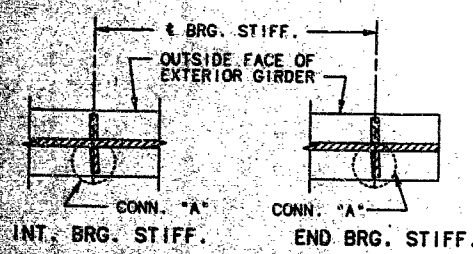
WELDING DETAILS



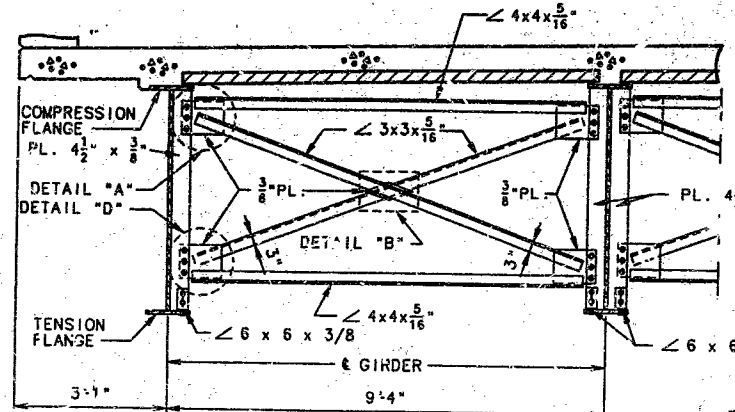
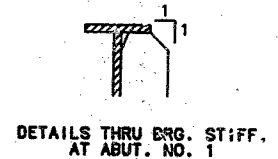
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



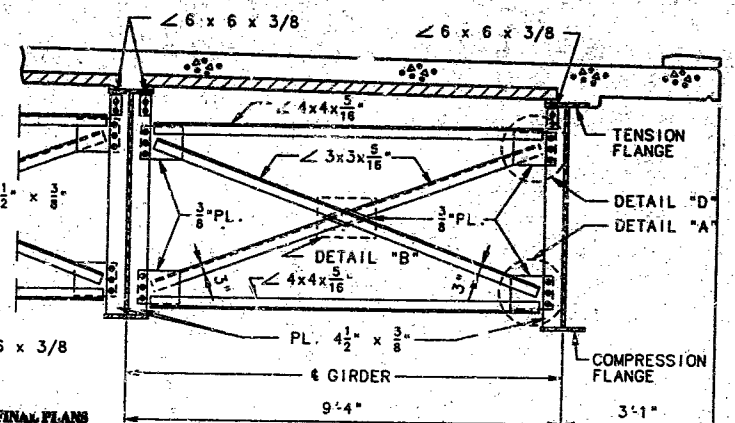
TYPICAL PART SECTION SHOWING CROSS FRAMES



TYPICAL LOCATION DETAILS



TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS BOTTOM FLANGE IN TENSION

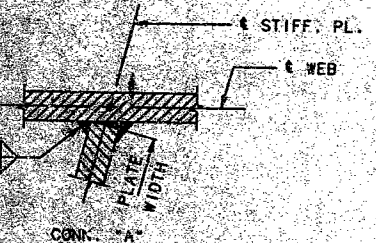


FINAL PLANS

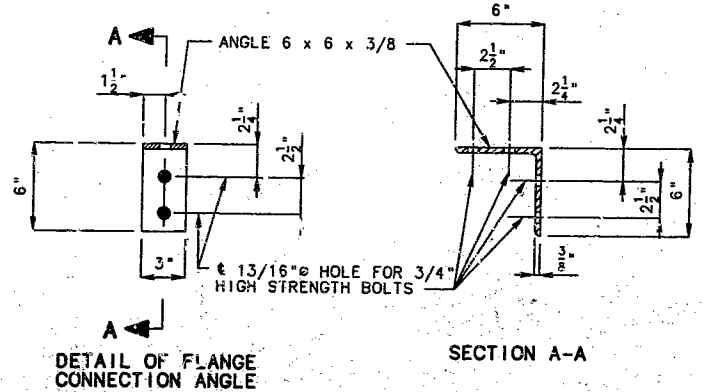
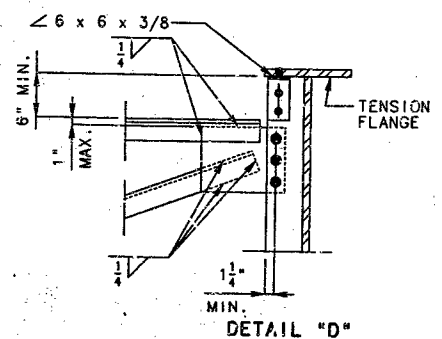
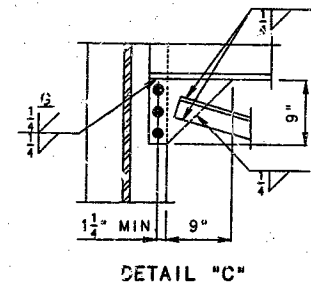
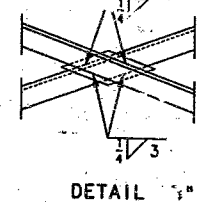
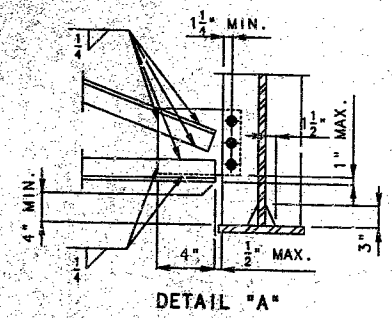
I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

STATE OF MISSISSIPPI  
THOMAS W. WYNN  
REGISTERED PROFESSIONAL ENGINEER  
E-25688

NOTE: THE TWO 3/4" H.S. BOLTS THAT CONNECT THE 6 x 6 x 3/8 ANGLE TO THE TOP FLANGE SHALL BE PLAC'D SO THE NUT IS ON THE INSIDE OF FLANGE TOWARD THE WEB.



Note: At the contractors option, holes in the diaphragm plate of non slab bearing diaphragms may be made 3/16" larger than the diameter of the bolt. A hardened washer shall be used under the head and nut when this option is used. Holes in the girder diaphragm connection plate or transverse web stiffener shall be standard size.



DETAILED SEPT. 1993  
CHECKED JUNE 1994

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

SHEET NO. 18 OF 35

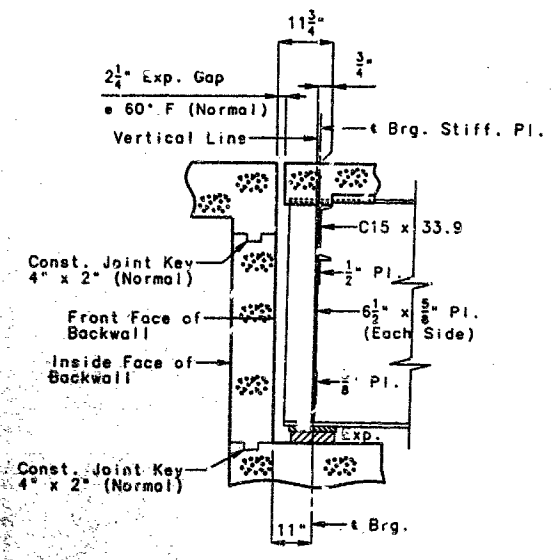
CLAY COUNTY A3530

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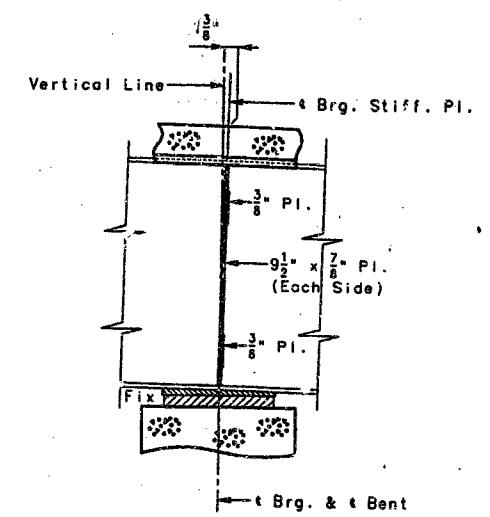


FINAL PLANS

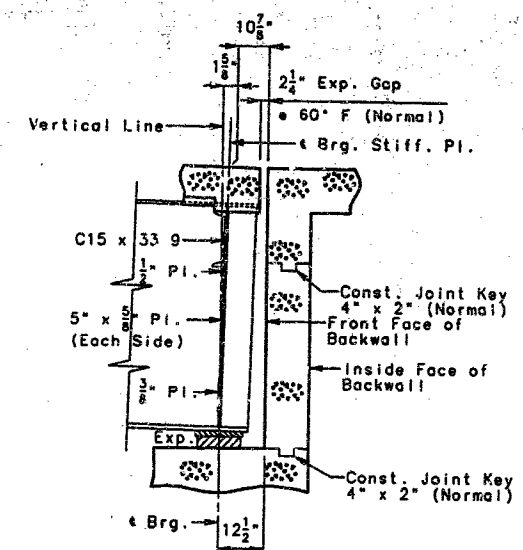
STATE	PROJ. NO.	SHEET NO.
MO: 709 16	ADW 2587 (43)	109



①

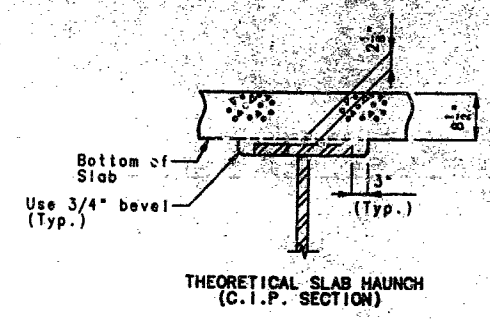


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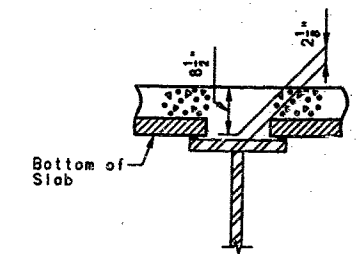


③

PART LONGITUDINAL SECTION



THEORETICAL SLAB HAUNCH (C.I.P. SECTION)

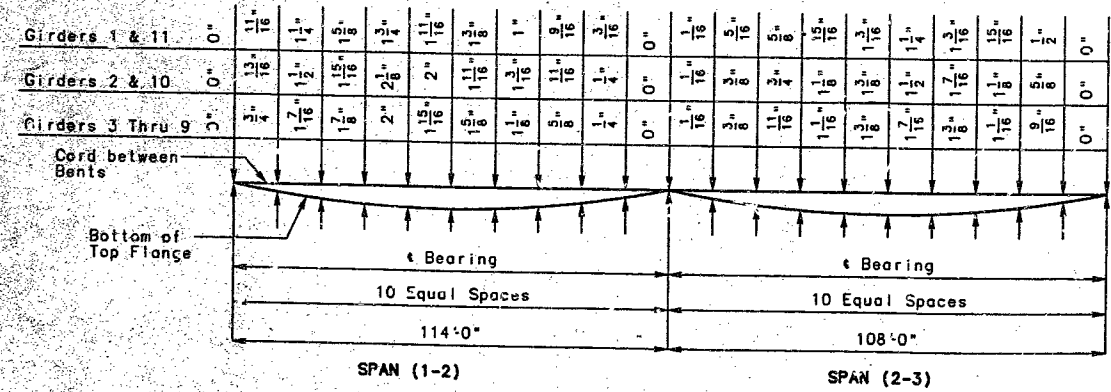


THEORETICAL SLAB HAUNCH (P/C P/S PANEL SECTION)

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



Note: Haunch Dimension may vary if the girder camber after erection differs from plan camber by more or less than the 1/2 of D. L. Deflection due to the weight of structural steel. No payment will be made for any adjustment in forming or additional concrete required for variation in haunching.



DEAD LOAD DEFLECTION

Note: 15% of Dead Load Deflection is due to weight of structural steel.

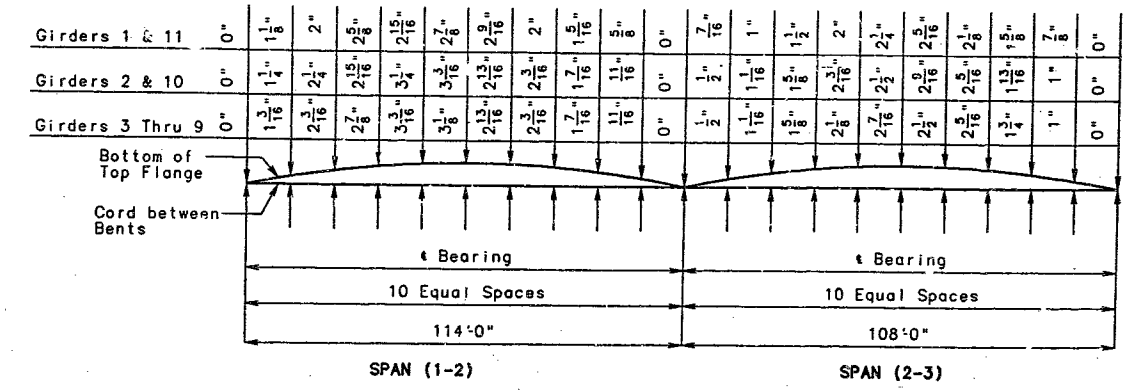


PLATE GIRDER CAMBER DIAGRAM

Note: Camber includes allowance for vertical curve, and for Dead Load Deflection due to concrete slab, curb, raised median and structural steel.

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DETAILED SEPT 1993  
CHECKED JUNE 1994

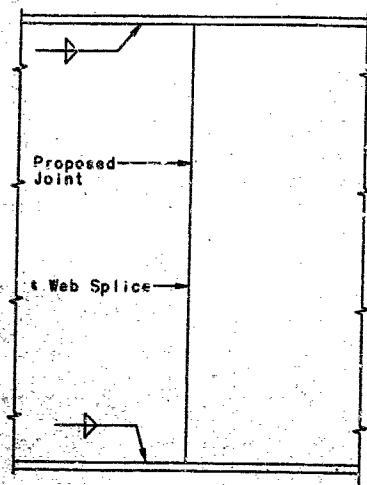
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 19 OF 35

CLAY COUNTY

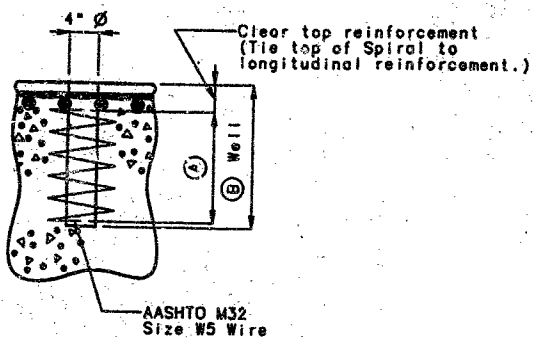
A3530





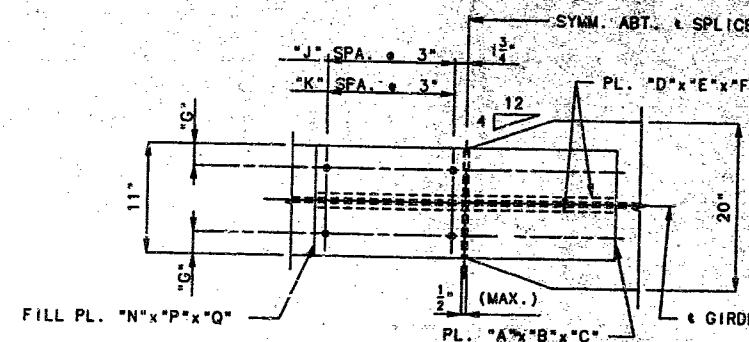
SHOP WEB SPLICE

- (A) 15" Abut. No. 1 & 3  
25" Int. Bt. No. 2
- (B) 18" Abut. No. 1 & 3  
28" Int. Bt. No. 2



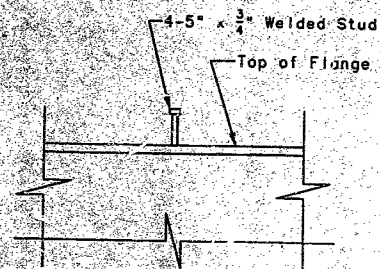
DETAIL OF ANCHOR BOLT WELLS

SPLICE LOCATION	TABLE OF DIMENSIONS-FIELD SPLICE														
	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	
TOP (S1 & S2)	12"	$\frac{3}{8}$ "	2'-0 $\frac{1}{2}$ "	5"	$\frac{1}{2}$ "	2'-0 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	3"	3"			12"	$\frac{3}{8}$ "	12"	5"
BOTTOM (S1)	14"	1"	2'-10 $\frac{1}{2}$ "	6"	$\frac{1}{8}$ "	2'-3 $\frac{1}{2}$ "	$\frac{1}{2}$ "	4"	3"						3 $\frac{1}{2}$ "
BOTTOM (S2)	11"	$\frac{7}{8}$ "	3'-6 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	3'-6 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	6"	6"						3"

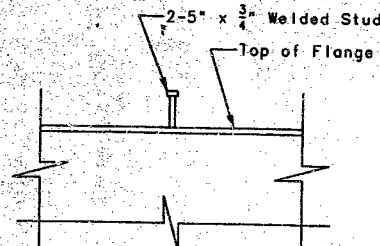


PLAN OF FLANGE BOTTOM (S2)

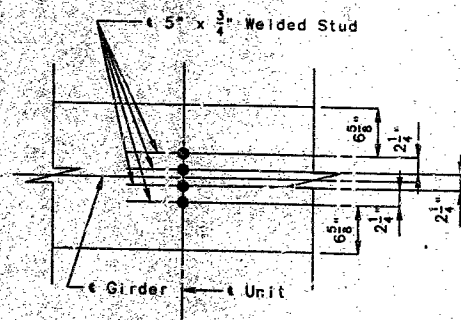
Note: Weight of 3139 lbs. of Shear Connectors is included in the weight of Fabricated Structural Carbon Steel.



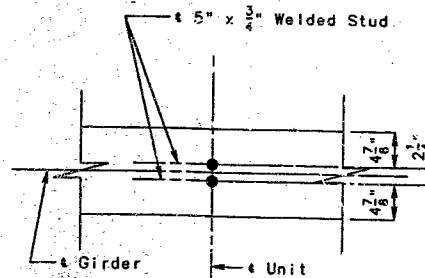
ELEVATION



ELEVATION

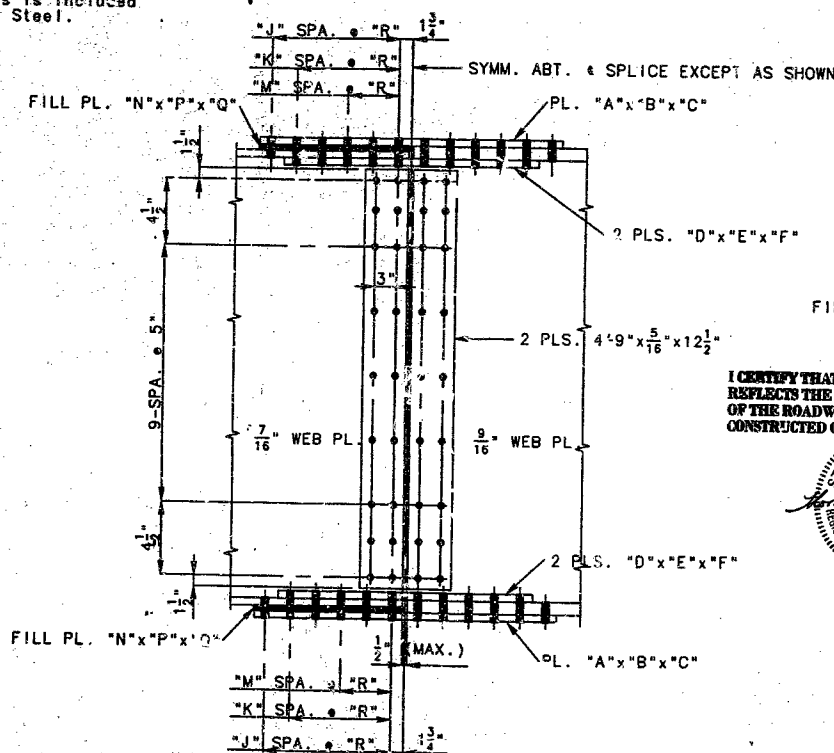


PLAN OF STUD CONN. 4 SHEAR CONN. PER UNIT



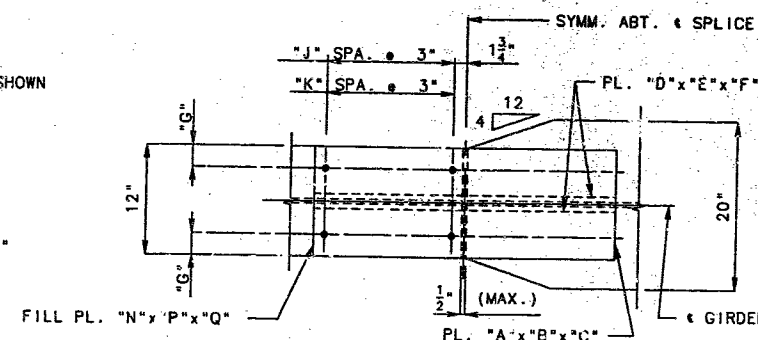
PLAN OF STUD CONN. 2 SHEAR CONN. PER UNIT

DETAILS OF SHEAR CONNECTORS



DETAIL OF BOLTED FIELD SPLICE

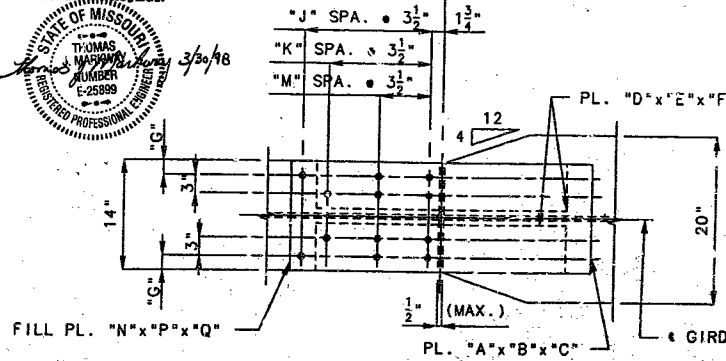
NOTE: USE  $\frac{7}{8}$ "  $\phi$  HIGH STRENGTH BOLTS WITH  $\frac{15}{16}$ "  $\phi$  REAMED HOLES.



PLAN OF FLANGE TOP (S1 & S2)

FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



PLAN OF FLANGE BOTTOM (S1)

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 DETAILED SEPT. 1993  
 CHECKED JUNE 1994

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

SHEET NO. 20 OF 35

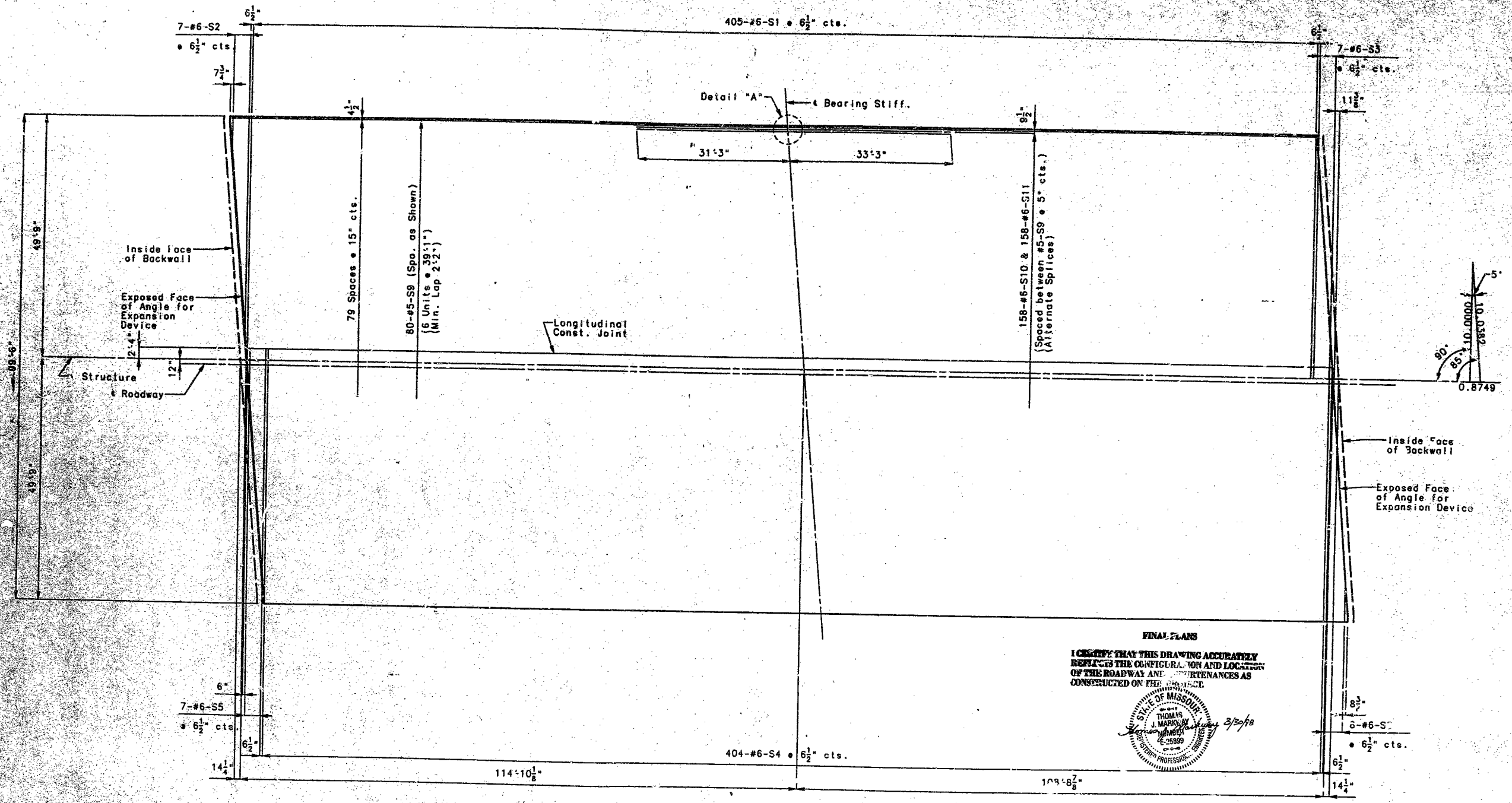
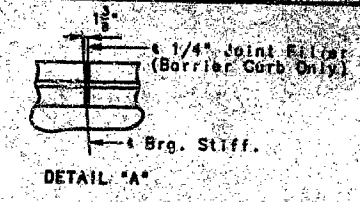
CLAY

COUNTY

A3530

FINAL PLANS

STATE	NO.	SHEET
MISSISSIPPI	2000-10-10-100000	21
PROJECT	MISSISSIPPI TURNPIKE	



FINAL PLANS  
 I CERTIFY THAT THIS DRAWING ACCURATELY  
 REFLECTS THE CONFIGURATION AND LOCATION  
 OF THE ROADWAY AND MAINTENANCES AS  
 CONSTRUCTED ON THIS PROJECT.



PLAN OF SLAB SHOWING TOP REINFORCEMENT

Note: For Details of Raised Median, see Sheet No. 27.  
 For Slab Cross Section and Slab Pouring Sequence, see Sheet No. 23.  
 For bottom reinforcement in slab, see Sheet No. 22.  
 Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" from vertical leg of angle at expansion device.

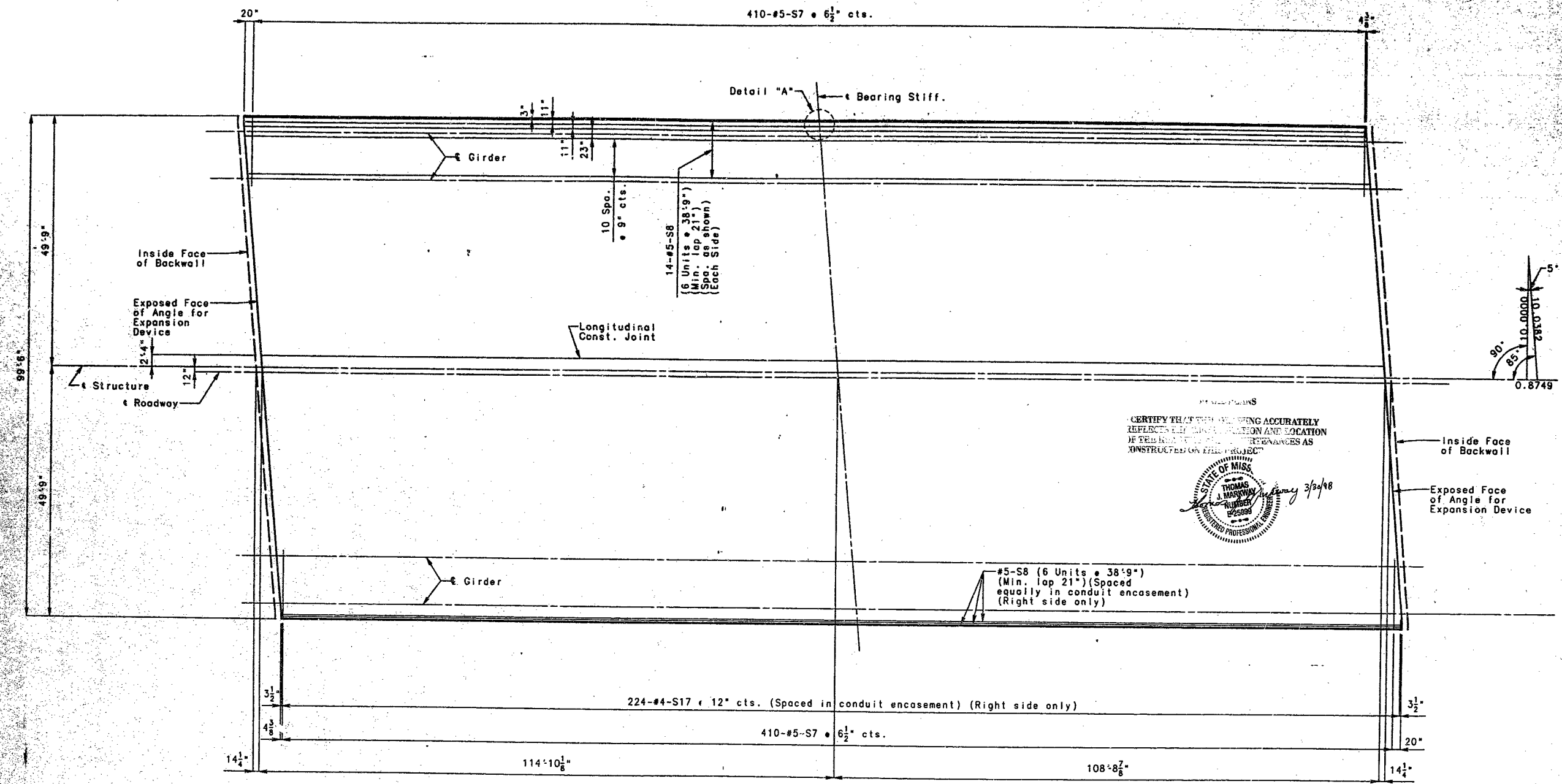
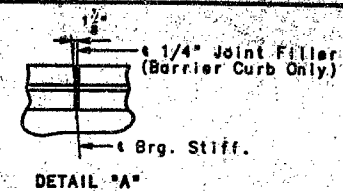
383  
 DETAILED SEPT. 1993  
 CHECKED JAN. 1994

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



FINAL PLANS

STATE	MO.
NO.	NO.



PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Note: For Details of Raised Median, see Sheet No. 27.  
 For Slab Cross Section and Slab Pouring Sequence, see Sheet No. 23.  
 For top reinforcement in slab, see Sheet No. 21.  
 Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" from vertical leg of angle at expansion device.

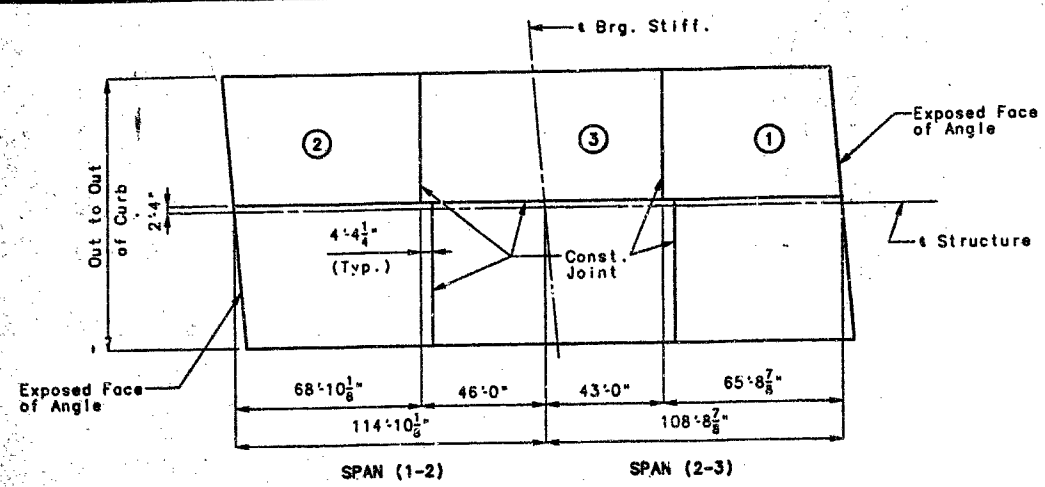
389  
 DETAILED SEPT. 1993  
 CHECKED JAN. 1994

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

SHEET NO. 22 OF 35

CLAY COUNTY A3530

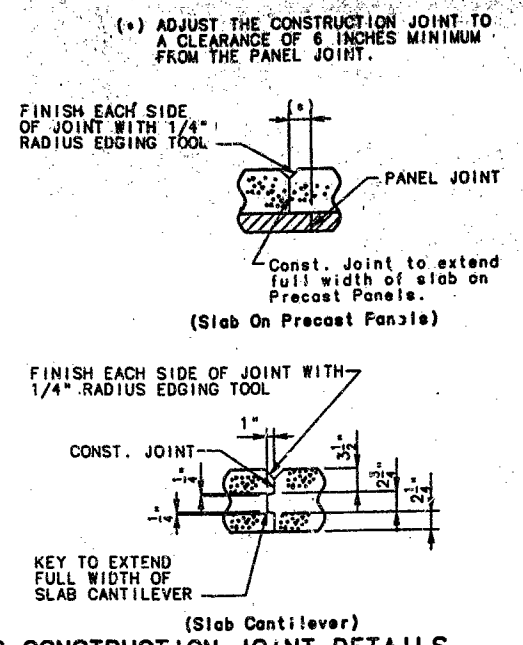




SEQUENCE OF POURS	DIRECTION	MIN. RATE OF POUR CU. YDS./HR.	
		WITH RETARDER	NO RETARDER
ALTERNATE "A"	1 + 3 + 2	48	8C
ALTERNATE "B"	1 + 3 + 2	48	8C

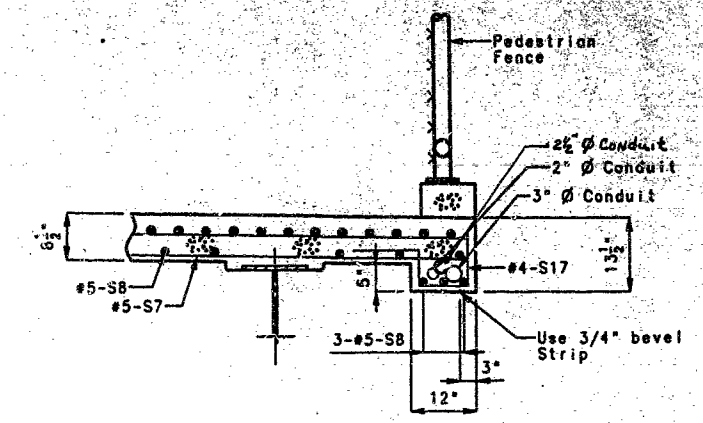
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.

SLAB POURING SEQUENCE



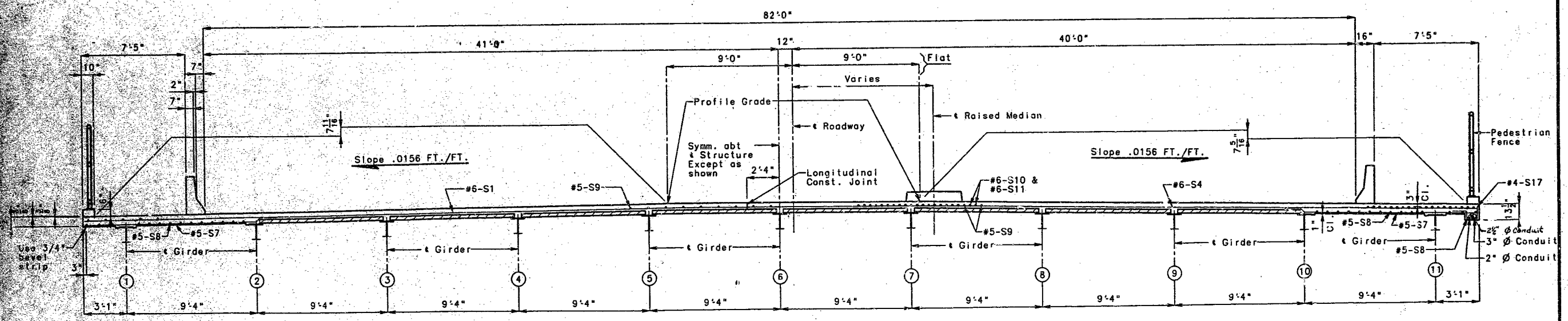
SLAB CONSTRUCTION JOINT DETAILS

Note: The Contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours. The longitudinal construction joint may be omitted with the approval of the Engineer. When the longitudinal construction joint is omitted, the minimum rate of pour for alternate pouring sequences shall be increased by a factor of 1.9.



PART SECTION SHOWING CONDUIT LOCATION (RIGHT SIDE ONLY)

Note: All conduit shall be rigid non-metallic schedule 40 heavy wall PVC (Polyvinyl Chloride Plastic) with 3" minimum cover in concrete. Each section of conduit shall bear the Underwriters Laboratories, Inc., (UL) label. Expansion fittings shall be equal to Carlon Electrical Construction Products or Triangle Conduit and Cable Company, Inc. Weepholes shall be provided at appropriate locations to drain any moisture in the conduit lines.



HALF SECTION NEAR t SPAN (1-2)

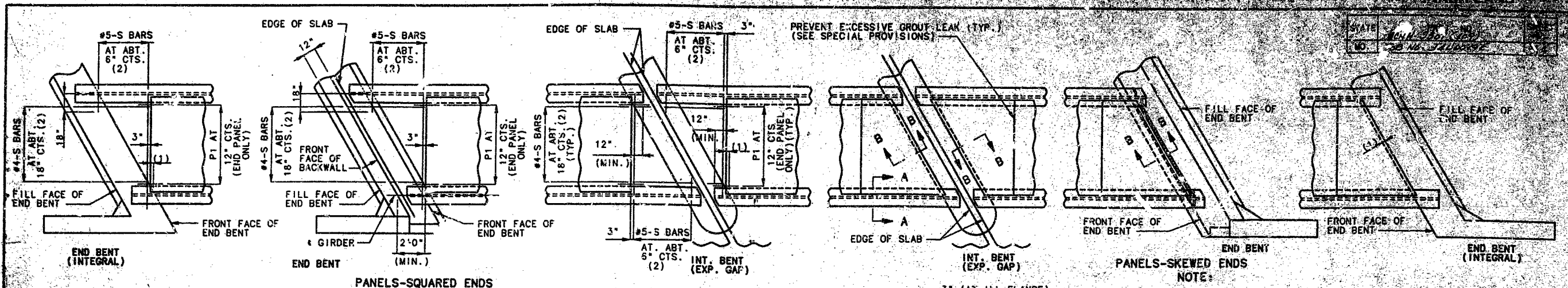
HALF SECTION NEAR INT. BENT

FINAL PLANS  
I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONSTRUCTION AND LOCATION OF THE ROADWAY AND DIMENSIONS AS CONSTRUCTED ON THIS PROJECT.

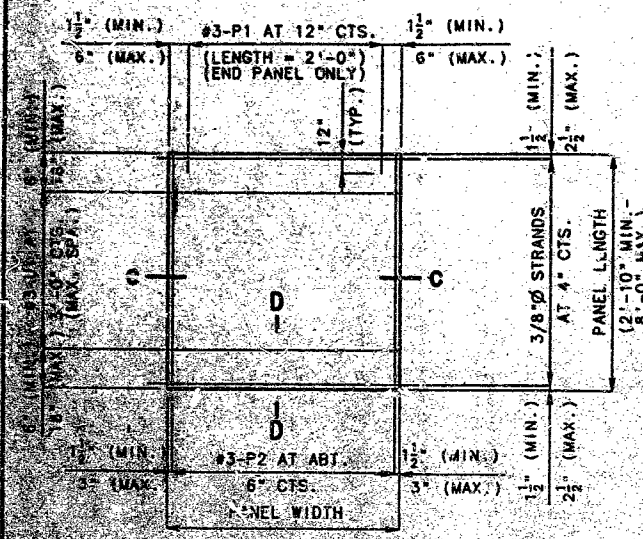


Note: For details and reinforcement of Safety Barrier not shown see Sheet No. 28.  
For details and reinforcement of Raised Median not shown see Sheet No. 27.  
For details of Pedestrian Fence and Curb, see Sheet No. 30.

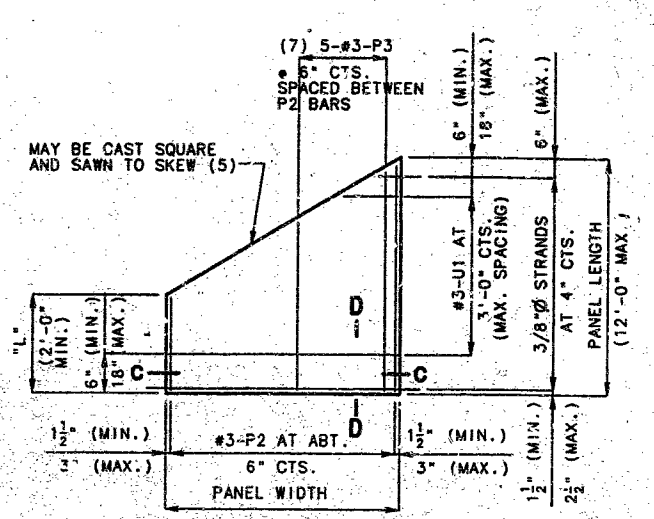
385



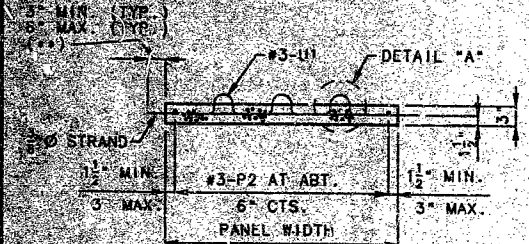
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



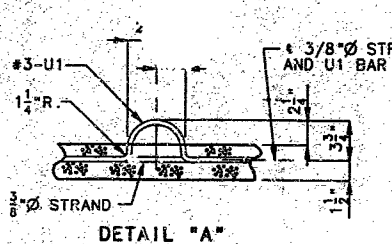
PLAN OF PRECAST PRESTRESSED PANEL



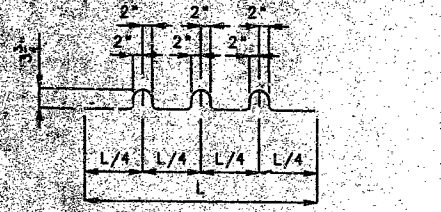
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END-OPTIONAL)



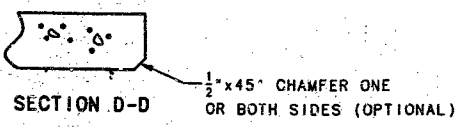
SECTION C-C  
(1) PRESTRESSING STRANDS TO EXTEND 6" OR TO WITHIN 1" OF ADJACENT PANEL.



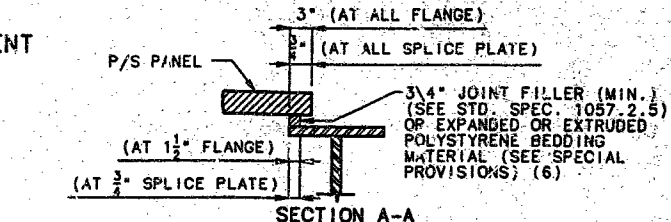
DETAIL "A"



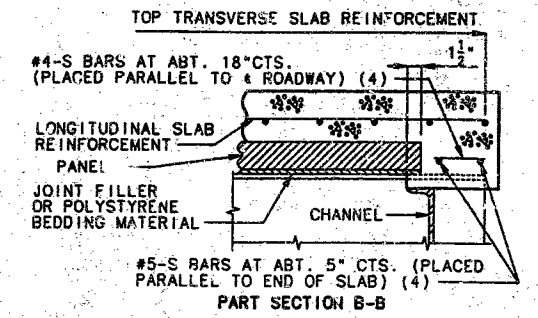
BENDING DIAGRAM FOR U1 BAR  
(U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS).



SECTION D-D  
1/2 x 45° CHAMFER ONE OR BOTH SIDES (OPTIONAL)



SECTION A-A



PART SECTION B-B

NOTES:

- END PANELS TO BE DIMENSIONED 1-1/2 INCHES FROM THE INSIDE FACE OF DIAPHRAGM.
- 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.
- ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS, OR GRADE, WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE 2% DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.
- S-BARS SHOWN ARE USED WITH SKEWED END PANELS, OR SQUARE END PANELS OF SQUARE STRUCTURES ONLY. THE #5-S BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES.
- ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATORS OPTION.
- 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.
- USE #3-P3 BARS IF PANEL IS SKEWED 45° OR GREATER.

DETAILS OF PRECAST PRESTRESSED PANELS

**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 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).  
 PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7) LOW-RILAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = 5/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 21,250 LBS. (256 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 IN-PLACE. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.  
 MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH, EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE 1/4 INCH. WHEN JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL IS LESS THAN 1/2 INCH THICK OVER A SPLICE PLATE, MAKE THE WIDTH OF MATERIAL AT THE SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCE, NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.  
 THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1 INCH TO CORRECT FOR VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.  
 SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

**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 SLAB ON STEEL.  
 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 OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. THE ABOVE ALTERNATIVE REINFORCEMENT CRITERIA MAY BE USED IN LIEU OF THE #3-P3 BARS, WHEN REQUIRED, AND PLACED OVER A WIDTH NOT LESS THAN 2FT.  
 THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8" STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:  
 #3-P2 BARS AT 18 INCHES.  
 WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS AT 24 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.  
 ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

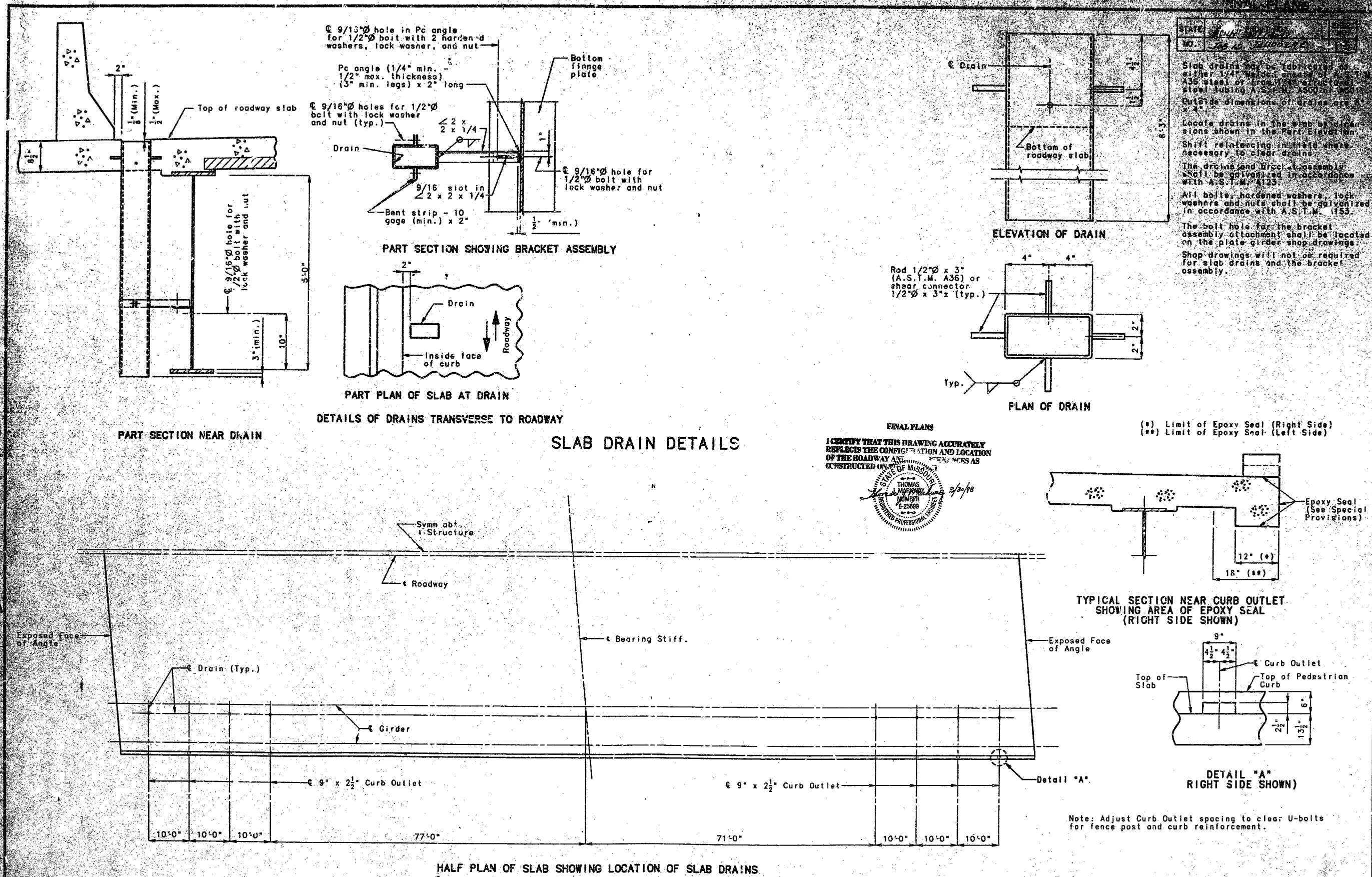
FINAL FLANS  
 I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND PERTINENCES AS CONST. TED ON THIS PROJECT.  
 THOMAS J. HANCOCK  
 REGISTERED PROFESSIONAL ENGINEER  
 MISSOURI  
 No. 25889  
 3/20/98

DESIGNED SEPT. 1993  
 CHECKED JUNE 1994

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

SHEET NO. 24 OF 35





Slab drains may be fabricated either 1/4" welded mesh or A36 steel or from 1/2" diameter steel tubing A.S.T.M. A500 or 1/2" outside dimensions of drains are 4" x 4".

Locate drains in the slab by dimensions shown in the Part Elevation. Shift reinforcing in field where necessary to clear drains.

The drains and bracket assembly shall be galvanized in accordance with A.S.T.M. 4123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with A.S.T.M. 153.

The bolt hole for the bracket assembly attachment shall be located on the plate girder shop drawings. Shop drawings will not be required for slab drains and the bracket assembly.

DRA 5 GS 3-30-STL-A  
 Steel Girder Drain  
 September 1995  
 Revised June 1995  
 387

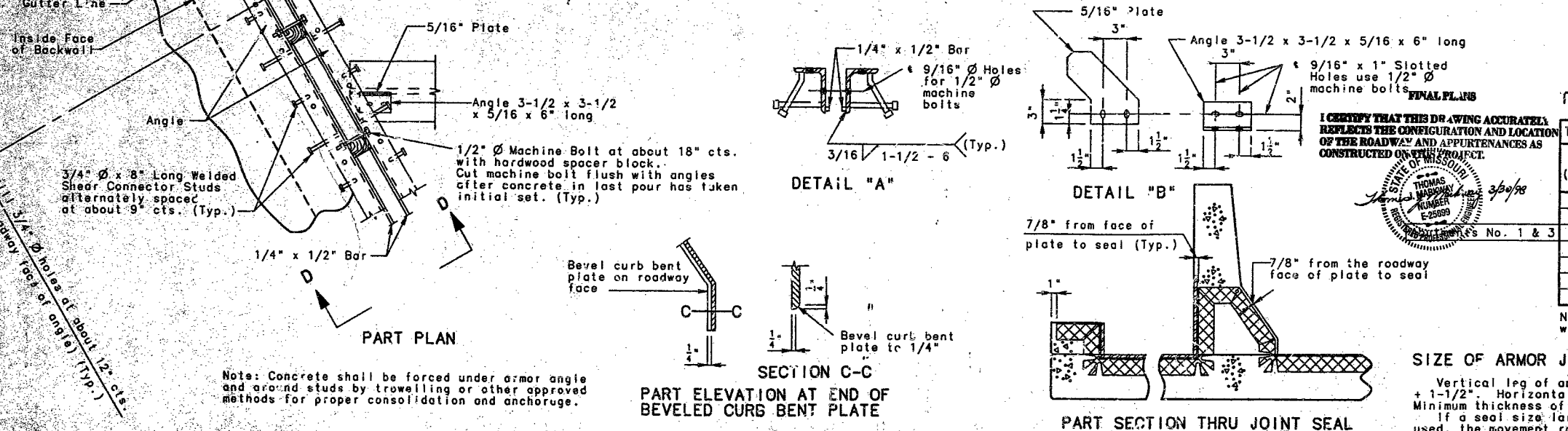
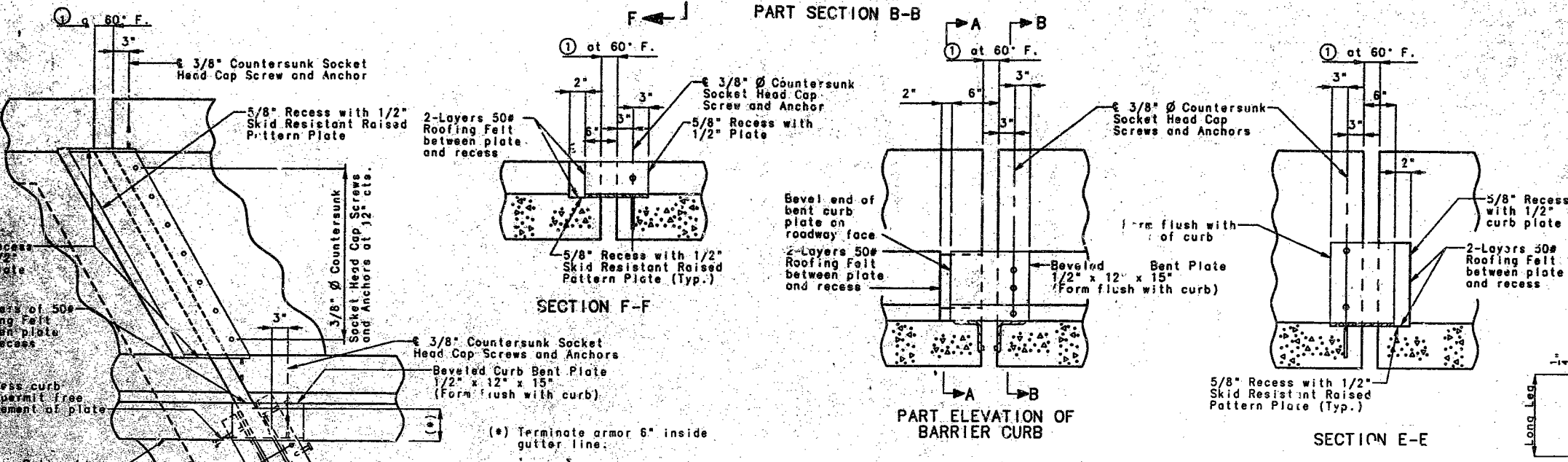
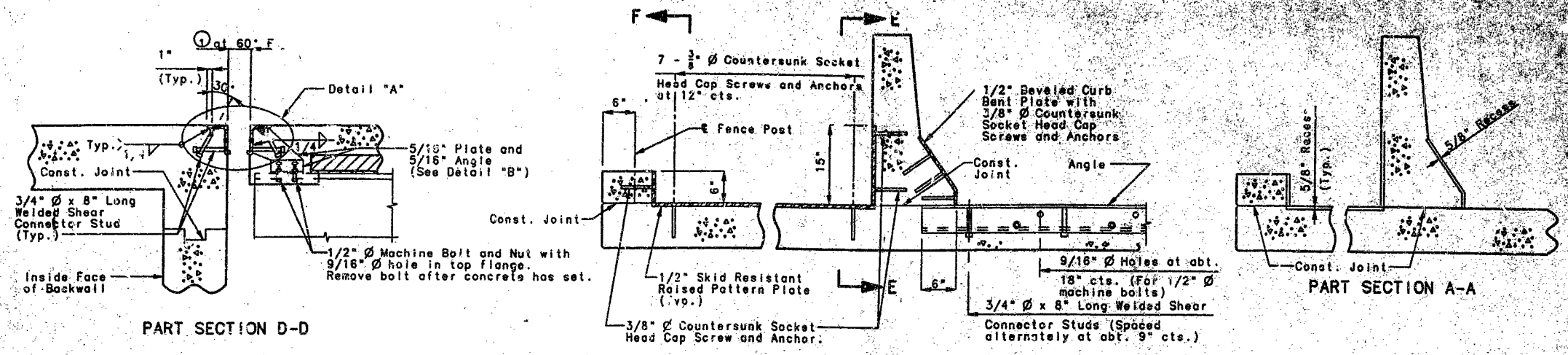
DETAILED JAN. 1995  
 CHECKED JUNE 1995

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

SHEET NO. 25 OF 35

CLAY COUNTY A3530





**GENERAL NOTES:**

Structural steel for expansion device shall be fabricated in one section, except that when the length is over 50' spanning is permissible.

The expansion device shall be bent to conform to crown and grade of roadway.

Structural steel for the armored joint shall be grade A36.

Plan dimensions are based on installation at 60°F.

Dimension ① shall be increased 1/16" for each 10° fall in temperature and decreased 1/16" for each 10° rise in temperature at installation.

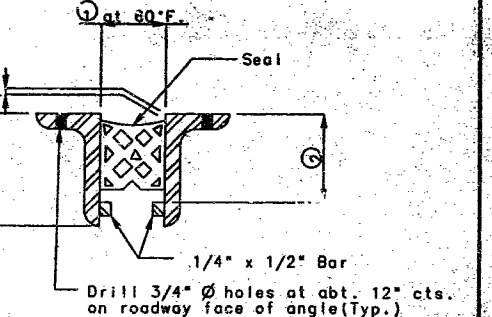
See Special Provisions for the requirements of compression joint seal.

Structural steel for the expansion device and curb plate shall be painted with a minimum of two coats of inorganic zinc primer (5 mils minimum) in accordance with the special provisions. Anchors need not be protected from overspray.

Furnishing, painting and installing the structural steel armored joint and curb plates shall be included in contract unit price for Preformed Compression Expansion Joint Seal.

Neoprene extrusions shall meet A.S.T.M. D3542.

Anchors for compression seal armor shall be approved stud welded anchors (C1010 thru C1020).



**TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS**

Seal (Width)	Ø	Ø	Required Movement Range
2.5"	1-5/8"	Seal Depth + 3/4"	0.9"
3.0"	1-7/8"	Seal Depth + 3/4"	1.0"
3.5"	2-1/4"	Seal Depth + 3/4"	1.3"
4.0"	2-5/8"	Seal Depth + 3/4"	1.6"
4.5"	2-3/4"	Seal Depth + 3/4"	1.9"
5.0"	2-7/8"	Seal Depth + 3/4"	2.0"

Note: Depth of seal shall not be less than width of seal.

**SIZE OF ARMOR JOINT**

Vertical leg of angle shall be a minimum of depth of seal + 1-1/2". Horizontal leg of angle shall be a minimum of 5". Minimum thickness of angle shall be 1/2".

If a seal size larger than that indicated on the plans is used, the movement range, the opening at 60° and all dimensions for the armor angles shall be shown on the shop drawings.

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

STATE OF MISSOURI  
THOMAS HANCOCK  
REGISTERED PROFESSIONAL ENGINEER  
NUMBER E-25899  
EXPIRES 3/31/98

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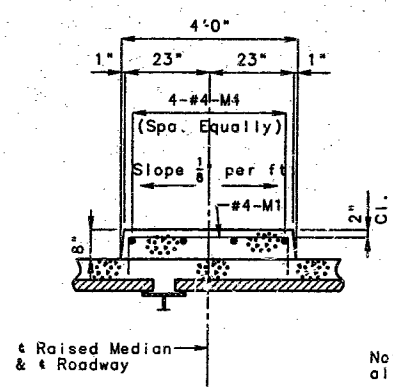
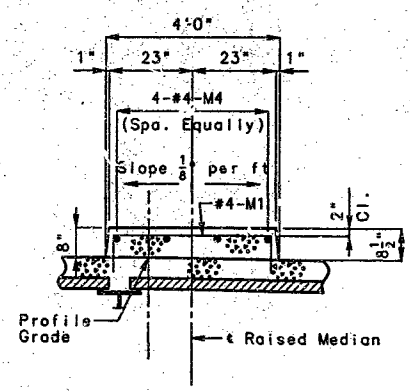
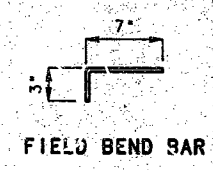
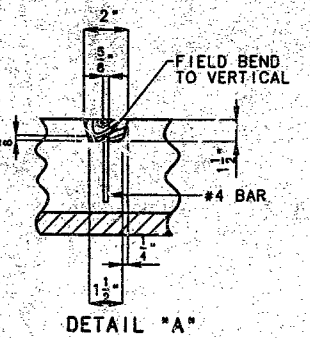
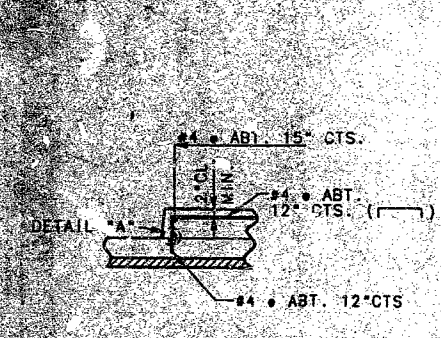
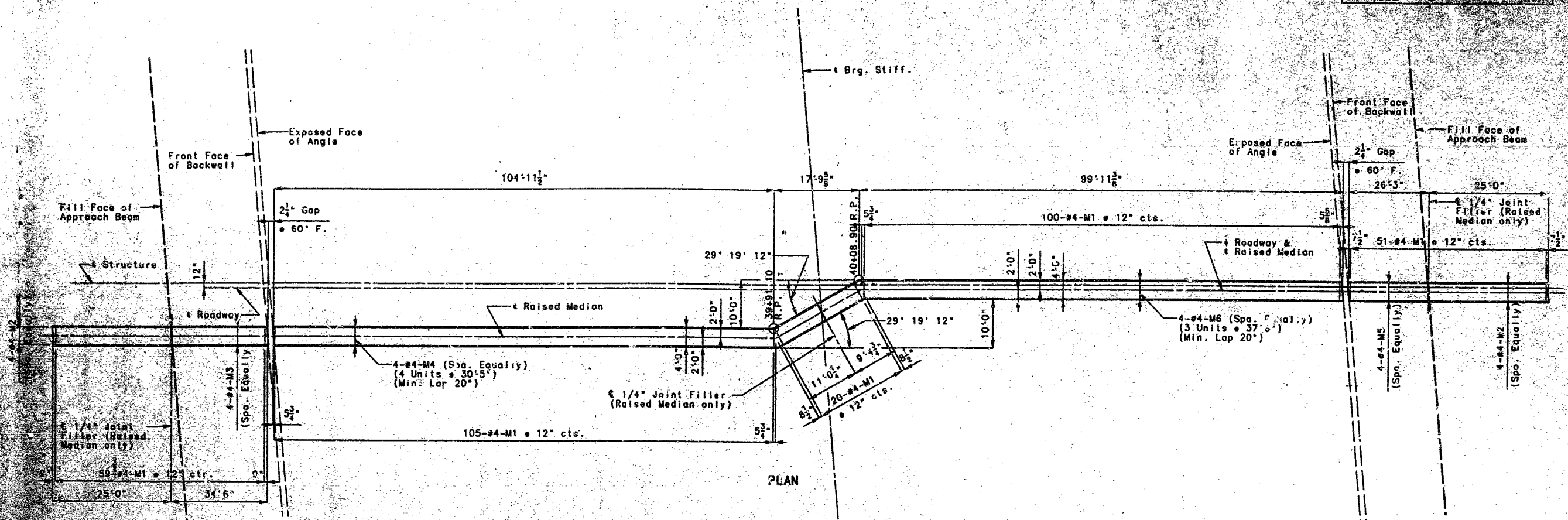
DETAILED SEPT. 1993  
CHECKED JUNE 1994

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

SHEET NO. 26 OF 35

CLAY COUNTY A3530

STATE MISSISSIPPI  
 PROJECT NO. 300-100-100  
 JOB NO. 300-100-100



FINAL PLANS  
 I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

THOMAS J. MANNING  
 3/30/98  
 REGISTERED PROFESSIONAL ENGINEER

Note: Field bend #4-M4 as required for raised median alignment.

When the raised median is bid by square feet, the contract unit price shall include the cost of all concrete and reinforcement, Complete in Place.

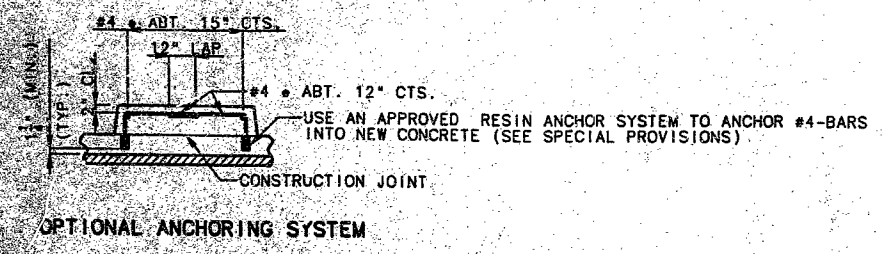
All reinforcement for the optional or alternate anchoring system shall be epoxy.

No additional payment will be allowed for the usage of the optional or alternate anchoring system.

All exposed edges of raised median shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Concrete in the raised median shall be class B2.

Measurement of the raised median is to the nearest square foot, measured between the outside faces of the raised median at the top of slab and from end of bridge approach slab to end of bridge approach slab along the raised median.



DETAILS OF RAISED MEDIAN

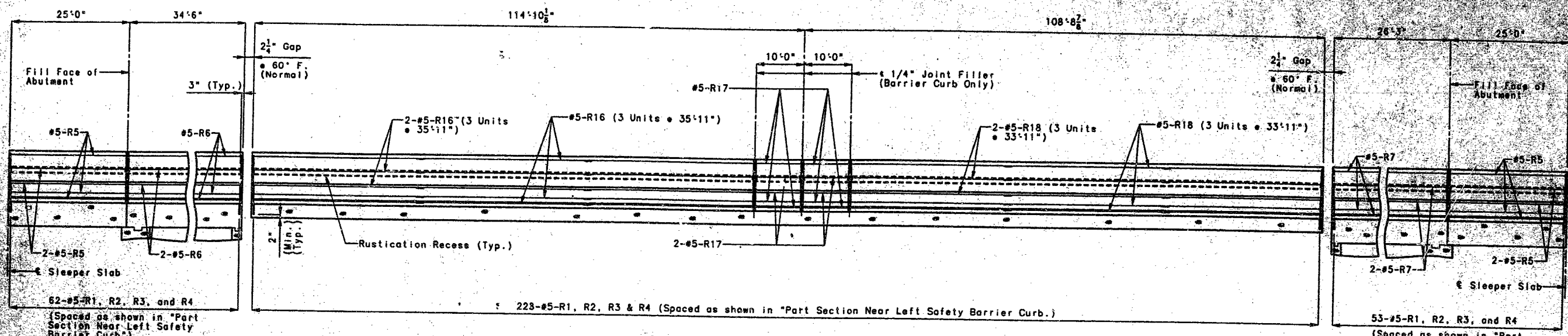
389

DETAILED SEPT. 1993  
 CHECKED JUNE 1994

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

SHEET NO. 27 OF 35

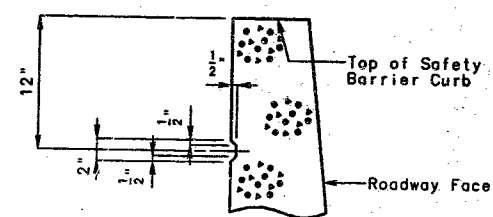




SECTION NEAR LEFT BARRIER CURB SHOWING REINFORCEMENT (RIGHT BARRIER CURB SIMILAR)

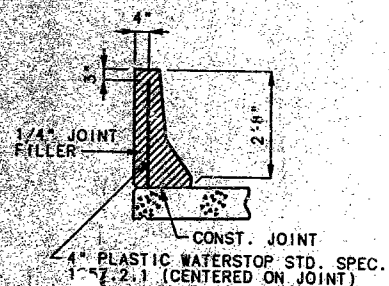
Note: Longitudinal dimensions are horizontal dimensions taken along top of outside edge of slab.

Note: The contractor shall use one of the resin anchor systems listed in the job special provisions for the safety barrier curb. These resin anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions. R3 & R4 bars from the "Bill of Reinforcing Steel" shall be a component part of the resin anchor system in lieu of 5/8 inch threaded rod studs. Cost of furnishing and installing the resin anchor system complete in place shall be included in the price bid for safety barrier curb per linear foot. The 5/8 inch diameter resin anchor systems shall have a minimum ultimate pullout strength of 15,500 lbs. in concrete with  $f_c = 4000$  psi, see special provisions.

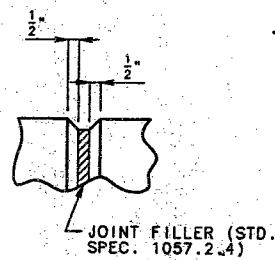


PART SECTION SHOWING RUSTICATION DETAILS

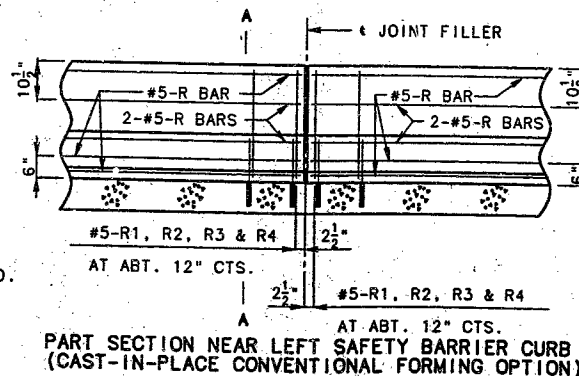
FINAL PLANS  
I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.  
THOMAS J. HANCOCK  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF MISSOURI  
NUMBER E-25889  
3/30/98



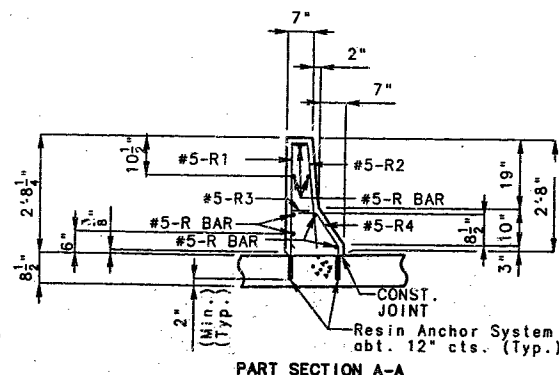
DETAILS OF PLASTIC WATERSTOP



FILLED JOINT DETAIL



PART SECTION NEAR LEFT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)



PART SECTION A-A

NOTE: USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. THE CROSS-SECTIONAL AREA ABOVE THE SLAB = 2.27 SQ. FT.

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE. ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A 1/2" RADIUS OR A 3/8" BEVEL, UNLESS OTHERWISE NOTED.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT, AND RESIN ANCHOR SYSTEMS, COMPLETE-IN-PLACE.

CONCRETE IN THE SAFETY BARRIER CURB SHALL BE CLASS B1.

MEASUREMENT OF SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE TOP OF SLAB FROM END OF BRIDGE APPROACH SLAB TO END OF BRIDGE APPROACH SLAB.

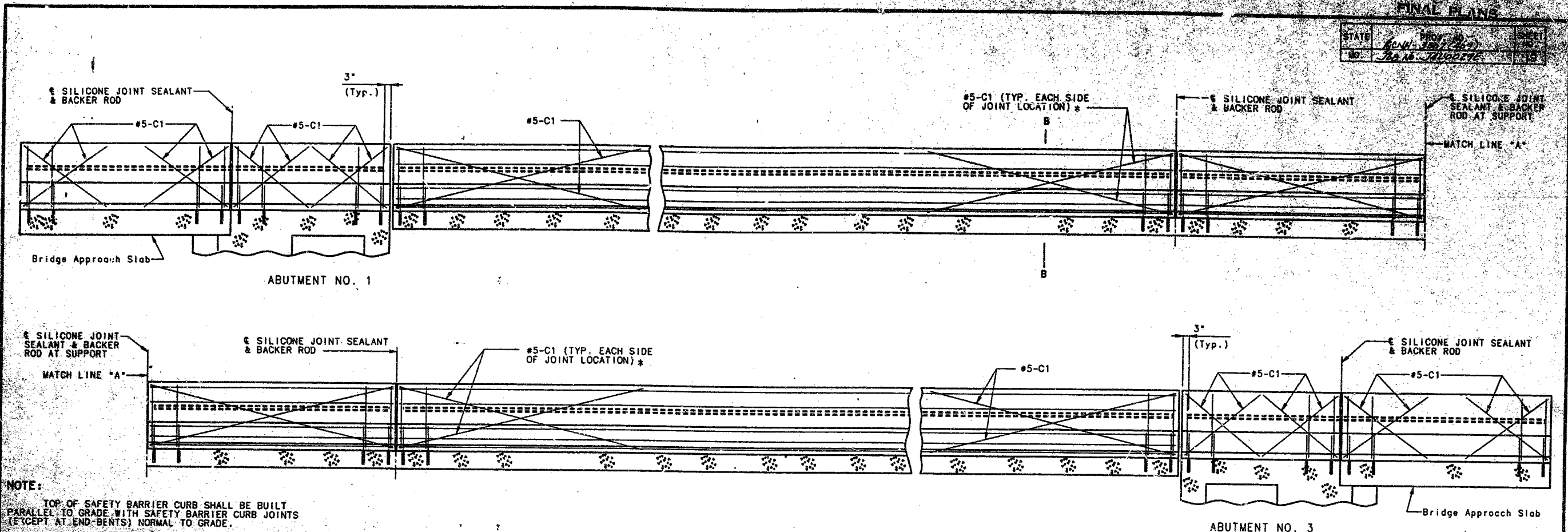
NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB FILLED JOINTS. (EXCEPT STRUCTURES WITH SUPERELEVATION, USE ON ALL LOWER SAFETY BARRIER CURB JOINTS ONLY)

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB.

DETAILED 1 JAN 1994  
CHECKED JUNE 1994

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



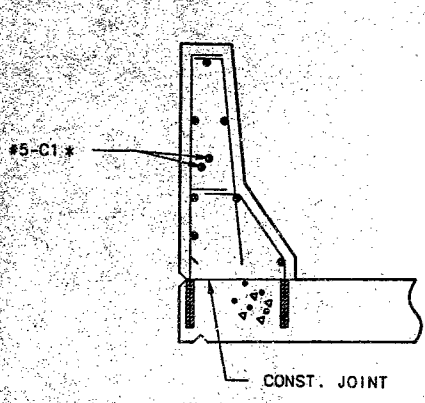


**NOTE:**  
 TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS (EXCEPT AT END-BENTS) NORMAL TO GRADE.  
 WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT, AND RESIN ANCHOR SYSTEMS, COMPLETE IN-PLACE.  
 CONCRETE IN THE SAFETY BARRIER CURB SHALL BE CLASS B.  
 MEASUREMENT OF SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE TOP OF SLAB FROM END OF BRIDGE APPROACH SLAB TO END OF BRIDGE APPROACH SLAB.

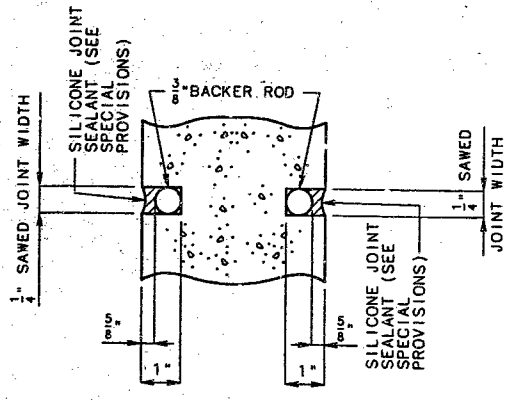
**TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)**

**NOTE:**  
 JOINT SEALANT AND BACKER RODS SHALL BE USED ON ALL SLIP-FORM BRIDGE SAFETY BARRIER CURBS INSTEAD OF JOINT FILLER.  
 C BARS (SLIP-FORM OPTION ONLY) SHALL BE USED IN ADDITION TO CAST-IN-PLACE CONVENTIONAL FORMING REINFORCEMENT FOR BRIDGE SAFETY BARRIER CURB.

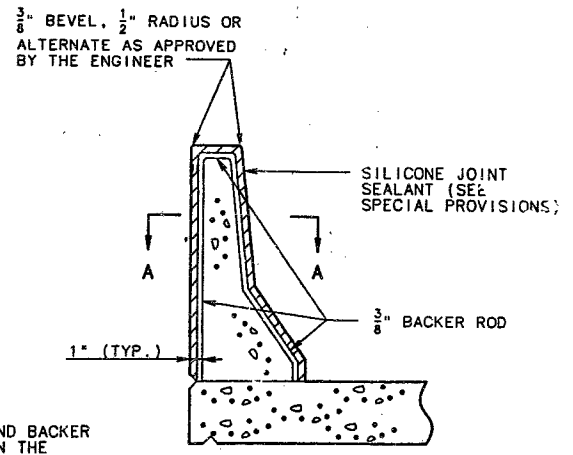
**FINAL PLANS**  
 I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



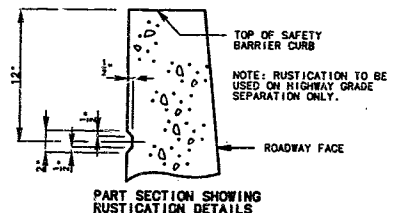
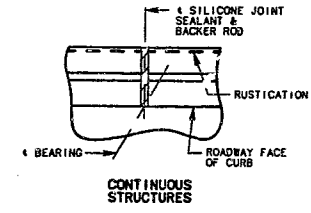
**PART SECTION B-B**  
 NOTE: \* EACH SIDE OF JOINT LOCATION.



**SECTION A-A**  
 NOTE: COST OF SILICONE JOINT SEALANT AND BACKER ROD COMPLETE IN PLACE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB.



**SECTION THRU JOINT**



**RUSTICATION DETAIL**  
 (Use on highway grade separation only)

**OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB**

DETAILED JAN. 1994  
 CHECKED JUNE 1994

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

SHEET NO. 29 OF 35

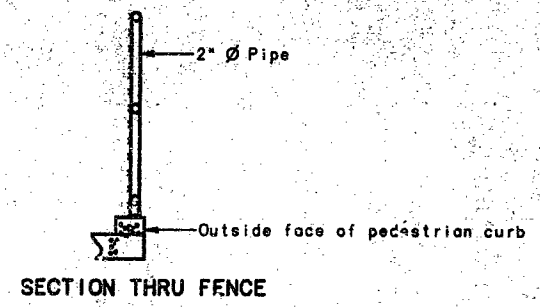
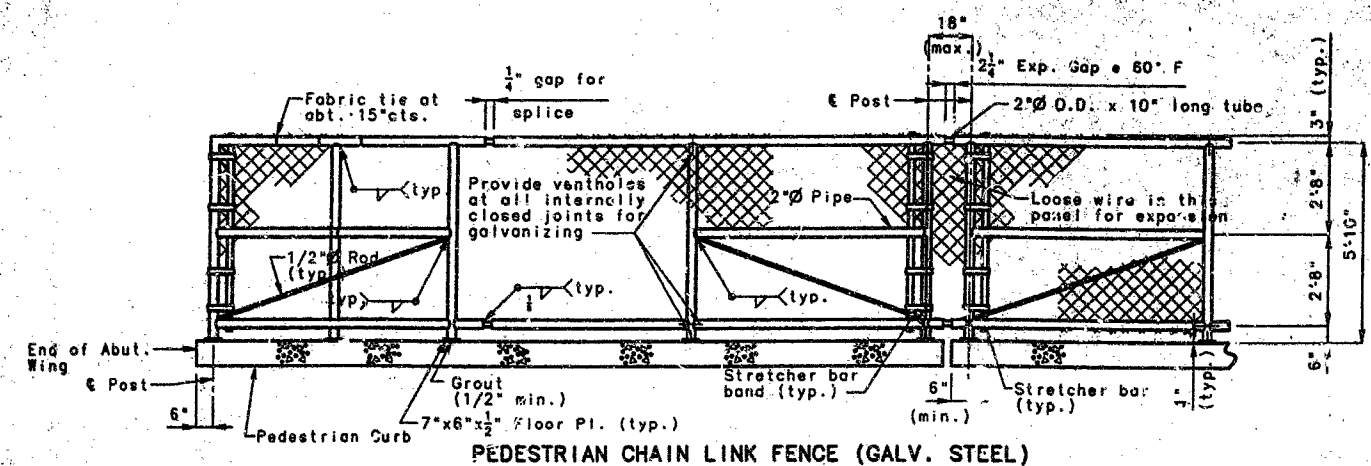
CLAY

COUNTY

A3530

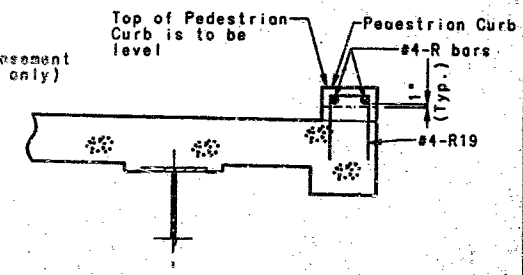
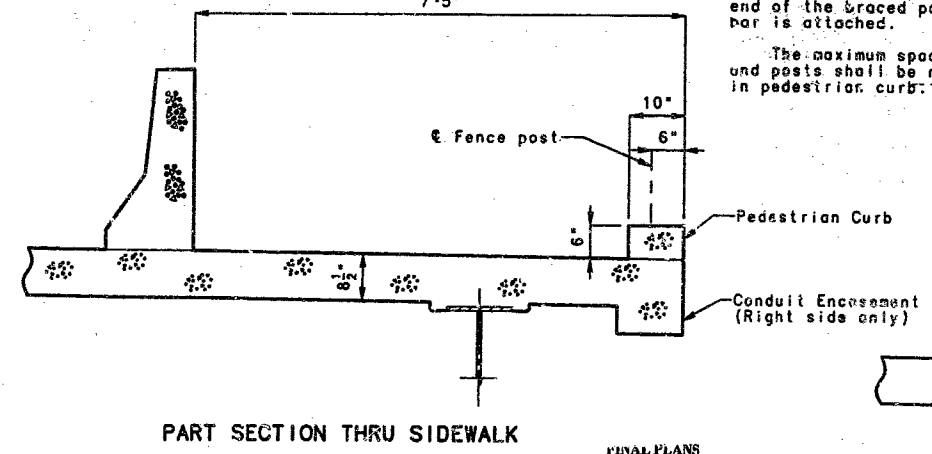
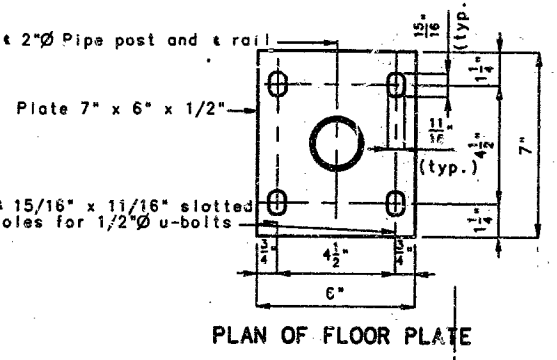
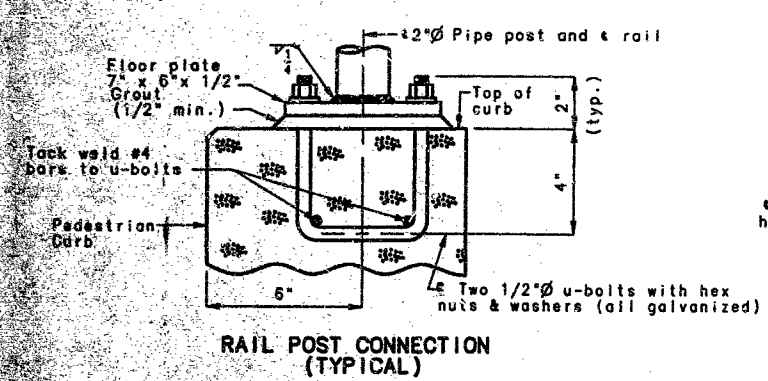
FINAL PLANS

STATE	MISSOURI	SHEET	30
NO.	100-N-34000-2	DATE	1/23/98



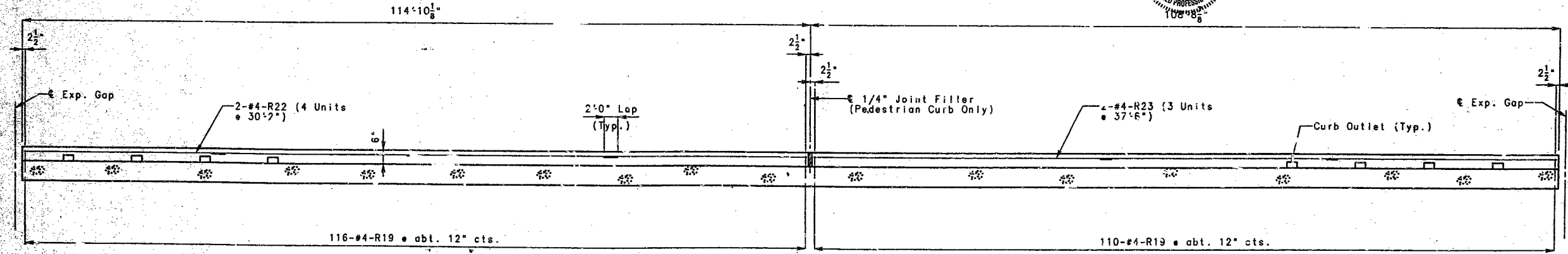
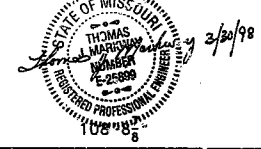
**NOTE:**  
 Pedestrian guard fence (chain link type) shall be in accordance with Section 1043 of the MO. Std. Spec., except all fabric shall have the top and bottom edges knuckled.  
 All rail post shall be vertical. Grout of 1/2" minimum thickness shall be placed under floor plate to provide for vertical alignment of rail posts.  
 The contract unit price per linear foot for (72 in.) pedestrian guard fence (structures) shall include furnishing, galvanizing and erecting the fence and frame complete with anchor bolts and washers.  
 Measurement of pedestrian guard fence shall be taken parallel to grade through the centerline of post.  
 The maximum spacing allowed for the braced panels (pull posts) is 100 ft.  
 Connect the lower end of the 1/2" rod to the end of the braced panel to which the stretcher bar is attached.  
 The maximum spacing allowed between posts is 8'-0" and posts shall be no closer than 6" to joint filler in pedestrian curb.

DETAILS AND REINFORCEMENT OF SIDEWALK:



**Notes for Pedestrian Curb:**  
 All exposed edges of pedestrian curb shall have either a 1/2" radius or a 3/8" bevel.  
 When the pedestrian curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete-in-place.  
 Concrete in the pedestrian curb shall be Class B-1.  
 Measurement of pedestrian curb is to the nearest linear foot for each structure, measured along the outside of slab from end of wing to end of wing.

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND SURTENCANCES AS CONSTRUCTED ON THIS PROJECT.



Note: For details of Pedestrian Curb on abutments, see Sheets No. 7 and 14.

DETAILED JULY 1995  
 CHECKED JULY 1995

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

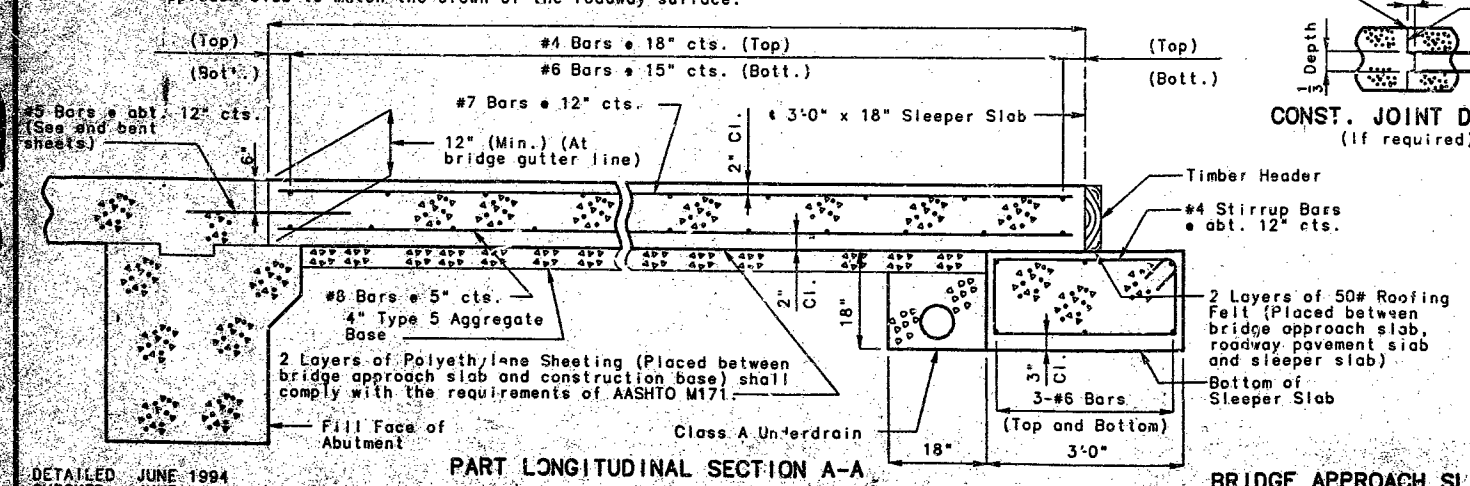
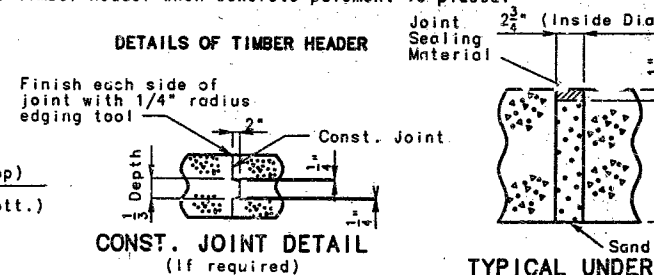
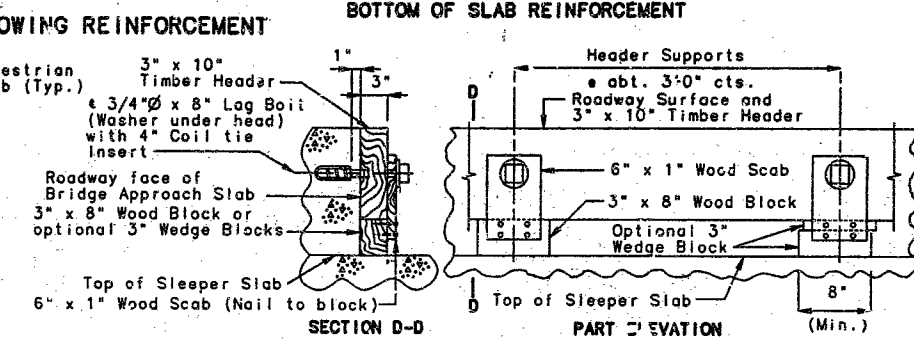
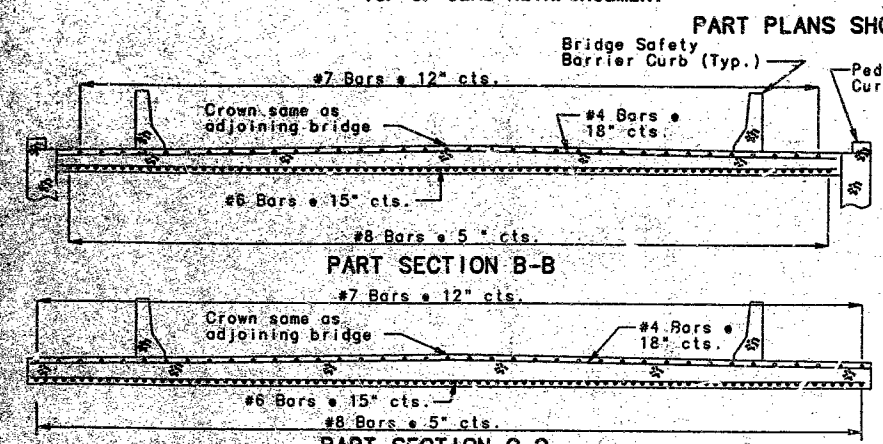
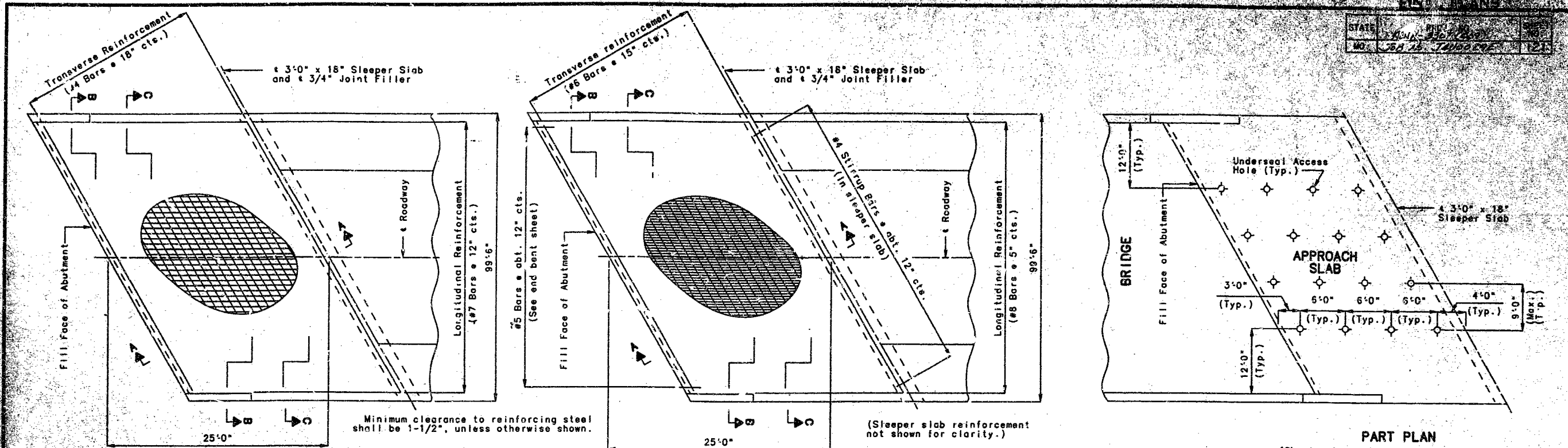
SHEET NO. 30 OF 35

CLAY COUNTY

A3530

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**GENERAL NOTES (CONT.):**  
 See Missouri Standard Plans Drawing 504.00 for details of concrete approach pavement.  
 See Missouri Standard Plans Drawing 605.10 for details of Class A Underdrain.  
 See Missouri Standard Plans Drawing 609.00 for details of Type A Barrier Curb.  
 Mechanical bar splices shall be epoxy coated in accordance with Mo. Std. Spec. 710.  
 When a lap splice is required for the use of a mechanical bar splice, the minimum lap length shall be 34" for transverse approach slab bar splices.  
 All joint filler shall meet the requirements of Section 1057.2.5, except as noted.  
 Type 5 aggregate base shall conform to Sections 1.0 through 3.0 of MRS-P-93-01C Type 5 aggregate for base. See Special Provisions.

**GENERAL NOTES:**  
 All concrete for the bridge approach slab and sleeper slab shall be in accordance with Section 503 (f'c = 4,000 psi).  
 The reinforcing steel in the bridge approach slab or the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.  
 The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 22" and 34" respectively.  
 Mechanical bar splices will be permitted and shall develop at least 125 percent of the specified yield strength of the reinforcing bars being spliced. The contractor shall furnish the Engineer the manufacturer's certification that this requirement is met and is required to follow the manufacturer's recommendation for installation.  
 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.  
 Place Class A underdrain at face of sleeper slab under bridge approach slab and slope to lowest grade of ground line, also missing the bottom of the sleeper slab by 1-1/2".  
 The contractor shall pour and satisfactorily finish the bridge slab before pouring the bridge approach slabs.  
 Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab.  
 Payment for furnishing all materials and labor necessary to construct the approach slab and timber header, complete in place as shown on this sheet, shall be considered as completely covered under the contract unit price for "Bridge Approach Slab (Bridge)". Per Sq. Yd.  
 At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.  
 When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired according to Mo. Std. Spec. 710.3.3.

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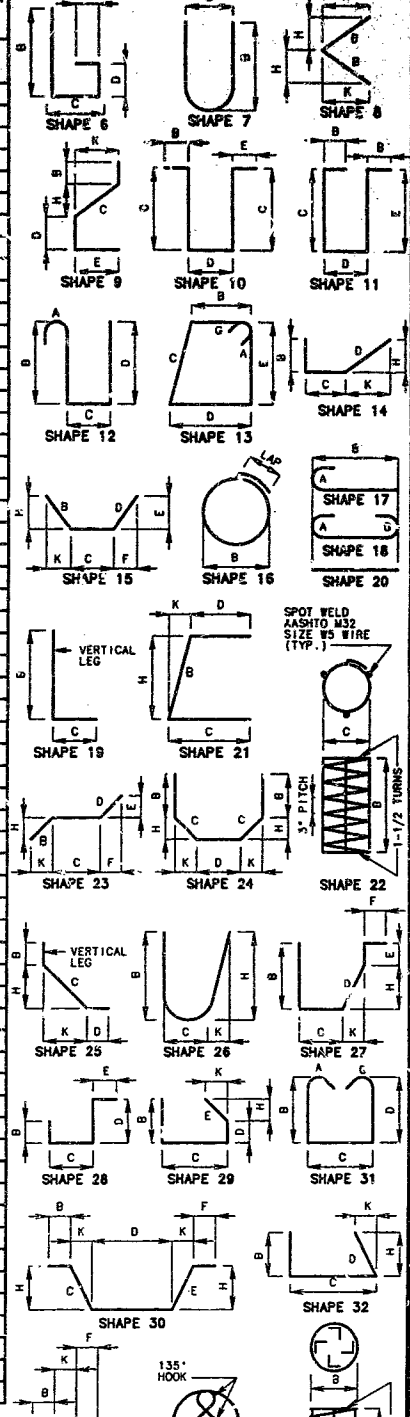
BILL OF REINFORCING STEEL

Table with columns: NO. REQ'D, MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes substructure, abutment #1, and various beams and wings.

BILL OF REINFORCING STEEL

Table with columns: NO. REQ'D, MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes backwall, apron, wing, curtain wall, footing, and column.

STATE MO. PROJ. NO. SHEET NO. FINAL PLANS



Two additional #4-M2, #5-R17, #6-S11, and #8-S15 are included in the bar bill for testing.

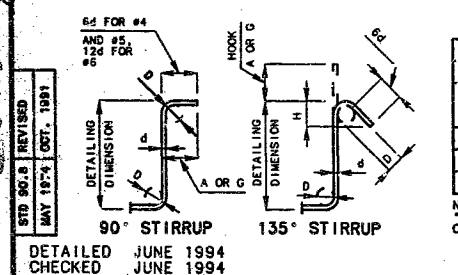


Table for STIRRUP HOOK DIMENSIONS, GRADES 40 - 50 - 60 K51. Columns include BAR SIZE, D (IN.), and hook dimensions.

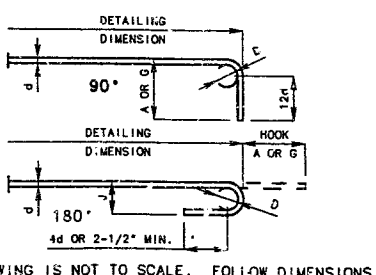


Table for END HOOK DIMENSIONS, ALL GRADES. Columns include BAR SIZE, D (IN.), and hook dimensions.

NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

REVISIONS: JUN 1994, JUN 1994

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

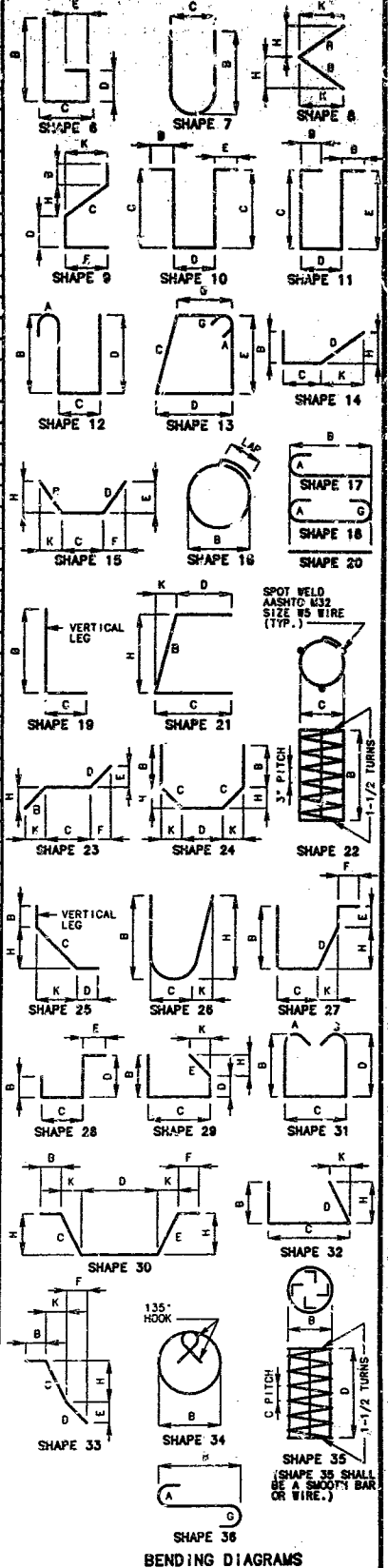
SHEET NO. 32 OF 35

BILL OF REINFORCING STEEL table with columns for NO. REQ'D., MARK NO., LOCATION, DIMENSIONS (B-K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT.

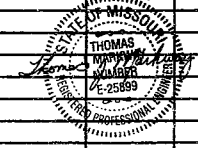
BILL OF REINFORCING STEEL table with columns for NO. REQ'D., MARK NO., LOCATION, DIMENSIONS (B-K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT.

FINAL PLANS

STATE MO. PROJ. NO. 99H-301(20) SHEET NO. 123



I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



Two additional #4-M2, #5-R17, #3-S11, and #8-S15 are included in the bar bill for testing.

STIRRUP HOOK DIMENSIONS table with columns for BAR SIZE, HOOK, and DIMENSIONS.

END HOOK DIMENSIONS table with columns for BAR SIZE, HOOK, and DIMENSIONS.

NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT					
								B	C	D	E	F	H	K								
		FT. IN.																				
7	6 S3	SLAB		E 20				44	1.000							44	1	44	1			
		INCREMENT =	6 11.000															6	11	6	11	268
		74.375 INCH																				
404	6 S4	SLAB		E 20				51	10.000							51	10	51	10	31453		
7	6 S5	SLAB		E 20				46	4.000							46	4	46	4	292		
		INCREMENT =	9 3.000															9	3	9	3	
		74.125 INCH																				
8	6 S6	SLAB		E 20				50	5.000							50	5	50	5	345		
		INCREMENT =	7 1.000															7	1	7	1	
		74.250 INCH																				
820	5 S7	SLAB		E 9				12	3.500	6.000	12.000			3.875	3.875	13	10	13	9	11760		
188	5 S8	SLAB		E 20				38	9.000							38	9	38	9	7517		
480	5 S9	SLAB		E 20				39	1.000							39	1	39	1	19567		
158	6 S10	SLAB		E 20				40	0.000							40	0	40	0	9493		
160	6 S11	SLAB		E 20				27	1.000							27	1	27	1	6509		
224	4 S17	SLAB		E 28				10.500		9.000	6.500	12.000				3	2	2	10	424		
		RAISED MED.																				
336	4 M1	RAISED MED.		E 10	S					11.500	3	7.000				5	6	5	4	1193		
10	4 M2	RAISED MED.		E 20				24	9.000							24	9	24	9	165		
4	4 M3	RAISED MED.		E 20				34	3.000							34	3	34	3	92		
16	4 M4	RAISED MED.		E 20				30	5.000							30	5	30	5	325		
4	4 M5	RAISED MED.		E 20				26	0.000							26	0	26	0	69		
12	4 M6	RAISED MED.		E 20				37	6.000							37	6	37	6	301		
		BARRIER CURB																				
56	5 C1	BARRIER CURB		E 20				10	0.000							10	0	10	0	584		
686	5 R1	BARRIER CURB		E 19	S			2	6.000	3.500						2	10	2	8	1908		
686	5 R2	BARRIER CURB		E 15	S			2	6.125	3.500			2	6.000	3.000	2	10	2	9	1969		
686	5 R3	BARRIER CURB		E 19	S			18	0.000	6.000						2	0	0	23	1371		
686	5 R4	BARRIER CURB		E 27	S			6	0.000	6.000	11.125	8.875			9	1.25	2	2	1	1491		
28	5 R5	BARRIER CURB		E 20				24	8.000							24	8	24	8	720		
14	5 R6	BARRIER CURB		E 20				34	3.000							34	3	34	3	900		
14	5 R7	BARRIER CURB		E 20				26	0.000							26	0	26	0	380		
42	5 R16	BARRIER CURB		E 20				35	11.000							35	11	35	11	1573		
30	5 R17	BARRIER CURB		E 20				9	9.000							9	9	9	9	305		
42	5 R18	BARRIER CURB		E 20				33	11.000							33	11	33	11	1486		
604	4 R19	PED. CURB		E 10	S					11.500	7.000					2	6	2	4	941		
8	4 R20	PED. CURB		E 20				21	7.000							21	7	21	7	115		
4	4 R21	PED. CURB		E 20				32	11.000							32	11	32	11	88		
16	4 R22	PED. CURB		E 20				30	2.000							30	2	30	2	322		
12	4 R23	PED. CURB		E 20				37	6.000							37	6	37	6	301		

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
								B	C	D	E	F	H	K			
		FT. IN.															
Two additional #4-M2, #5-R17, #6-S11, and #5-S15 are included in the bar bill for testing.																	

FINAL PLANS

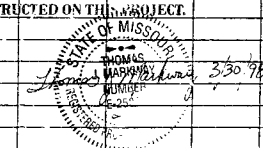
STATE: MO. PROJ. NO. ACH 3307 (209) SHEET NO. 124  
JOB NO. J40029E

SHAPE 6, SHAPE 7, SHAPE 8, SHAPE 9, SHAPE 10, SHAPE 11, SHAPE 12, SHAPE 13, SHAPE 14, SHAPE 15, SHAPE 16, SHAPE 17, SHAPE 18, SHAPE 19, SHAPE 20, SHAPE 21, SHAPE 22, SHAPE 23, SHAPE 24, SHAPE 25, SHAPE 26, SHAPE 27, SHAPE 28, SHAPE 29, SHAPE 30, SHAPE 31, SHAPE 32, SHAPE 33, SHAPE 34, SHAPE 35, SHAPE 36

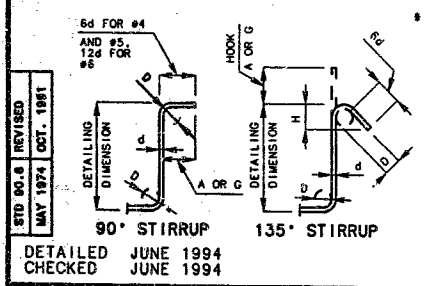
SPOT WELD AASHTO M32 SIZE #5 WIRE (TYP.)

BENDING DIAGRAMS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND SURVEY POINTS AS CONSTRUCTED ON THIS PROJECT.



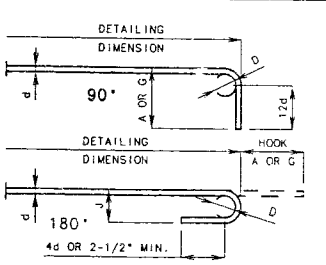
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\* Slip form option only.

BAR SIZE	D (IN.)	90° HOOK		135° HOOK	
		H	A OR G	H	A OR G
#4	2"	4-1/2"	4-1/2"	3"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"	4-1/2"

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



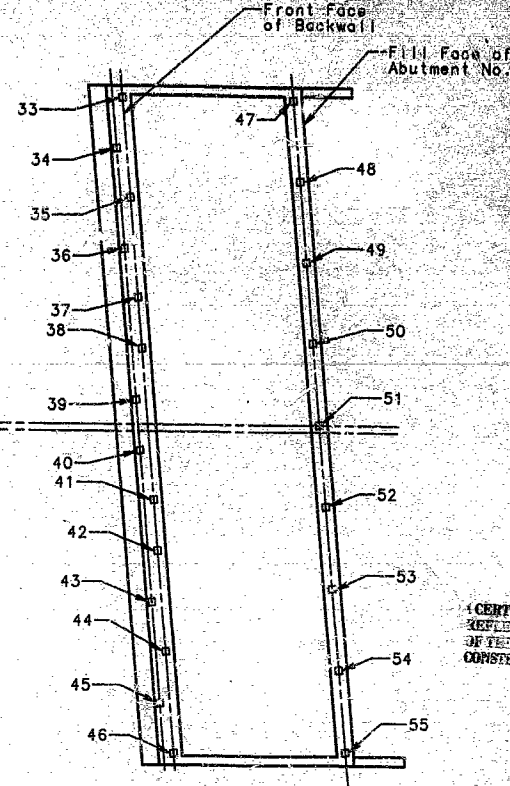
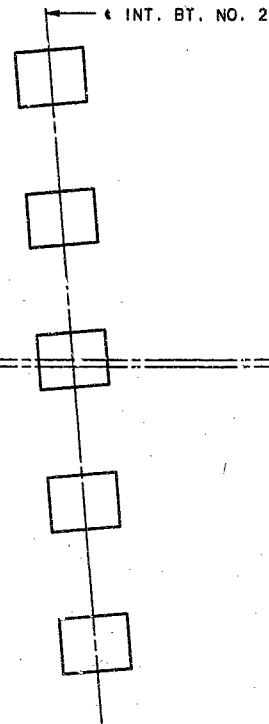
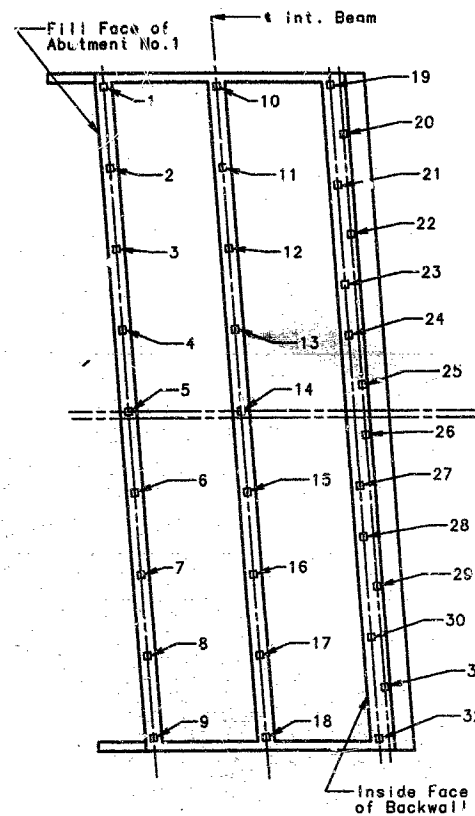
END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	H
#3	2-1/4"	5"	3"	6"	6"
#4	3"	6"	4"	8"	8"
#5	3-3/4"	7"	5"	10"	10"
#6	4-1/2"	8"	6"	12"	12"
#7	5-1/2"	10"	7"	14"	14"
#8	6"	11"	8"	16"	16"
#9	9-1/2"	15"	11-3/4"	19"	19"
#10	10-3/4"	17"	13-1/4"	22"	22"
#11	12"	19"	14-3/4"	24"	24"
#14	18-1/4"	27-3/4"	21-3/4"	34"	34"

NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE 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 BARS OF EACH LENGTH. NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH). ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH. PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS. FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS. REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

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





PART PLAN SHOWING PILE NUMBERING FOR RECORDING "AS BUILT PILE" DATA

CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.



Used Connico 65 Single Acting Air Hammer  
Formula:  $P = \frac{2wh}{(S+1)}$   
 $P_s = \frac{0.11(w+1)}{1+0.0001h}$  . P      w = 650 lb. h = 3 ft.

"AS BUILT PILE" DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
ABUTMENT NO. 1			
1	17'	91.8	Driven to Practical Refusal HP 12x53 Vertical
2	17'	97.5	" " " " " " " "
3	17'	97.5	" " " " " " " "
4	17'	97.5	" " " " " " " "
5	17'	86.7	" " " " " " " "
6	16'	82.1	" " " " " " " "
7	17'	82.1	" " " " " " " "
8	17'	97.5	" " " " " " " "
9	17'	91.8	" " " " " " " "
10	23'	130.0	" " " " " " " "
11	23'	120.0	" " " " " " " "
12	23'	111.4	" " " " " " " "
13	23'	130.0	" " " " " " " "
14	23'	111.4	" " " " " " " "
15	23'	111.4	" " " " " " " "
16	23'	130.0	" " " " " " " "
17	24'	111.4	" " " " " " " "
18	23'	130.0	" " " " " " " "
19	25'	—	Driven to Refusal " " " "
20	26'	—	" " " " " " 3 1/2" Batter
21	26'	130.0	Driven to Practical Refusal " Vertical
22	26'	120.0	" " " " " " 3 1/2" Batter
23	25'	130.0	" " " " " " Vertical

"AS BUILT PILE" DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
ABUTMENT NO. 1 (CONT.)			
24	25'	130.0	Driven to Practical Refusal HP 12x53 Vertical
25	26'	130.0	" " " " " " 3 1/2" Batter
26	26'	141.8	" " " " " " " "
27	25'	156.0	" " " " " " Vertical
28	26'	130.0	" " " " " " " "
29	25'	156.0	" " " " " " 3 1/2" Batter
30	25'	173.3	" " " " " " Vertical
31	25'	130.0	" " " " " " 3 1/2" Batter
32	25'	130.0	" " " " " " Vertical
ABUTMENT NO. 3			
34	26'	156.0	Driven to Practical Refusal HP 12x53 Vertical
35	26'	130.0	" " " " " " 3 1/2" Batter
36	26'	156.0	" " " " " " Vertical
37	26'	156.0	" " " " " " 3 1/2" Batter
38	25'	156.0	" " " " " " Vertical
39	26'	141.8	" " " " " " 3 1/2" Batter
40	25'	—	Driven to Refusal " " " "
41	25'	—	" " " " " " Vertical
42	26'	141.8	Driven to Practical Refusal " " "
43	25'	—	Driven to Refusal " 3 1/2" Batter
44	26'	141.8	Driven to Practical Refusal " Vertical

"AS BUILT PILE" DATA

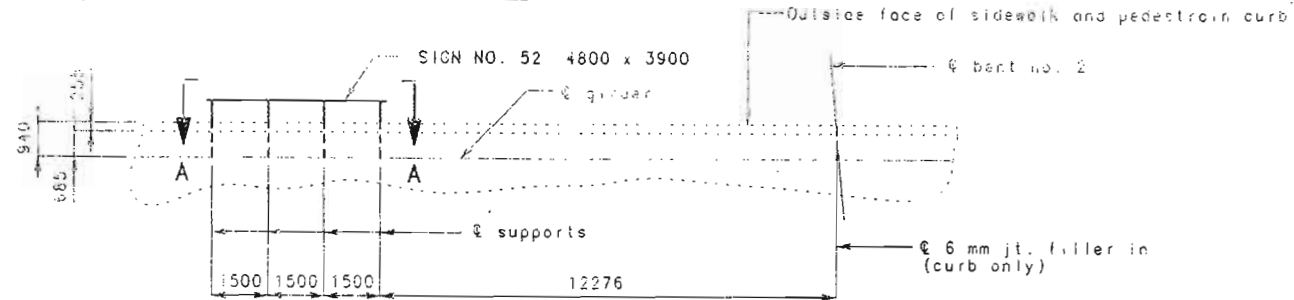
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
ABUTMENT NO. 3 (CONT.)			
45	26'	130.0	Driven to Practical Refusal HP 12x53 3 1/2" Batter
46	28'	156.0	" " " " " " Vertical
47	16'	156.0	" " " " " " " "
48	16'	130.0	" " " " " " " "
49	16'	120.0	" " " " " " " "
50	16'	141.8	" " " " " " " "
51	16'	120.0	" " " " " " " "
52	15'	156.0	" " " " " " " "
53	17'	130.0	" " " " " " " "
54	17'	130.0	" " " " " " " "
55	17'	120.0	" " " " " " " "

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL

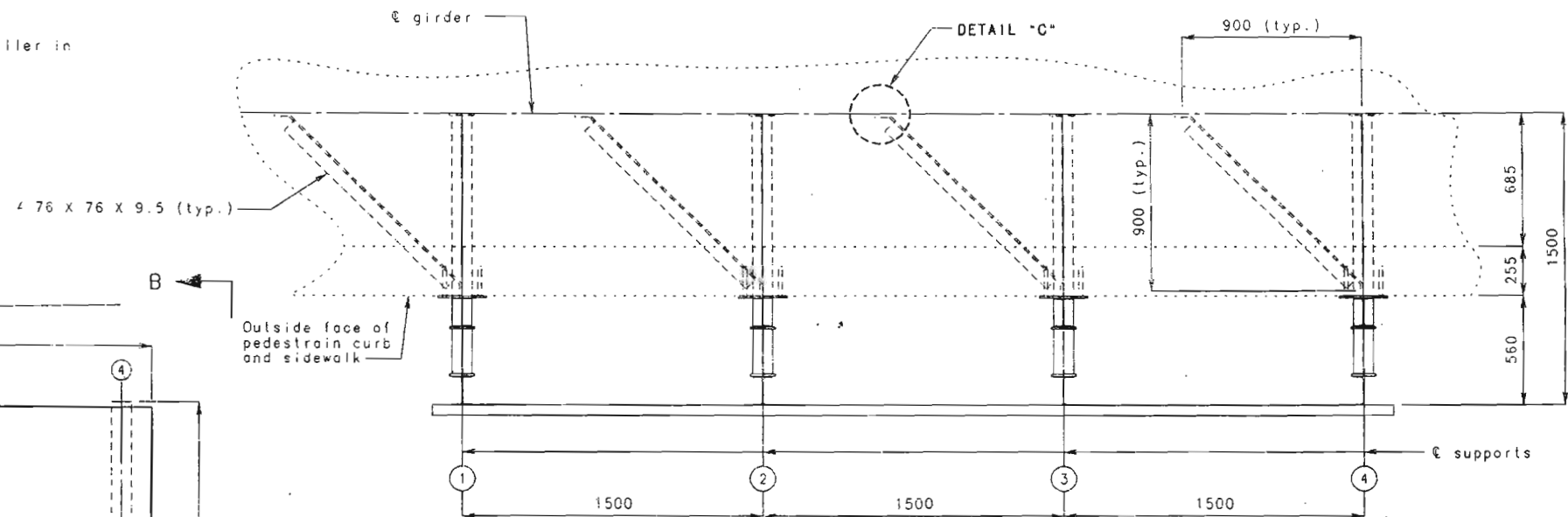
NOTE: INDICATE IN REMARK COLUMN:  
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL  
B.) PILE BATTER IF OTHER THAN SHOWN ON PILE DETAIL SHEET  
C.) TYPE OF PILING USED

390

STATE MO	JOB NO. J4U0029D	SHEET NO. 870
DIST NO. 4	PROJECT NO.	ROUTE 152
	COUNTY CLAY	



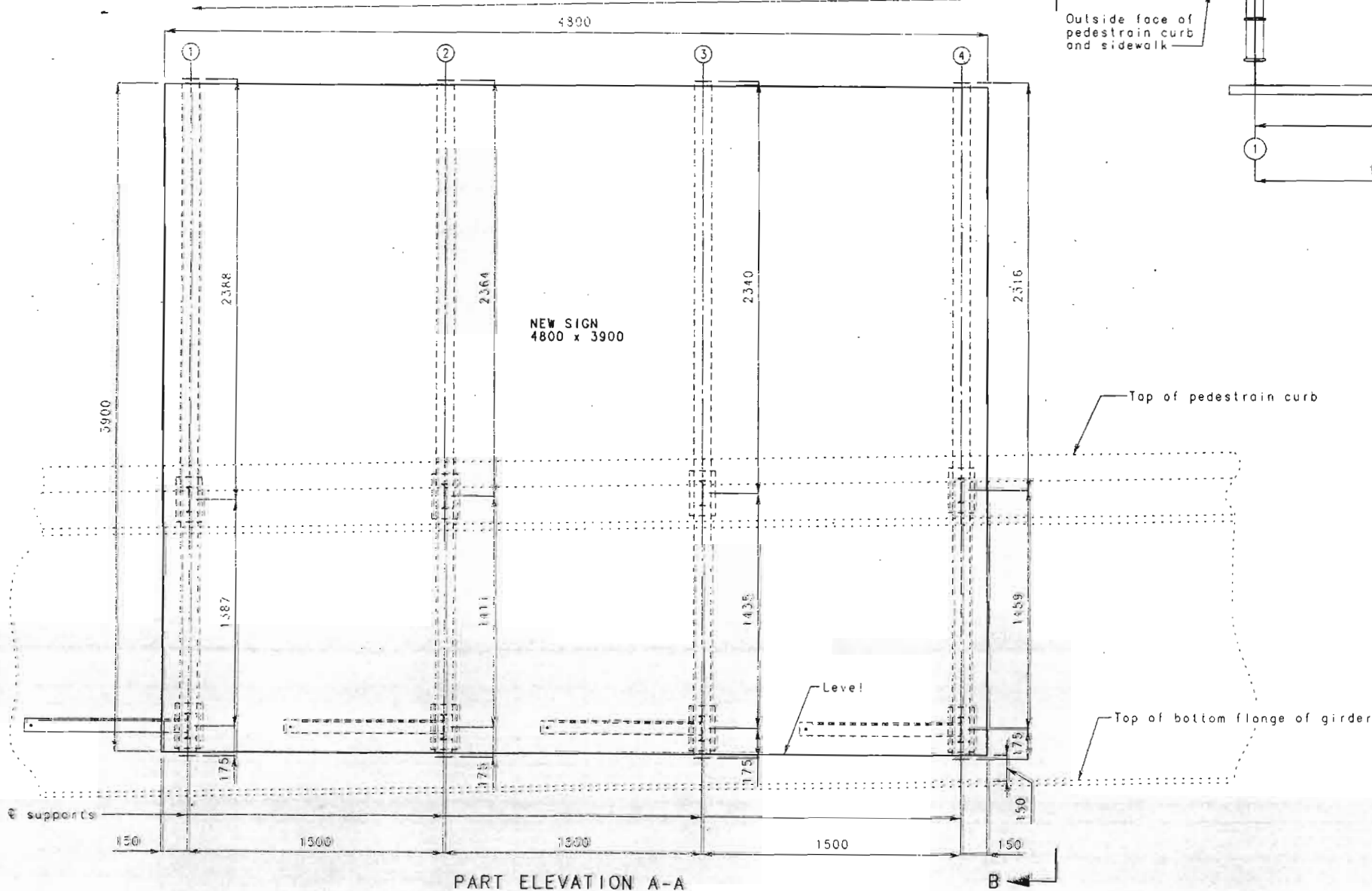
PART PLAN SHOWING LOCATION OF SIGN NO. 52



PART PLAN SHOWING DIMENSIONS AND HORIZONTAL BRACING

Note: bridge slope at sign = 1.59%

Note: For details of detail "C", see sheet no. 2.  
For details of section B-B, see sheet no. 2.



PART ELEVATION A-A

GENERAL NOTES:

- Center and level signs on brackets.
- All bolts, nuts and washers shall be galvanized.
- All structural steel shall be A.S.T.M. A709 grade 250 galvanized.
- Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
- Concrete anchors shall be non-drilling expansion type. They shall have a certified pullout strength (ultimate load) of at least 53.4 KN in 28MPa concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.
- The cost of furnishing and erecting the sign supports, including the concrete anchors complete-in-place, shall be paid for as fabricated sign support brackets. Lump sum.



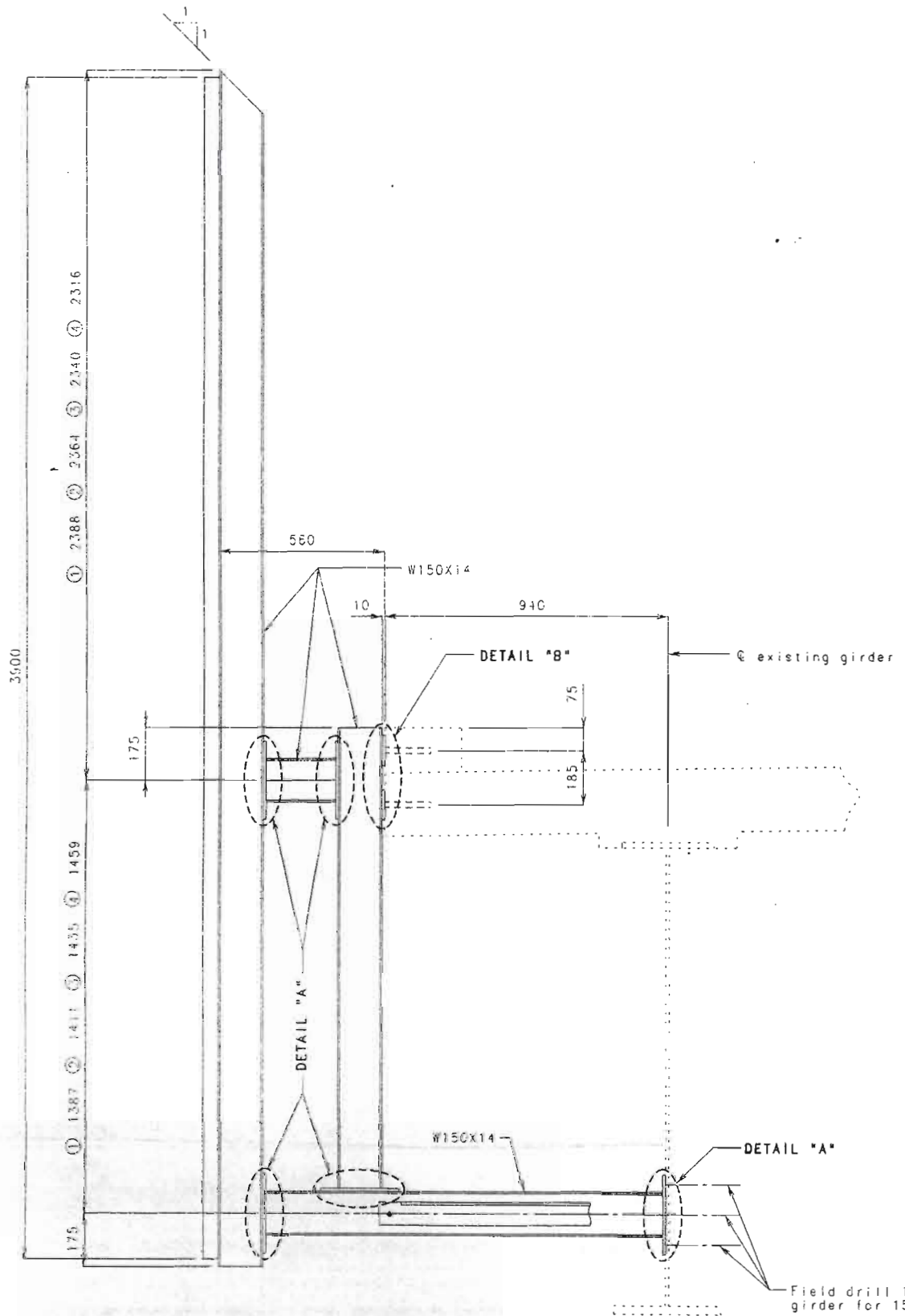
DATE 2/5/98

SIGN SUPPORT BRACKETS, SIGN NO. 52  
(East side of bridge, North Oak St. trafficway over Rte. 152)

DETAILED 11/27/97  
CHECKED 1/28/98

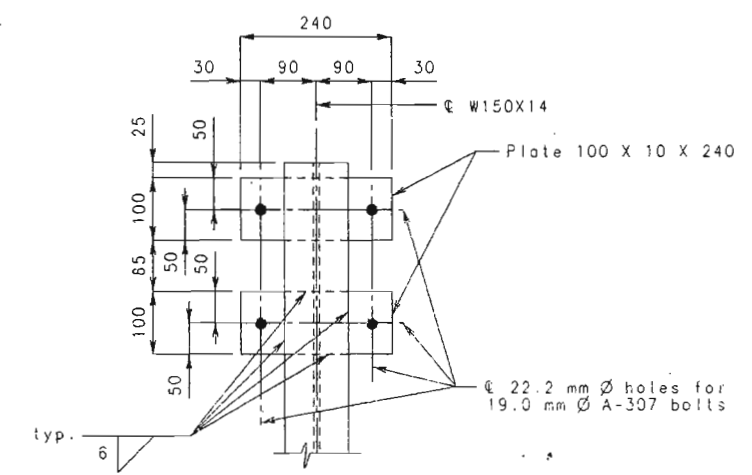


STATE MO	JOB NO. J4U0029D	SHEET NO. 871
DIST NO. 4	PROJECT NO.	ROUTE 152
	COUNTY CLAY	

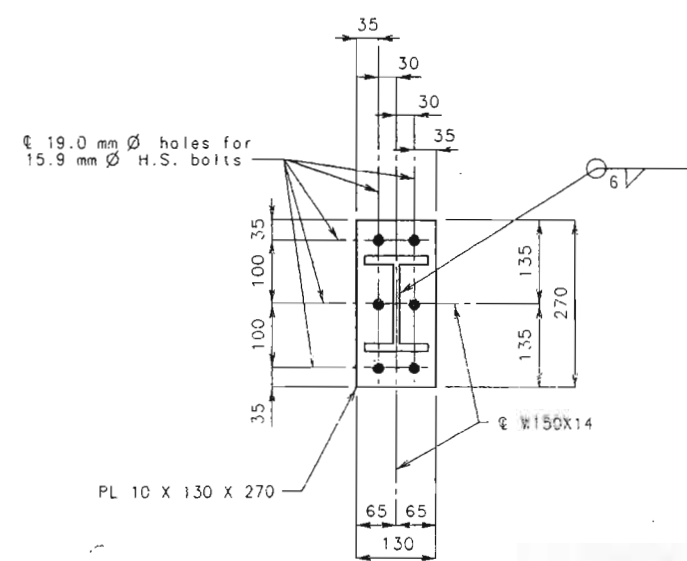


SECTION B-B

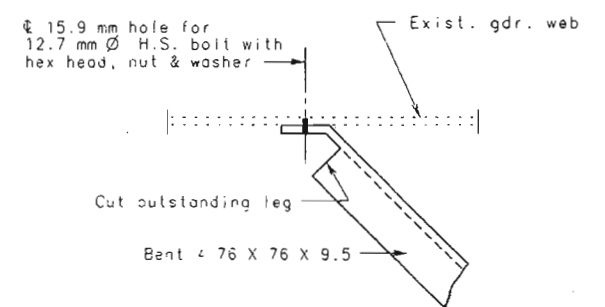
Field drill 19.0 mm Ø holes in web of girder for 15.9 mm Ø H.S. bolts



DETAIL "B"



DETAIL "A"



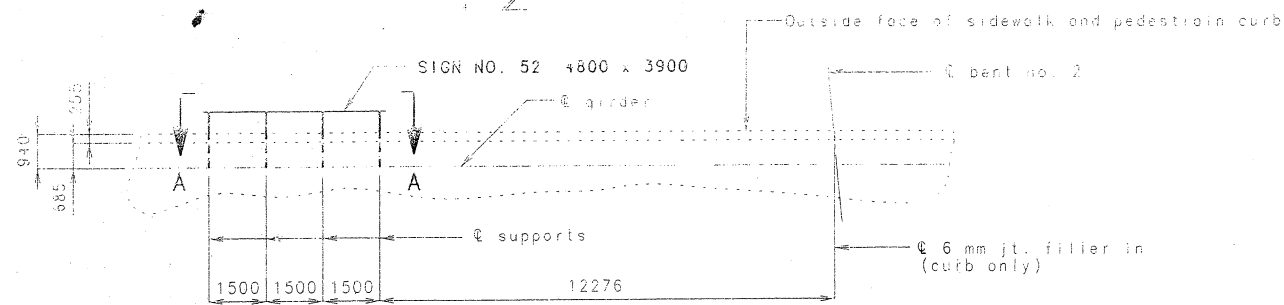
DETAIL "C"



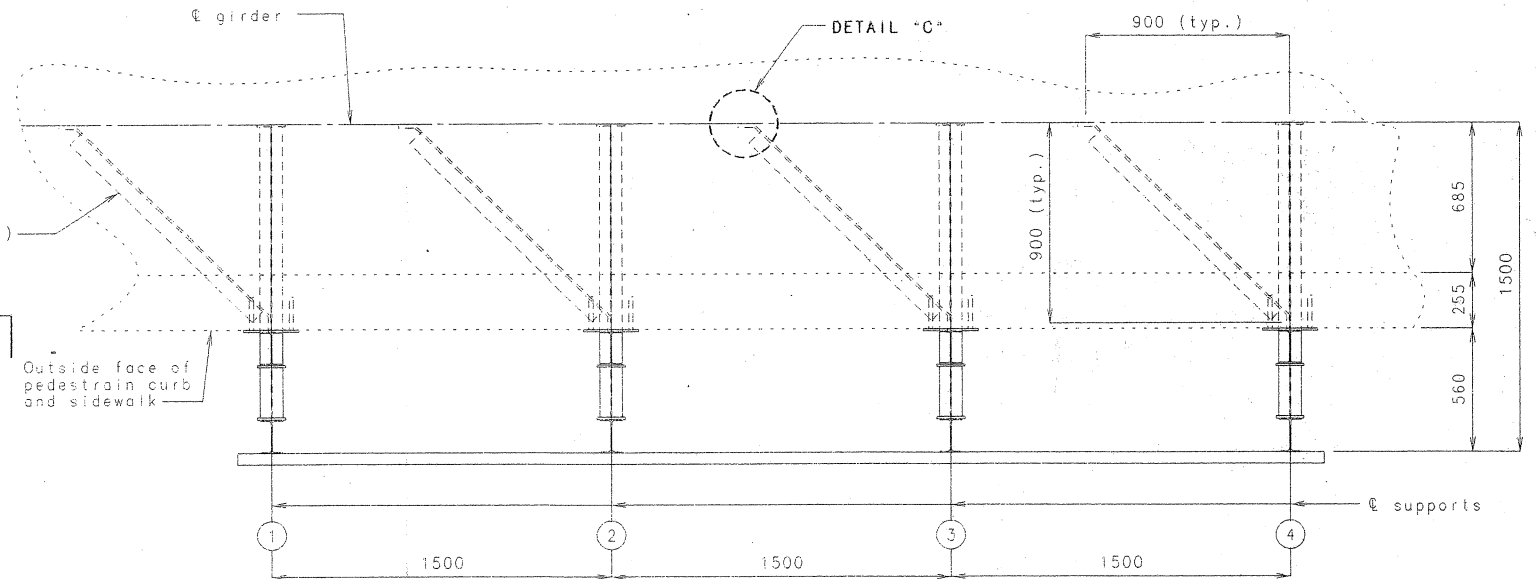
Note: For location of section B-B, see sheet no. 1. For location of detail "C", see sheet no. 1.

STATE MO	JOB NO. J4U0029D	SHEET NO. 37D
DIST NO. 4	PROJECT NO. F.A.M.-3307 (407)	ROUTE 152
	COUNTY CLAY	

CONTRACT ID 981023-08-PDF



PART PLAN SHOWING LOCATION OF SIGN NO. 52



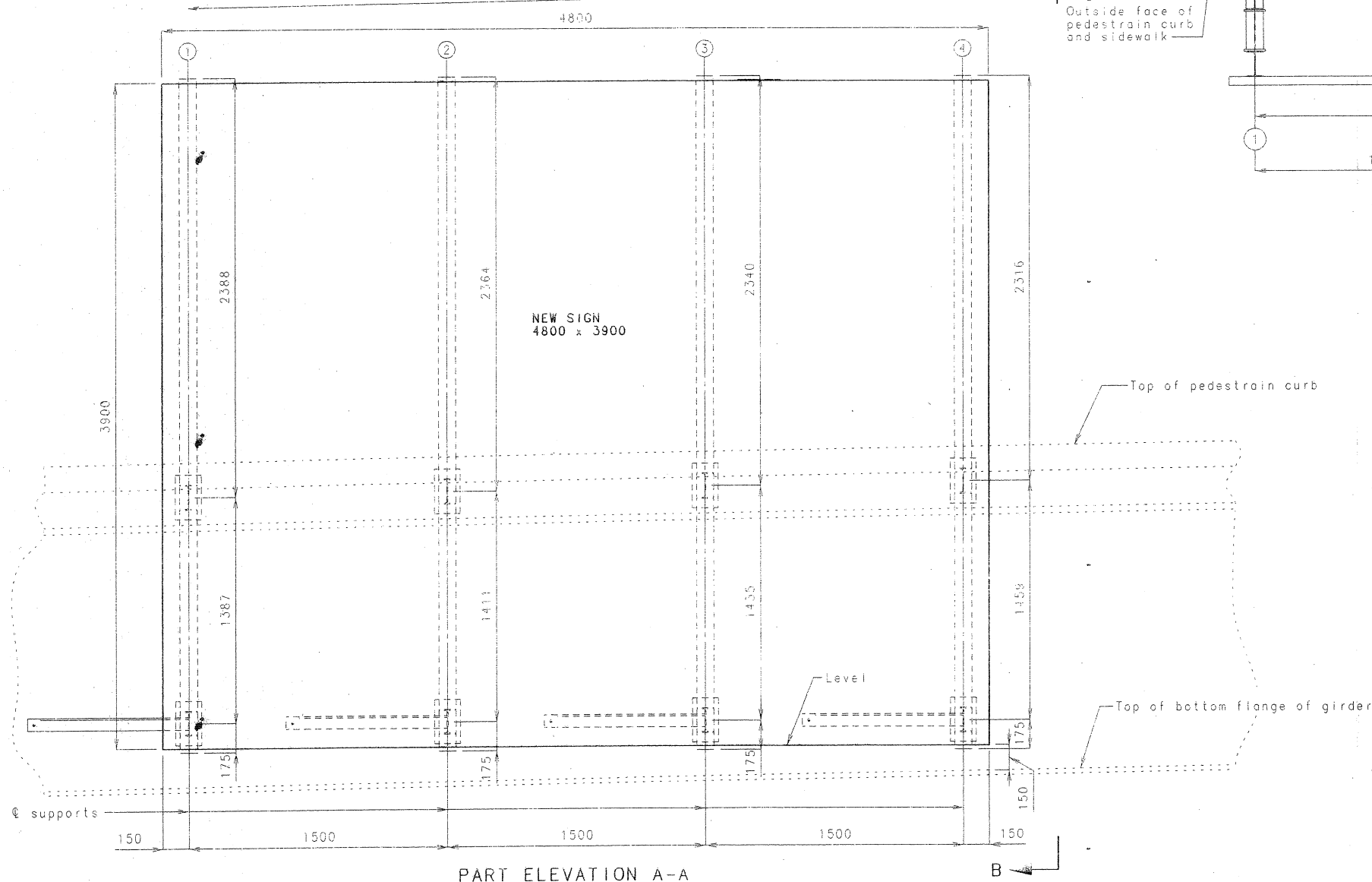
PART PLAN SHOWING DIMENSIONS AND HORIZONTAL BRACING

Note: bridge slope at sign = 1.59%

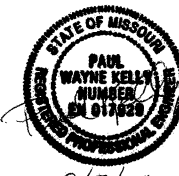
Note: For details of detail "C", see sheet no. 2.  
For details of section B-B, see sheet no. 2.

GENERAL NOTES:

- Center and level signs on brackets.
- All bolts, nuts and washers shall be galvanized.
- All structural steel shall be A.S.T.M. A709 grade 250 galvanized.
- Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
- Concrete anchors shall be non-drilling expansion type. They shall have a certified pullout strength (ultimate load) of at least 53.4 KN in 28MPa concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.
- The cost of furnishing and erecting the sign supports, including the concrete anchors complete-in-place, shall be paid for as fabricated sign support brackets, Lump sum.



PART ELEVATION A-A



DATE 2/5/98

**Final Plans**  
I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.

Signature: *[Signature]* Date: 12/24/01

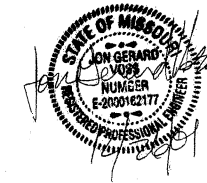
SIGN SUPPORT BRACKETS, SIGN NO. 52  
(East side of bridge, North Oak St. trafficway over Rte. 152)



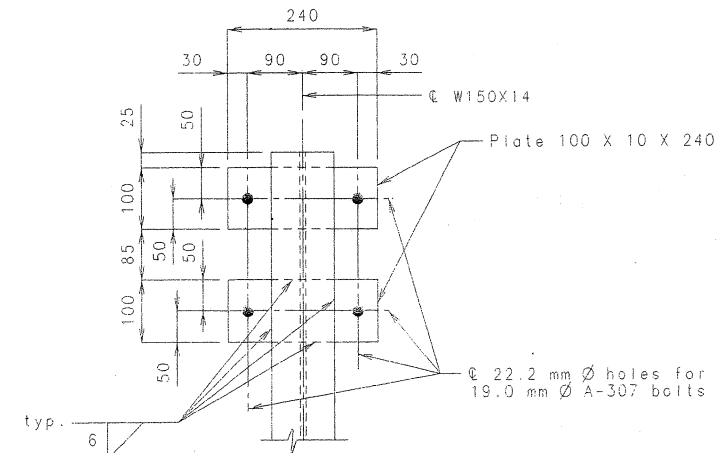
STATE MO	JOB NO. J400029D	SHEET NO. B71
DIST NO. 4	PROJECT NO. F.A.M.-3307 (407)	ROUTE 152
	COUNTY CLAY	

CONTRACT ID 981623-08-PDF

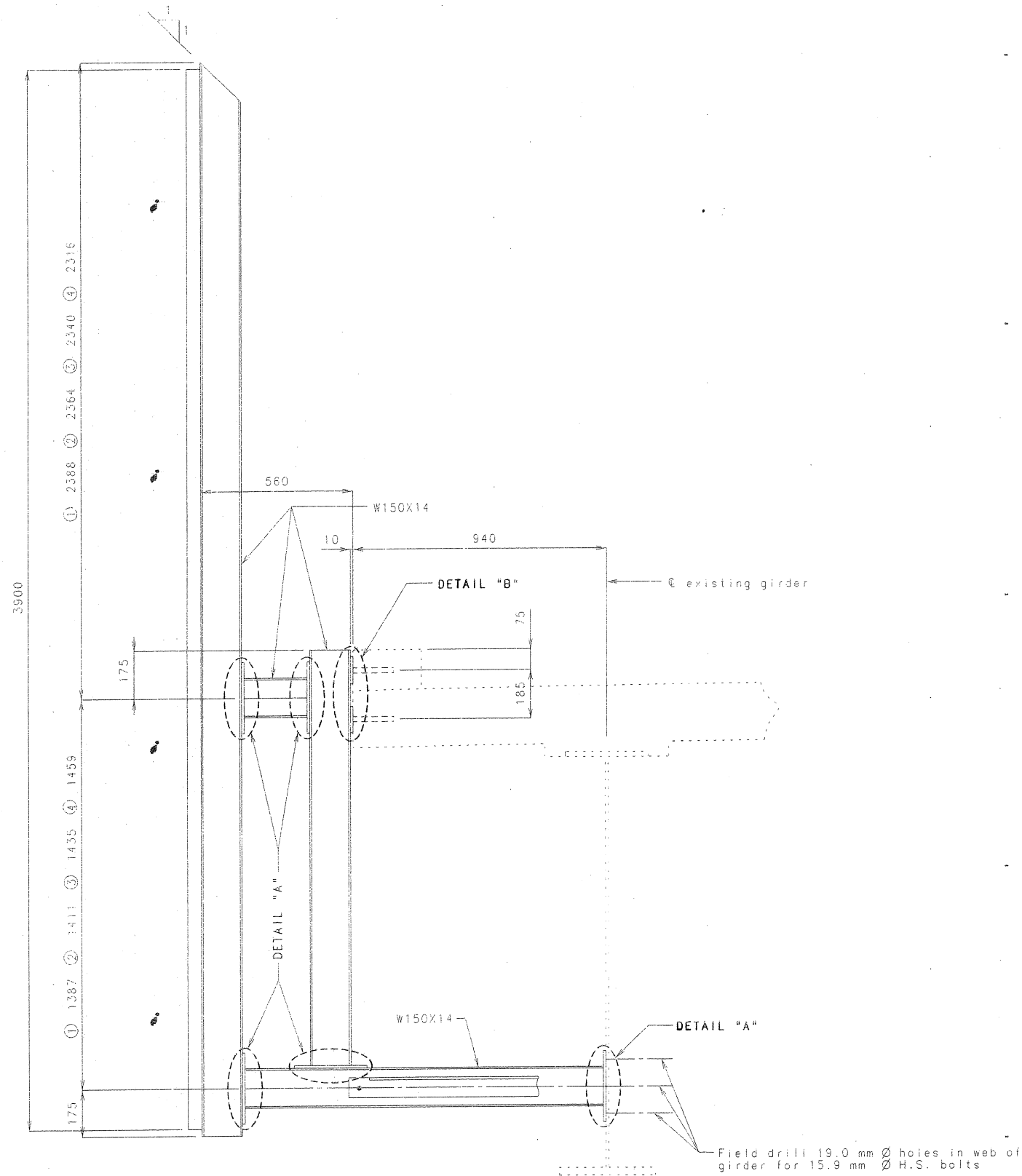
**Final Plans**  
 I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.



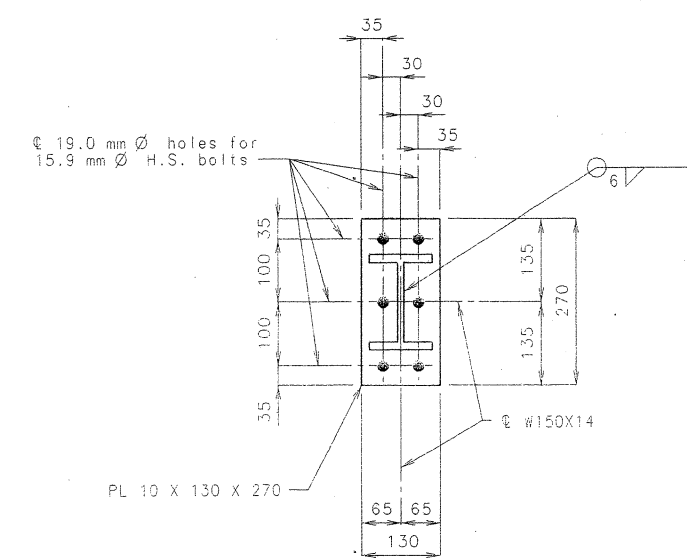
Signature: *Jon Gerard*  
 Date: *12/2/01*



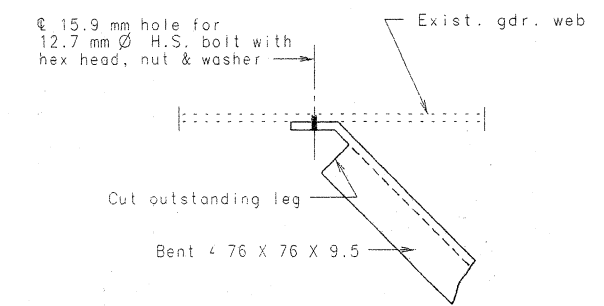
DETAIL "B"



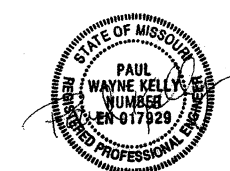
SECTION B-B



DETAIL "A"



DETAIL "C"



DATE: *2/5/98*

Note: For location of section B-B, see sheet no. 1.  
 For location of detail "C", see sheet no. 1

DETAILED SEPT. 1996  
 CHECKED FEB. 1998

SHEET NO. 2 OF 2.

CLAY COUNTY A35301