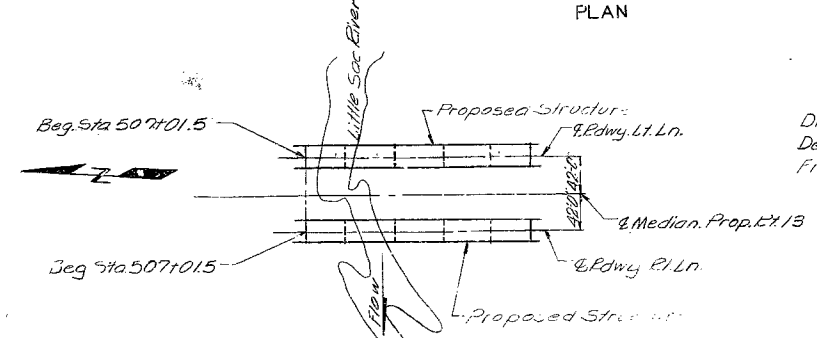
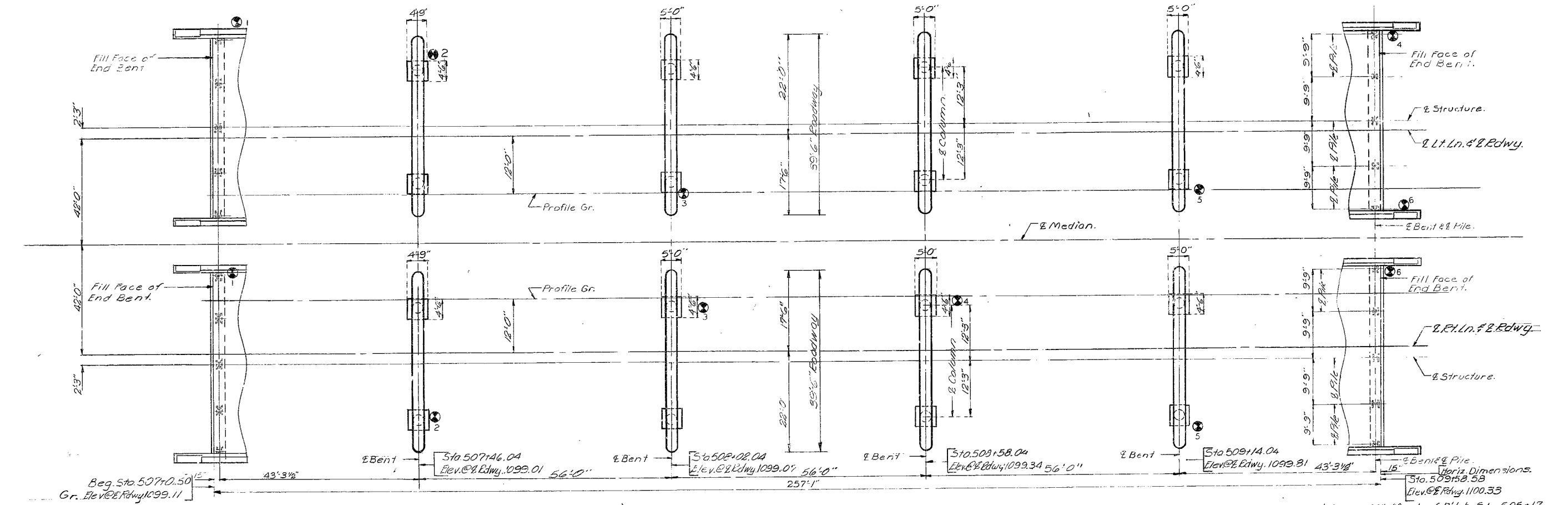
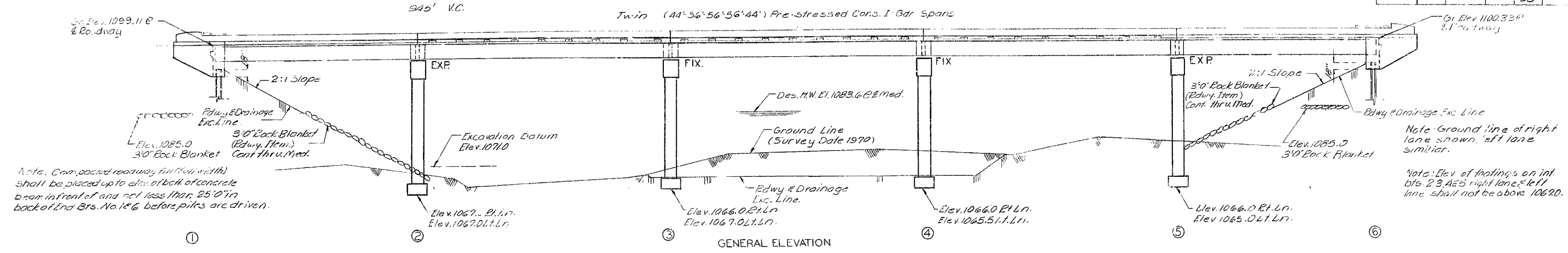


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	25	

MISSOURI STATE HIGHWAY DEPARTMENT



Note: See Sheet No. 4 of 3 for Boring Data. Indicates location of borings.

Drainage Area 71.0 sq. mi. (hilly).
Design Discharge 13000 cfs.
Frequency: 50 yrs.

B.M. Elev. 1082.61 NW corner 60' Maple 67' Lt. Sta. 505+17

BRIDGE OVER LITTLE SAC RIVER
STATE ROAD FROM GLIDEWILL SOUTH TO S. RINGFIELD
ABOUT 2.0 MILES N. OF SPRINGFIELD
PROJECT NO. F-13-219) SEC. A RTE. 13 STA. 507+01.50
GREENE COUNTY

SUBMITTED BY: W.A. Carney DATE: 6-27-73
APPROVED BY: Robert M. Hunter DATE: 6-27-73

STD. 70630A
A-3030

443

DESIGNED Oct. 1971 BY C. K. YU
DETAILED JAN 1972 BY RIDENHOUR
CHECKED Feb. 1972 BY H. Miller, Moffett.

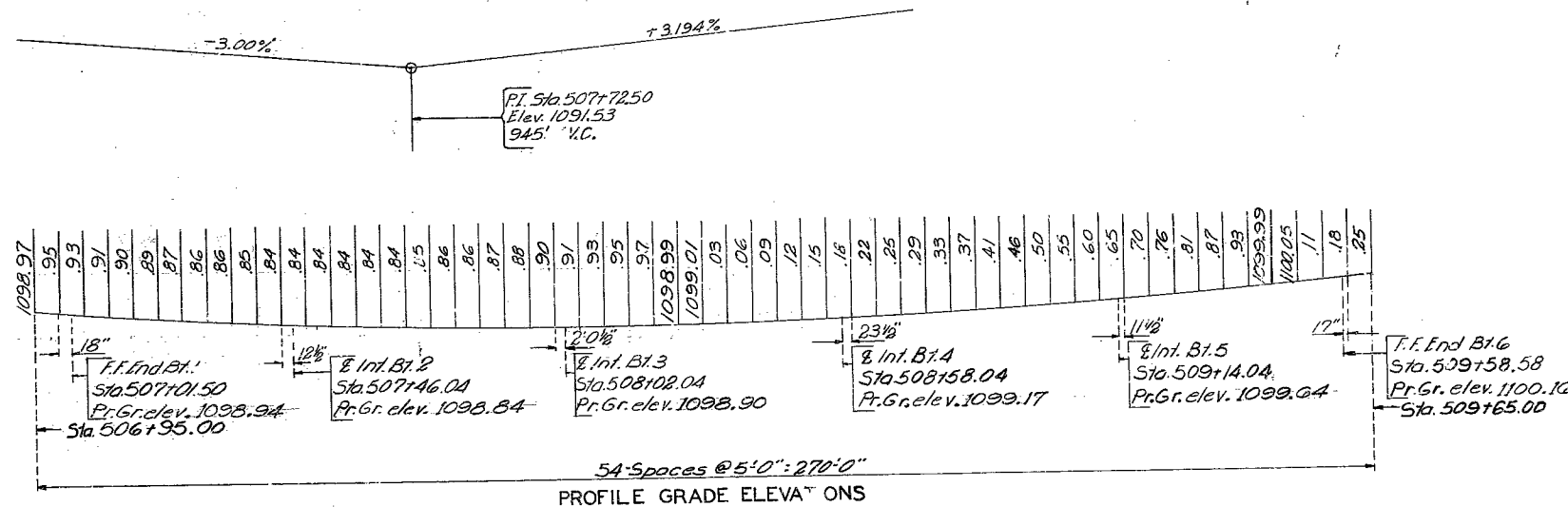
Note: This drawing is not to scale. Follow dimensions. LOCATION SKETCH

Sheet No. 1 of 1.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	20	

GENERAL NOTES:
 Design Specifications: A.A.S.H.O. - 1973
 Design Loading:
 HS 20-44, 15#/sq.ft. Future Wearing Surface
 Earth 120# Equivalent Fluid Pressure - 30"
 Superstructure: Simply supported non-composite for Dead Load. Continuous composite for Live Load.
 Design Unit Stresses:
 Class B Concrete (substructure) f_c : 1,200 psi.
 Class B Concrete (superstructure except prestressed girders) f_c : 1,600 psi.
 Reinforcing Steel f_s : 20,000 psi
 Steel Piles: f_a : 9,000 psi
 Structural Steel f_s : 20,000 psi
 For prestressed girder stresses see sheet No. 7 and 8 of 8
 Neoprene Bearings shall be Elastomeric Pads (60 Durometer)
 Minimum clearance to reinforcing steel shall be 1" (except prestressed girders) unless otherwise noted.



ITEM	SUBSTR.	S' PER STR	TOTAL
Class 1 Excavation	Cu. Yds.	65	65
Class 2 Excavation	Cu. Yds.	147	147
Structural Steel Pile (10")	Lin. Ft.	545	545
Class B Concrete	Cu. Yds.	225.0	225.0
Class B1 Concrete	Cu. Yds.	845.7	845.7
Prestressed Concrete Member (46") Each		20	20
Prestressed Concrete Member (56") Each		30	30
Reinforcing Steel (except prestressed members)	Lbs.	43,060	266,200
Bridge Rail (One tube)	Lin. Ft.	1052	1052
Plain Neoprene Bearing Pads (1" thick) Each		100	100

Note: All concrete and reinforcement in end bents is included with superstructure quantities.

BENT	PILE & FOOTING DATA											
	1		2		3		4		5		6	
LANE	LT	RT	LT	RT	LT	RT	LT	RT	LT	RT	LT	RT
PILE Type and Size	HPD148											
Number	5		5		5		5		5		5	
Approximate Length Ft.	25		26		26		26		26		29	
Design Bearing Tons	57		57		57		57		57		57	
Hammer Energy req'd. FT.Lbs.	2,600		2,600		2,600		2,600		2,600		2,600	
SPREAD FOUNDATION MATERIAL	Rock											
Design Bearing Tons/Sq. Ft.	9.0		9.0		9.0		9.0		9.0		9.0	

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

444

DETAILED Jan. 1972 BY Pidenhour
 CHECKED Feb. 1972 BY H. Miller

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

SEE FINAL PLANS
 Sheet No. 2 of 13

GREENE COUNTY

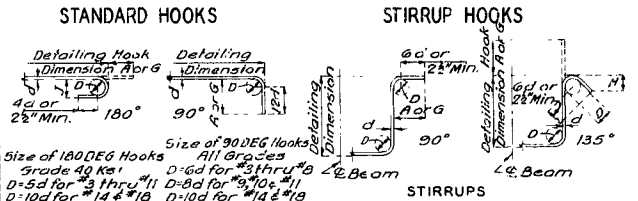
A-3030

MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

Table with columns: FED. ROAD DIST. NO., STATE, FED. AID PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS. Values: 5, MO., 19, 30.

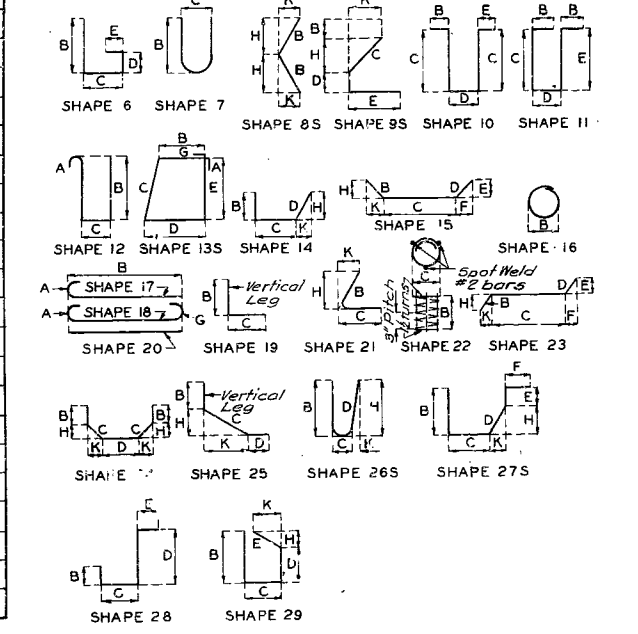
Main table with columns: NO. REQD., MARK NO., LOCATION, SHAPE NO., STIRRUP(S), SUBSTR. (X), VARIES (V), NO. EA., DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes sub-sections for RT & LT LANE, SUPERSTRUCTURE, and INT DIAPHRAGM.



Tables for END HOOK DIMENSIONS and STIRRUP HOOK DIMENSIONS. Includes columns for BAR SIZE, GRADE, HOOK, and dimensions.

Notes: All Standard Hooks and Bends other than 180 DEG. to be bent with same procedure as for 90 DEG. Standard Hooks. Hooks and bends shall be in accordance with the procedures as shown on this sheet.

BENDING DIAGRAMS



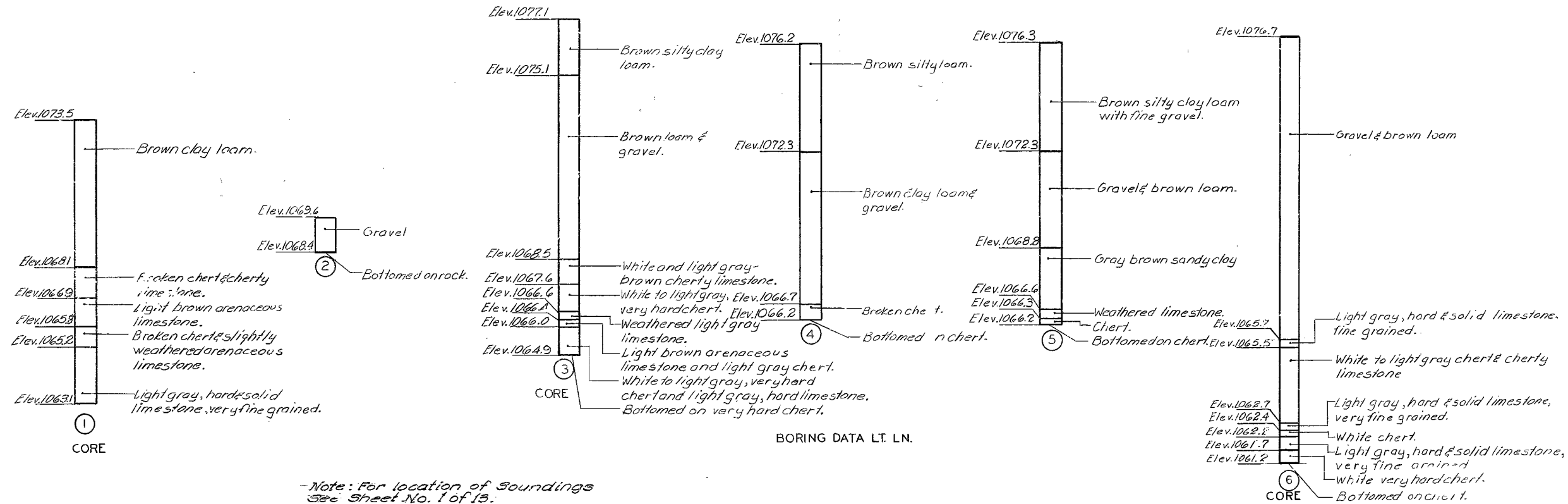
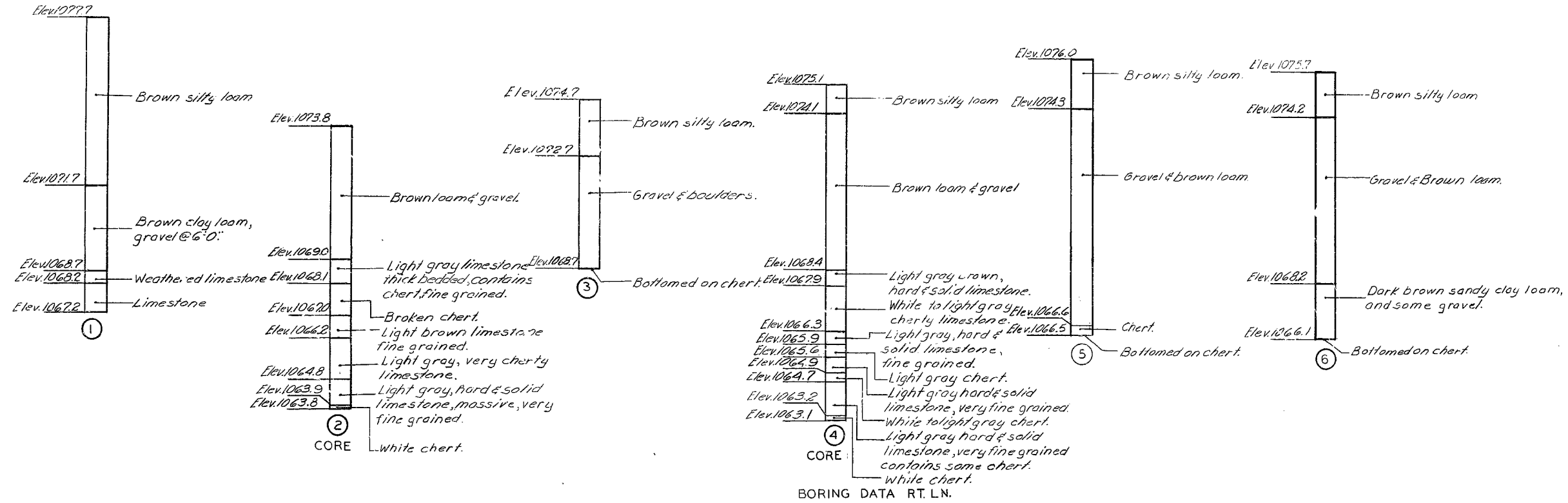
445
REVISED AUG. 1971
JULY 1969

DETAILED FEB 1972 BY DICK NEITE
CHECKED Feb. 1972 BY H. Miller

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

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	31	

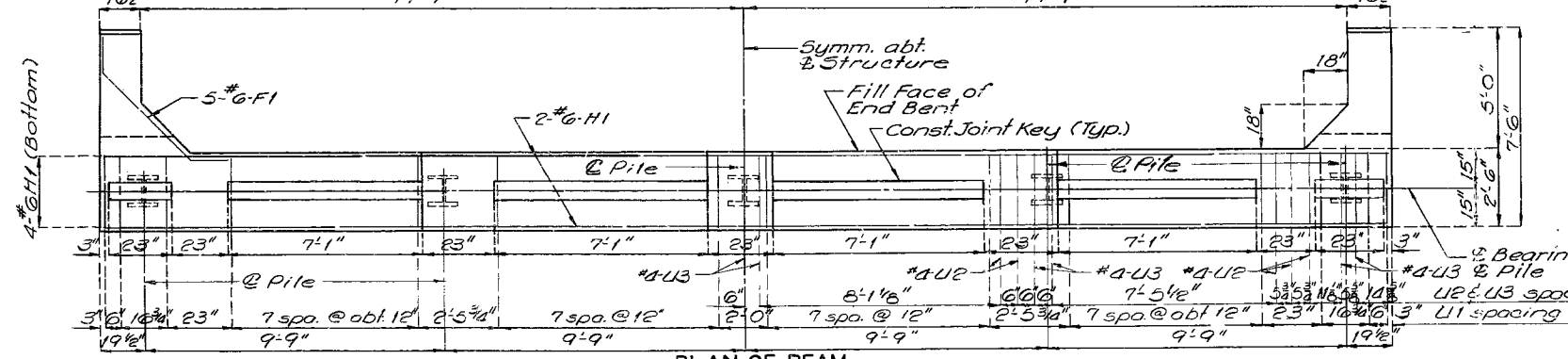
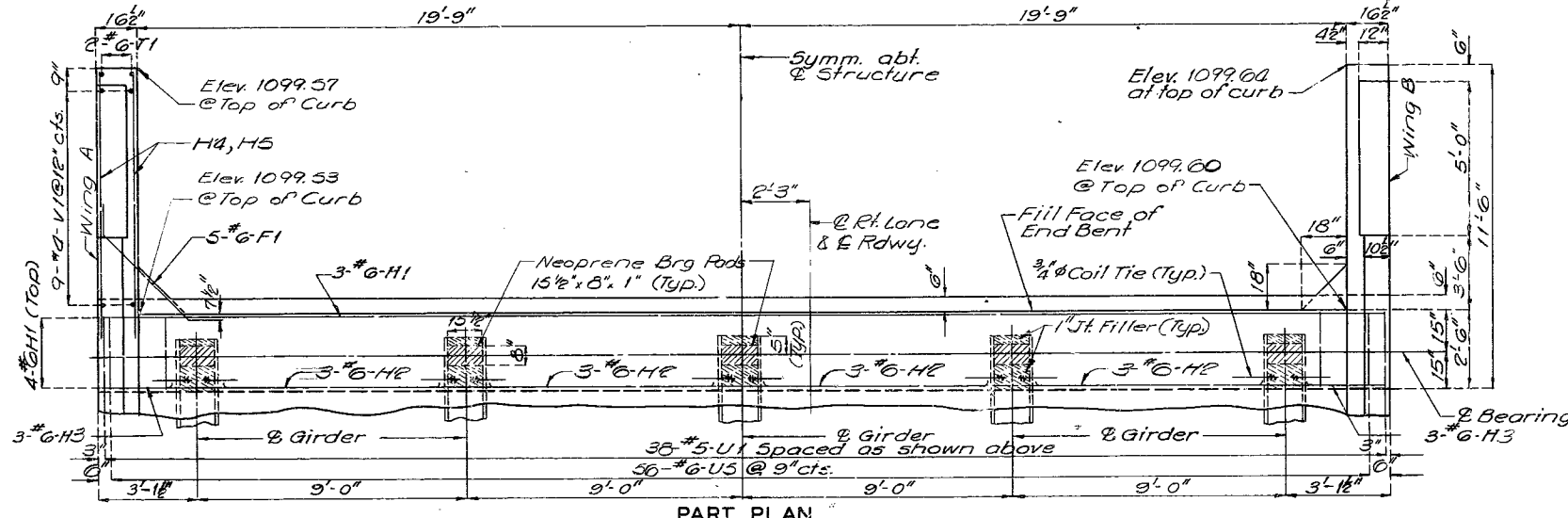
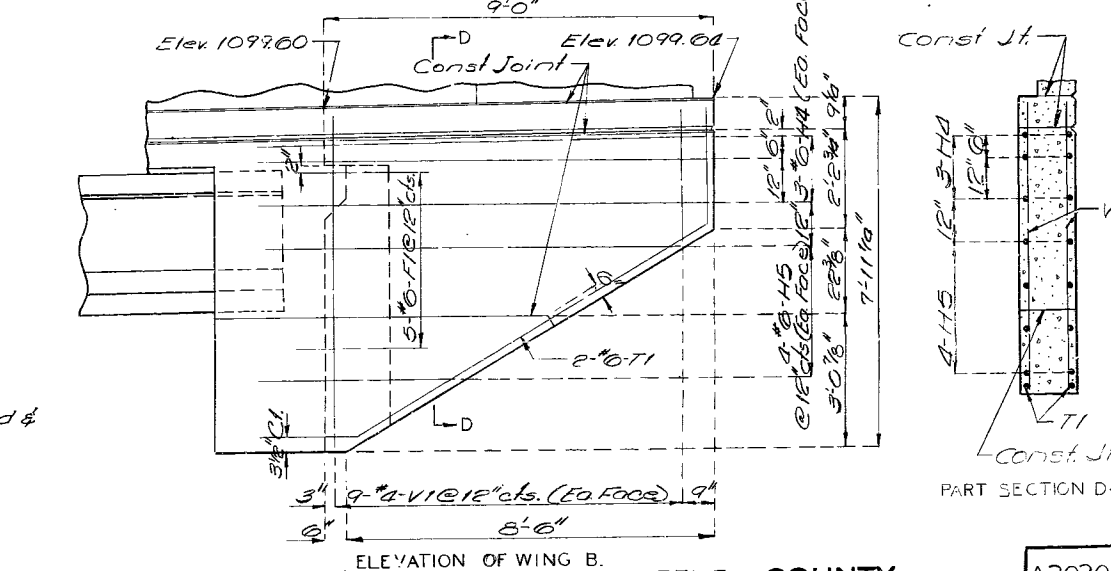
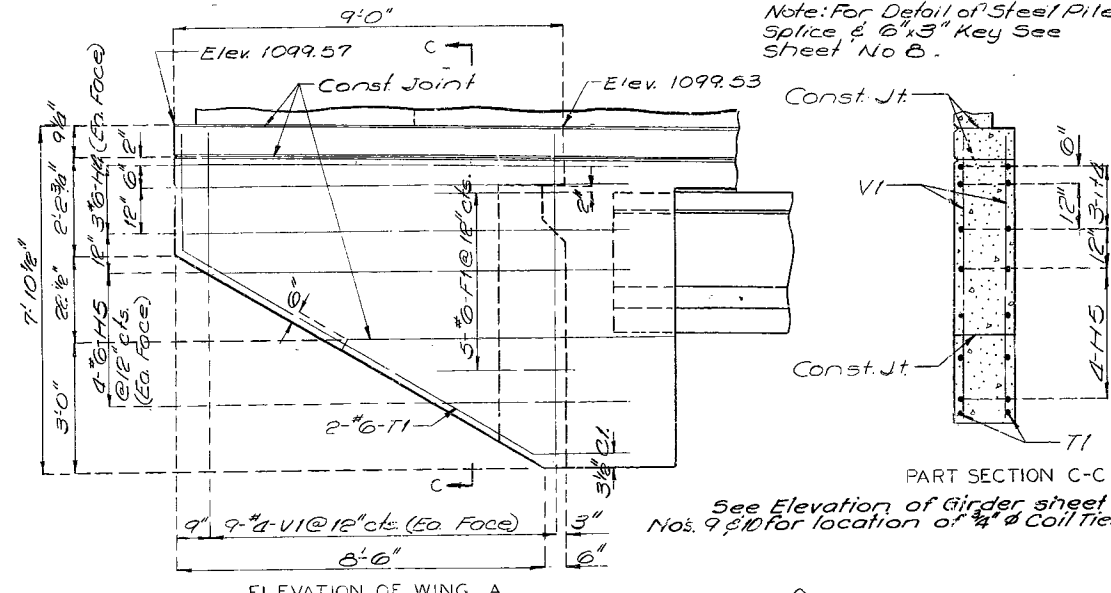
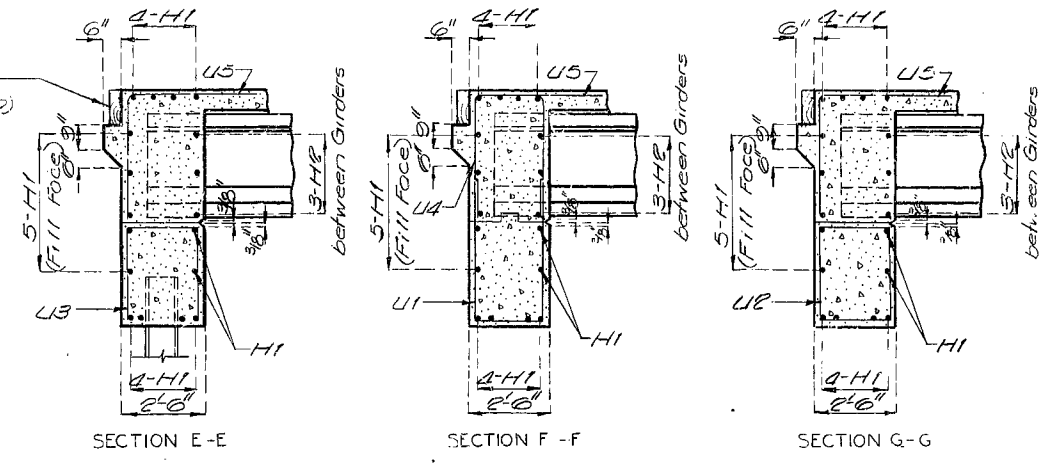
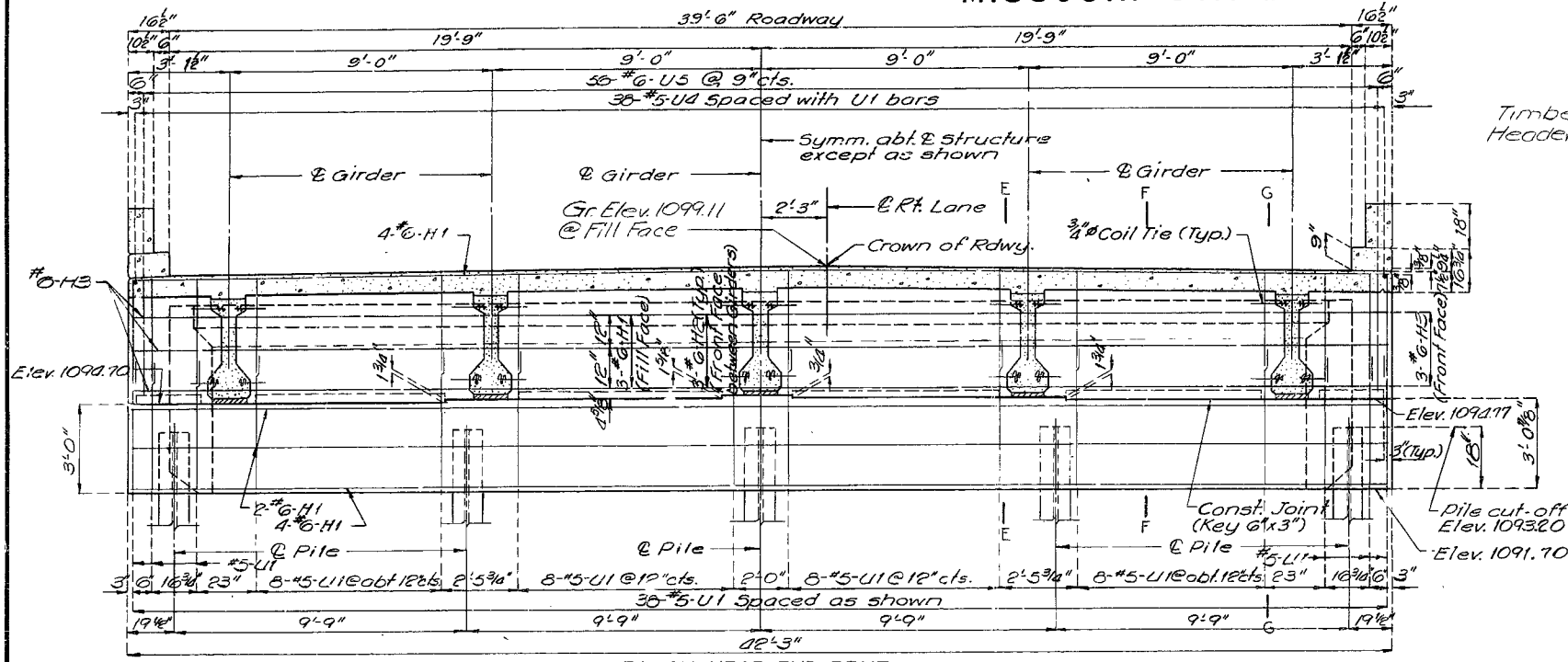


Note: For location of Soundings See Sheet No. 1 of 13.

446

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.		19	32	



DETAILS OF END BENT NO. 1 RT. & LT. LANE

Note: Bent No. 1 - Rt Lane shown, Bent 1 - Lt Lane opposite hand laterally.

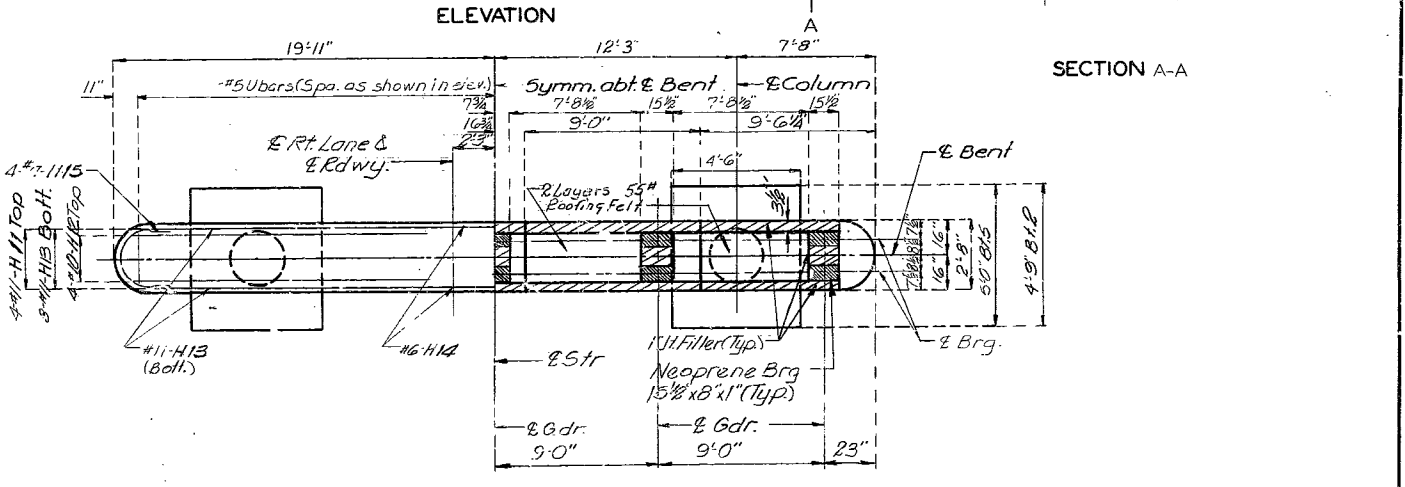
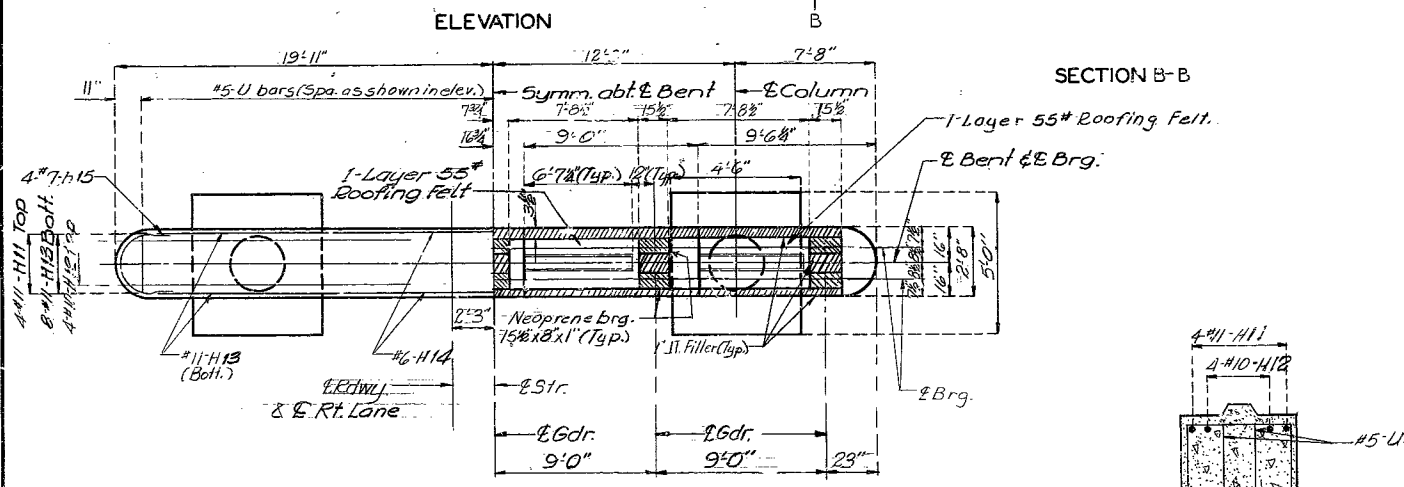
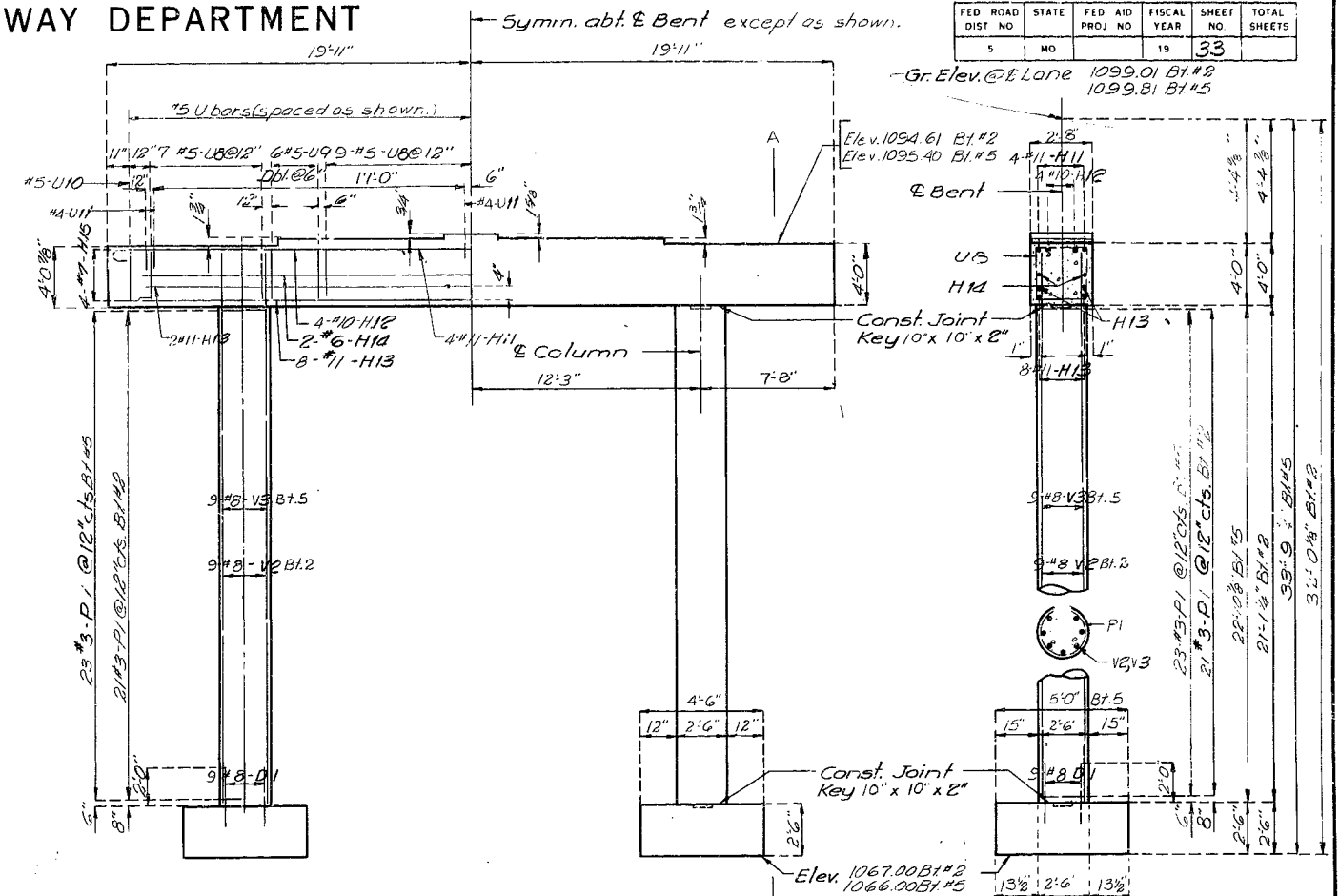
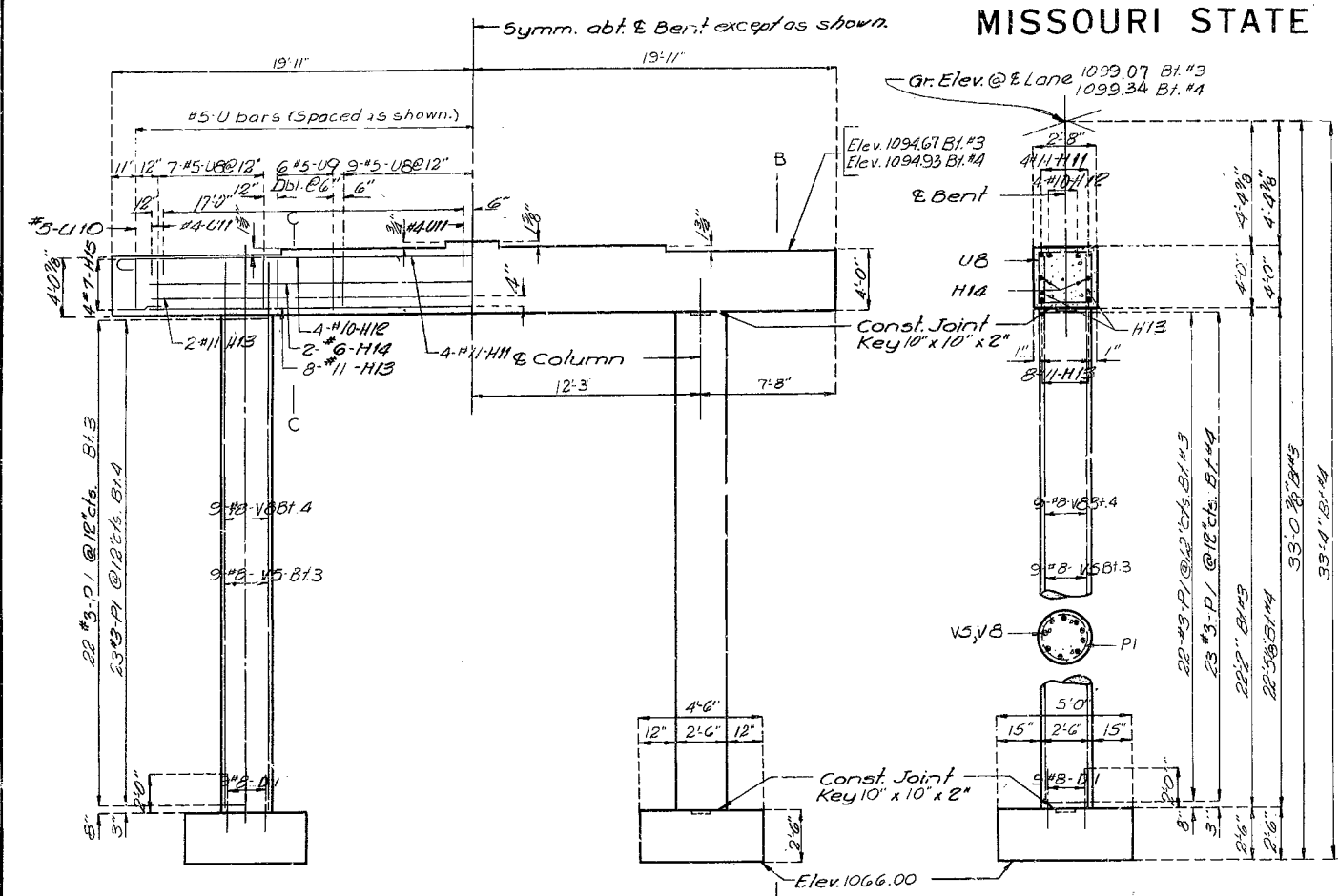
447

DETAILED Feb 1972 BY Dickneite
CHECKED Feb 1972 BY H. Miller

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

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	33	



DETAILS OF INTERMEDIATE BENTS NO.3&4 (RIGHT LANE)

DETAILS OF INTERMEDIATE BENTS NO.2&5 (RIGHT LANE)

DETAIL OF CONST. JT. KEY

SECTION C-C

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

Sheet No. 6 of 13.

GREENE COUNTY

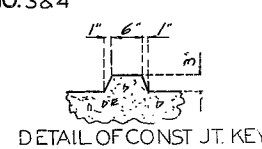
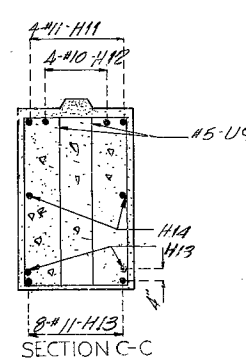
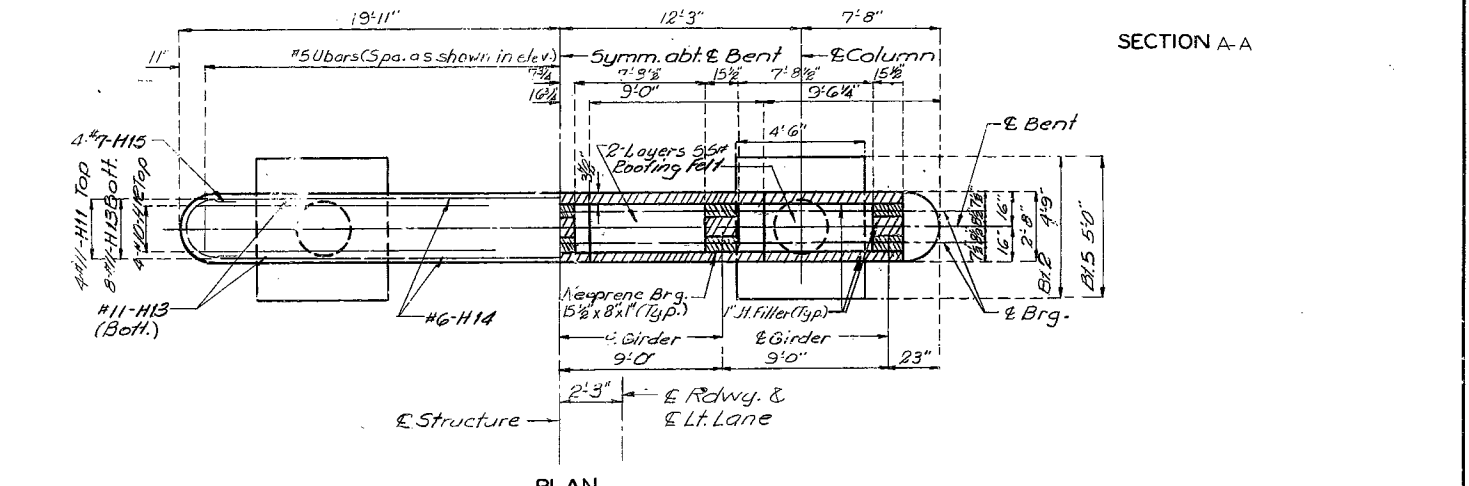
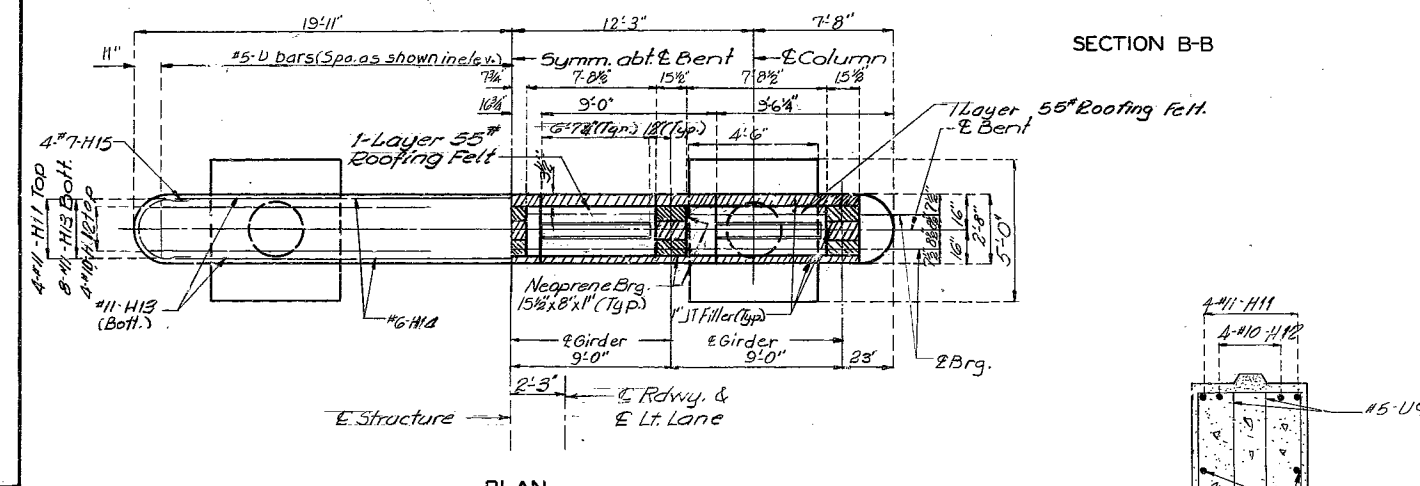
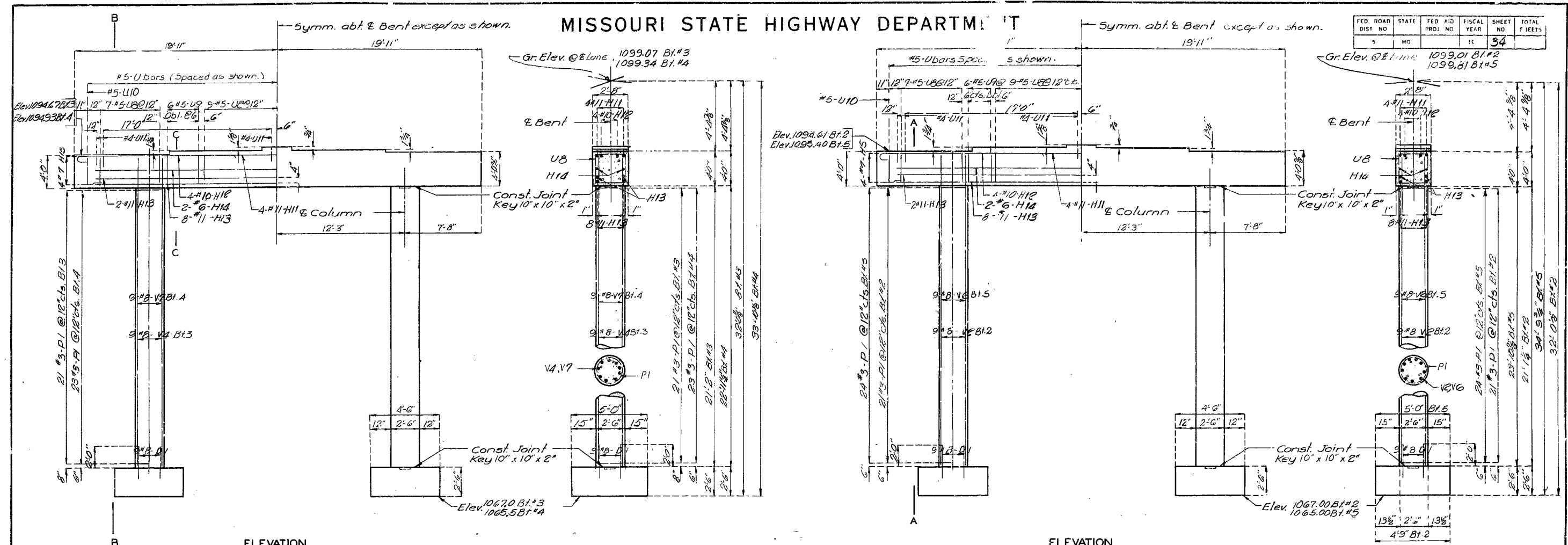
448

STD. 19.2
 SEPT. 1962
 REVISION
 APRIL 1971

DETAILED Dec. 1971 BY Ridenhour
 CHECKED Feb 1972 BY H. Miller

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		15	34	



DETAILS OF INTERMEDIATE BENTS NO.3&4 (LEFT LANE)

DETAILS OF INTERMEDIATE BENTS NO.2&5 (LEFT LANE)

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

Sheet No. 7 of 13.

GREENE COUNTY

A-3030

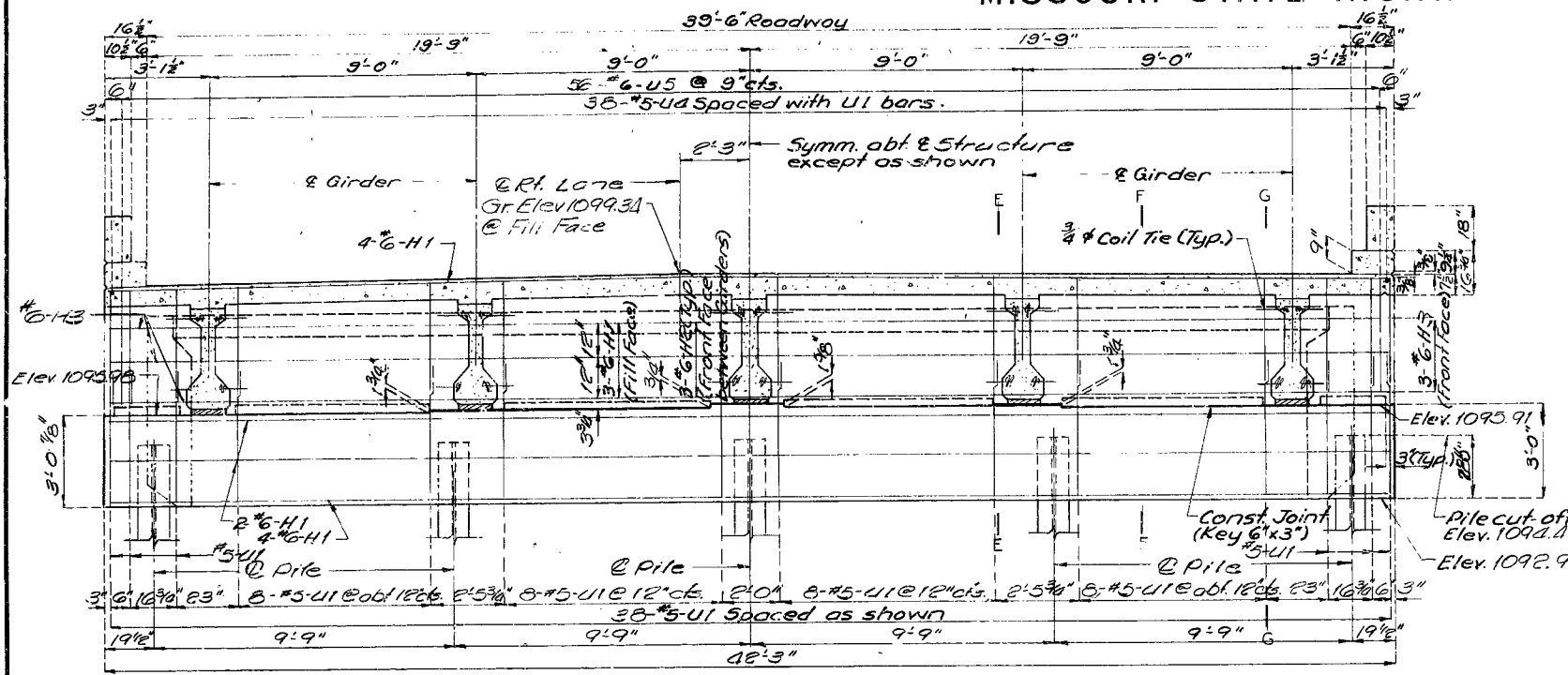
449

REVISED APRIL 1971
SEPT. 1962

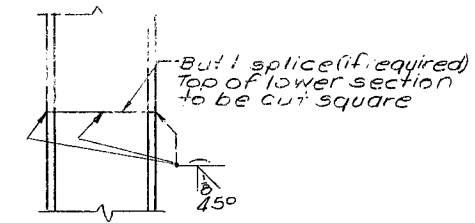
DETAILED Jan. 1972 BY B. Idenhour
CHECKED Feb. 1972 BY H. Miller

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	35	

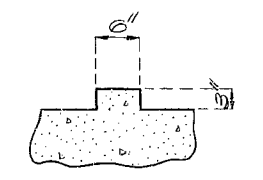
MISSOURI STATE HIGHWAY DEPARTMENT



SECTION NEAR END BENT

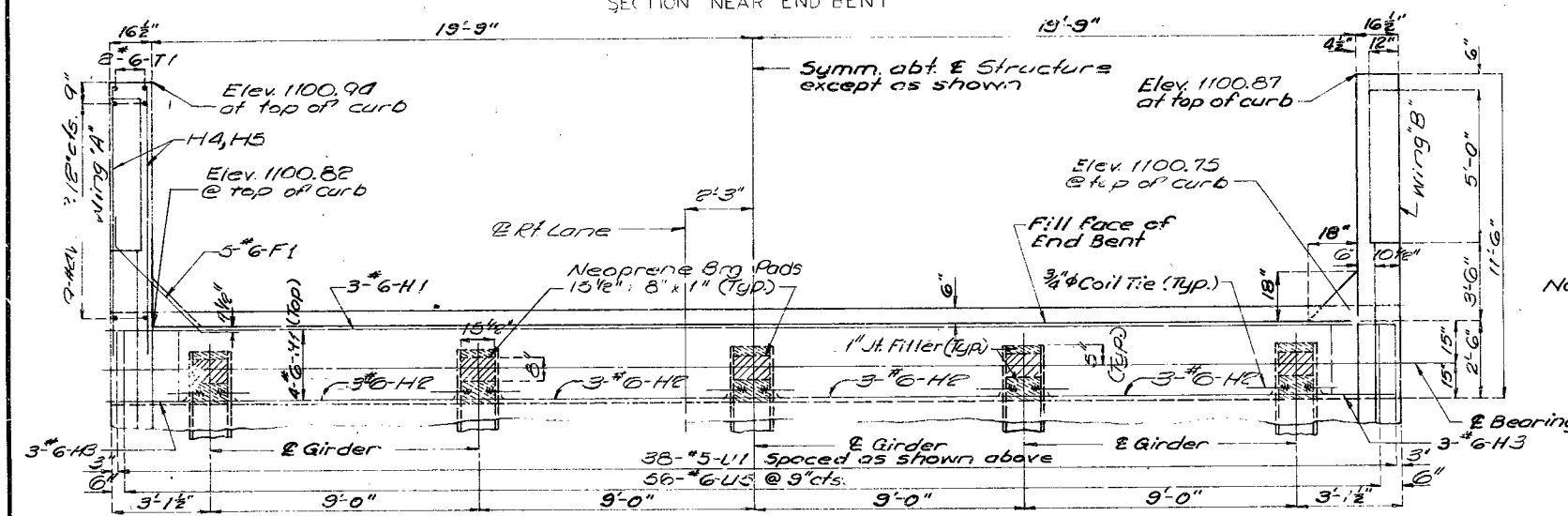


DETAIL OF STEEL PILE SPLICE

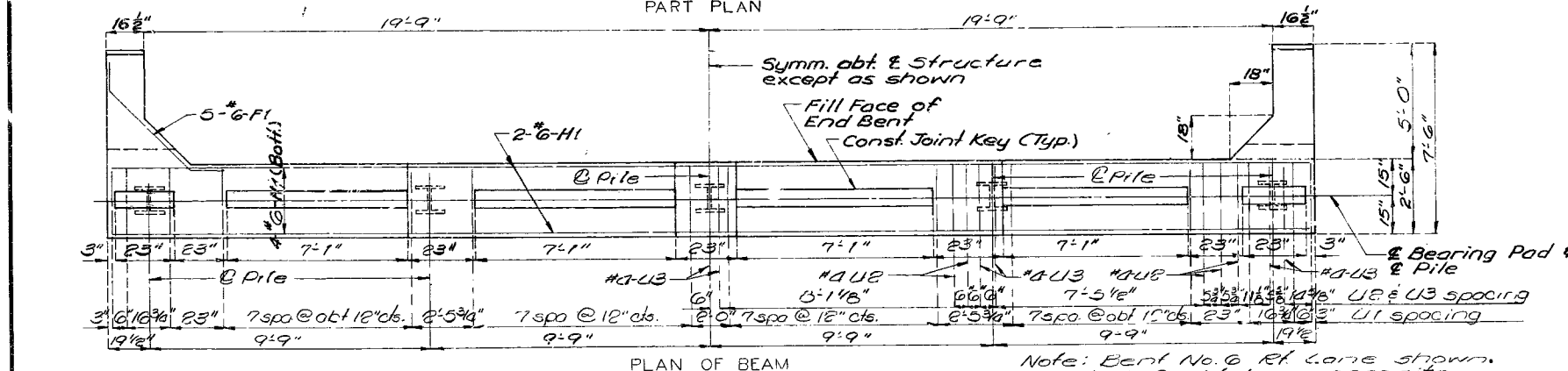


DETAIL OF KEYED CONST. JOINT

Note: For Sections E-E, F-F and G-G see Sheet No. 5.

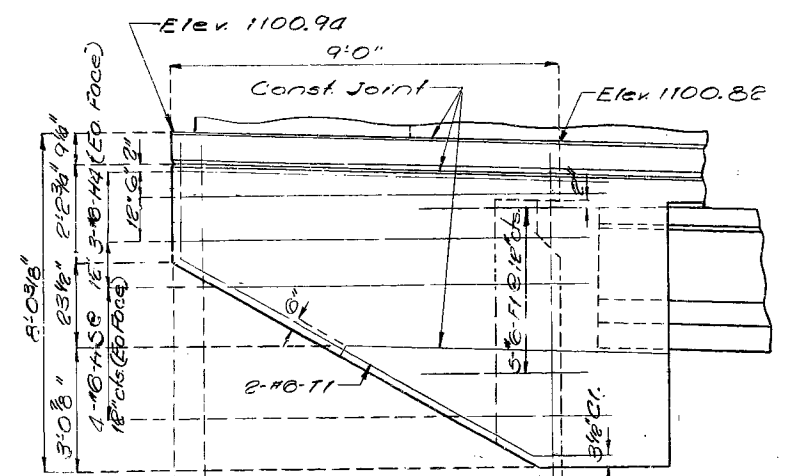


PART PLAN

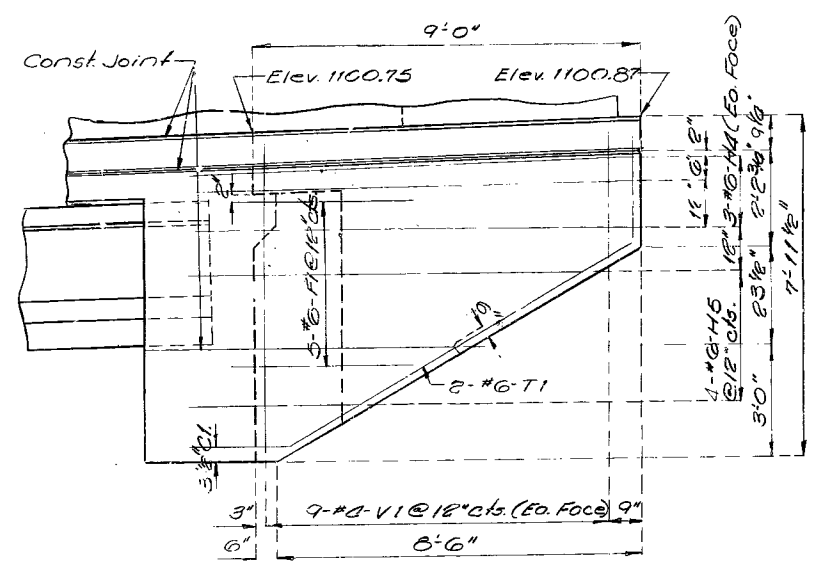


PLAN OF BEAM

Note: Bent No. 6 Rt. Lane shown. Bent No. 6 Lt. Lane opposite hand laterally.



ELEVATION OF WING A



ELEVATION OF WING B

See "Elevation of Girder" sheet Nos. 9&10 for location of 3/4" # Coil Ties.

450

DETAILED Feb 1972 BY Dickneite
CHECKED Feb. 1972 BY J. Miller

END BENT NO. 6 RT. & LT. LANE
Note: This drawing is not to scale. Follow dimensions.

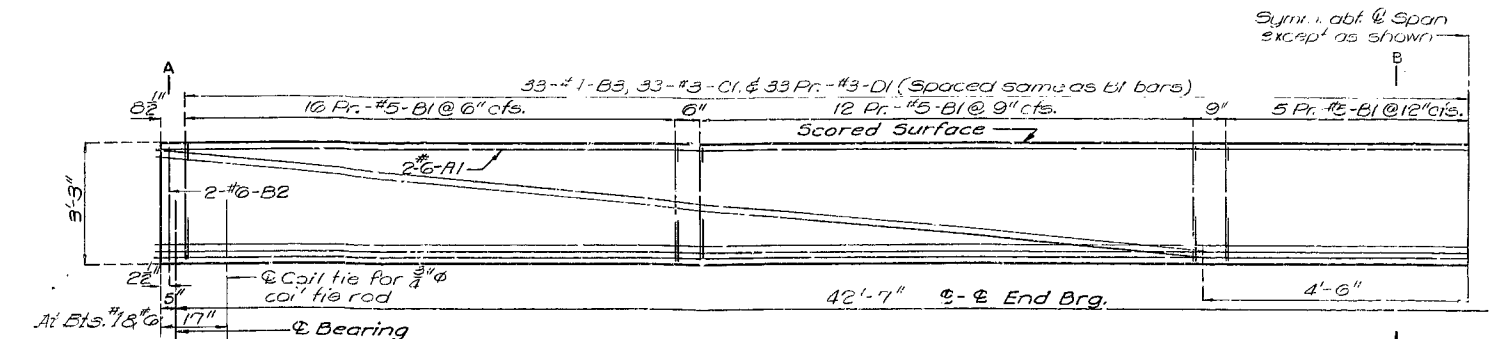
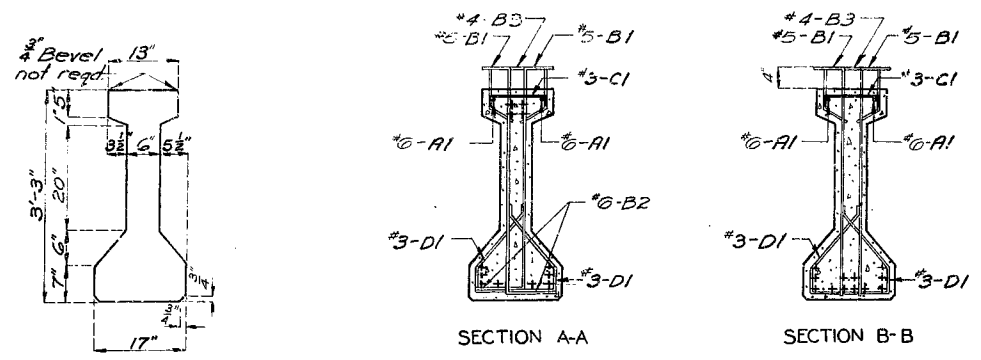
Sheet No. 8 of 13.

GREENE COUNTY

A-3030

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AC. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		1	36	

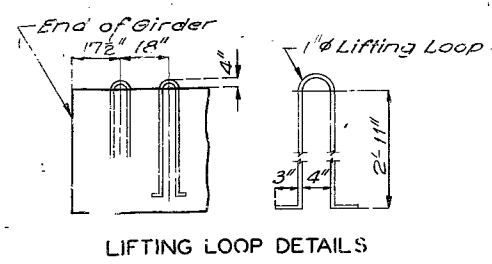


BILL OF REINFORCING STEEL (EACH GIRDER)			
NO	SIZE & MARK	LENGTH	SHAPE
2	6A1	43'-10"	20
130	5B1	3'-10"	195
4	6B2	3'-9"	195
65	4B3	2'-8"	505
65	3C1	13"	10
130	3D1	2'-11"	95

Note: Use 12 strands. Initial prestress force = 347 kips.

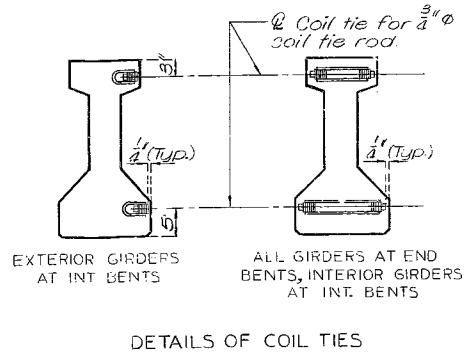
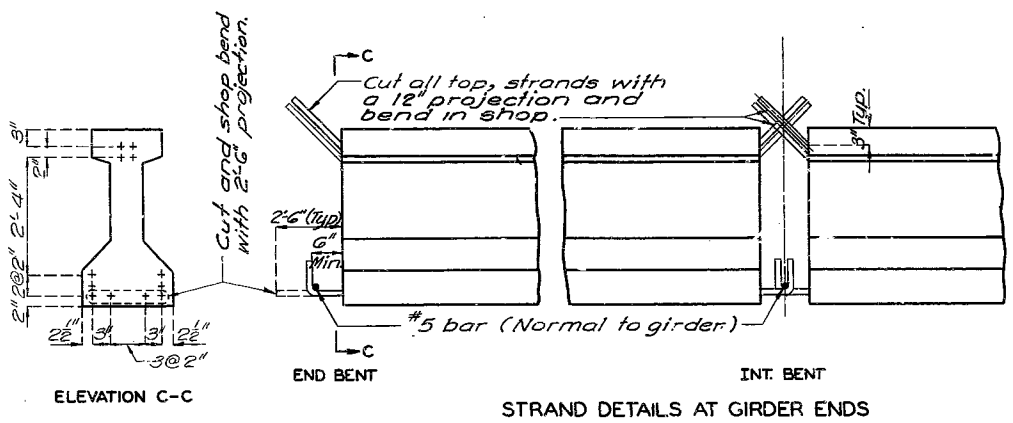
PART ELEVATION OF EXT. & INT. GIRDERS SPANS (1-2) & (5-6)

Note: All dimensions are cut to out. Where deflecting strands interfere with placement, some in-place bending may be necessary. Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for detailing reinforced concrete structures. The letter S after the shape number, in bending sketches, indicates bars that are to be bent according to CRSI stirrup and tie dimensions. Length - Total lengths are measured along centerline bar to the nearest inch. Minimum clearance to reinforcing shall be 1".



Note: Lifting loops are to be structural grade steel. Alternate types may be substituted with the approval of the Engineer.

GENERAL NOTES: PRESTRESSED GIRDERS
 Concrete for prestressed girders shall be Class A1 with $f'_c = 5000$ psi. Minimum compressive strength at transfer shall be 4,000 psi. Prestressing tendons shall be high-tensile strength uncoated seven-wire stressed relieved strands for Prestressed concrete conforming to ASTM A-416 except that nominal diameter of strand = $\frac{1}{2}$ " and nominal area = 0.153 sq. in. and minimum ultimate strength = 41,300 lbs. (= 270 ksi).
 The portions of girders to be embedded in the diaphragms of supports shall be roughened by sandblasting or other approved methods to provide suitable bond between girder and diaphragm. Coil ties shall be held in place in the forms by slotted wire setting studs projecting thru forms. Studs are to be left in place until girders are erected and then replaced by coil tie rods. Coil ties shall have a tensile strength of 9,000 lbs in 3,000 psi concrete.
 (t) Indicates Prestressed Strands. The method and sequence of releasing the strands shall be shown on the shop drawings. Cut 4 bottom prestressed strands as shown, with 2" projection and shop bend. The remaining bottom strands to be cut within 1" of concrete.

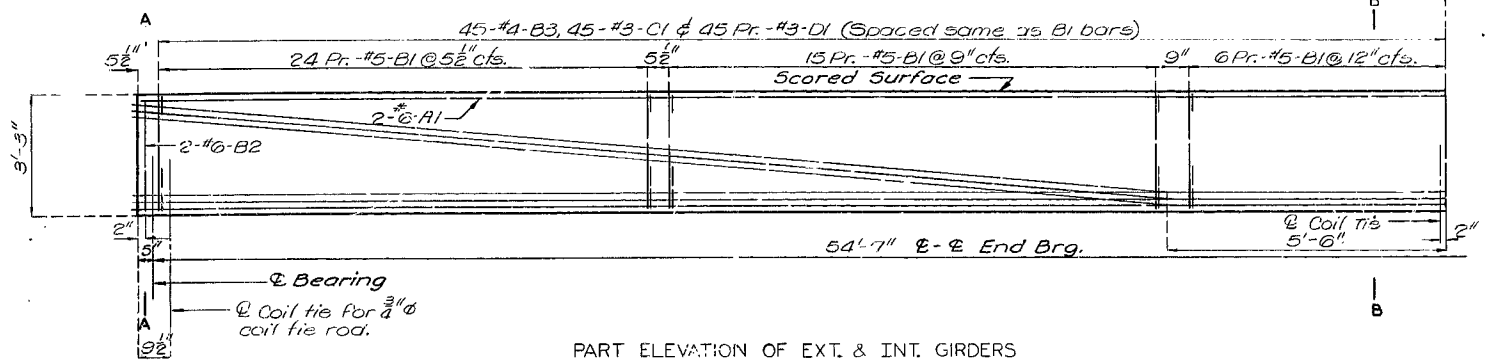
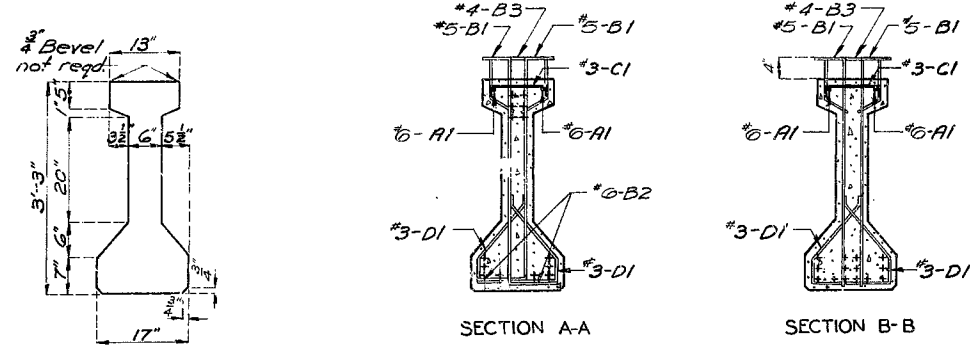


451

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	DATE	BY	AD. NO.	SCALE	SHEET NO.	TOTAL SHEETS
5					38	

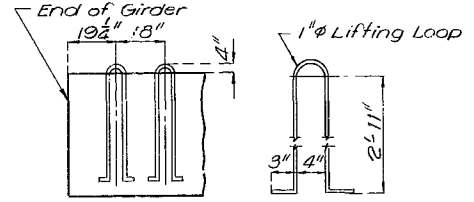
Symm. abt. & Spun except as shown



BILL OF REINFORCING STEEL (EACH GIRDER)				BENDING DIAGRAMS	
NO	SIZE & MARK	LENGTH	SHAPE		
2	6A1	55'-3"	20	Vertical Leg	
17B	5B1	3'-10"	195	SHAPE 195	
4	6B2	3'-9"	195	SHAPE 505	
89	4B3	2'-8"	505	SHAPE 20	
89	3C1	13"	10	SHAPE 10	
17B	3D1	2'-11"	95	SHAPE 95	

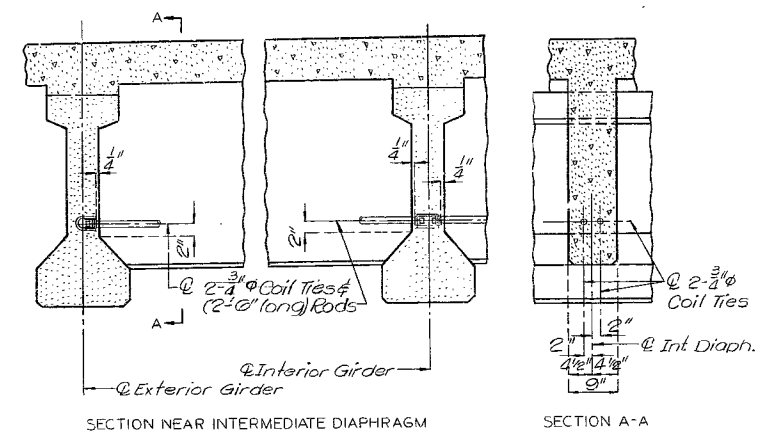
Note: Use 14 strands. Initial prestress force = 405 kips.

PART ELEVATION OF EXT. & INT. GIRDERS SPANS (2-3) (3-4) & (4-5)

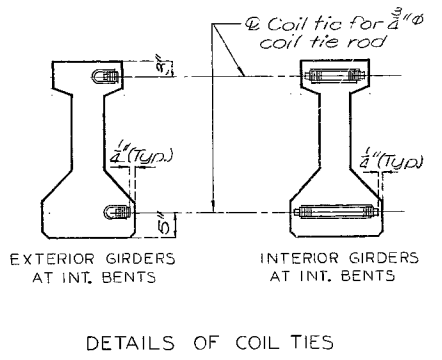
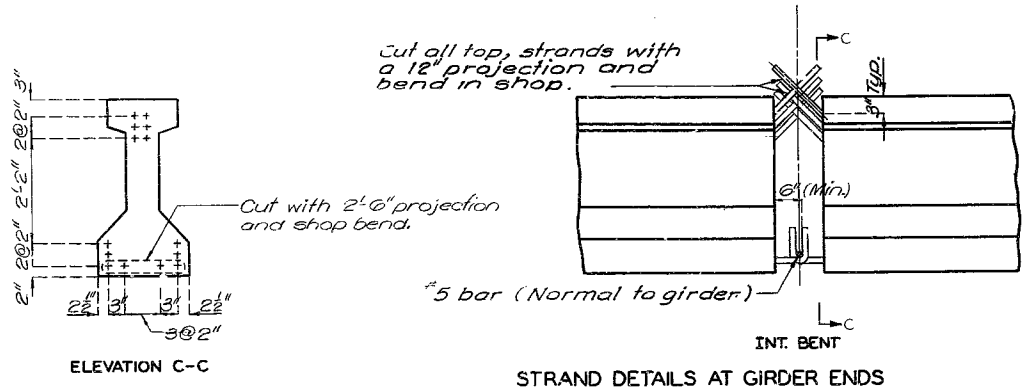


Note: Lifting loops are to be structural grade steel. Alternate types may be substituted with the approval of the Engineer.

Note: All dimensions are out to out. Where deflecting strands interfere with placement, some in-place bending may be necessary. Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for detailing reinforced concrete structures. The letter S after the shape numbers in bending sketches, indicates bars that are to be bent according to CRSI stirrup and tie dimensions. Length - Total lengths are measured along centerline bar to the nearest inch. Minimum clearance to reinforcing shall be 1".



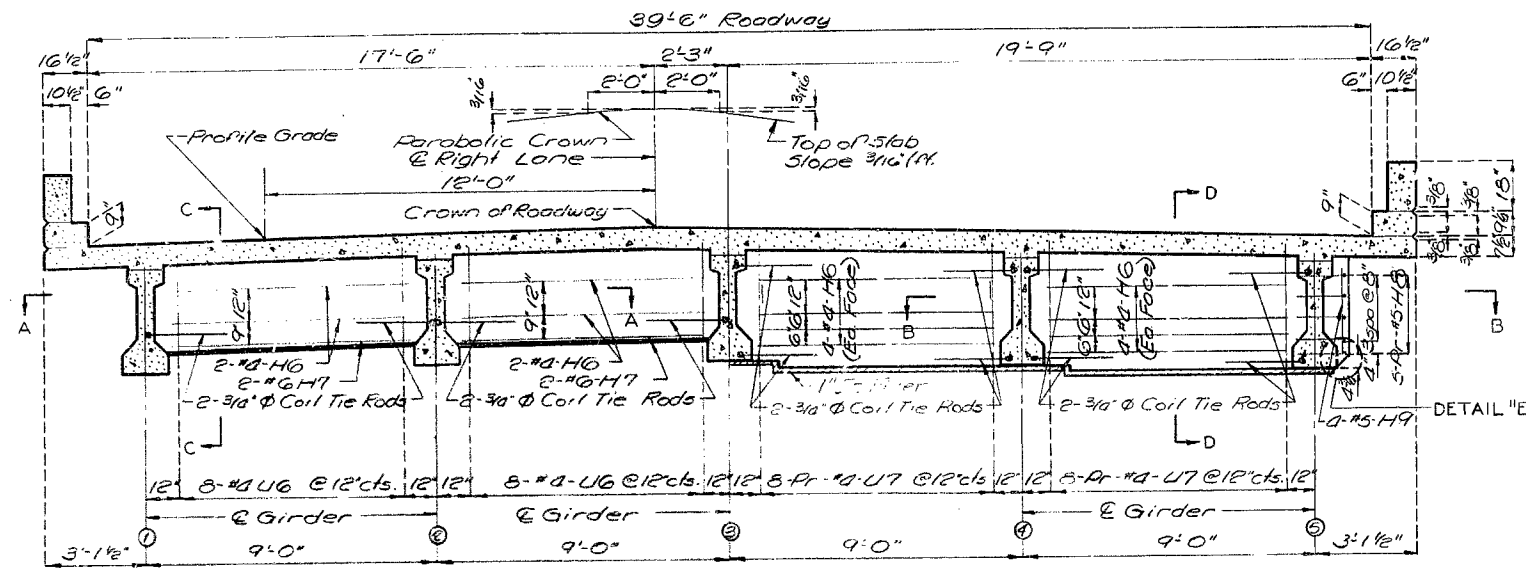
GENERAL NOTES: PRESTRESSED GIRDERS
 Concrete for prestressed girders shall be Class A1 with $f'_c = 5000$ psi. Minimum compressive strength at transfer shall be 4,000 psi. Prestressing tendons shall be high-tensile strength uncoated seven-wire stressed relieved strands for Prestressed concrete conforming to ASTM A-416 except that nominal diameter of strand = $\frac{1}{2}$ " and nominal area = 0.153 sq. in. and minimum ultimate strength = 41,300 lbs. (= 270 ksi).
 The portions of girders to be embedded in the diaphragms at supports shall be roughened by sandblasting or other approved methods to provide suitable bond between girder and diaphragm. Coil ties shall be held in place in the forms by slotted wire setting studs projecting thru forms. Studs are to be left in place until girders are erected and then replaced by coil tie rods. Coil ties shall have a tensile strength of 9,000 lbs in 3,000 psi concrete.
 (+) Indicates Prestressed Strands. The method and sequence of releasing the strands shall be shown on the shop drawings. Cut 4 bottom prestressed strands as shown with 2'-0" projection and shop bend. The remaining bottom strands to be cut within 1" of concrete.



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MISSOURI STATE HIGHWAY DEPARTMENT

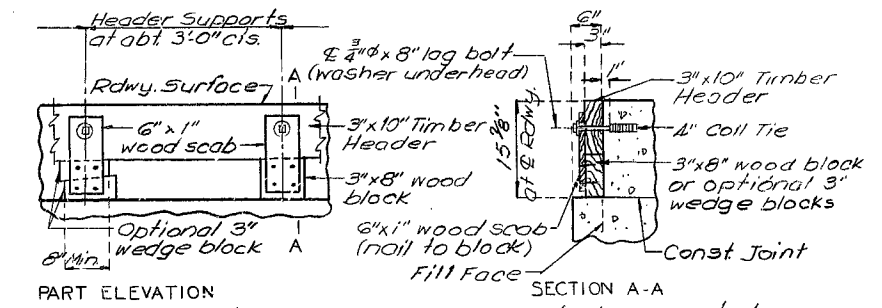
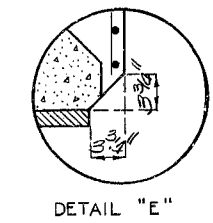
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		79	37	



HALF SECTION NEAR INT. DIAPH.
@ 56'-0" SPANS ONLY

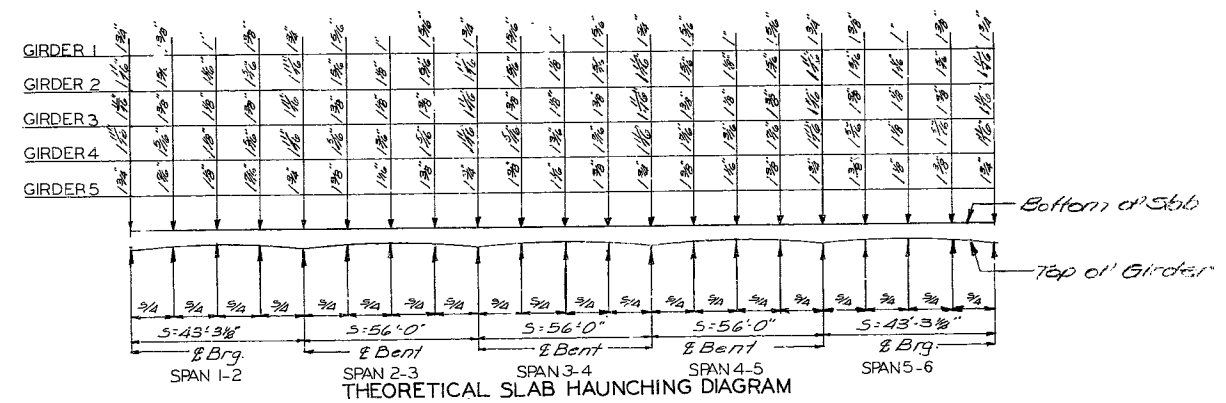
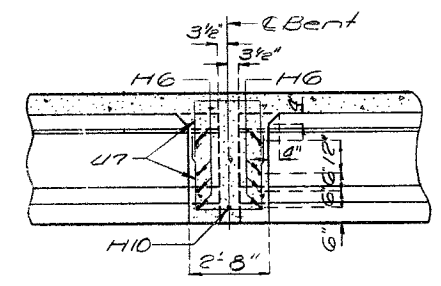
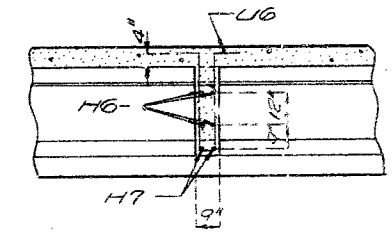
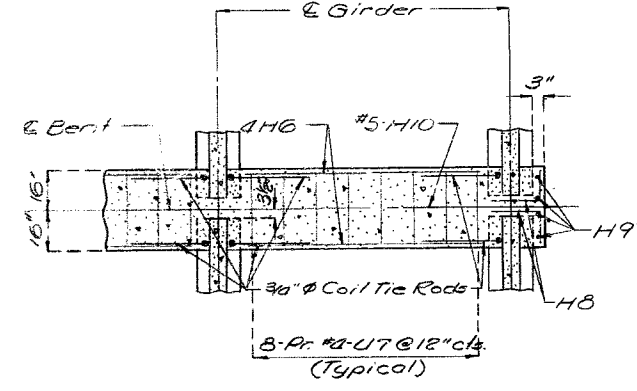
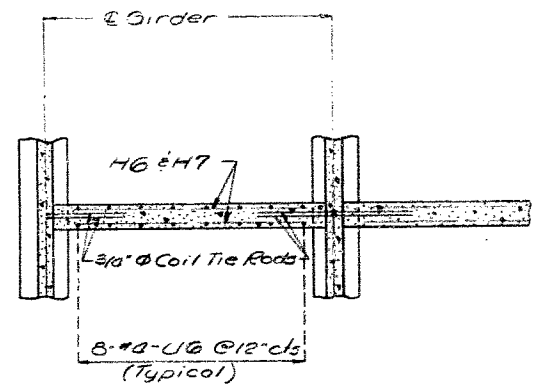
HALF SECTION NEAR INT. BENTS

Note: Right Lane details shown, Left Lane details are opposite hand laterally.



Note: Cost of timber headers complete in place to be included in price bid for concrete.

DETAILS OF TIMBER HEADER AT END BENTS

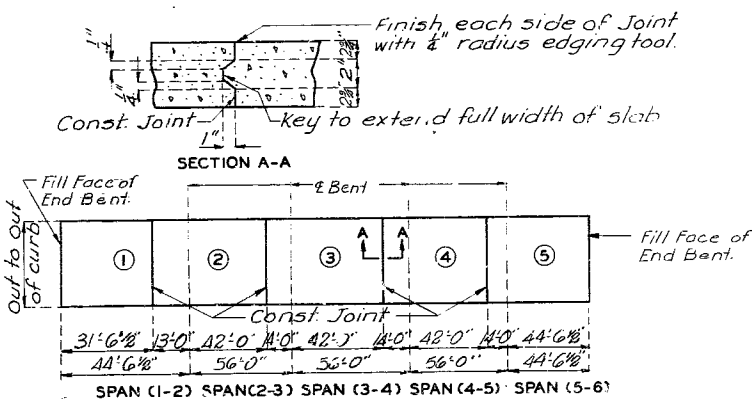
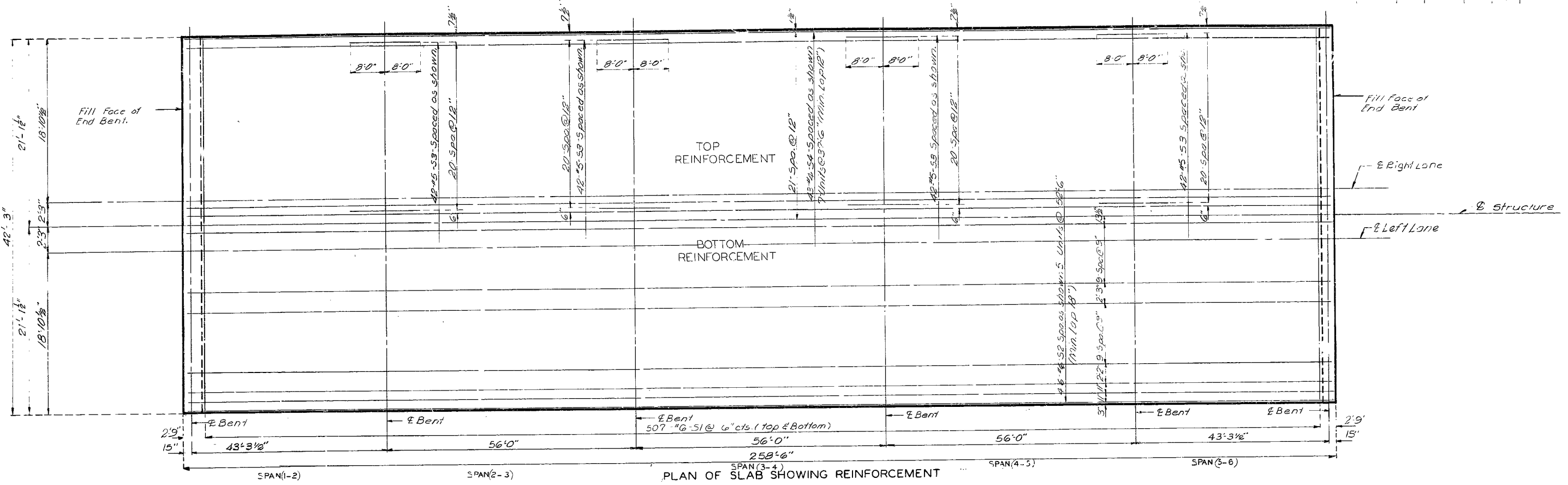


Note: Coil tie rods are 3/4" ϕ x 2'-0". Cost of 3/4" Coil tie rods in place in diaphragms is included in the price bid for other items.

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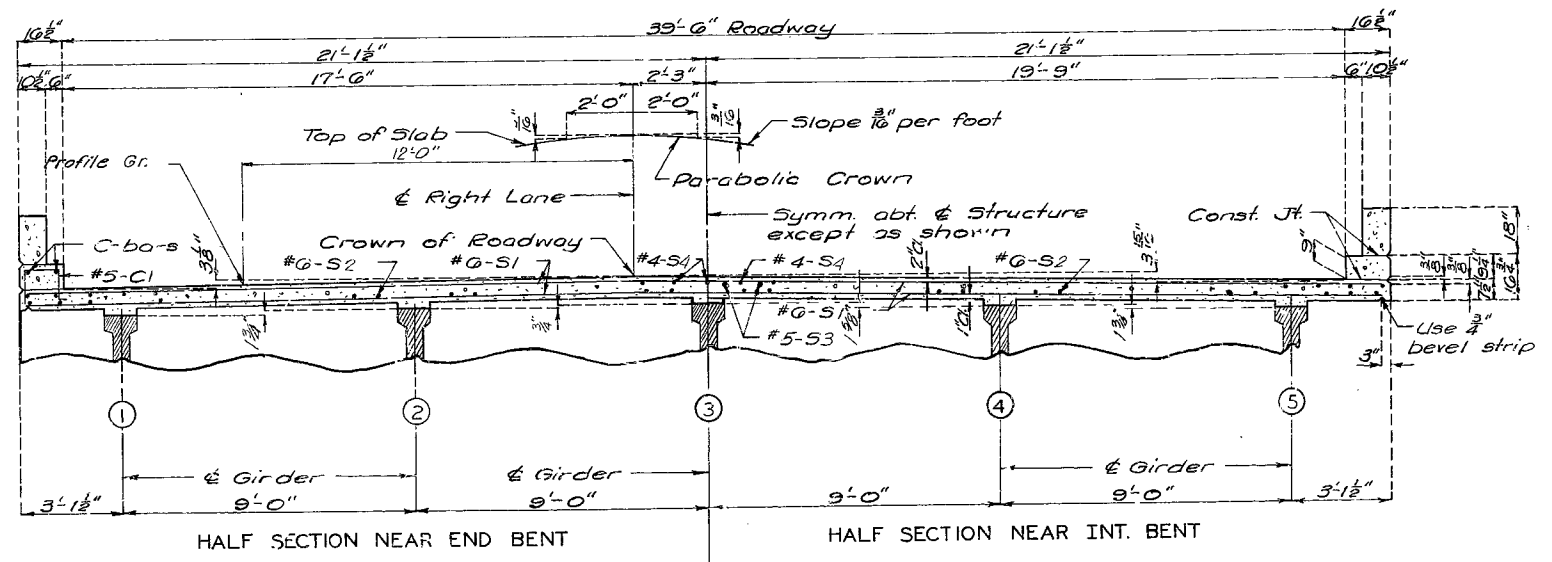
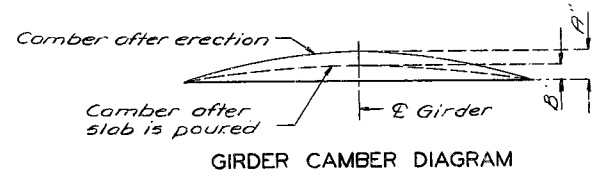
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	39	



Basic Sequence	Sequence of Pours				
	1	2	3	4	5
Basic Sequence	1 to 3	2 to 4	3 to 5	4 to End	5
Alternate "A" Pours	1+2	3	4+5	3 to End	
Alternate "B" Pours	1+2+3	2 to 4	4+5	3 to End	
Alternate "C" Pours	1+2+3+4+5				End to End

THEORETICAL SLAB HAUNCHING DIAGRAM



Note: Cross section of R. lane shown, L. lane opposite hand laterally.

Girder	A	B
44' Span Ext. Gdr.	1 1/8"	1/8"
44' Span Int. #8 Gdr.	1 1/8"	1 1/8"
56' Span Ext. Gdr.	1 3/8"	1 1/8"
56' Span Int. Gdr.	1 3/8"	1 1/8"
56' Span #8 Gdr.	1 1/8"	1 1/8"

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Note: The contractor shall furnish an approved rebar to rebar the set of the concrete in 2.5 hours and shall pour and satisfactorily finish the slab pours at a rate of not less than 25 cubic yards per hour.

Note: The diaphragm at the int. bents shall be poured a minimum of 30 minutes and a maximum of 2 hrs. before the slab is poured.

SLAB POURING SEQUENCE

DETAILED DEC. 1971 BY D. RIDENHOUR
CHECKED Feb. 1972 BY H. Miller, Moffett.

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

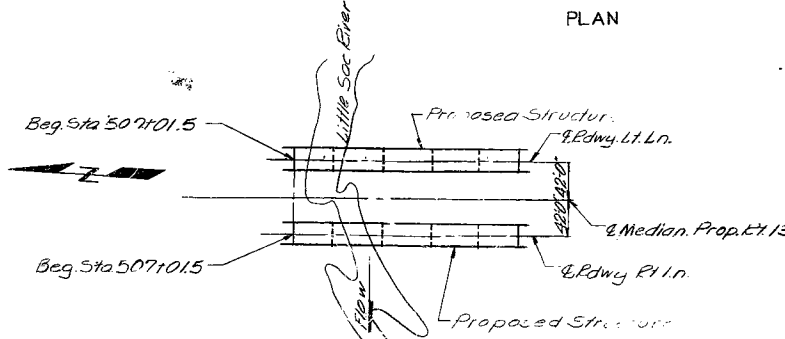
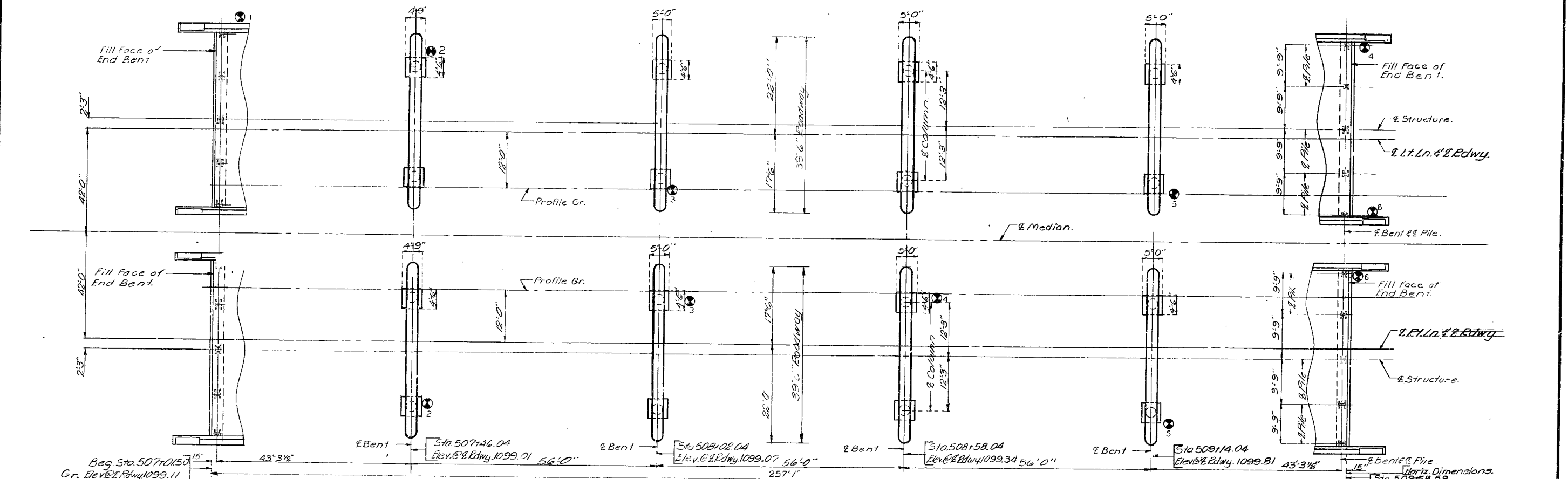
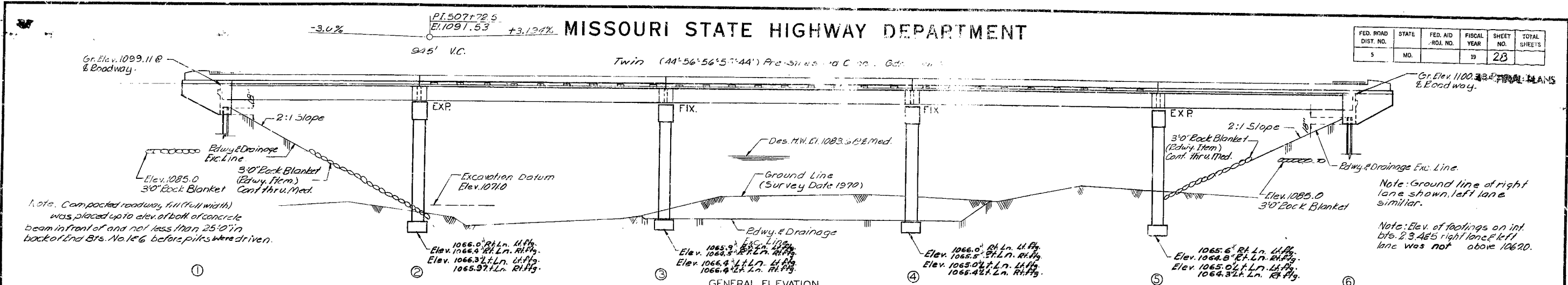
Sheet No. 12 of 13

GREENE COUNTY

A-3030

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	23	

MISSOURI STATE HIGHWAY DEPARTMENT



Note: See Sheet No. 4 of 13 for Boring Data
 • Indicates location of borings.

Drainage Area 71.0 sq. mi. (hilly)
 Design Discharge 13000 cfs.
 Frequency: 50 yrs.

B.M. Elev. 1101.01 on S.W. Cor. East Wingwall South End S.B.L. Bridge
 Sta. 509+67.53
BRIDGE OVER LITTLE SAC RIVER
 STATE ROAD FROM GLIDEWILL SOUTH TO SPRINGFIELD
 ABOUT 2.0 MILES N. OF SPRINGFIELD
 PROJECT NO. F-13-2(9) SEC. A PTE. 13 STA. 507+01.50
 GREENE COUNTY

SUBMITTED BY *W.A. Carney* DATE 6-27-73
 BRIDGE ENGINEER
 APPROVED BY *Robert N. Hunter* DATE 6-27-73
 CHIEF ENGINEER

DESIGNED Oct. 1971 BY C. K. YU
 D-TAILED JAN 1972 BY RIDENHOUR
 CHECKED Feb. 1972 BY H. Miller, Moffett

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

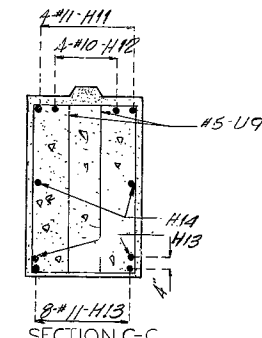
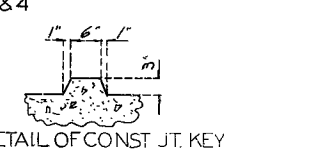
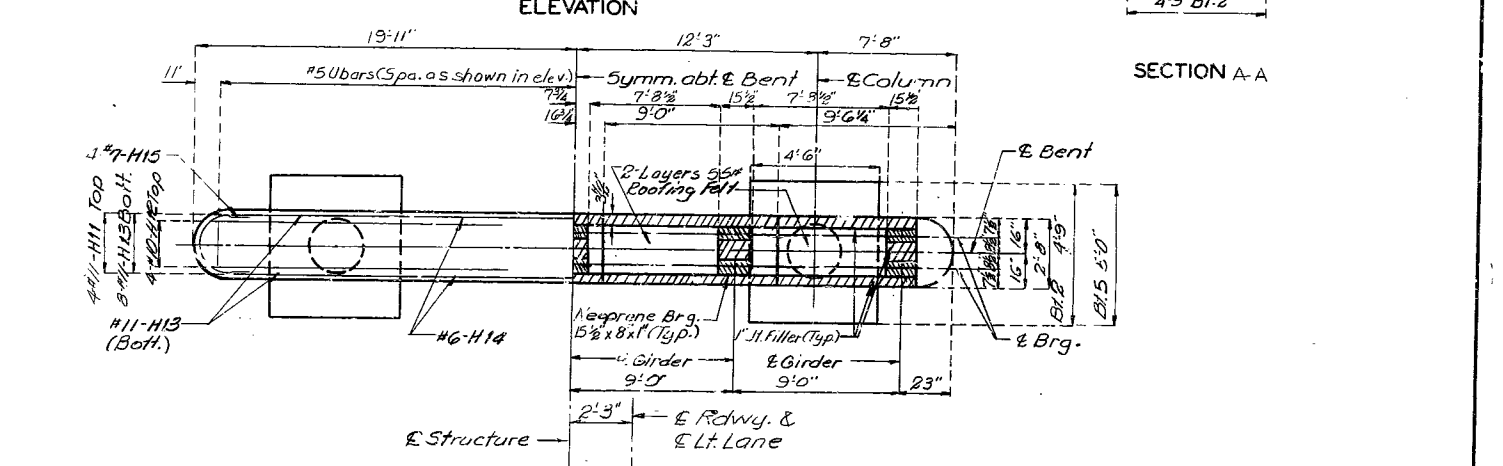
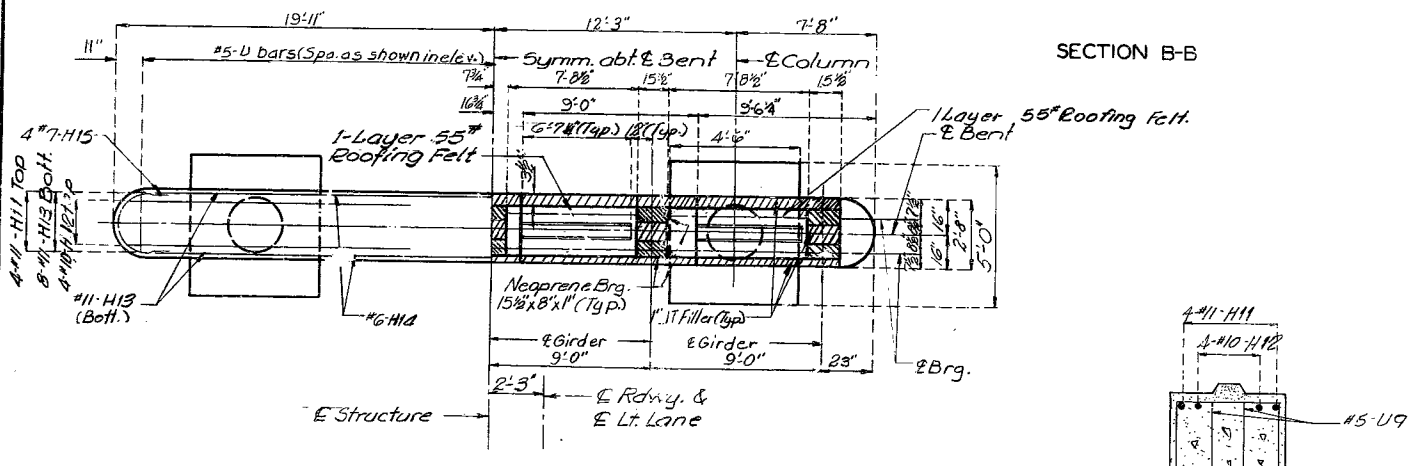
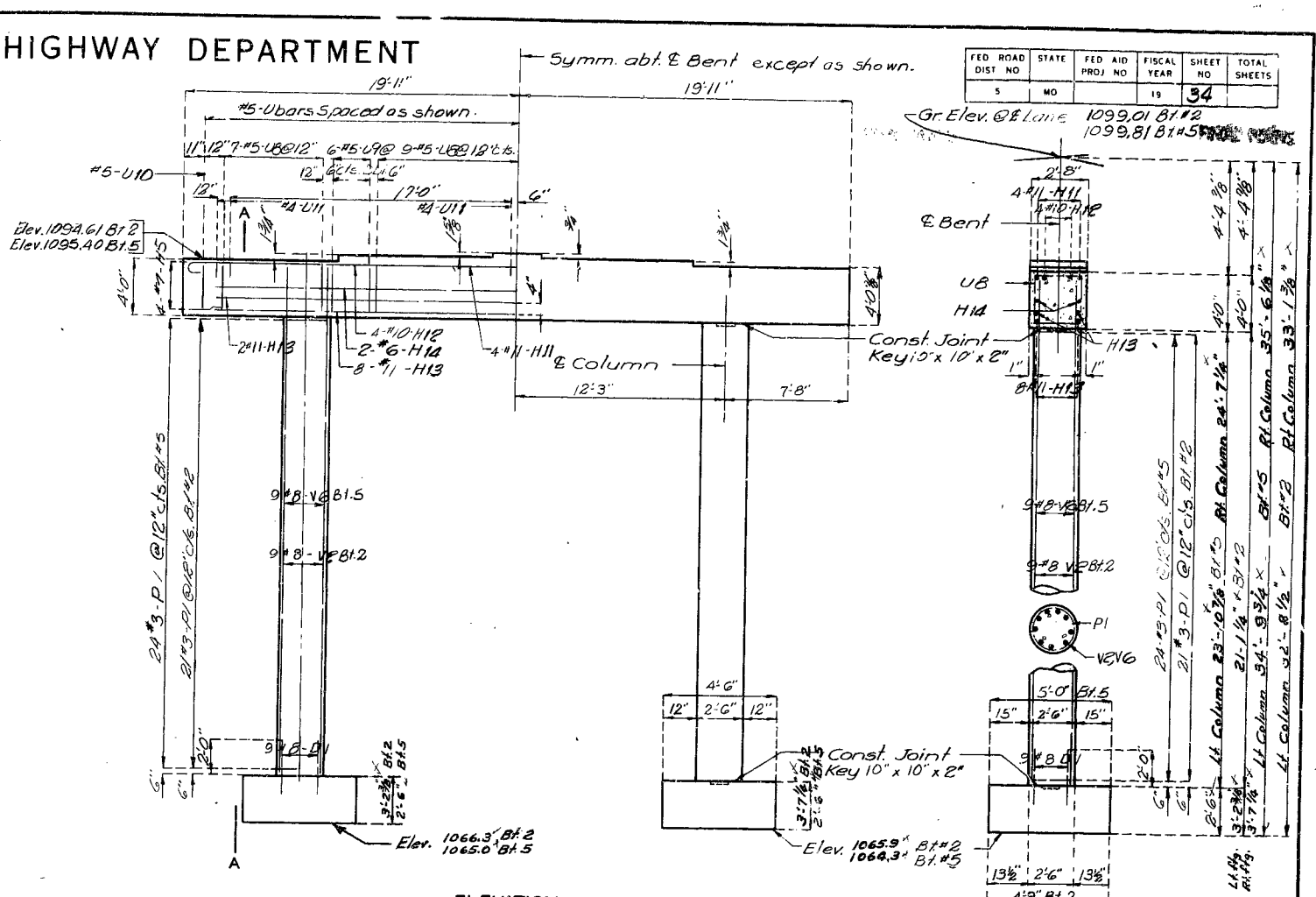
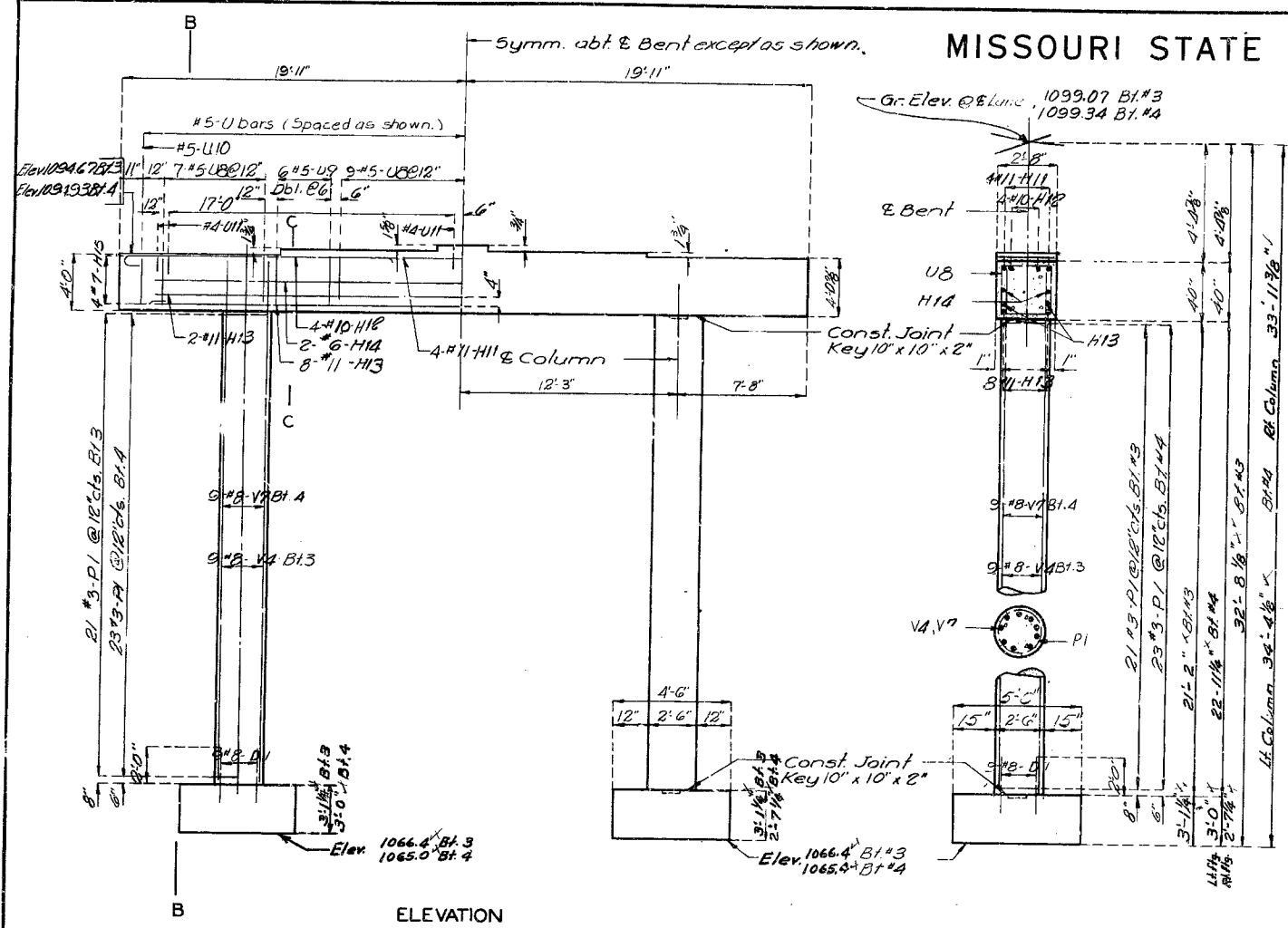
Sheet No. 1A of 15.

STD. 70630A
 A-3030

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	34	



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STD. 19.2
 SEPT. 1962
 REVISIONS
 APRIL 1971
 DETAILED Jan. 1972 by Ridenhour
 CHECKED Feb. 1972 by H. Miller

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

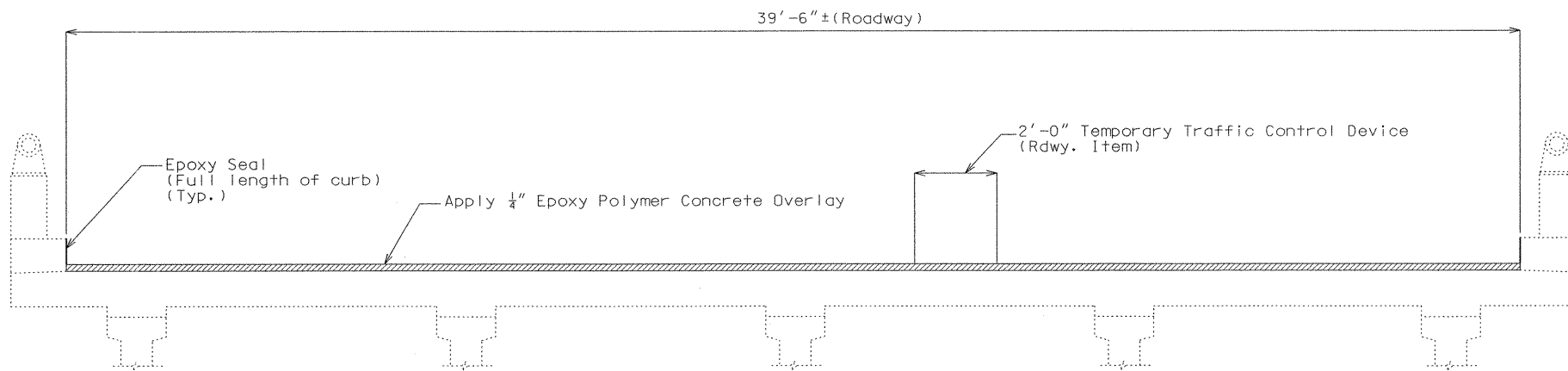
Sheet No. 7 of 13

FINAL PLAN GREENE COUNTY A-3030

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

U.I.P. EXISTING (44'-56'-56'-56'-44') PRESTRESSED CONCRETE I-GIRDER SPANS

State	Proj. No.	Sheet No.
MO		18
SEC/SUR 35	TWP 30N	RGE 22W



SECTION THRU SLAB

GENERAL NOTES:

Design Specifications:
2002 - AASHTO 17th Edition
Bridge Deck Rating = 7

Traffic:

Traffic over structure to be maintained during construction. (See roadway plans for traffic control)

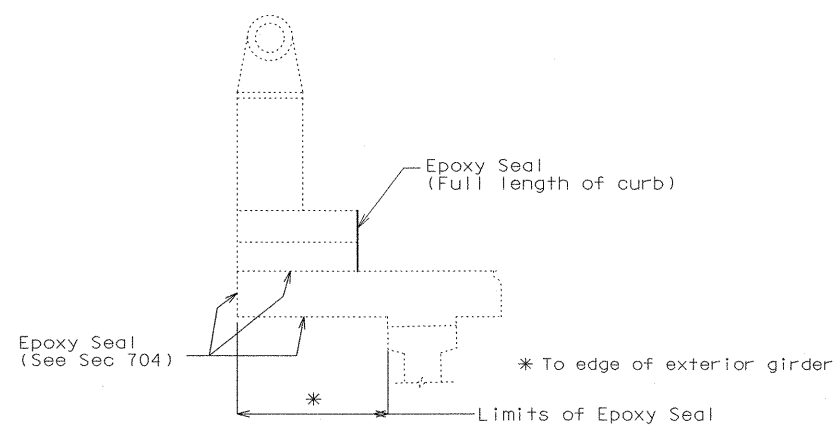
Miscellaneous:

Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

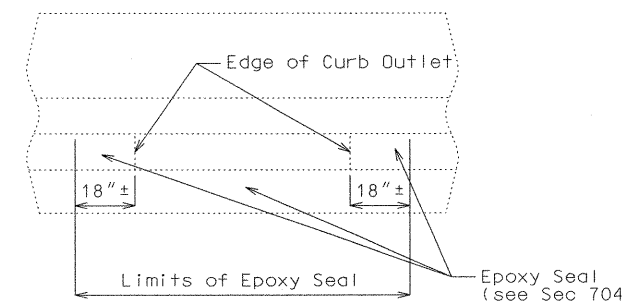
Contractor shall verify all dimensions in field before ordering new material.

"Sec" refers to the sections in the Missouri standard and supplemental specifications unless specified otherwise.

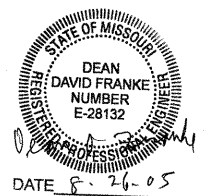
The contractor shall exercise care to ensure spillage over joint edges is prevented and that a neat line is obtained along any terminating edge of the epoxy polymer concrete.



TYPICAL SECTION OF EXISTING CURB SHOWING OUTLET



TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET



REPAIRS TO BRIDGE OVER LITTLE SAC RIVER

STATE ROAD FROM GLIDEWILL SOUTH TO SPRINGFIELD
ABOUT 2.0 MILES NORTH OF SPRINGFIELD
PROJECT NO. STA. 507+01.50± (Match Existing)
JOB NO. J8P0826 RTE. 13 SB

ESTIMATED QUANTITIES		
ITEM		TOTAL
Epoxy Polymer Concrete Overlay	sq. yard	1,128

Detailed June 2005
Checked June 2005

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

Sheet No. 1 of 1

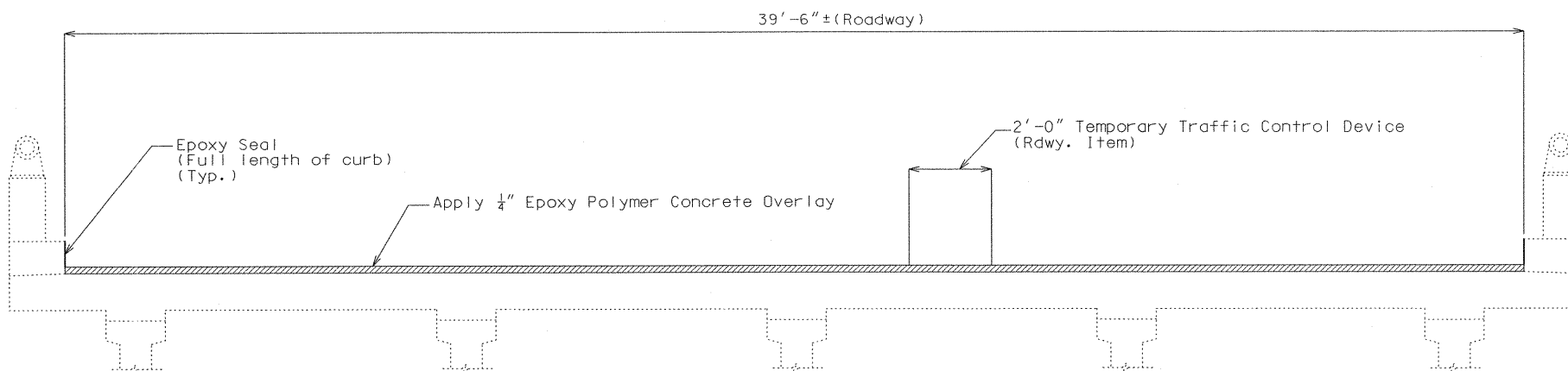
Date: 8 / 30 / 05

GREENE COUNTY **A30301**

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

U.I.P. EXISTING (44'-56'-56'-56'-44') PRESTRESSED CONCRETE I-GIRDER SPANS

State	Proj. No.	Sheet No.
MO		87
SEC/SUR 35	TWP 30N	RGE 22W



SECTION THRU SLAB

GENERAL NOTES:

Design Specifications:

2002 - AASHTO 17th Edition
Bridge Deck Rating = 7

Traffic:

Traffic over structure to be maintained during construction.
(See roadway plans for traffic control)

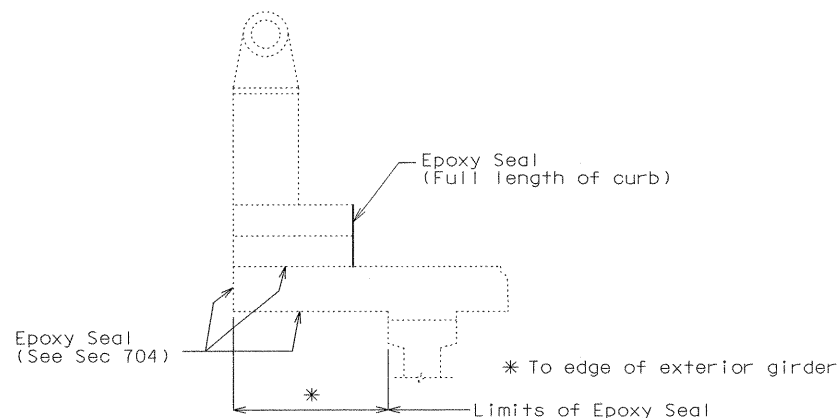
Miscellaneous:

Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

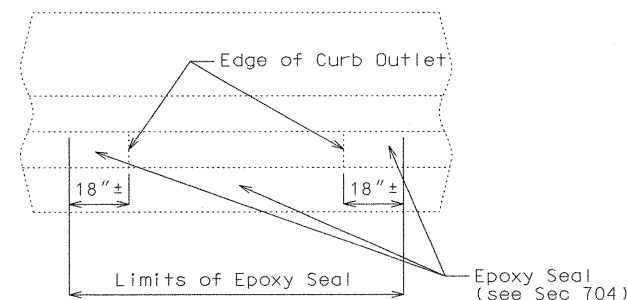
Contractor shall verify all dimensions in field before ordering new material.

"Sec" refers to the sections in the Missouri standard and supplemental specifications unless specified otherwise.

The contractor shall exercise care to ensure spillage over joint edges is prevented and that a neat line is obtained along any terminating edge of the epoxy polymer concrete.



TYPICAL SECTION OF EXISTING CURB SHOWING OUTLET



TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET



REPAIRS TO BRIDGE OVER LITTLE SAC RIVER

STATE ROAD FROM GLIDEWILL SOUTH TO SPRINGFIELD
ABOUT 2.0 MILES NORTH OF SPRINGFIELD
PROJECT NO. STA. 507+01.50± (Match Existing)
JOB NO. J8P0826 RTE. 13 NB

ESTIMATED QUANTITIES		
ITEM		TOTAL
Epoxy Polymer Concrete Overlay	sq. yard	1.128

Detailed June 2005
Checked June 2005

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

Sheet No. 1 of 1

Date: 8/30/05

GREENE COUNTY A30302

T:\br-proj\robinc1\J8P0826\A30302\A30302_001.dgn 01:52:50 PM 08/26/2005