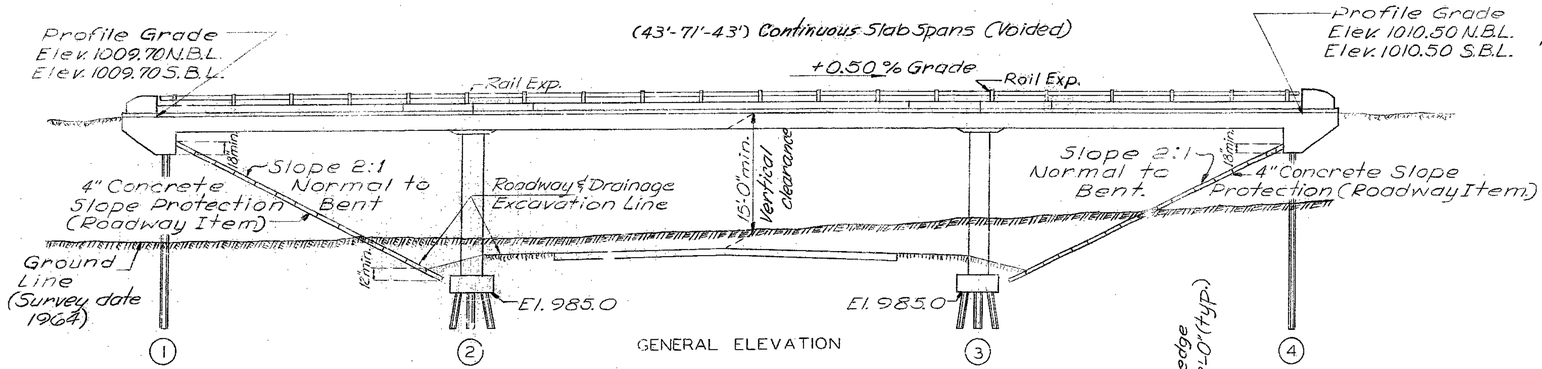
FOR INFORMATION ONLY

A17463, Sht. 6

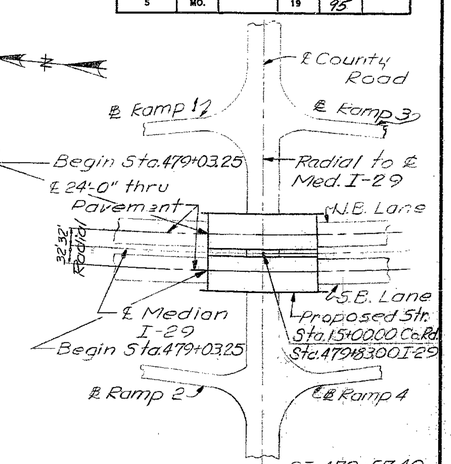
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	95	



GENERAL ELEVATION

Note:
Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less then 25'-0" in back of End Bents 1 & 4 before steel piles are driven.

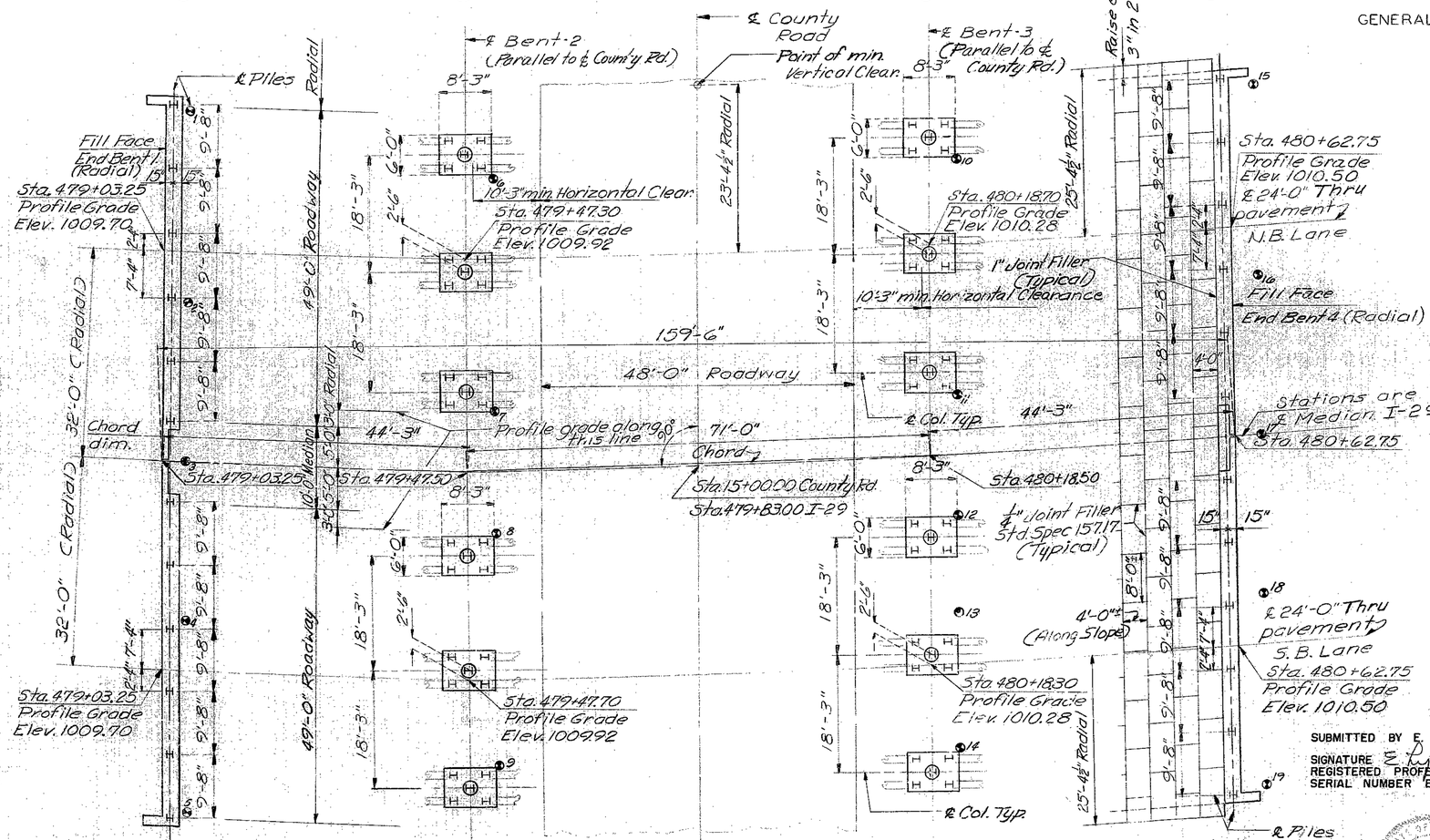


P.I. 479+57.40
Δ. 30° Lt.
D 1°-00'
T 153.56'
L 300.00'
R 5729.65'
S.E. .025 Ft.

LOCATION SKETCH

GENERAL NOTES:

Design Specifications:
A.A.S.H.O.-1965
Design Loading:
H.S. 20-44
15# / sq. ft. Future Wearing Surface
Modified 24,000# Tandem Axle
Earth 120# Equivalent Fluid Pressure 30#
Design Unit Stresses:
Class B Concrete (Substructure) fc = 1,200 psi
Class B1 Concrete (Superstructure) fc = 1,600 psi.
Reinforcing Steel fs = 20,000 p.s.i.
Steel pile (A.S.T.M. A36-66) fb = 9,000 psi.
Superstructure deck to be surface sealed



PLAN

Note:
For Pile Data see sheet 4 of 12.
For Substructure layout see sheet 2 of 12.

Note:
For Boring Data see sheet No. 3 of 12.
"●" Indicates location of boring.

ESTIMATED QUANTITIES				
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Class I Excavation for Structures	Cu. Yd.	225	–	225
Steel Piles in Place (10")	Lin. Ft.	3414	–	3414
Class B Concrete	Cu. Yd.	58.6	–	58.6
Class B1 Concrete	Cu. Yd.	–	1262.6	1262.6
Reinforcing Steel	Lb.	6040	315,590	321,630
Bridge Rail (Single Tube Type)	Lin. Ft.	–	318	318

Note:
All concrete and reinforcement above footings in intermediate bents is included in superstructure quantities.
No payment for excavation will be allowed at End Bents No. 1 and 4.

B.M. #36 - Elev. 1024.24
□ Cut on N. End Pump Island 137' Rt. of Survey Line Sta. 452+75.00

BRIDGE OVER COUNTY ROAD

STATE ROAD: INTERSTATE ROUTE 29

ABOUT 6 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1 (12) (RTE. I-29) **STA.** 479+03.25

PLATTE **COUNTY**

SUBMITTED BY E. LYN CROWLEY
SIGNATURE E Lyn Crowley
REGISTERED PROFESSIONAL ENGINEER
SERIAL NUMBER E-5993

SUBMITTED BY W. A. Carne, BRIDGE ENGINEER DATE Feb. 13, 1968
APPROVED BY M. J. Sweeney, CHIEF ENGINEER DATE Feb. 13 1968

STD. 54.00
A-1746

CROWLEY, WADE, MILSTEAD, INC.
ENGINEERS - ARCHITECTS
INDEPENDENCE, MISSOURI

Designed F.D. Poland 9-67	Checked J.E.R. Sweeney 9-67
Detailed H.L. Warren 9-67	Checked J.E.R. Sweeney 9-67
Quantities H.H. Bunten 7-67	Checked B.F. Foster 8-67

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

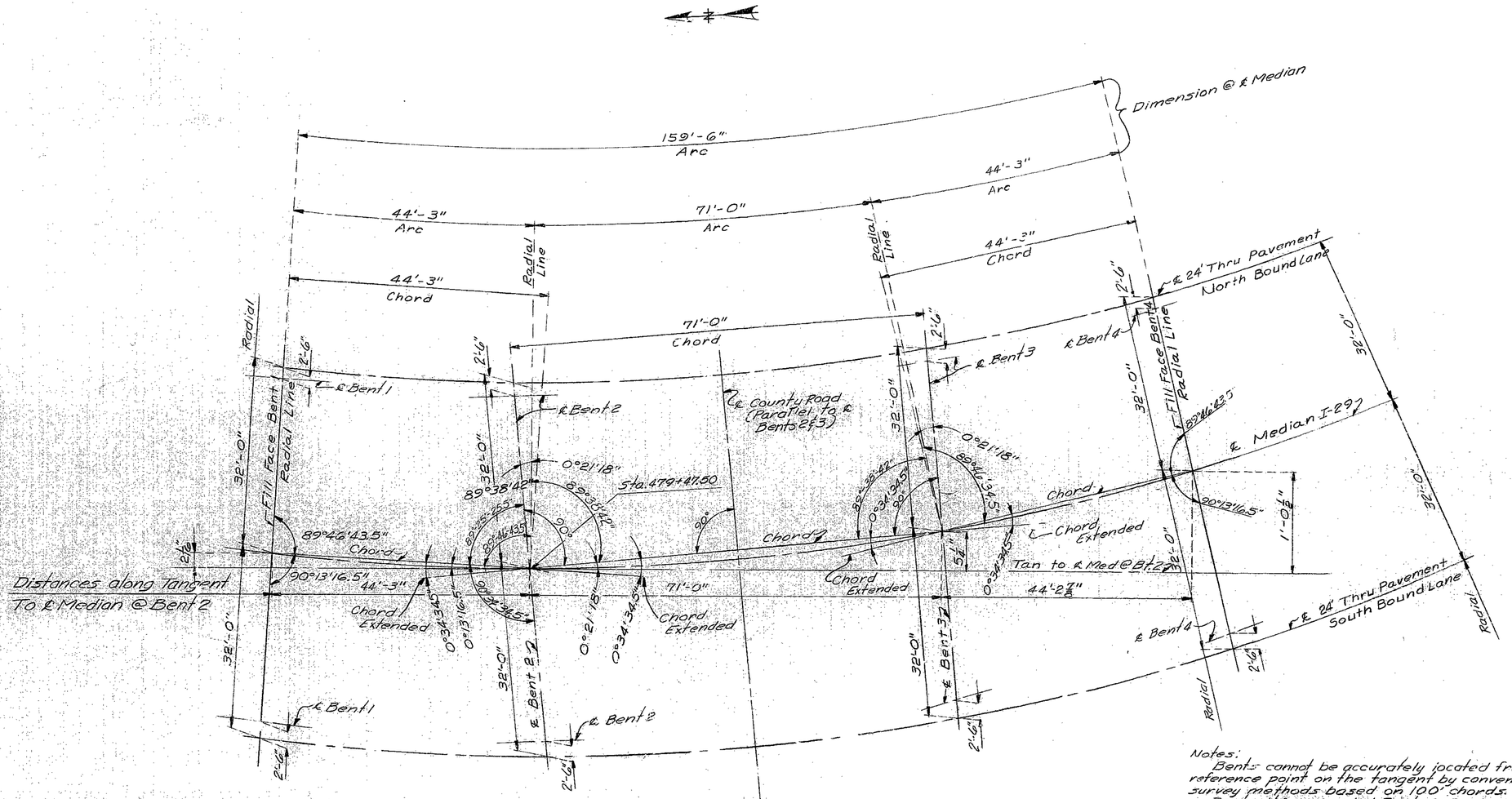
Sheet No. 1 of 12.

509

SEE FINAL PLANS BROWN-LINES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	76	



SUBSTRUCTURE LAYOUT

Notes:
Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.
Bents 1 & 4 are radial. Bents 2 & 3 are parallel to ℄ County Road.
All dimensions are horizontal.

BRIDGE OVER COUNTY ROAD

STATE ROAD: INTERSTATE RC ITE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1 (12) (RTE I-29) **STA.** 479+03.25

PLATTE **COUNTY**

A-1746

DETAILED April 1967 BY H.L.W.

CHECKED July 1967 BY J.E.R.

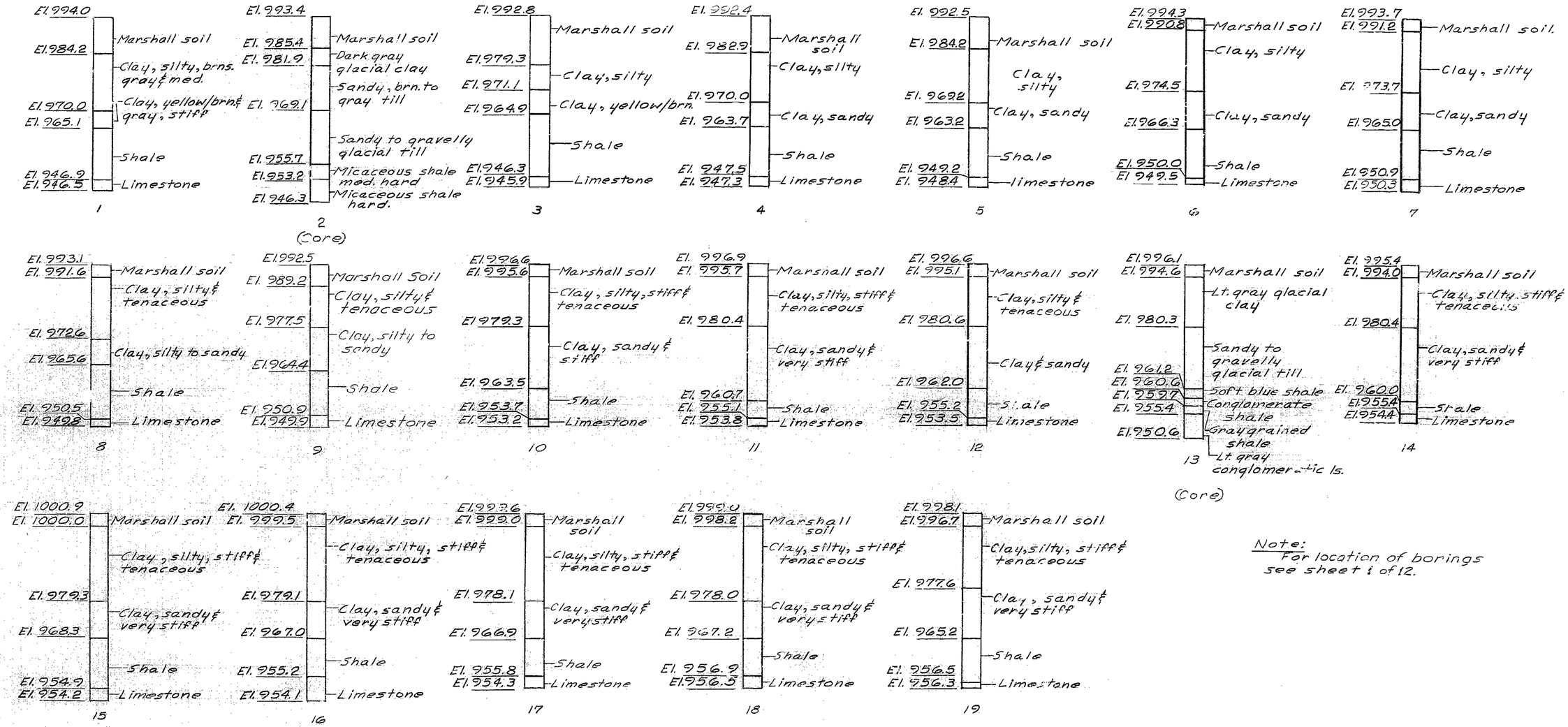
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 12.

510

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	MO.		19	97	



Note:
For location of borings see sheet 1 of 12.

BORING DATA

BRIDGE OVER COUNTY ROAD

STATE ROAD: INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1 (12) (RTE I-29) **STA.** 479+33.25

PLATTE **COUNTY**

A-1746

DETAILED April 1967 BY H. L. W.
CHECKED July 1967 BY B. F. F.

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

Sheet No. 3 of 12.

511

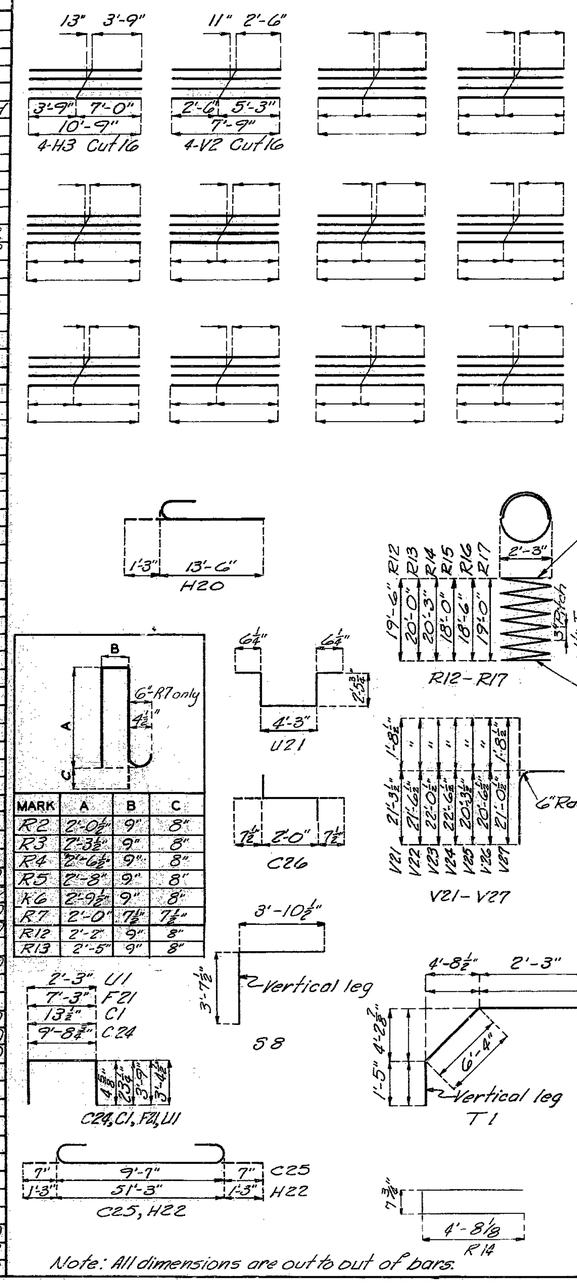
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	98	

COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION
Superstructure				
324	#5	5'-0"	C1	Curb
8	#6	5'-3"	C2	"
8	#5	22'-3"	C3	"
8	#5	36'-0"	C4	"
8	#5	23'-0"	C5	"
324	#4	3'-3"	C26	Slab & Med
1504	#5	26'-6"	S1	Slab
82	#8	30'-0"	S2	" N.B.
82	#7	17'-0"	S3	" N.B.
84	#10	60'-0"	S4	"
82	#10	47'-0"	S5	"
82	#11	34'-6"	S6	"
84	#9	51'-9"	S7	" N.B.
84	#11	39'-9"	S9	" N.B.
82	#11	29'-3"	S10	" N.B.
82	#11	18'-3"	S11	" N.B.
138	#5	23'-6"	S12	" N.B.
138	#5	34'-6"	S13	"
138	#5	22'-6"	S14	" N.B.
84	#11	40'-9"	S15	" S.B.
82	#11	31'-3"	S16	" S.B.
82	#11	20'-0"	S17	" S.B.
84	#9	52'-9"	S18	" S.B.
82	#8	30'-9"	S19	" S.B.
82	#7	19'-0"	S20	" S.B.
8	#5	4'-9"	R1	End Post
4	#5	5'-6"	R2	"
4	#5	6'-0"	R3	"
4	#5	6'-6"	R4	"
4	#5	6'-9"	R5	"
8	#5	7'-0"	R6	"
324	#5	5'-3"	R7	Parapet
8	#5	32'-3"	R8	"
32	#5	10'-9"	R9	"
16	#5	25'-0"	R10	"
8	#5	33'-9"	R11	"
4	#5	5'-9"	R12	End Post
4	#5	6'-3"	R13	"
16	#6	10'-0"	R14	"
Superstructure Int. Bent 2				
24	#9	14'-9"	H20	Beam
14	#9	12'-6"	H21	"
16	#9	53'-9"	H22	"
28	#9	51'-0"	H23	"
244	#5	10'-3"	U2	"
16	#11	25'-0"	V21	Col.1(S.B.)
16	#11	22'-9"	V27	Col.3(N.B.)
21	#11	23'-3"	V22	Col.2(S.B.)
16	#11	23'-9"	V23	Col.3(S.B.)
16	#11	22'-0"	V25	Col.1(N.B.)
21	#11	22'-3"	V26	Col.2(N.B.)
1	#4	548'-0"	R17	Col.1(S.B.)
1	#4	562'-0"	R12	Col.2(S.B.)
1	#4	575'-9"	R13	Col.3(S.B.)
1	#4	520'-3"	R15	Col.1(N.B.)
1	#4	534'-3"	R16	Col.2(N.B.)
1	#4	548'-0"	R17	Col.3(N.B.)
Superstructure Int. Bent 3				
24	#9	14'-9"	H20	Beam
14	#9	12'-6"	H21	"
16	#9	53'-9"	H22	"
28	#9	51'-0"	H23	"
244	#5	10'-3"	U21	"
21	#11	22'-9"	V27	Col.2(N.B.)
16	#11	23'-3"	V22	Col.1(S.B.)
16	#11	23'-3"	V22	Col.3(N.B.)

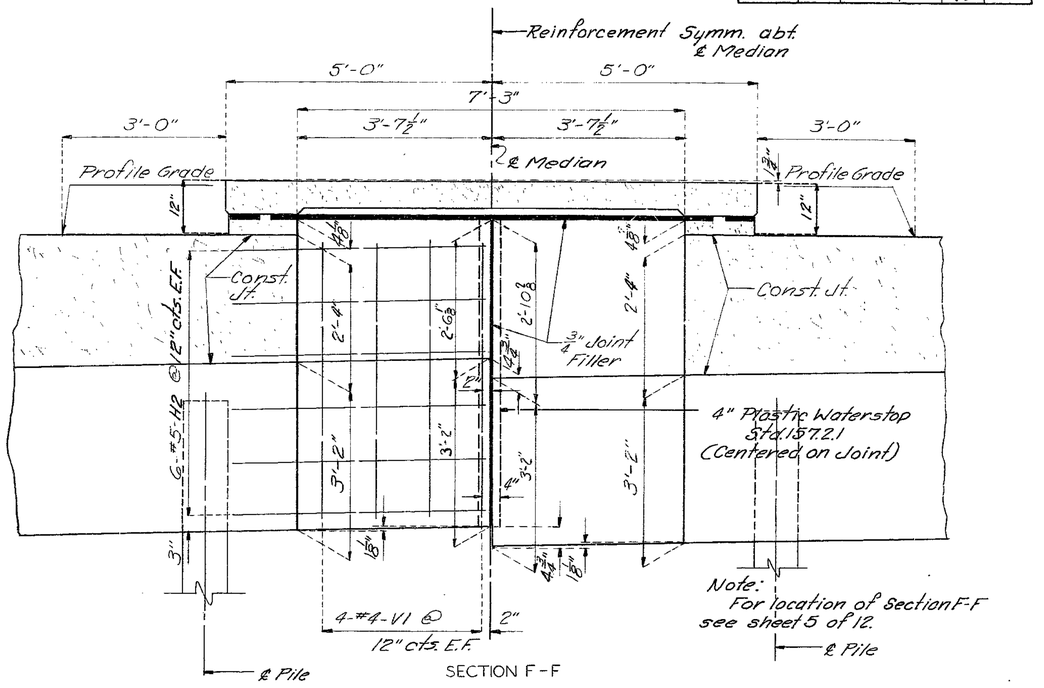
BENDING SKETCHES & CUTTING DIAGRAMS



Note: All dimensions are out to out of bars.

Note: Hooks and Bends shall be in accordance with the A.C.I. Manual of standard Practice for Detailing Reinforced Concrete Structures (ACI-315-65). Two diameter bends shall not be used unless specified in bending diagrams.

NO.	SIZE	LENGTH	MARK	LOCATION
21	#11	23'-9"	V23	Col.2(S.B.)
16	#11	24'-3"	V24	Col.3(S.B.)
16	#11	22'-3"	V26	Col.1(N.B.)
1	#4	562'-0"	R12	Col.1(S.B.)
1	#4	575'-9"	R13	Col.2(S.B.)
1	#4	582'-9"	R14	Col.3(S.B.)
1	#4	534'-3"	R16	Col.1(N.B.)
1	#4	548'-0"	R17	Col.2(N.B.)
1	#4	562'-0"	R12	Col.3(N.B.)
Superstructure End Bent 1				
48	#6	26'-9"	H1	Beam
24	#5	5'-0"	H2	Med. Wall
16	#6	10'-9"	H3	Wing
4	#6	7'-3"	H4	"
138	#6	7'-6"	S8	Bm. & Slab
4	#6	10'-0"	T1	Wing
196	#5	9'-0"	U1	Beam
16	#4	5'-6"	V1	Med. Wall
8	#4	7'-9"	V2	Wing
4	#4	5'-9"	V3	"
Superstructure End Bent 4				
48	#6	26'-9"	H1	Beam
24	#5	5'-0"	H2	Med. Wall
16	#6	10'-9"	H3	Wing
4	#6	7'-3"	H4	"
138	#6	7'-6"	S8	Bm. & Slab
4	#6	10'-0"	T1	Wing
196	#5	9'-0"	U1	Beam
16	#4	5'-6"	V1	Med. Wall
8	#4	7'-9"	V2	Wing
4	#4	5'-9"	V3	"
Superstructure Median				
28	#4	22'-9"	C20	Median
14	#4	36'-0"	C21	"
30	#5	22'-9"	C22	"
30	#5	36'-0"	C23	"
162	#4	10'-6"	C24	"
350	#5	10'-9"	C25	"
Substructure Int. Bent 2				
12	#9	14'-9"	F21	
(18)36	#9	7'-9"	F22	
(18)36	#5	5'-6"	F23	
106	#5	3'-0"	F24	
Substructure Int. Bent 3				
12	#9	14'-9"	F21	
(18)36	#9	7'-9"	F22	
(18)36	#5	5'-6"	F23	
106	#5	3'-0"	F24	



DETAIL OF END BENT AT MEDIAN

PILE DATA

BENT NO.		1	2	3	4
Pile Type & Size		10BP42	10BP42	10BP42	10BP42
Number		12	30	30	12
Approximate Length	Ft.	60	37	32	52
Design Bearing	Tons	43	49	49	43
Hammer Energy Required	Ft. Lbs.	9600	11500	11500	9600

Minimum energy requirement of hammer based on plan length and design bearing value of piles. Increase by the factor (W+w)/2W when the weight of the Ram (W) is less than the weight of the pile (w).
All pile shall be driven to practical refusal.

BRIDGE OVER COUNTY ROAD

STATE ROAD: INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1(12) (RTE I-29) **STA.** 479+03.25

PLATTE **COUNTY**

A-1746

512

No.	Revised
30.3	Dec. 1964
June 1961	

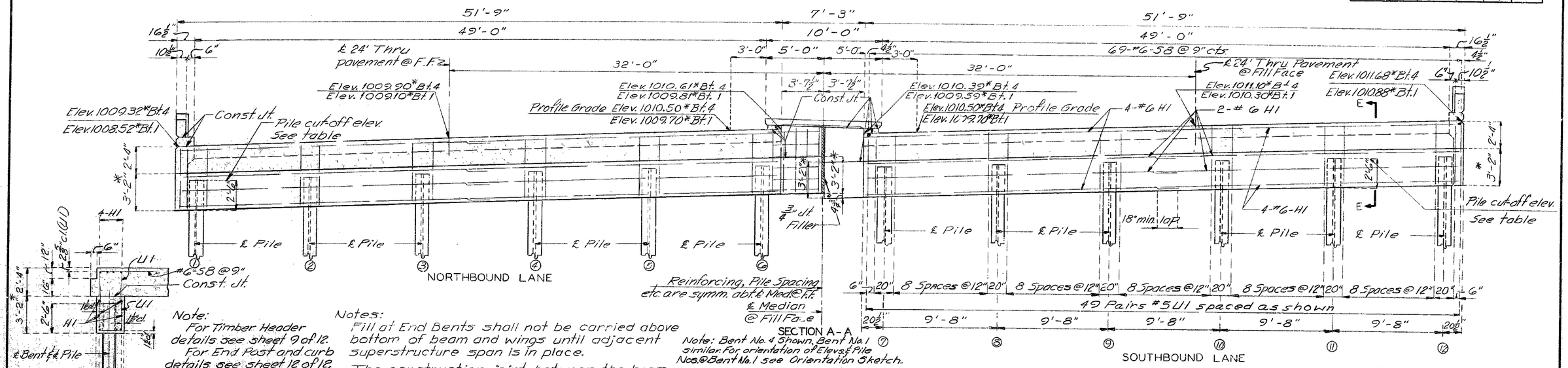
DETAILED April 1967 BY H.L.W.

CHECKED July 1967 BY B.F.F.

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 99		

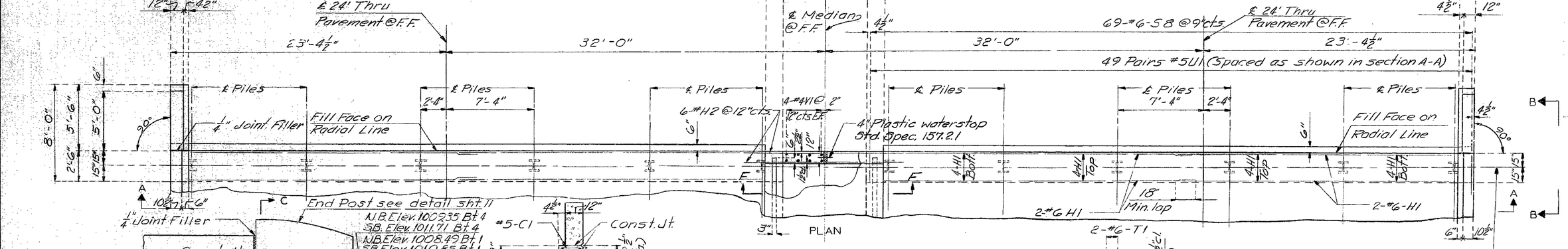


Note:
For Timber Header details see sheet 9 of 12.
For End Post and curb details see sheet 12 of 12.
For Median details see sheet 12 of 12.
For Section F-F see sheet 4 of 12.

Notes:
Fill at End Bents shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.
The construction joint between the beam and the bottom surface of the slab is parallel to the top surface of the roadway slab.
Elevations & dimensions marked (*) are taken at Fill Face.

Note: Bent No. 4 Shown, Bent No. 1 similar. For orientation of Elevs. & Pile Nos. @ Bent No. 1 see Orientation Sketch.

Pile Cut-Off Elev.												
	North Bound Lane						South Bound Lane					
NO.	1	2	3	4	5	6	7	8	9	10	11	12
Bt. 4	1005.56	1005.80	1006.04	1006.28	1006.53	1006.77	1006.65	1006.89	1007.11	1007.36	1007.60	1007.84
Bt. 1	1006.36	1006.44	1006.68	1007.08	1007.33	1007.57	1007.43	1007.67	1007.91	1008.16	1008.40	1008.64



BRIDGE OVER COUNTY ROAD
STATE ROAD: INTERSTATE ROUTE 29
ABOUT 9 MILES NORTH OF PARKVILLE
PROJECT NO. I-29-1 (12) (RTE I-29) **STA.** 479+03.25
PLATTE **COUNTY**

DETAILED April 1967 BY H.L.W.
CHECKED July 1967 BY J.E.R.

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

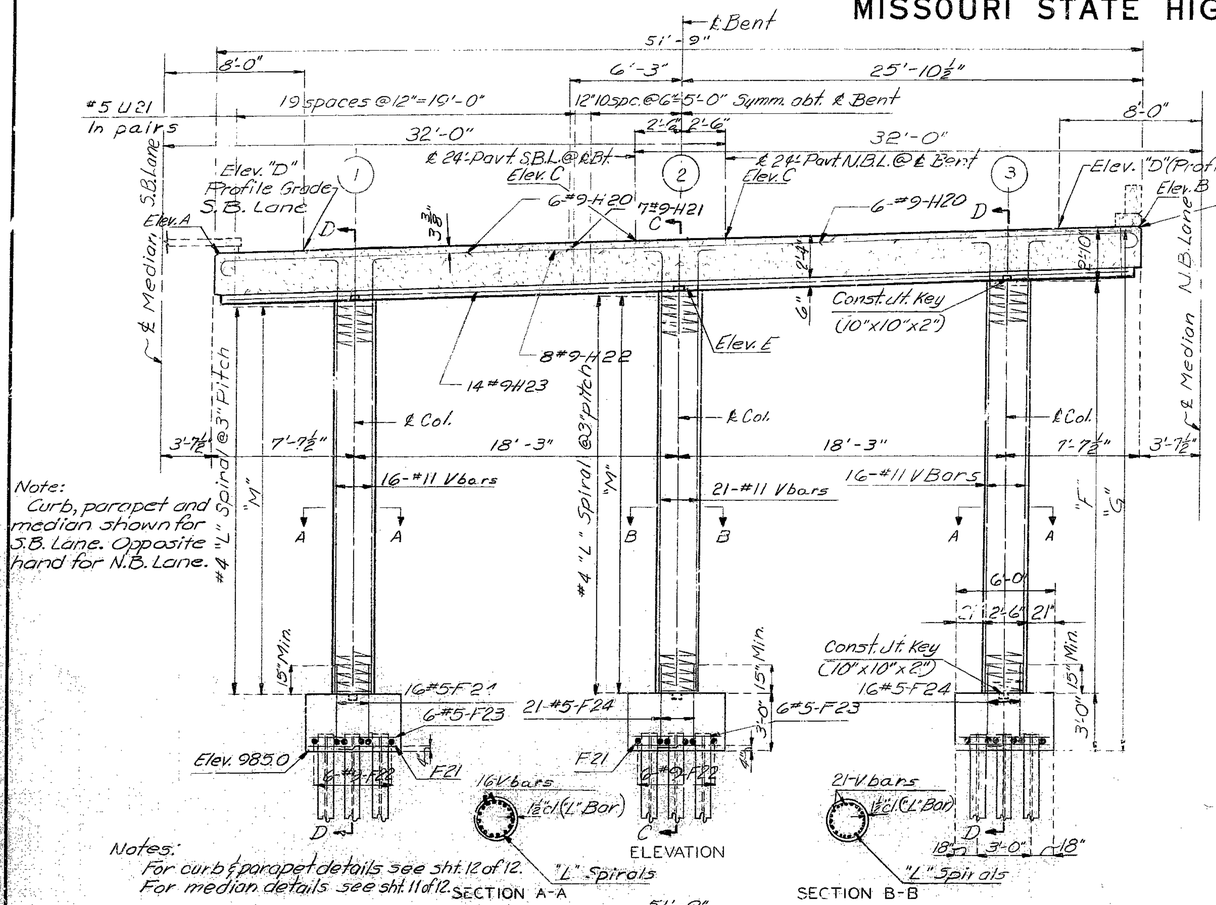
Sheet No. 5 of 12.

A-1746

5/3

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	100	



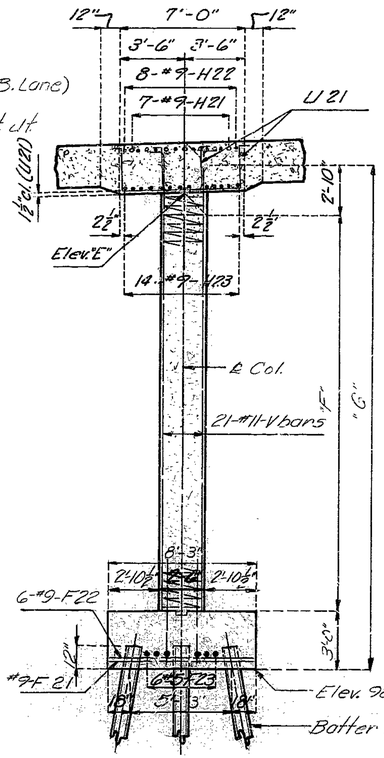
SECTION A-A

SECTION B-B

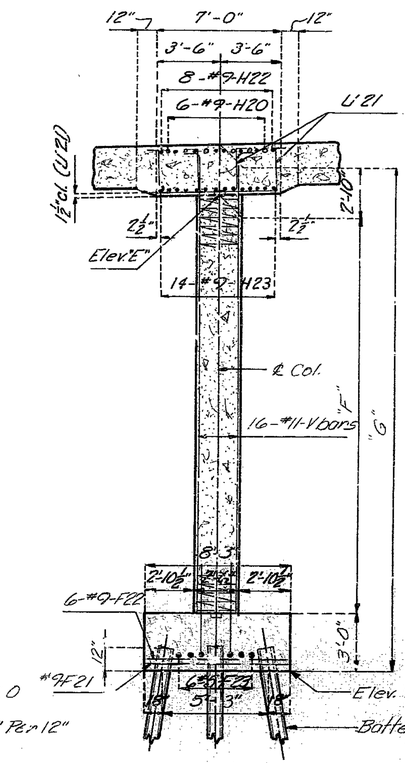
ELEVATION

Notes:
For curb & parapet details see sht. 12 of 12.
For median details see sht. 11 of 12.

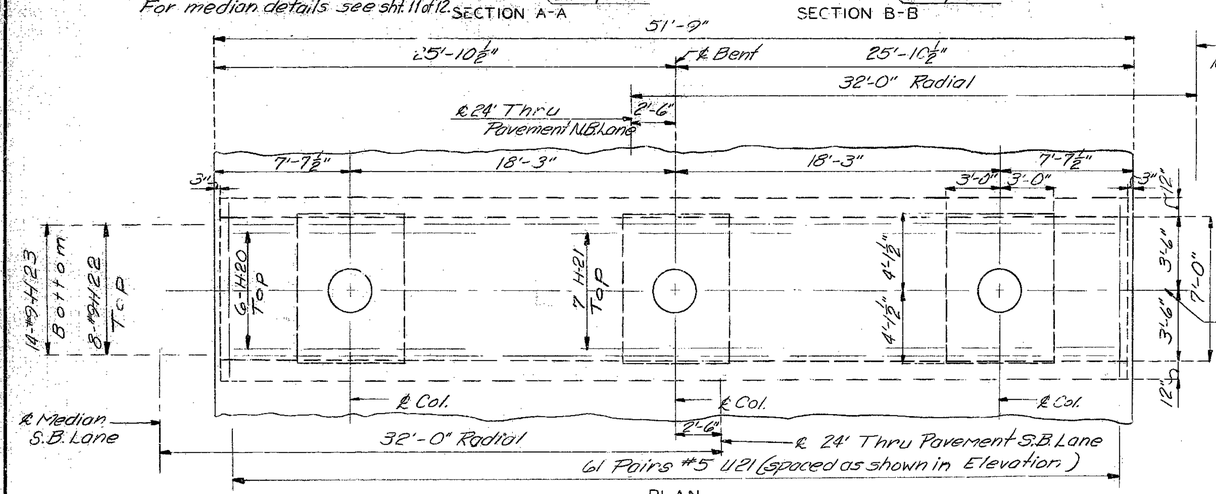
Note:
Curb, parapet and median shown for S.B. Lane. Opposite hand for N.B. Lane.



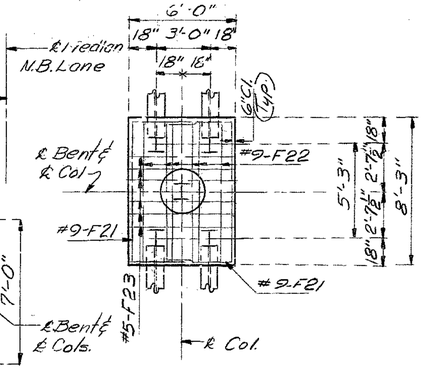
SECTION C - C



SECTION D - D



PLAN



PLAN OF FOOTING

TABLE OF VARIABLES												
LANE	SOUTH BOUND						NORTH BOUND					
BENT	2			3			2			3		
COL	1	2	3	1	2	3	1	2	3	1	2	3
ELEV. "A"	1009.82			1010.17			1008.74			1009.10		
ELEV. "B"	1011.11			1011.46			1010.03			1010.39		
ELEV. "C"	1010.53			1010.88			1009.32			1009.68		
ELEV. "D"	1009.92			1010.28			1009.92			1010.28		
ELEV. "E"	1007.18	1007.63	1008.09	1007.53	1007.98	1008.44	1006.10	1006.55	1007.01	1006.46	1006.91	1007.37
"F"	19'-2⅝"	19'-7½"	20'-1⅜"	19'-6⅜"	19'-11¾"	20'-5¼"	18'-1¼"	18'-6⅛"	19'-0⅛"	18'-5½"	18'-10⅜"	19'-2⅞"
"G"	25'-0⅛"	25'-5½"	25'-11⅛"	25'-4⅜"	25'-9¾"	26'-3¼"	23'-11¼"	24'-4⅝"	24'-10⅛"	24'-3⅛"	24'-8⅜"	25'-2⅛"
V BARS	V-21	V-22	V-23	V-22	V-23	V-24	V-25	V-26	V-27	V-26	V-27	V-28
"L"	R-11	R-12	R-13	R-12	R-13	R-14	R-15	R-16	R-17	R-16	R-17	R-18
"M"	19'-0"	19'-6"	20'-0"	19'-6"	20'-0"	20'-3"	18'-0"	18'-6"	19'-0"	18'-6"	19'-0"	19'-6"

Note: Elevations are at ℄ Bent

BRIDGE OVER COUNTY ROAD

STATE ROAD INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1(12) (RTE. I-29) **STA.** 479+03.25

PLATTE **COUNTY**

DETAILS OF INTERMEDIATE BENTS 2 & 3

DETAILED April 1967 BY H. L. W.
CHECKED July 1967 BY J. E. R.

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

Sheet No. 6 of 12.

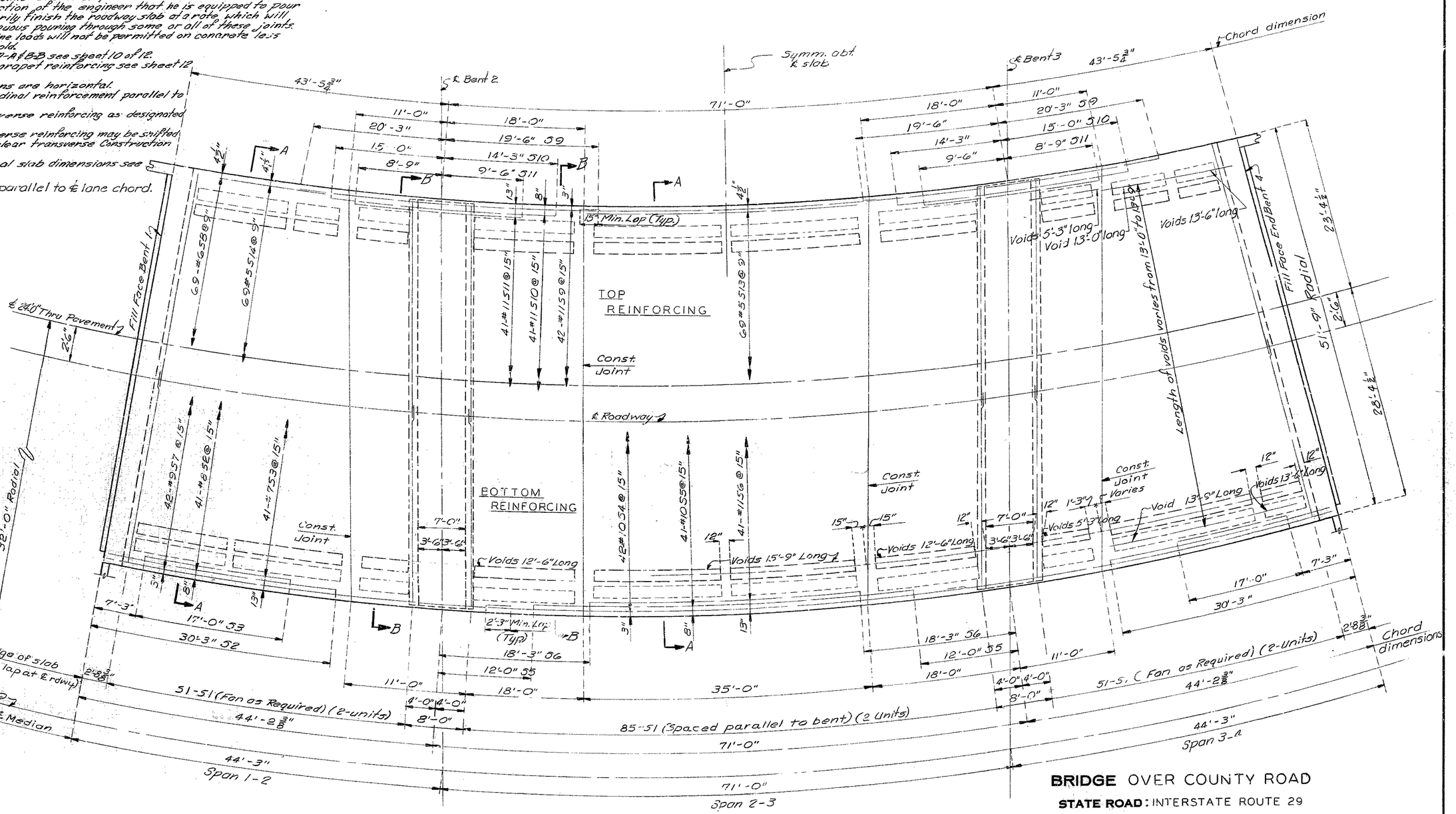
A-1746

514

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.		19	101	

Notes:
The contractor shall use an approved oscillating screed type, self-propelled mechanical finishing machine and shall pour and satisfactorily finish the roadway slab at a rate of not less than 67 cubic yards per hour. He shall observe the transverse construction joints shown on plans unless he can demonstrate to the satisfaction of the engineer that he is equipped to pour and satisfactorily finish the roadway slab at a rate which will permit a continuous pouring through some or all of these joints. Finishing machine loads will not be permitted on concrete less than 48 hours old.
For Section A-A & B-B see sheet 10 of 12.
For curb & parapet reinforcing see sheet 12 of 12.
All dimensions are horizontal.
Place longitudinal reinforcement parallel to ℄ lane chord.
Place transverse reinforcing as designated on plan.
Radial transverse reinforcing may be shifted as required to clear transverse Construction Joints.
For additional slab dimensions see sheet 9 of 12.
Place voids parallel to ℄ lane chord.



PART PLAN OF SLAB NORTHBOUND LANE

BRIDGE OVER COUNTY ROAD
STATE ROAD: INTERSTATE ROUTE 29
ABOUT 9 MILES NORTH OF PARKVILLE
PROJECT NO. I-29-1(12) (RTE I-29) **STA.** 479+03.25
PLATTE **COUNTY**

DETAILED April 1967 BY HLW
CHECKED July 1967 BY JER.

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

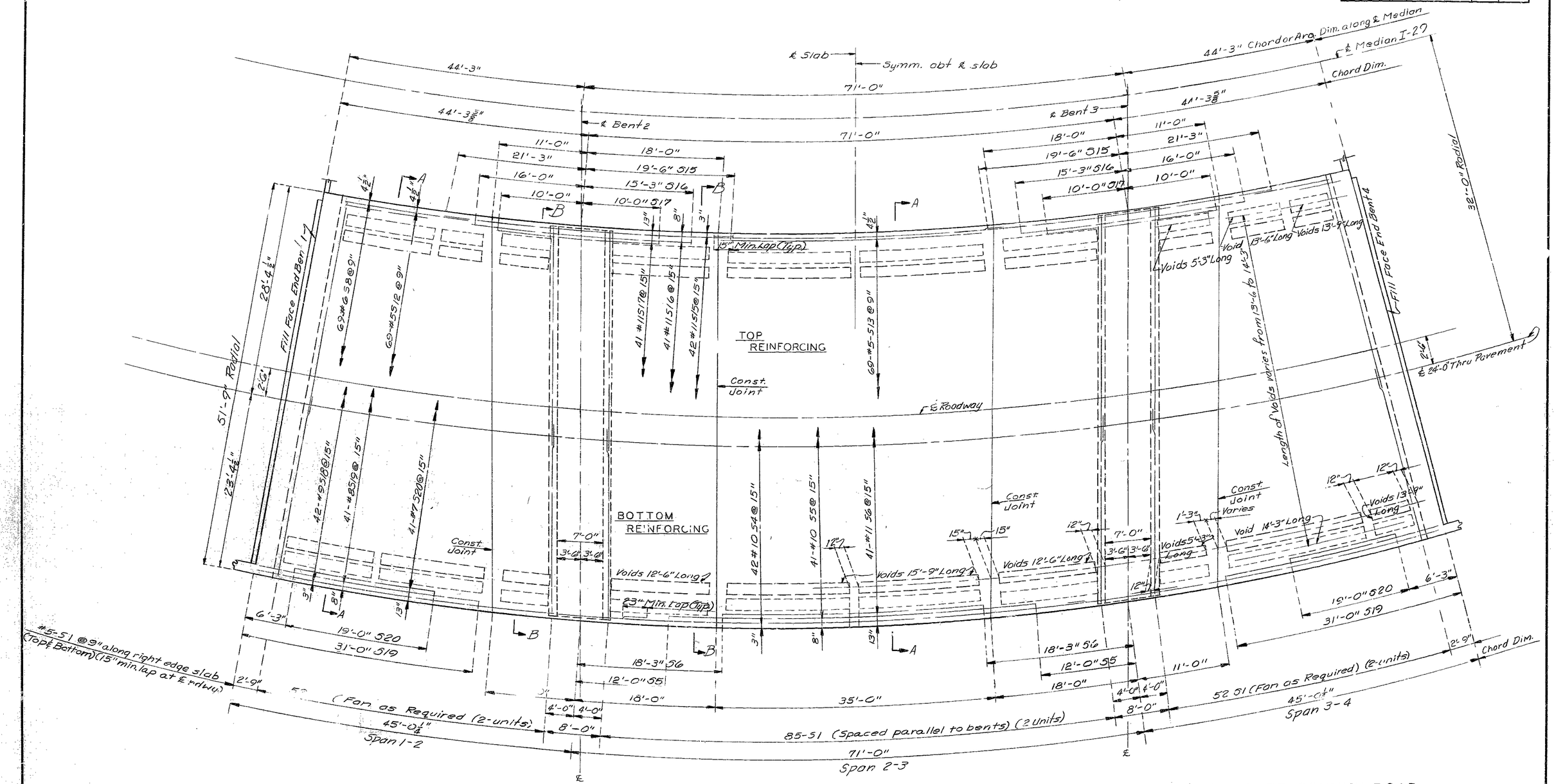
Sheet No. 7 of 12.

A-1746

515

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	102	



516

Note:
See sheet 7 of 12 for slab notes.

PART PLAN OF SLAB SOUTHBOUND LANE

BRIDGE OVER COUNTY ROAD

STATE ROAD: INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1(12) (RTE I-29) **STA.** 479+03.25

PLATTE **COUNTY**

DETAILED April 1967 BY H.L.W.

CHECKED July 1967 BY J.E.R.

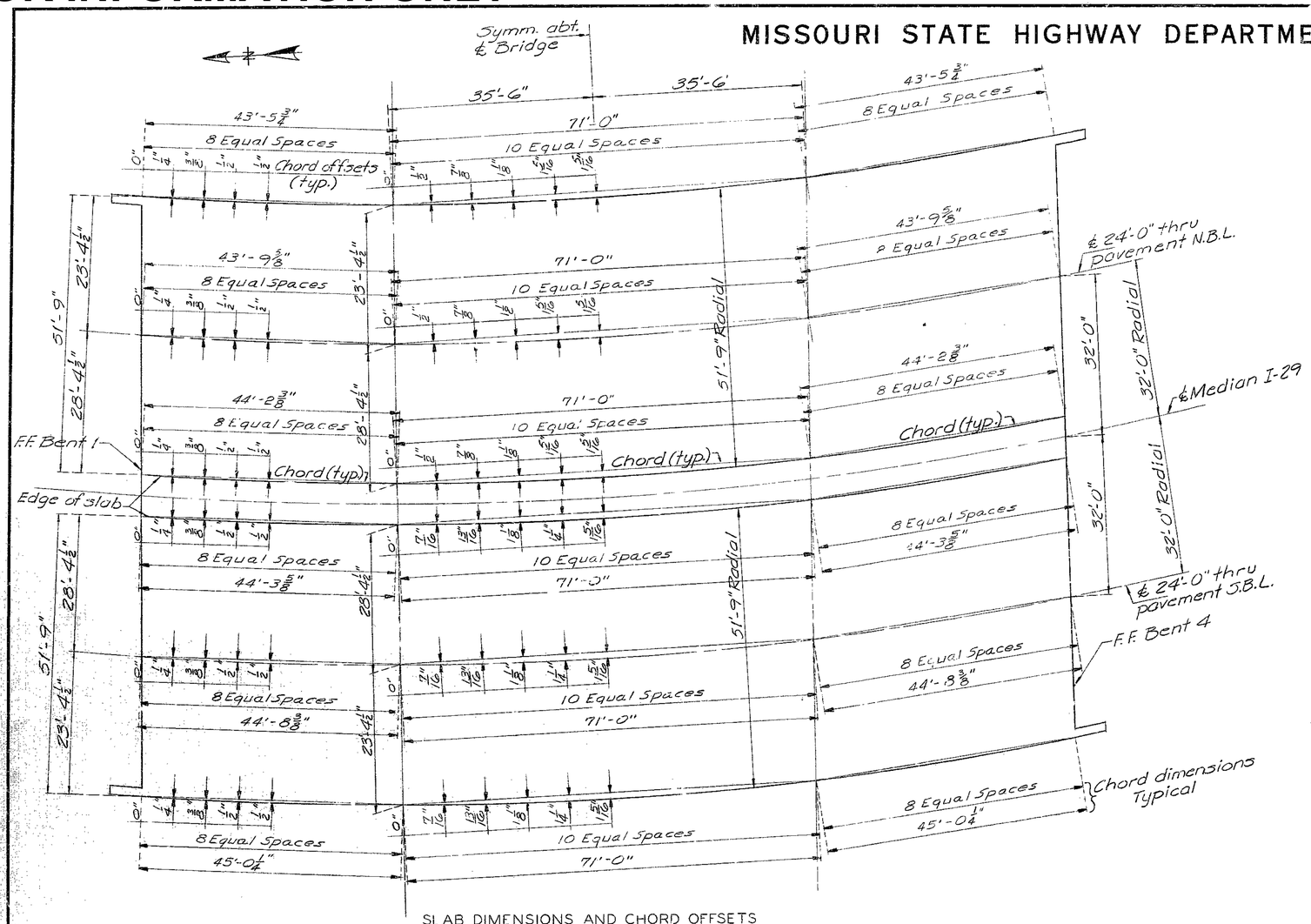
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 8 of 12.

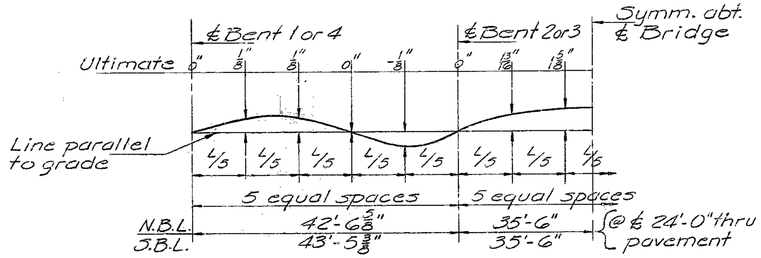
A-1746

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	103	

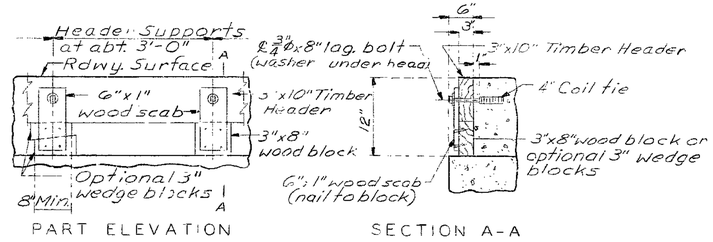


SLAB DIMENSIONS AND CHORD OFFSETS



THEORETICAL CAMBER DIAGRAM

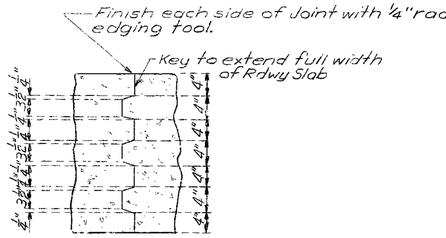
Note: The contractor shall camber forms to allow for ultimate dead load deflection.



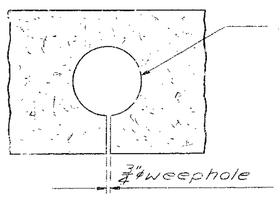
PART ELEVATION SECTION A-A

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

DETAIL OF TIMBER HEADER



DETAIL OF SLAB CONSTRUCTION JOINT KEY



Note:
One 3/4" ϕ weephole shall be provided near each end of each void. Weepholes shall be placed in straight lines parallel to bents.

DETAIL OF WEEPHOLE IN VOIDS

BRIDGE OVER COUNTY ROAD
STATE ROAD: INTERSTATE ROUTE 29
ABOUT 9 MILES NORTH OF PARKVILLE
PROJECT NO. I-29-1 (12) (RTE I-29) **STA.** 479+03.25
PLATTE **COUNTY**

A-1746

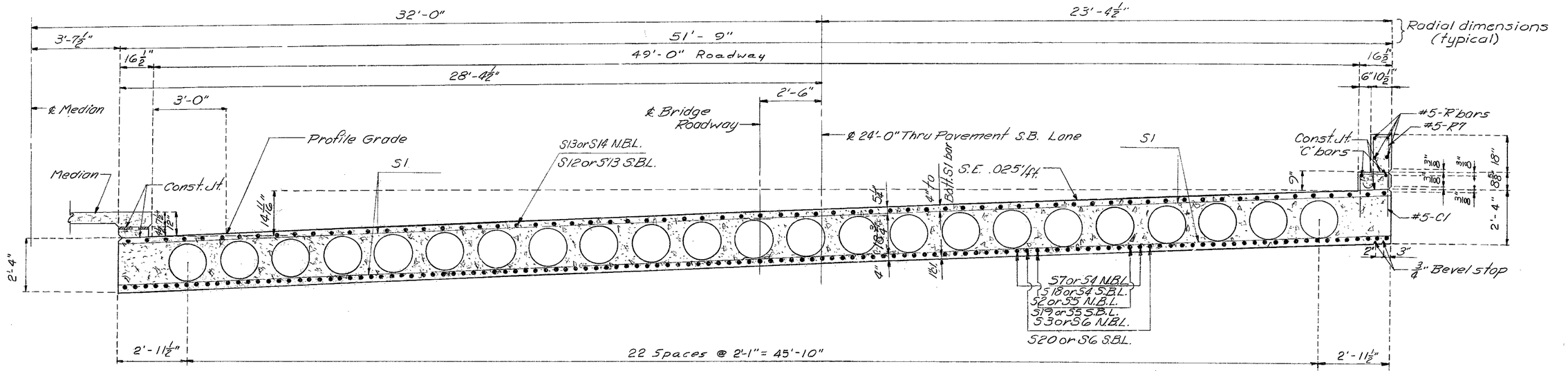
517

DETAILED APRIL 1967 BY H.L.W.
CHECKED JULY 1967 BY B.F.F.

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

MISSOURI STATE HIGHWAY DEPARTMENT

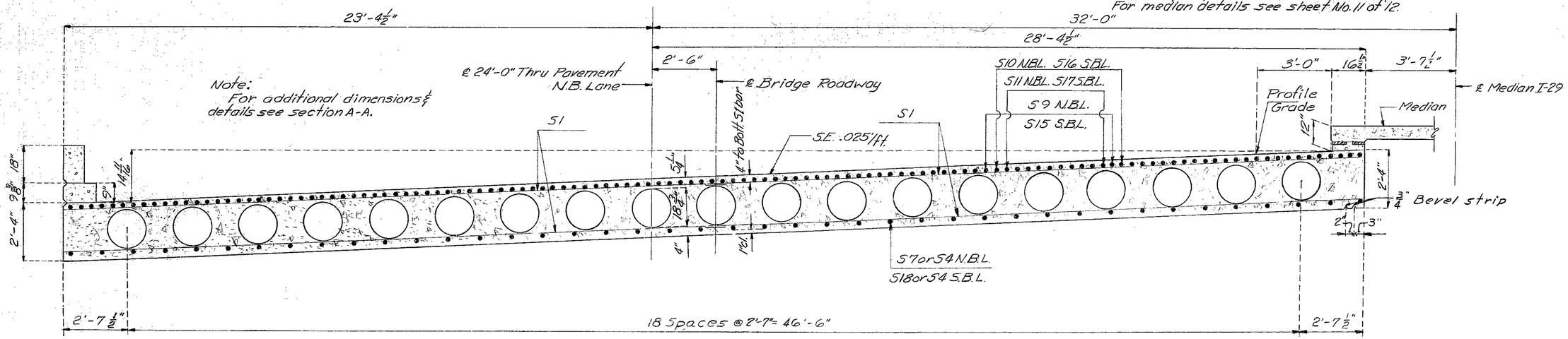
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	104	



SECTION A-A

Note:
Section shown for S.B. Lane
N.B. Lane similar.

Notes:
Fiber tubes for producing voids shall have an outside diameter of 18.7" and a wall thickness of .30" and shall be anchored to joist carrying the floor form at not more than 2'-6" centers. See Special Provisions for metal tube alternate for voids.
For location of Section A-A & B-B see sheets No. 7 & No. 8 of 12.
For curb, parapet, and handrail details see sheet No. 12 of 12.
For median details see sheet No. 11 of 12.



SECTION B-B

Note:
Section shown for N.B. Lane
S.B. Lane similar.

BRIDGE OVER COUNTY ROAD
STATE ROAD: INTERSTATE ROUTE 29
ABOUT 9 MILES NORTH OF PARKVILLE
PROJECT NO. I-29-1 (12) (RTE. I-29) **STA.** 479+03.25
PLATTE **COUNTY**

DETAILED April 1967 BY H. L. W.
CHECKED July 1967 BY J. E. R.

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

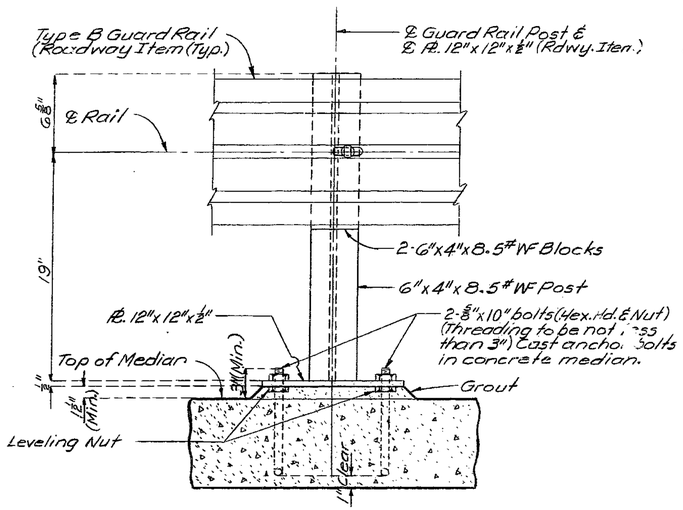
Sheet No. 10 of 12.

A-1746

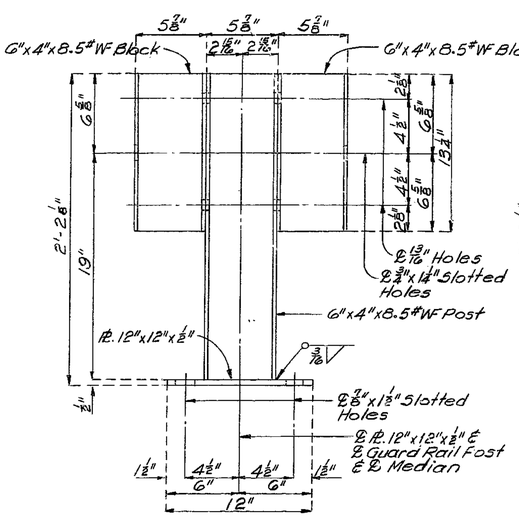
S18

MISSOURI STATE HIGHWAY DEPARTMENT

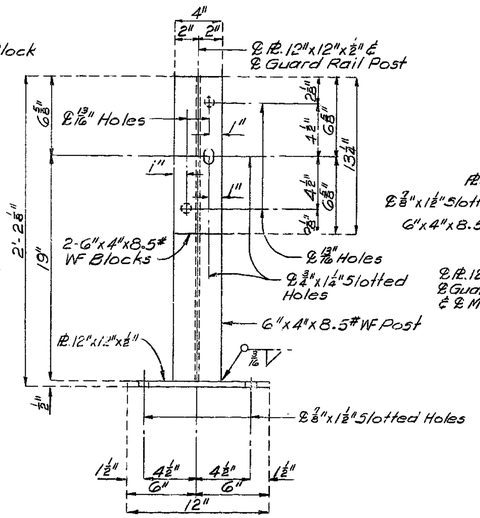
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	105	



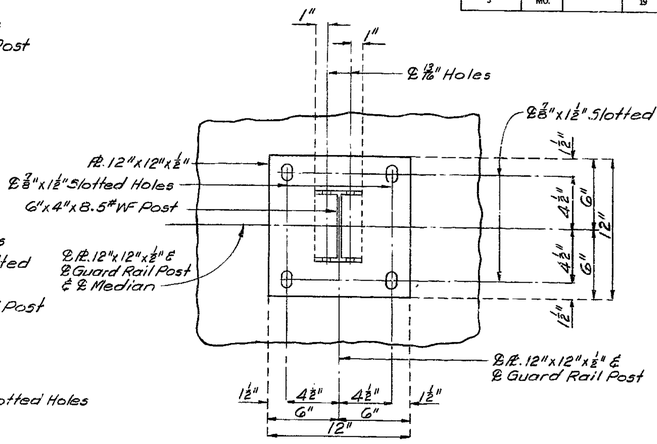
TYPICAL LONGITUDINAL SECTION



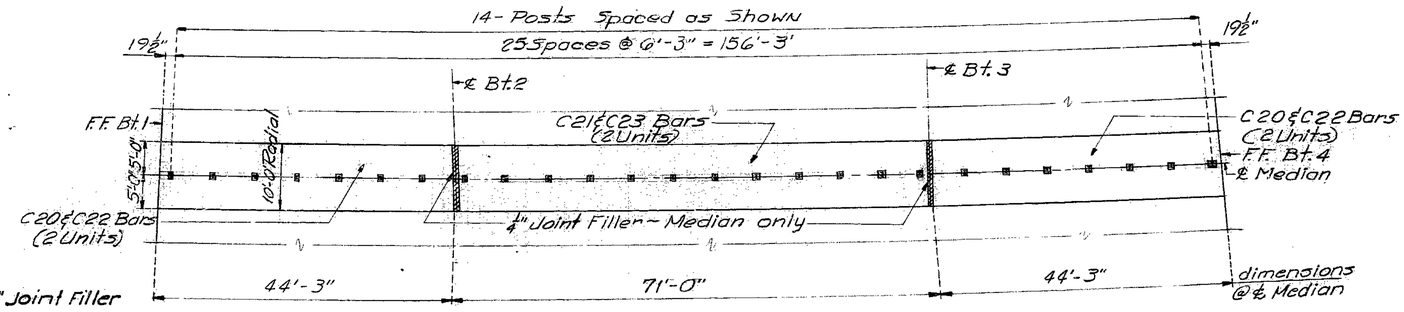
TRANSVERSE ELEVATION



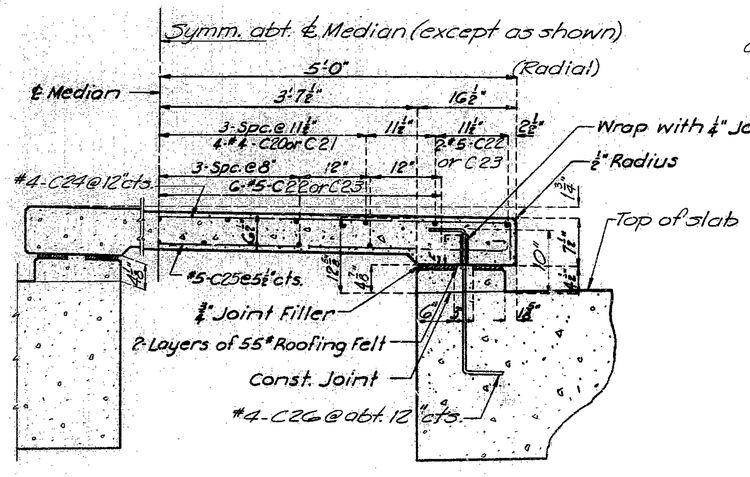
LONGITUDINAL ELEVATION



PLAN



PLAN OF MEDIAN SHOWING GUARD RAIL POST SPACING



SECTION THRU MEDIAN

GENERAL NOTES:

All other details not shown shall comply with Std. 86.00.
Grout shall comply with Std. Specs. 1086.1.5.
Tightening of nuts on bolts connecting rail members and post shall be to the extent that longitudinal movement of the bolt in slotted holes is possible. After tightening in this manner the top of the bolt shall be deformed in such a way as to prevent loss of nut.
Guard rail posts shall be set normal to grade.
Cost of furnishing and placing anchor bolts for guard rail shall be included in price bid for other items.
Type B Guardrail and Post will be furnished and paid for as a Roadway Item.

BRIDGE OVER COUNTY ROAD

STATE ROAD: INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1 (12) (RTE I-29) **STA.** 479+03.25

PLATTE **COUNTY**

A-1746

DETAILED MARCH 1967 BY BHF
CHECKED MARCH 1967 BY JER

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

Sheet No. 11 of 12.

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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	10/6	

GENERAL HANDRAIL NOTES:

All handrail posts shall be set normal to grade.

Aluminum tube handrail shall be bent to conform to vertical and horizontal alignment of parapet.

Aluminum washer shims between top of parapet and post base may be used for adjusting handrail alignment. Maximum thickness of shims to be 1/8". Where more tilting of post is required for proper alignment, concrete bearing areas shall be ground down.

All parts of handrail, except anchor bolts, nuts, washers, and set screws are to be of aluminum material.

The contract unit price per linear foot of "Bridge Rail" shall include furnishing and erecting the handrail complete with anchor bolts, shims and insulating compound.

All fillets 1/4" except as noted.

All drafts 3° except as noted.

Pipe rail to be fabricated in a minimum of 2 panel lengths.

Omit set screw on side adjacent to filled Joint in parapet and curb at all expansion posts.

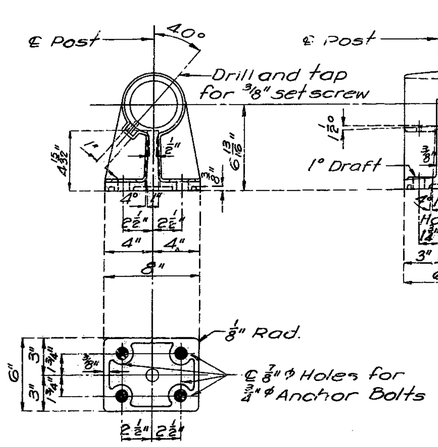
Top of curbs and parapets to be built parallel to grade with curb and parapet Joints (except at end posts) normal to grade.

Concrete end posts to be vertical.

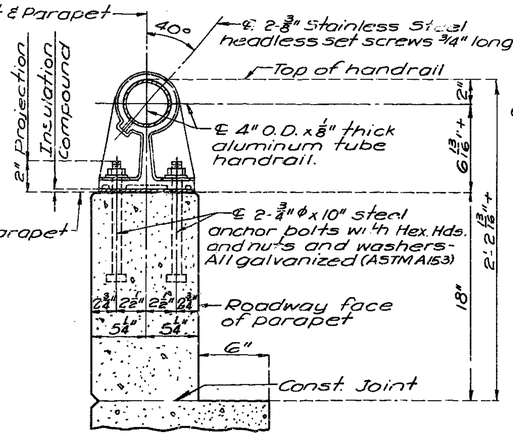
All exposed edges of end posts shall have 1/2" bevel. All exposed edges of curbs and parapets shall have 1/2" radius or 3/8" bevel unless otherwise noted.

If the contractor desires, he may use drive fit cast aluminum end caps in lieu of welded aluminum closure plates.

Integrally cast test coupons and a coat of clear lacquer specified in Std Spec. 56.2.4 and 56.3.5 respectively will not be required for these rail posts.

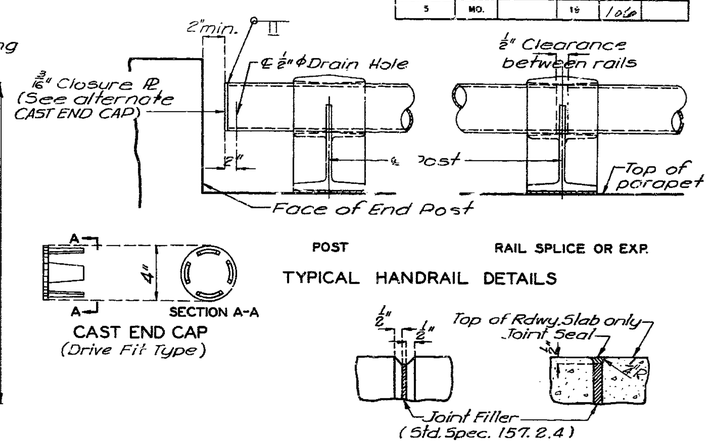


POST DETAILS



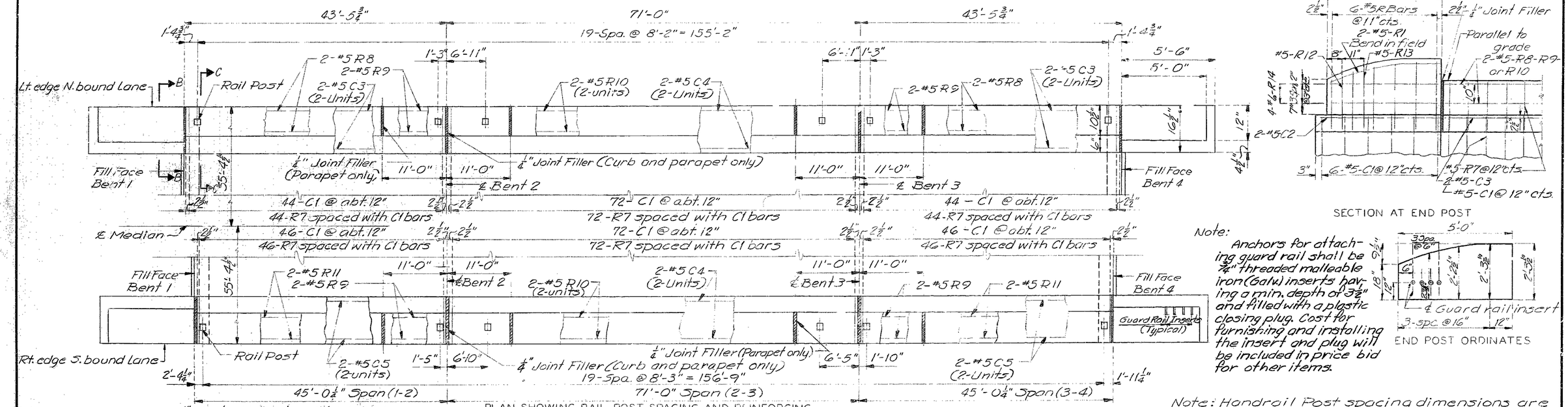
SECTION THRU HANDRAIL

SINGLE TUBE ALUMINUM RAILING



TYPICAL HANDRAIL DETAILS

FILLED JOINT DETAILS

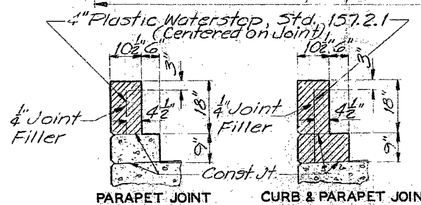


PLAN SHOWING RAIL POST SPACING AND REINFORCING

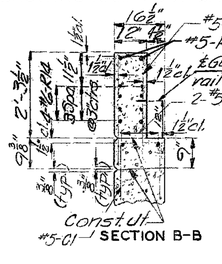
SECTION AT END POST

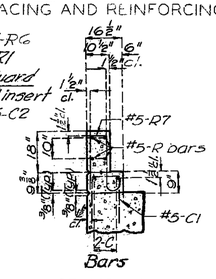
Note: Anchors for attaching guard rail shall be 3/4" threaded malleable iron (Galv.) inserts having a min. depth of 3 1/2" and filled with a plastic closing plug. Cost for furnishing and installing the insert and plug will be included in price bid for other items.

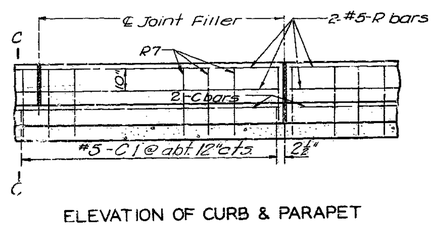
Note: Handrail Post spacing dimensions are parallel to grade and along ℄ rail at top of parapet. Other dimensions are along outside edge of slab parallel to grade at top of slab.
Note: For horizontal curb and parapet bars use a minimum lap of 15" for #5 and 18" for #6



Note: Plastic waterstop shall be placed in all parapet and curb filled joints. Left side of structure only.
Cost of plastic waterstop complete in place to be included in unit price bid for concrete.







BRIDGE OVER COUNTY ROAD

STATE ROAD INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. I-29-1 (12) (RTE I-29) **STA.** 479+03.25

PLATTE **COUNTY**

A-1746

DETAILS OF PLASTIC WATERSTOP Note: This drawing is not to scale. Follow dimensions.

DETAILED APRIL 1967 BY H.L.W.
CHECKED JULY 1967 BY B.F.

STD. 1.5.2 | REVISED JAN. 1967 | MAR. 1964

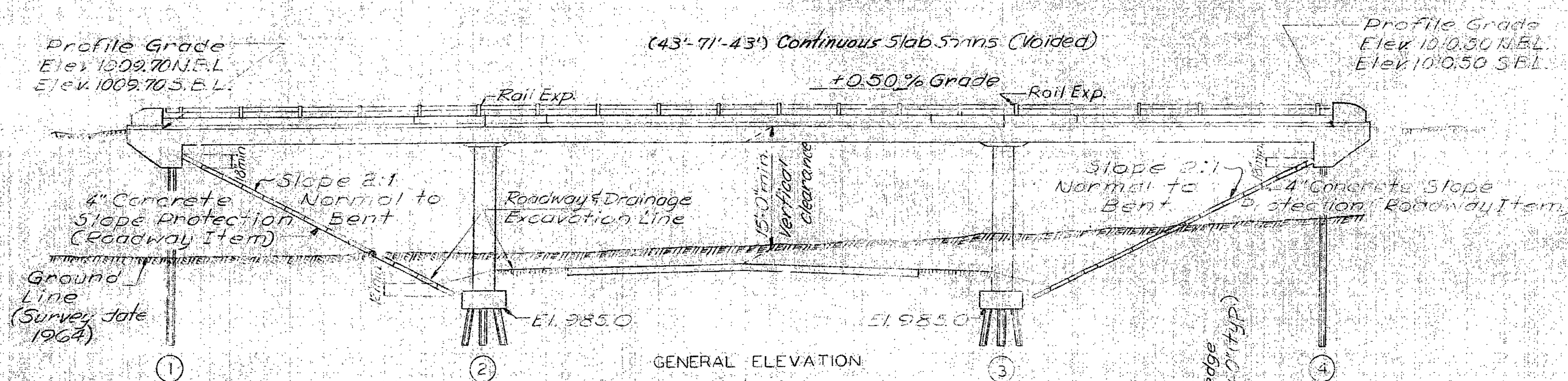
Sheet No. 12 of 12.

520

MISSOURI STATE HIGHWAY DEPARTMENT

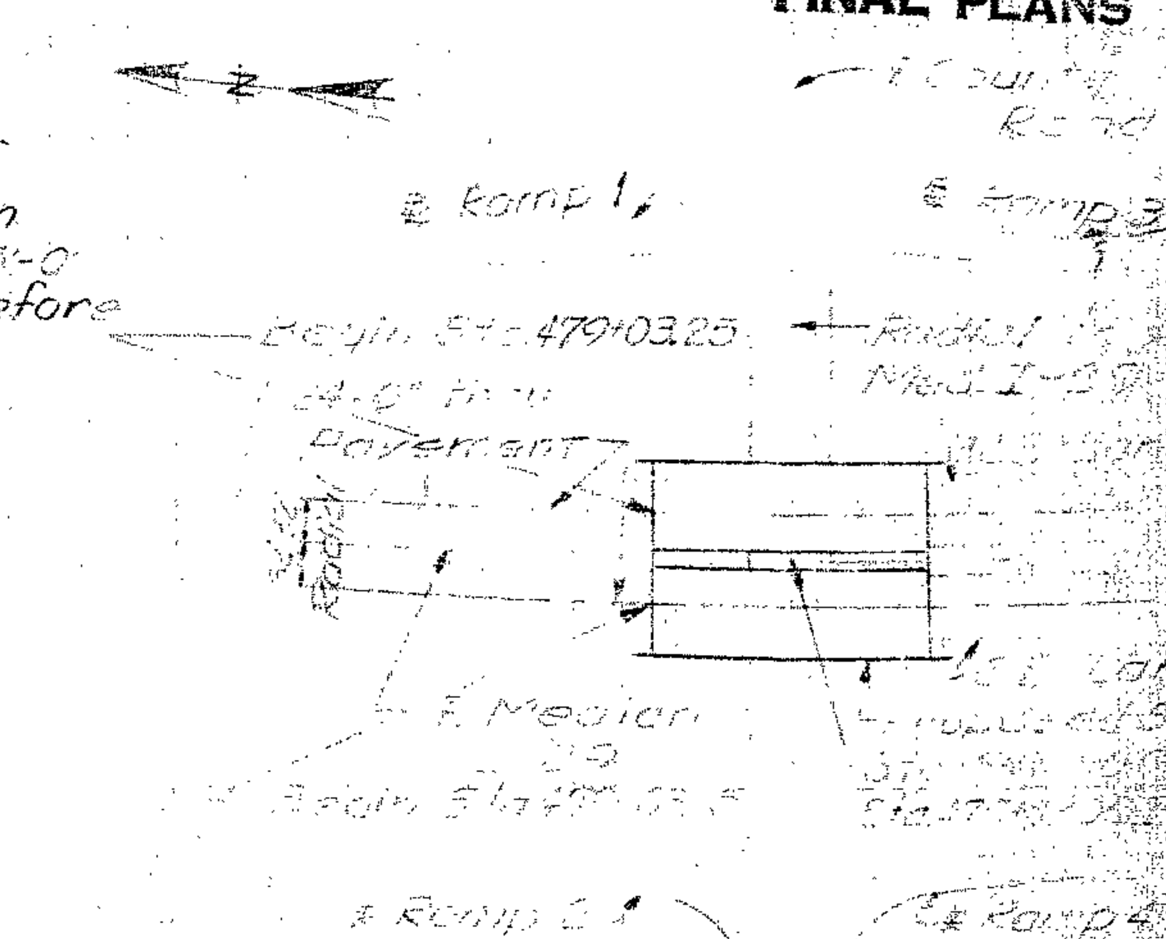
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	95	

FINAL PLANS

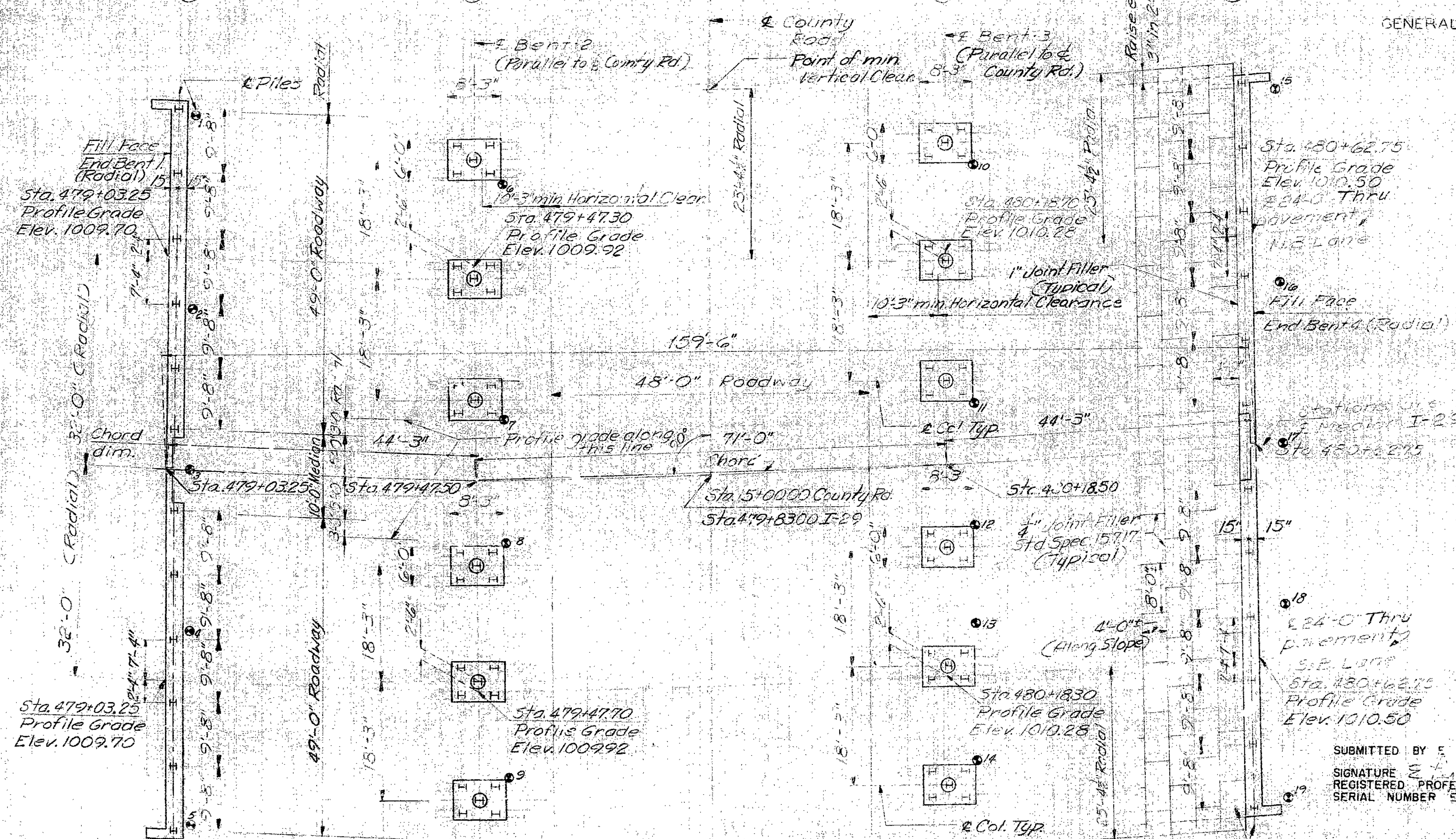


GENERAL ELEVATION

Note:
Compacted roadway fill (full roadway width), placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of End Bents 1 & 4 before steel piles driven.



GENERAL NOTES:
Design Specifications:
A.A.S.H.O.-1965
Design Loading:
H.S.20-44
15#/sq.ft. Future Wearing Surface
Modified 24,000# Tandem Axle
Earth 120#, Equivalent Fluid Pressure 30#
Design Unit Stresses:
Class B Concrete (Substructure) f'c = 1,200 psi
Class B1 Concrete (Superstructure) f'c = 1,600 psi
Reinforcing Steel fs = 20,000 psi
Steel pile (A.S.T.M. A36-66) fs = 9,000 psi
Superstructure deck surface sealed



PLAN

Note:
For Pile Data see sheet 4 of 12.
For Substructure layout see sheet 2 of 12.

Note: For Boring Data see sheet No. 3 of 12.
"●" Indicates location of boring.

QUANTITIES			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Class 1 Excavation for Structures Cu.Yd.	255	–	255
Steel Piles in Place (10") Lin.Ft.	3028	–	3028
Class B Concrete Cu.Yd.	66	–	66
Class B1 Concrete Cu.Yd.	–	1262.6	1262.6
Reinforcing Steel Lb.	4180	315,590	319,770
Bridge Rail (Single Tube Type) Lin.Ft.	–	318	318
10" Steel Pile @ 50% of Bid Price	45		45

Note:
All concrete and reinforcement above footings in intermediate bents is included in superstructure quantities.
No payment for excavation allowed at End Bents No. 1 and 4.

B.M. ~ PK nail Top of right curb E.F. Bt #1 ~ Elev. 1011.62
R.R. spike power pole 275'± Rt. Ramp 4 ~ Elev. 992.19

SUBMITTED BY E. LYN CROWLEY
SIGNATURE E. Lyn Crowley
REGISTERED PROFESSIONAL ENGINEER
SERIAL NUMBER E-5993

BRIDGE OVER COUNTY ROAD

STATE ROAD INTERSTATE ROUTE 29
ABOUT 9 MILES NORTH OF PARKVILLE
PROJECT NO. I-29-1(12) (RTE I-29) **STA.** 479+03.25
PLATTE **COUNTY**

SUBMITTED BY W. R. Carney, BRIDGE ENGINEER DATE Feb. 13, 1968
APPROVED BY M. J. Snider, CHIEF ENGINEER DATE Feb. 13, 1968

STD. 54.00
A-1746

CROWLEY, WADE, MILSTEAD, INC.
ENGINEERS - ARCHITECTS
INDEPENDENCE, MISSOURI

Designed	Checked
Detailed	Checked
Quantities H.H. Bunten 7-67	Checked B.F. Foster 8-67

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

Sheet No. 1A of 1

FINAL PLANS

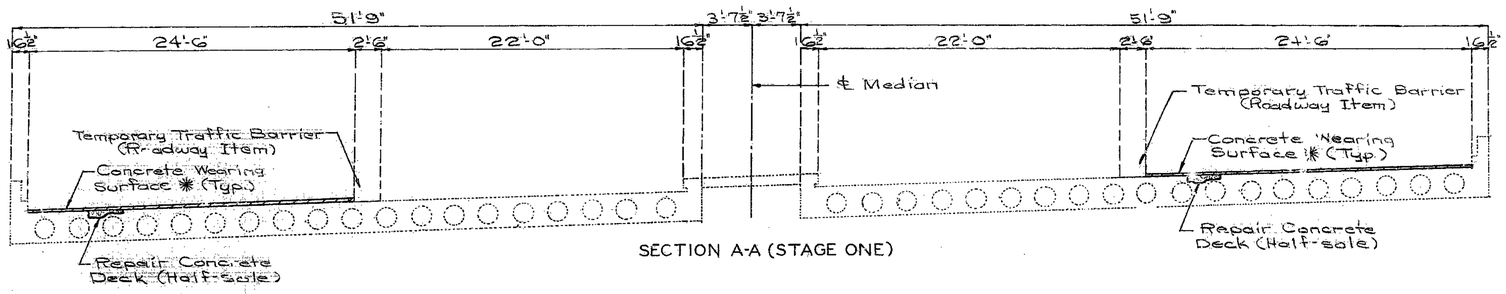
FOR INFORMATION ONLY

A17463, Sht. 19

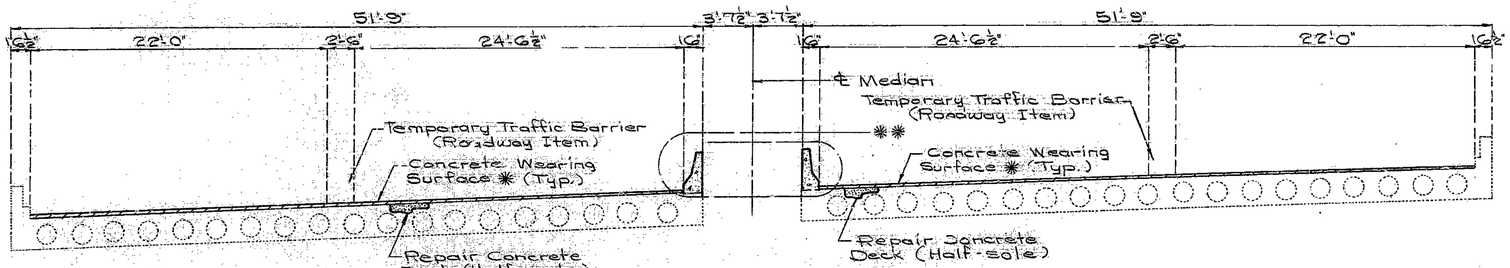
AF 33910A

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO
MO.		13
SEC. 26	TWP. 52N RGE. 34W	

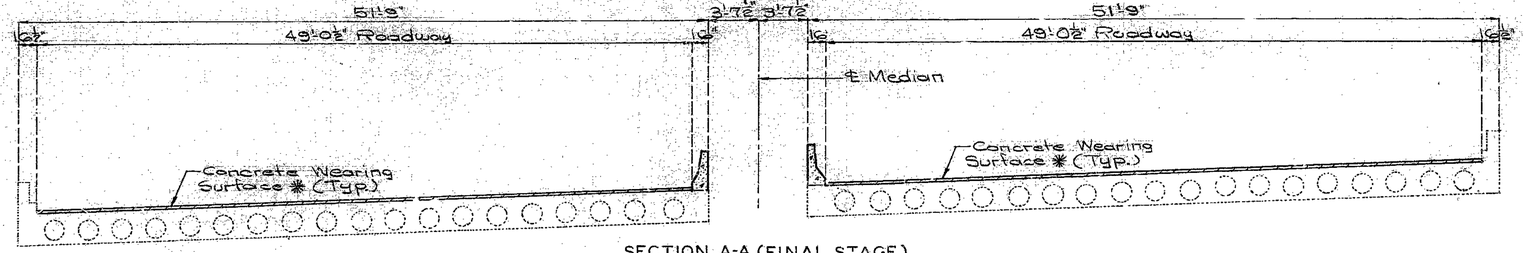


SECTION A-A (STAGE ONE)

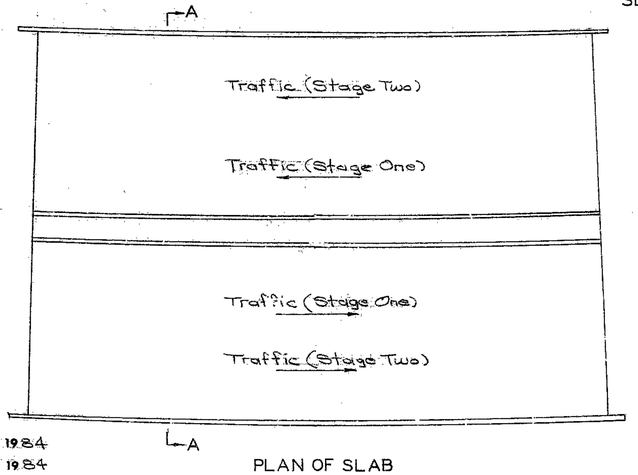


SECTION A-A (STAGE TWO)

✱✱ Remove existing median cover and install safety barrier curbs.



SECTION A-A (FINAL STAGE)



PLAN OF SLAB

ESTIMATED QUANTITIE		
ITEM		TOTAL
Special Work	Lump Sum	1
Safety Barrier Curb	Lin. Ft.	319
Repairing Concrete Deck (Half-soling)	Sq. Ft.	625
Concrete Wearing Surface ✱ ( )	Sq. Yd.	1738

✱ See Special Provisions for alternate use of concrete wearing surface. Alternate "A" 1½" (Min.) Latex Modified Concrete. Alternate "B" 2" (Min.) Low Slump Concrete.

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. 1977 and Interims thru 1982

Design Unit Stresses:

Class B1 Concrete (Superstructure) f'_c = 4,000 psi
Reinforcing Steel (Grade 60) f_y = 60,000 psi

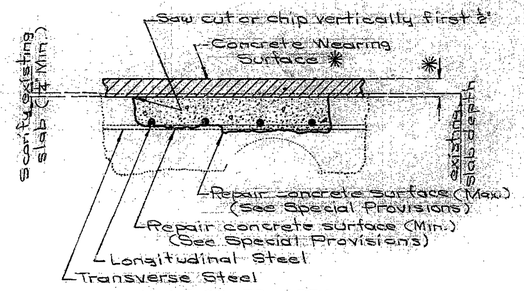
Joint Filler:
All joint filler shall meet the requirement of Std. Spec. 1057.2.4 except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.

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

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars.

Falsework over existing lanes shall be constructed with a minimum vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 28'-0" centered on existing lanes.



HALF-SOLED AREA

REPAIRS TO
BRIDGE OVER COUNTY ROAD

STATE ROAD INTERSTATE ROUTE 29

ABOUT 9 MILES NORTH OF PARKVILLE

PROJECT NO. IR-29-1(80) **STA.** 479+03.25±

JOB NO. 4-1029-137C **RTE.** I-29

PLATTE **COUNTY**

DATE December 17, 1984

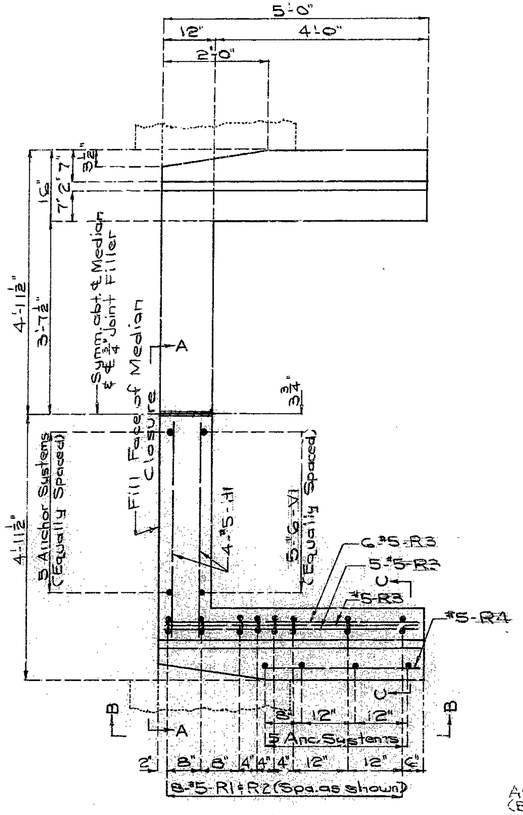
STD.
STD.
A-1746R

DESIGNED Nov. 1984
DETAILED Nov. 1984
CHECKED Nov. 1984

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

58

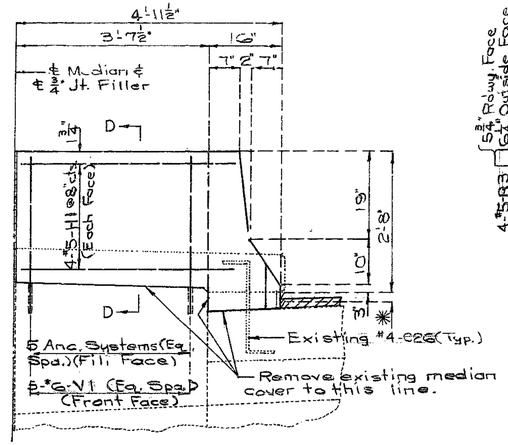
STATE	PROJ NO	SHEET NO.
MO		14



PLAN

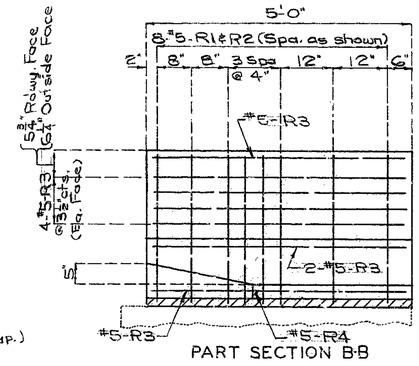
Note: Bent #1 shown Bent #4 similar.

Note: Cost of concrete and reinforcement and anchor systems required for Median Closure Wall, complete in place shall be included in unit price bid per linear foot of Safety Barrier Curb.

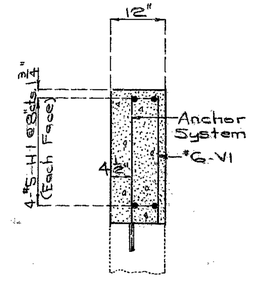


PART SECTION A-A

✳ 1¾" Latex Modified Concrete
2¼" Low Slump Concrete



PART SECTION B-B



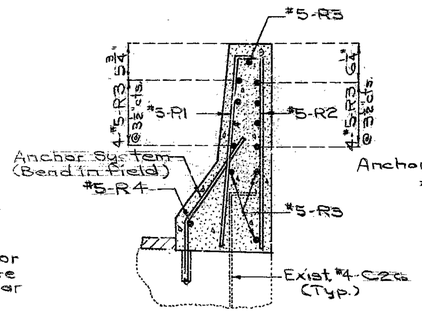
SECTION D-D

Note: The contractor shall use one of the following anchor systems for the barrier curb.

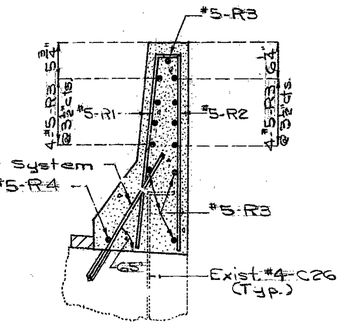
1. Molly Paraband Capsule Anchors
2. Hilti HVA Adhesive Anchors
3. U.S.E. Diamond Capsule Anchors
4. Kaligrout in Resin Bonding Anchors

These anchor systems shall be installed according to the manufacturers specifications except that an epoxy coated ¾"ø, Gr. 60 reinforcing bar 2'-6" long shall be substituted for the epoxy coated or galvanized threaded rod stud and if the Kaligrout in Resin Bonding Anchor System is used the minimum embedment in old concrete shall be 6½".

Cost of furnishing and installing the anchor system complete in place shall be included in the price bid per Lin. Ft. of Barrier Curb.

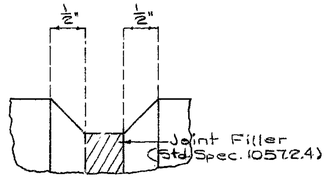


SECTION C-C

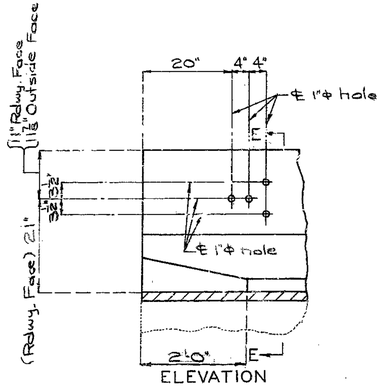


SECTION C-C
(Optional Anchoring System)

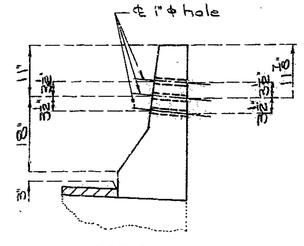
DETAILS OF MEDIAN CLOSURE WALL



FILLED JOINT DETAIL



ELEVATION



SECTION E-E

DETAILS OF GUARD RAIL ATTACHMENT

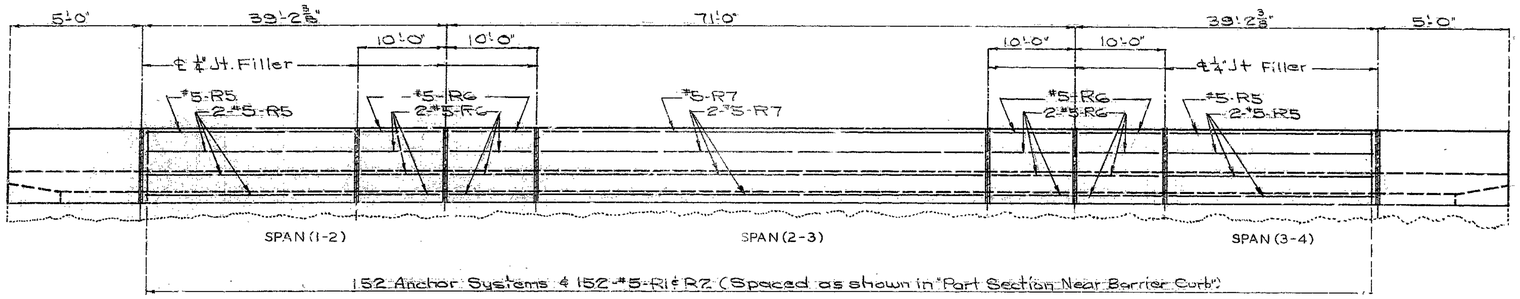
59

DETAILED Oct. 1984
CHECKED Nov. 1984

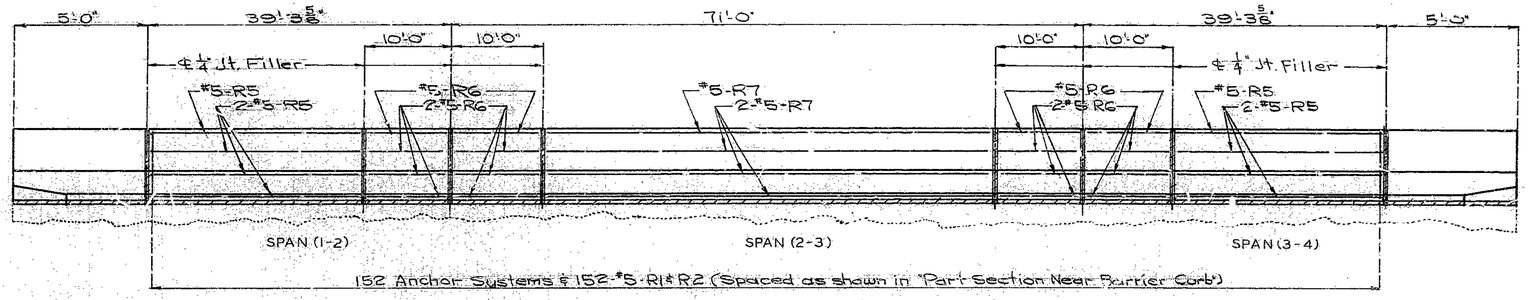
Note: This drawing is not to scale. Follow dimensions.

AP 339.08

STATE	PROJ. NO.	SHEET NO.
M.O.		15



PART ELEVATION OF RIGHT BARRIER CURB N. B. LANE



PART SECTION NEAR LEFT BARRIER CURB S.B. LANE

Note: Top of barrier curb to be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

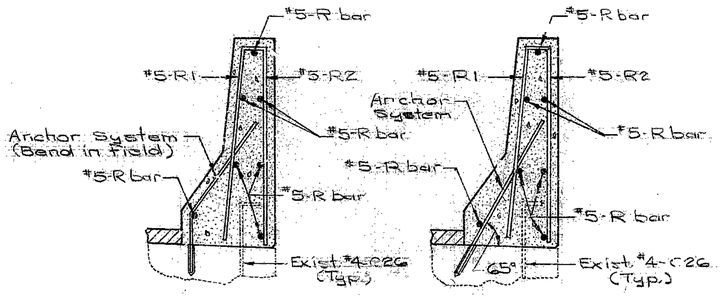
All exposed edges of barrier curb shall have ½" radius or ⅜" bevel unless otherwise noted.

When the barrier 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 safety barrier curb shall be class B1.

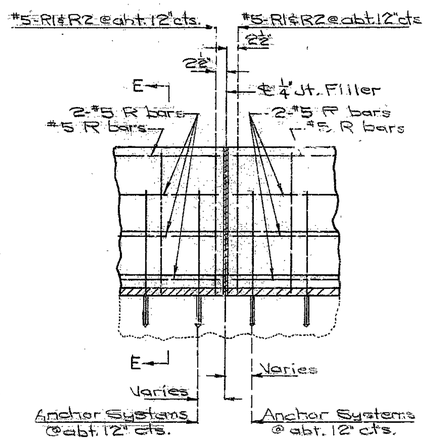
Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the top of slab from fill face of end bent to fill face of end bent.

Longitudinal dimensions shown are parallel to grade at top of slab. Longitudinal dimensions are based on original plans.

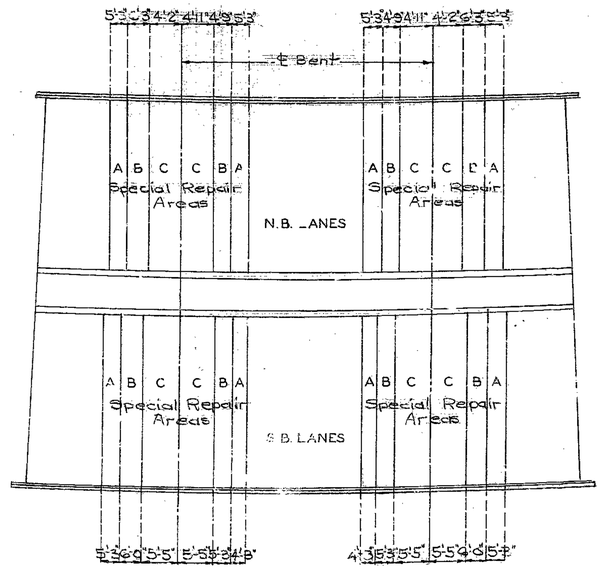


ELEVATION E-E

ELEVATION E-E
(Optional Anchoring System)



PART SECTION NEAR BARRIER CURB



PLAN OF SLAB

Note: Sequence for repair; Zone A, Zone B, then Zone C.

Zones at one bent with the same letter designation may be repaired at the same time.

Any repair in the remainder of the bridge that is within 5'-0" of Zone A shall be completed before removing old concrete in Zones A.

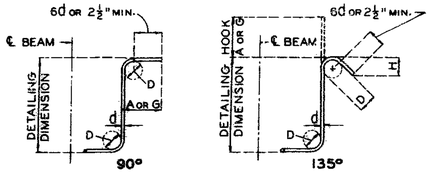
DETAILED Nov. 1984
CHECKED Nov. 1984

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

Sheet No. 3 *of* 4 .

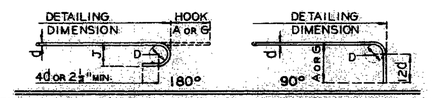
PLATTE COUNTY

A-1746R



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

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



SIZE OF 180° HOOKS (GRADE 40 KSI)

D = 5d FOR #3 THRU #11
D = 10d FOR #14 AND #18

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

D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

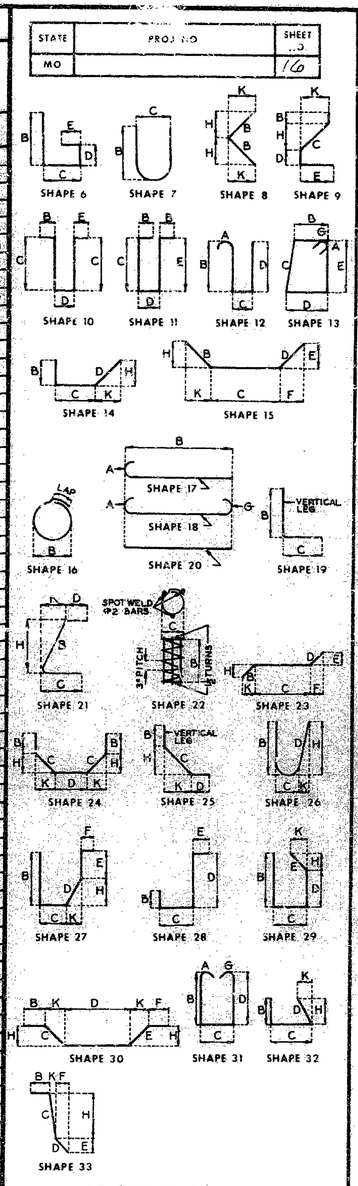
END HOOK DIMENSIONS					
BAR SIZE	180° HOOKS				90° HOOKS
	GRADE 40		GRADE 60		ALL GRADES
	A OR G	J	A OR G	J	A OR G
#3	5"	2-3/4"	5"	3"	6"
#4	6"	3-1/2"	6"	4"	8"
#5	7"	4-1/2"	7"	5"	10"
#6	8"	5-1/4"	8"	6"	12"
#7	9"	6-1/4"	10"	7"	14"
#8	10"	7"	11"	8"	16"
#9	12"	8"	15"	11-1/4"	19"
#10	13"	9"	17"	12-3/4"	22"
#11	14"	10"	19"	14-1/4"	2'-0"
#14	2'-2"	20-1/2"	2'-2"	20-1/2"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E. - EPOXY COATED REINFORCEMENT.
S - STIRRUP.
x - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

COMPLETE BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
32	5H1	MEDIAN CLOSURE	E	20					3 11.000							3 11	3 11	131
336	5R1	BARRIER CURB	E	15					2 7.625	3.500						2 11	2 10	993
336	5R2	BARRIER CURB	E	19					2 7.500	3.500				2 7.500	3.000	2 11	2 10	993
48	5R3	BARRIER CURB	E	20					4 9.000							4 9	4 9	238
4	5R4	BARRIER CURB	E	20					2 10.000							2 10	2 10	12
28	5R5	BARRIER CURB	E	20					28 11.000							28 11	28 11	844
56	5R6	BARRIER CURB	E	20					9 9.000							9 9	9 9	589
14	5R7	BARRIER CURB	E	20					50 9.000							50 9	50 9	741
20	6V1	MEDIAN CLOSURE	E	20					2 6.000							2 6	2 6	75
		END OF BAR LIST																



BENDING DIAGRAMS

NOTE: Two (2) additional RG are included in bar bill for testing.

STATE	PROJ. NO.	SHEET NO.
MO		16

STD. 90.8.5 MAY 1974 — REVISED MAY 1984

DETAILED Nov. 1984
CHECKED Nov. 1984

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

Sheet No. 4 of 4

PLATTE COUNTY

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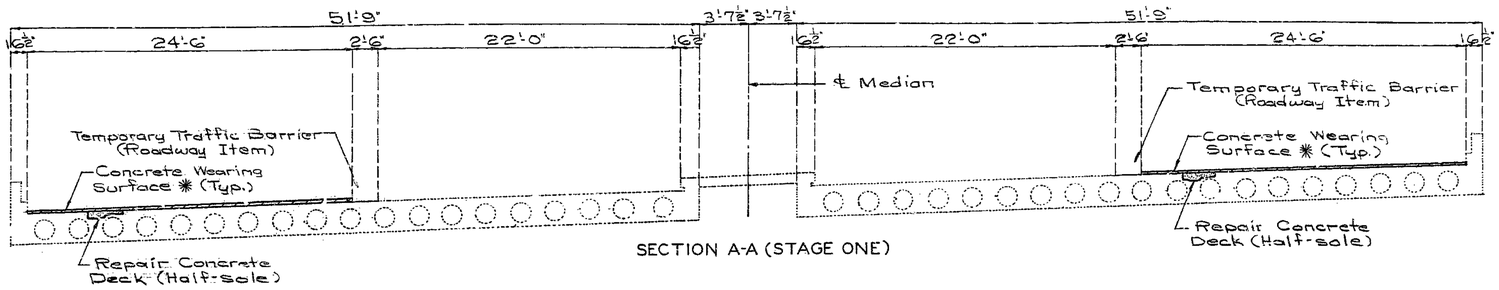
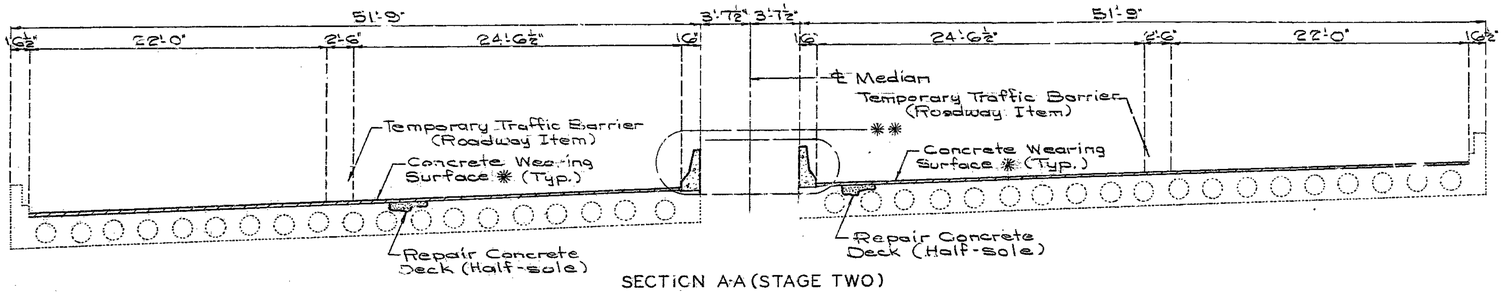
AF 339194

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO	SHEET NO.
MO.		13
SEC. 26	TWP. 52N RGE. 34W	

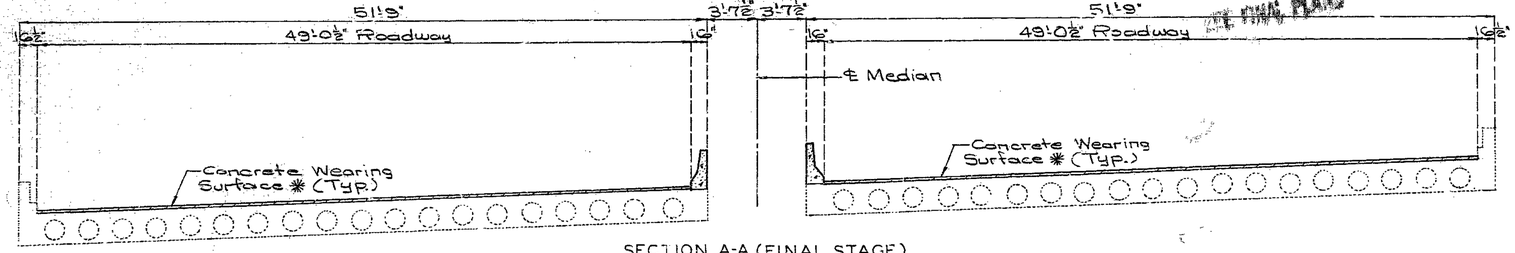


SECTION A-A (STAGE ONE)

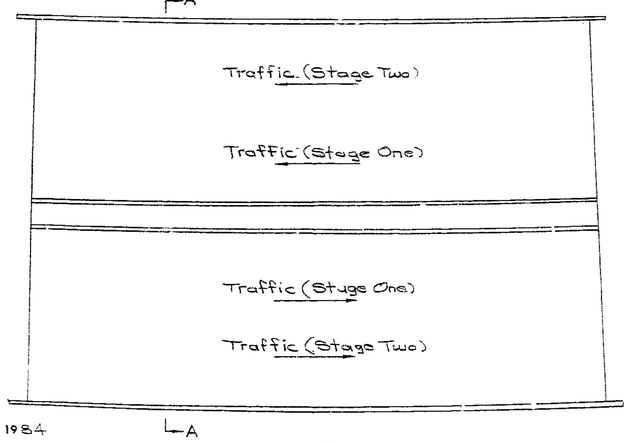


SECTION A-A (STAGE TWO)

✱✱ Remove existing median cover and install safety barrier curbs.



SECTION A-A (FINAL STAGE)



PLAN OF SLAB

FINAL QUANTITIES		
ITEM		TOTAL
Special Work	Lump Sum	1
Safety Barrier Curb	Lin. Ft.	319
Repairing Concrete Deck (Half-soling)	Sq. Ft.	152
Concrete Wearing Surface ✱ (Alt. B)	Sq. Yd.	1750

✱ See Special Provisions for alternate use of concrete wearing surface. ~~Alternate "A" ½ (Min.) Latex Modified Concrete~~. Alternate "B" 2½ (Min.) Low Slump Concrete.

FINAL PLANS

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. 1977 and Interims thru 1982

Design Unit Stresses:

Class B1 Concrete (Superstructure) f'_c = 4,000 psi
Reinforcing Steel (Grade 60) f_y = 60,000 psi

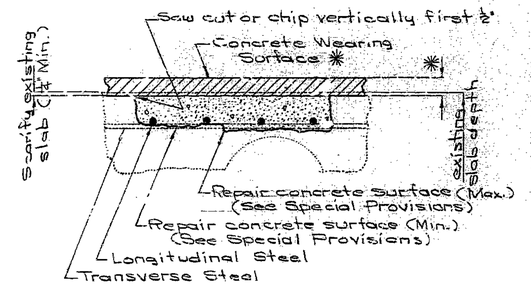
Joint Filler:
All joint filler shall meet the requirement of Std. Spec. 1057.2.4 except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.

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

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars.

Falsework over existing lanes shall be constructed with a minimum vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 28'-0" centered on existing lanes.



HALF-SOLED AREA

DESIGNED Nov. 1984
DETAILED Nov. 1984
CHECKED Nov. 1984

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

Sheet No. 1A of 4

REPAIRS TO
BRIDGE OVER COUNTY ROAD
STATE ROAD INTERSTATE ROUTE 29
ABOUT 9 MILES NORTH OF PARKVILLE
PROJECT NO. IR-29-1(80) **STA.** 479+03.25±
JOB NO. 4-1029-137C **RTE.** I-29
PLATTE **COUNTY**
DATE December 17, 1984

STD.
STD.
A-1746R