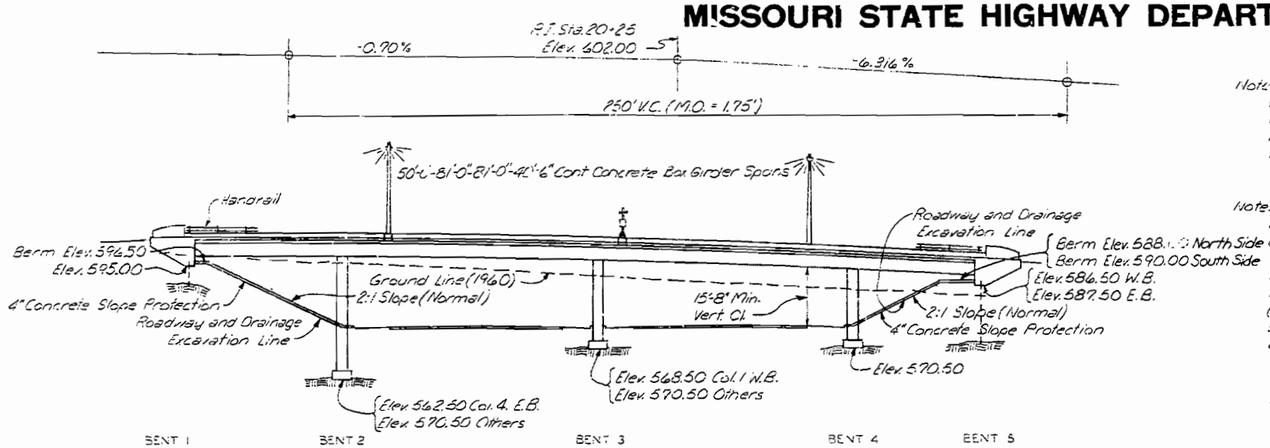
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	12,3	



ELEVATION
(Normal to ℄ Bents)

Note: Compacted roadway fill (full roadway width) shall be placed up to the elevation of bottom of Bent 5 in front of and not less than 25'-0" in back of Bent 5 before steel piles are driven.

Note: Concrete Slope Protection shall be in accordance with Standard Specification 83.50.

Concrete Protection on front slopes at End Bents to be included under roadway items. Provide 1" Joints (Standard Specification 157.1.7) between slope protection pavement and End Bents and columns of intermediate bents. Provide ½" Joints (Standard Specification 157.1.7) between slope protection and roadway curb.

BENCH MARKS
(U.S.G.S. Datum)

#14 Spike in ½ Root 30" Elm 60' N. & 20' E. of junct. of Sessions Ave. & Spellman Ave. Elev. 610.76.

#15 Top of ℄ Bolt on Fire Hyd. at S.W. Cor. of Spellman Ave. & Big Bend Elev. 624.95.

#16 Spike in base 30" W.O. 100' N. of Companion Garden Cemetery marker & 10' W. of Marshal, Mary & William Moore marker. Elev. 615.18.

GENERAL NOTES

SPECIFICATIONS: Missouri State Highway Commission Standard Specifications, 1961 Edition.

DESIGN LOADING: In accordance with Division I of the A.A.S.H.O. Standard Specifications for Highway Bridges, 1961 Edition and 1961 thru 1964 Interim Specifications.
Live Load: H-S 20-44
Dead Load: Provision is made for a future wearing surface of 15 pounds per square foot of roadway surface.
Earth Weight: 120 lbs. per cu. ft.; Equivalent Fluid Pressure 30 lbs. per cu. ft.

DESIGN UNIT STRESSES:
Concrete in Flexure: Class B Concrete f_c = 1,200 lbs. per sq. in.
Class B1 Concrete f_c = 1,400 lbs. per sq. in.
Reinforcing Steel f_s = 20,000 lbs. per sq. in.
Steel Piles (A.S.T.M. A36) f_b = 9,000 lbs. per sq. in.

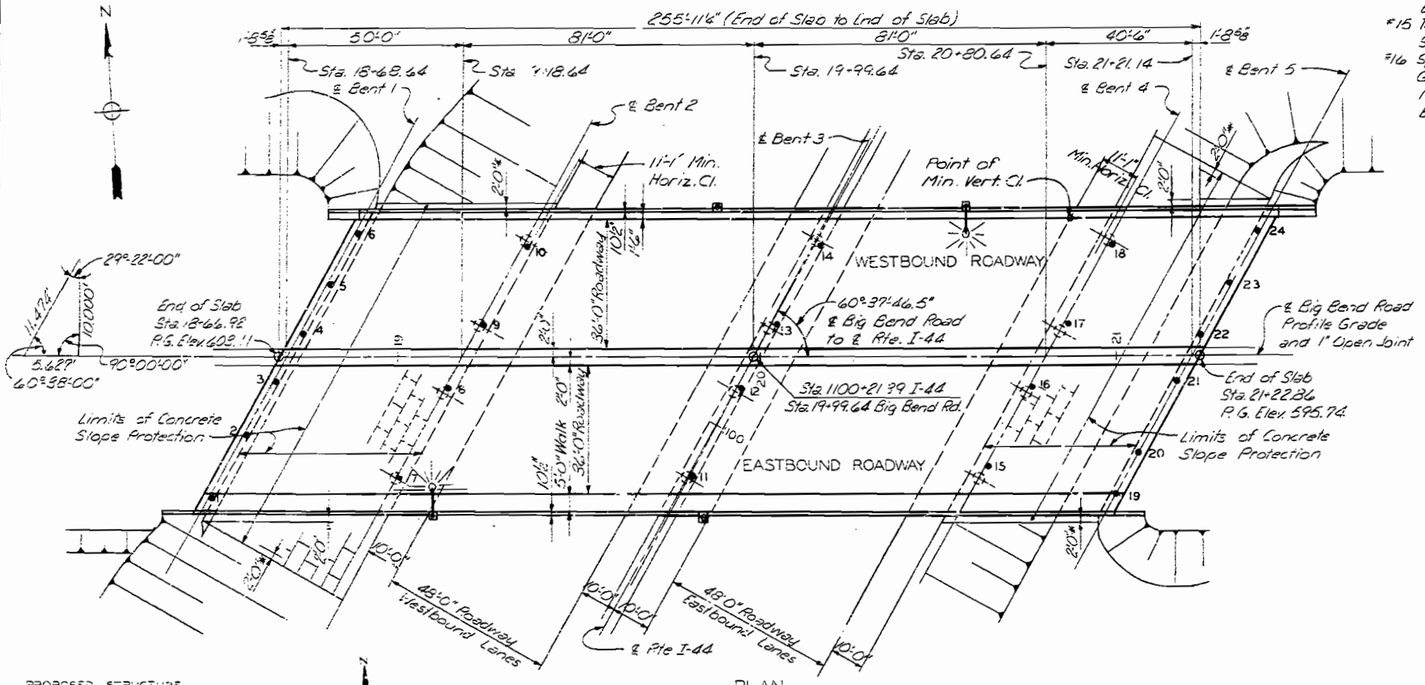
CONCRETE: Concrete for Superstructure shall be Class B1.
Concrete for Substructure (Footings of Bents 2, 3 and 4) shall be Class B.

FILLED JOINTS: Where joint filler is specified on the plans it shall conform to Standard Specification 157.2.4.

SURFACE SEALING: Superstructure deck to be surface sealed.

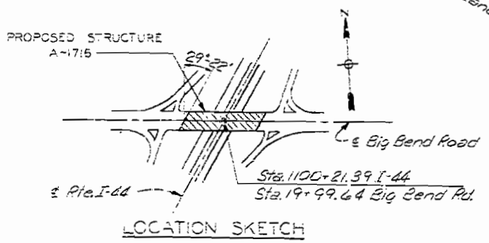
REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to center line of bar except where the clear distance is noted from the face of concrete. All reinforcing steel shall be lapped a minimum of 24 bar diameters.

PAINTING: Structural Steel access doors shall receive three coats of paint. They shall be cleaned and painted in the field or may be cleaned and painted one coat of red lead in the shop with intermediate crown coat and final coat applied in the field. Final coat on access doors and frames shall be gray. In lieu of painting, the contractor may, if he prefers, galvanize this material. All galvanizing shall be done after fabrication. Cost of painting or galvanizing to be included in price bid for other items.



PLAN

Note: • Indicates borings. For Log of Borings, see Sheet 2.
* Raise edge 3" in 2'-0".
Dimensions shown are measured horizontally.



LOCATION SKETCH

FOOTING AND PILE DATA

	Bent No.		1	2	3	4	5
SPREAD FOOTINGS	Foundation Material		——	Rock	Rock	Rock	——
	Design Bearing Tons / Sq. Ft.		- ——	10	10	10	——
BEARING PILE	Pile Size		10BP42	——	——	——	10BP42
	Number Required		11	——	——	——	11
	Approximate Length	Ft.	20	——	——	——	20
	Design Bearing	Tons	55	——	——	——	30
	*Hammer Energy Required	Ft.-Lbs.	12,400	——	——	——	11,200

Note: Bearing Piles shall conform to A.S.T.M. A36-66.
* 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 piles shall be driven to practical refusal.
Footings shall be carried down into hard, solid, undisturbed rock or 18" into soft rock and cast against vertical faces of same.

-237,480 -239,280 -249,850 -250,650 -489,930 △

Note: All concrete and reinforcement above footings is included in superstructure quantities. No payment for excavation will be allowed at Bent 5.

ESTIMATED QUANTITIES

Item		Westbound Bridge Substr.	Westbound Bridge Superstr.	Westbound Bridge Total	Eastbound Bridge Substr.	Eastbound Bridge Superstr.	Eastbound Bridge Total	Total
Class 1 Excavation for Structures	Cu. Yd.	110	——	110	120	——	120	230
10BP42 Steel Piles in Place	Lin. Ft.	200	——	200	240	——	240	440
Class B Concrete	Cu. Yd.	17.9	——	17.9	17.9	——	17.9	35.8
Class B1 Concrete	Cu. Yd.	——	758.3	758.3	——	789.7	789.7	1548.0
Reinforcing Steel	Lbs.	1300	237,270	238,570	1300	248,650	249,950	487,520
H.S. Bridge Rail (Two-Tube Type)	Lin. Ft.	——	256	256	——	256	256	512
Conduit System	Lump Sum	——	——	——	——	——	——	1

△ Rev. 2-9-68

SUBMITTED BY: R. E. Manners
REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. E-4681

SUBMITTED BY: Otis Sanders ..... DATE 9/14/67
BRIDGE ENGINEER

APPROVED BY: M. C. Louden ..... DATE 9/14/67
CHIEF ENGINEER

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

PROJECT NO. [illegible] **STA.** [illegible]

ST. LOUIS **COUNTY**

SHEET OF

DRAWN BY: D. Schrenzel Jan. 1967
TRACED BY:
CHECKED BY: RV Butterfield March 1967

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

2606
67565

273

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		'68	12	

HOLE NO. 1 Sta. 18+69 45 Ft. Rt.
Elev. 600.3
Asphalt
Brown Silty Clay
Med. Hard Limestone
Lms. Elev. 589.9

HOLE NO. 2 Sta. 18+69 25 Ft. Rt.
Elev. 599.4
Asphalt & Concrete Pavement
Brown Silty Clay
Very Hard Limestone
Lms. Elev. 583.6

HOLE NO. 3 Sta. 18+69 7 Ft. Rt.
Elev. 598.9
Asphalt & Concrete Pavement
Brown Silty Clay
Scattered Light Boulders and Stiff Clay
Soft Weathered Limestone
Med. Hard Limestone
Lms. Elev. 565.9

HOLE NO. 4 Sta. 18+69 7 Ft. Lt.
Elev. 598.1
Brown Silty Clay
Very Hard Limestone
Lms. Elev. 585.1

HOLE NO. 5 Sta. 18+69 23 Ft. Lt.
Elev. 597.2
Brown Silty Clay
Brown Clay with Scattered Rock Fragments
Hard Limestone
Lms. Elev. 583.0

HOLE NO. 6 Sta. 18+69 39 Ft. Lt.
Elev. 595.7
Brown Silty Clay
Weathered Limestone and Boulders, Cut with Rock Bit
Hard, Dense Thin Bedded Limestone
Clayseam
Hard Dense Med. Bedded Limestone, Top 1' a little Weathered
Lms. Elev. 565.1

HOLE NO. 7 Sta. 17+19 38 Ft. Rt.
Elev. 597.1
Asphalt Pavement
Brown Silty Clay, No Boulders
Hard Limestone
Lms. Elev. 561.5

HOLE NO. 8 Sta. 19+19 10 Ft. Rt.
Elev. 596.3
Asphalt & Concrete Pavement
Brown Silty Clay
Med. to Hard Limestone
Lms. Elev. 585.6

HOLE NO. 9 Sta. 19+19 10 Ft. Lt.
Elev. 596.6
Reddish-Brown Silty Clay, Firm
Hard Limestone
Lms. Elev. 584.6

HOLE NO. 10 Sta. 19+19 35 Ft. Lt.
Elev. 596.7
Brown Silty Clay
Brown Clay & Scattered Rock Fragments
Med. Hard Limestone Layer
Clay Seam
Med. Hard Limestone
Lms. Elev. 578.7

HOLE NO. 11 Sta. 20+00 38 Ft. Rt.
Elev. 592.5
Asphalt Pavement
Brown Silty Clay
Very Hard Limestone
Lms. Elev. 585.3

HOLE NO. 12 Sta. 20+00 10 Ft. Rt.
Elev. 591.9
Asphalt & Concrete Pavement
Brown Silty Clay & Scattered Gravel
Reddish Brown Stiff Clay
Very Hard Limestone
Lms. Elev. 580.9

HOLE NO. 13 Sta. 20+00 10 Ft. Lt.
Elev. 589.8
Reddish-Brown Silty Clay
Very Hard Limestone
Lms. Elev. 578.8

HOLE NO. 14 Sta. 20+00 35 Ft. Lt.
Elev. 593.1
Brown Silty Clay
Clay & Boulders
Limestone Boulders
Red Clay, Stiff
Hard, Dense Med. Bedded Limestone Top 2.5' Was a Little Shaly
Lms. Elev. 563.1

HOLE NO. 15 Sta. 20+81 35 Ft. Rt.
Elev. 587.9
Asphalt Pavement
Brown Silty Clay
Very Hard Limestone
Lms. Elev. 582.1

HOLE NO. 16 Sta. 20+81 10 Ft. Rt.
Elev. 587.6
Asphalt & Concrete Pavement
Grayish-Brown Silty Clay
Heavy Boulders
Very Hard Limestone
Lms. Elev. 580.5

HOLE NO. 17 Sta. 20+81 10 Ft. Lt.
Elev. 586.6
Asphalt Pavement
Brown Silty Clay
Very Hard Limestone
Lms. Elev. 579.9

HOLE NO. 18 Sta. 20+81 35 Ft. Lt.
Elev. 589.0
Brown Silty Clay
Brown Clay & Scattered Boulders
Limestone Layer
Clay Seam
Med. Hard to Very Hard Limestone
Lms. Elev. 574.0

HOLE NO. 19 Sta. 21+21 43 Ft. Rt.
Elev. 599.2
Brown Silty Clay
Med. Hard Limestone
Lms. Elev. 573.9

HOLE NO. 20 Sta. 21+21 27 Ft. Rt.
Elev. 585.6
Asphalt Pavement
Brown to Gray Silty Clay
Limestone & Clay
Hard Limestone
Lms. 578.8

HOLE NO. 21 Sta. 21+21 7 Ft. Rt.
Elev. 585.3
Asphalt & Concrete Pavement
Gray Silty Clay
Lms. 577.3

HOLE NO. 22 Sta. 21+21 7 Ft. Lt.
Elev. 584.7
Asphalt Pavement
Gray Silty Clay
Scattered Boulders & Clay
Stiff Clay
Soft Limestone
Lms. Elev. 563.7

HOLE NO. 23 Sta. 21+21 23 Ft. Lt.
Elev. 586.0
Brown Silty Clay
Scattered Boulders & Clay
Very Hard Limestone
Lms. Elev. 571.7

HOLE NO. 24 Sta. 21+21 39 Ft. Lt.
Elev. 586.1
Reddish-Brown Clay
Red Clay & Boulders
Limestone, Cut with
Hard Dense Limestone
Weathered Limestone & Clay Seams
Grayish-Brown to Light Gray, Hard, Dense Med. Bedded Limestone
Lms. Elev. 561.0

Note: Offset dimensions are measured along skew.
These data are for information only and may or may not represent the actual conditions when work is executed.
All Borings were made during March and April 1966.
For Boring locations see Sheet 1.
Holes 6, 14, and 24 are cored holes; all of the other holes were made with a 3" power auger.

BRIDGE BIG BEND ROAD UNDER-PASS
STATE ROAD INTERSTATE ROUTE 44
IN KIRKWOOD
PROJECT NO. I-IG-44-4(4)XRTE.I-44 **STA.** 100-21.39
ST. LOUIS COUNTY

DRAWN BY: A.L. Clark Dec. '67
TRACED BY:
CHECKED BY: R.L. Butterfield March '68

2606
665844

SVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

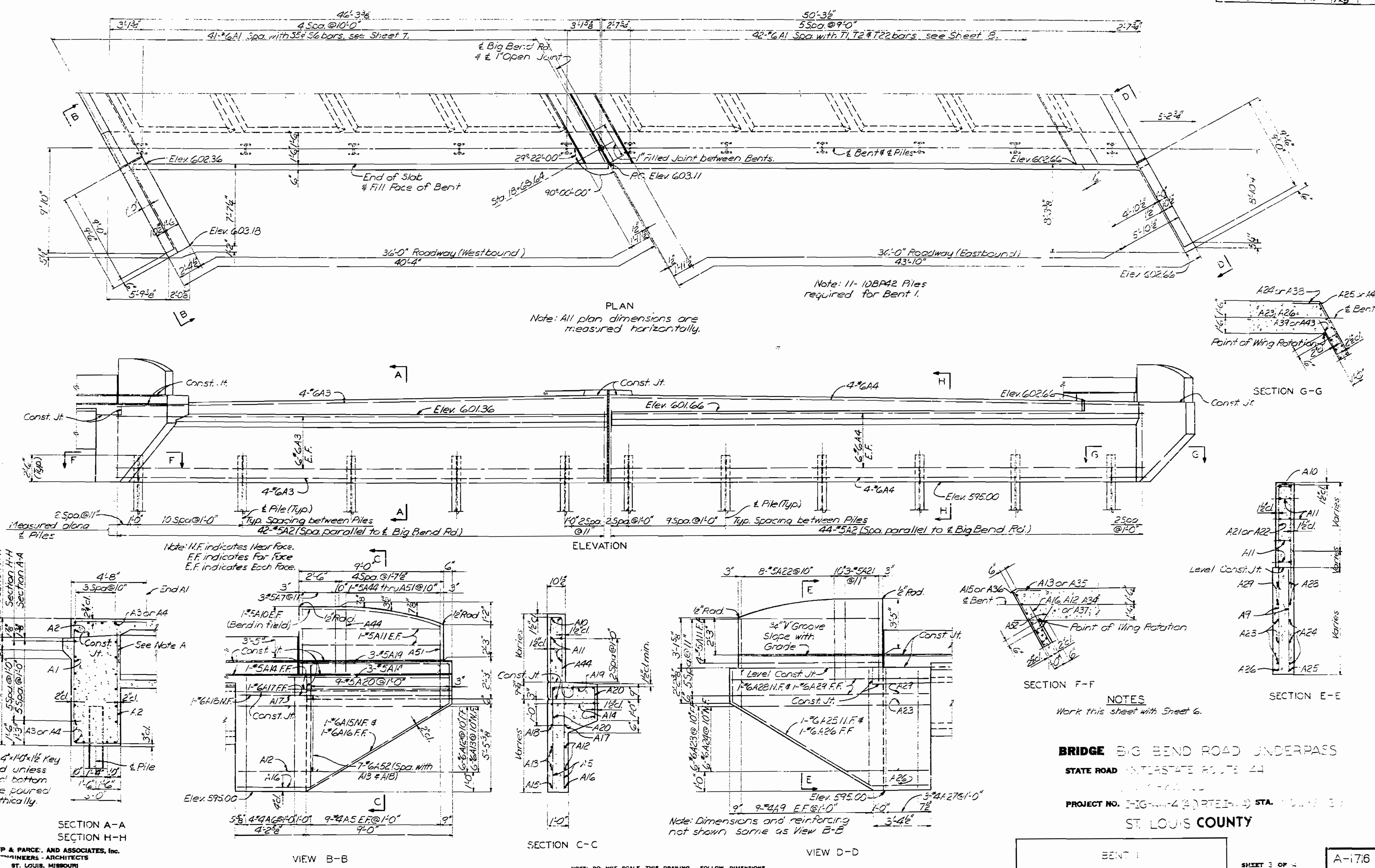
LOG OF BORINGS

SHEET 2 OF 14

A-1716

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	125	



NOTES

Work this sheet with Sheet 6.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

PROJECT NO. I-IG-44-4(4) RTEI-44 **STA.**

ST. LOUIS COUNTY

BENT 1

SHEET 3 OF 4

A-1716

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

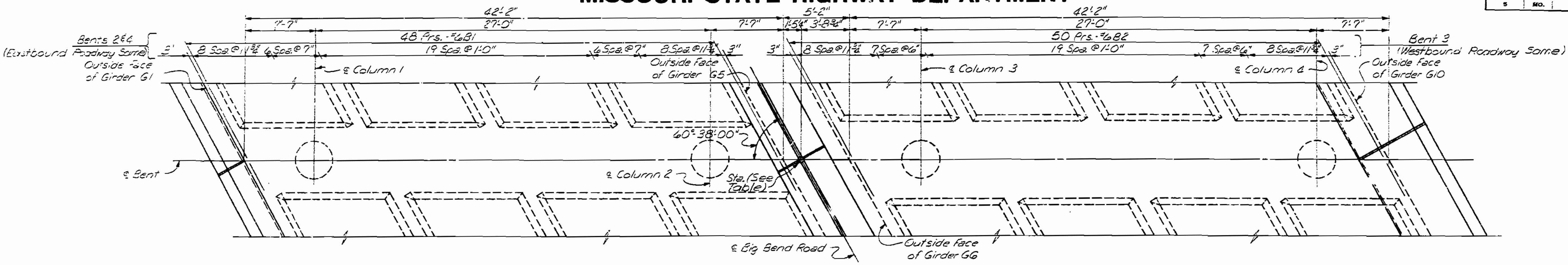
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

DRAWN BY: M.K. Yonowy Jan 1967
TRACED BY:
CHECKED BY: R.W. Fairfield March 1967

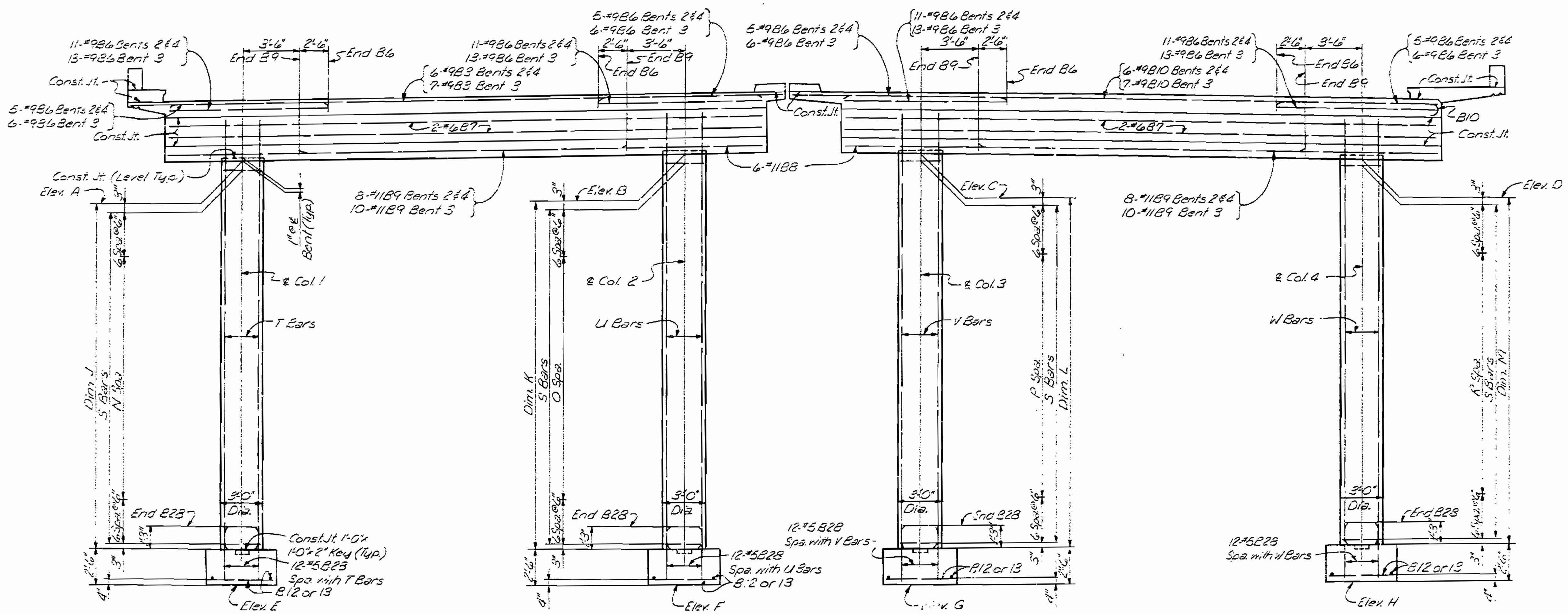
2606
67550

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	126	



PLAN



ELEVATION

NOTES

Work This Sheet with Sheet 5.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

IN KIRKWOOD

PROJECT NO. I-IG-44-4(4)(PTE-I44) **STA.**

ST LOUIS **COUNTY**

BENTS 2,3 AND 4

SHEET – OF –

A-1716

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

DRAWN BY: D. Schremp Jan. 1967
TRACED BY:
CHECKED BY: R.V. Butterfield March 1967

9606
9529

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	127	

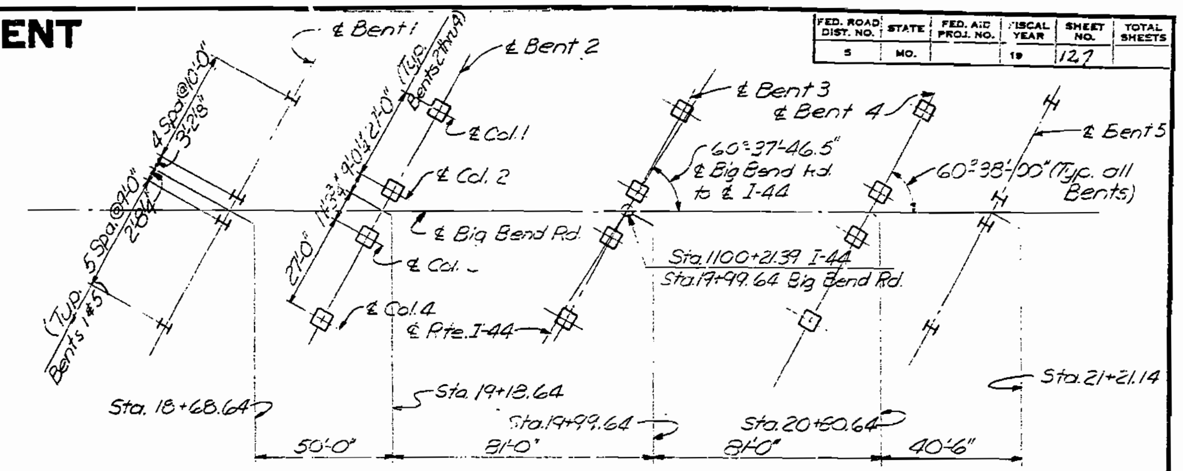
VARIABLE ELEVATIONS AND DIMENSIONS	Bent 2	Bent 3	Bent 4
Elev. A	597.73	595.77	592.33
Elev. B	598.28	596.56	593.36
Elev. C	598.36	596.82	593.80
Elev. D	598.10	596.80	594.03
Elev. E	570.50	568.50	570.50
Elev. F	570.50	570.50	570.50
Elev. G	570.50	570.50	570.50
Elev. H	562.50	570.50	570.50
Dim. J	24'-8¾"	24'-9¼"	19'-4"
Dim. K	25'-3⅜"	23'-6¾"	20'-4⅜"
Dim. L	25'-4⅜"	23'-9⅞"	20'-9⅝"
Dim. M	33'-1¼"	23'-9⅝"	21'-0⅜"
Station	19+18.64	19+99.64	20+80.64

Note: In no case shall bottom of footing elevation be higher than Elev. 570.50

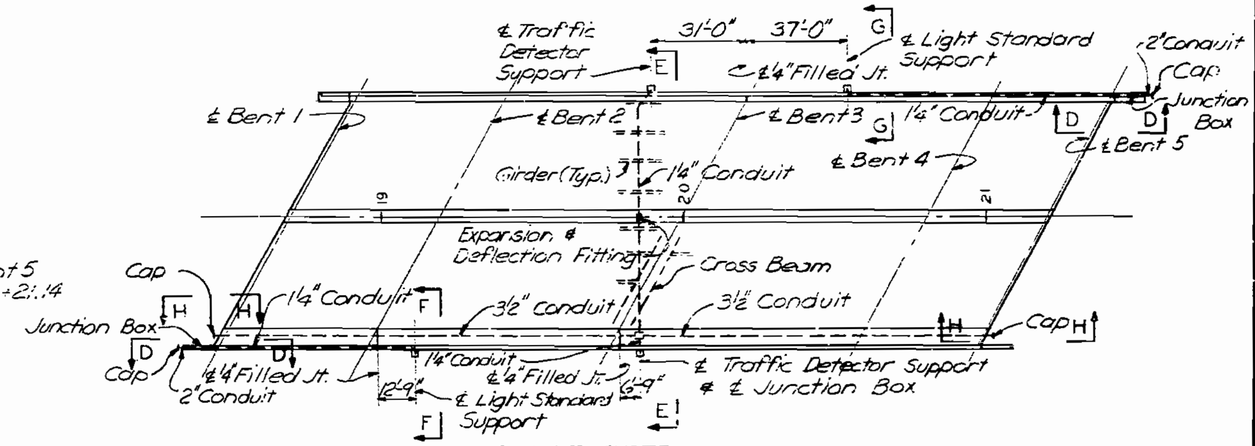
VARIABLE SPACINGS	N Spa.	O Spa.	P Spa.	R Spa.
Bent 2	18 @ abt. 1'-0⅛"	18 @ abt. 1'-0½"	18 @ abt. 1'-0½"	26 @ abt. 1'-0¼"
Bent 3	18 @ abt. 1'-0⅛"	17 @ abt. 1'-0"	17 @ abt. 1'-0¼"	17 @ abt. 1'-0⅛"
Bent 4	13 @ abt 11⅞"	14 @ abt 11⅞"	14 @ abt. 1'-0¼"	14 @ abt. 1'-0½"

VARIABLE BARS

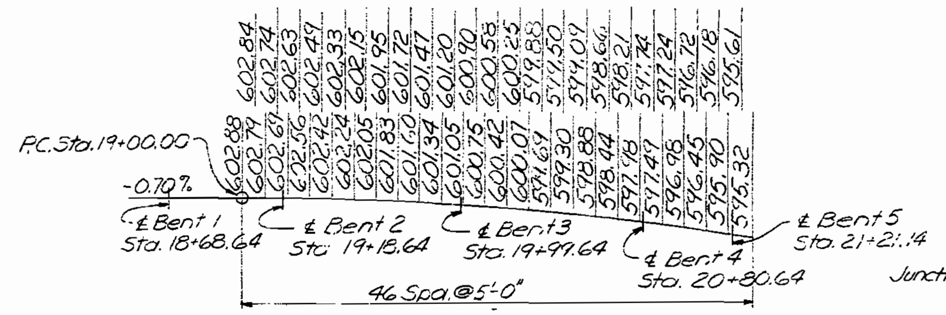
	Column 1		Column 2		Column 3		Column 4	
Bent	S Bars	T Bars	S Bars	U Bars	S Bars	V Bars	S Bars	W Bars
2	31-#5B15	12-#9B16	31-#5B15	12-#9B19	31-#5B15	12-#9B19	39-#5B15	12-#9B25
3	31-#5B15	12-#9B16	30-#5B15	12-#9B20	30-#5B15	12-#9B23	30-#5B15	12-#9B23
4	26-#5B15	12-#9B18	27-#5B15	12-#9B21	27-#5B15	12-#9B24	27-#5B15	12-#9B27



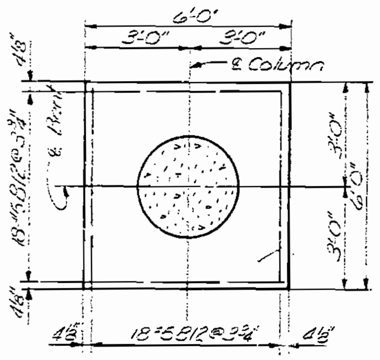
SUBSTRUCTURE LAYOUT



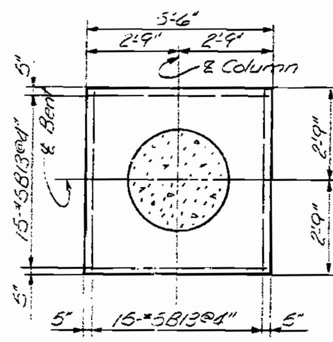
CONDUIT SYSTEM



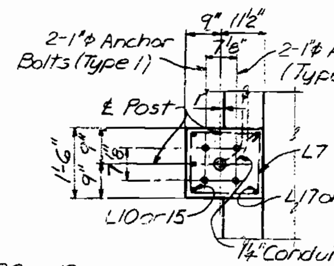
PROFILE GRADE ELEVATION



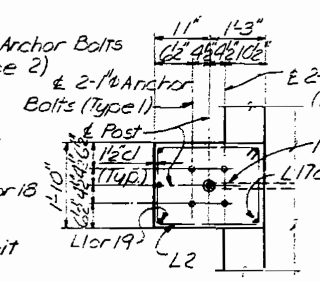
FOOTING PLAN
BENT 3



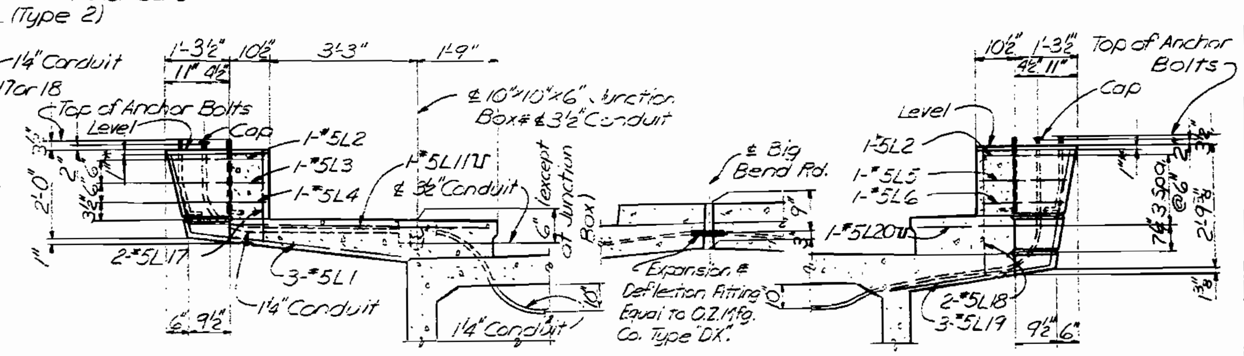
FOOTING PLAN
BENTS 2 & 4



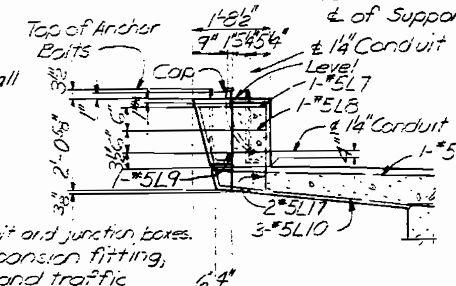
PLAN OF LIGHT STANDARD SUPPORT



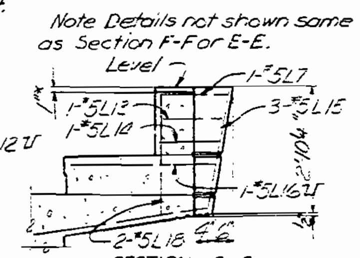
PLAN OF TRAFFIC DETECTOR SUPPORT



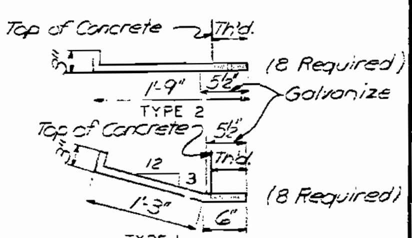
SECTION E-E



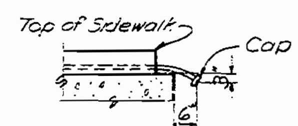
SECTION F-F



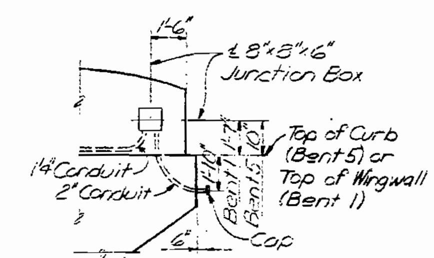
SECTION G-G



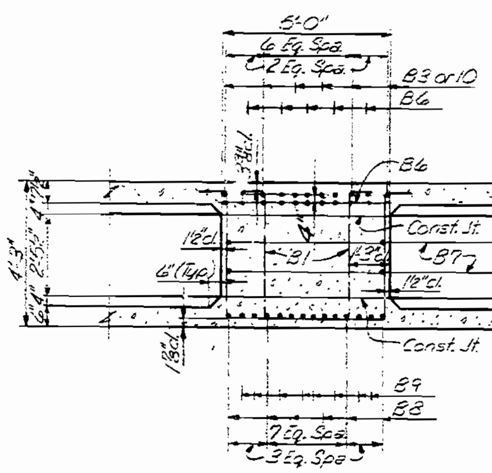
ANCHOR BOLTS



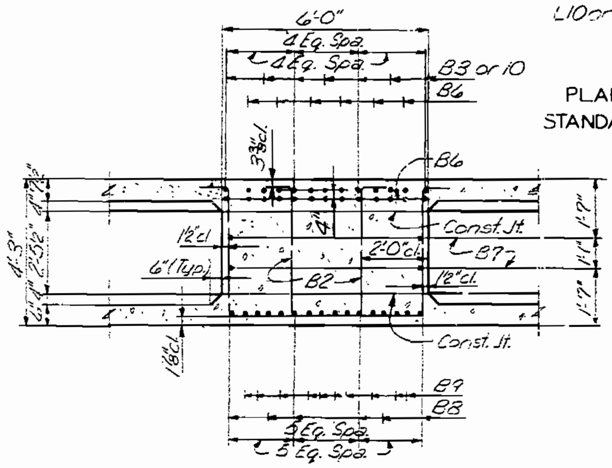
SECTION H-H



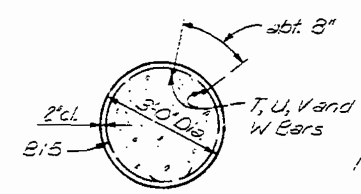
VIEW D-D



SECTION THRU
BENTS 2 & 4



SECTION THRU
BENT 3



SECTION THRU
COLUMN

Note: Spacing of Vertical Bars is measured along inside of ties.

CONDUIT SYSTEM NOTES

½"φ Drain holes shall be provided at low points of conduit and junction boxes.

Payment for furnishing and placing conduit, expansion fitting, junction boxes and anchor bolts for light standards and traffic detectors shall be included in the contract lump sum price bid for "Conduit System on Structures."

Light standards, traffic detectors, wiring and fixtures to be furnished and installed by others.

All conduit to be rigid galvanized steel.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

All junction boxes shall be flush mounted and similar or equal to O.Z. Mfg. Co. Type "YR" for parapets and Type "YT" for sidewalk.

Anchor bolts to be furnished with 2 Galvanized Std. Hex Nuts and 2 Galvanized Washers per bolt.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DRAWN BY: D. Schremp, Jan. 1967
TRACED BY:
CHECKED BY: R.V.B. & F.R.B. March 1967
2606
67530

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

PROJECT NO. [illegible] **STA.** [illegible]

ST. LOUIS **COUNTY**

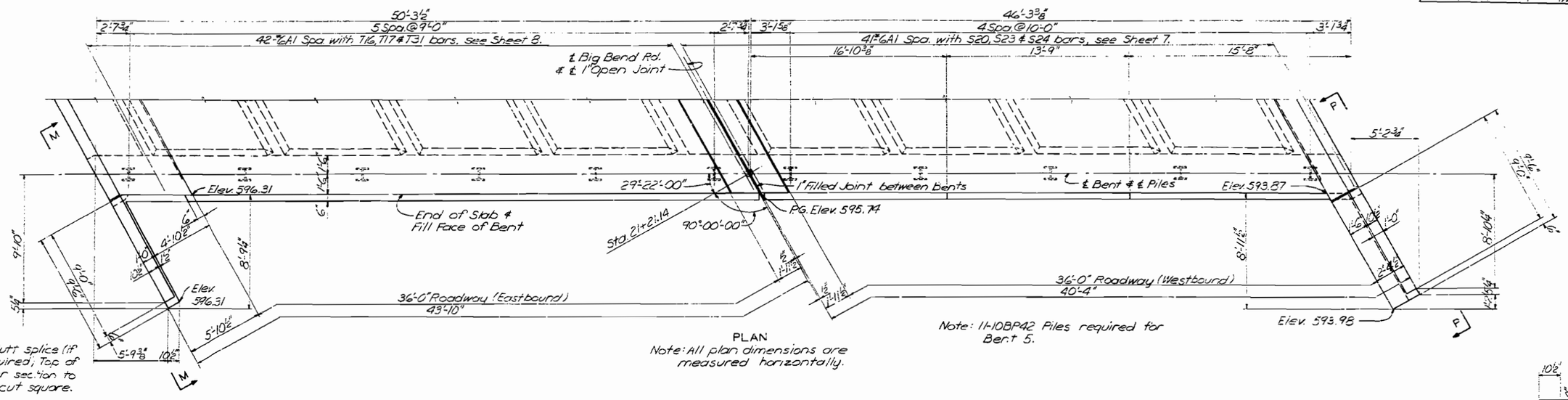
BENTS 2, 3 & 4 AND CONDUIT SYSTEM

SHEET 5 **OF** [illegible]

A-1716

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	128	



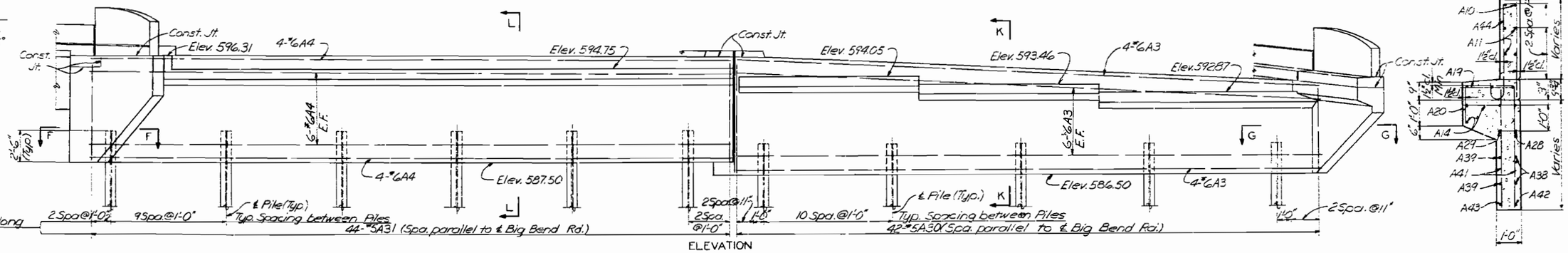
PLAN

Note: All plan dimensions are measured horizontally.

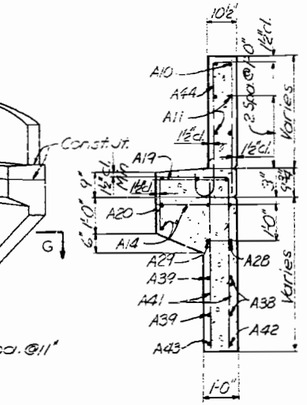
Butt splice (if required), Top of lower section to be cut square.

45°

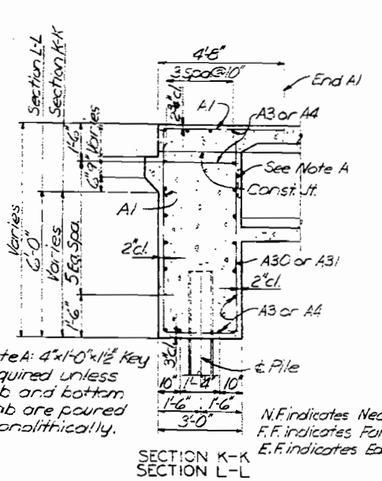
DETAIL OF STEEL PILE SPLICE



ELEVATION



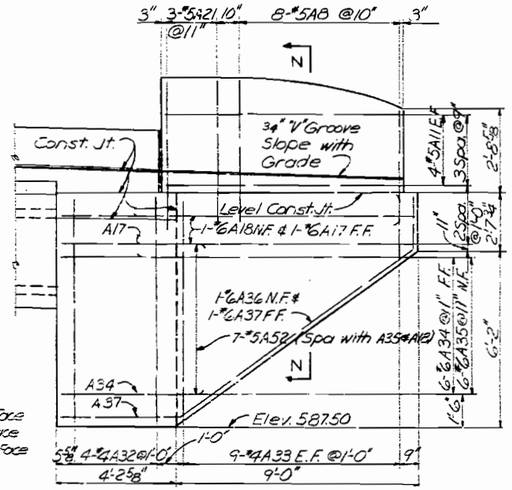
SECTION Q-Q



Note A: 4"x1'-0"x12" Key required unless web and bottom slab are poured monolithically.

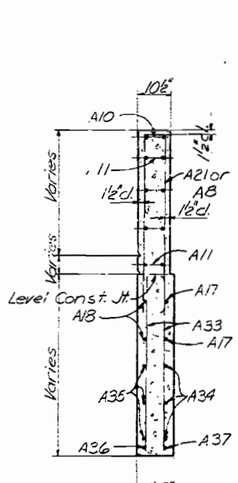
N.F. indicates Near Face
F.F. indicates Far Face
E.F. indicates Each Face

SECTION K-K
SECTION L-L

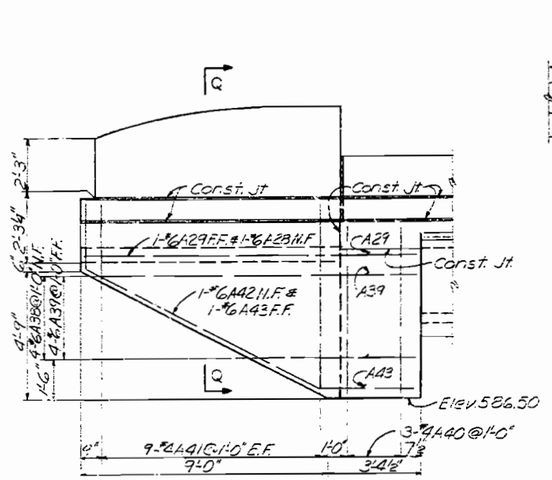


VIEW M-M

Note: Dimensions and reinf. not shown same as View D-D, on Sheet 3.



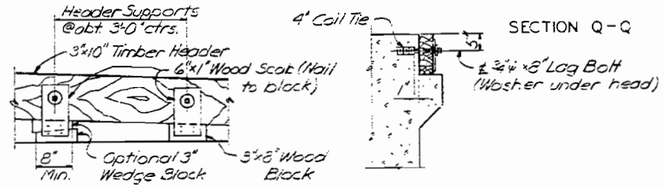
SECTION N-N



VIEW P-P

Note: Dimensions and reinf. not shown same as View B-B on Sheet 3.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



DETAIL OF TIMBER HEADER

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

NOTES

For Sections F-F & G-G see Sheet 3.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

OVER MISSOURI PACIFIC RAILROAD

PROJECT NO. I-[illegible], **STA.** [illegible]

ST. LOUIS **COUNTY**

BENT 5

SHEET OF

A-1716

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

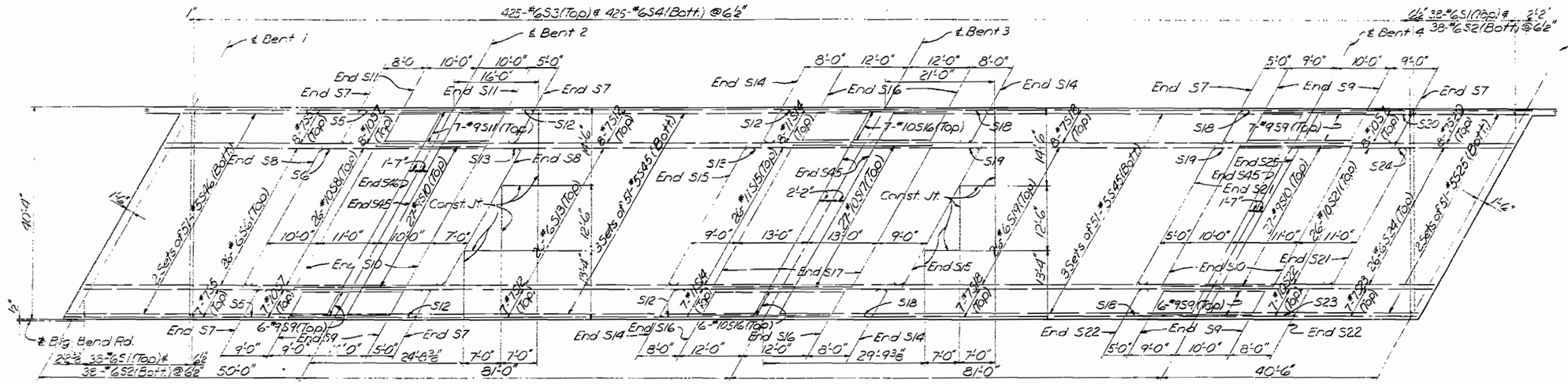
DRAWN BY: M. Kordziewski Jan. 1967
TRACED BY:
CHECKED BY: R.V. Butterfield March 1967

2606
63551

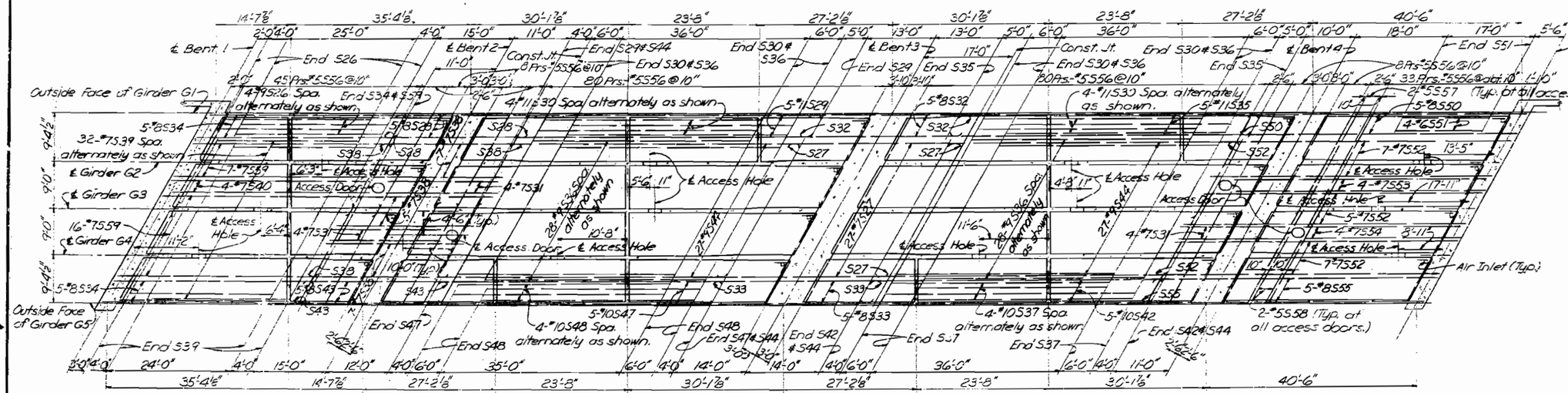
C30

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	129	



PLAN OF TOP SLAB



PLAN OF BOTTOM SLAB

SLAB NOTES

All dimensions shown on slab plans are measured horizontally.

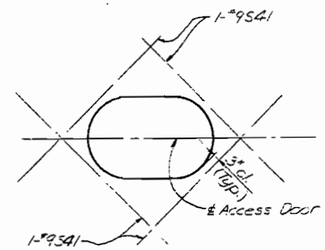
Reinforcement may be shifted where necessary to clear air inlets.

Payment for furnishing and installing air inlets and access doors and frames shall be made and considered fully covered under price bid for other items.

No longitudinal construction joint will be permitted unless shown on the plans.

For roadway drains and reinf. see Sheet 12.

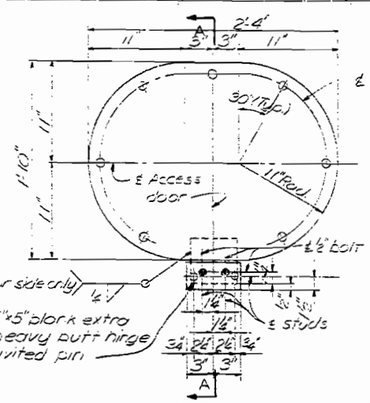
For light standard and traffic detector supports see Sheet 5.



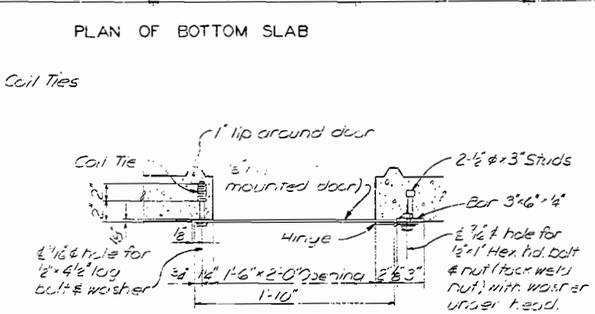
ADDITIONAL REINFORCEMENT AT ACCESS DOORS

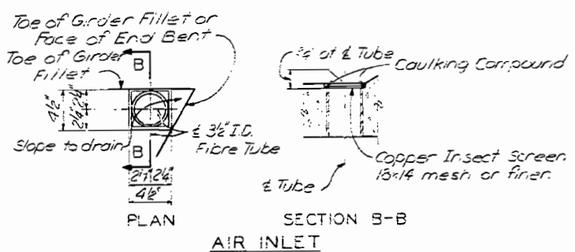
NOTES

Work this Sheet with Sheets 9 & 10.
For construction joint details see Sheet 10.
For pouring sequence see Sheet 8.



ACCESS DOOR
(8 Required)





AIR INLET
(32 Reqd.)

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE [illegible]

PROJECT NO. [illegible] **STA.** [illegible]

ST. LOUIS **COUNTY**

SHEET [illegible] OF [illegible]

A-1716

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

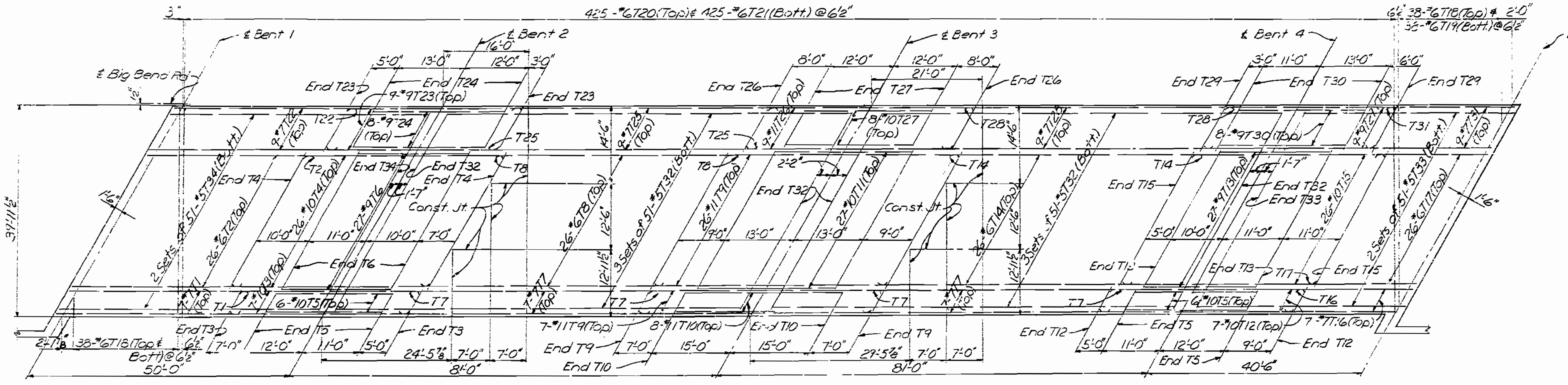
DRAWN BY: M. Kordonowy Dec. 1966
TRACED BY:
CHECKED BY: R.V. Butterfield March 1967

2606
26380

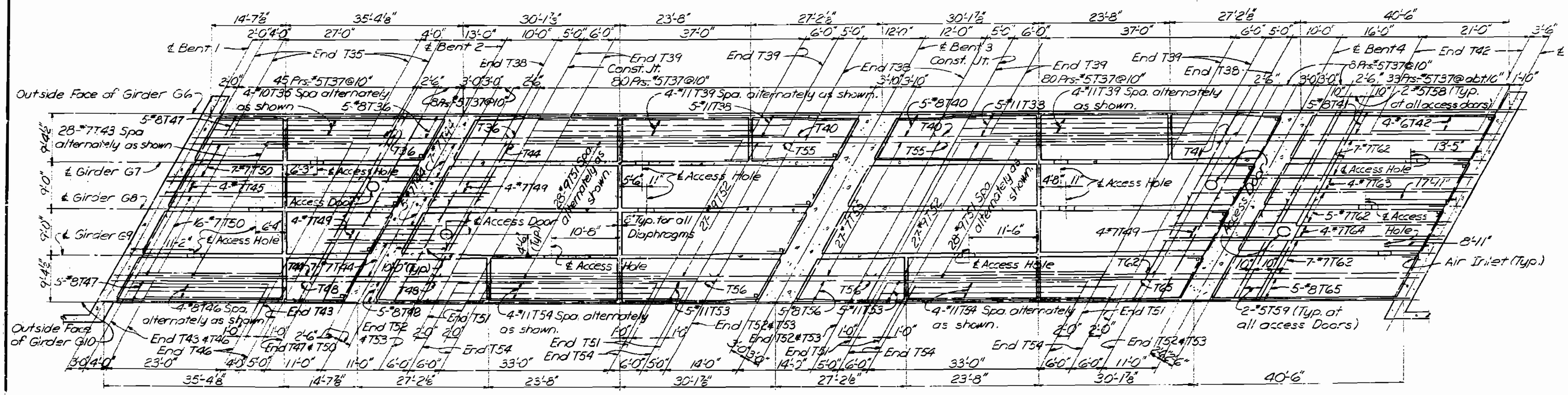
531

MISSOURI STATE HIGHWAY DEPARTMENT

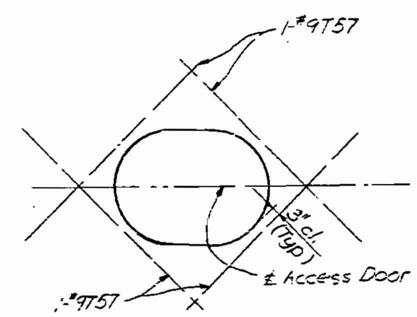
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	130	



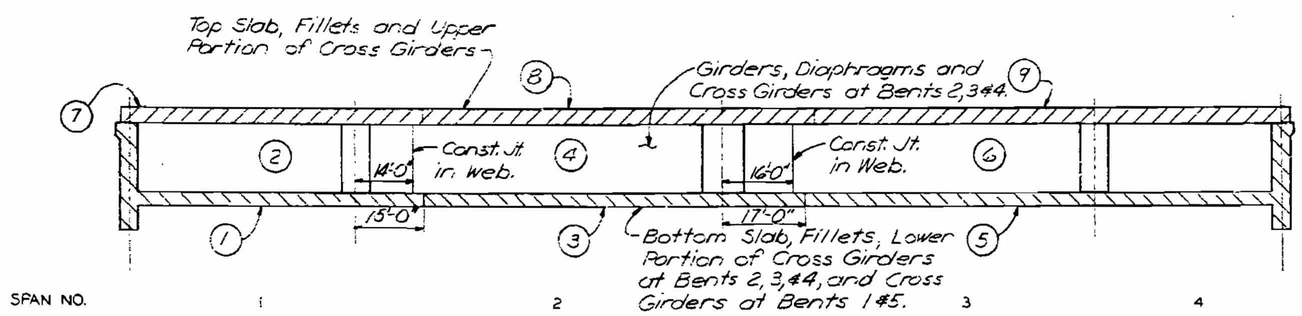
PLAN OF TOP SLAB



PLAN OF BOTTOM SLAB



ADDITIONAL REINFORCEMENT



POURING SEQUENCE

POURING NOTES

Numbers in circles indicate the basic pouring sequence.

Longitudinal joints in roadway slabs, unless specifically on plans, will not be permitted.

The contractor shall use an approved oscillating screed type, self-propelled mechanical finishing machine and shall pour roadway slabs at a rate of not less than 25 cubic yards per hour. He shall observe the basic pouring sequence unless he can demonstrate to the engineer that he can pour and satisfactorily finish the superstructure concrete at a rate which will permit the combining of such of the basic pours as may be specifically designated by the engineer as being compatible with design. Finishing machine loads will not be permitted on concrete less than 48 hours old.

With use of forms and basic falsework meeting the approval of the engineer, the girder webs and diaphragms may be poured with the bottom slab sections on which they bear.

All forms shall be removed from the interior of box girders, except top slab forms which may be left in place.

NOTES

Work this sheet with Sheets 9 & 10.
For Slab Notes, access doors and air inlets see Sheet 7.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DRAWN BY: M. Kordorowy, Dec. 1966
TRACED BY:
CHECKED BY: R.W. Butterfield, March 1967
2606
66589

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44 [illegible]

PROJECT NO. [illegible] **STA.** [illegible]

ST. LOUIS COUNTY

[illegible] BOTTOM SLAB
EASTBOUND ROADWAY

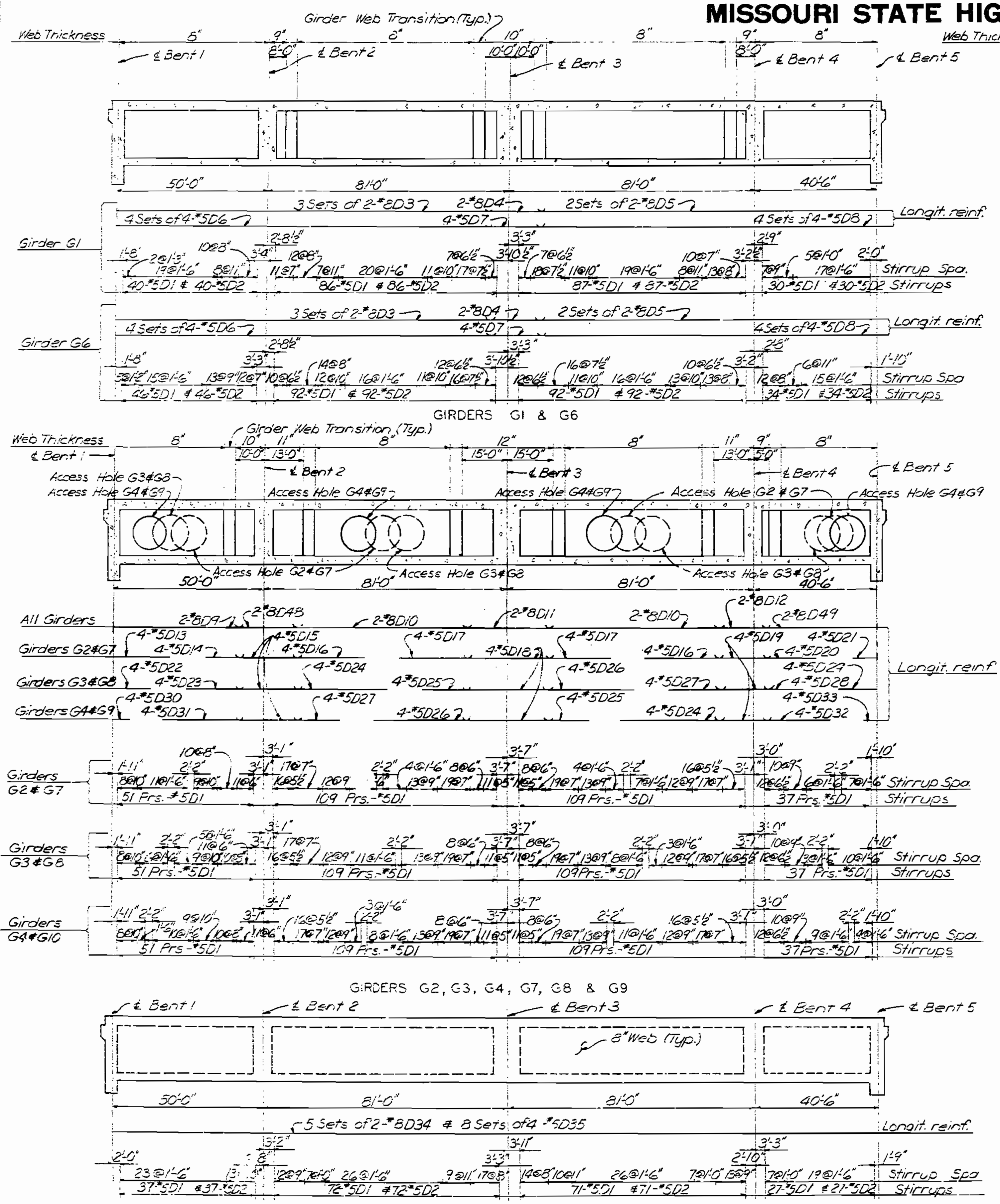
SHEET [illegible] OF [illegible]

A-1716

232

MISSOURI STATE HIGHWAY DEPARTMENT

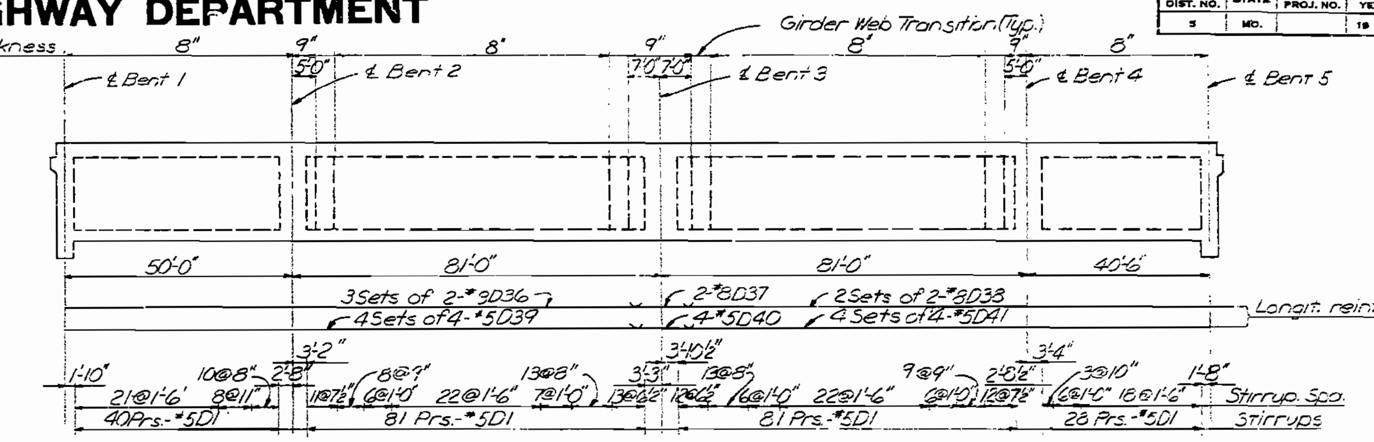
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	132	



GIRDERS G1 & G6

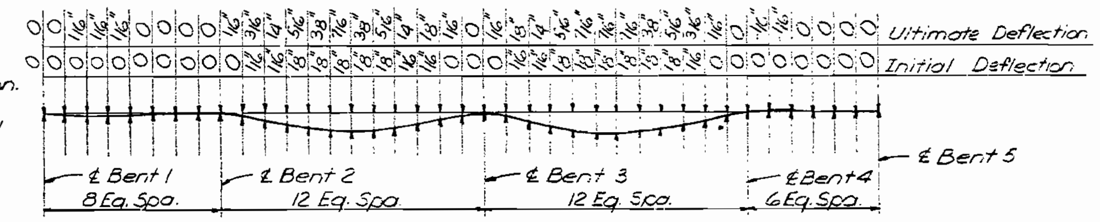
GIRDERS G2, G3, G4, G7, G8 & G9

GIRDER G5

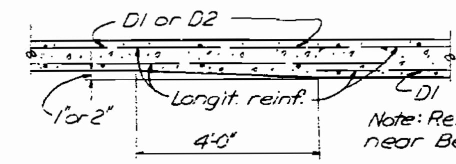


GIRDER G10

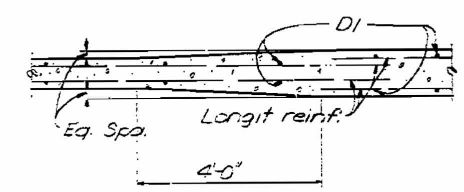
Note: The Contractor shall make allowances in setting forms to compensate for Ultimate Dead Load Deflection.
E_c = 2,000,000 p.s.i. used in computing ultimate dead load deflection.
E_c = 6,000,000 p.s.i. used in computing initial dead load deflection.



THEORETICAL DEAD LOAD DEFLECTION ORDINATES

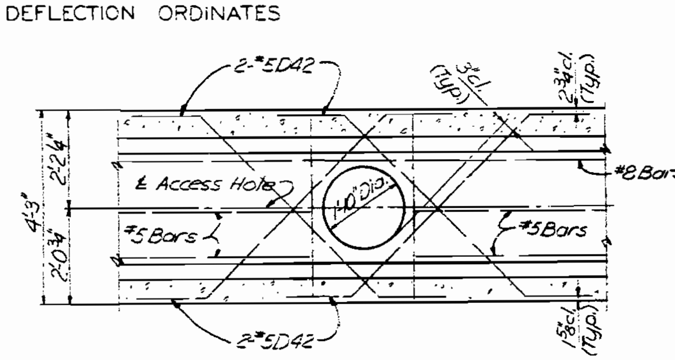


GIRDERS G1, G6, & G10



GIRDERS G2, G3, G4, G7, G8, & G9

SECTIONS THRU GIRDER WEB TRANSITIONS

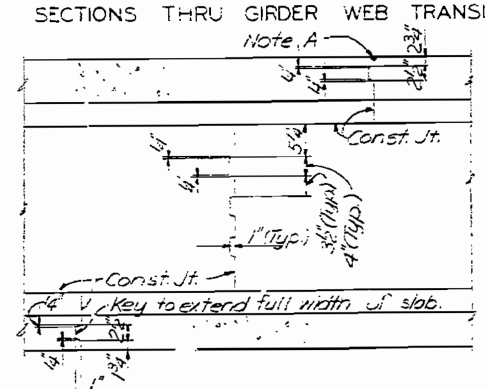


ACCESS HOLE

Note: For Access Hole locations see Sheets 7 and 8.

NOTES

Stirrup spacing is measured horizontally along the outside edge of Girders G1, G5, G6 & G10 and along the ℄ of Girders G2, G3, G4, G7, G8 & G9.
For Profile Grade Elevations see Sheet 5.



Note A: On roadway surface only, finish each side of joint with 1/4" radius edging tool.

CONSTRUCTION JOINT DETAILS

Note: For location of joints see Sheets 7 and 8.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

PROJECT NO. **STA.**

ST. LOUIS **COUNTY**

GIRDERS AND DIAPHRAGMS

SHEET **OF**

A-1716

DRAWN BY: M. Kordonowy, Jan. 1961
TRACED BY:
CHECKED BY: R.W. Butterfield, Feb. 1961

2606
6750

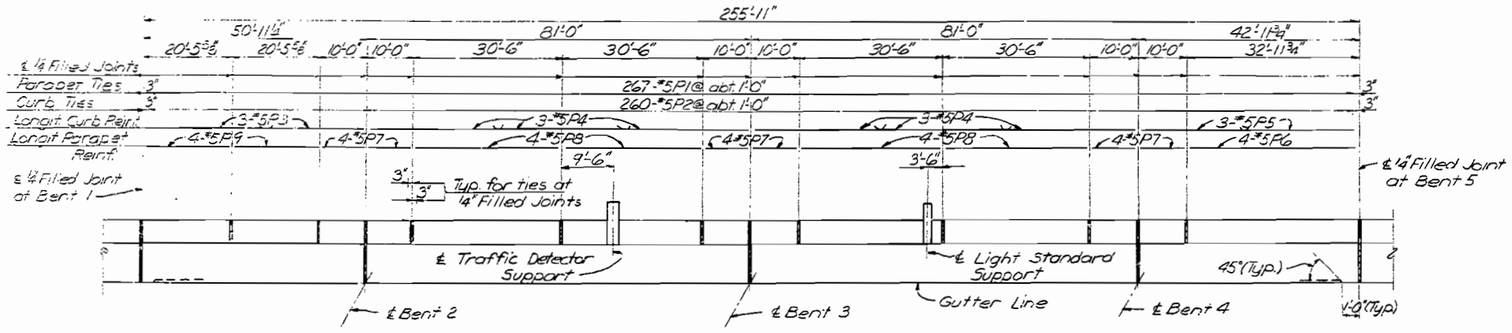
254

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

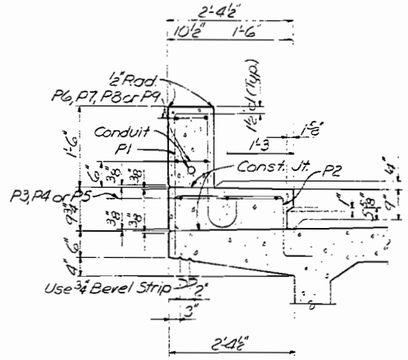
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

MISSOURI STATE HIGHWAY DEPARTMENT

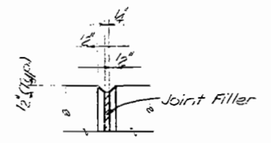
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	13.3	



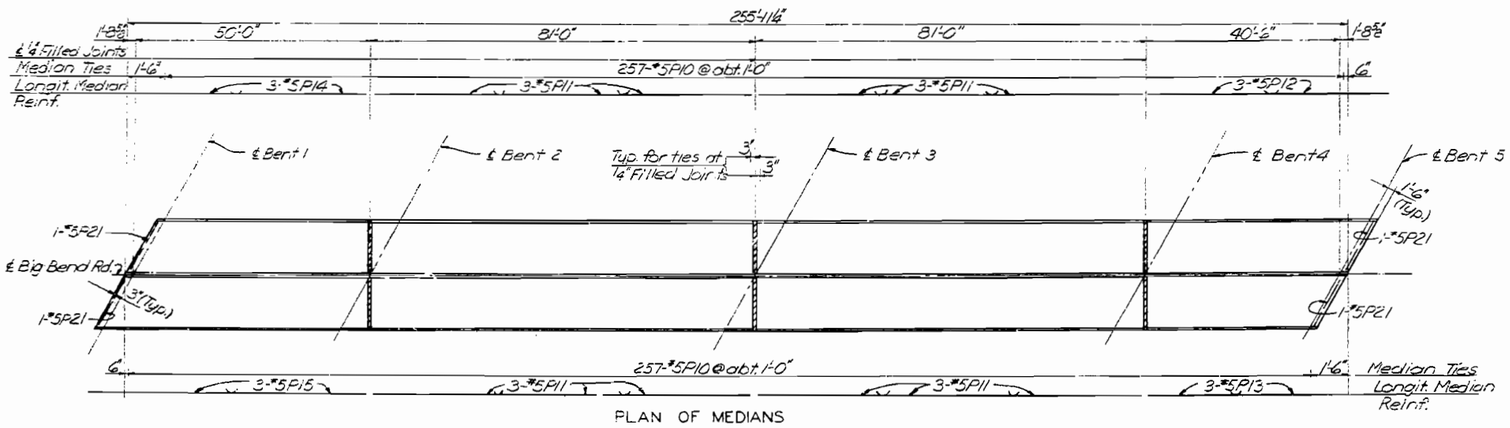
PLAN OF SAFETY CURB & PARAPET (W.B. ROADWAY)



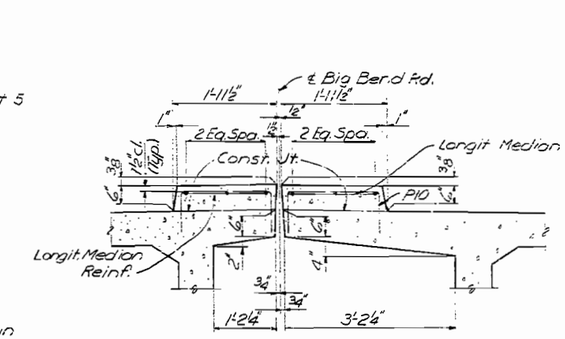
SAFETY CURB & PARAPET



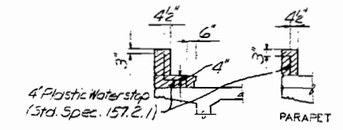
DETAIL OF BEVEL AT ¼" FILLED JOINTS



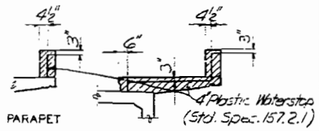
PLAN OF MEDIANS



MEDIAN



SAFETY CURB & PARAPET

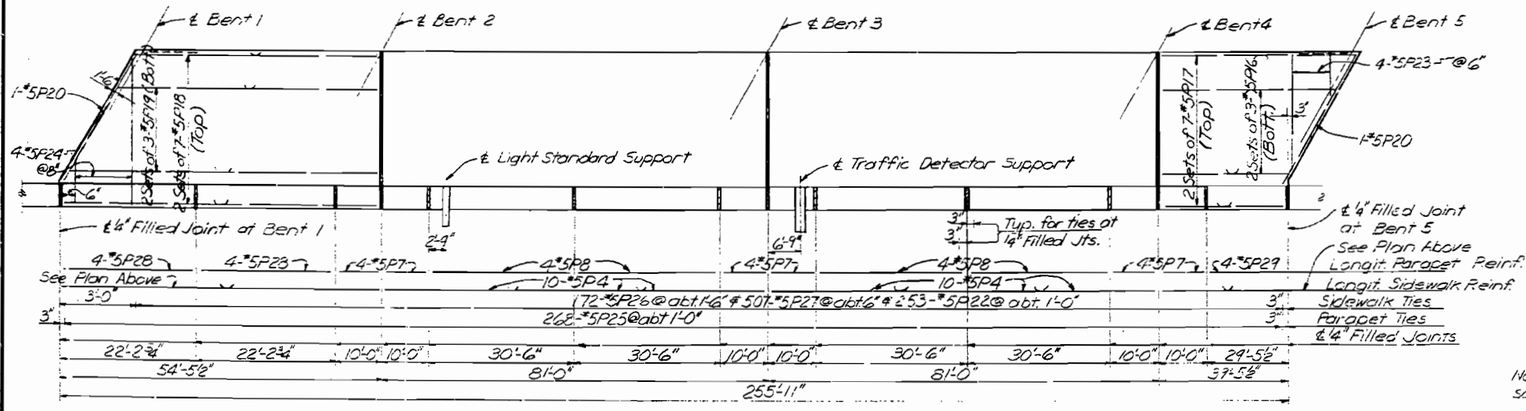


SIDEWALK & PARAPET

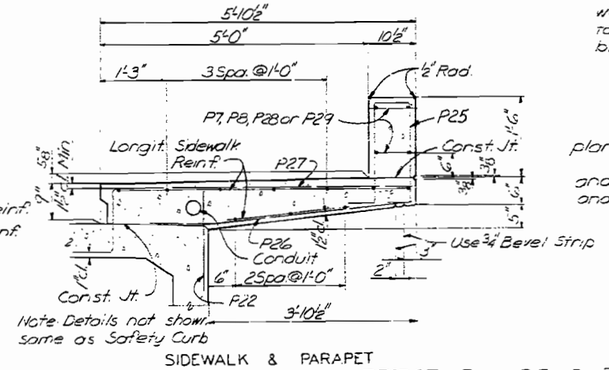
DETAIL OF WATERSTOP

Note: Plastic waterstop shall be placed in all parapet and curb filled joints.

Cost of plastic waterstop complete in place to be included in unit price bid for concrete.



PLAN OF SIDEWALK & PARAPET (E.B. ROADWAY)



Note: Details not shown same as Safety Curb

SIDEWALK & PARAPET

All longitudinal dimensions in plan are measured horizontally.

For details of light standard and traffic detector supports and location of conduit see Sheet 5.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

PROJECT NO. I-[illegible], STA. [illegible]

ST. LOUIS **COUNTY**

SIDEWALK, MEDIAN, CURB & PARAPET

SHEET . OF .

A-1716

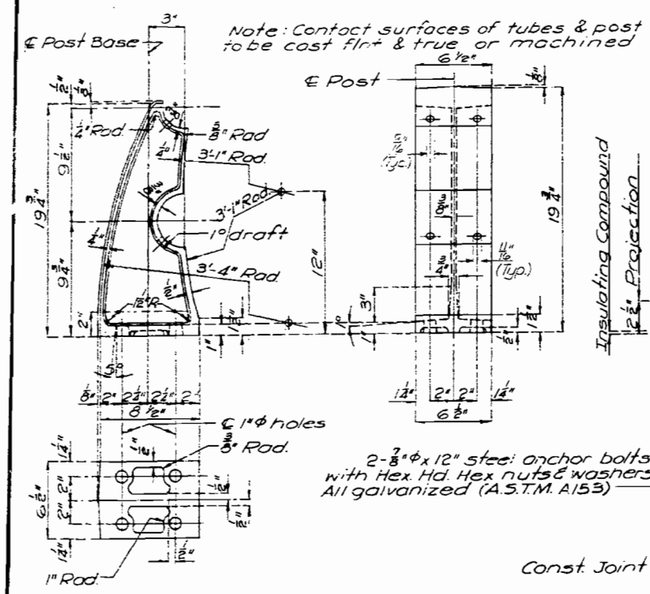
DRAWN BY: M. Montanaro, Jan. 1967
TRACED BY:
CHECKED BY: R.V. Butterfield March 1967
2606
67521

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

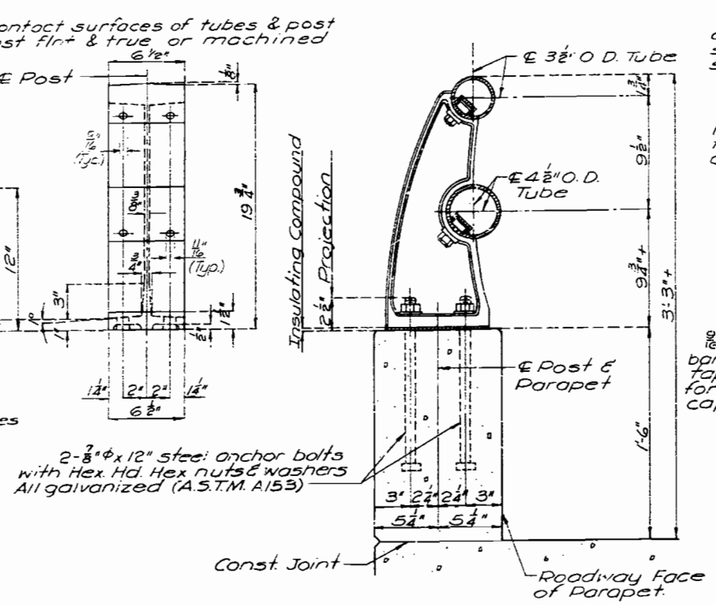
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

MISSOURI STATE HIGHWAY DEPARTMENT

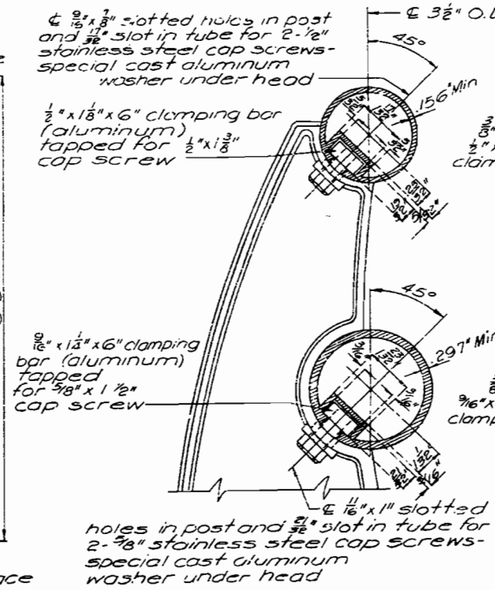
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	12	14



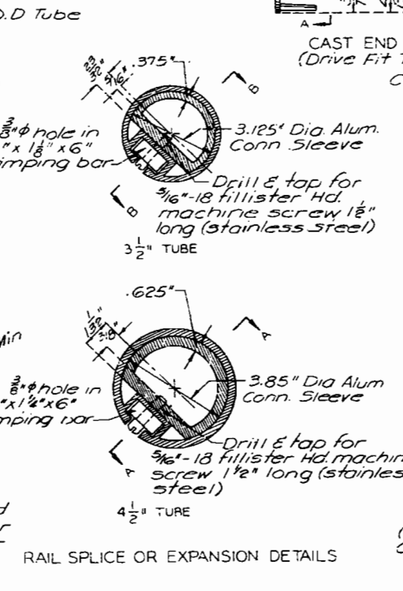
HANDRAIL POST



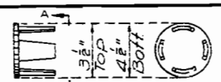
SECTION THRU HANDRAIL



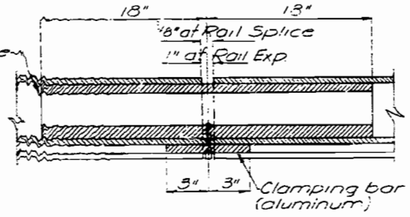
RAIL ATTACHMENT TO POST



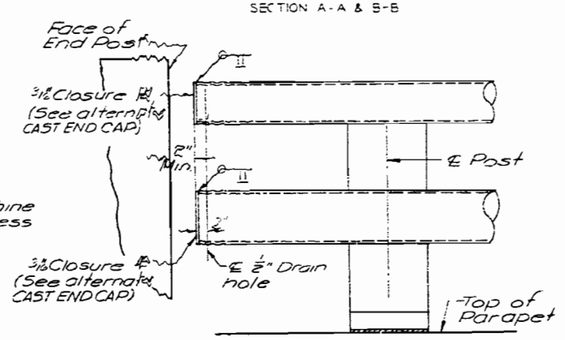
RAIL SPLICE OR EXPANSION DETAILS



CAST END CAP
(Drive Fit Type)

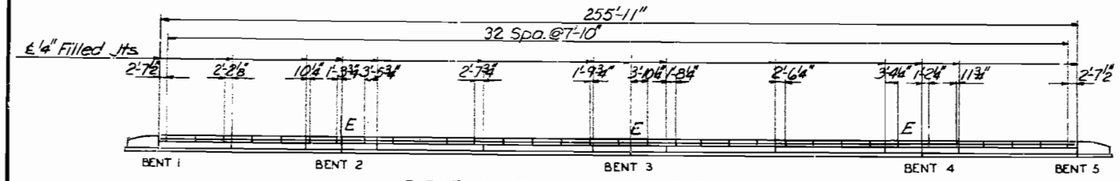


SECTION A-A & B-B



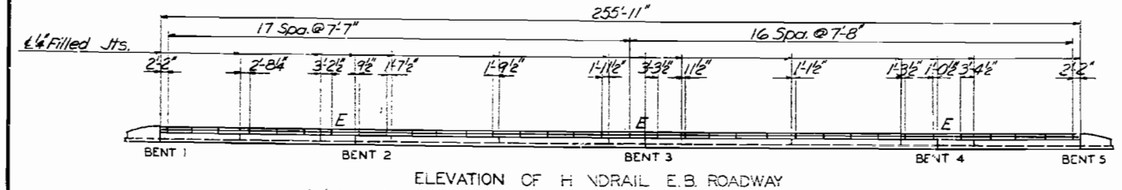
ELEVATION AT END RAIL POST

TWO-TUBE ALUMINUM RAIL



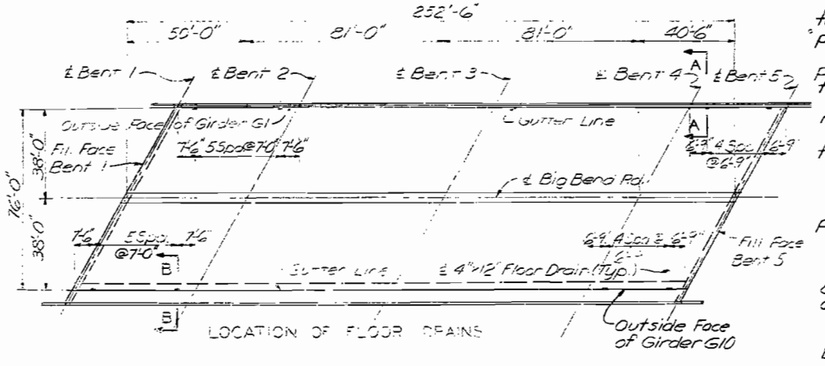
ELEVATION OF HANDRAIL W.B. ROADWAY

Note: All longitudinal dimensions are measured horizontally along outside face of parapet.
'E' indicates expansion Jt. in rail.

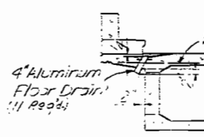


ELEVATION OF HANDRAIL E.B. ROADWAY

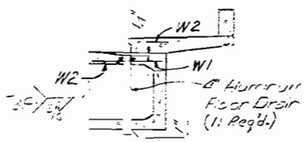
Note: All longitudinal dimensions are measured horizontally along outside face of parapet.
'E' indicates expansion Jt. in rail.



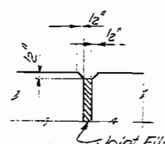
LOCATION OF FLOOR DRAINS



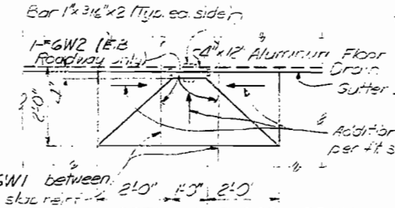
SECTION A-A



SECTION B-B



Note: Use bevel as shown for all exposed edges of joints. DETAIL OF BEVEL FOR FILLED JOINTS



TYPICAL DETAIL AT FLOOR DRAIN

DRAIN NOTES

Cut or shift transverse reinforcement in floor and shift longitudinal reinforcement to clear receiving drains.

Floor drains shall be welded ¾" aluminum sheets, A.S.T.M. B209 alloy 3003-H14 or 6061-T6.

Payment for furnishing and placing 4"x12" Aluminum Floor Drains and 4½"x12" sleeves shall be included in prime bid for other items.

Provide 4½"x12" sleeve in bottom slab under gutter. Place drains during top slab pour.

GENERAL NOTES:

All handrail posts shall be set normal to grade.

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

Top of curbs and parapets to be built parallel to grade. Concrete end post to be vertical.

Curb and parapet joints (except at end posts) to be normal to grade.

All outside corners of aluminum posts to have ⅛" radius except as noted.

All fillets ¼" except as noted.

All drafts 3° except as noted.

Rail to be fabricated in two or three panel lengths unless otherwise approved.

All rail splices shall be located near a ¼ point between rail posts.

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

See Special Provisions.

All exposed edges of end posts shall have ½" bevel. All exposed edges of curbs and parapets shall have ½" radius or ⅜" bevel.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

IN KIRKWOOD

PROJECT NO. I-MG-44-4(4)(RTE I-44) **STA.** 1100+21.39

ST. LOUIS **COUNTY**

HANDRAIL AND DRAINAGE

SHEET 12 OF 14

A-1715

TRACED BY:
CHECKED BY: E.P.B. Revised May, 1967

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

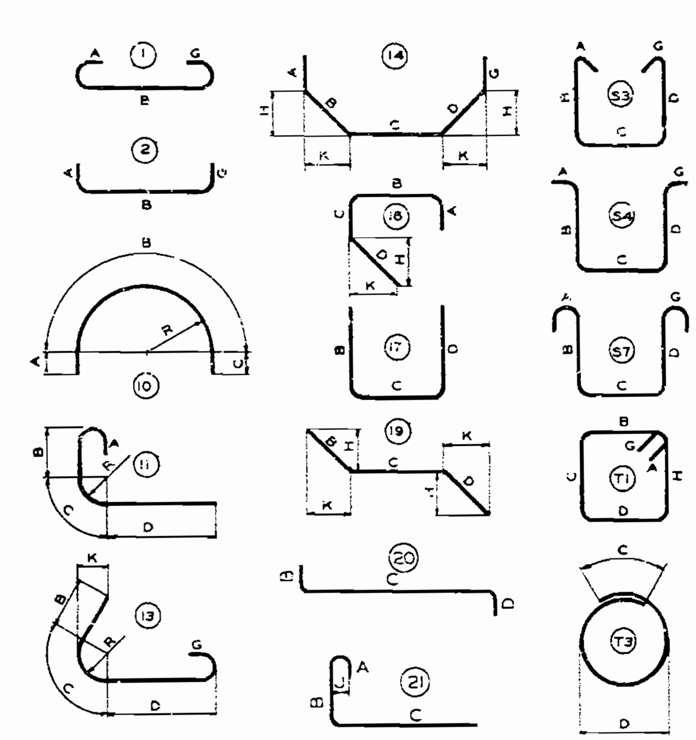
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	135	

MARK	NO. REQ'D	SIZE NO.	LENGTH FT-IN	TYPE	LOCATION	A FT-IN	B FT-IN	C FT-IN	D FT-IN	G FT-IN	H FT-IN	K FT-IN	R FT-IN
SUBSTRUCTURE													
B 12	144	5	5- 6	ST	FOOTING								
B 13	240	5	5- 0	ST	DO								
B 14					NOT USED								
B 28	144	5	5- 6	ST	FOOTING								
SUPERSTRUCTURE													
A 1	166	6	8- 2	17	BEAM		3- 0	5- 2	—				
A 2	86	5	15-11	17	DO		6- 5	3- 0 5/4	6- 5				
A 3	40	6	46- 0	ST	DO								
A 4	40	6	50- 0	ST	DO								
A 5	9	4	10-10	ST	WINGWALL	SEE	CUTTING	DIAGRAM					
A 6	4	4	7- 1	ST	DO								
A 7	6	5	9- 3	S7	END POST	7	4- 0 1/2	7 1/2	4- 0 1/2	—			
A 8	4	5	19-11	SP	DO	SEE	CUTTING	DIAGRAM					
A 9	9	4	9- 6	ST	WINGWALL	SEE	CUTTING	DIAGRAM					
A 10	8	5	8- 9	ST	DO								
A 11	24	5	8- 8	ST	END POST								
A 12	3	6	13- 6	ST	WINGWALL	SEE	CUTTING	DIAGRAM					
A 13	3	6	20- 1	SP	DO	SEE	CUTTING	DIAGRAM					
A 14	8	5	10- 6	ST	DO								
A 15	1	6	16- 9	14	DO	2- 6 1/4	9-11 1/2	4- 3 1/4	—	—	5- 1 7/8	8- 6 1/4	
A 16	1	6	14- 9	14	DO	2- 6 1/4	9-11 1/2	2- 3 1/4	—	—	5- 1 7/8	8- 5 1/4	
A 17	3	6	10- 9	ST	DO								
A 18	3	6	14- 0	13	DO		1- 0	5 1/2	12- 7	—		5 7/8	1 7/8
A 19	6	5	9- 2	ST	DO								
A 20	18	5	5- 2	17	DO		1- 7	1-11 3/4	1- 7				
A 21	6	5	11- 8	17	END POST		5- 6 1/4	7 1/2	5- 6 1/4				
A 22	4	5	20-11	SP	DO	SEE	CUTTING	DIAGRAM					
A 23	3	6	13- 6	ST	WINGWALL	SEE	CUTTING	DIAGRAM					
A 24	3	6	18- 5	SP	DO	SEE	CUTTING	DIAGRAM					
A 25	1	6	15- 5	14	DO	2- 0 1/4	9-11 1/2	3- 5 1/4	—	—	5- 1 7/8	8- 6 1/4	
A 26	1	6	14- 3	14	DO	2- 0 1/4	9-11 1/2	2- 3 1/4	—	—	5- 1 7/8	8- 6 1/4	
A 27	3	4	7- 3	ST	DO								
A 28	3	6	13- 3	19	DO		1- 3	12- 0	—		1- 1 1/8	7 1/4	
A 29	3	6	10- 9	ST	DO								
A 30	21	5	30- 9	SP	BEAM	SEE	CUTTING	DIAGRAM					
A 31	22	5	31- 7	SP	DO	SEE	CUTTING	DIAGRAM					
A 32	4	4	8- 5	ST	WINGWALL								
A 33	9	4	11- 2	ST	DO	SEE	CUTTING	DIAGRAM					
A 34	3	6	14- 5	ST	DO	SEE	CUTTING	DIAGRAM					
A 35	3	6	21- 0	SP	DO	SEE	CUTTING	DIAGRAM					
A 36	1	6	17- 0	14	DO	2- 5 1/2	10- 4 1/2	4- 2	—	—	5-10 1/4	8- 6 3/4	
A 37	1	6	15- 0	14	DO	2- 5 1/2	10- 4 1/2	2- 2	—	—	5-10 1/4	8- 6 3/4	
A 38	2	6	19- 7	SP	DO	SEE	CUTTING	DIAGRAM					
A 39	2	6	14- 8	ST	DO	SEE	CUTTING	DIAGRAM					
A 40	3	4	7- 0	ST	DO								
A 41	5	4	10- 5	ST	DO	SEE	CUTTING	DIAGRAM					
A 42	1	6	14- 5	14	DO	2- 6 1/2	9- 6 3/4	2- 3 3/4	—	—	4- 5	8- 3 3/4	
A 43	1	6	15- 7	14	DO	2- 6 1/2	9- 6 3/4	3- 5 3/4	—	—	4- 5	8- 5 3/4	
A 44	2	5	9- 3	S7	END POST	7	4- 0 1/4	7 1/2	4- 0 1/4	—			
A 45	2	5	9- 2	S7	DO	7	4- 0	7 1/2	4- 0	—			
A 46	2	5	9- 0	S7	DO	7	3-11	7 1/2	3-11	—			
A 47	2	5	8-10	S7	DO	7	3- 9 3/4	7 1/2	3- 9 3/4	—			
A 48	2	5	8- 6	S7	DO	7	3- 7 3/4	7 1/2	3- 7 3/4	—			
A 49	2	5	8- 1	S7	DO	7	3- 5 1/2	7 1/2	3- 5 1/2	—			
A 50	2	5	7- 8	S7	DO	7	3- 2 3/4	7 1/2	3- 2 3/4	—			
A 51	2	5	7- 1	S7	DO	7	2-11 1/2	7 1/2	2-11 1/2	—			
A 52	14	6	3- 9	19	WINGWALL		1- 0	2- 9	—		11 1/2	3 1/4	
B 1	334	6	13- 6	S4	BEAM	10 1/2	3- 9 3/4	4- 1 1/2	3- 9 3/4	10 1/2			
B 2	200	6	13-10	S4	DO	10 1/2	3- 9 3/4	4- 5 1/2	3- 9 3/4	10 1/2			
B 3	19	9	46- 0	ST	DO								
B 4					NOT USED								
B 5					NOT USED								
B 6	204	9	13- 5	ST	BEAM								
B 7	24	6	41-10	ST	DO								
B 8	36	11	41-10	ST	DO								
B 9	52	11	20- 0	ST	DO								
B 10	19	9	46- 9	1	DO	1- 3	45- 6			—			
B 11					NOT USED								
B 15	360	5	9- 8	T3	COLUMN			1- 3	2- 8				
B 16	24	9	27- 2	ST	DO								
B 17					NOT USED								

MARK	NO. REQ'D	SIZE NO.	LENGTH FT-IN	TYPE	LOCATION	A FT-IN	B FT-IN	C FT-IN	D FT-IN	G FT-IN	H FT-IN	K FT-IN	R FT-IN
SUPERSTRUCTURE (CONT)													
B 18	12	9	21- 9	ST	COLUMN								
B 19	24	9	27-10	ST	DO								
B 20	12	9	26- 0	ST	DO								
B 21	12	9	22-10	ST	DO								
B 22					NOT USED								
B 23	24	9	26- 3	ST	COLUMN								
B 24	12	9	23- 3	ST	DO								
B 25	12	9	25- 7	ST	DO								
B 26					NOT USED								
B 27	12	9	23- 6	ST	COLUMN								
S 1	38	6	42- 9	ST	TOP SLAB	SEE	CUTTING	DIAGRAM					
S 2	38	6	41- 7	ST	DO	SEE	CUTTING	DIAGRAM					
S 3	425	6	40- 0	ST	DO								
S 4	425	6	38- 9	ST	DO								
S 5	15	7	35- 4	ST	DO								
S 6	26	6	32- 1	ST	DO								
S 7	23	10	33- 0	ST	DO								
S 8	26	10	38- 0	ST	DO								
S 9	19	9	19- 0	ST	DO								
S 10	54	9	21- 0	ST	DO								
S 11	7	9	20- 6	ST	DO								
S 12	15	7	49- 6	ST	DO								
S 13	26	6	45- 0	ST	DO								
S 14	15	11	40- 0	ST	DO								
S 15	26	11	44- 0	ST	DO								
S 16	13	10	24- 0	ST	DO								
S 17	27	10	26- 0	ST	DO								
S 18	15	7	50- 6	ST	DO								
S 19	26	6	47- 0	ST	DO								
S 20	8	7	24-10	ST	DO								
S 21	26	10	37- 0	ST	DO								
S 22	7	10	32- 0	ST	DO								
S 23	7	7	25-10	ST	DO								
S 24	26	6	21- 7	ST	DO								
S 25	102	5	20-11	ST	DO								
S 26	4	9	29- 0	ST	BOTT.SLAB								
S 27	27	7	31- 6	ST	DO								
S 28	5	8	26- 0	ST	DO								
S 29	5	11	57- 0	ST	DO								
S 30	8	11	42- 0	ST	DO								
S 31	12	7	22- 0	ST	DO								
S 32	5	8	30- 0	ST	DO								
S 33	5	8	32- 0	ST	DO								
S 34	10	8	40- 7	ST	DO								
S 35	5	11	58- 0	ST	DO								
S 36	56	9	42- 0	ST	DO								
S 37	4	10	42- 0	ST	DO								
S 38	19	7	25- 6	ST	DO								
S 39	32	7	28- 0	ST	DO								
S 40	4	7	40- 5	ST	DO								
S 41	16	9	6- 0	ST	DO								
S 42	5	10	56- 0	ST	DO								
S 43	5	8	27- 0	ST	DO								
S 44	54	9	56- 0	ST	DO								
S 45	306	5	26- 7	ST	TOP SLAB								
S 46	102	5	25- 8	ST	DO								
S 47	5	10	55- 0	ST	BOTT.SLAB								
S 48	4	10	41- 0	ST	DO								
S 49					NOT USED								
S 50	5	8	54- 1	ST	BOTT.SLAB								
S 51	4	6	17- 0	ST	DO								
S 52	19	7	54-10	ST	DO								
S 53	4	7	51- 0	ST	DO								
S 54	4	7	31- 0	ST	DO								
S 55	5	8	55- 1	ST	DO								
S 56	540	5	21- 7	ST	DO								
S 57	8	5	25- 3	ST	DO								
S 58	8	5	14-10	ST	DO								
S 59	23	7	40- 7	ST	DO								
S56	540	5	22-10	17	DO		1-3	21-7	—	⚠			

STANDARD BAR TYPES



NOTES

Bending dimensions may be considered as approximate not necessarily adding to exact total length of bars.

All dimensions are out to out, except "R" which is to inside of bend.

All bends shown are bent around a standard mandrel, except where radius "R" is indicated.

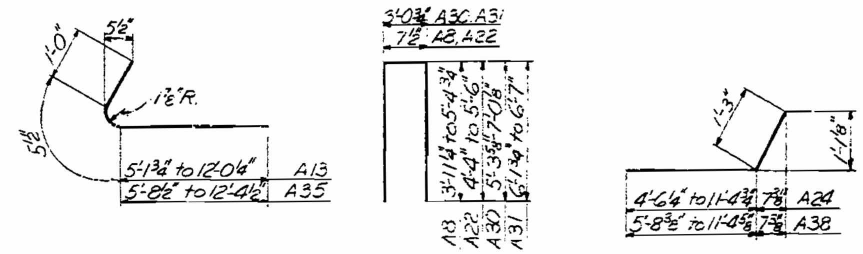
Figures in circles indicate standard bar types from A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete Structures."

Dimensioning, bending and hooks for bent bars shall conform to recommendations indicated in A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete Structures."

A dash in the appropriate dimension column indicates that a hook or portion of a standard bar type is to be omitted.

Bars marked "SP" in the type column require special bending, see detail.

Work this sheet with Sheet 14.



BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

IN KIRKWOOD

PROJECT NO. I-IG-44-4(41)(RTE I-44) **STA.** 1100+21.39

ST. LOUIS COUNTY

BAR LIST

SHEET 13 OF 14

A-1716

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

⚠ Rev. 2-9-68

DRAWN BY: M.Kordonowy Apr. 1967
TRACED BY:
CHECKED BY: F.P.Blanchard Apr. 1967

2666
675/95

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

MISSOURI STATE HIGHWAY DEPARTMENT

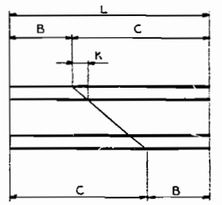
FED. ROAD DIST. NO.	STATE NO.	FED. AID PROJ. NO.	FISC. L YEAR 19	SHEET NO. 13	TOTAL SHEETS
3				13A	

SUPERSTRUCTURE (CONT.)

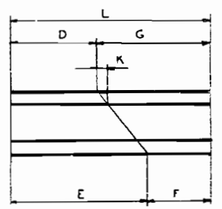
MARK	NO. REQ'D	SIZE NO.	LENGTH FT -IN	TYPE	LOCATION	A FT- IN	B FT- IN	C FT- IN	D FT- IN	G FT- IN	H FT- IN	K FT- IN	R FT- IN
T 1	7	7	34- 4	ST	TOP SLAB								
T 2	26	6	32- 4	ST	DO								
T 3	7	10	35- 0	ST	DO								
T 4	26	10	38- 0	ST	DO								
T 5	12	10	23- 0	ST	DO								
T 6	27	9	21- 0	ST	DO								
T 7	14	7	46- 6	ST	DO								
T 8	26	6	45- 0	ST	DO								
T 9	33	11	44- 0	ST	DO								
T 10	8	11	30- 0	ST	DO								
T 11	27	10	26- 0	ST	DO								
T 12	7	10	37- 0	ST	DO								
T 13	27	9	21- 0	ST	DO								
T 14	26	6	47- 0	ST	DO								
T 15	26	10	37- 0	ST	DO								
T 16	7	7	22-10	ST	DO								
T 17	26	6	21- 7	ST	DO								
T 18	57	6	42- 7	ST	DO	SEE	CUTTING	DIAGRAM					
T 19	19	6	40-11	ST	DO	SEE	CUTTING	DIAGRAM					
T 20	425	6	39- 8	ST	DO								
T 21	425	6	38-10	ST	DO								
T 22	9	7	35- 4	ST	DO								
T 23	9	9	33- 0	ST	DO								
T 24	8	9	25- 0	ST	DO								
T 25	9	7	49- 6	ST	DO								
T 26	9	11	40- 0	ST	DO								
T 27	8	10	24- 0	ST	DO								
T 28	9	7	50- 6	ST	DO								
T 29	9	9	33- 0	ST	DO								
T 30	8	9	24- 0	ST	DO								
T 31	9	7	24-10	ST	DO								
T 32	306	5	26- 7	ST	DO								
T 33	102	5	20-11	ST	DO								
T 34	102	5	25- 8	ST	DO								
T 35	4	10	31- 0	ST	BOTT.SLAB								
T 36	5	8	25- 0	ST	DO								
T 37	540	5	21- 7	ST	DO								
T 38	10	11	59- 0	ST	DO								
T 39	8	11	43- 0	ST	DO								
T 40	5	8	28- 0	ST	DO								
T 41	5	8	54- 1	ST	DO								
T 42	4	6	21- 0	ST	DO								
T 43	28	7	28- 0	ST	DO								
T 44	19	7	25- 6	ST	DO								
T 45	4	7	40- 5	ST	DO								
T 46	4	8	27- 0	ST	DO								
T 47	10	8	40- 7	ST	DO								
T 48	5	8	26- 0	ST	DO								
T 49	12	7	22- 0	ST	DO								
T 50	23	7	40- 7	ST	DO								
T 51	56	9	42- 0	ST	DO								
T 52	54	9	56- 0	ST	DO								
T 53	10	11	56- 0	ST	DO								
T 54	8	11	39- 0	ST	DO								
T 55	27	7	31- 6	ST	DO								
T 56	5	8	32- 0	ST	DO								
T 57	16	9	6- 0	ST	DO								
T 58	8	5	25- 3	ST	DO								
T 59	8	5	14-10	ST	DO								
T 60					NOT USED								
T 61					NOT USED								
T 62	19	7	54-10	ST	BOTT.SLAB								
[illegible]		7	52-										
T 64	4	7	31- 0	ST	DO								
T 65	5	8	55- 1	ST	DO								
T 37	540	5	22-10	17	DO		1-3	21-7	—				
D 1	4846	5	5- 6	2	GIRDER	9	4- 0				9		
D 2	714	5	5- 2	20	DO		9	4- 0	9				
D 3	12	8	42- 6	ST	DO								
D 4	4	8	20- 0	ST	DO								
D 5	8	8	58- 0	ST	DO								
D 6	32	5	31- 6	ST	DO								
D 7	8	5	29- 0	ST	DO								

MARK	NO. REQ'D	SIZE NO.	LENGTH FT -IN	TYPE	LOCATION	A FT- IN	B FT- IN	C FT- IN	D FT- IN	G FT- IN	H FT- IN	K FT- IN	R FT- IN
D 8	32	5	29- 2	ST	GIRDER								
D 9	12	8	42- 6	ST	DO								
D 10	24	8	57- 0	ST	DO								
D 11	12	8	30- 0	ST	DO								
D 12	12	8	18- 0	ST	DO								
D 13	8	5	25- 0	ST	DO								
D 14	8	5	13-11	ST	DO								
D 15	24	5	23- 0	ST	DO								
D 16	16	5	21- 0	ST	DO								
D 17	16	5	25- 2	ST	DO								
D 18	24	5	30- 0	ST	DO								
D 19	24	5	18- 0	ST	DO								
D 20	8	5	22- 2	ST	DO								
D 21	8	5	12- 3	ST	DO								
D 22	8	5	17- 6	ST	DO								
D 23	8	5	21- 5	ST	DO								
D 24	16	5	34- 0	ST	DO								
D 25	16	5	19- 2	ST	DO								
D 26	16	5	31- 2	ST	DO								
D 27	16	5	22- 0	ST	DO								
D 28	8	5	17- 8	ST	DO								
D 29	8	5	16- 9	ST	DO								
D 30	8	5	10- 0	ST	DO								
D 31	8	5	28-11	ST	DO								
D 32	8	5	26- 8	ST	DO								
D 33	8	5	7- 9	ST	DO								
D 34	10	8	52- 4	ST	DO								
D 35	32	5	32- 8	ST	DO								
D 36	6	8	43- 6	ST	DO								
D 37	2	8	14- 0	ST	DO								
D 38	4	8	59- 6	ST	DO								
D 39	16	5	32- 3	ST	DO								
D 40	4	5	14- 0	ST	DO								
D 41	16	5	29- 1	ST	DO								
D 42	192	5	8- 0	19	DO		1- 3		5- 6		1- 3	10 5/8	10 1/2
D 43					NOT USED								
D 44					NOT USED								
D 45	256	4	4- 2	S4	DIAPHRAGM	7 1/2	1- 3		5		1- 3	7 1/2	
D 46	48	5	18-11	ST	DO								
D 47	32	5	9- 6	ST	DO								
D 48	12	8	23- 0	ST	GIRDER								
D 49	12	8	38- 0	ST	DO								
P 1	267	5	5- 5	S7	PARAPET	7	2- 1 1/4		7 1/2		2- 1 1/4	—	
P 2	260	5	4-11	S4	CURB	9	1- 1		2- 0		1- 1	—	
P 3	6	5	25-11	ST	DO								
P 4	78	5	27- 9	ST	CURB & SW								
P 5	6	5	22- 0	ST	CURB								
P 6	4	5	32- 8	ST	PARAPET								
P 7	48	5	7- 8	ST	DO								
P 8	32	5	30- 2	ST	DO								
P 9	8	5	20- 2	ST	DO								
P 10	514	5	3- 1	17	MEDIAN		9		1- 7		9		
P 11	36	5	27- 9	ST	DO								
P 12	6	5	22- 2	ST	DO								
P 13	6	5	21- 7	ST	DO								
P 14	6	5	26- 4	ST	DO								
P 15	6	5	26-11	ST	DO								
P 16	6	5	21- 1	ST	SIDEWALK								
P 17	7	5	41-10	ST	DO	SEE	CUTTING		DIAGRAM				
[illegible]		5	24- 4	ST	DO	[illegible]	[illegible]		DIAG.				
P 19	6	5	27- 7	ST	DO								
P 20	2	5	7- 9	20	DO		1- 1		5- 8		1- 0		
P 21	4	5	3- 4	17	MEDIAN		9		1-10		9		
P 22	253	5	1-10	ST	SIDEWALK								
P 23	2	5	9- 3	SP	DO	SEE	CUTTING		DIAGRAM				
P 24	2	5	10- 8	SP	DO	SEE	CUTTING		DIAGRAM				
P 25	268	5	5- 9	SP	PARAPET								
P 26	172	5	5- 0	19	SIDEWALK		1- 3		3- 9		—		1 7/8 1- 2 7/8
P 27	507	5	7- 8	20	DO		5- 6		1- 2		1- 0		
P 28	8	5	21-11	ST	PARAPET								
P 29	4	5	29- 2	ST	DO								

MARK	NO. REQ'D	SIZE NO.	LENGTH FT -IN	TYPE	LOCATION	A FT- IN	B FT- IN	C FT- IN	D FT- IN	G FT- IN	H FT- IN	K FT- IN	R FT- IN
L 1	3	5	6- 3	19	UTILITY		1- 9		4- 6		—	1- 7 3/4	7 1/8
L 2	2	5	7-11	T1	SUPPORTS	6	1-10 1/2		1- 7		1-10 1/2	6	1- 7
L 3	1	5	7- 5	T1	DO	6	1- 9		1- 7		1- 9	6	1- 7
L 4	1	5	7- 5	T1	DO	6	1- 7 1/2		1- 7		1- 7 1/2	6	1- 7
L 5	1	5	7- 9	T1	DO	6	1- 9 3/8		1- 7		1- 9 3/8	6	1- 7
L 6	1	5	7- 8	T1	DO	6	1- 8 1/4		1- 7		1- 8 1/4	6	1- 7
L 7	2	5	6- 4	T1	DO	6	1- 5		1- 3		1- 5	6	1- 3
L 8	1	5	6- 1	T1	DO	6	1- 3 1/2		1- 3		1- 3 1/2	6	1- 3
L 9	1	5	5-10	T1	DO	6	1- 2		1- 3		1- 2	6	1- 3
L10	3	5	5- 9	19	DO		1- 9		4- 0		—	1- 7 3/4	7 1/8
L11	1	5	16- 1	S4	DO	9	6- 6		1- 7		6- 6	9	
L12	1	5	14-10	S4	DO	9	6- 0 1/2		1- 3		6- 0 1/2	9	
L13	1	5	6- 2	T1	DO	6	1- 4		1- 3		1- 4	6	1- 3
L14	1	5	6- 0	T1	DO	6	1- 3		1- 3		1- 3	6	1- 3
L15	3	5	5- 8	19	DO		2- 7		3- 1		—	2- 5 1/2	9 1/2
L16	1	5	7-10	S4	DO	9	2- 6 3/8		1- 3		2- 6 3/8	9	
L17	4	5	1-10	ST	DO								
L18	4	5	2- 8	ST	DO								
L19	3	5	6- 1	19	DO		2- 6		3- 7		—	2- 4 1/2	9 3/8
L20	1	5	9-	S4	DO	9	2-11 7/8		1- 7		2-11 7/8	9	
W 1	44	6	4- 0	ST	DRAINS								
W 2	22	6	3- 2	20	DO		1- 0		1- 2		1- 0		



EQUAL CUTTING DIAGRAM
(One Set Shown)

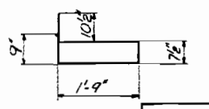


UNEQUAL CUTTING DIAGRAM
(One Set Shown)

Mark	Cutting Schedule	B	C	K	L
A5	Cut 1 Set of 9 Bars	3'-0"	7'-10"	7¼"	10'-10"
A9	Cut 1 Set of 9 Bars	2'-4"	7'-2"	7¼"	9'-6"
A33	Cut 1 Set of 9 Bars	2'-10"	8'-4"	8¼"	11'-2"
A41	Cut 1 Set of 9 Bars	2'-10"	7'-7"	7⅞"	10'-5"
P17	Cut 1 Set of 7 Bars	20'-2"	21'-8"	3"	41'-10"
P18	Cut 1 Set of 7 Bars	26'-5"	27'-11"	3"	54'-4"

Mark	Cutting Schedule	D	E	F	G	K	L
A8	Cut 1 Set of 4 Bars & Bend	8'-6"	9'-9"	10'-2"	11'-5"	5"	19'-11"
A12	Cut 1 Set of 3 Bars	3'-3⅜"	6'-0⅜"	7'-5¼"	10'-2¼"	1'-4½"	13'-6"
A13	Cut 1 Set of 3 Bars & Bend	6'-7⅛"	9'-4⅛"	10'-8⅜"	13'-5⅜"	1'-4½"	20'-1"
A22	Cut 1 Set of 4 Bars & Bend	9'-3½"	10'-3½"	10'-7½"	11'-7½"	4"	20'-11"
A23	Cut 1 Set of 3 Bars	3'-3⅜"	6'-0⅜"	7'-5¼"	10'-2¼"	1'-4½"	13'-6"
A24	Cut 1 Set of 3 Bars & Bend	5'-9⅜"	8'-6⅜"	9'-10⅜"	12'-7⅜"	1'-4½"	18'-5"
A30	Cut 1 Set of 21 Bars & Bend	13'-8"	15'-4"	15'-5"	17'-1"	1"	30'-9"
A31	Cut 1 Set of 22 Bars & Bend	15'-4⅜"	15'-9⅜"	15'-9⅜"	16'-2⅜"	4"	31'-7"
A34	Cut 1 Set of 3 Bars	3'-10⅜"	6'-6⅜"	7'-10⅜"	10'-6⅜"	1'-4"	14'-5"
A35	Cut 1 Set of 3 Bars & Bend	7'-2"	9'-10"	11'-2"	13'-10"	1'-4"	21'-0"
A38	Cut 1 Set of 2 Bars & Bend	6'-11⅜"	8'-10⅜"	10'-8⅜"	12'-7⅜"	1'-10⅜"	19'-7"
A39	Cut 1 Set of 2 Bars	4'-5⅜"	6'-4⅜"	8'-3⅜"	10'-2⅜"	1'-10⅜"	14'-8"
P23	Cut 1 Set of 2 Bars & Bend	3'-3⅜"	4'-2⅜"	5'-0⅜"	5'-11⅜"	10¾"	9'-3"
P24	Cut 1 Set of 2 Bars & Bend	3'-6⅜"	4'-5⅜"	5'-3⅜"	7'-1⅜"	1'-2⅜"	10'-8"
S1	Cut 2 Sets of 19 Bars	3'-8"	20'-11"	21'-10"	39'-1"	11½"	42'-9"
S2	Cut 2 Sets of 19 Bars	3'-1"	20'-4"	21'-3"	38'-6"	11½"	41'-7"
T18	Cut 3 Sets of 19 Bars	3'-7"	20'-10"	21'-9"	39'-0"	11½"	42'-7"
T19	Cut 1 Set of 19 Bars	2'-9"	20'-0"	20'-11"	38'-2"	11½"	40'-11"

1'-3⅜ to 3'-11⅝" P23
1'-6⅝ to 5'-1⅜" P24



P25

Note: For reinforcing steel notes see Sheet 13.

BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE ROUTE 44

IN KIRKWOOD

PROJECT NO. I-IG-44-4(41)(RTE I-44) **STA.** 1100 + 21.39

ST. LOUIS COUNTY

BAR LIST

SHEET 12 OF 12

A-1716

DRAWN BY: M. Kordonowy, Apr. '67
TRACED BY:
CHECKED BY: F.P. Blanchard, Apr. '67

2606
675196

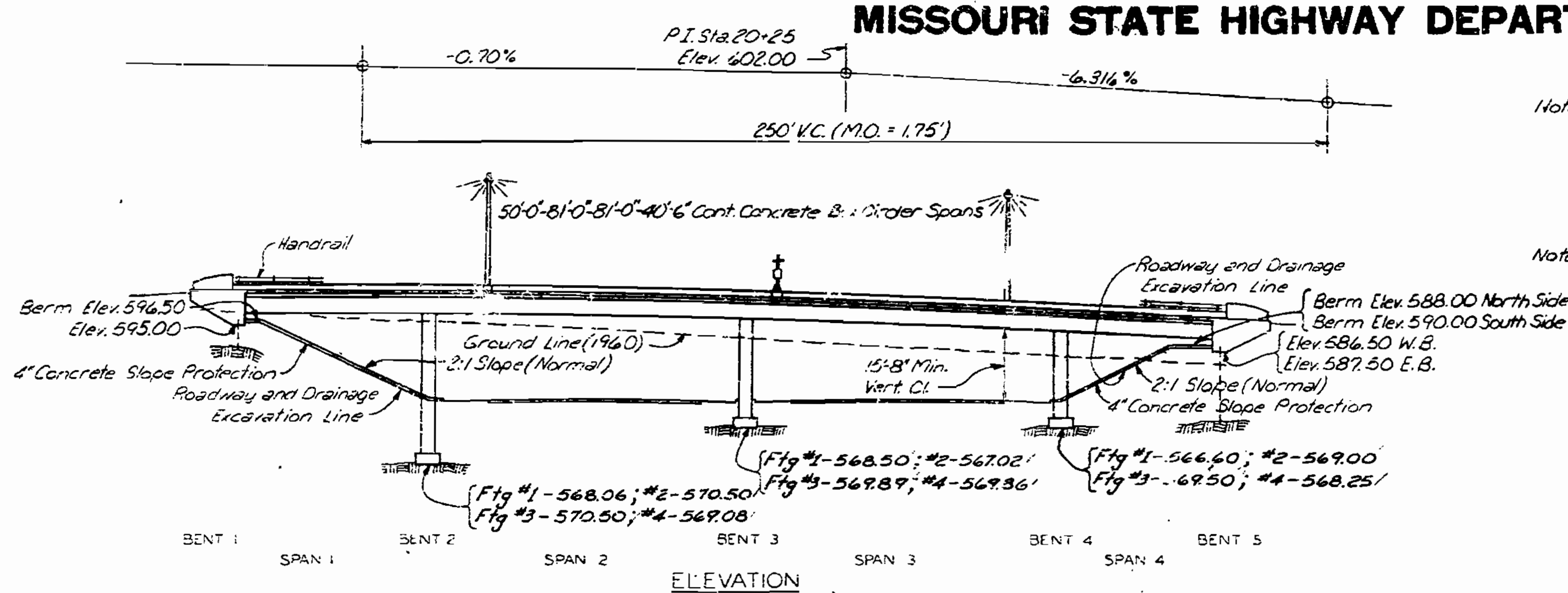
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS. △ Rev. 2-9-68

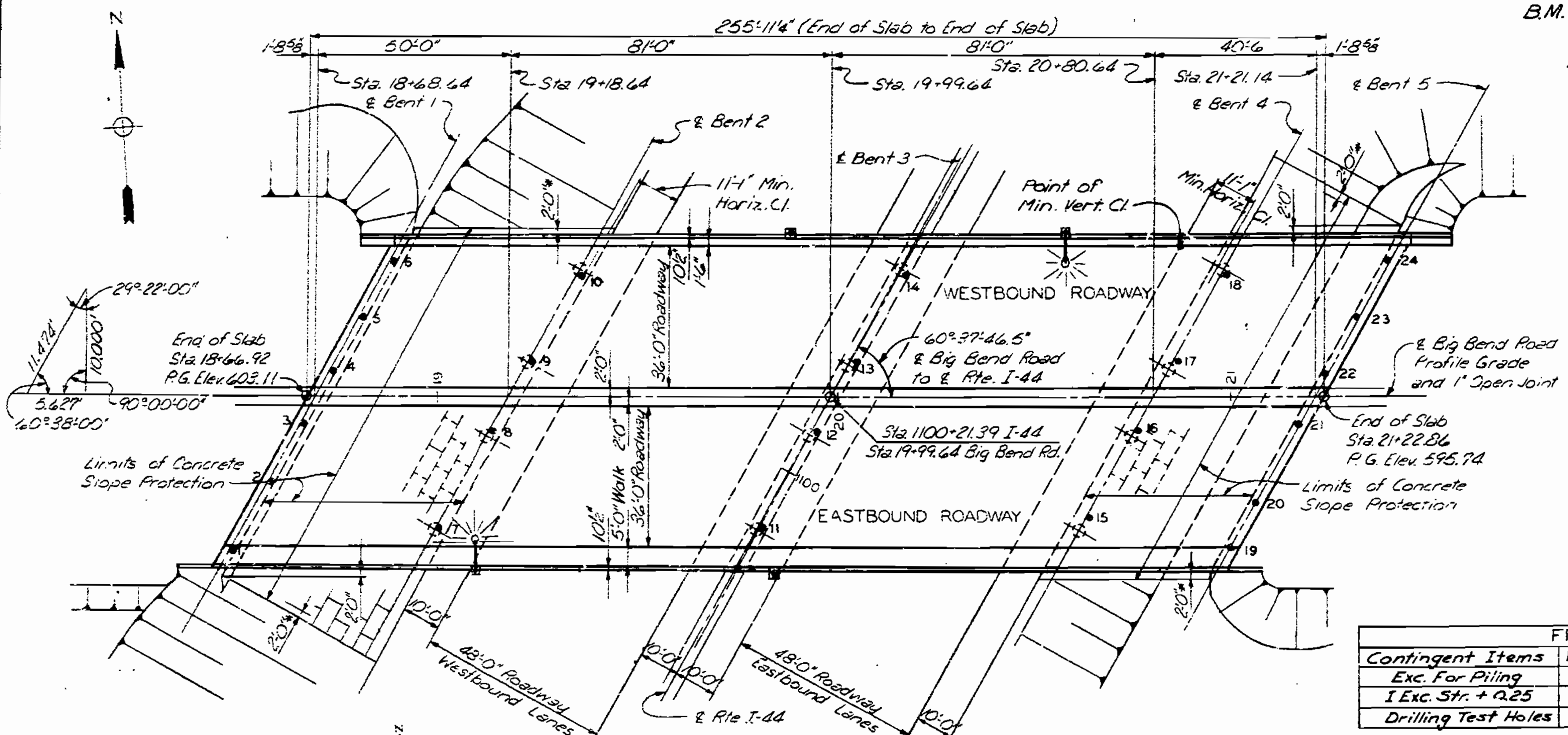
MISSOURI STATE HIGHWAY DEPARTMENT

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

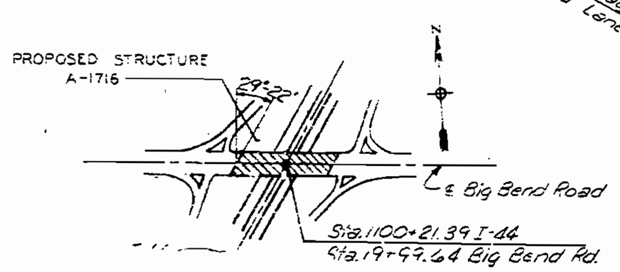
FINAL PLANS



ELEVATION
(Normal to ℄ Bents)



PLAN



LOCATION SKETCH

Note: Compacted roadway fill (full roadway width) was placed up to the elevation of bottom of Bent 5 in front of and not less than 25'-0" in back of Bent 5 before steel piles were driven.

Note: Concrete Slope Protection was in accordance with Standard Specification 83.50.
Concrete Protection on front slopes at End Bents was included under roadway items. Provide 1" Joints (Standard Specification 157.1.7) between slope protection pavement and End Bents and columns of intermediate bents. Provide ½" Joints (Standard Specification 157.1.7) between slope protection and roadway curb.

BENCH MARKS
(U.S.G.S. Datum)

B.M. #19-C: Chiseled □ on S.E. corner of sidewalk at end of bridge E.B.L. Elev. 597.12

GENERAL NOTES

FINAL PLANS

SPECIFICATIONS: Missouri State Highway Commission Standard Specifications, 1961 Edition.

DESIGN LOADING: In accordance with Division I of the A.A.S.H.O. Standard Specifications for Highway Bridges, 1961 Edition and 1961 thru 1964 Interim Specifications.
Live Load: H.S 20-44
Dead Load: Provision is made for a future wearing surface of 16 pounds per square foot of roadway surface.
Earth Weight: 120 lbs. per cu. ft.; Equivalent Fluid Pressure 30 lbs. per cu. ft.

DESIGN UNIT STRESSES:
Concrete in flexure: Class B Concrete — f_c = 1,200 lbs. per sq. in.
Class B1 Concrete — f_c = 1,600 lbs. per sq. in.
Reinforcing Steel — f_s = 20,000 lbs. per sq. in.
Steel Piles (A.S.T.M. A36) — f_b = 9,000 lbs. per sq. in.

CONCRETE: Concrete for Superstructure was Class B1. Concrete for Substructure (Footings of Bents 2, 3 and 4) was Class B.

FILLED JOINTS: Where joint filler is specified on the plans it was conform to Standard Specification 157.2.4.

SURFACE SEALING: Superstructure deck was surface sealed.

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to center line of bar except where the clear distance is noted from the face of concrete. All reinforcing steel was lapped a minimum of 24 bar diameters.

PAINTING: Structural Steel access doors did receive three coats of paint. They were cleaned and painted one coat of red lead in the shop with intermediate brown coat and final coat applied in the field. Final coat on access doors and frames was gray.

Cost of painting was [illegible] included in price bid for other items.

FOOTING AND PILE DATA							
	Bent No.		1	2	3	4	5
SPREAD FOOTINGS	Foundation Material		—	Rock	Rock	Rock	—
	Design Bearing Tons / Sq. Ft.		—	10	10	10	—
BEARING PILE	Pile Size		10BP42	—	—	—	10BP42
	Number Required		11	—	—	—	11
	Approximate Length	Ft	20	—	—	—	20
	Design Bearing	Tons	55	—	—	—	50
	Hammer Energy Required	Ft.-Lbs.	12,400	—	—	—	11,200

Note: Bearing Piles did conform to A.S.T.M. A36-66.
* 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 piles were driven to practical refusal.
Footings were carried 18" into soft rock and cast against vertical faces of same.

FINAL QUANTITIES				
Contingent Items	Westbound Br.	Eastbound Br.	Total	
Exc. For Piling	—	719.09	719.09	
I Exc. Str. + 0.25	20.2 c.y.	6.8 c.y.	27.0 c.y.	
Drilling Test Holes	79.0 ft.	45.0 ft.	124.0 ft.	

Note: • Indicates borings. For Log of Borings, see Sheet 2.
* Raise edge 3" in 2'-0".
Dimensions shown are measured horizontally.

Note: All concrete and reinforcement above footings was included in superstructure quantities.
No payment for excavation was allowed at Bent 5.

FINAL QUANTITIES								
Item		Westbound Bridge			Eastbound Bridge			Total
		Substr.	Superstr.	Total	Substr.	Superstr.	Total	
Class 1 Excavation for Structures	Cu. Yd.	112.0	—	112.0	113.0	—	113.0	225.0
10BP42 Steel Piles in Place	Lin. Ft.	205	—	205	239	—	239	444.0
Class B Concrete	Cu. Yd.	18.8	—	18.8	17.9	—	17.9	36.7
Class B1 Concrete	Cu. Yd.	—	761.3	761.3	—	789.2	789.2	1550.5
Reinforcing Steel	Lbs.	1300	237,980	239,280	1300	249350	250,650	489,930
H.S. Bridge Rail (Two-Tube Type)	Lin. Ft.	—	256	256	—	256	256	512
Conduit System	Lump Sum	—	—	—	—	—	—	1

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SUBMITTED BY: [signature] DATE 9/14/67
BRIDGE ENGINEER

APPROVED BY: [signature] DATE 9/14/67
CHIEF ENGINEER

BRIDGE BIG BEND ROAD UNDERPASS
STATE ROAD INTERSTATE ROUTE 44
[illegible]
PROJECT NO. [illegible] (RTE I-44) **STA.** [illegible]
ST. LOUIS COUNTY

FINAL PLANS

SUBMITTED BY: [signature]
REGISTERED PROFESSIONAL ENGINEER MISSOURI NO. E-4281

SHEET OF

A-716

DRAWN BY: D. Schnerrle Jan. 1967
TRACED BY:
CHECKED BY: R. U. Butterfield March 1967

2606
67545

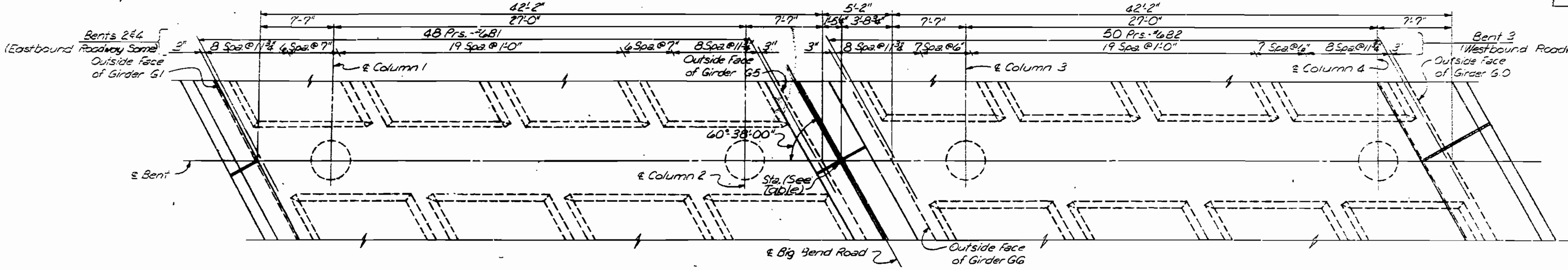
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

239

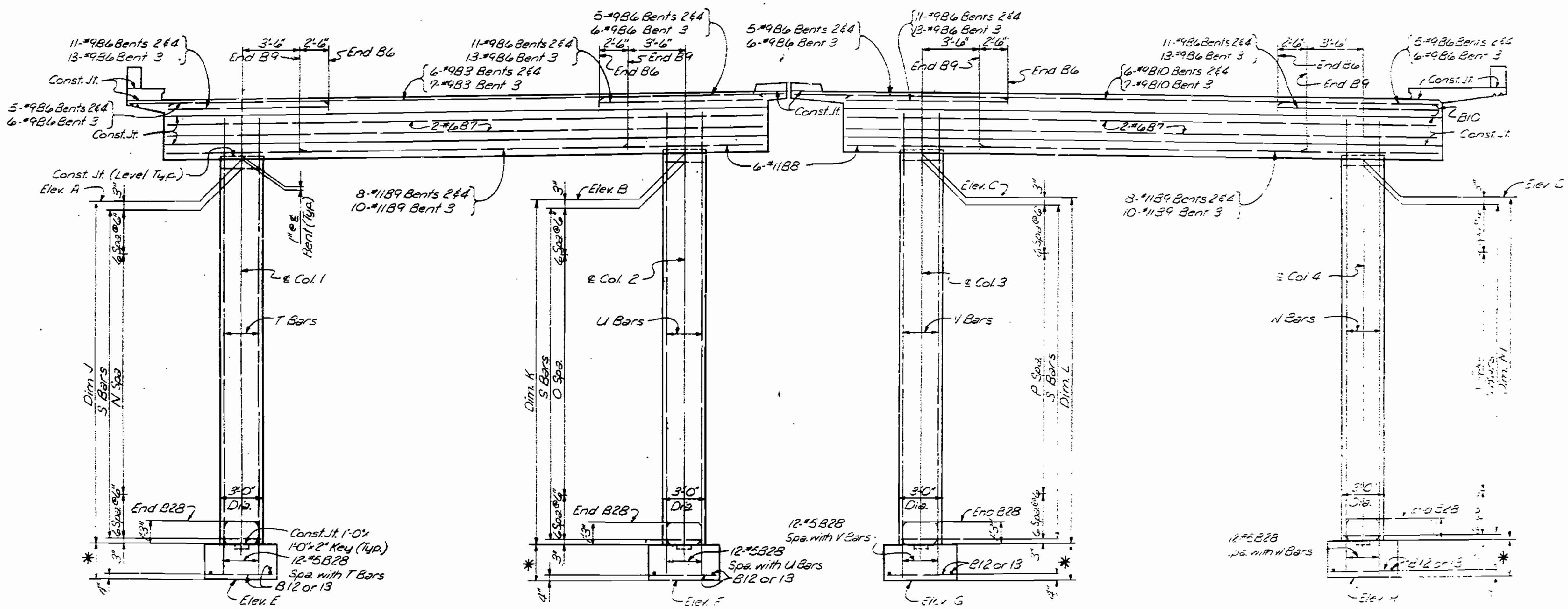
MISSOURI STATE HIGHWAY DEPARTMENT

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

FINAL PLANS



PLAN



ELEVATION

* See table for footing thickness

VARIABLE FOOTING DEPTH			
	Bent #2	Bent #3	Bent #4
Ftg #1	See O.R. #26	2'-6"	6'-4¾"
Ftg #2	2'-6"	5'-11¼"	4'-0"
Ftg #3	2'-6"	3'-1¼"	3'-6"
Ftg #4	2'-6"	3'-1¾"	4'-9"

NOTES

Work this Sheet with Sheet 5.

REVISED

BRIDGE BIG BEND ROAD OVERPASS

STATE ROAD

PROJECT NO. STA.

COUNTY

FINAL PLANS

BENTS

SHEET OF

A-1716

DRAWN BY: O. Schremp, Jan. 1961
TRACED BY:
CHECKED BY: P.V. Butterfield March 1961

2606
67529

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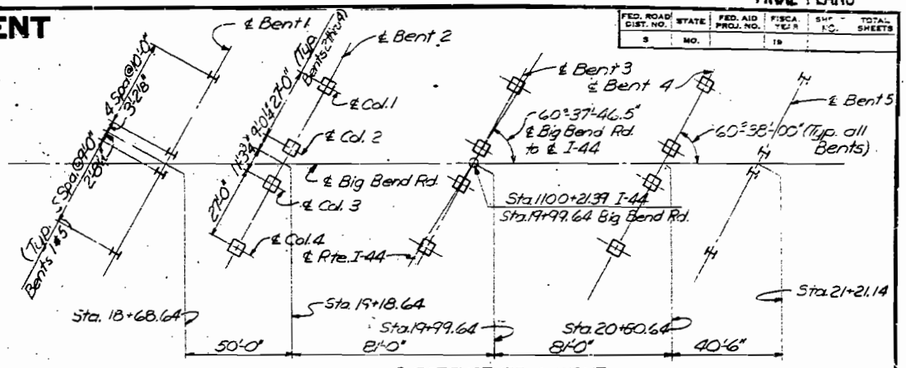
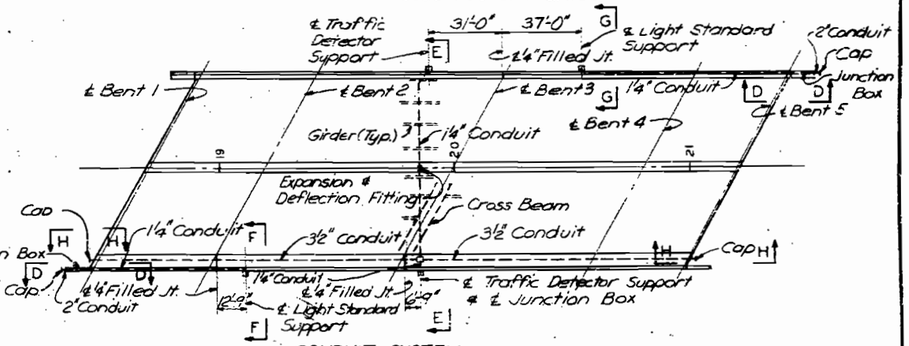
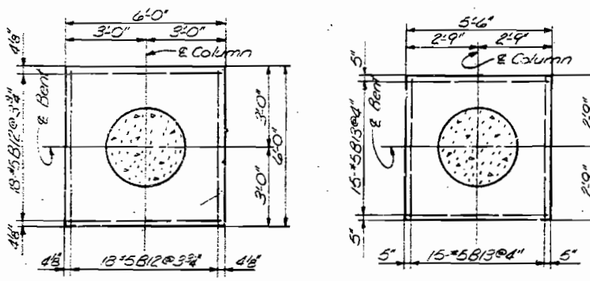
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

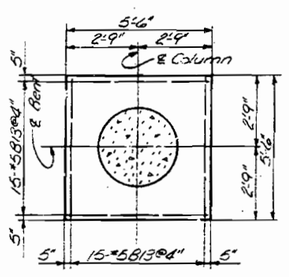
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

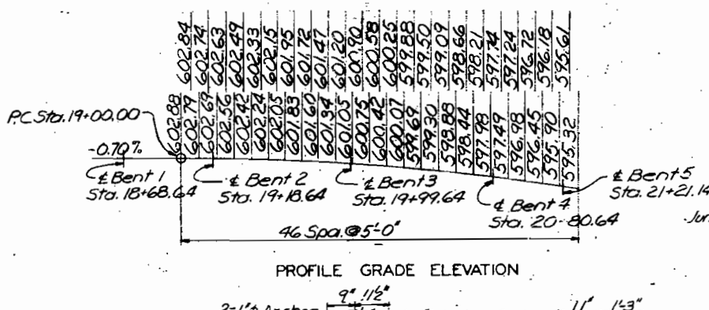
240

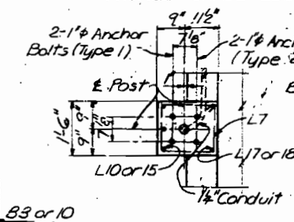


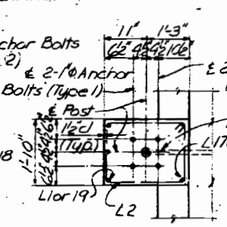












FINAL PLANS

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

MISSOURI STATE HIGHWAY DEPARTMENT

241

VARIABLE ELEVATIONS AND DIMENSIONS	Bent 2	Bent 3	Bent 4
Elev. A	597.73	595.77	592.33
Elev. B	598.28	596.56	593.36
Elev. C	598.36	596.82	593.80
Elev. D	598.10	596.80	594.03
Elev. E	568.06	568.50	566.60
Elev. F	570.50	567.02	569.00
Elev. G	570.50	569.89	569.50
Elev. H	569.08	569.86	568.25
Dim. J	26'-11⅝"	24'-9¼"	19'-4"
Dim. K	25'-3⅜"	23'-6¾"	20'-4⅜"
Dim. L	25'-4⅜"	23'-9⅞"	20'-9⅝"
Dim. M	26'-6¼"	23'-9⅝"	21'-0⅜"
Station	19+18.64	19+99.64	20+80.64

Note: In no case was bottom of footing elevation higher than Elev. 570.50

VARIABLE SPACINGS	N Spa.	O Spa.	P Spa.	R Spa.
Bent 2	18 @ abt. 1'-0⅛"	18 @ abt. 1'-0½"	18 @ abt. 1'-0½"	26 @ abt. 1'-0¼"
Bent 3	18 @ abt. 1'-0⅛"	17 @ abt. 1'-0"	17 @ abt. 1'-0¼"	17 @ abt. 1'-0¼"
Bent 4	13 @ abt 11⅞"	14 @ abt. 11⅞"	14 @ abt. 1'-0¼"	14 @ abt. 1'-0½"

VARIABLE BARS

	Column 1		Column 2		Column 3		Column 4	
Bent	S Bars	T Bars	S Bars	U Bars	S Bars	V Bars	S Bars	W Bars
2	31-#5B15	12-#9B16	31-#5B15	12-#9B19	31-#5B15	12-#9B19	39-#5B15	12-#9B25
3	31-#5B15	12-#9B16	30-#5B15	12-#9B20	30-#5B15	12-#9B23	30-#5B15	12-#9B23
4	26-#5B15	12-#9B18	27-#5B15	12-#9B21	27-#5B15	12-#9B24	27-#5B15	12-#9B27

TEST HOLES

	Bent #2	Bent #3	Bent #4
Ftg #1	2-3' & 1-5'	2-6'	2-6' & 2-4'
Ftg #2	1-4'	3-4' & 1-5'	1-7' & 2-4'
Ftg #3	1-4'	2-4' & 1-5'	1-7'
Ftg #4	1-6' & 1-5'	1-4'	1-6'

SUBSTRUCTURE LAYOUT

CONDUIT SYSTEM

FOOTING PLAN
BENT 3

FOOTING PLAN
BENTS 2 & 4

PROFILE GRADE ELEVATION

PLAN OF LIGHT
STANDARD SUPPORT

PLAN OF TRAFFIC
DETECTOR SUPPORT

SECTION E-E

*Note: 1" is measured at ℄ of Support.

Note Details not shown same as Section F-F or E-E.

SECTION THRU
BENTS 2 & 4

SECTION THRU
BENT 3

VIEW D-D

SECTION F-F

SECTION G-G

ANCHOR BOLTS

SECTION THRU
COLUMN

Note: Spacing of Vertical Bars is measured along inside of ties.

CONDUIT SYSTEM NOTES

½"φ Drain holes were provided at low points of conduit and junction boxes.

Payment for furnishing and placing conduit, expansion fitting, junction boxes and anchor bolts for light standards and traffic detectors was included in the contract lump sum price bid for "Conduit System on Structures."

Light standards, traffic detectors, wiring and fixtures furnished and installed by others.

All conduit was rigid galvanized steel.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

All junction boxes were flush mounted and similar or equal to O.Z. Mfg. Co. Type "YR" for parapets and Type "YT" for sidewalk.

Anchor bolts were furnished with 2 Galvanized Std. Hex. Nuts and 2 Galvanized Washers per bolt.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SECTION H-H

DRAWN BY: D. Schremp Jan. 1967
TRACED BY:
CHECKED BY: R.V.B. & F.R.B. March 1967
2606
47530

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

BRIDGE BIG BEND ROAD UNDERPASS
STATE ROAD INTERSTATE ROUTE 44
IN KIRKWOOD
PROJECT NO. I-IG-44-4(4),XRTE I-44 **STA.** 1100-21.39
ST. LOUIS **COUNTY**
FINAL PLANS

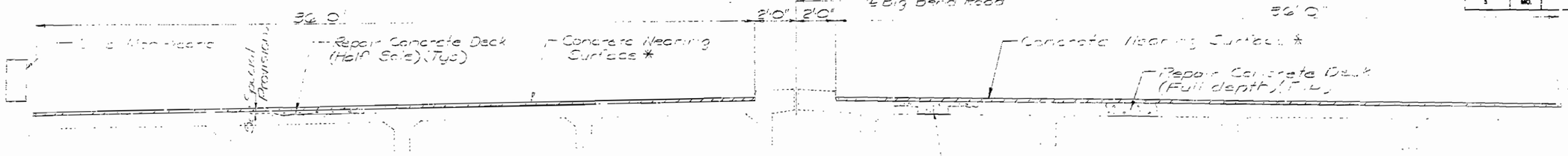
BENTS 2,3 & 4 AND CONDUIT SYSTEM

SHEET 3 OF 5

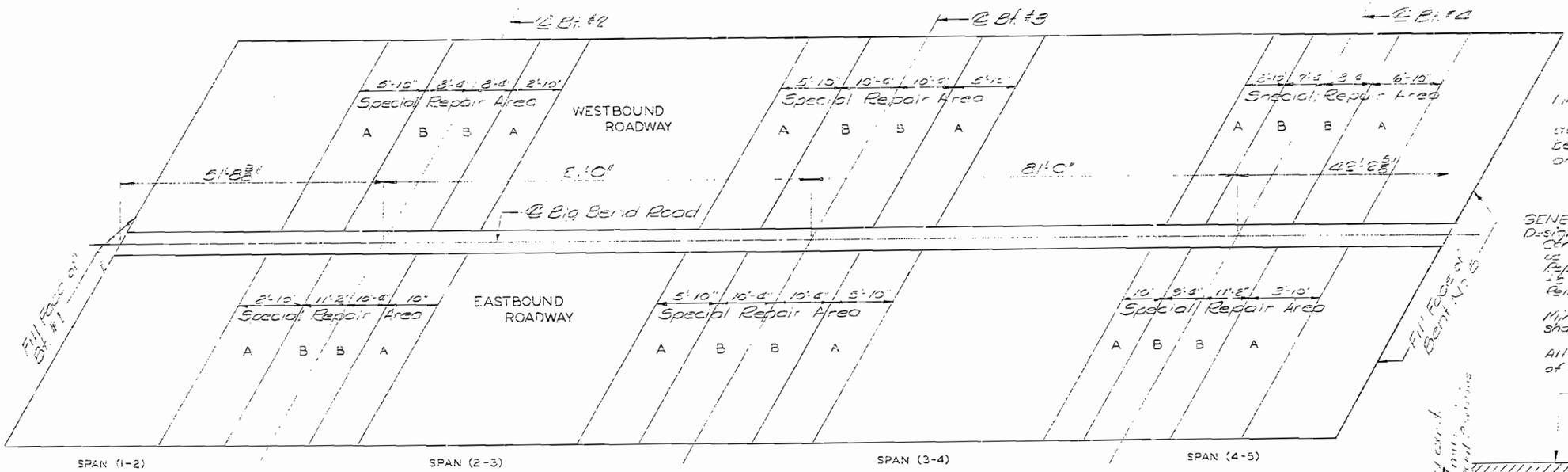
A-4716

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.		15	22	



SECTION THRU SLAB



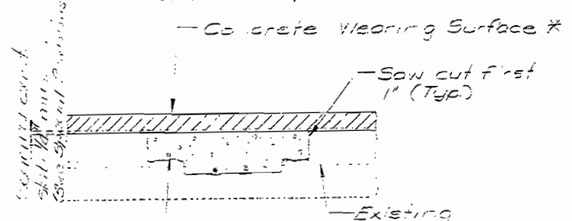
PLAN OF SLAB

Note: Any concrete removal for repair in areas designated 4 & B shall be repaired in alphabetical order. (See Special Provisions)

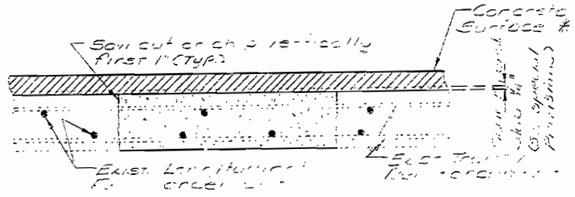
GENERAL NOTES:
Design Unit Stresses:
Concrete for Curb Modification shall be either Class B1 or Class B2 Deck Repair Concrete (See Special Provisions)
f'_c = 4000 psi
Reinforcing Steel (Grade 60) f_y=60,000 psi

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

All joint filler shall meet the requirement of Standard Specification 1057.2.4.

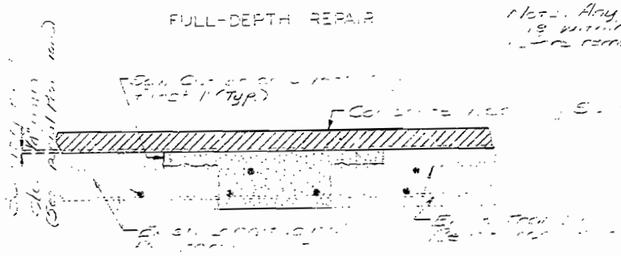


HALF-SOLED AREA



FULL-DEPTH REPAIR

Note: Any repair in the remainder of the bridge that is within 42" of adjacent Zone A shall be considered as removing old concrete in Zone A.



FULL-DEPTH REPAIR IN HALF-SOLE AREA

ESTIMATED QUANTITIES

ITEM		WB LANE	EB LANE	TOTAL
Concrete Wearing Surface*	Sq. Yd.	1003	1003	2006
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	1397	1357	2754
Full Depth Repair	Sq. Ft.	461	411	872
Curb Modification	Lin. Ft.	370		370

* Alternate A or B, by contractor. Alternate A = 1½" Latex Modified Concrete, Alternate B = 2" Low Slump Concrete. (See Job Special Provisions)

REPAIRS TO
BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE I-44
IN KIRKWOOD

PROJECT NO. IR-44-4(85) **STA.** 100 + 21.89

JOB NO. 6-1344-1685 **RTE.** I-44

ST LOUIS **COUNTY**

DATE 5-24-96

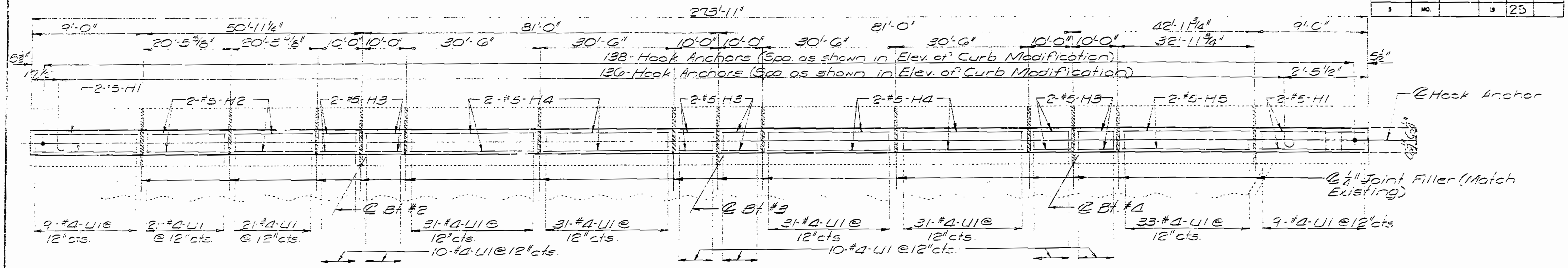
STD.
STD.
A-716R

DESIGNED
DETAILED
CHECKED

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

Sheet No. of 3.

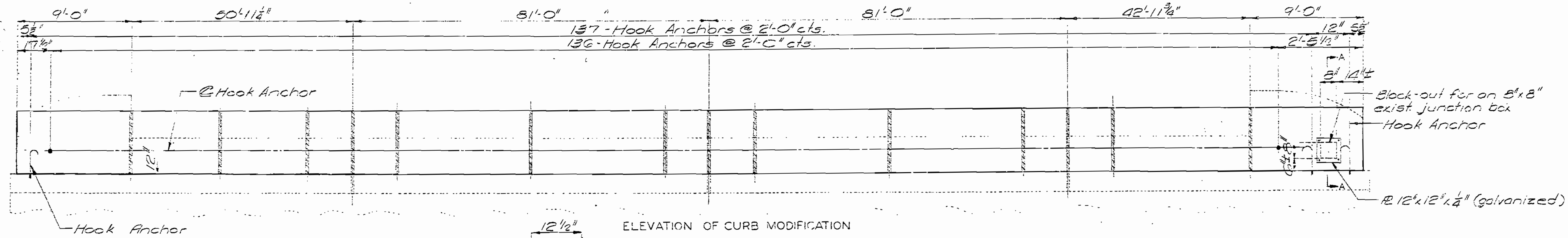
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		81	23	



Note: For ... [illegible]

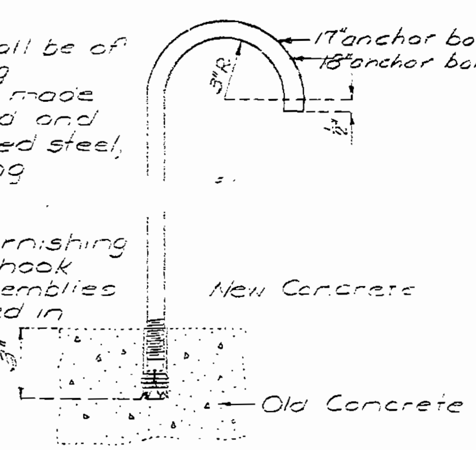
PART PLAN SHOWING CURB MODIFICATION

Note: At the option of the contractor one of the following anchor systems may be substituted for the self drilling expansion system noted on the plans: 1) Molly Parabond Capsule Anchors or 2) Hilti NVA Adhesive Anchors.
These optional anchor systems shall be installed according to the manufacturer's specifications with the following exception: A straight ¾" ⌀ reinforcing bar projecting 10" into new concrete may be substituted for the anchor bolt shown.

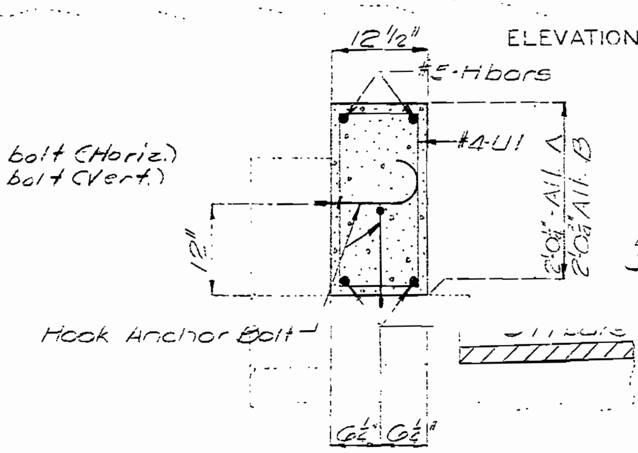


ELEVATION OF CURB MODIFICATION

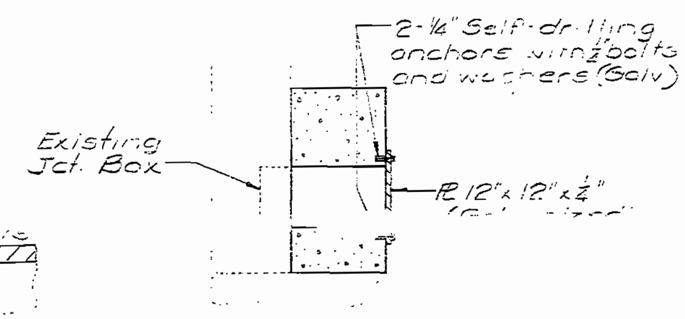
Note: Anchors shall be of the self drilling expansion type, made of casehardened and drawn carburized steel, with self-cutting ... grooves.
Cost of furnishing and installing hook anchor bolt assemblies shall be included in price bid for curb modification.



DETAIL OF HOOK ANCHOR BOLT



TYPICAL SECTION



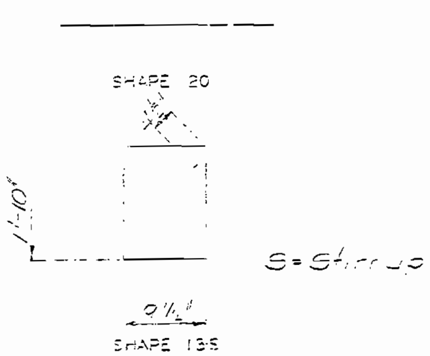
SECTION A-A

Note: No direct payment will be made for Junction Box extention all costs are included in the contract unit price for "Curb Modification."

Note: All reinforcement in curb modification shall be epoxy coated.

BAR BILL

QUANTITY	SIZE	MARK	SHAPE	LENGTH	WEIGHT
8	5	H1	20	8'-9"	73
8	5	H2	20	20'-2"	168
24	5	H3	20	9'-9"	244
16	5	H4	20	30'-3"	505
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
277	4	U1	135	5'-9"	1064



DETAILED ... 1980
CHECKED AUG. 1980

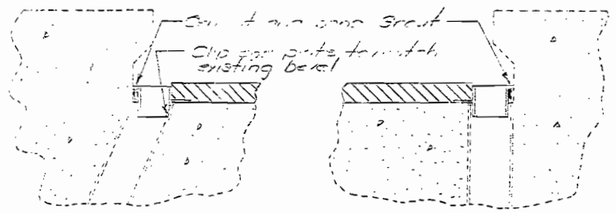
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 3

ST. LOUIS COUNTY

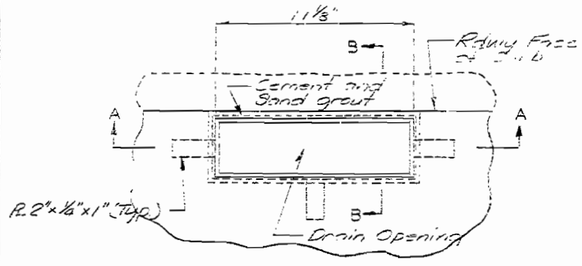
A-1718R

FED. ROAD DIST. NO.	STATE	F.I.P. AND PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	24	

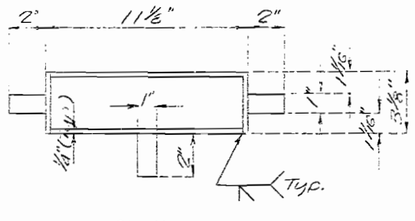


W. B. LANE E. B. LANE

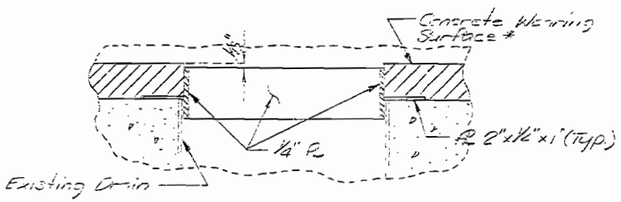
SECTION B-B



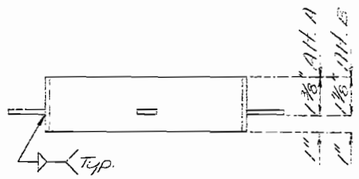
PLAN OF DRAIN



PLAN



SECTION A-A



ELEVATION

Note: FC - *, See Sheet No 1

(22 Required)

DETAILS OF FLOOR DRAIN MODIFICATION

DETAILED May 1984
CHECKED May 1984

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

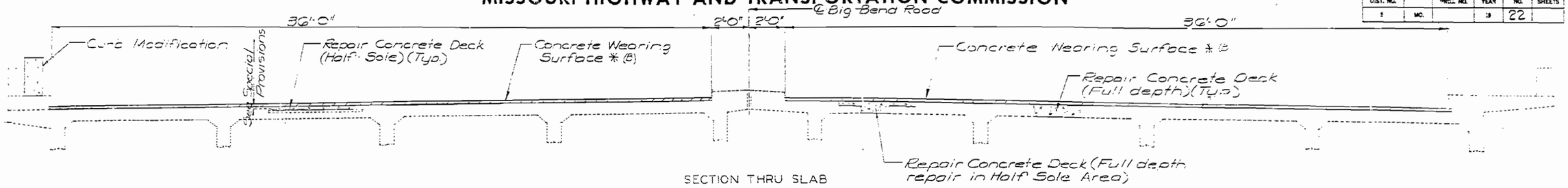
Sheet No. 3 of 3.

ST. LOUIS **COUNTY**

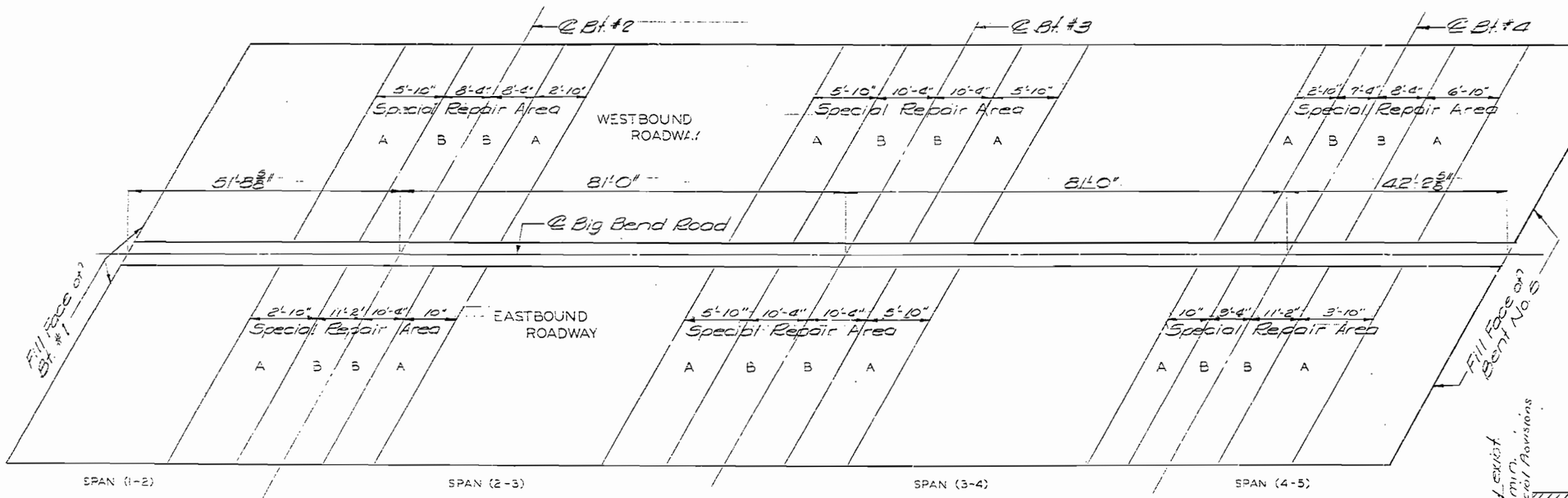
A-1716R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	22	



SECTION THRU SLAB



PLAN OF SLAB

Note: Any concrete removal for repair in areas designated A & B repaired in alphabetical order. (See Special Provisions)

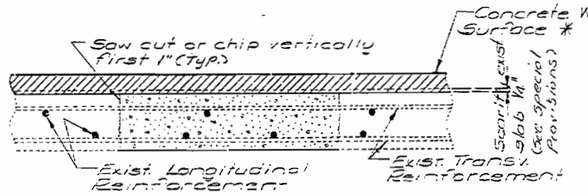
GENERAL NOTES:
Design Unit Stresses:
Concrete for Curb Modification shall be either Class B1 or Class B2 Deck Repair Concrete (See Special Provisions)
f'_c = 4000 psi
Reinforcing Steel (Grade 60) f_y = 60,000 psi

Minimum clearance to reinforcing steel 1½" unless otherwise shown

All joint filler meets the requirement of Standard Specification 1057.2.4.

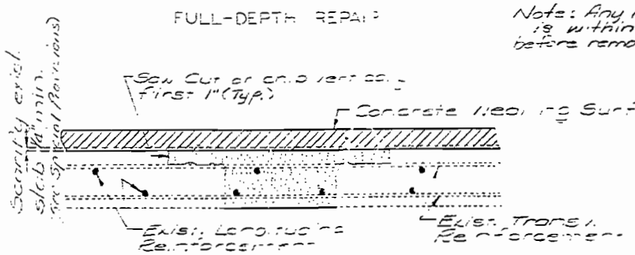
FINAL QUANTITIES				
ITEM		WB LANE	EB LANE	TOTAL
Concrete Wearing Surface* (B)	Sq. Yd.	1028	1028	2056
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	6907	8125	15,032
Full Depth Repair	Sq. Ft.	4	5	9
Curb Modification	Lin. Ft.	274'		274'

* Alternate A or B, by contractor. Alternate A = 1½" Latex Modified Concrete, Alternate B = 2" Low Slump Concrete. (See Job Special Provisions)

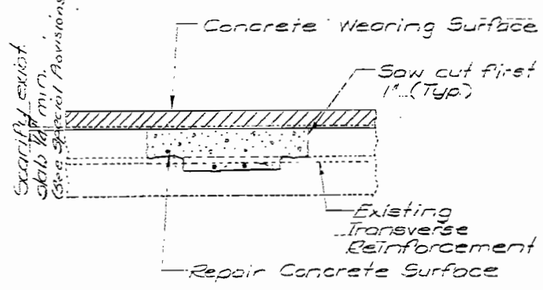


FULL-DEPTH REPAIR

Note: Any repair in the remainder of the bridge that is within 42" of adjacent Zone A completed before removing old concrete in Zones A.



FULL-DEPTH REPAIR IN HALF-SOLE AREA



HALF-SOLED AREA

REPAIRS TO
BRIDGE BIG BEND ROAD UNDERPASS

STATE ROAD INTERSTATE I-44
IN KIRKWOOD

PROJECT NO. IR-44-4(85) **STA.** 1100 + 21.32

JOB NO. 6-I044-1885 **RTE** I-44

ST. LOUIS **COUNTY**

DATE 5/24/84

STD.
STD.
A-1716R

DESIGNED Feb 1984
DETAILED Feb 1984
CHECKED Apr 1984

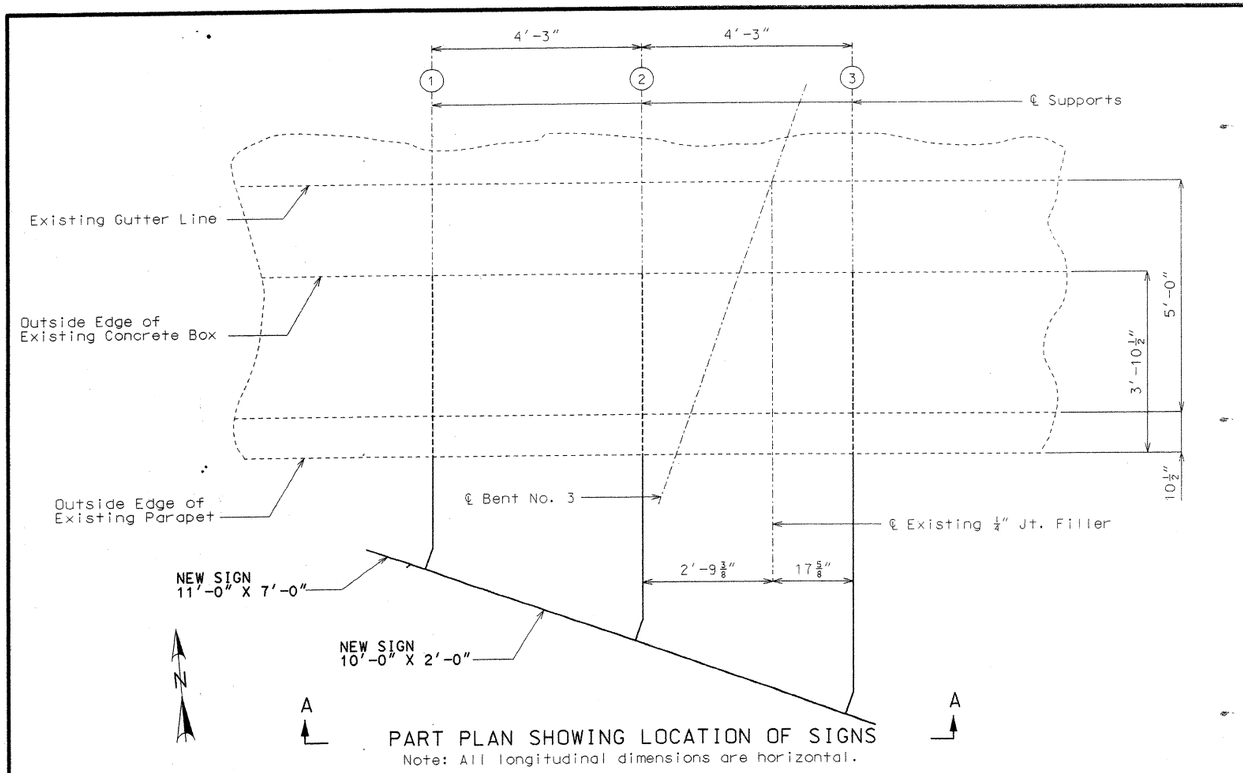
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 3 .

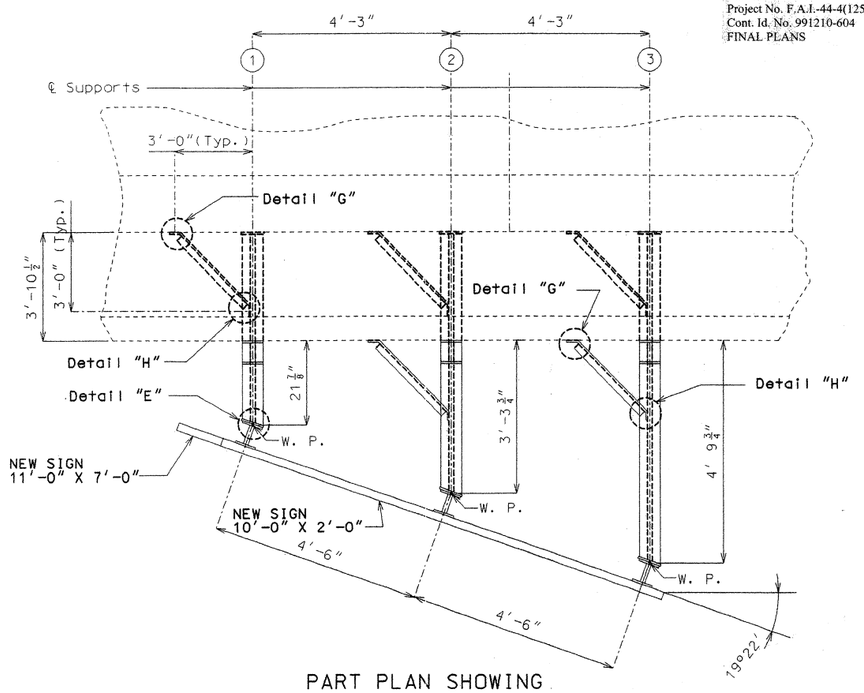
93

State	Proj. No.	Sheet No.
MO		60

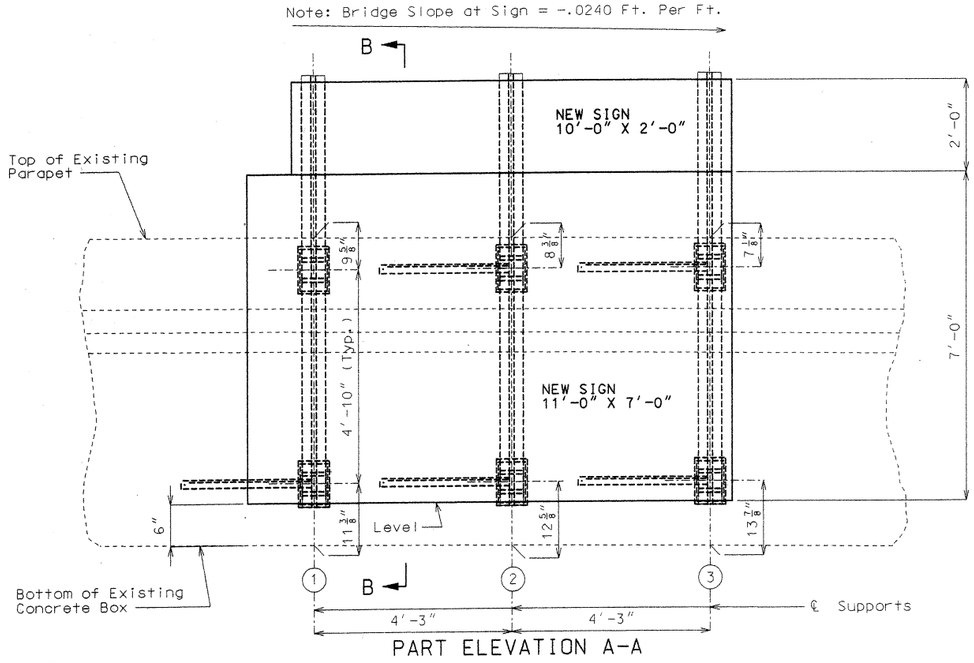
Route I-44, St. Louis County
Job No. J6I1303
Project No. F.A.I.-44-4(125)
Cont. Id. No. 991210-604
FINAL PLANS



PART PLAN SHOWING LOCATION OF SIGNS
Note: All longitudinal dimensions are horizontal.



PART PLAN SHOWING
DIMENSIONS AND HORIZONTAL BRACING
Note: For Section B-B and Detail "E", "G" and "H" see sheet No. 2.



PART ELEVATION A-A
Note: This drawing is not to scale. Follow dimensions.

GENERAL NOTES:

Level signs on brackets.

All bolts, nuts and washers shall be galvanized.

All structural steel shall be A.S.T.M. A709, Grade 36, galvanized.

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

Concrete anchors shall be the non-drilling expansion type. They shall have a certified concrete pullout strength (ultimate load) of at least 12,100 pounds in 4000 PSI concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

The contractor shall verify all dimensions in field before ordering new steel.

The cost of furnishing and erecting the sign supports shall be paid for as "Fabricated Sign Support Brackets" per pound (Rdwy. Item).

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 2/7/02 Date

STATE OF MISSOURI
GREGORY G. SUNDE
NUMBER E-24263
REGISTERED PROFESSIONAL ENGINEER

DATE 9-21-99

SIGN SUPPORT BRACKETS, SIGN NO. 16

(South side of bridge A-1716 on Rte. I-44 under Big Bend Road)

Detailed July 1999
Checked Aug. 1999

Sheet No. 1 of 3

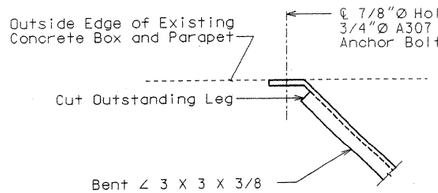
ST. LOUIS COUNTY

A17162

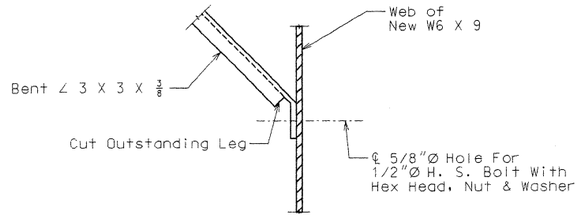
1

State	Proj. No.	Sheet No.
MO		61

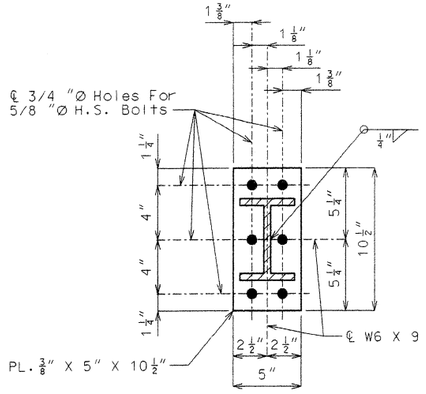
Route I-44, St. Louis County
Job No. J6I1303
Project No. F.A.I.-44-4(125)
Cont. Id. No. 991210-604
FINAL PLANS



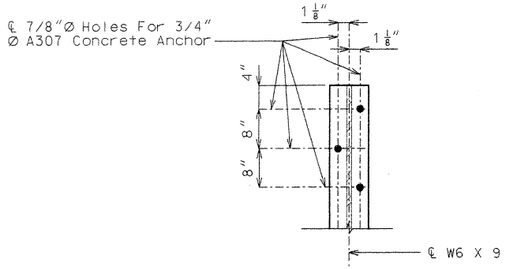
DETAIL "G"



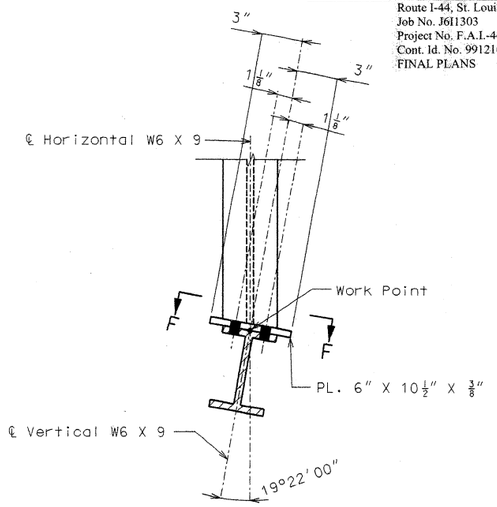
DETAIL "H"



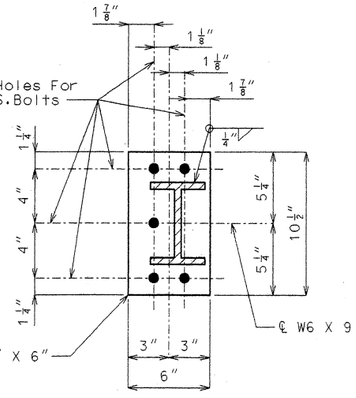
DETAIL "C"



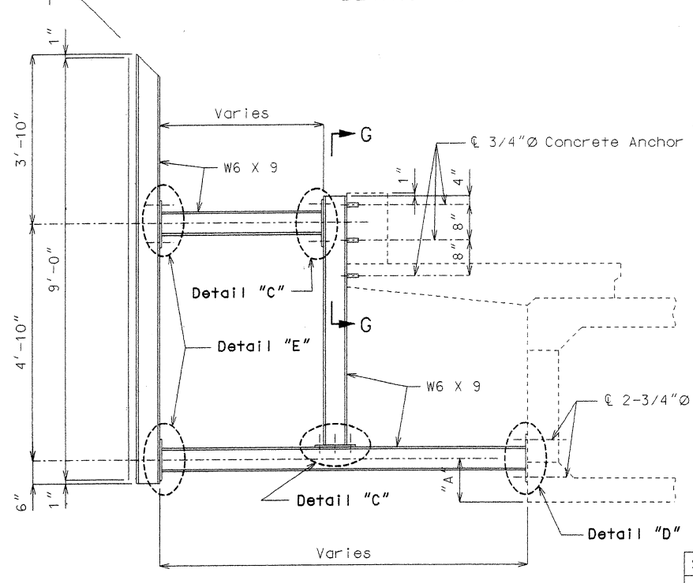
SECTION G-G



DETAIL "E"



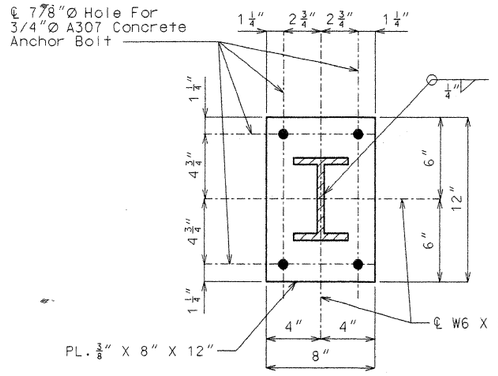
SECTION F-F



Support No.	Dim. "A"
1	11 3/8"
2	12 5/8"
3	13 7/8"

SECTION B-B

(Diagonal bracing not shown for clarity.)



DETAIL "D"

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 [redacted] Date 2/7/02

REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
GREGORY G. SUNDE
NUMBER E-24263
REGISTERED PROFESSIONAL ENGINEER

DATE 9-21-99

SIGN SUPPORT BRACKETS, SIGN NO. 16

(South side of bridge A-1716 on Rte. I-44 under Big Bend Road)

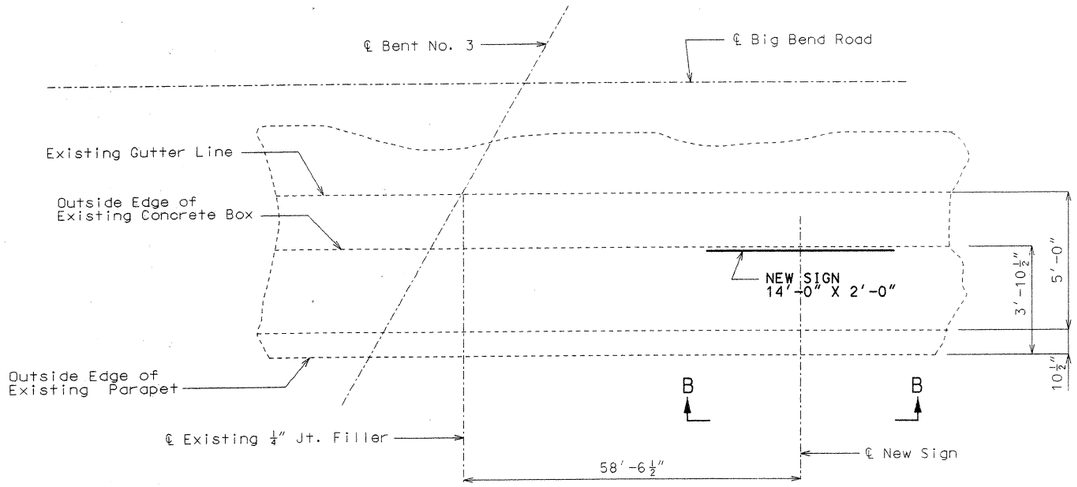
Detailed July 1999
Checked Aug. 1999

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

ST. LOUIS COUNTY A17162

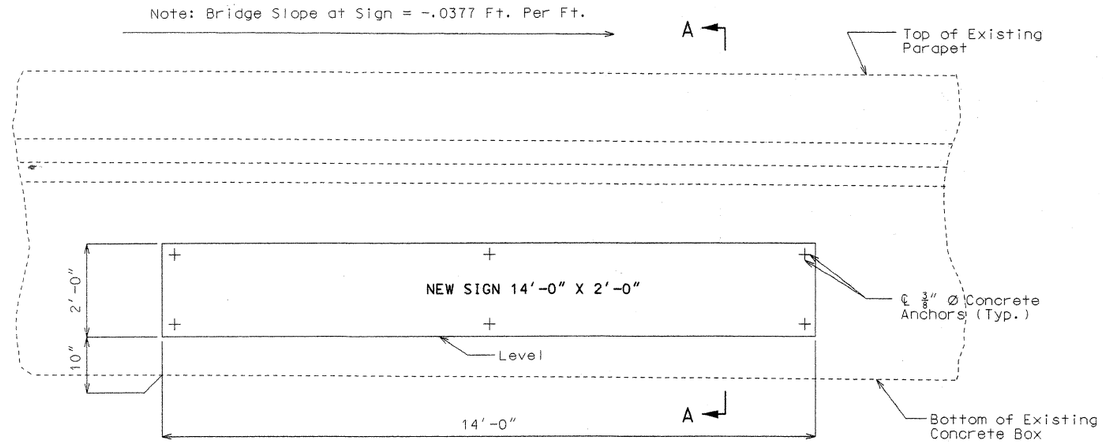
State	Proj. No.	Sheet No.
MO		62

Route I-44, St. Louis County
Job No. J6I1303
Project No. F.A.I.-44-4(125)
Cont. Id. No. 991210-604
FINAL PLANS

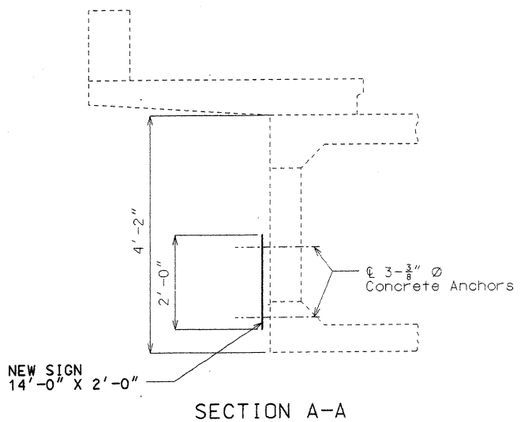


PART PLAN SHOWING LOCATION OF SIGN

Note: All longitudinal dimensions are horizontal.



PART ELEVATION B-B



SECTION A-A

GENERAL NOTES:

Center and level sign.

All bolts, nuts and washers shall be galvanized.

A 3/16 inch thick plastic washer, 7/8 inch outside diameter shall be placed on each side of the sign at all concrete anchor connections.

Concrete anchors shall be the non-drilling expansion type. They shall have a certified pullout strength (Ultimate Load) of at least 3,900 pounds in 4000 PSI concrete. The hole shall be pre-drilled with a conventional carbide masonary bit.

Existing vertical clearance sign to be removed.

See Special Provisions for removal of existing sign.

If any concrete is damaged when removing sign bracket it shall be restored with special mortar.

The existing steel not utilized shall be cut off one inch below the exposed face of the concrete.

All holes existing after sign brackets have been removed shall be filled with special mortar.

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

The contractor shall verify all dimensions in field before erecting the sign.

The cost of furnishing and erecting the sign including the concrete anchors complete-in-place, shall be paid for as "Bridge Mounting Signs Without Brackets" per each (Rdwy. Item)

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 _____ Date 2/7/02

STATE OF MISSOURI
BLAIR
NUMBER
E-29003
REGISTERED PROFESSIONAL ENGINEER

STATE OF MISSOURI
GREGORY
G. SUNDE
NUMBER
E-24263
REGISTERED PROFESSIONAL ENGINEER

DATE 9-21-99

SIGN NO. 17

(South side of bridge A-1716 on Rte. I-44 under Big Bend Road)

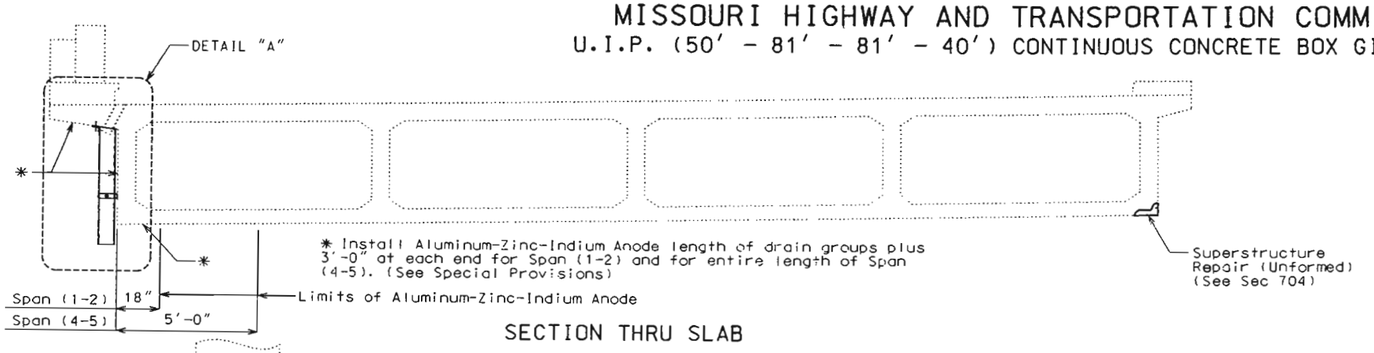
Detailed July 1999
Checked Aug. 1999

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

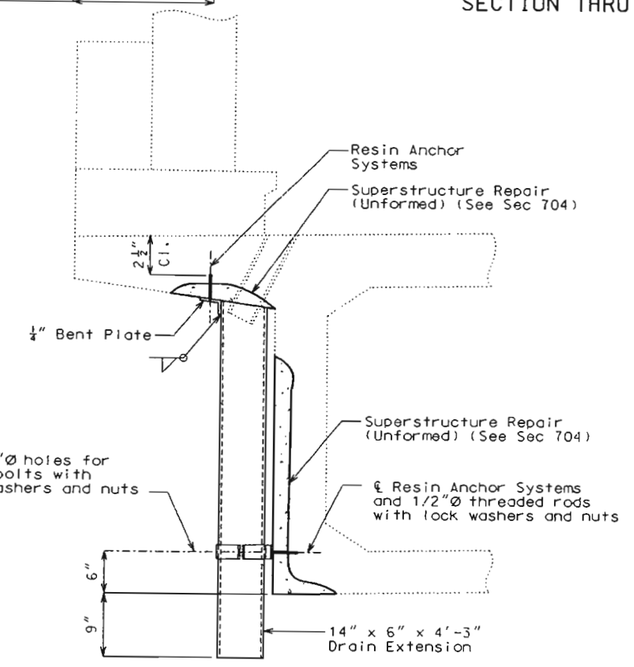
ST. LOUIS COUNTY A17162

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
U.I.P. (50' - 81' - 81' - 40') CONTINUOUS CONCRETE BOX GIRDER SPANS

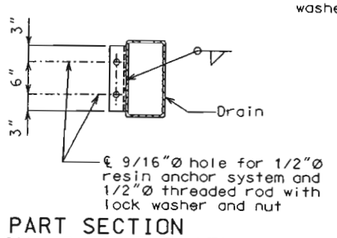
State	Proj. No.	Sheet No.
MO		B6
SEC/SUR 12	TWP 44N	RGE 6E



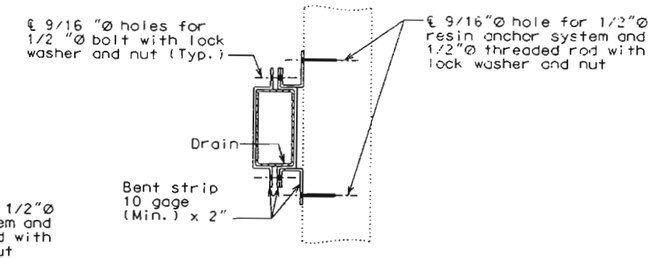
SECTION THRU SLAB



DETAIL "A"



PART SECTION SHOWING BENT PLATE



PART SECTION SHOWING BRACKET ASSEMBLY

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Outside dimensions of drains are 14" x 6".

The drains and bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

Shop drawings will not be required for the slab drains and the bracket assembly.

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Slab Drain Extensions.

The 1/2" diameter resin anchor systems shall have a minimum ultimate pullout strength of 2500 lbs. in concrete with f'c = 4,000 psi.

General Notes:

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

Verify Dimensions:
Contractor shall verify all dimensions in field before ordering materials.

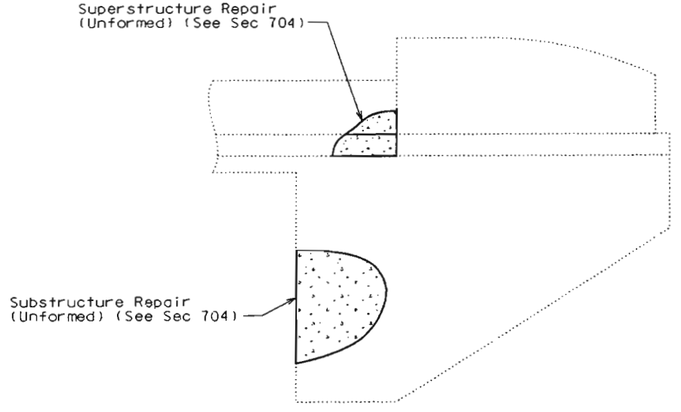
Traffic Control:
See roadway plans for traffic control during construction.

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

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

Estimated Quantities

Item		Total
Substructure Repair (Unformed)	sq. foot	35
Superstructure Repair (Unformed)	sq. foot	300
Aluminum-Zinc-Indium Anode	sq. foot	720
Slab Drain Extensions	each	11



END BENT NO. 1

REPAIRS TO BRIDGE: BIG BEND ROAD (WBL) UNDERPASS

STATE ROAD FROM RTE. I-270 TO RTE. I-55
ABOUT 2.3 MILES FROM RTE. I-270
PROJECT NO. STA. 1100+21.39± (Match Existing)
JOB NO. J6I1672 RTE. I-44

STATE OF MISSOURI
BOYD L. DENSON
NUMBER E-30094
REGISTERED PROFESSIONAL ENGINEER
DATE 11-17-2004

ST. LOUIS COUNTY Date: / /

STD.
STD.
A17163 REV.

Designed May 2003
Detailed May 2003
Checked June 2003

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

Sheet No. 1 of 1.

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MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

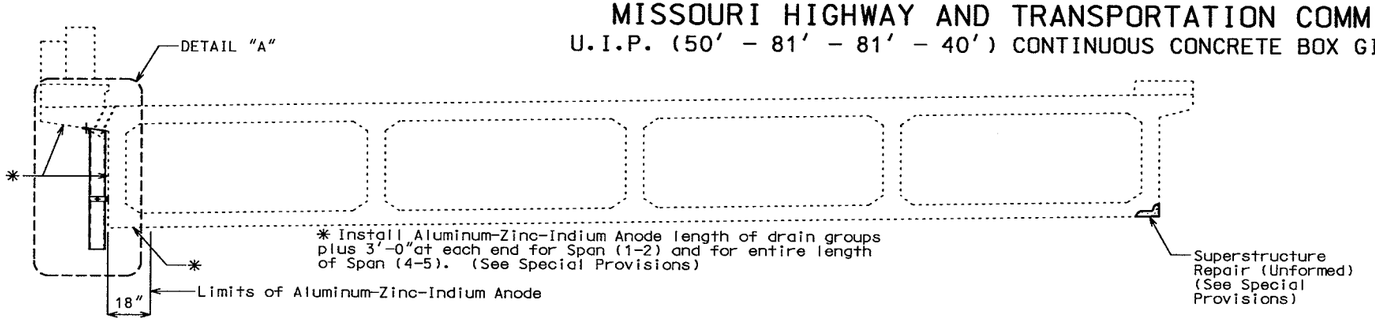
U.I.P. (50′ – 81′ – 81′ – 40′) CONTINUOUS CONCRETE BOX GIRDER SPANS

FINAL PLANS

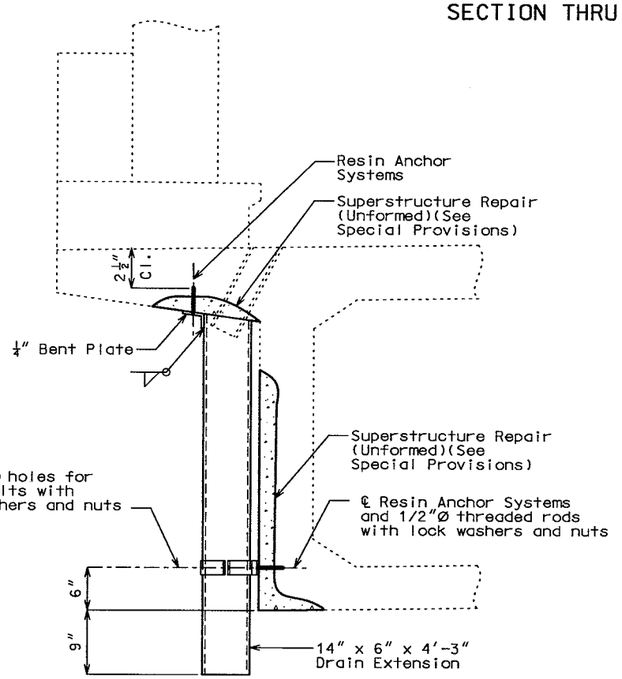
State	Proj. No.	Sheet No.
MO	041217-602	B6
SEC/SUR 12	TWP 44N	RGE 6E

J6I1672

BAP I-44-4(134)



SECTION THRU SLAB



DETAIL "A"

Slab drains may be fabricated of either 1/4″ welded sheets of ASTM A709 Grade 36 steel or from 1/4″ structural steel tubing ASTM A500 or A501.

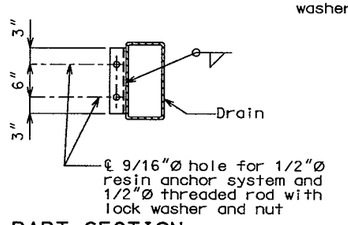
Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Outside dimensions of drains are 14″ x 6″.

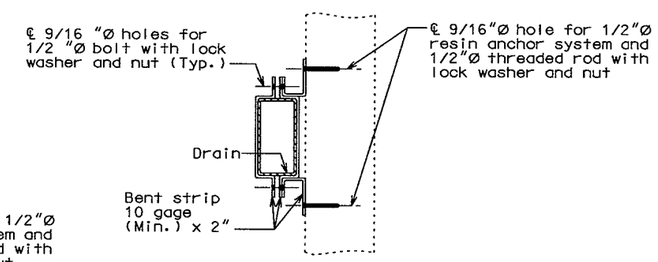
The drains and bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

Shop drawings will not be required for the slab drains and the bracket assembly.



PART SECTION SHOWING BENT PLATE



PART SECTION SHOWING BRACKET ASSEMBLY

The contractor shall use one of the resin anchor systems listed in the job special provisions. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

Cost of furnishing and installing the anchor system complete in place shall be included in the price bid for Slab Drain Extensions.

The 1/2″ diameter resin anchor systems shall have a minimum ultimate pullout strength of 2500 lbs. in concrete with f′c = 4,000 psi, see Special Provisions.

General Notes:

Design Specifications:
2002-AASHTO 17th Edition

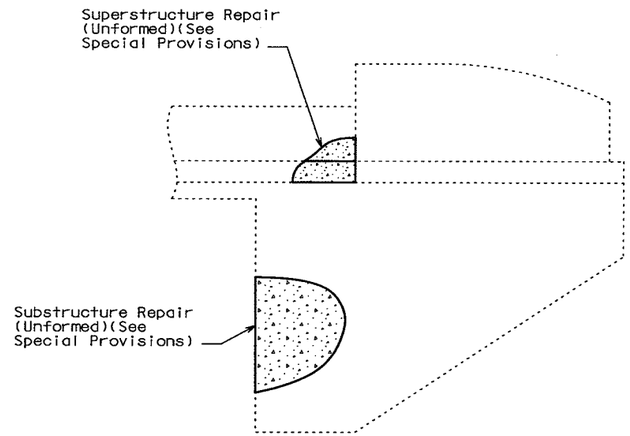
Verify Dimensions:
Contractor shall verify all dimensions in field before ordering materials.

Traffic Control:
See roadway plans for traffic control during construction.

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

Final Field Measured Quantities

Item		Total
Substructure Repair (Unformed)	sq. foot	22
Superstructure Repair (Unformed)	sq. foot	300
Slab Drain Extensions	each	11
Aluminum-Zinc-Indium Anode	sq. foot	720



END BENT NO. 1

REPAIRS TO
BRIDGE: BIG BEND ROAD (WBL) UNDERPASS

STATE ROAD FROM RTE. I-270 TO RTE. I-55

ABOUT 2.3 MILES FROM RTE. I-270

PROJECT NO. STA. 1100+21.39± (Match Existing)

JOB NO. J6I1672 RTE. I-44

Designed May 2003
Detailed May 2003
Checked June 2003

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

1
Sheet No. 1 of 1.

ST. LOUIS COUNTY

Date: / /

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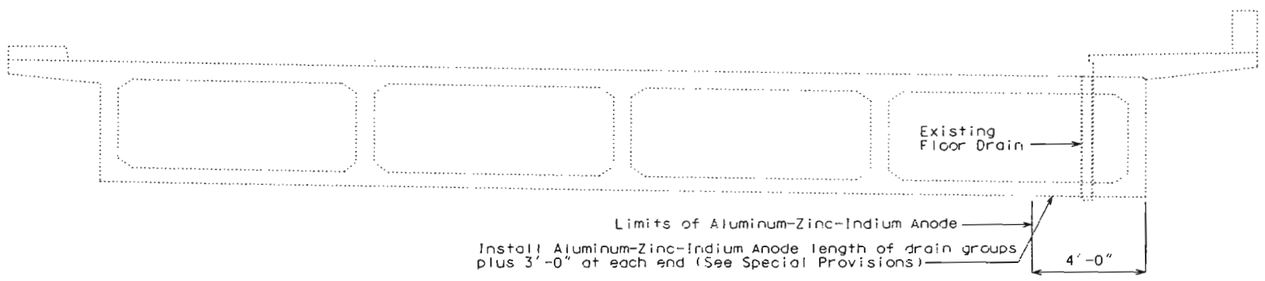
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

U.I.P. (50′ – 81′ – 81′ – 40′) CONTINUOUS CONCRETE BOX GIRDER SPANS

State	Proj. No.	Sheet No.
MO		B7
SEC/SUR 12	TWP 44N	RGE 6E



SECTION THRU SLAB

General Notes:

Design Specifications:

2002 - AASHTO 17th Edition
Bridge Deck Rating = 7

Verify Dimensions:

Contractor shall verify all dimensions in field before ordering materials.

Traffic Control:

See roadway plans for traffic control during construction.

Miscellaneous:

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

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

Estimated Quantities		
Item		Total
Aluminum-Zinc-Indium Anode	sq. foot	296

STATE OF MISSOURI
BOYD L. DENSON
NUMBER E-30094
REGISTERED PROFESSIONAL ENGINEER
DATE 11-17-2004

REPAIRS TO
BRIDGE: BIG BEND ROAD (EBL) UNDERPASS

STATE ROAD FROM RTE. I-270 TO RTE. I-55
ABOUT 2.3 MILES FROM RTE. I-270
PROJECT NO.
JOB NO. J611672
STA. 1100+21.39± (Match Existing)
RTE. I-44

ST. LOUIS COUNTY Date: / /

STD.
STD.
A17164

REV.

Designed May 2003
Detailed May 2003
Checked June 2003

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

Sheet No. 1 of 1.

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MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

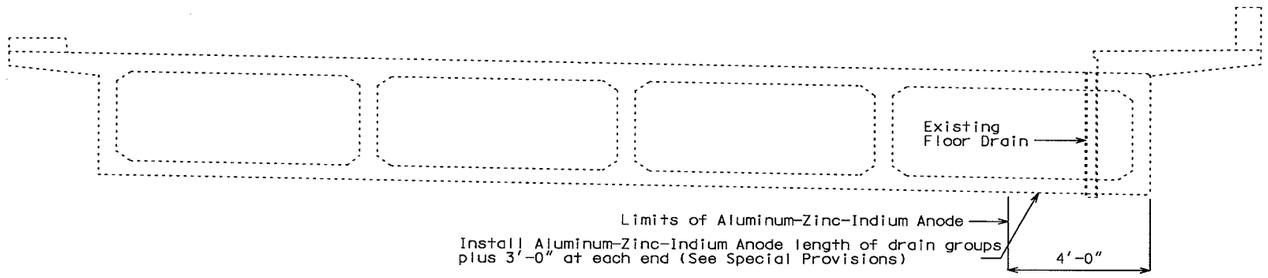
U.I.P. (50' - 81' - 81' - 40') CONTINUOUS CONCRETE BOX GIRDER SPANS

FINAL PLANS

State	Proj. No.	Sheet No.
MO	041217-602	B7
SEC/SUR 12	TWP 44N	RGE 6E

J6I1672

FAP- I-44-4(134)



SECTION THRU SLAB

General Notes:

Verify Dimensions:

Contractor shall verify all dimensions in field before ordering materials.

Traffic Control:

See roadway plans for traffic control during construction.

Miscellaneous:

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

Final Field Measured Quantities

Item		Total
Aluminum-Zinc-Indium Anode	sq. foot	296
Item No. 5001-Superstructure Repair (Unformed)	sq. foot	133

REPAIRS TO
BRIDGE: BIG BEND ROAD (EBL) UNDERPASS

STATE ROAD FROM RTE. I-270 TO RTE. I-55

ABOUT 2.3 MILES FROM RTE. I-270

PROJECT NO. STA. 1100+21.39± (Match Existing)

JOB NO. J6I1672 RTE. I-44

ST. LOUIS COUNTY

Date: / /

STD.

STD.

A17164 REV.

Designed May 2003
Detailed May 2003
Checked June 2003

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

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Sheet No. 1 of 1.

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