

MISSOURI STATE HIGHWAY DEPARTMENT

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

GENERAL NOTES

SPECIFICATIONS: Missouri State Highway Commission Standard Specifications (1961 Edition) and Special Provisions.

DESIGN LOADING: In accordance with Division I of the A.A.S.H.O. Standard Specifications for Highway Bridges, 1961 Edition.

Live Load: H20-44.

Dead Load: Provision is made for a future wearing surface of 15 pounds per square foot of roadway surface.

DESIGN UNIT STRESSES:

Concrete in flexure: Class B Concrete... 1200 lbs. per sq. in.

Class B1 Concrete... 1600 lbs. per sq. in.

Reinforcing Steel... 20,000 lbs. per sq. in.

CONCRETE: Concrete for superstructure shall be Class B1.

Concrete for substructure (footings of Bent 2, 3 and 4) shall be Class B or B1 except that payment will be on the basis of Class B Concrete.

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 (See Special Provisions).

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to 1/2 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 unless otherwise shown or noted.

WELDING: See Standard Specification 55.3.13 for qualifications of welding operators.

PAINT: Shop, none; Field, by Contractor in accordance with Standard Specification 55.4.10 except that final coat on access doors and frames shall be gray.

Note: Concrete Protection on front slopes of end bents to be included under Road Contract. Provide 1" Filler (Standard Specifications 157.1.7) between slope protection pavement and end bents and columns of intermediate bents. Provide 1/2" Filler (Standard Specifications 157.1.7) between slope protection and curbs.

Concrete Slope Protection Blocks to be 4'-0" x 3'-0" with a 1/4" joint in accordance with Standard Specification 83.50.

FOOTING AND PILE DATA					
Bent No.		1	2	3	4
Spread Footings	Foundation Material		Rock	Rock	Rock
	Design Bearing		120	120	120
Bearing Pile	See Standard Specifications 50.2.2				
	Pile Type and Size	10B P42			10B P42
	Number	6			6
	Approximate Length	17'			21'
	Plan Bearing	56			56
	Minimum Required Bearing	46			46
Hammer	Heavy Power				Heavy Power
	See Standard Specifications 52.2.6				

Note: Footings of Bents No. 2, 3 and 4 shall be carried 6" into hard, solid, undisturbed rock or 18" into soft rock or shale and cast against vertical faces of same. In no case shall footings of Bents No. 2, 3 and 4 be placed higher than the elevations shown.

All piles shall be driven to practical refusal on or into solid rock or other point bearing material of not less than the Plan Bearing shown, unless excessive splicing is required to obtain Plan Bearing, in which case the Engineer will authorize a lesser bearing, but in no case less than the Minimum Required Bearing. All piling shall be driven with an approved power hammer developing an energy of not less than 19,000 ft. lbs. and having a ram weighing not less than 4,500 lbs.

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yd.	200	200
10B P42 Steel Piles in place	Lin. Ft.	204	204
10B P42 Steel Pile cut-offs	Lin. Ft.	36	36
Class B Concrete	Cu. Yd.	20.0	20.0
Class B1 Concrete	Cu. Yd.	1,069.7	1,069.7
Reinforcing Steel	Lb.	279,490	281,970
Bridge Rail (Two Tube Type)	Lin. Ft.	502	502
Fabricated Structural Carbon Steel	Lb.	1450	1450
Conduit System on Structure Lump Sum (Bell Telephone Co.)			1
Conduit System on Structure Lump Sum (Lighting)			1

Note: Class I Excavation for Structures will be computed from the original ground line (1958) or from the lower limits of roadway excavation, whichever is lower regardless of the sequence of operations and the method of removal. Substructure Concrete includes concrete in footings of Bents 2, 3 and 4.

BENCH MARKS (City Datum)
B.M. #12 on S.W. Corner Storm Inlet So. Side Alley
S.E. Corner St. Matshy Church. Elev. 112.51
B.M. #13 in Open Top F.P. N.E. Corner Ewing and Bernard St. Elev. 101.94

SUBMITTED BY: *D. P. Jenkins* DATE: 8/12/63
APPROVED BY: *M. J. Nichols* DATE: 8/12/63
BRIDGE ENGINEER
CITY ENGINEER

BRIDGE-EWING AVE. UNDERPASS

STATE ROAD-DANIEL BOONE EXPRESSWAY

PROJECT NO. U-40-5 (6) (RTE. 40 T.R.) STA. 37+50.54

CITY OF ST. LOUIS

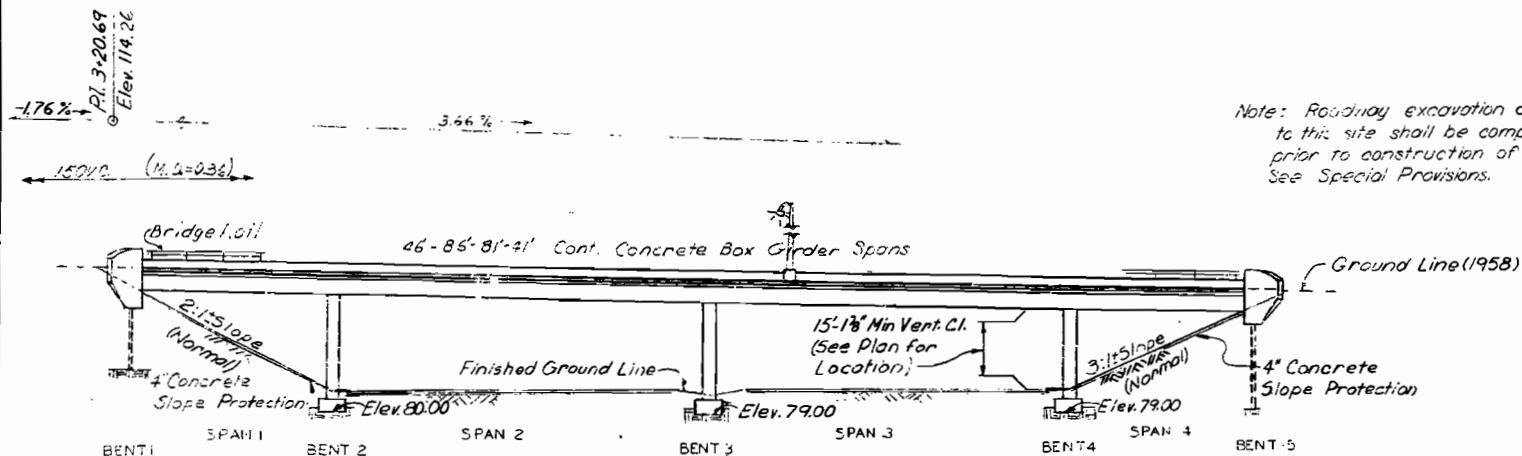
GENERAL PLAN AND ELEVATION

SHEET 1 OF 9

STD. 54.00

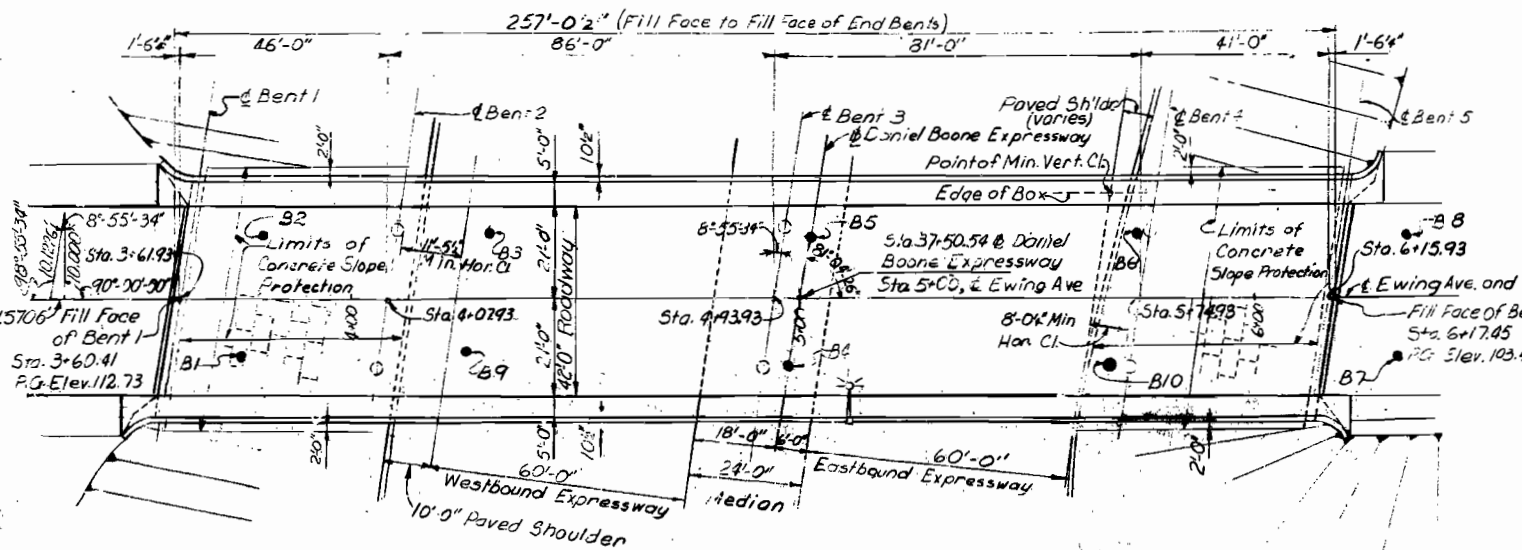
A-838

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



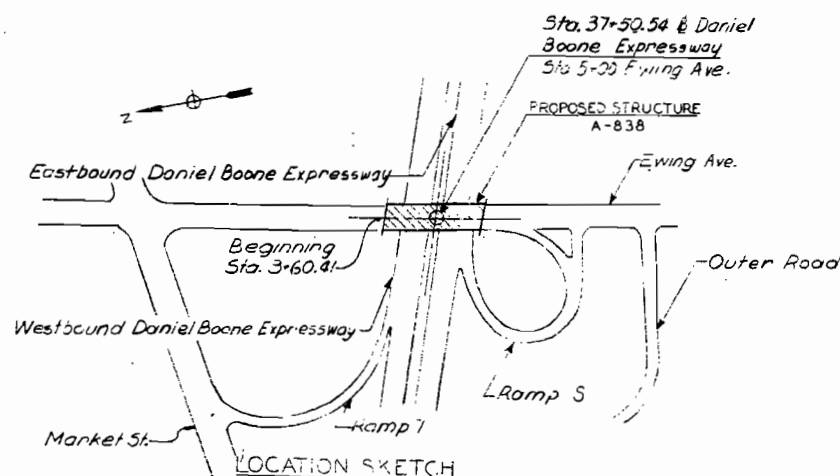
ELEVATION

Note: Elevation normal to Daniel Boone Expressway. Ground Lines are shown along Bridge.



PLAN

Note: All dimensions shown are measured horizontally. For Log of Borings see Sheet 3.

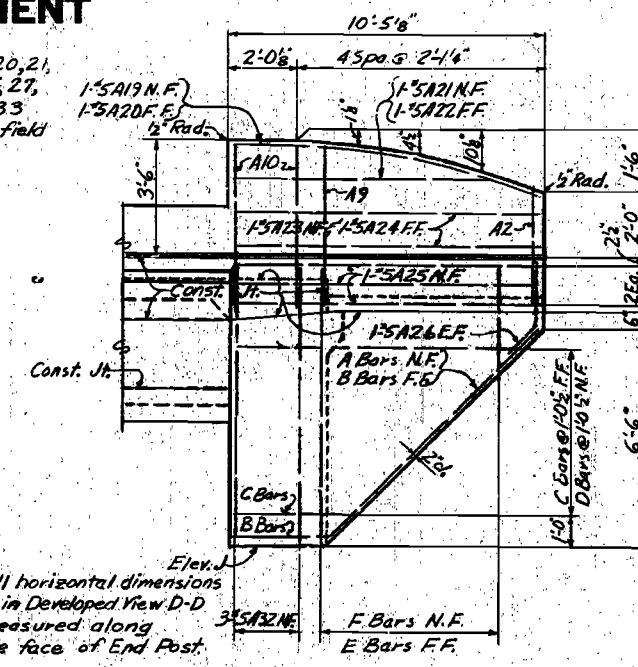


SYNDERUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

SUBMITTED BY:

Harold E. Jenkins
REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. 6-2047

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NO.		19	190	



<i>Elev.</i>	<i>Bent 1</i>	<i>Bent 5</i>
A	112.31	103.21
B	112.73	103.40
C	112.52	102.97
D	113.21	103.72
E	113.16	103.67
F	113.42	103.36
G	113.47	103.41
H	111.31	101.97
J	104.31	94.97
K	112.20	102.28
M	111.00	102.50

PILE SPICE
Note: Top of lower section
to be cut square

LEFT END POST
Note: Reinforcement for Left End Post
same as Right End Post, except
as shown and noted.

PLAN

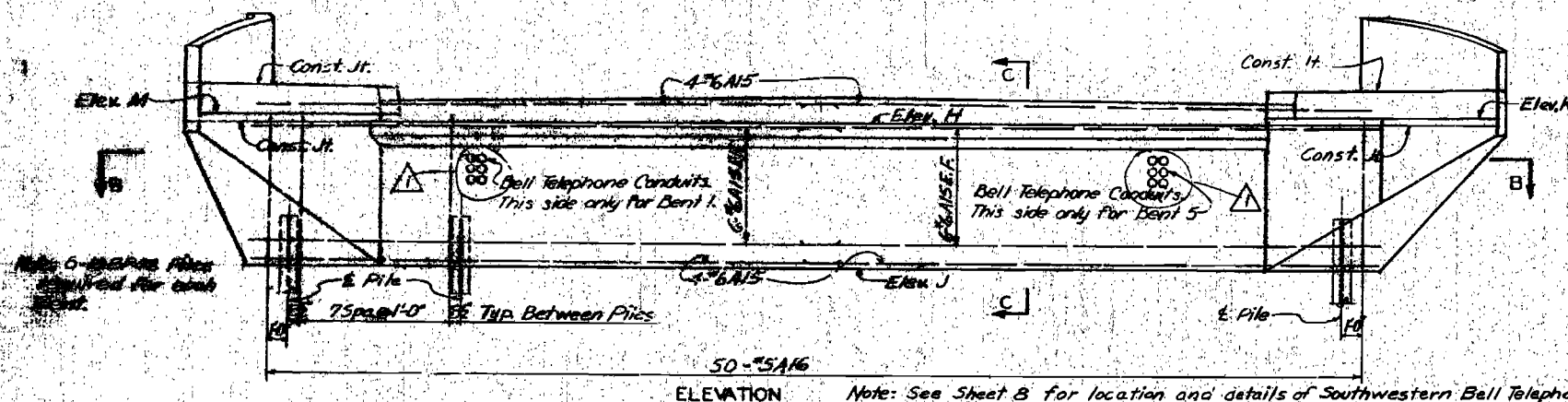
Note: Elevations at end of slab are top of roadway elevations. All others are top of sidewalk elevations.
All dimensions are horizontal.

PIGHT END POST

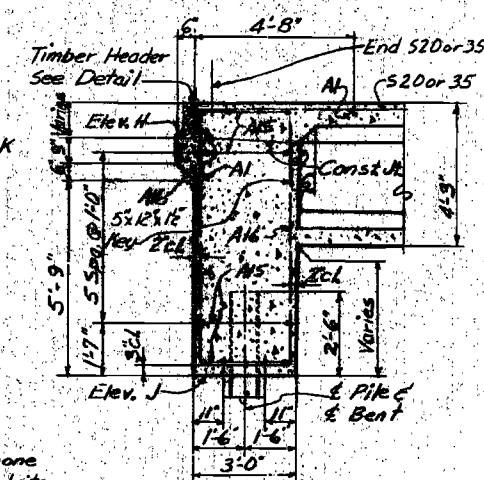
Note: All horizontal dimensions shown in Developed View D-D are measured along outside face of End Post.

DEVELOPED VIEW D-D
Note: Developed View E-E similar and
opposite hand except as noted.

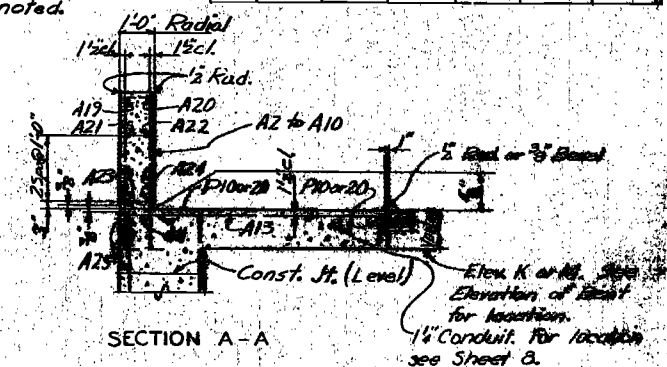
View	A Bars	B Bars	C Bars	D Bars	E Bars	F Bars
D-D	F5A28	F5A28	G5A30	G5A33	H5A34	F5A31
E-E	F5A27	F5A29	G5A31	G5A33	H5A35	F5A32



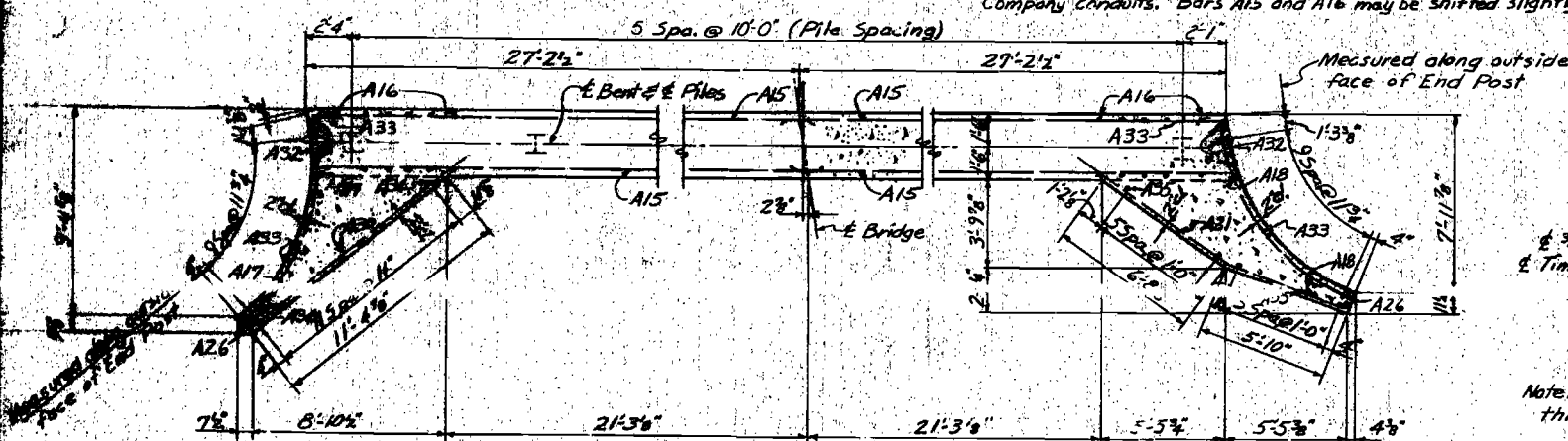
Note: See Sheet 8 for location and details of Southwestern Bell Telephone Company conduits. Bars A15 and A16 may be shifted slightly to clear conduits.



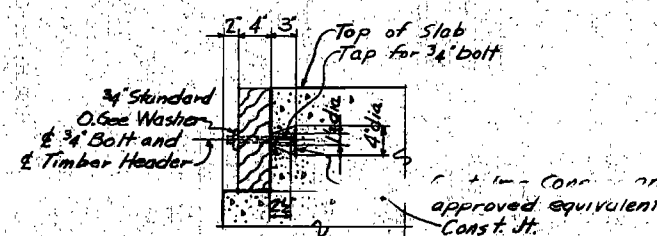
Note: E.F. indicates Each Face.
N.F. indicates Near Face.
F.F. Indicates Far Face.



Note: E.F. indicates Each Face.
N.F. indicates Near Face.
F.F. Indicates Far Face.



SECTION B - B



DETAIL OF TIMBER HEADER
 Note: 3/4" Bolts shall be 6'4" long with sq. or hex. hd., threaded 3' long and placed @ abt. 3'-0" ctrs.
 Cost of Timber Headers complete in place to be included in price bid for concrete.

 Revised 11-9-63 D.S. & L.H.G.

BRIDGE-EWING AVE. UNDERPASS

STATE ROAD-DANIEL BOONE EXPRESSWAY

PROJECT NO. U-40-5 (6) (RTE 40 T.R.) STA. 37+50.54

CITY OF ST. LOUIS

BENTS 1 & 5

SHEET 2 OF 9

A-838

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

5 FIND CONSTRUCTION CHANGES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	191	

ELEV.	HOLE B7 Sta. 6+32.00 13' Pt.	HOLE B8 Sta. 6+32.00 14' Lt.	HOLE B9 Sta. 4+28.00 12.5' Ft.	HOLE B10 Sta. 5+72.00 15' Pt.
110			110.32	
105				105.10
100	102.50	102.40		
95				
90				
85				
80	82.10	80.40	87.50	
75				75.00
70				

Asphalt pavement

Heavy debris fill

Olive green soft silty clay

Stiff br clay with limestone fragments

boulders

Limestone

Asphalt pavement

Olive gray silty clay, wet

Boulders

Limestone

Pavement

Base

Stiff br. clay

Thick bedded limestone with shale seams

Limestone

Asphalt pavement

Soft clay

Boulders

Limestone with clay seams

Thick bedded gray hard limestone

Limestone

Borings were taken during March 1961. All holes were made with a power auger.

TOP LONGIT. REINFORCEMENT

PLAN

Const. Jt.

B1

B2

2" x B5

1 1/2" Conduit

B6

Const. Jt. (Level)

Elev. F (at Bent)

Column A

Elev. F (at Bent)

Column B

B Bars

A Bars

6' Spacing

2'-6"

1'-6"

3'-0"

1'-6"

Const. Jt.

1'-0" x 1'-0" x 2' Key (Typ)

Bottom of Footing Elev. G

Note: Details are same for both columns and footings except as otherwise shown.
For location of conduits, see Sheet B.
B5 bars may be shifted where necessary to clear Bell Telephone Conduits.

End B14

B5

8" x 5 B14 Dorrals Spa with B Bars (Bent 3)
16" x 5 B14 Dorrals Spa with B Bars (Bents 2 & 4)

[illegible]

Hand-drawn cross-section diagram of a square column. The column has a total width of 6'-0" and a total height of 6'-0". The inner square frame is 3'-0" wide and 3'-0" high. The circular reinforcement has a diameter of 17" 6/8. The reinforcement is labeled "17" 6/8 @ 4"" and "17" 6/8 @ 4"". The column is labeled "Column" and "Bent".

SECTION C-C

BENTS 2,3 AND 4

A-838

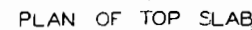
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS

THE FINAL PLANS BROTHLINE

2107	DRAWN BY: D.D. Raffaelle, Apr. 1963
6852-16	TRACED BY:
	CHECKED BY: T.V. Dillon, Apr. 1963

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	192	



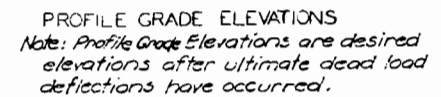
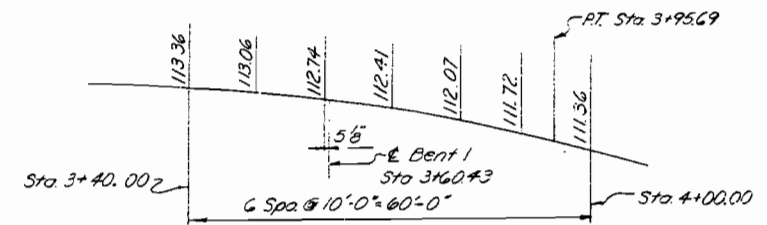
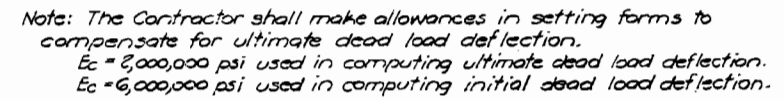
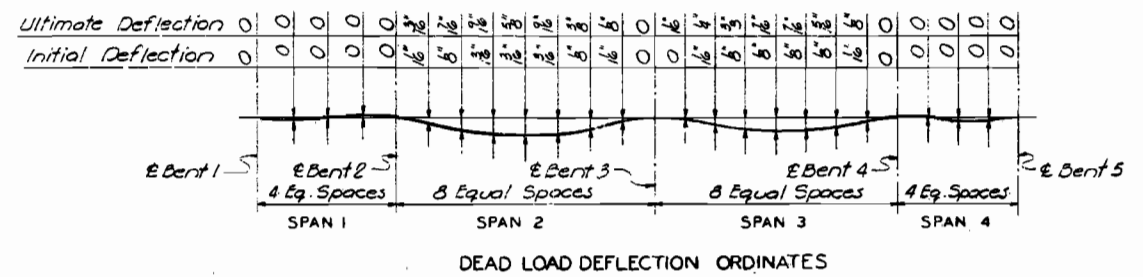
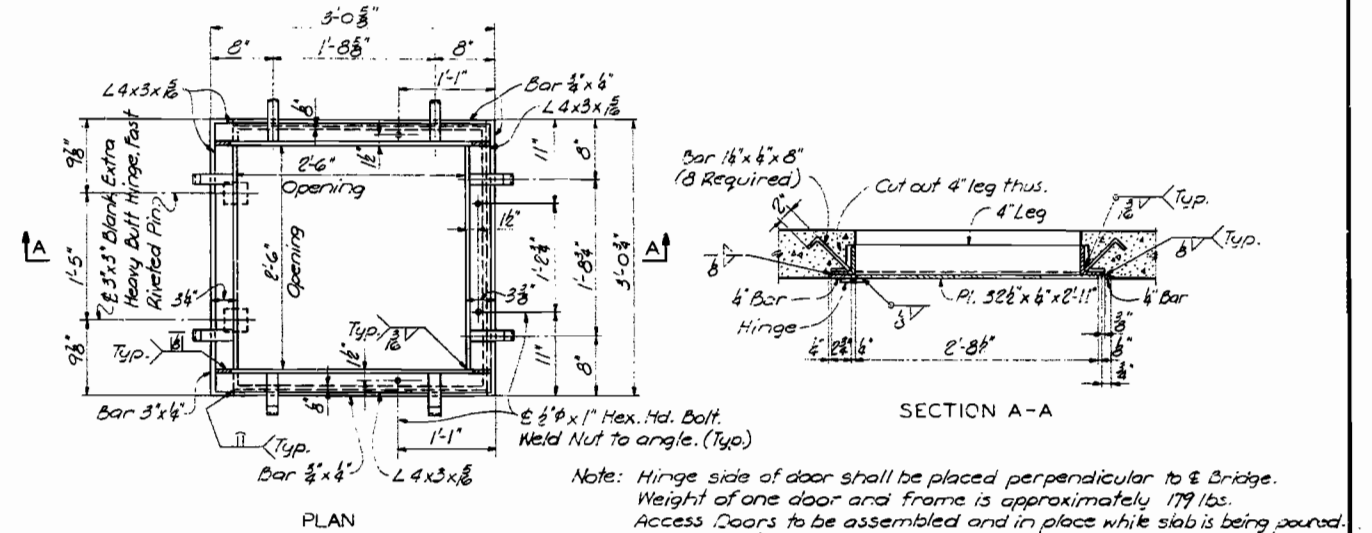
SHEET 4 OF 9

NO CONSTRUCTION CHANGES

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

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63594	TRACED BY:
	CHECKED BY: T.V. Dillon Apr. 1963

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	193	



 Revised 11/9/63 D.J.C. & L.H.G.
BRIDGE-EWING AVE. UNDERPASS

STATE ROAD-DANIEL BOONE EXPRESSWAY
PROJECT NO.U-40- 5 (6) (RTE. 40 T.R.) STA. 37+50.54

CITY OF ST. LOUIS

CROSS SECTION

SHEET 5 OF 9

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NO CONSTRUCTION CHARGES

NOTES

Work this sheet with Sheet 4.
Payment for furnishing and installing access doors and frames shall be made and considered fully covered under price bid for Fabricated Structural Carbon Steel. For Southwestern Bell Telephone Conduit Details, see Sheet 8.
Payment for furnishing and installing Air Inlets to be included in price bid for other items of work

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

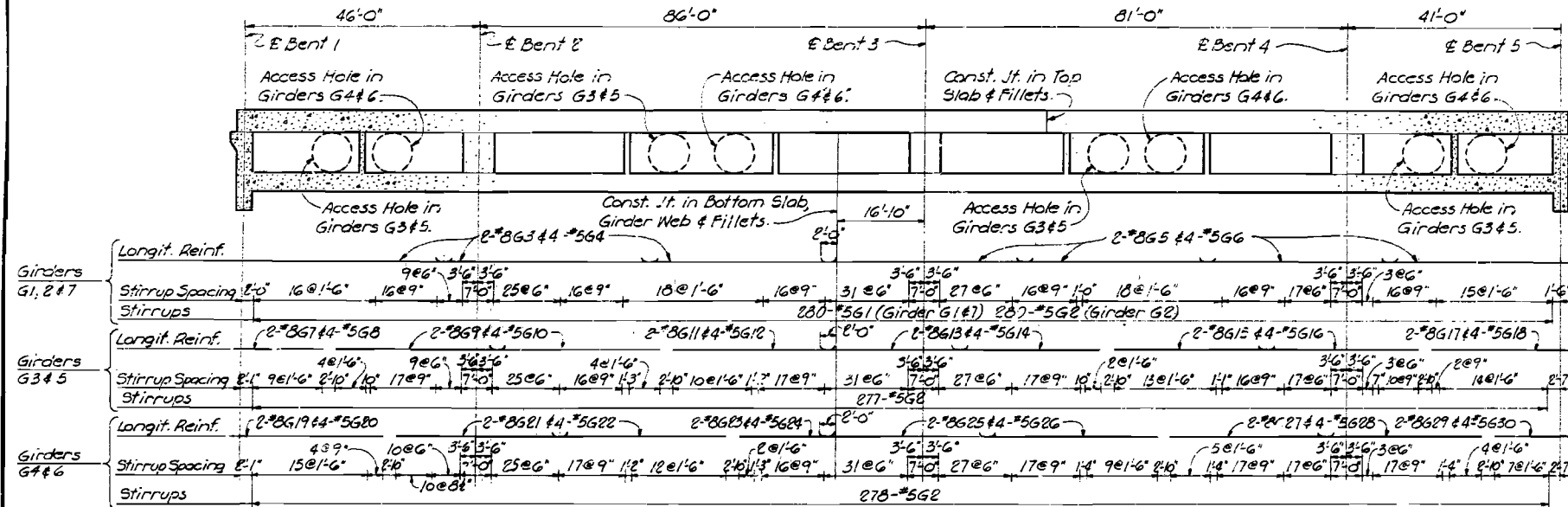
AIR INLET
(24 Required)

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6352008	TRACED BY:	
	CHECKED BY: T.V. Dillon,	Apr. 1963

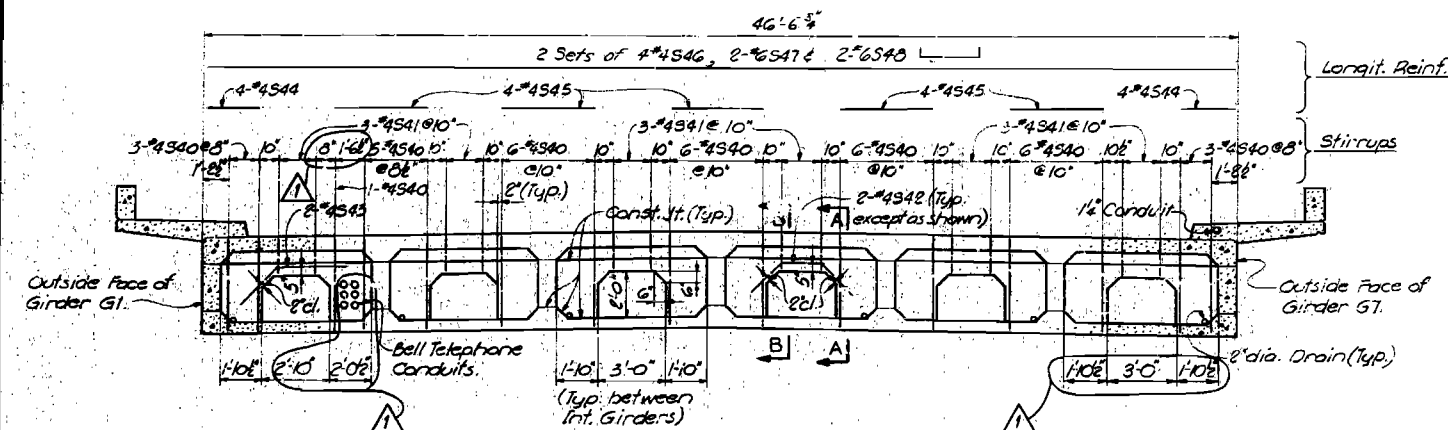
SYVERDRUP & PARCEL AND ASSOCIATES, Inc.
ENGINEERS - ARCHITECTS
ST. LOUIS, MISSOURI

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		18	19A	

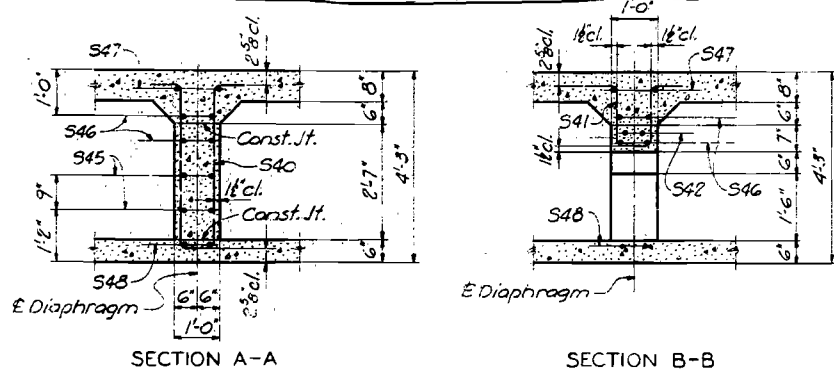


GIRDER REINFORCEMENT



DIAPHRAGM

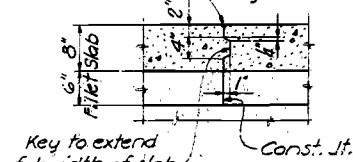
Note: Dimensions shown are measured horizontally. S45 bars may be shifted slightly to clear conduit.



SECTION A-A

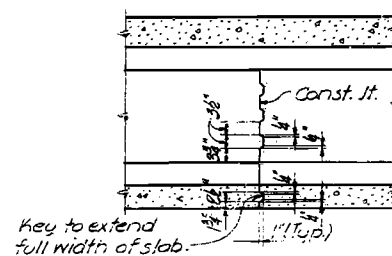
SECTION B-B

On roadway surface only, finish each side of jt. with 2" rad. edging tool. Fill groove with joint seal.

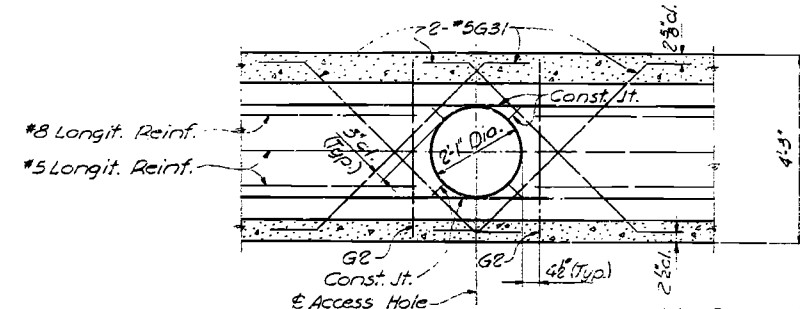


CONSTRUCTION JOINT IN TOP SLAB

Note: Payment for joint seal and furnishing and installing drains to be included in price bid for other items of work.

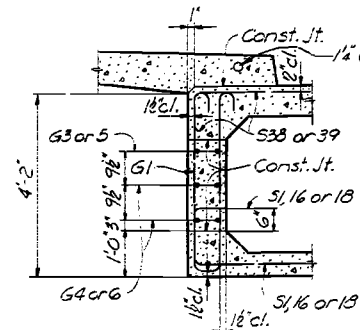


CONST. JT. IN BOTTOM SLAB AND GIRDER WEB

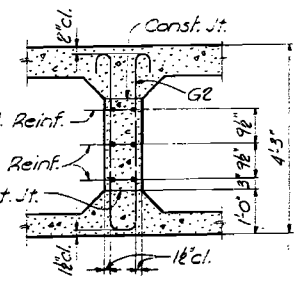


ACCESS HOLE

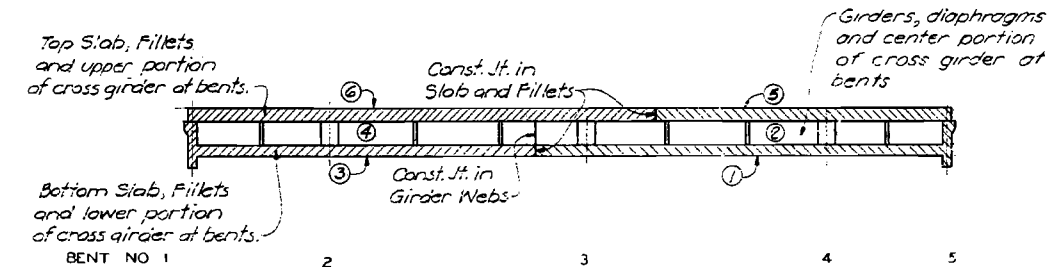
Note: For location of Access Holes, see Sheet 4



SECTION THRU GIRDERS G1 AND G7



SECTION THRU GIRDERS G2 THRU G6



POURING SEQUENCE

Note: Numbers in circles indicate sequence of pouring. No longitudinal construction joints will be permitted in roadway slab on bridge. The Contractor shall use an approved oscillating screed type, self-propelled mechanical finisher and shall observe the basic pouring sequence unless he can demonstrate to the satisfaction of the Engineer that he is equipped to pour and satisfactorily finish the roadway slab at a rate which will permit the combining of such of the basic pours as may be specifically designated by the Engineer and not required for design reasons. Finishing machine load will not be permitted on concrete less than 48 hours old. With use of forms and 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 are to be removed from the interior of box girders except top slab forms, which may be left in place. See Standard Specification 53.4.2.4.

Revised 11/9/63 D.J.C. & L.H.G.

BRIDGE-EWING AVE. UNDERPASS

STATE ROAD-DANIEL BOONE EXPRESSWAY

PROJECT NO. U-40-5 (8) (RTE. 40 T.R.) STA. 37+50.54

CITY OF ST. LOUIS

GIRDERS AND DIAPHRAGMS

SHEET 6 OF 6

A-838

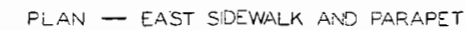
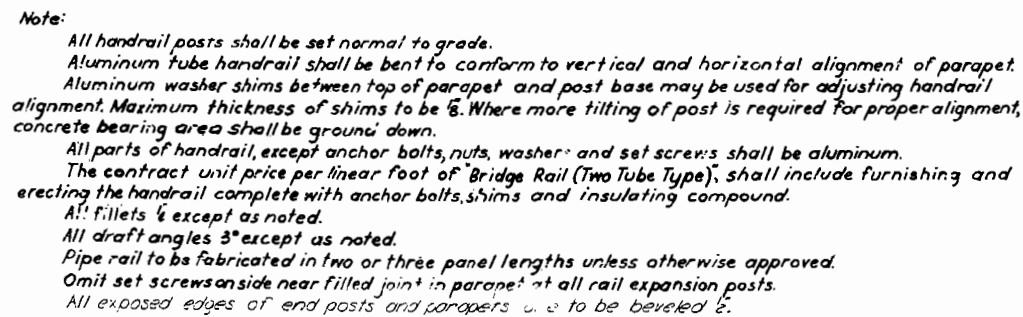
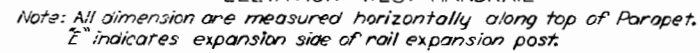
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

FOR STRUCTURAL CHANGES

DRAWN BY: R.O. Williams, Inc. NO. 177
CHECKED BY: J.V. Dillon, Apr. 1963
2107
635222

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

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



Note: For reinforcing in End Posts and additional reinforcing in sidewalk near End Post see Sheet 2.
All dimensions are measured horizontally.



Note: Sidewalk and Parapet between Bents 2 & 4 same as East Sidewalk and Parapet.



SHEET 7 OF 9

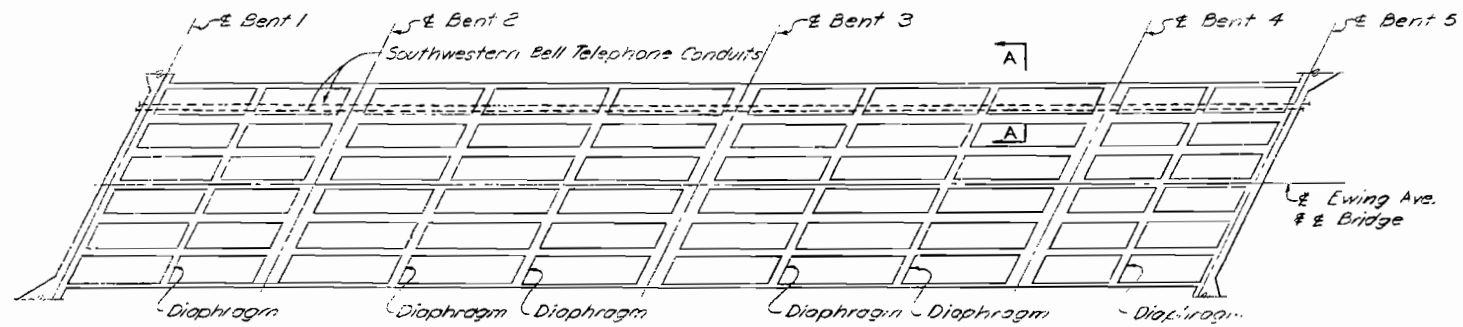
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NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

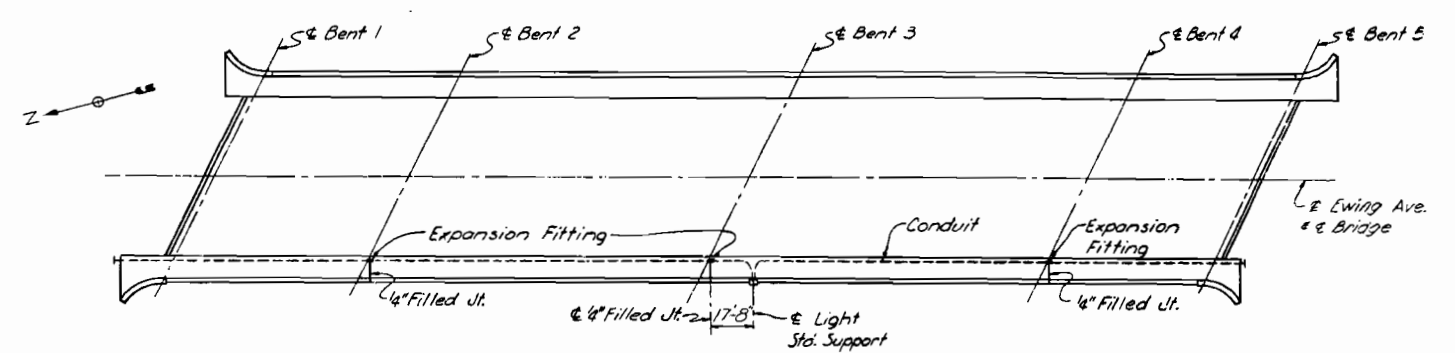
NO CONSTRAINTS 244 11

MISSOURI STATE HIGHWAY DEPARTMENT

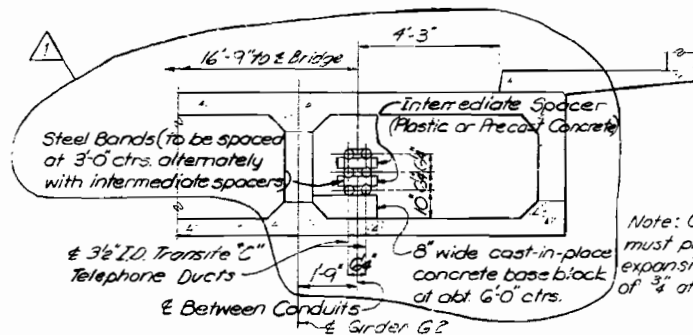
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5	MO.		19	26	



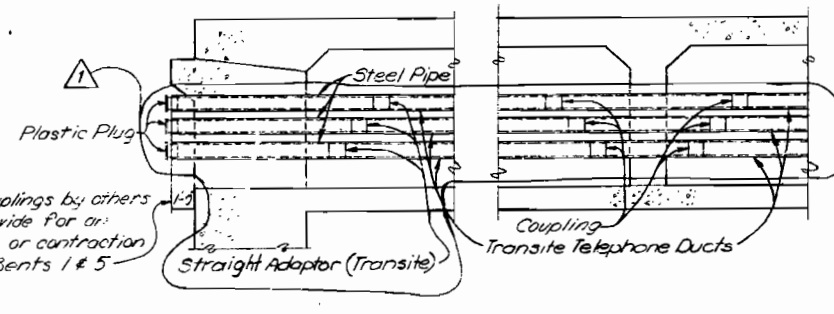
CONDUIT LAYOUT



CONDUIT LAYOUT

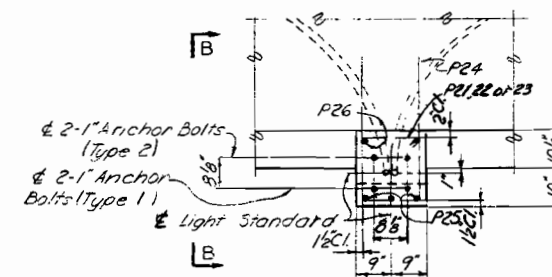


SECTION A-A

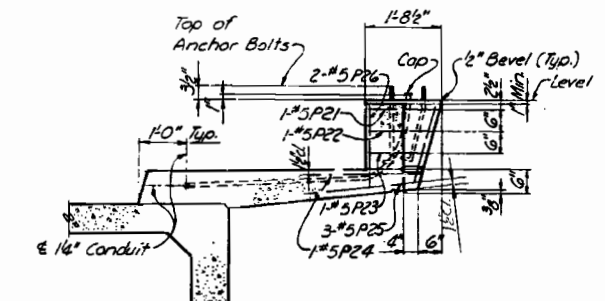


SECTION THRU BENTS 1 & 5

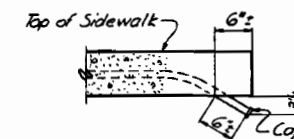
SECTION THRU DIAPHRAGM
Section thru Interior Bents 2, 3 & 4 similar



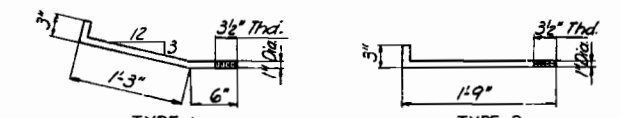
PLAN AT LIGHT STANDARD SUPPORT
Note: Anchor Bolts to be placed symm. abt. Light Standard.



SECTION B-B



DETAIL OF CONDUIT
AT END OF BRIDGE



ANCHOR BOLTS
Note: Anchor Bolts to be furnished complete with 2 Std. Hex nuts and washers, all galvanized.

CONDUIT SYSTEM FOR SOUTHWESTERN BELL TELEPHONE

All ducts, except thru Bents 1 and 5, including short lengths thru diaphragms and Bents 2, 3 and 4 are to be 3" I.D. Transite Type C Telephone Duct, with plastic couplings, as manufactured by Johns-Manville, or an approved equivalent.

Short lengths of conduit thru Bents 1 and 5 are to be 4" O.D. Galvanized Steel Pipe, with straight adaptor couplings and plastic plugs.

Plastic couplings and plugs are to be as manufactured by Johns-Manville or an approved equivalent.

The cost of furnishing and installing all items required for the Telephone Company conduit installation, shall be included in the lump sum bid for Conduit System for Southwestern Bell Telephone Company.

Short lengths of Transite ducts are to be cast integrally with diaphragms, interior bents or bottom slab of interior bents.

Plastic couplings as shown in details.

CONDUIT SYSTEM FOR STREET LIGHTS

Note: For details of Lighting Standards, Wiring and Fixtures, see Lighting Plans.

Cost of furnishing and placing conduit, expansion fittings and anchor bolts for light standard shall be included in the lump sum bid for Conduit System on Structures (Lighting).

All Expansion Fittings to be O.Z. Elect. Mfg. Co. Cat. No. AX125 with AJ125 Bonding Jumper or equal.

Shift reinforcing in field where necessary to clear conduit.

All conduit to be 1 1/2" rigid galvanized steel.

Revised 11/9/63 D.J.C. & L.H.G.

BRIDGE-EWING AVE. UNDERPASS

STATE ROAD-DANIEL BOONE EXPRESSWAY

PROJECT NO. 11-40-5 (6) (RTE 40 T.R.) STA. 37+50.54

CITY OF ST. LOUIS

CONDUIT SYSTEM FOR STREET
LIGHTING AND BELL TELEPHONE

SHEET 2 OF 3

A-838

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

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

CONDUIT SYSTEM

DRAWN BY: G. Milonas, Apr. 63
CHECKED BY: T.V. Dillon, Apr. 19, 63
Street Lighting Conduit System Reviewed by: R. Dress, 6/28/63

DRAWN BY: G. Milonas, Apr. 63
CHECKED BY: T.V. Dillon, Apr. 19, 63
Street Lighting Conduit System Reviewed by: R. Dress, 6/28/63

MISSOURI STATE HIGHWAY DEPARTMENT

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

DIMENSIONS FOR BENDING															DIMENSIONS FOR BENDING														
NO.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	G	H	K	R	O	NO.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	G	H	K	R	O
SUPERSTRUCTURE																													
204	6	7'-0"	B8	1	Footings	5'-5'-2"									42	8	34'-0"	38	Str	Bent Slab									
80	5	4'-0"	B19	1	DO	7'-5'-4"									5	8	25'-7"	59	Str	DO									
															78	8	44'-0"	510	Str	DO									
															42	8	30'-6"	571	Str	DO									
															11	8	57'-7"	572	Str	DO									
															5	8	22'-7"	573	Str	DO									
															42	8	58'-4"	574	Str	DO									
															5	8	32'-11"	575	Str	DO									
															10	5	3'-11"	576	Str	DO									
															16	5	20'-0"	577	Str	DO									
															16	5	19'-7"	578	Str	DO									
															32	9	6'-0"	579	Str	DO									
															62	5	24'-7"	580	Str	Top Slab									
															20	10	42'-0"	581	Str	DO									
															20	9	42'-0"	582	Str	DO									
															12	10	26'-0"	583	Str	DO									
															49	9	26'-0"	584	Str	DO									
															12	11	46'-0"	585	Str	DO									
															50	10	44'-0"	586	Str	DO									
															12	11	26'-0"	587	Str	DO									
															49	10	26'-0"	588	Str	DO									
															62	5	44'-6"	589	Str	DO									
															12	9	38'-0"	591	Str	DO									
															50	8	38'-0"	592	Str	DO									
															12	9	26'-0"	593	Str	DO									
															49	8	25'-0"	594	Str	DO									
															62	5	21'-7"	595	Str	DO									
															216	5	40'-0"	596	Str	DO									
															162	5	39'-8"	597	Str	DO									
															451	5	47'-6"	598	Str	DO									
															12	5	55'-7"	599	Str	DO									
															216	4	9'-8"	540	SA	Diaphragm									
															108	4	4'-10"	541	SA	DO									
															60	4	6'-8"	542	SA	DO									
															12	4	5'-10"	543	SA	DO									
															48	4	2'-5"	544	SA	DO									
															120	4	2'-2"	545	SA	DO									
															48	4	23'-7"	546	SA	DO									
															12	6	46'-3"	547	SA	DO									
															12	6	48'-9"	548	SA	DO									
															451	5	45'-8"	549	SA	Top Slab									
															12	5	53'-9"	550	SA	DO									
															522	4	5'-7"	P1	35	Parapet									
															258	5	4'-9"	P2	19	Side Walk									
															602	5	7'-6"	P3	34	DO									
															4	5	34'-8"	P4	Str	Parapet									
															48	5	9'-8"	P5	Str	DO									
															16	5	32'-8"	P6	Str	DO									
															12	5	3'-6"	P7	Str	DO									
															4	5	30'-5"	P8	Str	DO									
															6	5	22'-11"	P9	Str	Side Walk									
															14	5	27'-2"	P10	Str	DO									
															60	5	29'-5"	P11	Str	DO									
															60	5	27'-4"	P12	Str	DO									
															6	5	21'-5"	P13	Str	DO									
															14	5	25'-7"	P14	Str	DO									
															4	5	36'-4"	P15	Str	Parapet									
															4	5	29'-8"	P16	Str	DO									
															6	5	23'-11"	P17	Str	Side Walk									
															4	5	20'-4"	P18	Str	DO									
															14	5	28'-0"	P19	Str	DO									
															14	5	24'-8"	P20	Str	DO									
															1	5	6'-3"	P21	71	DO									
															1	5	6'-0"	P22	71	DO									
															1	5	3'-8"	P23	71	DO									
															1	5	6'-9"	P24	71	DO									
															3	5	4'-1"	P25	19	DO									
															2	5	1'-8"	P26	54	DO									

MISSOURI STATE HIGHWAY DEPARTMENT

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

GENERAL NOTES

SPECIFICATIONS: Missouri State Highway Commission Standard Specifications (1961 Edition) and Special Provisions.

DESIGN LOADINGS: In accordance with Division I of the AASHTO Standard Specifications for Highway Bridges, 1961 Edition.

Live Load: H20-44.

Dead Load: Provision is made for a future wearing surface of 15 pounds per square foot of roadway surface.

DESIGN UNIT STRESSES:

Concrete in Flexure: Class B Concrete—1200 lbs. per sq. in.

Class B1 Concrete—1600 lbs. per sq. in.

Reinforcing Steel—20,000 lbs. per sq. in.

CONCRETE: Concrete for superstructure was Class B1.

Concrete for substructure (footings of Bent 2, 3 and 4) was Class B or B1 except that payment was on the basis of Class B Concrete.

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

SURFACE SEALING: Superstructure deck was surface sealed (See Special Provisions).

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to 1/2" 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 unless otherwise shown or noted.

WELDING: See Standard Specification 55.3.13 for qualifications of welding operators.

PAINT: Shop, none; Field, by Contractor in accordance with Standard Specification 55.4.10 except that final coat on access doors and frames was gray.

Note: Concrete Protection on front slopes of end bents was included under Road Contract. Provide 1" filler (Standard Specifications 157.1.7) between slope protection pavement and end bents and columns of intermediate bents. Provide 2" Filler (Standard Specifications 157.1.7) between slope protection and curbs. Concrete Slope Protection Blocks were 4'-0" x 3'-0" with a 1' joint in accordance with Standard Specification 83.50.

FOOTING AND PILE DATA

Bent No.		1	2	3	4	5
Spread Footings	Foundation Material					
	Design bearing	12.0	12.0	12.0	12.0	12.0
Bearing Pile	See Standard Specifications 504.2					
	Pile Type and Size	10BP42				10BP42
	Number	6				6
	Approximate Length	17				21
	Plan Bearing	56				56
Hammer	Minimum Required Bearing	46				46
	See Standard Specifications 52.2.6					

Note: Footings of Bents No. 2, 3 and 4 were carried 6" into hard, solid, undisturbed rock and cast against vertical face of same. In no case were footings of Bents No. 2, 3 and 4 placed higher than the elevations shown. All piles were driven to practical refusal on or into solid rock or other competent material of not less than the Plan Bearing shown.

All piling was driven with an approved power hammer, or developing an energy of not less than 19,000 ft. lbs. and having a ram weighing not less than 4,500 lbs.

FINAL QUANTITIES

Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yd.	121.0	121.0
10BP42 Steel Piles in place	Lin. Ft.	164	164
10BP42 Steel Pile cut-offs	Lin. Ft.	76	76
Class B Concrete	Cu. Yd.	20.0	20.0
Class B1 Concrete	Cu. Yd.	1071.8	1071.8
Reinforcing Steel	Lb.	2480	280,350
Bridge Rail (Two Tube Type)	Lin. Ft.	502	502
Fabricated Structural Carbon Steel	Lb.	1430	1430
Conduit System on Structure (Lump Sum)			1
Conduit System on Structure (Lighting)			1

Note: Class I Excavation for Structures was computed from the original ground line (1958) or from the lower limits of roadway excavation, whichever is lower regardless of the sequence of operations and the method of removal. Substructure Concrete includes concrete in footings of Bents 2, 3 and 4.

CONTINGENT ITEMS

Item	Substr.	Superstr.	Total
Class I Excavation + 25%	Cu. Yd.	6.0	6.0
Test Holes	Lin. Ft.	36	36

SUBMITTED BY:

REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. 6, 2047

BRIDGE-EWING AVE. UNDERPASS

STATE ROAD-DANIEL BOONE EXPRESSWAY

PROJECT NO. U-40-5 (6) (RTE. 40 T.R.) STA. 37+50.54

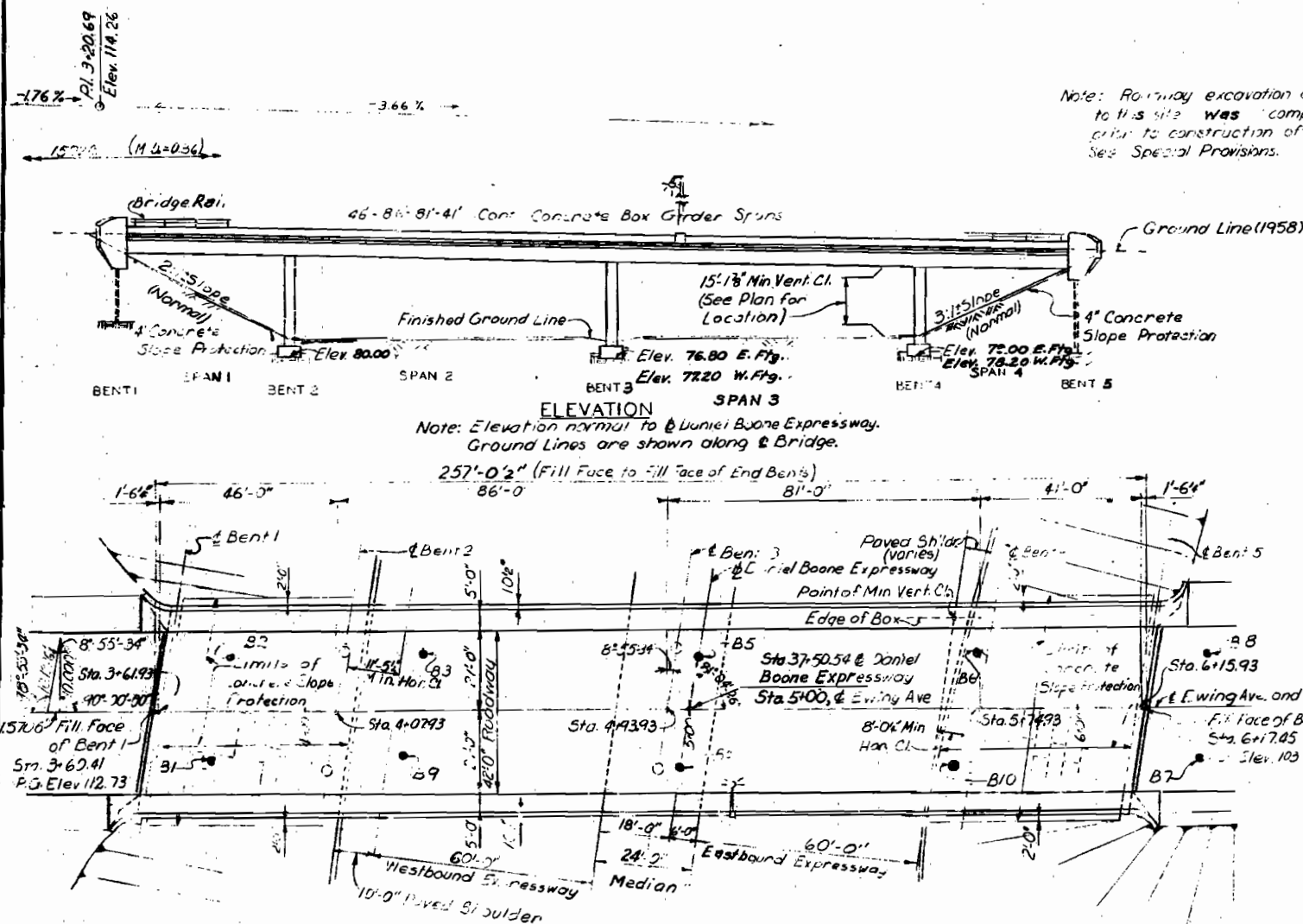
CITY OF ST. LOUIS

GENERAL PLAN AND ELEVATION

SHEET 1A OF 2

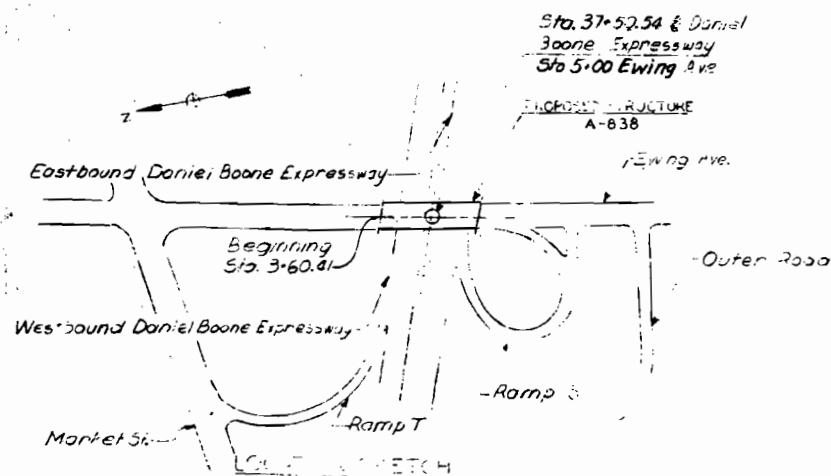
STD. 54.00
A-838

FINAL PLANS



PLAN

Note: All dimensions shown are measured horizontally. For Log of Borings see Sheet 3.



BENCH MARKS
BM. - Chiseled 'a' on N.E. End Post
Elev. 116.44

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ST. LOUIS, MISSOURI

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		18		

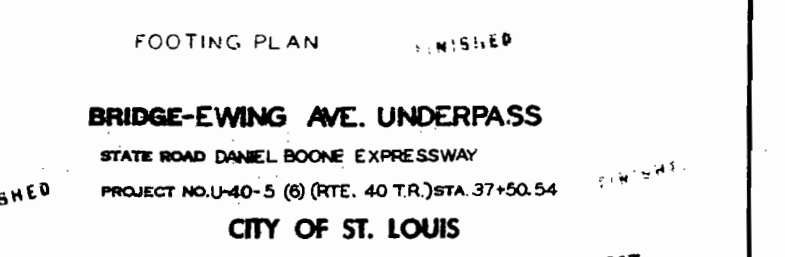
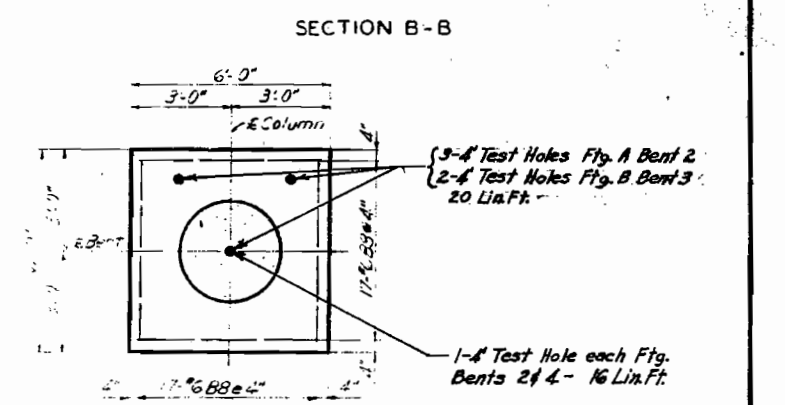
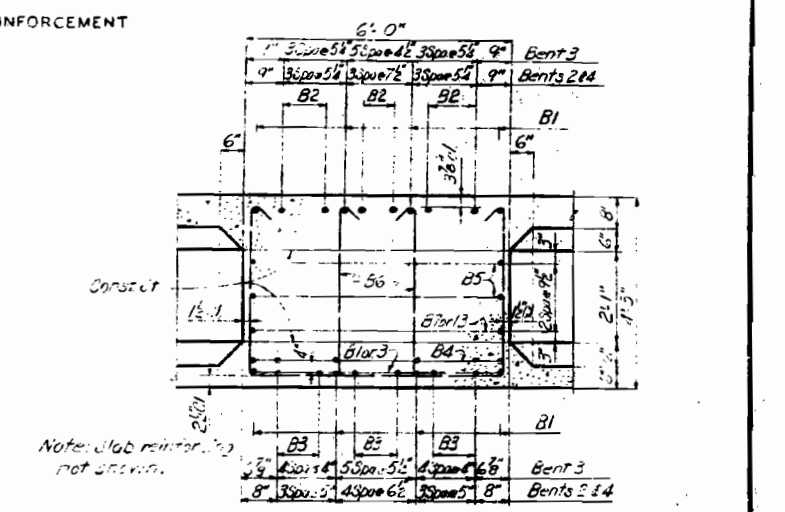
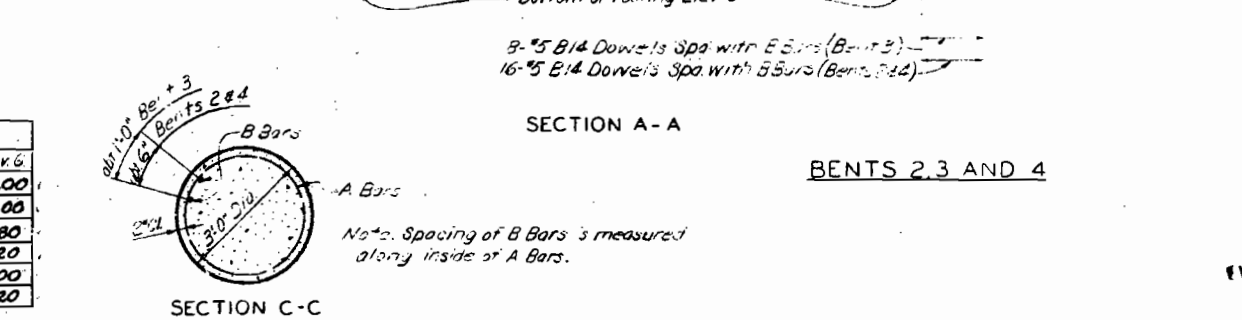
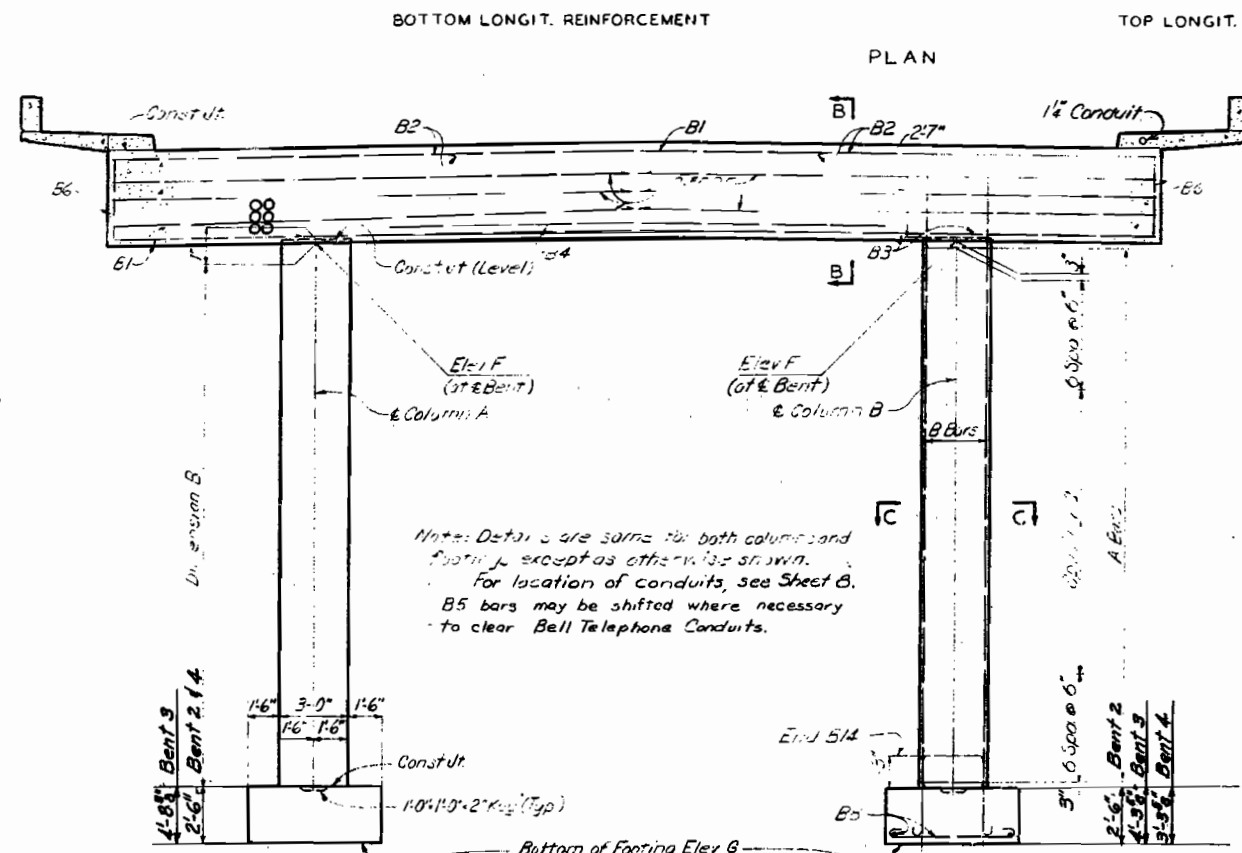
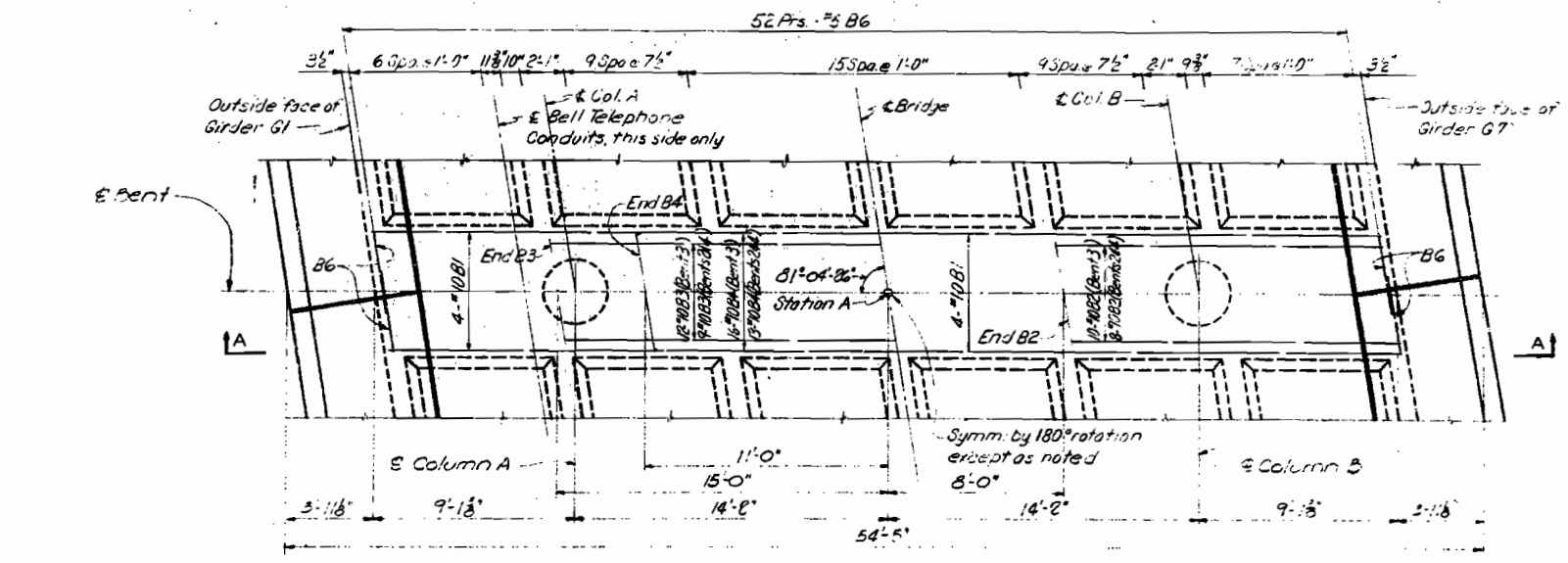
MISSOURI STATE HIGHWAY DEPARTMENT

LOG OF BORINGS

ELEV.	HOLE B1 Sta 3+78.00 13' R.	HOLE B2 Sta 3+78.00 14' L.	HOLE B3 Sta 4+28.00 15' L.
110	112.22 Asphalt pavement	112.22 Asphalt pavement	110.41 Asphalt pavement
105	Debris	Med. br. silty clay	Asphalt pavement
100	Med. br. silty clay to clay	Med. br. silty clay	Med. br. silty clay
95	Stiffer br. clay		
90	91.00 Soft weathered limestone	93.30 weathered limestone	92.00 weathered limestone
85	Limestone	Limestone	Limestone
80			
75			
ELEV.	HOLE B4 Sta 5+00.00 15' R.	HOLE B5 Sta 5+00.00 14' L.	HOLE B6 Sta 5+72.00 14' R.
110	107.71 Asphalt pavement	107.71 Asphalt pavement	105.00 Asphalt pavement
105	Debris	Debris	Asphalt pavement
100	Med. br. silty clay	Med. br. silty clay	Olive br. silty clay
95	Stiffer br. clay	Med. br. silty clay	Gray clay
90	86.71 Limestone	87.50 Limestone	86.50 Limestone
85			
80			
75			
ELEV.	HOLE B7 Sta 6+32.00 12' R.	HOLE B8 Sta 6+32.00 14' L.	HOLE B9 Sta 4+28.00 12.5' R.
110	102.50 Asphalt pavement	102.40 Asphalt pavement	105.50 Pavement base
105	Heavy debris fill	Asphalt pavement	Stiff br. clay
100	Olive green soft silty clay	Olive gray silty clay	Thick bedded limestone with shale seams
95	Stiff clay	Med. br. silty clay	Limestone
90	80.10 Limestone fragments	80.10 Limestone	
85			
80			
75			
70			

Note: Borings are referenced to the center line of Ewing Ave. along the skew.
These data are furnished for information only and may or may not represent the actual conditions which will be found when the work is executed.
Borings were taken during March 1961. All holes were made with a double auger.

ELEVATIONS, DIMENSIONS AND COLUMN REINFORCEMENT									
Bent	Col.	Sta. A	Dim. B	Spacing C	A Bars	B Bars	Elev. F	Elev. G	
2	A	4+07.43	24'-0"	18 Spa @ abt. 11"	31-58B	16-70B	106.53	80.00	
	B	4+13.93	24'-0"	18 Spa @ abt. 11"	31-58B	16-70B	106.70	80.00	
3	A	4+13.93	21'-0"	16 Spa @ abt. 11"	29-58B	14-70B	103.39	76.80	
	B	4+13.93	22'-0"	16 Spa @ abt. 11"	29-58B	14-70B	103.55	77.20	
4	A	5+74.43	18'-11"	13 Spa @ abt. 11"	26-58B	16-70B	100.42	79.00	
	B	5+74.43	19'-1"	13 Spa @ abt. 11"	26-58B	16-70B	100.58	78.20	



NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BRIDGE-EWING AVE. UNDERPASS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-40-5 (B) (RTE. 40 T.R.) STA. 37+50.54
CITY OF ST. LOUIS

LOG OF BORINGS AND BENTS 2, 3 AND 4
SHEET 34 OF 2
A-638

FINAL PLANS