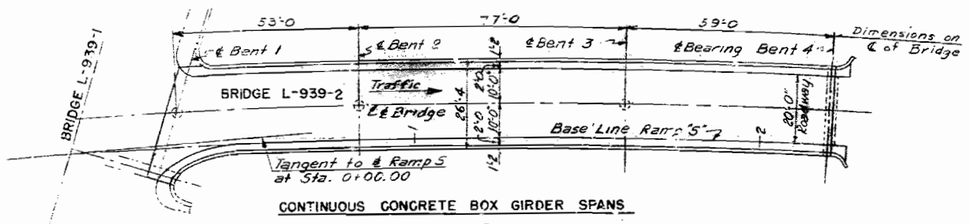
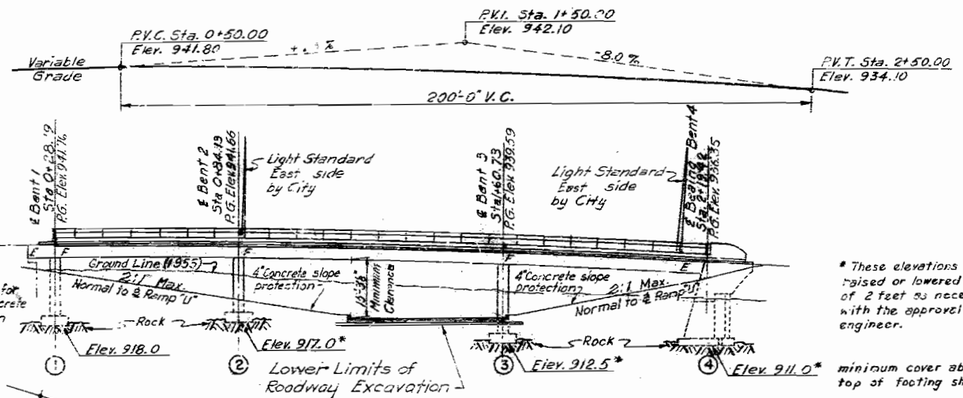
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No.	SHEET NO.	TOTAL SHEETS
	5 MO		159	
DIST. NO. 4	COUNTY		ROUTE	JOB

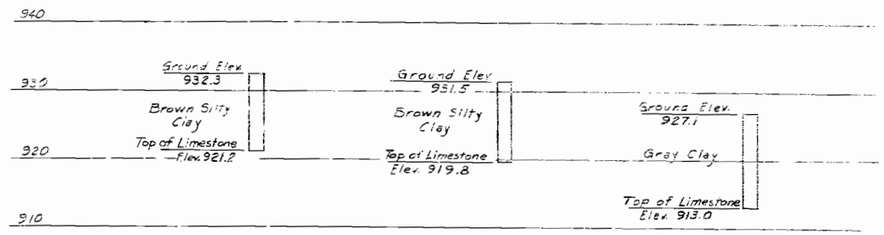


CONTINUOUS CONCRETE BOX GIRDER SPANS

PLAN



ELEVATION



BORING LOGS

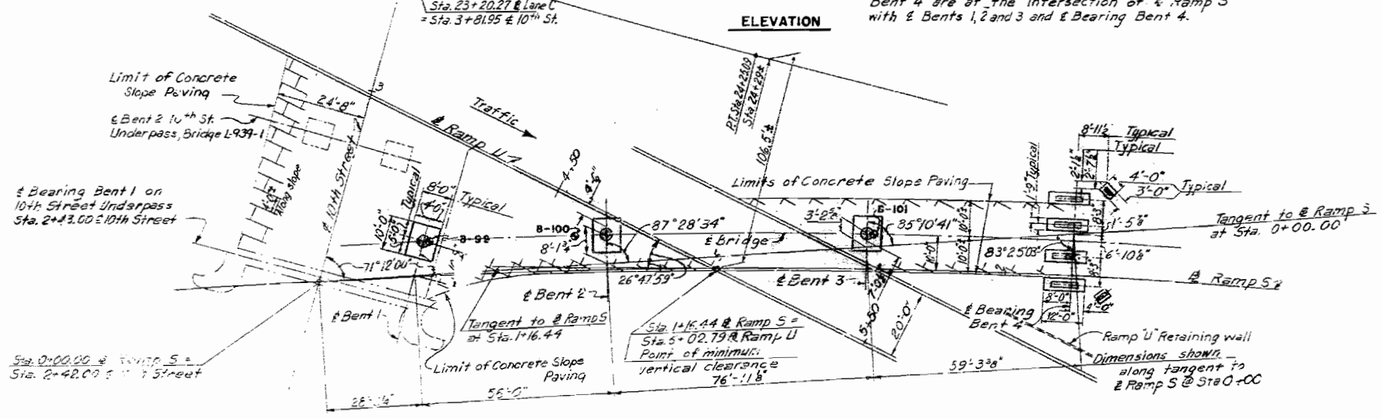
* These elevations may be raised or lowered a maximum of 2 feet as necessary with the approval of the engineer.

The minimum cover above the top of footing shall be 1'-6".

Ramp S Curve Data	
PI	Sta 2+97.37
Δ	17° 42' 00"
D	3° 00' 00"
R	1909.86 to ℄
T	297.37'
L	590.00'
S.E.	+0.0575% @ Sta 0+50 +0.0485% @ Sta 0+75 +0.0390% @ Sta 1+00 +0.0300% Sta 1+25 to Sta 3+10

Note: For elevations on structure before Station 0+50 see contours on sheet 10.

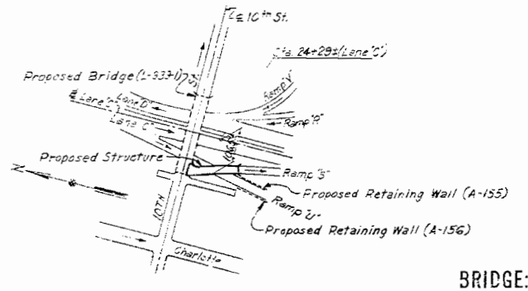
Bench Mark: N.E. Corner 10th & Harrison. 'X' on hydrant 3' west of Spindle. Elev. 956.37



Note: Length of Structure is approximately 194' along ℄ of Bridge

Note: All loose, shelly or disintegrated rock shall be removed and the footings carried at least 6" into and cast against 6" vertical faces of hard, solid, undisturbed rock. If soft rock or shale is encountered, the footings shall be carried at least 18" into and cast against vertical faces of same.

GROUND PLAN



LOCATION SKETCH

SUBMITTED BY:
R. A. Bergendoff
REGISTERED PROFESSIONAL ENGINEER MISSOURI NO. E-253

BRIDGE: RAMP "S" OVER RAMP "U"

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-70-1(17) (RT I-70) STA. 24+29±(LANE C) 106.5'± RT.

JACKSON COUNTY

STD. C-110 R 7

L-939-2

GENERAL PLAN AND ELEVATION

SHEET 1 OF 11

SUBMITTED BY J. A. Williams, BRIDGE ENGINEER, DATE 4-3-1959

APPROVED BY Roy M. Hutton, CHIEF ENGINEER, DATE 4-3-1959

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE V.W. & T.D.T. DATE 5-21-56 TRACED DATE

CHECKED A.S.G. DATE 8-24-56 SCALE

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

350

SEE FINAL PLANS BOOK

MISSOURI STATE HIGHWAY DEPARTMENT

FED. AID SYM. NO.	STATE	FEDERAL PROJECT No.	SHEET NO.	TOTAL SHEETS
5	MO.		20	
DIST. NO.	COUNTY		ROUTE	SEC.
4				

GENERAL NOTES

Design Specifications: A.A.S.H.O., 1953 with Tentative Revision T 14 (54).

Construction Specifications: Missouri Standard Specifications for State Roads, Materials, Bridges, Culverts, and incidental Structures, 1955.

Design Loading: H 20-S16-44 (Modification: 24,000# Tandem Axles.)
15 lbs. per square foot future wearing surface.

Concrete: Concrete Stress (Class "B" and "B-1") Fc = 1400 psi (Fc = 4000 psi).
Concrete for superstructure shall be Class "B-1" air entrained.
Concrete for substructure shall be Class "B" air entrained. If the contractor desires, he may use Class "B-1" in lieu of Class "B" concrete in substructure with payment made on the basis of Class "B" concrete.
All forms are to be removed from the interior of box girders.

Reinforcing Steel: Allowable stress 20,000 psi
All splices in reinforcing steel shall be 32 bar diameters.
Bar sizes are designated on the plans by numbers. The first digit after the letter in three digit marks and the first two digits after the letter in four digit marks indicate the size of the bar.
Dimension shown on plans from reinforcing steel to outside edge of concrete are all clear dimensions.
All bending dimensions are from "out" to "out" of bars except diameter dimensions on spirals which are from "center" to "center" of bar.

Fiber Conduit: Expansion sleeve is oversized fiber conduit, as provided by manufacturer, complete with rubber ring.

Joint Filler: Where joint filler is specified on the plans it shall conform with the requirements for Gray Rubber Compound Joints as given in Section 59-22.5 of the Standard Specifications.

Welding: Qualification for welding operators will be required.

Slope Protection: Not included in bridge Quantities. See sheet 11 for details. See Road Plans for Quantities.

Utilities: All utilities, unless shown otherwise, shall be removed or relocated by others. The contractor will notify the owner of the utilities of his work schedule sufficiently in advance to allow time for the disposition of utilities.

Deflection Joints: Deflection joints shall be placed in the parapet or sidewalk and parapet where shown on the plans. The surface of the joint shall be coated with paraffin and the reinforcing steel shall be stopped 2" clear of joint. No chamfer shall be placed on the sidewalk.

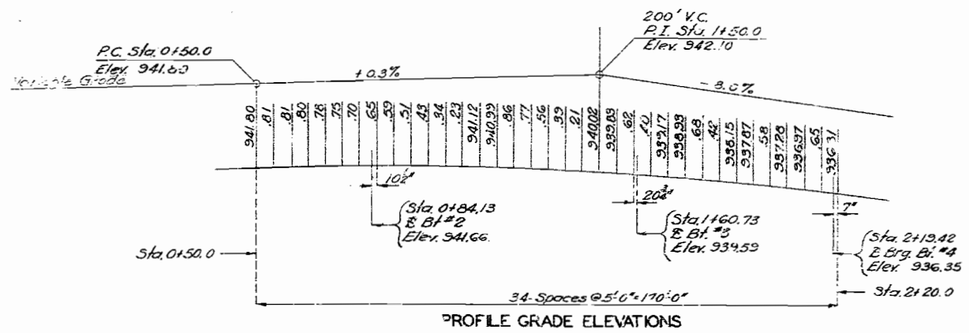
Estimated Quantities: Estimated quantity of Class "B" concrete substructure, includes all concrete in Bent No. 4 (including wingwalls and end posts), and footings of Bents No. 1, 2 & 3. All other concrete is included in estimated quantity of Class "B-1" superstructure. Joint filler, roofing felt, insulation pads and other incidental items shown on the plans shall be included in the price bid for other items.

Waterproofing: Superstructure deck to be waterproofed. See Special Provisions.

Shipping: Permits will be required for all truck loads over the legal length.

Painting: For painting see Special Provisions.

Note:
All excavation for bridge will be paid for as Class I Excavation for Structures.
Estimated quantities of Class I Excavation for Structures includes only amounts of excavation below Roadway Excavation.



PROFILE GRADE ELEVATIONS

ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	TOTAL
1-G	Class I Excavation for Structures	Cu. Yds.	485		485
16-B	Class B Concrete	Cu. Yds.	107.7		107.7
16-B-1	Class B-1 Concrete	Cu. Yds.		352.6	352.6
17-B	Fabricated Structural Steel - Fabricated and Erected	Lbs.		1,880	1,880
17-B	△ Fabricated Structural Steel - Erected only	Lbs.		1940	1940
17-A-A	Aluminum Alloy Handrail	Lin. Ft.		374	374
17-B	Fabricated Structural Steel (Bearings)	Lbs.		620	620
			(1,792	(117,550	(119,342
19-A	Reinforcing Steel	Lbs.	(10,970	(107,490	(118,460
40-W	Lighting Conduit System	L. Sum		1	1

△ This item includes the portion of the expansion joint on Ramp S which will be fabricated with the portion on Tenth Street (Bridge L-939-1) but will be erected by the contractor who builds Ramp S.

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE: RAMP "S" OVER RAMP "U"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(67)(RT I-70) STA. 24+29±(LANE C) 106.5'± RT.
JACKSON COUNTY

SHEET 2 OF 11

L-939-2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE J.S.H.	DATE 7-6-56	TRACED B.S.L.	DATE 2-11-57
CHECKED R.S.G.	DATE 12-29-56	SCALE	

NOTE. This drawing is not to scale. Follow dimensions.

351

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD SYS. NO.	STATE	FEDERAL PROJECT No. & SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	5 MO.			6	
DIST. NO.	COUNTY		ROUTE	SEC.	
	4				

PARTIAL BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
BENT 1, 2, & 3 - SUBSTRUCTURE								
15	#6	7'-6"	F601	str.				
27	#7	7'-6"	F701	str.				
10	#7	9'-6"	F702	str.				
24	#5	9'-6"	F501	str.				
68	#11	8'-0"	F1101	126	5'-5"	1'-7"	1'-0"	1'-0"
BENTS 1, 2 & 3 - SUPERSTRUCTURE								
1	#5	G37'-6"	C501	127	2'-8 3/8"	18'-4 3/8"		
1	#5	G67'-8"	C502	127	2'-8 3/8"	19'-1 3/8"		
1	#5	738'-9"	C503	127	2'-8 3/8"	21'-8 3/8"		
48	#10	8'-6"	C1001	126	3'-7"	3'-2"	1'-9"	2'-0"
24	#11	21'-0" (21'-3")	C1101	str.				
20	#11	21'-9"	C1102	str.				
24	#11	24'-0"	C1103	str.				
BENT 4								
36	#6	3'-0"	F601	str.				
40	#6	4'-5"	F602	101	3'-9"	8"		
6	#6	3'-6"	F603	str.				
8	#6	2'-6"	F604	str.				
16	#7	4'-11"	F701	101	4'-1"	10"		
16	#7	11'-8"	F702	str.				
26	#4	29'-0"	H401	109	4'-0" to 7'-3"	1'-2"	4 1/2"	
46	#4	7'-5"	H402	109	2'-8"	8"	4 1/2"	
12	#4	26'-1"	H403	str.				
9	#4	2'-10"	H404	str.				
2	#4	10'-6"	H405	str.*				
2	#4	11'-6"	H406	str.*				
2	#4	8'-0"	H407	str.*				
2	#4	9'-0"	H408	str.*				
2	#4	10'-1"	H409	str.*				
2	#4	11'-1"	H410	str.*				
1	#4	26'-1"	H411	str.				
6	#4	4'-5"	H418	105	2'-2"	1'-2"	1'-2"	
6	#4	3'-3"	H419	105	1'-3"	1'-0"	1'-0"	

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
6	#5	7'-10"	H501	125	6"	2'-10"	1'-4"	3'-2"
2	#5	8'-2"	H502	125	6"	3'-0"	1'-4"	3'-4"
2	#5	9'-3"	H503	125	6"	3'-6"	1'-4"	3'-6"
2	#5	10'-0"	H504	125	6"	4'-0"	1'-4"	3'-8"
2	#5	11'-0"	H505	125	6"	4'-6"	1'-4"	4'-8"
2	#5	12'-11"	H506	125	6"	5'-6"	1'-4"	5'-7"
2	#5	14'-11"	H507	125	6"	6'-6"	1'-4"	6'-7"
12	#5	9'-4"	H508	str.				
4	#5	6'-6"	H509	str.				
4	#5	4'-0"	H510	str.				
4	#5	2'-6"	H511	str.				
2	#5	13'-0"	H512	str.*				
2	#5	14'-0"	H513	str.*				
6	#5	25'-8"	H514	str.*				
5	#5	26'-10"	H515	str.*				
6	#5	26'11"	H516	str.*				
14	#5	7'-0"	H517	str.				
16	#6	26'-0"	H601	Str.				
6	#6	11'-4"	H602	Str.				
26	#4	18'-11"	V401	123	2'-8"	4'-2"	5'-7"	5'-9"
2	#4	17'-9"	V402	123	2'-0"	4'-2"	4'-11"	5'-1"
4	#4	7'-11"	V403	108	6'-3"	1'-8"	1'-7 1/2"	
4	#4	7'-2"	V404	108	5'-6"	1'-8"	1'-7 1/2"	
22	#5	6'-3"	V501	str.				
4	#5	10'-2"	V502	103	8"	7'-6"	2'-0"	
4	#5	9'-6"	V503	105	8"	6'-10"	2'-0"	
3	#5	9'-3"	V504	str.				
2	#5	8'-3"	V505	str.				
6	#5	23'-10"	V506	str.				
5	#5	13'-0"	V507	str.				
2	#5	10'-4"	V508	124	4'-3"	10"	4'-3"	1'-0"
3	#5	8'-10"	V509	str.				
2	#5	7'-3"	V510	str.				
6	#5	22'-9"	V511	str.				
5	#5	12'-6"	V512	str.				
2	#5	6'-6"	V513	str.				
2	#5	6'-0"	V514	str.				
21	#5	3'-8"	V515	125	6"	1'-2"	4"	1'-8"
12	#5	6'-4"	V516	str.				
16	#6	14'-8"	V601	str.				
4	#6	23'-6"	V602	str.				
4	#6	20'-0"	V603	str.				
8	#6	14'-11"	V604	Str.				
8	#6	7'-6"	V605	Str.				
12	#7	15'-0"	V701	str.				
2	#7	20'-10"	V702	str.				
2	#7	23'-4"	V703	str.				

SUPERSTRUCTURE

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
5	#4	30'-7"	W401	str.				
8	#4	33'-3"	W402	str.				
4	#4	23'-6"	W403	str.				
2	#4	25'-10"	W404	str.				
2	#4	27'-2"	W405	str.				
8	#4	30'-2"	W406	str.				
8	#4	38'-10"	W407	str.				
9	#4	28'-10"	W408	str.				
2	#4	29'-8"	W409	str.				
2	#4	30'-6"	W410	str.				

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
1	#6	12'-6"	B601	139	2'-1 1/2"	3'-6 3/4"	6"	
1	#6	14'-6"	B602	109	3'-1 1/2"	3'-6 3/4"	6"	
76	#6	13'-5"	B603	109	2'-8"	3'-6 3/4"	6"	
18	#6	15'-5"	B604	109	3'-8"	3'-6 3/4"	6"	
8	#6	13'-8"	B605	str.				
2	#6	28'-0"	B606	str.				
2	#6	28'-3"	B607	str.				
12	#10	19'-8"	B1001	str.				
36	#11	13'-8"	B1101	str.				
4	#11	65'-2"	B1102	str.				
1	#11	29'-9"	B1103	str.				
1	#11	28'-11"	B1104	str.				
1	#11	29'-3"	B1105	str.				
1	#11	28'-5"	B1106	str.				
1	#11	28'-6"	B1107	str.				
1	#11	23'-6"	B1108	str.				
12	#4	5'-0"	D401	109	8"	11 1/2"	4 1/2"	
24	#4	4'-5"	D402	109	8"	1'-2"	4 1/2"	
24	#4	4'-10"	D403	109	8"	1'-4 1/2"	4 1/2"	
24	#4	5'-3"	D404	109	8"	1'-7"	4 1/2"	
3	#4	5'-11"	D405	109	11"	1'-8"	4 1/2"	
10	#6	26'-0"	D601	str.				
20	#6	10'-8"	D602	109	1'-2"	3'-8"	6"	
8	#6	19'-8"	D603	str.				
16	#6	5'-2"	D604	101	4'-6"	8"		
16	#6	8'-6"	D605	106	4'-3"	4'-3"	2'-2"	
2	#6	8'-7"	D606	137	2'-9"	2'-2"	9"	
5	#6	2'-8"	D607	str.				
4	#6	8'-2"	D608	105	1'-2"	3'-6"	3'-6"	
96	#4	25'-8"	G401	str.				
6	#4	36'-4"	G402	str.				
18	#4	22'-4"	G403	str.				
12	#4	25'-5"	G404	str.				
24	#4	29'-7"	G405	str.				
18	#4	26'-4"	G406	str.				
6	#4	24'-2"	G407	str.				
6	#4	8'-0"	G408	str.				
350	#5	5'-5"	G501	130	3'-5"	1'-0"		
350	#5	5'-8"	G502	105	3'-8"	1'-0"	1'-0"	
658	#5	6'-0"	G503	129	3'-3"	1'-0"	9"	6"
56	#6	3'-0"	G601	str.				

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
16	#10	19'-0"	G1001	str.				
16	#10	24'-0"	G1002	str.				
16	#10	36'-0"	G1003	str.				
8	#10	46'-0"	G1004	str.				
36	#10	60'-0"	G1005	str.				
16	#10	17'-6"	G1006	str.				
16	#10	25'-0"	G1007	str.				
8	#10	35'-0"	G1008	str.				
20	#10	45'-0"	G1009	str.				
1	#10	26'-7"	G1010	str.				
1	#10	31'-7"	G1011	str.				
4	#10	28'-6"	G1012	str.				
1	#10	39'-6"	G1013	str.				
1	#10	35'-4"	G1014	str.				
1	#10	30'-4"	G1015	str.				
1	#10	37'-3"	G1016	str.				
1	#10	32'-3"	G1017	str.				
5	#10	28'-2"	G1018	str.				
1	#10	28'-3"	G1019	str.				
8	#10	24'-1"	G1020	str.				
4	#10	33'-2"	G1021	str.				
4	#10	55'-0"	G1022	str.				
12	#10	50'-0"	G1023	str.				
28	#10	42'-0"	G1024	str.				
12	#10	25'-3"	G1025	str.				
1	#10	49'-3"	G1026	str.				
8	#10	51'-0"	G1027	str.				
12	#10	23'-0"	G1028	str.				
8	#10	47'-0"	G1029	str.				
1	#10	33'-3"	G1030	str.				
1	#10	51'-3"	G1031	str.				
1	#10	53'-0"	G1032	str.				
1	#10	48'-0"	G1033	str.				
1	#10	43'-0"	G1034	str.				
1	#10	21'-6"	G1035	str.				
1	#16	18'-0"	G1036	str.				
1	#10	41'-3"	G1037	str.				
1	#10	46'-3"	G1038	str.				
1	#10	54'-3"	G1039	str.				
1	#10	49'-3"	G1040	str.				
1	#10	44'-3"	G1041	str.				
1	#10	44'-3"	G1042	str.				
8	#4	27'-1"	P401	str.				
16	#4	6'-8"	P402	str.				
12	#4	3'-8"	P403	str.				
8	#4	29'-3"	P404	str.				
4	#4	38'-8"	P405	str.*				
8	#4	26'-8"	P406	str.				
8	#4	28'-9"	P407	str.				
8	#4	25'-4"	P408	str.*				
4	#6	9'-8"	P601	str.				
24	#4	23'-10"	S401	str.				
6	#4	37'-2	S402	str.				
90	#4	25'-8"	S403	str.				
41	#4	2'-10"	S404	101	2'-8"	6"		
16	#4	26'-3"	S405	str.				
24	#4	27'-2"	S406	str.				
8	#4	37'-0"	S407	str.*				
2	#4	22'-5"	S408	str.				

Note:
Prefix all bar marks for Bents 1, 2, and 3 with "B1"; example: B1-F601.
Prefix all bar marks for Bent 4 with "B4"; example: B4-F701.
Prefix all bar marks for superstructure with "SU"; example: SU-B501.
* Indicates these bars may be bent in field.
For bending and cutting diagrams see sheet 4.

FISCAL YEAR

BRIDGE: RAMP S OVER RAMP U

STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(7)(RT I-70) STA. 24+29± (LANE C) 108.5± RT.
JACKSON COUNTY

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

DESIGNED JJN DATE 12-9-56 TRACED DATE
CHECKED WPO DATE 12-10-56 SCALE

NOTE: This drawing is not to scale Follow dimensions

REINFORCING SCHEDULE SHEET 3 OF 11 Sheets

L-939-2

352

MISSOURI STATE HIGHWAY DEPARTMENT

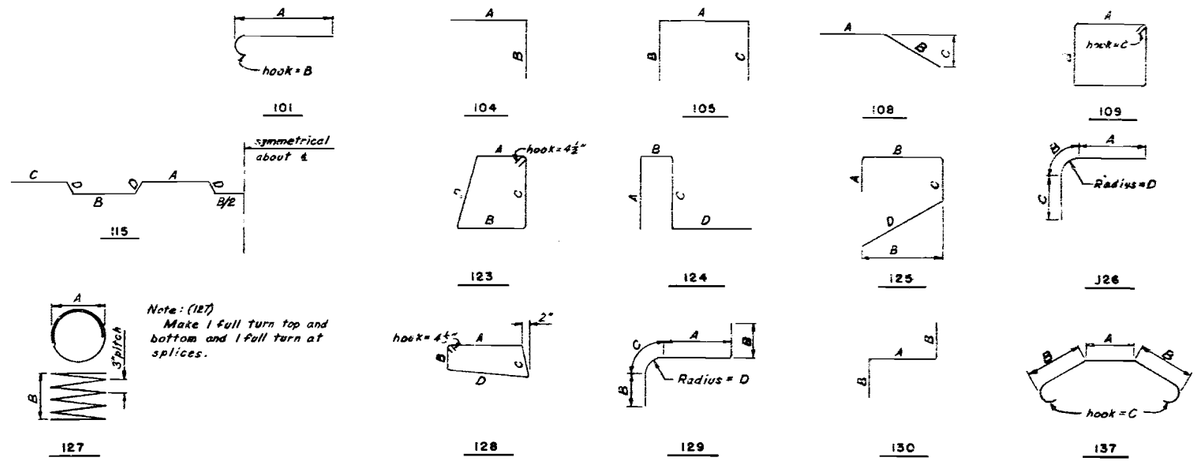
FED. ROAD DIV. NO.	STATE FEDERAL PROJECT NO. 8 SEC	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		42	
SHT. NO.	COUNTY		ROUTE	SEC
4				

PARTIAL BILL OF REINFORCING STEEL

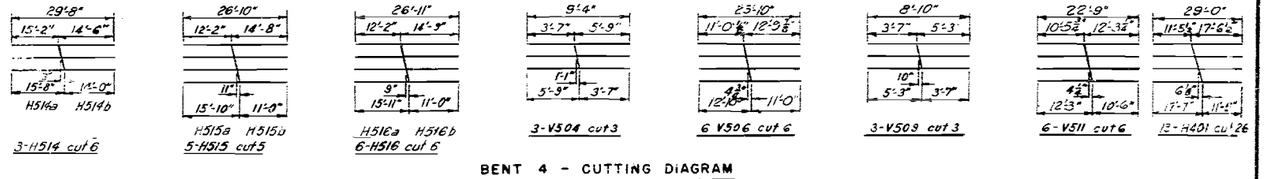
NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
SUPERSTRUCTURE CONT'D								
1	#4	27'-9"	S409	str.				
3	#4	17'-4"	S410	101	8"Omit2'-4"	6"		
4	#4	21'-8"	S411	str.				
2	#4	21'-10"	S412	str.				
1	#4	37'-10"	S413	str.				
2	#4	38'-10"	S414	str.				
4	#4	23'-4"	S415	str.				
4	#4	22'-0"	S416	str.				
4	#4	23'-6"	S417	str.				
1	#4	40'-0"	S418	str.				
1	#4	29'-8"	S419	str.				
2	#4	22'-8"	S420	str.				
2	#4	40'-9"	S421	str.				
2	#4	23'-2"	S422	str.				
1	#4	39'-3"	S423	str.				
2	#4	41'-3"	S424	str.				
2	#4	24'-2"	S425	str.				
1	#4	41'-9"	S426	str.				
4	#4	24'-6"	S427	str.				
1	#4	9'-6"	S428	101	9'-0"	6"		
1	#4	31'-6"	S429	str.				
4	#4	5'-3"	S430	101	4'-9"	6"		
2	#4	16'-1"	S431	str.				
1	#4	3'-4"	S432	str.				
2	#4	24'-11"	S433	str.*				
2	#4	22'-1"	S434	str.				
2	#4	25'-2"	S435	str.				
2	#4	23'-7"	S436	str.*				
6	#4	25'-5"	S437	str.*				
2	#4	22'-7"	S438	str.				
1	#4	29'-3"	S439	str.				
1	#4	31'-0"	S440	str.				
1	#4	33'-0"	S441	str.				
16	#4	32'-2"	S442	str.				
230	#4	7'-3"	S443	109	11"	2'-10"	4½"	
264	#4	8'-6"	S444	128	2'-9"	10"	1'-3"	2'-11"
1	#4	9'-6"	S445	128	3'-3"	10"	1'-3"	3'-5"
1	#4	12'-4"	S446	128	4'-7"	10"	1'-3"	4'-11"
2	#4	6'-9"	S447	105	9"	3'-0"	3'-0"	
126	#5	26'-0"	S501	str.				
119	#5	21'-4"	S502	115	2'-11"	3'-0"	2'-0"	5"
126	#5	20'-6"	S503	str.				
1	#5	14'-0"	S504	str.				
2	#5	17'-3"	S505	str.				
1	#5	18'-8"	S506	str.				
8	#5	20'-9"	S507	str.				
2	#5	21'-0"	S508	str.				
3	#5	21'-3"	S509	str.				
2	#5	21'-6"	S510	str.				
1	#5	10'-8"	S511	str.				
2	#5	22'-6"	S512	str.				
1	#5	19'-4"	S513	str.				
1	#5	15'-5"	S514	str.				
2	#5	6'-9"	S515	str.				
29	#5	4'-10"	S516	str.				
1	#5	11'-2"	S517	str.				
2	#5	26'-3"	S518	str.				
1	#5	8'-2"	S519	str.				
2	#5	9'-5"	S520	str.				
1	#5	7'-9"	S521	str.				
1	#5	26'-6"	S522	str.				

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
1	#5	3'-0"	S523	str.				
1	#5	26'-9"	S524	str.				
2	#5	12'-9"	S525	str.				
1	#5	27'-2"	S526	str.				
4	#5	21'-9"	S527	str.				
1	#5	28'-3"	S528	str.				
1	#5	6'-6"	S529	str.				
1	#5	27'-10"	S530	str.				
2	#5	22'-3"	S531	str.				
1	#5	4'-7"	S532	str.				
1	#5	22'-9"	S533	str.				
1	#5	23'-9"	S534	105	21'-3"	1'-3"	1'-3"	
1	#5	24'-1"	S535	105	21'-6"	1'-3"	1'-3"	
1	#5	24'-5"	S536	105	21'-11"	1'-3"	1'-3"	
1	#5	24'-8"	S537	104	23'-5"	1'-3"		
1	#5	20'-5"	S538	104	19'-2"	1'-3"		
1	#5	17'-6"	S539	104	16'-3"	1'-3"		
1	#5	15'-3"	S540	104	14'-0"	1'-3"		
1	#5	12'-8"	S541	104	11'-5"	1'-3"		
191	#5	22'-0"	S542	105	19'-6"	1'-3"	1'-3"	
4	#5	45'-6"	S543	105	19'-8" to 20'-10"	1'-3"	1'-3"	
1	#5	10'-7"	S544	104	9'-4"	1'-3"		
1	#5	8'-6"	S545	104	7'-5"	1'-3"		
1	#5	6'-0"	S546	104	4'-9"	1'-3"		
1	#5	4'-5"	S547	104	3'-2"	1'-3"		
18	#5	9'-7"	S548	104	8'-4"	1'-3"		
⓪ 4	#6	19'-8"	S601	str.				
⓪ (40)	#6	3'-6"	S602	125	5"	9"	11"	1'-5"
4	#6	46'-0"	S603	str.				
2	#6	38'-10"	S604	str.				
1	#6	21'-8"	S605	str.				
2	#6	31'-2"	S606	str.				
3	#6	26'-2"	S607	str.				
3	#6	19'-2"	S608	str.				
1	#6	38'-6"	S609	str.				
1	#6	39'-0"	S610	str.				
1	#6	29'-3"	S611	str.				
1	#6	27'-8"	S612	str.				
1	#6	41'-8"	S613	str.				
1	#6	42'-2"	S614	str.				
1	#6	43'-1"	S615	str.				
1	#6	43'-5"	S616	str.				
1	#6	43'-9"	S617	str.				
1	#6	45'-8"	S618	str.				
1	#6	12'-2"	S619	str.				
1	#6	9'-9"	S620	str.				
1	#6	7'-9"	S621	str.				
1	#6	6'-4"	S622	str.				
1	#6	5'-0"	S623	str.				
1	#6	3'-9"	S624	str.				
1	#6	22'-6"	S625	str.				
2	#6	32'-0"	S626	str.				
2	#6	39'-6"	S627	str.				
2	#6	31'-8"	S628	str.				
1	#6	17'-11"	S629	str.				
1	#6	22'-3"	S630	str.				
9	#6	50'-0"	S631	str.				
1	#6	30'-5"	S632	str.				
24	#6	4'-6"	S633	str.				
8	#8	7'-0"	S801	str.				

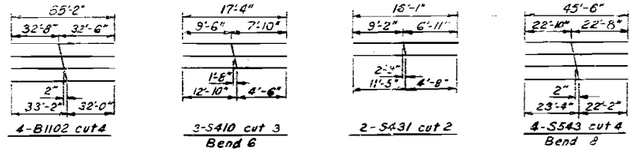
BENDING AND CUTTING DIAGRAMS



Note:
All hooks and bends shall be in accordance with the AASHO. Manual for Detailing Reinforced Concrete Highway Structures.



BENT 4 - CUTTING DIAGRAM



SUPERSTRUCTURE CUTTING DIAGRAM

FINISHES

FINISHES

BRIDGE: RAMP 'S' OVER RAMP 'U'

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-70-1(7) (RTE. I-70), STA 24+29± (LANE CHOICE RT.

JACKSON COUNTY

REINFORCING SCHEDULE SHEET 4 OF 11

L-939-2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE JJN DATE 12-6-56 TRACED DATE

CHECKED WPD DATE 12-10-56 SCALE

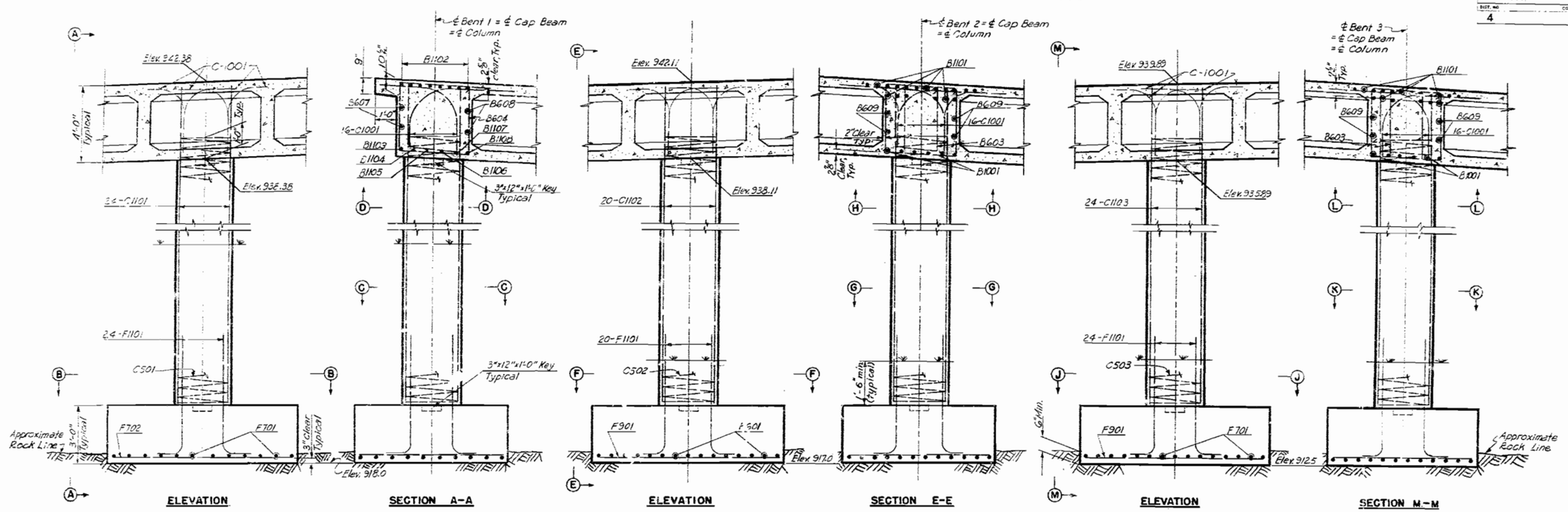
NOTE: This drawing is not to scale Follow dimensions

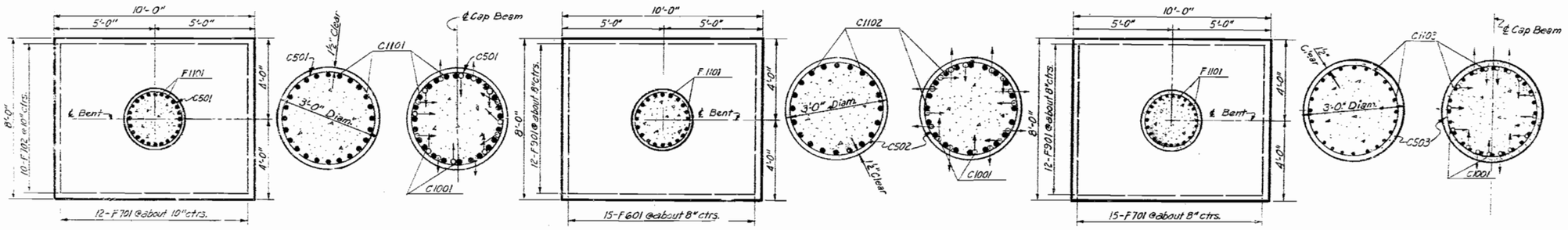
353

NO CONSTRUCTION CHANGES

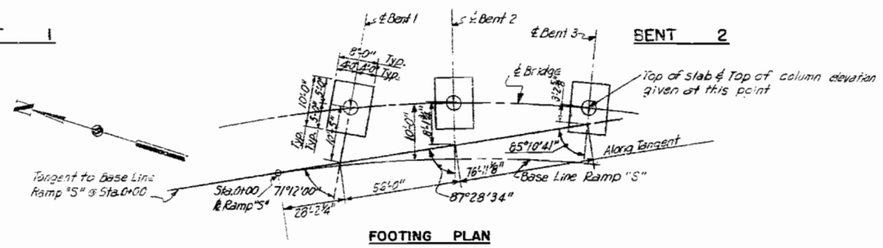
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				162	
DIST. NO.	COUNTY			ROUTE	SEC.	
4						





BENT 1



BENT 2

BENT 3

Note:
Bars C1001 shall be bent in the arrows shown in Sections D-D, H-H, and L-L.

FINISHED

BENTS 1, 2 & 3

BRIDGE: RAMP "S" OVER RAMP "U"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(73) RT. I-70 STA. 244+29± (LANE C) 106.5± RT.
JACKSON COUNTY

SHEET 5 OF 11

L-939-2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

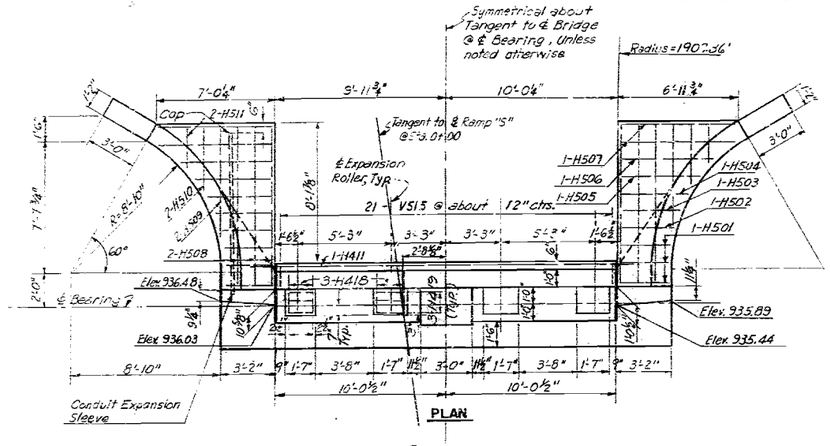
MADE CCF DATE 7-16-56 TRACED DATE
CHECKED PHH DATE 8-14-56 SCALE

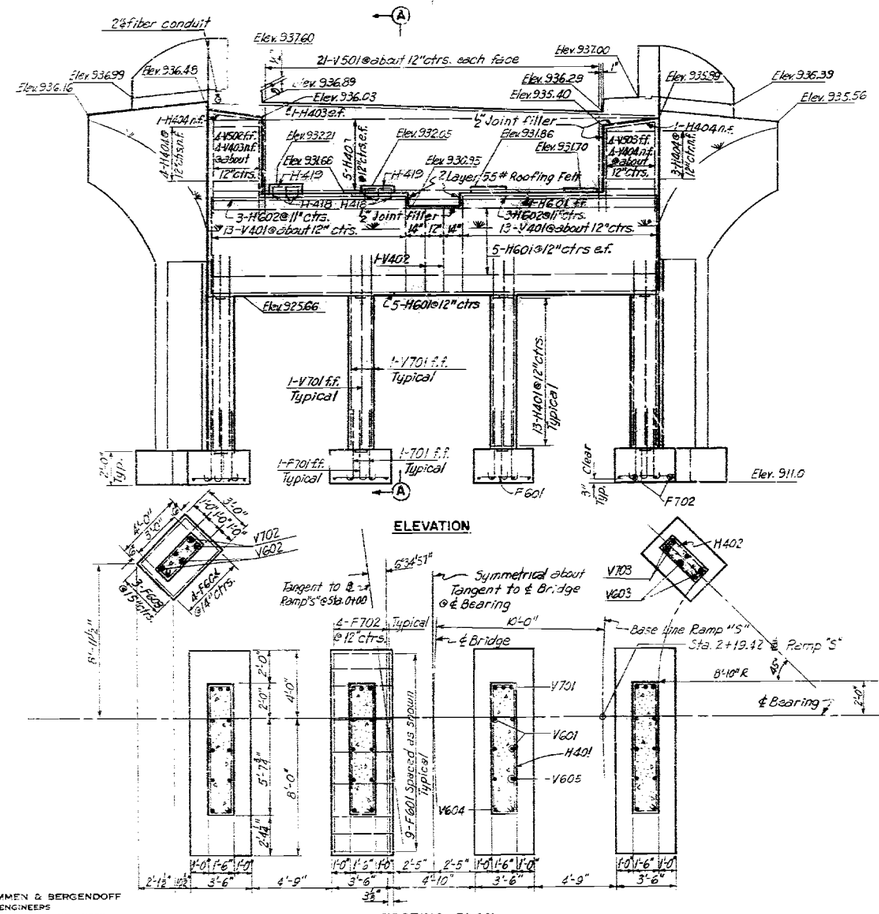
NOTE: This drawing is not to scale. Follow dimensions.

354

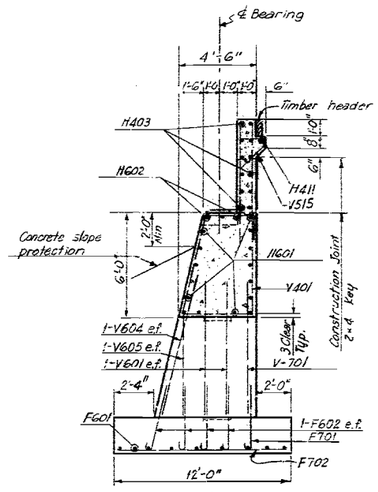
MISSOURI STATE HIGHWAY DEPARTMENT

ROAD SYS. NO.	STATE FEDERAL PROJECT No.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5 MO.					
DIST. NO.	COUNTY		ROUTE	SEC.	
4					

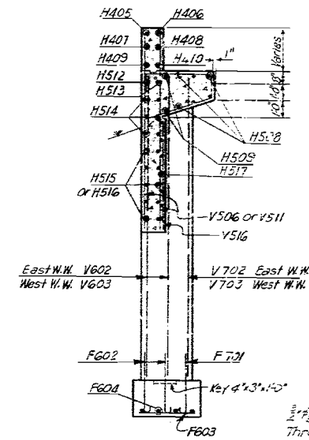




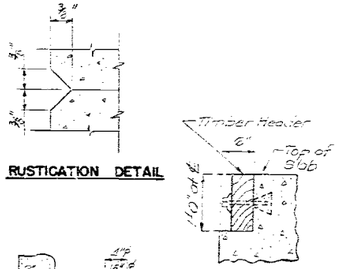
NOTE: This drawing is not to scale. Follow dimensions.



SECTION A-A



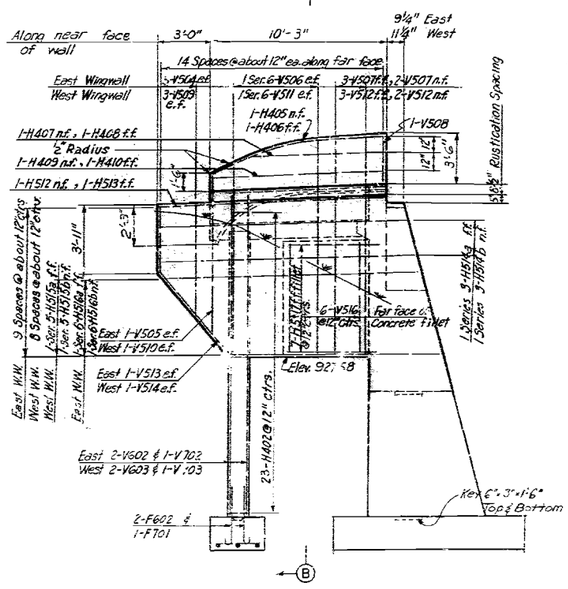
SECTION B-B



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

DETAIL OF TIMBER HEADER

Legend:
e.f. — each face
n.f. — near face
f.f. — far face



DEVELOPED WINGWALL ELEVATION

Note:
For end post details, see Sheet 11.
Where elevations or dimensions are shown to surfaces which are to receive ½" joint filler, these elevations or dimensions are to the surface of the concrete.

For expansion joint details, see Sheet 11.

END BENT 4

BRIDGE: RAMP "S" OVER RAMP "U"

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY MO.

PROJECT NO. I-70-1(17)(RT I-70) STA. 24+29±(LANE C) 106.5±RT.

JACKSON COUNTY

SHEET 6 OF 11

L-939-2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

NAME C.C.F. DATE 7-11-56 TRACED DATE
CHECKED CHH DATE 8-13-56 SCALE

355

SEE FINAL PLANS BROWNLINES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DEM. NO. | STATE | FEDERAL PROJECT No. | SHEET NO. | TOTAL SHEETS
5 MO
SHT. NO. 4

PART SLAB PLAN

Top Bars: S404, S407T, S410, S411T, S414T, S415T, S416, S417, S418, S420, S421T, S425, S427, S428, S430, S434, S435, S436, S437T, S442; S501, S504, S506, S516, S517, S518, S519, S522, S524, S526, S526, S529, S530, S533.
Bottom Bars: S407B, S408, S409, S411B, S412, S413, S414B, S415B, S419, S421B, S422, S423, S424, S426, S429, S431, S432, S433, S437B, S438, S439, S440, S441; S503, S507B, S509B, S510, S511, S512, S513, S514, S521, S523, S532.

PART SLAB PLAN

PART SLAB PLAN

GEOMETRICS IN VICINITY OF BENT 1

TOP SLAB PLAN

Notes:
For sections through Cap Beams see sheet 5.
For section through end diaphragm at Bent 4 see Section H-H, sheet 10.
For Pouring sequence see sheet 10.
All transverse dimensions are on radial lines.
Cap beam reinforcing shown for Bent 3 is typical for Bent 2 unless otherwise shown.
For Construction Joint Details see sheet 10.
For sections A-A through F-F see sheet 10.
Steel and steel spacing, shown in Spans 2-3 and 3-4, are typical for bridge unless otherwise shown.
Bars B1102, 3410 and 5431 are series bars, see cutting diagrams on sheet 4.

All longitudinal dimensions are along the ℄ of Bridge unless noted otherwise.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK
MADE EDM DATE 7-20-56 TRACED DATE
CHECKED CCF DATE 10-5-56 SCALE

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

BRIDGE: RAMP "S" OVER RAMP "J"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(7) (RT I-70) STA. 24+29.±(LANE C) 16+06.5± RT
JACKSON COUNTY

SHEET 7 OF 11

L-939-2

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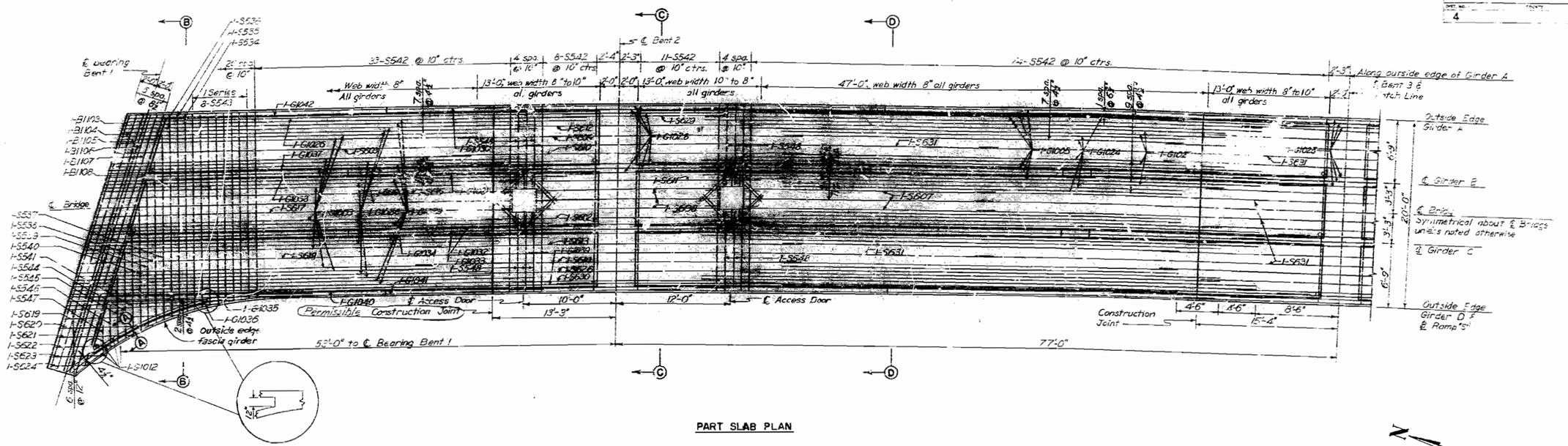
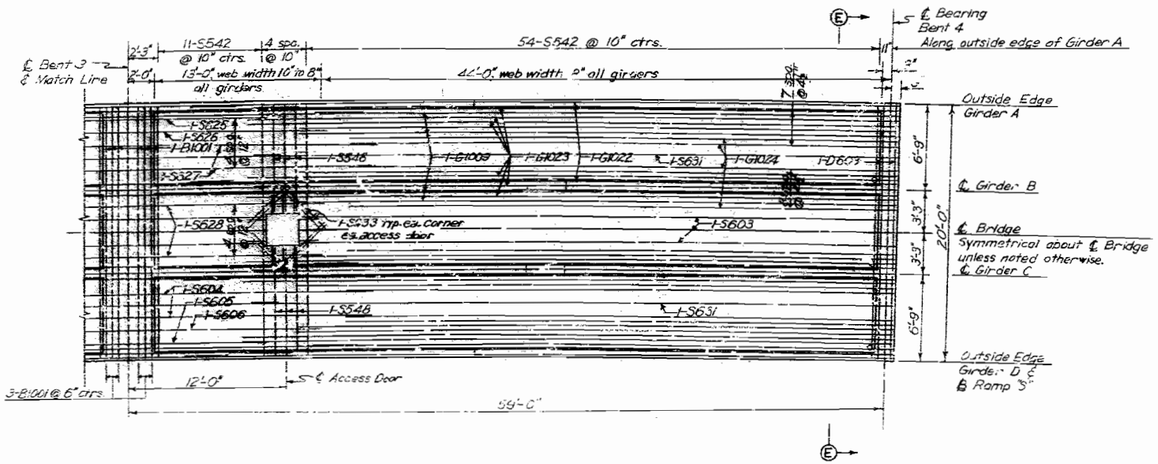
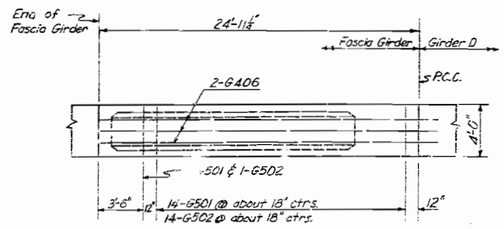
MISSOURI STATE HIGHWAY DEPARTMENT

STATE FEDERAL PROJECT NO. | SEC. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS
5 MO. | 160
SHT. NO. 4 | COUNTY | ROUTE | SEC.



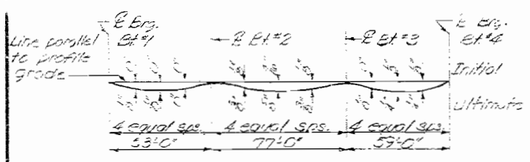
PART SLAB PLAN





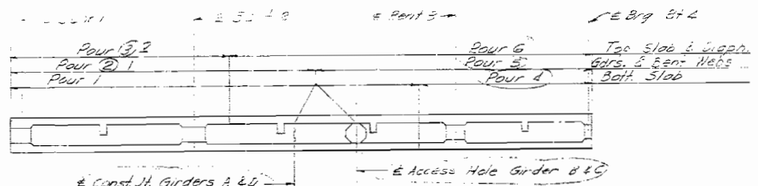
FASCIA GIRDER ELEVATION

Notes:
Cap beam reinforcing shown for Bent 3 is similar for Bent 2.
For sections through Cap Beams see Sheet 5.
For section through End Diaphragm at Bent 4 see Section H-H, Sheet 10.
For pouring sequence see sheet 10.
For Construction Joint details see sheet 10.
For sections A-A through E-E see sheet 10.
For details of access holes in girders see sheet 9.
For details of access doors in slab see sheet 11.
For Girder Elevation see sheet 4.
Steel and steel spacing between Girders A-B and C-D are similar unless otherwise noted.
For series bar S542 see cutting diagram sheet 9.
All longitudinal dimensions are along ℄ Bridge unless otherwise noted.
All transverse dimensions are on radial lines.



CAMBER DIAGRAM

PART SLAB PLAN



ELEVATION POURING SEQUENCE

NOTE. This drawing is not to scale. Follow dimensions.

BOTTOM SLAB PLAN

Revised 10-7-57

SHEET 8 OF 11

BRIDGE: RAMP "S" OVER RAMP "U"

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-70-1(7)(RT I-70) STA. 24+29± (LANE C) 106.5± RT.

JACKSON COUNTY

L-939-2

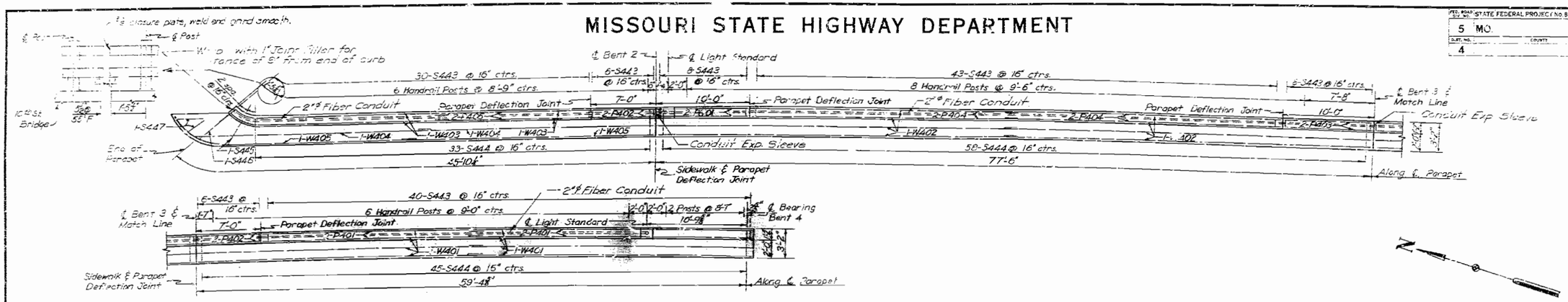
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE CCA DATE 8-9-57 | TRACED DATE
CHECKED GTE DATE 8-22-57 | SCALE

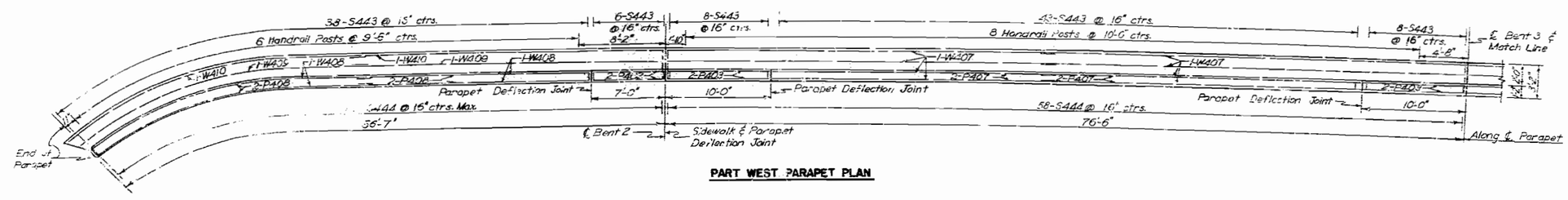
357

MISSOURI STATE HIGHWAY DEPARTMENT

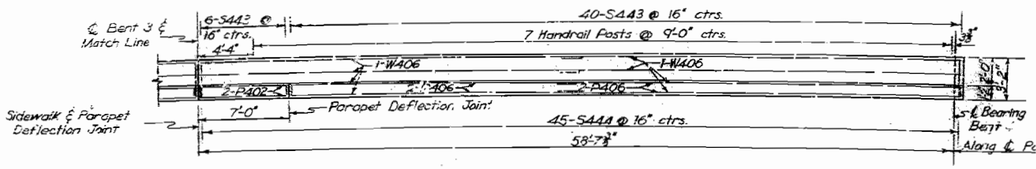
FED. ROAD DIV. NO.	STATE FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
5	MO.		27
DIST. NO.	COUNTY	ROUTE	SEC.
4			



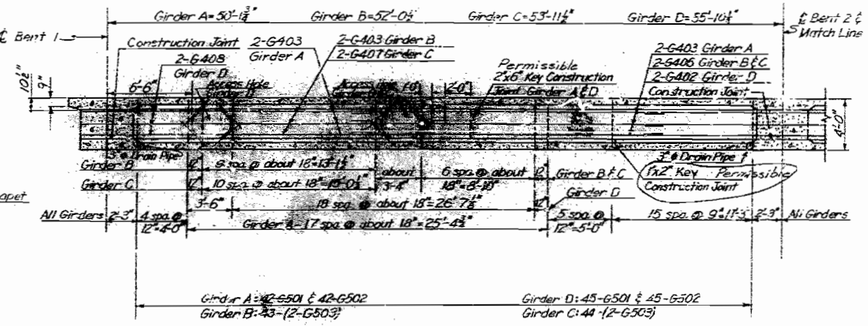
EAST PARAPET PLAN



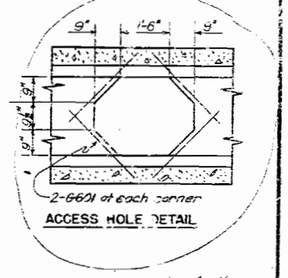
PART WEST PARAPET PLAN



PART WEST PARAPET PLAN

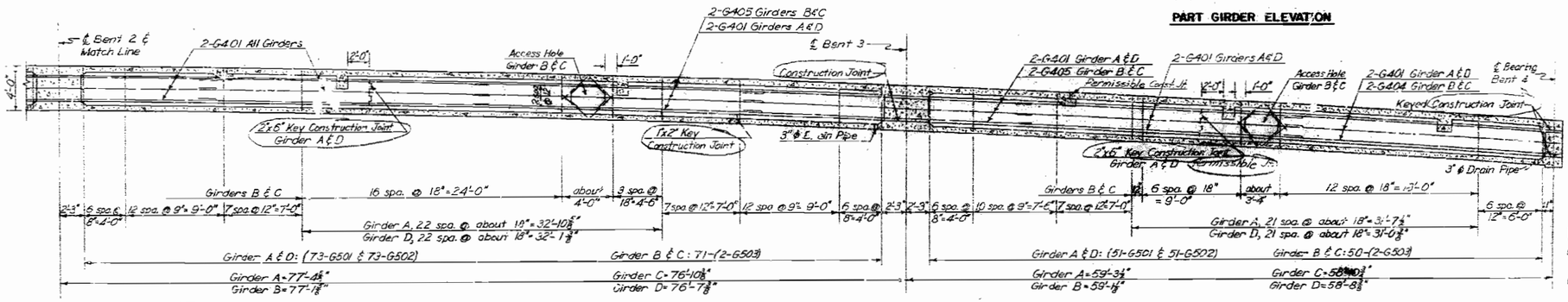


PART GIRDER ELEVATION



ACCESS HOLE DETAIL

Illegible *



PART GIRDER ELEVATION

Notes:
All longitudinal dimensions are on ℄ of Girder unless noted otherwise.
Stirrup spacing is for all girders unless noted otherwise.
For Fascia Girder Elevation see sheet 8.
For Drain Pipe Detail see sheet 11.
For Light Standard and Handrail Details see sheet 14.
For pouring sequence see sheet 11.
Handrail Post spacing is measured on ℄ of Parapet.

Illegible

BRIDGE: RAMP "S" OVER RAMP "U"

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-70-1(17)(RT I-70) STA. 24+29± (LANE C) 106.5± RT.

JACKSON COUNTY

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE BDM DATE 9-27-56 TRACED DATE
CHECKED RSG DATE 11-21-56 SCALE

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

PARAPET PLAN & GIRDER ELEVATION

SHEET 9 OF 11

L-939-2

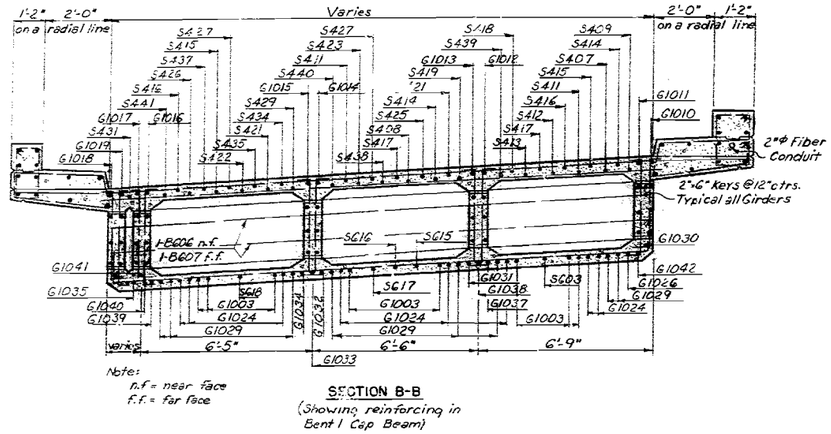
Illegible

* CONSTRUCTION CHANGES NOTED HEREON

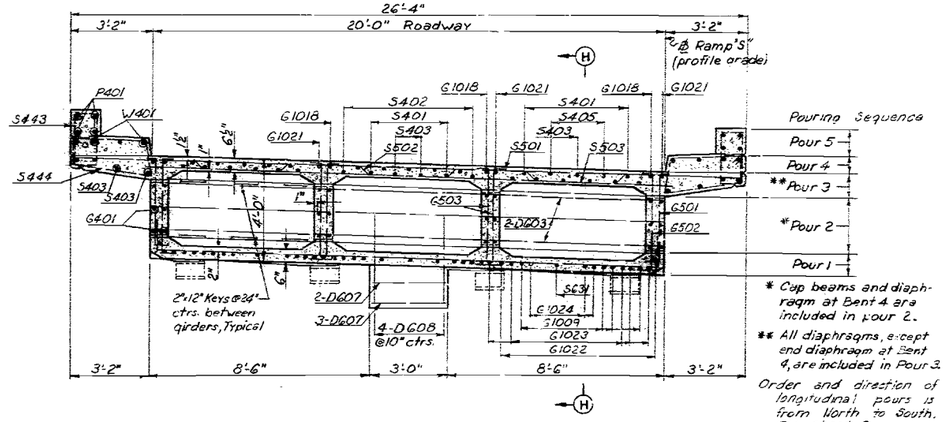
358

MISSOURI STATE HIGHWAY DEPARTMENT

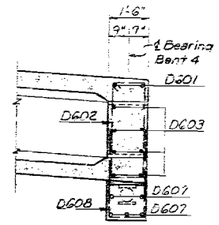
FED. ROAD DIST. NO.	STATE	FEDERAL PROJECT No.	SHEET NO.	TOTAL SHEETS
5	MO.			
DIST. NO.	COUNTY	ROUTE	SEC.	
4				



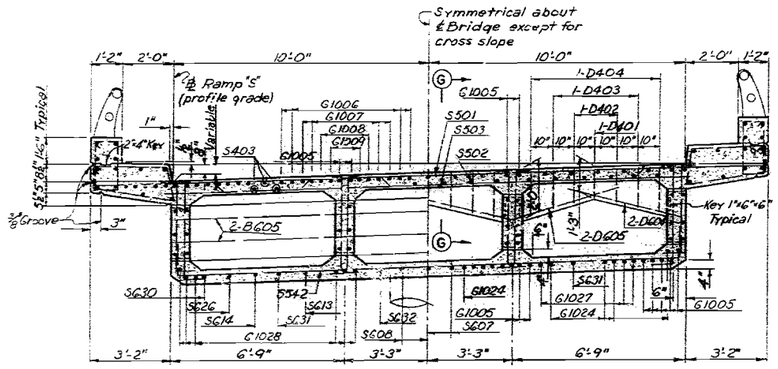
SECTION B-B
(Showing reinforcing in Bent 1 Cap Beam)



SECTION E-E

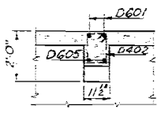


SECTION H-H

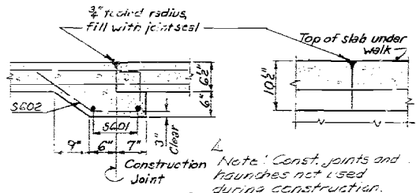


HALF SECTION C-C
(Showing cap beam at Bents 2 and 3)

HALF SECTION D-D
(Showing typical diaphragm)



SECTION G-G

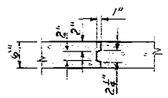


Note: Const. joints and haunches not used during construction.

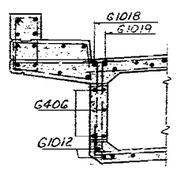
BETWEEN GIRDERS

SLAB UNDER WALKS

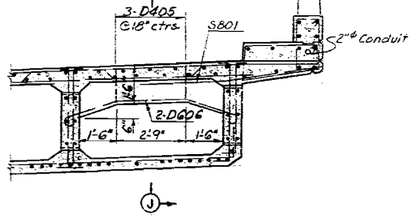
TOP SLAB CONSTRUCTION JOINTS



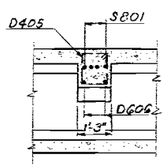
BOTTOM SLAB CONSTRUCTION JOINT



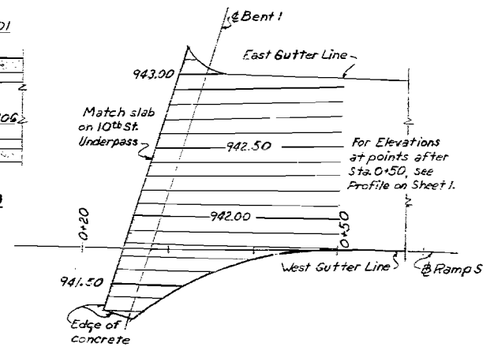
SECTION A-A



SECTION F-F



SECTION J-J



DECK CONTOURS IN THE VICINITY OF BENT 1

Notes:

For locations of Sections A-A thru F-F see Sheets 7 and 8.

Pouring sequence shown in Section E-E is typical for all sections.

Walk and parapet dimensions shown in Half Section C-C are typical for all sections.

Fillet dimensions and chamfer dimensions at edges of bottom slab shown in Half Section D-D are typical for all sections.

Slab thickness, box girder depth and reinforcing clear dimensions shown in Section E-E are typical for all sections.

Handrail as shown in Half Sections C-C and D-D is typical for all sections.

Cross Slope varies, see Sheet 1 for cross slope data and this sheet for Detours in vicinity of Bent 1.

For ¾" Groove Details see Rusticatio Detail, Sheet 6.

FINIS

BRIDGE: RAMP "S" OVER RAMP "U"

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-70-1(17) (RT. I-70) STA. 24+29±(LANE C) 106.5± RT.

JACKSON COUNTY

CROSS SECTIONS AND DETAILS

SHEET 10 OF 11

L-939-2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE RSS DATE 8-8-56 TRACED DATE

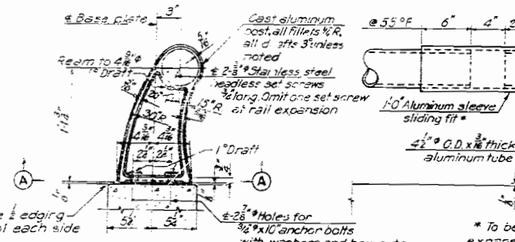
CHECKED RFM DATE 11-20-56 SCALE

NOTE This drawing is not to scale. Follow dimensions.

CONSTRUCTION CHANGES NOTED HEREON

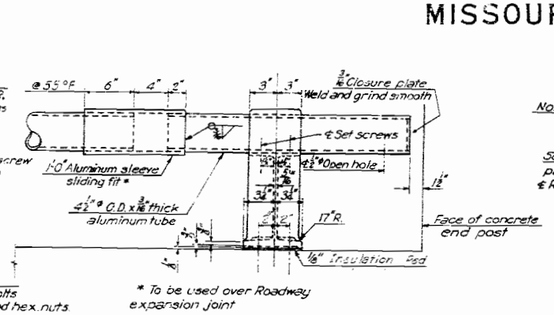
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIV. NO. 5 | STATE FEDERAL PROJECT NO. BSIS | 5 MO. | DIST. NO. | COUNTY | ROUTE NO. | SHT. NO. 4

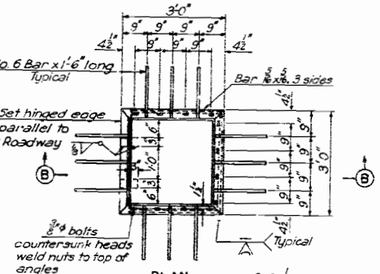


TYPE "A" HANDRAIL

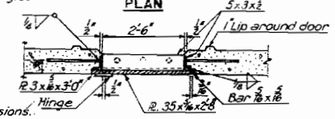
BRIDGES ~~L-934-1, L-934-2, L-934-3, L-935~~



* To be used over Roadway expansion joint



PLAN



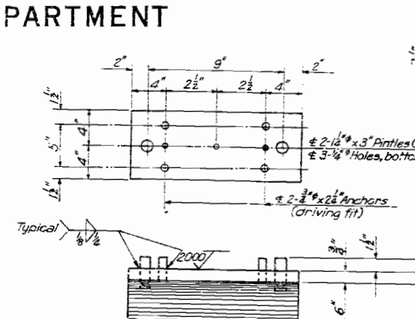
SECTION B-B

ACCESS DOOR NOTES

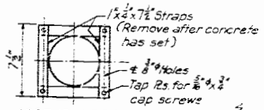
Unit to be assembled and in place while slab is being poured. Bottom surface of door to be flush with bottom of slab

For painting see special provisions.

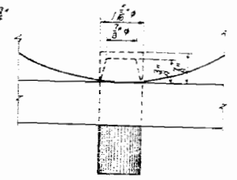
Payment for furnishing and installing access doors and frames shall be included in price bid for other items of work.



EXPANSION ROLLER



ASSEMBLY DETAIL



PINTLE DETAIL

EXPANSION ROLLER NOTES

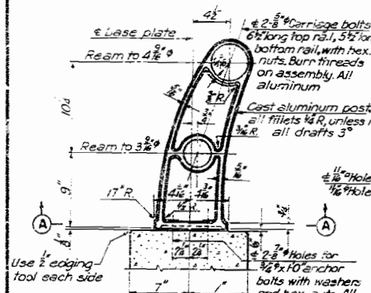
Top and bottom plates to be [illegible] S.T-1 Alloy or equivalent.

[illegible] surface marked "To be [illegible] shed to fineness given [illegible] A.S.A. [illegible]

[illegible] at Bent 1, see Sheet 6, Bridge L-938-1. Material for [illegible] rollers shall be [illegible] steel A 36 or A 242 or [illegible] E6015 or E6016 welding electrodes shall be used. Paint: Shop: One coat red lead except top surface of top plate and bottom surface of bottom plate.

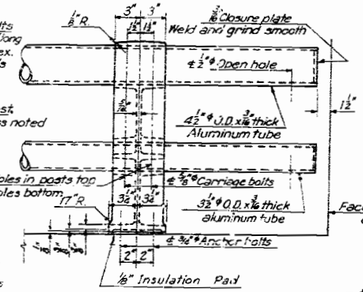
Number of Expansion Rollers Required

4 @ Bent 4

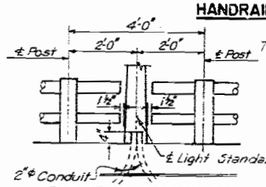


TYPE B HANDRAIL

BRIDGES L-936, L-937, L-938, L-939-1 & L-939-2

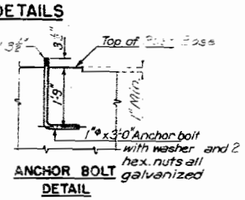


HANDRAIL DETAILS

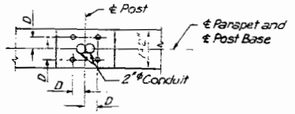


RAIL AT LIGHT STANDARD

Type 'B' handrail shown, Type 'A' handrail similar



ANCHOR BOLT DETAIL



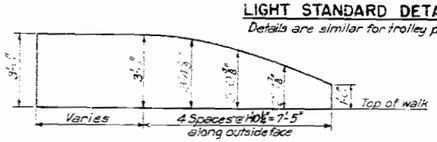
Dimension "D": Dimension "D" equals 3 15/16 on Bridge L-938. Dimension "D" equals 3 7/8 on Bridges L-934-1, L-934-2, L-934-3, L-935, L-936, L-937, L-939-1 and L-939-2.

Note: Cost of furnishing and placing anchor bolts shall be included in price bid for other items.

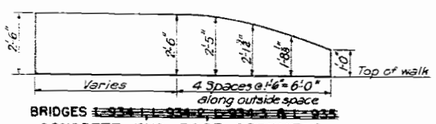
ANCHOR BOLT SETTING PLAN

LIGHT STANDARD DETAILS

Details are similar for trolley poles



BRIDGES L-936, L-937, L-938, L-939-1 & L-939-2



BRIDGES ~~L-934-1, L-934-2, L-934-3 & L-935~~

CONCRETE END POST ORDINATES

HANDRAIL NOTES

All handrail posts shall be set normal to grade.

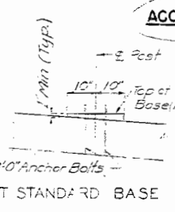
Rails to be fabricated in two or three panel lengths.

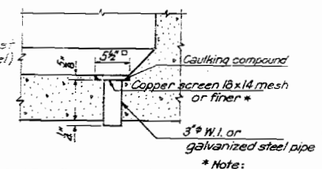
Bolt holes in rails at intermediate posts of sections to be 11/16 x 1" slotted holes. At expansion posts bolt holes in rails to be 11/16 x 1½ slotted holes, centered on bolts at 55°F. Provide ½ clearance between ends of rails at 55°F.

[illegible] shims between post base and insulation pad may be used for adjusting rail alignment, maximum thickness ⅛". Where more fitting of the post is required, concrete bearing area shall be ground down.

ACCESS DOOR IN BOTTOM SLAB

Access door eliminated during construction

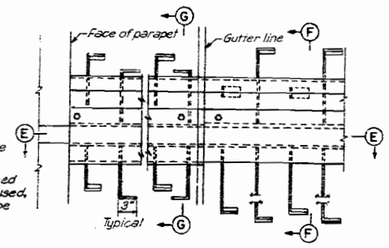


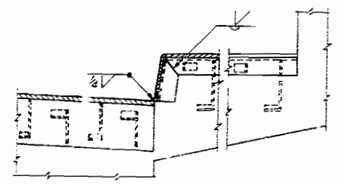


PIPE DRAIN IN BOTTOM SLAB

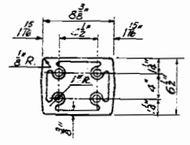
* Note: If galvanized steel pipe is used, screen shall be aluminum.

Note: Cost of furnishing and placing pipe, screen and caulking compound shall be included in price bid for other items.

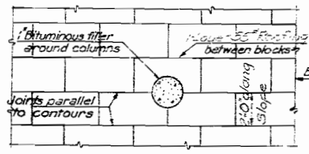




SECTION E-E

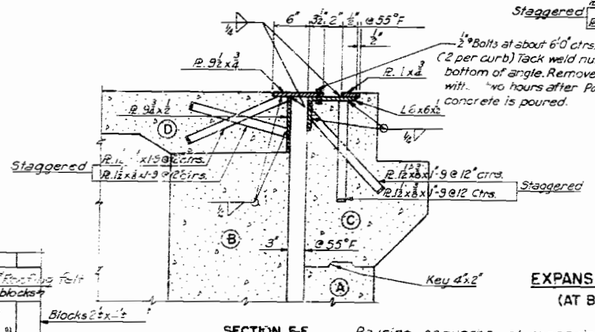


SECTION A-A



SLOPE PROTECTION UNDER ENDS OF SUPERSTRUCTURE

Note: Provide ½" bituminous filler at curbs, Walks and abutments.

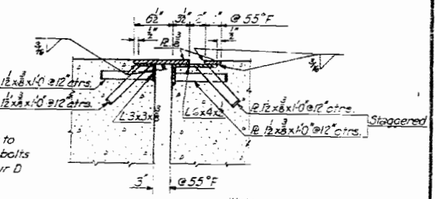


SECTION F-F

EXPANSION JOINT (AT BENT 4)

Pouring sequence at expansion joint is noted thus (A). Order of pours is from A to D

Note: For painting see Special Provisions.



SECTION G-G

Note: Weld anchor bars to joint as shown in Section F-F. For expansion joint at Bent 1 see Sheet 17, Bridge L-939-1.

[illegible] approved [illegible] be used [illegible] for [illegible]

BRIDGE: RAMP "S" OVER RAMP "U"

STATE ROAD MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-70-1(17) (RT I-70) STA. 24+28± LANE C 106 5½ RT.

JACKSON COUNTY

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE P.S.H. | DATE 4-26-56 | TRACED G.H. | DATE 2-15-57
CHECKED W.P.O. | DATE 12-17-56 | SCALE

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

MISCELLANEOUS DETAILS

SHEET 11 OF 11

L-939-2

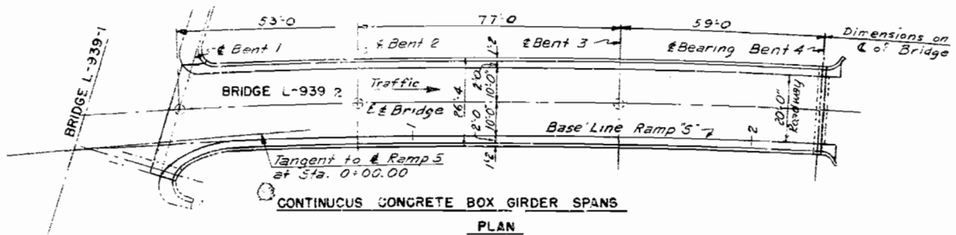
[illegible] CONSTRUCTION CHANGES NOTED HEREON

360

MISSOURI STATE HIGHWAY DEPARTMENT

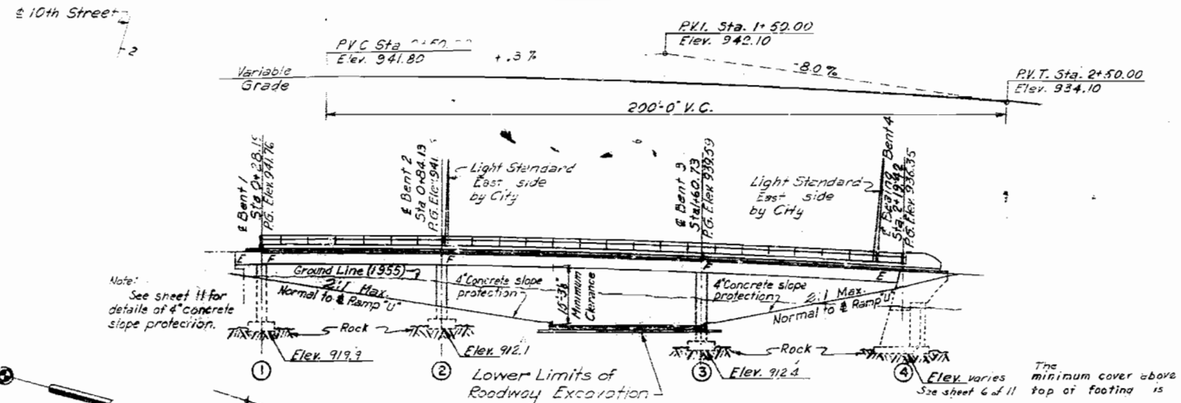
SH. NO.	STATE	FEDERAL PROJECT NO.
5	MO	I-70-1(17)2
SHT. NO.	COUNTY	
4	JACKSON	

FINAL PLANS

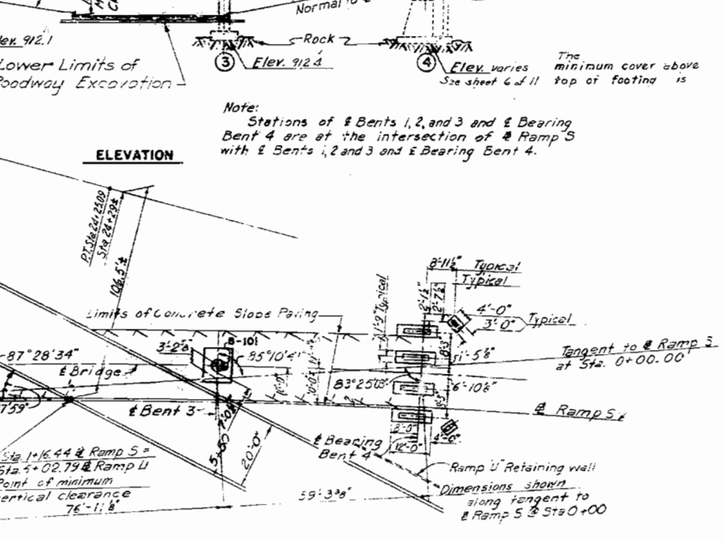


CONTINUOUS CONCRETE BOX GIRDER SPANS

PLAN



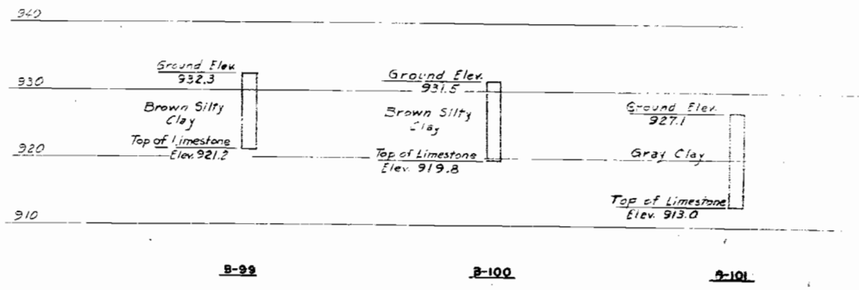
ELEVATION



Note: Length of Structure is approximately 194' along ℄ of Bridge.

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

GROUND PLAN



BORING LOGS

	Ramp S Curve Data
P.I.	Sta 2+97.37
Δ	17° 42' 00"
D	3° 00' 00"
R	1909.86 to ℄
T	297.37'
L	590.00'
S.E.	+0.0575%, @ Sta 0+50 +0.0485%, @ Sta 0+75 +0.0390%, @ Sta 1+00 +0.0300%, Sta 1+25 to Sta 3+70

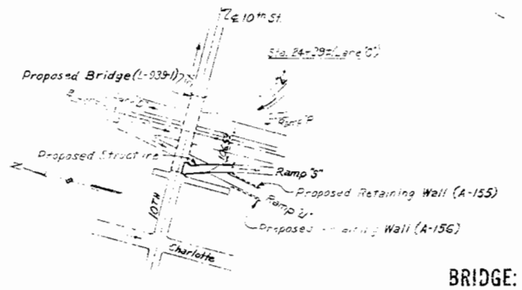
Note: For elevations on structure before Station 0+50 see contours on sheet 10.

The minimum cover above top of footing is 1'-6".

Note: Stations of ℄ Bents 1, 2, and 3 and ℄ Bearing Bent 4 are at the intersection of ℄ Ramp "S" with ℄ Bents 1, 2 and 3 and ℄ Bearing Bent 4.

Note: All loose, shelly or disintegrated rock was removed and the footings carried at least 6" into and rest against 6" of vertical faces of hard, solid, undisturbed rock.

SUBMITTED BY:
R. A. Bergendoff
REGISTERED PROFESSIONAL ENGINEER MISSOURI NO. E-253



LOCATION

FINISHED

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK
MADE KAW & TDD DATE 5-21-56 TRACED ____ DATE ____
CHECKED RBG DATE 6-26-56 SCALE ____

GENERAL PLAN AND ELEVATION

BRIDGE: RAMP "S" OVER RAMP "U"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(17) (RT I-70) STA. 24+28. (LANE C) 105.5± RT.
JACKSON COUNTY

SHEET NO. 4

SUBMITTED BY: J. A. Williams, DIRECTOR OF ENGINEERING, DATE 4-3-1959
APPROVED BY: Ray M. Tolliver, CHIEF ENGINEER, DATE 4-3-1959

STD. C-110 R-1
L-939-2

FINISHED

FINAL PLANS

3691

MISSOURI STATE HIGHWAY DEPARTMENT

SHT. NO.	STATE FED. AID PROJECT NO.	FISCAL YEAR	PART NO.	TOTAL SHTS.
5	MO I 70-1(12)			
DIST. NO. 4	COUNTY JACKSON		ROUTE I-70	

GENERAL NOTES

Design Specifications: A.A.S.H.O., 1953 with Tentative Revision 1-14 (54).

Construction Specifications: Missouri Standard Specifications for State Roads, Materials, Bridges, Culverts, and incidental Structures, 1955.

Design Loading: H20-S16-44 (Modification: 24,000# Tandem Axles)
15 lbs. per square foot future wearing surface.

Concrete: Concrete Stress (Class "B" and "B-1" f'_c = 4000 psi) (f'_c = 4000 psi)
Concrete for superstructure is Class "B-1" air entrained
Concrete for substructure is Class "B" air entrained.

All forms are not removed from the interior of box girders.
Stay-in-place forms permitted to remain in place.

Reinforcing Steel: Allowable stress 20,000 psi.
All splices in reinforcing steel 32 bar diameters.
Bar sizes are designated on the plans by numbers. The first digit after the letter in three digit marks and the first two digits after the letter in four digit marks indicate the size of the bar.
Dimension shown on plans from reinforcing steel to outside edge of concrete are all clear dimensions.
All bending dimensions are from "out" to "out" of bars except diameter dimensions on spirals which are from "center" to "center" of bar.

Fiber Conduit: Expansion sleeve is over-sized fiber conduit as provided by manufacturer, complete with rubber ring.

Joint Filler: Where joint filler is specified on the plans it shall conform with the requirements for Gray Rubber Compound Joints as given in Section 53-22B of the Standard Specifications.

Welding: Qualification for welding operators required.

Slope Protection: Not included in Bridge Quantities. See sheet 11 for details.
See Road Plans for Quantities.

Utilities: All utilities, unless shown otherwise, removed or relocated by others. The contractor notify the owner of the utilities of his work schedule sufficiently in advance to allow time for the disposition of utilities.

Deflection Joints: Deflection joints placed in the parapet sidewalk and parapet where shown on the plans. The surface of the joint was coated with paraffin and the reinforcing steel was stopped 2" clear of joint. No chamfer placed on the sidewalk.

Concrete Quantities: quantity of Class "B" concrete substructure, includes all concrete in Bent No. 4 (including wingwalls and end posts), and footings of Bents Nos. 1, 2, & 3. All other concrete is included in quantity of Class "B-1" superstructure.
Joint filler roofing felt insulation pads and other incidental items shown on the plans included in the price bid for other items.

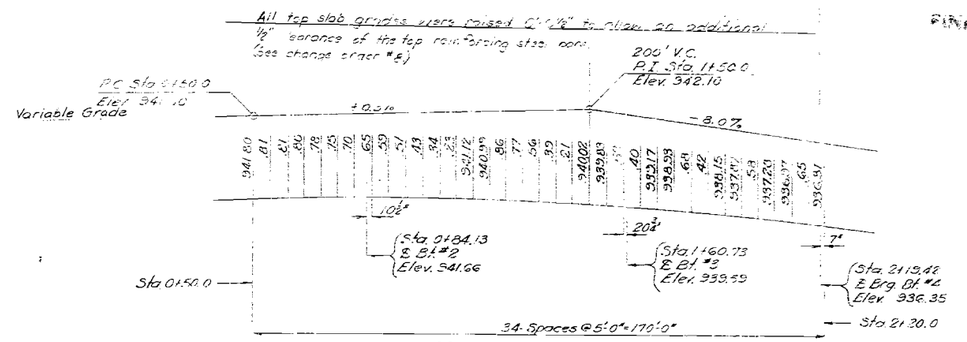
Waterproofing: Superstructure deck waterproofed.
See "Special" Provisions.

Shipping: Permits were required for all truck loads over the legal length.

Painting: For painting see Special Provisions.

All top slab girders were raised 0'-1½" to allow for additional ½" clearance of the top reinforcing steel. (See change order "E")

FINAL PLANS



PROFILE GRADE ELEVATIONS

MNO.	ITEM	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	TOTAL	
	FINAL PLANS QUANTITIES					
1-G	Class 1 Excavation for Structures	Cu Yds	385.5		385.5	
	Class 1 Excavation + 25%	Cu. Yds.	42		42.0	contingent
	Test Holes	Lin. Ft.	51		51	contingent
16-B	Class B Concrete	Cu Yds.	115.5		115.5	
16-B-1	Class B-1 Concrete	Cu Yds.		359.3	359.3	
	Stay-in-Place Forms for Class B-1 Conc. (Super)	Cu Yds		359.3	359.3	contingent
17-B	Fabricated Structural Steel: Fabricated and Erected	Lbs.		1740	1740	
	Remodel Exp. Devices	L. S.		1	1	contingent
17-B	△Fabricated Structural Steel - Erected only	Lbs.		1970	1970	
	Eliminate Access Doors	Each		3	3	contingent
17-A-1	Aluminum Alloy Handrail	Lin Ft.		374	374	Field Measured
17-B	Fabricated Structural Steel (Bearings)	Lbs.		610	610	
9-A	Reinforcing Steel	Lbs.	11950	107120	119070	
40-W	Lighting Conduit System	L Sum			1	

△ This item includes the portion of the expansion joint on Ramp S which will be fabricated with the portion on Tenth Street (Bridge L-939-1) but was erected by the contractor who built Ramp S.

Note:
All excavation for bridge footings paid for as Class 1 Excavation for Structures.
Estimated quantities of Class 1 Excavation for Structures includes only amounts of excavation below Roadway Excavation.

FINISHED

BRIDGE: RAMP "S" OVER RAMP "U"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(7)(RT I-70) STA. 24+29±(LANE C) 1965± RT.
JACKSON COUNTY
FINISHED

GENERAL NOTES AND QUANTITIES
FINISHED

SHEET 24 4

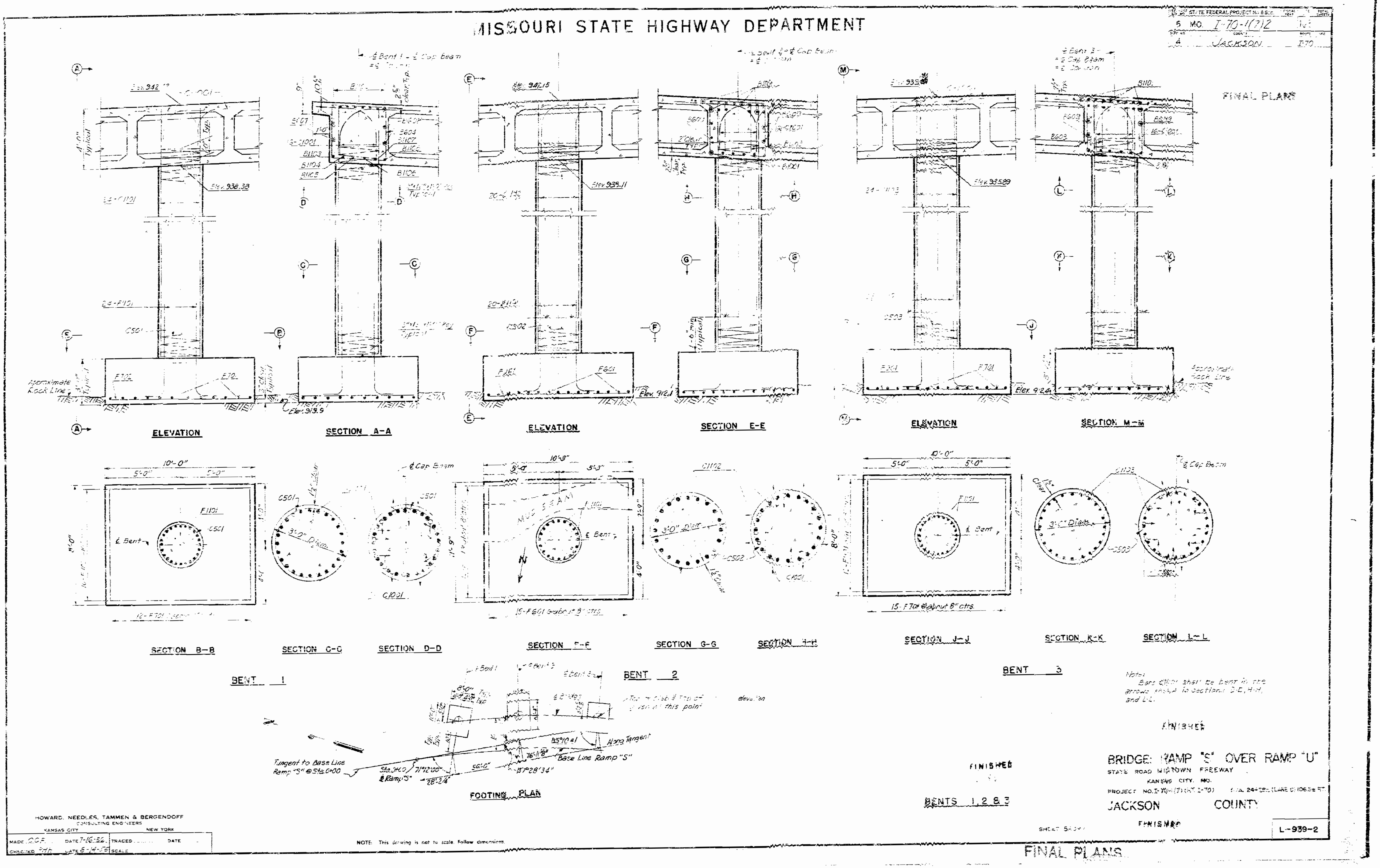
L-939-2

HOWARD, NEEDLES, TA CONSULTING ENGINEERS KANSAS CITY & BERGENDOFF NEW YORK
MADE J.S.H. DATE 7-9-56 TRACED B.S.L. DATE 2-11-57
CHECKED R.S.G. DATE 12-29-56 SCALE

NOTE. This drawing is not to scale. Follow dimensions.

362

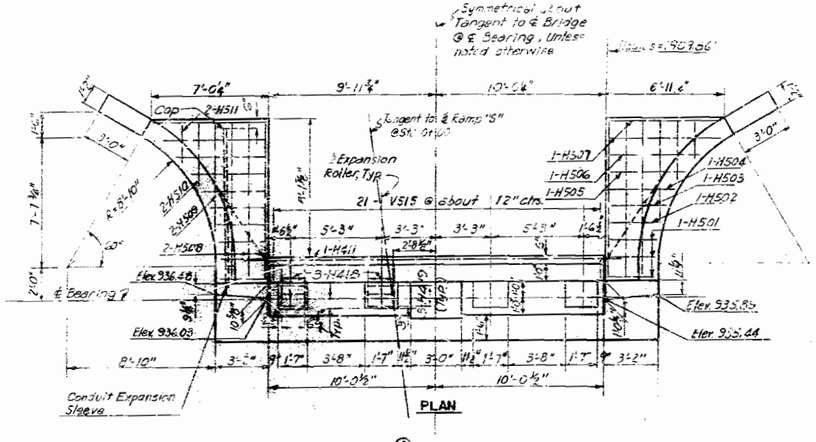
FINAL PLANS

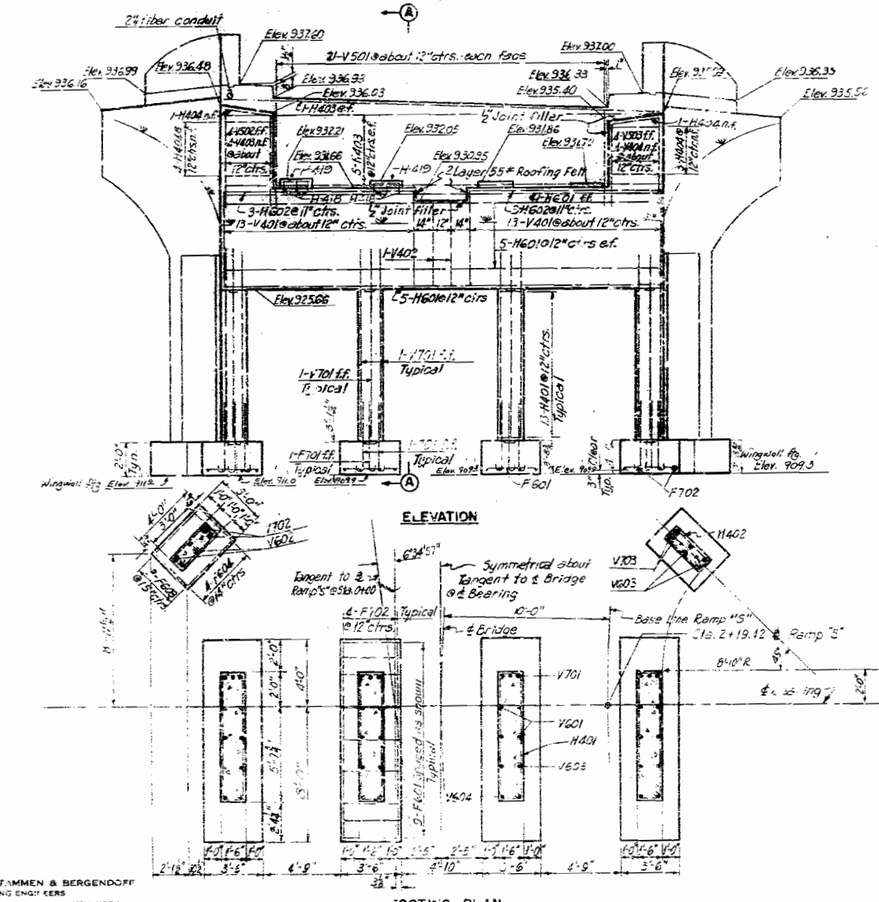

MISSOURI STATE HIGHWAY DEPARTMENT
FINAL PLANS
ELEVATION
SECTION A-A
ELEVATION
SECTION E-E
ELEVATION
SECTION M-M
SECTION B-B
SECTION C-C
SECTION D-D
SECTION F-F
SECTION G-G
SECTION H-H
SECTION J-J
SECTION K-K
SECTION L-L
BENT 1
BENT 2
BENT 3
FOOTING PLAN
BENTS 1, 2 & 3
BRIDGE: RAMP "S" OVER RAMP "U"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
JACKSON COUNTY
L-939-2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK
NOTE: This drawing is not to scale. Follow dimensions.
FINAL PLANS

MISSOURI STATE HIGHWAY DEPARTMENT

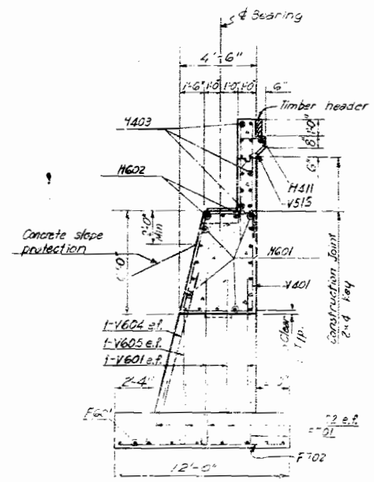
FED. ROAD DIST. NO.	STATE	FEDERAL PROJECT No.	F.A.S. YEAR	SHEET NO.	TOT. SHTS.
5	MO.	I-70-1(7)2		164	
DIST. NO.	COUNTY			ROUTE	SEC.
4	JACKSON			I-70	

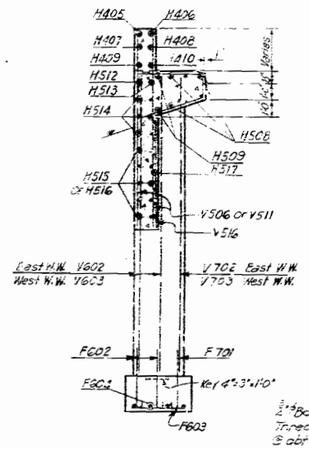
FINAL PLANS

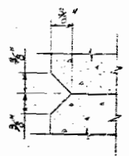


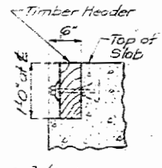


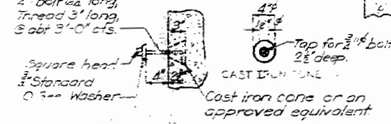
NOTE: This drawing is not to scale. Follow dimensions.







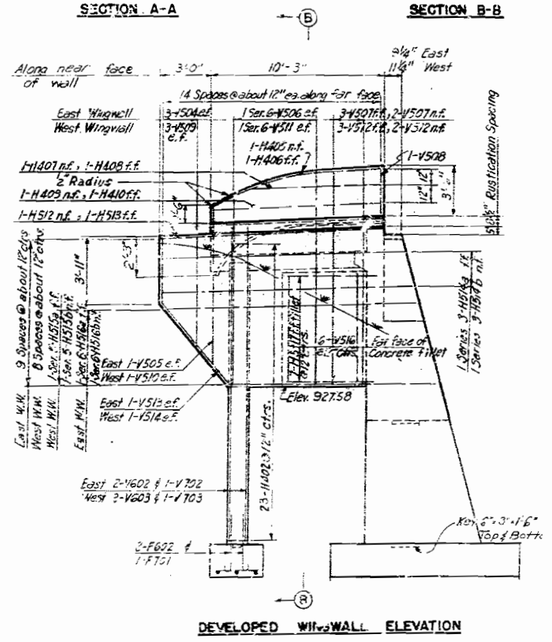




Note: Cost of timber headers complete in place included in price bid for concrete.

DETAIL OF TIMBER HEADER

Legend:
e.f. — each face
n.f. — near face
f.f. — far face



DEVELOPED WINGWALL ELEVATION

Note:
For end post details, see Sheet 11.
Where elevations or dimensions are shown to surfaces which are to receive ½" Joint Filler, these elevations or dimensions are to the surface of the concrete.

For expansion joint details, see Sheet 11.

FINISHED

END BENT 4

FINISHED

BRIDGE: RAMP "S" OVER RAMP "U"
STATE ROAD MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-70-1(7)RT I-70. STA. 24+29± (LANE C) 106.5± RT.
JACKSON COUNTY

SHEET 64 of 4

FINISHED

L-939-E

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE C.C.E. DATE 7-11-56 TRACED DATE
CHECKED PHH DATE 8-13-56 SCALE

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