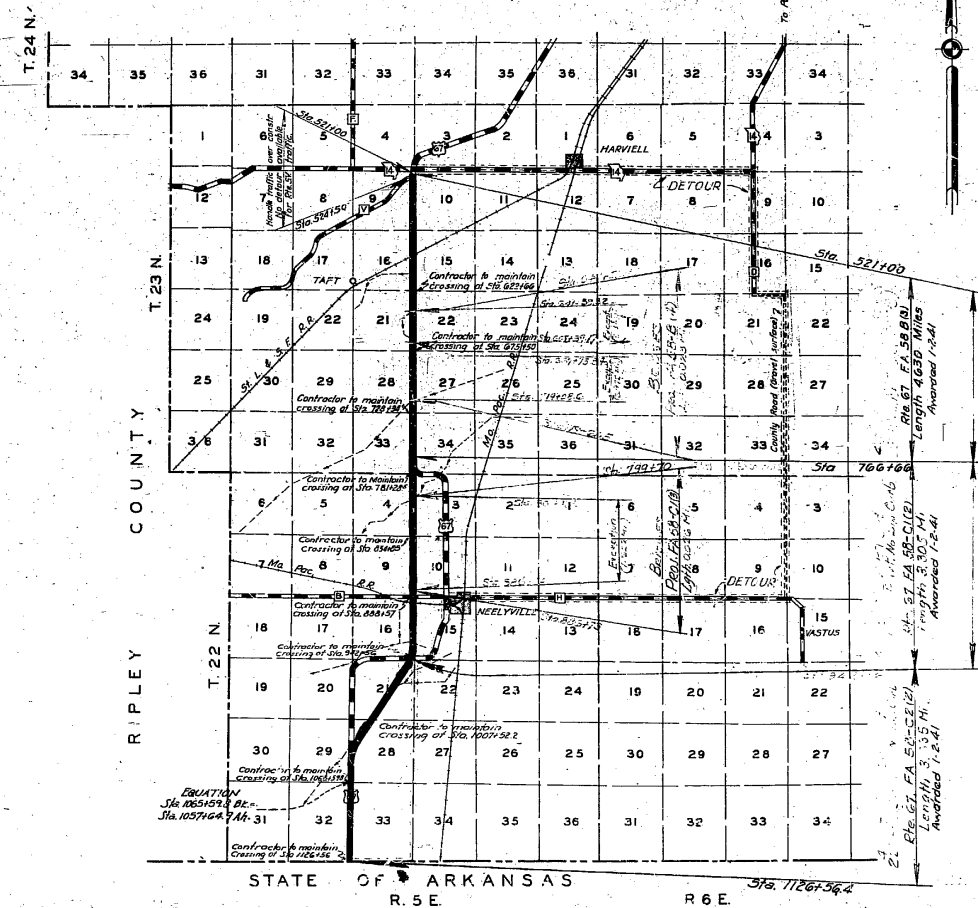


# MISSOURI STATE HIGHWAY COMMISSION PLAN AND PROFILE OF PROPOSED STATE ROAD FEDERAL AID PROJECT BUTLER COUNTY

PLAN 1 IN. = 100 FT.  
PROFILE, HOR. 1 IN. = 100 FT. VERT. 1 IN. = 10 FT.  
SCALES. CROSS-SECTIONS 1 IN. = 5 FT.

STATE	ROUTE	SECTION	TOTAL
MO	100	1	1
BUTLER			67

Proj. FA 58-B(3)  
Proj. FA 58-C(12)  
Proj. FA 58-C(27)  
Proj. FA 58-B(1)



CONVENTIONAL SIGNS	
STATE AND NATIONAL LINE	LEAVE
COUNTY LINE	CROSS
CITY, TOWNSHIP, OR SECTION	ROAD
SECTION LINE	ROAD
CRANK LINE	ROAD
FORCE LINE	ROAD
GUARD RAIL	ROAD
UNIMPROVED PROPERTY	ROAD
ROAD OF WAY LINE	ROAD
TRAILING WIRE	ROAD
RAILROAD	ROAD
RETAINING WALL	ROAD
GRADE OR SURVEY LINE	ROAD

SUBMITTED  
CHIEF ENGINEER  
MISSOURI STATE  
HIGHWAY COMMISSION

RECOMMENDED FOR APPROVAL  
DISTRICT ENGINEER  
PUBLIC ROADS ADMINISTRATION  
TOWNSHIP, MISSOURI

APPROVED  
COMMISSIONER  
PUBLIC ROADS ADMINISTRATION  
FEDERAL AID PROJECT

LOCATION Rte 14 South To Arkansas State Line

## MISSOURI STATE HIGHWAY COMMISSION

TYPE BRIDGES

## FINAL SUMMARY OF QUANTITIES

FED. ROAD DIST. No.	STATE	PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	MO.	19 20 3 (4)		29	
DIV. No.	COUNTY	ROUTE	REC. No.		
10	BUTLER	61			

## GENERAL SUMMARY

24" COBBLESTONE GUTTER  
(AT BRIDGE ENDS)

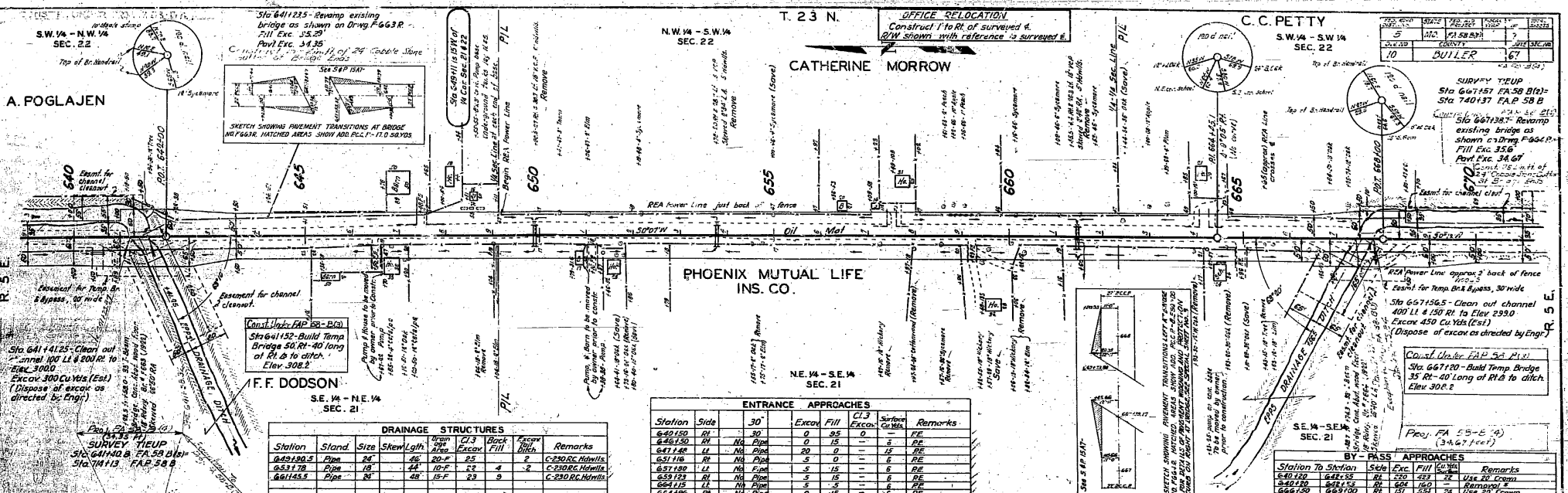
STATION	LENGTH
64123.5	90
66134.7	105
71210.0	86
TOTAL	282

## LENGTH OF PROJECT

End of Project	Station	7916.20
Beginning of Project	Station	64123.5
Apparent Length		1872.60
Equalization		
and Exceptions:		
94.667 18.32 75.55 66.75 50.17	3580.55	
78.667 18.32 75.55 66.75 50.17	534.76	
Total Corrections	-715.61	Feet
Net Length of Project	21.93	Feet
State Length	0.023	Miles
Federal Length	0.023	Miles

ITEM NO.	DESCRIPTION	UNIT	TOTAL UNITS	NO. UNITS PER AS BUILT
75-E	24" Cobblestone Gutter	Lineal	282	
BRIDGE AT STA 64123.5 (DWG No. E-663R)				
1-A	Class 1 Excav. for Structures	Cu Yd	42.5	
1-H	Class 2 Excav. for Structures	Cu Yd	22.5	
16-B	C1.8 Concrete (Horizontal)	Cu Yd	6.0	
16-B	C1.8 Concrete (Super-elev. Heav.)	Cu Yd	27.0	
16-B	C1.8 Concrete (Substructure Heav.)	Cu Yd	34.8	
17-B	Reinforced Structural Steel	Pound	2220	
17-A	Reinforcing Steel	Pound	1000	
22-B	Crossed Timber Piles in Place	Lineal	236	
60-A	Special Mark (For Special Revision)	Lump Sum	1	
BRIDGE AT STA 66134.7 (DWG No. E-664R)				
1-A	Class 1 Excav. for Structures	Cu Yd	31.5	
1-H	Class 2 Excav. for Structures	Cu Yd	20.0	
16-B	C1.8 Concrete (Horizontal)	Cu Yd	8.2	
16-B	C1.8 Concrete (Super-elev. Heav.)	Cu Yd	32.6	
16-B	C1.8 Concrete (Substructure Heav.)	Cu Yd	35.1	
17-B	Reinforced Structural Steel	Pound	1171.0	
17-A	Reinforcing Steel	Pound	1150.0	
22-B	Crossed Timber Piles in Place	Lineal	202	
60-A	Special Mark (For Special Revision)	Lump Sum	1	
BRIDGE AT STA 71210.0 (DWG No. E-665R)				
1-A	Class 1 Excav. for Structures	Cu Yd	101.6	
1-H	Class 2 Excav. for Structures	Cu Yd	62.5	
16-B	C1.8 Concrete (Horizontal)	Cu Yd	7.9	
16-B	C1.8 Concrete (Super-elev. Heav.)	Cu Yd	42.5	
16-B	C1.8 Concrete (Substructure Heav.)	Cu Yd	64.6	
17-B	Reinforced Structural Steel	Pound	1972.0	
17-A	Reinforcing Steel	Pound	1270.0	
22-B	Crossed Timber Piles in Place	Lineal	251	
60-A	Special Mark (For Special Revision)	Lump Sum	1	

Prepared By \_\_\_\_\_ Date \_\_\_\_\_ 19 \_\_\_\_\_ Checked in Div. Office By \_\_\_\_\_ Date \_\_\_\_\_ 19 \_\_\_\_\_ Checked in Central Office By \_\_\_\_\_ Date \_\_\_\_\_ 19 \_\_\_\_\_ Revised By \_\_\_\_\_ Date \_\_\_\_\_ 19 \_\_\_\_\_



**DRAINAGE STRUCTURES**

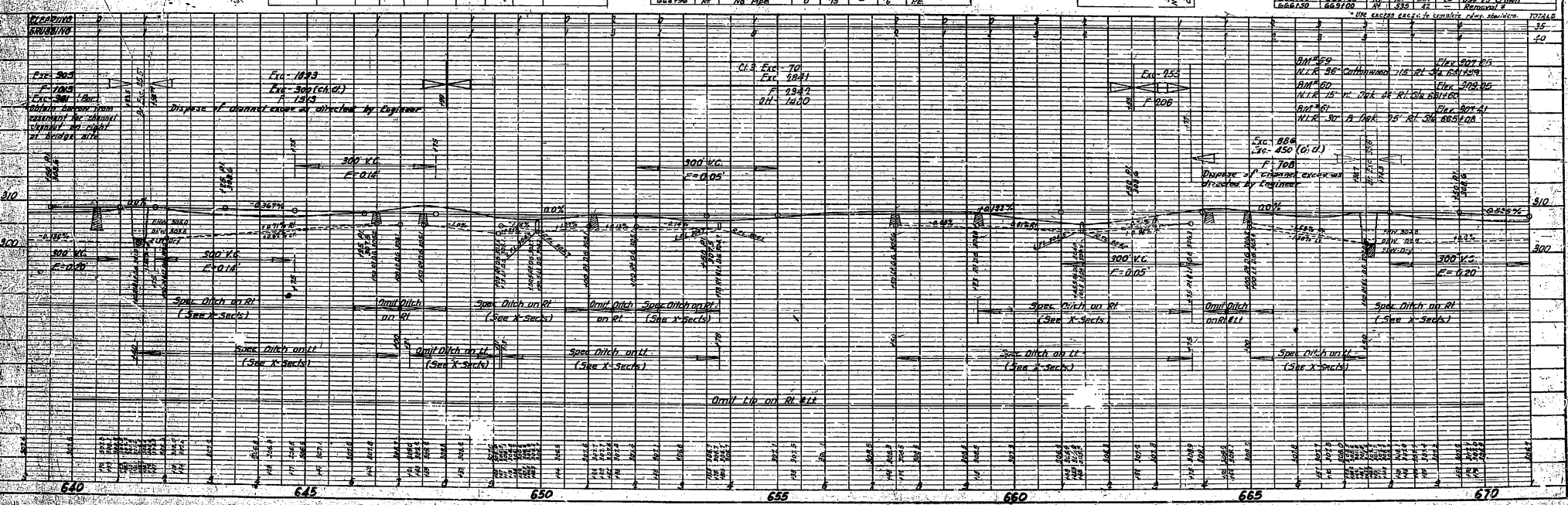
Station	Span	Size	Skew	Lgth	Excav	Fill	Back	Remarks
649+30.5	Pipe	24"	48"	25'	0	0	2	C-230RC.Hdmls
651+78	Pipe	24"	48"	25'	0	0	2	C-230RC.Hdmls
661+55.5	Pipe	24"	48"	25'	0	0	2	C-230RC.Hdmls

**ENTRANCE APPROACHES**

Station	Side	30'	Excav	Fill	CL3	Excav	Remarks
640+150	RI	30'	0	15'	0	0	FE
646+150	RI	30'	0	15'	0	0	FE
647+18	LI	30'	0	15'	0	0	FE
651+118	RI	30'	0	15'	0	0	FE
657+180	LI	30'	0	15'	0	0	FE
659+125	RI	30'	0	15'	0	0	FE
661+115	LI	30'	0	15'	0	0	FE
664+196	RI	30'	0	15'	0	0	FE

**BY PASS APPROACHES**

Station To Station	Side	Excav	Fill	Remarks
640+120 to 642+35	RI	220	220	Use 20' Crown
640+120 to 642+35	LI	640	160	Removal
646+150 to 662+100	RI	230	230	Use 20' Crown
646+150 to 662+100	LI	530	41	Removal



S.W. 1/4 - N.W. 1/4  
SEC. 27

N.W. 1/4 - S.W. 1/4  
SEC. 27

S.W. 1/4 - S.W. 1/4  
SEC. 27

N.W. 1/4 - N.W. 1/4  
SEC. 34

S.E. 1/4 - N.E. 1/4  
SEC. 28

N.E. 1/4 - S.E. 1/4  
SEC. 28

S.E. 1/4 - S.E. 1/4  
SEC. 28

N.E. 1/4 - N.E. 1/4  
SEC. 33

**OFFICE RELOCATION**  
Construct 1' to Rt of surveyed & to Sta. 720+125  
Rt shown with reference to surveyed &

DRAINAGE STRUCTURES									
Station	Side	Size	Skew	Lgth.	Alt.	Excav.	Back.	Rem.	
720+100	Left	24"	0°	50'	20.7'	2.8'	2'	Removal	LE
720+186	Left	24"	0°	50'	20.7'	2.8'	2'	Removal	LE

H.E. ABBINGTON

Const. Under FAP 58-B  
Sta. 719+118 Build Temp.  
bridge 60' R-50 long at  
Rt to ditch. Elev. 3071

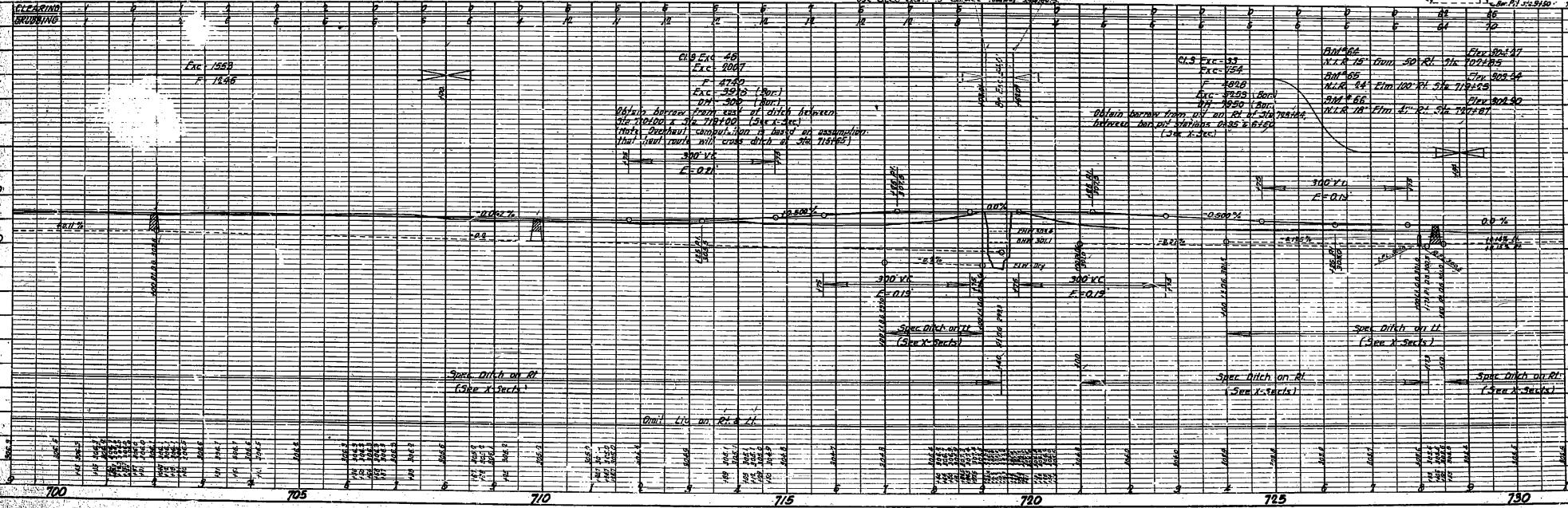
Const. Under FAP 58-B  
Sta. 719+060  
Const. 10' x 10' R-1 of 24' Grade  
Stone Gutter at Bridge Ends

END OFFICE RELOCATION  
PI Δ=0°07' Rt

SIDE ROAD APPROACHES									
Station	Side	18"	Excav.	Fill	CL3	Excav.	Fill	Remarks	
720+100	Rt	No Dip	0	50	0	12			
720+186	Rt	No Dip	0	50	0	12			

ENTRANCE APPROACHES									
Station	Side	24"	Excav.	Fill	CL3	Excav.	Fill	Remarks	
720+100	Rt	24"	0	35	0	6	26		
720+186	Rt	24"	0	35	0	6	26		

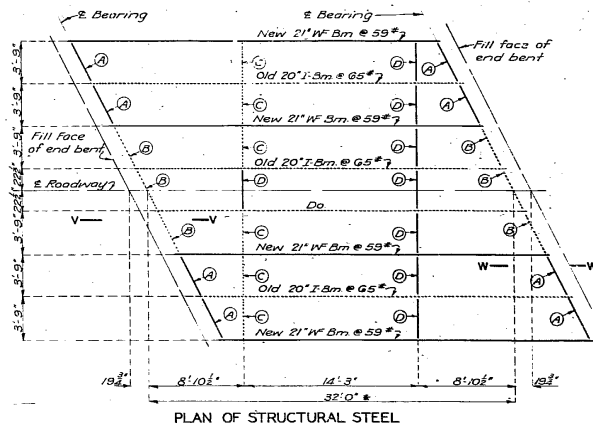
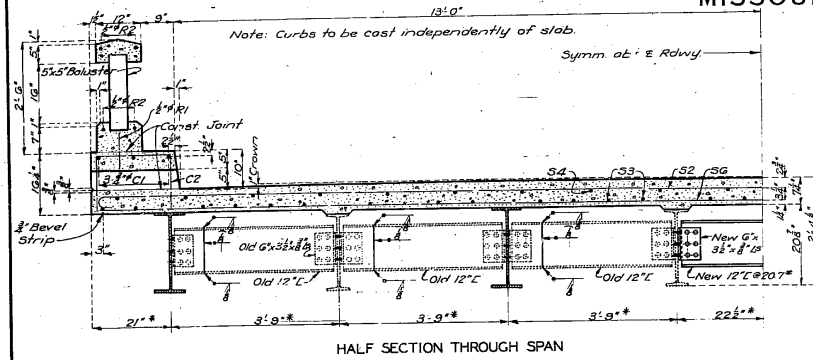
BY-PASS APPROACHES									
Station To Station	Side	Excav.	Fill	CL3	Excav.	Fill	Remarks		
720+100 to 720+186	Rt	65	60	21	48	24	200mm (100' max)		
720+186 to 720+100	Rt	65	60	21	48	24	200mm (100' max)		



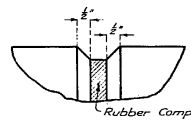
DATE 1-31-1988 BY 11111111

# MISSOURI STATE HIGHWAY DEPARTMENT

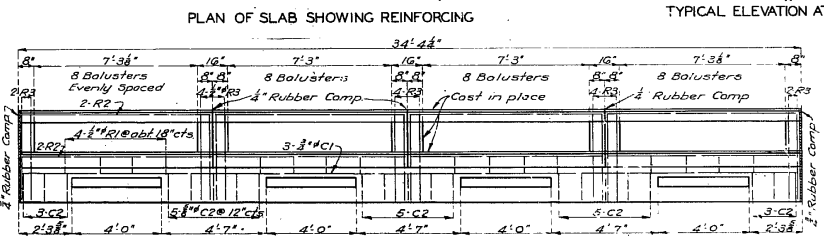
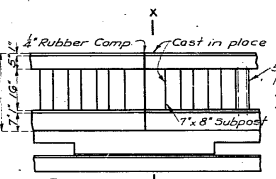
FED. ROAD STATE PROJ. NO. 100-1000  
 DIST. NO. 100-1000  
 SHEET NO. 100-1000



Note: Separators (A) and (B) are to be cut from old 12" channel separators and welded as shown. Separators (C) and (D) are to be made up from new 12" x 12" x 20" 7" Old 2" turned bolts which are serviceable after removal from old structure may be used for separator to beam connections.



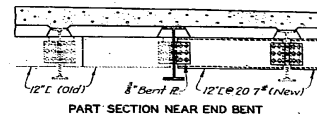
Note: Use bevel as shown for exposed faces of all joints consisting of rubber compound.



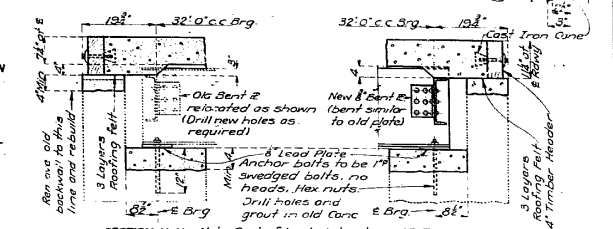
ELEVATION OF HANDRAIL

Drawn May 1940 by D.K.M.  
 Traced June 1940 by G.W.  
 Checked Nov. 1940 by J.N.T. & A.H.

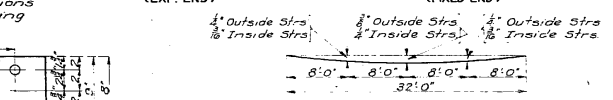
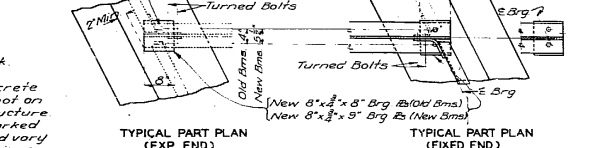
Note: This drawing is not to scale. Follow dimensions.



Note: 2" Timber header extending full length of approach paths anchored with 3" bolts. 3" long square heads. 3" thru old structure at 3'0" centers. Cast of timber header and fastening to be included in price bid for other items. An approved alternative may be substituted for cast iron cone shown.



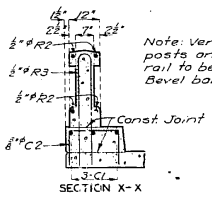
Note: Cast of lead plates to be included in price bid for other items. Use present 14" x 3" slots in old Bms. Make 14" x 22" slots in new Bms.



Note: Floor slab shall be brought to grade and dead load deflection taken care of by increasing slab thickness. Depth of slab at outside face of curb shall be kept uniform and bottom surface of slab warped between curb and outside beam to obtain required thickness of beam. Payment will be allowed for additional concrete required for thickening slab. This additional concrete is included in "Estimated Quantities".

Note: All bearing plates shall be straightened to plane surfaces. Required 8" x 8" x 8" Plates. Required 8" x 8" x 3" Plates.

DETAIL OF BEARING PLATES



Note: Vertical edges of posts and bottom of top rail to be beveled 1/4" Bevel balusters 1/4".

## BRIDGE OVER EPPS DRAINAGE DITCH

STATE ROAD FROM ROUTE 14 SOUTH  
 ABOUT 5 MILES S.W. OF HARVEILL  
 PROJECT NO. FAC-8-BI(4) (US 67) STA. 641+23.5

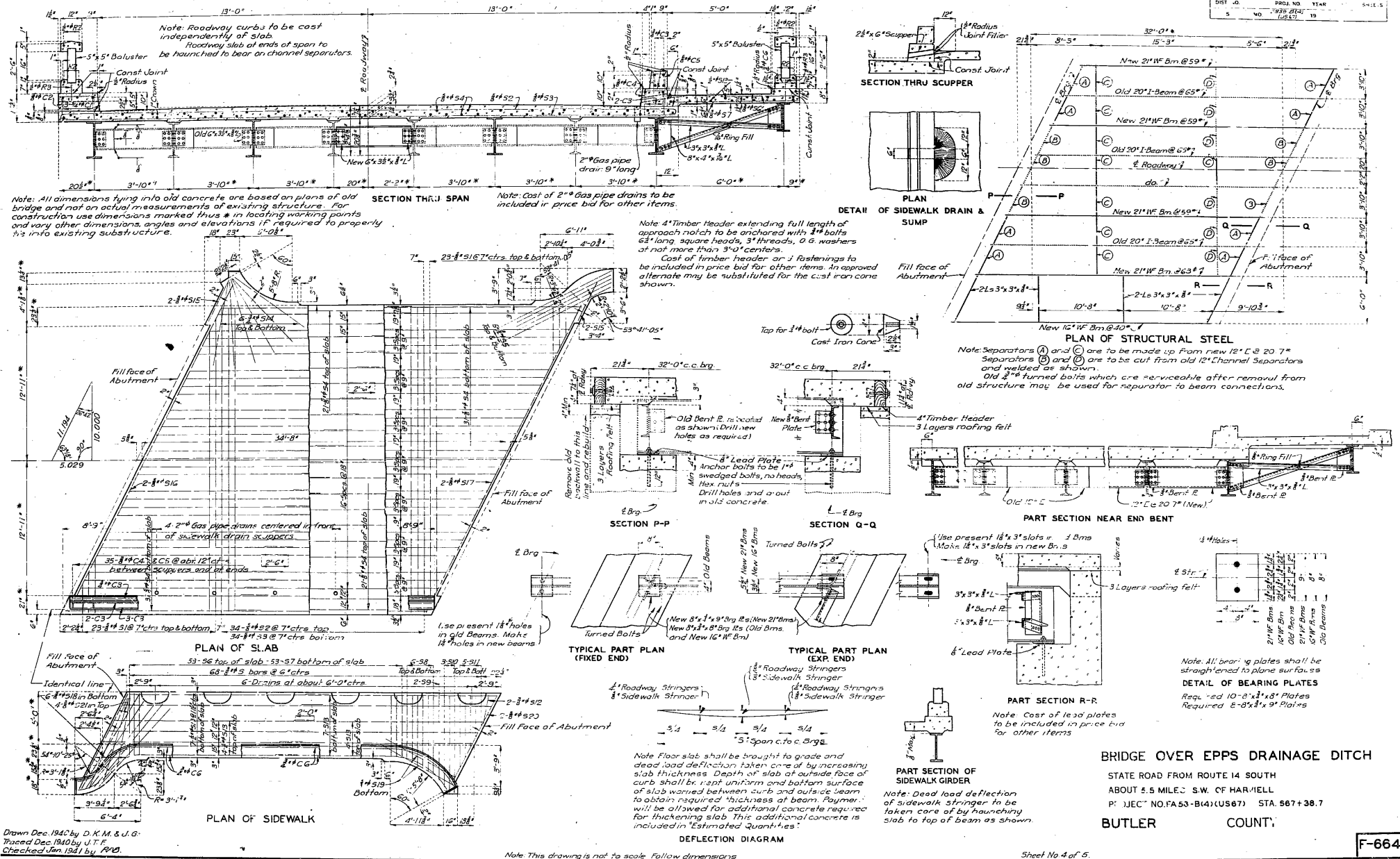
BUTLER COUNTY

F-663R

Sheet No. 4 of 4

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID	FISCAL YEAR	F. EXT.	TOTAL
5	MO.	1919	19		541.5

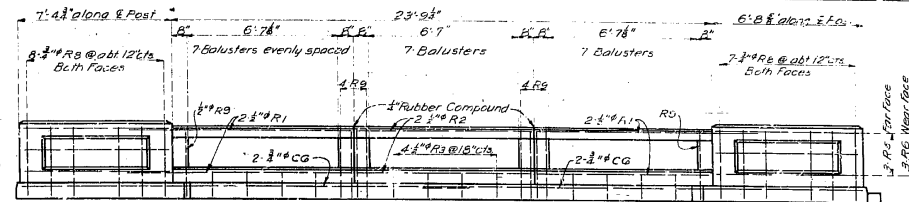


Drawn Dec. 1940 by D. K. M. & J. G.  
Traced Dec. 1940 by U. T. F.  
Checked Jan. 1941 by R. M.

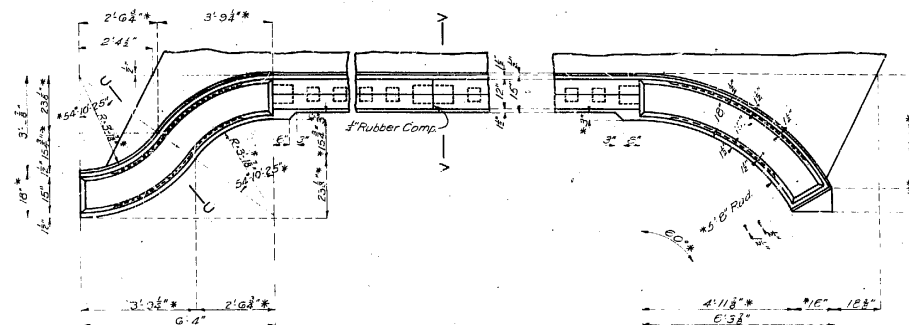
F-664R



FED ROAD DIST. NO.	STAT.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
5	MO.	458 B(4) (US 47)	19		

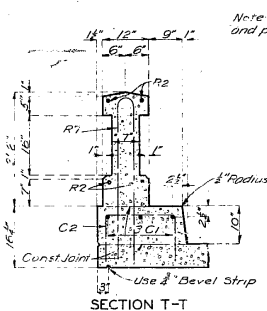


ELEVATION OF RIGHT HANDRAIL

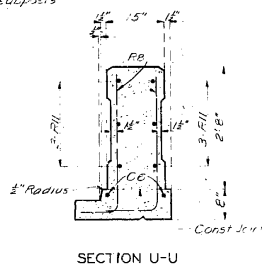


### PLAN OF RIGHT END POSTS

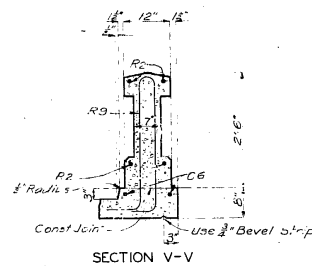
Note: All dimensions tying into old concrete are based on plans of old bridge and not on actual measurements of existing structure. For construction use dimensions marked thus \* in locating working points and vary other dimensions, angles and elevations if required to properly tie into existing substructure.



Note: Bevel corners of rail, subposts  
and posts  $\frac{1}{2}$ ".  
Bevel bolusters  $\frac{1}{4}$ ".

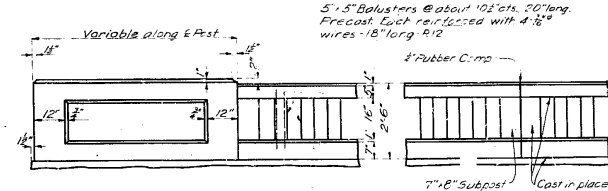


SECTION U-U



SECTION V-V

Note: Details of Right rail not shown above are similar to Left rail.



TYPICAL ELEVATION OF END POST-OUTSIDE FACE

BRIDGE OVER EPPS DRAINAGE DITCH

STATE ROAD FROM ROUTE 14 SOUTH  
ABOUT 5.5 MILES S.W. OF HARVIELL  
PROJECT NO. FA 58-B(4)(US 67) STA. 667+38.7

BUTLER COUNTY

F-664R

Note: This drawing is not to scale, 5" low dimensions.

Sheet No 5 of 5

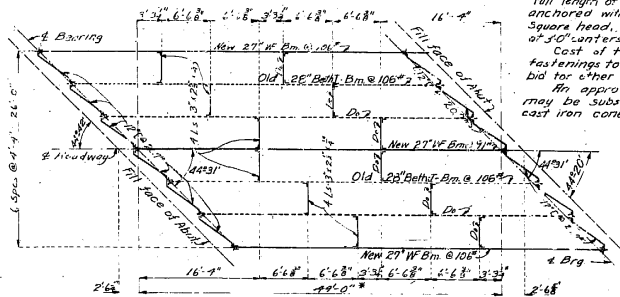
Drawn Nov 1940 by D.K.M. & J.G.  
Traced Dec. 1940 by C.S.A  
Checked Jan. 1941 by RAB

# MISSOURI STATE HIGHWAY DEPARTMENT

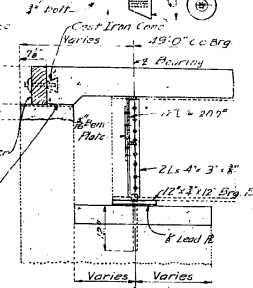
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	LOCAL YEAR	TOTAL SHEETS
5	MO		19	1

Note: Curbs to be cast independently of slab. Concrete slab at ends of span shall bear on ends of channel separators.

Symm. about & Roadway



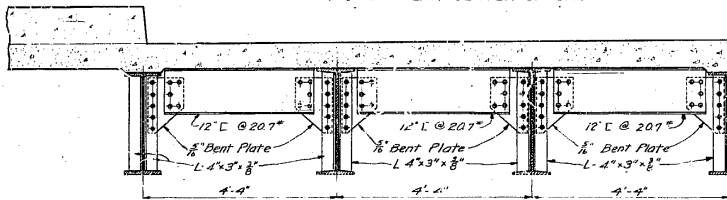
Note: 4" Timber header extending full length of approach notch anchored with 4 bolts, 65" long Square head, 3" thread, O.G. washers at 50" centers. Cost of timber headers and fastenings to be included in price bid for other items. An approved alternate may be substituted for the cast iron cone shown.



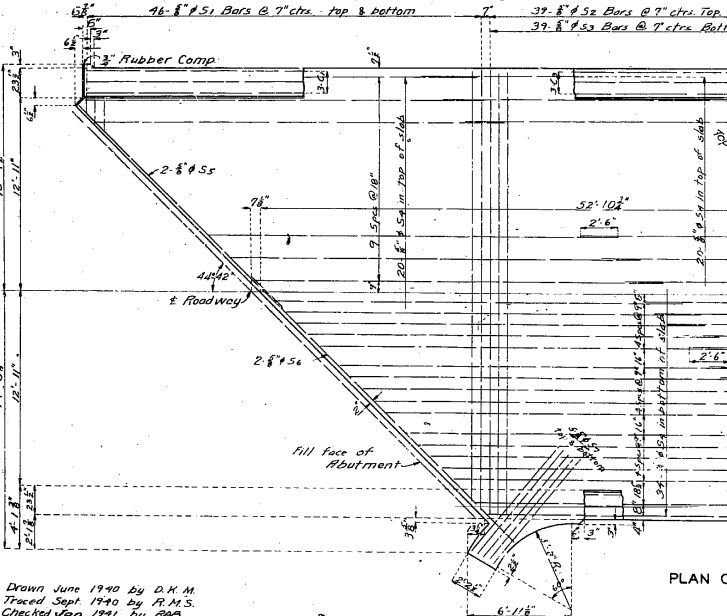
Note: End of 27" W Beams to be ground to bear top and bottom of welded to top end of beam. Flanges of beams with 4" continuous fillet weld along both sides and edges of C.S. legs.

Note: Use similar details on new W Beams

HALF SECTION NEAR CENTER OF SPAN



HALF SECTION NEAR END OF SPAN

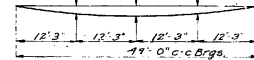


DETAIL OF BEVEL FOR RUBBER COMPOUND JOINT

Note: Use bevel as shown for exposed faces of all joints consisting of rubber compound

DETAILS OF BEARING PLATES

Note: All bearing plates shall be straightened to plane surfaces. 14-16" x 3" x 1/2" Plates required. Note: Cost of lead plates to be included in price bid for other items.



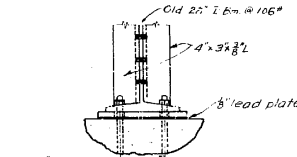
Note: Floor slab shall be brought to grade and dead load deflection taken care of by increasing slab thickness. Depth of slab at outside face of curb shall be kept uniform and bottom surface of slab warped between curb and outside beam to obtain required thickness at beam. Payment will be allowed for additional concrete required for thickening slab. This additional concrete is included in "Estimated Quantities."

DEFLECTION DIAGRAM

PLAN OF SLAB SHOWING REINFORCING

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

ABUTMENT NO. 1 ABUTMENT NO. 2 DETAILS AT BEARINGS



DETAIL AT ANCHOR BOLTS

Note: Details at new W Beams To be similar

Note: Light dotted lines indicate old work. Heavy lines indicate new work. All dimensions tying into old concrete are based on plans of old bridge and not on actual measurements of existing structure. For construction use dimensions marked thus \* indicating working points and vary other dimensions, angles & elevations if required to properly tie into existing substructure.

## BRIDGE OVER HARVIELL DITCH

STATE ROAD FROM JUNCTION ROUTE 14 SOUTH ABOUT 6.5 MILES S.W. OF HARVIELL PROJECT NO. FA 58-B(4)U.S.67 STA. 719+08.01

BUTLER COUNTY

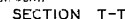
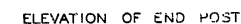
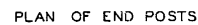
F-665R

Drawn June 1940 by D.H.M.  
Traced Sept. 1940 by R.M.S.  
Checked Jan. 1941 by R.A.S.

Sheet No. 4 of 5.



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



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

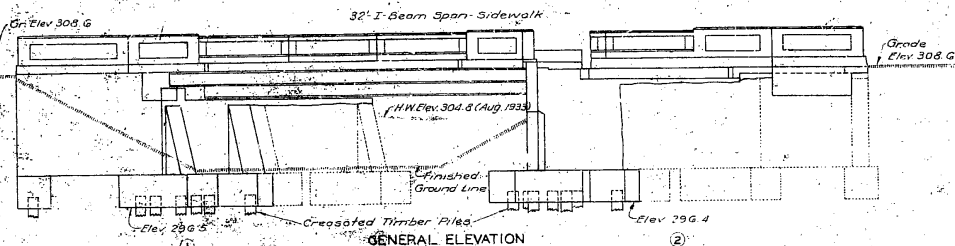
Sheet No. 5 of 5

STATE ROAD FROM JUNCTION ROUTE 14 SOUTH  
ABOUT 6.5 MILES S.W. OF HARRIELL  
PROJECT NO. F.A 58-B(4)(U.S. 67) STA. 719+08.01

BUTLER COUNTY

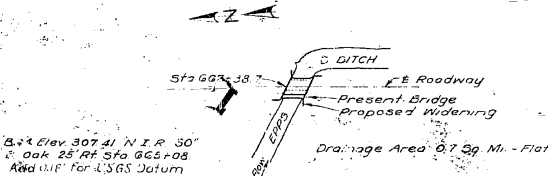
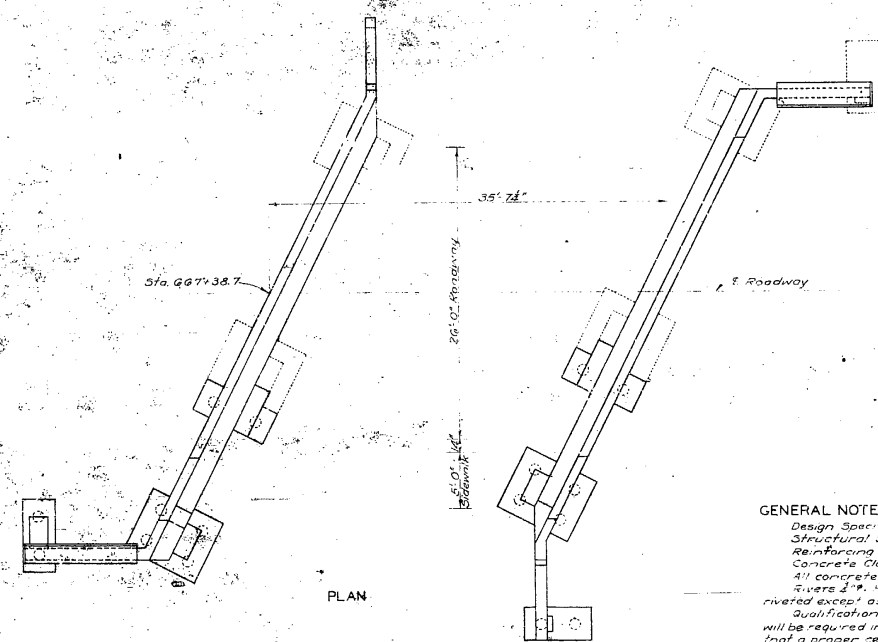
# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
5	MO.	1171	1941	1



Note: Piles driven to sustain a load of at least 20 tons per pile.

Note: Channel cleared above and below site as shown in Road Plans.



LOCATION SKETCH

Note: Light dotted lines indicate old work. Heavy lines indicate new work.

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

## COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location	No.	Size	Length	Mark	Location
16	1/4"	9' 0"	R2	Rail	1	1/4"	10' 0"	H1	Wall	21	1/4"	10' 0"	H1	Wall
8	1/4"	7' 0"	R3	Post	2	1/4"	10' 0"	H2	Wall	22	1/4"	10' 0"	H2	Wall
24	1/4"	9' 0"	R3	Post	3	1/4"	10' 0"	H3	Wall	23	1/4"	10' 0"	H3	Wall
30	1/4"	3' 0"	R4	Post	4	1/4"	10' 0"	H4	Wall	24	1/4"	10' 0"	H4	Wall
6	1/4"	0' 0"	R5	Post	5	1/4"	10' 0"	H5	Wall	25	1/4"	10' 0"	H5	Wall
10	1/4"	7' 0"	R6	Subpost	6	1/4"	10' 0"	H6	Wall	26	1/4"	10' 0"	H6	Wall
30	1/4"	4' 0"	R6	Subpost	7	1/4"	10' 0"	H7	Wall	27	1/4"	10' 0"	H7	Wall
10	1/4"	8' 0"	R9	Subpost	8	1/4"	10' 0"	H8	Wall	28	1/4"	10' 0"	H8	Wall
6	1/4"	7' 0"	R10	Post	9	1/4"	10' 0"	H9	Wall	29	1/4"	10' 0"	H9	Wall
6	1/4"	7' 0"	R11	Post	10	1/4"	10' 0"	H10	Wall	30	1/4"	10' 0"	H10	Wall
10	1/4"	18' 0"	R12	Baluster	11	1/4"	10' 0"	H11	Wall	31	1/4"	10' 0"	H11	Wall
46	1/4"	34' 0"	S1	Slab	12	1/4"	10' 0"	H12	Wall	32	1/4"	10' 0"	H12	Wall
34	1/4"	30' 0"	S2	Slab	13	1/4"	10' 0"	H13	Wall	33	1/4"	10' 0"	H13	Wall
34	1/4"	28' 0"	S3	Slab	14	1/4"	10' 0"	H14	Wall	34	1/4"	10' 0"	H14	Wall
104	1/4"	18' 0"	S4	Slab	15	1/4"	10' 0"	H15	Wall	35	1/4"	10' 0"	H15	Wall
10	1/4"	13' 0"	S5	Slab	16	1/4"	10' 0"	H16	Wall	36	1/4"	10' 0"	H16	Wall
53	1/4"	3' 0"	S6	S.W. Slab	17	1/4"	10' 0"	H17	Wall	37	1/4"	10' 0"	H17	Wall
53	1/4"	0' 0"	S7	S.W. Slab	18	1/4"	10' 0"	H18	Wall	38	1/4"	10' 0"	H18	Wall
6	1/4"	13' 0"	S8	Slab	19	1/4"	10' 0"	H19	Wall	39	1/4"	10' 0"	H19	Wall
2	1/4"	0' 0"	S9	Slab	20	1/4"	10' 0"	H20	Wall	40	1/4"	10' 0"	H20	Wall
6	1/4"	9' 0"	S10	Slab	21	1/4"	10' 0"	H21	Wall	41	1/4"	10' 0"	H21	Wall
5	1/4"	10' 0"	S11	Slab	22	1/4"	10' 0"	H22	Wall	42	1/4"	10' 0"	H22	Wall
2	1/4"	2' 0"	S12	Slab	23	1/4"	10' 0"	H23	Wall	43	1/4"	10' 0"	H23	Wall
22	1/4"	18' 0"	S13	Slab	24	1/4"	10' 0"	H24	Wall	44	1/4"	10' 0"	H24	Wall
12	1/4"	9' 0"	S14	Slab	25	1/4"	10' 0"	H25	Wall	45	1/4"	10' 0"	H25	Wall
4	1/4"	6' 0"	S15	Slab	26	1/4"	10' 0"	H26	Wall	46	1/4"	10' 0"	H26	Wall
2	1/4"	35' 0"	S16	Slab	27	1/4"	10' 0"	H27	Wall	47	1/4"	10' 0"	H27	Wall
2	1/4"	31' 0"	S17	Slab	28	1/4"	10' 0"	H28	Wall	48	1/4"	10' 0"	H28	Wall
6	1/4"	11' 3"	S18	S.W. Slab	29	1/4"	10' 0"	H29	Wall	49	1/4"	10' 0"	H29	Wall
2	1/4"	0' 0"	S19	Slab	30	1/4"	10' 0"	H30	Wall	50	1/4"	10' 0"	H30	Wall
2	1/4"	9' 0"	S20	Slab	31	1/4"	10' 0"	H31	Wall	51	1/4"	10' 0"	H31	Wall
2	1/4"	17' 0"	S21	Slab	32	1/4"	10' 0"	H32	Wall	52	1/4"	10' 0"	H32	Wall
6	1/4"	20' 0"	C1	Curb	33	1/4"	10' 0"	H33	Wall	53	1/4"	10' 0"	H33	Wall
16	1/4"	3' 0"	C2	Curb	34	1/4"	10' 0"	H34	Wall	54	1/4"	10' 0"	H34	Wall
6	1/4"	32' 0"	C3	Curb	35	1/4"	10' 0"	H35	Wall	55	1/4"	10' 0"	H35	Wall
35	1/4"	3' 0"	C4	Curb	36	1/4"	10' 0"	H36	Wall	56	1/4"	10' 0"	H36	Wall
35	1/4"	3' 0"	C5	Curb	37	1/4"	10' 0"	H37	Wall	57	1/4"	10' 0"	H37	Wall
4	1/4"	20' 0"	C6	Curb	38	1/4"	10' 0"	H38	Wall	58	1/4"	10' 0"	H38	Wall
14	1/4"	4' 0"	C7	Curb	39	1/4"	10' 0"	H39	Wall	59	1/4"	10' 0"	H39	Wall
					40	1/4"	10' 0"	H40	Wall	60	1/4"	10' 0"	H40	Wall
					41	1/4"	10' 0"	H41	Wall	61	1/4"	10' 0"	H41	Wall
					42	1/4"	10' 0"	H42	Wall	62	1/4"	10' 0"	H42	Wall
					43	1/4"	10' 0"	H43	Wall	63	1/4"	10' 0"	H43	Wall
					44	1/4"	10' 0"	H44	Wall	64	1/4"	10' 0"	H44	Wall
					45	1/4"	10' 0"	H45	Wall	65	1/4"	10' 0"	H45	Wall
					46	1/4"	10' 0"	H46	Wall	66	1/4"	10' 0"	H46	Wall
					47	1/4"	10' 0"	H47	Wall	67	1/4"	10' 0"	H47	Wall
					48	1/4"	10' 0"	H48	Wall	68	1/4"	10' 0"	H48	Wall
					49	1/4"	10' 0"	H49	Wall	69	1/4"	10' 0"	H49	Wall
					50	1/4"	10' 0"	H50	Wall	70	1/4"	10' 0"	H50	Wall
					51	1/4"	10' 0"	H51	Wall	71	1/4"	10' 0"	H51	Wall
					52	1/4"	10' 0"	H52	Wall	72	1/4"	10' 0"	H52	Wall
					53	1/4"	10' 0"	H53	Wall	73	1/4"	10' 0"	H53	Wall
					54	1/4"	10' 0"	H54	Wall	74	1/4"	10' 0"	H54	Wall
					55	1/4"	10' 0"	H55	Wall	75	1/4"	10' 0"	H55	Wall
					56	1/4"	10' 0"	H56	Wall	76	1/4"	10' 0"	H56	Wall
					57	1/4"	10' 0"	H57	Wall	77	1/4"	10' 0"	H57	Wall
					58	1/4"	10' 0"	H58	Wall	78	1/4"	10' 0"	H58	Wall
					59	1/4"	10' 0"	H59	Wall	79	1/4"	10' 0"	H59	Wall
					60	1/4"	10' 0"	H60	Wall	80	1/4"	10' 0"	H60	Wall
					61	1/4"	10' 0"	H61	Wall	81	1/4"	10' 0"	H61	Wall
					62	1/4"	10' 0"	H62	Wall	82	1/4"	10' 0"	H62	Wall
					63	1/4"	10' 0"	H63	Wall	83	1/4"	10' 0"	H63	Wall
					64	1/4"	10' 0"	H64	Wall	84	1/4"	10' 0"	H64	Wall
					65	1/4"	10' 0"	H65	Wall	85	1/4"	10' 0"	H65	Wall
					66	1/4"	10' 0"	H66	Wall	86	1/4"	10' 0"	H66	Wall
					67	1/4"	10' 0"	H67	Wall	87	1/4"	10' 0"	H67	Wall
					68	1/4"	10' 0"	H68	Wall	88	1/4"	10' 0"	H68	Wall
					69	1/4"	10' 0"	H69	Wall	89	1/4"	10' 0"	H69	Wall
					70	1/4"	10' 0"	H70	Wall	90	1/4"	10' 0"	H70	Wall
					71	1/4"	10' 0"	H71	Wall	91	1/4"	10' 0"	H71	Wall
					72	1/4"	10' 0"	H72	Wall	92	1/4"	10' 0"	H72	Wall
					73	1/4"	10' 0"	H73	Wall	93	1/4"	10' 0"	H73	Wall
					74	1/4"	10' 0"	H74	Wall	94	1/4"	10' 0"	H74	Wall
					75	1/4"	10' 0"	H75	Wall	95	1/4"	10' 0"	H75	Wall
					76	1/4"	10' 0"	H76	Wall	96	1/4"	10' 0"	H76	Wall
					77	1/4"	10' 0"	H77	Wall	97	1/4"	10' 0"	H77	Wall
					78	1/4"	10' 0"	H78	Wall	98	1/4"	10' 0"	H78	Wall
					79	1/4"	10' 0"	H79	Wall	99	1/4"	10' 0"	H79	Wall
					80	1/4"	10' 0"	H80	Wall	100	1/4"	10' 0"	H80	Wall

Note: Weight of bar mat is included in weight of reinforcing steel.

## GENERAL NOTES:

Design Specifications A.A.S.H.O. - Loading 4-5 A.A.S.H.O.  
Structural Steel Stress 16,000 P.S.I.  
Reinforcing Steel Stress 16,000 P.S.I.  
Concrete Class B' 800 P.S.I.  
All concrete shall be Class B'.  
Towers 2" x 10". All field connections shall be riveted except as noted on plans for old turner bolts.  
Qualification of all welding operators and electrodes will be required in accordance with Specifications, except that a proper certification of electrodes previously qualified will be acceptable.  
Paint Shop, none. Field, contact surfaces of bolted field connections are coat of red lead and surface inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Red lead required shall be furnished by the Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for structural steel.  
All rubber compound shall be gray in color.

## ESTIMATED QUANTITIES

Item	Superstr.	Substr.	Total
Class 1 Excavation for Structures - Cu Yds	31.5	31.5	63.0
Class 2 Excavation for Structures - Cu Yds	30.0	30.0	60.0
Class B' Concrete (Handroll) - Cu Yds	6.0	6.0	12.0
Class B' Concrete - Cu Yds	39.4	39.4	78.8
Reinforcing Structural Steel - Lbs.	11710	11710	23420
Reinforcing Steel - Lbs.	8730	8730	17460
Crested Timber Piles in Place - Lin. Ft.	309	309	618
Special Work (See Special Provisions) - Lbs.			

Note: Excavation for bridge made above Elev 302.0 will be paid for as Class 1 Excavation for Structures.  
Excavation for bridge made below Elev 302.0 will be paid for as Class 2 Excavation for Structures.

## BRIDGE OVER EPPS DRAINAGE DITCH

STATE ROAD FROM ROUTE 14 SOUTH  
ABOUT 5.5 MILES S.W. OF HARVELL  
PROJECT SN-FA 58-B(4) (JS 67) STA. 667+38.7  
BUTLER COUNTY

APPROVED BY: *MR. Lock* DATE: 1/17/41  
APPROVED BY: *C.W. Brown* DATE: 1/17/41  
CHIEF ENGINEER

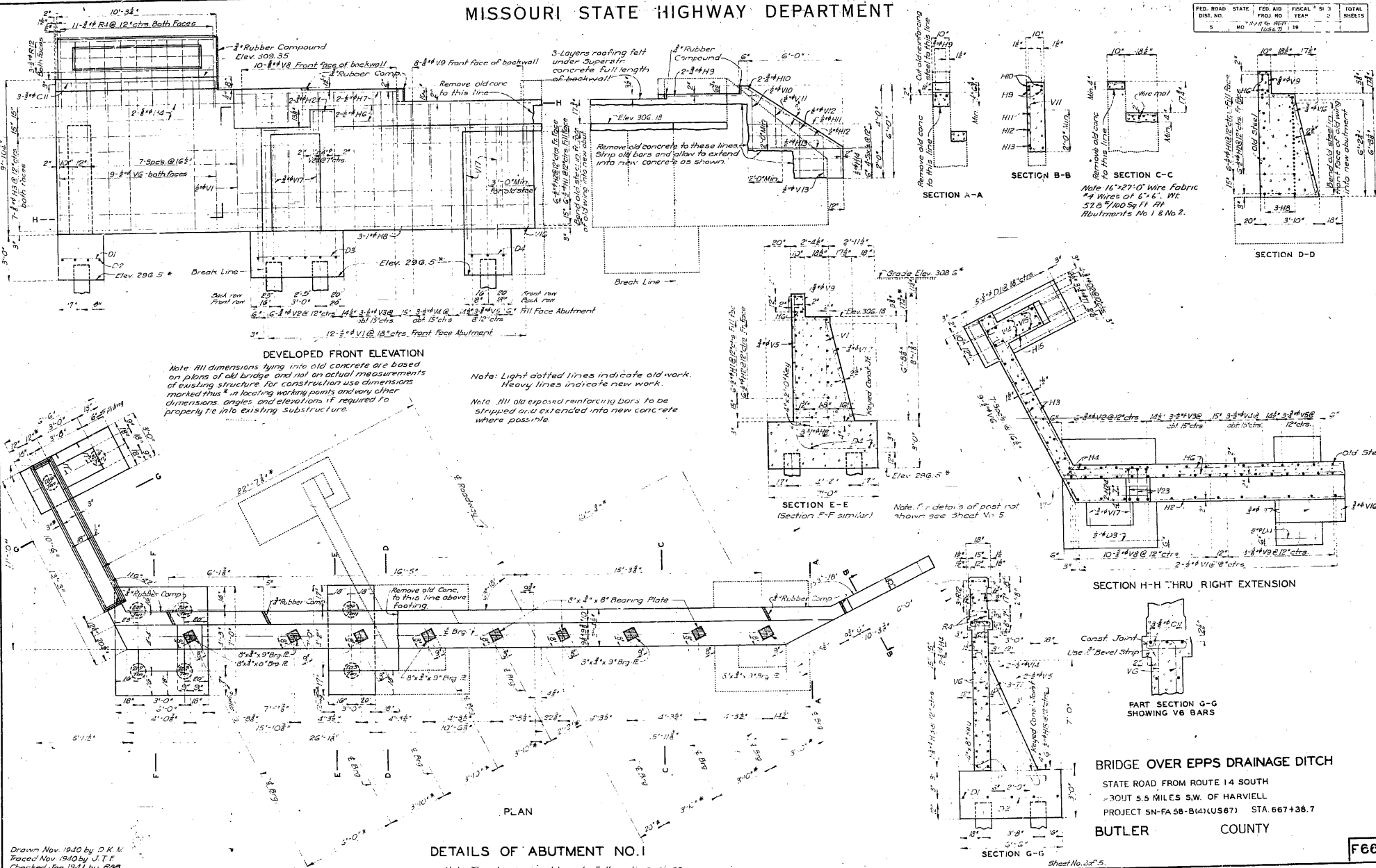
STD. C-110R2  
F-664R

Sheet No. 1 of 5

Drawn Dec. 1940 by J.G.  
Checked Dec. 1940 by G.  
Checked Jan. 1941 by J.A.B.

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	1686	19		

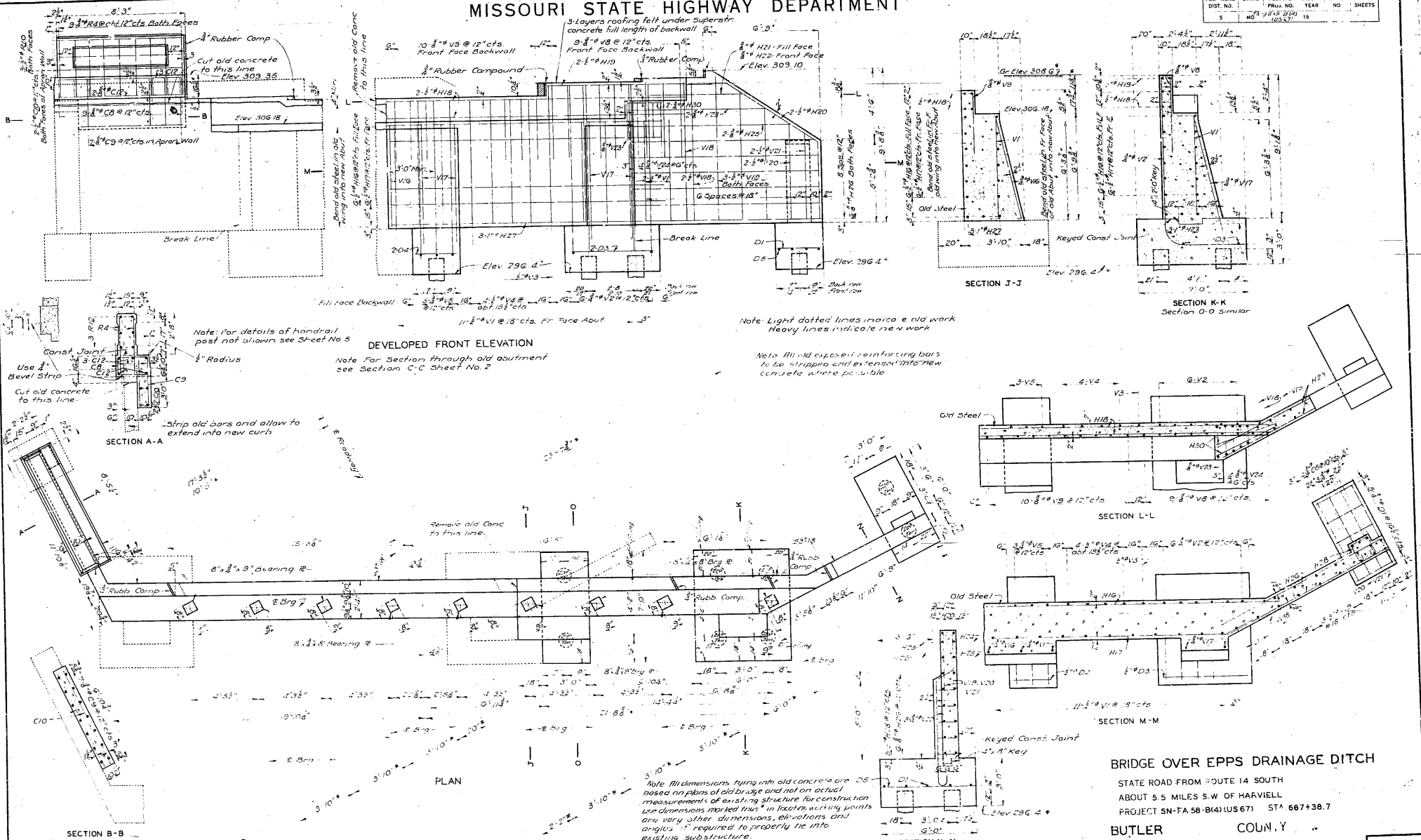


Drawn Nov. 1940 by D.K.A.  
 Traced Nov. 1940 by J.T.F.  
 Checked Jan. 1941 by R.A.B.

F664R

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	100-251	19		



Drawn Nov. 1940 by D.M. & J.G.  
 Traced Nov. 1940 by G.W.  
 Checked Jan. 1941 by R.M.

DETAILS OF ABUTMENT NO. 2

Sheet No. 3 of 5.

BRIDGE OVER EPPS DRAINAGE DITCH

STATE ROAD FROM ROUTE 14 SOUTH  
 ABOUT 5.5 MILES S.W. OF HARVEILL  
 PROJECT SN-FA 58-B(4)(US 67) STA. 667+38.7

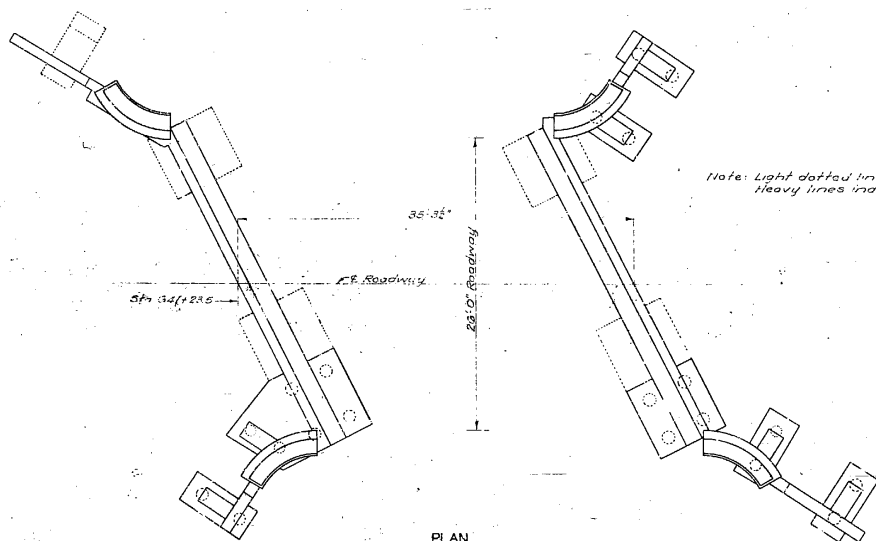
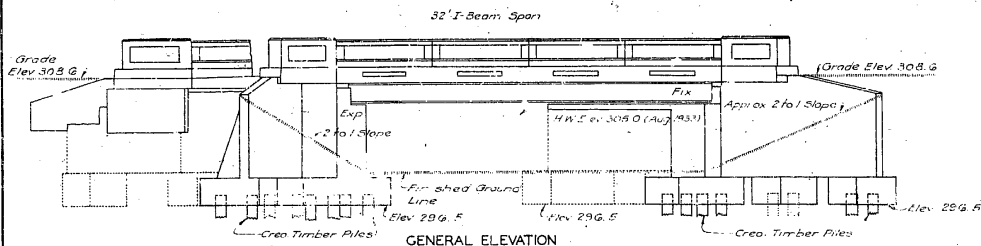
BUTLER

COUNTY

F-664R

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID	FISCAL YEAR	TOTAL SHEETS
5	MO.	FA-58-B(4)	1940	14



ESTIMATED QUANTITIES			
Item	Superstr.	Substr.	Total
Class 1 Excavation for Structures Cut & Fill		65.5	65.5
Class 2 Excavation for Structures Cut & Fill		99.5	99.5
Class 3 Concrete (Handrail) Cu Yds	3.7		6.9
Class 3 Concrete (Handrail) Cu Yds	97.0	54.6	151.6
Fabricated Structural Steel Lbs	9920		9920
Reinforcing Steel Lbs	6550	4050	10600
Crested Timber Piles in Place Lin ft		434	434
Special Work (See Spec. Prov.) Lump Sum			1

Note: Excavation for bridge made above Elev 302.0 will be paid for as Class 1 Excavation for Structures.  
Excavation for bridge made below Elev 302.0 will be paid for as Class 2 Excavation for Structures.  
Weight of bar mat is included in weight of reinforcing steel.

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

## GENERAL NOTES:

Design Specifications A.A.S.H.O.  
Loading H-15 4 A, H-10  
Reinforcing Steel Stress 18,000 P.S.I.  
Structural Steel Stress 18,000 P.S.I.  
Concrete Class "B" 900 P.S.I.  
All concrete shall be Class "B".  
Rivets 3/4" Holes 1/2". All field connections shall be riveted except as noted on plans.  
Qualification of all welding operators and electrodes will be required in accordance with Specifications, except that a proper certification of electrodes previously qualified will be acceptable.  
Paint, Shop name, field contact surfaces of bored field connections one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Red lead required shall be furnished by the Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for structural steel.  
All rubber compounds shall be gray in color.

R.M. Elev 307.65 P.C.R. 36' Collarwood 16' 9" 5th 541+59  
Add 0.18 for U.S.G.S. Datum

## BRIDGE OVER EPPS DRAINAGE DITCH

STATE ROAD FROM ROUTE 14 SOUTH  
ABOUT 5.0 MILES S.W. OF HARWELL  
PROJECT 5N-FA58-B(4) (U567) STA 641+23.5

BUTLER COUNTY

DESIGNED BY *W.R. Eck* 1/10/41  
APPROVED BY *C.H. Brown* 1/10/41

STD-C-110R2  
F-663R

Sheet No. 1 of 4

COMPLETE BILL OF REINFORCING STEEL											
No	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams	No	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams
Substructure						Substructure					
1	1/2"	8'-0"	H1	Wing		1	1/2"	4'-6"	D3	Footings	
2	1/2"	7'-3"	H2			2	1/2"	7'-0"	D4		
3	1/2"	12'-3"	H3			3	1/2"	7'-3"	D5		
4	1/2"	11'-6"	H4			4	1/2"	15'-9"	D6		
5	1/2"	6'-9"	H5			5	1/2"	9'-3"	D7		
6	1/2"	13'-3"	H6			6	1/2"	9'-3"	D8		
7	1/2"	10'-6"	H7			7	1/2"	7'-1"	D9	Footings	
8	1/2"	10'-6"	H8			8	1/2"	7'-0"	D10		
9	1/2"	7'-3"	H9			9	1/2"	6'-9"	D11		
10	1/2"	7'-3"	H10	Abut		10	1/2"	6'-3"	D12		
11	1/2"	11'-6"	H11	Wing		11	1/2"	7'-3"	D13		
12	1/2"	6'-9"	H12			12	1/2"	6'-0"	C3	Curb	
13	1/2"	15'-0"	H13	Cut		13	1/2"	7'-3"	C4		
14	1/2"	7'-3"	H14	Abut		14	1/2"	5'-3"	C5		
15	1/2"	10'-0"	H15	Wing		15	1/2"	6'-0"	C6		
16	1/2"	19'-0"	H16			16	1/2"	4'-0"	C7		
17	1/2"	6'-0"	H17			17	1/2"	7'-3"	Cd		
18	1/2"	18'-0"	H18			18	1/2"	6'-9"	R4	Post	
19	1/2"	18'-9"	H19			19	1/2"	6'-0"	R5		
20	1/2"	10'-6"	H20			20	1/2"	5'-3"	R6		
21	1/2"	6'-3"	H21	Abut		21	1/2"	12'-3"	T1	Wing	
22	1/2"	5'-3"	V1	Wing		22	1/2"	14'-9"	T2		
23	1/2"	3'-9"	V2			23	1/2"	10'-9"	T3		
24	1/2"	3'-9"	V3			24	1/2"	14'-3"	T4		
25	1/2"	17'-6"	V4			25	1/2"	14'-3"	T5		
26	1/2"	10'-0"	V5			26	1/2"	14'-3"	T6		
27	1/2"	8'-6"	V6			27	1/2"	14'-3"	T7		
28	1/2"	3'-9"	V7	Wing		28	1/2"	14'-3"	T8		
29	1/2"	3'-9"	V8			29	1/2"	14'-3"	T9		
30	1/2"	3'-9"	V9			30	1/2"	14'-3"	T10		
31	1/2"	3'-9"	V10			31	1/2"	32'-0"	S1	Slab	
32	1/2"	3'-9"	V11			32	1/2"	31'-0"	S2		
33	1/2"	3'-9"	V12			33	1/2"	34'-0"	S3		
34	1/2"	3'-9"	V13			34	1/2"	34'-0"	S4		
35	1/2"	3'-9"	V14			35	1/2"	32'-0"	S5		
36	1/2"	3'-9"	V15			36	1/2"	29'-0"	S6		
37	1/2"	3'-9"	V16			37	1/2"	34'-0"	C1	Curb	
38	1/2"	3'-9"	V17			38	1/2"	34'-0"	C2		
39	1/2"	3'-9"	V18			39	1/2"	5'	R1	Rail	
40	1/2"	3'-9"	V19			40	1/2"	4'-3"	R2		
41	1/2"	3'-9"	V20			41	1/2"	7'-0"	R3		
42	1/2"	3'-9"	V21			42	1/2"	3'-8"	C2		
43	1/2"	3'-9"	V22			43	1/2"	5'	R1		
44	1/2"	3'-9"	V23			44	1/2"	6'-3"	R2		
45	1/2"	3'-9"	V24			45	1/2"	7'-0"	R3		
46	1/2"	3'-9"	V25			46	1/2"	18'	R7		
47	1/2"	3'-9"	V26			47	1/2"	18'	R7		
48	1/2"	3'-9"	V27			48	1/2"	18'	R7		
49	1/2"	3'-9"	V28			49	1/2"	18'	R7		
50	1/2"	3'-9"	V29			50	1/2"	18'	R7		

Drawn June 1940 by O.K.M.  
Traced July 1940 by G.W.  
Checked Nov 1940 by J.H.M. & R.R.

IED ROAD STATE	FED AID	FISCAL	YR	DTN
DIST NO	PROJ. NO.	YR		REF ID
5	40	1964-65	16	



Note This drawing is not to scale. Follow dimensions.

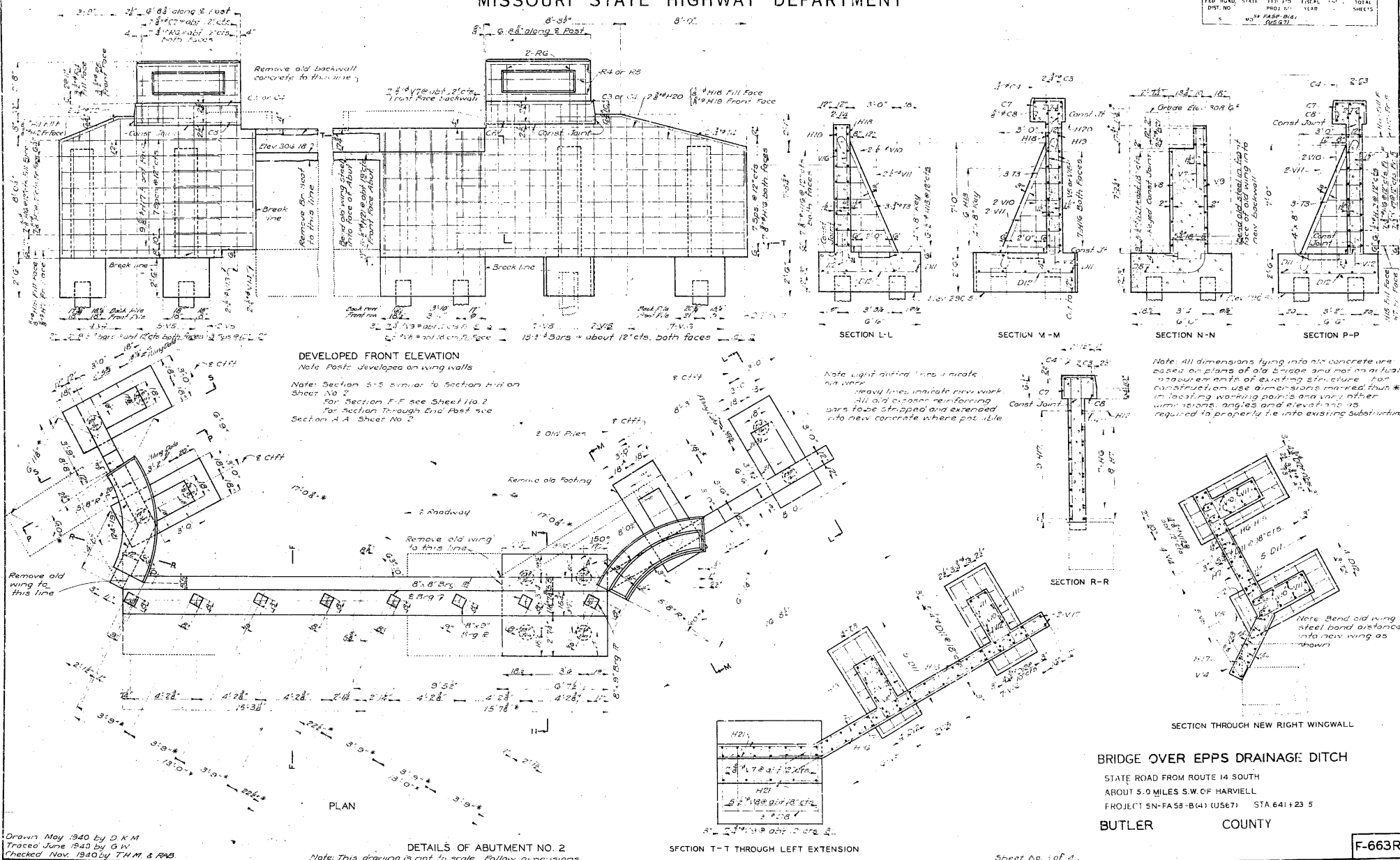
Sheet No 2 of 4

F-663R



# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
5	MO.	SN-FA58-B(4)	1940	5



## BRIDGE OVER EPPS DRAINAGE DITCH

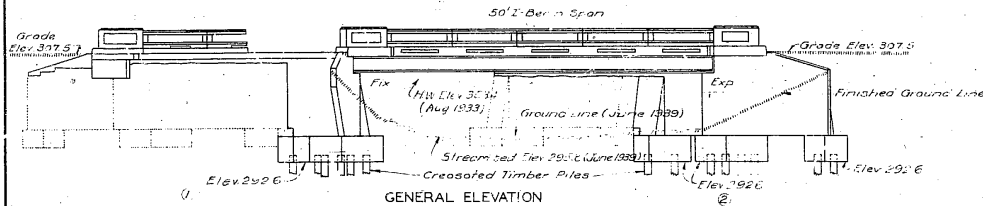
STATE ROAD FROM ROUTE 14 SOUTH  
 ABOUT 5.0 MILES S.W. OF HARVEY  
 PROJECT SN-FA58-B(4) (US67) STA. 641+23.5

BUTLER COUNTY

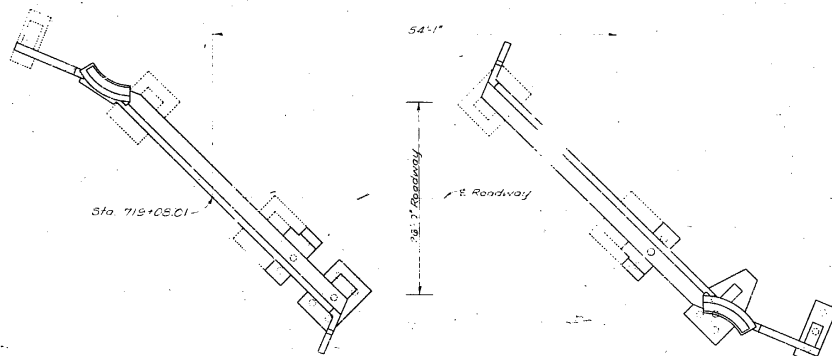
F-663R

# MISSOURI STATE HIGHWAY DEPARTMENT

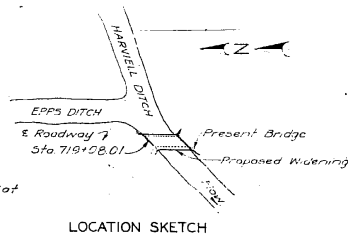
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.	46	1940	10	10



Note: All piles driven to sustain a load of at least 17 ton per pile.



Note: Light dotted lines indicate old work. Heavy lines indicate new work.



Drainage Area 9.39 Miles - Flat

## GENERAL NOTES:

Design Specifications A.A.S.H.O.  
Loading H-16 A.A.S.H.O.  
Reinforcing Steel Stress 18,000 psi  
Structural Steel Stress 18,000 psi  
Concrete Class "B" 3000 psi  
All concrete shall be Class "B"  
Rivets 3/4" Holes 3/8" All field connections shall be riveted.  
Qualification of all welding operators and electrodes will be required in accordance with Specifications except that a proper certification of electrodes previously qualified will be acceptable.

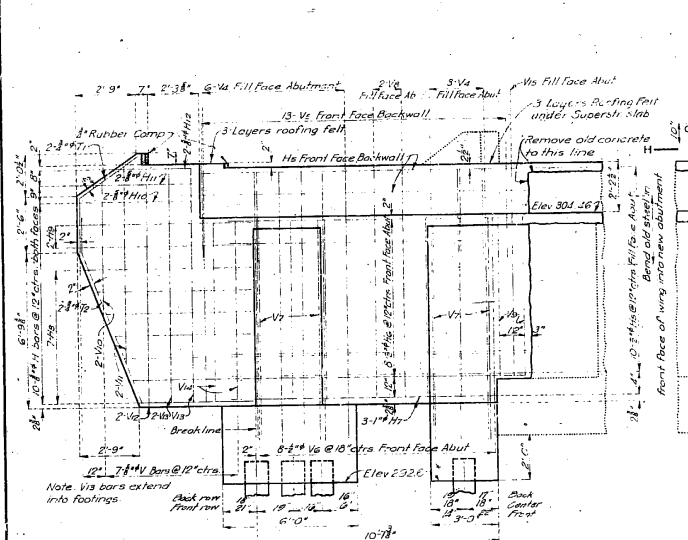
Paint: Shop, non-field surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Red lead required shall be furnished by the Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for structural steel. All rubber compound shall be gray in color.

## COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams	No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams
Substructure						Substructure (Cont'd)					
3	1 1/2"	9'-0"	H1	Wing		30	3"	7'-6"	D1	Footings	
1	3"	5'-0"	H2	"		10	1 1/2"	5'-6"	L2	"	
2	3"	3'-0"	H3	"		11	3"	6'-0"	D2	"	
3	3"	3'-0"	H4	"		12	5"	7'-3"	D3	"	
10	1 1/2"	13'-9"	H5	Abutment		13	3"	5'-0"	D5	"	
8	3"	12'-3"	H7	"		1	3"	6'-0"	D6	"	
3	3"	12'-3"	H8	"		12	3"	8'-3"	D7	"	
1	3"	12'-3"	H9	"		1	3"	8'-3"	D8	"	
1	3"	7'-6"	H10	"		2	3"	9'-0"	D9	"	
2	3"	5'-3"	H10	"		4	3"	6'-0"	C4	Curb	
2	3"	4'-3"	H11	"		4	3"	7'-6"	C5	"	
2	3"	3'-6"	H12	"		7	3"	4'-0"	C6	"	
1	3"	17'-0"	H13	"		2	3"	6'-0"	C7	"	
1	3"	16'-6"	H15	"		2	3"	3'-9"	R3	Post	
3	3"	13'-0"	H16	Abutment		6	3"	3'-0"	R4	"	
1	3"	12'-3"	H19	"		6	3"	6'-9"	R5	"	
2	3"	13'-3"	H20	"		2	3"	5'-9"	R6	Wing	
0	3"	3'-9"	H21	"		1	3"	5'-9"	R7	"	
3	3"	3'-9"	H22	"		1	3"	5'-9"	R8	"	
12	3"	14'-0"	H24	Abutment		7	3"	5'-9"	R9	"	
25	3"	3'-9"	H25	"		7	3"	12'-5"	T4	Giff	
2	3"	3'-9"	H26	"		2	3"	11'-9"	T5	Wing	
1	3"	3'-9"	H27	"		2	3"	5'-6"	D10	Footings	
6	3"	10'-0"	V7	"		Substructure					
14	3"	10'-3"	V8	"		32	3"	35'-6"	S1	Slab	
4	3"	7'-3"	V9	"		39	3"	7'-3"	S2	"	
4	3"	5'-9"	V10	Wing		108	3"	7'-6"	S3	"	
13	3"	9'-0"	V11	"		1	3"	5'-9"	S4	"	
13	3"	10'-6"	V12	"		3	3"	21'-9"	S6	"	
3	3"	12'-0"	V13	"		20	3"	9'-6"	S7	"	
1	3"	8'-3"	V14	Abutment		3	3"	29'-9"	C1	Curo	
1	3"	9'-3"	V15	"		52	3"	3'-9"	C2	"	
1	3"	10'-9"	V16	"		6	3"	23'-6"	C3	"	
3	3"	8'-3"	V17	Wing		14	3"	4'-0"	C6	"	
3	3"	7'-3"	V18	Abutment		26	2	3'-9"	R3	Post	
4	3"	6'-3"	V19	CFF		50	3"	9'-0"	R1	Post	
4	3"	3'-9"	V20	"		3	3"	7'-3"	R2	Post	
3	3"	10'-0"	V21	Footings		30	3"	11'-3"	R6	Substructure	
6	3"	6'-6"	V22	Wing		4	3"	7'-6"	R7	Substructure	
						3	3"	10'-9"	R8	Post	
						3	3"	6'-0"	R9	Post	
						3	3"	6'-0"	R5	Post	

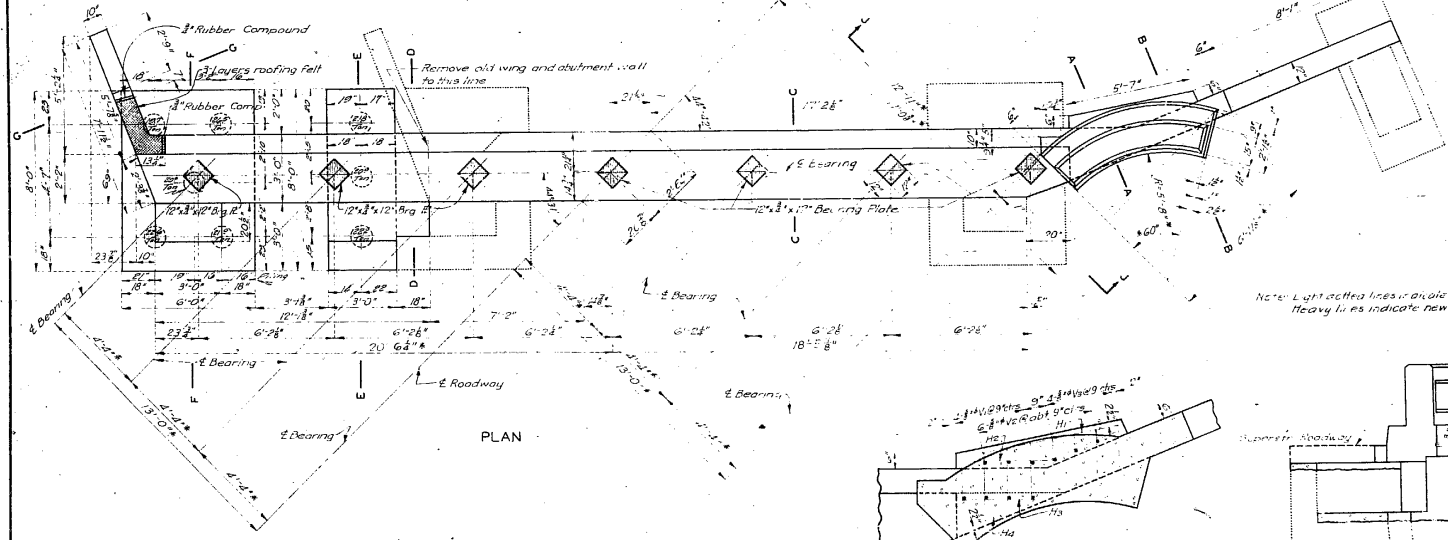
# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	14-74	1944	19	25



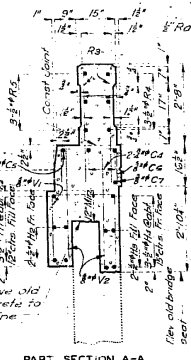
**DEVELOPED FRONT ELEVATION**  
 Note: End Post de...  
 For detail, see Sheet No. 5

Note: All old exposed reinforcing bars to be stripped and extended into new concrete where possible.  
 All dimensions tying into old concrete are based on plans of old structure. For construction use dimensions marked thus \* in locating working points and carry other dimensions, angles & elevations, if required to properly tie into existing substructure.

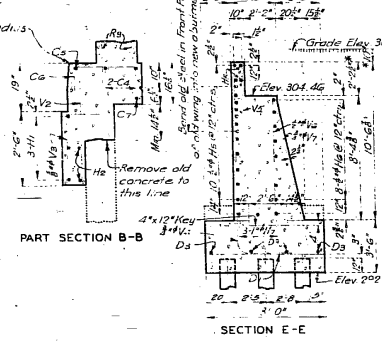


**DETAILS OF ABUTMENT NO. 1**

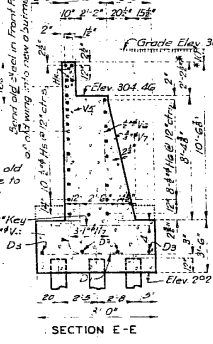
Drawn June 1940 By D. K. M.  
 Traced Sept. 1940 By J. T. F.



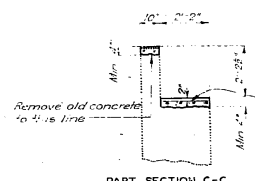
**PART SECTION A-A**



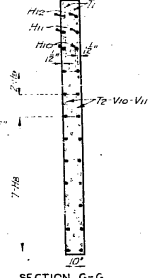
**PART SECTION B-B**



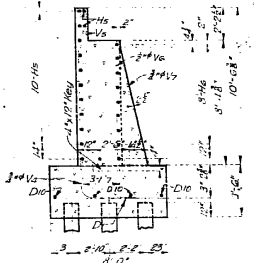
**SECTION C-C**



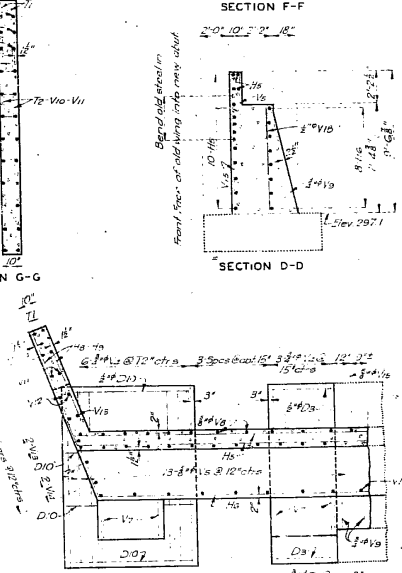
**PART SECTION C-C**



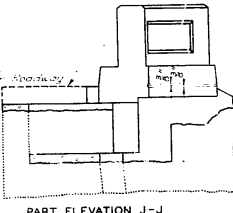
**SECTION G-G**



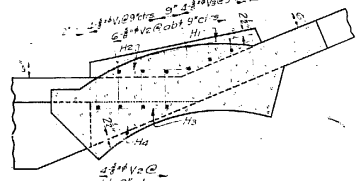
**SECTION D-D**



**HORIZONTAL SECTION THRU BACKWALL & WING**



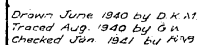
**PART ELEVATION J-J**



**PART SECTION H-H**  
 Note: Curb reinforcing not shown.

**BRIDGE OVER HARVIELL DITCH**  
 STATE ROAD FROM JUNCTION ROUTE 14 SOUTH  
 ABOUT 8.5 MILES S.W. OF HARVIELL  
 PROJECT 5N-FA 58-B(4)J.5 67 STA. 719+00.00  
 BUTLER COUNTY

FED ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	CHG N	TOTAL SHEETS
5	MO.	041845	19		



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

Sheet No 3 of 5

F-6652

TYP SEC. Earthwork

STANDARDS

Route 27  
Sec. -- Proj. 583-4  
County E. 15  
Sheet 19

SURFACE-CURB-GUTTER  
APPROACHES



DRAINAGE

CURB

BRIDGES

Curb Gut.

CONCRETE CURBS, PORTS,  
FINISH

CLOT

MISC.

27-1-61