

100-1000 UNITS AD	100-1000 UNITS AD	100-1000 UNITS AD	100-1000 UNITS AD	100-1000 UNITS AD	100-1000 UNITS AD
5	10	58		1	122

"B"

FEDERAL AID PROJECT

SEALS

INDEX OF SHEETS

SHEET NO. 1 TITLE PAGE

2. TYPICAL CROSS SECTION OF IMPROVEMENT.  
PLAIN AND PROFILE STATIONS 100 TO 300+.

STATION	HEIGHT
100	271.00
110	271.00
120	271.00
130	271.00
140	271.00
150	271.00
160	271.00
170	271.00
180	271.00
190	271.00
200	271.00
210	271.00
220	271.00
230	271.00
240	271.00
250	271.00
260	271.00
270	271.00
280	271.00
290	271.00
300	271.00

BRIDGE PLANS

39 LOW-WATER BRIDGE STATION 520+54  
 40 535+40  
 41 BRIDGE 9' STR. 74+15.4 MID STR. 74+36.3  
 42 752+14.5 74+50.0  
 43 577+56.5 74+50.0  
 44 1187+188.0 74+50.0  
 45 74+0.0  
 46 CULVERT PLANS:  
 47 717  
 48 7125  
 49 N 226  
 50 48-79 CROSS-SECTIONS.

END OF PROJECT, STA. 128+90.70.  
J.N. COR. SEC. 33 TWP. 22 N. R. 5 E.

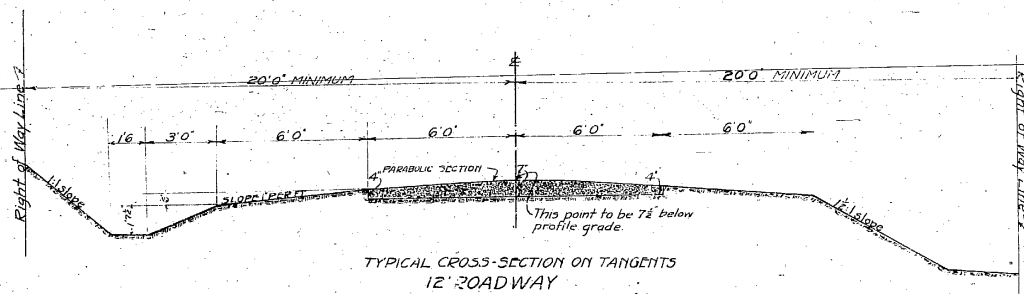
SECTION LINE  
FENCE LINE  
RIGHT OF WAY LINE  
RAILROAD  
COUNTY ROAD  
DRAINAGE DITCH  
BASE OF SURVEY LINE  
TELEPHONE POLE  
CULVERT

GROUND FILE.

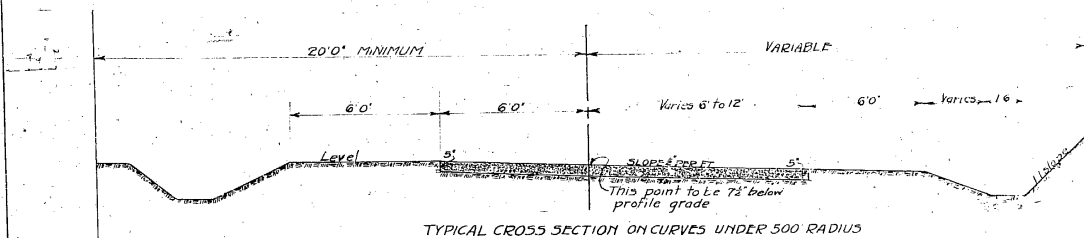
GRADE LINE...  
SURFACE LINE...  
GRADE LINE

E. C. NICKLEY, HX. ENGR.  
PO BOX 184, BLUFF, MO.

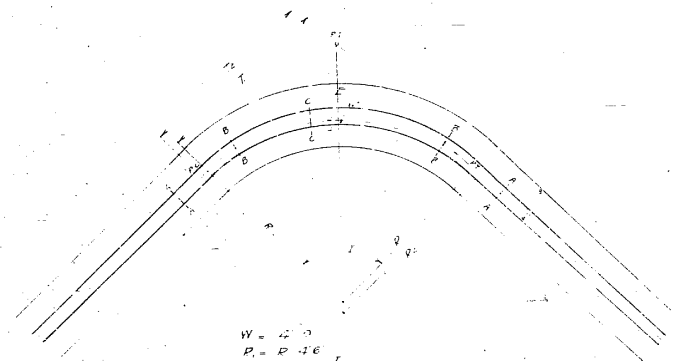
NO. 412-571-5-175A. 11



**TYPICAL CROSS-SECTION ON TANGENTS**  
**12' ROADWAY**  
 GRAVEL PAVEMENT SPECIFICATION 'C'  
 Depths of gravel shown are compacted depths in place complete.  
 This section requires the same amount of earthwork as cross sections from which quantities were computed.



**TYPICAL CROSS SECTION ON CURVES UNDER 500' RADIUS**



$W = 12.0$   
 $P = P + 1.6$   
 $E = P \cos \frac{1}{2}$   
 $T = P \tan \frac{1}{2}$   
 $L = P \tan \frac{1}{2}$   
 $APC = \frac{1}{2} (P + P') + (P' \sin \frac{1}{2})$   
 SUPERELEVATION BEGINS AT SECTION AA 25' FROM PC OR PT  
 AND ATTAINS ITS FULL VALUE AT SECTION BB 50' FROM AA

**TYPICAL PLAN OF CURVES UNDER 500' RADIUS**

# MISSOURI STATE HIGHWAY DEPARTMENT

## ESTIMATE SHEET

County of BUTLER  
Length 8.526 miles

EST. NO.	DATE	BY	CHECKED	DATE	BY
36	7	EA			

See B

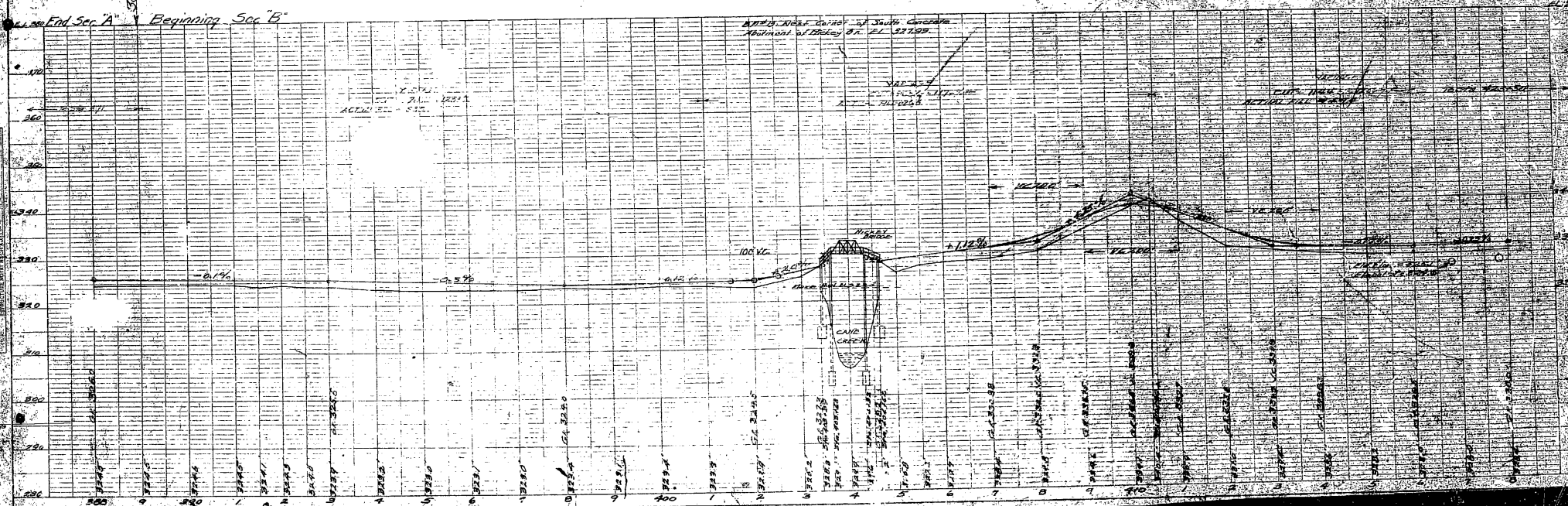
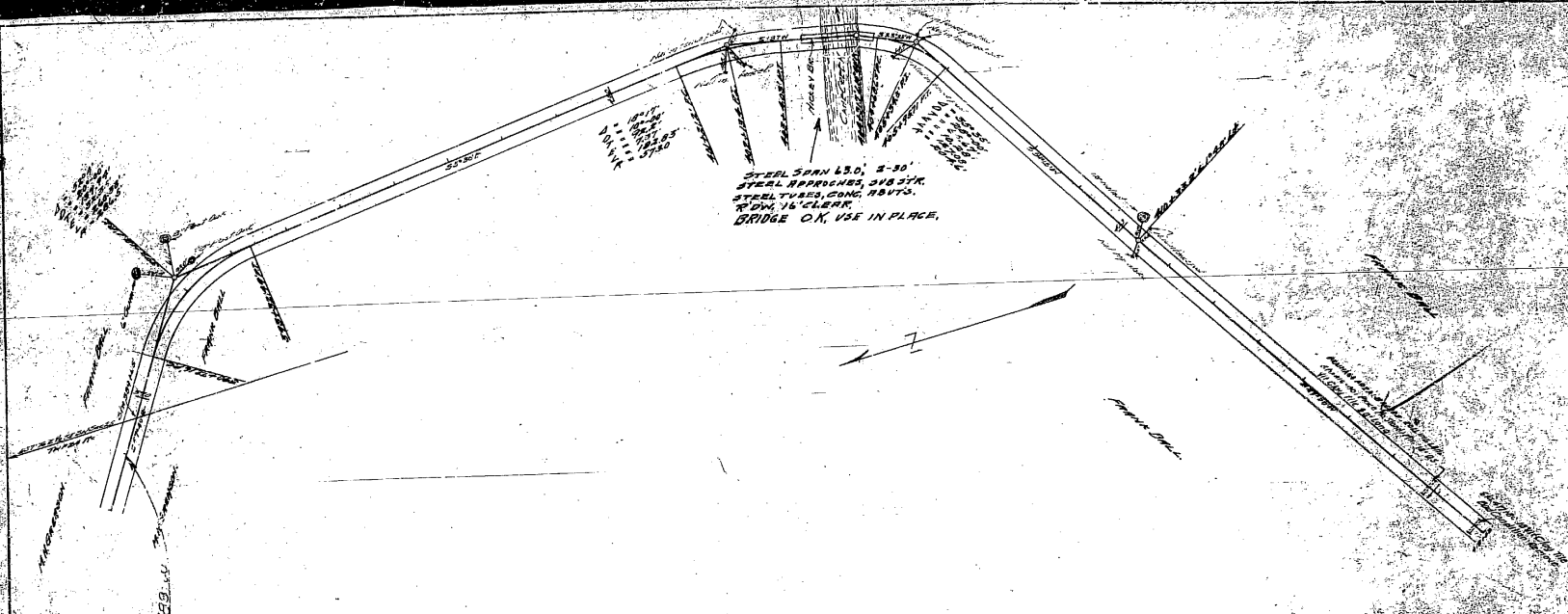
Description of paving 12" Gravel Spec C

Prepared by Dean Wilson

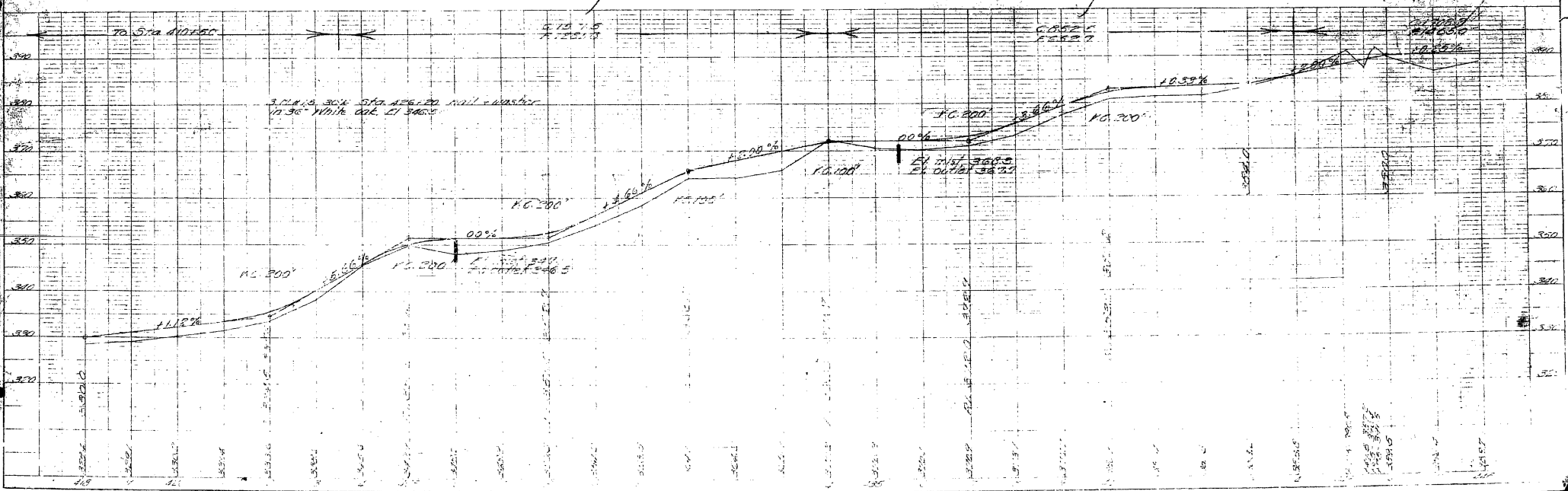
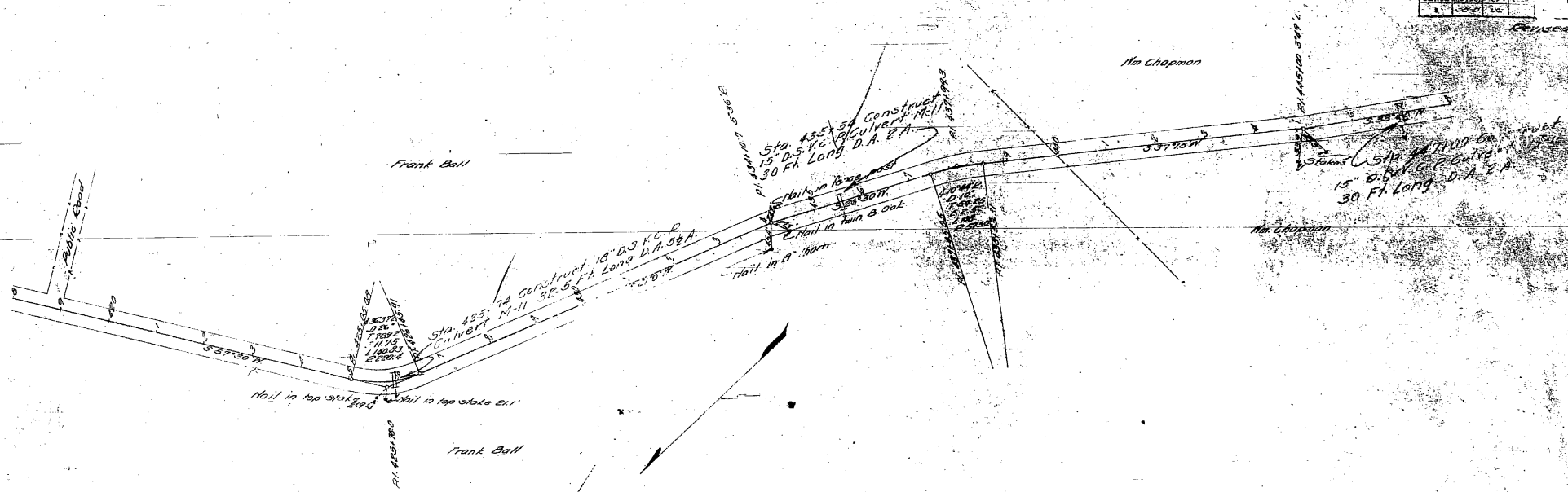
Date 4-17-22

Name of road POPULAR BLUFF - ARK. STATE LINE

EXCAVATION				MIL CULVERTS				V.C.P.	STANDARD CULVERTS				SUMMARY				
STATION	EARTH	ROCK	BORROW	STATION	15"	18"	24"	30"	STATION	STAND.	LENGTH	B' CONC	STEEL	ITEM	DESCRIPTION	UNIT	QUANTITY
309				416+20		30			572+27	225	24	16.7	1175	3	EARTH EXCAVATION	CU YD	35196
407	851+00			425+34		32%								4	BOBROW	CU YD	2560
410+50	863+00			435+54	30									31	OVERPAVE		1000
423+50	1144.5			443+32	30									32	CLASS "B" CONC MAS	CU YD	1167
434	1571.5			451+51			32%							33	REIN FOR	LB	936
439	1572.5			466+50		30								34	18" V.C.P. CULVERT	LINEAL	230
450	1638.5			479+70			32%							35	18" V.C.P. CULVERT	LINEAL	230
454	1639.5			483+70		30								36	18" V.C.P. CULVERT	LINEAL	230
464	1639.5			493+72		30								37	18" V.C.P. CULVERT	LINEAL	230
470+30	1639.5			500+90	30									38	18" V.C.P. CULVERT	LINEAL	230
480	1672.9			513+00	30									39	18" V.C.P. CULVERT	LINEAL	230
502	1722.5			523+20		30								40	18" V.C.P. CULVERT	LINEAL	230
514	1782.5			536+04		32%								41	18" V.C.P. CULVERT	LINEAL	230
526+75	1810.5			546+10	30									42	18" V.C.P. CULVERT	LINEAL	230
536+10	1830.5			560+32		30								43	18" V.C.P. CULVERT	LINEAL	230
544+50	1835.7			567+50		30								44	18" V.C.P. CULVERT	LINEAL	230
557+70	2110.7			575+00		30								45	18" V.C.P. CULVERT	LINEAL	230
568+50	1130.5			583+32	30									46	18" V.C.P. CULVERT	LINEAL	230
581	1099.5			593+64		30								47	18" V.C.P. CULVERT	LINEAL	230
590+25	1260.7			603+10		30								48	18" V.C.P. CULVERT	LINEAL	230
604	1142.5			613+32		30								49	18" V.C.P. CULVERT	LINEAL	230
618	1329.5			623+64		37%								50	18" V.C.P. CULVERT	LINEAL	230
628+90	1581.5			633+96		37%								51	18" V.C.P. CULVERT	LINEAL	230
636	1659.5			643+32		37%								52	18" V.C.P. CULVERT	LINEAL	230
650	2057.5			653+64		37%								53	18" V.C.P. CULVERT	LINEAL	230
656	1641.5			663+96		37%								54	18" V.C.P. CULVERT	LINEAL	230
666	492.5			673+32		37%								55	18" V.C.P. CULVERT	LINEAL	230
676	371.5	212.5		683+64	30									56	18" V.C.P. CULVERT	LINEAL	230
686	711.5	729.5		693+96	30									57	18" V.C.P. CULVERT	LINEAL	230
696	502.5	721.5		703+32		32%								58	18" V.C.P. CULVERT	LINEAL	230
706	233.5			713+64		32%								59	18" V.C.P. CULVERT	LINEAL	230
716	207.5	64.5		723+96		37%								60	18" V.C.P. CULVERT	LINEAL	230
726	431.5	709.5		733+32		37%								61	18" V.C.P. CULVERT	LINEAL	230
736	266.5	560.5		743+64		35								62	18" V.C.P. CULVERT	LINEAL	230
746	466.5	493.5		753+96		37%								63	18" V.C.P. CULVERT	LINEAL	230
756	326.5	618.5		763+32		27%								64	18" V.C.P. CULVERT	LINEAL	230
766	526.5	619.5		773+64		30								65	18" V.C.P. CULVERT	LINEAL	230
776	559.5			783+96	280	595	290	33						66	18" V.C.P. CULVERT	LINEAL	230
786	293.5	21.5												67	18" V.C.P. CULVERT	LINEAL	230
791+51	5.5	735.5												68	18" V.C.P. CULVERT	LINEAL	230
802	0	1000.5												69	18" V.C.P. CULVERT	LINEAL	230
811+50	171.5	1130.5												70	18" V.C.P. CULVERT	LINEAL	230
822+50	591.5													71	18" V.C.P. CULVERT	LINEAL	230
830+50	955.5													72	18" V.C.P. CULVERT	LINEAL	230
GRAVEL PAVEMENT																	
12143050.0-50900.0 20725 14751 240611 601050																	
Curves 2106.11																	
Bridges 227.25																	
Equations 32.73																	
RIP RAP																	
518+50 521+00 56.5 3 gpd																	
535+00 536+00 133.4																	
MONUMENTS																	
467+370																	
511+342																	
563+60.0																	
606+11.3																	
602+50.8																	
603+10.9																	
735+10.6																	
748+28.1																	
774+72.0																	
801+13.2																	
827+62.0																	
SUMMARY																	
ITEM DESCRIPTION UNIT QUANTITY																	
3 EARTH EXCAVATION CU YD 35196																	
4 BOBROW CU YD 2560																	
31 OVERPAVE																	
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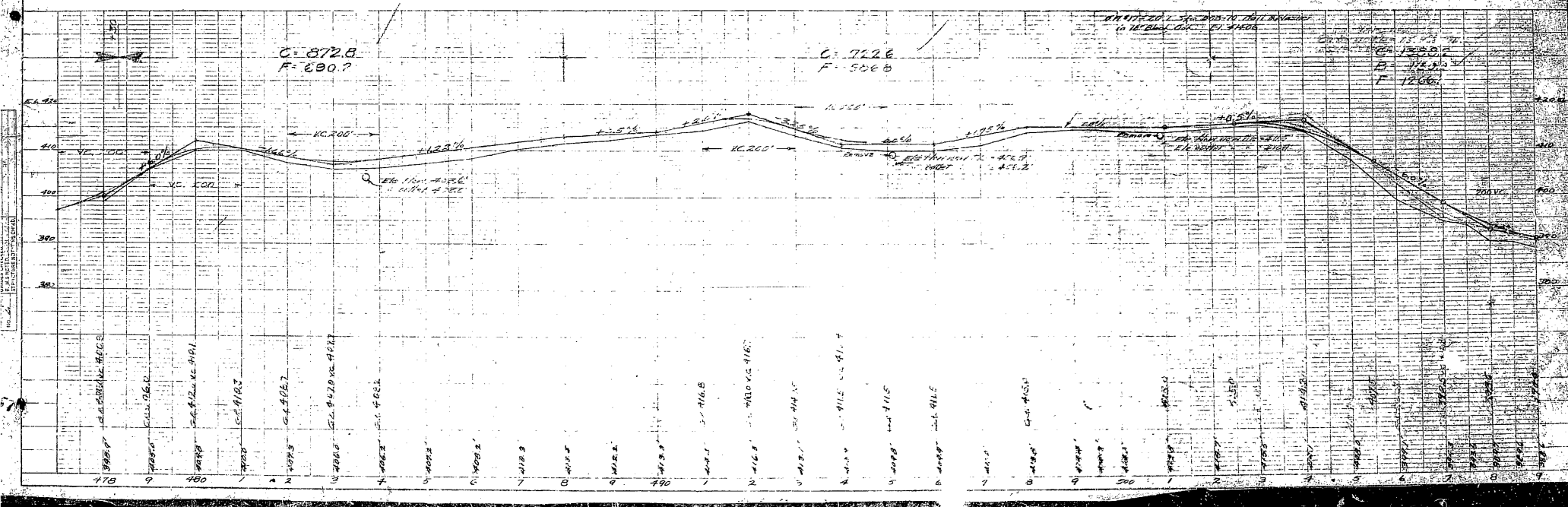


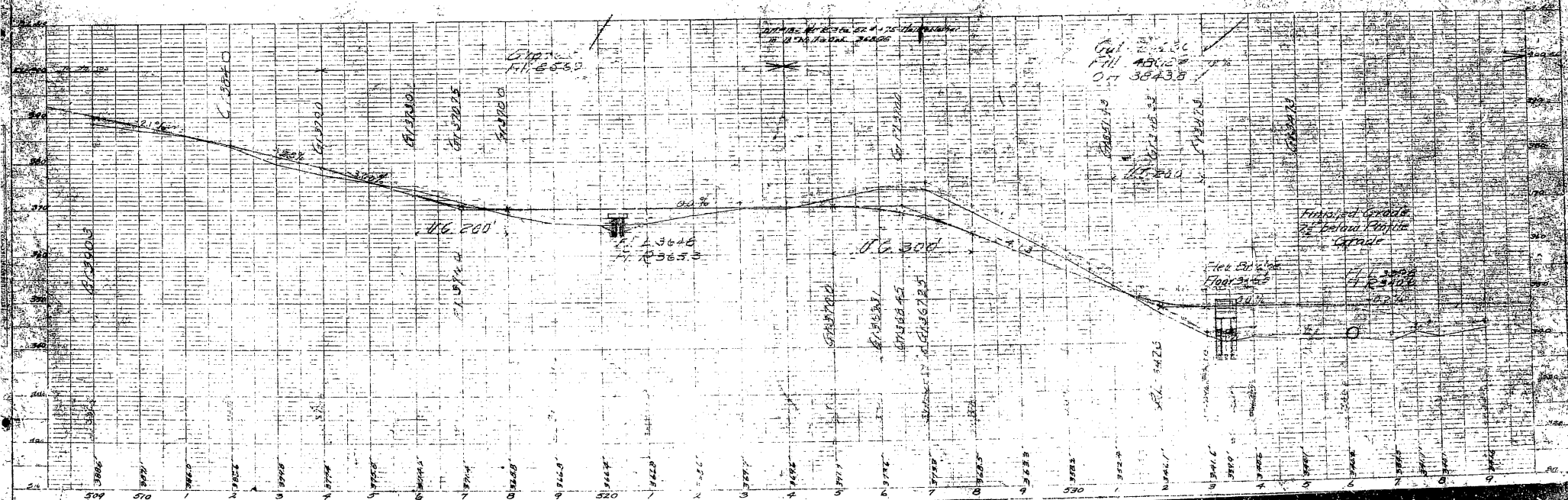
Notes: 1. Bridge is to be used in place. 2. Steel spans are 63.0' long. 3. Steel approaches are 218.37K. 4. Steel tubes are used for abutts. 5. 10' dia. 16" clear. 6. Bridge is O.K. for use in place.



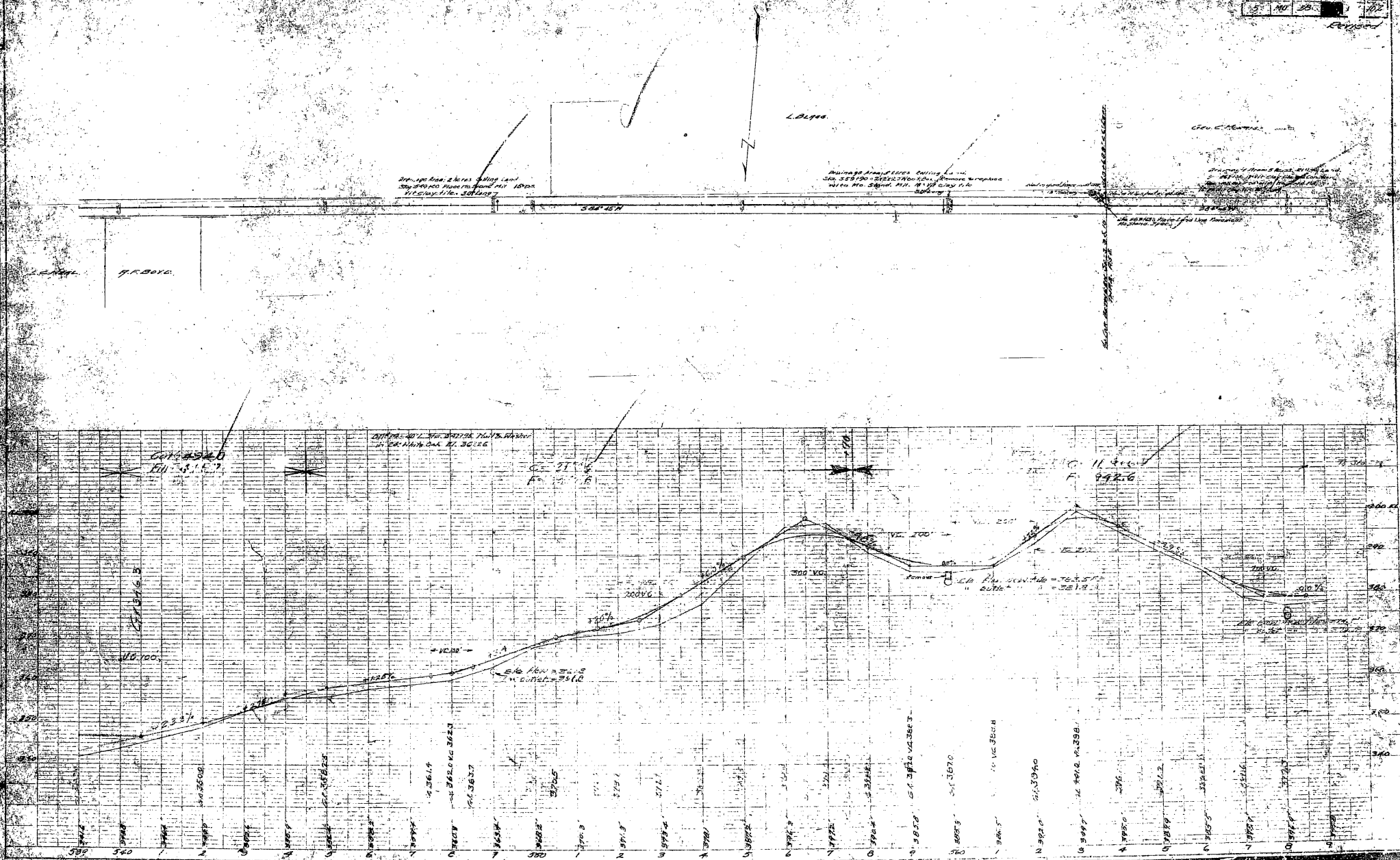


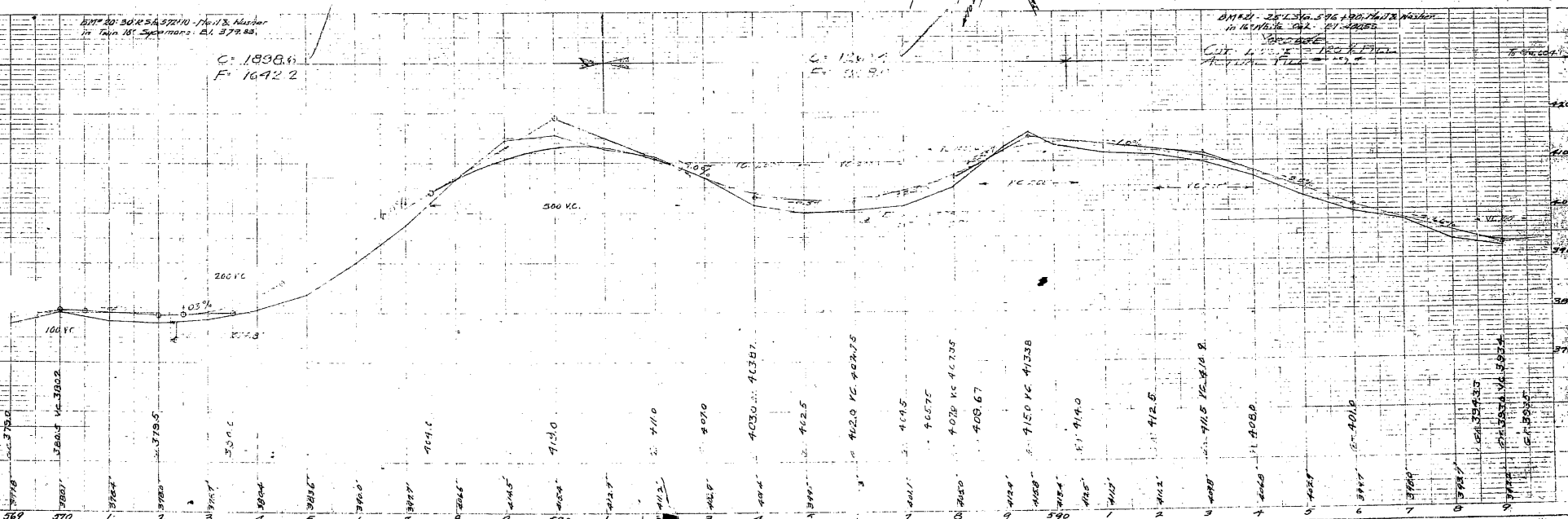




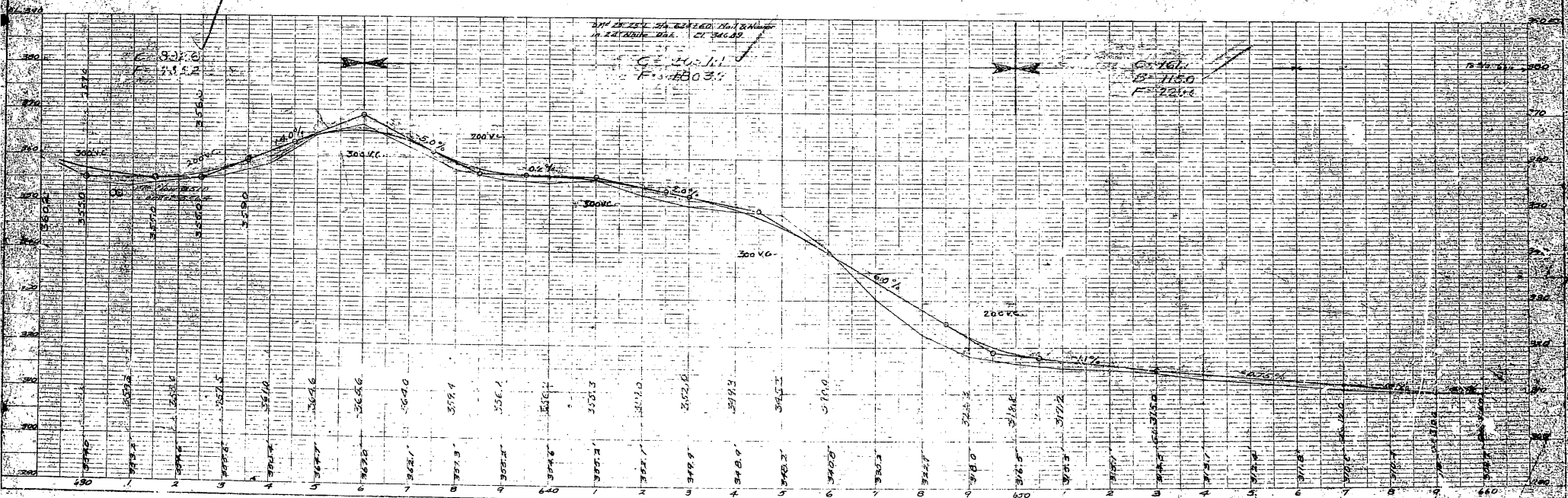
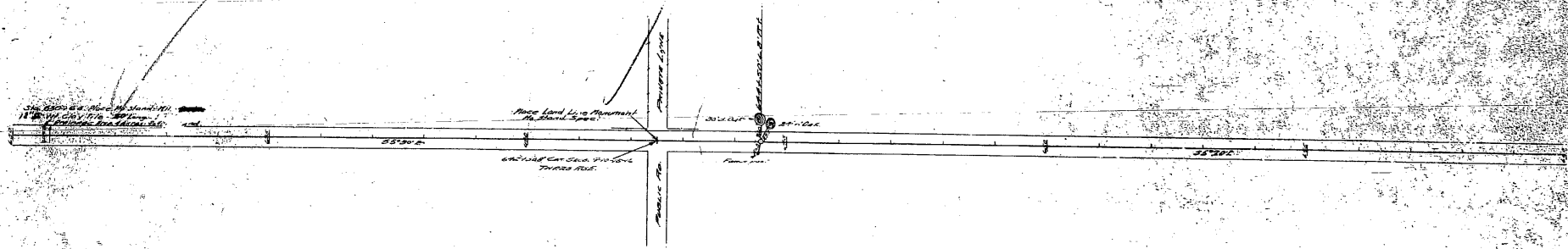




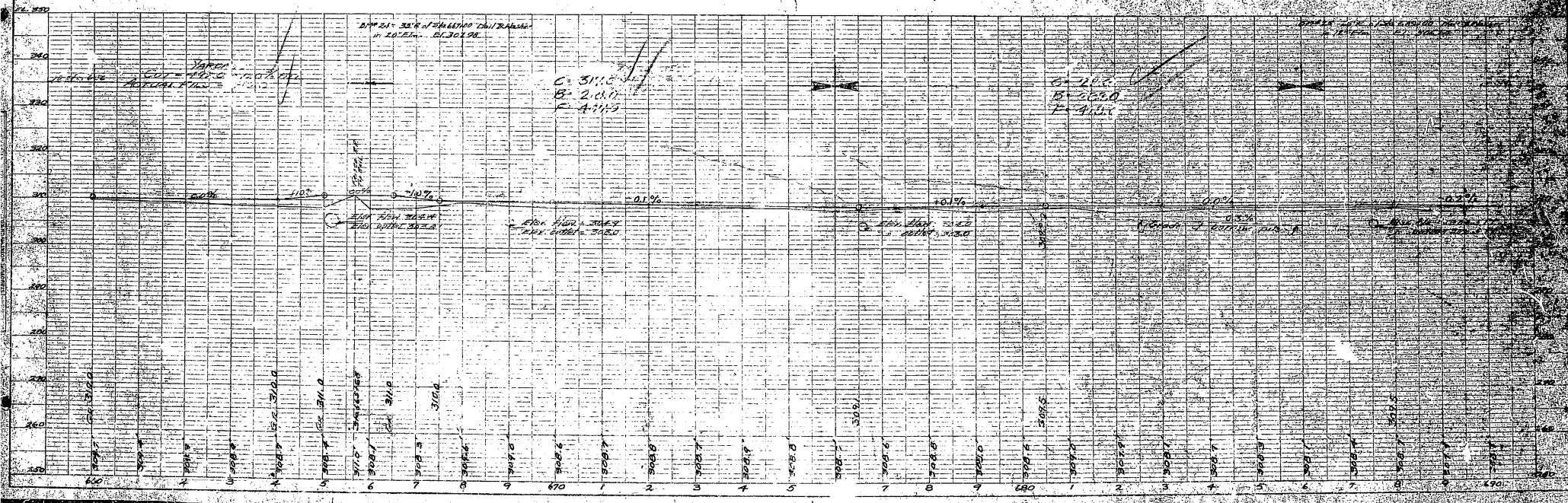
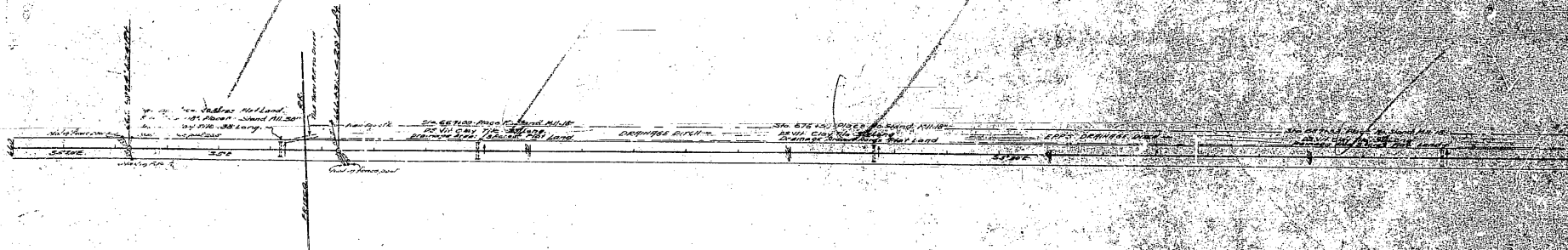






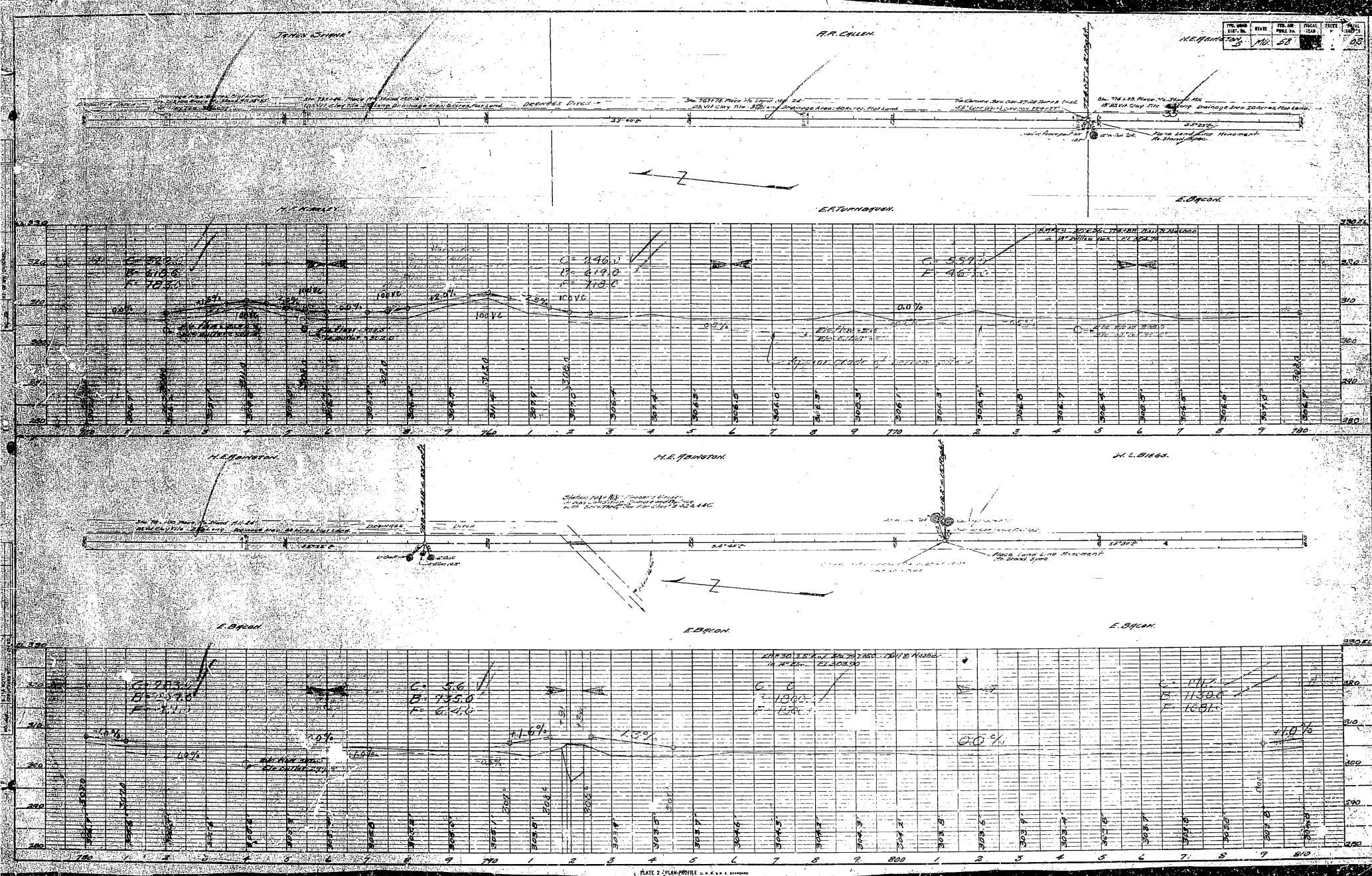


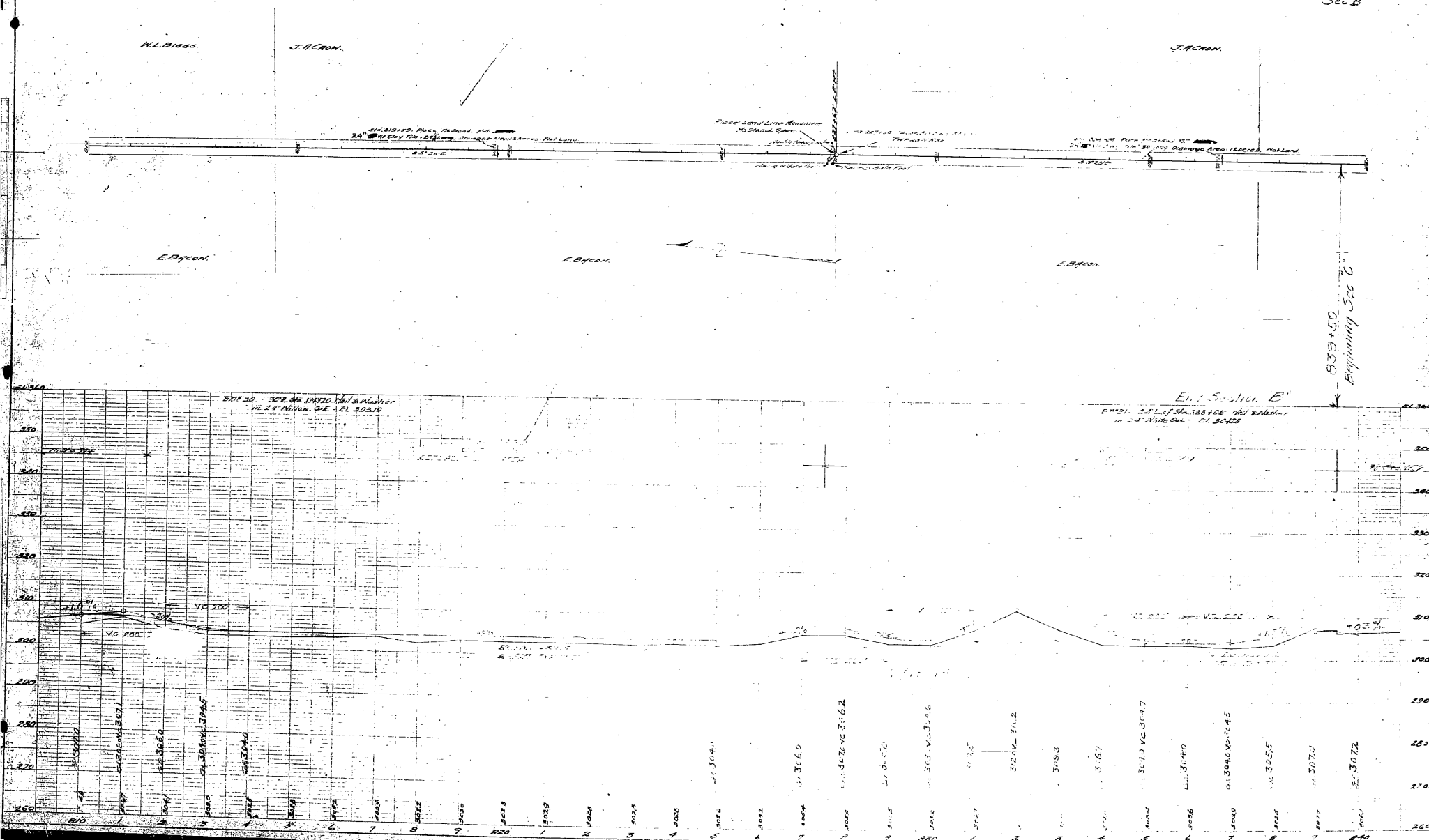




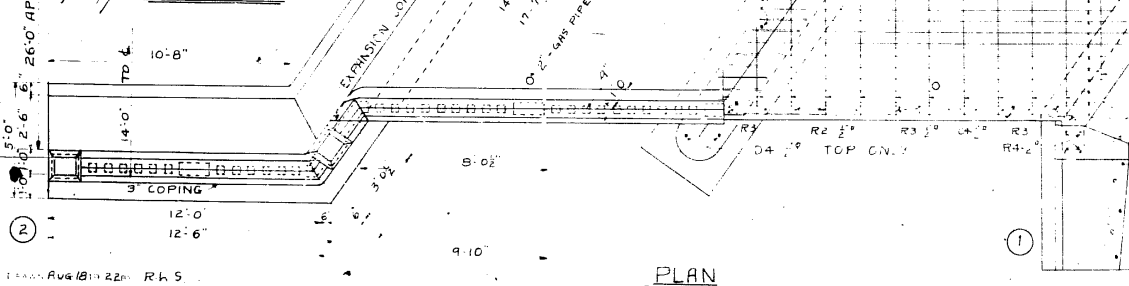
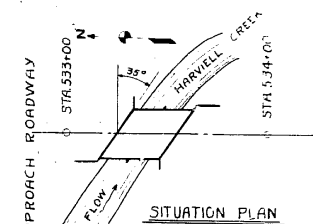
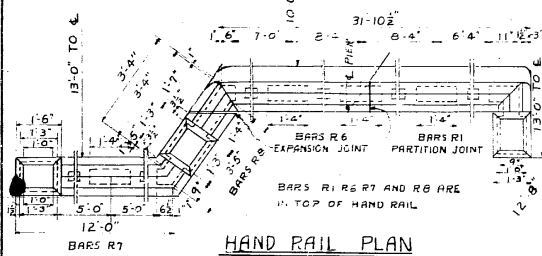
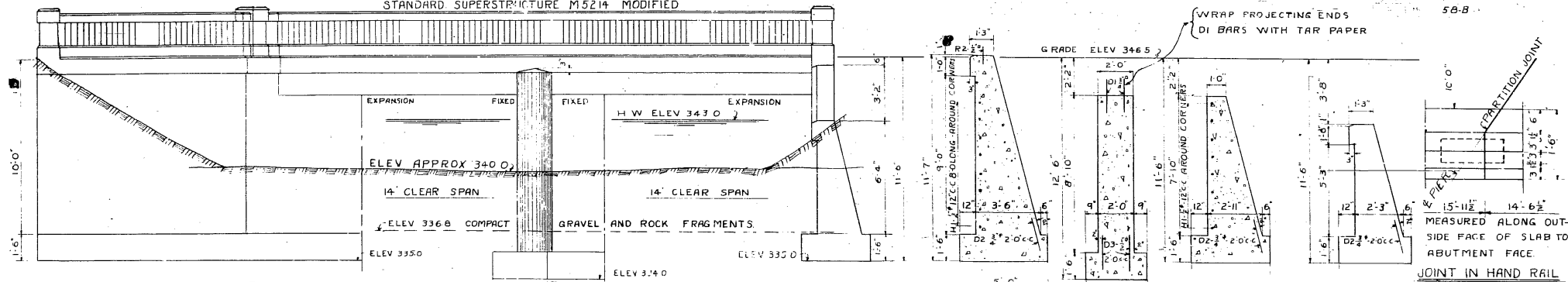








## STANDARD SUPERSTRUCTURE M5214 MODIFIED



## BILL OF REINFORCEMENT

NO.	SIZE	LENGTH	MARK	REMARKS
10	1/2"	17'-3"	S1	STRAIGHT
11	1/2"	23'-10"	S2	SEE SKETCH
2	3/8"	5'-0"	S3	
2	3/8"	7'-3"	S4	
2	3/8"	9'-6"	S5	
2	3/8"	11'-6"	S6	
2	3/8"	13'-9"	S7	
2	3/8"	15'-9"	S8	
2	3/8"	18'-0"	S9	
2	3/8"	20'-0"	S10	
2	3/8"	22'-3"	S11	
4	2"	16'-0"	C1	STRAIGHT
4	2"	11'-9"	C2	
4	2"	3'-0"	C3	
4	2"	15'-6"	C4	
9	2"	2'-0"	D1	
46	2"	2'-0"	D2	
30	2"	2'-0"	D3	
4	2"	2'-0"	D4	
32	2"	3'-0"	H1	
4	2"	15'-3"	S9	
4	2"	17'-3"	S10	
4	2"	16'-0"	R1	
44	2"	1'-0"	R2	
26	1/2"	4'-0"	R3	SEE SKETCH
24	1/2"	4'-0"	R4	STRAIGHT
392	1/2"	1'-6"	R5	WIRES
4	2"	15'-3"	R6	STRAIGHT
4	2"	11'-9"	R7	
4	2"	3'-0"	R8	

## TABLE OF QUANTITIES

LOCATION	HAND RAIL	SLAB & CURB	ABUTMENT	PIER	TOTAL
CONCRETE 123	4.7				4.7
CONCRETE 124		36.3			36.3
CONCRETE 135			113.1		113.1
STEEL LBS	550	3560	390		4500

## NOTE

THE ABOVE BILL OF REINFORCEMENT CONTAINS ALL THE STEEL NECESSARY FOR THIS BRIDGE

## NOTE

ALL THE GENERAL NOTES WHICH APPLY TO STANDARD SUPERSTRUCTURE M5214 WILL ALSO APPLY TO THIS BRIDGE.  
CONCRETE IN ABUTMENT 135  
CONCRETE IN PIER 135

OVER HARVILL CREEK  
FROM POPLAR BLUFF TO ARKANSAS  
1 MILE FROM HARVILL, MO.  
58 B 533+25

BUTLER

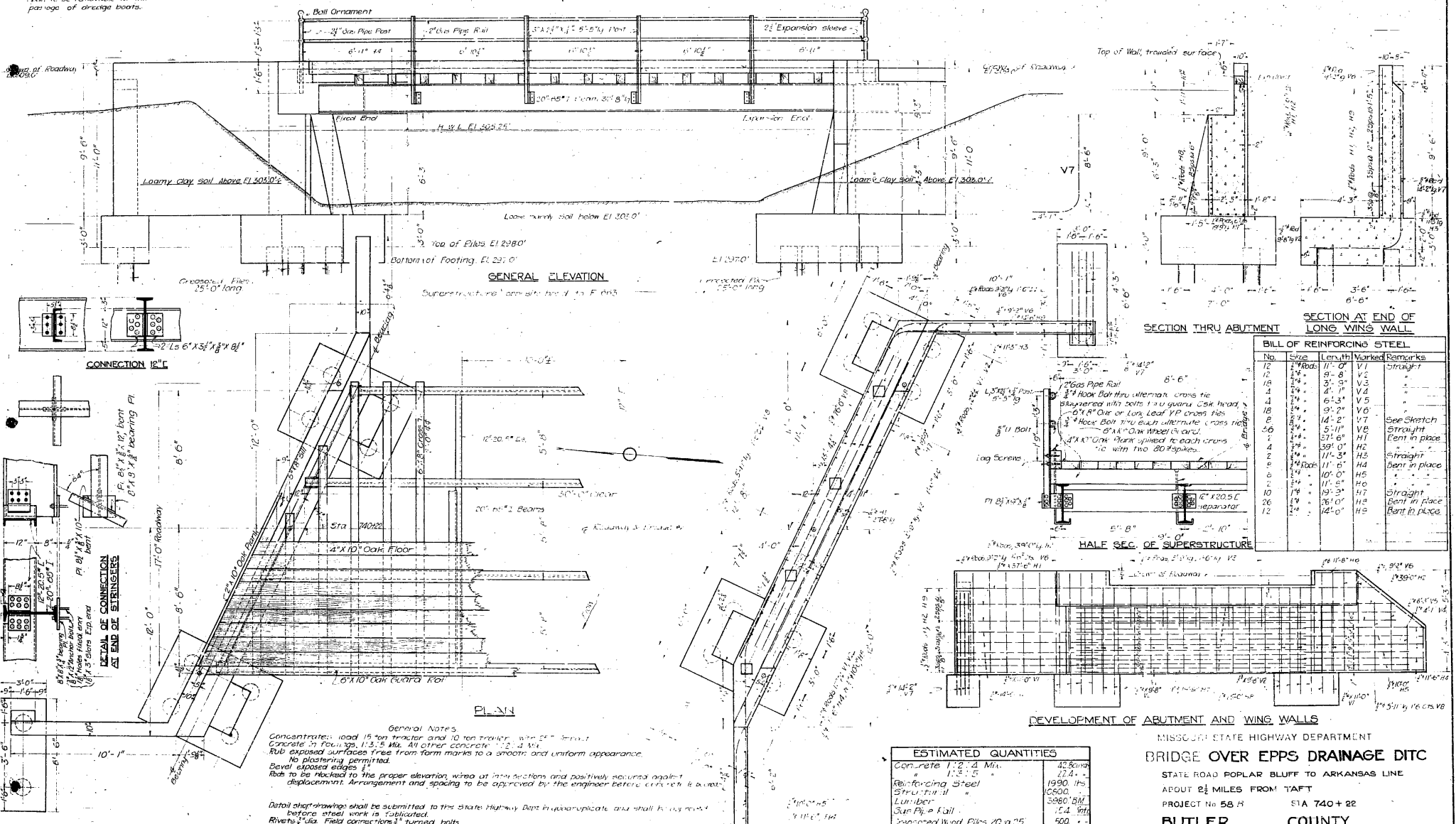
M5214  
F1140

1. DRAWN BY: R.H.S.  
2. CHECKED BY: J.W.C.



NOTE: This is to be removable for the passage of dredge boats.

STATE	FED. AID DIST. NO.	PROJECT NO.	SECTION	DATE
MO.	58B	1921		



Drawn Mar. 1921 by C. C. C.

Ch'kd Eng. 1921 by C. C. C.

MISSOURI STATE HIGHWAY DEPARTMENT

**BRIDGE OVER EPPS DRAINAGE DITCH**

STATE ROAD POPLAR BLUFF TO ARKANSAS LINE

ABOUT 2 1/2 MILES FROM TAFT

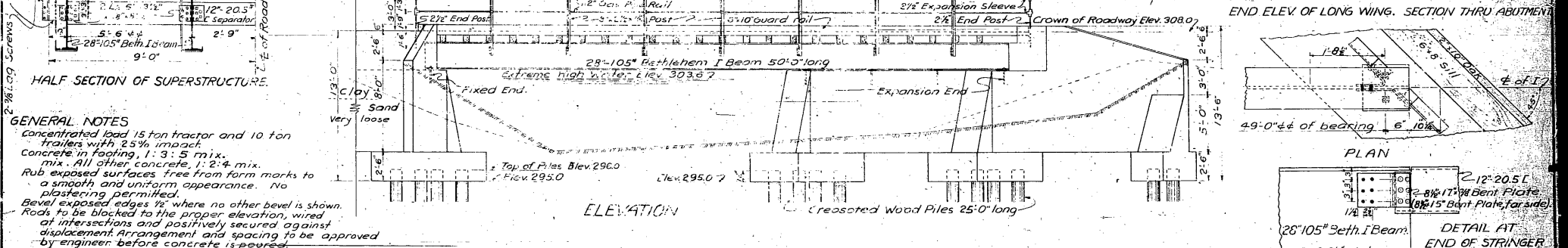
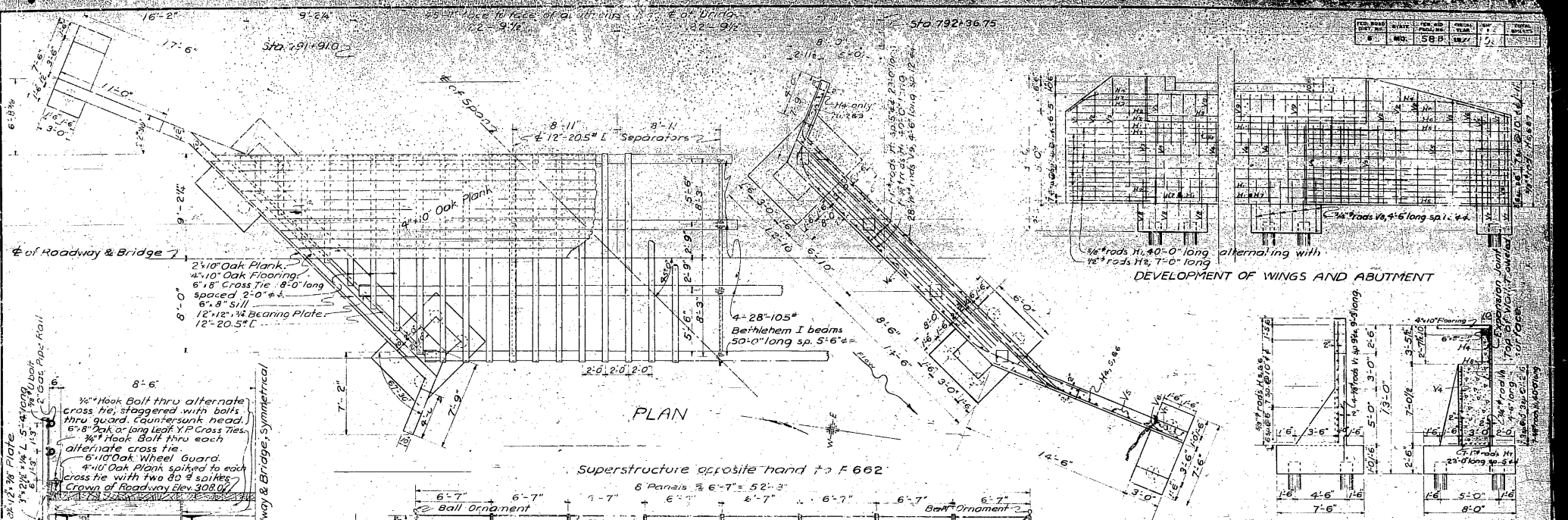
PROJECT No 58 B STA 740+22

**BUTLER COUNTY**

Submitted by *Chas. S. Mann* BRIDGE ENGINEER

Approved by \_\_\_\_\_ STATE HIGHWAY ENGINEER

**E-664**



**GENERAL NOTES**

concentrated load 15 ton tractor and 10 ton  
trailers with 25% impact.

Concrete in Footing, 1:3:5 mix.

Concrete in Slab, All other 2:4:8 mix.

Rub exposed surfaces free from form marks to  
a smooth and uniform appearance. No  
plastering permitted.

Rebar exposed edges to where no other level is shown.  
Roads to be blocked to the proper elevation, wired  
at intersections and positively secured against  
displacement during construction and spacing to be approved  
by engineer before construction.

Very low

4  
6

BILL OF REINFORCING STEEL			
Qty	Size	Length	Remarks
14	5/8"	40'-0"	H <sub>1</sub> Bent in Field
18	5/8"	7'-0"	H <sub>2</sub> Straight
4	1/2"	6'-0"	H <sub>3</sub> "
2	1/2"	48'-0"	H <sub>4</sub> Bent in Field
6	5/8"	17'-6"	H <sub>5</sub> Bent in Field
12	5/8"	23'-0"	H <sub>1</sub> Straight
4	1/2"	30'-0"	H <sub>2</sub> "
2	1/2"	8'-5"	V <sub>1</sub> Straight
2	1/2"	9'-0"	V <sub>2</sub> "
9	1/2"	10'-8"	V <sub>3</sub> "
9	1/2"	6'-9"	V <sub>4</sub> "
4	1/2"	9'-0"	V <sub>5</sub> "
6	7/8"	7'-10"	V <sub>6</sub> "
8	5/8"	9'-3"	V <sub>7</sub> "
4	5/8"	4'-6"	V <sub>8</sub> "
16	1/2"	4'-6"	V <sub>9</sub> "

ESTIMATED QUANTITIES

Concrete, 1:2:4 mix.	65.7 Cu.Yds.
Concrete, 1:3:5 mix.	21.4 " "
Reinforcing Steel	2970 Pounds
Structural Steel	23,850 "
Gas Pipe Rail	229 Lin. Feet.
Lumber	6,240 F.F. B.M
Crescoted Wood Piles	500 Lin. Feet

MISSOURI STATE HIGHWAY DEPARTMENT  
BRIDGE OVER HARVIELL DRAINAGE DITCH

STATE ROAD FROM POPLAR BLUFF TO ARKANSAS STATE LINE  
ABOUT 2½ MILES FROM BOOSER  
PROJECT No. 58 B STA. 791+91.0

BUTLER COUNTY

Submitted by Charles D. Nunn BRIDGE ENGINEER

Approved by W. B. Brown STATE HIGHWAY ENGINEER

F665

Drawn Feb. 9, 1921 by R.L.T.  
Ch'k'd Feb. 27, 1921 by E.C.H.

Ch'k'd Feb. 27, 1921 by E. C. D.

F665



TYP SEC - Earthwork

STANDARDS

Roll 12  
Sheet 20  
Count 12  
F 8513

SURFACE-CURB-GUTTER  
APPROACHES

DRAINAGE

BRIDGES

CONC.-REINF, APPURTS,  
FINISH ETC.

MISC.