

SHEET NUMBER	SECTION	STRUCTURE			STATION	SUBJECT	BRIDGE CONTRACT NO.
		NO.	TYPE	SPAN			
2	F 1084	Steel Truss	48'-0" SK. 25°	Over Owl Creek	414+06	Index and Title Sheet	406
3						Layout	
4						General Plan	
5						Substructure Details	
6						Std. 45'-48" SK. R. Steel Truss	
7						Truss Details	
8						Miscellaneous	
9						Road Dept. Sheet No. 13	
10						Road Plan & Profile Rd. Proj. FA 202-A	
11						Std. C-8-G Paving Section	
12						Std. Miscell. Rd. Stds. Sh. A Jan. 1928 Sk. B Dec. 1930	
13	F 1078	R.C. Arch	36'-0" SK. 15°	Over Drainage Ditch	237+07	Layout	420
14						General Plan	
15						Plan, Sections & Elevations	
16						Forming Plan, Misc. Details, Bend, Dip, & R.R. Part	
17						Road Dept. Sheet No. 9 & 10	
18						Road Plan & Profile Rd. Proj. FA 202-A	
19						Std. C-8-G Paving Section	
20						Miscellaneous Road Stds. Sheets A & B	
21						Std. Miscell. Rd. Stds. Sheets A & B	
22						Std. Detour Barricades, Etc.	
23	F 1077	R.C. Arch	36'-0" SK. 15°	Over Raccoon Creek	79+10	Layout	429
24						General Plan	
25						Section Plan	
26						Abutments, Spans & Wing Walls, Sections	
27						Abutment Plan, Wing Walls, Etc. Details	
28						Forming Plan, Misc. Details	
29						Abutments, Spans & Wing Walls, Sections	
30						Spans A, B & C, Details of Deck, Joint, etc.	
31						Road Dept. Sheet No. 9	
32						Road Plan & Profile Rd. Proj. FA 202-A	
33						Std. C-8-G Paving Sections	
34						Miscell. Road Stds. Sheets A & B	
35						Std. Detour Barricades, Etc.	

STATE OF INDIANA  
STATE HIGHWAY COMMISSION

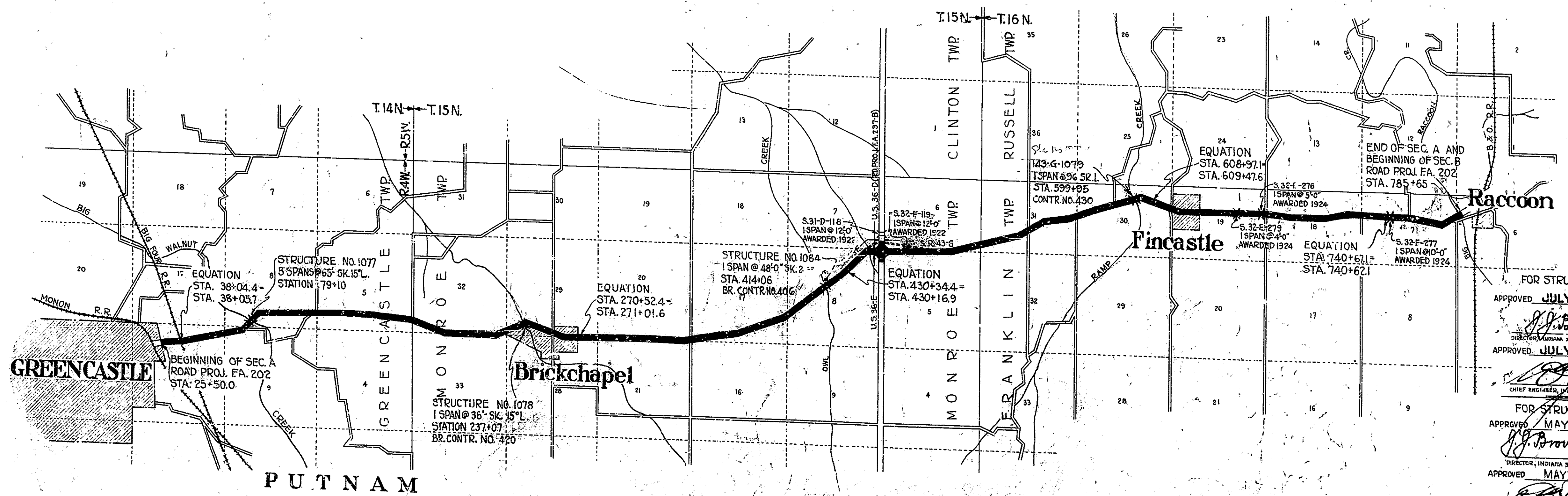
PLANS FOR BRIDGES OF SPANS OVER 20 FEET  
FOR PROPOSED

STATE HIGHWAY  
PROJECT NO. 43 SECTION F

DESCRIPTION OF ROAD PROJECT NO. FA, 202, SEC. A. GREENCASTLE-CRAWFORDSVILLE ROAD- BEGINNING AT THE NORTH CORNER LINE OF GREENCASTLE ON S.R. 43 AND RUNNING NORTH THRU BRICKCHAPEL AND FINCASTLE TO A POINT IN THE SOUTH WEST CORNER OF SECTION 6, TOWNSHIP 16 NORTH, RANGE 4 WEST, IN PUTNAM COUNTY. GROSS LENGTH-14.981 MI. MAX. GRADE-6.48%

BRIDGES OVER 20 FT. SPANS					
FILE NO.	DATE	PROJ. NO.	SECTION	DATE	STATUS
7	IND.	43	1931		

SCALE = 1" = 300'



INDIANA STATE HIGHWAY STANDARD  
BRIDGE SPECIFICATIONS, 1923 TO BE  
USED WITH THESE PLANS

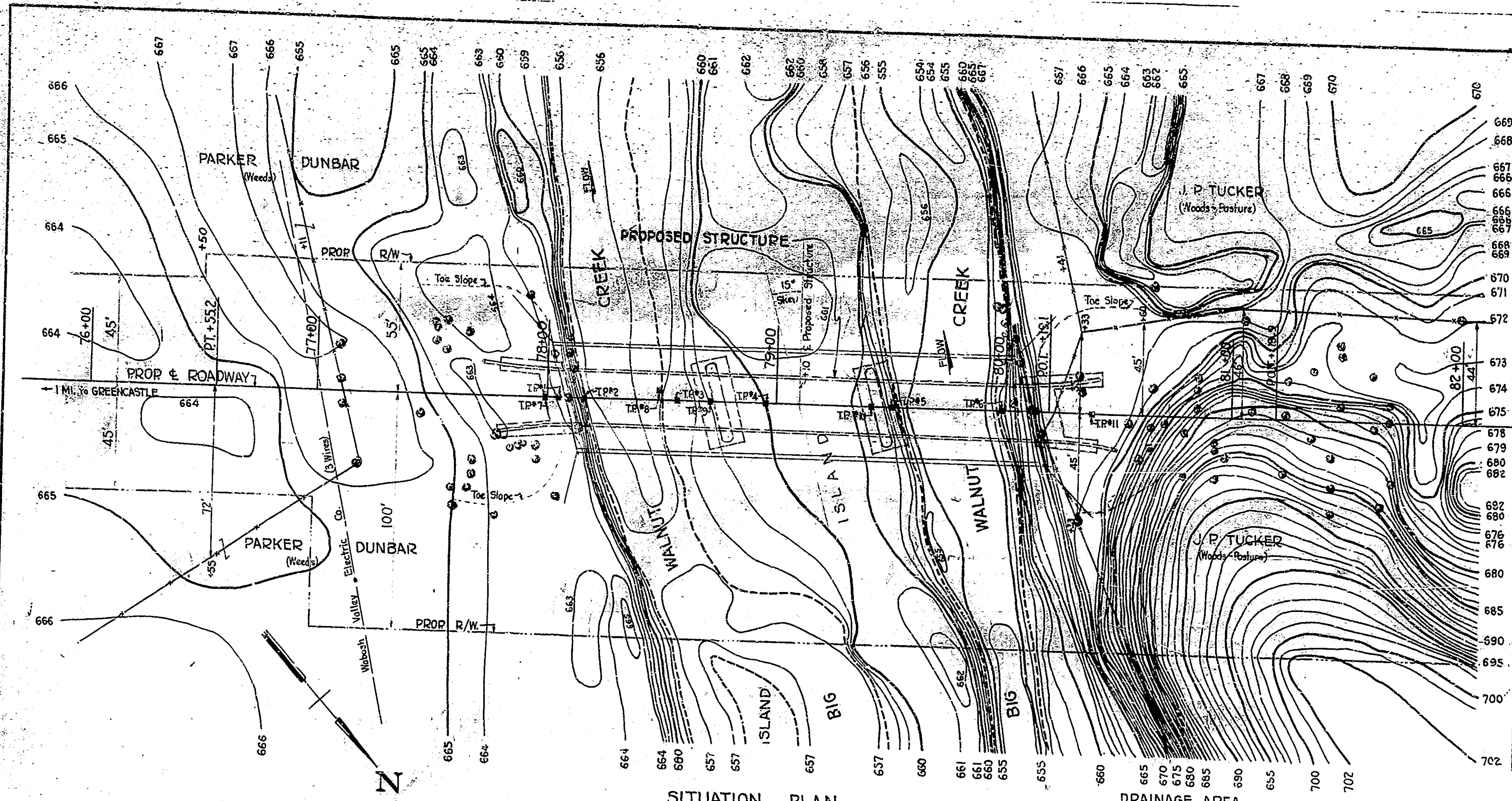
FOR STRUCTURE NO. 1077  
APPROVED JULY 3, 1931  
*J. J. Town*  
DIRECTOR, INDIANA STATE HIGHWAY COMMISSION

FOR STRUCTURE NO. 1078  
APPROVED MAY 11, 1931  
*J. J. Town*  
DIRECTOR, INDIANA STATE HIGHWAY COMMISSION

FOR STRUCTURE NO. 1084  
APPROVED MARCH 25, 1931  
*J. J. Town*  
DIRECTOR, INDIANA STATE HIGHWAY COMMISSION

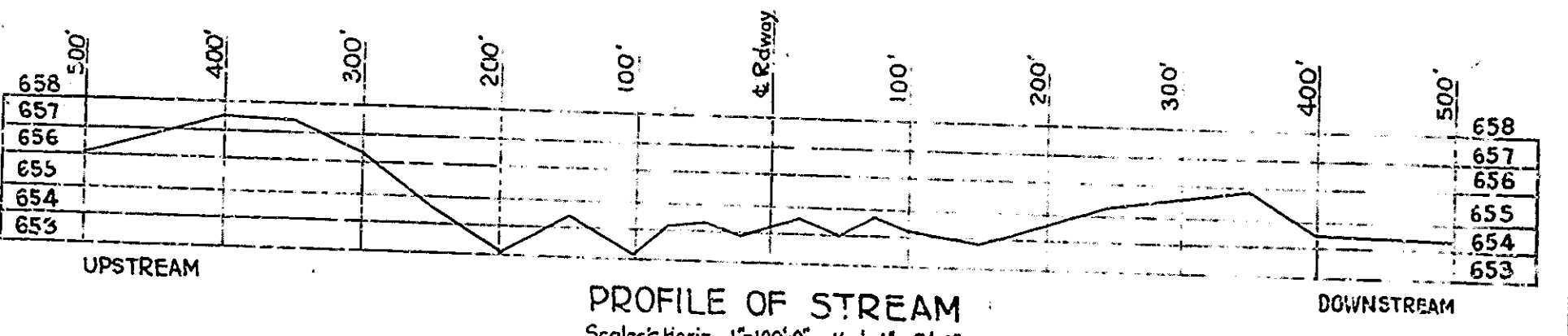


BRIDGES OVER 20' SPAN				
PER ROAD DIST. IN MI.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
7	IND.	43	131	25
SECTION-F				



PRESENT STRUCTURE ON STATE ROAD NO. 43-02 MI. UPSTREAM  
 CL. RDWY. - 15'-0" CL. SPAN - 195.0' AVE. ORD. - 19.5' EFF. TOTAL  
 WATERWAY - 3800' EFF. H.W. WATERWAY - 3700 x 8.66 - 3200' B'  
 SKEW - 30° STRUCTURE IS 2 COVERED WOODEN SPANS - 1 @ 130'  
 AND 1 @ 65'

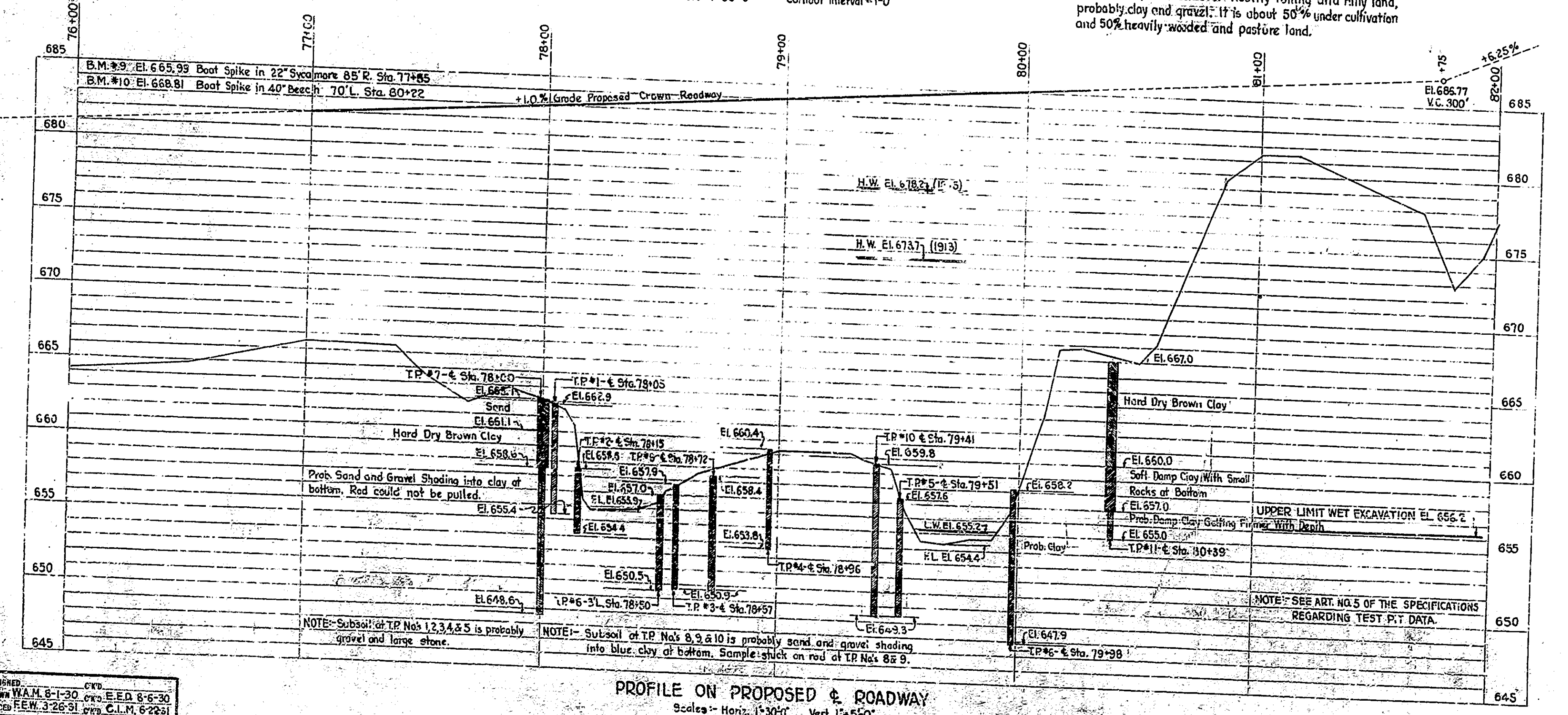
Note: See Road Plan for References.



SITUATION PLAN  
 Scale: 1"=30'-0" Contour Interval = 1'-0"

DRAINAGE AREA  
 Approx. 192,000 Acres of heavily rolling and hilly land, probably clay and gravel. It is about 50% under cultivation and 50% heavily wooded and pasture land.

PROFILE OF STREAM  
 Scales: Horiz. 1"=100'-0" Vert. 1"=5'-0"



PROFILE ON PROPOSED ROADWAY  
 Scales: Horiz. 1"=30'-0" Vert. 1"=5'-0"

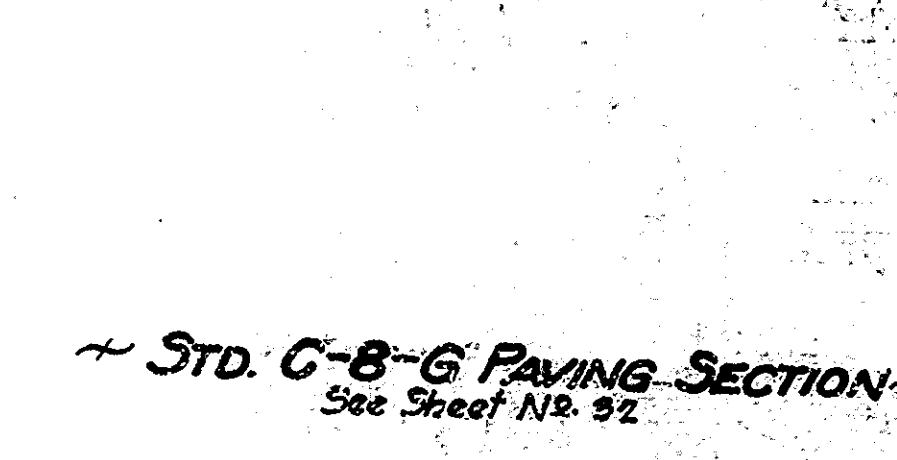
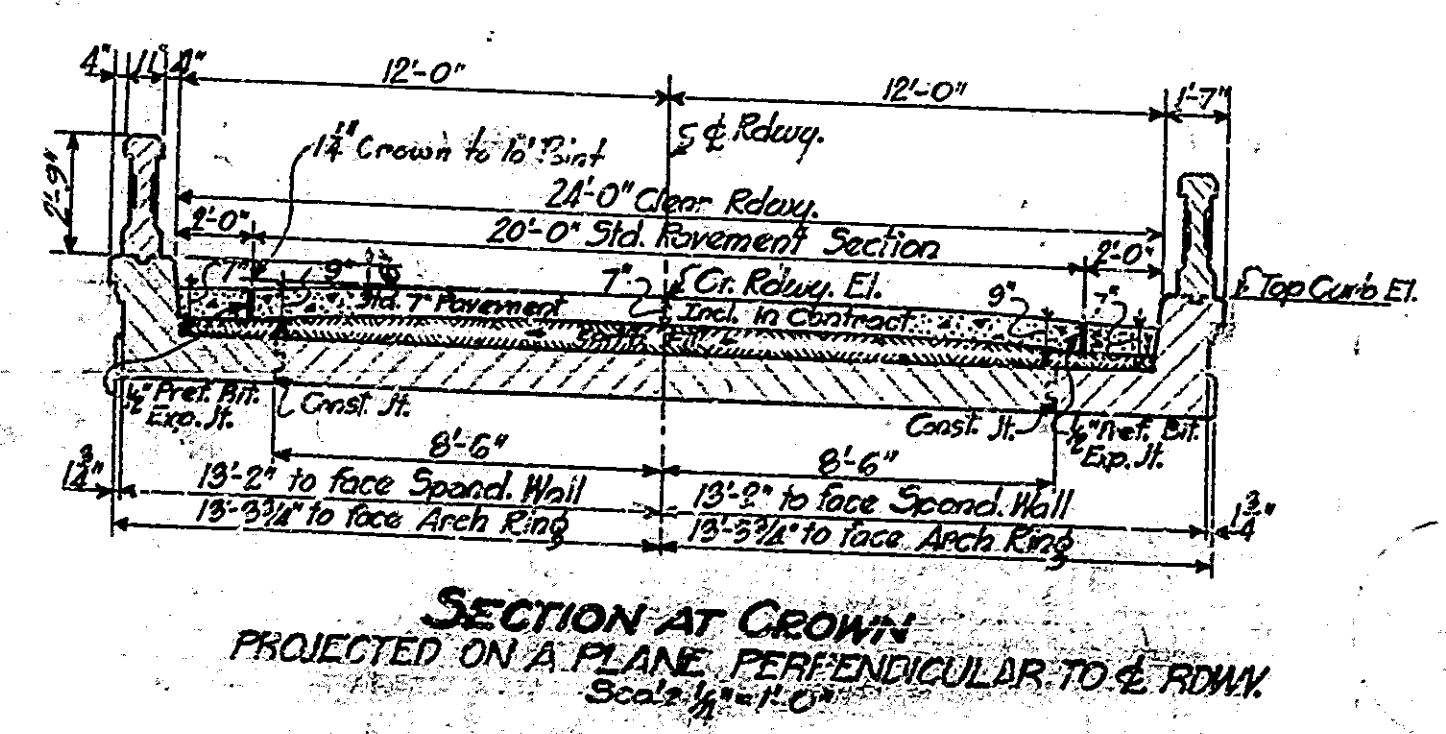
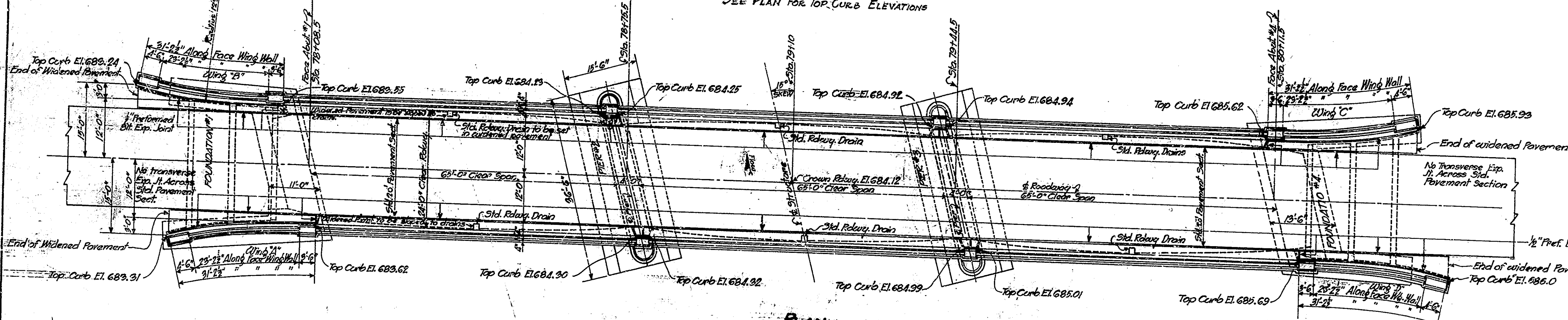
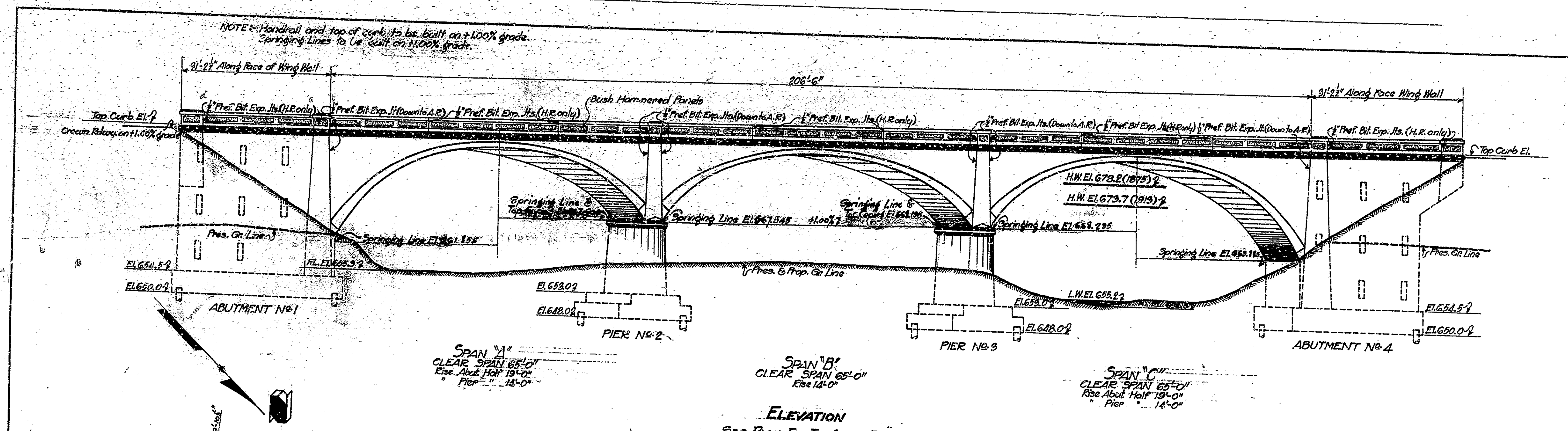
NOTE: THIS IS STRUCTURE NO. 2 ON ROAD PROJ. NO. FA. 202-A. SEE SHEET NO. 5 OF ROAD DEPT. PLANS FOR GRADE LINE, BENCH MARKS AND REFERENCES

LAYOUT  
**REINFORCED CONCRETE BRIDGE**  
 3 SPANS @ 65'-0" SKEW 15° L. 24'-0" ROADWAY  
 OVER BIG WALNUT CREEK ON STATE ROAD - 43-F  
**INDIANA STATE HIGHWAY COMMISSION**  
 PUTNAM COUNTY

SCALE: AS NOTED  
 RECOMMENDED FOR APPROVAL: *Fred Keenan* JULY 3, 1931  
 ASST. CHIEF ENGINEER IN CHARGE OF STRUCTURES  
 PROJECT: 43 SECTION: F STATION: 79+10  
 DRAWING: 21 OF 8 STRUCTURE NO. 1077



BRIDGES OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
7	IND.	48	1981	24
				35



**GENERAL NOTES**

There is no structure at this location at present. Depth of footings to be extended if found necessary. See Art. 113 of Supplement.

All concrete in handrail above top of curb E.I. to be Class "F". All concrete in footings, wingwalls, tie beams, abutments up to screedbacks and piers up to springing lines to be Class "E". All concrete in arch rings above screedbacks of abutments and springing lines shall be embedded 3" in piers and abutments below springing line; 3" in wing walls; 2" in arch rings, spandrel walls and other parts.

Abutments, wingwalls, arch rings and spandrel walls to be waterproofed in accordance with specifications. If piles are required, they shall have bearing value as shown on Art. 301 of Supplement.

See Supplement to Specifications. Gates to be raised down securely.

Bevel forms 1/4" on under side of all castings. See detail of handrail. Corner all exposed, edged 3/4" except the soffits and handrails. Approaches to be graded and paved. See Special Provisions to Sheet # 22 directed by the engineer. See Art. 901 of Supplement and Sheet # 35. Special filling material over arches indicated in this contract.

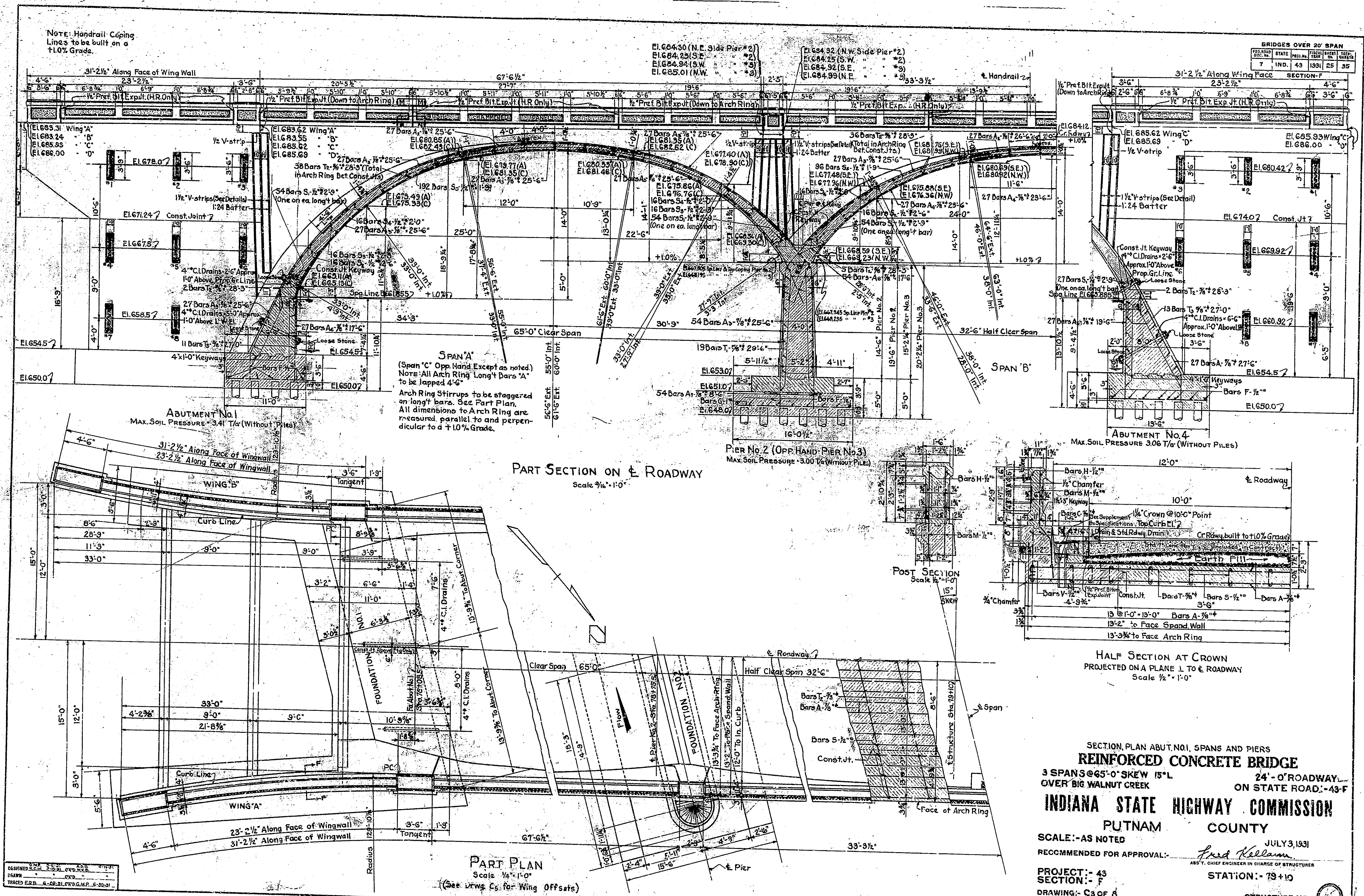
Form and ground lines to extend 3' beyond front faces of abutments. Run and grade. See Areas and Weights in accordance with standards adopted April 1, 1930 by Const. Reinforcing Steel Institute.

GENERAL PLAN  
**REINFORCED CONCRETE BRIDGE**  
 3 SPANS @ 65'-0" SK. 15' L.  
 OVER BIG WALNUT CREEK  
 ON STATE ROAD - 43 - F  
**INDIANA STATE HIGHWAY COMMISSION**  
 PUTNAM COUNTY  
 SCALE: - 3/32" = 1'-0" EXCEPT AS NOTED  
 JULY 3, 1931  
 RECOMMENDED FOR APPROVAL: *Fred Kellan*  
 ASST. CHIEF ENGINEER IN CHARGE OF STRUCTURES  
 PROJECT: - 43  
 SECTION: - F  
 DRAWING: - C<sub>2</sub> OF 8  
 BRIDGE CONTRACT NO. 429  
 STATION: - 19 + 10  
 STRUCTURE NO. (1077)  
 Rev. 7-29-31 Handrail Panels & Joints.

DESIGNED: C.E.D.  
 DRAWN: C.E.D.  
 CHECKED: C.E.D.  
 TRACED: C.E.D.

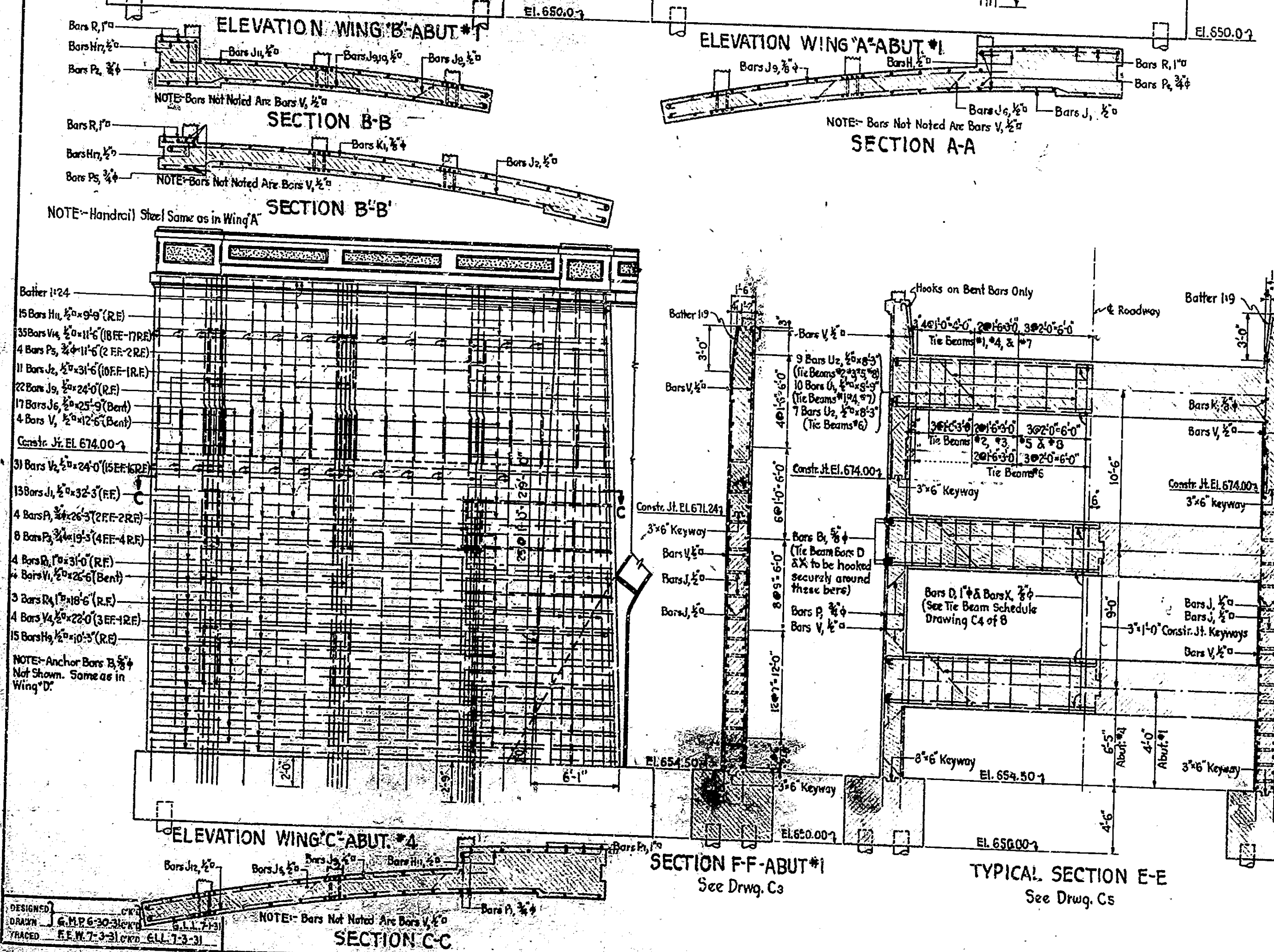
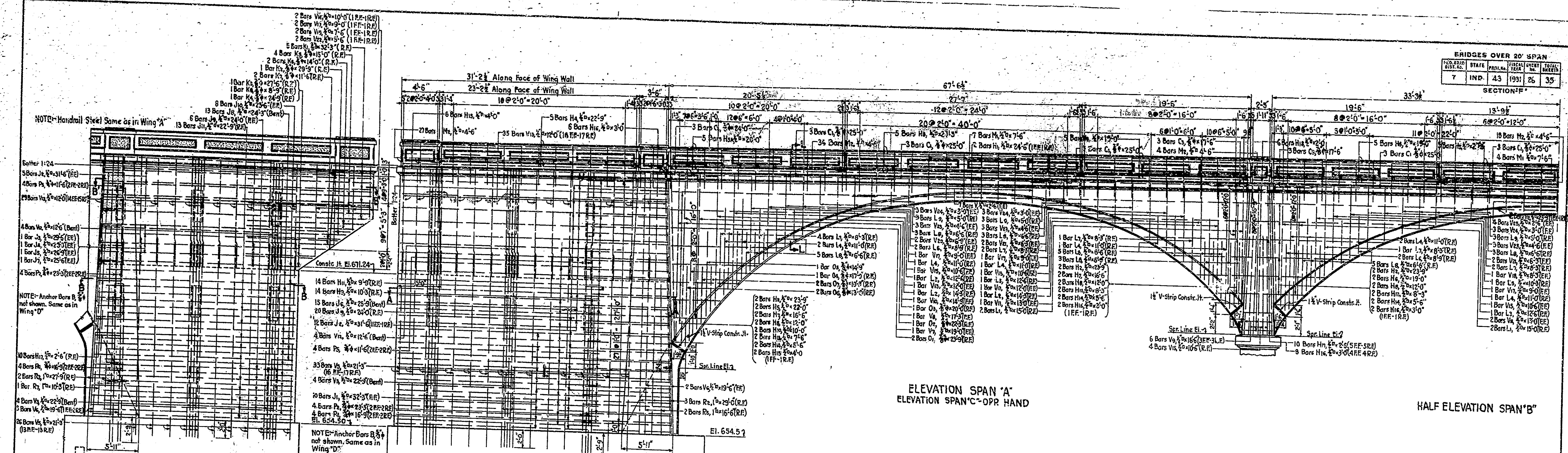
LEC 6-21-31







BRIDGES OVER 20' SPAN				
YEAR	STATE	NO.	SPAN	TOTAL
IND.	43	1931	26	35
7	IND.	43	1931	26

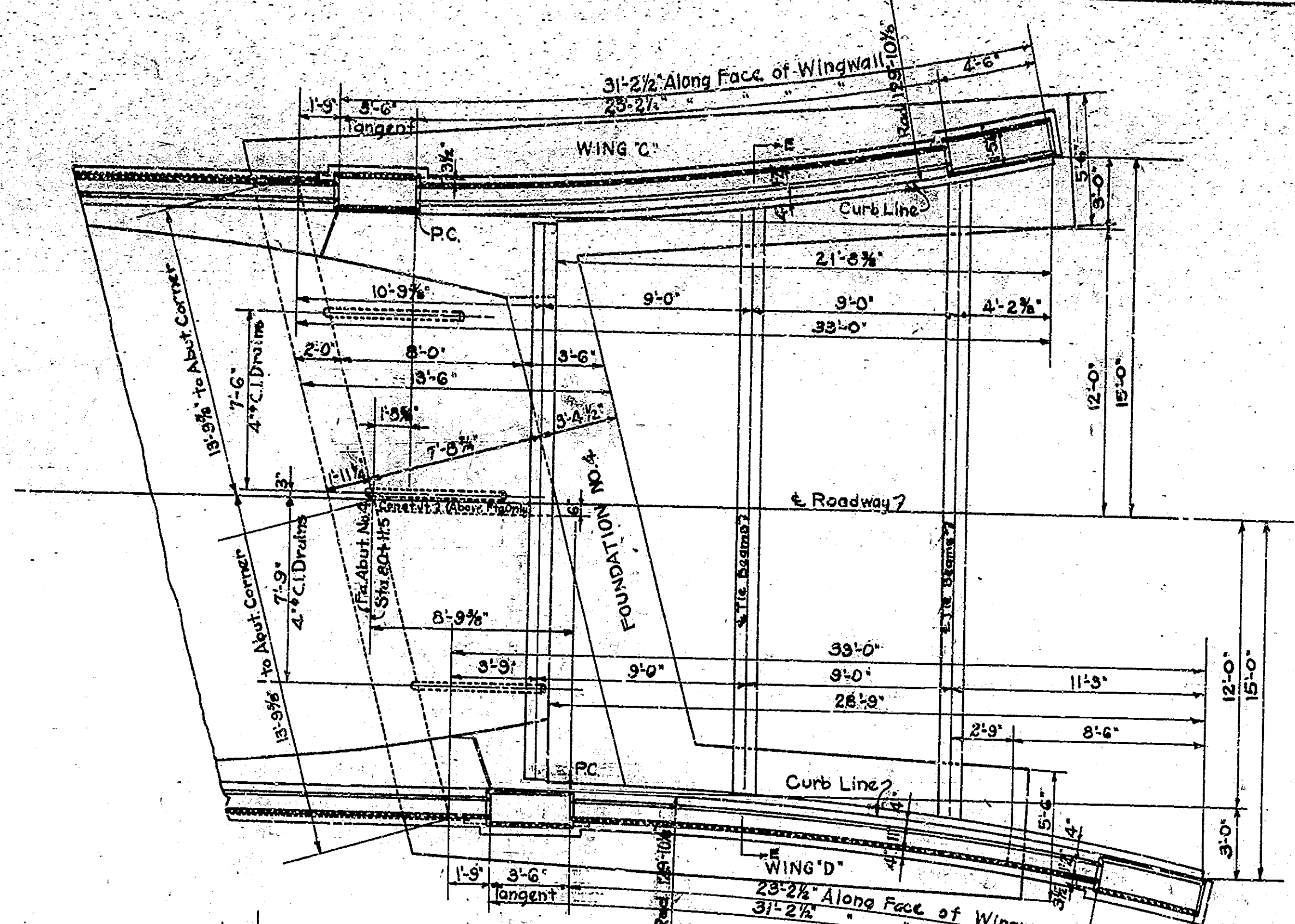


TIE BEAM REINF STEEL SCHEDULE						
TIE BEAM NO.	SIZE	NO. OF BARS	MARK	SIZE	LENGTH	LOCATION
1	1'-0"	2	D1	1"	33'-6"	Bent
	x	4	D2	1"	30'-9"	2 Top - 2 Bolt.
	3'-9"	5	X1	7/8"	30'-6"	2 - 3 - "
2	1'-0"	2	D2	1"	31'-3"	Bent
	x	4	D2	1"	28'-9"	2 Top - 2 Bolt.
	3'-6"	3	X2	7/8"	28'-6"	1 Top - 2 Bolt.
3	1'-0"	2	D4	1"	30'-6"	Bent
	x	3	D6	1"	28'-0"	Both.
	3'-6"	3	X3	7/8"	27'-9"	Top
4	1'-0"	2	D1	1"	33'-6"	Bent
	x	3	D3	1"	30'-9"	Both.
	3'-9"	7	X1	7/8"	30'-6"	5 Top - 2 Bolt.
5	1'-0"	2	D2	1"	31'-3"	Bent
	x	3	D5	1"	28'-9"	2 Top - 1 Bolt.
	3'-6"	6	X2	7/8"	28'-6"	2 Top - 4 Bolt.
6	1'-0"	2	D4	1"	30'-6"	Bent
	x	5	D6	1"	28'-0"	1 Top - 4 Bolt.
	3'-6"	5	X3	7/8"	27'-9"	4 Top - 1 Bolt.
7	1'-0"	2	D1	1"	33'-6"	Bent
	x	7	D3	1"	30'-9"	2 Top - 5 Bolt.
	3'-9"	3	X1	7/8"	30'-6"	Top
8	1'-0"	2	D1	1"	31'-3"	Bent
	x	3	D5	1"	28'-9"	Both.
	3'-6"	7	X2	7/8"	28'-6"	5 Top - 2 Bolt.

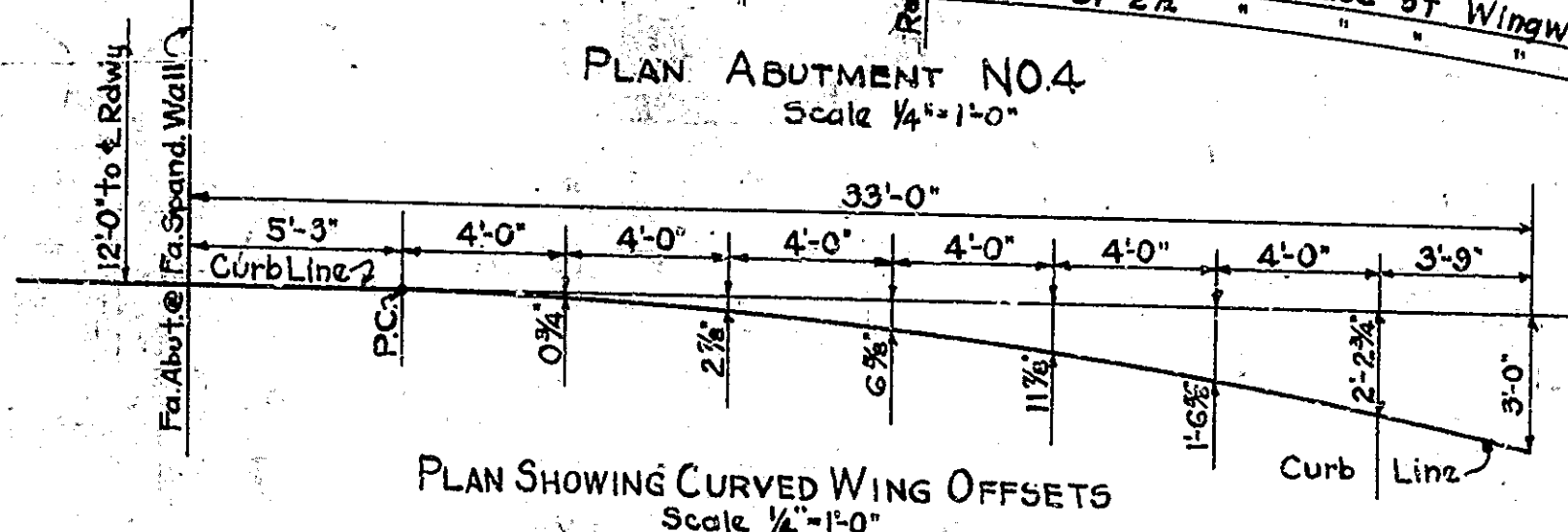
ELEVATIONS, SPANS & WING WALLS, SECTIONS  
**REINFORCED CONCRETE BRIDGE**  
 3 SPANS @ 65'-0" SKEW 15° L. 24'-0" ROADWAY  
 OVER BIG WALNUT CREEK ON STATE ROAD - 43-F  
**INDIANA STATE HIGHWAY COMMISSION**  
 PUTNAM COUNTY  
 SCALE: - 3/8" = 1'-0" JULY 3, 1931  
 RECOMMENDED FOR APPROVAL: *Fred Keenan*  
 PROJECT: - 43 SECTION: - F STATION: - 79+10  
 DRAWING: - C4 OF 8 BRIDGE CONTRACT NO. 423 STRUCTURE NO. (1077)  
 Rev. 7-29-31 Handrail Panels, Jts. & Horiz. Steel



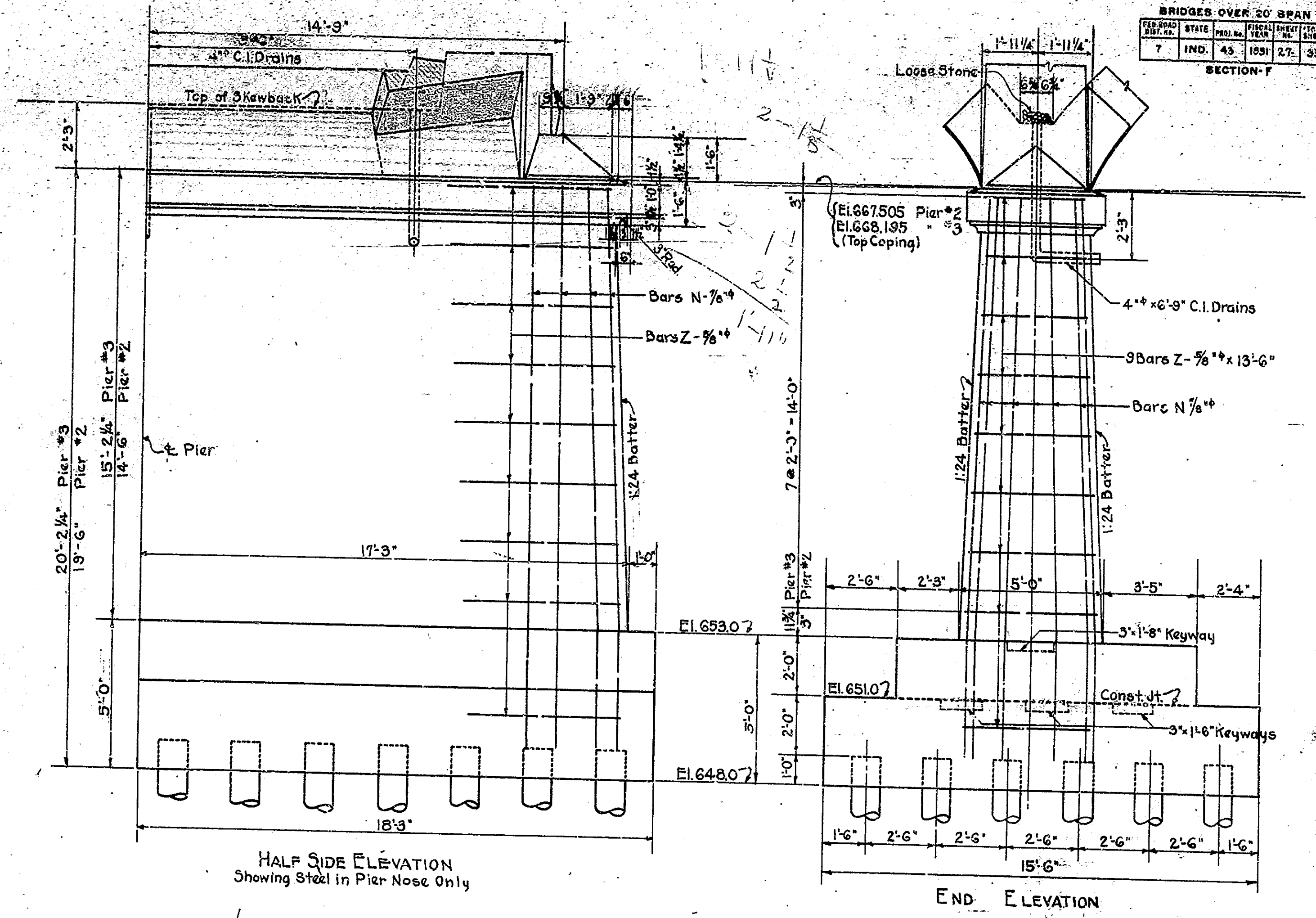
BRIDGES OVER 20 SPAN					
STATE	FED. AID PROJ. NO.	STATE PROJ. NO.	SECTION	SHEET NO.	TOTAL SHEETS
IND.	43	1091	27	35	



PLAN ABUTMENT NO. 4  
Scale 1/4" = 1'-0"

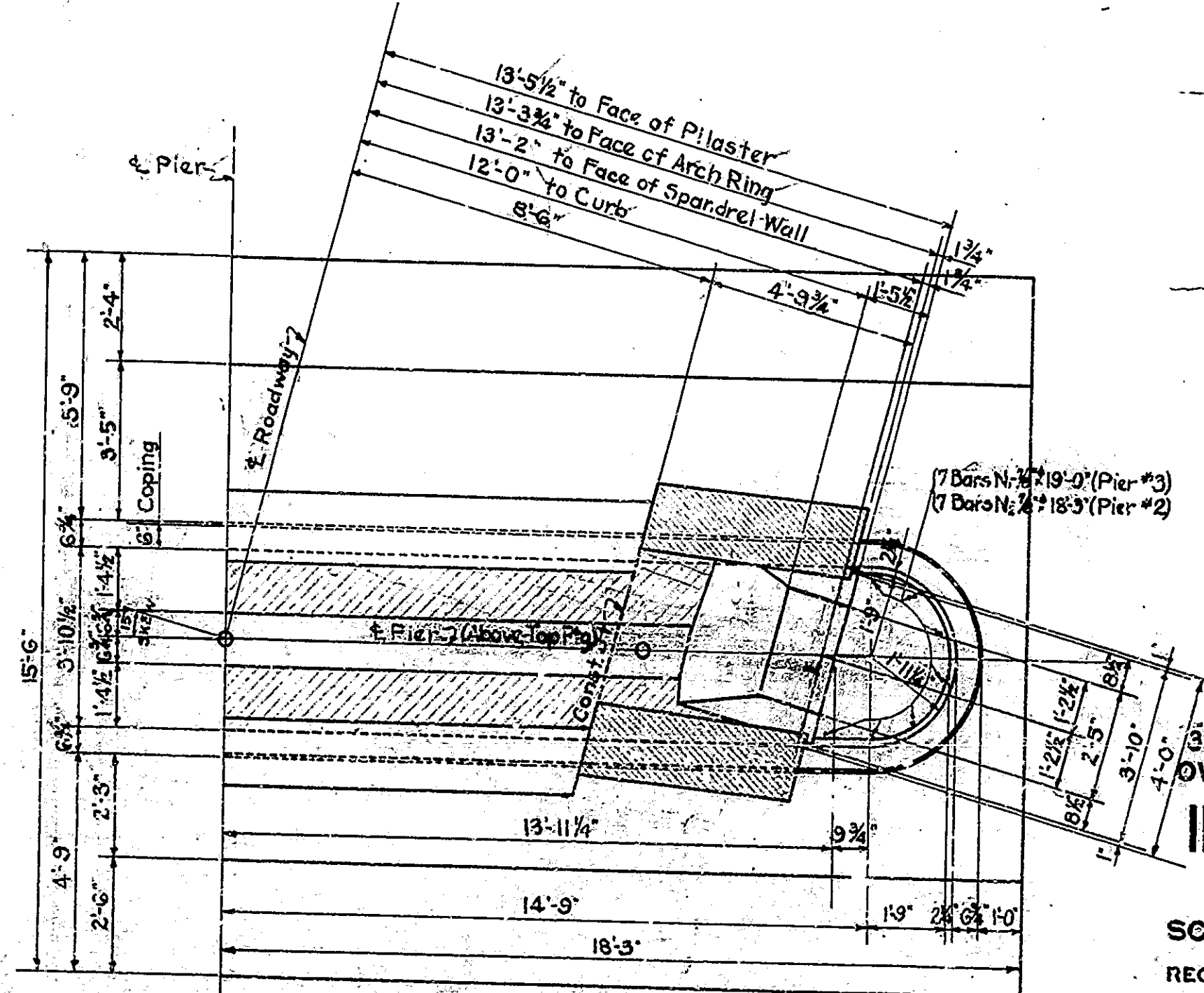


PLAN SHOWING CURVED WING OFFSETS  
Scale 1/4" = 1'-0"



HALF SIDE ELEVATION  
Showing Steel in Pier Nose Only

END ELEVATION



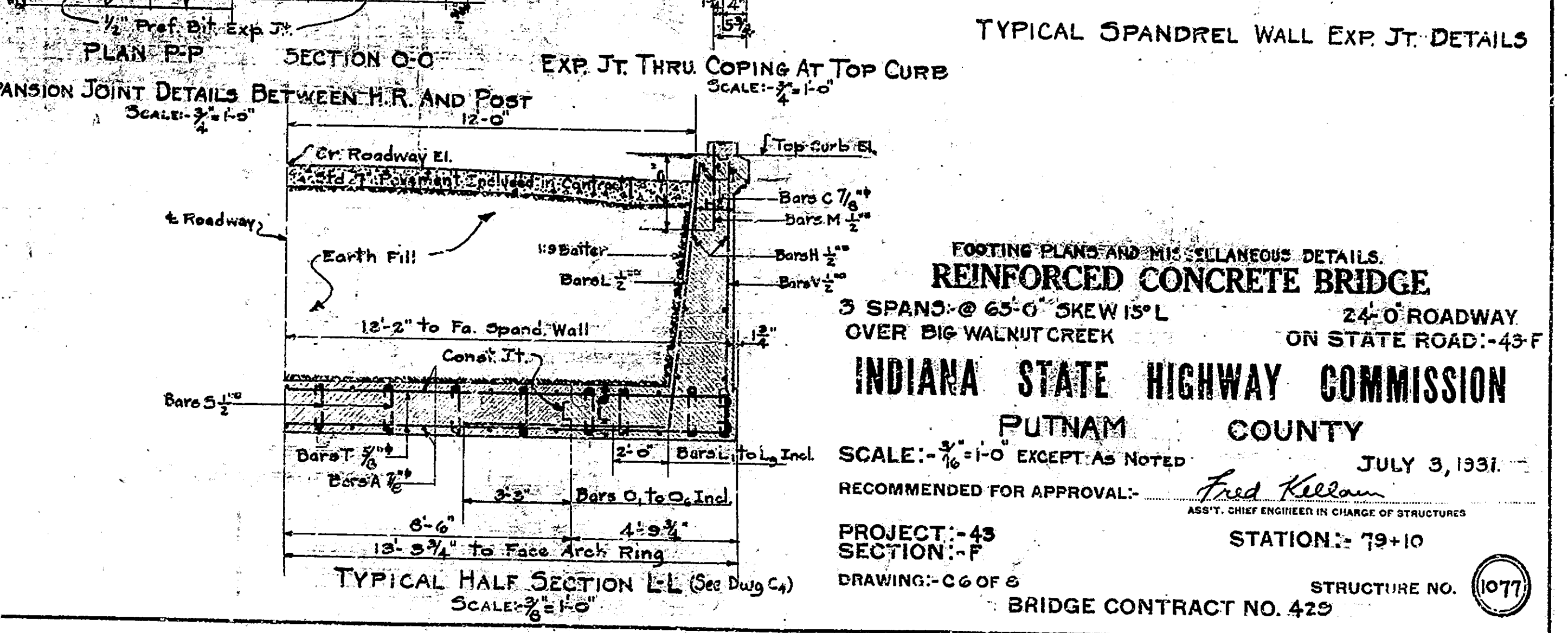
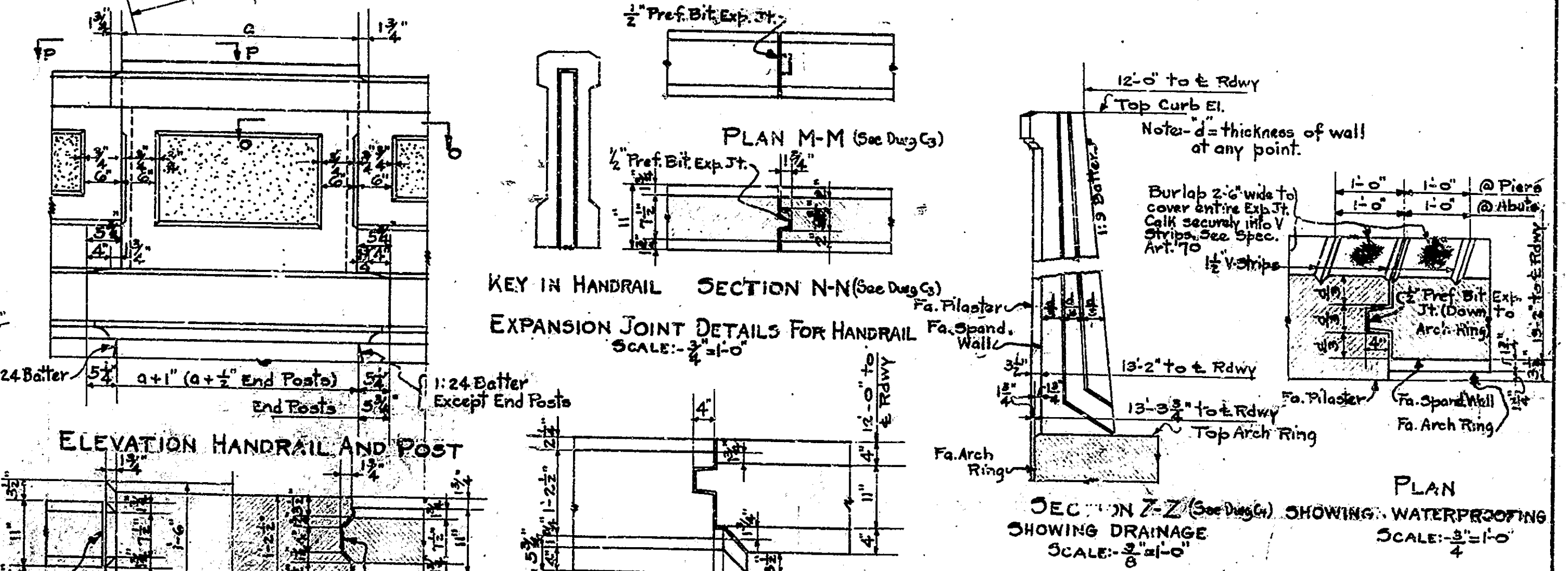
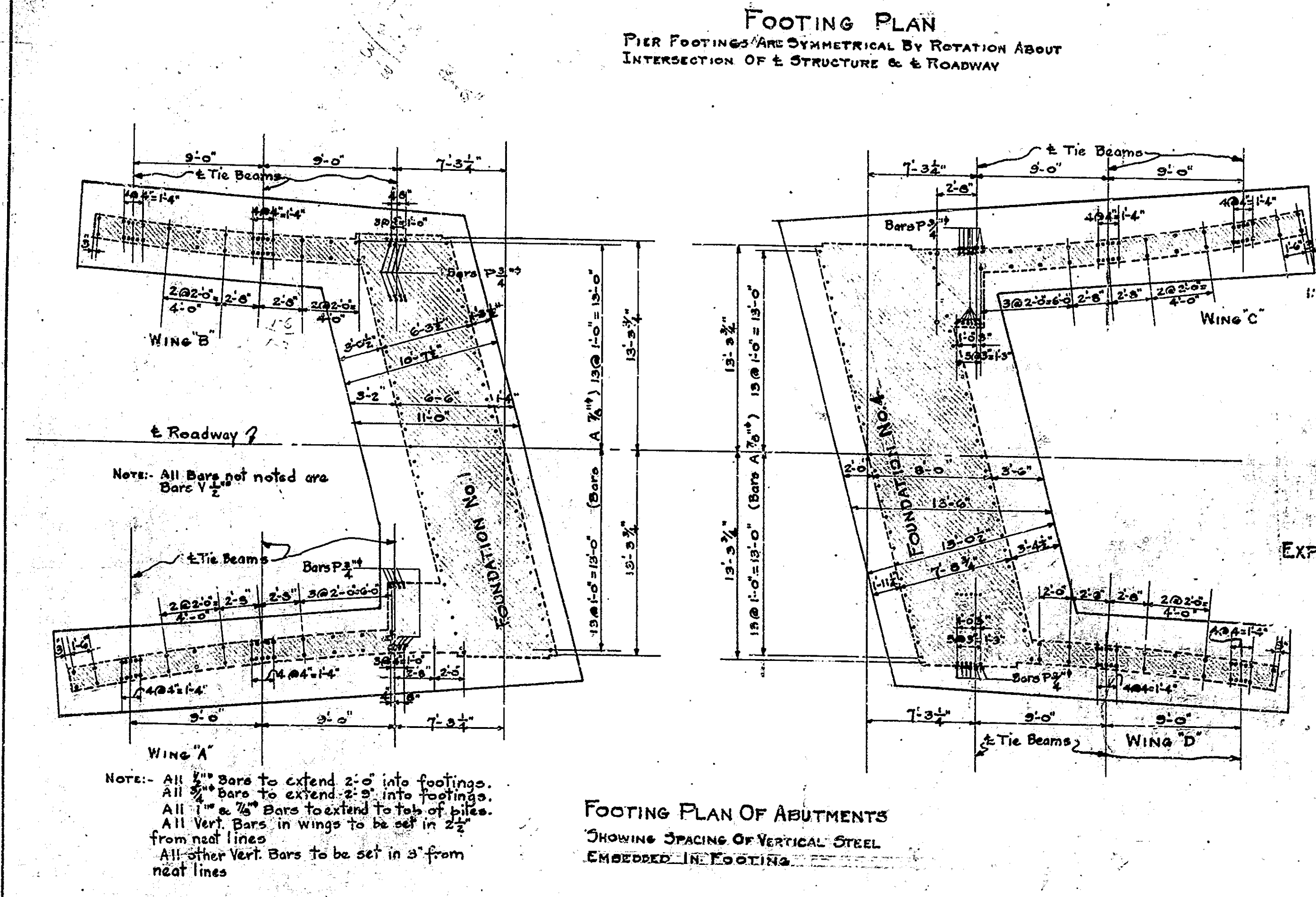
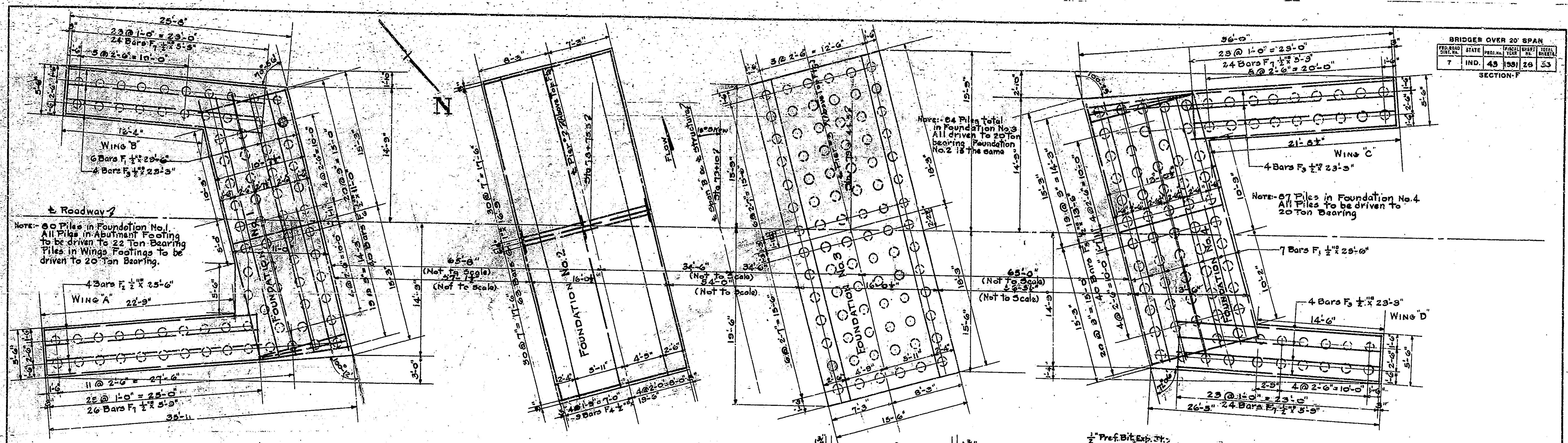
HALF PLAN

ABUT. NO. 4 PLAN, WING OFFSETS AND PIER DETAILS  
**REINFORCED CONCRETE BRIDGE**  
 3 SPANS @ 65'-0" SKEW 15° L.  
 OVER BIG WALNUT CREEK  
 24'-0" ROADWAY  
 ON STATE ROAD - 45-F  
**INDIANA STATE HIGHWAY COMMISSION**  
**PUTNAM COUNTY**  
 SCALE: -3/8" = 1'-0" EXCEPT AS NOTED JULY 3, 1931  
 RECOMMENDED FOR APPROVAL: *Fred Kellan*  
 PROJECT: - 43 STATION: - 79+10  
 SECTION: - F STRUCTURE NO. 1071  
 DRAWING: - C5 OF 8 BRIDGE CONTRACT NO. 429

DESIGNED BY: J. H. ...  
 DRAWN BY: ...  
 CHECKED BY: ...  
 TRACED BY: ...



BRIDGE OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SECTION	DATE
7	IND.	43	1381	26
SECTION - F				



DESIGNED BY: J. W. B. & C. W. B.  
 DRAWN BY: J. W. B. & C. W. B.  
 CHECKED BY: J. W. B. & C. W. B.  
 DATE: 7-3-31

INDIANA STATE HIGHWAY COMMISSION  
 PUTNAM COUNTY  
 STATION: 79+10  
 BRIDGE CONTRACT NO. 429



# BILLS OF MATERIALS

BRIDGES OVER 20' SPAN					
PROJ. NO.	STATE	PROJ. NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	IND.	45	1931	29	55
SECTION-					

## ABUT. NO. 1

REINFORCING STEEL					
Mark	No. Pos.	Size	Length	Location	Total Length
R.1	1	1/2"	23'-0"	R.F. Butler Wing	87'-0"
R.2	2	1/2"	27'-0"	"	55'-0"
R.3	2	1/2"	16'-6"	"	33'-0"
R.4	2	1/2"	10'-0"	"	20'-0"
Total 1/2" bars					195'-0"
D.1	6	1/4"	23'-0"	Tr. Beams - 21' x 24' x 27'	201'-0"
D.2	6	1/4"	31'-0"	"	187'-0"
D.3	12	1/4"	20'-6"	"	490'-6"
D.4	4	1/4"	20'-6"	"	162'-0"
D.5	10	1/4"	23'-0"	"	230'-0"
D.6	8	1/4"	23'-0"	"	184'-0"
Total 1/4" bars					1452'-0"
A.1	27	7/8"	20'-6"	Vert. Abut. Arch Ring Ext.	658'-6"
A.2	27	1/2"	17'-6"	"	472'-6"
K.1	1	1/2"	332'-0"	Horiz. R.F. Wing	332'-0"
K.2	1	1/2"	291'-0"	"	291'-0"
K.3	1	1/2"	271'-0"	"	271'-0"
K.4	1	1/2"	261'-0"	"	261'-0"
K.5	4	1/2"	418'-0"	"	1672'-0"
K.6	2	1/2"	141'-0"	"	282'-0"
K.7	2	1/2"	116'-0"	"	232'-0"
K.8	1	1/2"	81'-0"	"	81'-0"
X.1	15	1/2"	301'-6"	Tr. Beams - 5' x 7' x 8' x 7'	4521'-6"
X.2	16	1/2"	291'-6"	"	4665'-6"
X.3	8	1/2"	271'-0"	"	2168'-0"
Total 1/2" bars					26591'-6"
P.1	8	3/4"	28'-0"	Vert. W. Grids - 4' x 7' x 8' x 8'	176'-0"
P.2	8	1/2"	161'-0"	"	1288'-0"
P.3	8	1/2"	116'-0"	"	928'-0"
Total 3/4" bars					1272'-0"
Total 1/2" bars					3022'-0"
Total Steel (Abut. #1)					7261'-0"
* Wts. for 1930 Sls.					

## ABUT. NO. 4

REINFORCING STEEL					
Mark	No. Pos.	Size	Length	Location	Total Length
R.1	4	1/2"	31'-0"	R.F. Butler Wing	124'-0"
R.2	2	1/2"	27'-0"	"	54'-0"
R.3	2	1/2"	16'-6"	"	33'-0"
R.4	2	1/2"	10'-0"	"	20'-0"
Total 1/2" bars					231'-0"
D.1	6	1/4"	33'-0"	Tr. Beams - 21' x 24' x 27' x 30'	258'-0"
D.2	6	1/4"	31'-0"	"	186'-0"
D.3	12	1/4"	20'-6"	"	490'-6"
D.4	4	1/4"	20'-6"	"	162'-0"
D.5	10	1/4"	23'-0"	"	230'-0"
D.6	8	1/4"	23'-0"	"	184'-0"
Total 1/4" bars					1452'-0"
A.1	27	7/8"	27'-0"	Vert. Abut. Arch Ring Ext.	729'-0"
A.2	27	1/2"	19'-6"	"	527'-6"
K.1	5	1/2"	321'-0"	Horiz. R.F. Wing	1605'-0"
K.2	1	1/2"	291'-0"	"	291'-0"
K.3	1	1/2"	271'-0"	"	271'-0"
K.4	1	1/2"	261'-0"	"	261'-0"
K.5	4	1/2"	418'-0"	"	1672'-0"
K.6	2	1/2"	141'-0"	"	282'-0"
K.7	2	1/2"	116'-0"	"	232'-0"
K.8	1	1/2"	81'-0"	"	81'-0"
X.1	15	1/2"	301'-6"	Tr. Beams - 5' x 7' x 8' x 7'	4521'-6"
X.2	16	1/2"	291'-6"	"	4665'-6"
X.3	8	1/2"	271'-0"	"	2168'-0"
Total 1/2" bars					27671'-6"
P.1	8	3/4"	28'-0"	Vert. W. Grids - 4' x 7' x 8' x 8'	176'-0"
P.2	8	1/2"	161'-0"	"	1288'-0"
P.3	8	1/2"	116'-0"	"	928'-0"
Total 3/4" bars					1272'-0"
Total 1/2" bars					3022'-0"
Total Steel (Abut. #4)					20233'-0"
* Wts. for 1930 Sls.					

## PIER NO. 2

REINFORCING STEEL					
Mark	No. Pos.	Size	Length	Location	Total Length
G.1	63	1/4"	151'-0"	Transv. Flg. (Both)	10521'-0"
A.1	24	1/4"	251'-0"	Vert. Pier Stem & Long. Arch Ring	18072'-0"
A.2	24	1/4"	171'-0"	"	12672'-0"
A.3	24	1/4"	111'-0"	"	8064'-0"
A.4	14	1/4"	181'-0"	Stubs bars in Flg.	2534'-0"
Total 1/4" bars					30264'-0"
N.1	14	1/4"	181'-0"	Noses - 7 Ea. Noses	2534'-0"
Total 1/4" bars					30264'-0"
T.1	19	3/8"	251'-0"	Horiz. 17 Stem - 2 Flg.	3609'-0"
T.2	8	1/4"	231'-0"	Transv. Arch Rings	1848'-0"
T.3	18	1/4"	181'-0"	Horiz. Noses (2 ea. nose)	2454'-0"
Total 3/8" bars					3609'-0"
F.1	18	3/4"	191'-0"	Long. Flg. (Both)	3438'-0"
F.2	16	1/2"	211'-0"	Horiz. Flg. (R.F. - R.F.)	3376'-0"
H.1	20	1/2"	211'-0"	" (R.F. - R.F.)	4220'-0"
H.2	12	1/2"	211'-0"	" (R.F. - R.F.)	2532'-0"
H.3	8	1/2"	211'-0"	" (R.F. - R.F.)	1688'-0"
H.4	8	1/2"	211'-0"	" (R.F. - R.F.)	1688'-0"
S.1	8	1/2"	211'-0"	Stirrups - Arch Rings	1688'-0"
V.1	12	1/2"	161'-0"	Vert. Pile caps (R.F. - R.F.)	1932'-0"
V.2	8	1/2"	101'-0"	" (R.F. - R.F.)	808'-0"
Total 1/2" bars					33996'-0"
Total Steel (Pier #2)					11726'-0"
* Wts. for 1930 Sls.					

## PIER NO. 3

REINFORCING STEEL					
Mark	No. Pos.	Size	Length	Location	Total Length
G.1	63	1/4"	161'-0"	Transv. Flg. (Both)	10266'-0"
A.1	24	1/4"	251'-0"	Vert. Pier Stem & Long. Arch Ring	18072'-0"
A.2	24	1/4"	171'-0"	"	12672'-0"
A.3	24	1/4"	111'-0"	"	8064'-0"
A.4	14	1/4"	181'-0"	Stubs bars in Flg.	2534'-0"
Total 1/4" bars					30264'-0"
N.1	14	1/4"	181'-0"	Noses - 7 Ea. Noses	2534'-0"
Total 1/4" bars					30264'-0"
T.1	19	3/8"	251'-0"	Horiz. 17 Stem, 2 Flg.	3609'-0"
T.2	8	1/4"	231'-0"	Transv. Arch Rings	1848'-0"
T.3	18	1/4"	181'-0"	Horiz. Noses (2 ea. nose)	2454'-0"
Total 3/8" bars					3609'-0"
F.1	18	3/4"	191'-0"	Long. Flg. (Both)	3438'-0"
F.2	16	1/2"	211'-0"	Horiz. Flg. (R.F. - R.F.)	3376'-0"
H.1	20	1/2"	211'-0"	" (R.F. - R.F.)	4220'-0"
H.2	12	1/2"	211'-0"	" (R.F. - R.F.)	2532'-0"
H.3	8	1/2"	211'-0"	" (R.F. - R.F.)	1688'-0"
H.4	8	1/2"	211'-0"	" (R.F. - R.F.)	1688'-0"
S.1	8	1/2"	211'-0"	Stirrups - Arch Rings	1688'-0"
V.1	12	1/2"	161'-0"	Vert. Pile caps (R.F. - R.F.)	1932'-0"
V.2	8	1/2"	101'-0"	" (R.F. - R.F.)	808'-0"
Total 1/2" bars					33996'-0"
Total Steel (Pier #3)					11746'-0"
* Wts. for 1930 Sls.					

ABUT. #1 & 4 - PIERS #2 & 3 - BILLS OF MATERIALS  
**REINFORCED CONCRETE BRIDGE**  
 3 SPANS @ 65'-0" SKEW 15° L 24'-0" ROADWAY  
 OVER BIG WALNUT CREEK ON STATE ROAD - 43-F  
**INDIANA STATE HIGHWAY COMMISSION**  
 PUTNAM COUNTY  
 SCALE: -  
 RECOMMENDED FOR APPROVAL: *Frederick Kellam* JULY 3, 1931  
 PROJECT: 43 SECTION: F STATION: - 79 + 10  
 DRAWING: C-7 OF 8 STRUCTURE NO. (1077)  
 BRIDGE CONTRACT NO. 429

DESIGNED BY G.M.P. 7-25-31  
 DRAWN BY G.M.P. 7-25-31  
 CHECKED BY G.M.P. 7-25-31



# BILLS OF MATERIALS

SPAN 'A' (SPAN 'C' SAME)

REINFORCING STEEL		Location	Total Length	Weight
As	162	28'-0" Long. Arch Ring - 81 Ext. 81 Int.	4131'-0"	
Cs	18	Curbs	450'-0"	
Ca	6	24'-0" Vert. Sp. Wls. & Horiz. Curbs	144'-0"	
Ca	6	17'-6" " " " "	108'-0"	
Ca	4	23'-9" " " " "	95'-0"	
Ca	2	22'-3" " " " "	44'-0"	
Ca	2	20'-0" " " " "	40'-0"	
Ca	2	17'-0" " " " "	34'-0"	
Ca	4	13'-0" " " " "	28'-0"	
Ca	4	10'-3" " " " "	41'-0"	
Ts	38	28'-3" TOTAL 1/2" BARS Transv. Arch Ring	5166'-0"	10694*
Hs	4	24'-6" Horiz. Sp. Wl. (2EF - 2RF)	1075'-6"	1138*
Hs	8	23'-9" Sp. Wls. (4RF - 4RR)	190'-0"	
Hs	4	22'-0" Spandrel Wall (2-2-2)	88'-0"	
Hs	10	19'-0" Handrails	190'-0"	
Hs	8	18'-6" Spandrel Wall (4RF - 4RR)	132'-0"	
Hs	8	17'-0" " " " "	132'-0"	
Hs	4	10'-0" " " " "	96'-0"	
Hs	4	8'-3" " " " "	40'-0"	
Hs	4	7'-6" " " " "	38'-0"	
Hs	8	5'-6" " " " "	30'-0"	
Hs	4	4'-0" " " " "	44'-0"	
Hs	4	3'-0" " " " "	16'-0"	
Ls	4	15'-0" Vert. R.F. Spandrel Wall	60'-0"	
Ls	4	14'-3" " " " "	57'-0"	
Ls	4	12'-6" " " " "	50'-0"	
Ls	10	11'-0" " " " "	110'-0"	
Ls	14	8'-9" " " " "	81'-6"	
Ls	14	6'-9" " " " "	115'-6"	
Ls	12	5'-6" " " " "	208'-0"	
Ms	14	7'-6" H.R. & R.F.	60'-0"	
Ms	72	4'-6" " " " "	105'-0"	
Ss	54	2'-9" Stirrups - Arch Ring	324'-0"	
Ss	16	2'-6" " " " "	148'-6"	
Ss	32	2'-3" " " " "	46'-0"	
Ss	32	2'-0" " " " "	72'-0"	
Ss	192	1'-9" " " " "	356'-0"	
Vs	2	19'-0" Vert. R.F. Spandrel Wall	38'-0"	
Vs	2	17'-3" " " " "	34'-6"	
Vs	2	14'-9" " " " "	29'-6"	
Vs	2	13'-0" " " " "	26'-0"	
Vs	4	12'-0" " " " "	48'-0"	
Vs	4	10'-6" " " " "	42'-0"	
Vs	4	9'-0" " " " "	36'-0"	
Vs	4	6'-9" " " " "	27'-0"	
Vs	4	6'-3" " " " "	25'-0"	
Vs	12	4'-6" " " " "	54'-0"	
Vs	12	3'-0" " " " "	36'-0"	
Vs	14	2'-6" " " " "	38'-0"	
TOTAL 1/2" BARS			3710'-0"	3191*
TOTAL STEEL				115,023*

CONCRETE		Location	Total Length	Weight
Class 'D'	Arch Ring, Bet. Transv. & Longt. Const. Jts. Central Sect. (17'-0" width)	58.0 Cu. Yds.		
" "	Const. Jts. Outside Sect. (9'-7 1/2" width)	34.0 "		
" "	" " Spandrel Walls	50.5 "		
TOTAL CLASS 'D'		142.5 Cu. Yds.		
Class 'F'	Handrail (10.0 Cu. Yds.)	135.08 Lin. Ft.		
MISCELLANEOUS		Location	Total Length	Weight
2-Std. Rdwy. Drains (See Supplement to Specifications)				
2-4" C.I. Drains or 4" Steel Tubing Approx. 3/16" Thk. x 1'-6" = 9.0 Lin. Ft.				
Hs	10	27'-3" Horiz. Handrail	272'-6"	
HsA	10	20'-0" " " " "	200'-0"	

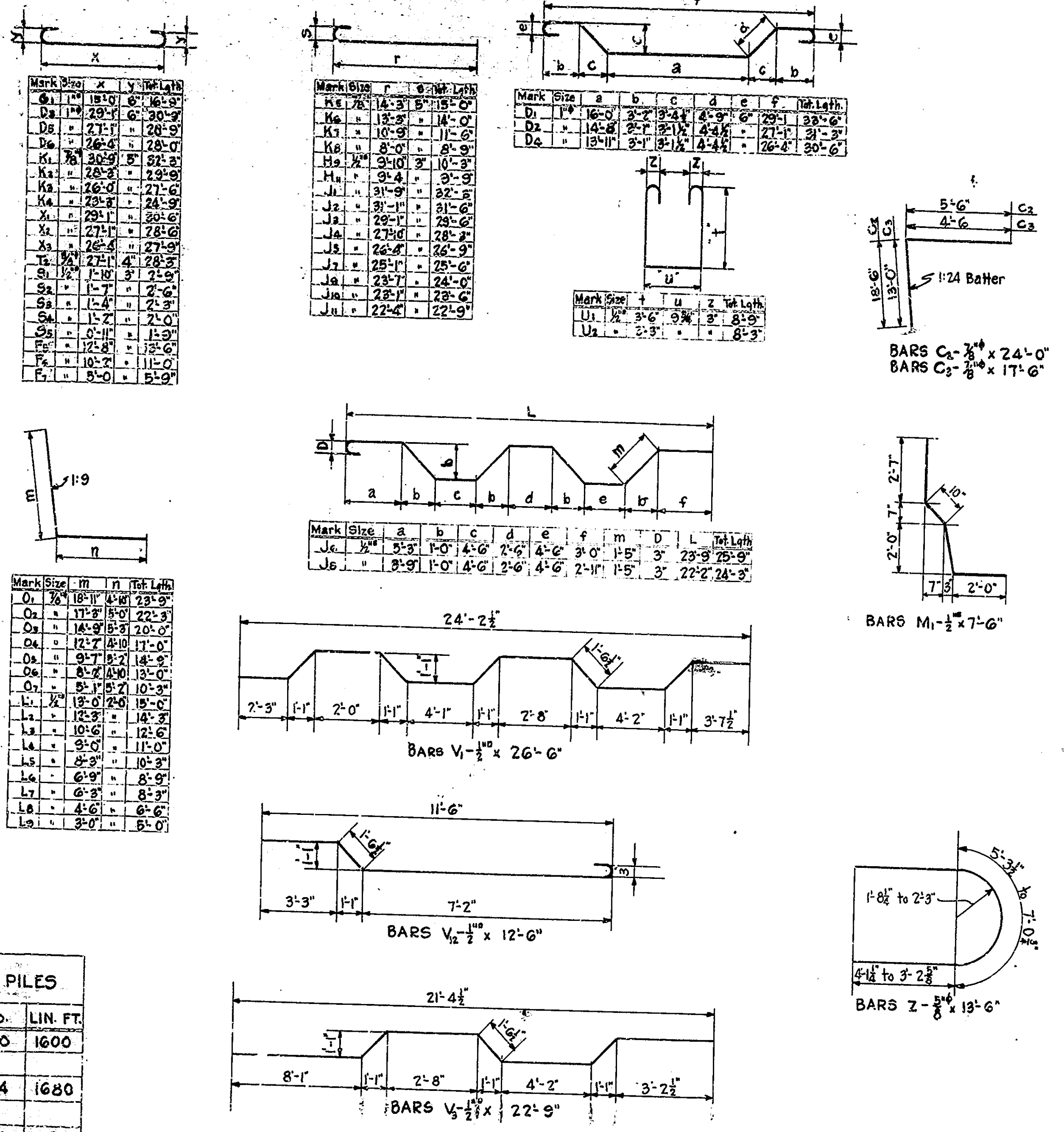
SPAN 'B'

REINFORCING STEEL		Location	Total Length	Weight
As	27	26'-0" Long. Arch Ring - Extrados	715'-6"	
As	54	25'-6" " " " " - Intrados	1317'-0"	
Ae	81	23'-0" " " " " - Curbs	1908'-0"	
Ts	18	25'-0" " " " " - 2 Vert. Sp. Wl.	450'-0"	
Ca	12	17'-6" " " " " - Transv. Arch Ring	210'-0"	
TOTAL 1/2" BARS			4690'-0"	9688*
Ts	36	28'-3" Transv. Arch Ring	1017'-0"	1078*
Hs	12	23'-9" Horiz. Sp. Wls. (6RF - 6RR)	285'-6"	
Hs	10	22'-3" " " " "	272'-6"	
Hs	28	19'-0" " " " " - Handrails	532'-0"	
Hs	8	12'-0" " " " " - H.R. & Sp. Wls. (4RF - 4RR)	96'-0"	
Hs	8	8'-3" " " " " - Spandrel Wls. (4-2-2)	66'-0"	
Hs	8	8'-6" " " " " - " " " " (4-2-2)	64'-0"	
Hs	8	3'-0" " " " " - " " " " (4-2-2)	24'-0"	
Ls	8	18'-0" Vert. " " " " - R.F.	120'-0"	
Ls	4	12'-6" " " " " - " " " " - R.F.	50'-0"	
Ls	12	11'-0" " " " " - " " " " - R.F.	132'-0"	
Ls	4	10'-9" " " " " - " " " " - R.F.	41'-0"	
Ls	12	8'-9" " " " " - " " " " - R.F.	70'-0"	
Ls	12	8'-3" " " " " - " " " " - R.F.	99'-0"	
Ls	12	8'-0" " " " " - " " " " - R.F.	208'-0"	
Ms	14	7'-0" Handrail & Sp. Wl. R.F.	60'-0"	
Ms	72	4'-6" " " " " - " " " " - R.F.	105'-0"	
Ss	54	2'-9" Stirrups - Arch Ring	324'-0"	
Ss	32	2'-6" " " " " - " " " " - R.F.	148'-6"	
Ss	32	2'-0" " " " " - " " " " - R.F.	80'-0"	
Ss	192	1'-9" " " " " - " " " " - R.F.	356'-0"	
Vs	8	13'-0" Vert. R.F. Spandrel Walls	104'-0"	
Vs	4	10'-6" " " " " - " " " " - R.F.	42'-0"	
Vs	4	9'-0" " " " " - " " " " - R.F.	36'-0"	
Vs	4	8'-9" " " " " - " " " " - R.F.	36'-0"	
Vs	12	4'-6" " " " " - " " " " - R.F.	54'-0"	
Vs	14	2'-6" " " " " - " " " " - R.F.	38'-0"	
TOTAL 1/2" BARS			2588'-0"	2681*
TOTAL STEEL				118,767*

CONCRETE		Location	Total Length	Weight
Class 'D'	Arch Ring, Bet. Transv. & Longt. Const. Jts. Central Sect. (17'-0" width)	58.0 Cu. Yds.		
" "	Const. Jts. Outside Sect. (9'-7 1/2" width)	34.0 "		
" "	" " Spandrel Walls	50.5 "		
TOTAL CLASS 'D'		142.5 Cu. Yds.		
Class 'F'	Handrail (10.0 Cu. Yds.)	135.08 Lin. Ft.		
MISCELLANEOUS		Location	Total Length	Weight
2-Std. Roadway Drains (See Supplement to Specifications)				
2-4" C.I. Drains or 4" Steel Tubing Approx. 3/16" Thk. x 1'-6" = 9.0 Lin. Ft.				

## COMPLETE SUMMARY

ITEM	CONCRETE		REINFORCING STEEL					PILES					
	Class 'E'	Class 'D'	Class 'F'	Handrail	1"	1 1/4"	1 1/2"	3/4"	1/2"	TOTAL	No.	LIN. FT.	
Abut. No. 1	260.5	4.5	5.64	62.46	699	9922	5505	626	748	726	18,701	80	1600
Span 'A'	145.0	10.16	135.08				10,694		1138	3191	15,023		
Pier No. 2	171.0	22.0	0.65	4.83	2630		6286		1001	808	11,725	84	1680
Span 'B'	182.5	10.01	133.17				9,638		1088	3051	13,767		
Abut. No. 4	145.0	10.16	135.08				10,694		1138	3191	15,023		
Test Bars	292.5	4.5	5.64	62.44	858	9922	5729	927	805	7793	20,095	87	1740
TOTALS	899.0	475.5	42.91	597.81	8802	7879	34,952	16,011	6939	26,143	106,316	335	6700
MISCELLANEOUS		Location	Total Length	Weight									
4" C.I. Drains or 4" Steel Tubing Approx. 3/16" Thk. = 9.0 Lin. Ft.													
6 Std. Roadway Drains (See Supplement to Specifications)													
1/4" Over Arches (Fa. to Fa. Abuts.) (798 +/- 10%) = 878 Cu. Yds.													



SPANS A, B, & C, BILLS OF MATERIALS, BEND DIAGRAMS & COMPLETE SUMMARY;  
**REINFORCED CONCRETE BRIDGE**  
 3 SPANS @ 65'-0" SKEW 15° L  
 OVER BIG WALNUT CREEK ON STATE ROAD - 43-F  
**INDIANA STATE HIGHWAY COMMISSION**  
 PUTNAM COUNTY  
 SCALE: -  
 RECOMMENDED FOR APPROVAL: *Fred Kellam*  
 PROJECT: - 43  
 SECTION: - F  
 DRAWING: - C<sub>8</sub> OF 8  
 STATION: - 79+40  
 BRIDGE CONTRACT NO. 429  
 STRUCTURE NO. 1077

DESIGNED BY: G.L.L. & T. J. S. CIVIL ENGINEERS  
 DRAWN BY: G.L.L. & T. J. S. CIVIL ENGINEERS  
 CHECKED BY: G.L.L. & T. J. S. CIVIL ENGINEERS