

STATE OF ARKANSAS
STATE HIGHWAY DEPARTMENT

FISCAL YEAR	Job No.	SHEET No.	TOTAL SHEETS
1928	1008	1	2
PLAN, BRIDGE TO BE REMOVED, BRIDGE NO. 303-A			

PLAN OF EXISTING BRIDGE TO BE REMOVED

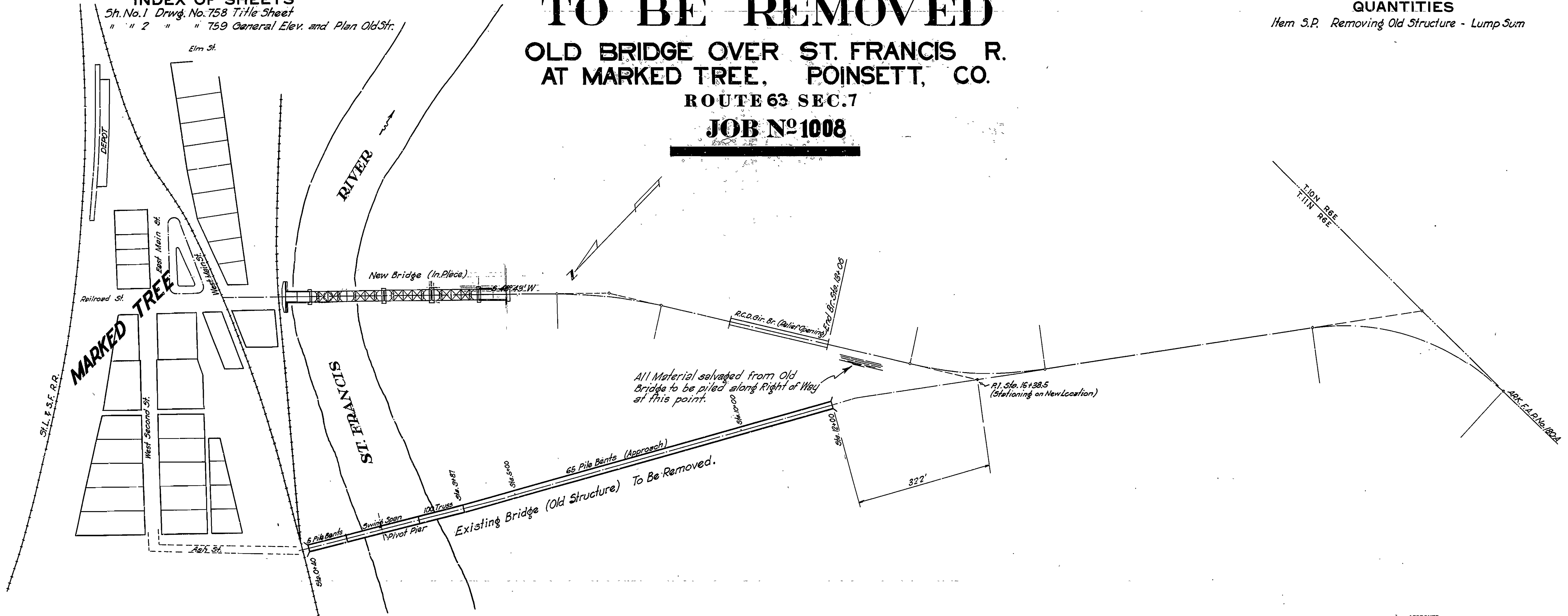
OLD BRIDGE OVER ST. FRANCIS R. AT MARKED TREE, POINSETT, CO.

ROUTE 63 SEC. 7

JOB NO 1008

QUANTITIES
Item 3.P. Removing Old Structure - Lump Sum

INDEX OF SHEETS
Sh. No. 1 Drawg. No. 758 Title Sheet
" " 2 " " 759 General Elev. and Plan Old Str.



LAYOUT

Scale: 1 in. = 100 Ft.

GROSS LENGTH OF PROJECT 1160 Ft. = .22 Mi.
NET LENGTH OF PROJECT

APPROVED
COMMISSIONER - STATE LANDS, HIGHWAYS AND IMPROVEMENTS

APPROVED
STATE HIGHWAY ENGINEER

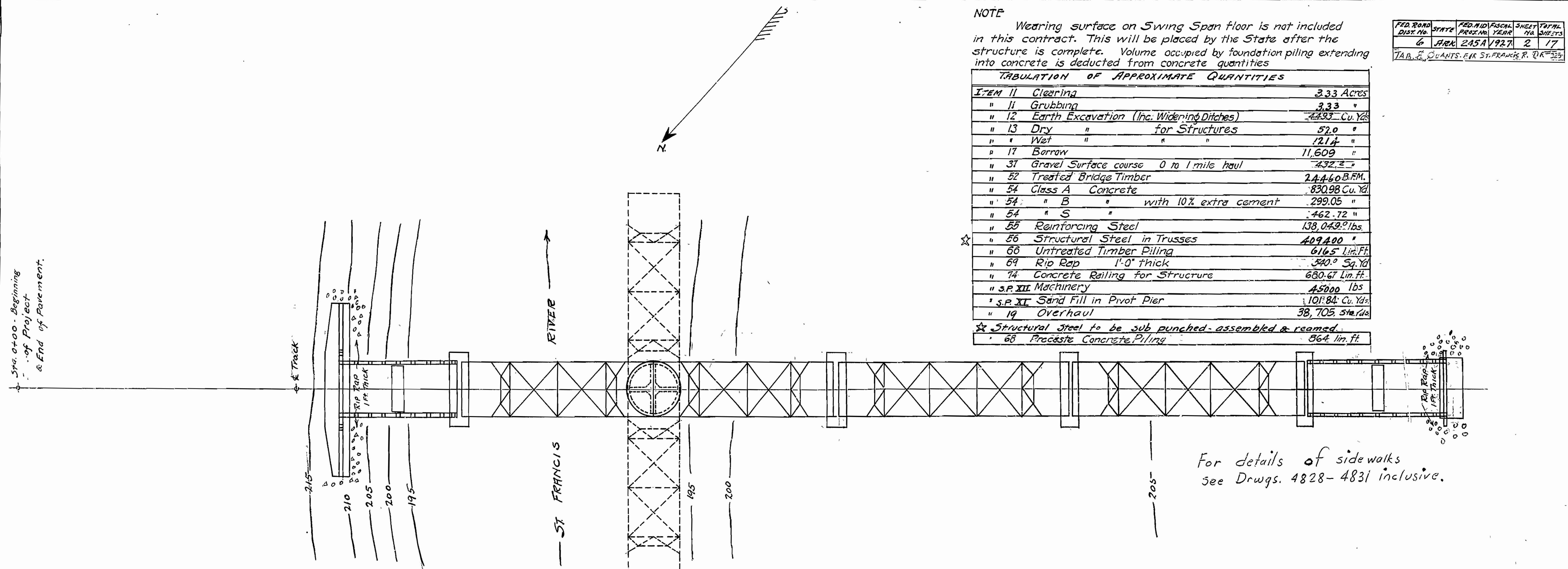
RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER - U. S. BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL
CHIEF ENGINEER - U. S. BUREAU OF PUBLIC ROADS

APPROVED
DIRECTOR - U. S. BUREAU OF PUBLIC ROADS

M.B. Langer
BRIDGE ENGINEER

BRIDGE NO. 303-A DRAWING NO. 758



NOTE
Wearing surface on Swing Span floor is not included in this contract. This will be placed by the State after the structure is complete. Volume occupied by foundation piling extending into concrete is deducted from concrete quantities

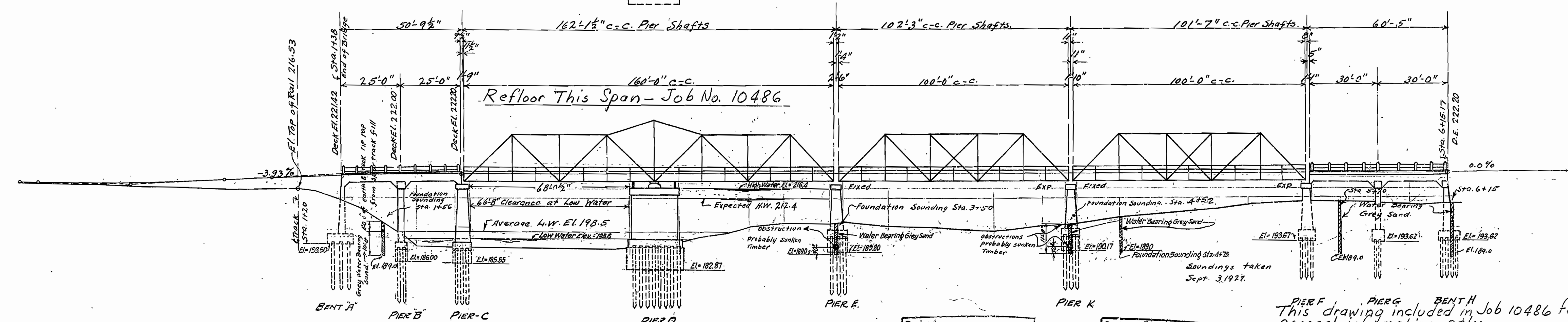
FED. ROAD DIST. NO.	STATE	FED. AID FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	245A 1927	2	17

TAB. OF QUANTS. FOR ST. FRANCIS R. BR.

TABULATION OF APPROXIMATE QUANTITIES

ITEM 11 Clearing	3.33 Acres
" 11 Grubbing	3.33 "
" 12 Earth Excavation (Inc. Widening Ditches)	4432 Cu. Yds.
" 13 Dry " for Structures	52.0 "
" " Wet " " "	1214 "
" 17 Borrow	11,609 "
" 31 Gravel Surface course 0 to 1 mile haul	432.2 "
" 52 Treated Bridge Timber	24460 B.F.M.
" 54 Class A Concrete	830.98 Cu. Yd.
" 54 " B " with 10% extra cement	299.05 "
" 54 " S " "	462.72 "
" 55 Reinforcing Steel	138,043.2 lbs.
" 56 Structural Steel in Trusses	409400 "
" 66 Untreated Timber Piling	6165 Lin. Ft.
" 69 Rip Rap 1'-0" thick	340.0 Sq. Yd.
" 74 Concrete Railing for Structure	680.67 Lin. Ft.
" S.P. XII Machinery	4500 lbs.
" S.P. XI Sand Fill in Pivot Pier	101.84 Cu. Yds.
" 19 Overhaul	38,705 Sta. Yds.
☆ Structural Steel to be sub punched - assembled & reamed	
" 68 Precast Concrete Piling	364 lin. ft.

For details of sidewalks see Drawgs. 4828-4831 inclusive.



Revised _____
Revised E.A.W. Oct-27 For 2 Fl. Piers (C.A.D.)

Revised Jan 24, -28 For Quantities in Concrete Treatise (C.A.D.)

SCALE 1 INCH = 20 FEET

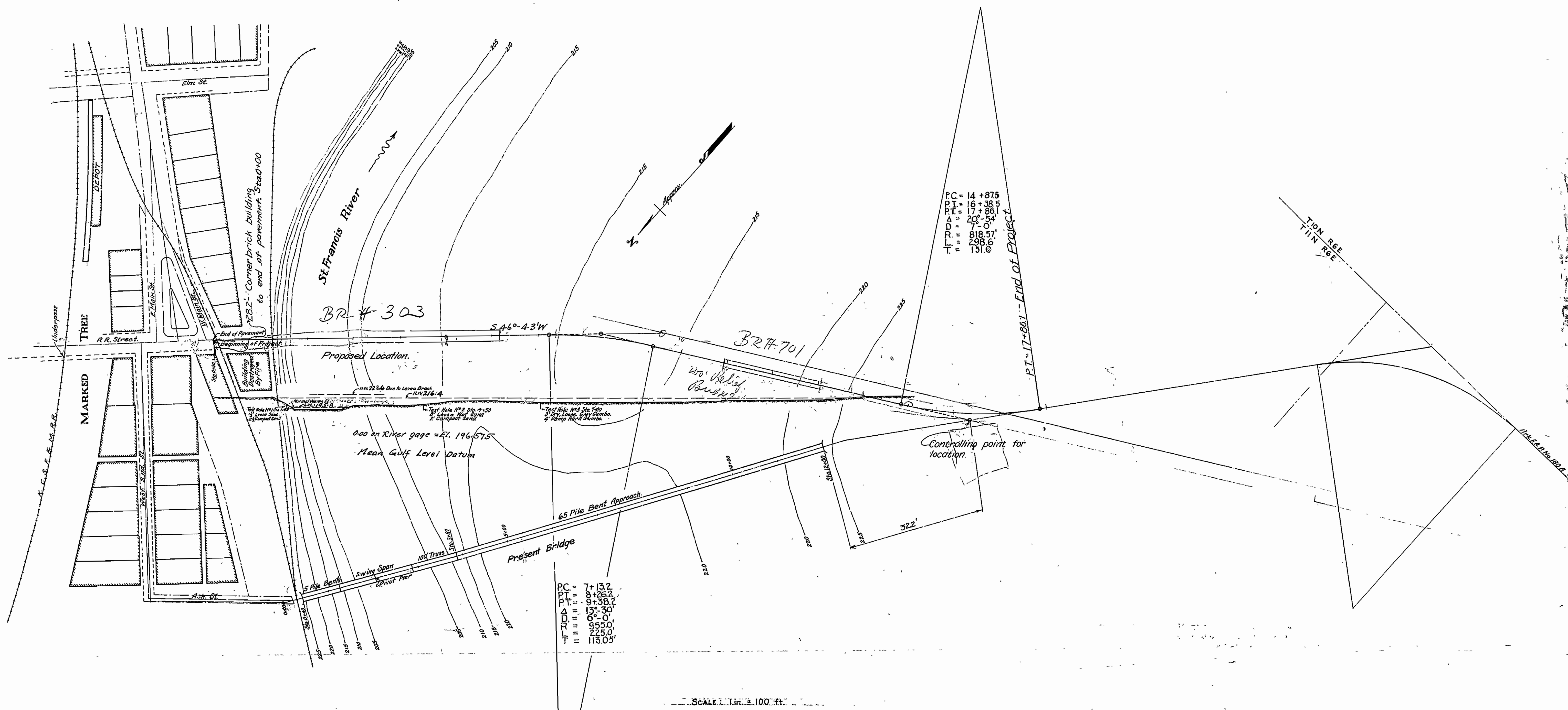
REVISED - SEPT 6, 1927

PIER F PIERS BENT H
This drawing included in Job 10486 for general information only.
LAYOUT PLAN & TABULATION OF QUANTITIES
FOR BRIDGE OVER ST. FRANCIS RIVER RT. 63
NEAR MARKED TREE - POINSETT COUNTY
ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK ARKANSAS - AUG. 1927

Sta. 0+00 - Beginning of Project & End of Pavement.

FED. AID PROJ. NO.	STATE	FED. AID DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	ARK.	6	1927	5	17

Map Showing Location Marked Tree Br. Dr. 327



PC = 14+87.5
 PT = 16+38.5
 PVI = 20'-54"
 Δ = 7'-0"
 TD = 818.57'
 T = 298.6'
 L = 131.0'

PC = 7+13.2
 PT = 8+26.2
 PVI = 9+38.2
 Δ = 13'-30"
 TD = 6'-0"
 T = 95.0'
 L = 225.0'
 L = 113.0'

Revised

MAP SHOWING LOCATION
 MARKED TREE BRIDGE
 POINSETT COUNTY, ARK.

N.B. Sawyer
 Bridge Engineer

Bridge No. 303

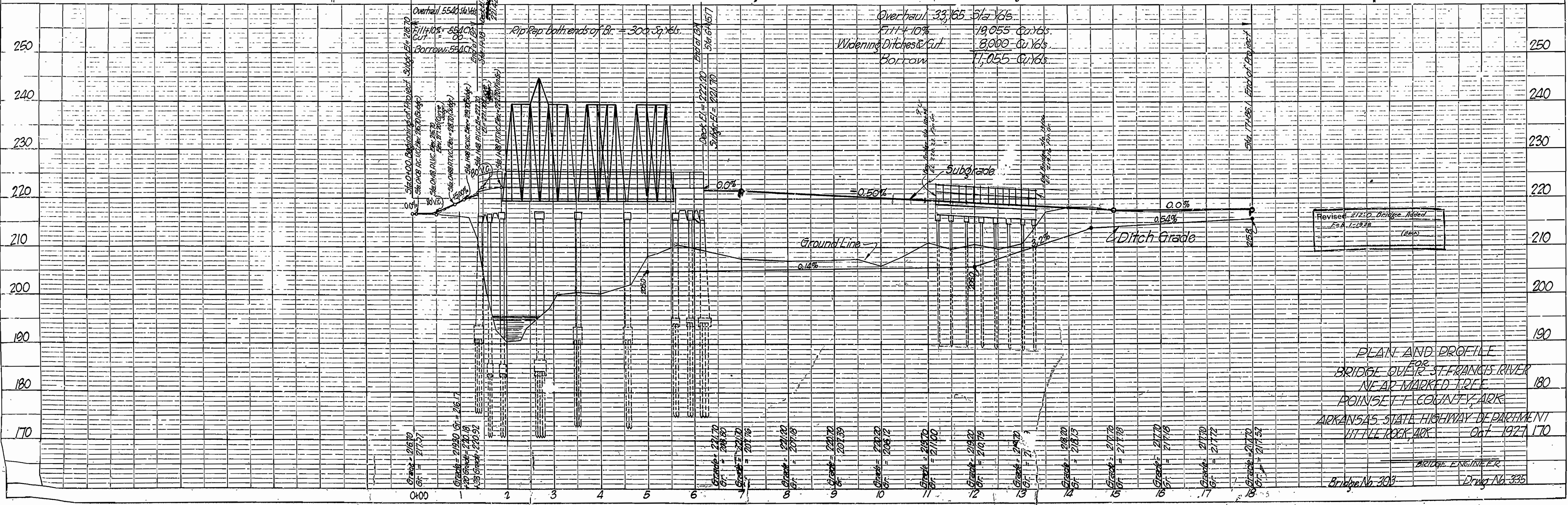
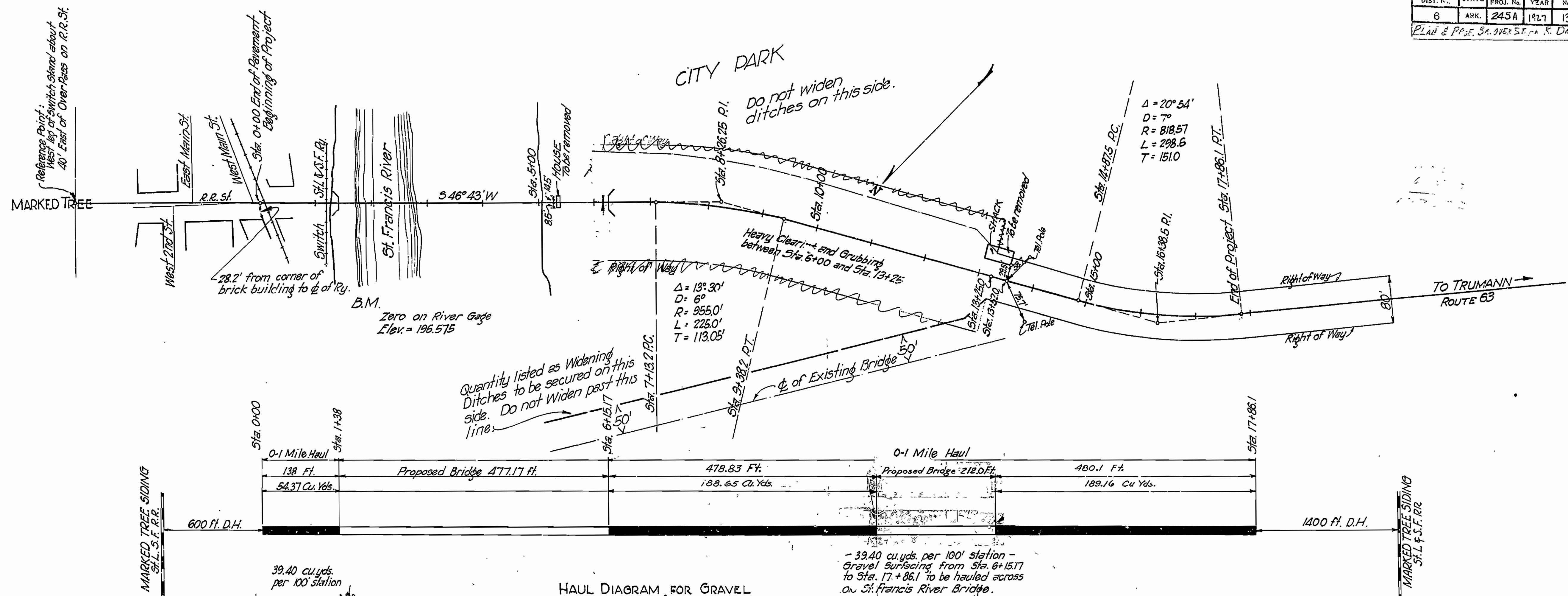
FED. ROAD DIST. N.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.	245A	1927	13	17

PLAN & PROFILE, ST. FRANCIS RIVER BRIDGE NEAR MARKED TREE, R. D. No. 335

PLAN
 SUPERVISOR
 CHECKED
 DATE
 NO.

PROFILE
 SUPERVISOR
 CHECKED
 DATE
 NO.

DATE
 1927

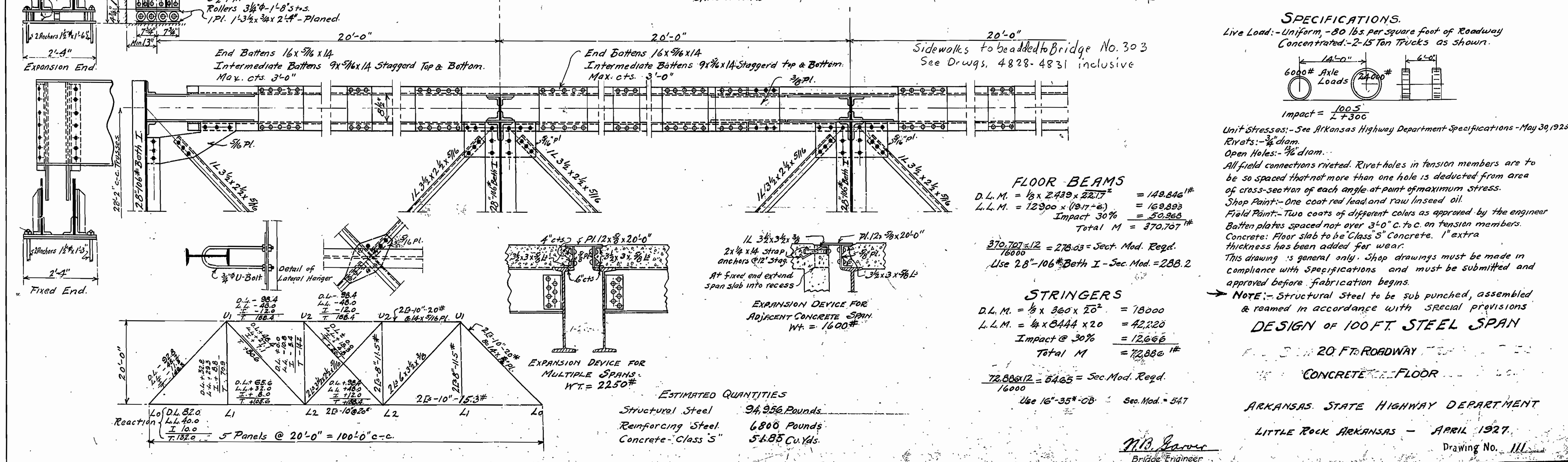
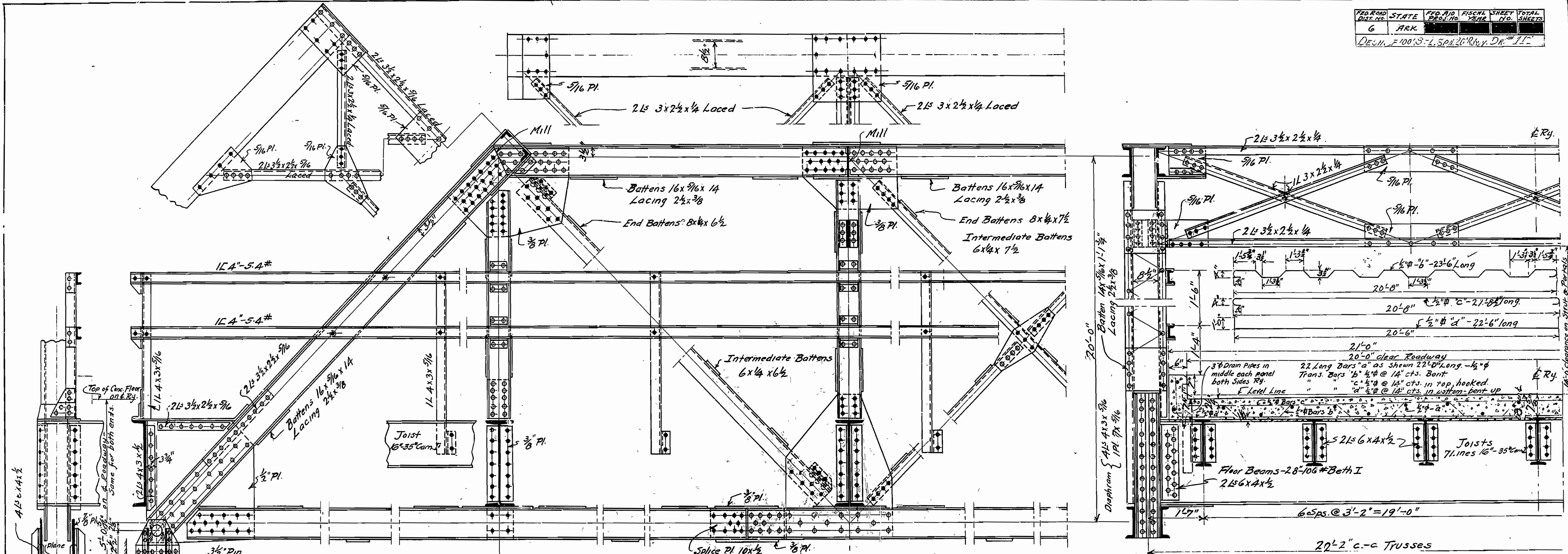


PLAN AND PROFILE
 FOR
 BRIDGE OVER ST. FRANCIS RIVER
 NEAR MARKED TREE
 POINSETT COUNTY, ARK.
 ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK. Oct. 1927 170

BRIDGE ENGINEER
 Bridge No. 303
 Drawg No. 335

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				

DESN. F. 100.3-L.S.P.H. 26' R.W. DR. 11'



SPECIFICATIONS.

Live Load: - Uniform, - 80 lbs. per square foot of Roadway
 Concentrated, - 2-15 Ton Trucks as shown.

Impact = $\frac{100.5}{L + 300}$

Unit Stresses: - See Arkansas Highway Department Specifications - May 30, 1925
 Rivets: - $\frac{3}{4}$ " diam.
 Open Holes: - $\frac{3}{8}$ " diam.
 All field connections riveted. Rivet holes in tension members are to be so spaced that not more than one hole is deducted from area of cross-section of each angle at point of maximum stress.
 Shop Paint: - One coat red lead and raw linseed oil.
 Field Paint: - Two coats of different colors as approved by the engineer.
 Batten plates spaced not over 3'-0" c. to c. on tension members.
 Concrete: Floor slab to be Class 5 Concrete. 1" extra thickness has been added for wear.
 This drawing is general only. Shop drawings must be made in compliance with Specifications and must be submitted and approved before fabrication begins.

NOTE: - Structural Steel to be sub punched, assembled & reamed in accordance with special provisions

DESIGN OF 100 FT. STEEL SPAN

20 FT. ROADWAY

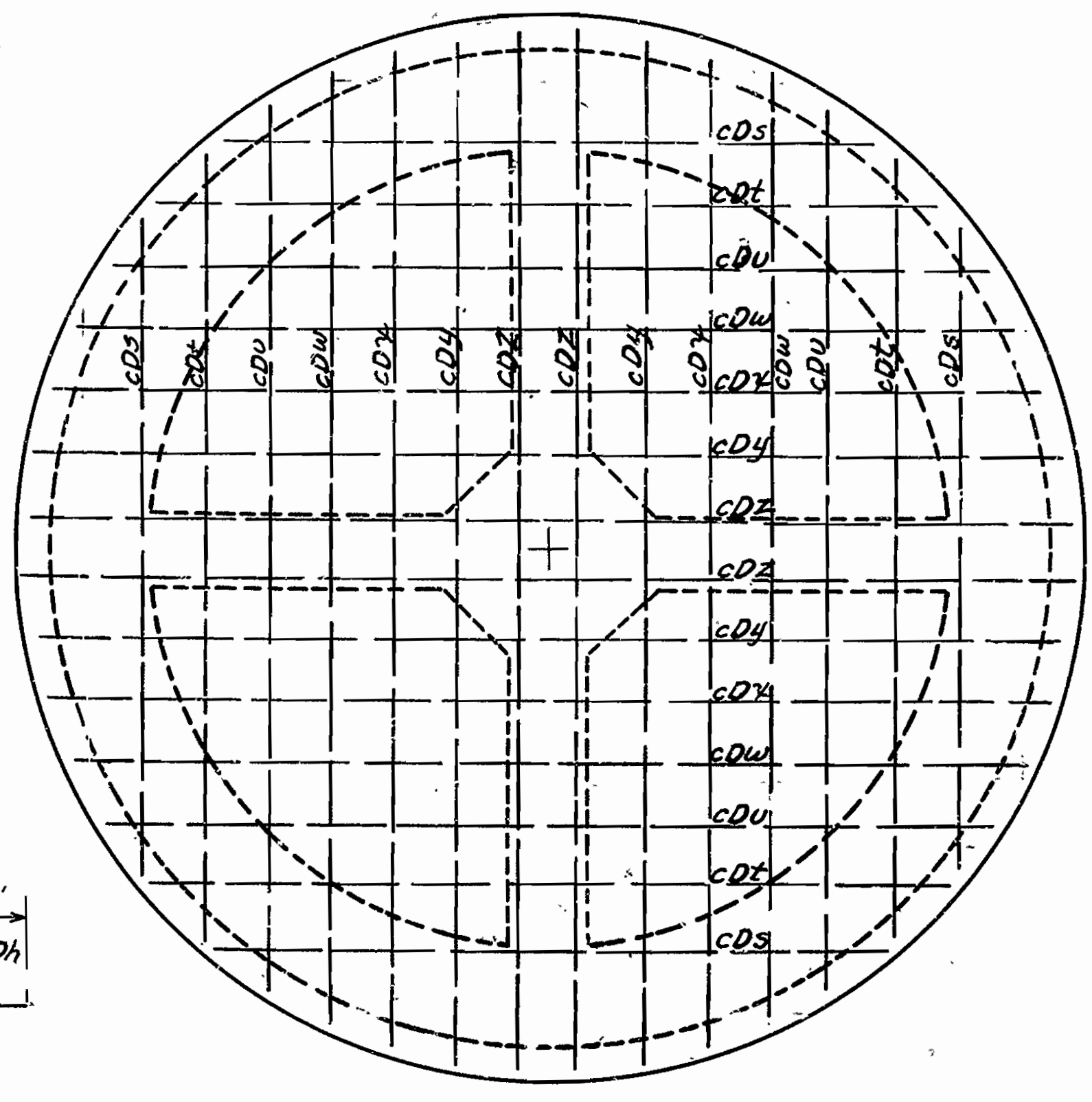
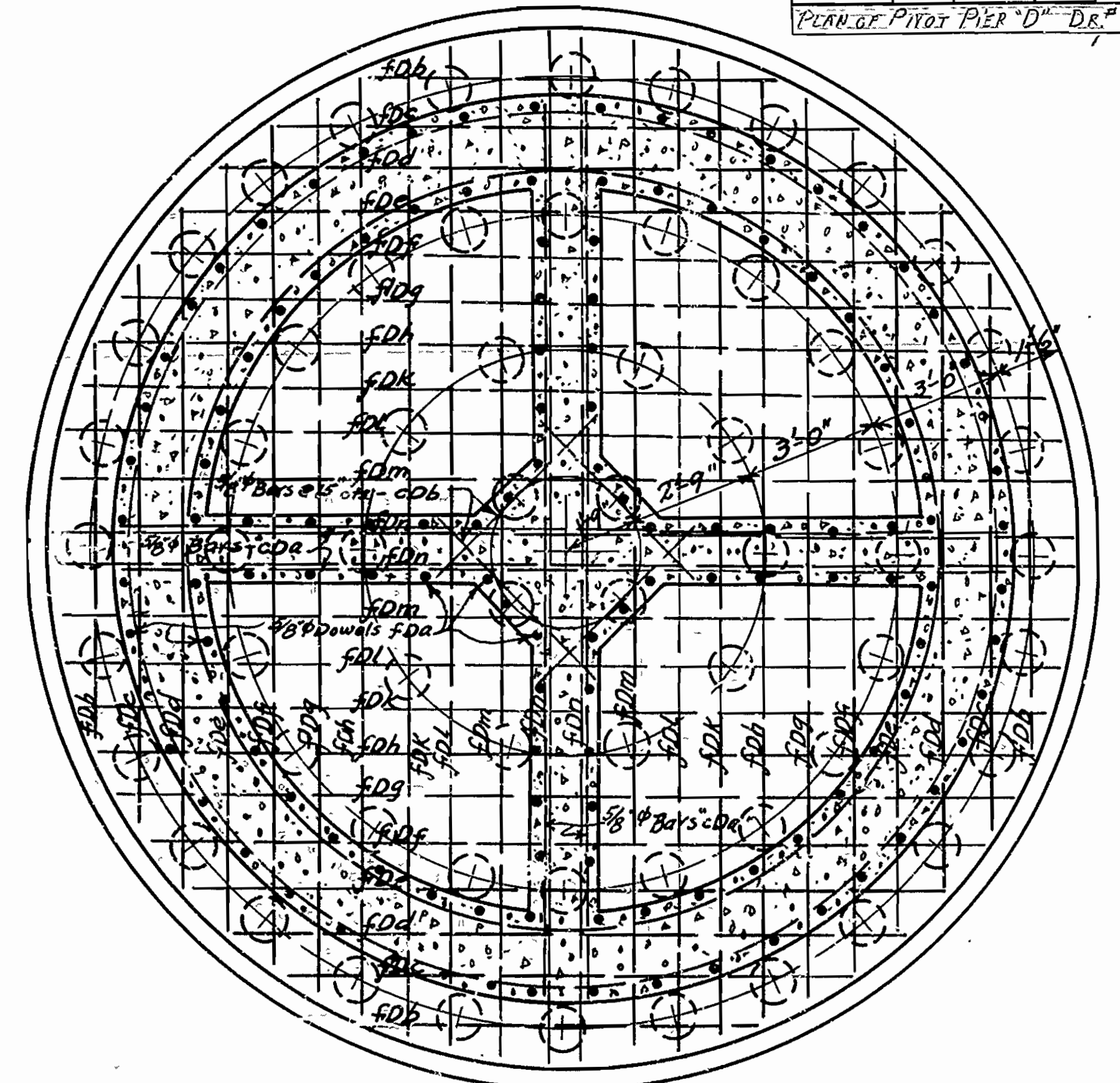
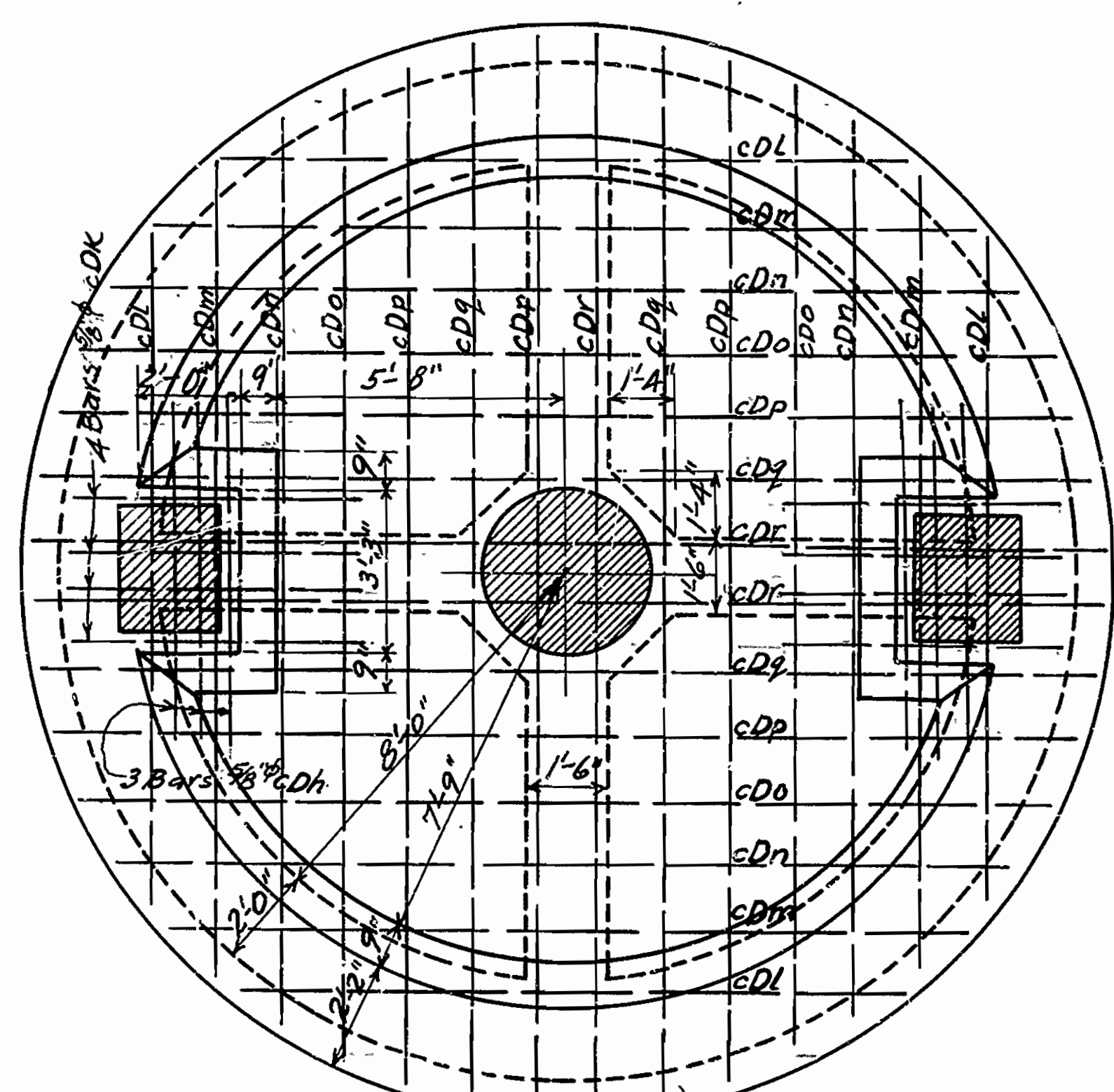
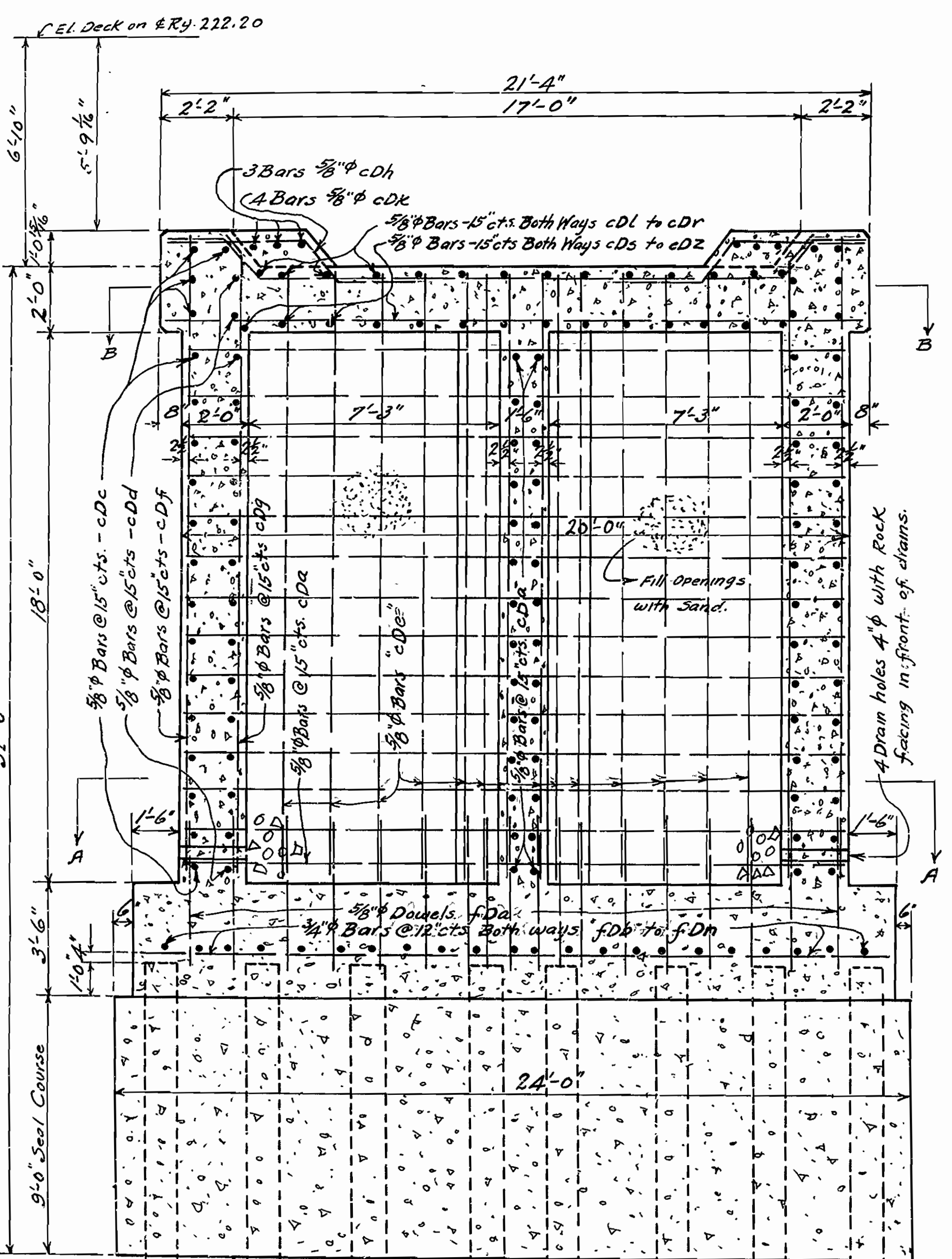
CONCRETE FLOOR

ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK ARKANSAS - APRIL 1927.
 Drawing No. 111

M.B. Brown
 Bridge Engineer

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK		1927	32	32

PLAN OF PIVOT PIER "D" - D.R. # 328



SCHEDULE OF REINFORCING STEEL FOR PIVOT PIER "D"

BAR	No.	SIZE	LENGTH	TYPE	LOCATION
fDa	132	5/8"φ	5'-0"	Str.	Footings Dowels
fDb	4	5/8"φ	9'-6"	"	Bottom of Footing
fDc	4	5/8"φ	13'-0"	"	"
fDd	4	5/8"φ	15'-3"	"	"
fDe	4	5/8"φ	17'-0"	"	"
fDf	4	5/8"φ	18'-6"	"	"
fDg	4	5/8"φ	19'-9"	"	"
fDh	4	5/8"φ	20'-9"	"	"
fDk	4	5/8"φ	21'-6"	"	"
fDl	4	5/8"φ	22'-0"	"	"
fDm	4	5/8"φ	22'-3"	"	"
fDn	4	5/8"φ	22'-6"	"	"
cDa	60	5/8"φ	19'-6"	"	Web Walls (Horz)
cDb	64	5/8"φ	5'-0"	"	Center Coker (Horz)
cDc	72	5/8"φ	17'-5"	Bent.	Outside of Pier Shell (Horz)
cDd	68	5/8"φ	14'-6"	"	Inside of Pier Shell (Horz)
cDe	44	5/8"φ	19'-6"	Str.	Web Walls (Vert)
cDf	48	5/8"φ	20'-9"	"	Outside of Pier Shell - (Vert)
cDg	40	5/8"φ	20'-11"	Bent.	Inside of Pier Shell (Vert)
cDh	6	5/8"φ	8'-2"	"	Bracket Under Center Girder
cDk	8	5/8"φ	7'-3"	"	"
cDl	4	5/8"φ	13'-6"	Str.	Top of Pier Cap
cDm	4	5/8"φ	16'-0"	Bent.	"
cDn	4	5/8"φ	17'-6"	"	"
cDo	4	5/8"φ	19'-0"	"	"
cDp	4	5/8"φ	20'-0"	"	"
cDq	4	5/8"φ	20'-6"	"	"
cDr	4	5/8"φ	20'-10"	"	"
cDs	4	5/8"φ	13'-6"	Str.	Bottom of Pier Cap.
cDt	4	5/8"φ	15'-9"	"	"
cDu	4	5/8"φ	17'-9"	"	"
cDv	4	5/8"φ	19'-0"	"	"
cDx	4	5/8"φ	20'-0"	"	"
cDy	4	5/8"φ	20'-6"	"	"
cDz	4	5/8"φ	20'-10"	"	"

Concrete in Seal Course to be Class B with 10% extra cement.
 Concrete above Seal Course to be Class A.
 Reinforcing bars to be deformed (Square twisted bars not to be considered deformed).
 Piling to have capacity for 15 Ton Load with a minimum penetration of 15 feet.
 A penetration of 18 feet has been used in estimating the approximate quantity of piling.

TABULATION OF APPROXIMATE QUANTITIES.

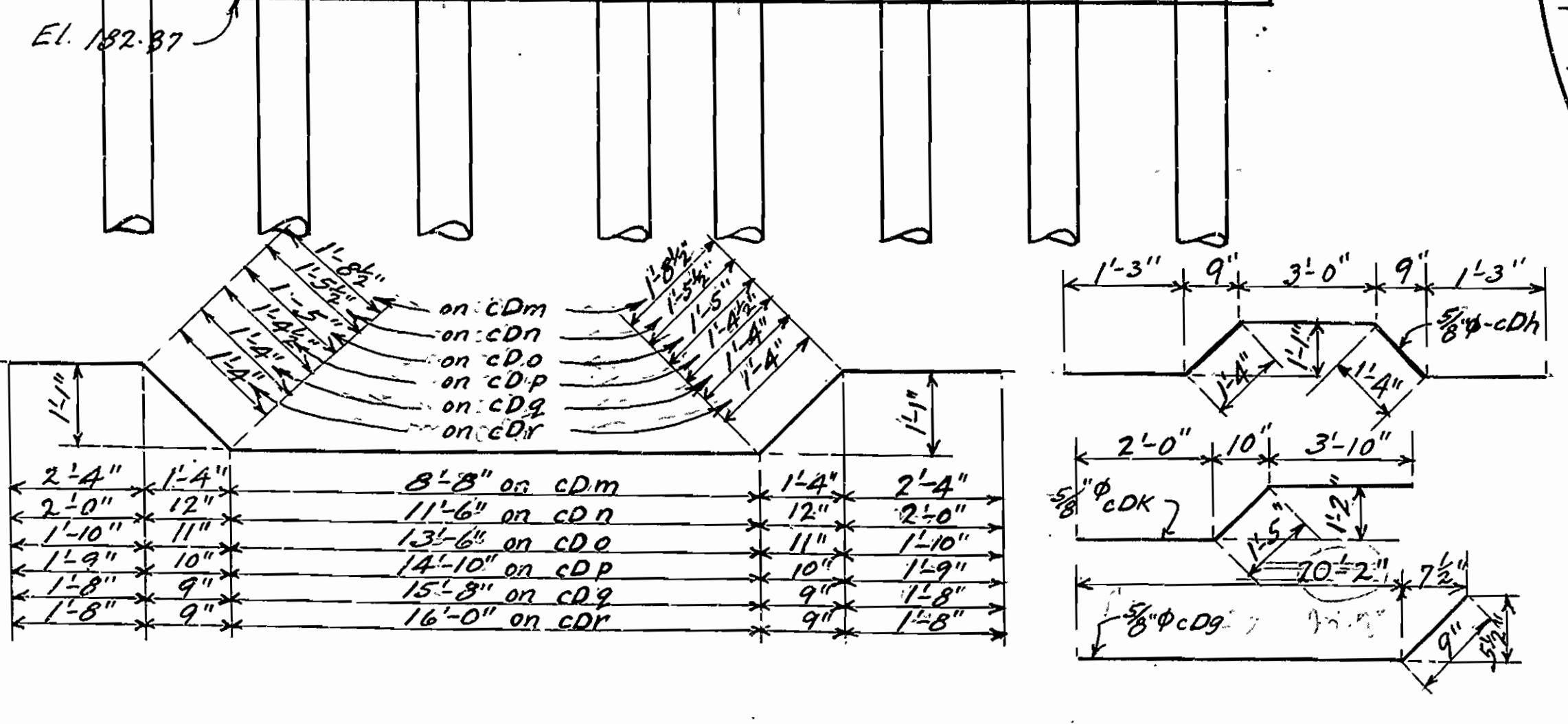
CLASS A CONCRETE	194.39	CU. YDS.
CLASS B CONCRETE WITH 10% EXTRA CEMENT	140.46	CU. YDS.
REINFORCING STEEL	2819	POUNDS
TIMBER PILING (UNTREATED)	1674	LINEAL FEET
STRUCTURAL EXCAVATION WET	191	CU. YDS.
STRUCTURAL EXCAVATION DRY	0	CU. YDS.
SAND FILL IN PIVOT PIER	101.84	CU. YDS.

NOTE
 Volume occupied by foundation piling extending into concrete is deducted from conc. quant.

PLAN OF PIVOT PIER "D" FOR
 BRIDGE OVER ST. FRANCIS RIVER
 NEAR MARKED TREE - POINSETT CO.
 ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK. - APRIL 1927

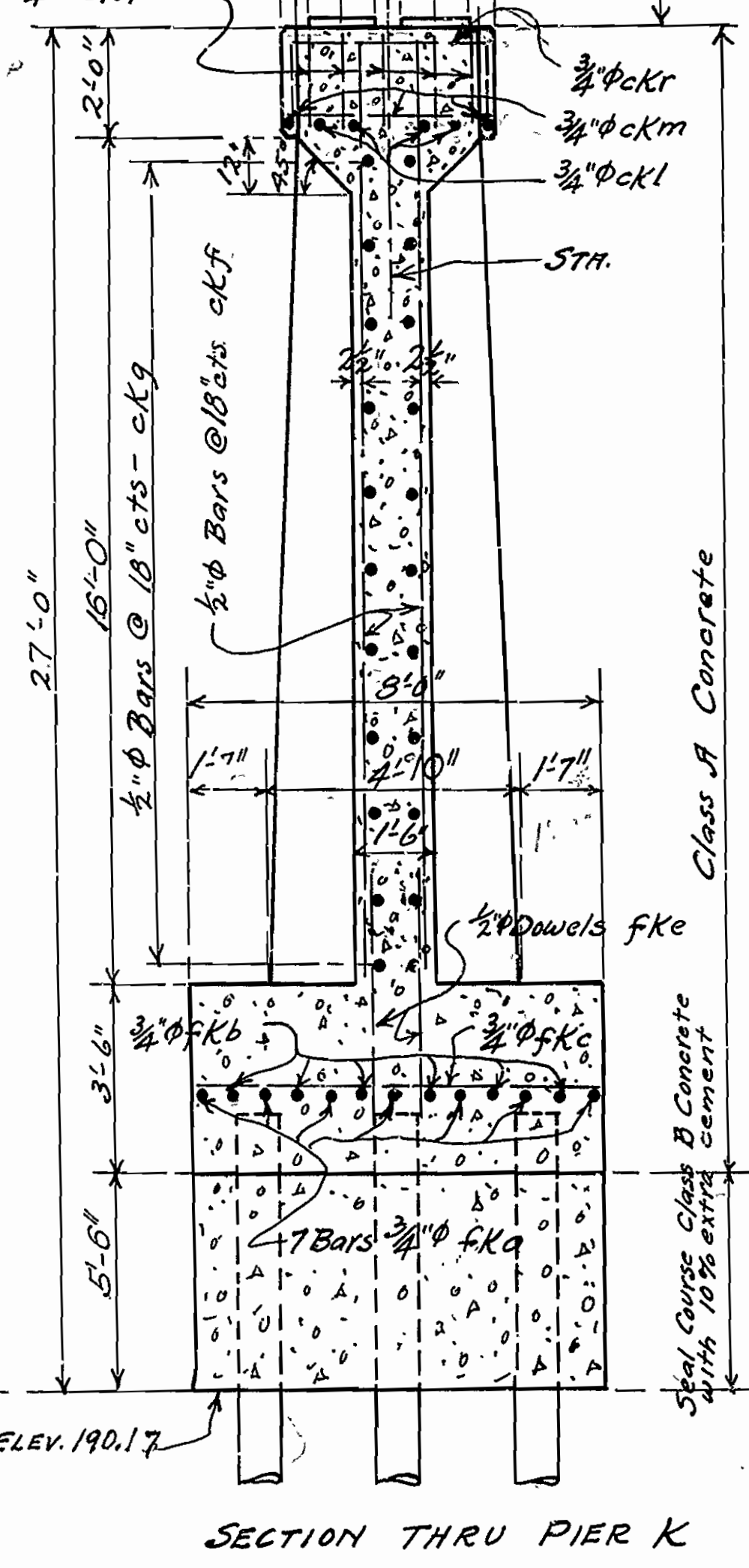
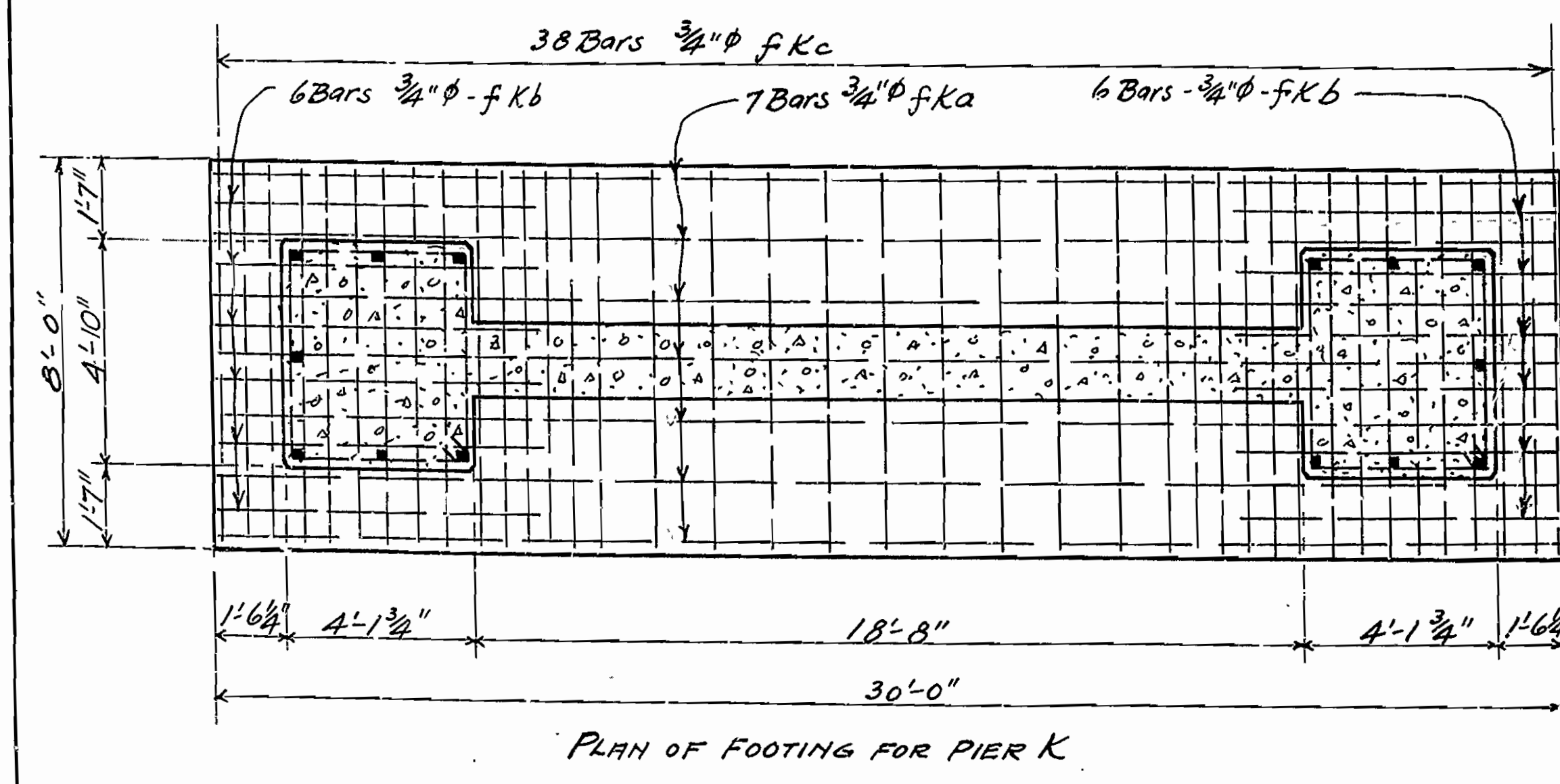
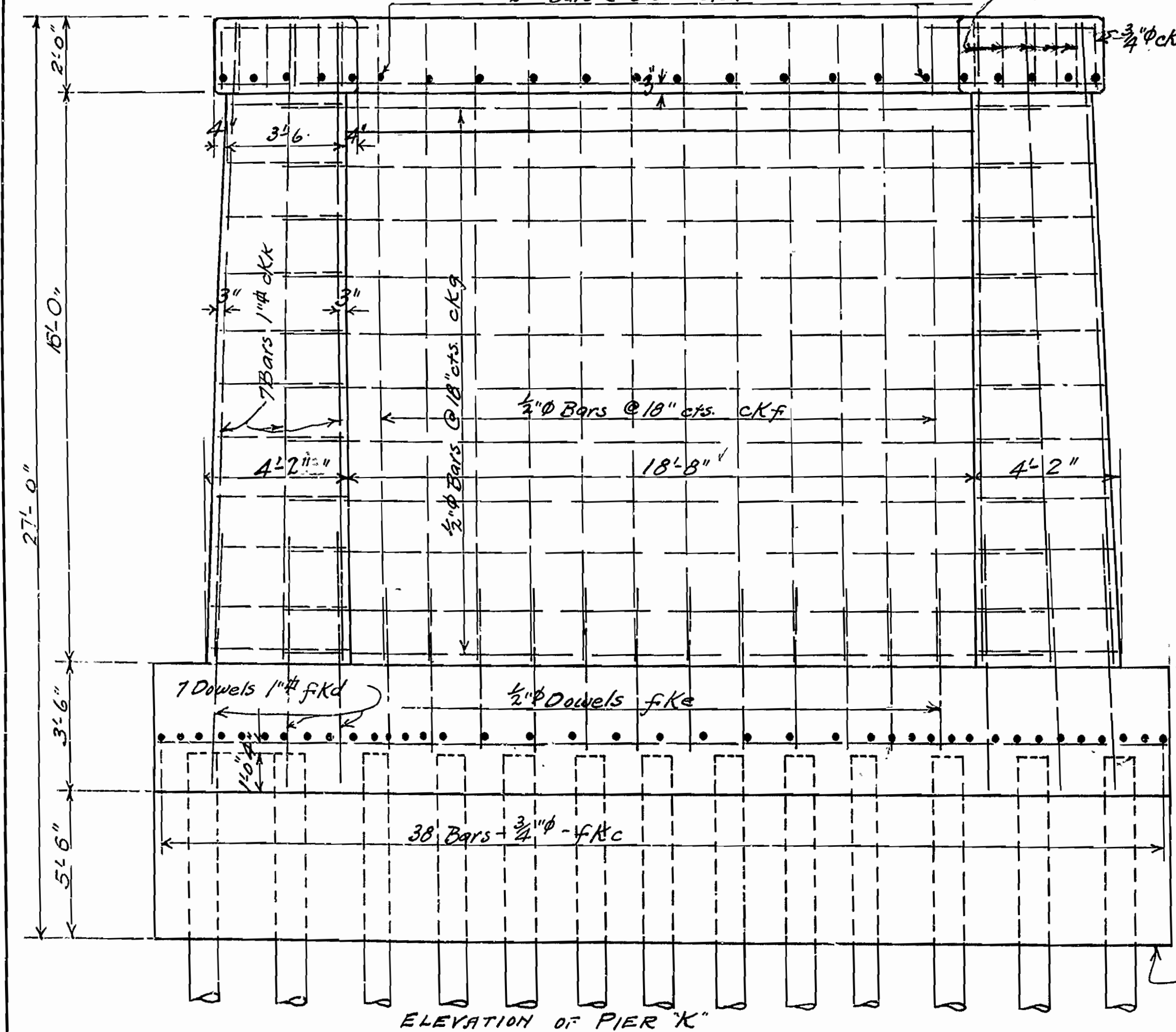
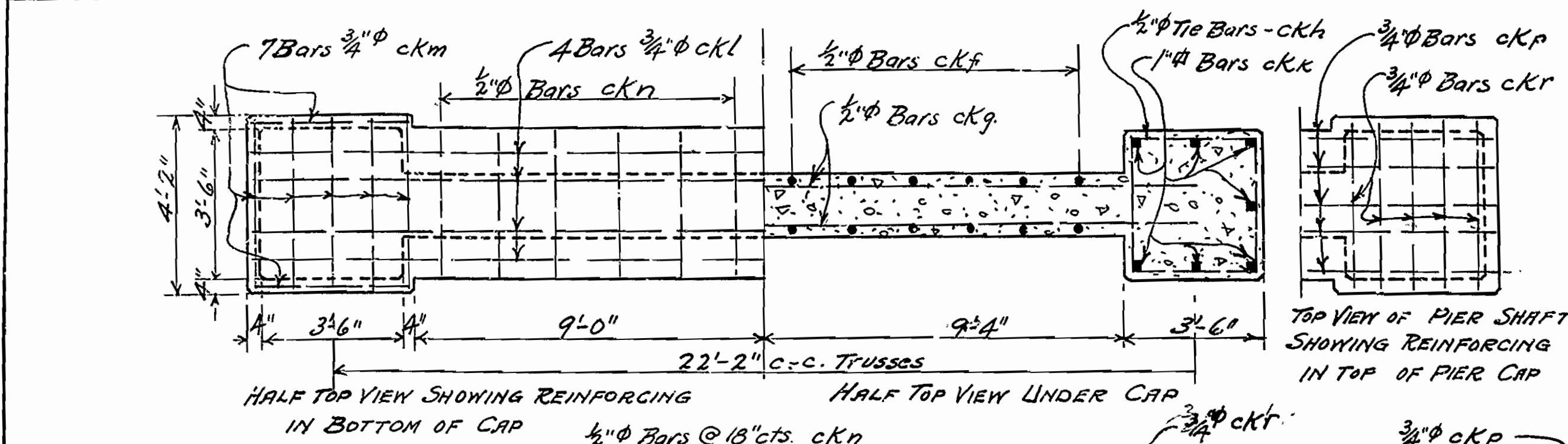
M.B. Evans
 Bridge Engineer

Revised E.A.W. 10-7-27 Dimensions and Quantities for 2 Piers 100' each



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR.	SHEET NO.	TOTAL SHEETS
6	ARK.		1927	32	32

PLAN OF BRIDGE PIER K DR. 329



TABULATION OF APPROXIMATE QUANTITIES

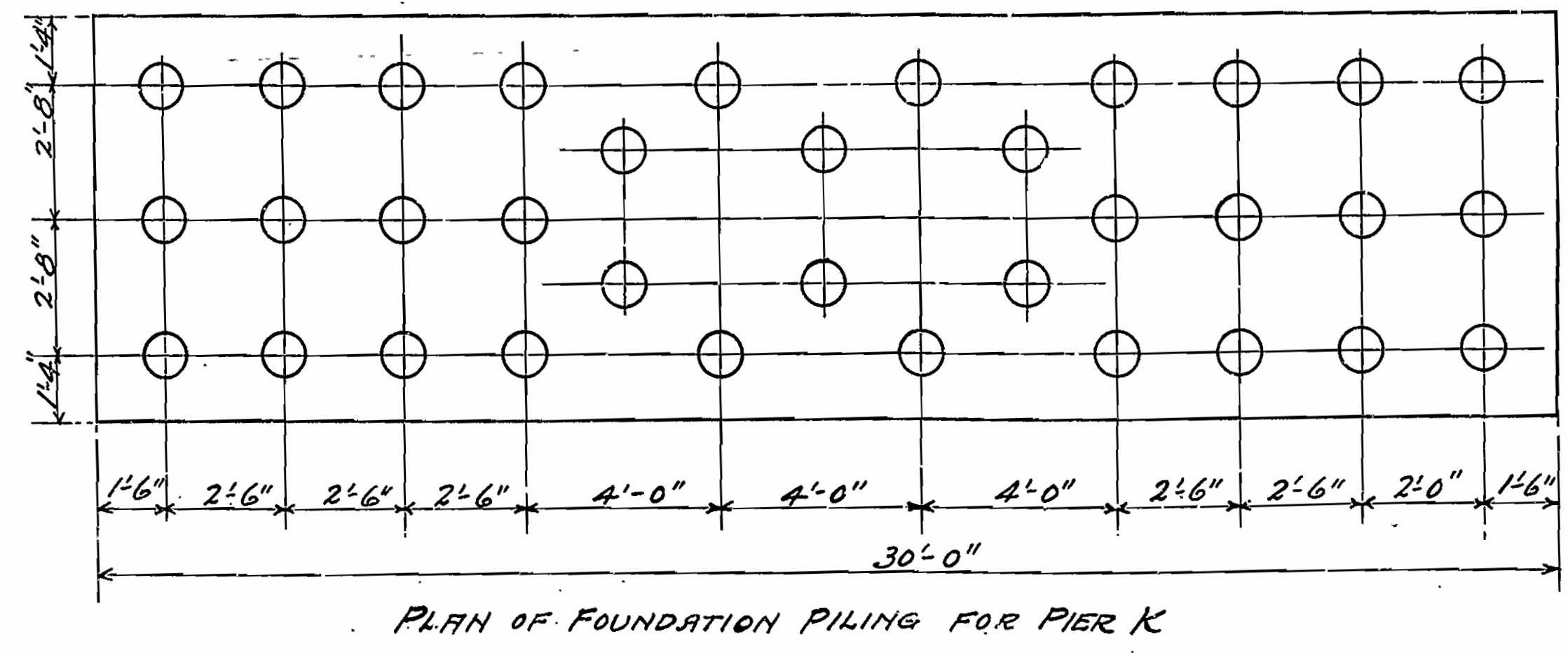
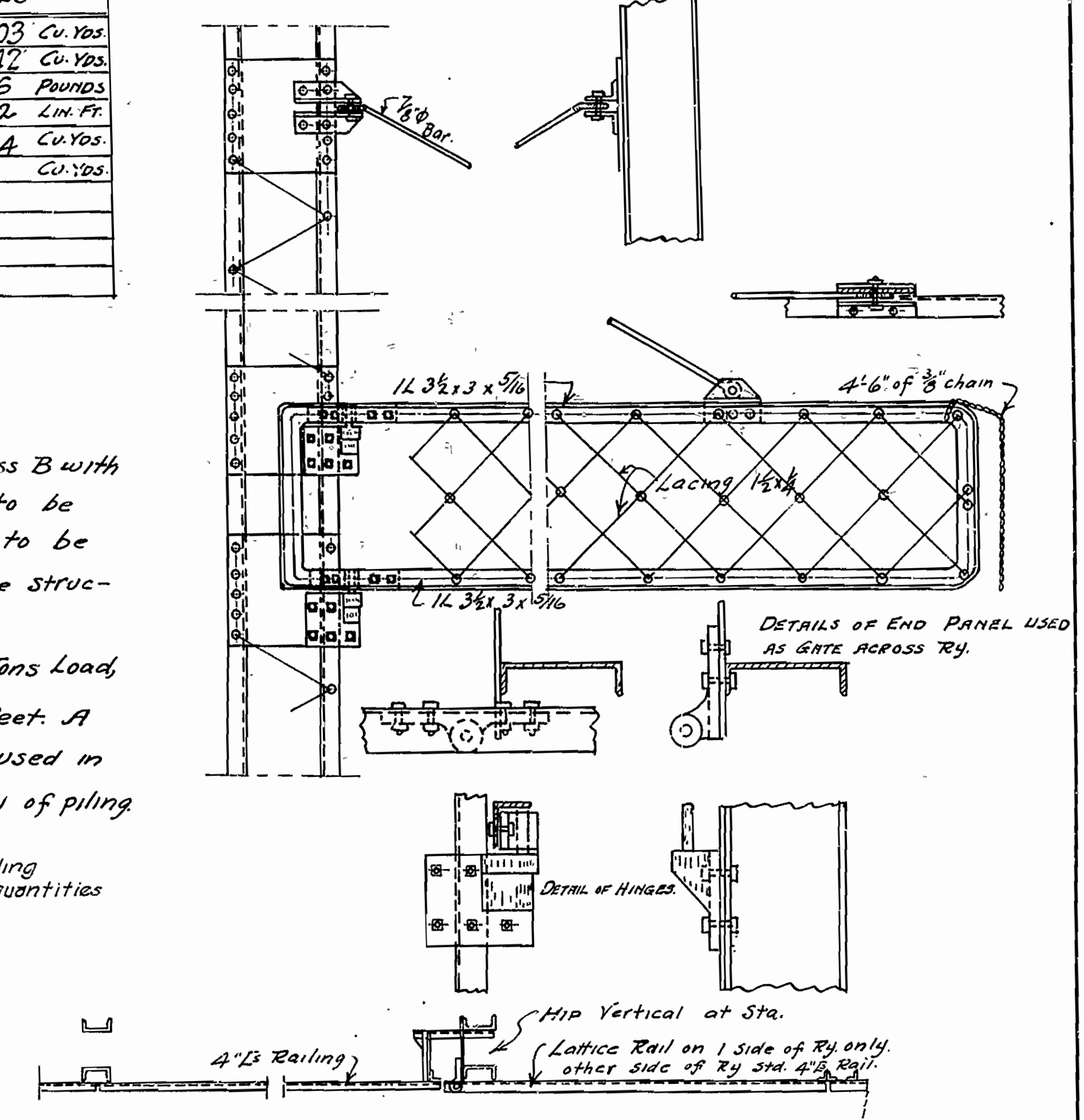
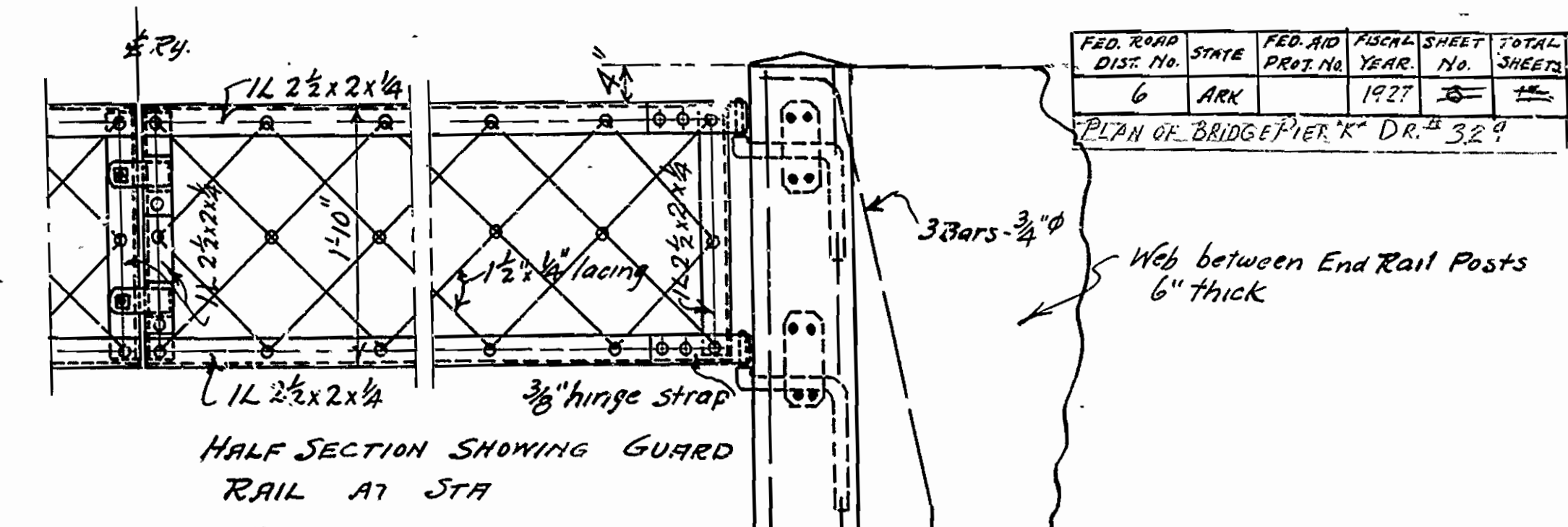
CLASS A CONCRETE	74.03	CU. YDS.
CLASS B CONCRETE WITH 10% EXTRA CEMENT	45.42	CU. YDS.
REINFORCING STEEL	3476	POUNDS
TIMBER PILING (UNTREATED)	782	LIN. FT.
STRUCTURAL EXCAVATION WET	154	CU. YDS.
STRUCTURAL EXCAVATION DRY	0	CU. YDS.

NOTE

Concrete in Seal Course to be Class B with 10% extra cement. Reinforcing bars to be deformed. (Square twisted bars not to be considered deformed. Grade to be structural or intermediate.

Piling to have a capacity of 15 Tons Load, with a minimum penetration of 15 feet. A penetration of 18 feet has been used in estimating the approximate quantity of piling.

Volume occupied by foundation piling extending into concrete is deducted from concrete quantities.



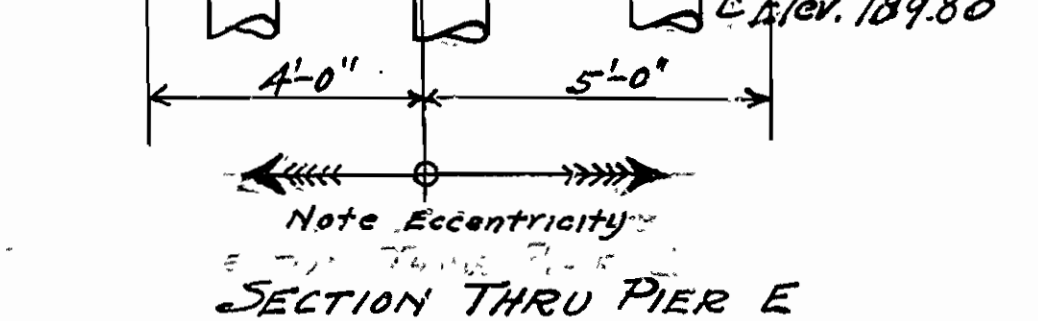
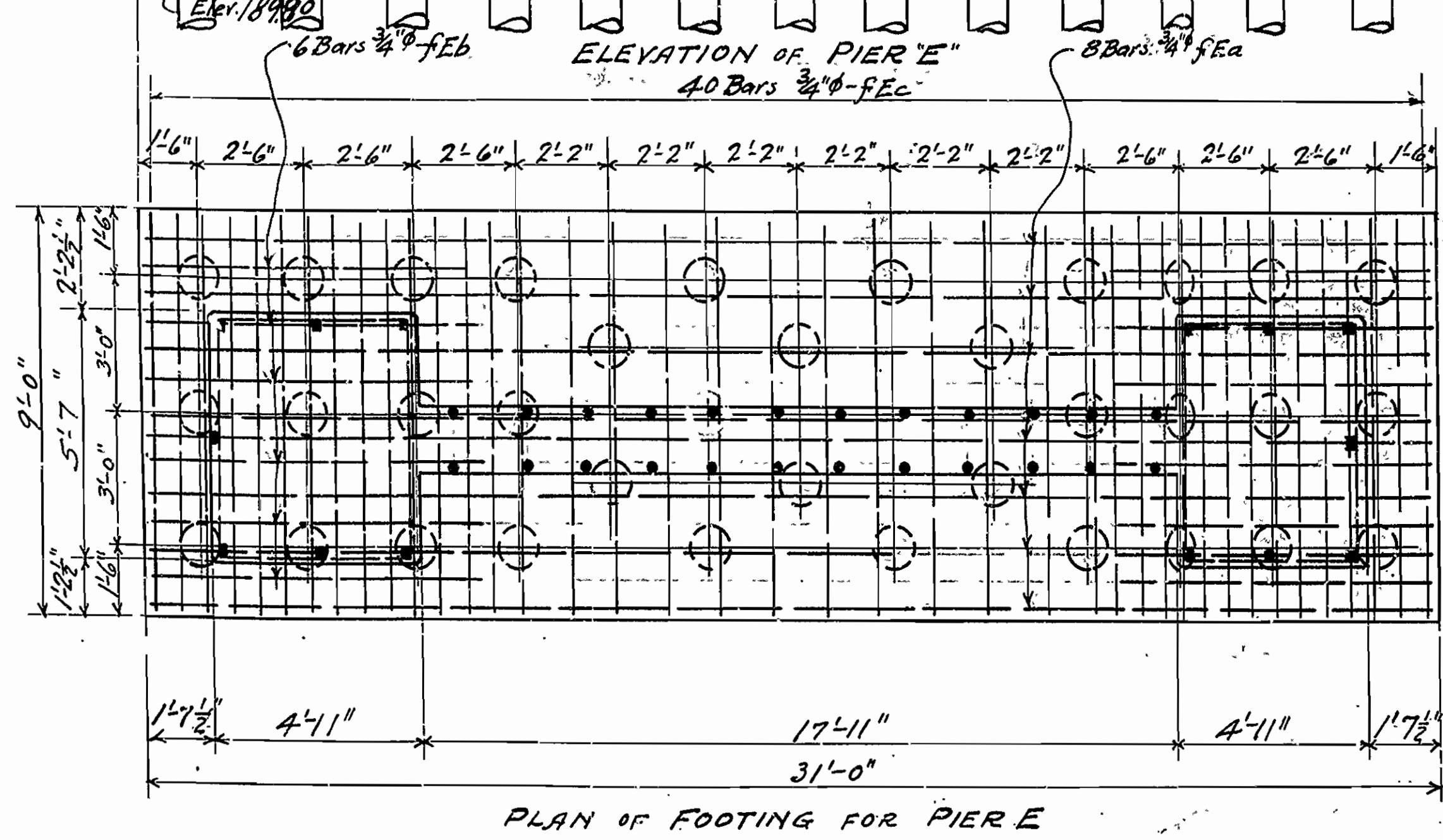
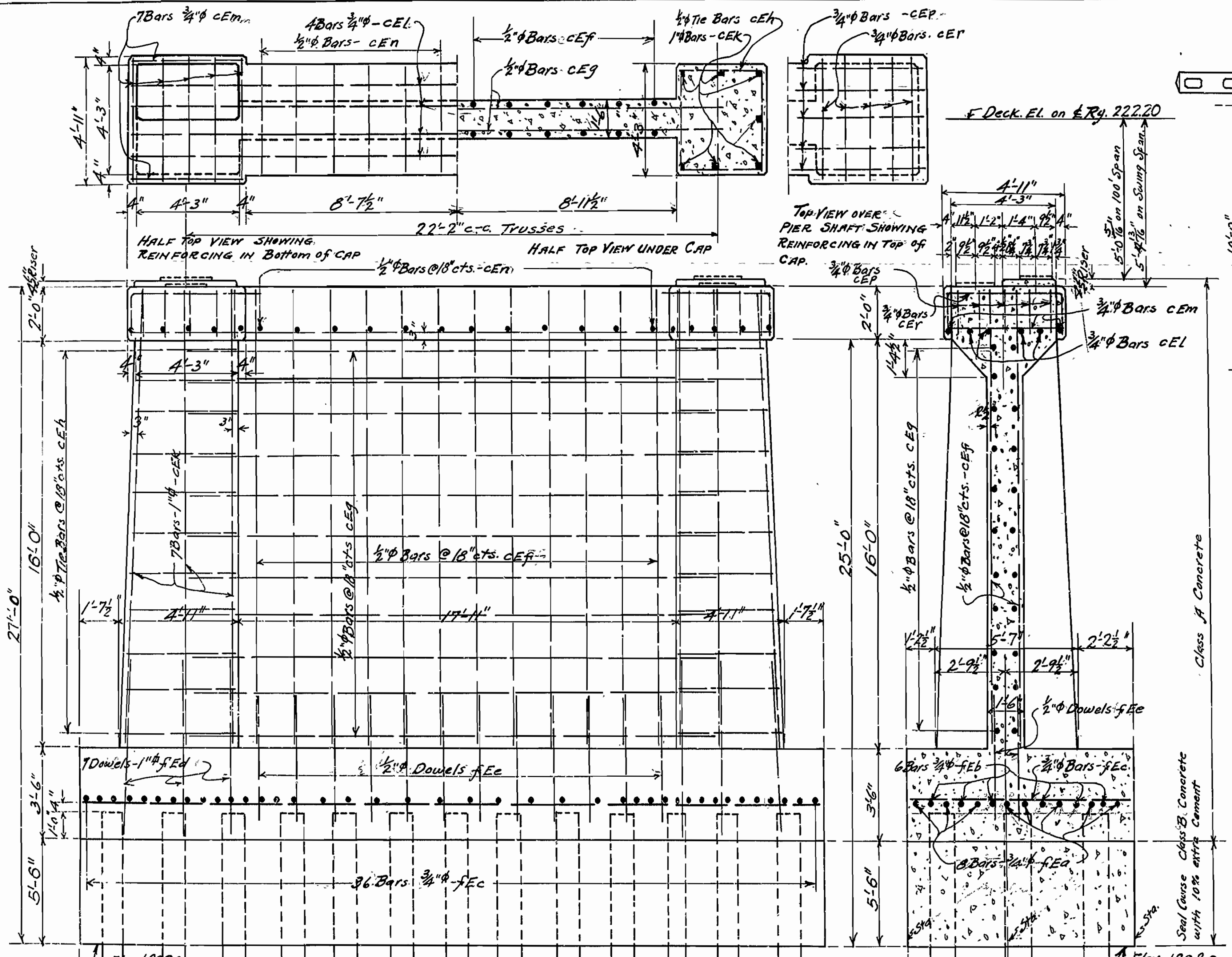
Revised E.A.W. Oct. 7-27 Dimension and quantities for 2' Rise in grade

PLAN OF BRIDGE PIER K FOR BRIDGE OVER ST. FRANCIS RIVER NEAR MARKED TREE - POINSETT CO. ARKANSAS STATE HIGHWAY DEPARTMENT LITTLE ROCK - ARK. - AUGUST 1927

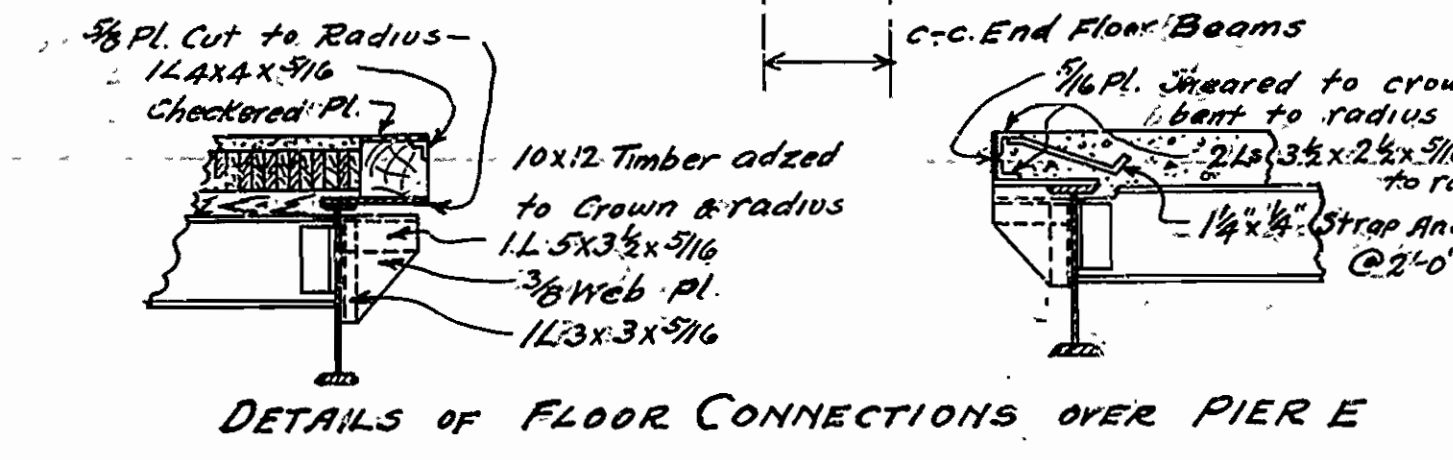
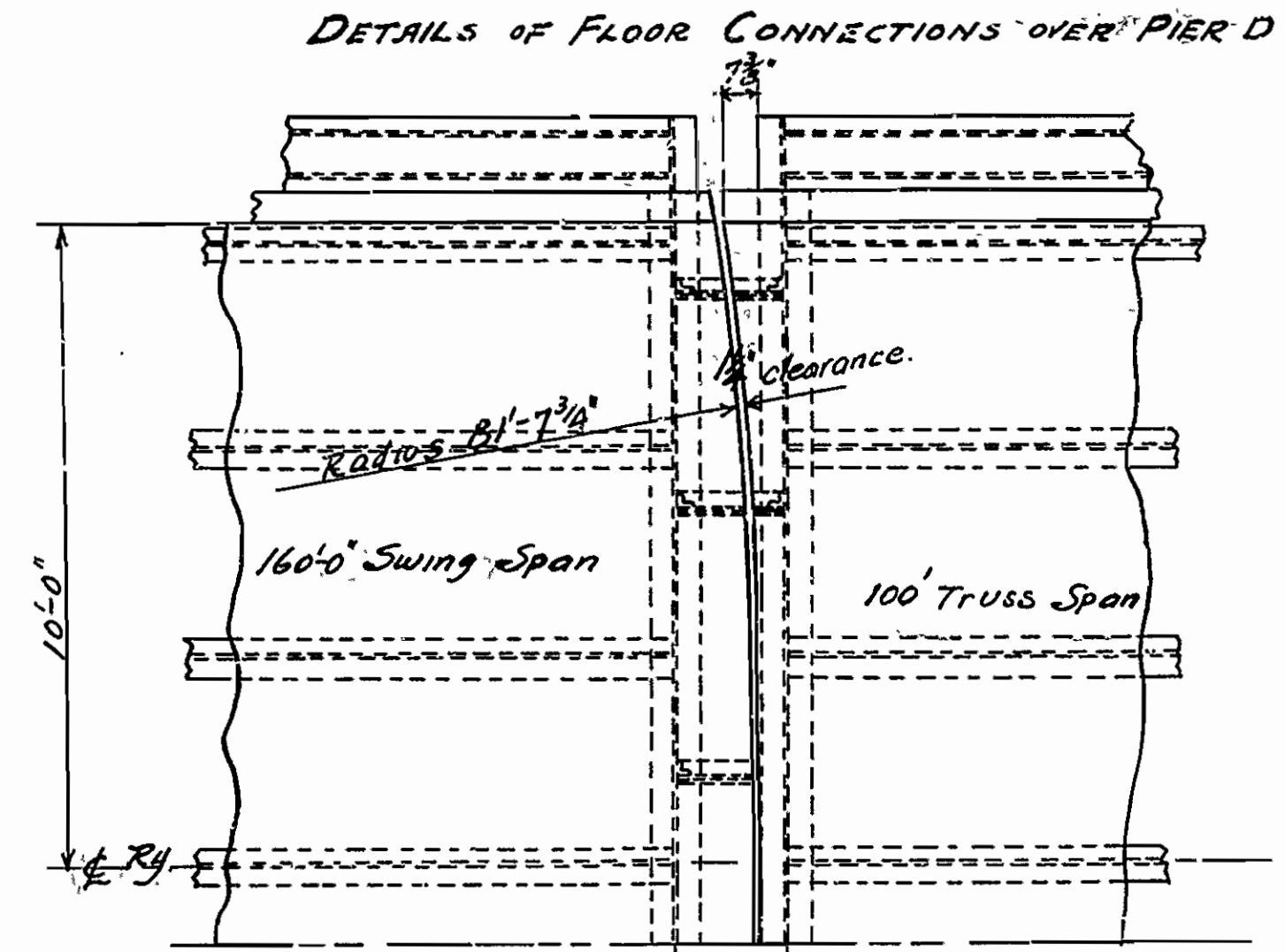
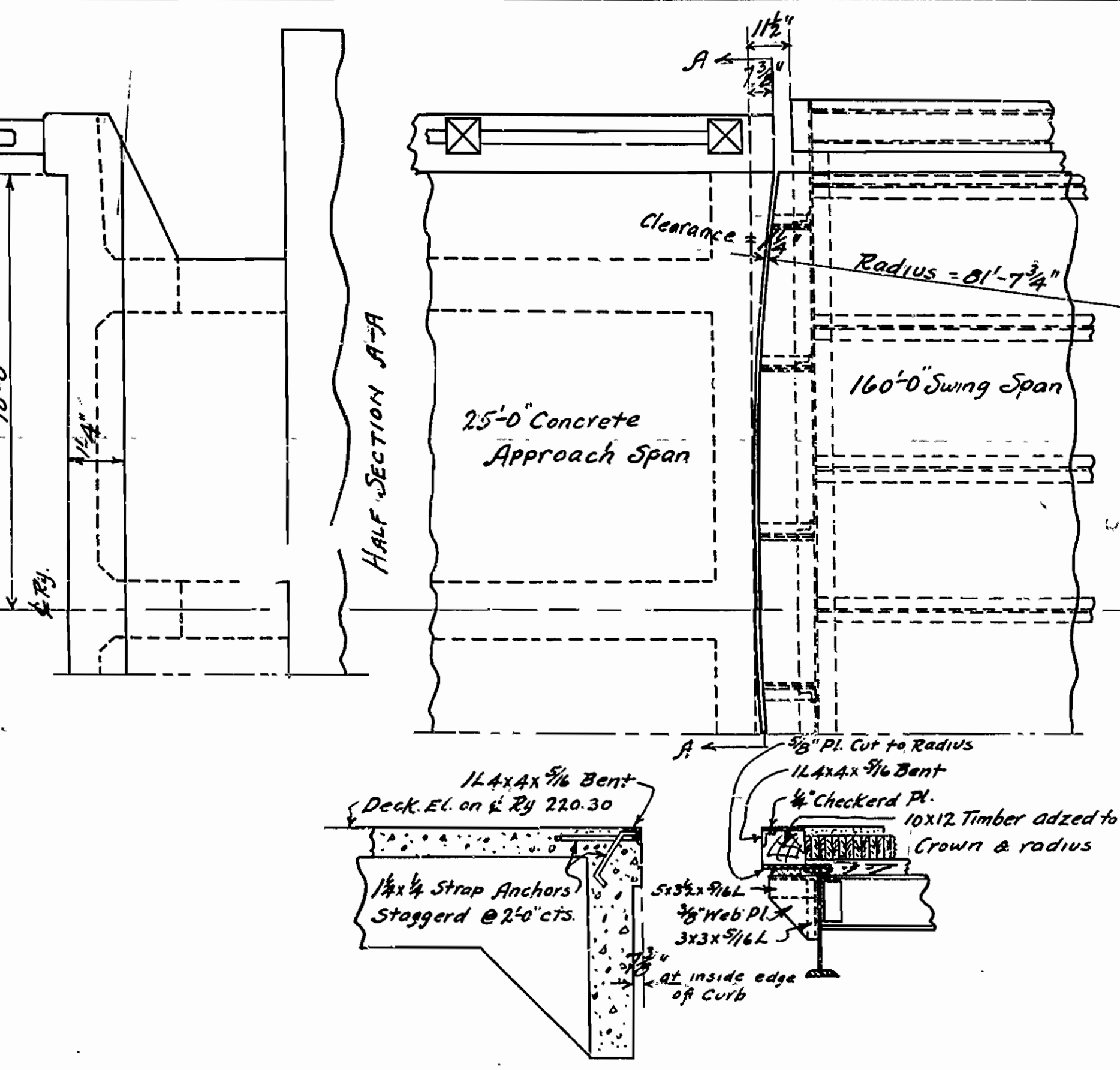
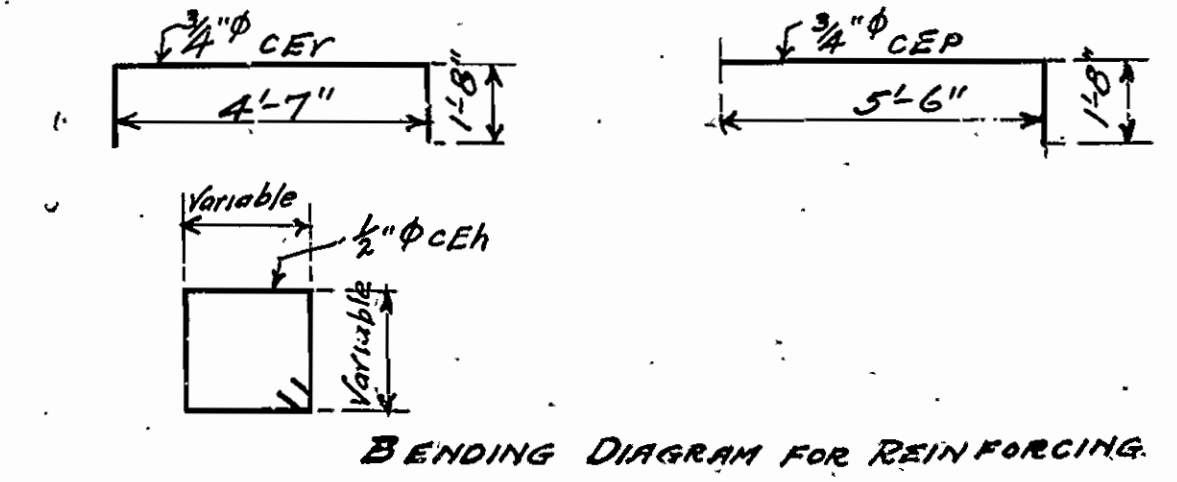
M.B. Garver Bridge Engineer Bridge No. 303 Drawing No. 329

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK		1927	#	#

PLAN OF BRIDGE PIER "E" DR. # 330



NOTE
 Concrete in Seal Course to be class B with 10% extra cement. Reinforcing Bars to be deformed (square twisted bars not to be considered deformed). Grade to be Structural or Intermediate. Piling to have capacity for 15 Tons Load, with a minimum penetration of 15 ft. A penetration of 18 feet has been used in estimating the approximate quantity of piling. Piling to be untreated.



NOTE
 Volume occupied by foundation piling extending into concrete is deducted from concrete quantities

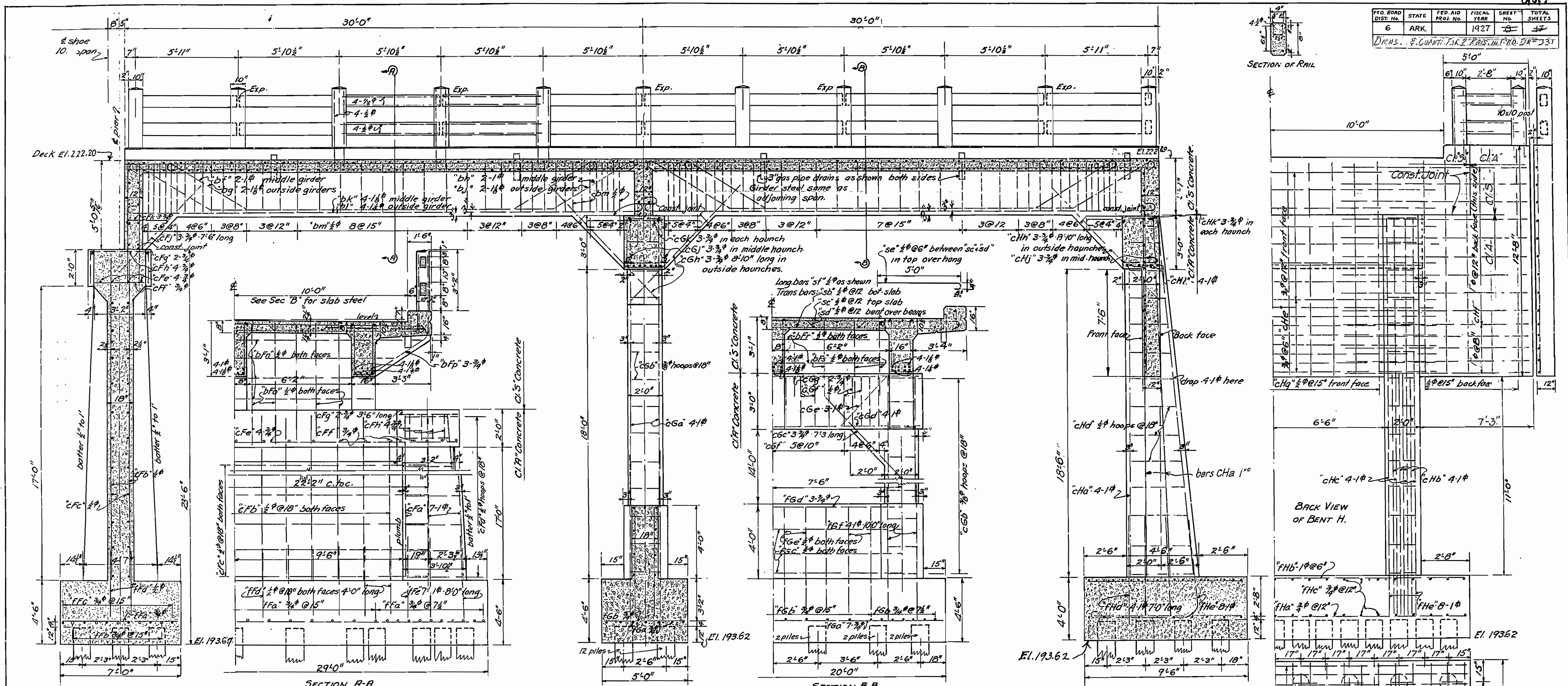
For details of sidewalk to be added see Drawgs. 4828 - 4831 incl.

CLASS A CONCRETE	88.79 Cu. Yds.
CLASS B CONCRETE WITH 10% EXTRA CEMENT	53.31 Cu. Yds.
REINFORCING STEEL	37.10 Pounds
TIMBER PILING (UNTREATED)	782 Lin. Ft.
STRUCTURAL EXCAVATION WET	178 Cu. Yds.
STRUCTURAL EXCAVATION DRY	0 Cu. Yds.

PLAN OF BRIDGE PIER E FOR
 BRIDGE OVER ST. FRANCIS RIVER
 NEAR MARKED TREE - POINSETT Co.
 ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK - ARK. - APRIL 1927
 W.B. Lewis
 Bridge Engineer

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.		1927	31	31

Dimns. & Quant. for Piers in P. 331



Mark	No.	Size	l	d	Location
cAg	9	3/4"	3'-3"	6"	Haunch Bent A
cBk	9	3/4"	6'-0"	6"	" Bent B
cCk	10	3/4"	2'-6"	6"	" Piers C+H
bc	1	1"	24'-8"	8"	Mid. Girder
bd	16	1 1/2"	24'-8"	8"	Outside Girders
sc	112	1/2"	22'-4"	4"	Bot. slab
cGk	9	3/4"	6'-3"	6"	Haunch Bent G
cHk	9	3/4"	4'-0"	6"	" Bent H
bk	8	1 1/2"	29'-8"	8"	Middle Girder
bl	16	1 1/2"	29'-8"	8"	Outside "

Mark	No.	Size	a	b	c	d	e	Location
cBe	3	1"	2'-0"	2'-5"	8'-8"	2'-3"	2'-0"	Beam Bent B
cGe	3	1"	2'-0"	2'-6"	8'-2"	2'-6"	2'-0"	" " G

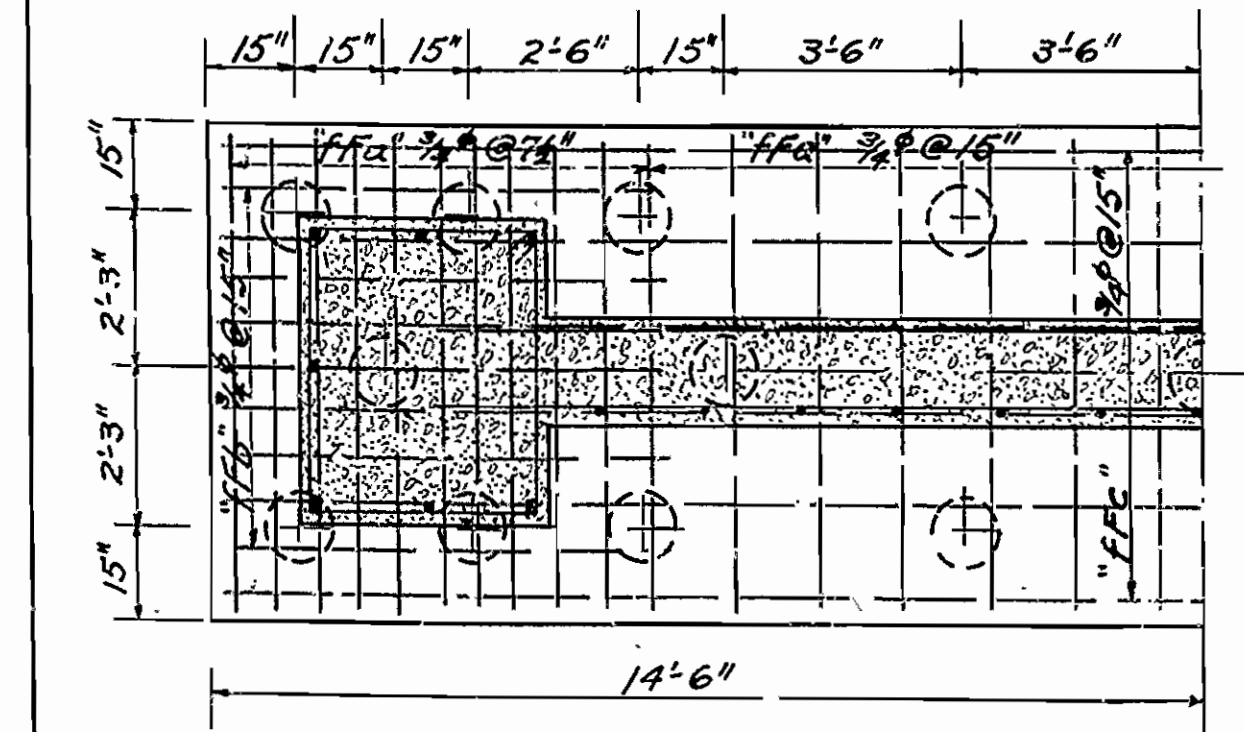
Mark	No.	Size	a	b	Location
cCh	10	3/4"	4'-2"	18"	Cap Pier C
cFh	8	3/4"	3'-6"	18"	" " F

Mark	No.	Size	a	b	c	Location
cCb	32	3/8"	19 1/2"	19 1/2"	4"	Col. Bent B
cCb	30	5/8"	3'-5" to 4'-2"	3'-5" to 4'-2"	6"	Pier C
cFd	28	5/8"	2'-0" to 3'-5"	2'-9" to 4'-2"	6"	Pier F
cGb	34	3/8"	19 1/2"	19 1/2"	4"	Col. Bent G
cHh	30	5/8"	19" to 4'-1"	19"	6"	Col. Bent H

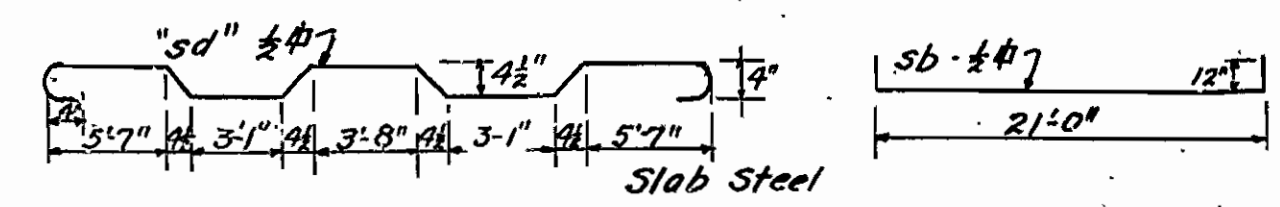
Mark	No.	Size	a	b	c	d	Location
ba	12	1"	3'-9"	12'-2"	3'-9"	1'-11"	25' Girders
bb	12	1"	3'-9"	17'-2"	3'-9"	1'-11"	" "
bf	4	1 1/2"	4'-4"	16'-0"	4'-4"	2'-3"	Inside 30' girder
bg	8	1 1/2"	4'-4"	16'-0"	4'-4"	2'-3"	Outside " "
bh	4	1"	4'-4"	2'-0"	4'-4"	2'-3"	Inside " "
bj	8	1 1/2"	4'-4"	2'-0"	4'-4"	2'-3"	Outside " "

Mark	No.	Size	a	b	Location
cBj	6	3/8"	2'-0"	6'-0"	Haunch Bent B
cGj	6	3/8"	2'-0"	6'-4"	" " G
cHj	6	3/8"	2'-0"	6'-4"	" " H

Mark	No.	Size	Type	a	b	Location
cBf	10	1"	B	2'-3"	1'-11"	Beam Bent B
be	20	1"	A	2'-3"	1'-11"	25' Girders
cef	10	1"	B	2'-6"	1'-11"	Beam Bent G
bm	23	1"	A	2'-7"	1'-2"	30' Girders



HALF PLAN FOOTING PIER F



Slab Steel

For details of sidewalks to be added see Drawgs. 4828-4831 incl.
 NOTE: Volume occupied by foundation piling extending into concrete is deducted from concrete quantities.

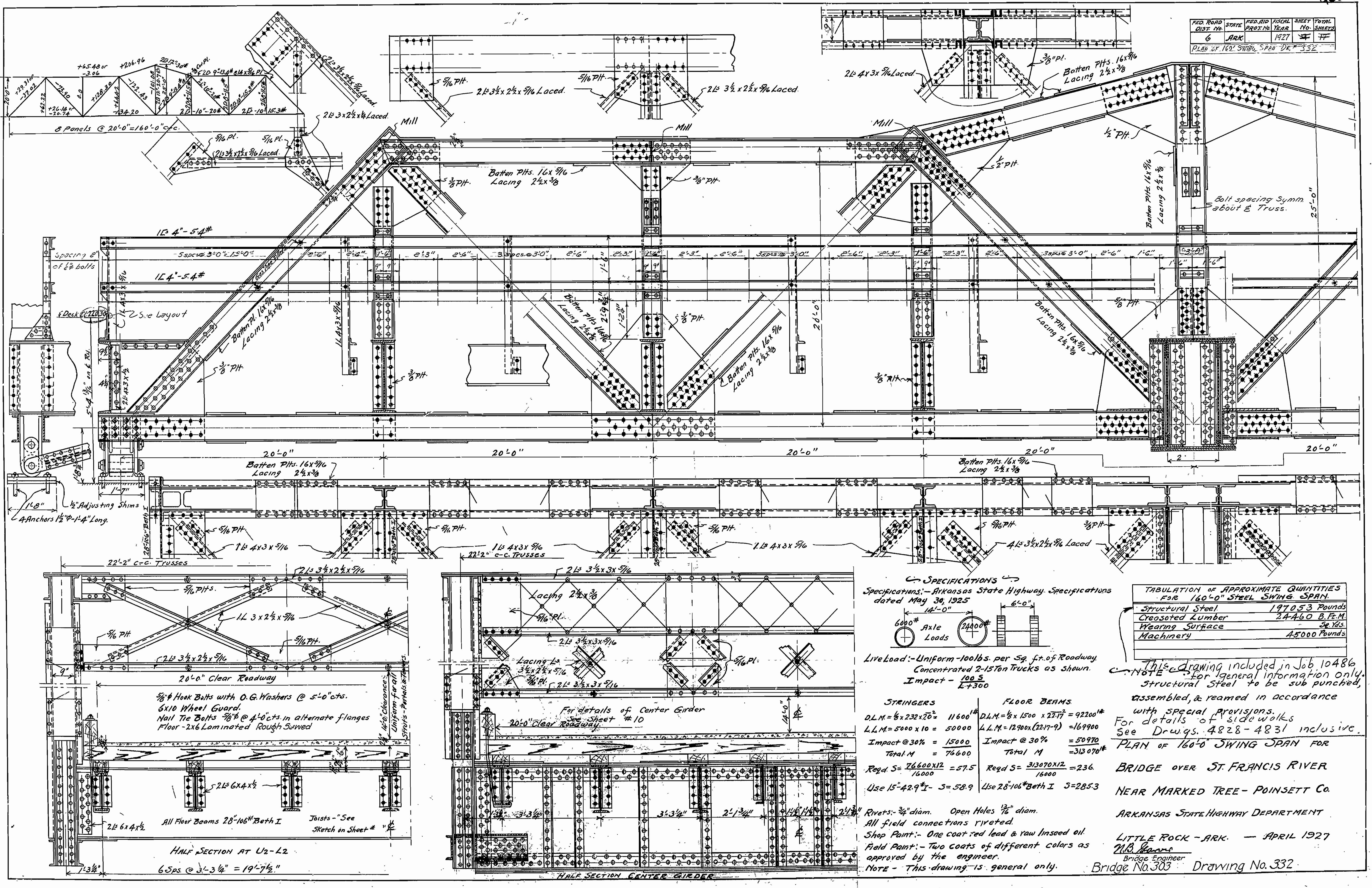
Revised E.A.W. Oct. 7-1927
 Dimensions and Quantities for
 Piers in Grade

ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK.

Designed By: *N.B. Carver* Date: _____
 Traced By: _____ Date: _____
 Checked By: _____ Date: _____
 Bridge No. 303 Scale: 1"=10'
 Drawing No. 331

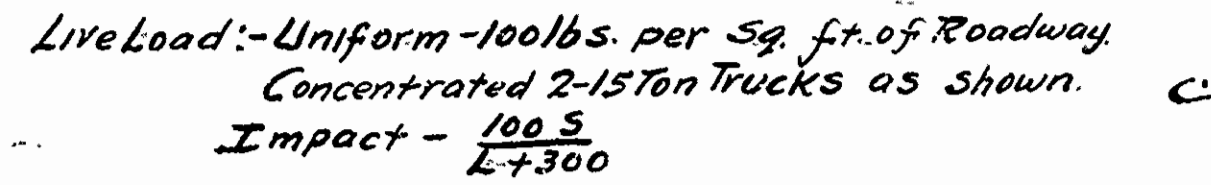
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.		1927	37	77

PLAN OF 160' SWING SPAN DR. No. 332



SPECIFICATIONS

Specifications: - Arkansas State Highway Specifications dated May 30, 1925



Live Load: - Uniform - 100 lbs. per Sq. ft. of Roadway
 Concentrated 2-15 ton Trucks as shown.
 Impact - 100%
 L+300

STRINGERS	FLOOR BEAMS
D.L.M. = 6 x 232 x 20 = 11600	D.L.M. = 6 x 1500 x 22.77 = 92200*
L.L.M. = 5000 x 10 = 50000	L.L.M. = 12900 x (22.77 - 9) = 169900
Impact @ 30% = 15000	Impact @ 30% = 50970
Total M = 76600	Total M = 313070*
Reqd S = 76600 x 12 = 57.5	Reqd S = 313070 x 12 = 236
Use 15'-42.9" I - S = 58.9	Use 28'-108" Both I S = 285.3

Structural Steel	197053 Pounds
Creosoted Lumber	24460 B.F.M.
Wearing Surface	28 Yds.
Machinery	45000 Pounds

This drawing included in Job 10486 for general information only. Structural Steel to be sub punched, assembled, & reamed in accordance with special provisions. For details of sidewalks see Drawgs. 4828-4831 inclusive.

PLAN OF 160' SWING SPAN FOR BRIDGE OVER ST. FRANCIS RIVER NEAR MARKED TREE - POINSETT Co. ARKANSAS STATE HIGHWAY DEPARTMENT

LITTLE ROCK - ARK. - APRIL 1927
 W.B. Harris
 Bridge Engineer
 Bridge No. 303 Drawing No. 332

Rivets: 3/4" diam. Open Holes 1 1/8" diam.
 All field connections riveted.
 Shop Paint: - One coat red lead & raw linseed oil.
 Field Paint: - Two coats of different colors as approved by the engineer.
 NOTE - This drawing is general only.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.		1927	33	33

15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"
15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"	15'-42.9"

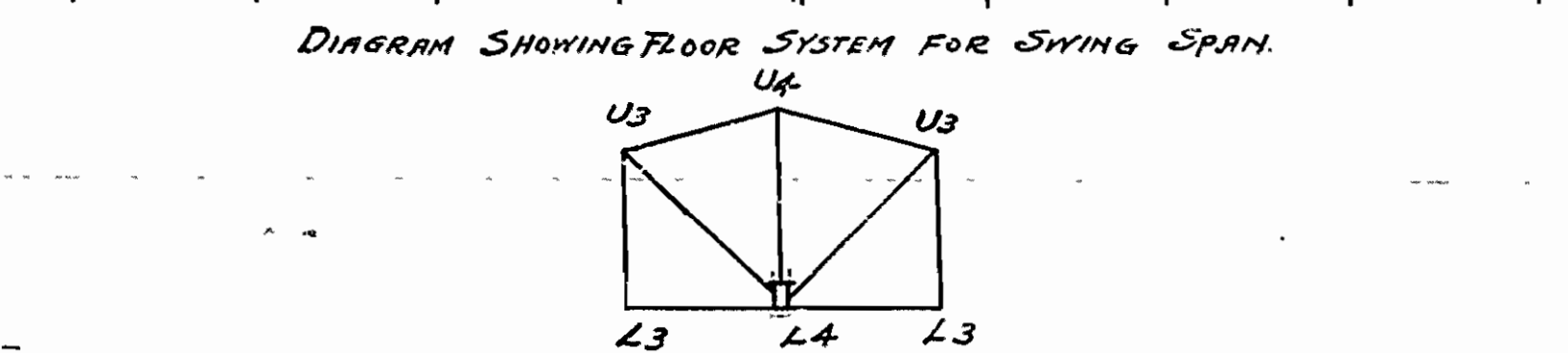
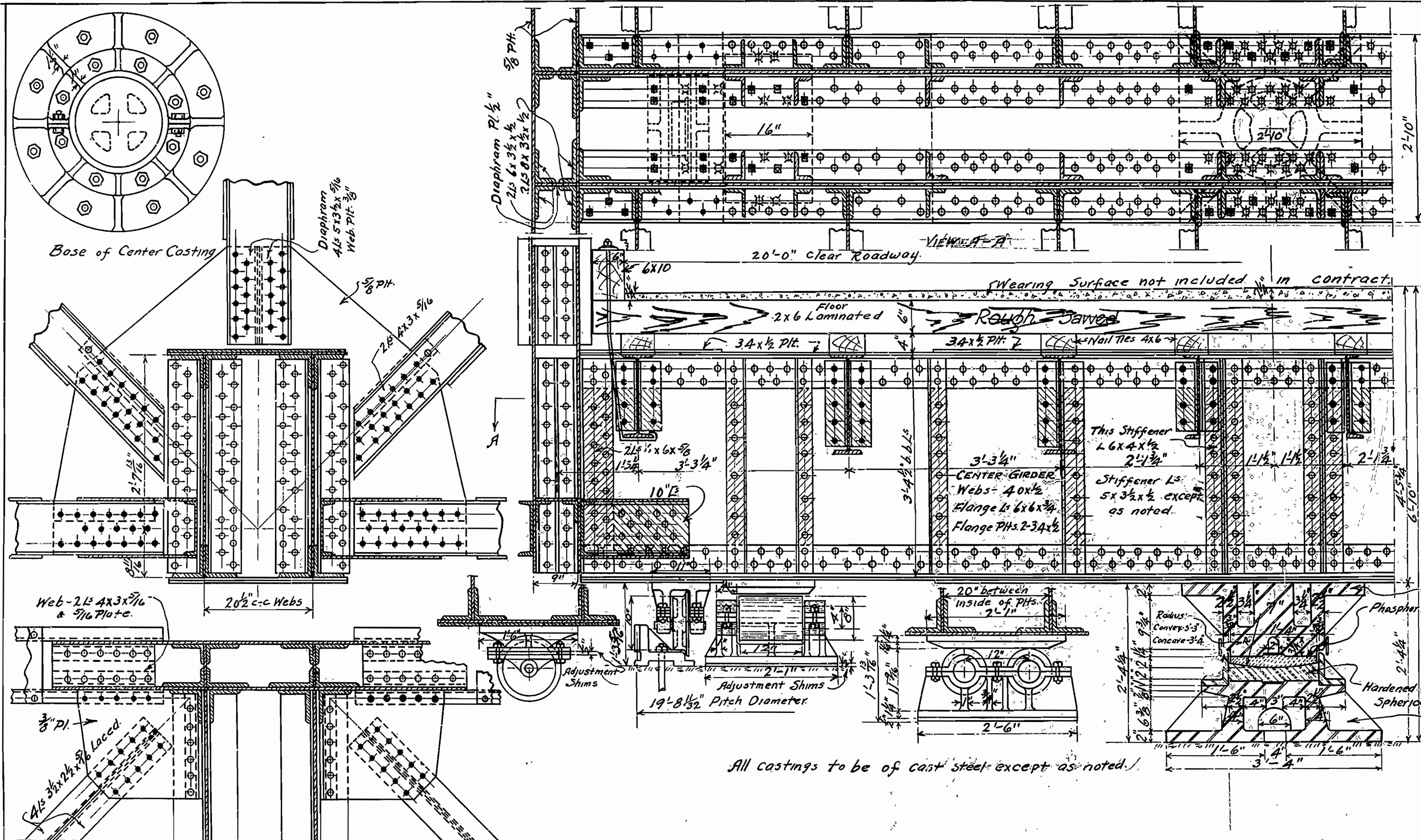
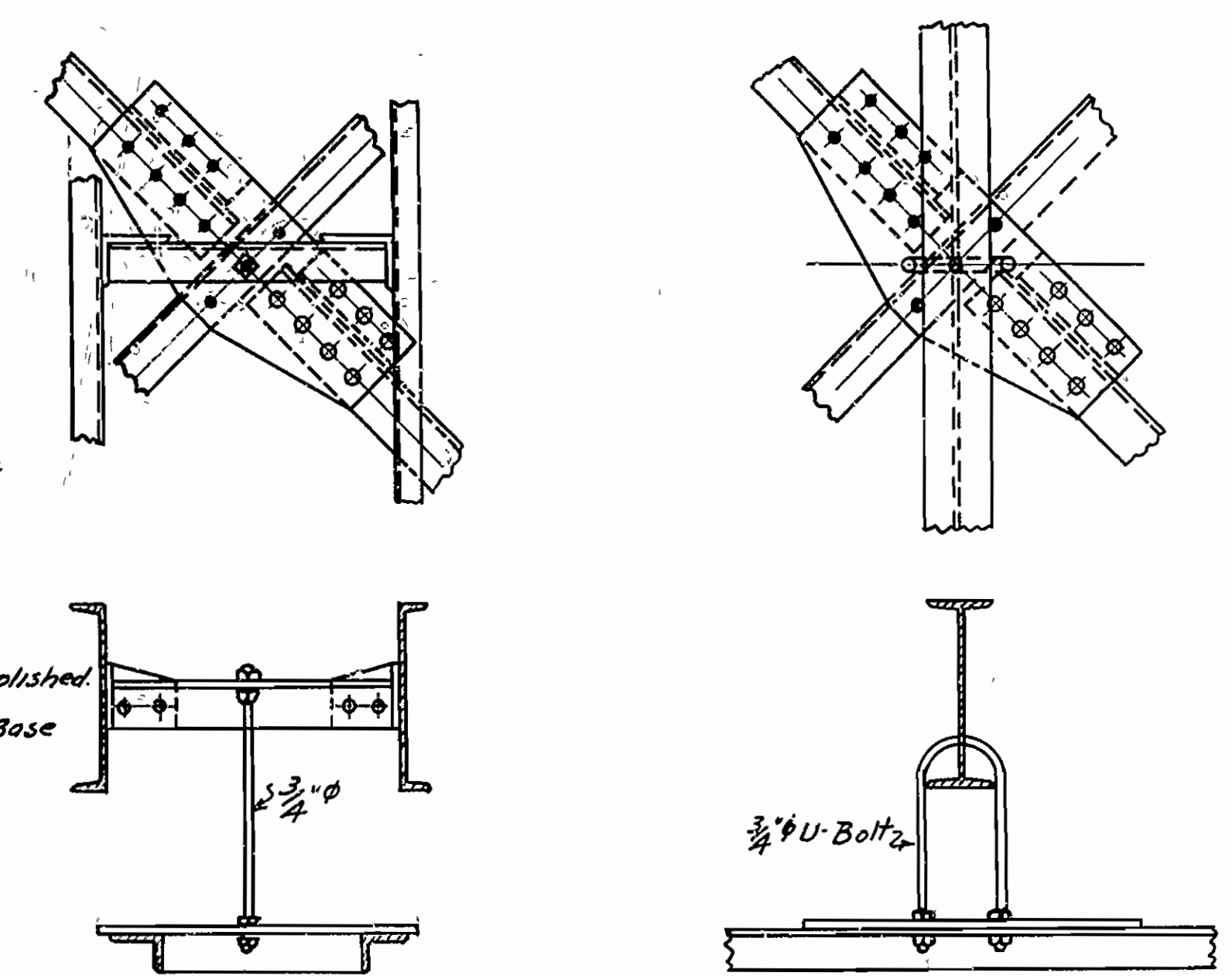
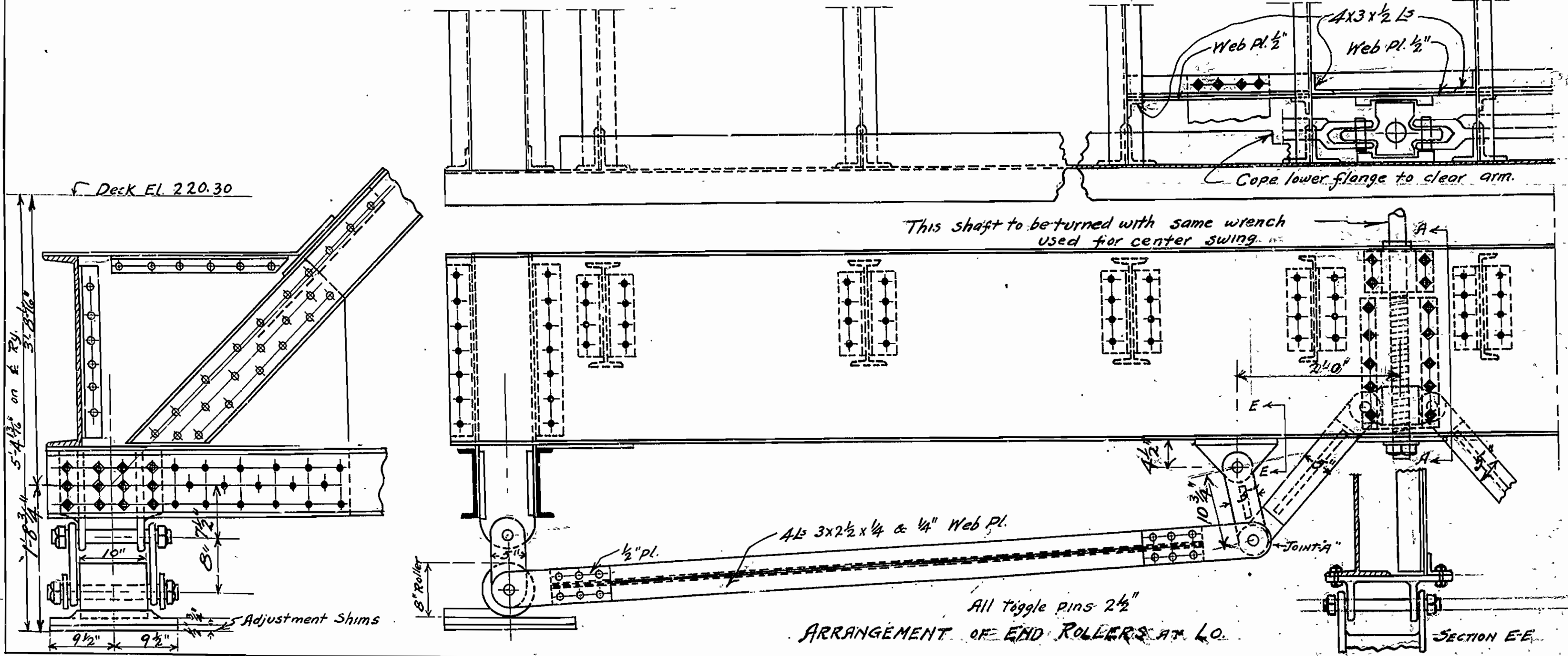


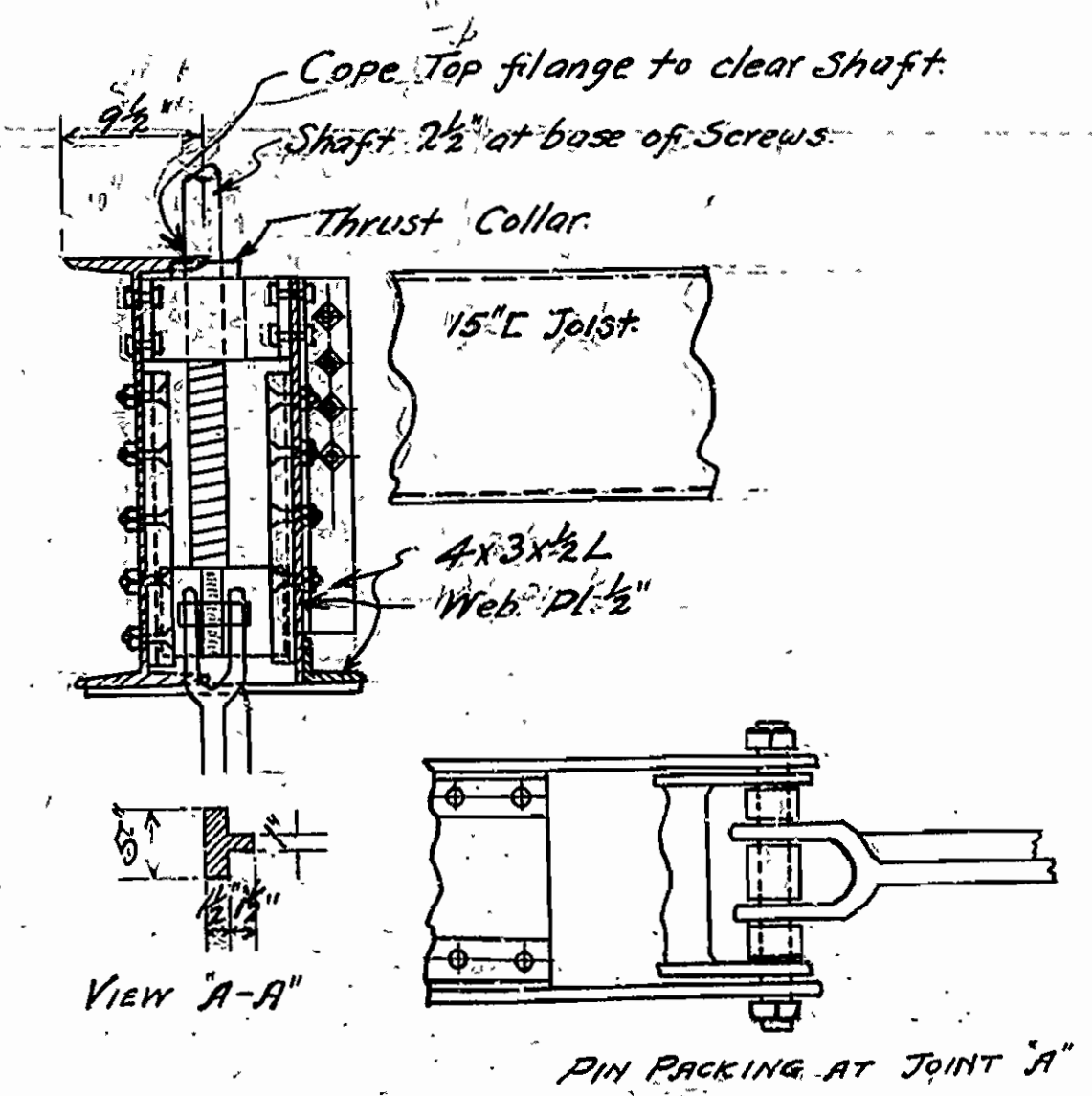
Diagram showing section of bridge to be assembled, reamed, and match marked at the time of shop inspection by the engineer. For the section of bridge shown all structural steel and all material covered in the specifications under the item of machinery shall be completely assembled at the structural steel fabrication shop.



DETAILS SHOWING LATERAL HANGERS



ARRANGEMENT OF END ROLLERS AT L.O.



View A-A

PIN PACKING AT JOINT A

NOTE:— Structural Steel to be sub punched, assembled, & reamed in accordance with special provisions.

For details of sidewalks see Drawgs. 4828-4831 inclusive. This drawing included in Job 10486 for general information only.

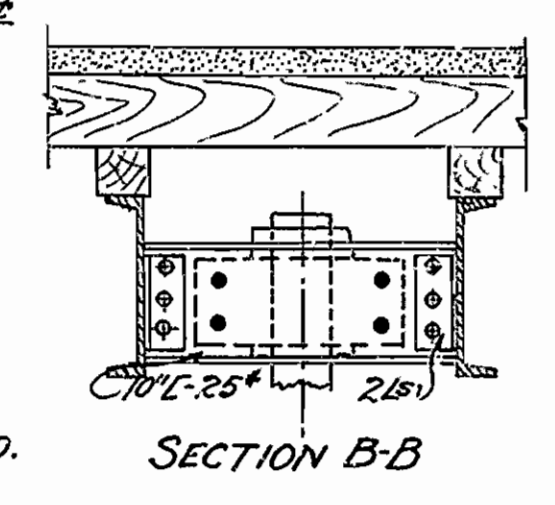
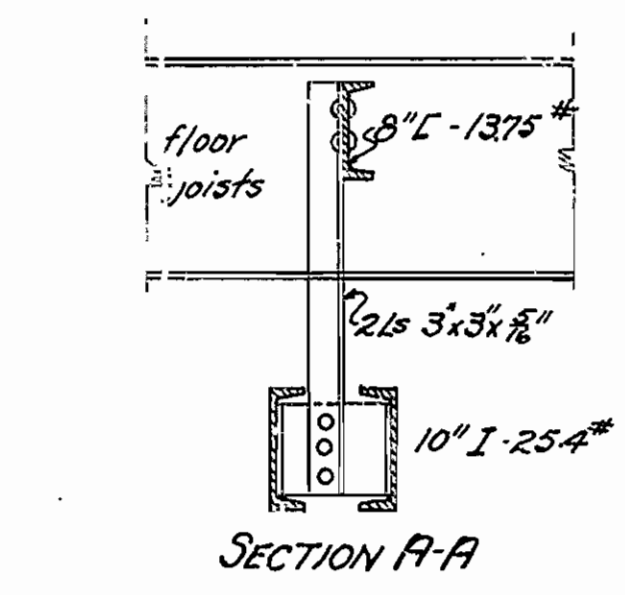
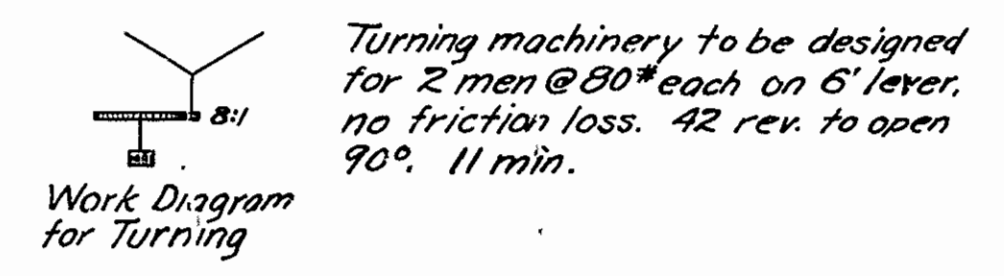
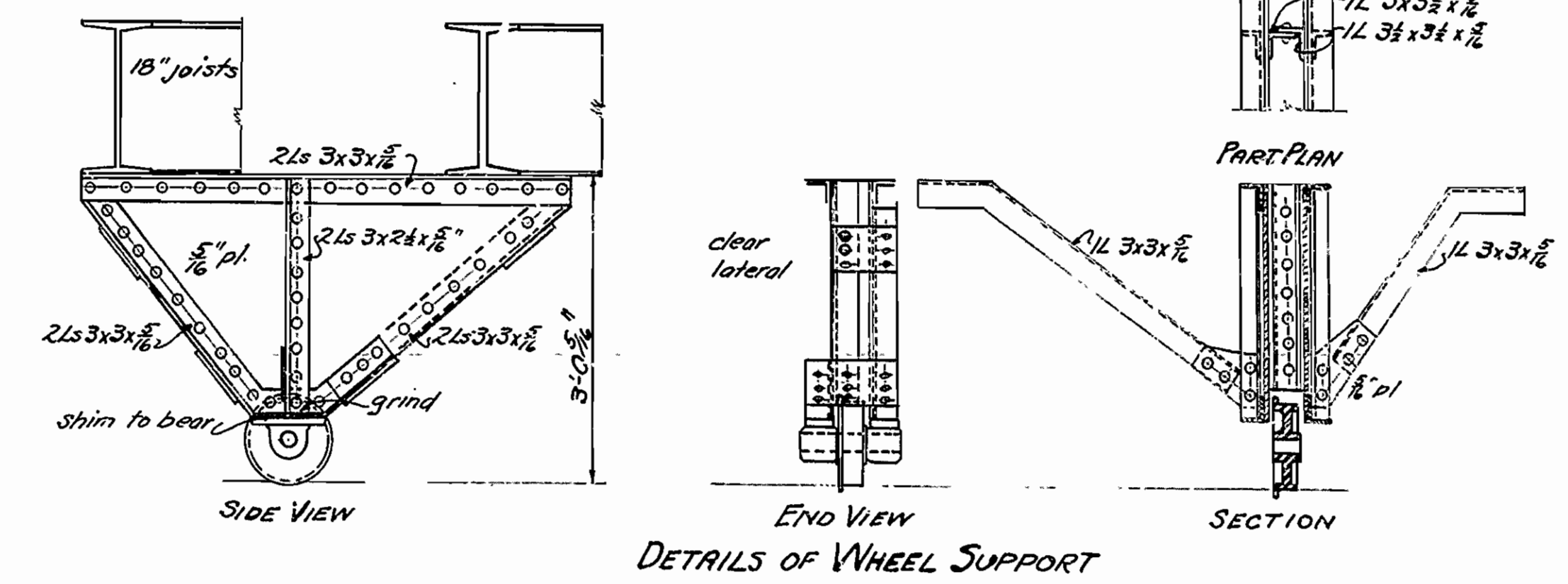
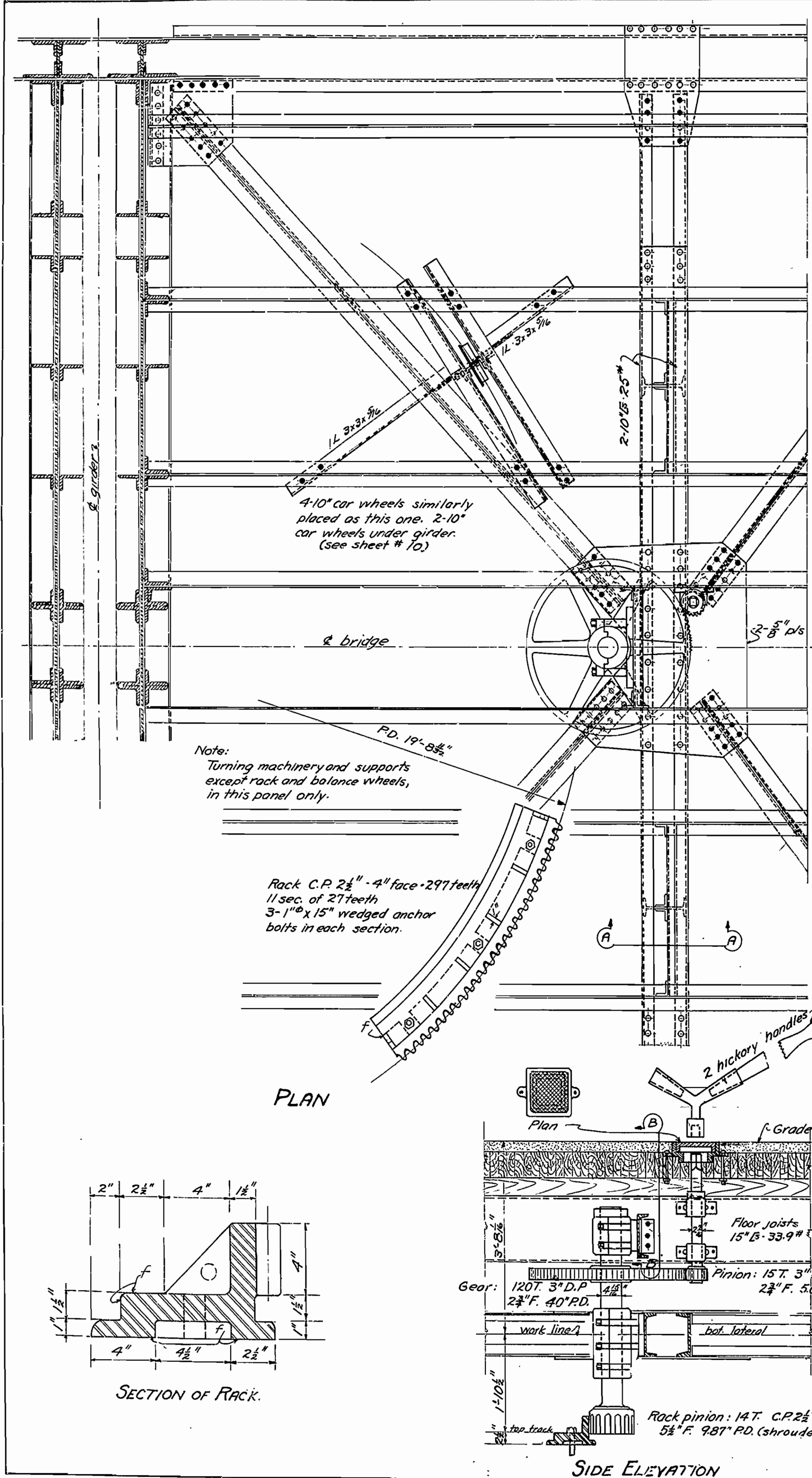
DETAILS OF CENTER GIRDER & END ROLLERS FOR BRIDGE OVER ST. FRANCIS RIVER NEAR MARKED TREE - POINSETT COUNTY ARKANSAS STATE HIGHWAY DEPARTMENT LITTLE ROCK ARK. - APRIL - 1927

N.B. Garver
Bridge Engineer
Bridge No. 303

Drawing No. 333

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK		1927	11	12

TURNING MACH. - DET. ST. FR. R. BR. DR. #3



Notes:

- The complete center of the swing span, including turning machinery, rack + track segments + balance wheels, shall be assembled in the shop, aligned, fitted, drilled and the parts matched marked.
- All gears and rack to be of steel.
- All gear teeth, except rack teeth, to be machine cut.
- All gears to be secured to shafts with suitable keys.
- Pitch line to be scribed on both sides of all gears and top of rack.
- All bearing boxes to be babbitted except main pinion and bull wheel bearings which are to have a phosphor-bronze lining.
- All shafts under 3 1/2" diameter to be C.R. steel. All shafts over 3 1/2" diameter to be rolled or forged.
- All bearing boxes and center pivot to be provided with suitable grease cups and grooves; where not otherwise accessible, they shall be connected with oil pipes.
- All castings to be of cast steel.
- These drawings are general only. Contractor shall check same and submit shop drawings made in compliance with specifications. These are to be submitted and approved before fabrication begins.

This drawing included in Job 10486 for general information only.

N.B. Gamm
 Bridge Engineer

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.		1927	14	17

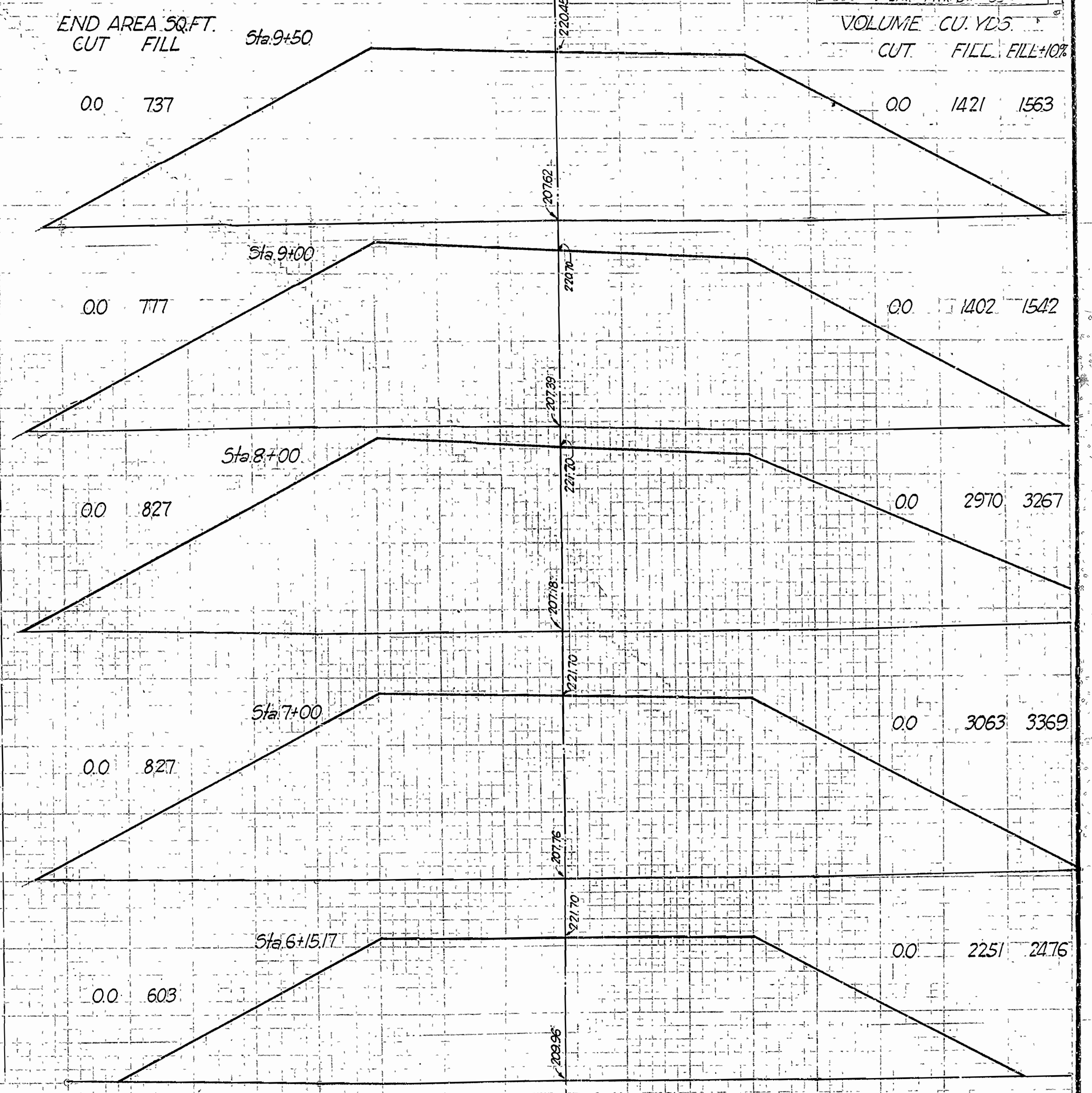
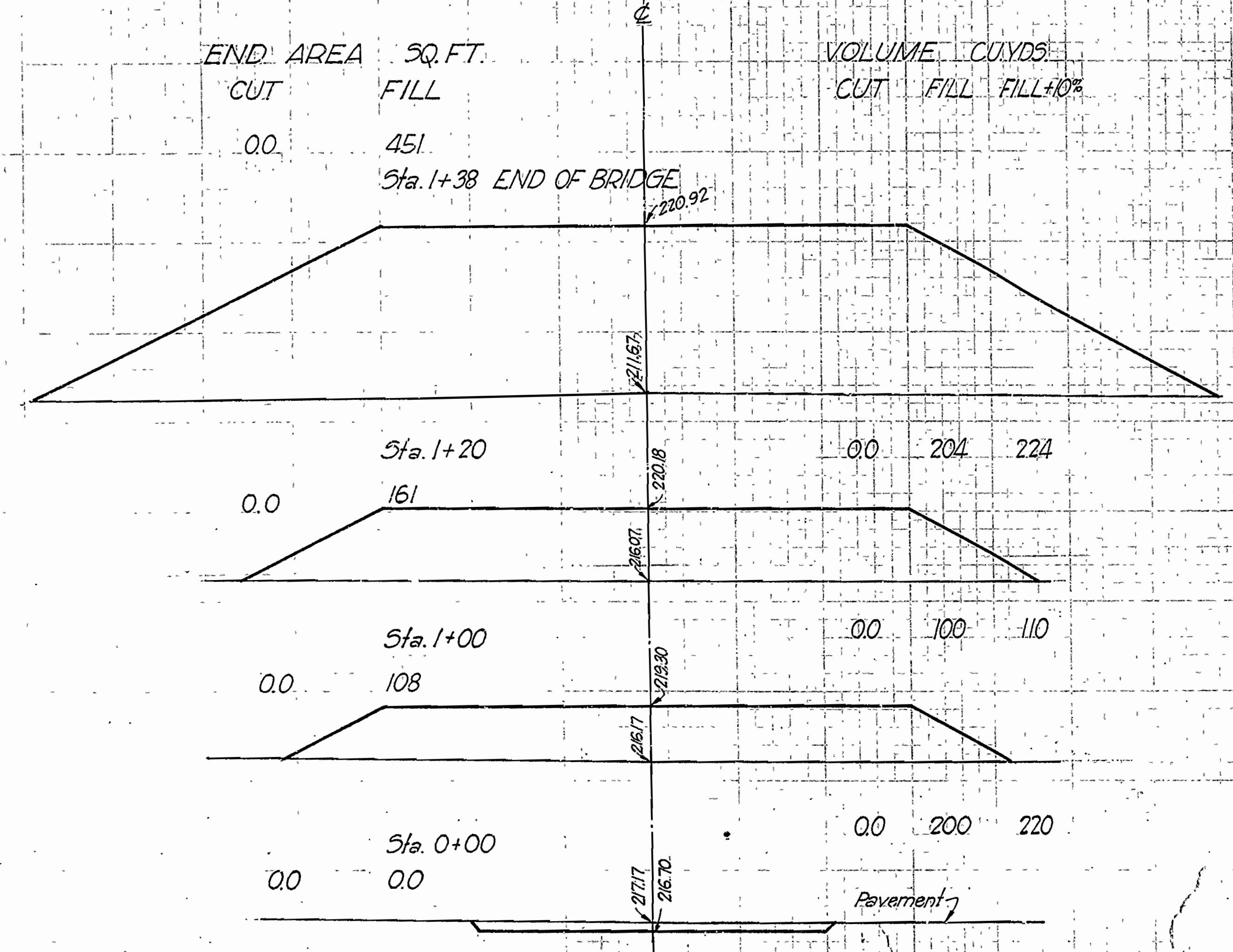
SUMMARY OF EARTHWORK AND GRAVEL SURFACING

	Cut	Fill+10%	Widening Ditches	Borrow	Overhaul
Sta. 0+00 to Sta. 1+38	0.0	554 Cu.Yds.	0.0	554 Cu.Yds.	5540 Sta.Yds.
Sta. 6+15.17 to Sta. 17+86.1	875 Cu.Yds.	19,055 Cu.Yds.	7125 Cu.Yds.	11,055 Cu.Yds.	33,165 Sta.Yds.
	875 Cu.Yds.	19,609 Cu.Yds.	7125 Cu.Yds.	11,609 Cu.Yds.	38,705 Sta.Yds.

Sta. 0+00 to Sta. 1+38 54.37 Cu.Yds. Gravel Surfacing 0-1 Mile Haul
 Sta. 6+15.17 to Sta. 17+86.1 461.33 Cu.Yds. Gravel Surfacing 0-1 Mile Haul
 515.70 Cu.Yds.

Use total of 300 Sq.Yds. of RipRap 1 Ft. thick at both ends of Bridge

NOTE:-
 Secure Borrow from Pit approximately 150' to the side of Sta. 11+50



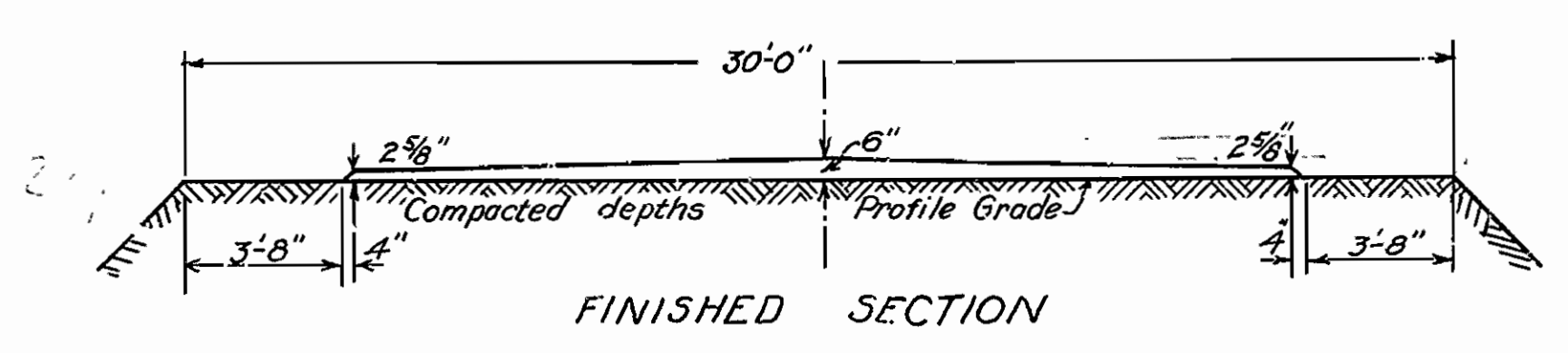
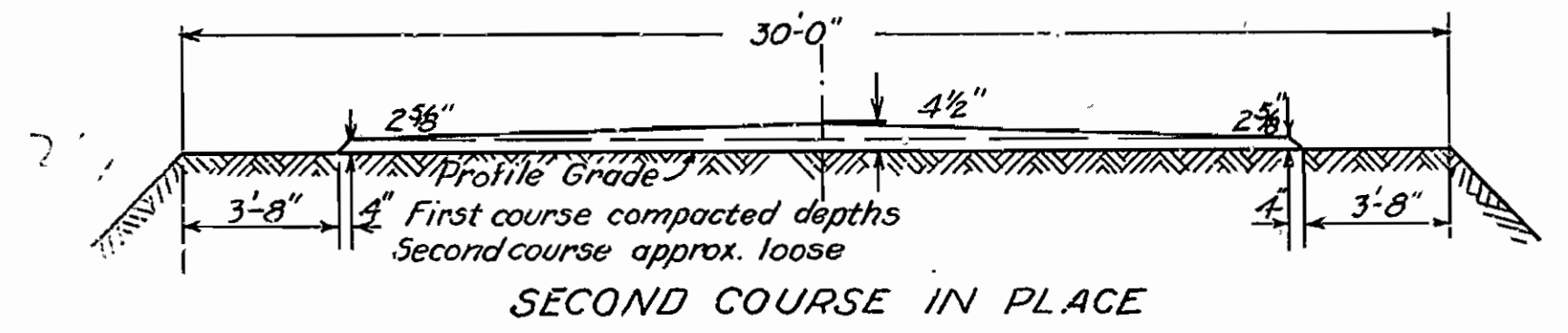
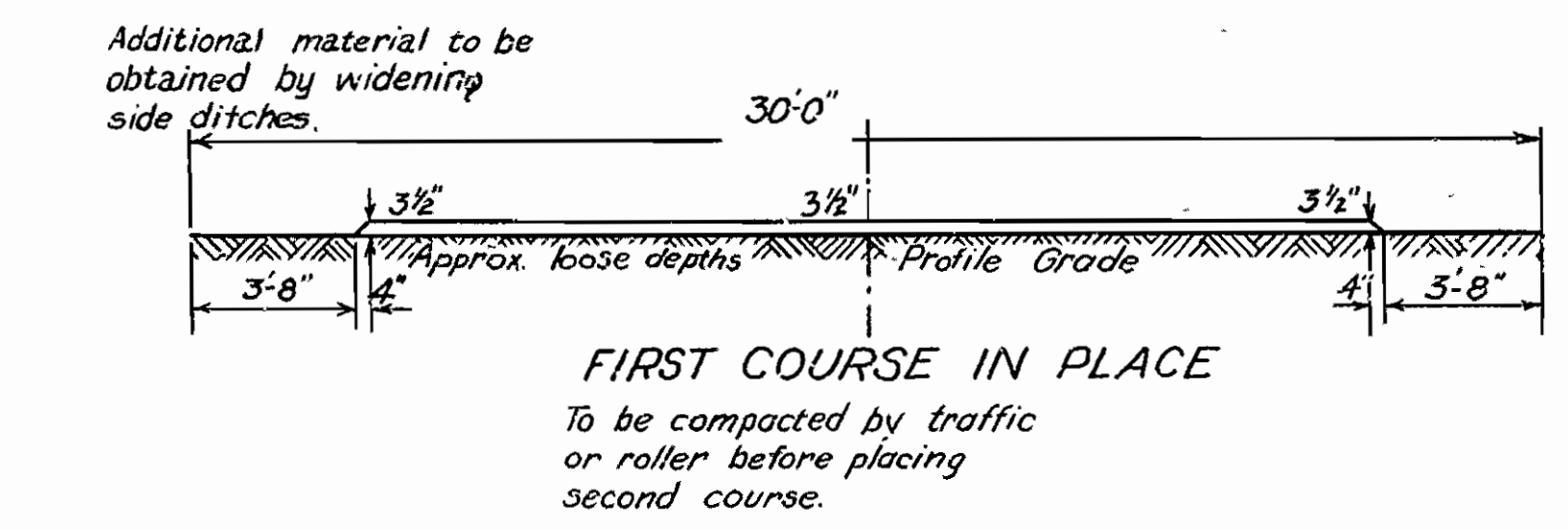
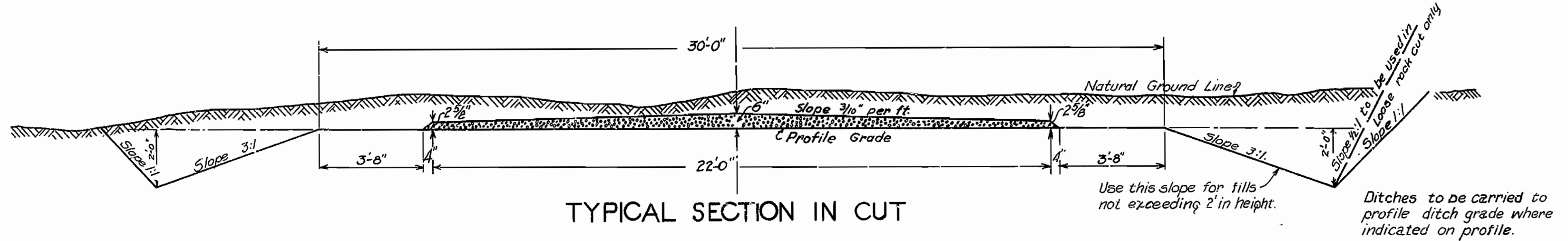
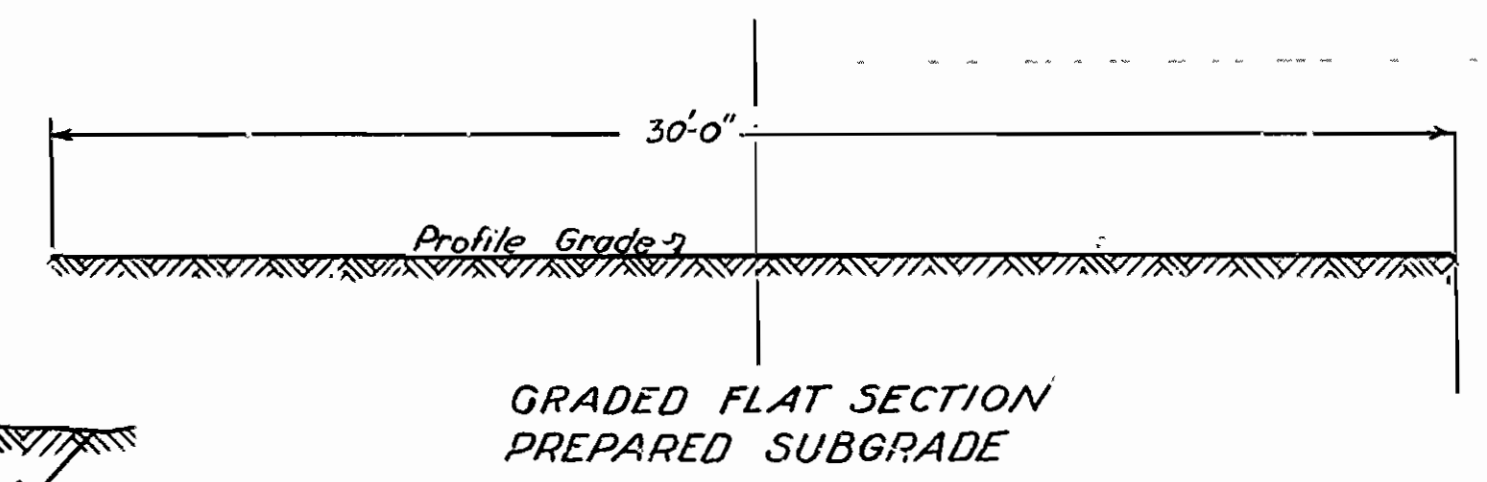
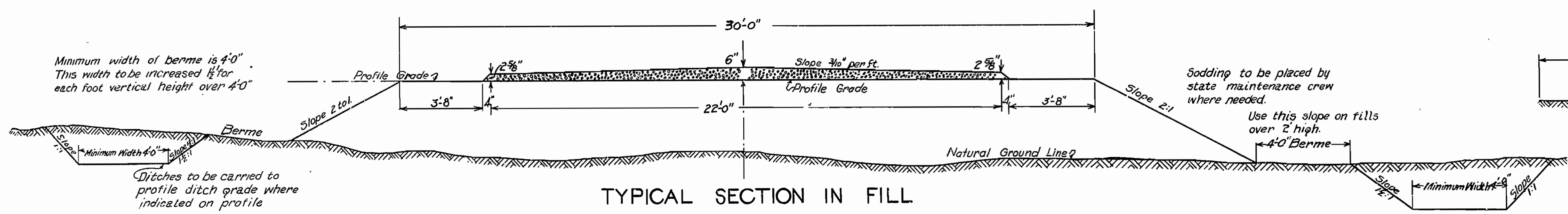
CROSS SECTIONS OF EARTH APPR.
 BRIDGE OVER ST. FRANCIS RIVER
 NEAR MARKED TREE, POINSETT CO. ARK.
 ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK. Oct. 1927

BRIDGE ENGINEER

Bridge No. 303

Drawg. No. 336

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				



APPROXIMATE GRAVEL QUANTITIES
 39.4 Cu. Yds. per 100' Station.
 20.80 Cu. Yds. per mile.

Revised E.A.W. 10-27-27

ARKANSAS HIGHWAY DEPARTMENT
30'-0" ROAD
 WITH
 FEATHEREDGE GRAVEL SURFACE COURSE
 AUG. 1927. M.W.K. DRAWING No. 338

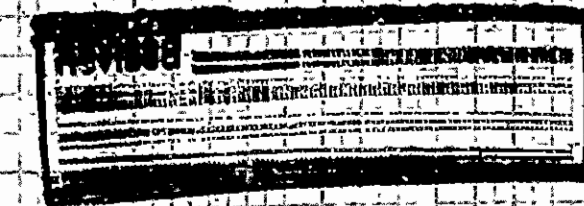
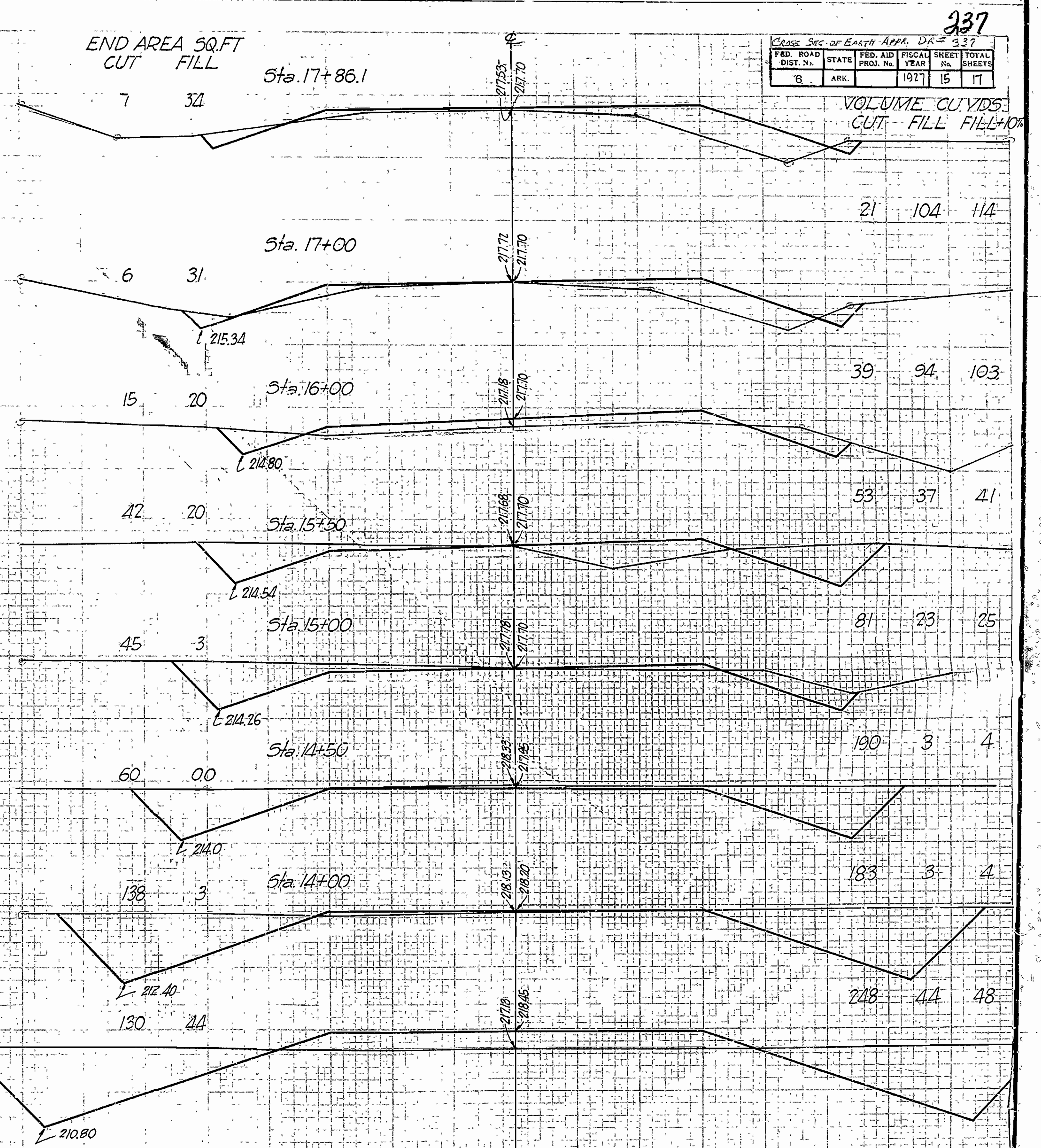
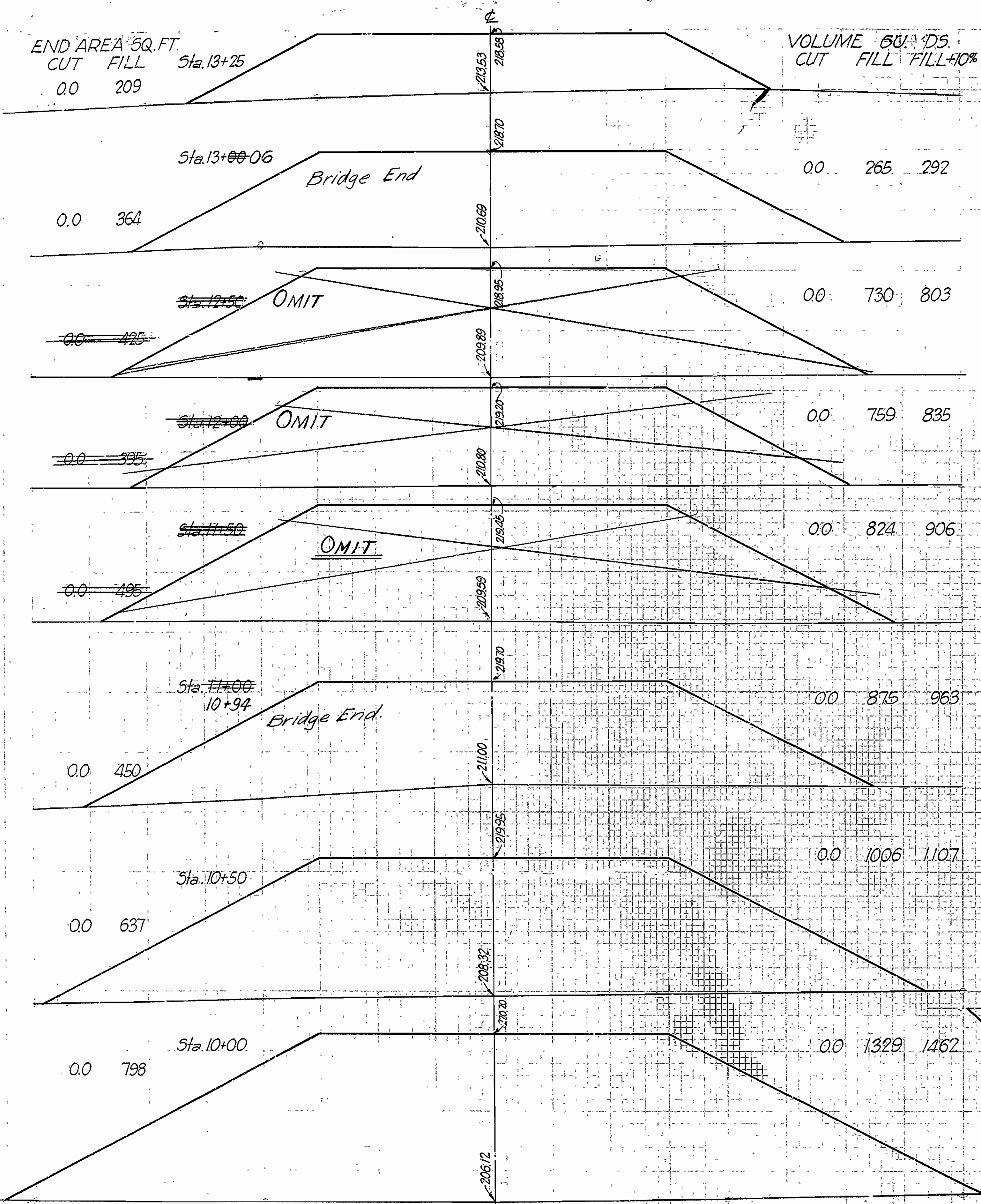
END AREA SQ. FT.
CUT FILL

VOLUME CU. YDS.
CUT FILL FILL+10%

END AREA SQ. FT.
CUT FILL

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.		1927	15	17

VOLUME CU. YDS.
CUT FILL FILL+10%



Revised Jan 24 - 28, 1928
Charles T. Traylor

CROSS SECTIONS OF EARTH APPR.
BRIDGE OVER ST. FRANCIS RIVER
NEAR MARKED TREE, DOWNSSETT CO., ARK.
ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK. Oct. 1927

BRIDGE ENGINEER

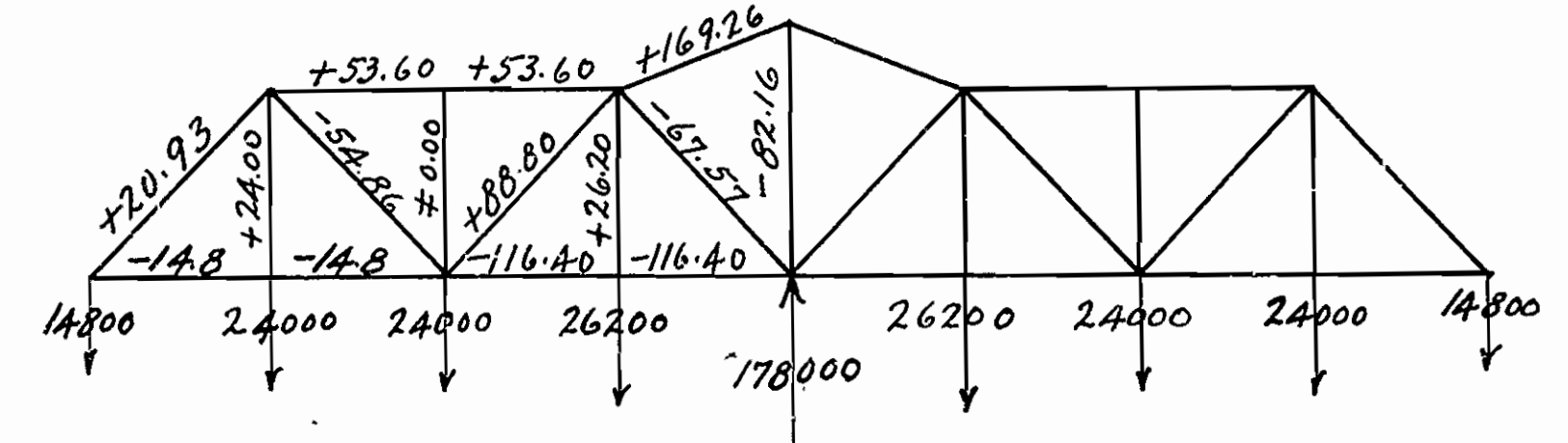
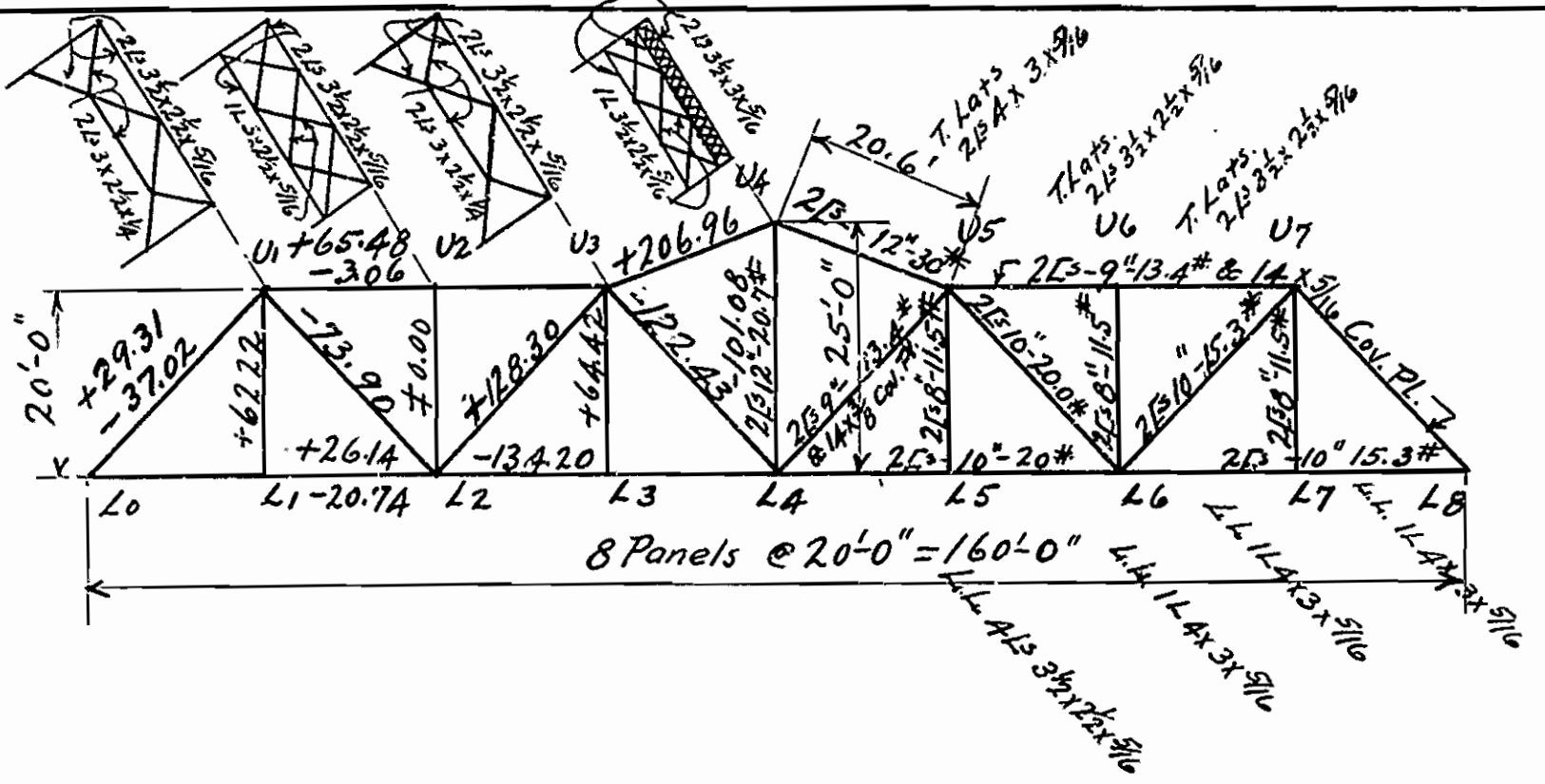
Bridge No. 303

Drawg No. 337

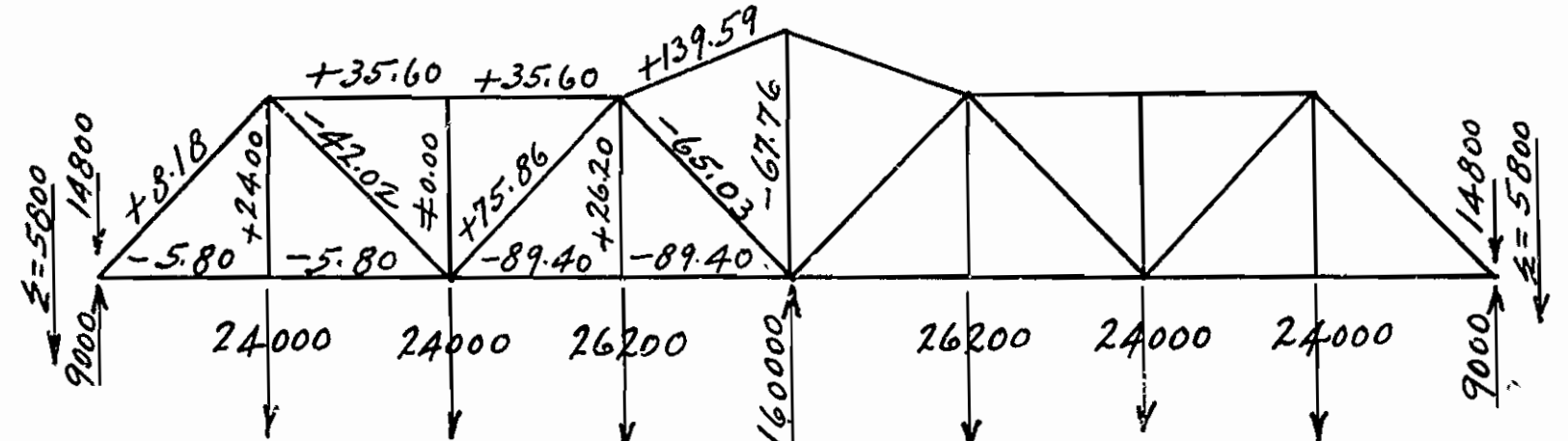
COMPUT. FILE 160	SWS. SPEC. DR. # 337A
FED. ROAD DIST. NO. 6	STATE PROJ. NO. ARK
YEAR	SHEET NO. 1709A
	TOTAL SHEETS

TABULATION OF UNIT STRESSES

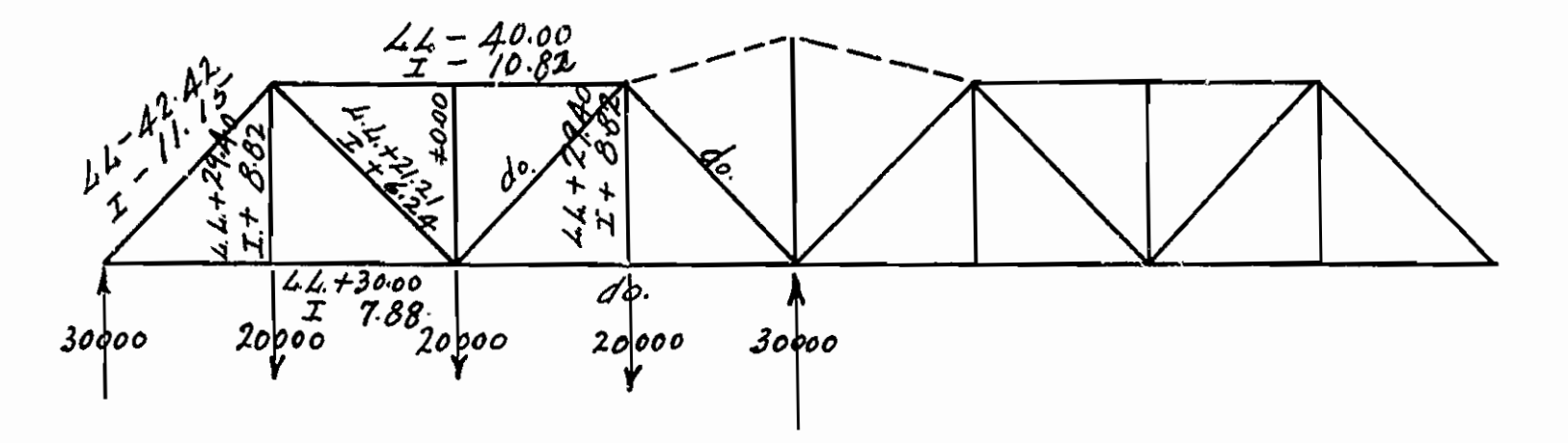
MEMBER	1000*Load at L1	1000*Load at L2	1000*Load at L3	1000*Load at L5	1000*Load at L6	1000*Load at L7	Max +	Imp on +	Σ +	Max -	Imp on -	Σ -
R1	+691	+406	+168	-82	-94	-59						
R2	+367	+688	+914	+914	+688	+367						
R3	-59	-94	-82	+168	+406	+691						
L0 U1	-977	-574	-238	+116	+133	+83	+332	+87	+419	-1789	-471	-2260
U1 U2	-382	-812	-336	+164	+188	+118	+470	+124	+594	-1530	-403	-1933
U2 U3	-382	-812	-336	+164	+188	+118	+470	+124	+594	-1530	-403	-1933
U3 U4	+195	+309	+270	+270	+309	+195	+1548	+337	+1885	-0.0	0.0	0.0
U4 L4	-94	-150	-130	-130	-150	-94	0	0	0	-748	-198	-946
L0 L1	+691	+406	+168	-82	-94	-59	+1265	+332	+1597	-235	-62	-297
L1 L2	+691	+406	+168	-82	-94	-59	+1265	+332	+1597	-235	-62	-297
L2 L3	+73	+218	+504	-246	-282	-177	+795	+209	+1004	-705	-185	-890
L3 L4	+73	+218	+504	-246	-282	-177	+795	+209	+1004	-705	-185	-890
U1 L2	-437	+574	+238	-116	-133	-83	+812	+226	+1038	-769	-183	-952
L2 U3	+437	+840	-238	+116	+133	+83	+1609	+366	+1975	-238	-74	-312
U1 L1	+1000	0.0	0.0	0.0	0.0	0.0	+1000	+313	+1313	0.0	0.0	0.0
U2 L2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
U3 L3	0.0	0.0	+1000	0.0	0.0	0.0	+1000	+313	+1313	0.0	0.0	0.0
U3 L4	-370	-734	-1081	-24	-27	-17	0.0	0.0	0.0	-22.53	-490	-2743



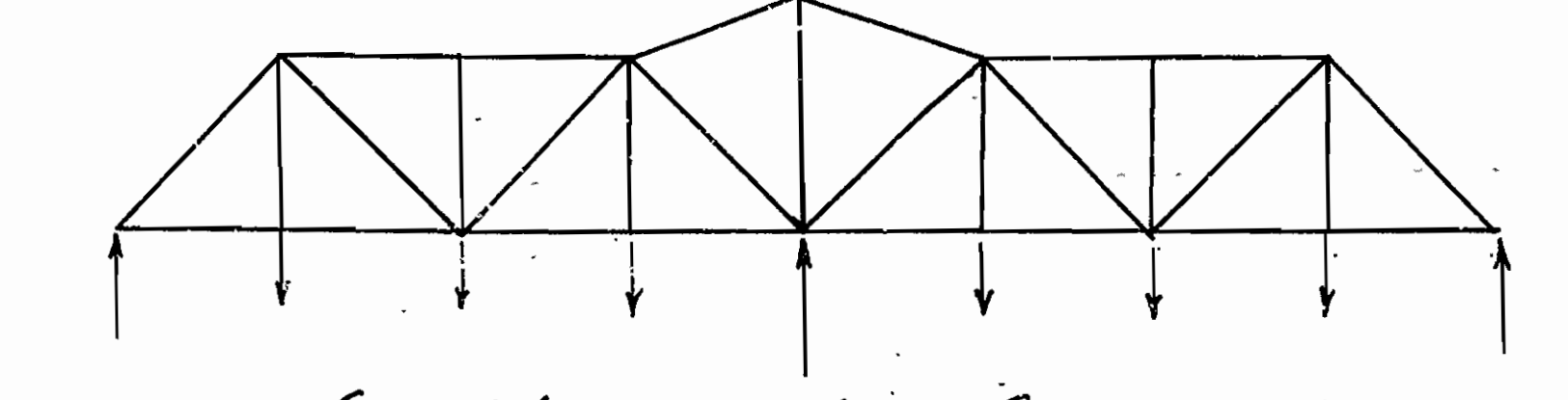
CASE I - DEAD LOAD - SPAN OPEN



CASE II DEAD LOAD - PARTIAL END REACTION



CASE III LIVE LOAD STRESSES SIMPLE SPAN



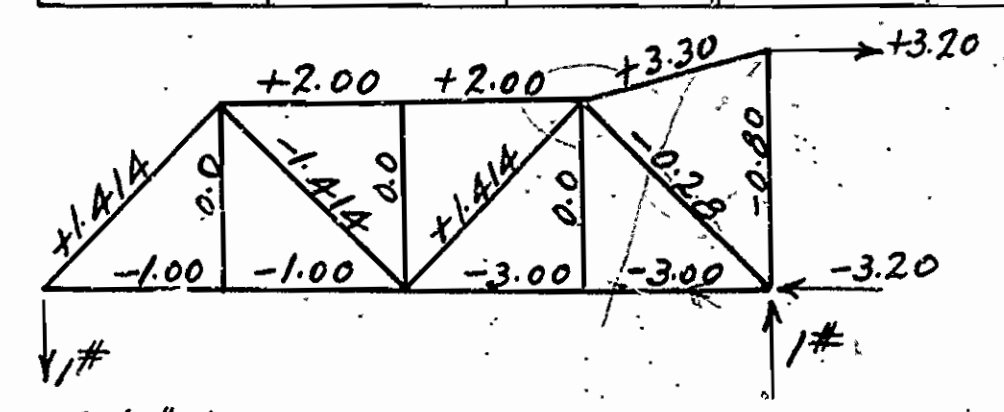
CASE IV VARIABLE LIVE LOADS - CONTINUOUS SPAN
SPAN CLOSED WITH END WEDGES DRIVEN

SUMMARY OF STRESSES

MEMBER	CASE I +	CASE I -	CASE II +	CASE II -	CASE III +	CASE III -	CASE IV +	CASE IV -	CASE III + I (+)	CASE III + I (-)	CASE I + II (+)	CASE I + II (-)	CASE II + III (+)	CASE II + III (-)
L0 U1	+20.93		+8.18			-53.57	+8.38	-45.20		-32.64	+29.31	-24.27	+16.56	-37.02
U1 U2	+53.60		+35.60			-50.82	+11.88	-38.66	+2.78		+65.48		+47.48	-3.06
U2 U3	+53.60		+35.60			-50.82	+11.88	-38.66	+2.78		+65.48		+47.48	-3.06
U3 U4	+169.26		+139.59		0	0	+37.70	0	+169.26		+206.96		+177.29	
U4 L4		-82.16		-67.76	0	0	-18.92			-82.16		-101.08		-86.68
L0 L1		-14.80		-5.80	+37.88		+31.94	-5.94	+23.08		+17.14	-20.74	+26.14	-11.70
L1 L2		-14.80		-5.80	+37.88		+31.94	-5.94	+23.08		+17.14	-20.74	+26.14	-11.70
L2 L3		-116.40		-89.40	+37.88		+20.08	-17.80		-78.52		-134.20		-107.20
L3 L4		-116.40		-89.40	+37.88		+20.08	-17.80		-78.52		-134.20		-107.20
U1 L2		-54.86		-42.02	+27.45		+20.76	-19.04		-27.41		-73.90		-61.06
L2 U3	+88.80		+75.86		+27.45		+34.50	-6.24	+116.25		+128.30		+115.30	
U1 L1	+24.00		+24.00		+38.22		+38.22	0	+62.22		+62.22		+62.22	
U2 L2	0		0		0		0	0	0		0		0	
U3 L3	+26.20		+26.20		+38.22		+38.22	0	+64.42		+64.42		+64.42	
U3 L4		-67.57		-65.03		-53.57	0	-54.86		-121.14		-122.43		-119.89

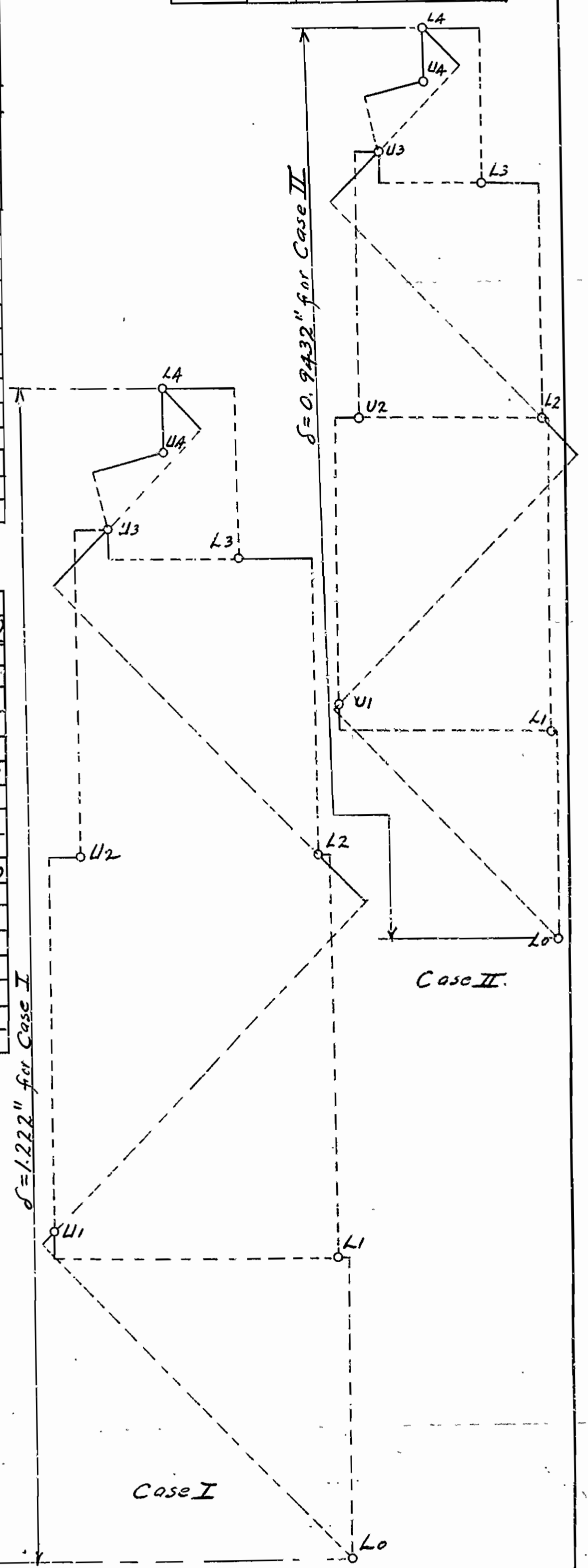
COMPUTATIONS FOR DEFLECTION

MEMBER	LENGTH 'L'	AREA 'A'	CASE I				CASE II				
			STRESS 'D'	PL/A	U-1' Load at L0	PUL/A	PL/AE	STRESS P	PUL/A	PL/AE	PL/AE
L0 L2	480	8.94	-14.80	-794	-1.00	+794	-0.02646	-5.80	+311	-311	-0.01038
L2 L4	480	11.72	-116.40	-4767	-3.00	+14361	-1.5890	-89.40	+10983	-3661	-1.2200
L0 U1	339	12.16	+20.93	+583	+1.41	+823	+0.01945	+8.18	+322	+228	+0.0076
U1 U3	480	12.16	+53.60	+2116	+2.00	+4232	+0.07053	+35.60	+3082	+1531	+0.570
U3 U4	247	17.58	+169.26	+2378	+3.30	+7887	+0.07926	+139.50	+6458	+1957	+0.653
U1 L2	339	8.94	-54.86	-2080	-1.41	+2982	-0.06933	-42.02	+2246	-1595	-0.531
L2 U3	339	11.72	+88.80	+2569	+1.41	+3622	+0.08563	+75.86	+3034	+2194	+0.731
U3 L4	339	13.03	-67.57	-1758	-0.28	+492	-0.0586	-65.03	+473	-1692	-0.564
U1 L1	240	6.72	+24.00	+857	±0.00	±0	±0.02057	+24.00	±0	+857	+0.286
U2 L2	240	6.72	0.0	0.0	±0.00	±0	±0.0	0.00	±0	±0	±0
U3 L3	240	6.72	+26.20	+936	±0.00	±0	+0.03119	+26.20	±0	+936	+0.312
U4 L4	300	12.06	-82.16	-2043	-0.80	+1634	-0.6810	-87.76	+1347	-1684	-0.562



$\delta_d = \frac{28296}{30000} = 0.9432"$

For details of sidewalks to be added see Drawgs. 4828-4831 inclusive.



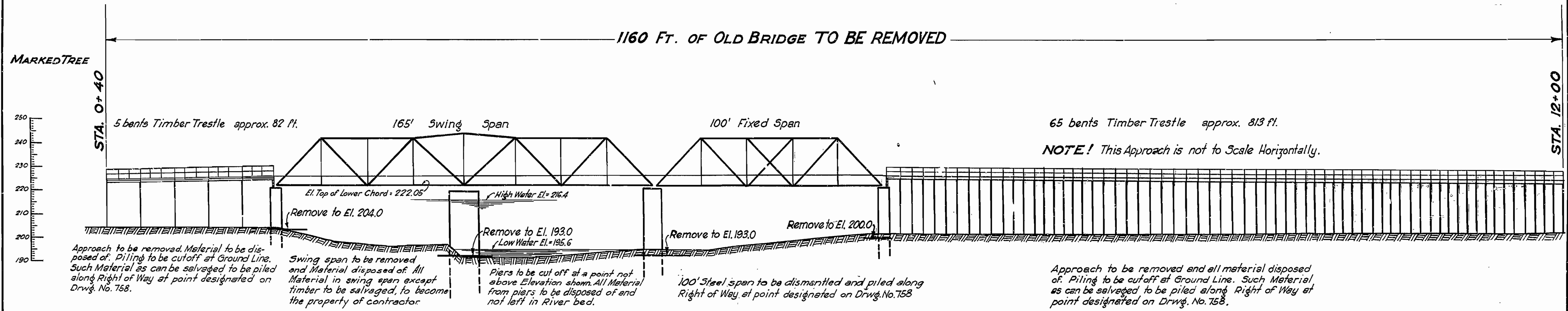
DEFLECTION DIAGRAMS

COMPUTATIONS FOR 160'-0" SWING SPAN FOR BRIDGE OVER ST. FRANCIS RIVER NEAR MARKED TREE - POINSETT CO. ARKANSAS STATE HIGHWAY DEPARTMENT LITTLE ROCK - ARK -- APRIL 1927

L React = -4700*	Dist from R end	Right Reaction R2	Center Reaction R3	Left Reaction R1
Impact = 1240*	L = 20'-0"	691	367	-0.59
-5940*	L = 40'-0"	406	688	-0.94
-3970*	L = 60'-0"	168	914	-0.82
Σ = 8910*	Reactions	Σ 1265	Σ 1969	Σ -235
Use 9000* Uplift at L0	"	+25300*	+39380*	-4700*

Span 160'-0" c-c. - Roadway 20'-0" Clear
Floor 2x6 Laminated
Floor Covering @ 2.5"/ft
Live Load @ 100#/ft Floor Surface
or 2-15 Ton Trucks
Joists - 7lines-15" 42.9#
Floor Beams - 28" 196# Both I's

FISCAL YEAR	Job No.	SHEET No.	TOTAL SHEETS
1928	1008	2	2
OLD BRIDGE OVER ST. FRANCIS RIVER AT MARKED TREE, ARK.			



Approach to be removed. Material to be disposed of. Piling to be cutoff at Ground Line. Such Material as can be salvaged to be piled along Right of Way at point designated on Drwg. No. 758.

Swing span to be removed and Material disposed of. All Material in swing span except timber to be salvaged, to become the property of contractor.

Piers to be cut off at a point not above Elevation shown. All Material from piers to be disposed of and not left in River bed.

100' Steel span to be dismantled and piled along Right of Way at point designated on Drwg. No. 758

Approach to be removed and all material disposed of. Piling to be cutoff at Ground Line. Such Material as can be salvaged to be piled along Right of Way at point designated on Drwg. No. 758.

E · L · E · V · A · T · I · O · N

B.M.
O.O on Marked Tree Gage = Elev. 196.6

GENERAL ELEVATION
OLD BRIDGE OVER ST. FRANCIS RIVER
AT MARKED TREE, ARK.
TO BE REMOVED

ROUTE 63 SEC. 7
ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

Drawn By: *[Signature]* Date: 7-20-28
Traced By: E.A.W. Date: 7-21-28
Checked By: _____ Date: _____

[Signature]
BRIDGE ENGINEER

Scale: 1 in. = 20 ft.
BRIDGE NO. 303-A DRAWING NO. 759