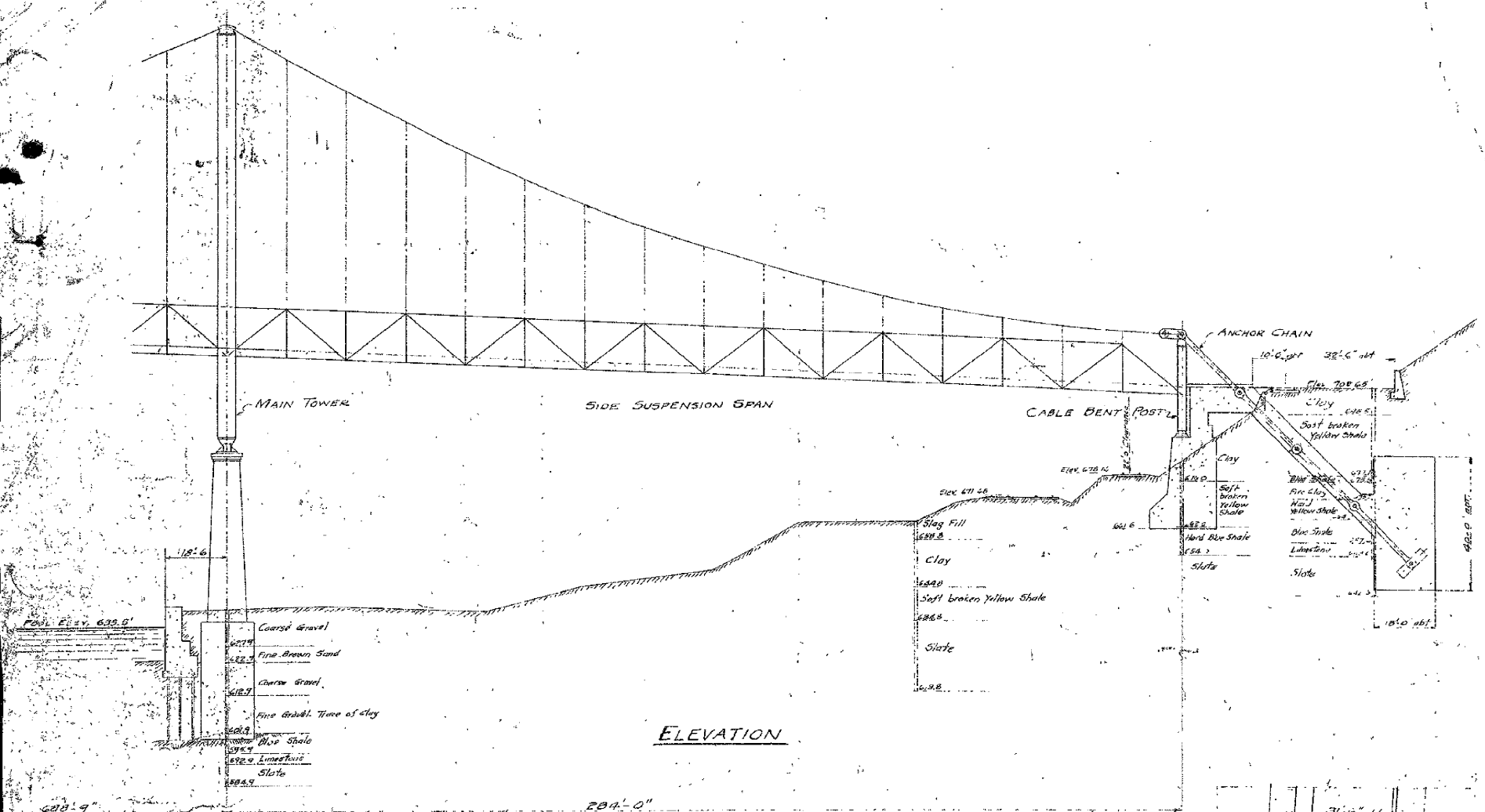
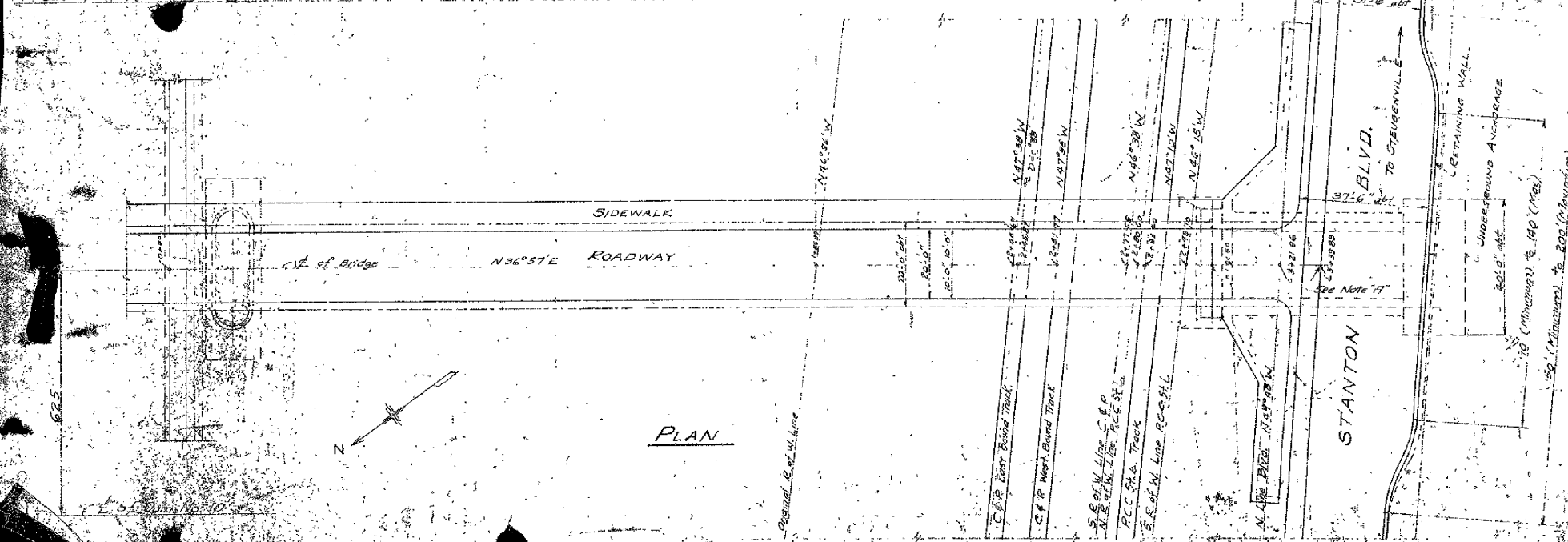


ALTERATIONS									
MARK	DESCRIPTION	DATE							



ELEVATION



PLAN

NOTE "A"
Center Line of Bridge to intersect
Stanton Boulevard between stations
15+75 and 15+90 of the City Survey

NO. 642	CONT. NO.	ORDER	SHOP BILL	REFERENCE DWGS.
STANTON BRIDGE				
THE WEIRTON-STEUBENVILLE BRIDGE				
STEUBENVILLE, OHIO				
DETAILS OF STEUBENVILLE APPROACH				
THE DRAVO CONTRACTING COMPANY				
DESIGNERS AND BUILDERS				
ENGINEERING OFFICE				
501 E. W. 10th St.				
STEUBENVILLE, OHIO				
DATE (FROM PLAN) 1911				
APPROVED & FORWARDED TO DATE 1911				

Required
1-Hand Rail Section-HR40
(This section may be shipped in 3 pieces
as shown in Secs BB-CC & DD)

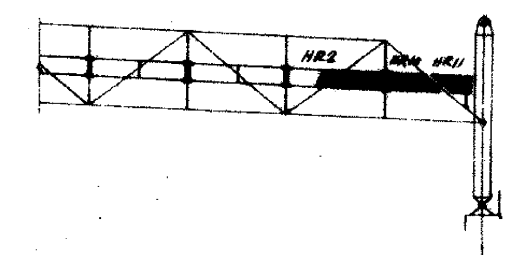
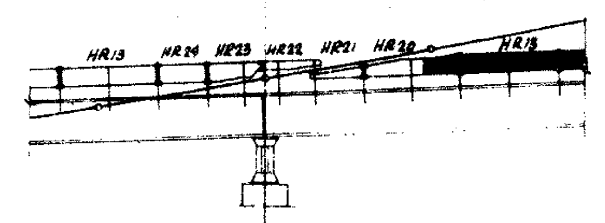
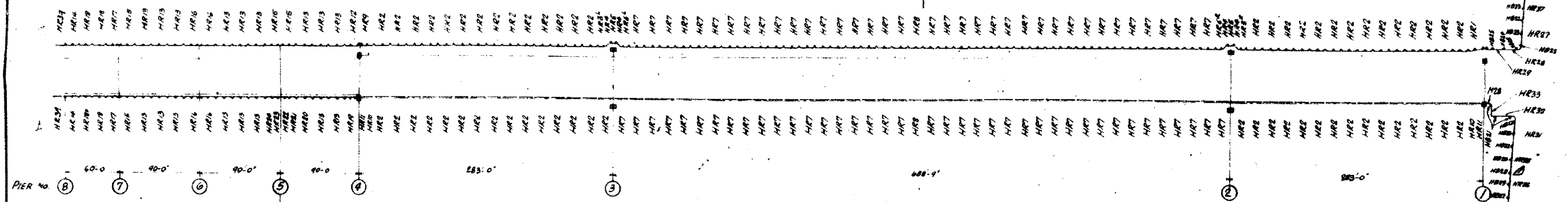
DR. <u>E.F. Shumaker</u>	TO: <u>E.F. Shumaker OF</u>	CH. <u>S. TRIN 6</u>
DATED <u>2-28</u>	SCALE <u>4" = 1 FOOT</u>	DRAWN BY
APPROVED <u>G.F. Wolfe</u>	DATE <u>6-11-28</u>	<u>17123</u>

ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH.
Δ	Ohio Approach altered	4-30-28	575
	HR 39 & HR 40 Approaches added		

W.VA.

OHIO

River flow



17124

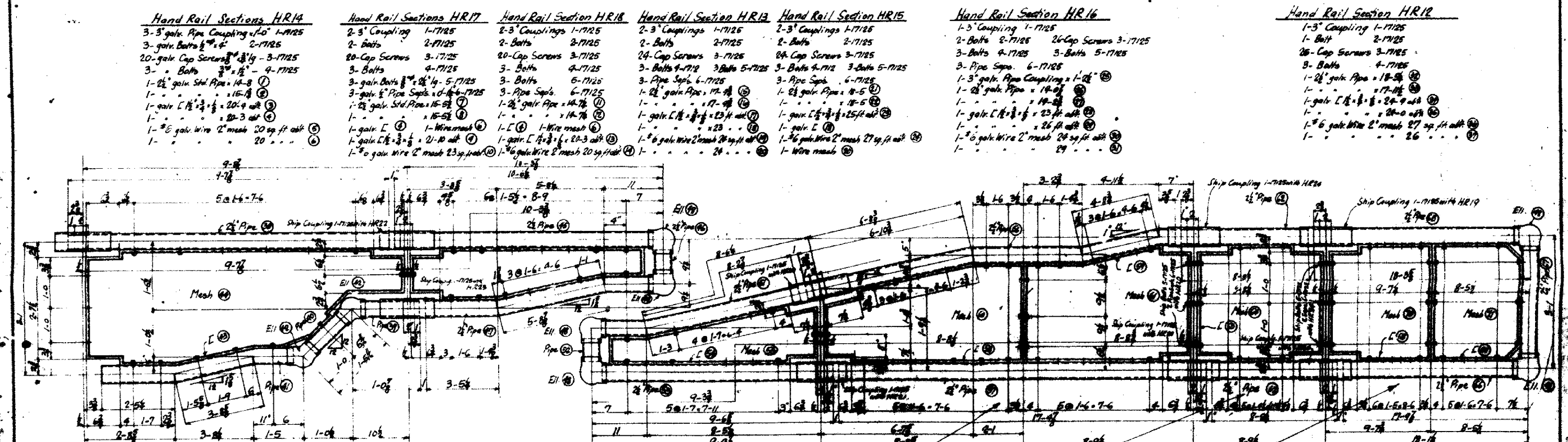
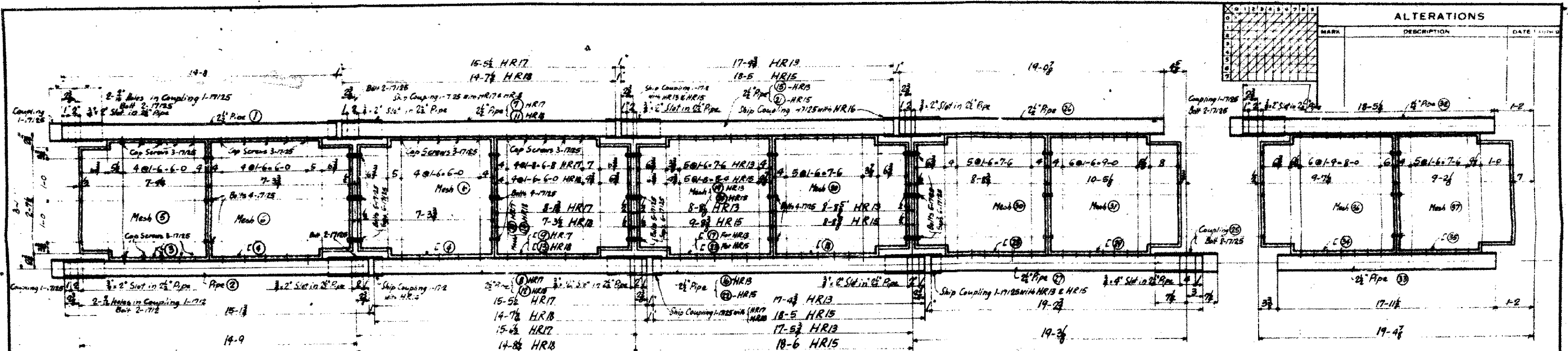
NO. RECD	CONT. NO.	CODE	GROUP	REFERENCE
17642	C12			THIS FILE - PREP - FILE - FILE

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO

ERECTION DIAGRAM FOR HARDRAILING

THE
ORAVO CONTRACTING
COMPANY
DESIGNERS AND ENGINEERS

17124



Section	Material	Quantity	Notes
One Hand Rail Section HR18	HR18	17-94	
One Hand Rail Section HR14	HR14	14-74	
One Hand Rail Section HR15	HR15	18-5	
One Hand Rail Section HR16	HR16	19-02	
One Hand Rail Section HR17	HR17	15-52	
One Hand Rail Section HR18	HR18	14-74	
One Hand Rail Section HR19	HR19	17-94	
One Hand Rail Section HR20	HR20	18-5	
One Hand Rail Section HR21	HR21	10-94	
One Hand Rail Section HR22	HR22	10-94	
One Hand Rail Section HR23	HR23	9-74	
One Hand Rail Section HR24	HR24	17-94	

Notes: All Hand Railing Material must be galvanized. Channel Frames to be galvanized after bending. Hand Railing Fittings may be welded and pinned in cases where screwed fittings will not permit assembly. Hand Railing must be set in position and lined up, before Hand Rail Posts are riveted or grouted. Punch holes to be made for 1/2" Spacing may be varied slightly to suit connections of various sizes.

ALTERATIONS			
MARK	DESCRIPTION	DATE	INITIALS

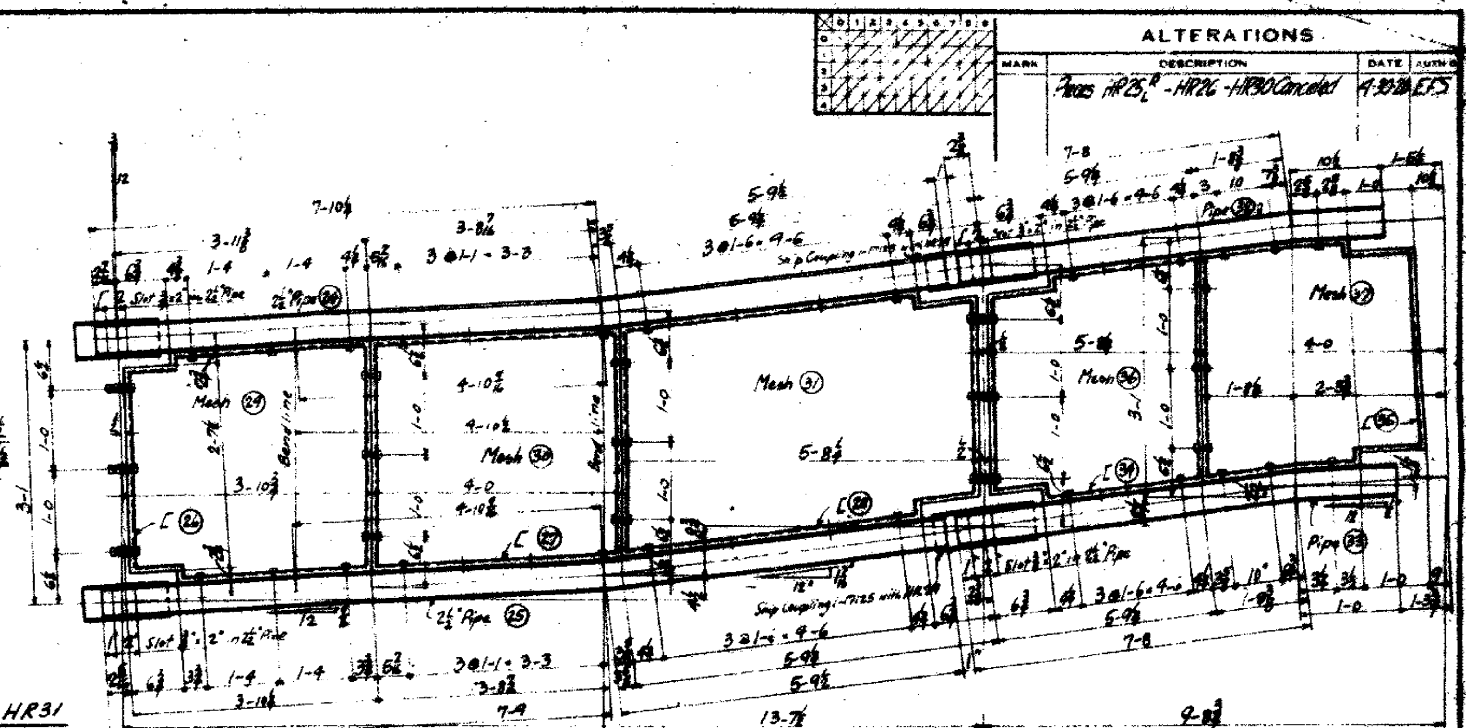
STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.

HAND RAILING FOR N.W.A. APPROACH SPANS

THE
DRAYO
CONTRACTING COMPANY
DESIGNERS AND BUILDERS

NO. 17126 C-44 132 17126-6-7-8
REFERENCE OWNER

17126



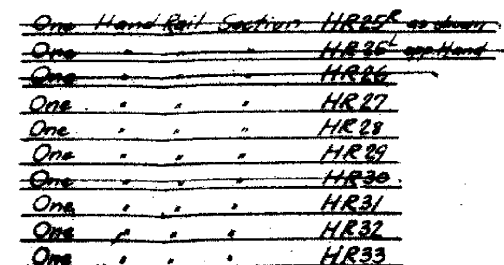
Hand Rail Section HR31

2-3" Pipe Coupling 1-17/25
2-Bolts 2-17/25
16-Cap Screws 3-7/25
3-Bolts 4-17/25
2-2 1/2" galv. Std. Pipes 14-10" (23)
2-L (19)
2-Wire mesh (21)

Hand Rail Section HR29

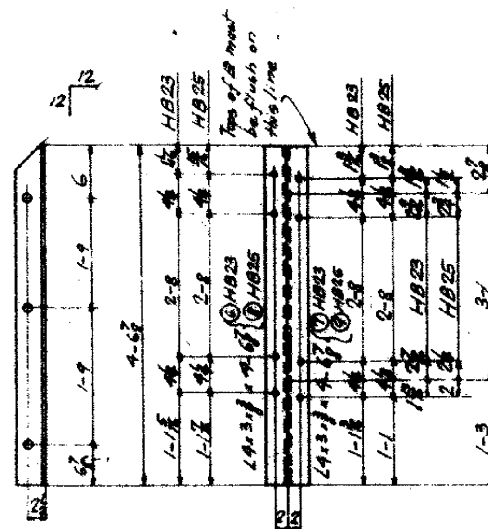
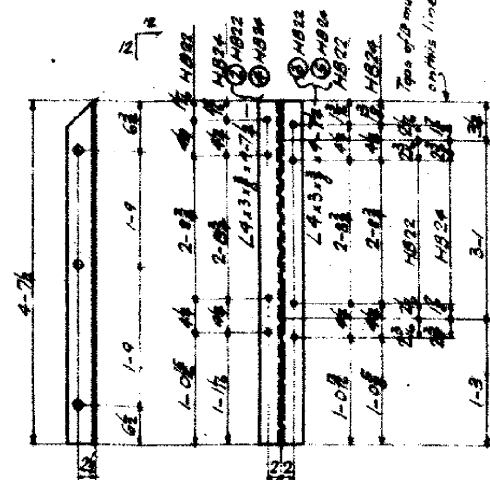
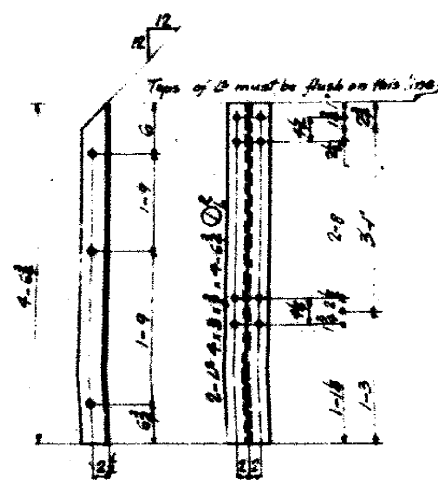
2-3" Pipe Couplings 1-7/185
2-Batts " 2-7/185
14 Cap Screws 3-7/185
3-Batts " 4-7/185
3-Batts " 5-7/185
3-Pipe Seps. 6-7/185
1-2 1/2 galv. Pipe + 6-4 1/2" Bolt
1- " " " 9-8
1-galv L 1 1/2 x 3/4 x 1/2 " 17-0 abt.
1- " " " 12-0 abt.
1-6 galv wire 2' mesh 16 sq ft abt.
1- " " " 9 sq ft abt.

Notes:
All Hand Railing Material must be galvanized.
Channel Frames to be galvanized after bending.
Hand Rail Fittings may be named and pinned
in cases where screwed fittings will not permit assembly.
Hand Railing must be cut in position and lined up,
before Hand Rail Posts are riveted or grouted.
Punch Ls and top Pipe for 3rd Cap Screws.
Spacing may be varied slightly to suit
connections of wire mesh to Ls.



NO. 1682	CAR 102	102	17124-5-6-8
NO. REQD.	CONT. NO.	CITY	REFERENCE DWGS.
<p>STANTON BRIDGE OVER THE OHIO RIVER AT STUEBENVILLE, OHIO.</p> <p>HAND RAILING FOR OHIO APPROACH</p>			
<p>THE ORAVO</p>		<p>CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. ATTN: WARD, CO.</p>	
<p>DR. G.A. Jacob</p> <p>DATE 9-2-28</p> <p>APPROVED G.F. Hoff</p> <p>APPROVED S.G. G</p>	<p>TR. G.A. Jacob</p> <p>SCALE 1" = 1'-0"</p> <p>DATE 9/1/28</p> <p>DATE 9/1/28</p>		
<p>ONE HALF DRAWING 17124</p>			

<table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr></table>										1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	<h2 style="text-align: center;">ALTERATIONS</h2> <table border="1"><tr><th>MARK</th><th>DESCRIPTION</th><th>DATE</th><th>AUTH</th></tr><tr><td>1</td><td>No. of Ps of HBZ, HB3, HB103 changed</td><td>1960-8</td><td>EPS</td></tr><tr><td></td><td style="text-align: center;">M27</td><td></td><td></td></tr></table>				MARK	DESCRIPTION	DATE	AUTH	1	No. of Ps of HBZ, HB3, HB103 changed	1960-8	EPS		M27		
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	M27																																																																																																																												



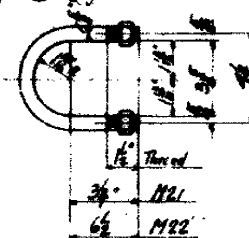
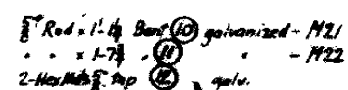
3-Hand Railing Posts HB21 Code C38

8-Hand Railing Posts HB22

1- " " " HB24 } Code C38

W/O Hand Railing Posts HB23

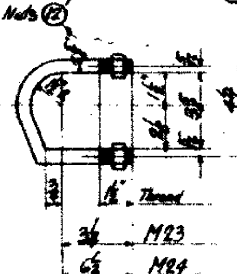
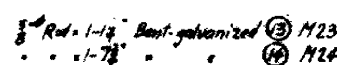
2- HB25



4728 U Bolts - M21

you with HNT-18 - 8 - - M22

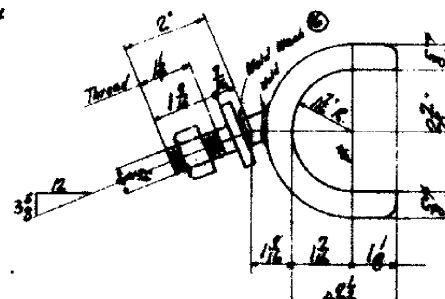
At Mandrel Slip Joints



① 708 U Balls - M23

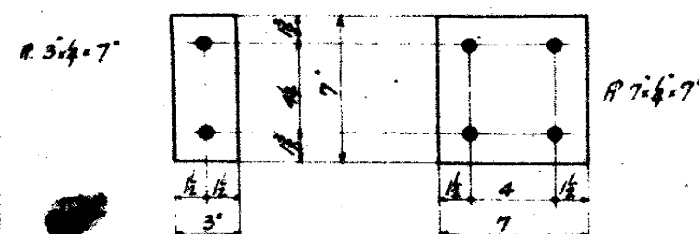
4- • - M24 - Use with M24

*For intermediate Hand Railing Supports
between Joints:*



8-Y Bolts M25 Code C43

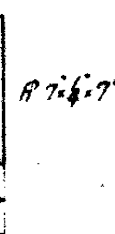
For Conn. of Handrail Sections HR10, HR11
to End Diagonals of Stiff Truss - Roadway Side.



144-Fill. Plates M26

Code C-44

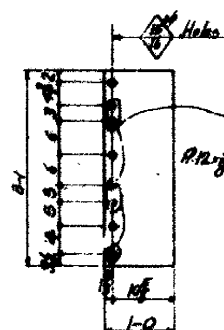
to be used with U-Bolts M23
to peak between 2 1/2" Pipe Railing
and Posts HD 20 and Diagonals
of Stiff Truss on Roadway Side



260 Filler Plates M27

Code C44

To be used with U Bolt M23
to post between 2 1/2" Pipe Railing
and Posts. HBB-4-10-12-14-16-18-20



One Guard Plate M28

Code C44

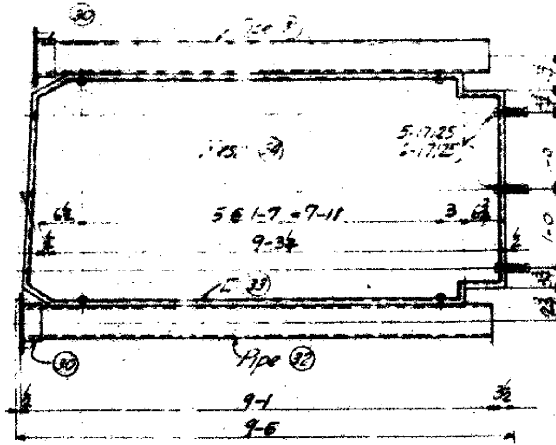
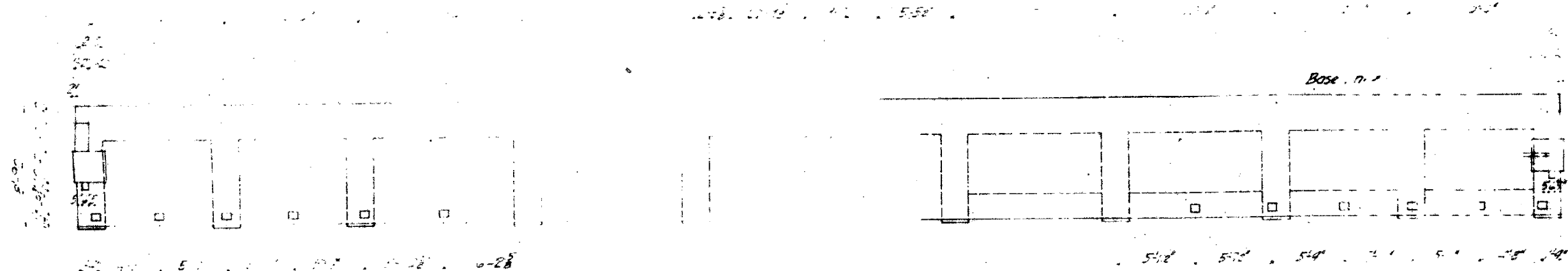
Erectors Note:

- Knock out 5 Rivets in Ohio Cable Box Plot (Roadway Side)
take off 2-15 28-17194
drill 3 new 1/2" Holes in Field.

Rivets $\frac{3}{4}$ "
Holes $\frac{11}{16}$ " unless noted
Paint: One Coat Red Lead
except for galv. Bolts.

NO. 1720		CONTRACT NO.	CODE	DATE OF BILL	REFERENCE DWGS.
H642		C2004	135	17120-5-1-7	
<p align="center">STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO</p>					
<p align="center"><u>HANDRA, FOSTER, BUTTS - PAUL</u></p>					
<p align="center">THE DRAY</p>		<p align="center">CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT PITTSBURGH, PA.</p>			
DR. G.A. FOSTER		TR. G.A. FOSTER		CHAS. FOSTER	
DATE 3-7-29		SCALE 1/2" = 6'-0"		DATE 3-7-29	
APPROVED G.A. FOSTER		DATE 3-7-29		17120	
DRAWN H.W.G.		DATE 3-7-29			

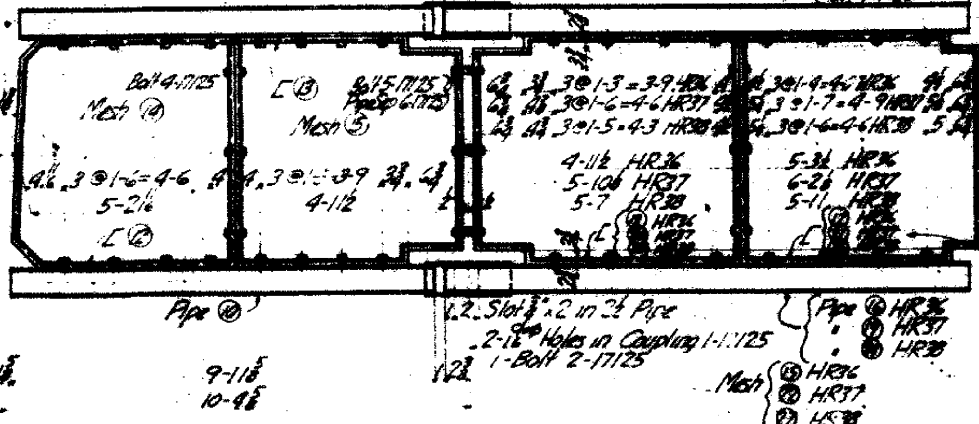
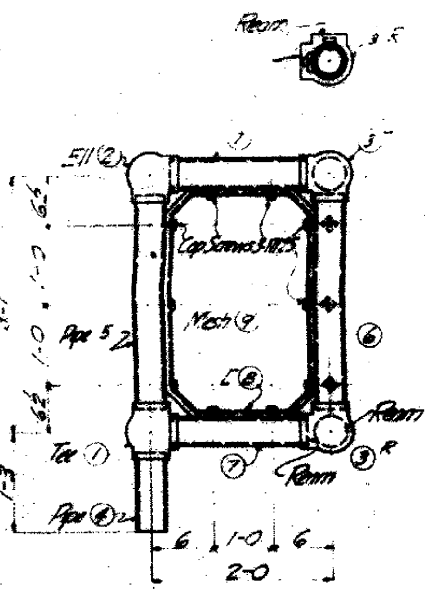
17728



- 18-201 30 Sems 3-1725
 3-80 = 5-1725
 3- = 6 Seps 6-1725
 11-50k 1/2 Lap Sems 2 1/2 #1
 2-50k 2 1/2" Flanges 30
 1- = 2 1/2" Std Aprx 8-11 #2
 1- = " " " x 9-10 #2
 1- = 1 1/2" x 1 1/2" x 24" Std #1
 1- 6 gals wire 2" mesh 25 #2

Notes:-
All hand railing material must be galvanized
Channel Frames to be galvanized after Bending.
Hand Rail fittings may be reamed and painted in areas
where screened fittings will not perform adequately.
Hand Railing must be set in position and lined up
before Hand Rail Posts are installed or grouted.
Finish LS and top floor for 3rd Cap Screws.
Spacing may be varied slightly to suit conditions
of wire mesh to LS.

17129



- 10-4 HR36
12-14 HR37
11-7 HR38
10-3 HR36
12-04 HR37
11-6 HR38

Required

- | | | | | | |
|---|---|------|------|---------|-------------------|
| 1 | - | Hard | Real | Section | HR34 ^R |
| 1 | " | " | " | " | HR34 |
| 2 | " | " | " | " | HR35 |
| 2 | " | " | " | " | HR36 |
| 1 | " | " | " | " | HR37 |
| 1 | " | " | " | " | HR38 |
| 2 | " | " | " | " | HR39 |

- 7 { ① HR36
② HR37
③ HR38

- | HANDRAIL SECTION HR-24 | HANDRAIL SECTION HR-25 | HANDRAIL SECTION HR-26 | HANDRAIL SECTION HR-27 | HANDRAIL SECTION HR-28 |
|--------------------------------------|---------------------------------------|---------------------------------------|---|---|
| 13-60k Cap Screws 1/4" x 3-17/25 | 16-60k Cap Screws 3-17/25 | 2-30k Std Pipe Coupling x1-0-17/25 | 2-3" Pipe Couplings 1-17/25 | 2-3" Pipe Couplings 1-17/25 |
| 1-28 galv Tee ① | 3-galv Bolts 1/2" x 4-17/25 | 2-60k Bolts 1/2" x 4-2-17/25 | 2-Bolts 2-17/25 | 2-Bolts 2-17/25 |
| 1 " " Ell ② | 3 " " 1/2" x 2-5-17/25 | 16-Cap Screws 3-17/25 | 16-Cap Screws 3-17/25 | 16 Cap Screws 3-17/25 |
| 2 " " Ells with Side cut ③ ④ | 3 " " 2" Pipe Spigot x 4-6-17/25 | 3-Bolts 4-17/25 | 3-Bolts 4-17/25 | 3 Bolts 4-17/25 |
| 1 " " Std Pipe x 1 1/2" ⑤ Third land | 1-28 galv Std Pipe x 9-1 1/2" ⑥ | 2-28 galv Std Pipe x 10-3 ⑦ | 2-28" galv Std Pipe x 12-0 ⑧ | 2-2-28 galv Std Pipe x 14-6 ⑨ |
| 1 " " " x 2-10 ⑩ ⑪ 2 joints | 1 " " " x 9-10 ⑫ | 1-L ⑬ | 1-60k Ell x 12 x 17-4 cut ⑭ | 1-60k Ell x 12 x 16-10 ⑮ |
| 1 " " " x 2-12 ⑯ | 1-60k Ell x 12 x 16-0 cut ⑰ | 1-60k Ell x 12 x 15-4 cut ⑱ | 1 " " " x 10-0 cut ⑲ | 1 " " " x 11-6 ⑳ |
| 2 " " " x 1-13 ㉑ ㉒ 1 joint | 1 " " " x 15-6 ㉓ | 1-Wire Mesh ㉔ | 1-1/2 galv wire 2" mesh x 15 spf flat ㉕ | 1-1/2 galv wire 2" mesh x 15 spf flat ㉖ |
| 1-60k Ell x 12 x 18 x 9-0 cut ㉗ | 1-1/2 galv wire 2" mesh 15 spf flat ㉘ | 1-1/2 galv wire 2" mesh 15 spf flat ㉙ | 1 " " " x 17 " ㉚ | 1 " " " x 16 " ㉛ |
| 1-1/2 galv wire 2" mesh 55 spf cut ㉜ | 1 " " " 14 " ㉝ | | | |

W692 C42 192 11729-5-678

IND. REG'D CONTY NO. CODE BRIDGE BILL REFERENCE SPAN.

STANTON BRIDGE
OVER THE OHIO RIVER AT
STEUBENVILLE, OHIO

HAND RAILING FOR OHIO ATTORNEY

THE
DRAVO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
OF BRIDGES AND STRUCTURES
INCORPORATED
COLUMBUS, OHIO

DATE OF ORDER TO BE PAID BY
NOV 2 1967

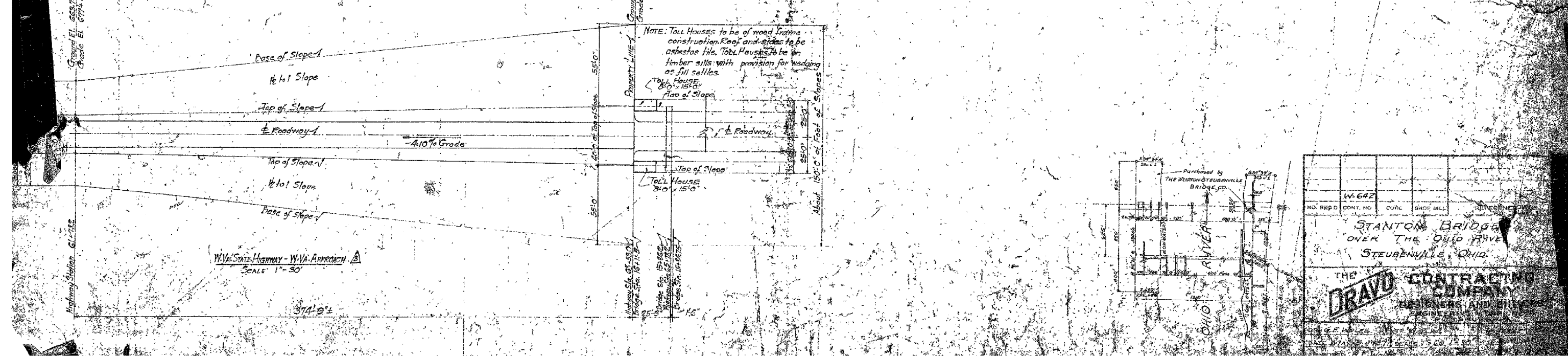
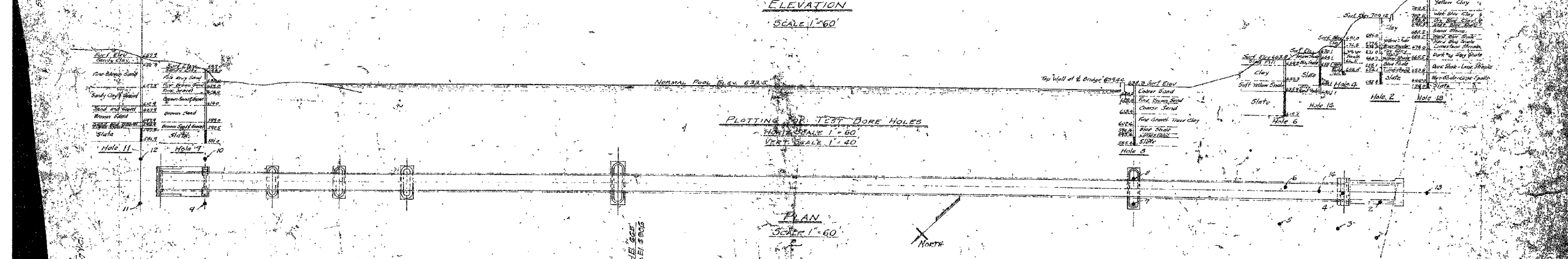
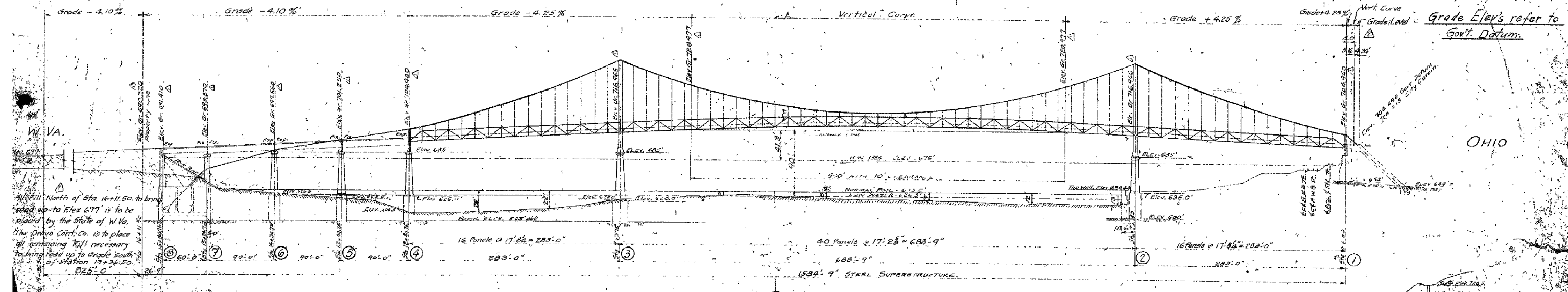
TO BE PAID BY
RILEY

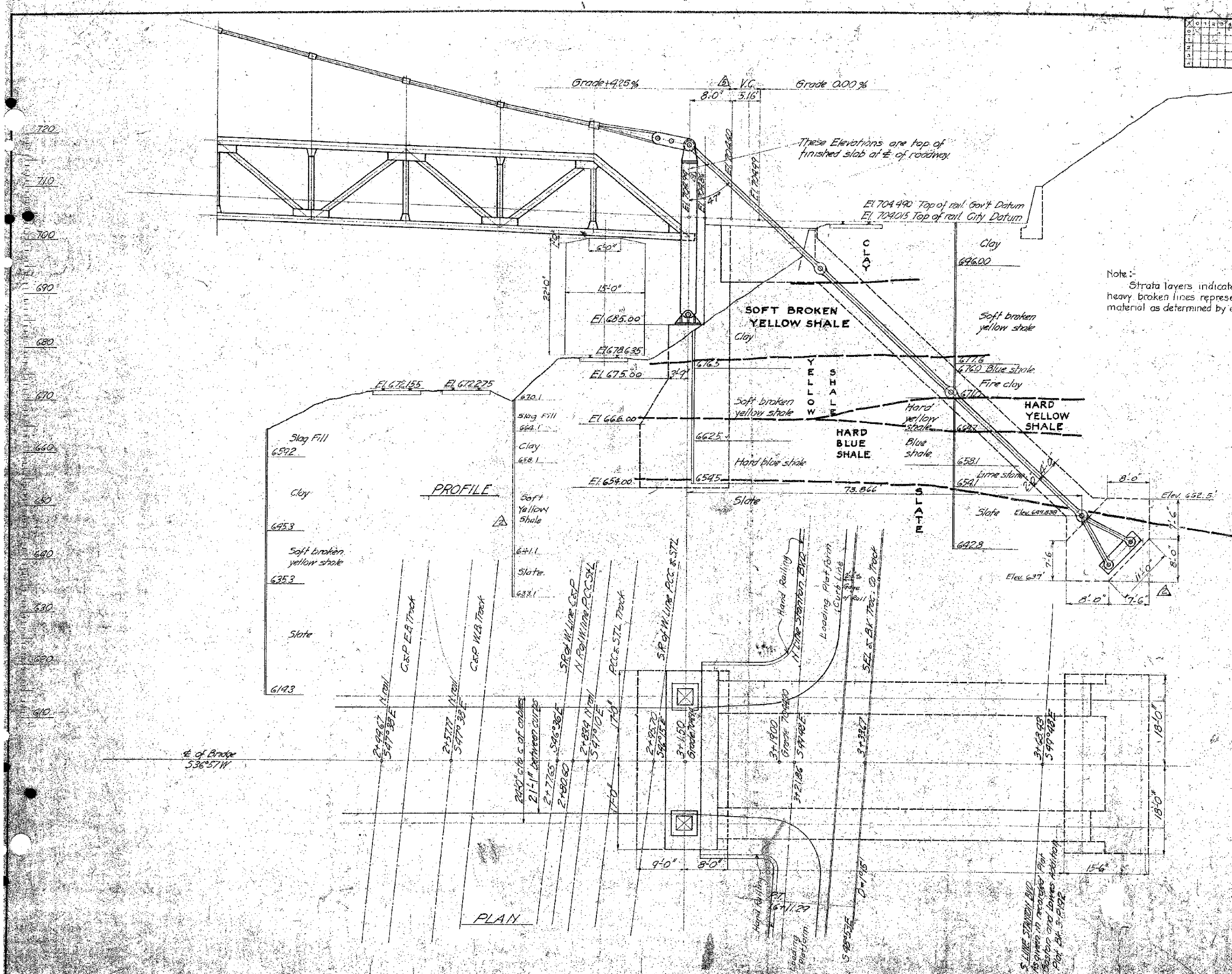
AMOUNT \$ 100.00

17129

17129

										ALTERATIONS			
										MATERIAL	DESCRIPTION	PAGE NO.	VOLUME
										A	Grade Elev. Changed - Note on W.Ya. Fill added	11-28-79	DEPT
										B	Grade Changed on Chis Approach.	1-28-80	G.T.
										C	W.Ya State Highway - W.Ya. Approach added	4-16-80	E.T.





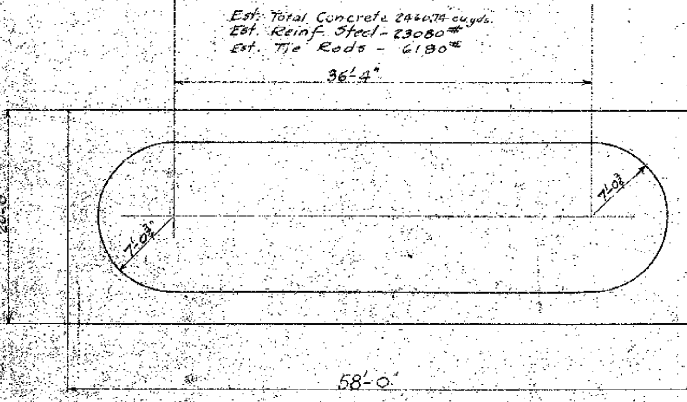
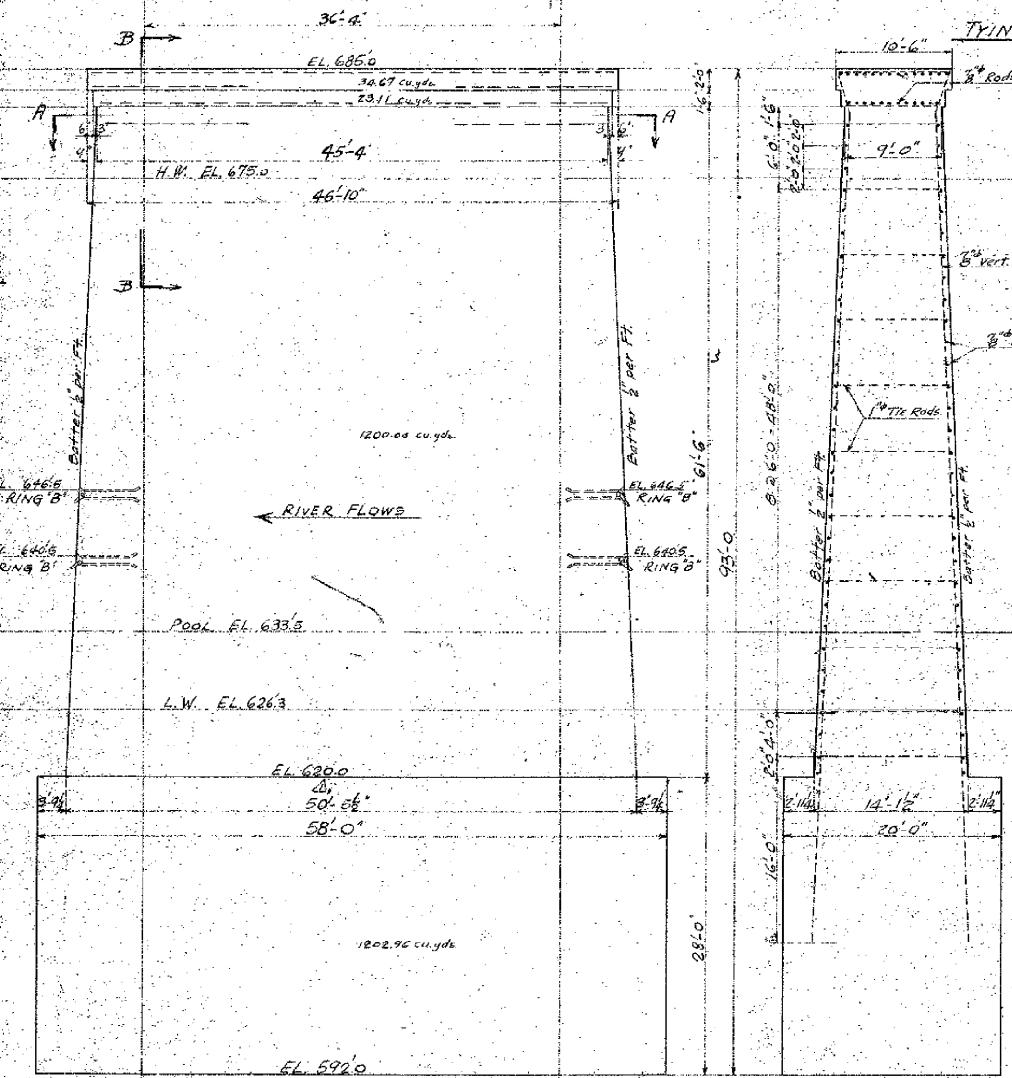
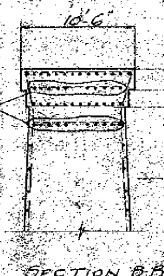
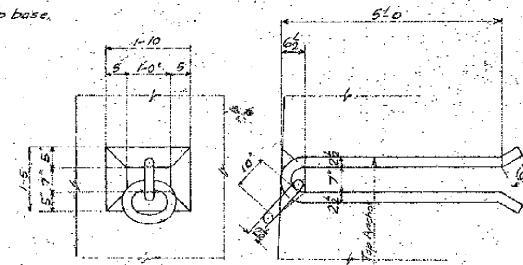
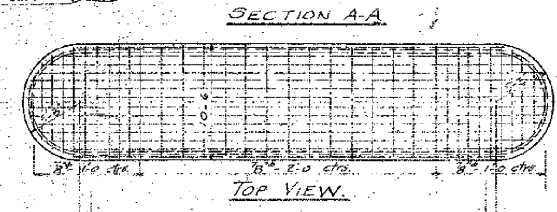
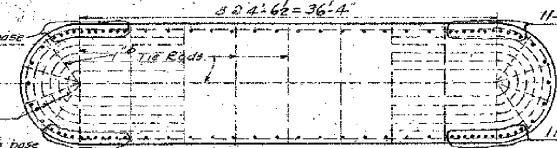
ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
1	Elevations changed	7-28-27	G.A.
2	Anchorages revised - Piling added	8-5-27	G.F.W.
3	11' Span width changed to 15'-6"	8-22-27	E.P.S.
4	Grade lowered and changed	11-25-27	ST
5	Grade altered at Pier #1	1-18-28	E.P.S.

ELEVATION	DESCRIPTION	ELEVATION	DESCRIPTION
720.0	Yellow clay	710.0	Wet blue clay
709.5		702.5	Dry blue clay
702.5		698.5	Soft blue shale
695.5		688.5	Sand stone
688.5		684.5	Hard blue shale
684.5		679.0	Hard blue shale lime stone streaks
679.0		670.0	Dark and gray shale
666.5		660.0	Dark shale lime streaks
653.5		650.0	Blue shale lime spalls
644.0		640.0	Slate
639.0			

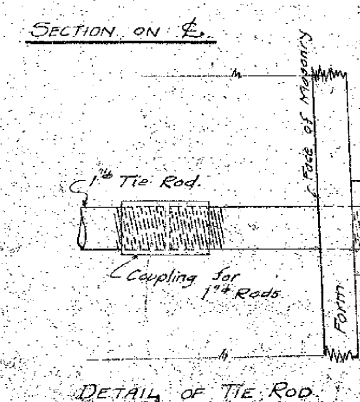
Note: All elevations given are based on U.S. War Dept. Datum. For corresponding City Elevations add 44.7.

NO. 642	CONTRACT NO.	CODE	SHEET NO.	REFERENCE
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO DETAIL OF OHIO APPROACH				
THE DRAGO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS Bldg. PITTSBURGH, PA.				
DATE: JULY 1927 DRAWN BY: J. H. H.				

11-14 Rods carried 16' into base
 11-14 Rods carried 16' into base
 11-14 Rods carried 16' into base

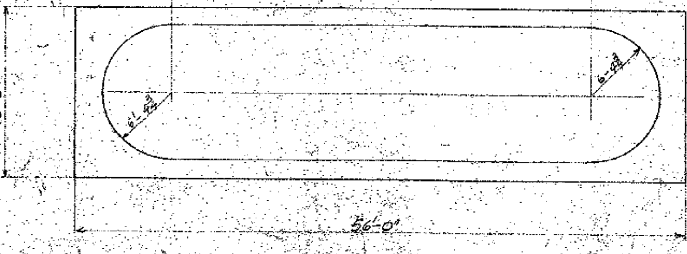
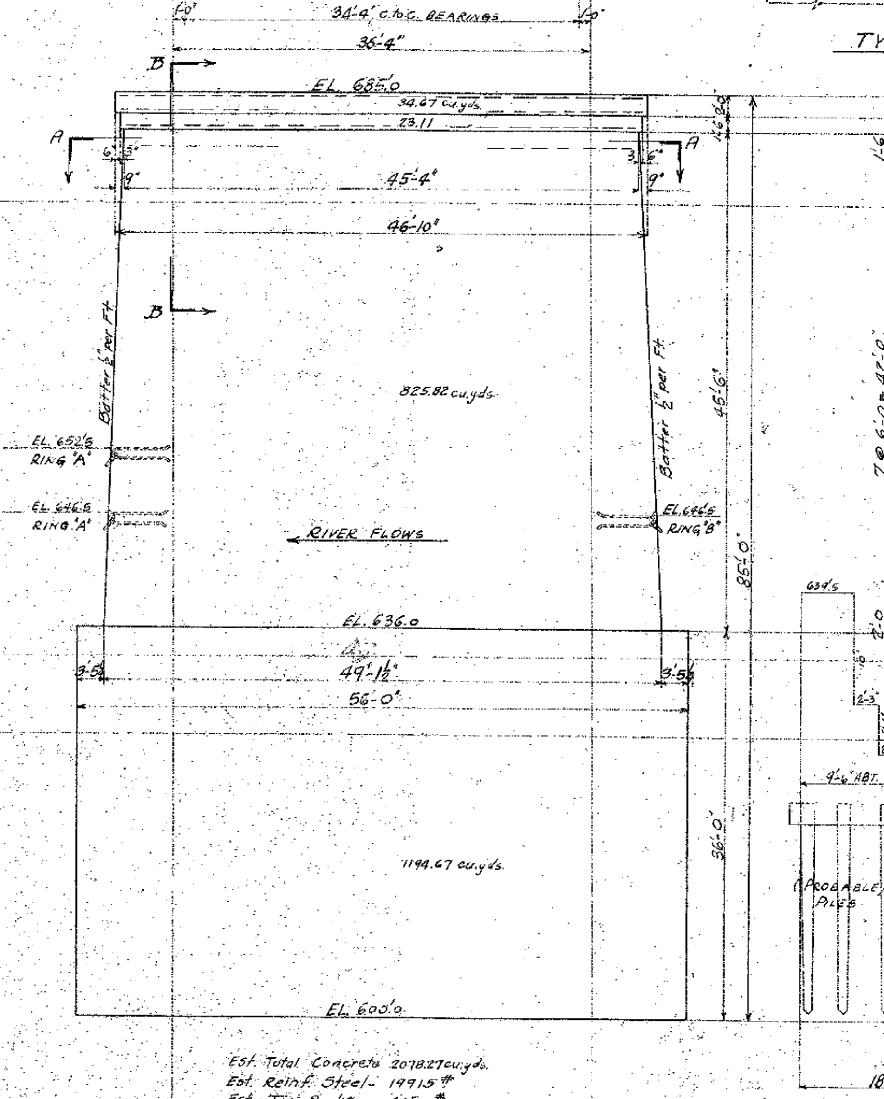
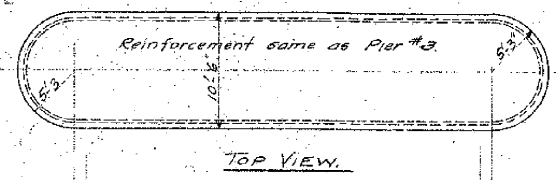


MAIN PIER NO 3
 PIER FOR RIVER TOWER
 (W.VA. SIDE)

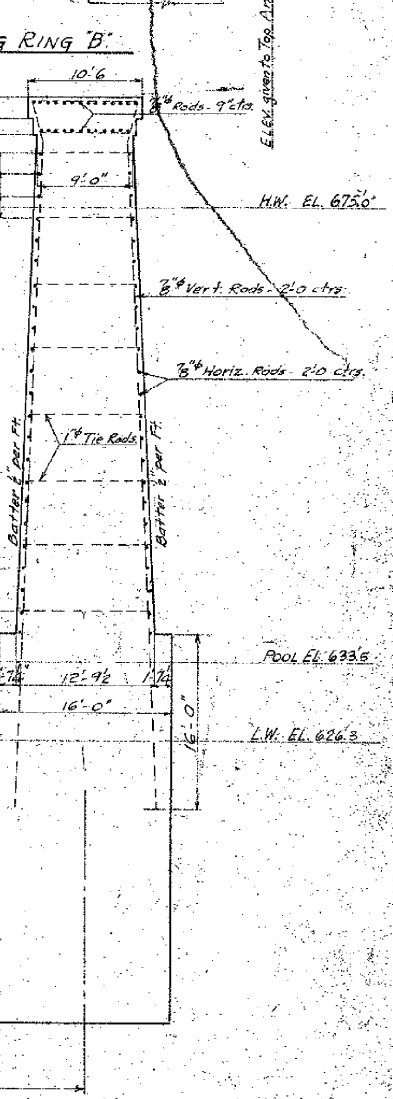
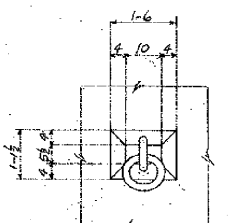


DETAIL OF TIE ROD

DETAIL OF COPING



MAIN PIER NO 2
 BACK OF GUIDEWALL
 (OHIO SIDE)



Note: Anchor Bolt setting Plans to be furnished later

NO. REV'D		DATE	BY	CHKD.	APP'D.	REVISION
W642 G-101		6-1-1927	J. H. HOFF	J. H. HOFF	J. H. HOFF	

STANTON BRIDGE
 OVER THE OHIO RIVER AT
 STEUBENVILLE, OHIO
 PIERS #2 & 3

THE
ORAVO
 CONTRACTING COMPANY
 DESIGNERS AND BUILDERS
 ENGINEERING WORKS DEPT.
 PITTSBURGH, PA.

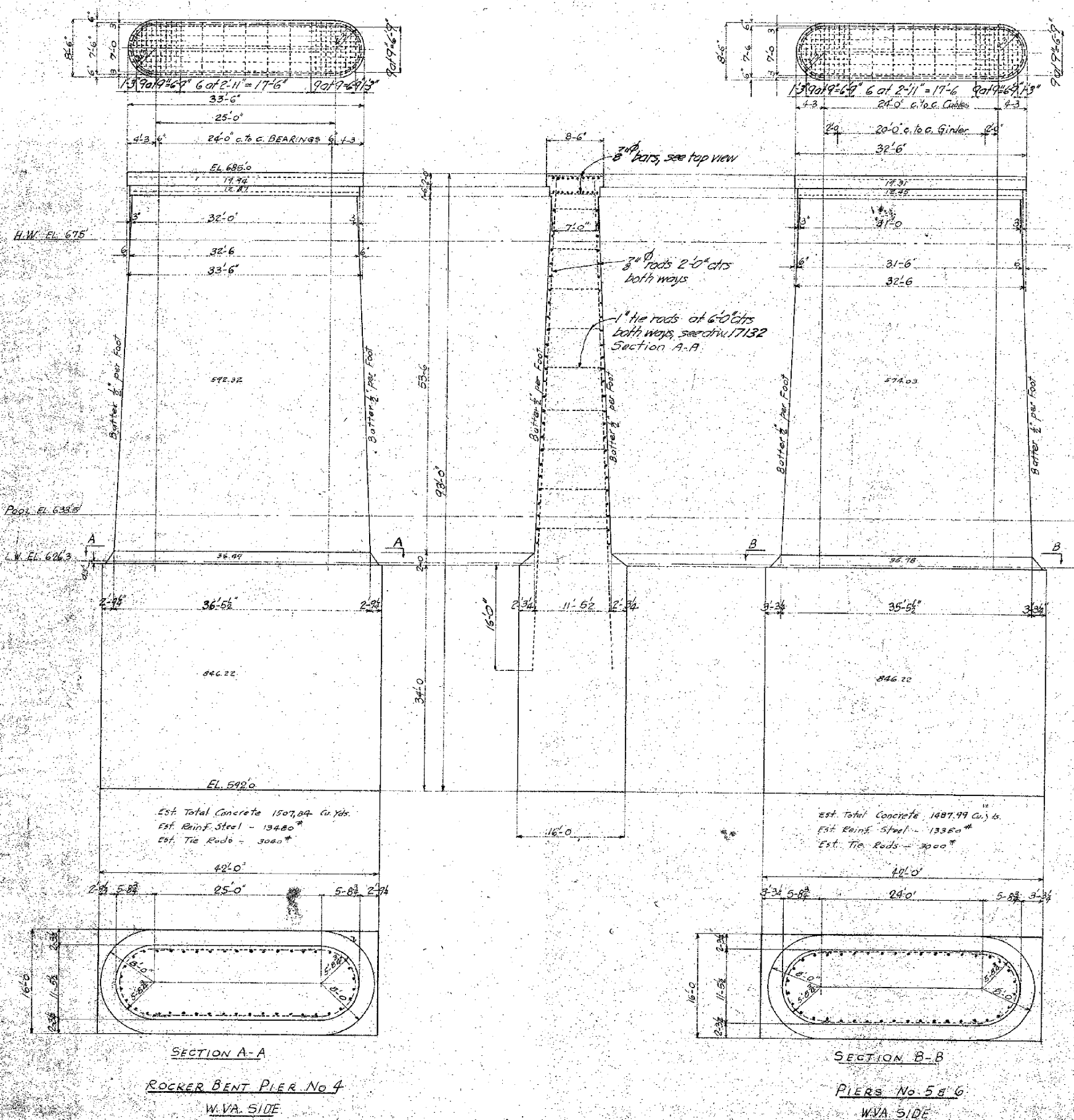
DATE 6-1-1927
 SCALE 1/4" = 1'-0"
 DRAWING NO. 17132

ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
△	Dimensions changed for 20' Rdwy. Dimensions reduced 2'-0"	6-1-27	J.H.H.
		7-1-27	J.H.H.

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

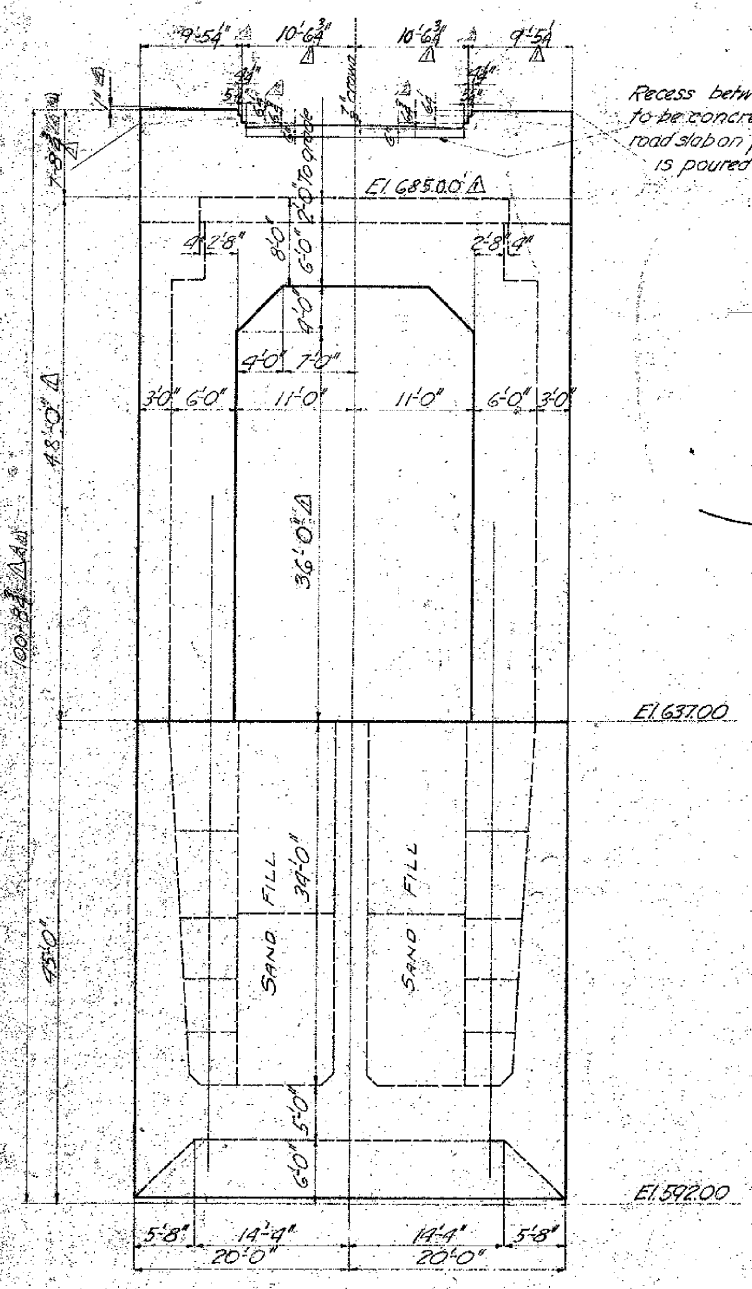
ALTERATIONS

MARK	DESCRIPTION	DATE	APPROVED
	Dimensions changed for 20' edwy	6-27-27	G.F.W.

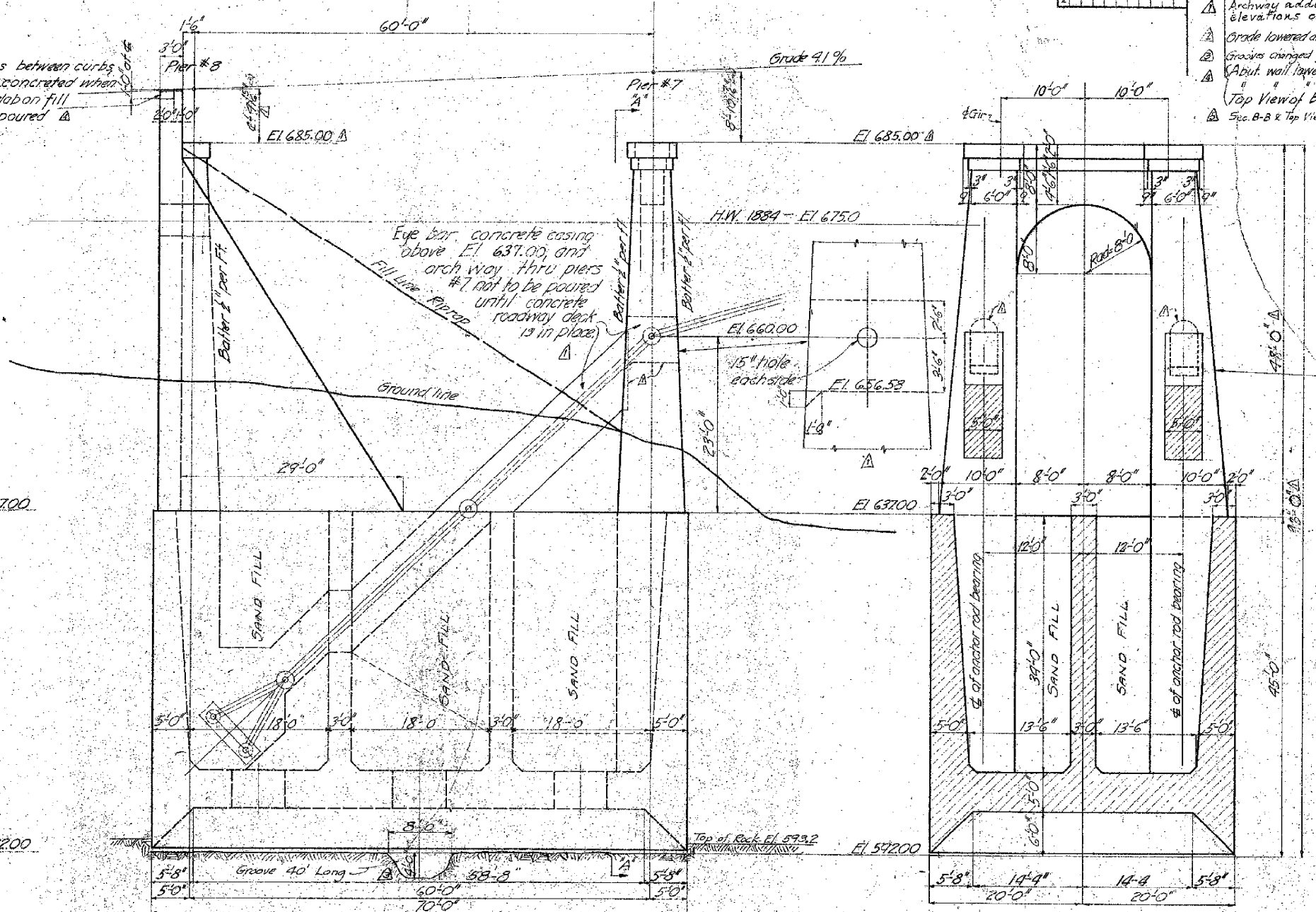


Note - Anchor Bolt setting Plans to be furnished later

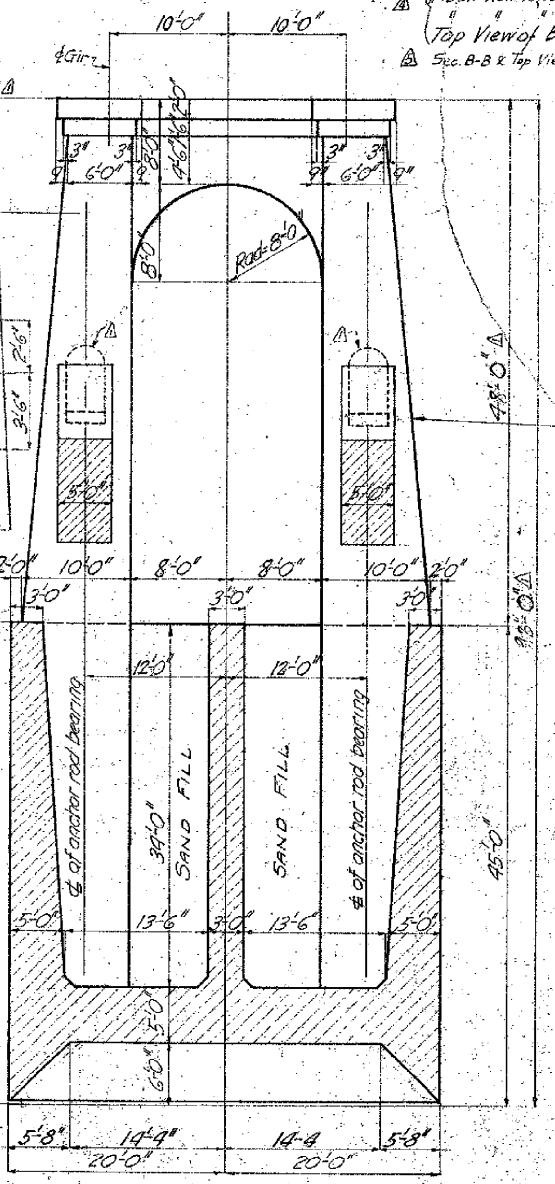
NO. DES'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO PIERS No. 4-5-6				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
BY: JACOB	IN: JACOB	CH: JACOB		
DATE: 6-10-1927	DATE: 6-10-1927	DATE: 6-10-1927		
APPROVED: G.F.W.	DATE: 6-27-27	17132		



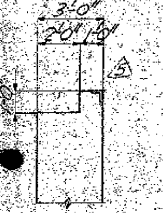
END ELEVATION



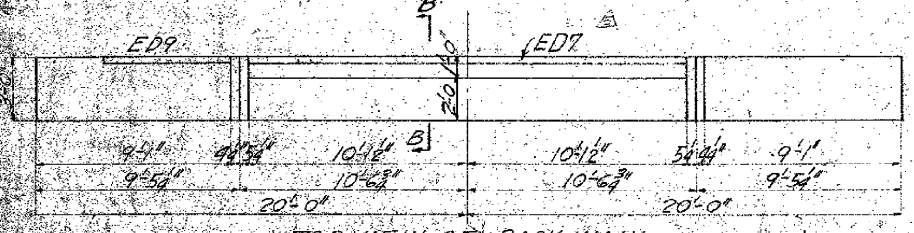
SIDE ELEVATION



SECTION A-A

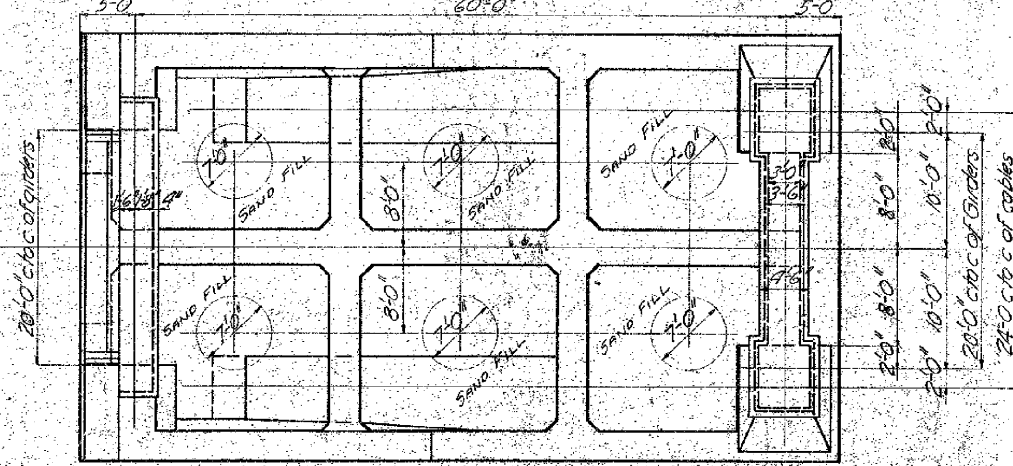


SECTION BB



TOP VIEW OF BACK WALL

Scale 1/4" = 1'-0"

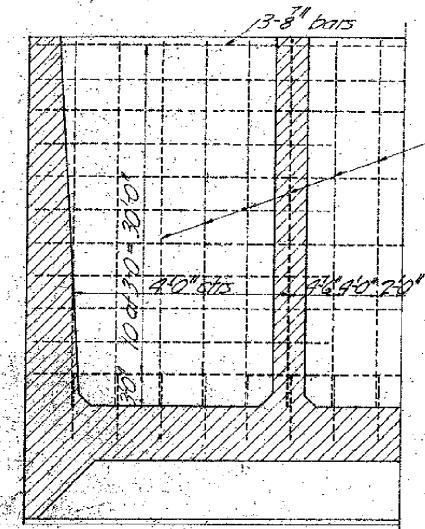


PLAN VIEW

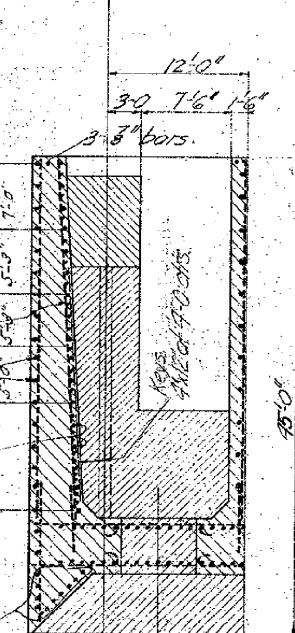
ALTERATIONS			
MARK	DESCRIPTION	DATE	INITIALS
1	Dimensions changed for 20' Runway Archway added. Dimensions and elevations changed.	6-27-27	ST
2	Grade lowered and Abut. wall altered.	11-27-27	ST
3	Grooves changed from 4 to one groove.	12-13-27	ST
4	Abut. wall lowered 1' outer end.	12-27-27	ST
5	Top View of Back wall added.	12-27-27	ST
6	Spec. B-B & Top View of Back Wall changed.	1-12-28	ST

Note: - Anchor Bolt setting Plans to be furnished later.

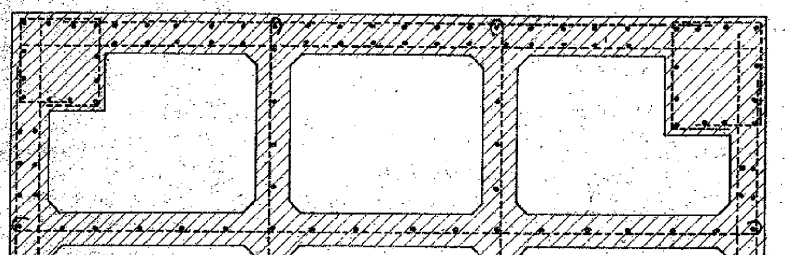
NO. 262	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
1062	C-101			
STANTON BRIDGE OVER THE OHIO RIVER STUBENVILLE, OHIO DETAILS OF W.V.A. ANCHORAGE				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT.				
DR. F.L. Pierce	CH. E.L. Thompson	CH. F. W. Jones		
DATE 6-19-27	SCALE 1/4" = 1'-0"	DRAWING NO.		
APPROVED G.F. W. Jones	DATE 6-21-27	17134		



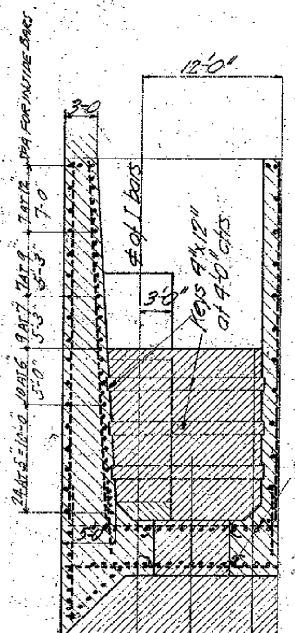
SECTION G-G



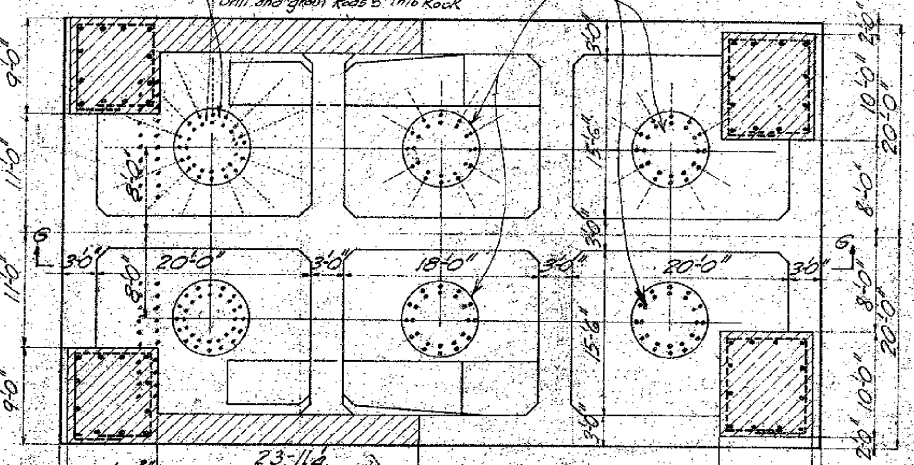
SECTION C-C



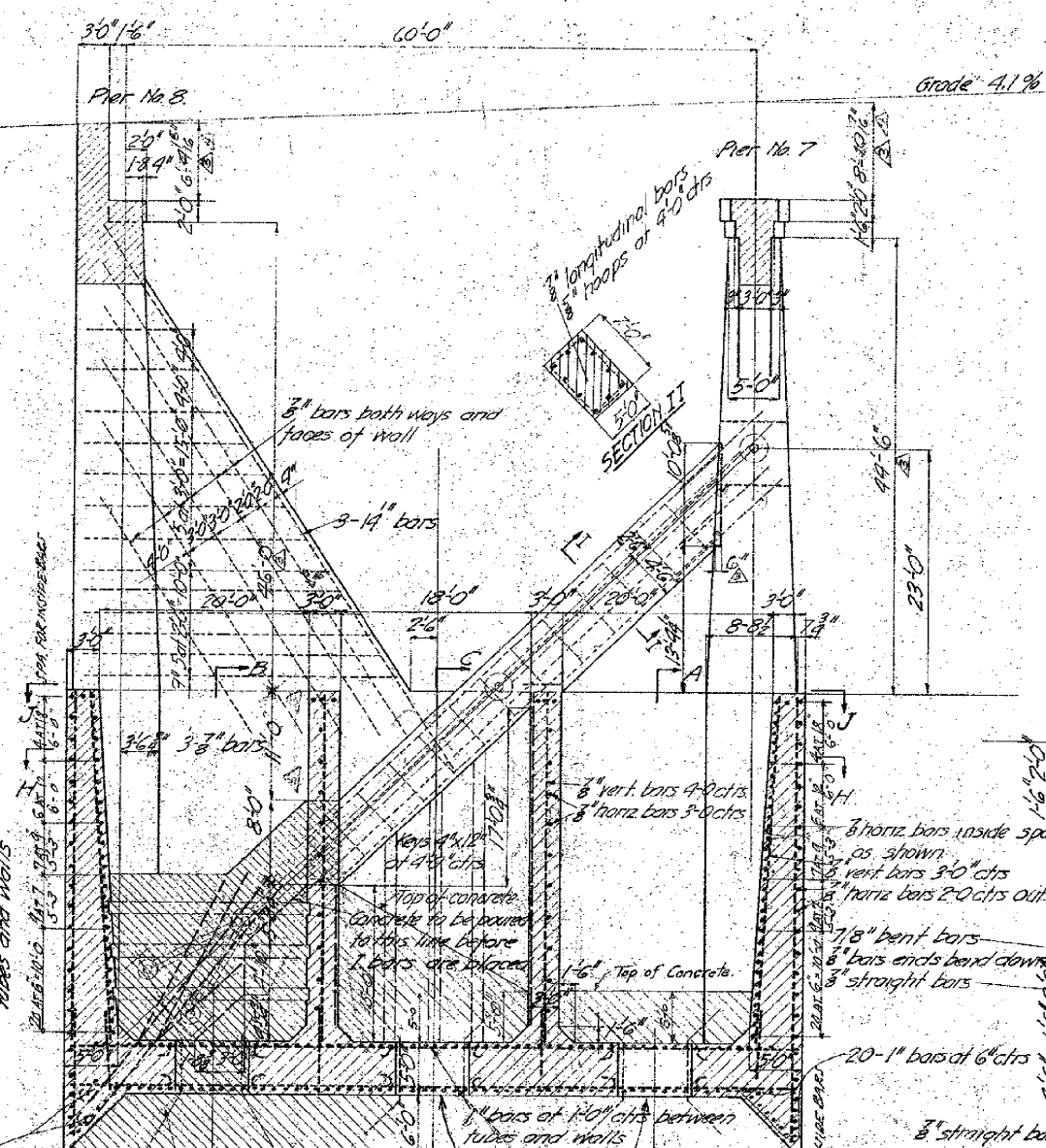
SECTION H-H



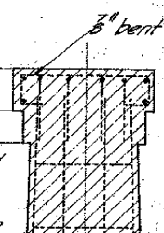
SECTION B-B



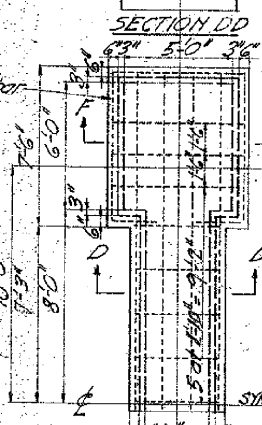
SECTION J-J



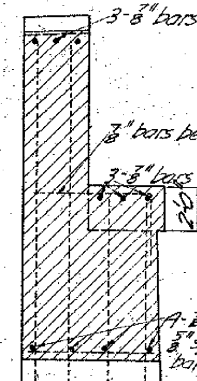
Grade 4.1%



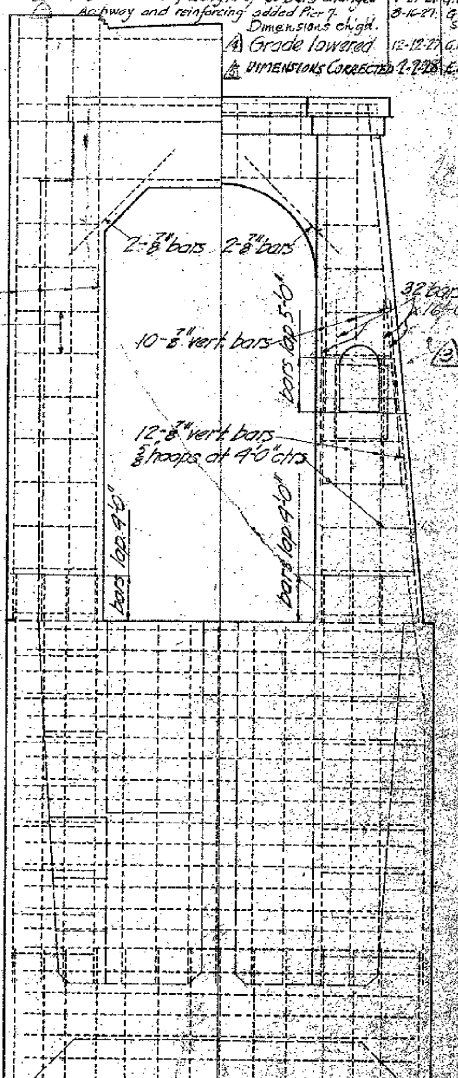
SECTION E-E



SECTION D-D



SECTION F-F



HALF END ELEVATIONS REAR FRONT

ESTIMATED QUANTITIES	
CONCRETE	3665 CU. YDS.
SAND & GRAVEL FILL	1575
REINFORCING STEEL	120,700 LBS.

All reinforcing bars are round deformed bars. Bars adjacent to concrete surface to be placed 3" clear distance within concrete.

Note: Anchor Bolt setting Plans to be furnished later.

WCA2 C-101

NO. RECD. CODE SHOP-BUY REFERENCE BUYER

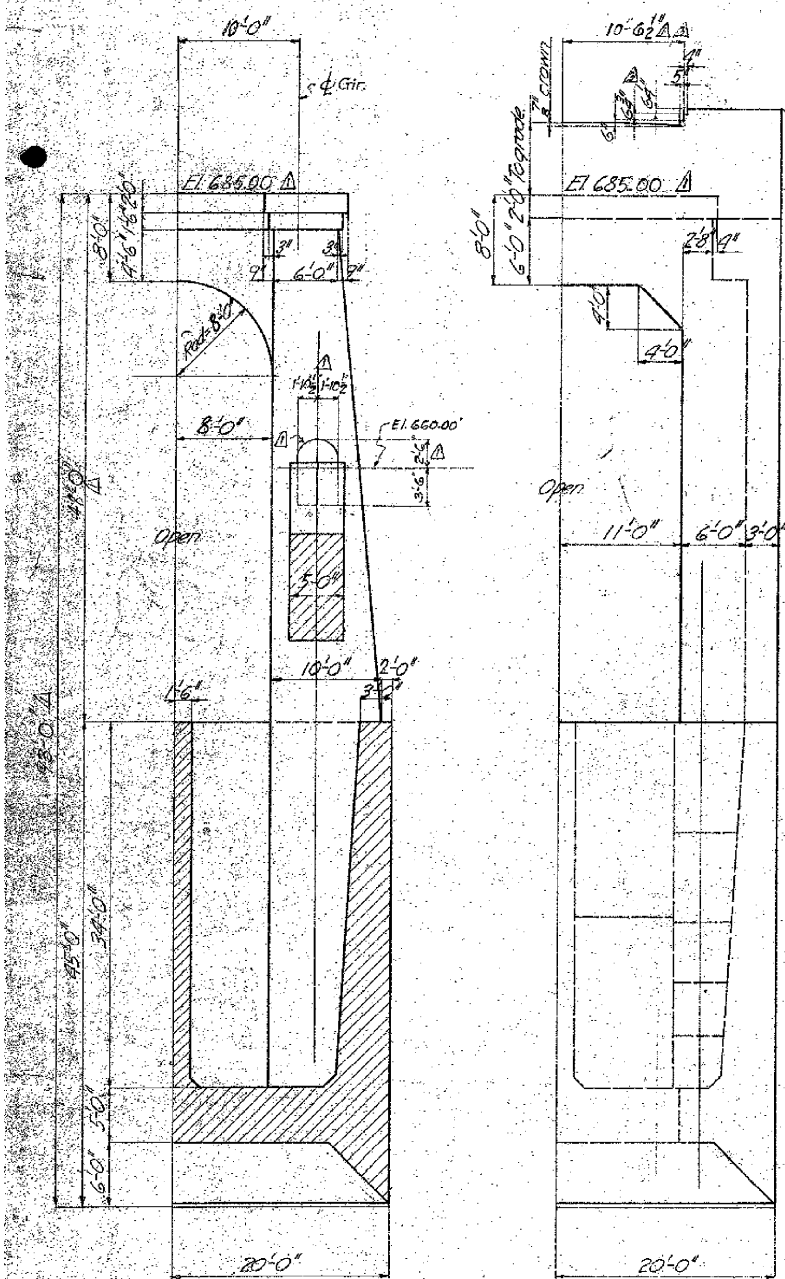
STANTON BRIDGE
OVER THE OHIO RIVER
STUBENVILLE, OHIO
DETAILS OF W.V.A. ANCHORAGE

THE DRAVO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
CINCINNATI, OHIO

DR. E. L. ... DATE 6-16-27 APPROVED G. F. ... DATE 6-16-27

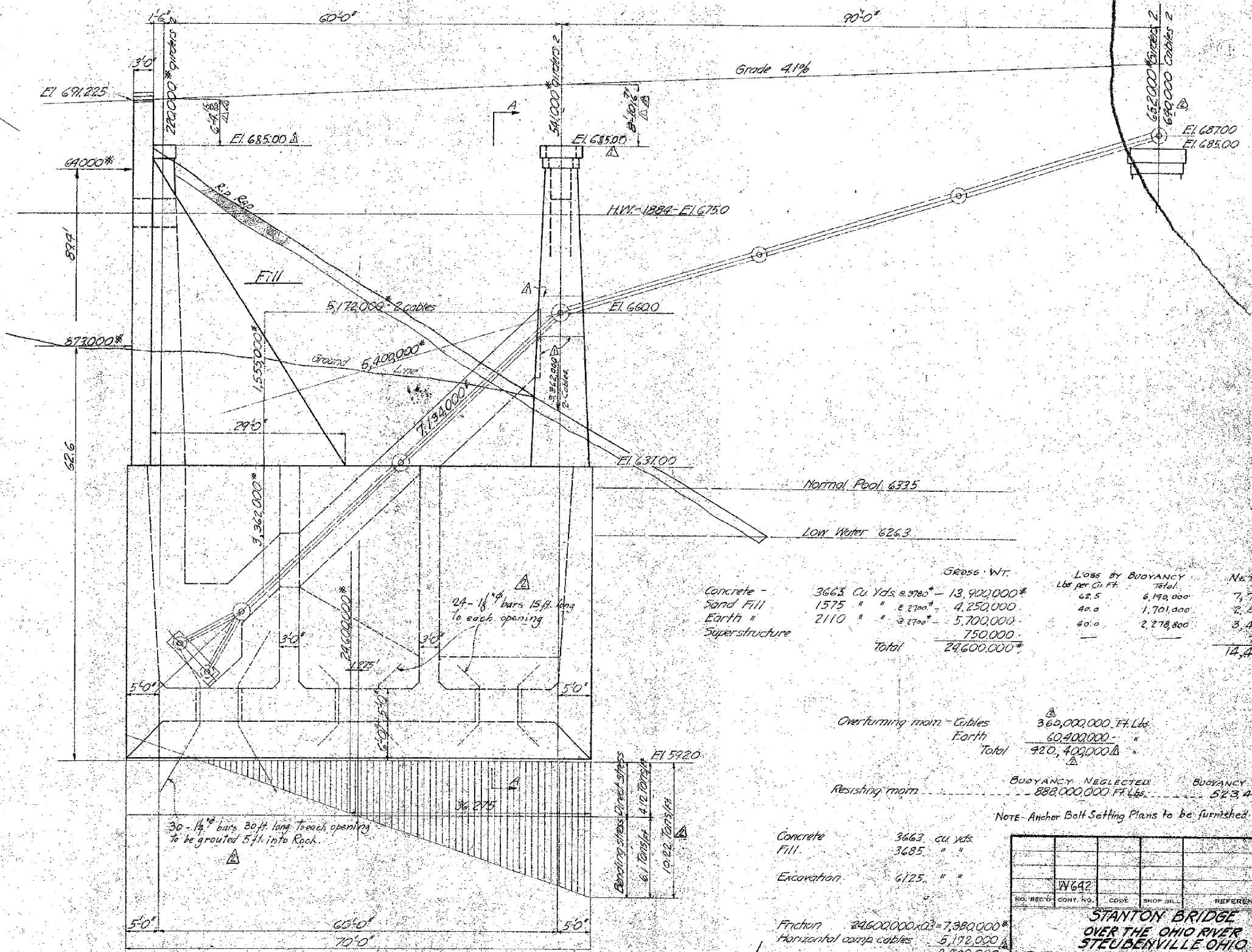
17135

ALTERATIONS			
MARK	DESCRIPTION	DATE	APPROVED
Ⓐ	Dimensions changed for 20' Rwy Archway added. Dimensions and elevations changed.	6-1-2007	WJH
Ⓑ	Streets changed for 221' Roadway with Streetcar Track. Anchor Road added.	3-17-27	SJT
Ⓒ	Gravel lowered and curb wall altered	4-8-27	SJT
		12-1-27	WJH



HALF SECTION A-A

HALF REAR ELEVATION



SIDE ELEVATION

	GROSS WT.	Loss by BUOYANCY Lbs per Cu. Ft.	NET WT.
Concrete -	3665 Cu Yds @ 7700* = 13,900,000*	62.5	7,710,000
Sand Fill	1575 " " @ 2700* = 4,250,000	40.0	2,549,000
Earth "	2110 " " @ 2700* = 5,700,000	40.0	3,421,000
Superstructure	750,000		750,000
Total	24,600,000*		14,430,000*

Overturning mom - Cables
Earth
Total

	360,000,000 Ft. Lbs
	60,400,000 -
	<u>220,400,000</u>

NOTE - Anchor Bolt Setting Plans to be furnished later.

Concrete	3663	cu yds
Fill	3685	" "
Excavation	6125	" "

Friction	$29,600,000 \times 0.3 = 7,380,000$
Horizontal comp cables	5,172,000
	<u>2,208,000</u>
" Earth	937,000
Excess	1,271,000

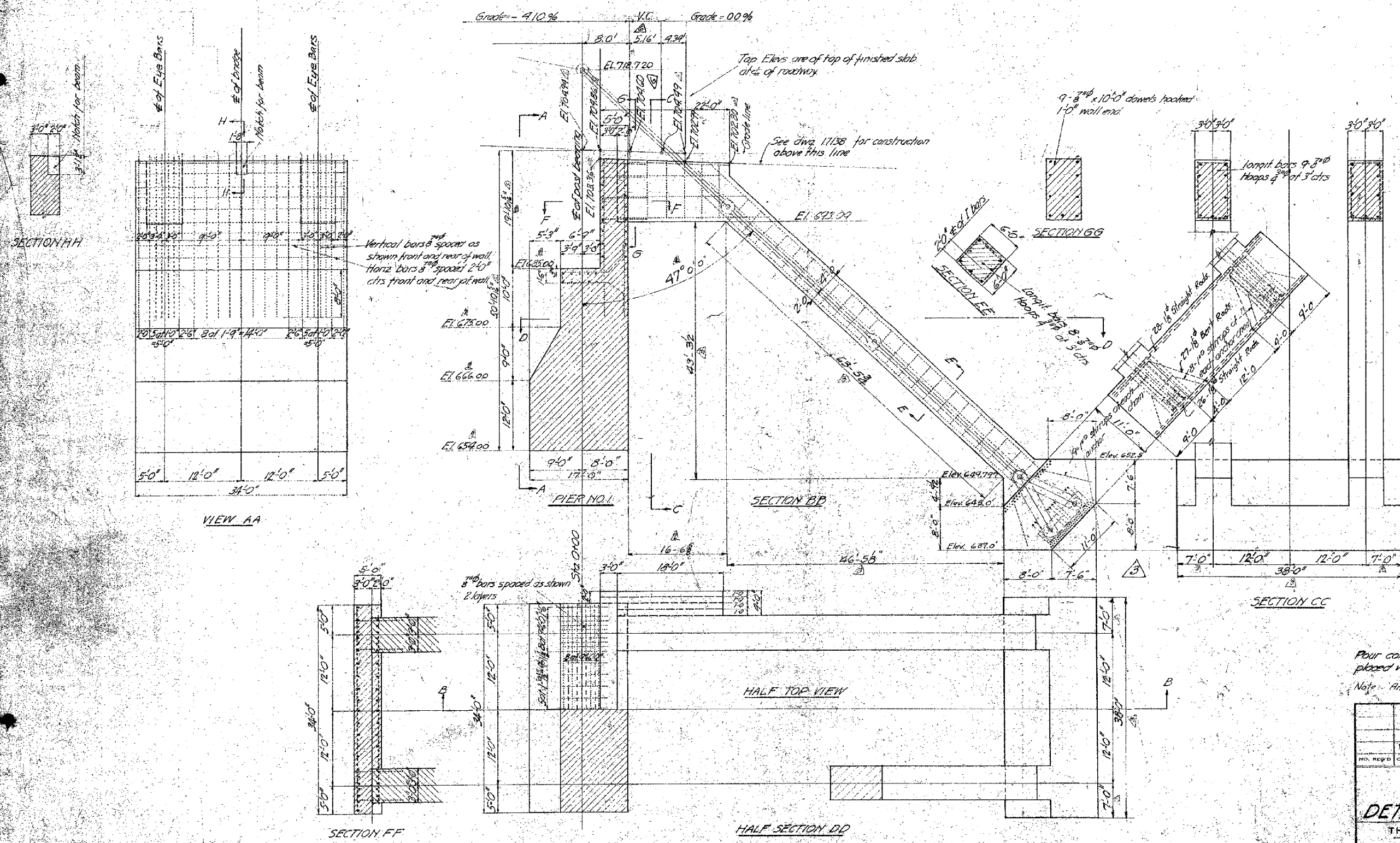
Friction $24,600,000 \times 0.5 = 12,300,000^*$
Horizontal comp cables 5,172,000
2 Friction 7,128,000
Earth (full depth) 5,457,000

[illegible]

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

ALTERATIONS

MARK	DESCRIPTION	DATE	APPROVED
Δ	Dimensions changed for 20' Rdwy added if changed	4-27-27 GFW	
Δ	Anchorage altered-reinf revised	7-28-27 G.A.T.	
Δ	Dimensions altered in View A-A	8-6-27 G.F.W.	
Δ	Grade lowered	9-13-27 S.T.	
Δ	Grades Altered at pier #1	11-25-27 S.T.	
		1-4-28 E.F.S.	



EST. QUANTITIES

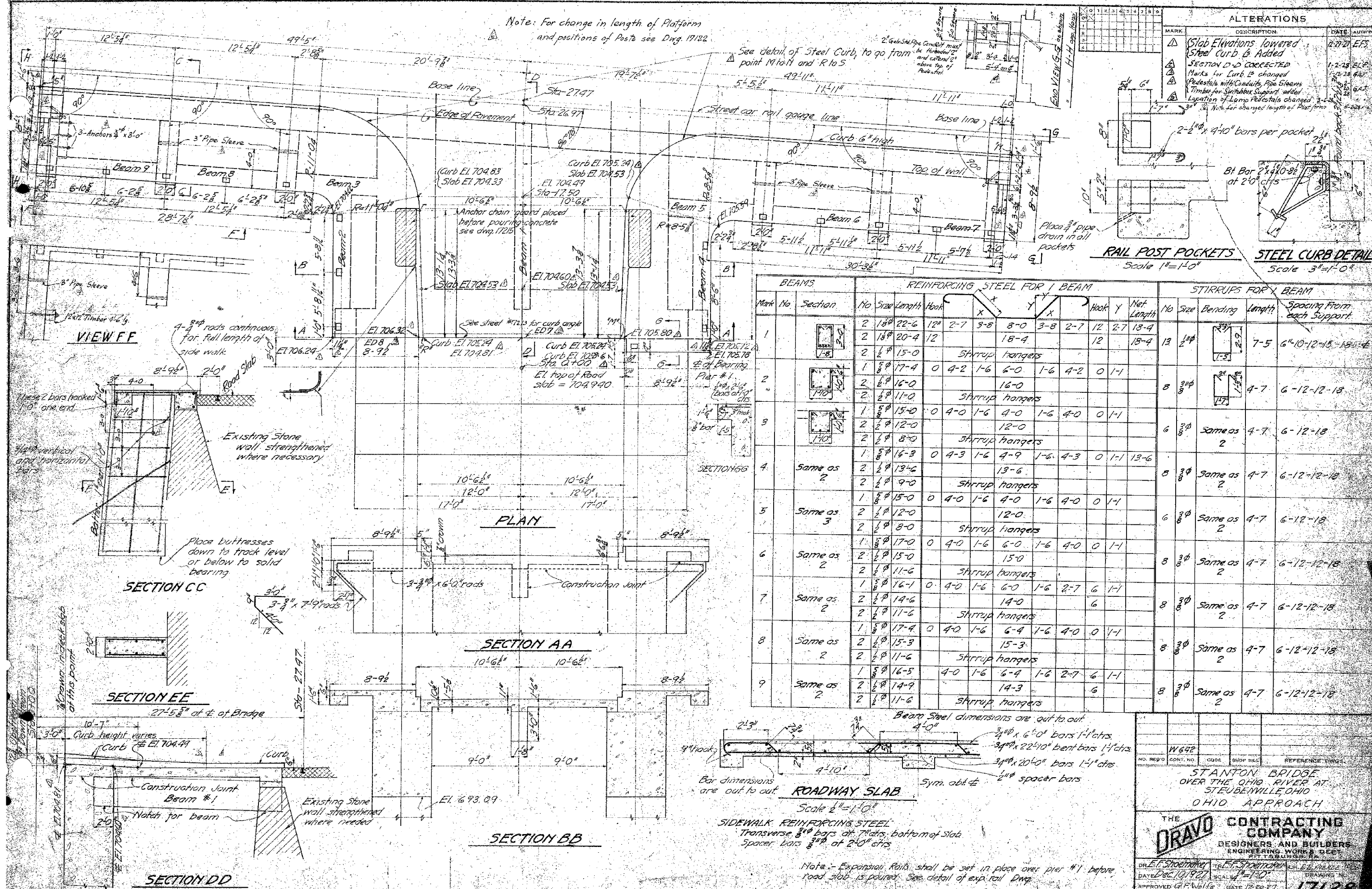
Pier No. 1 Concrete	895.5 cu yds (854 cu yds)
Ohio Anchor	460.0 cu yds (511,170 lbs)

Pour concrete to 6" of top. This last 6" to be placed when pouring roadway and sidewalk slabs.

Note: Anchor Bolt setting Plans to be furnished later.

NO. REQ'D	WG2	C-101	CODE	SHOP BILL	REFERENCE DWGS.
<p align="center">STANTON BRIDGE OVER THE OHIO RIVER STUBENVILLE, OHIO DETAILS OF OHIO ANCHORAGE</p>					
<p align="center">THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.</p>					
DR. E. L. Parke	DR. E. F. S.	DR. G. F. Wolfe			
DATE 6-21-27	SCALE 1"=10'	DATE 1-4-28			
APPROVED G. F. Wolfe	DATE 1-4-28	DRAWING NO. 17137			

Note: For change in length of Platform and positions of Posts see Dwg. 17122



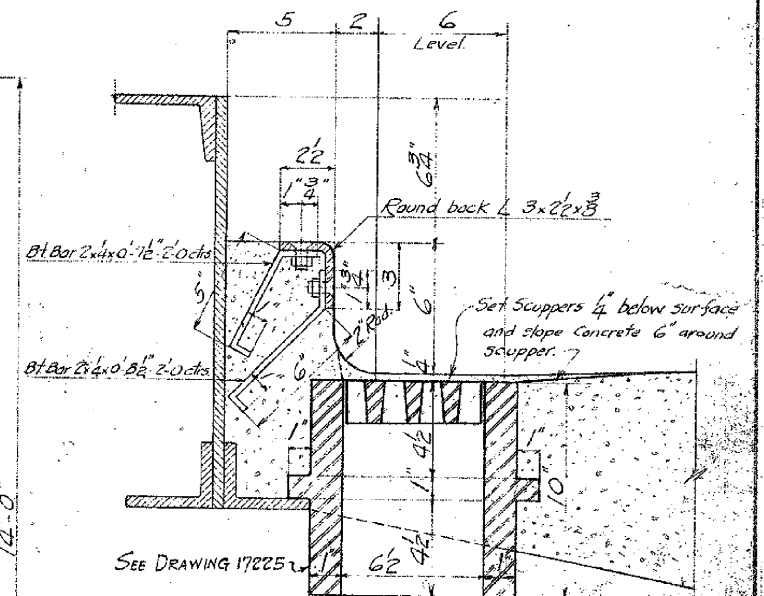
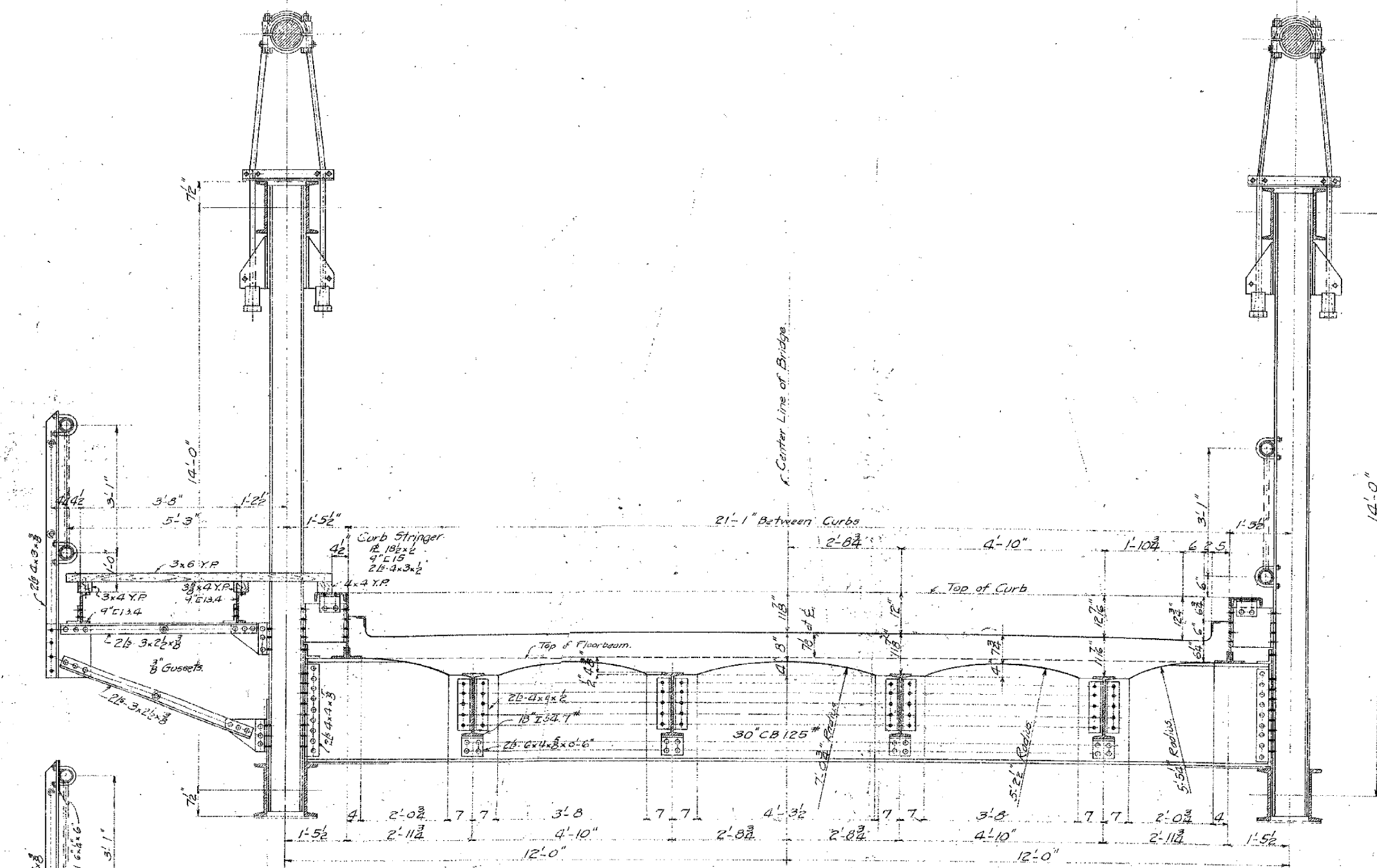
NO. 642
 STANTON BRIDGE
 OVER THE OHIO RIVER AT
 STEUBENVILLE OHIO
 OHIO APPROACH

THE DRAVO CONTRACTING COMPANY
 DESIGNERS AND BUILDERS
 ENGINEERING WORKS DEPT.
 217 S. MAIN ST.
 STEUBENVILLE, OHIO

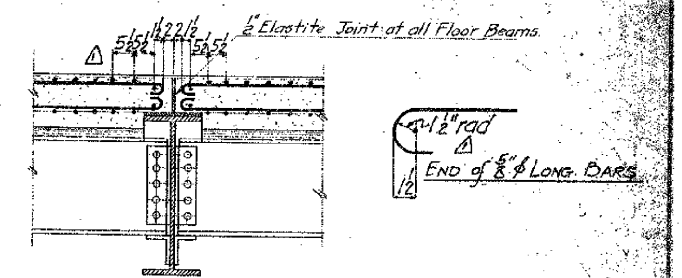
DR. E. F. Shoemaker
 DATE: Dec 10/1922
 APPROVED: G. F. Wolfe
 DATE: 12-20-27

REFERENCE DWGS.
 17138

ALTERATIONS			
MARK	DESCRIPTION	DATE	APPROVED
Δ	Cor Tracks removed. Concr. Slab revised. Detail shown for end of bars at Elastite Jt.	1-12-28 5/28/28	E.F.W. S.T.

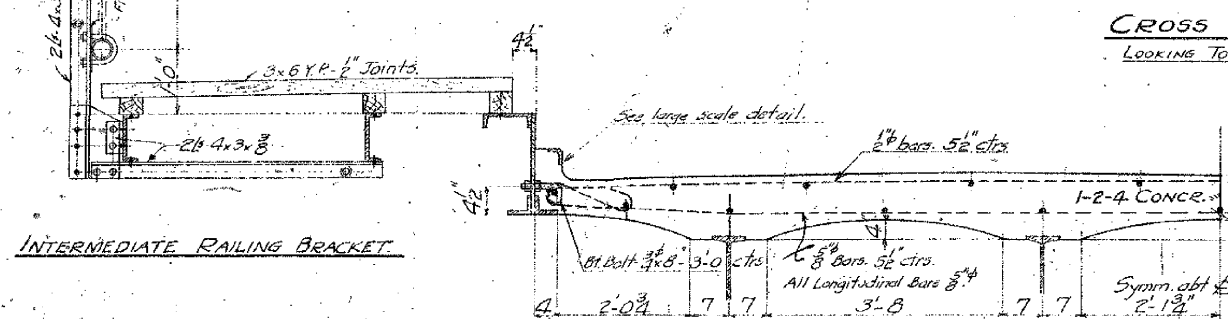


DETAIL AT CURB

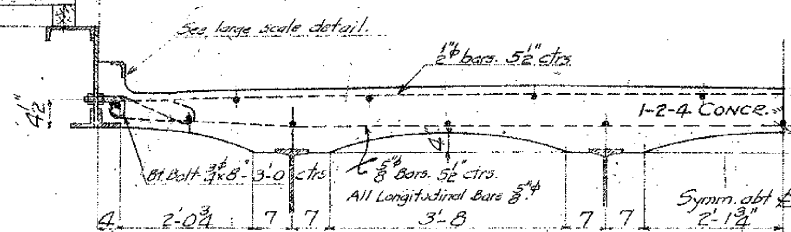


SECTION THRU FLOORBEAM.

CROSS SECTION
LOOKING TOWARDS OHIO.



INTERMEDIATE RAILING BRACKET

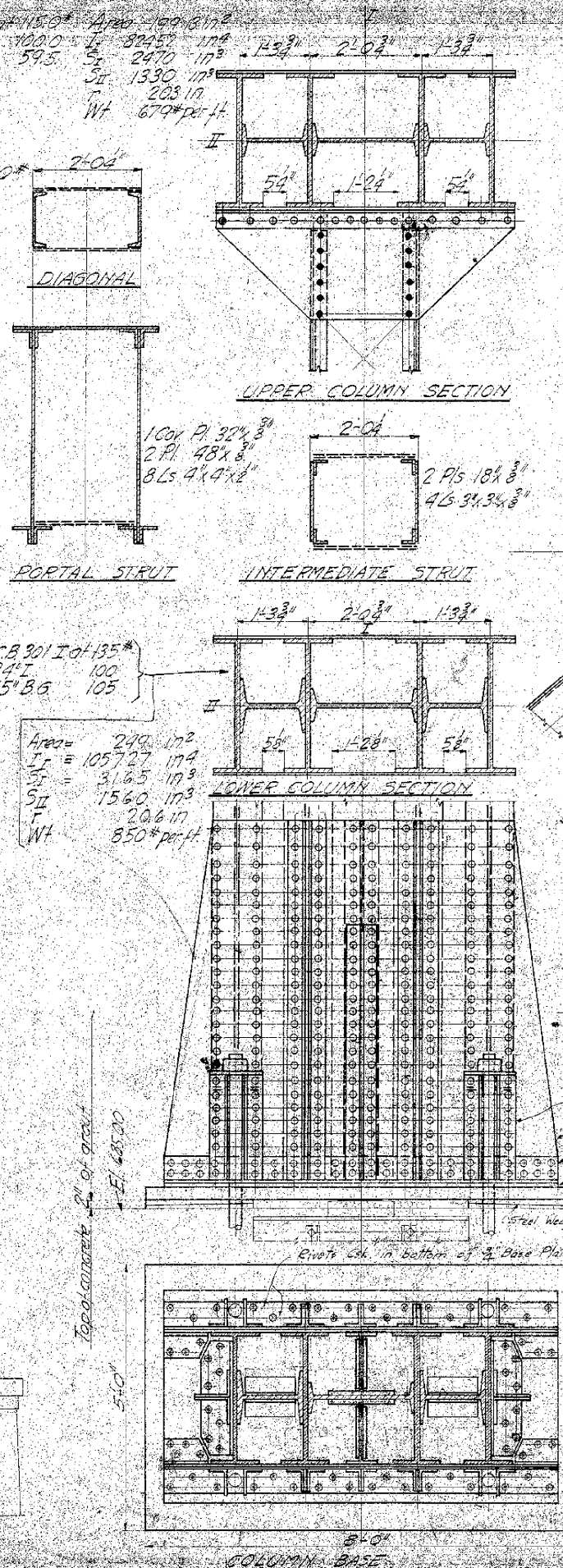


DESIGN OF FLOOR SLAB.

FINAL DESIGN

WEIGHT PER FOOT ON CABLES		
	UPSTREAM CABLE	DOWNSTREAM CABLE
Cables and Fittings	179	179
Stringers	185	185
Floor Beams	92	92
Trusses	385	385
Lateral System	41	41
Concrete	1273	1273
Sidewalk and Handrail	0	180
Total D. Load	2155	2335
L. Load	600	600
Total Dead & Live Load	2755	2935

W642 C-102			
NO. 5020	CONT. NO.	CODE	REVISION
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO. CROSS SECTION OF MAIN SPAN.			
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.			
DR. G. F. Wolfe	TR. G. F. Wolfe	CHG. A. Jace	
DATE FEB. 22, 1927	SCALE 3/4" = 1'-0"	DRAWING	
APPROVED G. F. Wolfe	DATE 12-22-27	17	

[illegible][illegible]

ASSUMED DESIGN DATA
FLOOR SYSTEM

Concrete 18.40 cu ft. at 150*	=	2760*	per lin ft. bridge
Rail 4 x 122/3		163	
Stringers		363	
Floor Beam			

1-30 I-125 x 23-0"	2875
16-2 x 4 x 8 x 1-3	256
8-2 x 4 x 8 x 0-6	80
4-2 x 4 x 8 x 2-3	141
2 C.B. 123 x 40 x 0-8	80
4L 6 x 4 x 8 x 0-7	29
260 Riv heads	37
Total weight of floor system	

CABLE LOADING

<u>Up Stream</u>		<u>Down Stream</u>	
Cable	176	176 [#]	per length of cable
Stringers	182	182	
Floor beams	100	100	
Trusses	375	375	
Bracing	35	35	
Concrete	1380	1380	
Rail	82	82	
	<u>2330</u>	<u>2330</u>	
Sidewalk	- 25	+ 160	
D.L.	2305	2490	
L.L.	600	600	
Total load	2905	3090	

Horiz comp. of cable stress $H = \frac{249000 \times 22.75'}{8 \times 70} = 477000$
 $= 2109000 + 477000 = 2586000$
 Cable stress = $2586000 \cos 22.75^\circ = 2,387,000$
 7 Strands at 280 Wires $\times 8 (10206 \text{ sq in}) = 194000$
 Net Area of Cable $1960 \times .0206 = 40.376 \text{ sq in}$
 Unit Stress of Cable $\frac{2,387,000}{40.376} = 71,351 \text{ psi}$
 Vert. Reat. of Cable $2,387,000 \sin 22.75^\circ = 920,000$
 Truss $100,000 \times 7 \text{ truss} = 700,000$
 Weight of tower $\frac{150,000}{251,000} \text{ Cal}$

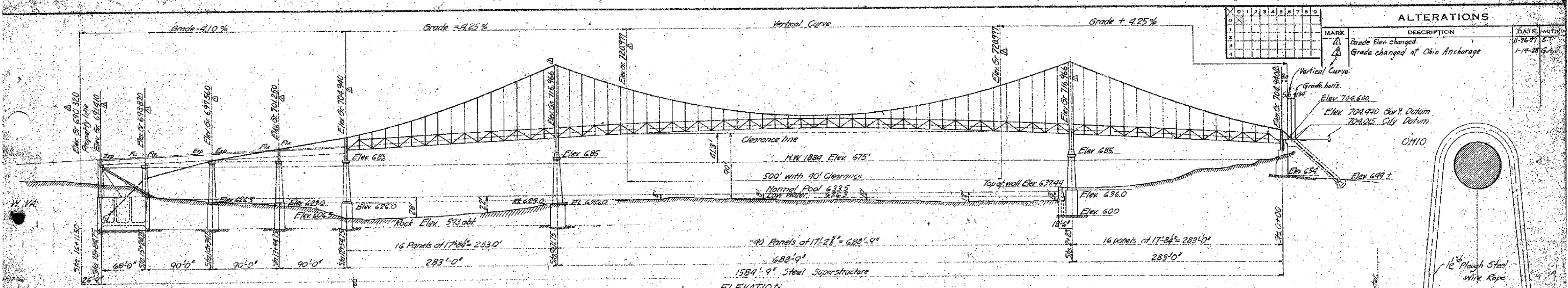
WIND

Reaction of cables suspenders
at top of tower = 7800* per cable
Wind on tower in direction
of river 40700
Reaction from truss 165600
Vertical Reaction at Base due to
wind mom = Σ 249000 lbs per tower leg.

All lattice bars $2\frac{3}{4}" \times 2"$
Rivets 36

Note: Beam brillages are designed for full dead load of Bridge Steel members to be used during erection and adjusted to final position when towers come into a vertical position with addition of concrete floor. Balance of space under 2' Steel slab to be grouted at that time.

	W-642				
NO REQ'D	CONT NO.	CODE	SHOP BILL	REFERENCE DWGS.	
<p>STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO MAIN TOWER</p>					
<p>THE DRAVO</p>		<p>CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.</p>			
ENK. WORK BY: J. J. J. J.	TR. E. J. J. J.	E. J. J. J. J. J. J. J.			
DATE: 4-22-40	SCALE: 1/4" = 1'-0"	DRAWING NO.			
RECEIVED: 4-22-40		1745			



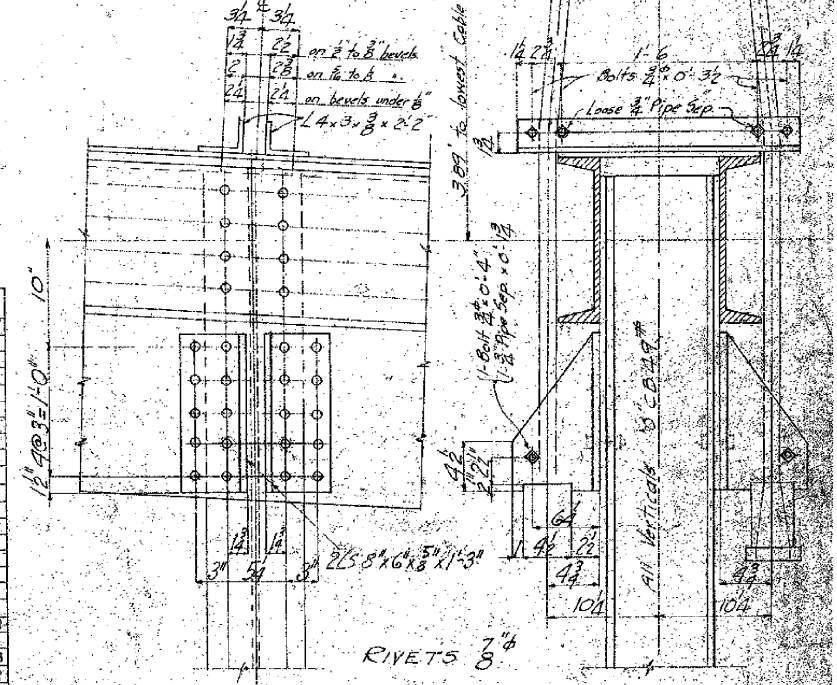
CHORD STRESSES				SECTIONS	
Member	Total Used	Total L+T	Area Required	Member	Area Used
10-11	115	121	8.00	15-16	14.80
11-12	180	174	12.95	16-17	15.80
12-13	309	309	22.25	17-18	23.40
13-14	367	368	27.80	18-19	29.78
14-15	413	383	29.70	19-20	33.15
15-16	388	388	27.95	20-21	33.15
16-17	478	419	34.60	21-22	33.15
17-18	485	419	34.60	22-23	33.15
18-19	707	510	50.40	23-24	34.47
19-20	440	308	29.40	24-25	31.34
20-21	323	289	23.60	25-26	25.80
21-22	1670	112	10.70	26-27	11.20
22-23	350	419	26.70	27-28	18.90
23-24	317	340	23.85	28-29	26.34
24-25	317	387	23.80	29-30	28.78
25-26	341	600	24.50	30-31	33.15
26-27	347	601	24.60	31-32	33.15
27-28	337	593	23.82	32-33	33.15
28-29	408	475	34.75	33-34	33.15
29-30	445	552	37.20	34-35	33.15
30-31	545	630	45.00	35-36	33.15
31-32	536	674	48.00	36-37	33.15
32-33	487	688	50.00	37-38	33.15
33-34	565	801	58.00	38-39	33.15
34-35	503	724	52.00	39-40	33.15
35-36	316	483	35.00	40-41	33.15
36-37	288	385	28.00	41-42	33.15
37-38	486	500	35.00	42-43	33.15
38-39	486	500	35.00	43-44	33.15
39-40	447	474	35.00	44-45	33.15
40-41	694	693	50.00	45-46	33.15
41-42	710	410	30.00	46-47	33.15
42-43	707	386	28.00	47-48	33.15

DIAGONAL STRESSES				SECTIONS	
Member	Total Used	Total L+T	Area Required	Member	Area Used
41-42	105	100	7.50	10-11	10.38
42-43	86	81	6.50	11-12	9.08
43-44	77	73	5.75	12-13	8.08
44-45	68	64	5.00	13-14	7.08
45-46	59	55	4.25	14-15	6.08
46-47	50	46	3.50	15-16	5.08
47-48	41	37	2.75	16-17	4.08
48-49	32	28	2.00	17-18	3.08
49-50	23	19	1.25	18-19	2.08
50-51	14	10	0.50	19-20	1.08
51-52	5	1	0.00	20-21	0.08
52-53	105	100	7.50	21-22	10.38
53-54	86	81	6.50	22-23	9.08
54-55	77	73	5.75	23-24	8.08
55-56	68	64	5.00	24-25	7.08
56-57	59	55	4.25	25-26	6.08
57-58	50	46	3.50	26-27	5.08
58-59	41	37	2.75	27-28	4.08
59-60	32	28	2.00	28-29	3.08
60-61	23	19	1.25	29-30	2.08
61-62	14	10	0.50	30-31	1.08
62-63	5	1	0.00	31-32	0.08
63-64	105	100	7.50	32-33	10.38
64-65	86	81	6.50	33-34	9.08
65-66	77	73	5.75	34-35	8.08
66-67	68	64	5.00	35-36	7.08
67-68	59	55	4.25	36-37	6.08
68-69	50	46	3.50	37-38	5.08
69-70	41	37	2.75	38-39	4.08
70-71	32	28	2.00	39-40	3.08
71-72	23	19	1.25	40-41	2.08
72-73	14	10	0.50	41-42	1.08
73-74	5	1	0.00	42-43	0.08

CHORD STRESSES				SECTIONS	
Member	Total Used	Total L+T	Area Required	Member	Area Used
10-11	115	121	8.00	15-16	14.80
11-12	180	174	12.95	16-17	15.80
12-13	309	309	22.25	17-18	23.40
13-14	367	368	27.80	18-19	29.78
14-15	413	383	29.70	19-20	33.15
15-16	388	388	27.95	20-21	33.15
16-17	478	419	34.60	21-22	33.15
17-18	485	419	34.60	22-23	33.15
18-19	707	510	50.40	23-24	34.47
19-20	440	308	29.40	24-25	31.34
20-21	323	289	23.60	25-26	25.80
21-22	1670	112	10.70	26-27	11.20
22-23	350	419	26.70	27-28	18.90
23-24	317	340	23.85	28-29	26.34
24-25	317	387	23.80	29-30	28.78
25-26	341	600	24.50	30-31	33.15
26-27	347	601	24.60	31-32	33.15
27-28	337	593	23.82	32-33	33.15
28-29	408	475	34.75	33-34	33.15
29-30	445	552	37.20	34-35	33.15
30-31	545	630	45.00	35-36	33.15
31-32	536	674	48.00	36-37	33.15
32-33	487	688	50.00	37-38	33.15
33-34	565	801	58.00	38-39	33.15
34-35	503	724	52.00	39-40	33.15
35-36	316	483	35.00	40-41	33.15
36-37	288	385	28.00	41-42	33.15
37-38	486	500	35.00	42-43	33.15
38-39	486	500	35.00	43-44	33.15
39-40	447	474	35.00	44-45	33.15
40-41	694	693	50.00	45-46	33.15
41-42	710	410	30.00	46-47	33.15
42-43	707	386	28.00	47-48	33.15

DIAGONAL STRESSES				SECTIONS	
Member	Total Used	Total L+T	Area Required	Member	Area Used
41-42	105	100	7.50	10-11	10.38
42-43	86	81	6.50	11-12	9.08
43-44	77	73	5.75	12-13	8.08
44-45	68	64	5.00	13-14	7.08
45-46	59	55	4.25	14-15	6.08
46-47	50	46	3.50	15-16	5.08
47-48	41	37	2.75	16-17	4.08
48-49	32	28	2.00	17-18	3.08
49-50	23	19	1.25	18-19	2.08
50-51	14	10	0.50	19-20	1.08
51-52	5	1	0.00	20-21	0.08
52-53	105	100	7.50	21-22	10.38
53-54	86	81	6.50	22-23	9.08
54-55	77	73	5.75	23-24	8.08
55-56	68	64	5.00	24-25	7.08
56-57	59	55	4.25	25-26	6.08
57-58	50	46	3.50	26-27	5.08
58-59	41	37	2.75	27-28	4.08
59-60	32	28	2.00	28-29	3.08
60-61	23	19	1.25	29-30	2.08
61-62	14	10	0.50	30-31	1.08
62-63	5	1	0.00	31-32	0.08
63-64	105	100	7.50	32-33	10.38
64-65	86	81	6.50	33-34	9.08
65-66	77	73	5.75	34-35	8.08
66-67	68	64	5.00	35-36	7.08
67-68	59	55	4.25	36-37	6.08
68-69	50	46	3.50	37-38	5.08
69-70	41	37	2.75	38-39	4.08
70-71	32	28	2.00	39-40	3.08
71-72	23	19	1.25	40-41	2.08
72-73	14	10	0.50	41-42	1.08
73-74	5	1	0.00	42-43	0.08

ASSUMED CABLE LOADING			
Items	Upstream	Downstream	Truss
Cable	176	176	
Stringers	182	182	
Floor beams	100	100	
Trusses	375	375	
Bracing	35	35	
Concrete	1380	1380	
Rolling	82	82	
Sidewalk	25	25	
Total D.L.	2305	2305	
Total L.L.	600	600	
Total D.L.+L.L.	2905	2905	



Unit Stresses
(+) 20,000 for Live Load only.
(-) 18,000 for Live Load only.
Increase Unit Stresses 30% for Live Load combined with Temp. or with Temp. and Wind.

Stresses and sections as tabulated above are in accordance with the design by the Dravo Contracting Co.

Stresses and sections at left include changes suggested by Cons. Engr. C.W. Hudson. The trusses are fabricated in accordance with the revised stresses at the left.

STANTON BRIDGE
OVER THE OHIO RIVER AT
ST. CINCINNATI, OHIO.
DESIGN OF STIFFENING TRUSSES AND LATERAL SYSTEM.

THE DRAVO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
ST. CINCINNATI, OHIO.

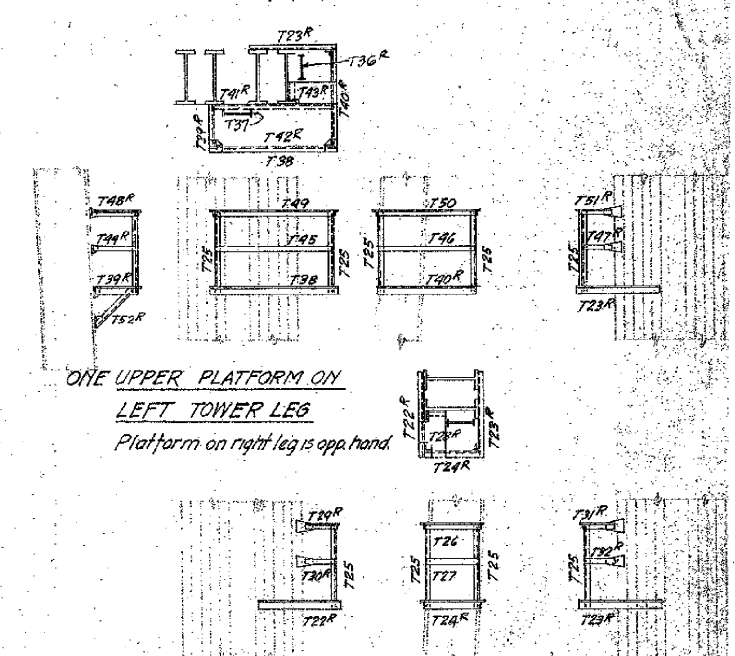
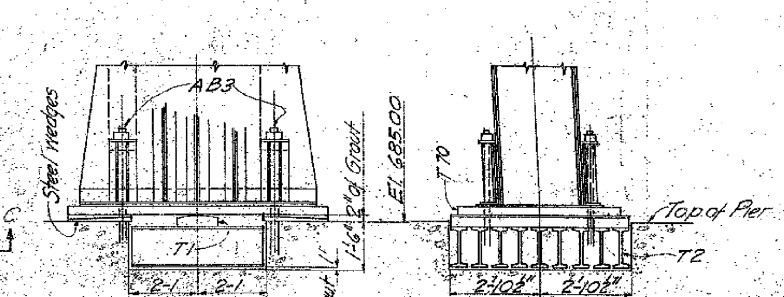
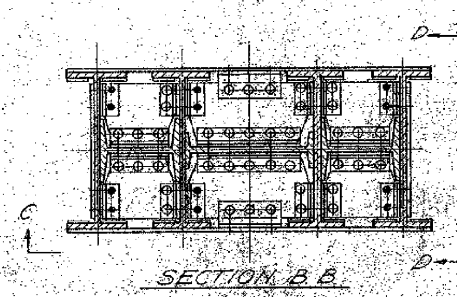
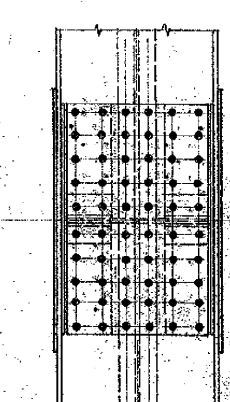
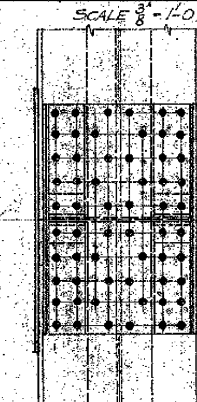
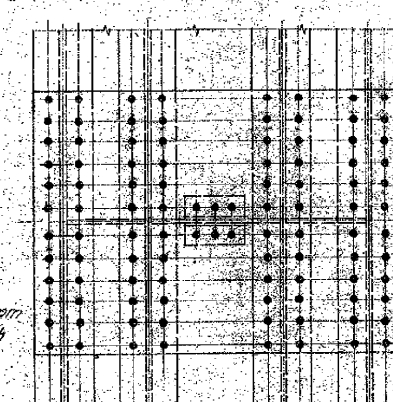
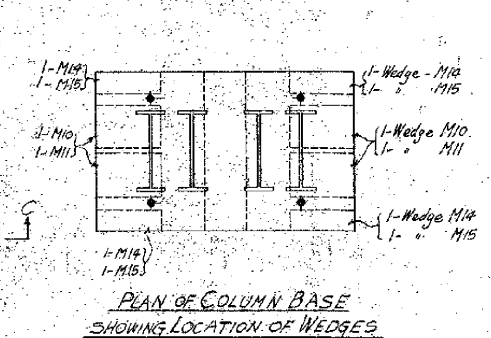
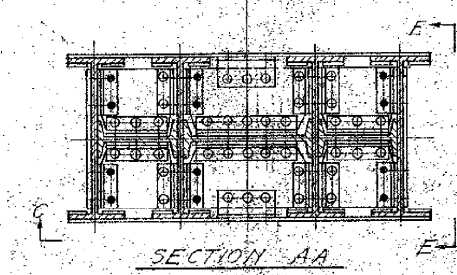
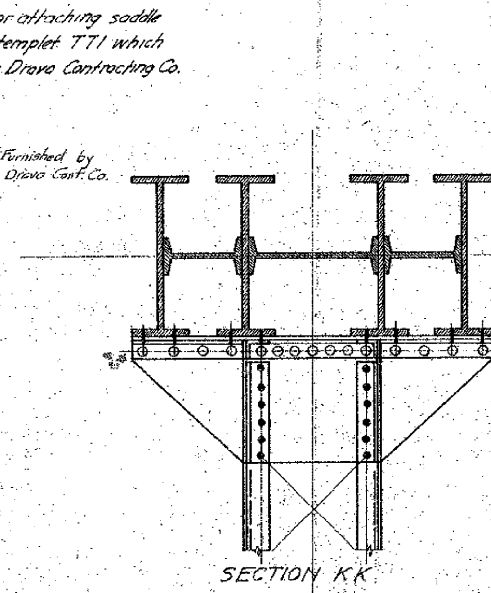
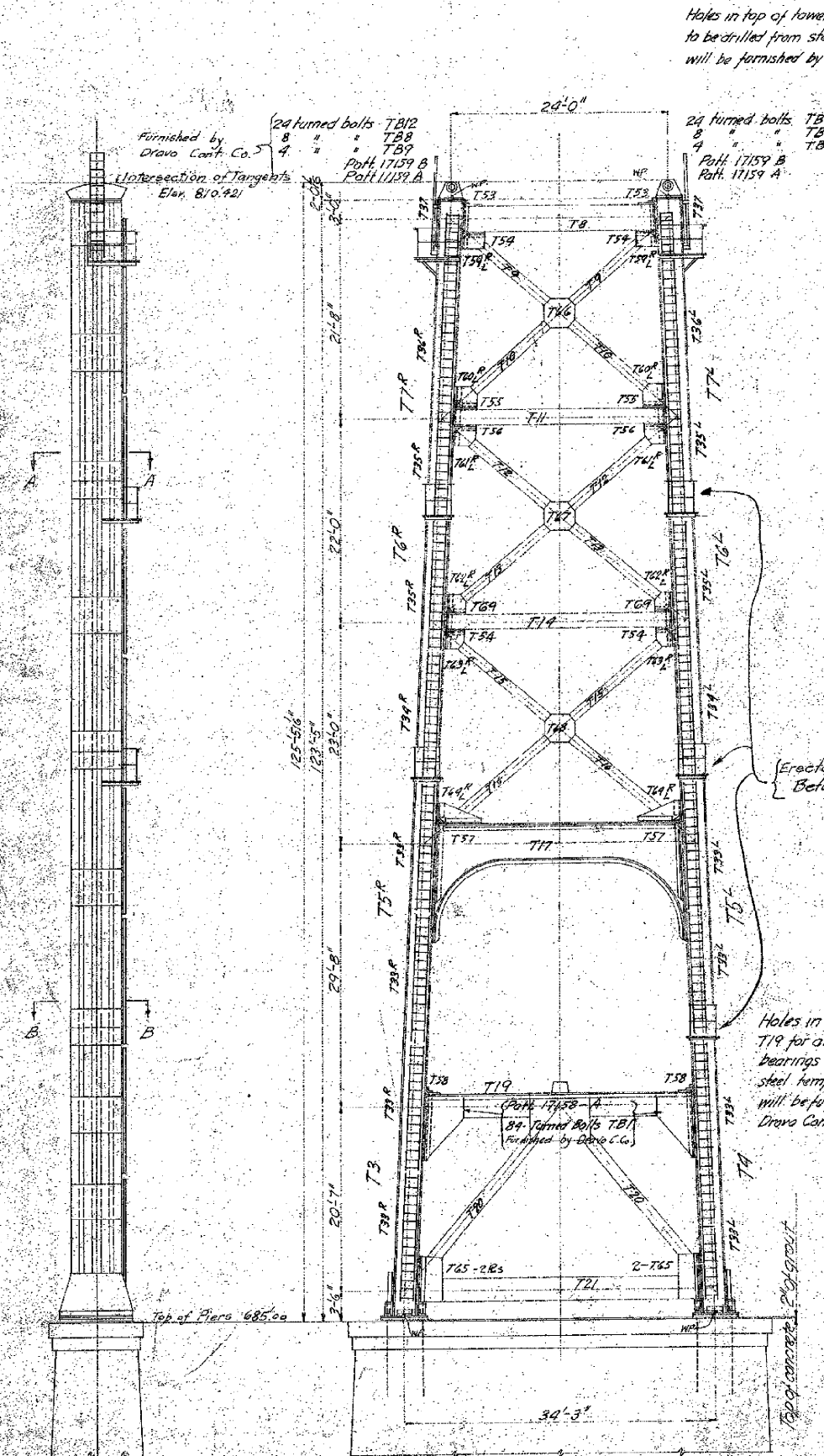
DR. E.L. Pierce
DATE Sept. 1927
APPROVED G.E. HODGE

DR. F.F. Smith
DATE 1-1-60
APPROVED

G.E. HODGE
DATE 1-1-60
APPROVED

17143

ALTERATIONS										MARK	DESCRIPTION	DATE	BY
1	2	3	4	5	6	7	8	9	10				
										Δ	Note added: Shipment of Splice Plates.	11-10-44	J.P.F.



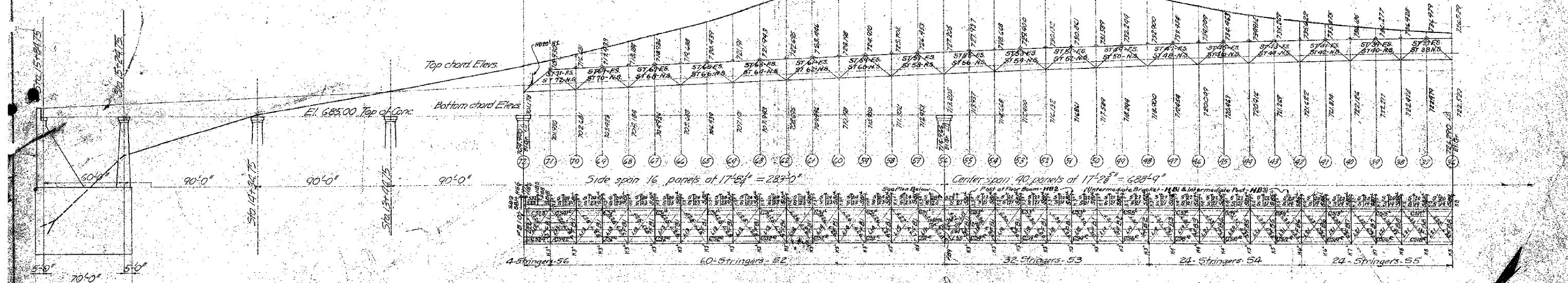
2-INTERMEDIATE PLATFORMS ON LEFT TOWER LEG
3-Platforms on right leg are opp. hand

SHOP ASSEMBLY.
Fabricator must make complete shop assembly of towers including Posts, Struts, Diagonals, Trusses and all splice plates. REAMING of all holes in splices, which are to be punched 1/16" and reamed to 1/16", shall be done only when tower is in the shop entirely assembled and with butt joints in full contact.
SHIPMENT OF SPLICE PLATES. When dismantling towers after shop assembly bolt splice plates of tower legs to the upper ends of the three lower sections of each leg.

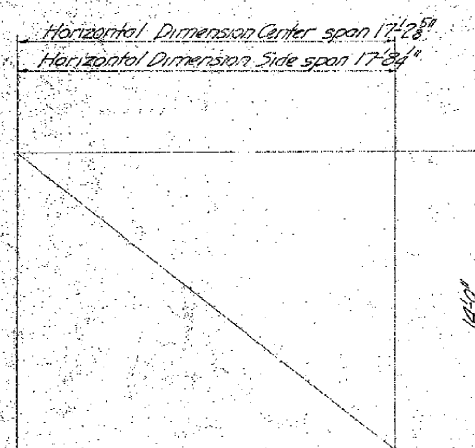
VIEW OF MAIN TOWERS- LOOKING FROM W. SIDE

W-442	C-7	12	17142, 17160 to 17172
NO. REPT. CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO MAIN TOWER ERECTION PLAN			
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.			
By: [Signature]	IN: [Signature]	By: [Signature]	DATE: 10-28-44
DATE: Sept 2, 1944	SCALE: 3/8" = 1'-0"	DATE: 10-28-44	17144

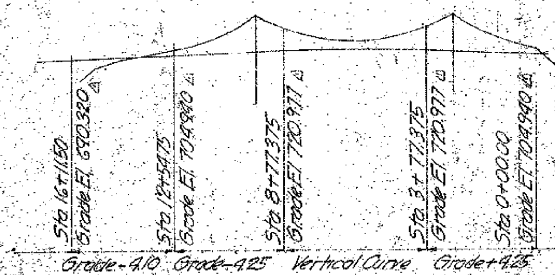
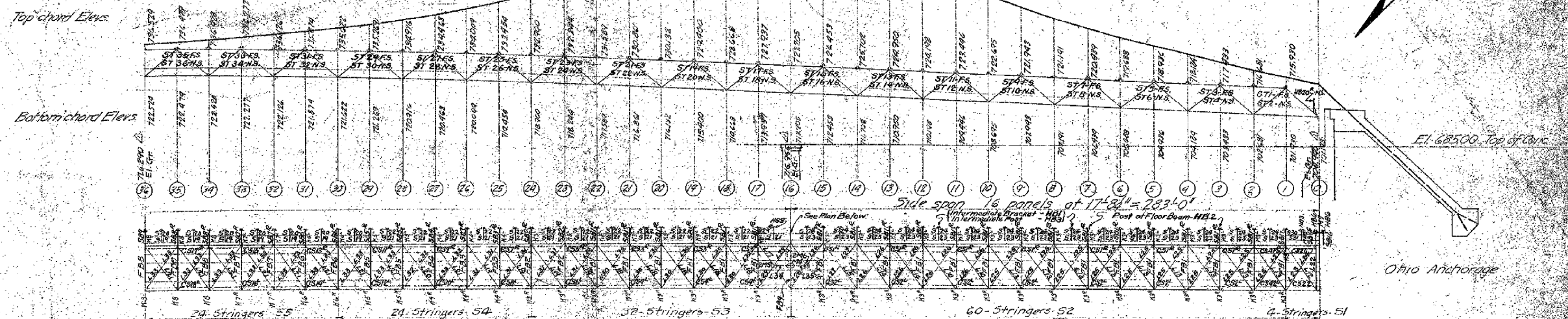
0	1	2	3	4	5	6	7	8	9	ALTERATIONS			
0										MARK	DESCRIPTION	DATE	AUTH.
1													
2													
3													
4													
											Grade Elevations changed	1/26/67	EEB



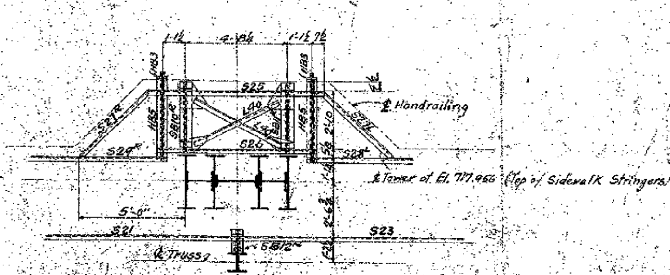
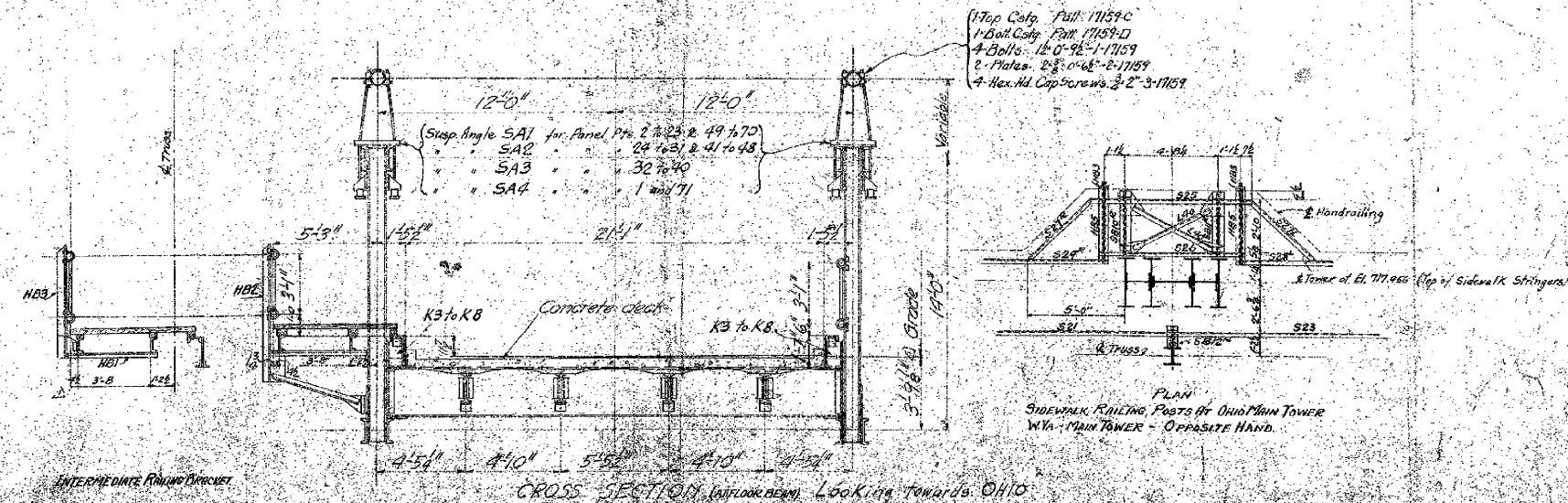
WVA ANCHORAGE



LOCATION OF TRUSS WORKING LINES

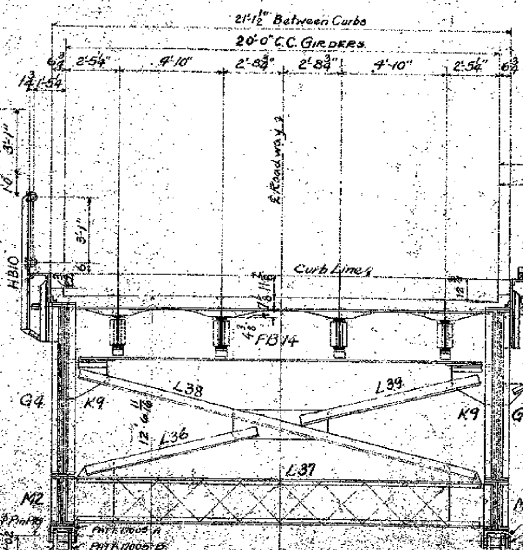
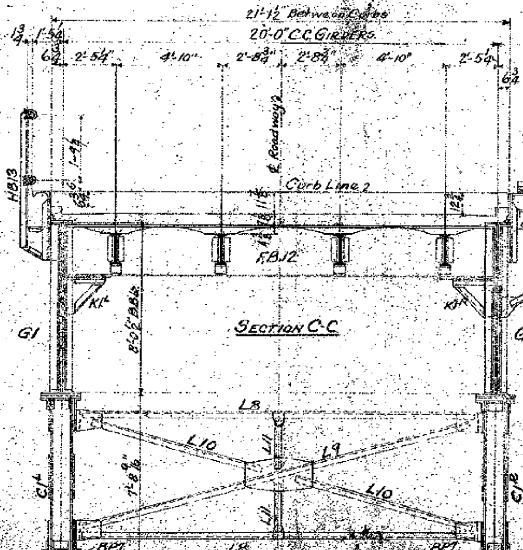
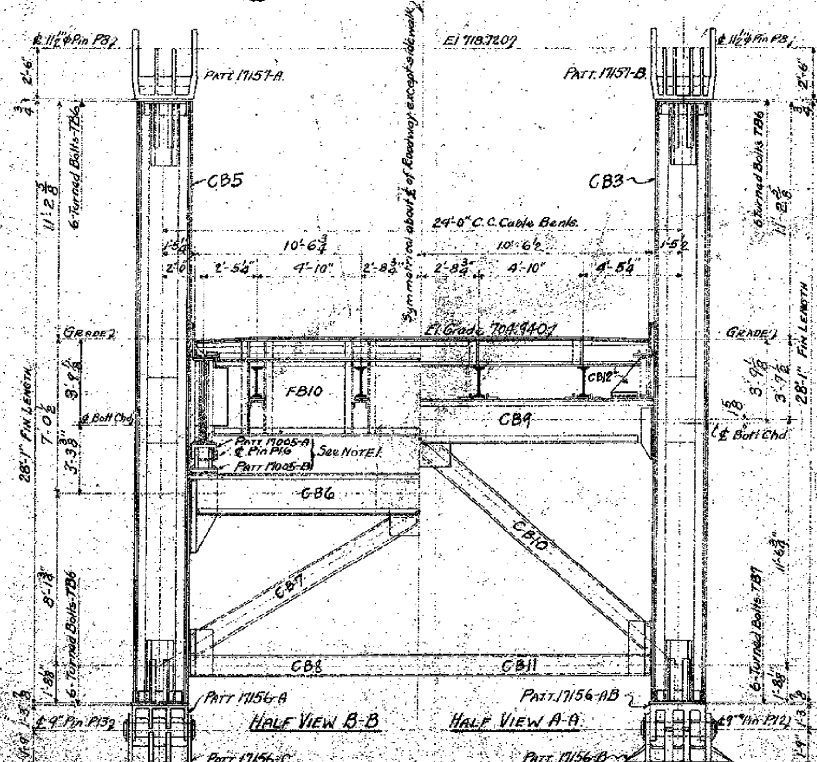
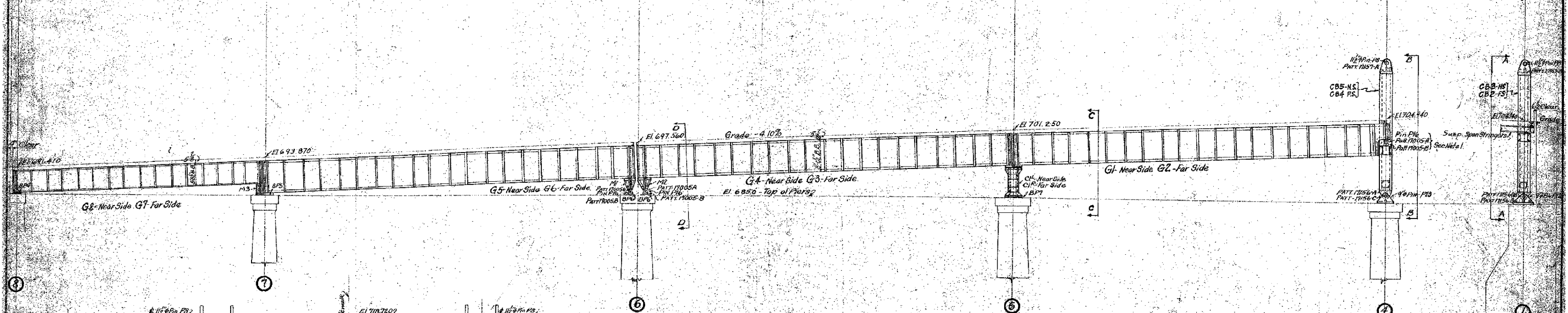
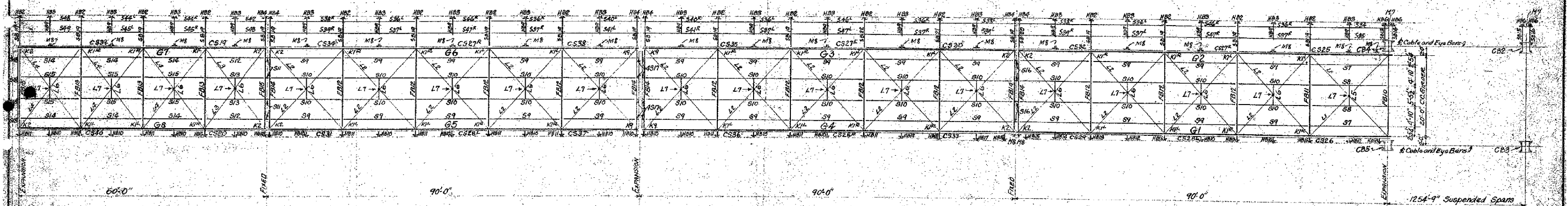


CONTROLLING POINTS OF GRADE



PLAN
SIDEWALK RAILING POSTS AT OHIO MAIN TOWER
WYA - MAIN TOWER - OPPOSITE HAND.

NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
17173	17193	17206	17173	17193
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO				
ERECTION DIAGRAM OF SUSPENSION SPANS				
<div> <div>THE</div> <div> </div> <div>CONTRACTING COMPANY</div> </div> <div>DESIGNERS AND BUILDERS</div> <div>ENGINEERING WORKS DEPT.</div> <div>PITTSBURGH, PA.</div>				
BY: EF Shoemaker	BY: EF Shoemaker	DATE: 1/1/1913	DATE: 1/1/1913	DATE: 1/1/1913
APPROVED	DATE	DRAWING NO. 17195		

[illegible]

ERECTOR'S NOTES:
17005B and 17006B must be assembled with Pin P14 before
at Pier (A)
using P150 for Erection DIAGRAM of EYE BAR CHAIN
and PEDESTALS.

W692

No.	REG'D	COPY NO.	CODE	SHEET # OF	REFERENCE DWGS.

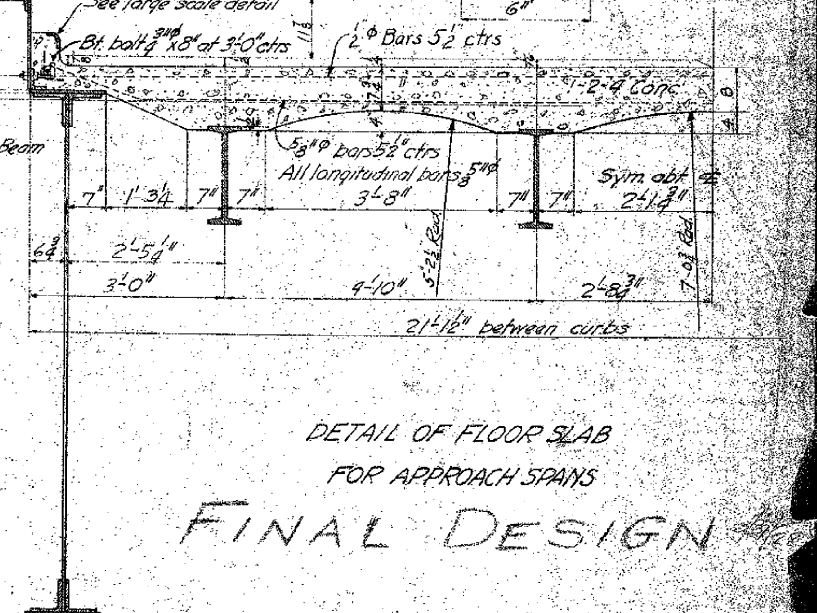
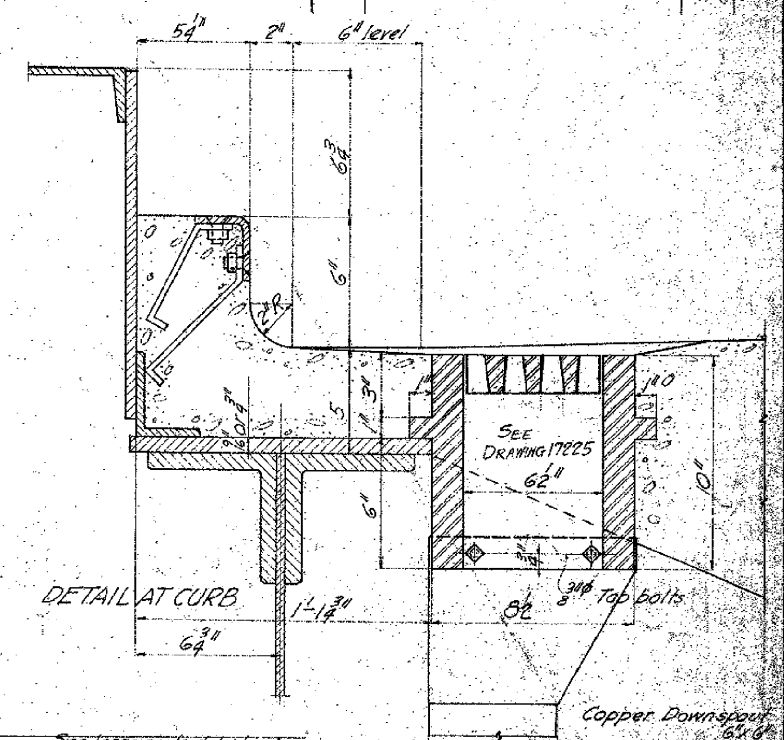
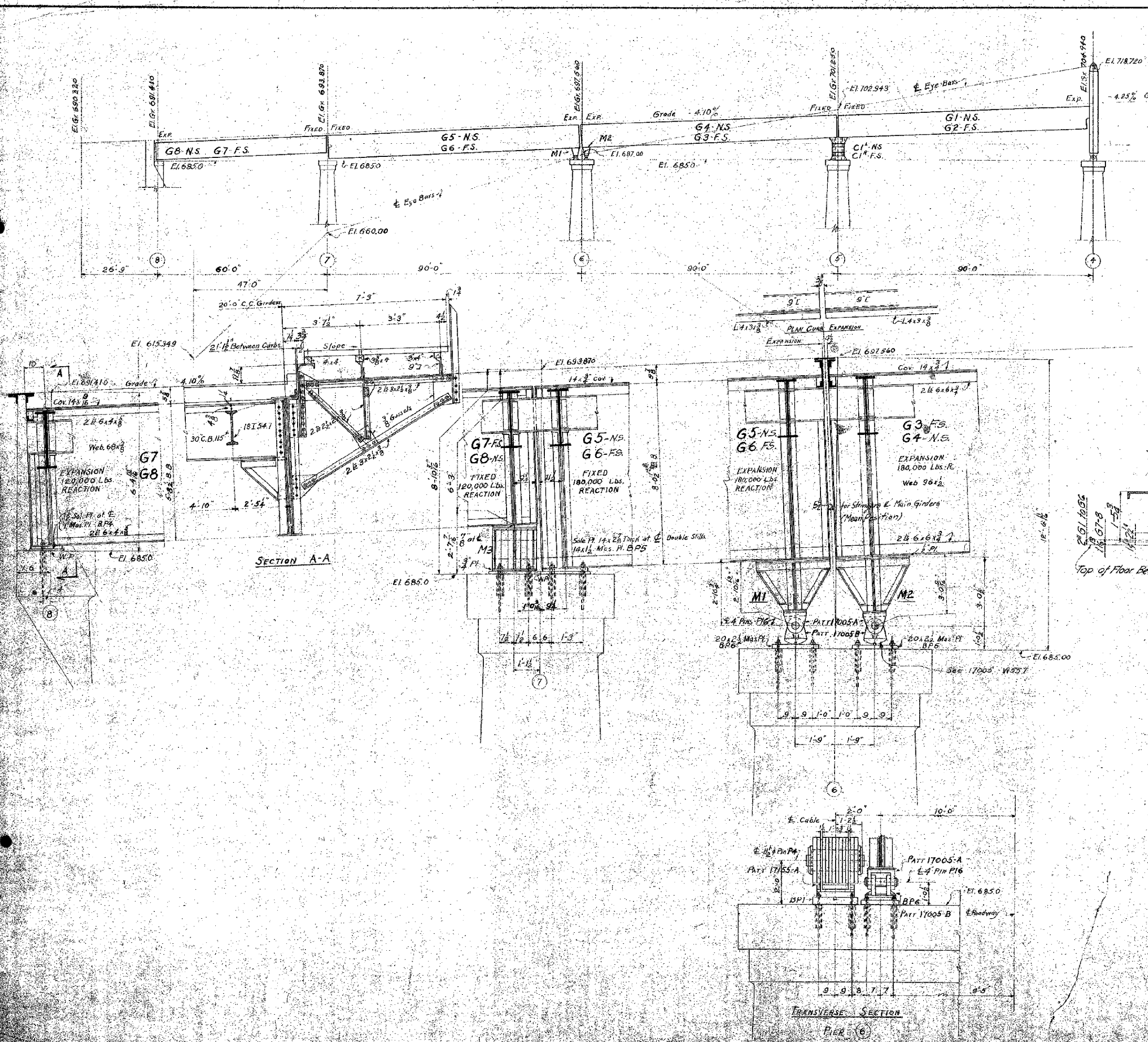
STANTON BRIDGE

OVER THE OHIO RIVER AT STEUBENVILLE, OHIO.

ERECTION DIAGRAM - WITH APPROACH AND CABLE BENT TOWERS

**THE
DRAVO
CONTRACTING
COMPANY**
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH PA.

DR. S. Krimm	TR PG Strahl	G.A. Tracy
DATE 10-14-27	SCALE 3/4" = 1 Foot	DRAWING NO.

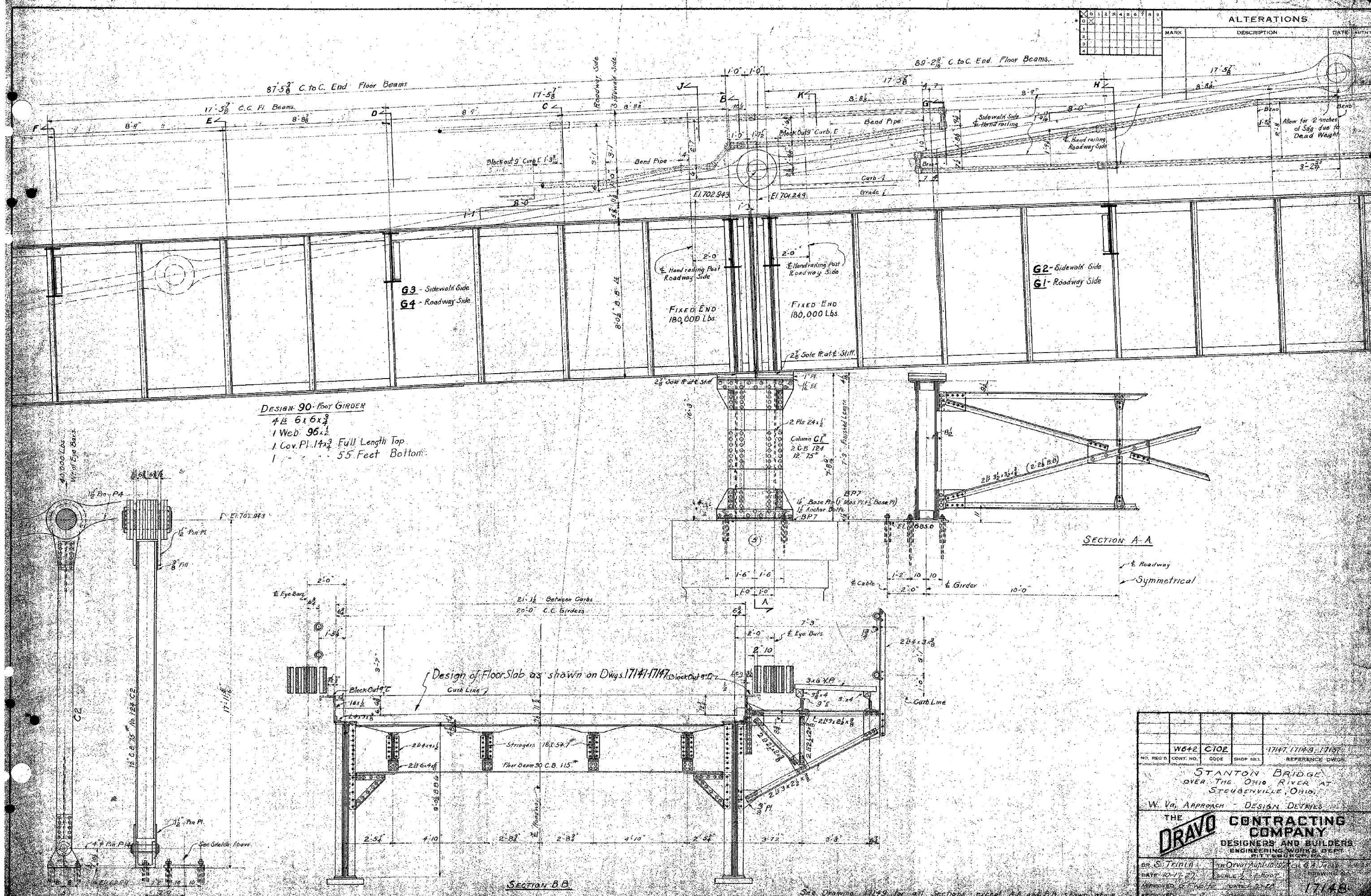


FINAL DESIGN

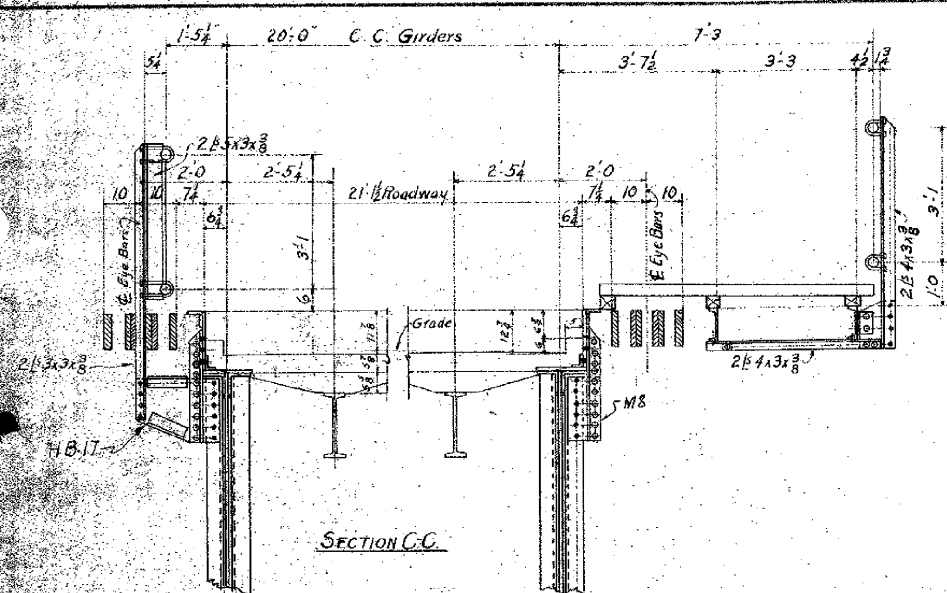
ALTERATIONS			
MARK	DESCRIPTION	DATE	INITIALS
1			
2			
3			
4			

NO. 1742	CON. NO. 0102	CON. NO. 1742, 1743, 1744, 1745
STANTON BRIDGE		
OVER THE OHIO RIVER AT		
STUBENVILLE, OHIO		
W. Va. APPROACH DESIGN DETAILS		
THE DRAYO CONTRACTING COMPANY		
DESIGNERS AND BUILDERS		
ENGINEERING WORKS DEPT.		
PITTSBURGH, PA.		
DR. S. TRIMM	IN CHARGE	DATE 12-29-27
APPROVED G. F. H. B. G.	DATE 12-29-27	17147

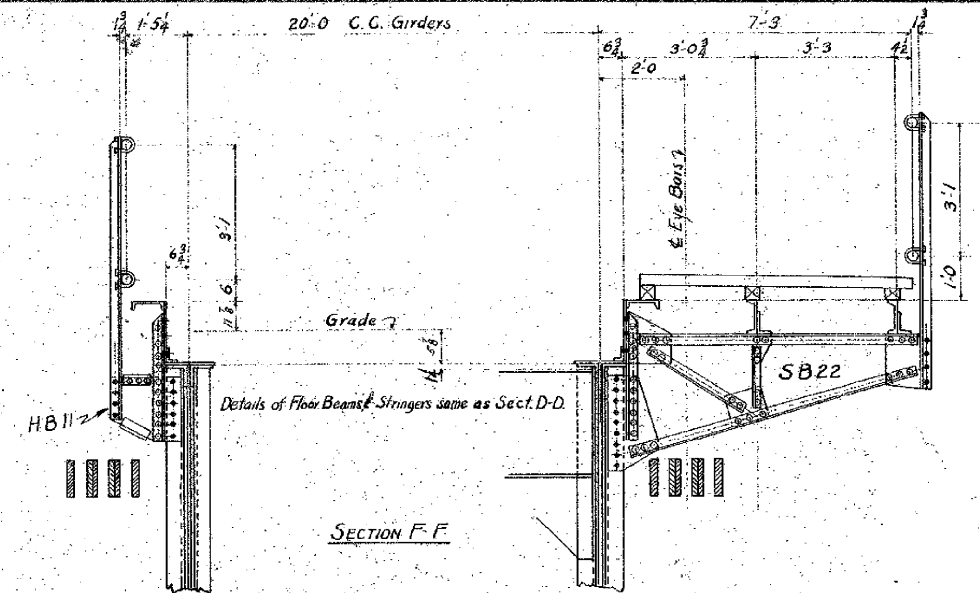
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1										MARK	DESCRIPTION	DATE	AUTH.
2													
3													
4													



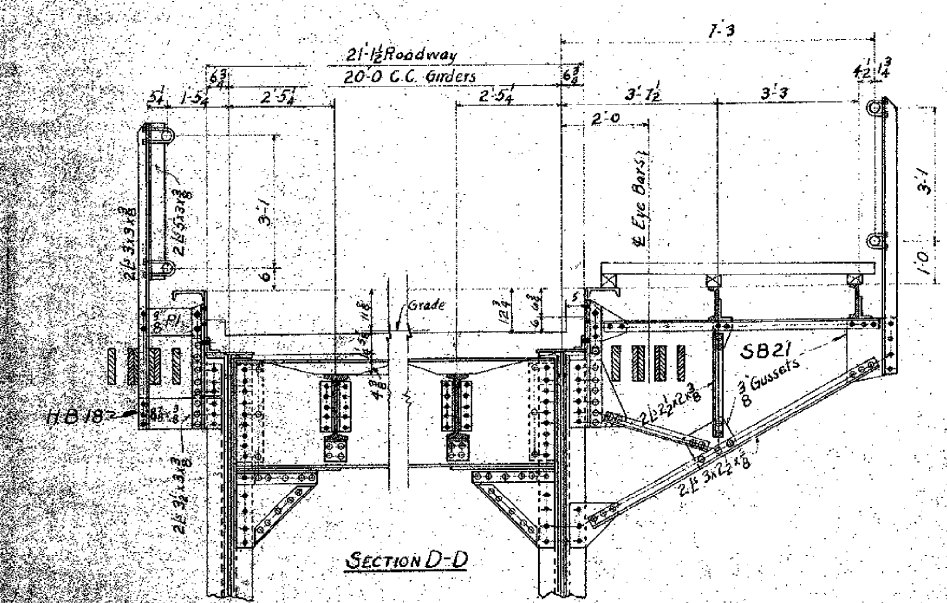
DR. S. Trinin	TR Orval Auhl 10-10-52	CH. G.A. Jacob
DATE 10-17-57	SCALE 2 1/2 HOOT.	DRAWING NO.
APPROVED S.F. Wolfe	DATE 1-21-58	17148
APPROVED		



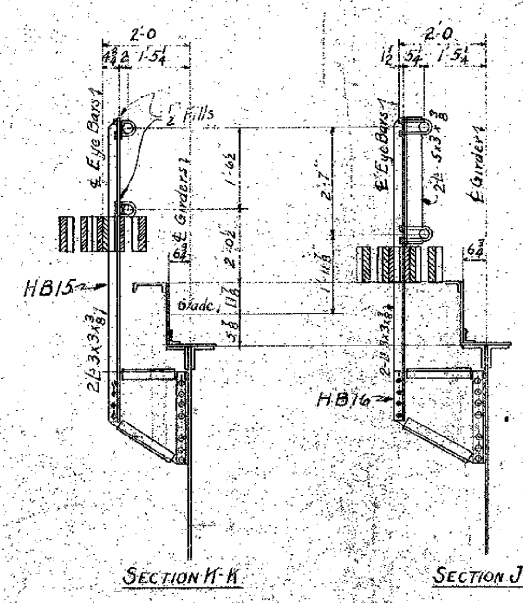
SECTION C-C



SECTION F-F

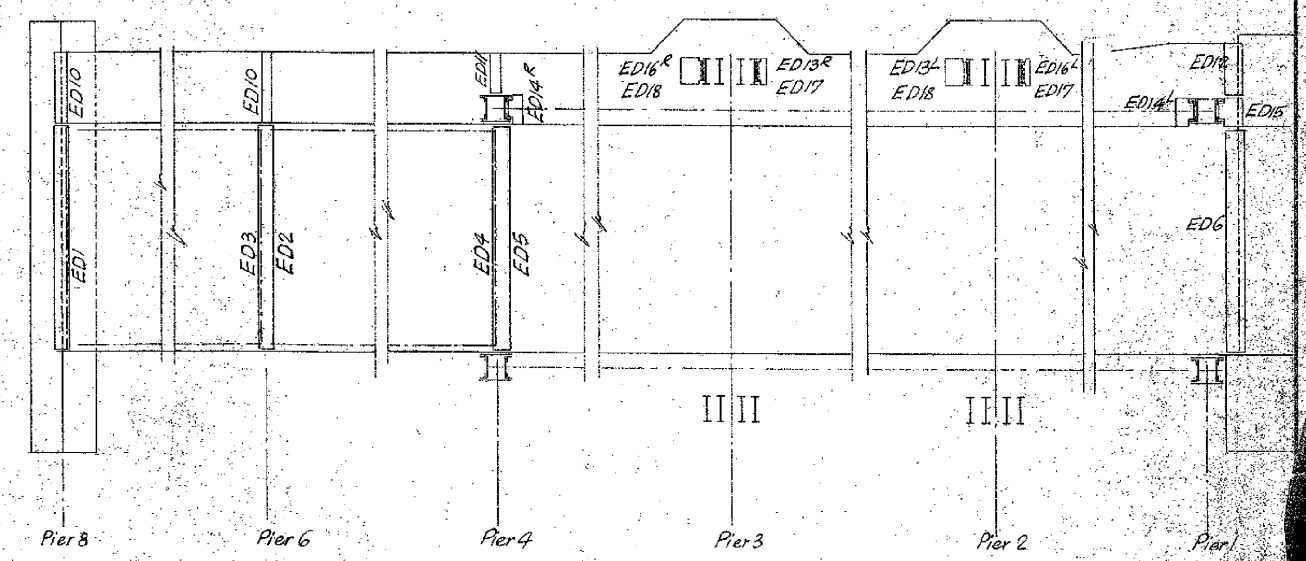


SECTION D-D

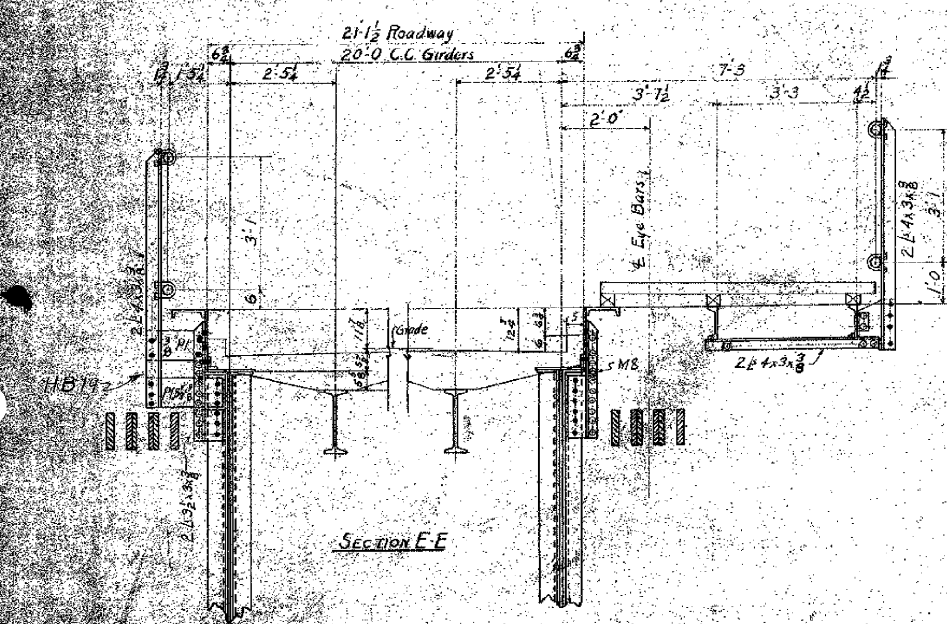


SECTION H-H

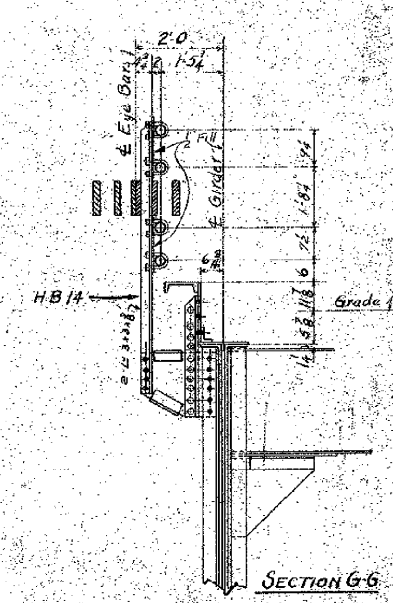
SECTION J-J



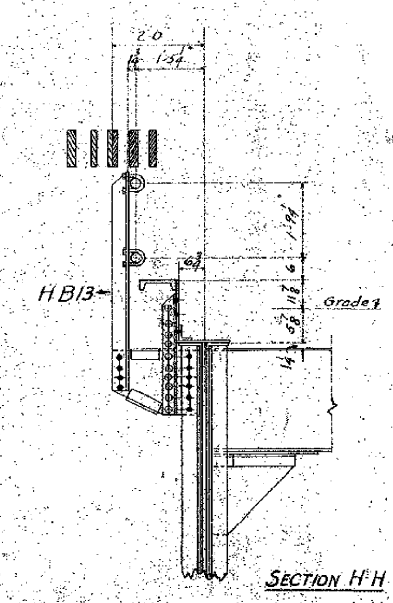
ERECTION DIAGRAM
for EXPANSION JOINTS-



SECTION E-E



SECTION G-G

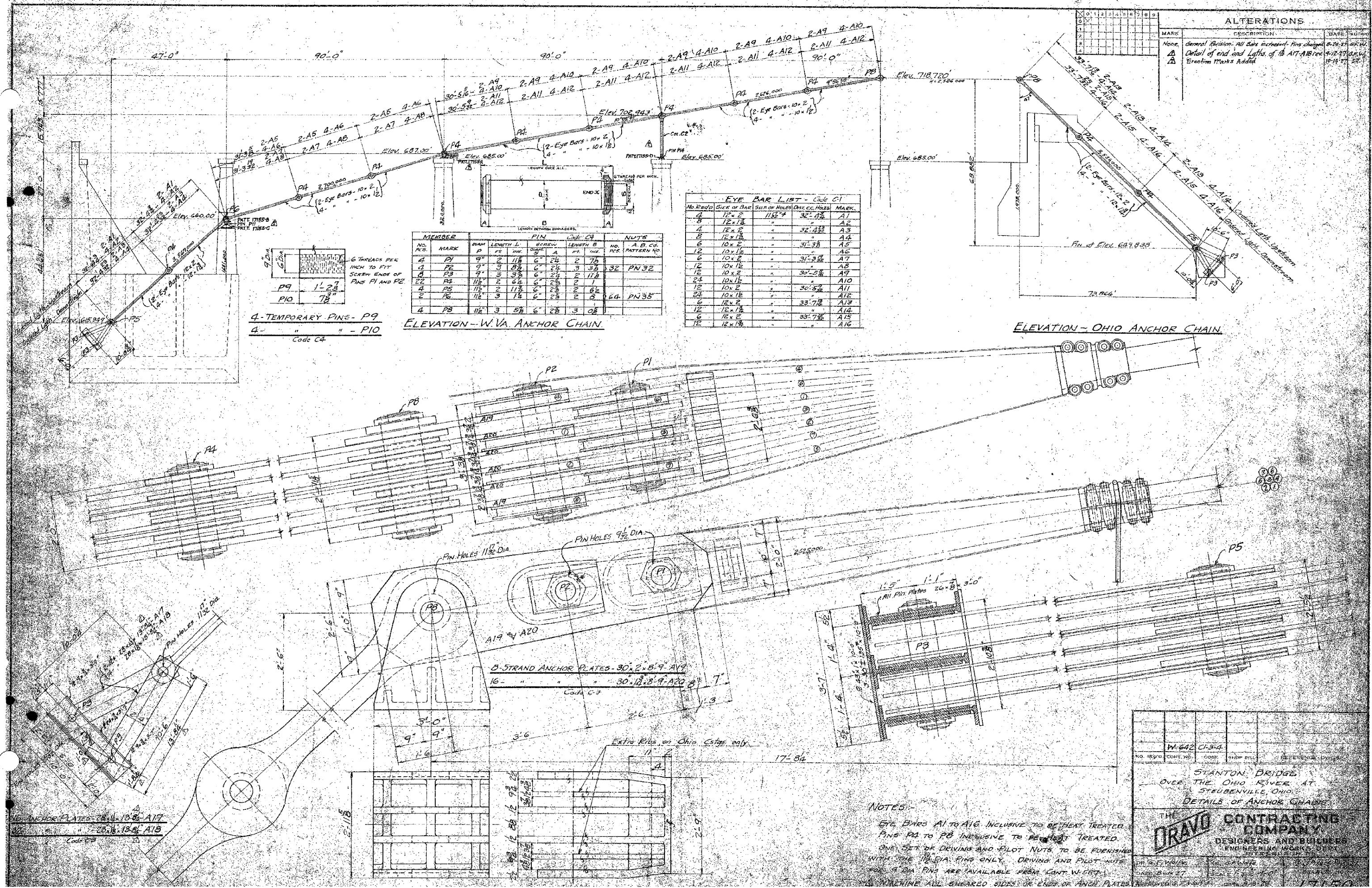


SECTION H-H

See Drawing 1714-B for Longitudinal Elevation

ALTERATIONS									
MARK	DESCRIPTION	DATE	APPROVED						
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

W642		17147, 17148, 17151, 17152	
NO. REPT.	CONT. NO.	CODE	SHOP FILE
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO. ERECTION DIAGRAM FOR EXPANSION JOINTS. W. VA. APPROACH			
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.			
DR. S. Trinin		TE. Oral Auhle	
DATE 10-22-27		SCALE 1" = 1' Foot	
APPROVED G.F. Wolfe		DATE 1-20-28	
DRAWING		17149	



ALTERATIONS		
MARK	DESCRIPTION	DATE
None	General Revision: All Bars increased. Pins changed.	8-24-27
Δ	Detail of end and Laths of 13 ATT-A18 rev.	4-12-27
Δ	Erection Marks Added	10-14-27

EYE BAR LIST - Code C1					
No.	Bar	Size of Bar	Shr. or Holes	Dist. CC. Holes	MARK.
1	12 x 2	11 1/2 x 4	32"	11 1/2"	A1
2	12 x 2	"	32"	11 1/2"	A2
3	12 x 2	"	32"	11 1/2"	A3
4	12 x 2	"	32"	11 1/2"	A4
5	12 x 2	"	32"	11 1/2"	A5
6	12 x 2	"	32"	11 1/2"	A6
7	12 x 2	"	32"	11 1/2"	A7
8	12 x 2	"	32"	11 1/2"	A8
9	12 x 2	"	32"	11 1/2"	A9
10	12 x 2	"	32"	11 1/2"	A10
11	12 x 2	"	32"	11 1/2"	A11
12	12 x 2	"	32"	11 1/2"	A12
13	12 x 2	"	32"	11 1/2"	A13
14	12 x 2	"	32"	11 1/2"	A14
15	12 x 2	"	32"	11 1/2"	A15
16	12 x 2	"	32"	11 1/2"	A16

MEMBER					
No.	MARK	DIAM.	LENGTH	NO. OF PINS	NO. OF NUTS
1	P1	9"	2 1/8"	24	2 7/8"
2	P2	9"	2 1/8"	24	3 3/8"
3	P3	9"	2 1/8"	24	2 1/8"
4	P4	10 1/2"	2 1/8"	24	2 1/8"
5	P5	10 1/2"	2 1/8"	24	2 1/8"
6	P6	10 1/2"	2 1/8"	24	2 1/8"
7	P7	10 1/2"	2 1/8"	24	2 1/8"
8	P8	10 1/2"	2 1/8"	24	2 1/8"

4-Temporary Pins - P9
4- " " - P10
Code C4

ELEVATION - W.VA. ANCHOR CHAIN

ELEVATION - OHIO ANCHOR CHAIN

NOTES
EYE BARS A1 TO A16 INCLUSIVE TO BE HEAT TREATED.
PINS P1 TO P8 INCLUSIVE TO BE HEAT TREATED.
ONE SET OF DRIVING AND PILOT NUTS TO BE FURNISHED
WITH THE 1 1/2" DIA. PINS ONLY. DRIVING AND PILOT NUTS
FOR 1 1/2" DIA. PINS ARE AVAILABLE FROM CONT. W-677.
ALL MACHINE ALL SHEARED SIDES OR END OF ANCH. PLATES IMPROVED 1-16-27

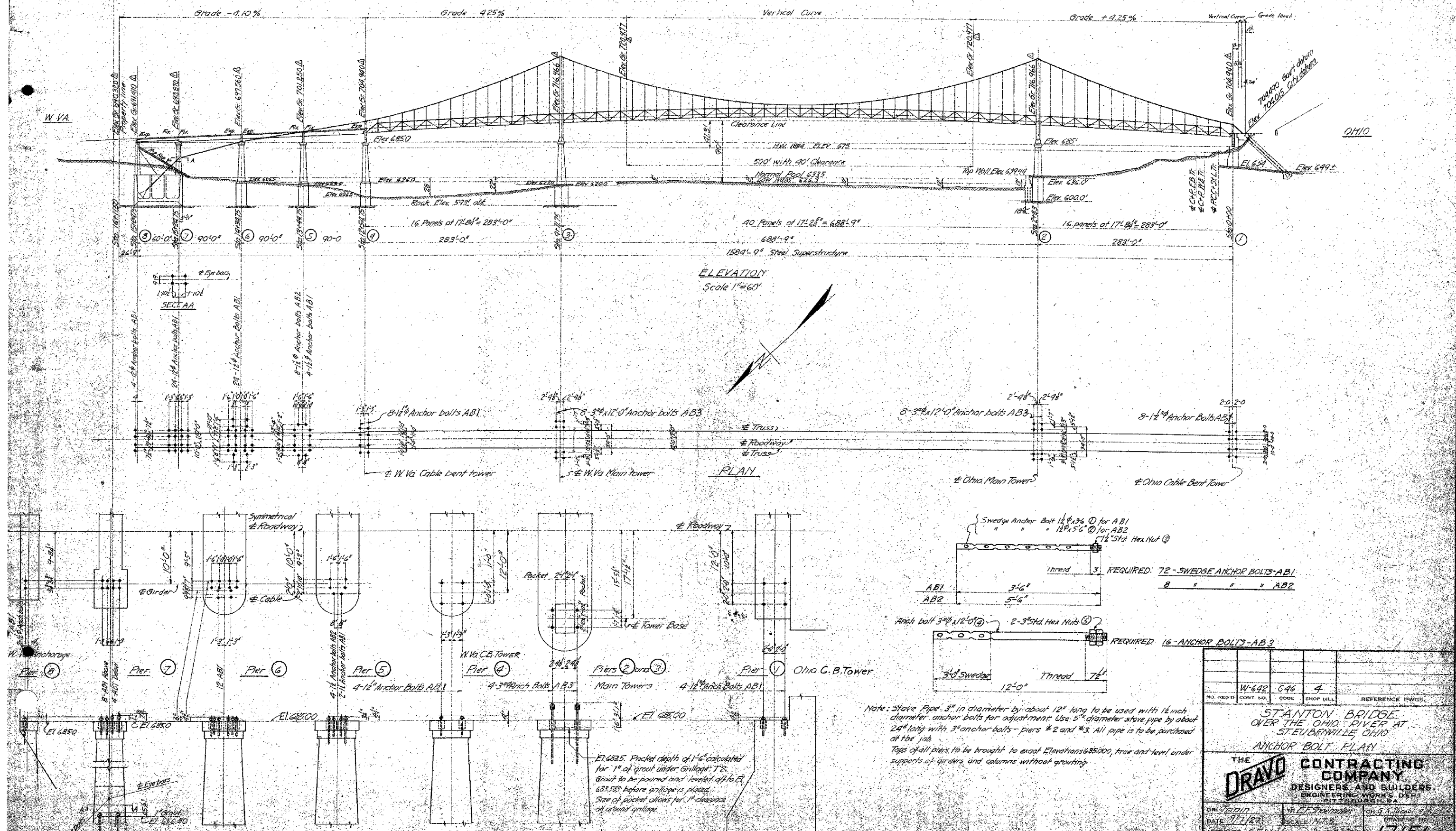
W-642 C1-344

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.
DETAILS OF ANCHOR CHAIN

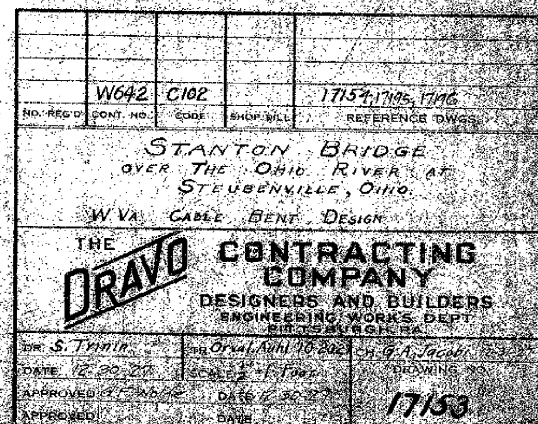
THE
DRAVO
CONTRACTING
COMPANY

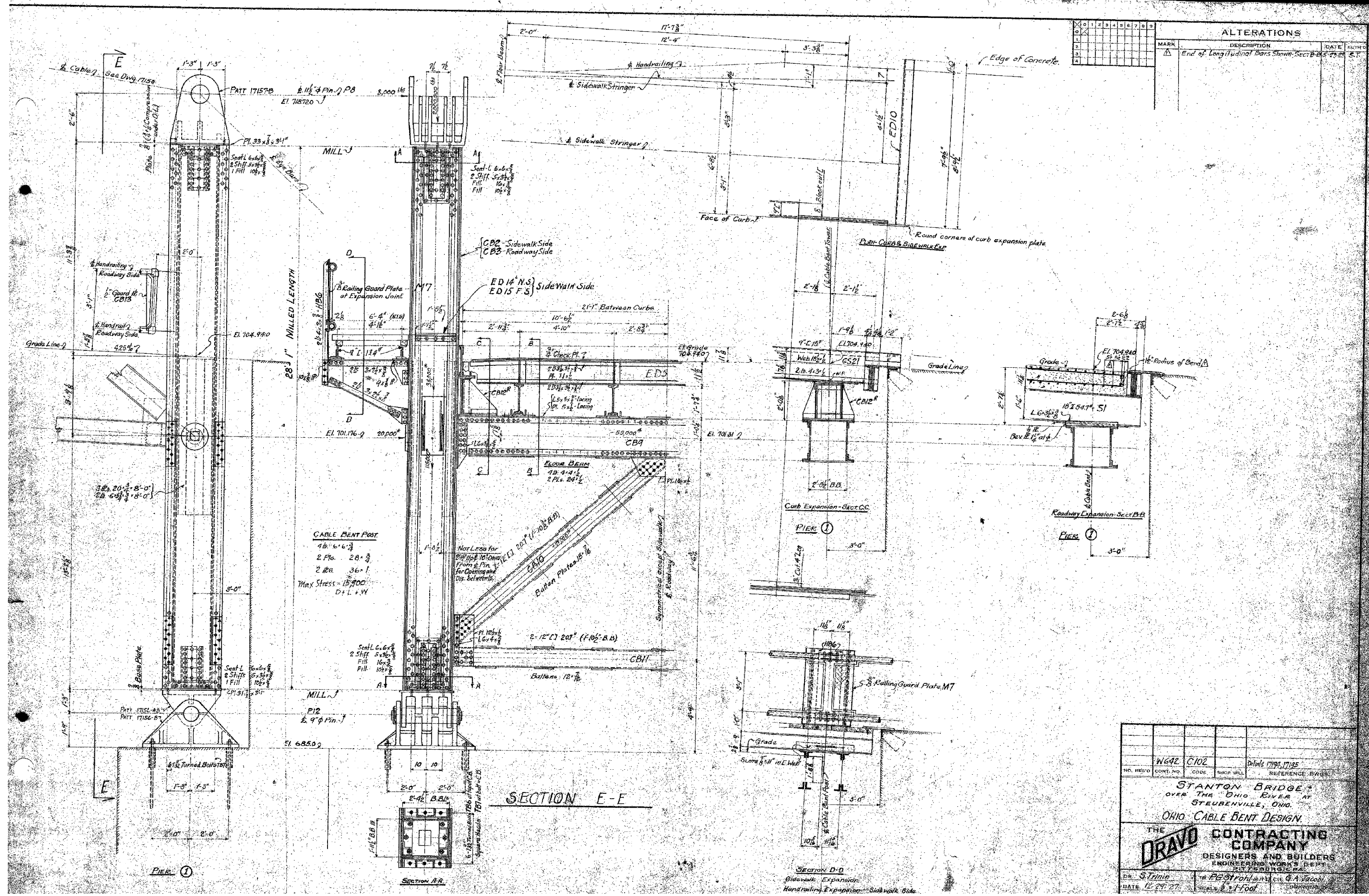
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH.
△	Grade Elev. changed	11-26-77	S.T.
△	Grade changed at Ohio Anchorage	1-21-78	G.A.J.



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH.
15	End of Longitudinal Bars Shown - Spec. B.D.	5-23-98	ST





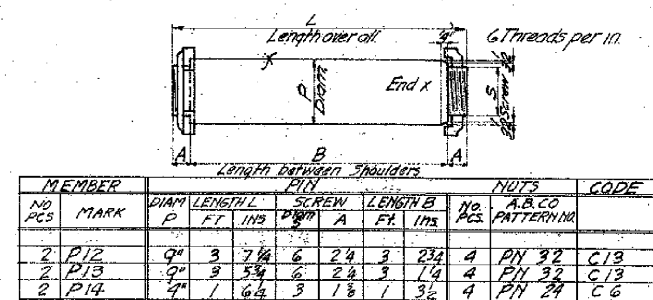
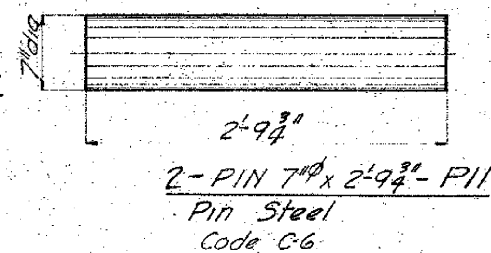
ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
Δ	End of Longitudinal Bars Shown Sect B-B 2/22	S.T.	

CABLE BENT POST
16' 6" x 3"
2 Fls. 28" x 3"
2 Rls. 36" x 1"
Max Stress = 15,000
D + L + W

SECTION E-E

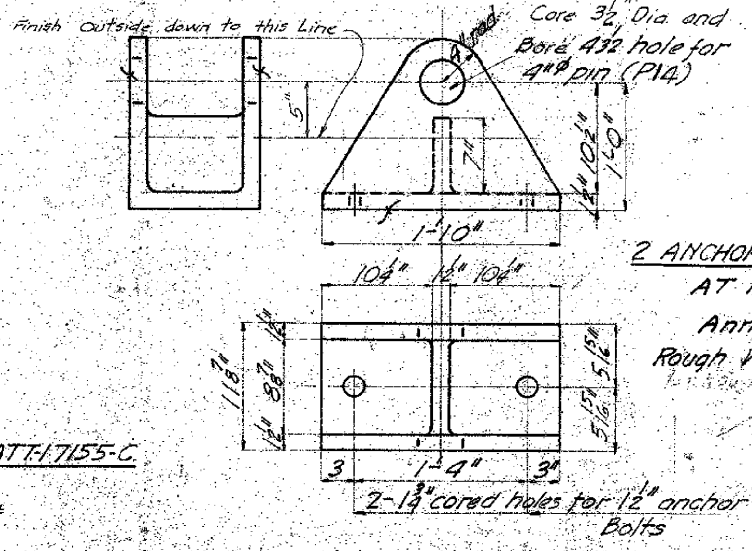
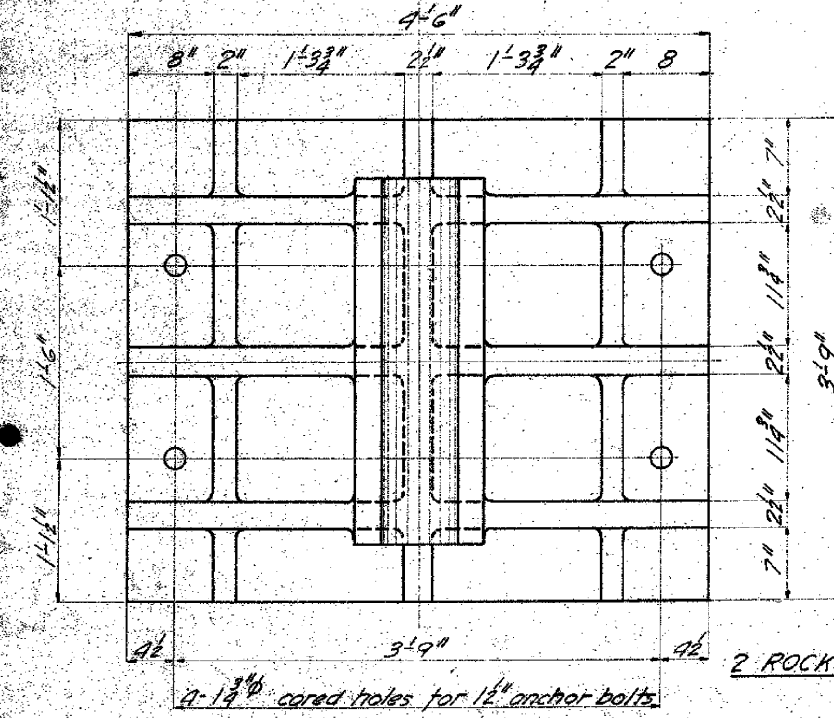
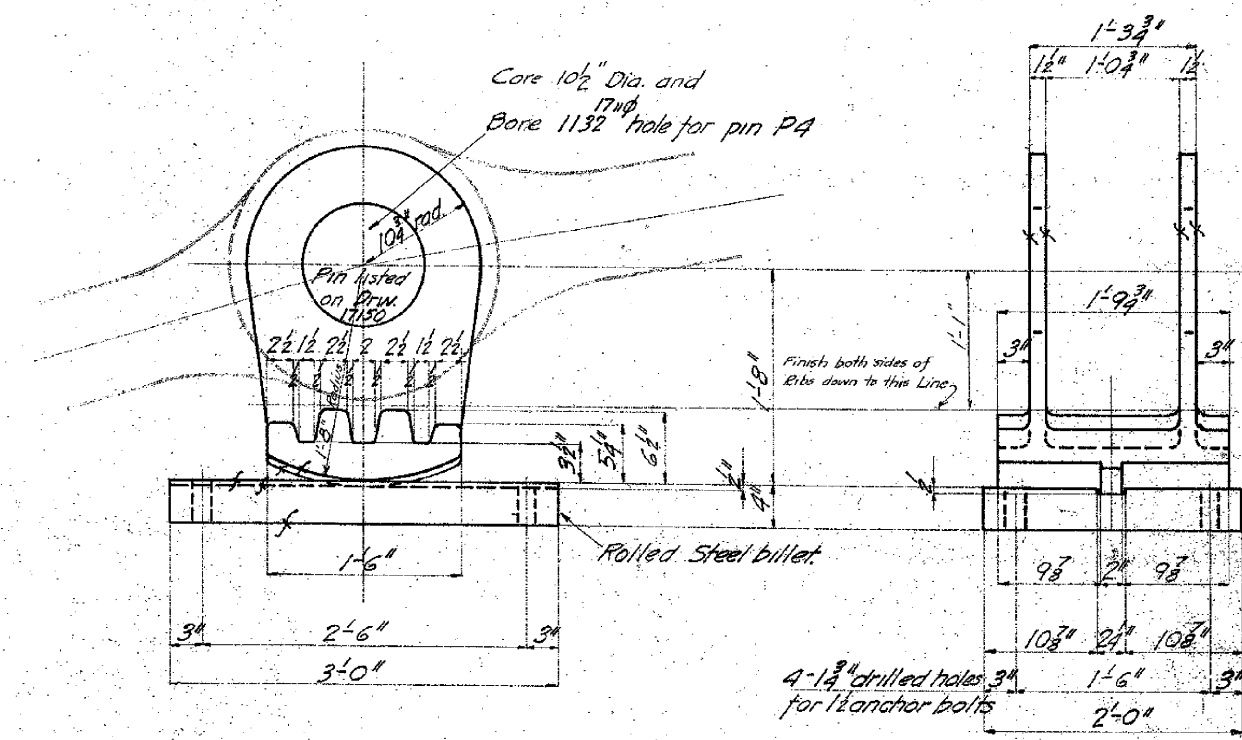
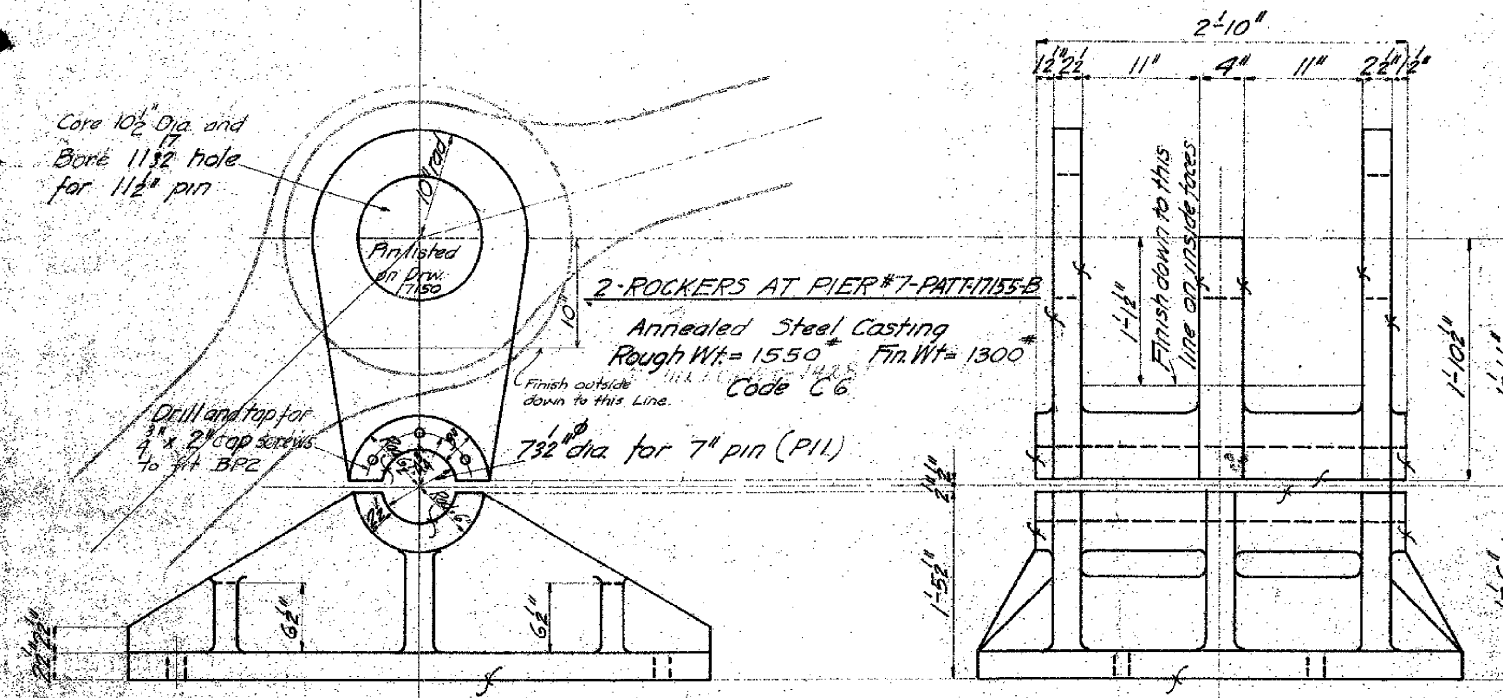
SECTION D-D
Sidewalk Expansion
Handrail Expansion - Sidewalk Side

N642 C102		Details 17194, 17195	
NO. RES'D	CONT. NO.	CODE	SHOP USE
REFERENCE DWGS:			
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO. OHIO CABLE BENT DESIGN.			
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. 2125 N. HIGHWAY 100, CLEVELAND, OHIO 44115			
DR. J. Trinio		R. P. G. Trinio, J. A. Trinio, G. A. Trinio	
DATE 12-29-27		SCALE 3/4" = 1' FOOT	



1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
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406	407	408	409	410	411	412	413	414
415	416	417	418	419	420	421	422	423
424	425	426	427	428	429	430		

ALTERATIONS				
MARK	DESCRIPTION	DATE	AUTHOR	



2-ROCKERS AT PIER#6-PATT 17155-A
 Annealed Steel Casting
 Rough Wt= 985# Fin Wt 830#
 1/2" #44# WT 24#
 Code C-6

2- ROCKER PEDESTAL PLS AT PIER #6 - BPI
 Rolled Steel Billet 24" x 4" x 3¹/₂"
 Rough Wt = 1100# Fin. Wt = 968#
 Code C-6

2 ANCHOR CHAIN BENT POST PEDESTALS
AT PIER #5- PATT-17155-D

Annealed Steel Casting
Rough Wt. = 330# Fin. Wt. = 300#
Code C-6

2 ROCKER PEDESTALS AT PIER #7- PATT-17155-0

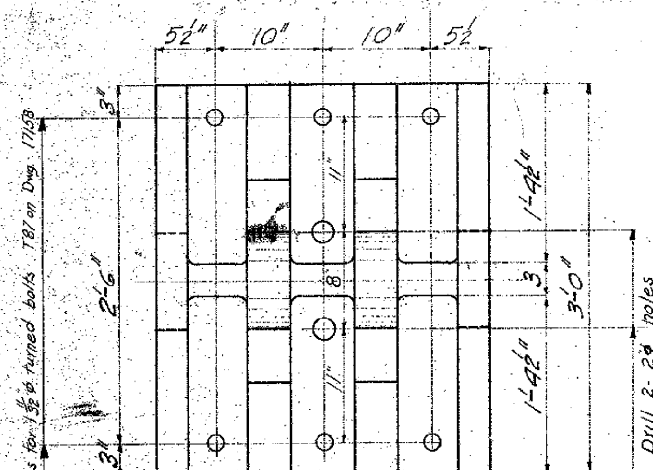
Annealed Steel Casting
 Rough Wt = 3970# Fin Wt = 3650#
 Code C-6

NO. REQ'D	CONT. NO.	CODE	SHIP BILL	REFERENCE DWGS.
14642	C-6	B		
<p>STANTON BRIDGE OVER THE OHIO RIVER AT STUEBENVILLE, OHIO. ROCKER+CHAIN-BENT POST CASTINGS+ PINS</p>				
<p>THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. MILWAUKEE, WIS.</p>				
DR. <i>Wolfe + Neumaier</i>	TR. <i>W. Neumaier</i>	DATE <i>9-27-27</i> SCALE <i>1/4" = 1'-0"</i>		
DATE <i>9-27-27</i>	APPROVED <i>G.F. Wolfe</i>		DRAWING NO. <i>17155</i>	

NO.	1	2	3	4	5	6	7	8	9
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2									
3									
4									
5									
6									
7									
8									
9									

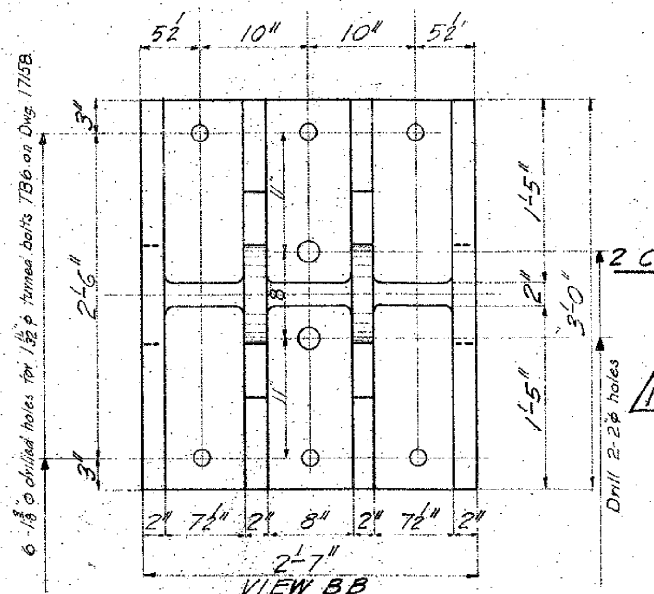
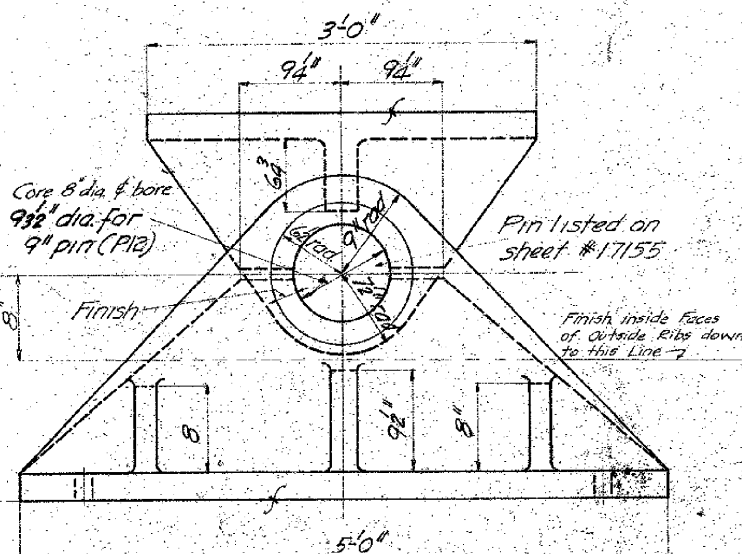
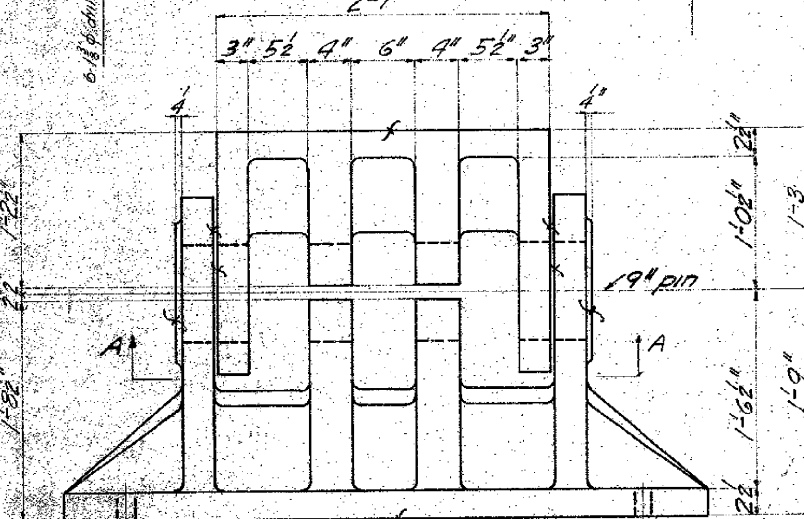
ALTERATIONS

MARK	DESCRIPTION	DATE	AUTH.
Δ	Holes added in 17156 AB	11-22-67	GPW



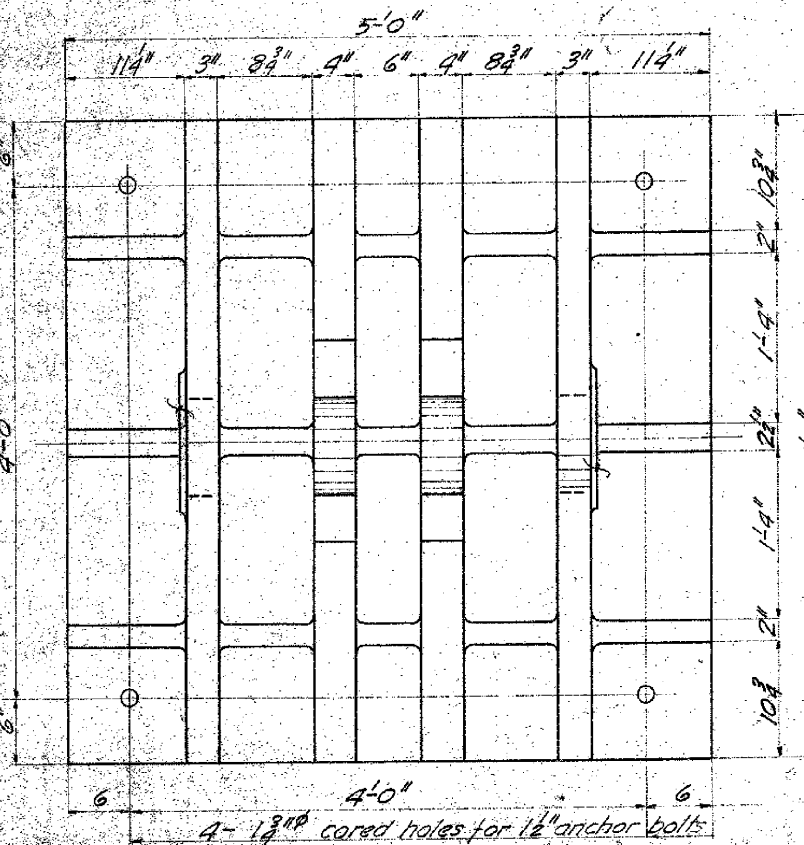
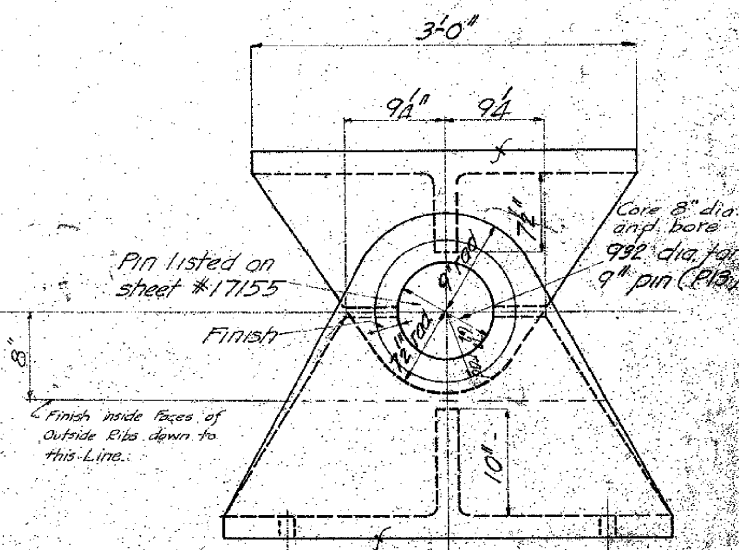
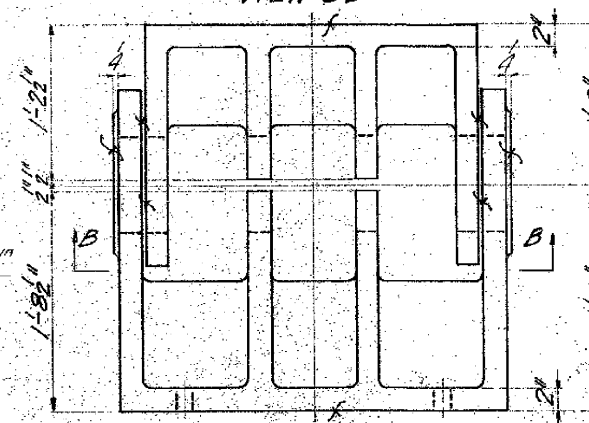
2 CABLE BENT POST BASES AT PIER #1 - PATT. 17156-AB
Annealed Steel Casting
Rough Wt= 2400# Fin. Wt= 2275#
Code C-12

VIEW A A
2'-7"

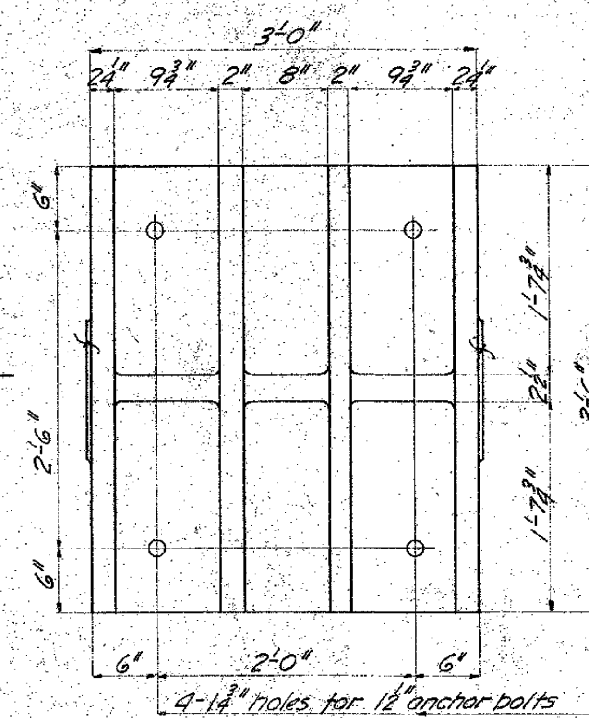


2 CABLE BENT POST BASES AT PIER #4 - PATT. 17156-A
Annealed Steel Casting
Rough Wt= 1670# Fin. Wt= 1520#
Code C-12

VIEW B B
2'-7"



2 CABLE BENT POST PEDESTALS AT PIER #1 - PATT. 17156-B
Annealed Steel Casting
Rough Wt= 6800# Fin. Wt= 6300#
Code C-12



2 CABLE BENT POST PEDESTALS AT PIER #4 - PATT. 17156-C
Annealed Steel Casting
Rough Wt= 2850# Fin. Wt= 2600#
Code C-12

NO. 17156	CONT. NO. C-12	CODE B	REVISION BILL	REFERENCE DWG.
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO CABLE BENT POST CASTINGS				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. 17156				
DR. W. H. DRAVO	DATE 9-9-27	APPROVED BY	DATE 11-22-67	17156

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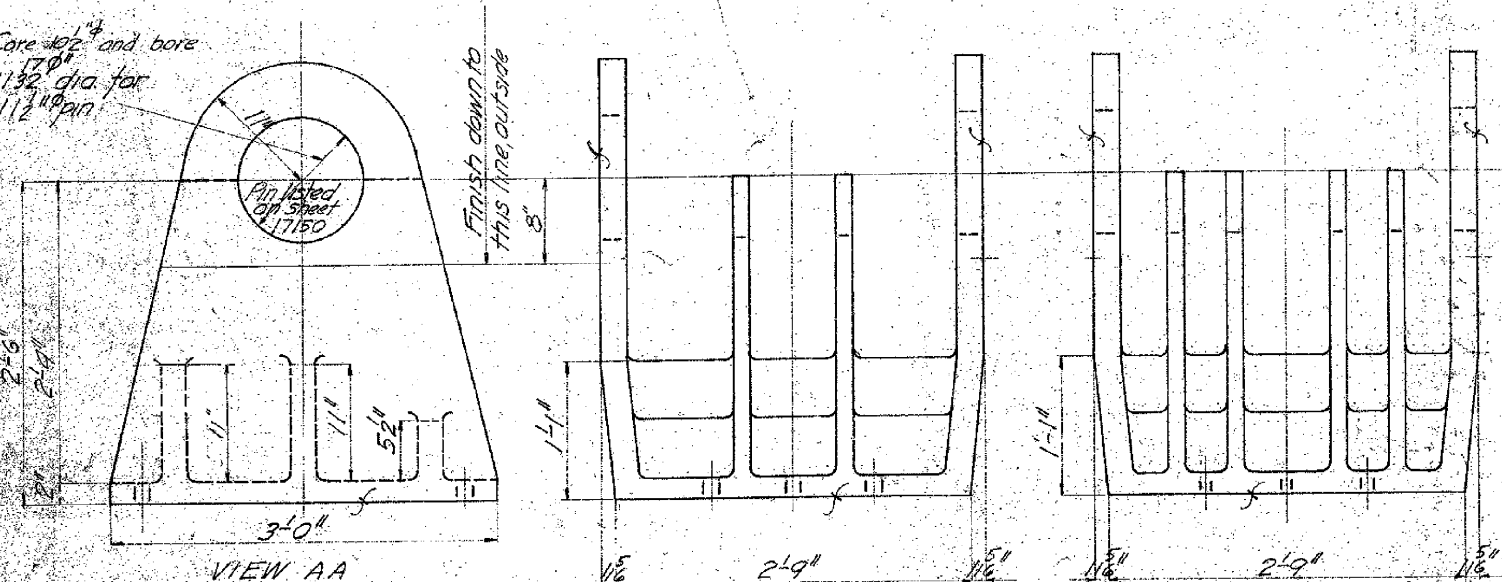
ALTERATIONS

MARK	DESCRIPTION	DATE	INITIALS

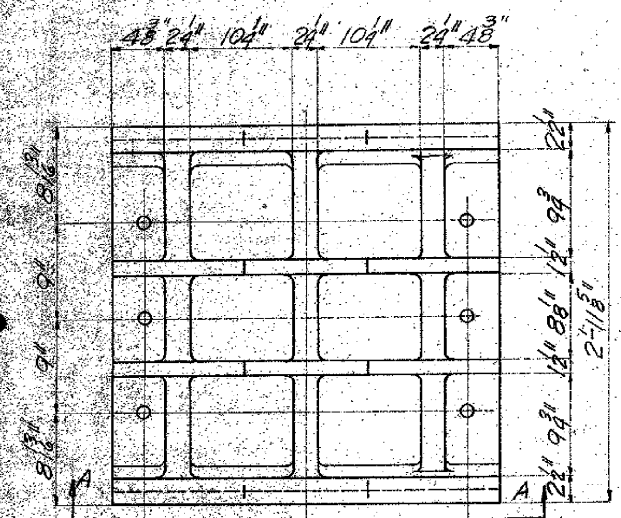
Surfaces of shim plates to be smooth and parallel
Material: Structural Steel

- 20 Shim Plates $3\frac{1}{2} \times 1\frac{1}{2} \times 0.083$ - A22
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A23
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A24
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A25
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A26
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A27
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A28
 40 " " $3\frac{1}{2} \times 1\frac{1}{2} \times 0.098$ - A29
- Code: C-5

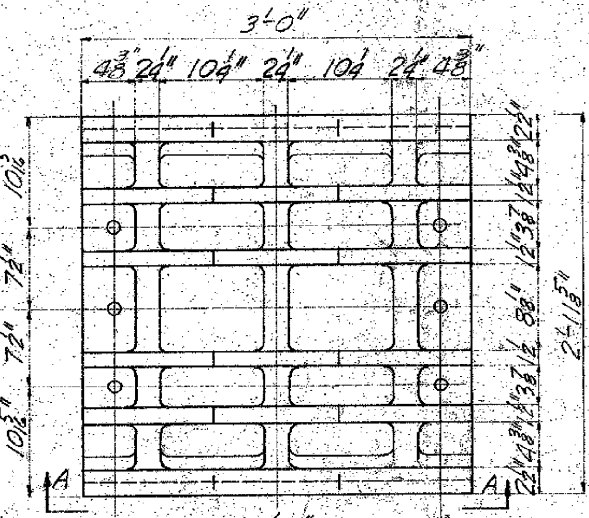
Core 102" and bore 1132 dia for 112" pin



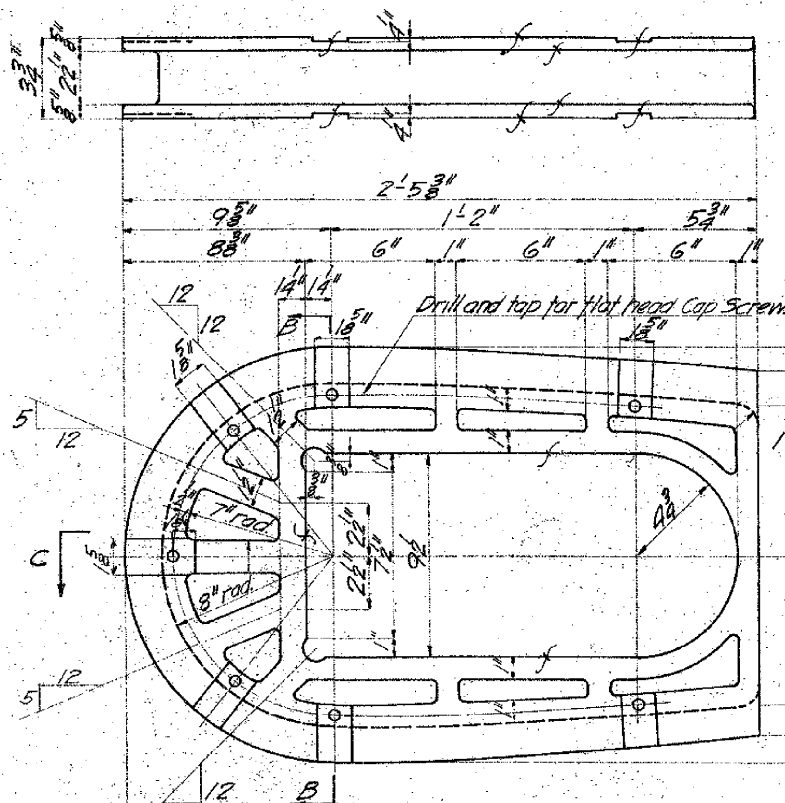
VIEW AA



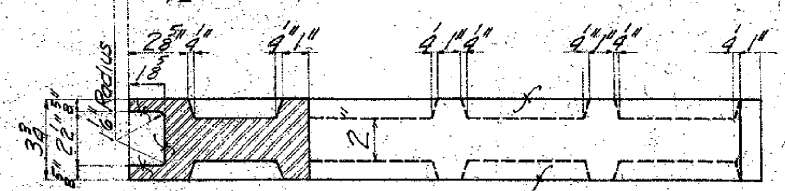
2 CABLE BENT POST CAPS AT PIER #4 - PATT-17157A
 Annealed Steel Casting
 Rough Wt 3250# Fin Wt 3090#
 Code C-12



2 CABLE BENT POST CAPS AT PIER #1 - PATT-17157B
 Annealed Steel Casting
 Rough Wt 3750# Fin Wt 3540#
 Code C-12

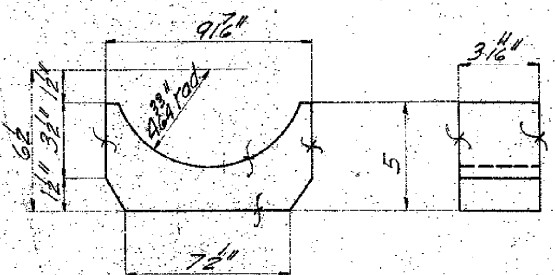


SECTION B-B

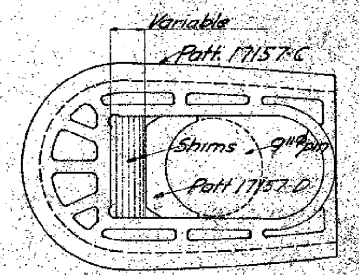


SECTION C-C

28 STRAND SHOES - PATT. 17157-C
 Annealed Steel Casting
 Rough Wt = 340# Fin Wt = 260#
 Code C-5



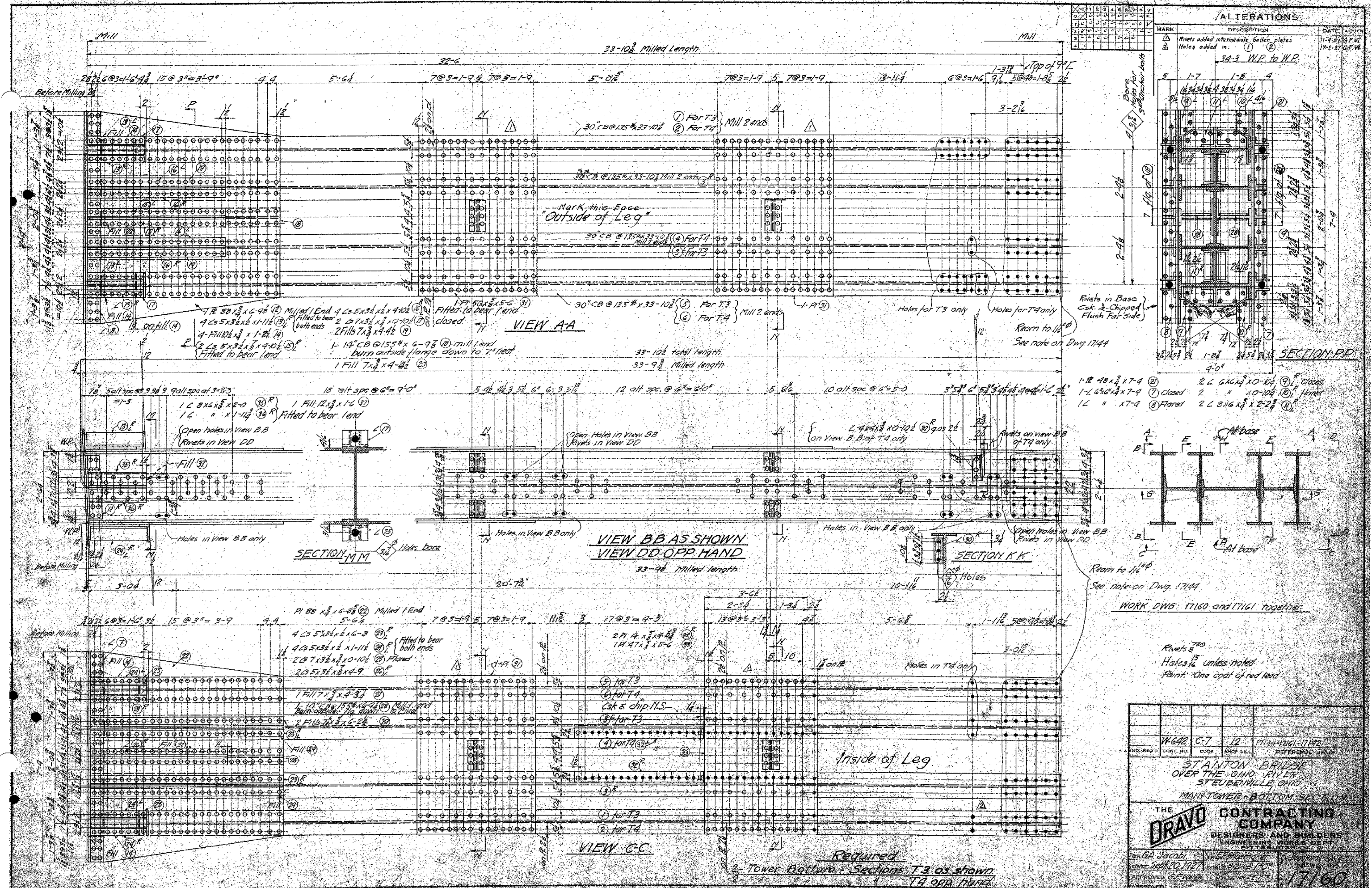
28 BEARING BLOCKS - PATT. 17157-D
 Annealed Steel Casting
 Rough Wt = 42# Fin Wt = 30#
 Code C-5



ASSEMBLY OF STRAND SHOE
 Scale 3/4" = 1'-0"

W. G. D.	25	C. 12	8
NO. REVISIONS	CONT. NO.	CODE	PROJ. FILE NO.
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO			
CABLE BENT POST CAPS AND STRAND SHOES			
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. 17157			
BY: W. G. D.	DATE: 9-13-27	BY: L. J. S.	DATE: 9-13-27
APPROVED: G. F. W.	DATE: 9-13-27	APPROVED: G. F. W.	DATE: 9-13-27

[illegible]



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH
1	Rivets added intermediate batten plates	11-4-27	G.F.W.
2	Holes added in:	12-2-27	G.F.W.
3	34-3 W.P. to W.P.		

1-2 48x3x7-4 (2)	2-2 6x6x3x10-14 (2) Closed
1-1 6x6x3x7-4 (2) Closed	2-1 10-10 (2) Closed
1-1 10-10 (2) Closed	2-1 10-10 (2) Closed
1-1 10-10 (2) Closed	2-1 10-10 (2) Closed

WORK DWG 17160 and 17161 together

Rivets 7/10
Holes 1/2 unless noted
Paint: One coat of red lead

W642 C-7	12	17160-17161-17162
NO. REQD	COST NO.	COPY

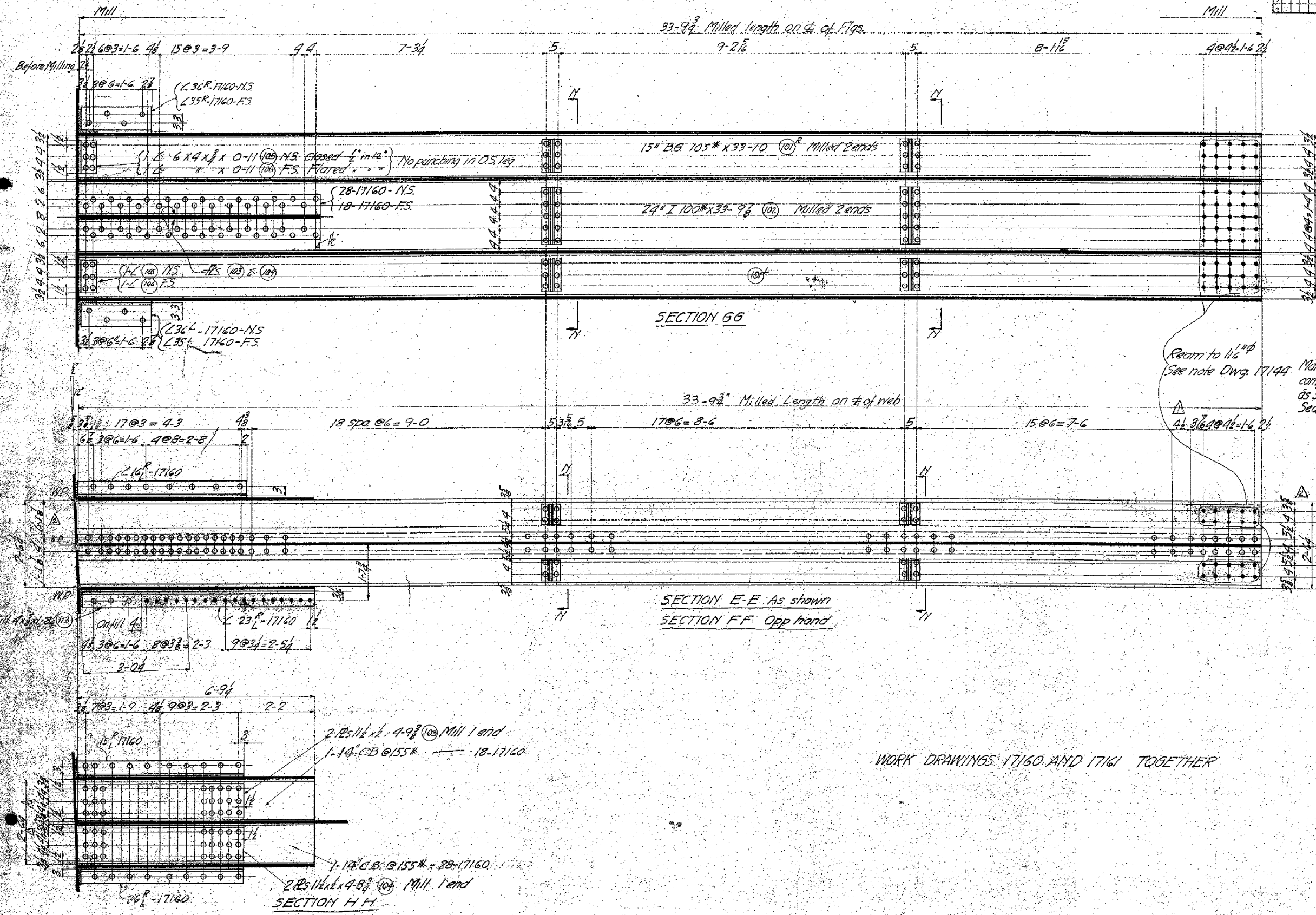
STANTON BRIDGE
OVER THE OHIO RIVER
STUBENHILLE OHIO
MANTOWER BOTTOM SECTION

THE
DRAY
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.

By G. Jacoby
DATE Sept. 19, 1927
APPROVED G. F. W.
17/60

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH'D
Δ	4" Changed to 4 1/2", space 1/2" Added	11-30-21 G.F.V.	
Δ	4 1/2" Gage changed to 4"	12-14-21 G.F.W.	

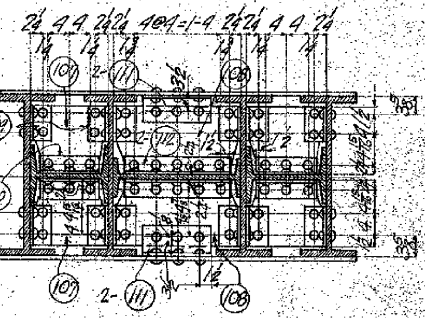


Note: Burn IRs (101) & (102) to clear beam flgs. as shown.

Ream to 1 1/2" φ
See note Dwg. 17144

Material for one complete diaphragm as shown in Section N-Y

- 24 Ls 4x4x3/8x0-7 (109) g.s.s. 24" x 5" x 6"
- 8 Ls 4x4x3/8x0-11 (110)
- 4 IRs 12x6x1-13 (107)
- 4 Ls 4x4x3/8x1-7 (112) g.s.s. 24" x 5" x 6"
- 4 Ls 5x5x3/8x0-11 (111)
- 2 IRs 12x12x1-102 (108)



SECTION N-Y

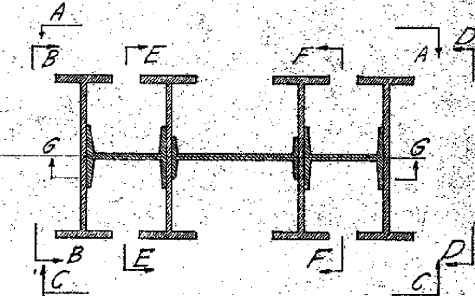
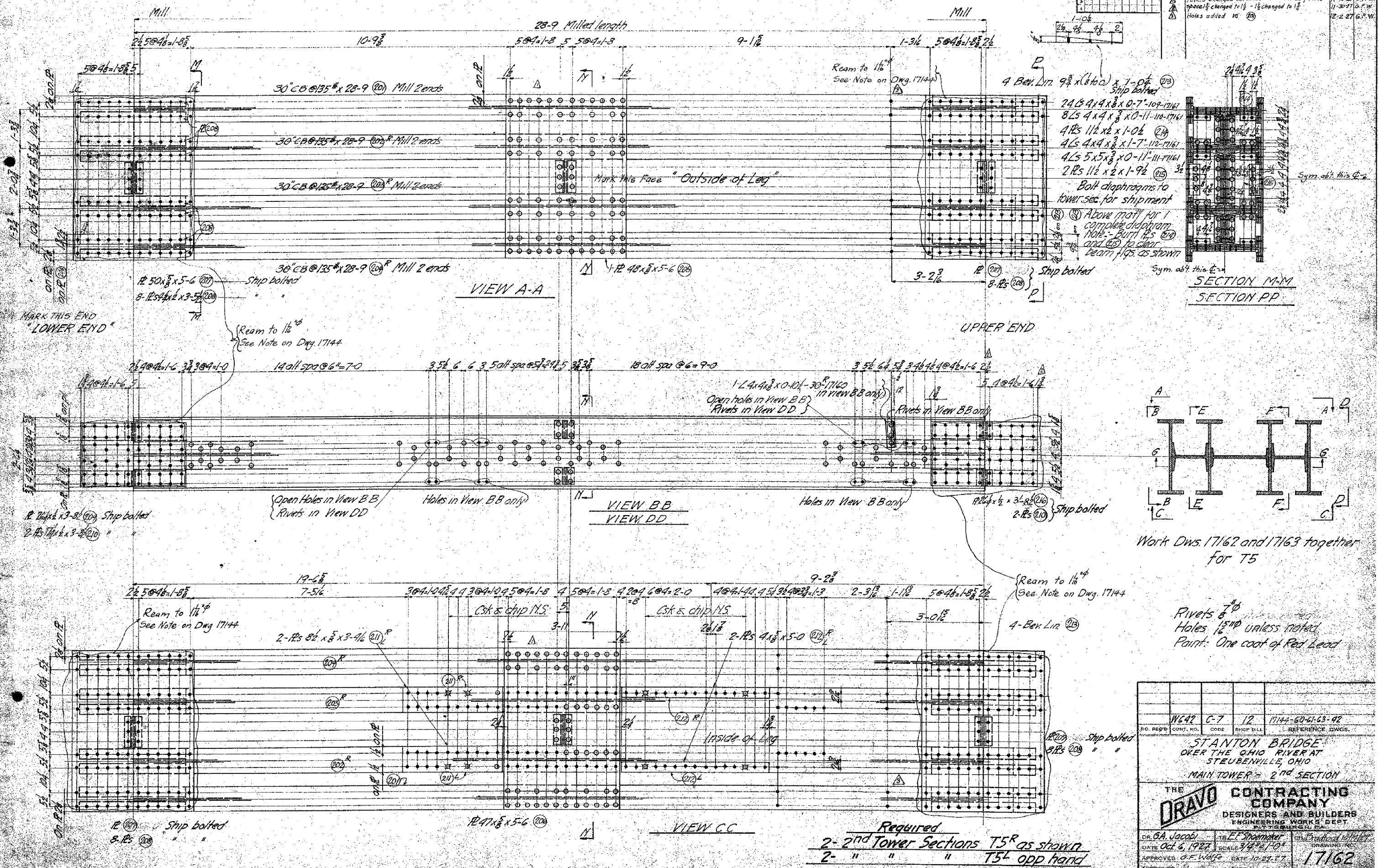
WORK DRAWINGS 17160 AND 17161 TOGETHER

Rivets 3/8" φ
Holes 1 1/8" unless noted
Paint: One coat of Red Lead

NO.	REP'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWG.
17162	C-7	12	17144-17160-17161-17162-17163-17164-17165-17166-17167-17168-17169-17170-17171-17172-17173-17174-17175-17176-17177-17178-17179-17180-17181-17182-17183-17184-17185-17186-17187-17188-17189-17190-17191-17192-17193-17194-17195-17196-17197-17198-17199-17200		
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE OHIO MAIN TOWER BOTTOM SECTION					
THE ORAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.					
DR. G.A. Jacobi	DATE Oct. 6, 27	APPROVED	DATE 10-29-27	17161	

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70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
Δ	Rivets changed 1/2" to 3/4" 200	11-22-27	G. A. W.
Δ	Spacings changed to 1/2" - 1/2" changed to 1/2"	11-30-27	G. A. W.
Δ	Holes added 1/2" (200)	12-22-27	G. A. W.



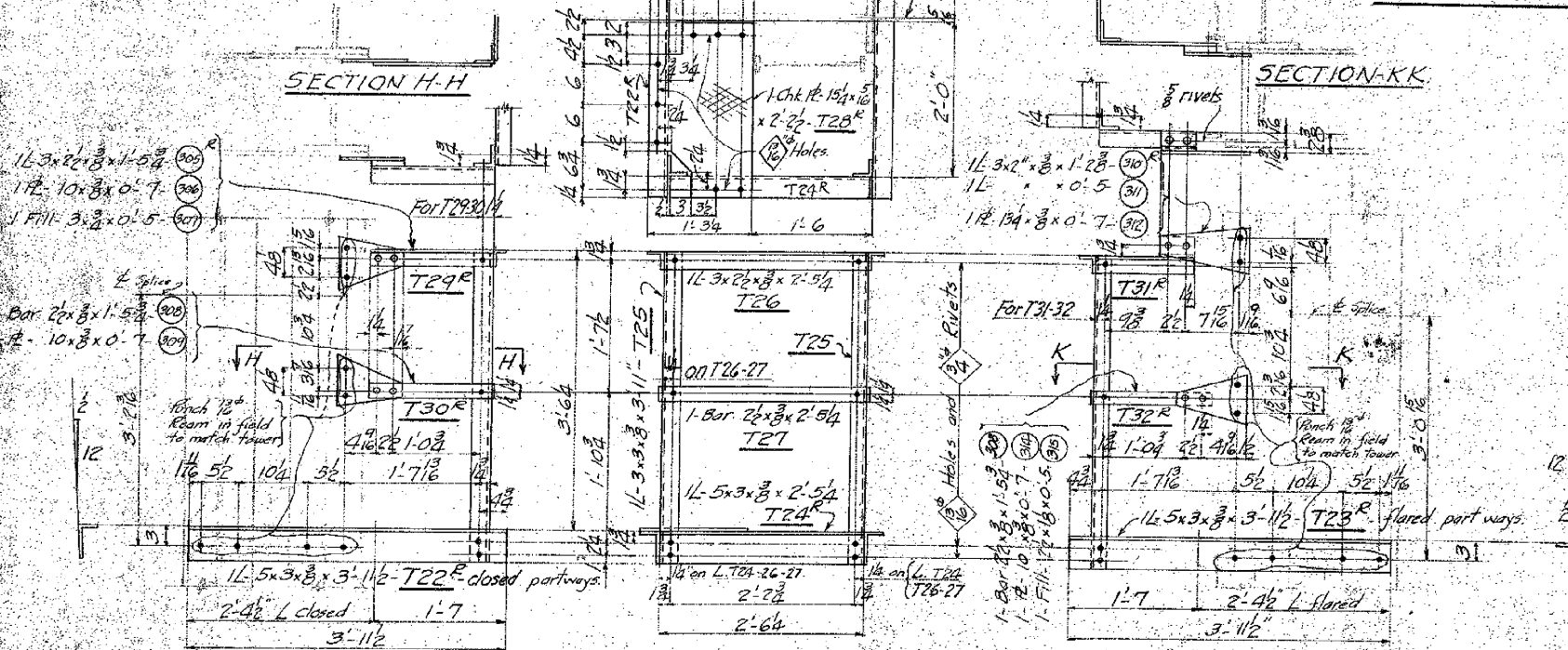
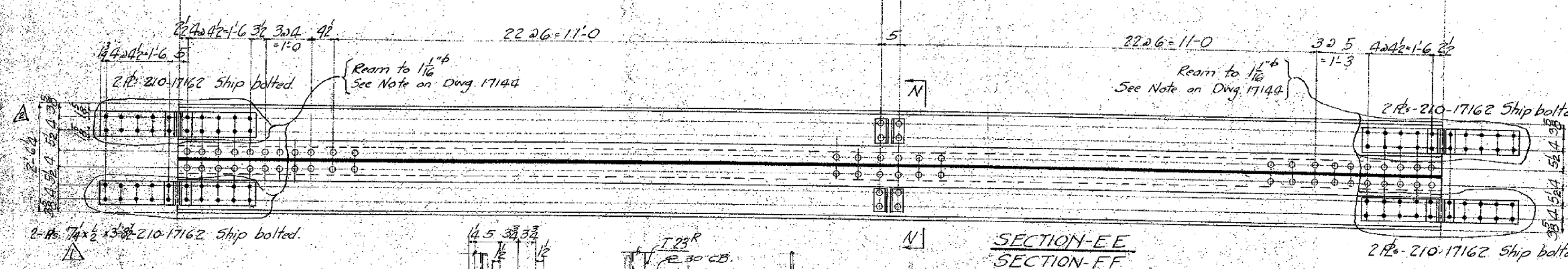
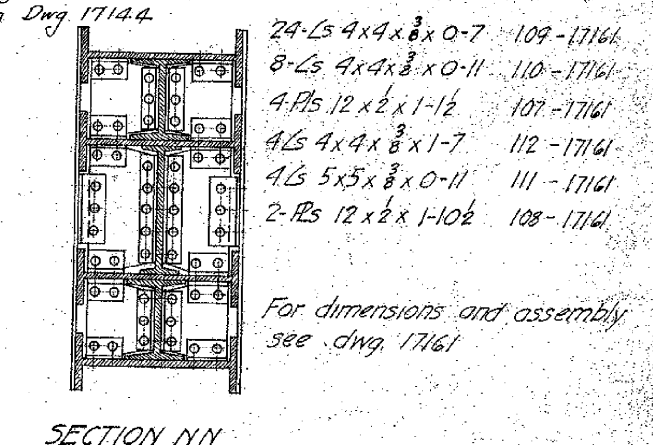
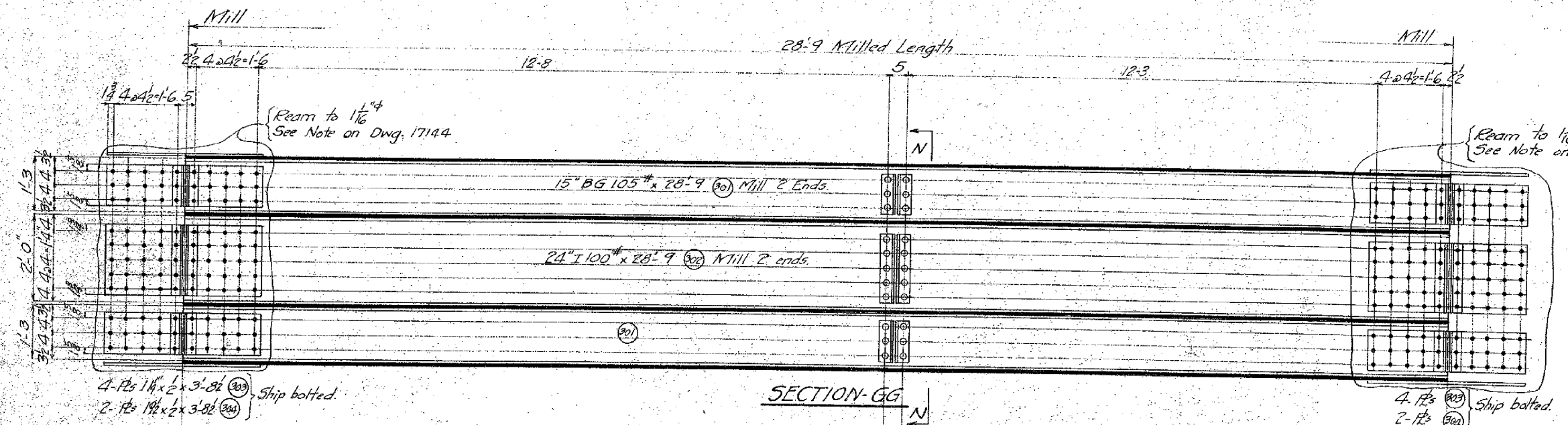
Work Dws. 17162 and 17163 together for T5

Rivets 5/8"
Holes 1/2" unless noted
Paint: One coat of Red Lead

17162		C-7		12		17144-60-61-63-92	
NO. REV'D	CONT. NO.	CODE	SHIP B'LL	REFERENCE DWGS.			
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO MAIN TOWER - 2ND SECTION							
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				DRAWING NO. 17162			
DR. G. A. Jacoby		TR. E. F. Shumaker		CH. G. A. W.		DATE Oct 6, 1927	
APPROVED		DATE		SCALE		DATE	
G. A. W.		10-27-27		3/4" = 1'-0"		17162	

Required
2- 2nd Tower Sections T5R as shown
2- " " " T5L opp hand

ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
1	Plates 210-17162 changed from 7/8" to 1/2"	11-30-27 G.F.	
2	Gage 1/2 changed to 4	12-14-27 G.F.	



- 4- PLATFORM ANGLES- T22^R As shown
- 6- " " - T22^L Opp hand
- 6- " " - T23^R As shown
- 8- " " - T23^L Opp hand
- 4- " " - T24^R As shown
- 32- RAILING POSTS - T25 " "
- 10- PLATFORM RAILINGS- T26 " "
- 10- " " - T27 " "
- 4- " Check. Plates- T28^R As shown
- 6- " " - T28^L Opp hand
- 4- " RAILINGS - T29^R As shown
- 6- " " - T29^L Opp hand
- 4- " " - T30^R As shown
- 6- " " - T30^L Opp hand
- 4- " " - T31^R As shown
- 6- " " - T31^L Opp hand
- 4- " " - T32^R As shown
- 6- " " - T32^L Opp hand
- 6- " angles - T24^L " "

Work Dwgs 17162 and 17163 together for T5

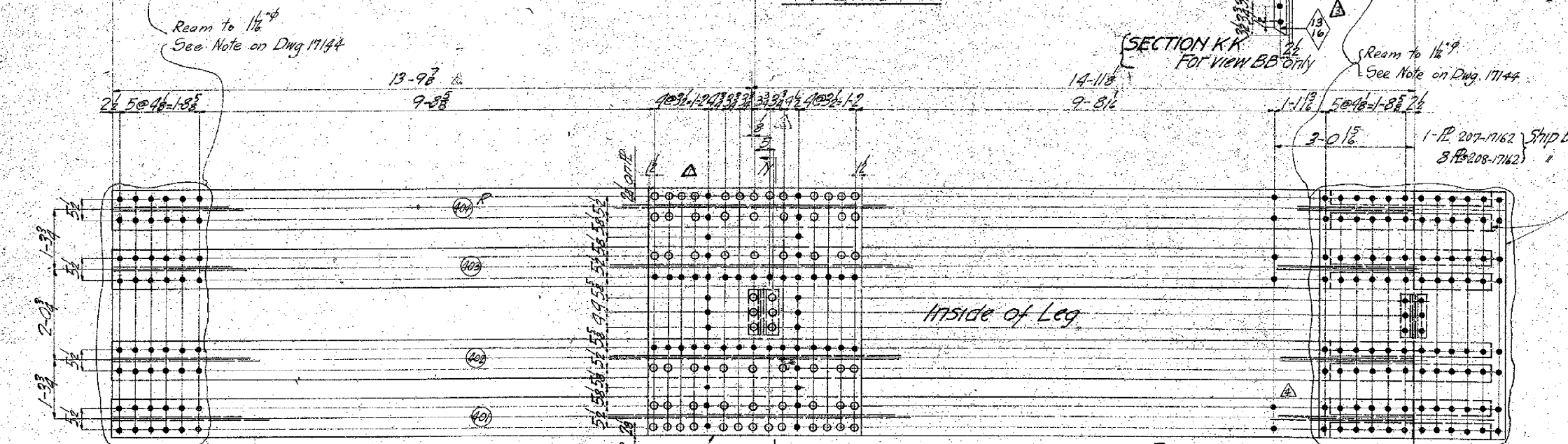
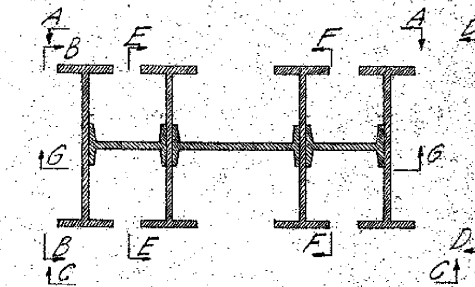
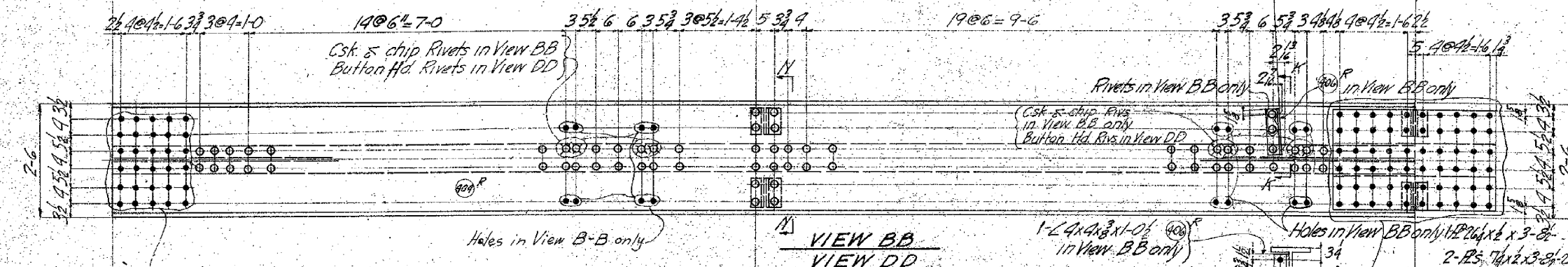
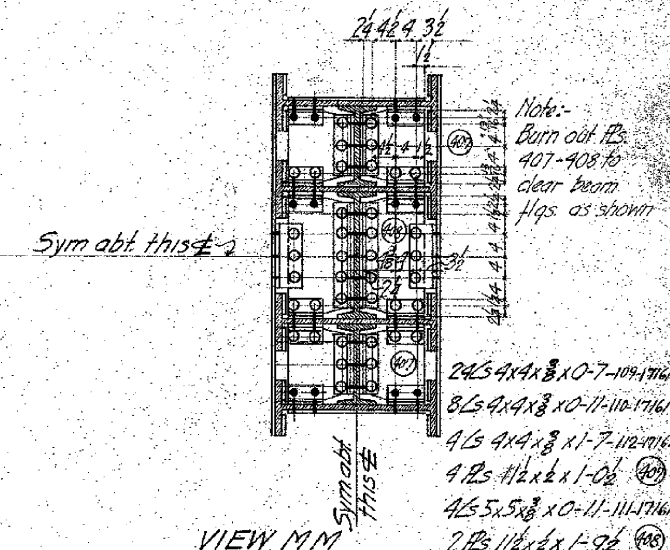
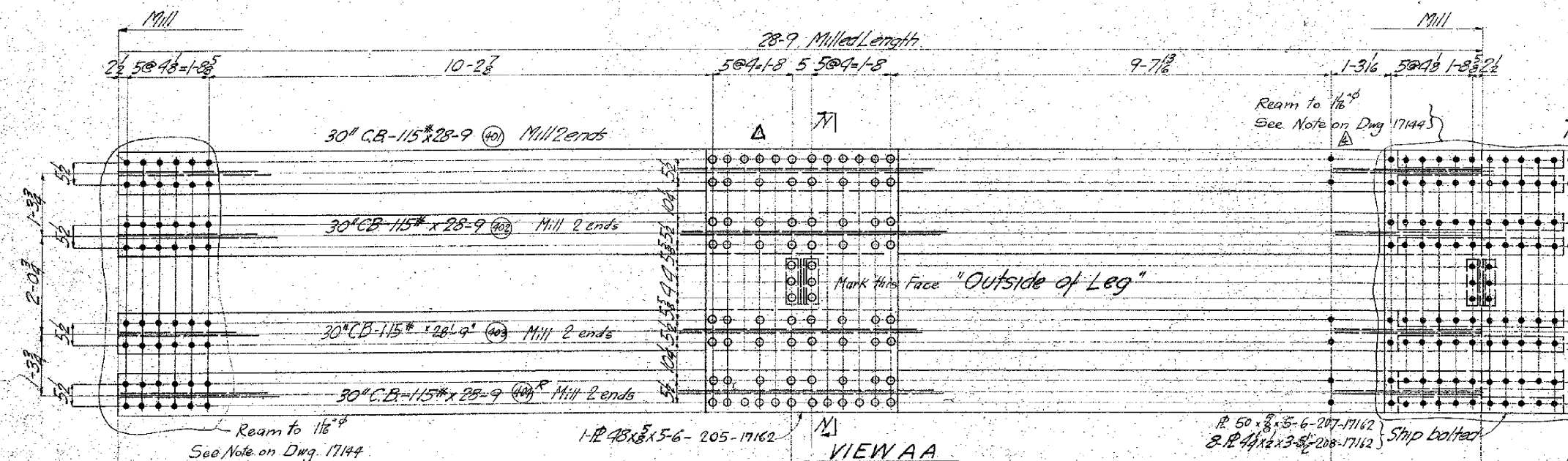
Rivets- 7/8" unless noted.
Holes 1 1/8" "
Paint- One coat of Red Lead.

NO.	REV'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
W692 C-7 12 17144-42-61-62 STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO. MAIN TOWER- 2nd SECTIONS THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT PITTSBURGH, PA. DATE Oct. 6, 1927 SCALE 3/4" = 1'-0" DRAWING NO.					

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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ALTERATIONS

MARK	DESCRIPTION	DATE	BY
Δ	Rivets changed in 2nd "batten" plates	11-3-27	G.F.W.
Δ	Dimensions changed in View C-C	11-4-27	G.F.W.
Δ	Size for Holes added for L	11-30-27	G.F.W.
Δ	Holes added in 10	12-2-27	G.F.W.
Δ	Mark 209-17162 Changed to 40	12-14-27	G.F.W.

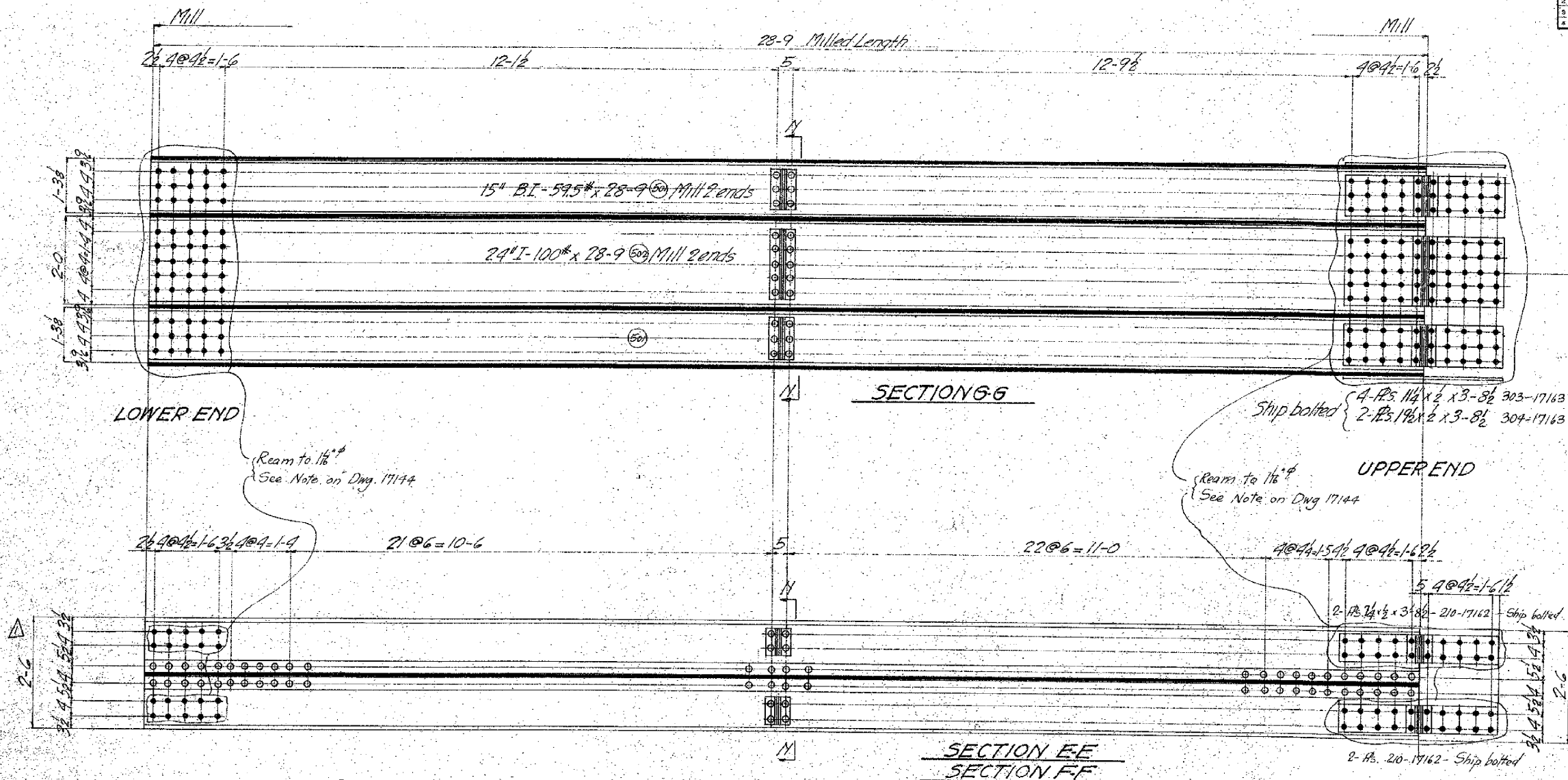


Work Dwg. 17164 and 17165 together for T6

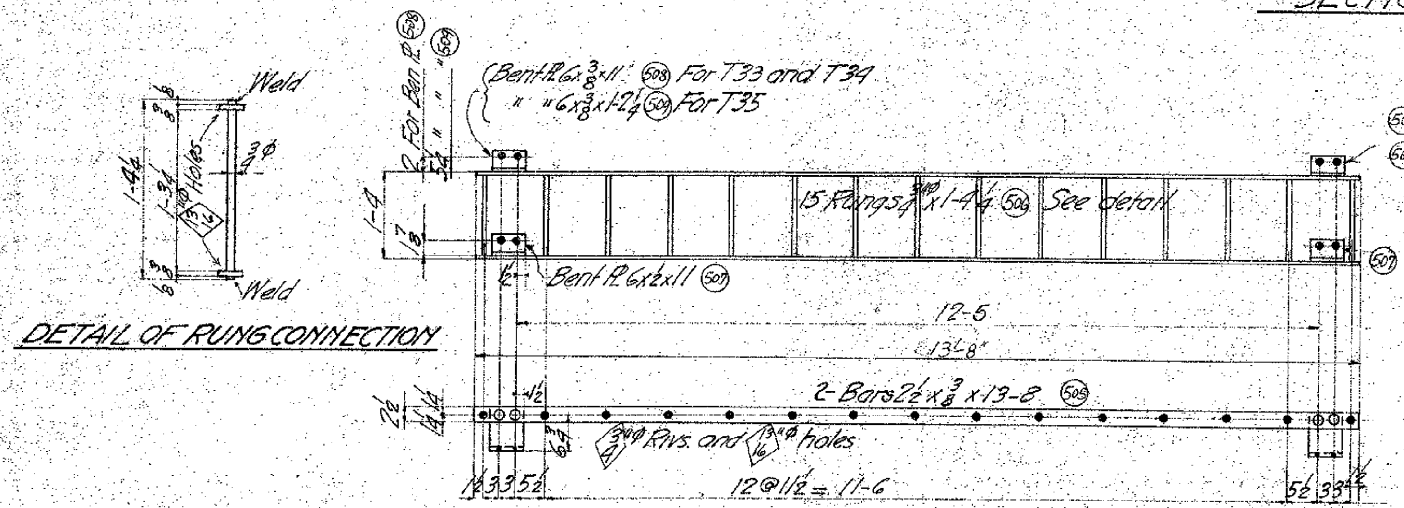
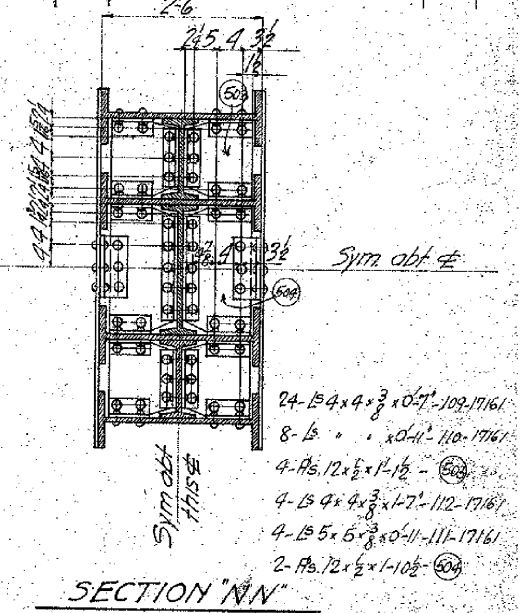
Rivets 7/8"
Holes 1 1/4" unless noted
Paint 1 coat of Red lead

Required
2-3rd Tower Sections T6^R as shown
2-3rd Tower Sections T6^L opp hand

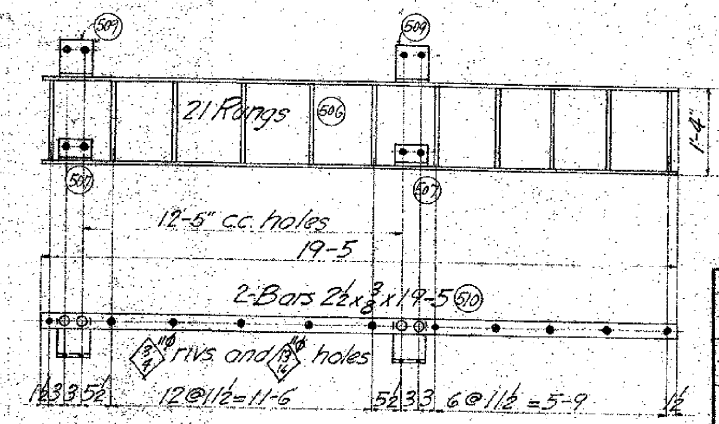
NO.	W642	CONT.	C-7	CODE	12	SHOP BILL	17144-6100-68-10	REFERENCE DWGS.
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO MAIN TOWER - 3rd SECTION								
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.								
DR. G. A. Jacoby	DR. E. F. Shoemaker	DR. J. H. Bradfield						
DATE Sept. 22, 1927	SCALE 3/4" = 1'-0"	DRAWING NO.	17164					
APPROVED G. F. Wolfe	DATE 10-27-27							
APPROVED K. J. C.	DATE 11-1-27							



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH
A	Gage 42 Changed to 4"	12-14-27	G.F.W.



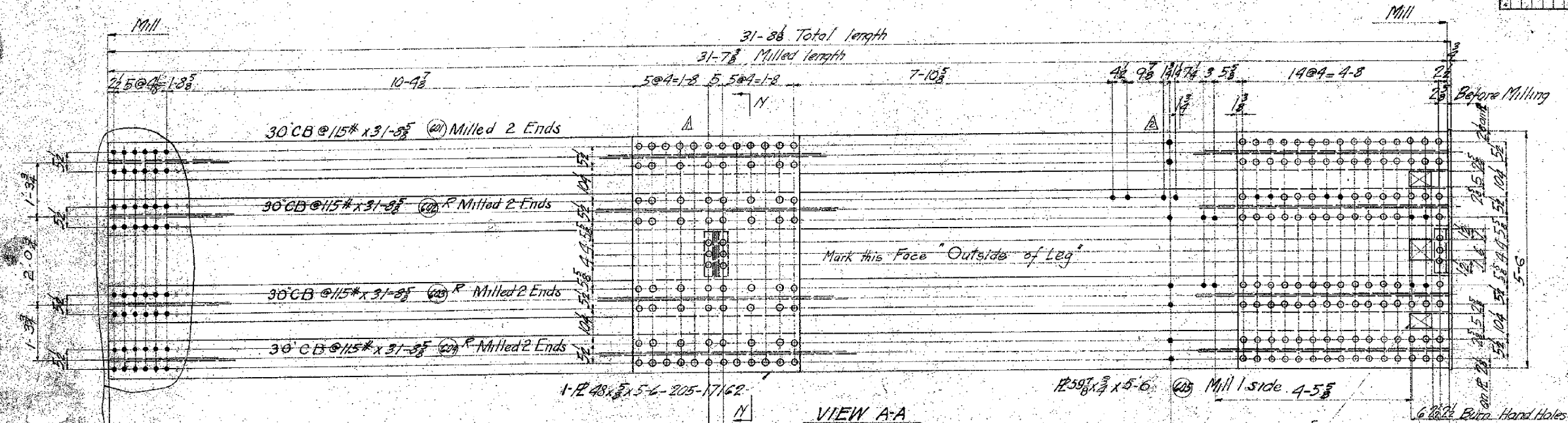
- 8-Ladder Sections T33^R as shown
- 8 " " T33^L opp hand
- 2 " " T34^R as shown
- 2 " " T34^L opp hand
- 4 " " T35^R as shown
- 4 " " T35^L opp hand



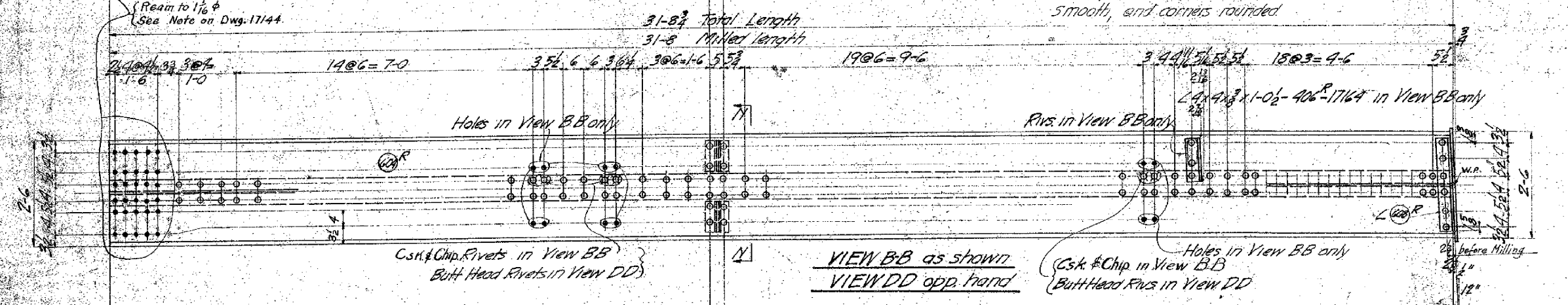
- 2 Ladder Sections T36^R as shown
- 2 " " T36^L opp hand

Rivets 7/8" unless noted
Holes 15/16" "
Paint: 1 coat of Red Lead

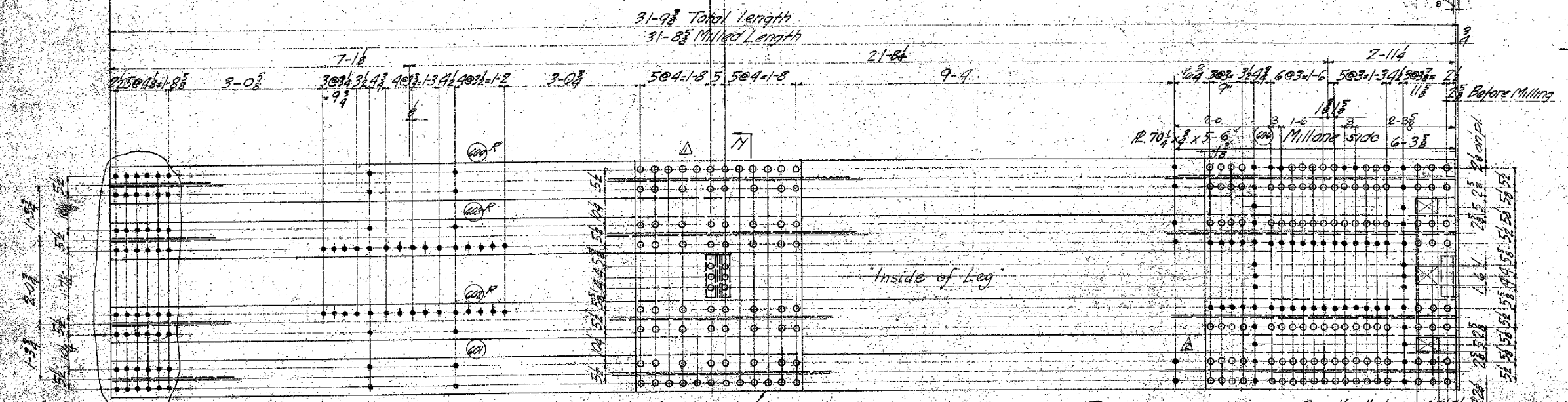
NO. REV'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
W642 C-7 12 17144-17164-62-63-64-65 STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO MAIN TOWER THIRD SECTION				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. G. A. Jacoby	TO: E. E. Stauffer	BY: E. E. Stauffer		
DATE: Sept. 23, 1927	SCALE: 3/4" = 1'-0"	DRAWING NO.		
APPROVED: G. E. W. H. C.	DATE: 10-27-27	17163		



VIEW A-A



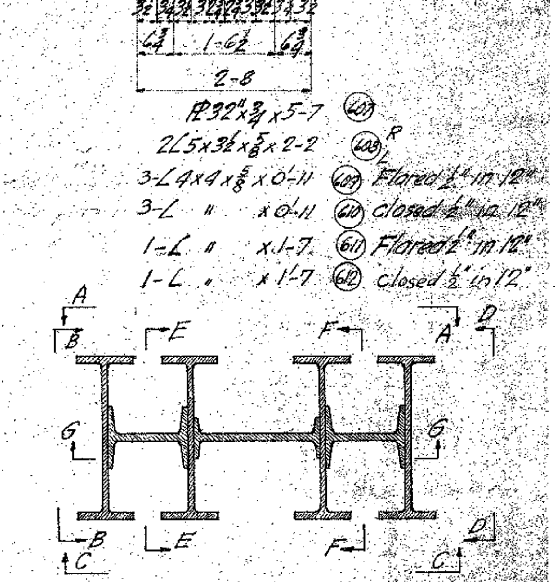
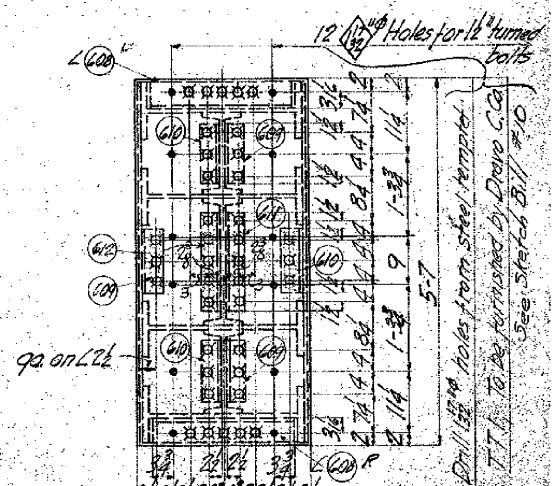
VIEW BB as shown
VIEW DD opp. hand



VIEW GC

Required
2-Top Tower Sections T7R as shown
2- " " T7L opp. hand

ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH.
Δ	Rivets changed intermediate batten plates	11-9-27	G.F.W.
Δ	Holes added in (60)	12-2-27	G.F.W.



Work Dwg 17166 and 17167 together for T7

Rivets 3/16
Holes 15/16 unless noted
Paint: 1 coat of Red Lead

W642	C7	12	17141-17162-64-67-72
NO. REQ'D	CONT. NO.	CODE	REFERENCE DWGS.
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO MAIN TOWER TOP SECTION			
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. 1225 BUSH AVE. CHICAGO, ILL.			
BY G.A. Jacoby	DATE 5/21/27	BY E.F. Shoemaker	DATE 10/27/27
APPROVED G.F.W.H.C.	DATE 10/27/27	APPROVED	DATE
DRAWING NO. 17166			

T62 - Detailed and billed on Dwg. 17168

23-17168 NS

12 Lattice bars 2 1/2 x 7/8 x 2-2 1/2 - 6-17168

1-Lattice bar 2 1/2 x 7/8 (2-3/4) ④ Ship bolted
CLOC

1/2" thick

VIEW A-A
12-7 1/2

6 @ 1-6 1/4 = 9-1 1/2
25-2 1/2 O to O top Flg.
19 @ 6 = 9-6

2-17 1/2 x 1-11 ⑥
2-4 x 1/8 x 1-7 1/2 - 23-17168
2-4 x 1/8 x 1-12 - 26-17168

2-64 x 3 x 3/8 x 24-5 5/8 ②

2-4 x 1/8 x 1-5 1/2 - 25-17168

2-18 x 1/8 x 25-3 ①

25-3 3/8 W.P. TO W.P. BK OF 25-17168

2-64 x 3 x 3/8 x 24-7 1/8 ③

2-17 1/2 x 1-11 3/4 ⑦

T14

19 @ 6 = 9-6
25-9 3/8 O to O Bot Flg.
27-10 5/8 W.P. TO W.P.

12-8 1/6

T54 Detailed & Billed on Dwg. 17168

1/2" thick

23-17168 NS

12-Lattice bars 6-17168

1-Lattice bars 2 1/2 x 7/8 (2-5 1/8) ⑤ Ship bolted
CLOC

6 @ 1-6 1/4 = 9-1 1/2

SECTION B-B

25-9 3/8 O to O bot flg

4-Diagonals T9

4-Gusset Plates T62R as shown

4-1 T62L opp. hole

T 59 Detailed & Billed on Dwg 17168

12- $\frac{3}{8}$ thick

24' 1-76'

24' 1-76'

12-Lattice bars - 6-17168

SECTION BB

1-Lattice bars $2\frac{1}{2} \times \frac{7}{16}$ (2-3 $\frac{1}{2}$ ' 5) Ship bolted C to C 6 @ 1-6 $\frac{1}{4}$ ' = 9-12'

21-3 $\frac{1}{2}$ ' 3 $\frac{1}{2}$ ' 403 1/4-1-1' 1-8 $\frac{1}{2}$ '

25-48' 0 to 0' batt flg

4-Diagonals T 9

4-Gusset Plates T62R as shown

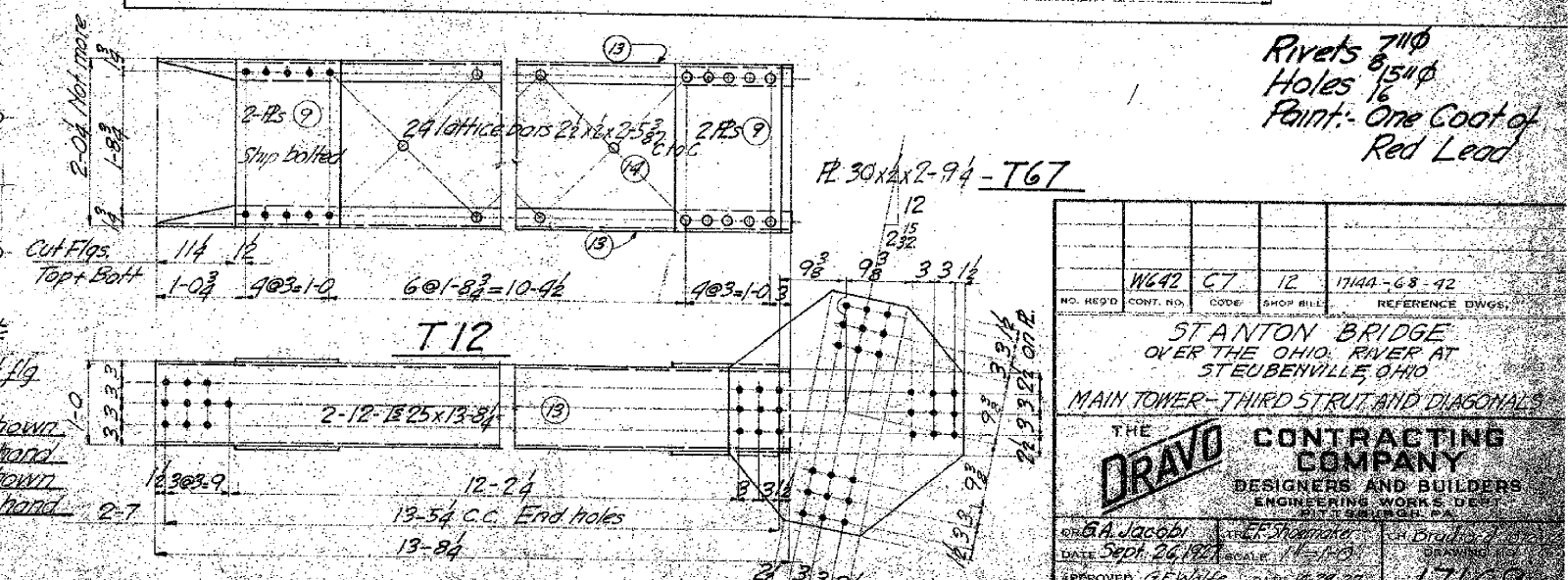
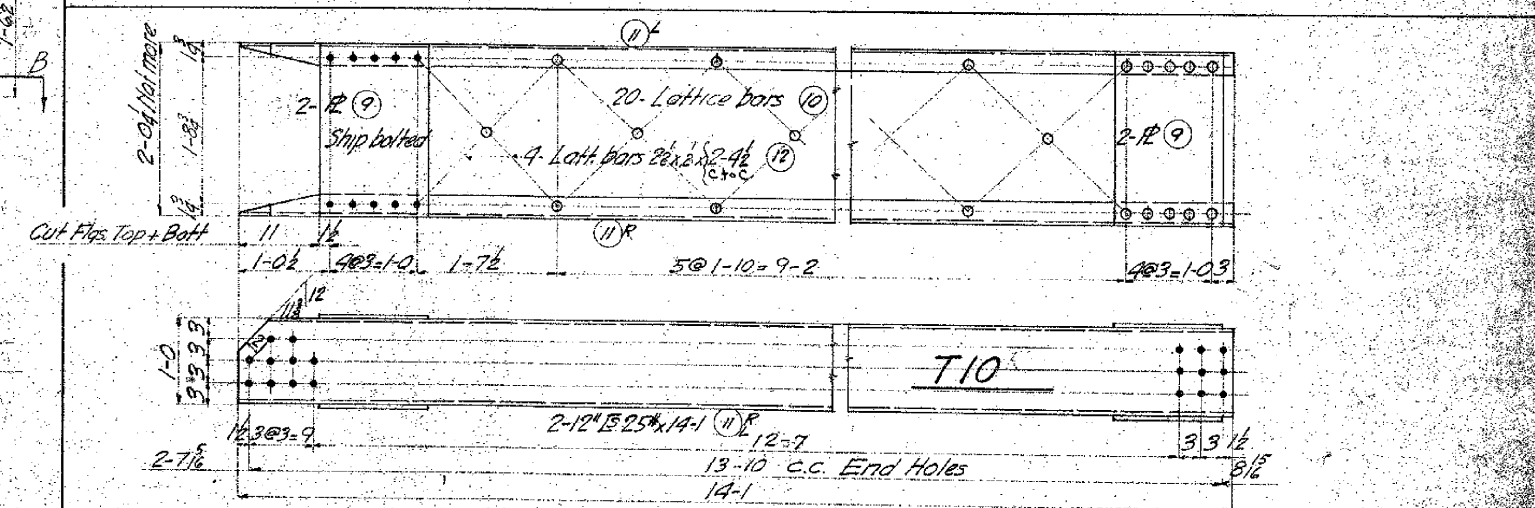
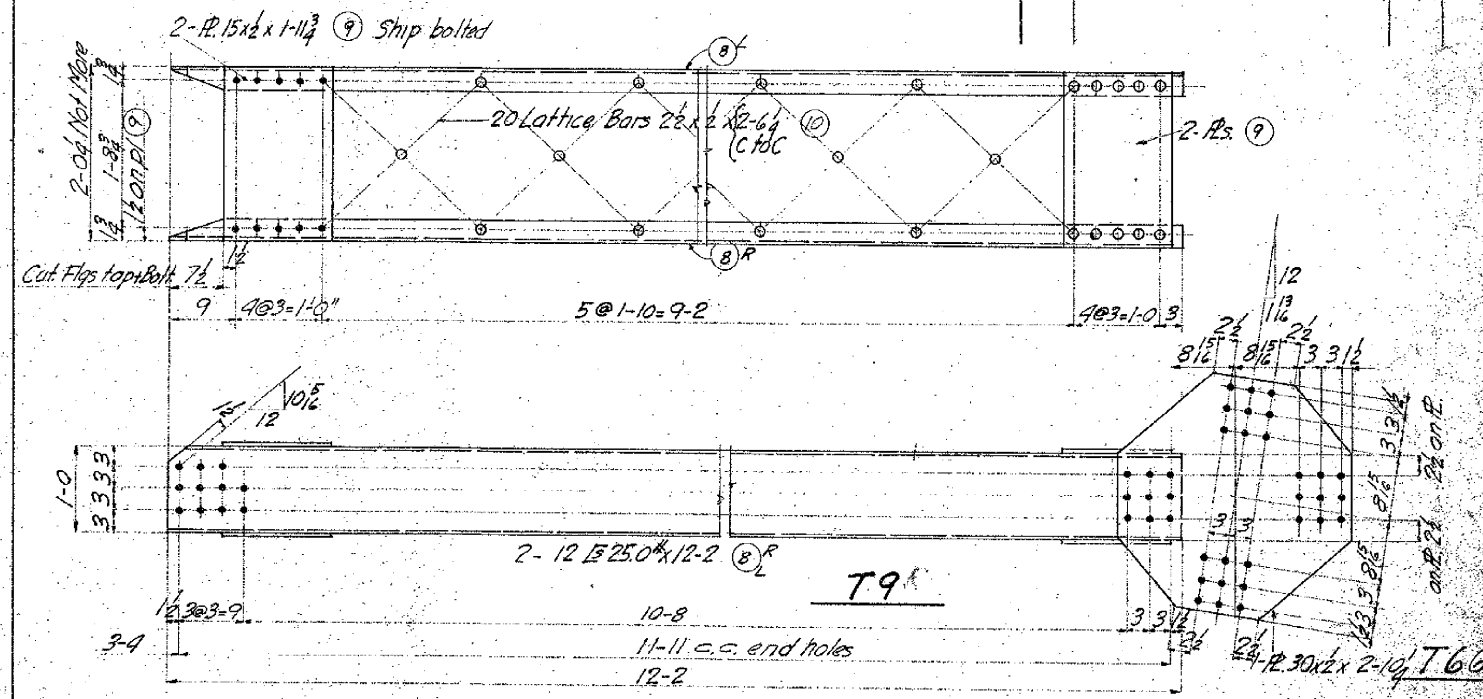
4-1' T62L opp. horns

Sym abt this

4-Diagonals	T9	4-Gusset Plates	T62R as shown
4- "	T10	4- "	T62L opp. hand
4- "	T11	4- "	T63R as shown
4- "	T12	4- "	T63L opp. hand
2-Third Struts	T14	4- "	T66
		4- "	T67

[illegible]

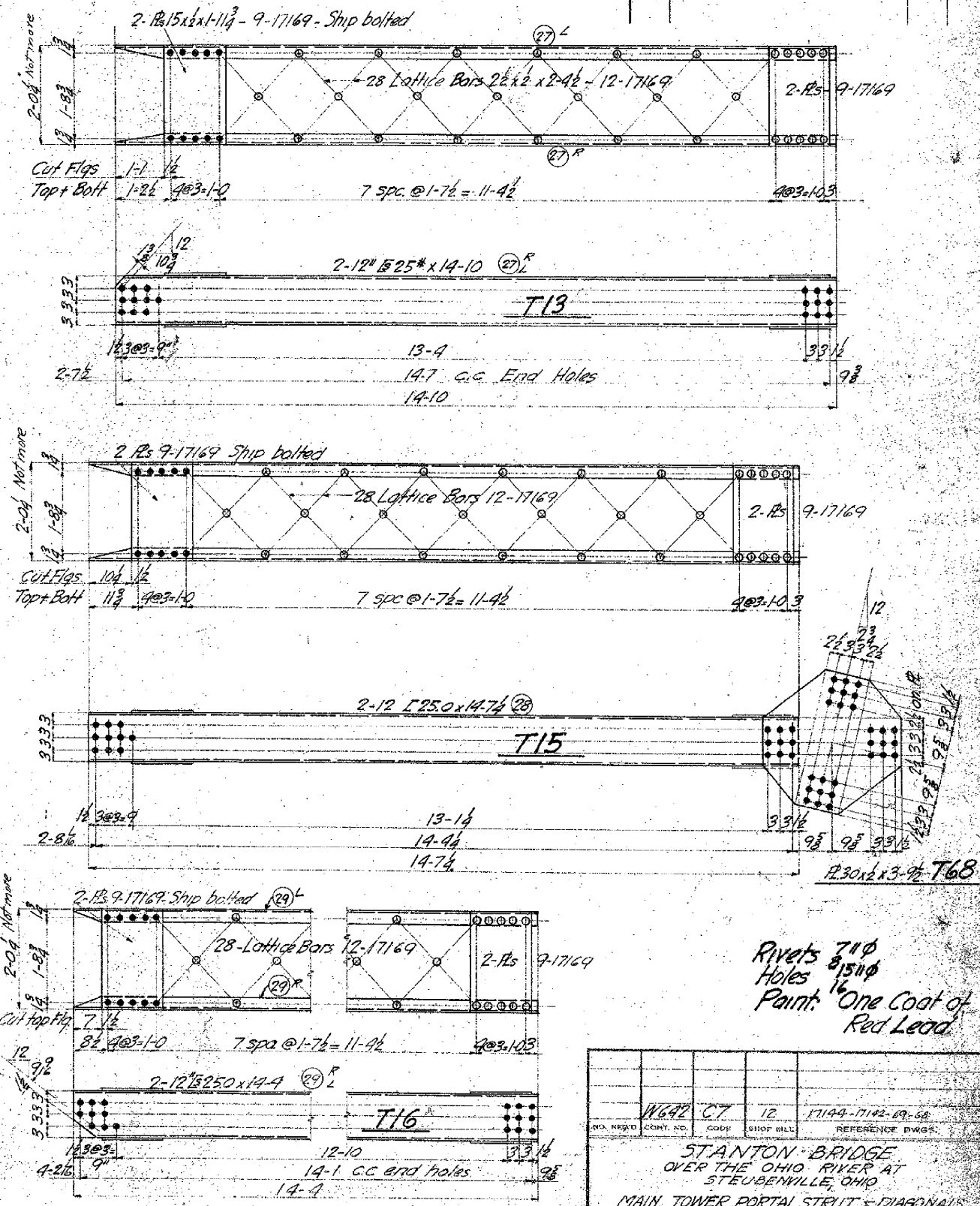
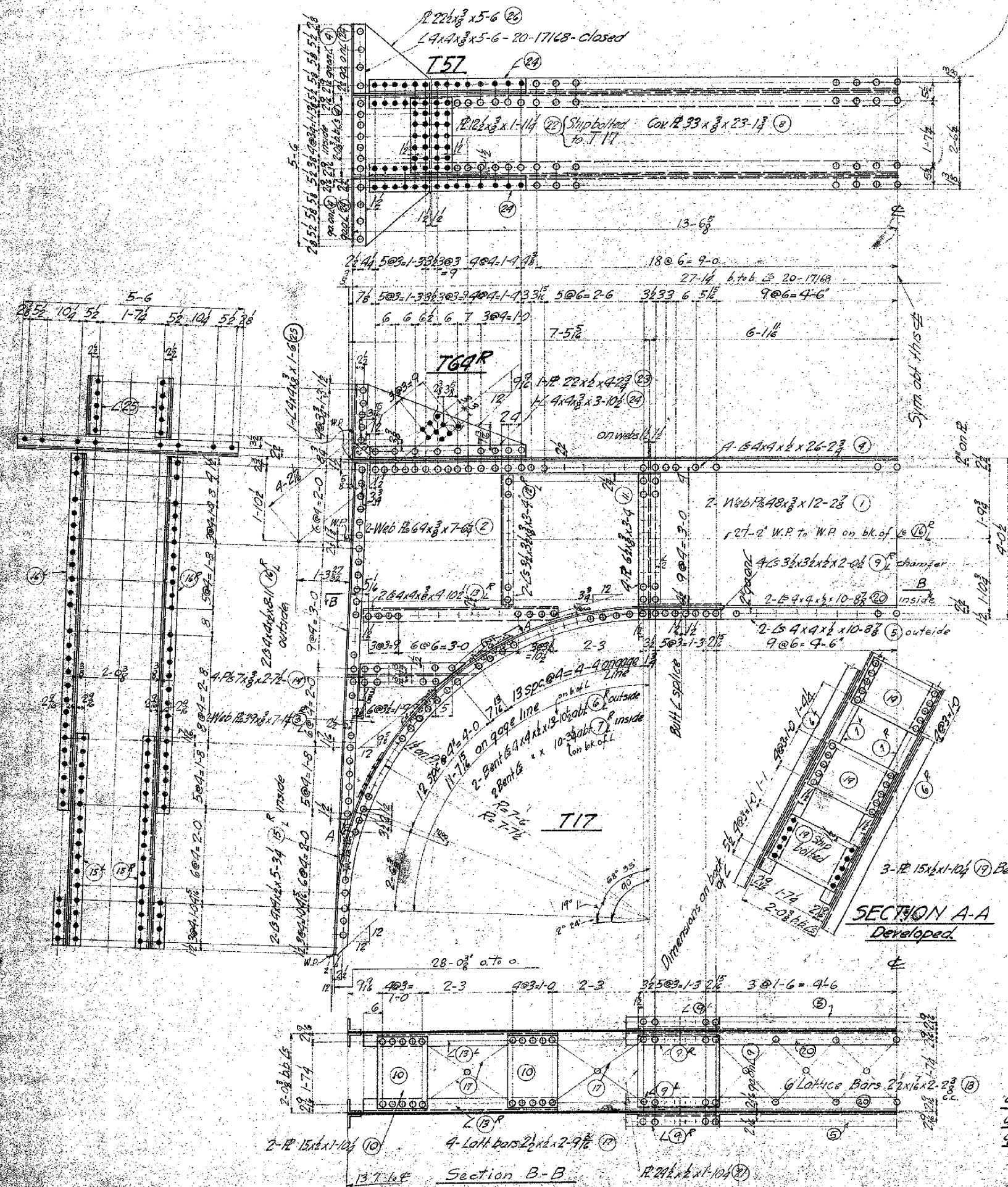
ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH.
1	Dimension changed for T10	1-8-27	G.A.



Rivets 711¢
Holes 8,154¢
Paint: One Coat of
Red Lead

[illegible]

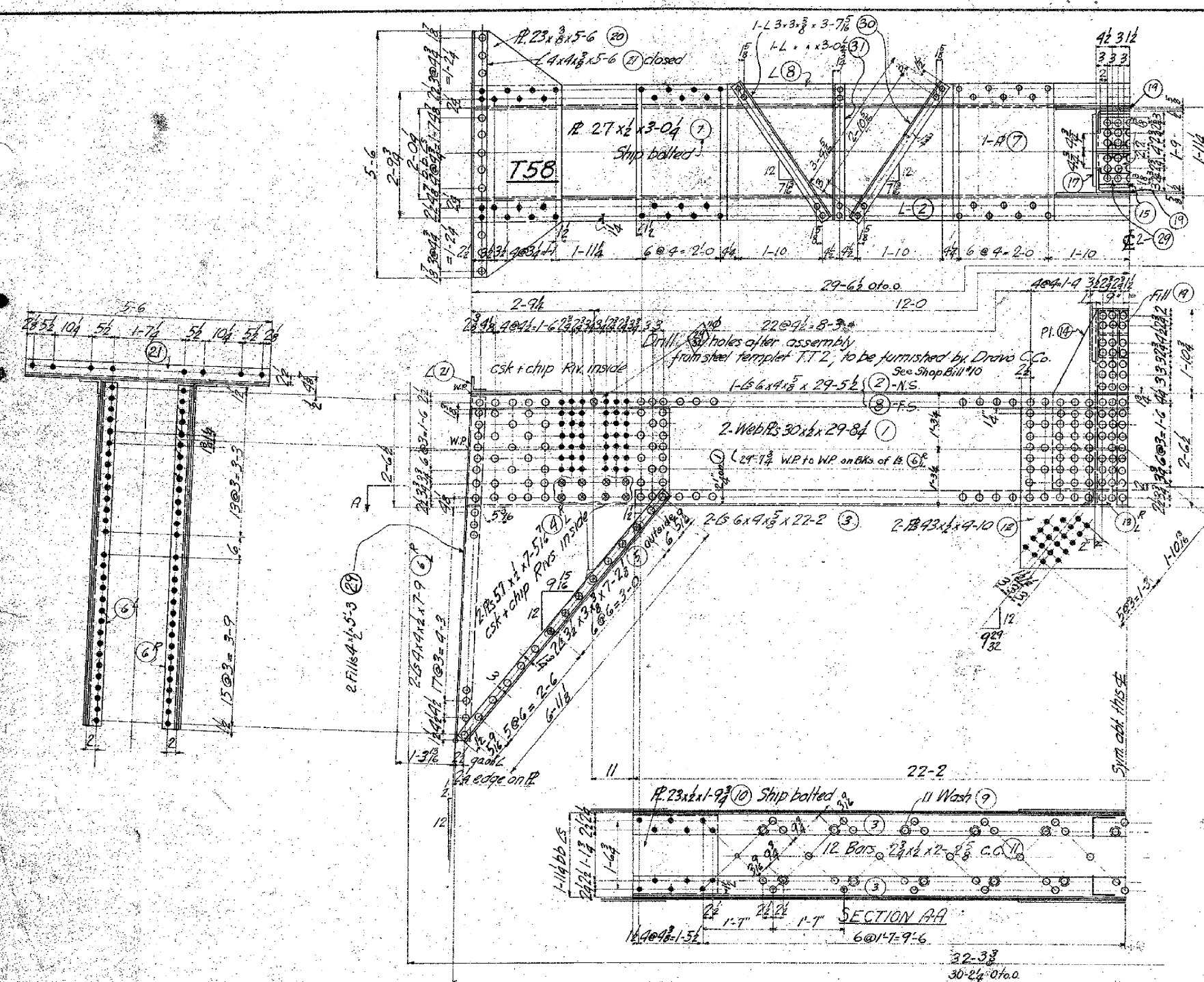
ALTERATIONS										MARK	DESCRIPTION	DATE	AUTH
1	2	3	4	5	6	7	8	9	10				
11	12	13	14	15	16	17	18	19	20				
21	22	23	24	25	26	27	28	29	30				
31	32	33	34	35	36	37	38	39	40				
41	42	43	44	45	46	47	48	49	50				
51	52	53	54	55	56	57	58	59	60				
61	62	63	64	65	66	67	68	69	70				
71	72	73	74	75	76	77	78	79	80				
81	82	83	84	85	86	87	88	89	90				
91	92	93	94	95	96	97	98	99	100				



- 4-Diagonals T13
- 4- " T15
- 4- " T16
- 2-Portal Struts T17
- 4- Brackets T57
- 4- Gusset Plates T64R as shown
- 4- " T64L opposite
- 4- " T68

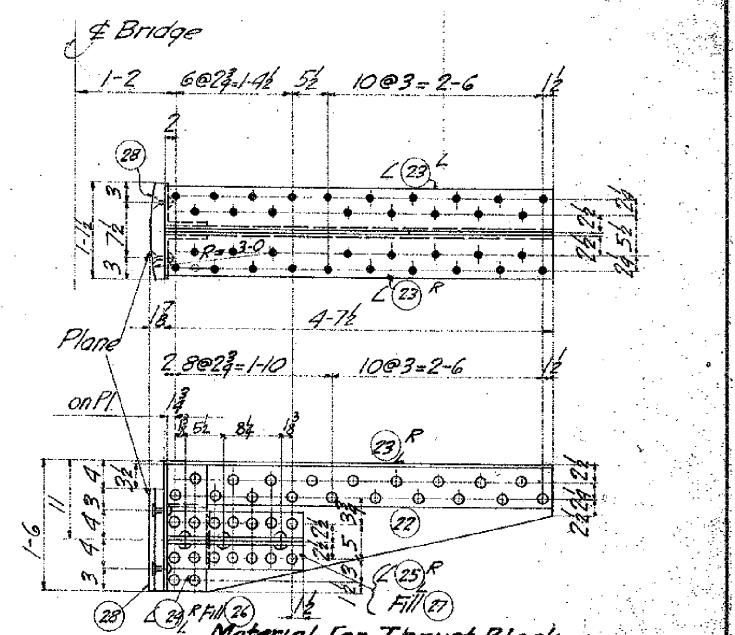
Rivets 7/16
Holes 15/16
Paint: One Coat of Red Lead

NO.	REV.	DATE	BY	CHKD.	DESCRIPTION
1	1	11/14/44	J. A. Jacob	J. A. Jacob	STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO
2	1	11/14/44	J. A. Jacob	J. A. Jacob	MAIN TOWER PORTAL STRUT & DIAGONALS
3	1	11/14/44	J. A. Jacob	J. A. Jacob	DESIGNERS AND BUILDERS
4	1	11/14/44	J. A. Jacob	J. A. Jacob	ENGINEERING WORKS DEPT.
5	1	11/14/44	J. A. Jacob	J. A. Jacob	PITTSBURGH, PA.
6	1	11/14/44	J. A. Jacob	J. A. Jacob	DATE: Sept 26, 1927
7	1	11/14/44	J. A. Jacob	J. A. Jacob	APPROVED: J. A. Jacob
8	1	11/14/44	J. A. Jacob	J. A. Jacob	DATE: 10-27-27
9	1	11/14/44	J. A. Jacob	J. A. Jacob	17170



- 4-6x6x1/2 x 4-4 1/2 (B) R
- 2-RS 40x1/2 x 4-1 (14)
- 1-21" CB @ 104" x 1-5 (15) Fit 2 ends
- 4-6x6x1/2 x 1-6 exact (16) plane 2 ends
- 2-RS 14x1 x 1-7 (17) planed from 1/8" thick
- 4-RS 12x2 x 1-6 (18)
- 2-Fills 13x2 x 0-5 1/2 (19)
- 2-RS 17 1/2 x 3/8 x 1-5 (29) Fit 2 ends.

ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH'D
Δ	Gage Added for L (29)	11-30-27	G.F.W.



Material for Thrust Block

- 1-R. 17 1/2 x 2 x 4-7 1/2 (22)
- 2-6x6x1/2 x 4-7 1/2 (23) R
- 2-6x6x1/2 x 1-5 1/2 (24) R Fit one end g.o.s.3"
- 4-6x4x1/2 x 1-7 1/2 (25) R Fit one end g.o.s. 2 1/2"
- 2-Fills 5 1/2 x 2 x 0-1 1/2 (26)
- 2 " 8x1" x 1-1 1/2 (27)
- 1-R. 13 1/2 x 1/8 x 1-2 (28) Plane cyl. Surface from 2" thick

4 THRUST BLOCKS T18

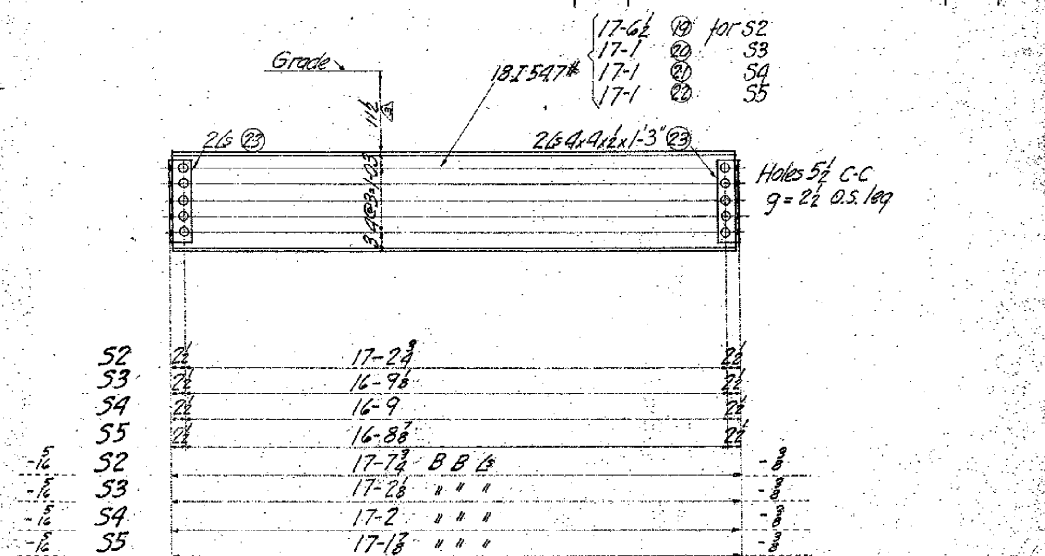
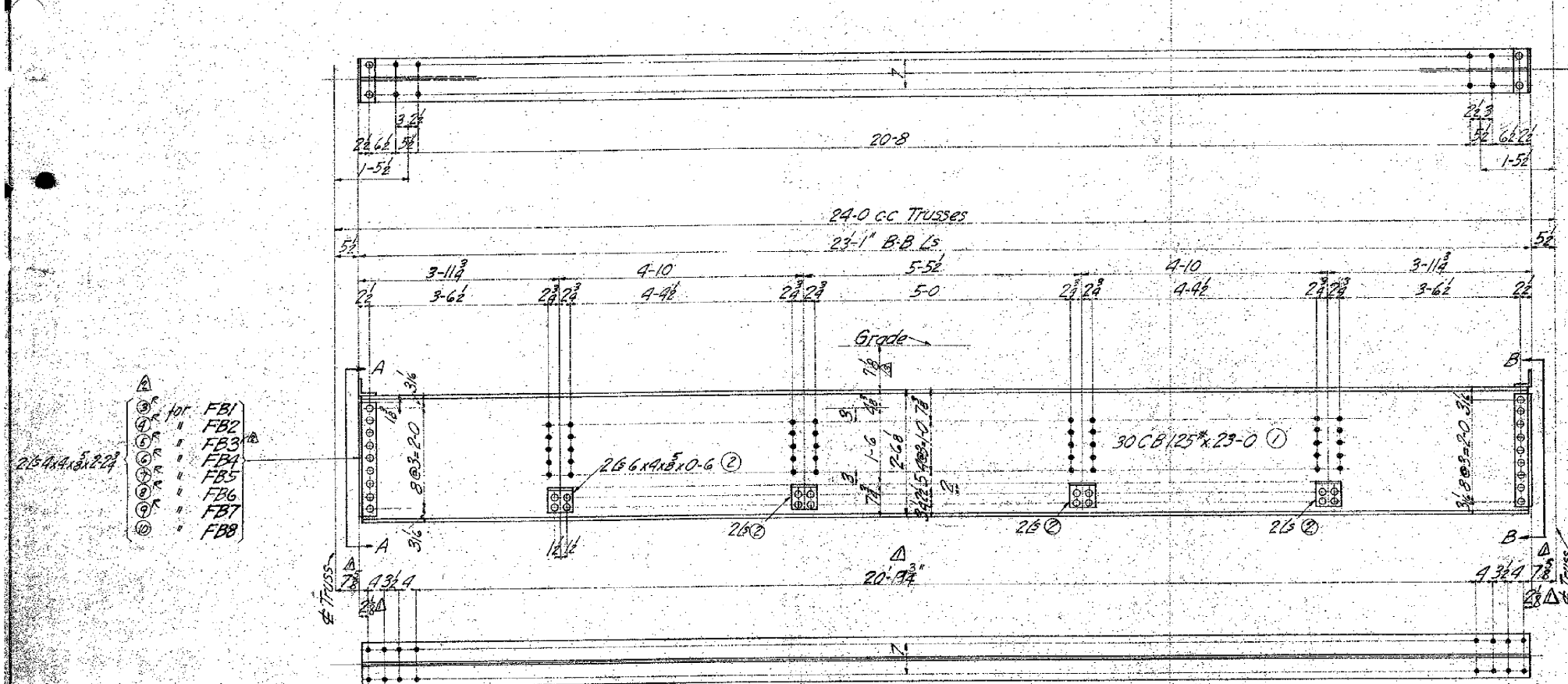
Rivets 7/16"
Holes 15/16"
Paint: One coat Red Lead.

2-TRUSS MEMBER T19
4-BRACKETS T58

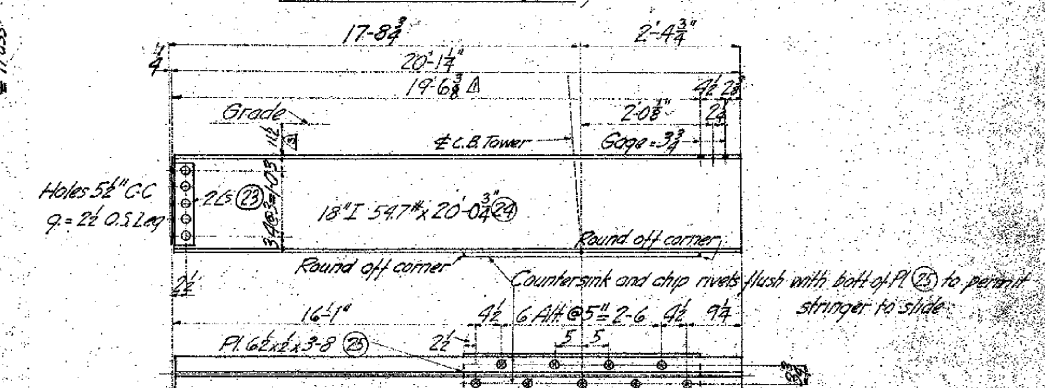
NO. RECD.	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
W642	C7	12	17144-17142	
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO MAIN TOWER-TRUSS MEMBER				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. G.A. Jacobi	TR. E.F. Shumaker	SCALE 3/4"=1'-0"	DATE 10-29-27	
DATE 10-29-27	APPROVED G.F. Wolfe	DATE 10-29-27	17144	

1	2	3	4	5	6	7	8	9
1								
2								
3								
4								
5								
6								
7								
8								
9								

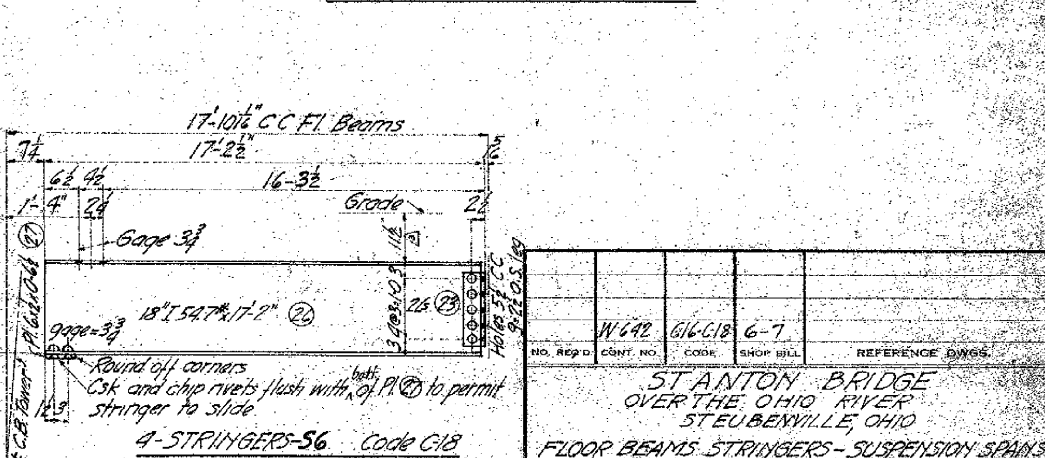
ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH
1	7 ₂ to 7 ₈ 20'-10" to 20'-2 ¹ / ₂ " 19'-8 ¹ / ₂ " to 19'-6 ¹ / ₂ " 2 to 2 ¹ / ₈	4-30-27	S.T.
2	1/2 to 1/4 incl. chgd to 3/8 to 1/8 incl. FB2 changed to FB3	10-24-27	S.T.
3	Grade Elev. changed	11-16-27	S.T.



NO. REQ'D	DESCRIPTION	MARK	A	B	C	D	E	F	G	H	K
42	FLOOR BEAMS	FB1	2	1 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB2	1 1/2	1 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB3	2	2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
2	"	FB4	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB5	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB6	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB7	2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
5	"	FB8									



NO. REQ'D	DESCRIPTION	MARK	A	B	C	D	E	F	G	H	K
42	FLOOR BEAMS	FB1	2	1 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB2	1 1/2	1 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB3	2	2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
2	"	FB4	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB5	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB6	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB7	2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
5	"	FB8									



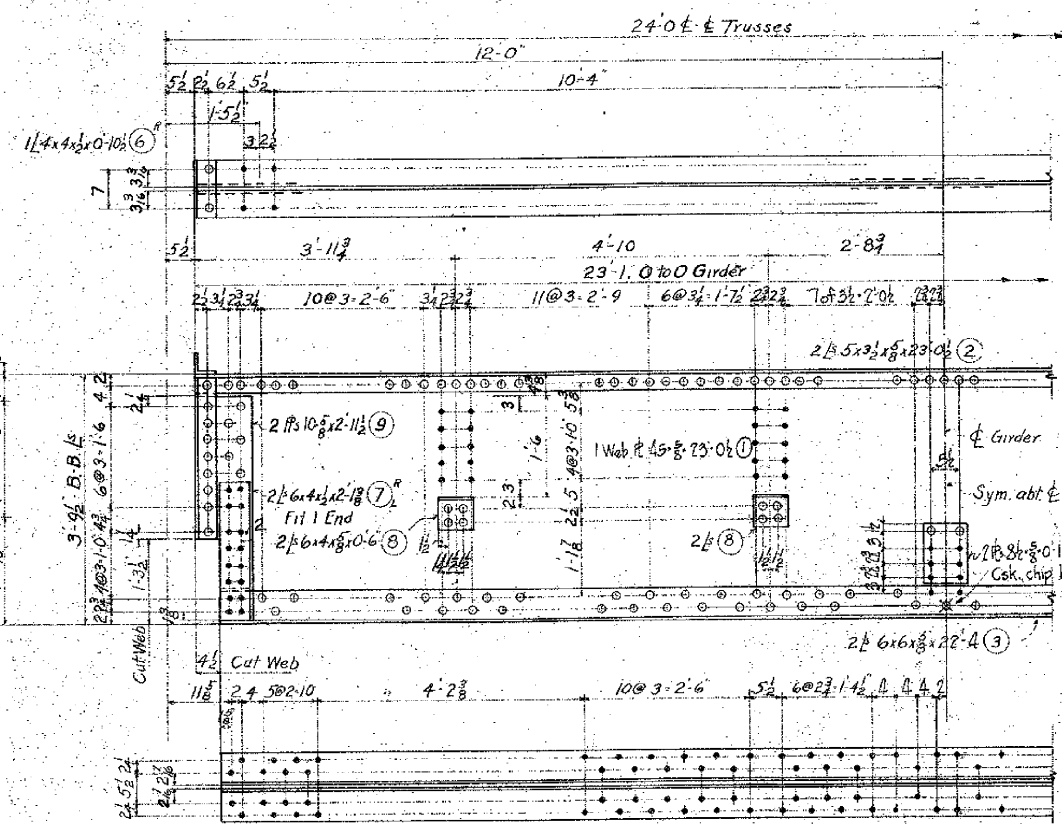
NO. REQ'D	DESCRIPTION	MARK	A	B	C	D	E	F	G	H	K
42	FLOOR BEAMS	FB1	2	1 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB2	1 1/2	1 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB3	2	2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
2	"	FB4	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB5	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB6	1 1/2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
4	"	FB7	2	2 1/2	2 1/2	4 1/2	4 1/2	2 1/2	2 1/2	3 1/2	1 1/2
5	"	FB8									

VIEW A-A AS SHOWN
VIEW B-B OPP HAND
For FB1 to FB7 Inclusive

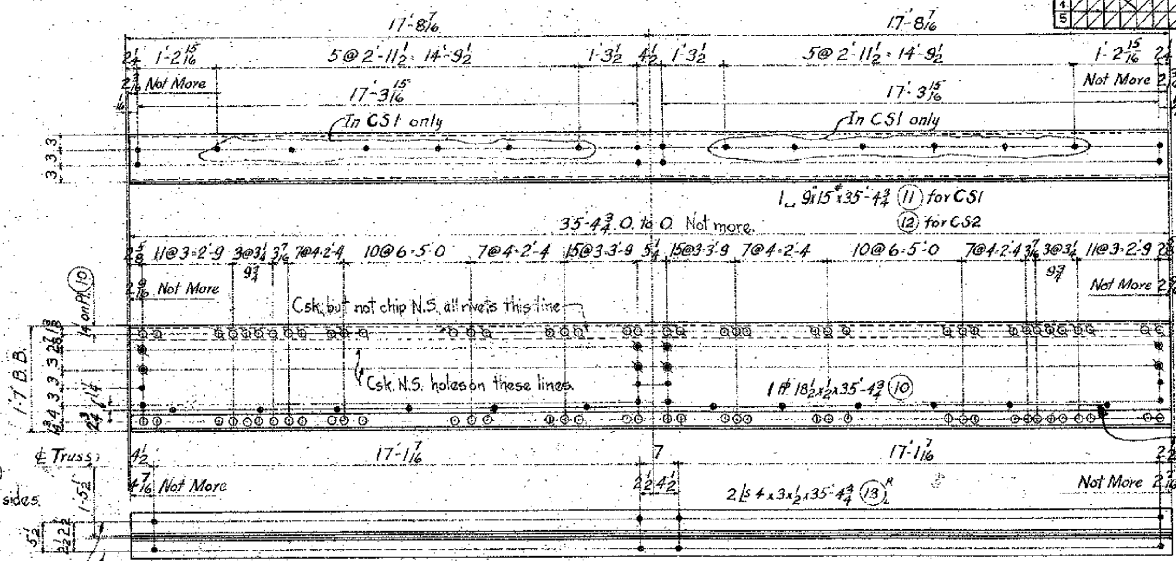
VIEW A-A AND BB
For FB8 only

Rivets - 3/8
Open Holes - 1 1/2
Paint - One coat of red lead

NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE Dwg.
42	616-C18	6-7		
STANTON BRIDGE OVER THE OHIO RIVER STUBENVILLE, OHIO FLOOR BEAMS STRINGERS - SUSPENSION SPANS				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. 1115 S. MAIN ST. STUBENVILLE, OHIO				
DR. J. H. H. H.	TR. E. F. H. H.	CH. E. L. H. H.	DRAWING NO.	
DATE 9-19-27	SCALE 3/4"=1'-0"	DATE 9-20-27	17173	
APPROVED G. F. Wolfe				



2 FLOOR BEAMS F.B. 9 (Code C17)



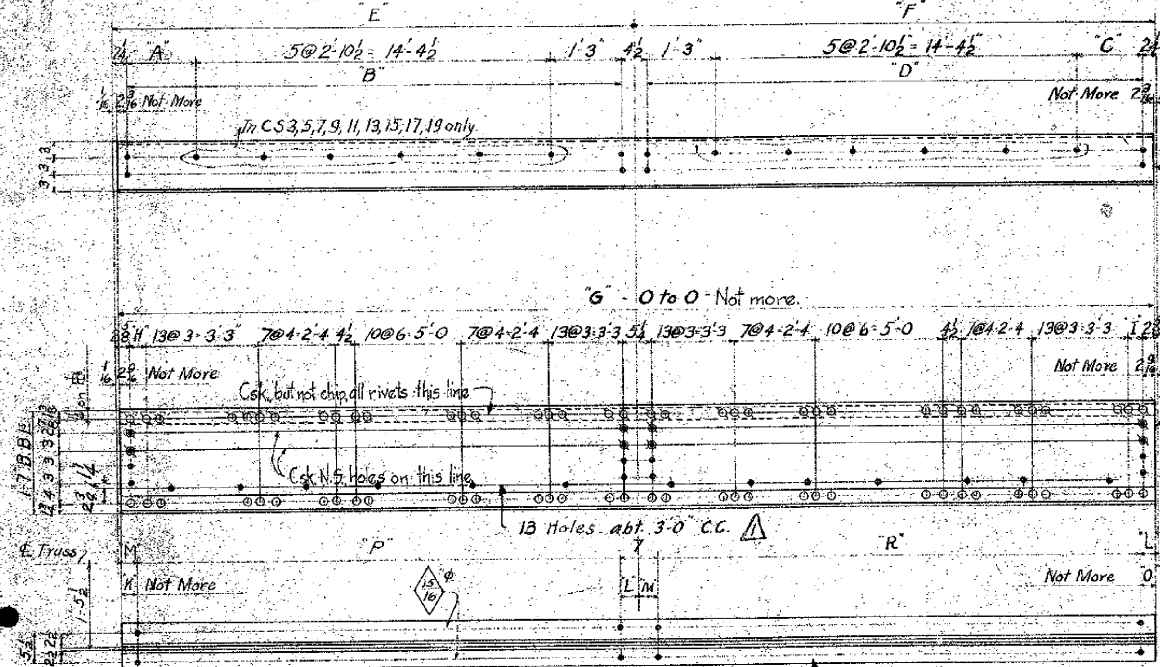
7 CURB STRINGERS CS1st AS SHOWN & NOTED

7 " CS1st OPP. HAND " " "

7 " CS2nd AS SHOWN " " "

7 " CS2nd OPP. HAND " " "

CODE C19



- (14) for CS3
- (15) for CS4
- (16) for CS5
- (17) for CS6
- (18) for CS7
- (19) for CS8
- (20) for CS9
- (21) for CS10
- (22) for CS11
- (23) for CS12
- (24) for CS13
- (25) for CS14
- (26) for CS15
- (27) for CS16
- (28) for CS17
- (29) for CS18

- 1 R. 18x12x1/2 (28) for CS3, CS4
- 1 R. do 18x12x1/2 (29) for CS5, CS6
- 1 R. do 18x12x1/2 (30) for CS7, CS8
- 1 R. do 18x12x1/2 (31) for CS9, CS10
- 1 R. do 18x12x1/2 (32) for CS11, CS12
- 1 R. do 18x12x1/2 (33) for CS13, CS14
- 1 R. do 18x12x1/2 (34) for CS15, CS16
- 1 R. do 18x12x1/2 (35) for CS17, CS18

3 CURB STRINGERS CS3rd

3 " CS4th

1 " CS5th

1 " CS6th

1 " CS7th

1 " CS8th

1 " CS9th

1 " CS10th

1 " CS11th

1 " CS12th

1 " CS13th

1 " CS14th

1 " CS15th

1 " CS16th

1 " CS17th

1 " CS18th

3 CURB STRINGERS CS3rd

3 " CS4th

1 " CS5th

1 " CS6th

1 " CS7th

1 " CS8th

1 " CS9th

1 " CS10th

1 " CS11th

1 " CS12th

1 " CS13th

1 " CS14th

1 " CS15th

1 " CS16th

1 " CS17th

1 " CS18th

AS SHOWN & NOTED

48 BRACKETS K3rd

6 " K4th

4 " K5th

4 " K6th

10 " K7th

10 " K8th

CODE C19

48 BRACKETS K3rd

6 " K4th

4 " K5th

4 " K6th

4 " K7th

4 " K8th

AS SHOWN

OPP. HAND

MARK	S	T	U
K3	2 1/2	2 1/2	1 1/2
K4	2 1/2	2 1/2	1 1/2
K5	2 1/2	2 1/2	1 1/2
K6	2 1/2	2 1/2	1 1/2
K7	2 1/2	2 1/2	1 1/2
K8	2 1/2	2 1/2	1 1/2

Notes:-
Rivets 3/4" unless noted.
Open holes 1 1/2" unless noted.
Shop paint - One coat red lead.

MARK	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R
CS3	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS4	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS5	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS6	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS7	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS8	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS9	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS10	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS11	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS12	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS13	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS14	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS15	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS16	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS17	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2
CS18	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2	1-2 1/2

- 2 R. 18x12x1/2 (36) for CS3, CS4
- 2 R. do 18x12x1/2 (37) for CS5, CS6
- 2 R. do 18x12x1/2 (38) for CS7, CS8
- 2 R. do 18x12x1/2 (39) for CS9, CS10
- 2 R. do 18x12x1/2 (40) for CS11, CS12
- 2 R. do 18x12x1/2 (41) for CS13, CS14
- 2 R. do 18x12x1/2 (42) for CS15, CS16
- 2 R. do 18x12x1/2 (43) for CS17, CS18

ALTERATIONS	
MARK	DESCRIPTION
A	Holes added in Webs of CS1 to CS18

12 Holes abt. 3'-0" C.C.

84 SUSPENDER ANGLES SA1
32 " SA2
18 " SA3

CODE C15

4 SUSPENDER ANGLES SA4

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.

FLOOR BEAMS, CURB STRINGERS & BRACKETS SUSPENDER ANGLES

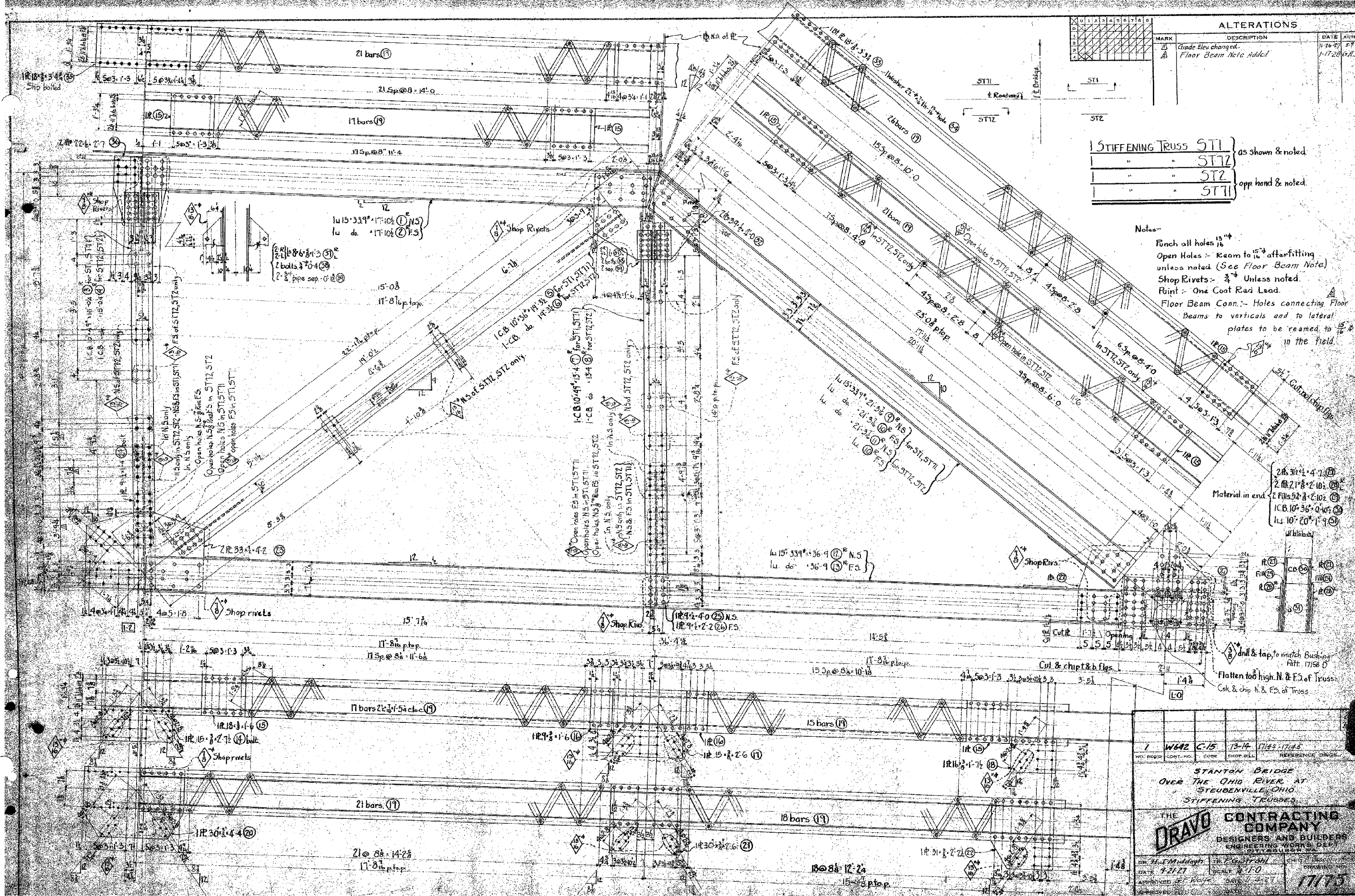
THE DRAYO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

DR. H.J. Middagh Jr.
DATE 10-12-27
APPROVED G.W.H. DATE 11-7-27

TR. O'Dell
DATE 11-10-27
DATE 11-7-27

G.A. Jacoby
DATE 11-10-27
DATE 11-7-27

DRAWING NO.
1774



ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
Δ	Grade Elev. changed.	1-26-27	ST
Δ	Floor Beam Note Added	1-17-28	G.R.T.

1	STIFFENING TRUSS	ST1	as shown & noted
"	"	ST2	"
"	"	ST3	opp hand & noted
"	"	ST4	"

Notes:-
Punch all holes 13"
Open Holes - Room to 15" after fitting unless noted (See Floor Beam Note)
Shop Rivets - 3/4" Unless noted.
Paint - One Coat Red Lead.
Floor Beam Conn. - Holes connecting Floor Beams to verticals and to lateral plates to be reamed to 15/16" in the field.

Material in end:
2 R. 31/2" x 4" x 1/2"
2 R. 21/8" x 2" x 1/2"
2 Fills 5/8" x 2" x 1/2"
1 C.B. 10" x 36" x 1/2"
1 L. 10" x 20" x 1/2"

1

W442 C.15

13-14

17143

17145

NO. REQD.

CONT. NO.

CODE

SHOP BILL

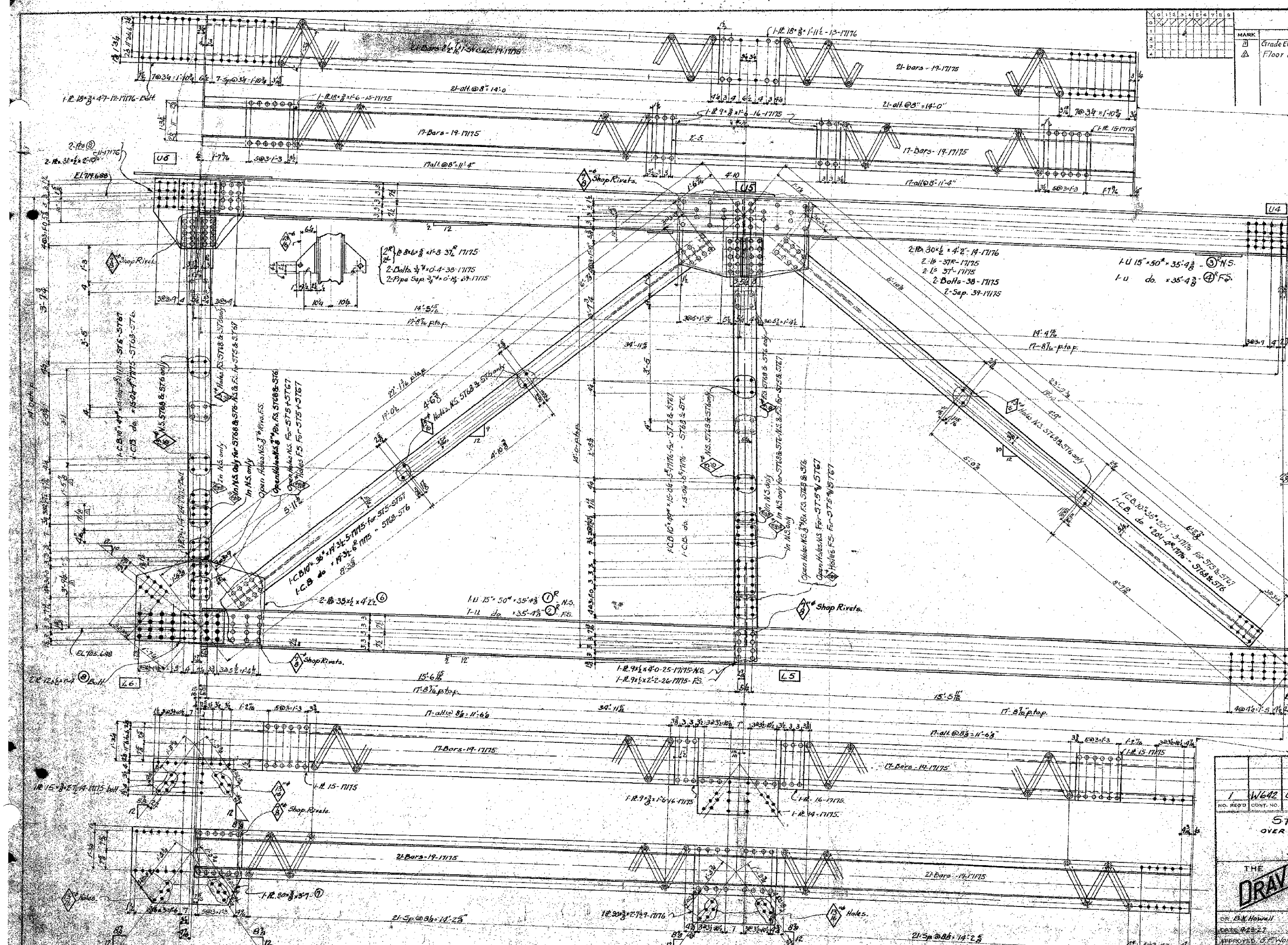
REFERENCE DWGS.

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO
STIFFENING TRUSSES

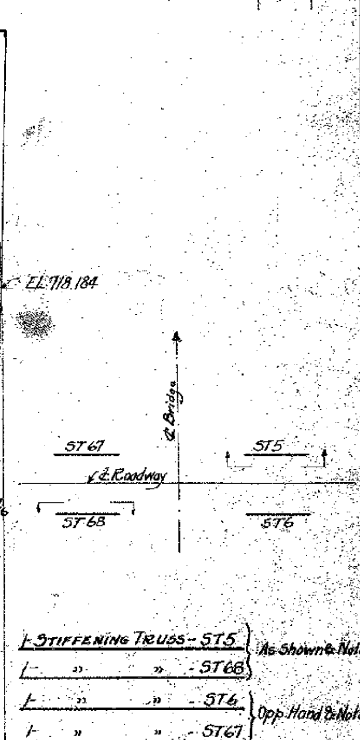
THE
DRAYO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
ATTN: DRAYO

DR. H. E. MIDDAGH
DATE 4-21-27
APPROVED J. F. WOLF
DATE 1-2-27

DR. P. G. STROHL
SCALE 3/4" = 1'-0"
DRAWING NO.
17175

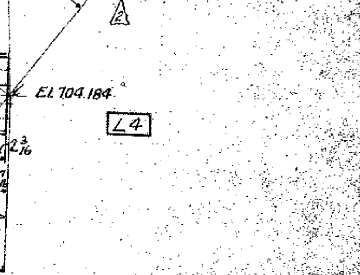


ALTERATIONS			
MARK	DESCRIPTION	DATE	APPROVED
1	Grade Elev. changed.	11-26-27	S.T.
2	Floor Beam Note Added	1-18-28 G.H.J.	

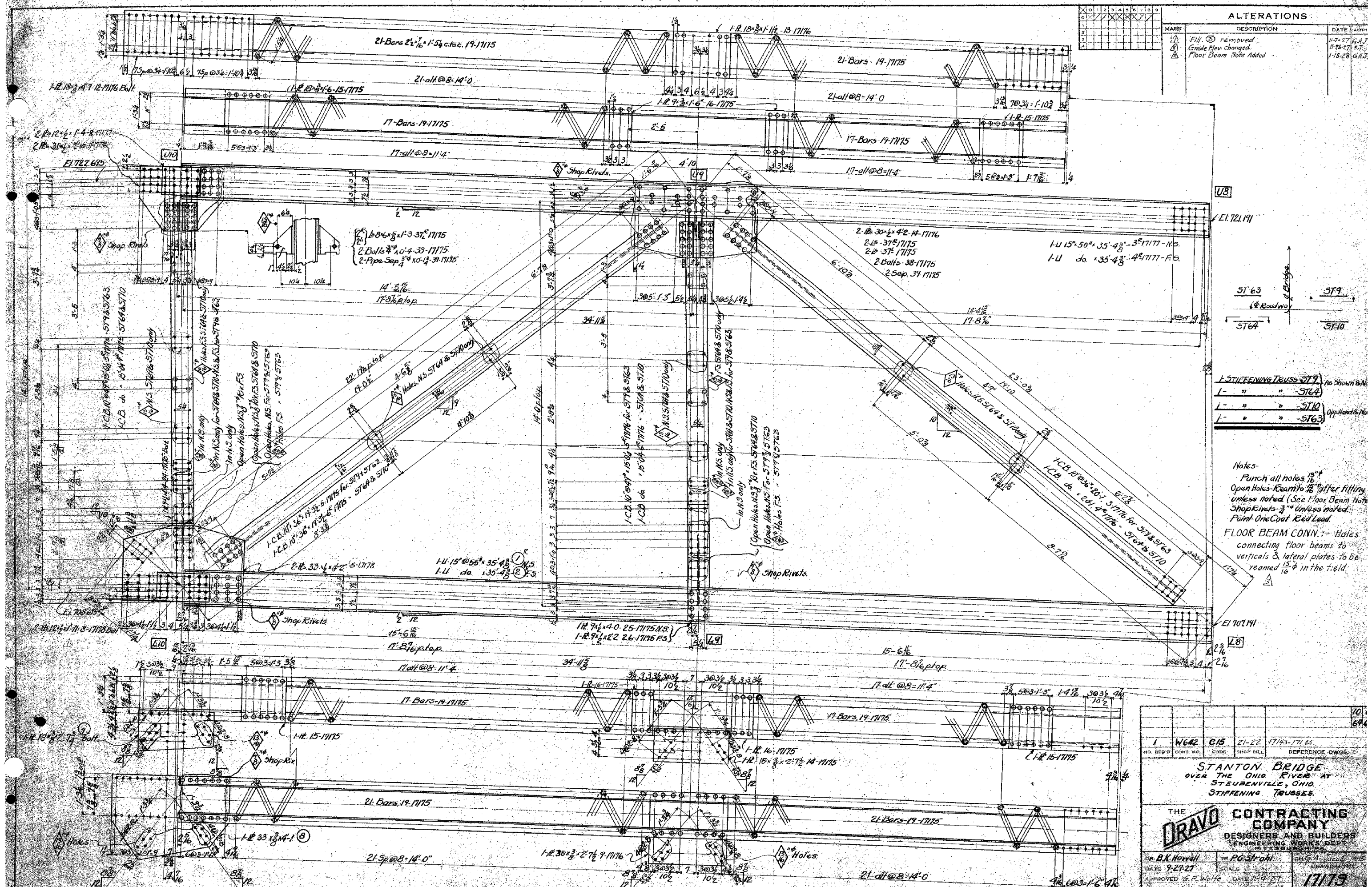


Notes:

- Punch all holes 1/8" 16"
- Open Holes - Ream to 1/8" after filling unless noted. (See Floor Beam Note)
- Shop Rivets - Unless noted
- Paint - One Coat Red Lead
- FLOOR BEAM CONN. - Holes connecting floor beams to verticals & lateral plates to be reamed 1/8" in the field

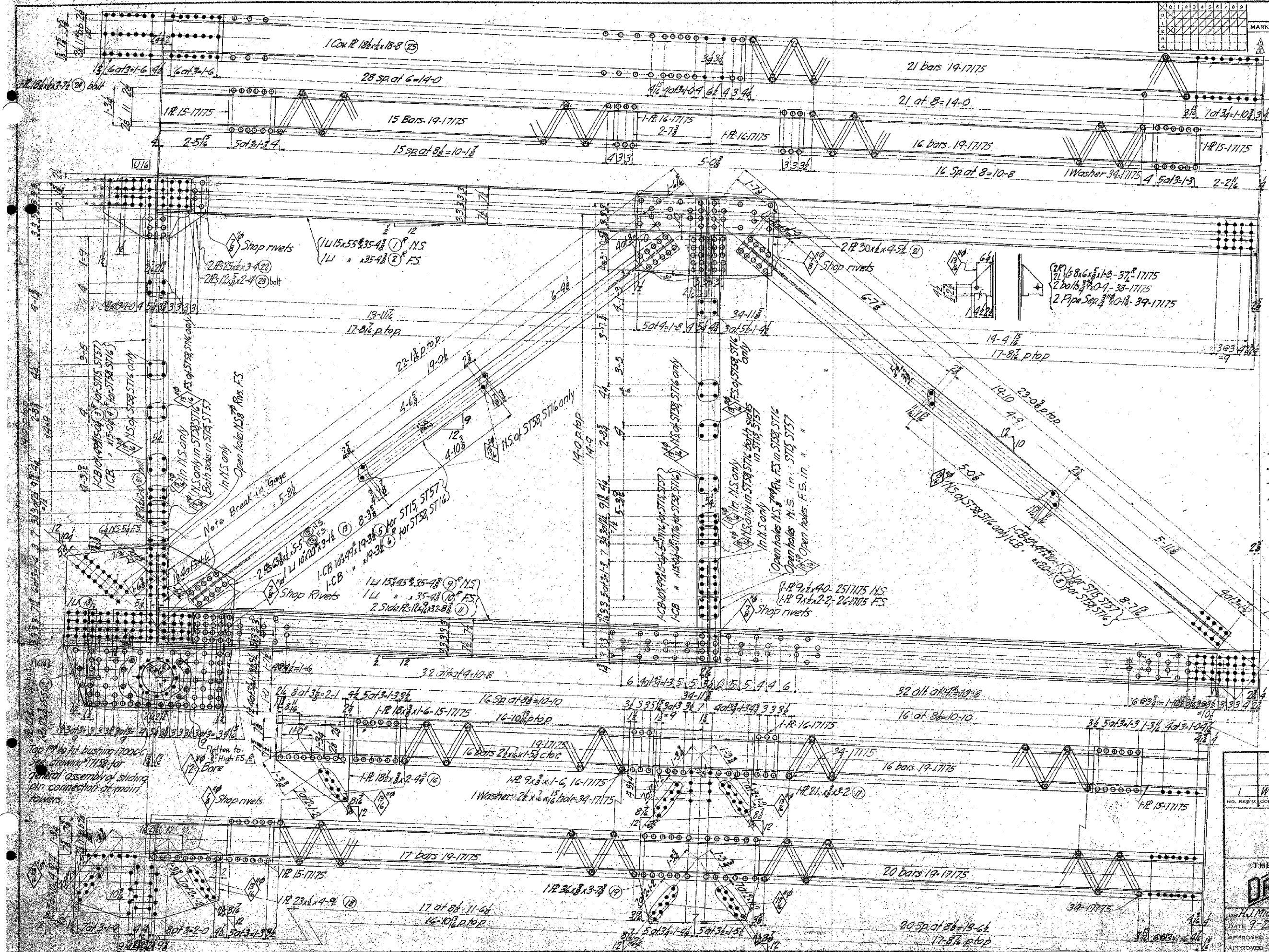


1 W642 C15 17-18 17-19-1775		6 4
NO. REQD.	CONT. NO.	66
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO		
STIFFENING TRUSSES		
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.		
DR. B.H. HOWELL	DR. FOSBROGH	DR. G.A. LEAH
DATE 11-26-27	DATE 1-18-28	DATE 1-18-28
APPROVED G.P. WOLF	DATE 1-18-28	1777



ALTERATIONS				
MARK	DESCRIPTION	DATE	AUTH	
⚠	Fill. ③ removed	4-7-27	G.A.J.	
⚠	Grade Elev. changed	11-26-27	E.T.	
⚠	Floor Beam Note Added	1-18-28	G.H.J.	

					10
					64
1	W642	C15	21-22	17143-171 45	
NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.	
STANTON BRIDGE					
OVER THE OHIO RIVER AT					
STUEBENVILLE, OHIO.					
STIFFENING TRUSSES.					
<div> <div>THE</div> <div>DRAVO</div> <div>CONTRACTING COMPANY</div> <div>DESIGNERS AND BUILDERS</div> <div>ENGINEERING WORKS DEPT.</div> <div>111 F STREET WASHINGTON, D.C.</div> </div>					
DR. B.K. Howell		TR. P.G. Strohl		CH. G.A. Jacob	
DATE 9-27-27		SCALE		DRAWING NO.	
APPROVED G.F. Wolfe		DATE 11-9-27		17179	



ALTERATIONS		
MARK	DESCRIPTION	DATE
1	Floor Beam Note Added Rivets flattened in Pin Pls	7-18-28 G.A.J. 1-20-28 S.J.

STIFFENING TRUSSES	
ST57	ST15
ST58	ST16
ST59	ST17

Notes:
 1. STIFFENING TRUSSES ST15 as shown + note
 2. " " " ST58
 3. " " " ST16
 4. " " " ST57

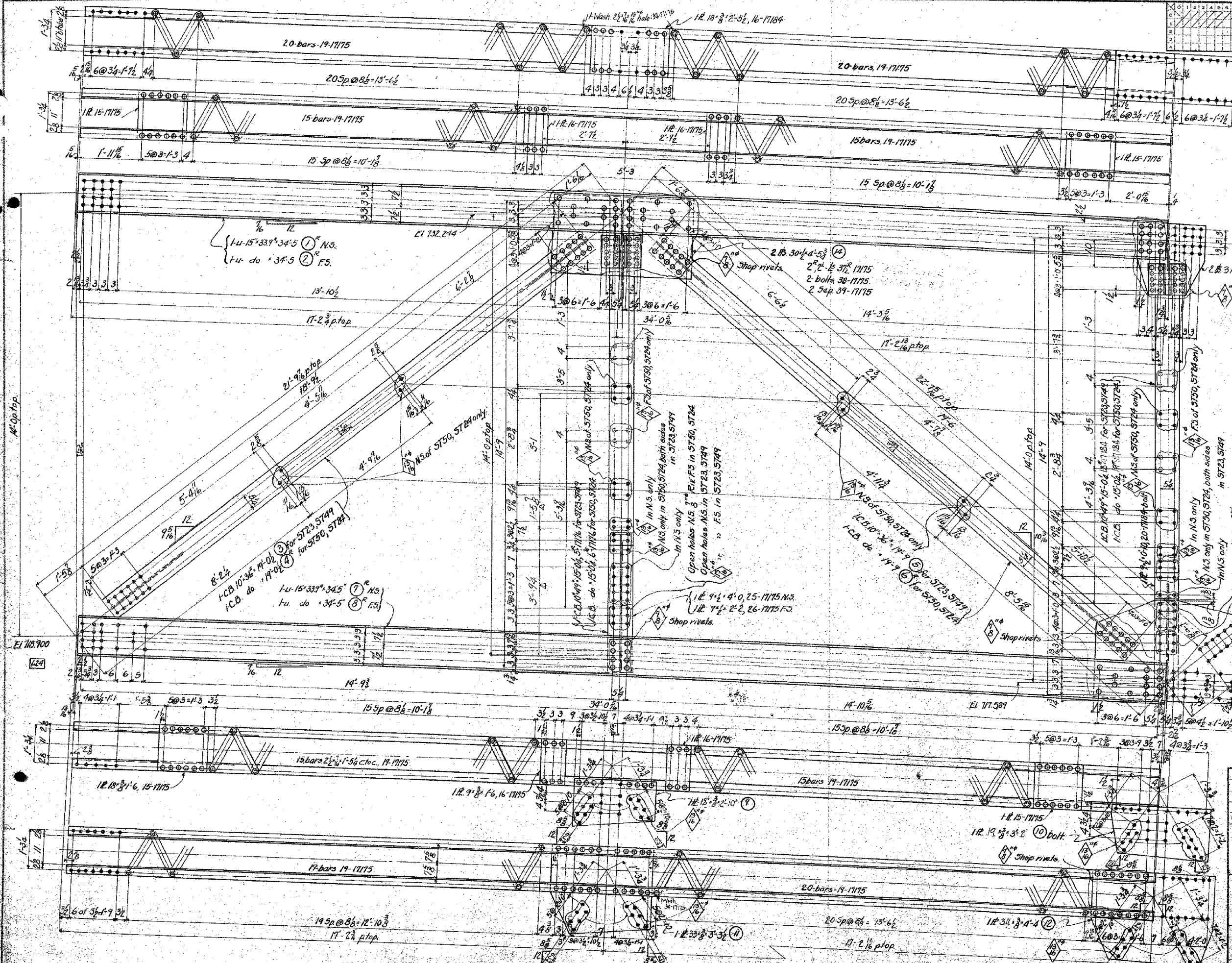
Notes:
 Punch all holes 1/2"
 Open holes Ream to 1/2" after fitting
 unless noted (See Floor Beam Note)
 Shop rivets 3/4" unless noted
 Paint One coat red lead
 FLOOR BEAM CONN. - Holes connecting
 floor beams to verticals & lateral plate
 to be reamed 1/2" in the field

NO.	W642	C15	27-28	17143-17145
REV.	1	1	1	1

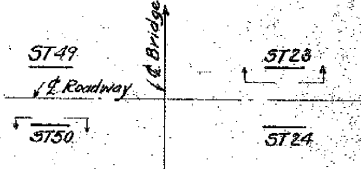
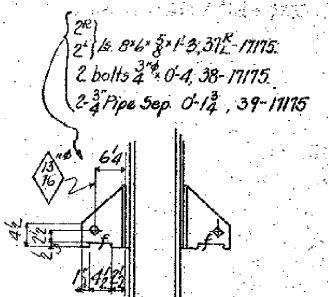
STANTON BRIDGE
 OVER THE OHIO RIVER AT
 STEUBENVILLE, OHIO
 STIFFENING TRUSSES

THE DRAVO CONTRACTING COMPANY
 DESIGNERS AND BUILDERS
 ENGINEERING WORKS DEPT.
 17162

APPROVED: [Signature] DATE: 7-26-27
 APPROVED: [Signature] DATE: 7-26-27



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH
Δ	Grade Elev. changed	11-26-27	ST
Δ	Floor Beam Note Added	1-17-28	G.H.



STIFFENING TRUSS	ST23	ST50	ST24	ST49
1	as shown & notes			
2		as shown & notes		
3			as shown & notes	
4				as shown & notes

Notes-

- Punch all holes 13/16"
- Open holes - Ream to 15/16" after fitting unless noted. (See Floor Beam Note)
- Shop rivets 3/4" unless noted.
- Paint - One coat red lead
- FLOOR BEAM CONN' -** Holes connecting floor beams to verticals & lateral plates to be reamed 15/16" in the field.

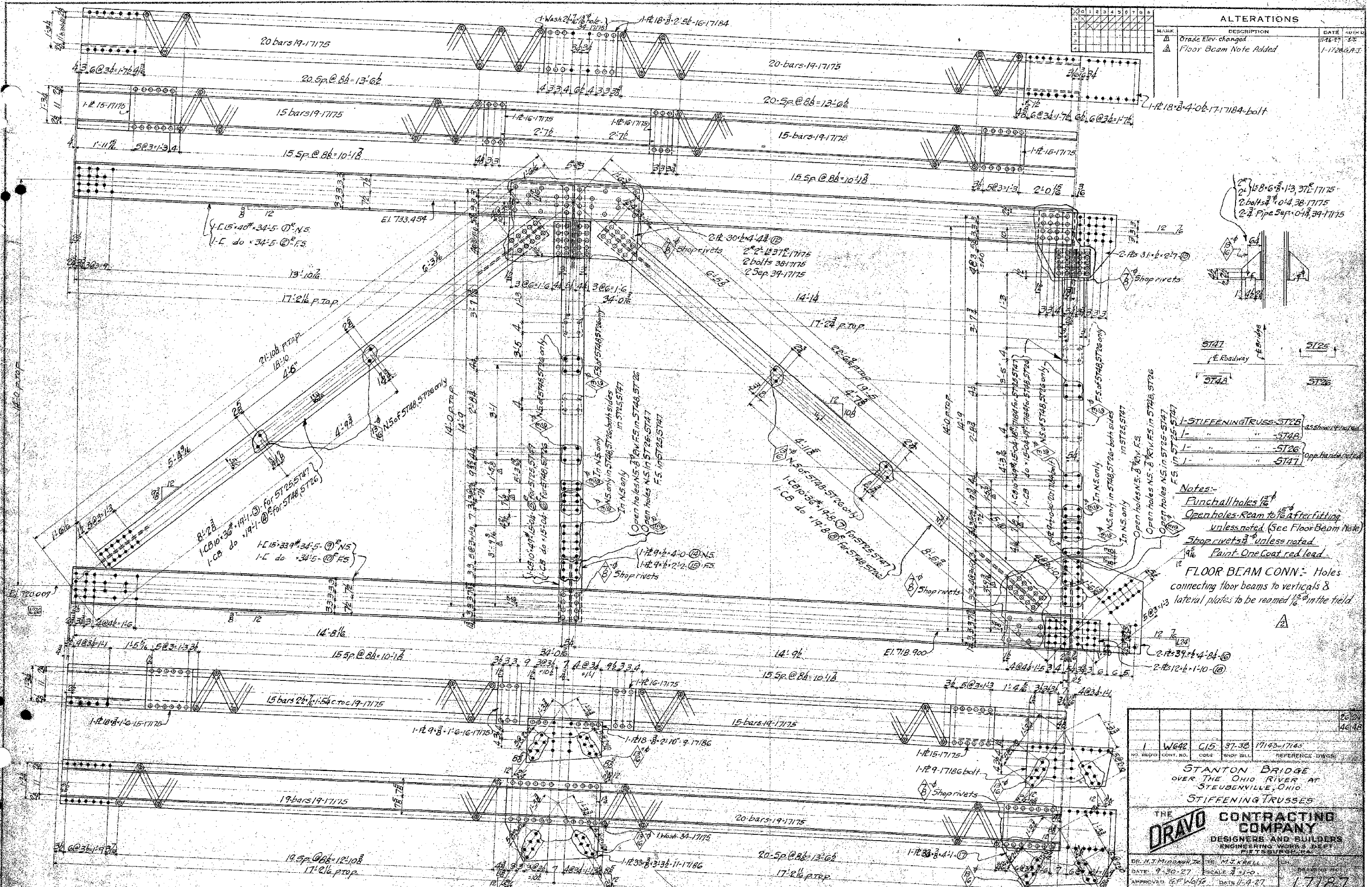
NO. RECD	1	W642	C15	35-36	17195-17195	24
CONT. NO.						485
CODE						
SHOP BILL						
REFERENCE DWGS.						


STANTON BRIDGE
OVER THE OHIO RIVER AT
STEVENSVILLE, OHIO
STIFFENING TRUSSES

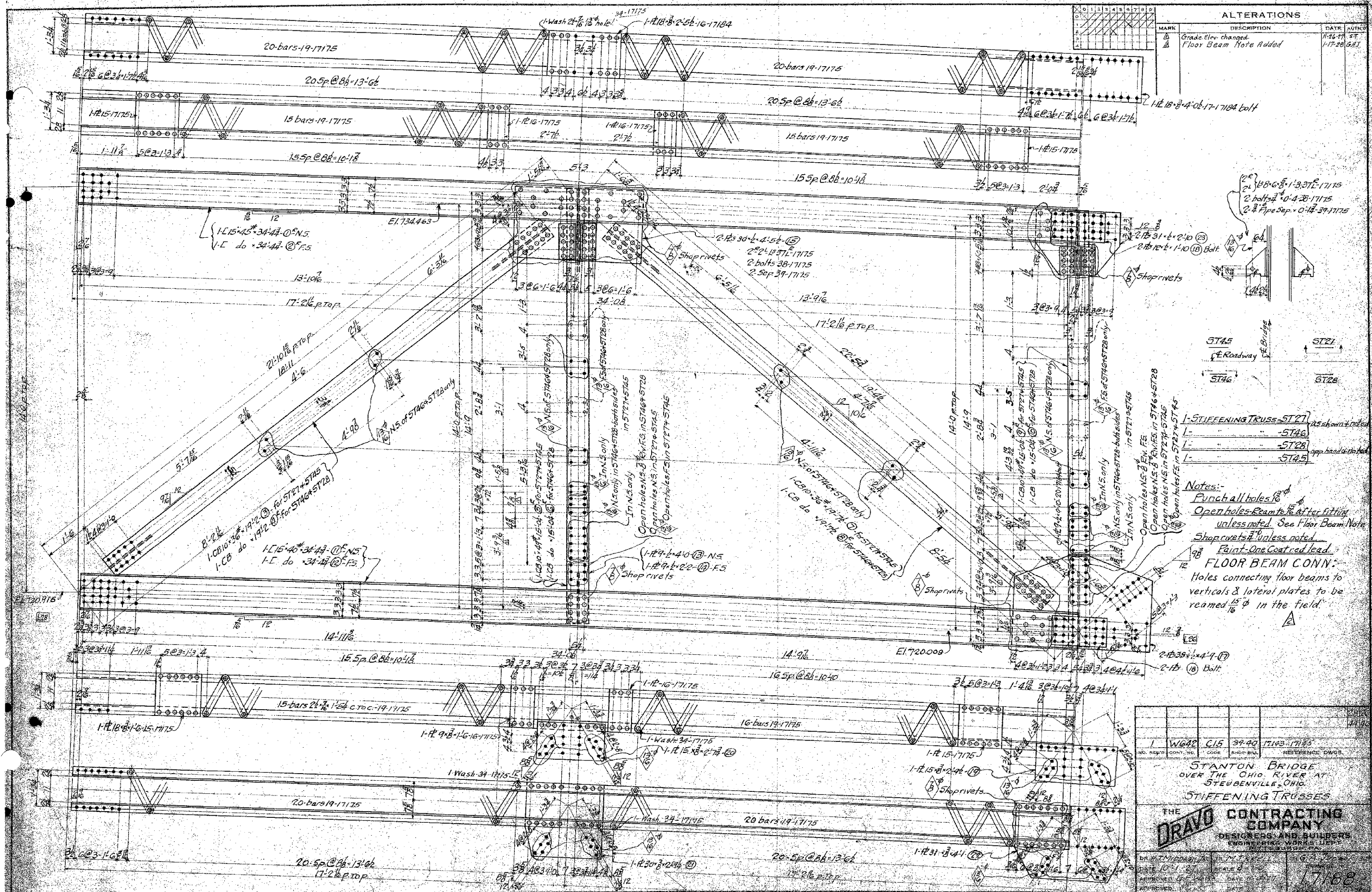
THE DRAVO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

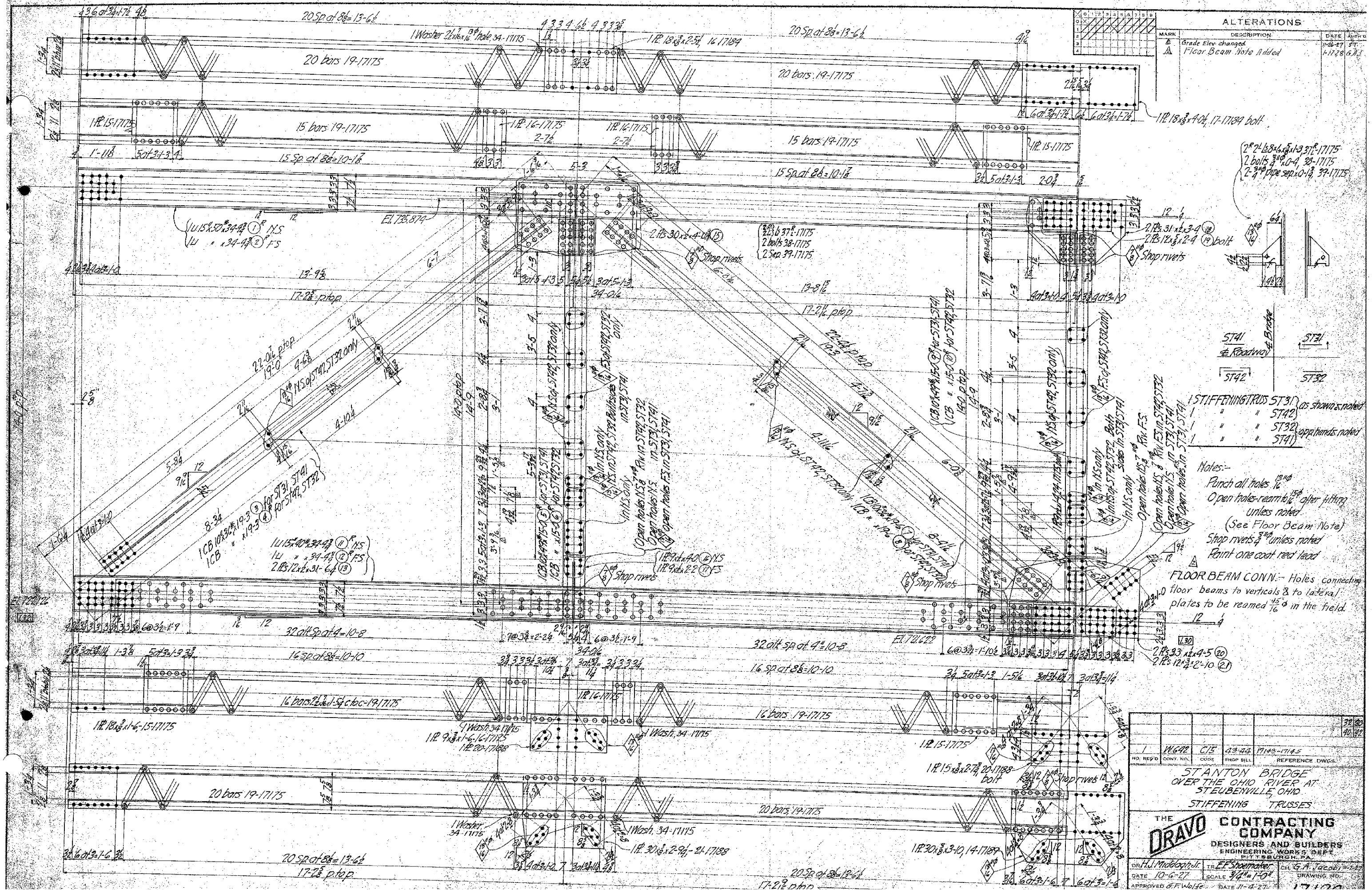
DR. H. M. Middagh Jr. TR. P. G. Strohl
DATE 9-29-27 SCALE 3/4"=1'-0"
APPROVED G. F. Wolfe DATE 11-6-27

17186



					26 24 46 48
1	W642	C15	37-38	17143-17165	
NO. REG'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.	
<p align="center">STANTON BRIDGE OVER THE OHIO RIVER AT STUEBENVILLE, OHIO STIFFENING TRUSSES</p>					
		<p align="center">CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.</p>			
DR. H. J. MIDDAGH, JR.	OR. M. J. KRELL	CH.	DRAWING NO.		
DATE: 9-30-27	SCALE: 3/4" = 1'-0"				
APPROVED: G. F. Waite	DATE: 10-9-27		17187		





ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTHG
△	Grade Elev changed	11-26-27	ST
△	Floor Beam Note Added	1-17-28	611

-1P 18x8x4-06, 17-17189 bolt

{
2P 2-LB x 6.5 at 3.37P-17175
2 bolts @ 3.0-4, 3.8-17175
2-3P 1000 sep. 10-13, 3.9-17175

12' 1/4

1B 31"x3-4 (18)
1B 12x8x2-4 (19) bolt

app rivets

6' 6"

ST41

BRIDGE

ST31

ST42

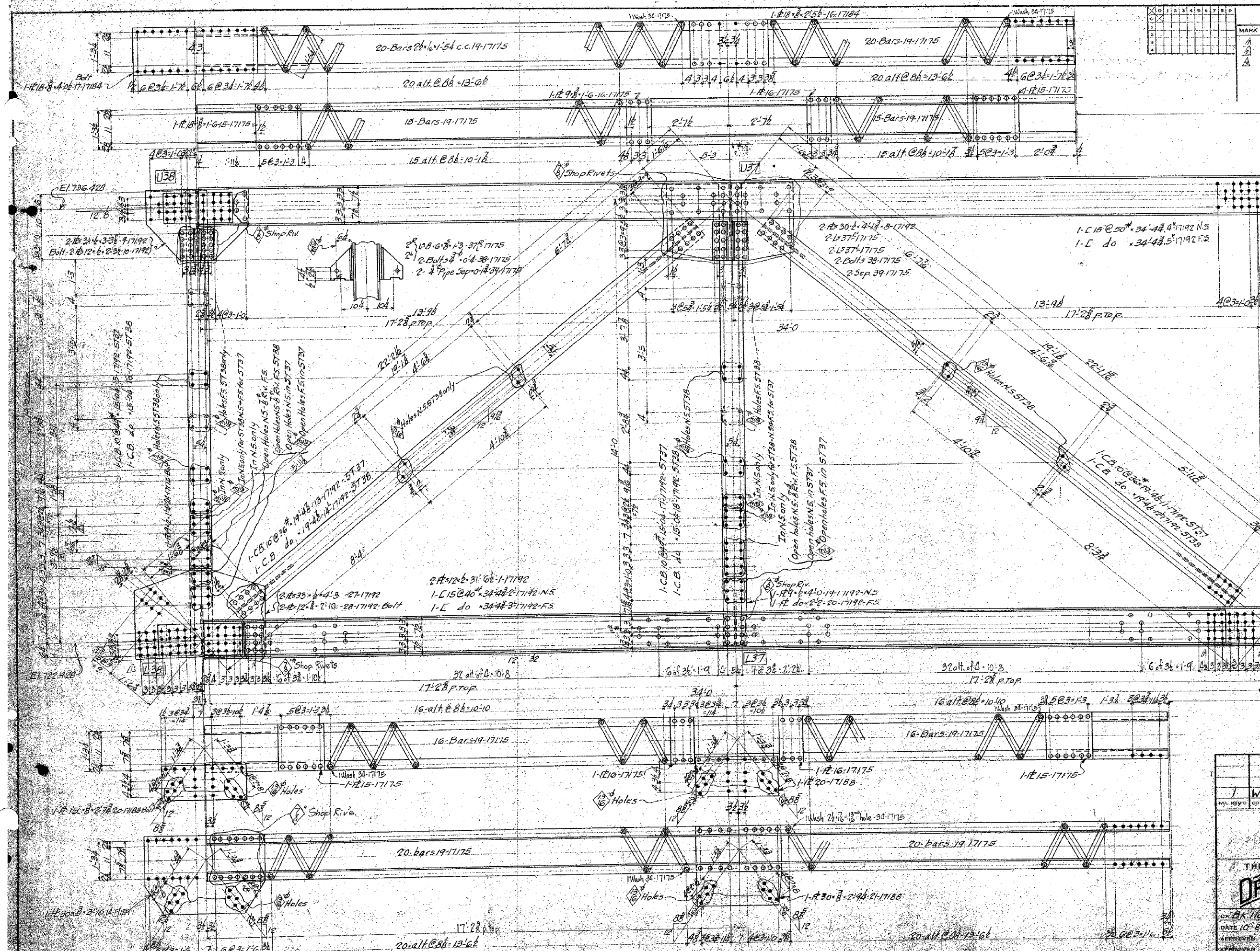
ST32

1 STIFFENING TRUSS ST31 } (as shown & noted
" " " ST42)
" " " ST32) app hands noted
" " " ST41)

Notes:-
 Paint all holes $1\frac{3}{4}''$
 Open holes - ream to $1\frac{5}{8}''$ after fitting
 unless noted
 (See Floor Beam Note)
 Snap rivets $\frac{3}{4}''$ unless noted
 Paint one coat red lead

FLOOR BEAM CONN: - Holes connecting floor beams to verticals & to lateral plates to be reamed $\frac{15}{16}$ ϕ in the field.

								38	90
								40	92
I	W692	C15	43-44	171143-171145					
NO. REV'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.					
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO. STIFFENING TRUSSES									
THE <i>DRAVO</i>					CONTRACTING COMPANY				
DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.									
DR. H.J. Muddochrle	TR. E.F. Shoemaker	CH. G.A. Jacoby 171147							
DATE 10-6-27	SCALE 3/4"=1'-0"	DRAWING NO. 171142							
APPROVED C.F. Wolfe	DATE 11-4-27								



ALTERATIONS			
MARK	DESCRIPTION	DATE	APPROVED
A	Holes and Rivs added in both Chords	11-7-27	G.A.T.
B	Grade Elev. changed	11-26-27	S.T.
A	Floor Beam Note Added	1-17-28	G.A.T.

ST37
E Roadway
ST38

E1736.529.7

1-5 STIFFENING TRUSS-ST37 as shown in Notes
1- ST36 Opposite Holes

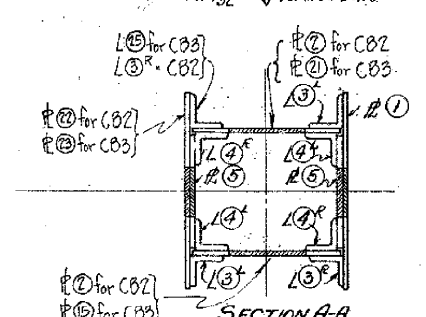
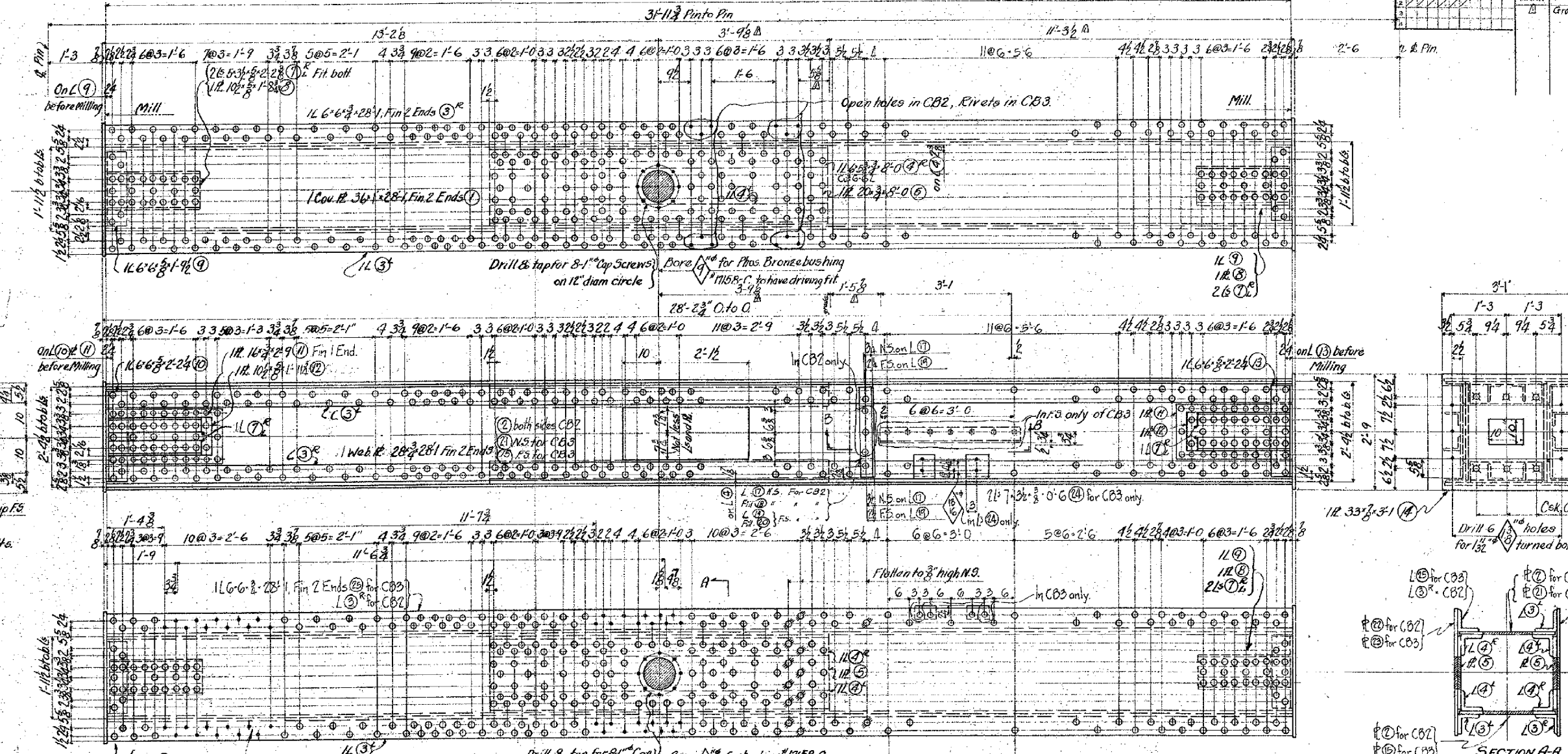
Notes-Punchall/Holes to
Open Holes-Remove to 1/2" after
fitting unless noted. F.B. Note
Shop Riv. 4" Unless noted
Paint One Coat Red Lead
Floor Beam Conn. - Holes Connecting
Floor Beams to Verticals & to Lateral
Plates to be Reamed 1/8" in the Field

1	W642	C15	49	17193-17195
NO. REV'D	CONF. NO.	CON.	SHOP BILL	REFERENCE DWG.
STANTON BRIDGE OVER THE OHIO RIVER AT STEVENSVILLE, OHIO.				
STIFFENING TRUSSES				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. BETHLEHEM, PA.				
DR. H. K. HOWELL	IN. M. J. KRELL	AS. G. A. GARDNER	DRAWING NO.	
DATE 10-8-27	SCALE 3/8"=1'-0"	DATE 11-9-27	17193	
APPROVED: G. F. WOLFE	DATE 11-9-27			

28-1 Mill 2 Ends
3-11 1/2 Pinto Pin

ALTERATIONS

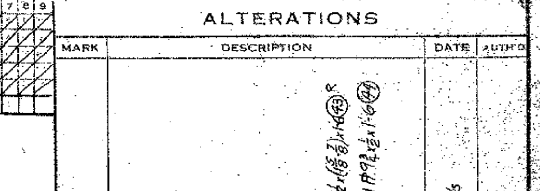
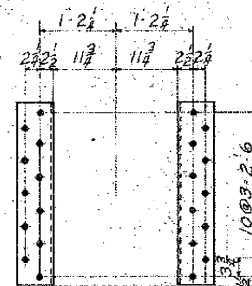
MARK	DESCRIPTION	DATE	AUTH
A	Grade Elev. changed	11-26-77	ST



Bore holes after riveting is complete perpendicular to column and parallel in both directions.

Notes:
Rivets 7/8\"
Open holes 1/2\" unless noted
Shop paint one coat red lead.

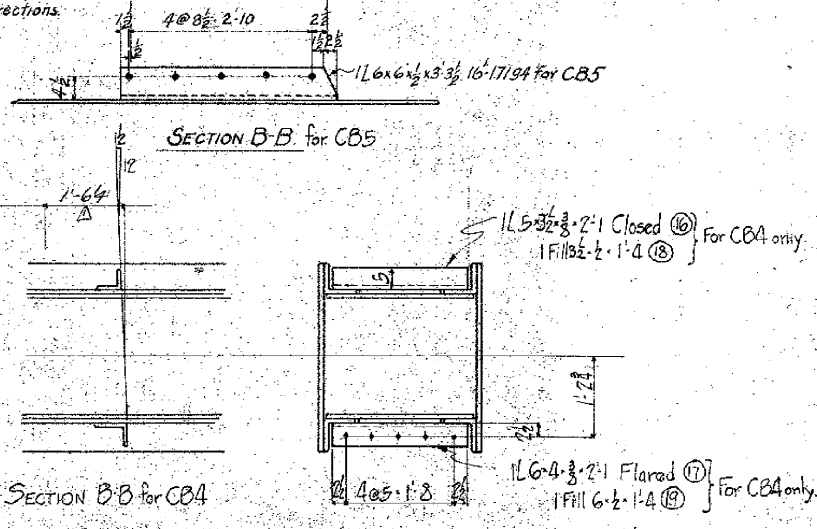
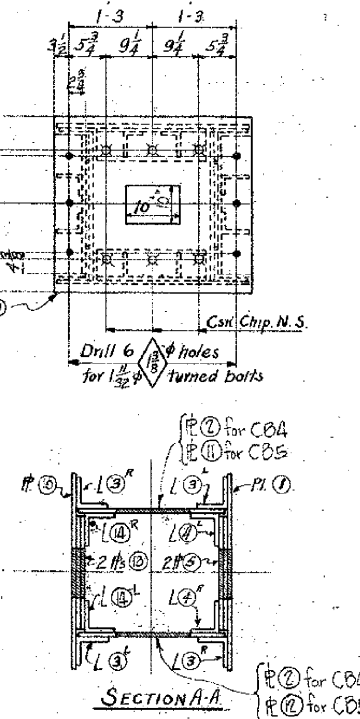
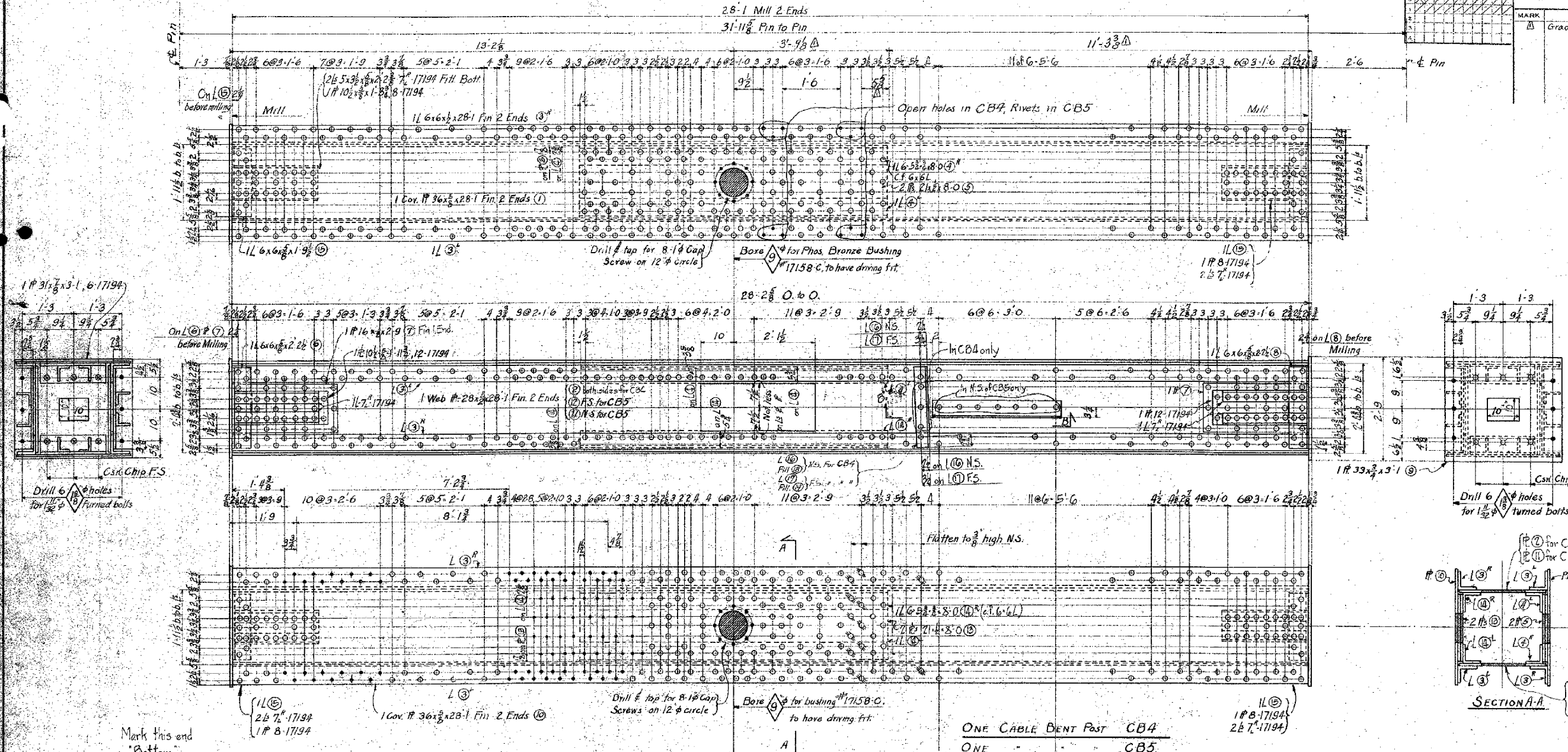
1	W642	C71	83.3A	17154-17125
NO. REV'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWG.
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO. OHIO CABLE BENT POSTS.				
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. H. J. Middagh Jr. DATE 10-26-77		TR. F. G. Strahl SCALE 3/4\" = 1'-0\" DATE 11-27-77		CH. G. A. Jacoby DRAWING NO. 17194
APPROVED G. F. W. 1/3		DATE 11-27-77		DATE



NO. 1	W642	CH	17153-6	17194-6
NO. REG'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
<p>STANTON BRIDGE OVER THE OHIO RIVER AT STUEBENVILLE, OHIO.</p> <p>W.VA. & OHIO. CABLE BENT TRUSSES</p> <p>THE DRAYO SCALE CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. CITY TEBURG, PA.</p>				
DR. H. J. Muddagh, Jr. DATE 10-28-27		T. O'Neal, Asst. 11-3-27 CH. G. A. Jackson, 11-18-27 DRAWING NO. APPROVED G. F. Wolfe DATE 11-21-27 17195		

ALTERATIONS

MARK	DESCRIPTION	DATE	AUTH
Δ	Grads Elev. changed.	11-26-27	577

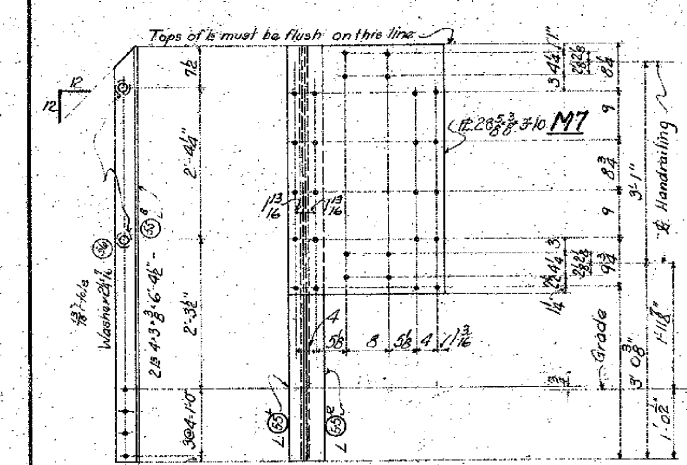
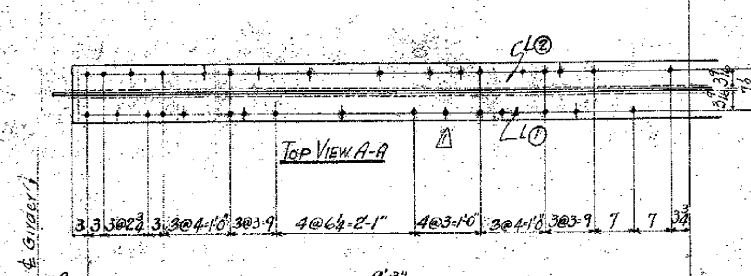


Notes:
 Rivets 7/8"
 Open holes 1 5/16" unless noted
 Shop paint one coat red lead

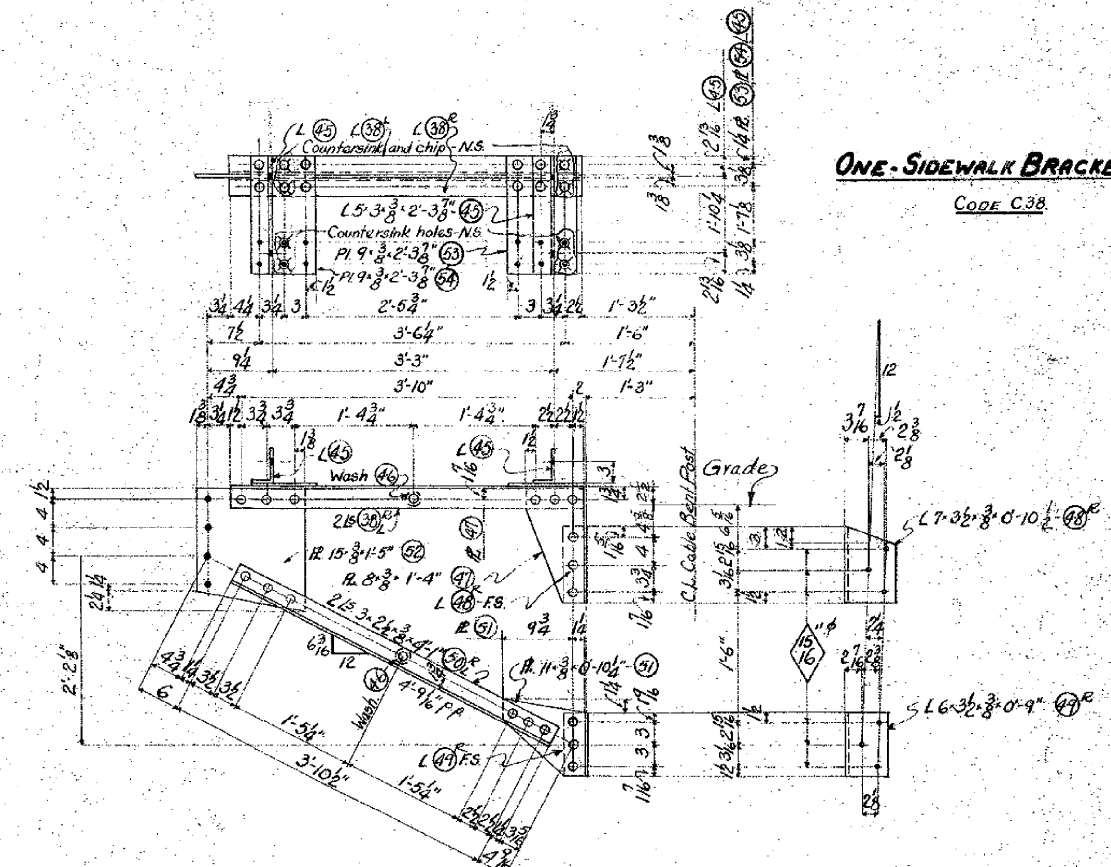
1	W6x2	C11	55.86	17153-17195
NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO				
W. VA. CABLE BENT POSTS				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. H. M. Middaugh, Jr.	TR. Orval Muhl	11-2-27	EN. G. A. Gabel	17196
DATE 10-26-27	SCALE 3/4" = 1'-0"	DATE 11-21-27	DRAWING NO.	
APPROVED C. E. Wolfe	DATE 11-21-27			
APPROVED	DATE			

0	1	2	3	4	5	6	7	8	9
0									
1									
2									
3									
4									
5									

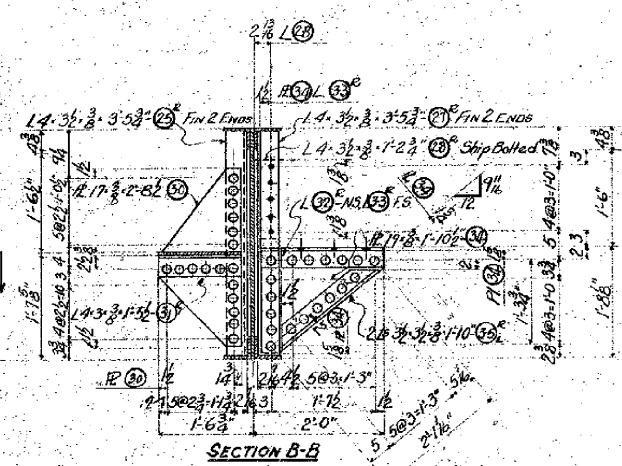
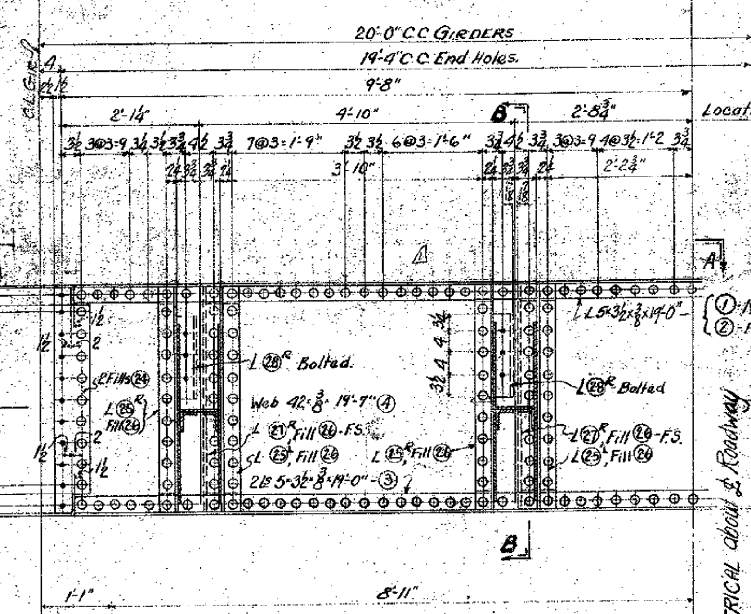
ALTERATIONS			
MARK	DESCRIPTION	DATE	INITIALS
Δ	FBIO revised	1-9-28	ST



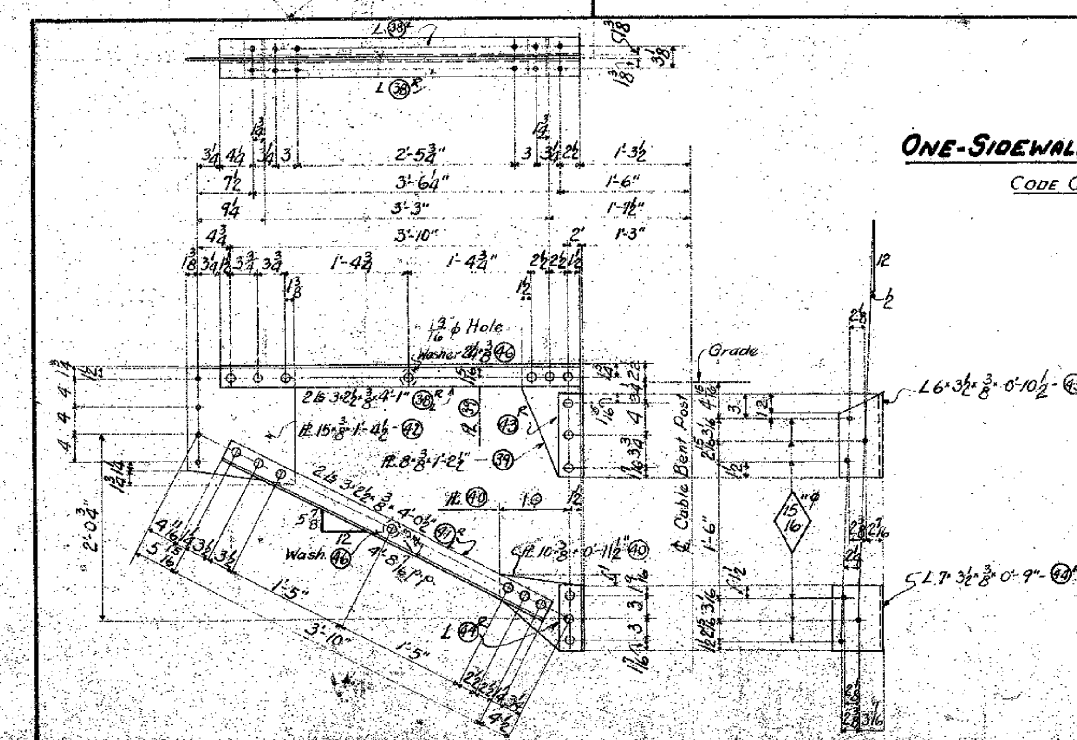
4-HANDRAILING POSTS-HB6
2-GUARD PLATES-M7
CODE C38.



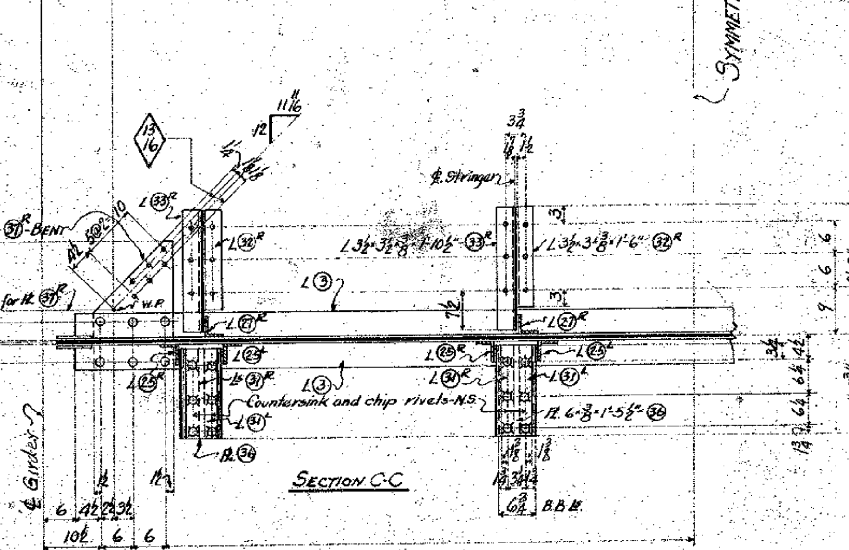
ONE-SIDEWALK BRACKET SB/4.
CODE C38.



SECTION B-B



ONE-SIDEWALK BRACKET SBI3
CODE C38



SECTION C-C

ONE-FLOOR BEAM-FB10
CODE C17

Rivets - $\frac{3}{4}$ " ϕ Unless Noted.
Open Holes - $\frac{13}{16}$ " ϕ Unless Noted.
Paint - One Coat of Red Lead.
All Stiffeners to bear Top and Bottom.

W692 C7C38 95.16

NO. REQ'D CONT. NO. CODE SHOP BILL REFERENCE DWGS.

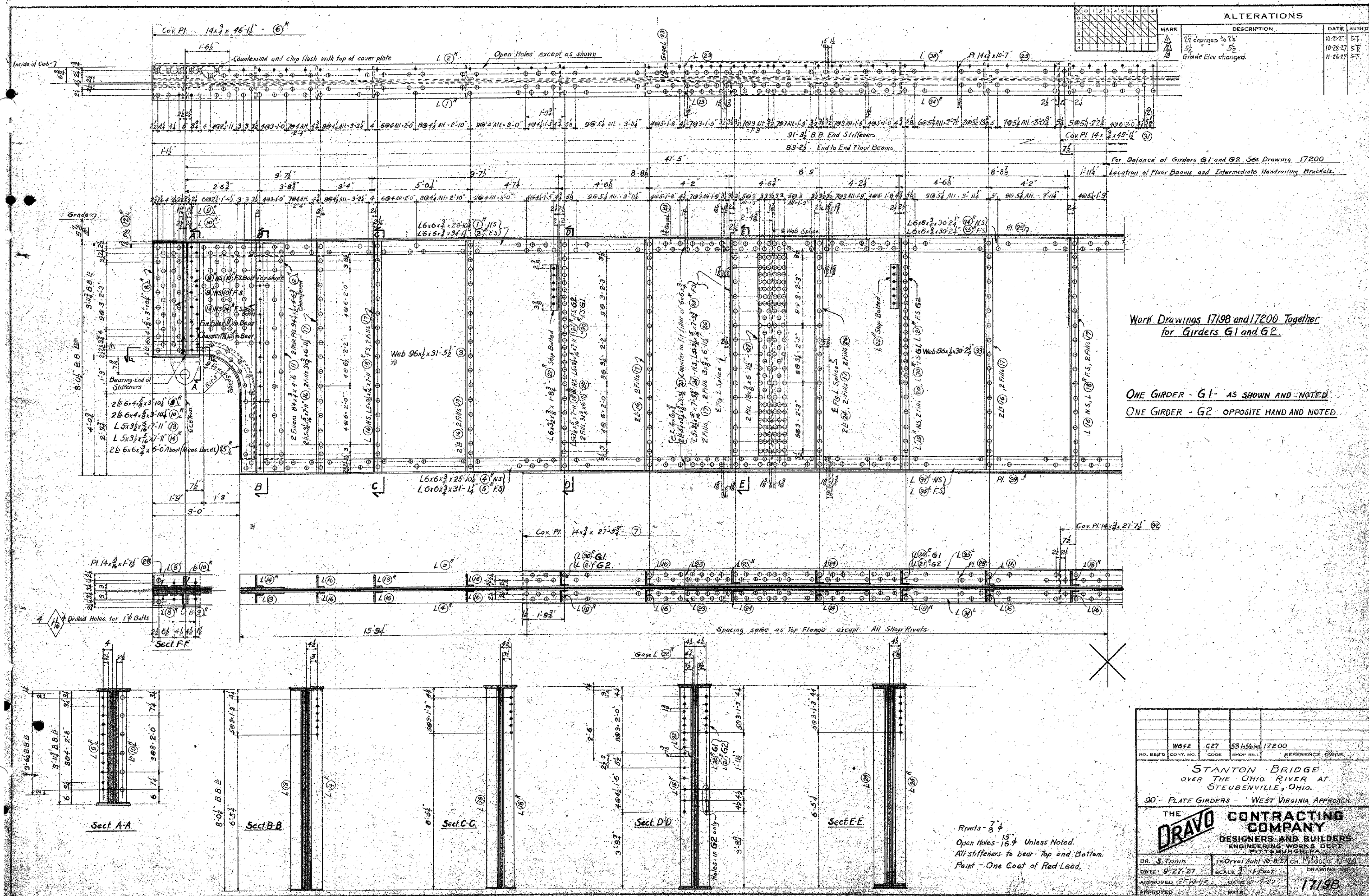
STANTON BRIDGE.

OVER THE OHIO RIVER AT
STEUBENVILLE, OHIO.

FLOOR BEAM, SIDEWALK BRACKETS, POSTS, W.V.A.C.I.

THE
DRAYO
CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
P.O. BOX 1197
ALBANY, N.Y.

DR. STREIN	TRI. PG. SPROULE	JEN. G. A. JACOBI - 12-1971
DATE 12-8-27	SCALE 3/4" = 1'-0"	DRAWING NO. _____
APPROVED G.F. VOILE	DATE 12-15-27	17197



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH'D
24	changes to 24"	10-27-27	S.T.
52	Grade Elev. changed	11-16-27	S.T.

Work Drawings 17198 and 17200 Together for Girders G1 and G2.

ONE GIRDER - G1 - AS SHOWN AND NOTED
ONE GIRDER - G2 - OPPOSITE HAND AND NOTED

Sect. A-A

Sect. B-B

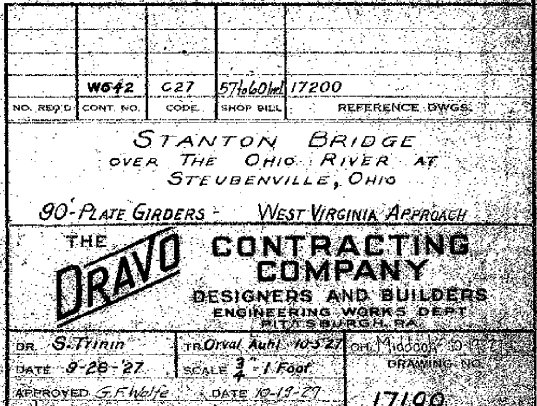
Sect. C-C

Sect. D-D

Sect. E-E

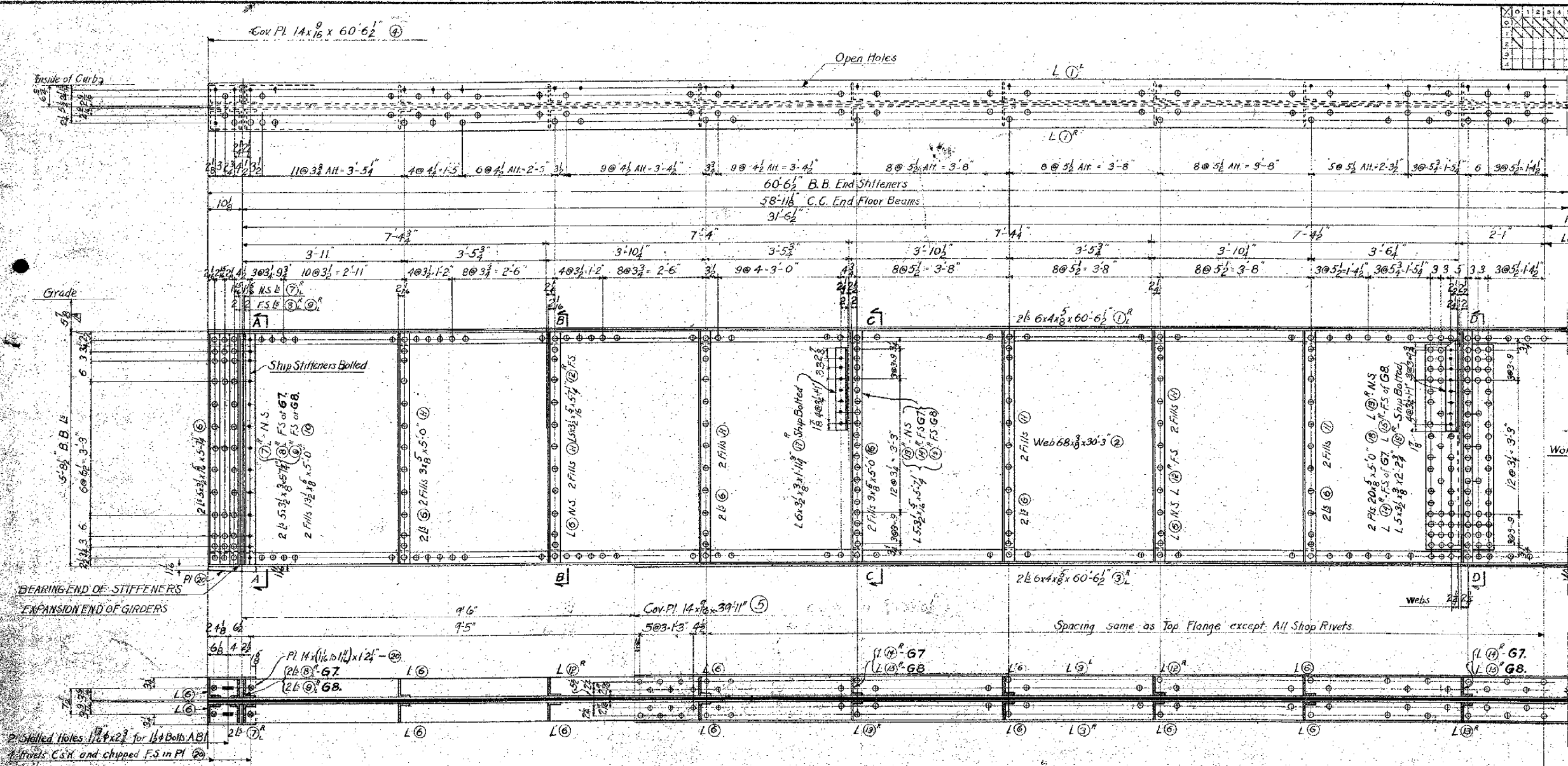
Rivets - 7/8"
Open Holes 1 1/2" Unless Noted.
All stiffeners to bear Top and Bottom.
Paint - One Coat of Red Lead.

NO. REV'D	W642	CONT. NO.	G27	CODE	53 h56 hnd	REFERENCE DWGS.	17200
STANTON BRIDGE OVER THE OHIO RIVER AT STUEBENVILLE, OHIO.							
90' PLATE GIRDERS - WEST VIRGINIA APPROACH							
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.							
DR. S. Trimm	TR. Orval Auhl			10-8-27		CH. M. McGowan	
DATE 9-27-27	SCALE 3/4" = 1'-0"			DRAWING NO.		17198	
APPROVED C.F.W.H.S.	DATE 10-17-27			BASE			



1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36

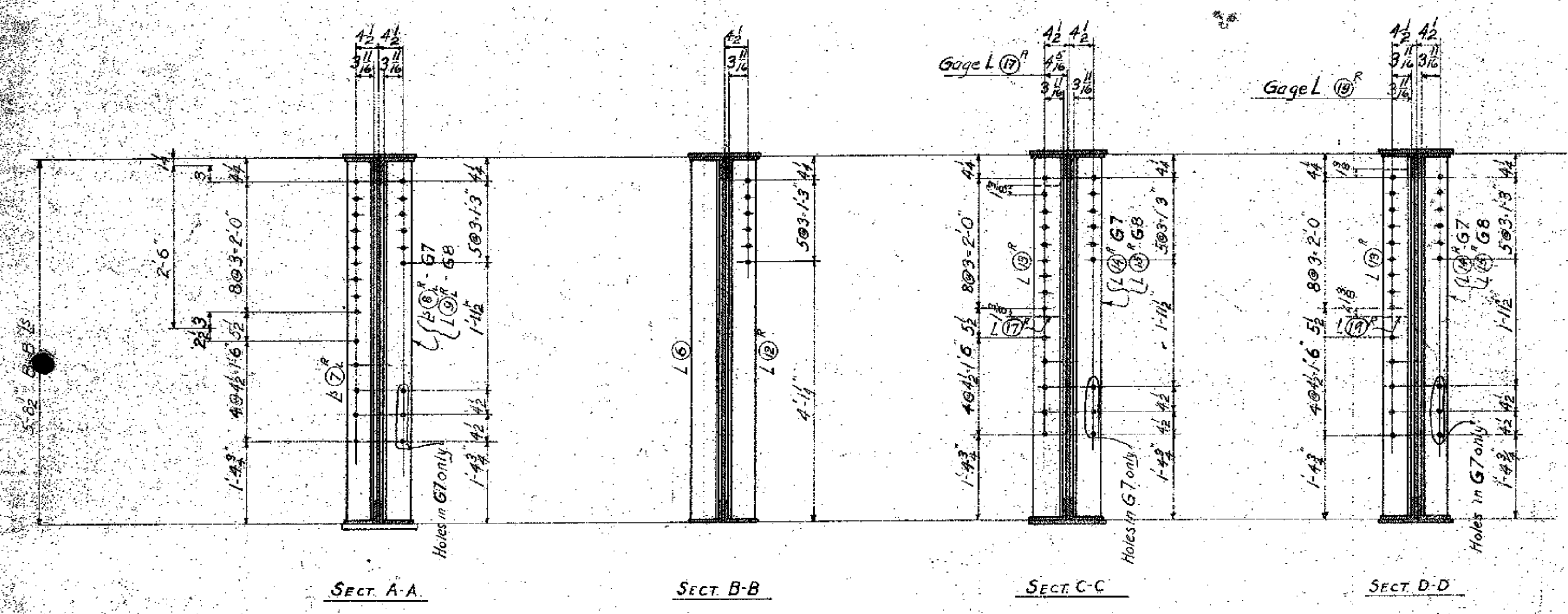
ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH'D
Δ	Grade Elev. changed	11-16-27	S.T.



For Balance of Girders 67, 68 - See Drawing 17202
Location of Floor Beams and Intermediate Handrailing Brackets.

WORK DRAWINGS 17201 and 17202 TOGETHER FOR GIRDERS 67, 68

ONE GIRDER 67 AS SHOWN AND NOTED
ONE GIRDER 68 OPPOSITE HAND AND NOTED



All Stiffeners to bear at Top and Bottom.
Rivets - 7/8" φ
Open Holes - 15/16" Unless Noted.
Paint - One Coat of Red Lead.

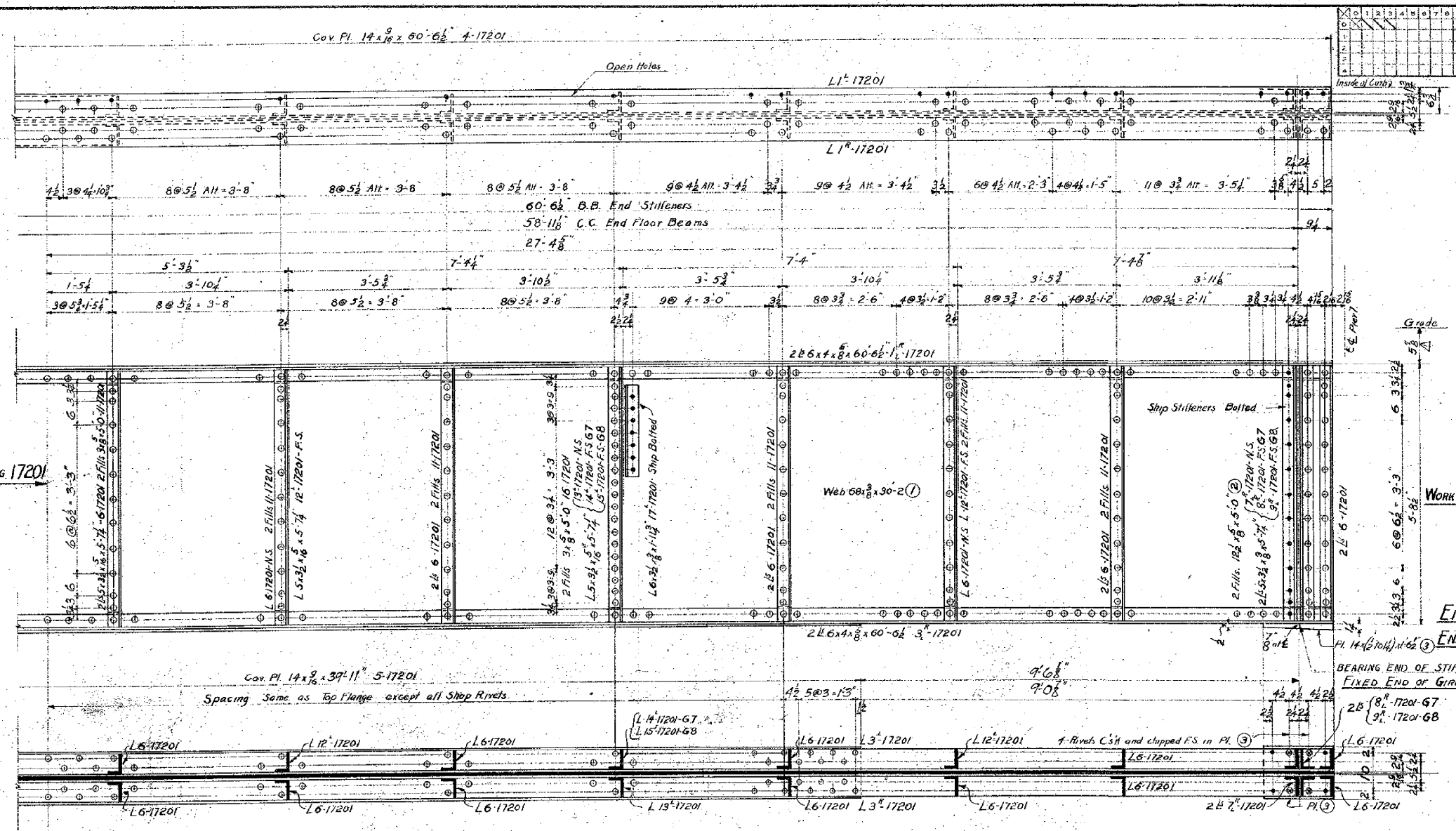
NO. 17201	C28	6/16/27	17202
NO. REVD.	CART. NO.	CODE	SHOP BILL
REFERENCE DWGS.			

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.

60" PLATE GIRDERS - WEST VIRGINIA APPROACH.

THE **DRAVO** CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.

DR. S. TRIMM	TR. ORVAL R. HUBB	CH. M. MCGLOTHLIN
DATE 10-1-27	SCALE 2" = 1' FOOT	DRAWING NO.
APPROVED G.E. WOLFE	DATE 10-8-27	17201



FOR BALANCE OF GIRDERS G7,G8 SEE DRAWING 17201

WORK DRAWINGS 17201 AND 17202 TOGETHER FOR GIRDERS G7,G8.

END FOR GIRDER G7 AS SHOWN AND NOTED.

END FOR GIRDER G8 OPPOSITE HAND AND NOTED.

BEARING END OF STIFFENERS
FIXED END OF GIRDERS

All Stiffeners to Bear at Top and Bottom.
Rivets - 8" φ.
Open Holes - 15" φ Unless Noted.
Paint - One Coat of Red Lead.

ALTERATIONS			
MARK	DESCRIPTION	DATE	APPROVED
1	Grade Elev. changed.	11-26-27	ST

NO. RECD	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
W642	C28	6162	17201	

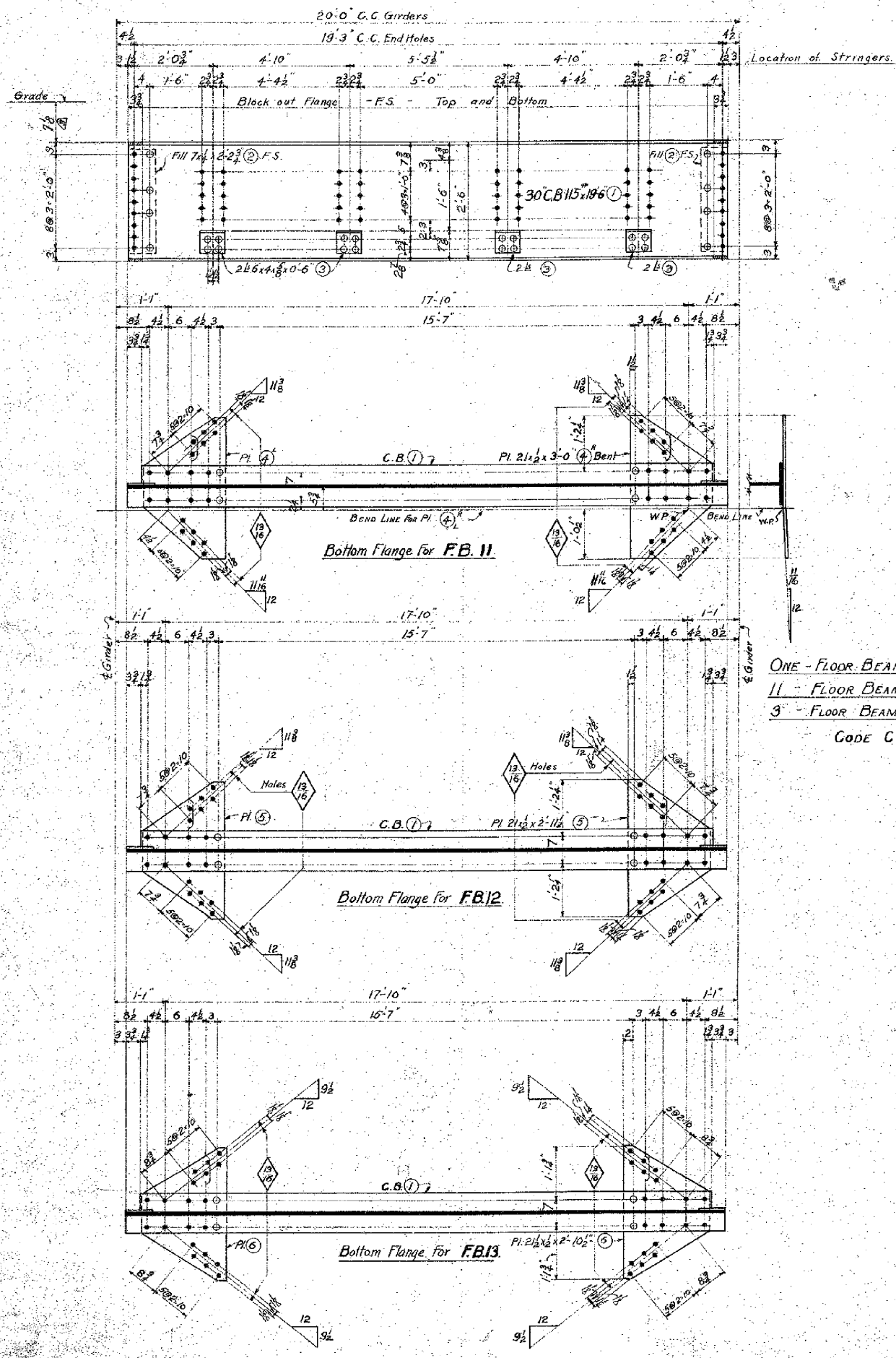
STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.

60 PLATE GIRDERS - WEST VIRGINIA APPROACH

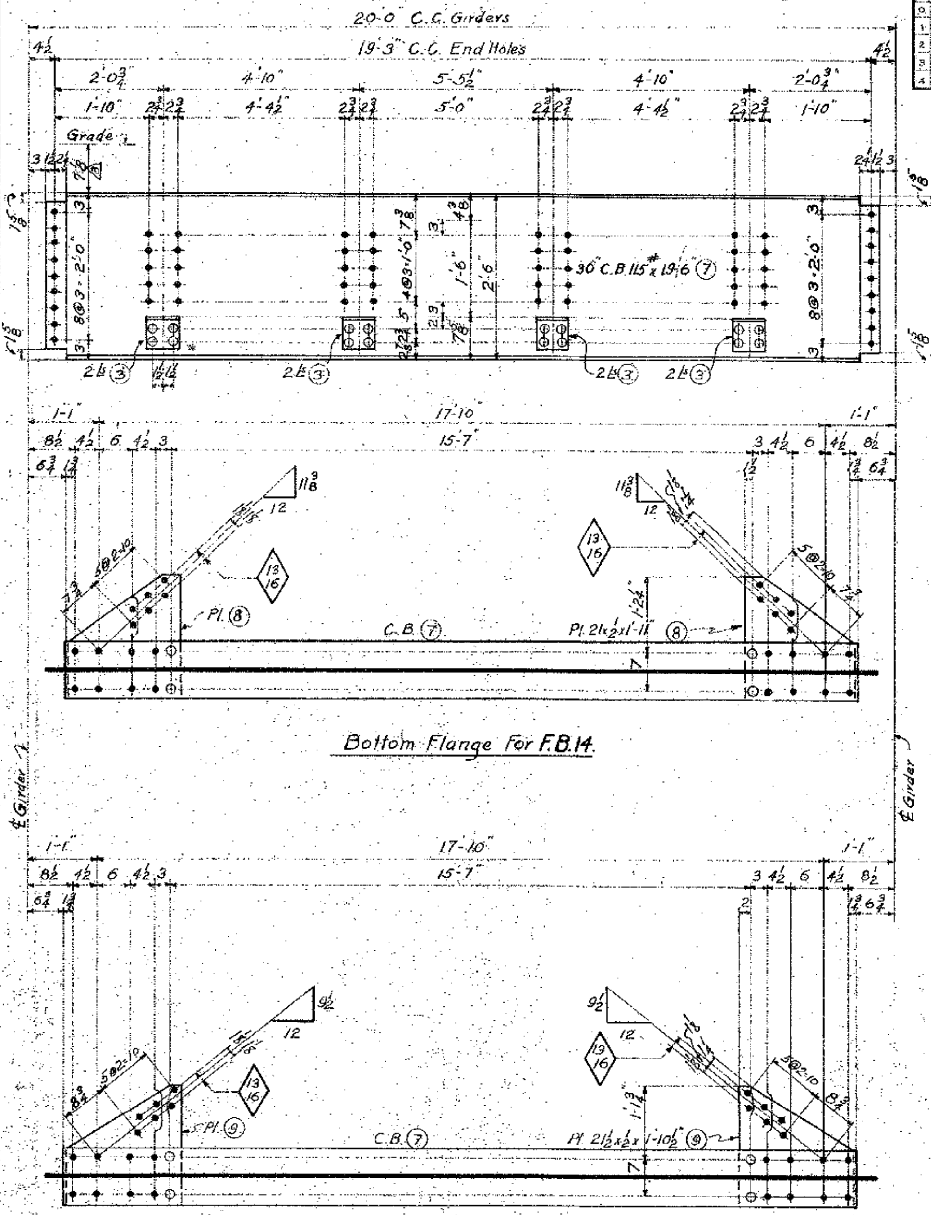
THE
DRAYO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

DR.	DATE	SCALE	BY	DATE	APPROVED
S. Tinn	10-3-27	1" = 1'-0"	Orval Auhl	10-11-27	
G.F. Mohr	10-21-27				

17202



ONE - FLOOR BEAM - FB.11
 11 - FLOOR BEAMS - FB.12
 3 - FLOOR BEAMS - FB.13.
 CODE C29.

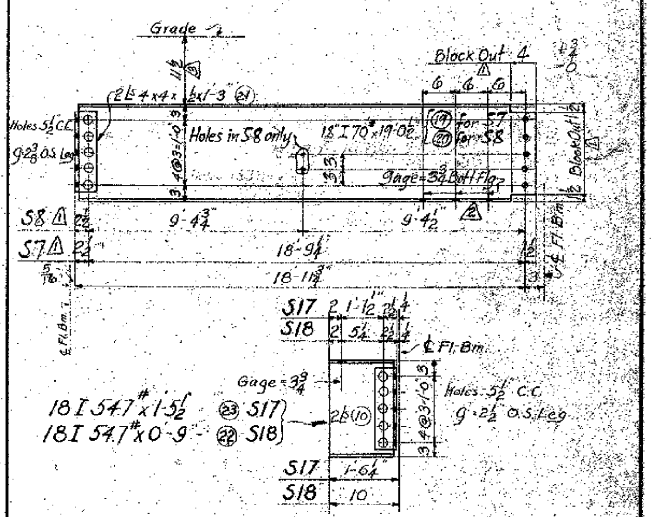


5 - Floor Beams - FB.14
 2 - Floor Beams - FB.15
 CODE C29.

Rivets $\frac{3}{8}$ "
 Open Holes $\frac{15}{16}$ " Unless Noted.
 Paint - One Coat of Red Lead.

MARK	DESCRIPTION	DATE	APPROVED
1	S7 and S8 revised	11-2-27	S.T.
2	S7 and S8 revised	11-9-27	S.T.
3	Grade Elev. changed.	11-22-27	S.T.

17'-4"	(11) for S9
1'-7"	(12) S10
1'-7"	(13) S11
14'-7"	(14) S12
1'-10"	(15) S13
1'-10"	(16) S14
1'-10"	(17) S15
1'-10"	(18) S16



2 - STRINGERS - S7	2 - STRINGERS - S13
2 - " - S8	6 - " - S14
28 - " - S9	6 - " - S15
28 - " - S10	4 - " - S16
4 - " - S11	8 - " - S17
2 - " - S12	4 - " - S18

W642 C29 C30 C364

NO. RECD. CONT. NO. CODE SHOP BILL REFERENCE DWGS.

STANTON BRIDGE
 OVER THE OHIO RIVER AT
 STEUBENVILLE, OHIO.

FLOOR BEAMS - STRINGERS - WEST VA. APPROVED

THE
DRAYO
 CONTRACTING COMPANY
 DESIGNERS AND BUILDERS
 ENGINEERING WORKS DEPT.
 1117 S. MAIN ST. PA.

DR. S. T. M. TR. DRAYO AUTH. 10-13-26 (Middle) 10-10-27

DATE 10-5-27 SCALE 1" = 1' FOOT DRAWING NO.

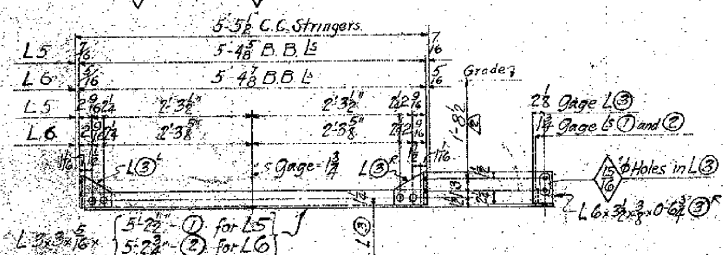
APPROVED G.F. Wolfe DATE 10-31-27 17203

L1	502-10	11'-6"	11'-6"	502-10
L2	502-10	10'-9"	10'-9"	502-10
L3	502-10	9'-9"	9'-9"	502-10
L4	502-10	9'-9"	9'-9"	502-10
L1	4	24'-0"	(16 for draw)	7
L2	7	23'-9"	(6)	8
L3	8	21'-3"	(8)	8
L4	8	21'-3"	(8)	8

2- LATERALS - L1	
28- " - L2	
2- " - L3	
6- " - L4	

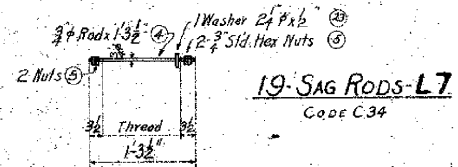
CODE C34

3 Rivets C&K and chipped F.S. for L1 to L6 Incl. Unless Noted



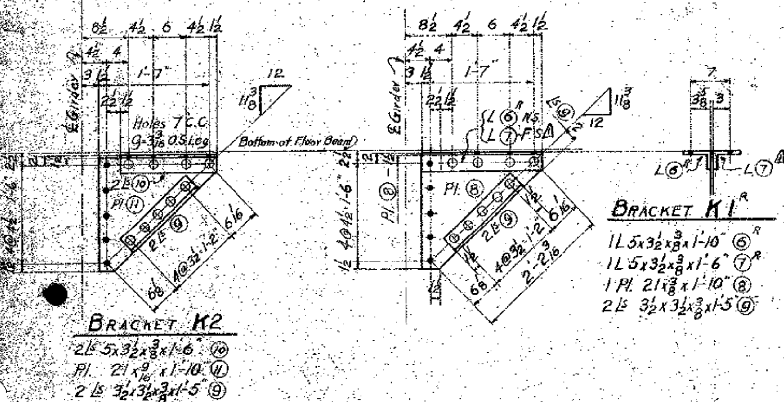
ONE SAG ROD SUPPORT L5
18- " - L6

CODE C34



19- SAG RODS L7

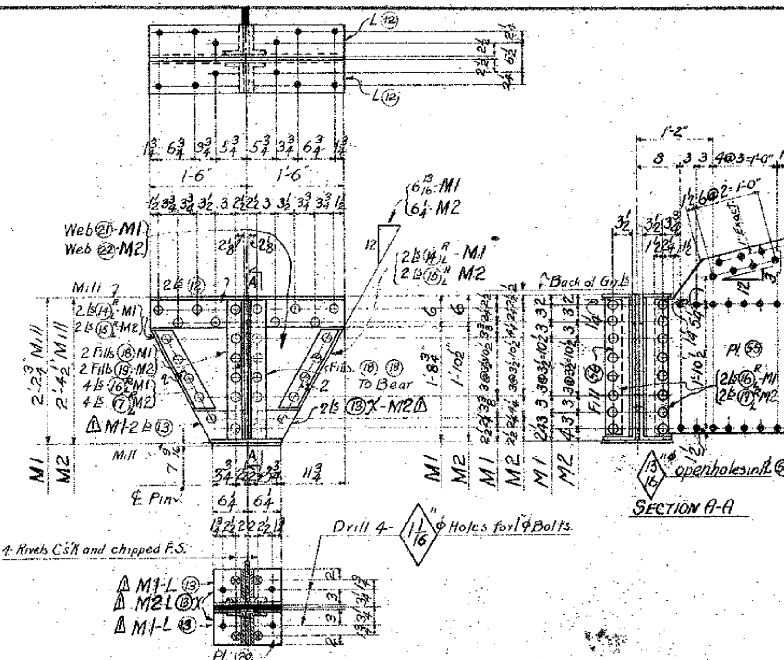
CODE C34



15- BRACKETS - K1
15- " - K1
12- " - K2

BRACKET K1

11 5/8 x 3/8 x 1'-10" (6)
11 5/8 x 3/8 x 1'-6" (7)
1 Pl. 21 x 1/2 x 1'-10" (8)
2 Pl. 3/4 x 3/8 x 1'-5" (9)



GIRDER SUPPORT M1

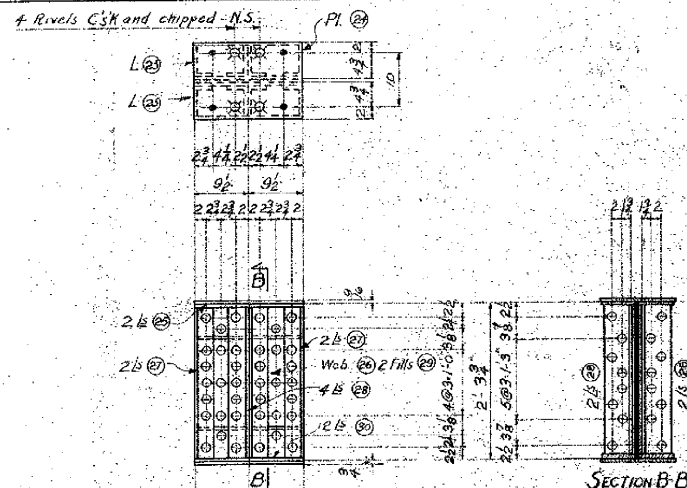
2 Pl. 6 x 6 x 1/2 x 3'-0" (10)
2 Pl. 6 x 6 x 1/2 x 1'-7 1/2" (11)
4 Pl. 3/4 x 3/8 x 1'-6 1/4" (12)
4 Pl. 5/8 x 3/4 x 2'-1 1/2" (13)
2 Pl. 7/8 x 1/2 x 1'-2 3/4" (14)
1 Pl. 14 x 9/16 x 1'-0 1/2" (15)
1 Web 30 x 1/2 x 2'-2 1/2" (16)
1 Pl. 3 x 3/4 x 2'-1 1/2" (17)

GIRDER SUPPORT M2

2 Pl. 6 x 6 x 1/2 x 3'-0" (10)
2 Pl. 6 x 6 x 1/2 x 1'-6 3/4" (11)
4 Pl. 3/4 x 3/8 x 1'-7 1/2" (12)
4 Pl. 5/8 x 3/4 x 2'-3 1/2" (13)
2 Pl. 7/8 x 1/2 x 1'-1 1/2" (14)
1 Pl. 14 x 9/16 x 1'-0 1/2" (15)
1 Web 30 x 1/2 x 2'-4 1/2" (16)
1 Pl. 24 x 3/4 x 2'-1 1/2" (17)

2- GIRDER SUPPORTS M1
2- GIRDER SUPPORTS M2

CODE C35

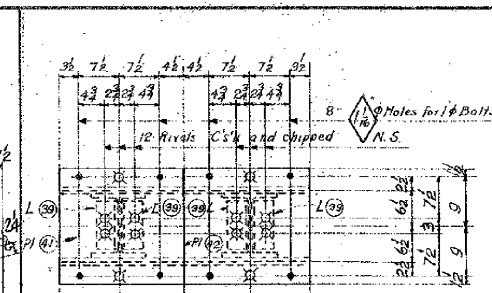


GIRDER SUPPORT M3

1 Pl. 14 x 9/16 x 1'-7" (18)
2 Pl. 6 x 6 x 1/2 x 1'-7" (19)
1 Web 18 x 1/2 x 2'-3" (20)
4 Pl. 5 x 3/4 x 2'-2 3/4" (21)
2 Pl. 7/8 x 1/2 x 1'-3 1/4" (22)
2 Pl. 6 x 6 x 1/2 x 1'-7" (23)
1 Pl. 14 x 9/16 x 1'-7" (24)

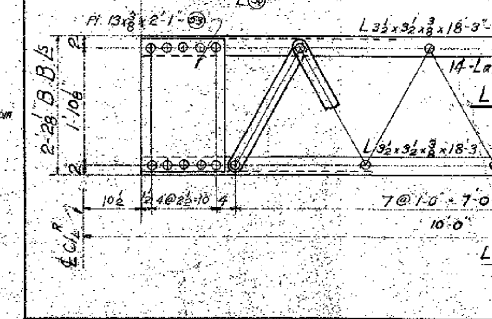
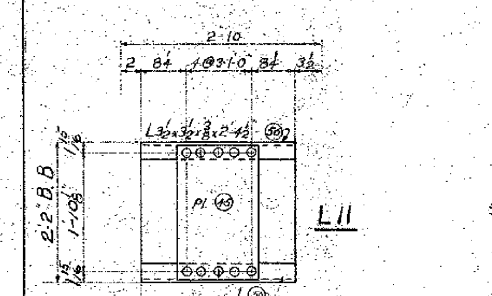
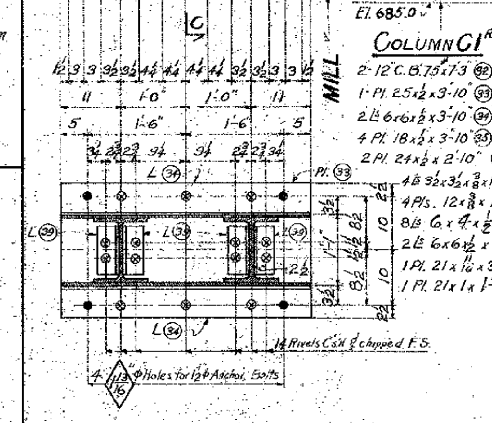
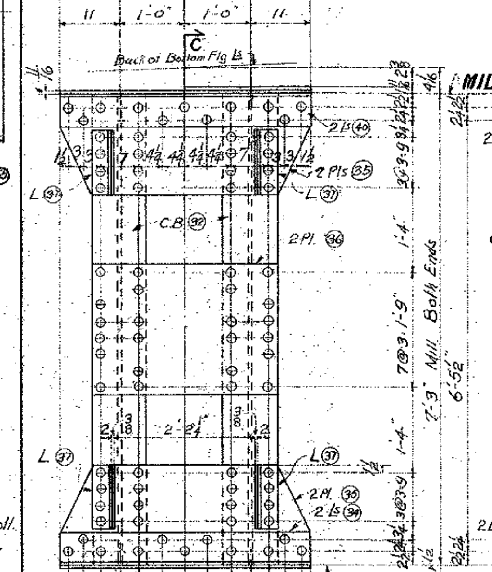
2- GIRDER SUPPORTS M3

CODE C35



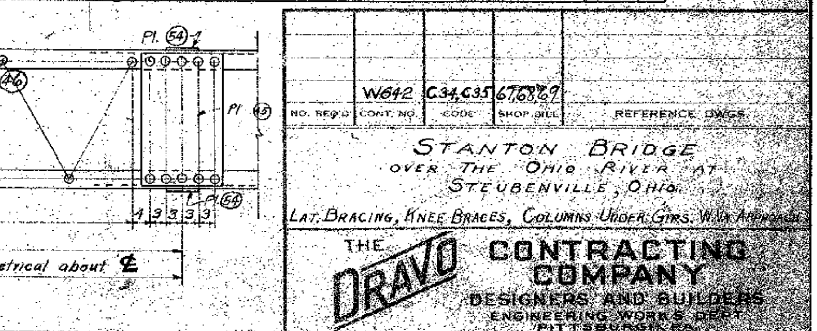
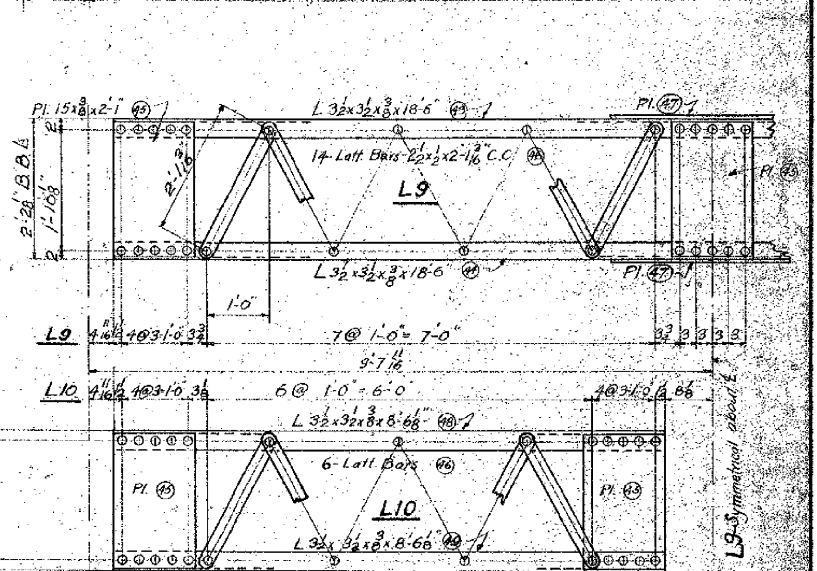
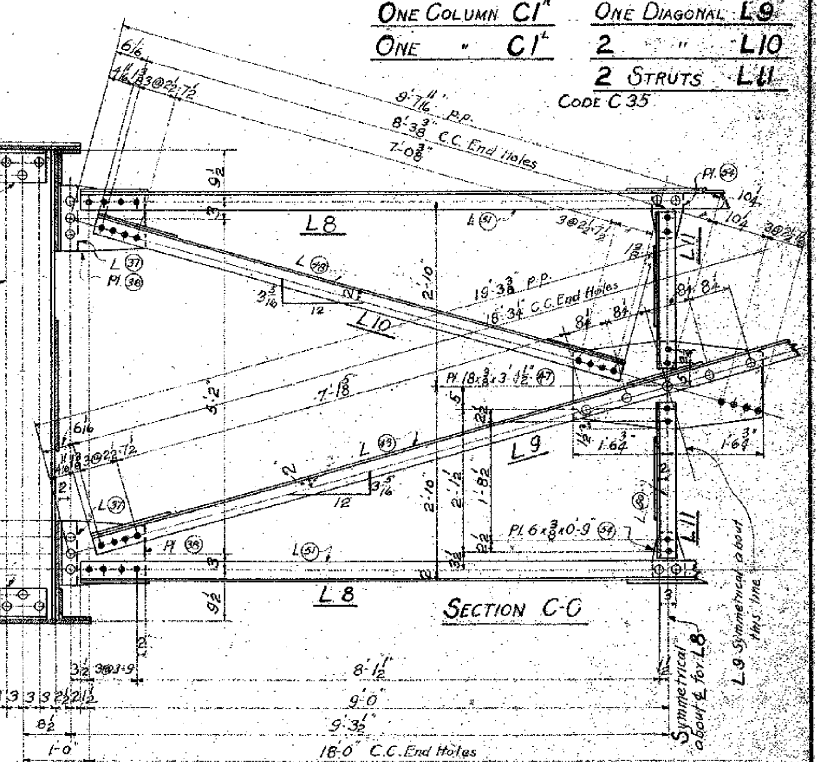
COLUMN C1

2- 12" C.B.T. 17.3 (25)
1 Pl. 25 x 1/2 x 3'-10" (26)
2 Pl. 6 x 6 x 1/2 x 3'-10" (27)
4 Pl. 18 x 1/2 x 3'-10" (28)
2 Pl. 24 x 1/2 x 2'-10" (29)
4 Pl. 12 x 1/2 x 1'-4" (30)
8 Pl. 6 x 1/2 x 1'-0" (31)
2 Pl. 6 x 6 x 1/2 x 3'-10" (32)
1 Pl. 21 x 1/2 x 3'-10" (33)
1 Pl. 21 x 1/2 x 1'-11" (34)



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH
1	7' to 7' 1/2"	11/22/27	ST
2	Grade Elev. changed	11/22/27	ST

2 STRUTS L8
ONE COLUMN C1
ONE " C1
ONE DIAGONAL L9
2 " " L10
2 STRUTS L11
CODE C35



W642 C34 C35 676327

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.

LAT. BRACING, KNEE BRACES, COLUMNS UNDER GIRS. WALK APPROACH

THE
DRAYO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

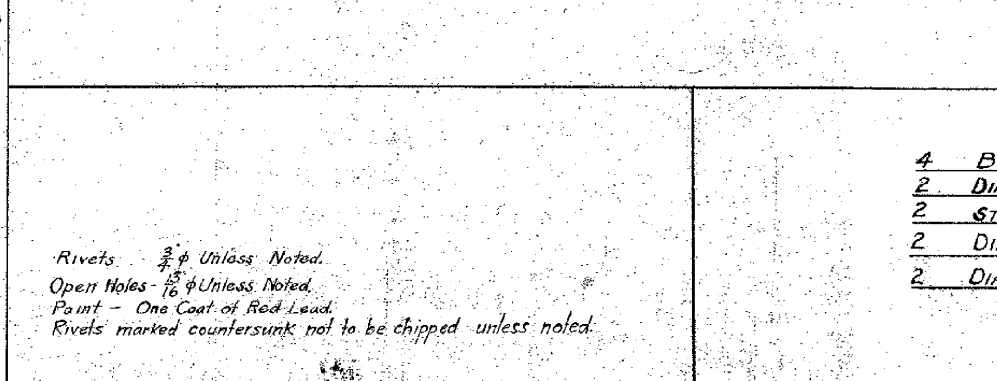
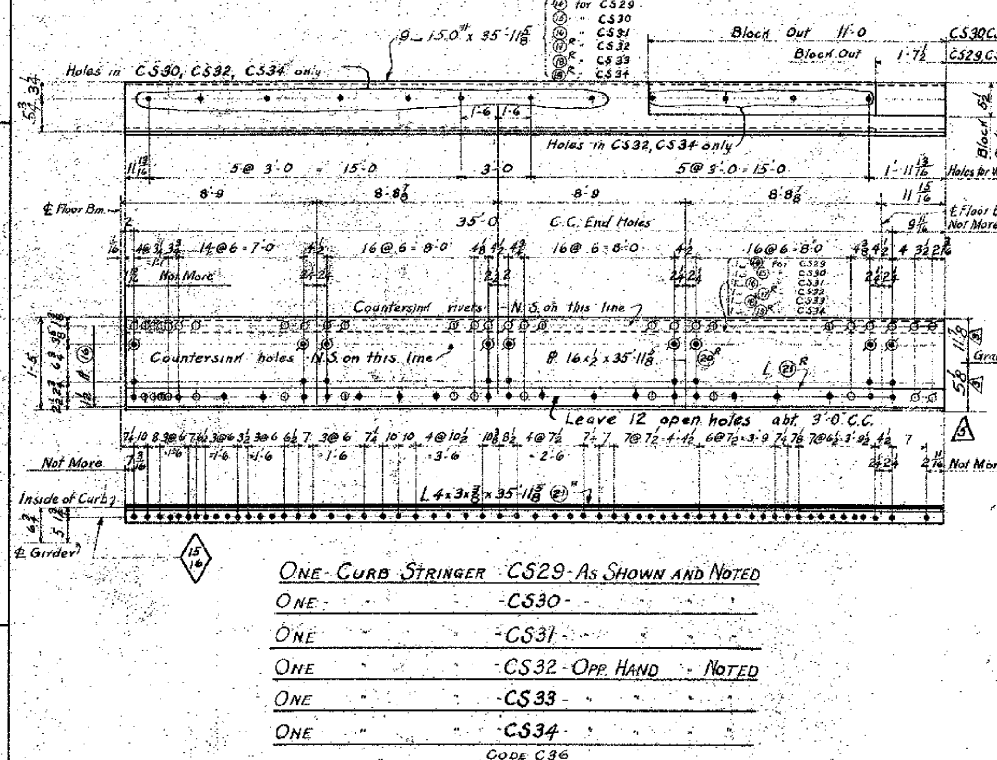
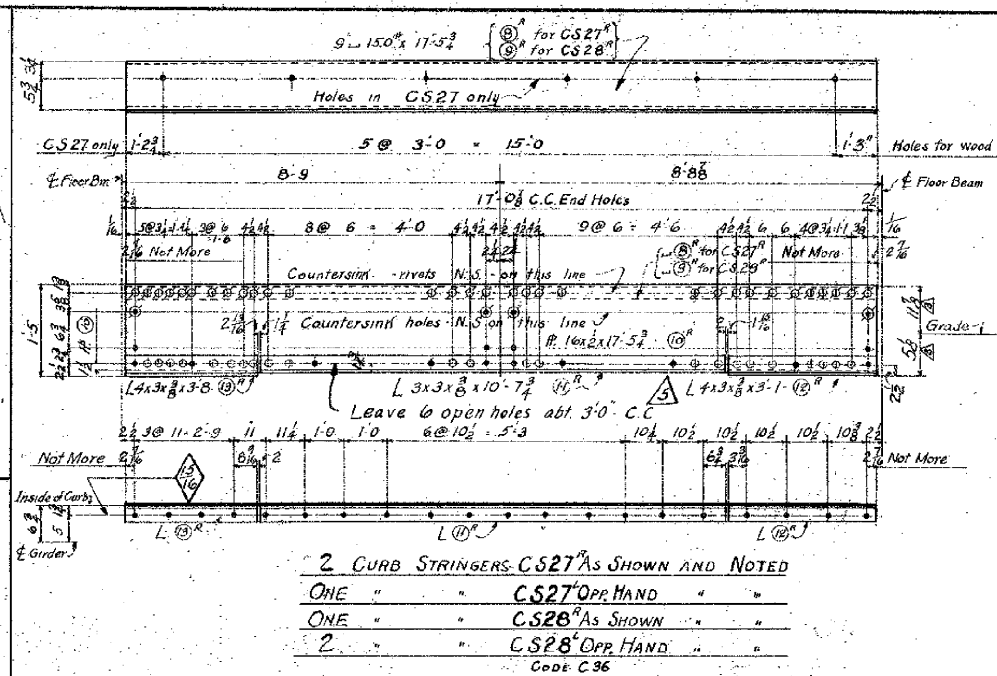
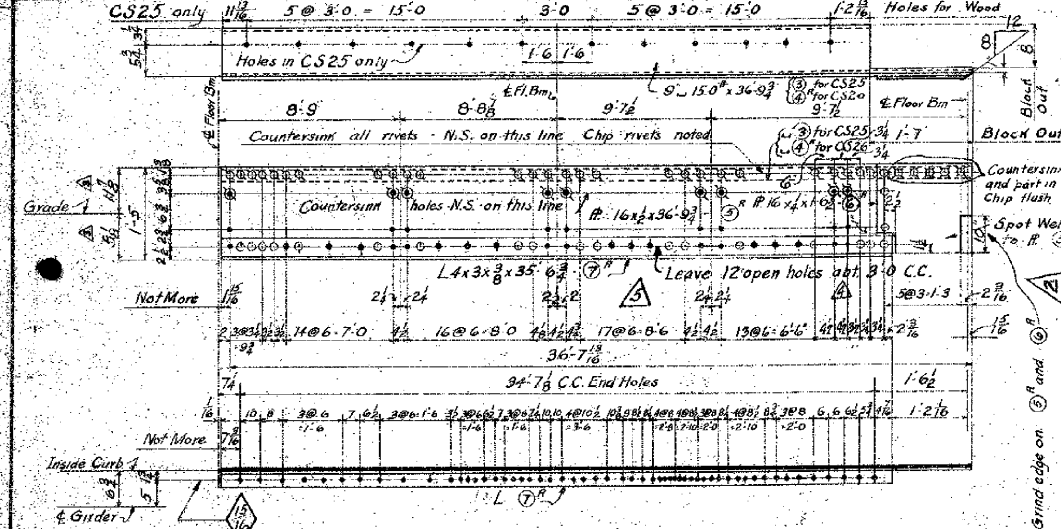
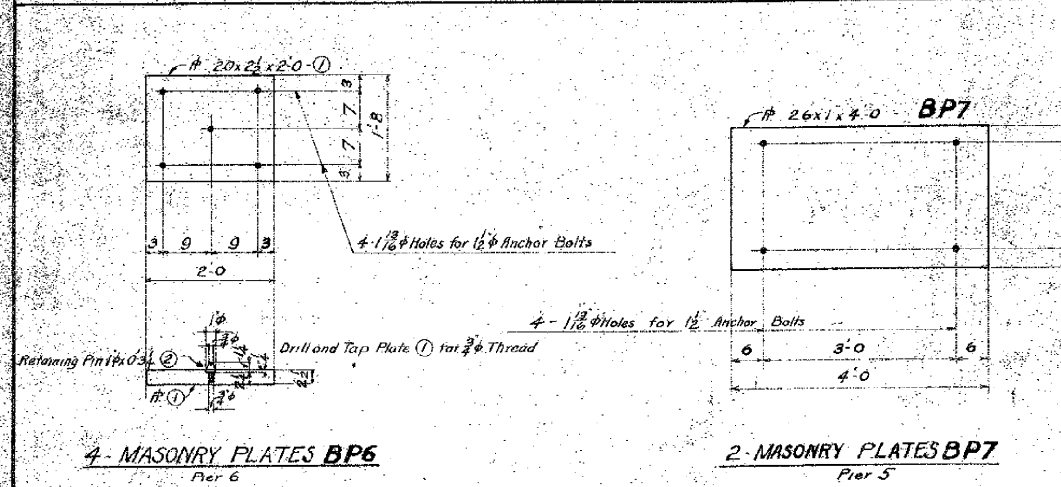
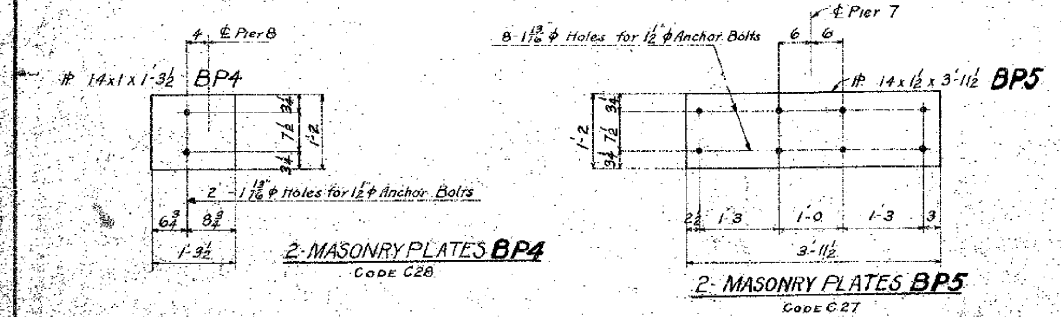
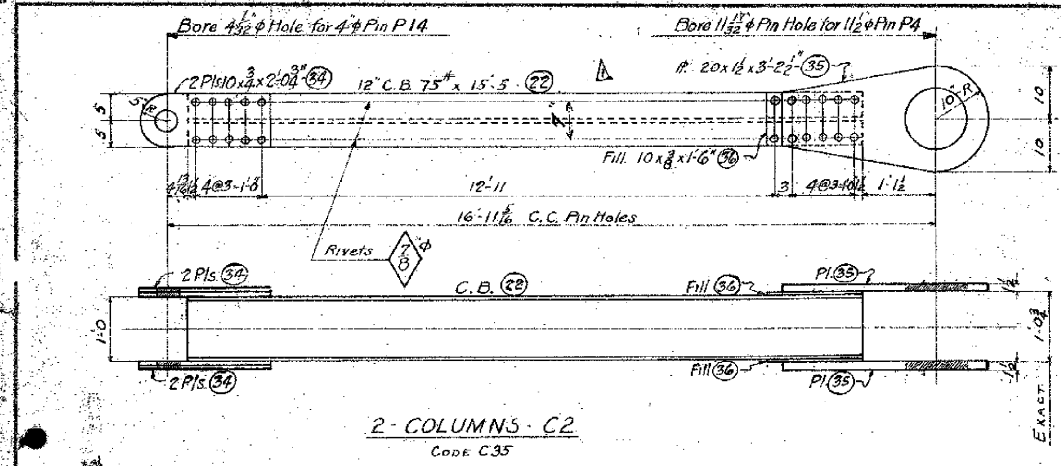
DR. S. J. Irwin
DATE 10-16-27
APPROVED G. F. W. H. C.

1000 1000 1000 1000
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1000 1000 1000 1000

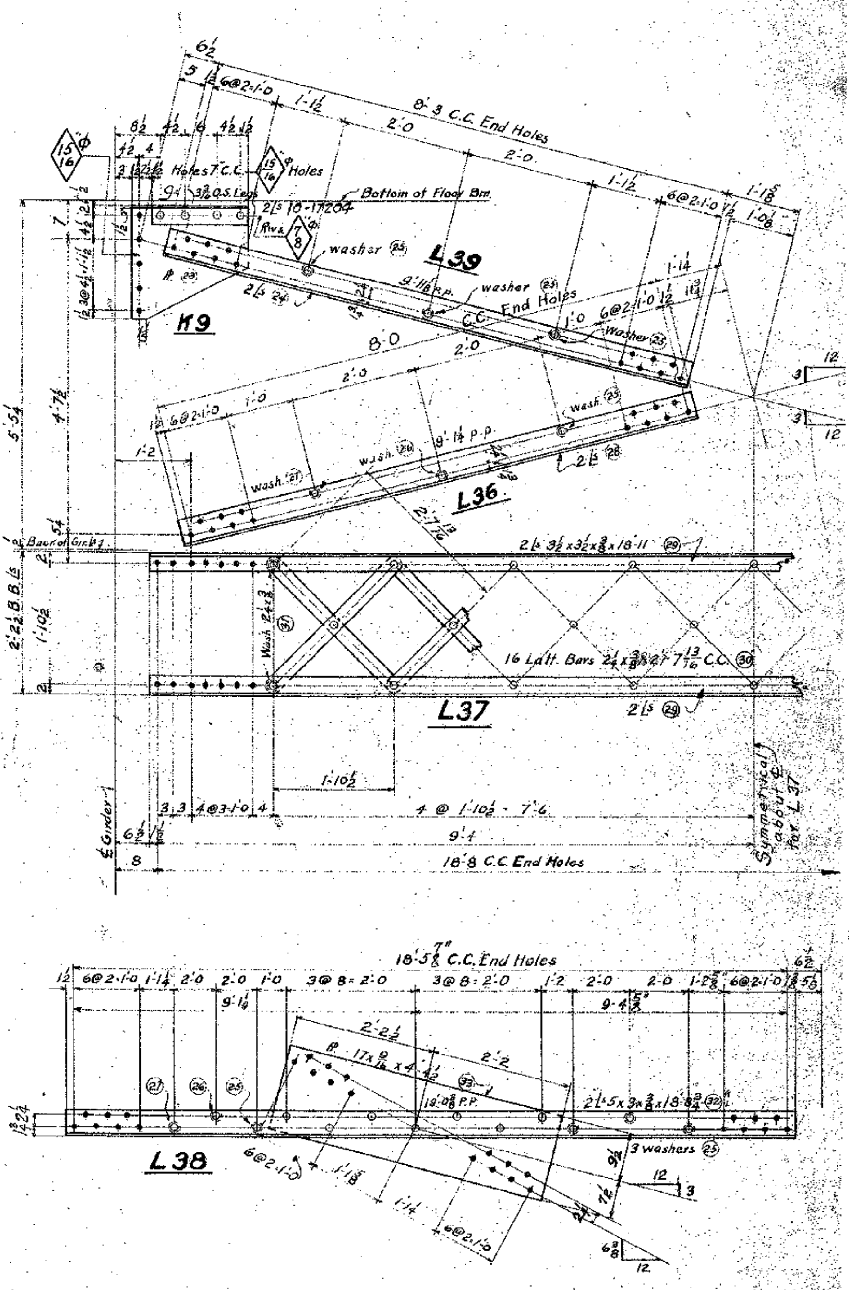
17204

CODE C34

Rivets 3/4" Unless Noted.
Open Holes 1/2" Unless Noted.
Paint - One Coat of Red Lead.



ALTERATIONS		
MARK	DESCRIPTION	DATE
1	Girge length added	11-22-67
2	Grade Elev. changed	11-22-67
3	Note added for grinding and on CS25-CS26	12-1-67
4	Holes Added - Spacing Revised	CS25-CS26 12-8-67
5	Notes added - leave open holes for CS25 to CS34	12-28-67



- 4 BRACKETS - K9
 - 2 DIAGONALS - L36
 - 2 STRUTS - L37
 - 2 DIAGONALS - L38
 - 2 DIAGONALS - L39
- CODE C35

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUEBENVILLE, OHIO

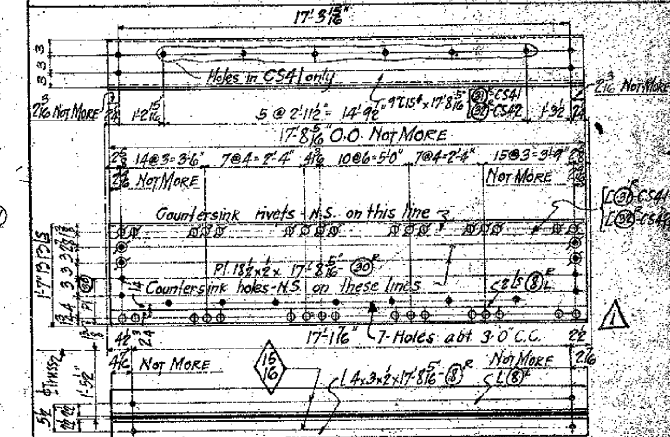
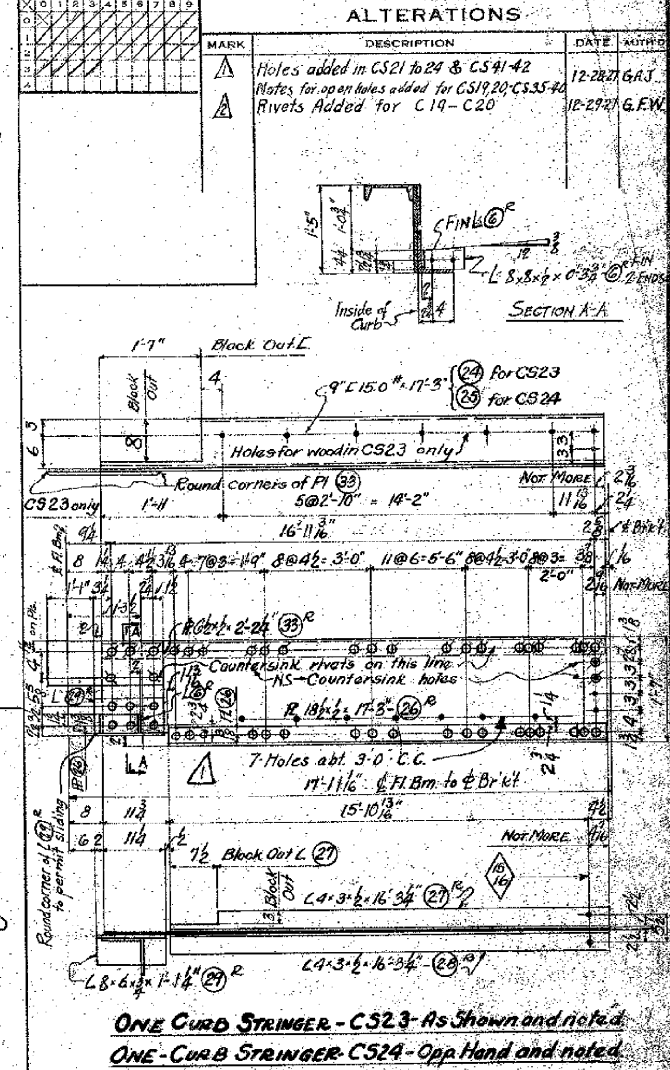
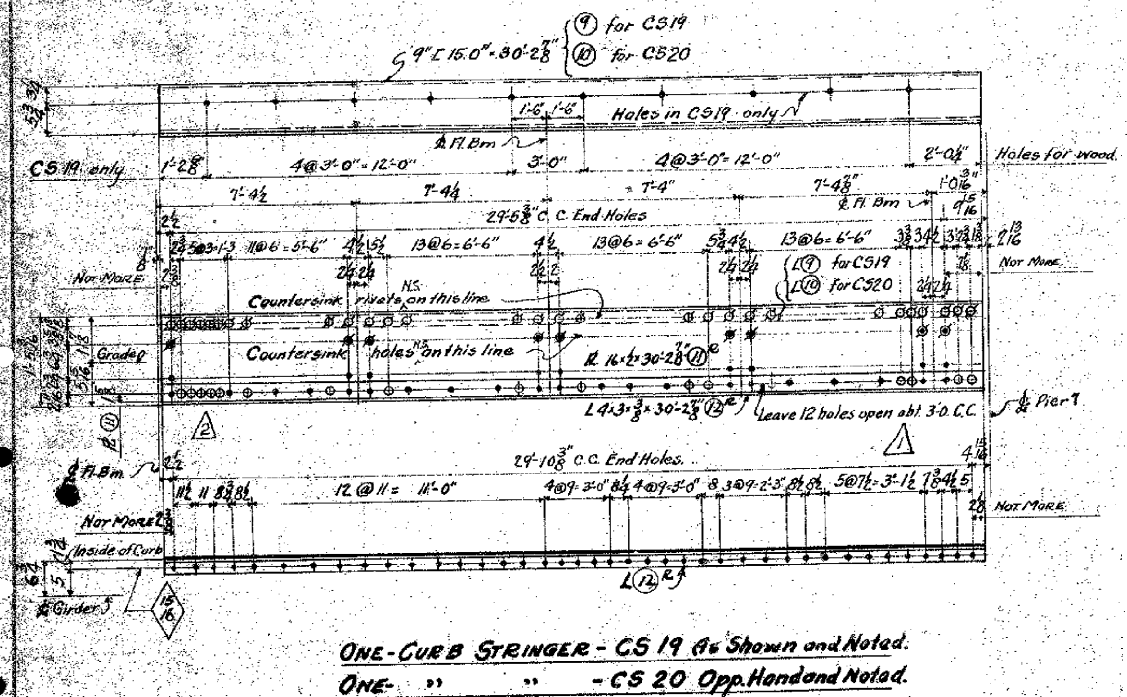
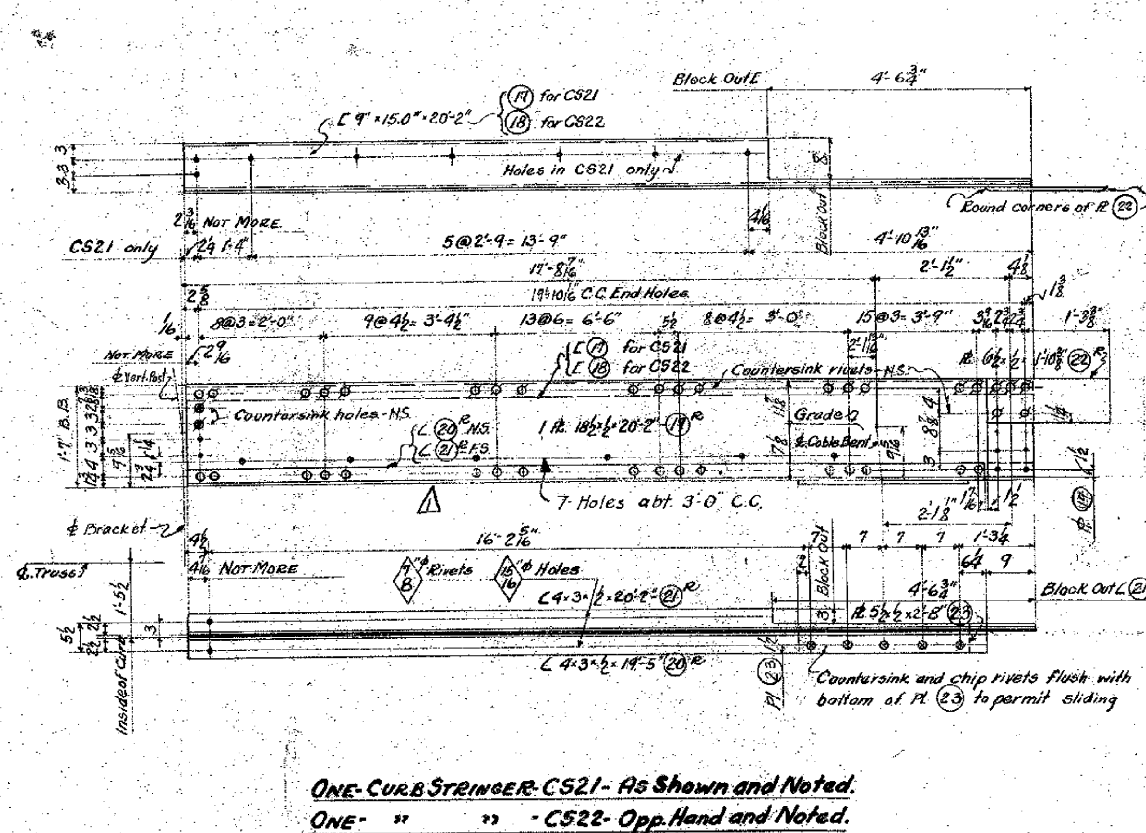
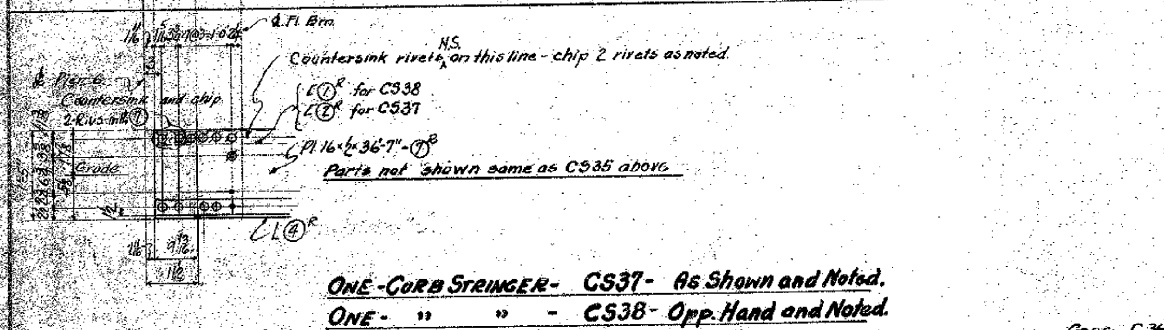
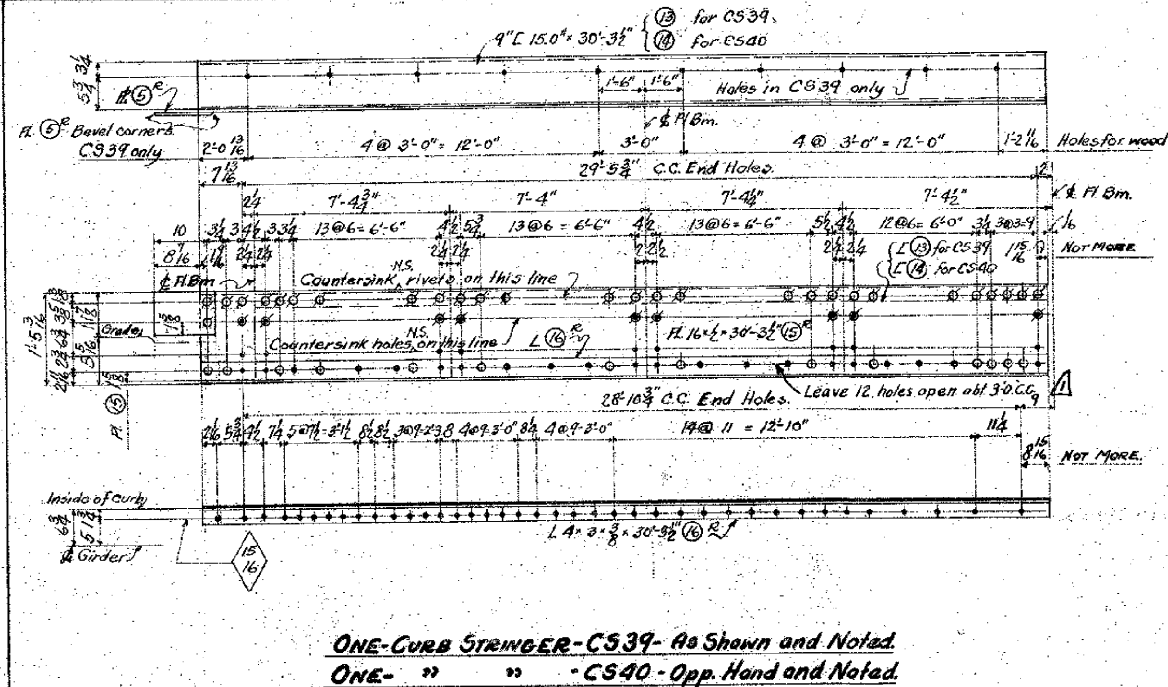
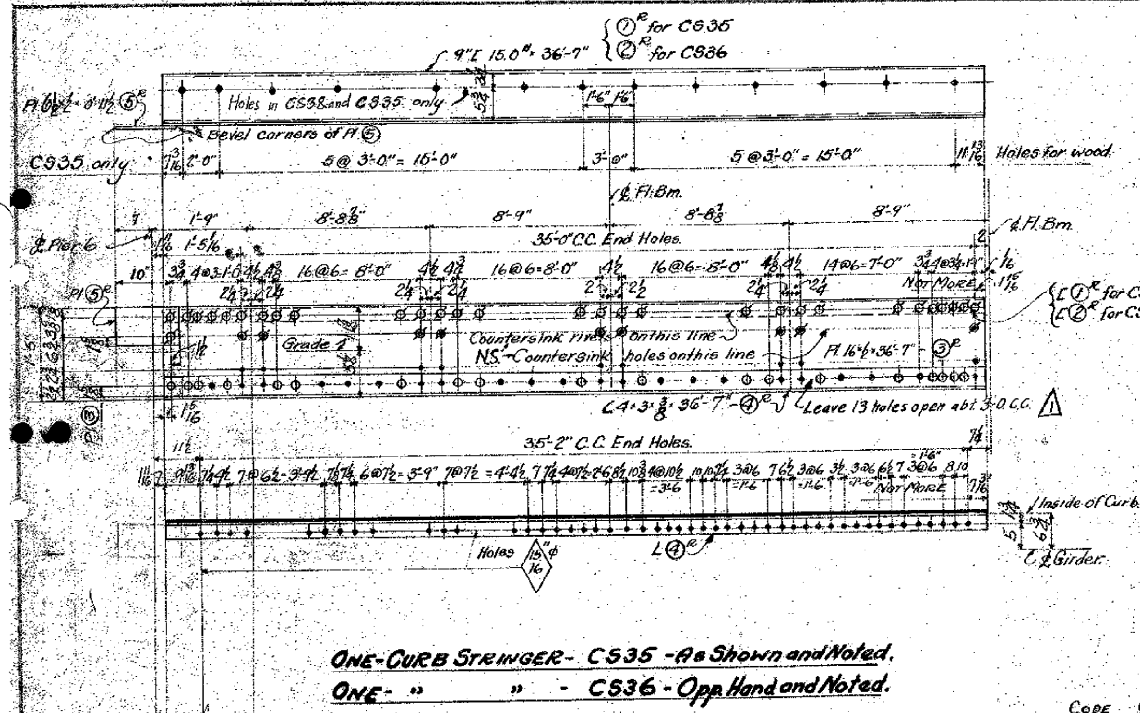
COLUMNS, CURB STRINGERS, BRACING - WVA APP

THE DRAGO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

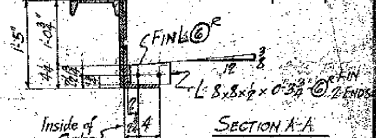
DR: S. Trinin
DATE: 10-25-27
APPROVED: G.F. Wolfe

TO: Onal Auhl
SCALE: 3/4" = 1'-0"
DATE: 11-2-27

17205



ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTHOR
A	Holes added in GS21 to 24 & GS41-42	12-28-71	GAS
A	Holes for open holes added for GS18-20-GS35-40	12-29-71	GFW
	Rivets Added for C19-C20		

[illegible]

STANTON BRIDGE
OVER THE OHIO RIVER AT
STEBENVILLE, OHIO

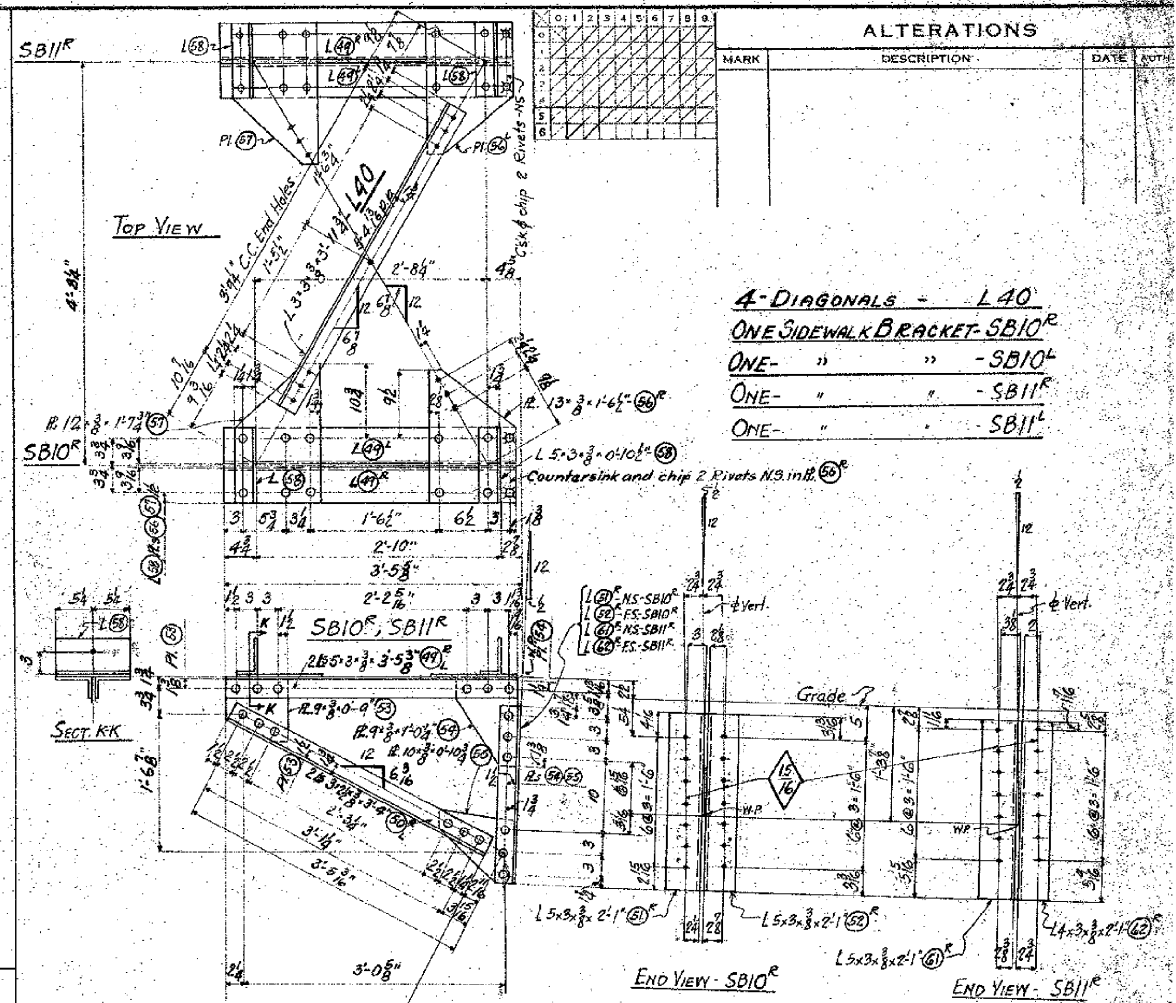
THE
DRAGO

**CONTRACTING
COMPANY**

DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

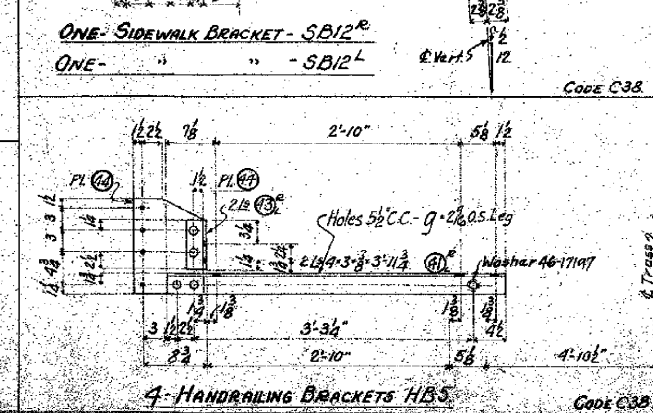
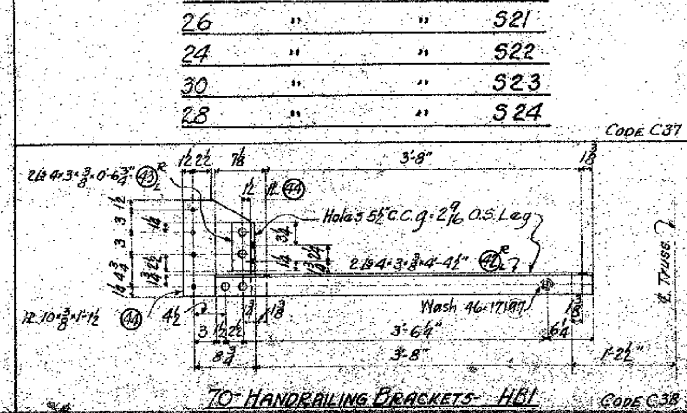
DR. <i>S. Trimin</i>	TR. <i>P. G. Stronig</i>	CH. <i>G. A. Jacob</i>
DATE <i>10-31-27</i>	SCALE $\frac{3}{4} = 1 \text{ FOOT}$	DRAWING NO. <i>17206</i>
APPROVED <i>G. F. Wolfe</i>	DATE <i>12-10-27</i>	
APPROVED	DATE	

Rivets - $\frac{3}{8}$ " ϕ Unless Noted.
Open Holes - $\frac{1}{16}$ " Unless Noted.
Paint - One Coat of Red Lead.
Rivets marked Counter sunk not to be chipped
unless noted.



The technical drawing consists of three main parts:

- Top Left:** An "END VIEW - SB10°" showing a cross-section of a tapered member. It includes dimensions for thicknesses (L , L_1) and a radius (R_{10}). A note indicates "1/8\"
- Top Right:** Another "END VIEW - SB11°" showing a similar cross-section.
- Bottom Left:** An elevation view of the component. It shows a base plate with various holes and dimensions. Key dimensions include overall width of 1'-2 1/2\", height of 1'-3 1/2\", and hole diameters ranging from 3/8\" to 1 1/2\". Notes specify "9-1/8\" AS Lays", "1/4\" WS SLOTS", "Grade", and "WR for Brackets".
- Bottom Right:** A list of specifications:
 - Rivets - 3/4\" ϕ
 - Open Holes - 1 1/8\" ϕ Unless Noted
 - Paint - One Coat of Red Lead.



Rivets - $4 \frac{3}{4} \phi$
Open Holes - $1 \frac{3}{16} \phi$ Unless Noted
Paint - One Coat of Red Lead.

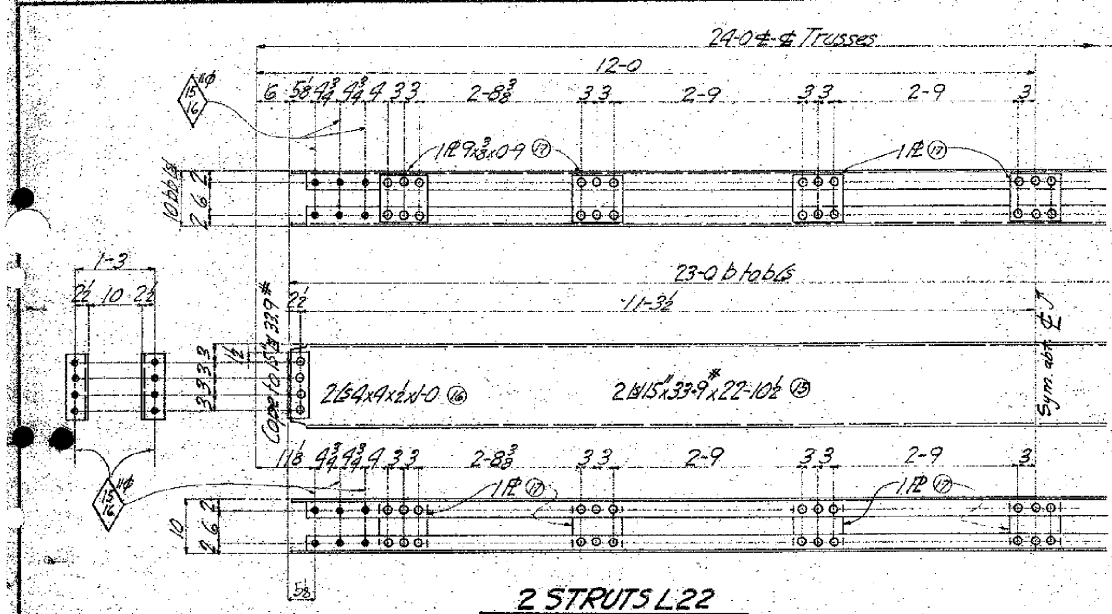
	W 642	C57,C38	88.10.97	
NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBBINSVILLE, OHIO.

SIDEWALK BRACKETS, SIDEWALK STRINGERS, HANDRAILS, POSTS, SUBSP...

THE
DRAYO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH

DR. STEINER
DATE 11-7-27
APPROVED G. FitzWalter
DRAWN BY
SCALE 1" = 10'-0" (or)
DATE 11-30-27
CHECKED G. N. Jackson
DRAWING NO.
17207



For L12
For L13, L14, L15
For L16
For L17
For L18, L19, L20
For L21

28-64 ptop
29-78 ptop
29-46 ptop
27-18 ptop
29-61 ptop
29-63 ptop

For L12 1-23
For L13, L14, L15 1-33
For L16 1-33
For L17 1-33
For L18, L19, L20 1-33
For L21 1-33

13-08
13-76
11-108
11-96
13-52
13-52

12-108
13-76
11-78
11-52
13-52
13-52

1-98
1-33
1-33
1-33
1-33
1-33

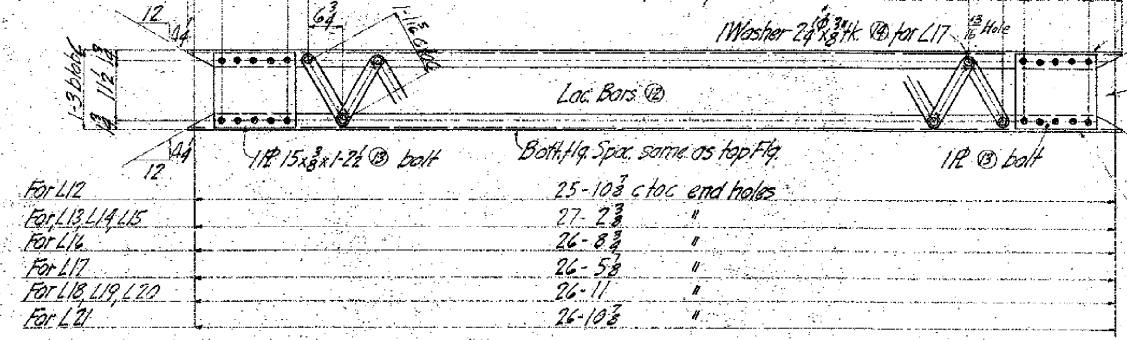
For L15, L16, L17, L18 7012-1-2
For L19, L20 5012-10
For L21, L22, L23, L24 4012-8

7012-1-2 For L15, L16, L17, L18
5012-10 For L19, L20
4012-8 For L21, L22, L23, L24

For L21 81/2 4013-10-9
For L18, L19, L20 28 4013-10-9
For L17 81/2 4013-10-9
For L16 8 4013-10-9
For L13, L14, L15 78 4013-10-9
For L12 76 4013-10-9

41 of 63-23-08
41 of 63-23-08
40 of 63-22-6
41 of 63-23-08
41 of 63-23-08
39 of 63-21-14

4 4013-10-8
4 4013-10-8
4 4013-10-9
4 4013-10-9
4 4013-10-9
4 4013-10-9



126-18 for L12
127-48 for L13
127-48 for L14
127-18 for L19
127-18 for L20
127-18 for L21
127-48 for L15
126-114 for L16
126-88 for L17
127-18 for L18
39 Loc. Bars 2 1/2 at 16 cloc for L12
40 " " " for L17
41 " " " for L13, L14, L15, L16, L17, L18, L19, L20, L21
1- L 5x3x1/2 x 26-18 for L12
12 for L13
12 for L14
12 for L15
12.5x3x1/2 x 26-114 for L16
12.5x3x1/2 x 26-88 for L17
12 for L18
12 for L19
12 for L20
12 for L21

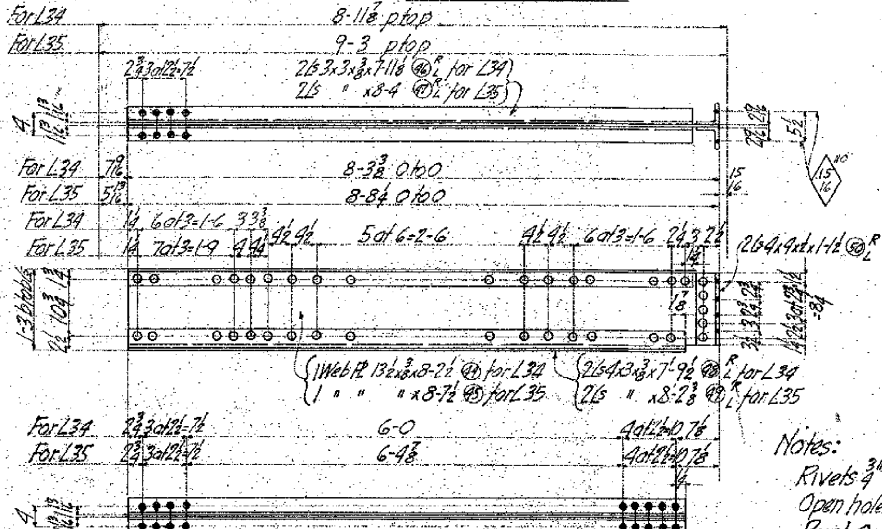
2 PLATES M4

2 LATERALS L12
18 " L13
8 " L14

2 LATERALS L15
2 " L16
2 " L17
10 " L18

8 LATERALS L19
2 " L20
18 " L21

2 LATERALS L23
2 " L24
36 " L25
16 " L26
4 " L27
4 " L28
4 " L29
20 " L30
16 " L31
4 " L32
36 " L33



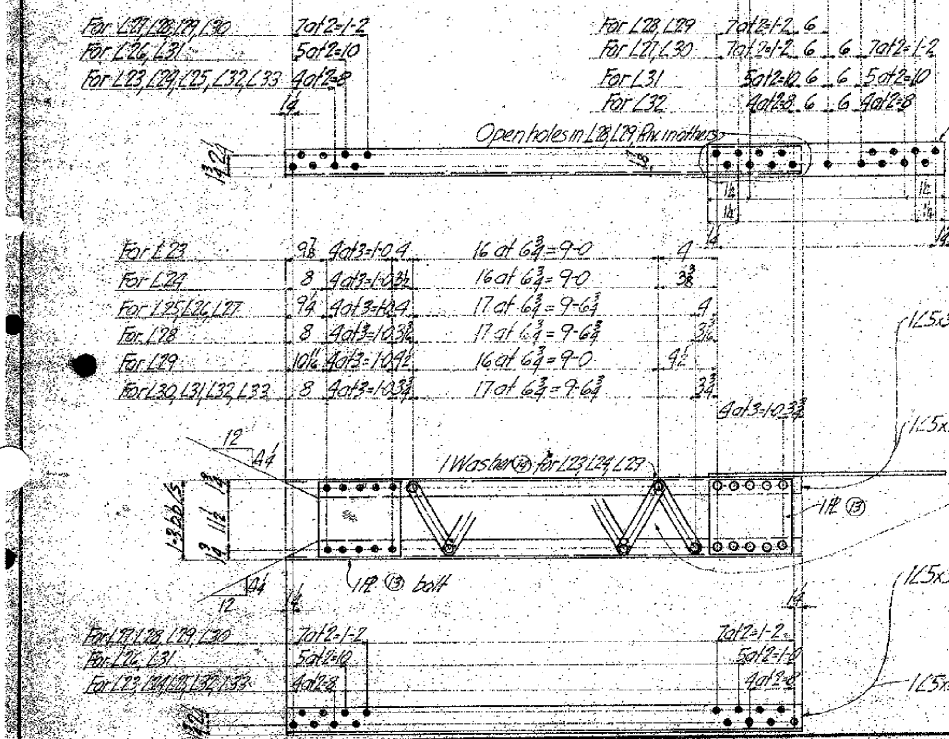
2 STRUTS L34
2 " L35

Notes:
Rivets 3/8
Open holes 1/8 unless noted
Paint One coat red lead

For L23, L24	14-36
For L25, L26, L27	14-108
For L28	14-88
For L29	14-66
For L30, L31, L32	14-96
For L33	14-78

For L23	1-23	12-78	54
For L24	1-48	12-46	63
For L25, L26, L27	1-33	13-14	516
For L28	1-33	12-108	6
For L29	1-33	12-88	6
For L30, L31, L32	1-33	12-114	6
For L33	1-33	12-114	516

For L23 4013-5 68 4013-6
For L24 4013-6 54 4013-6
For L25, L26, L27 4013-5 516 4013-6
For L28 4013-5 516 4013-6
For L29 4013-5 516 4013-6
For L30, L31, L32 4013-5 516 4013-6
For L33 4013-5 516 4013-6



ALTERATIONS			
MARK	DESCRIPTION	DATE	BY
1	No. of Pcs. changed for M5 - M6	1-8-27	G.A.T.
2	Mark changed for L on L12	1-11-27	

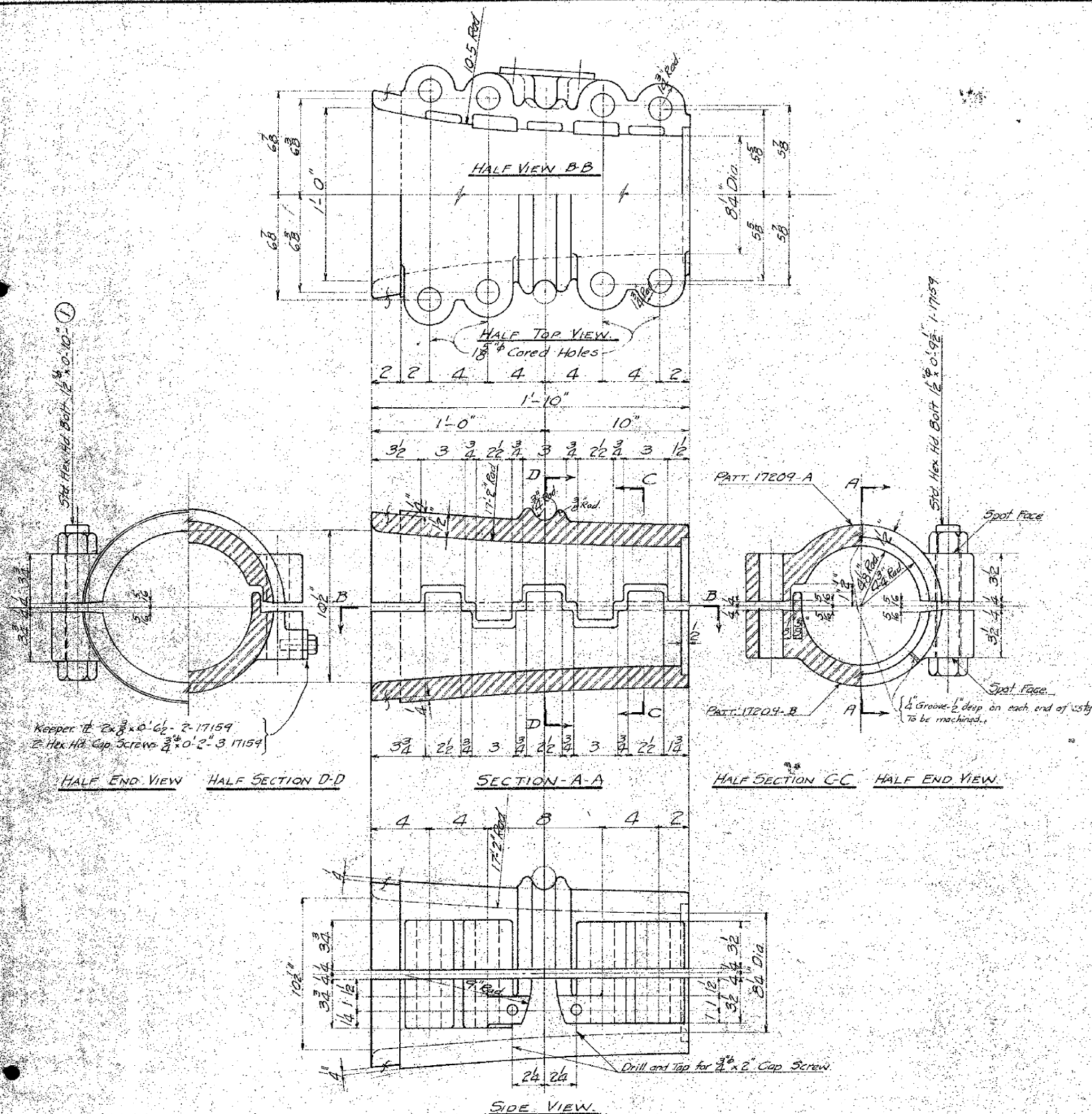
NO.	REP'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
1	W642	C20	18-82		

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUEBENVILLE OHIO
BOTTOM CHORD STRUTS & LATERALS

THE
DRAVO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

DR. H. Miedel, Jr.
DATE 10-24-27
APPROVED G.F. Wolfe
DATE 11-7-27

CH. G.A. Jacob, Jr.
DRAWING NO.
SCALE 3/4" = 1'-0"
DATE 11-7-27
17208



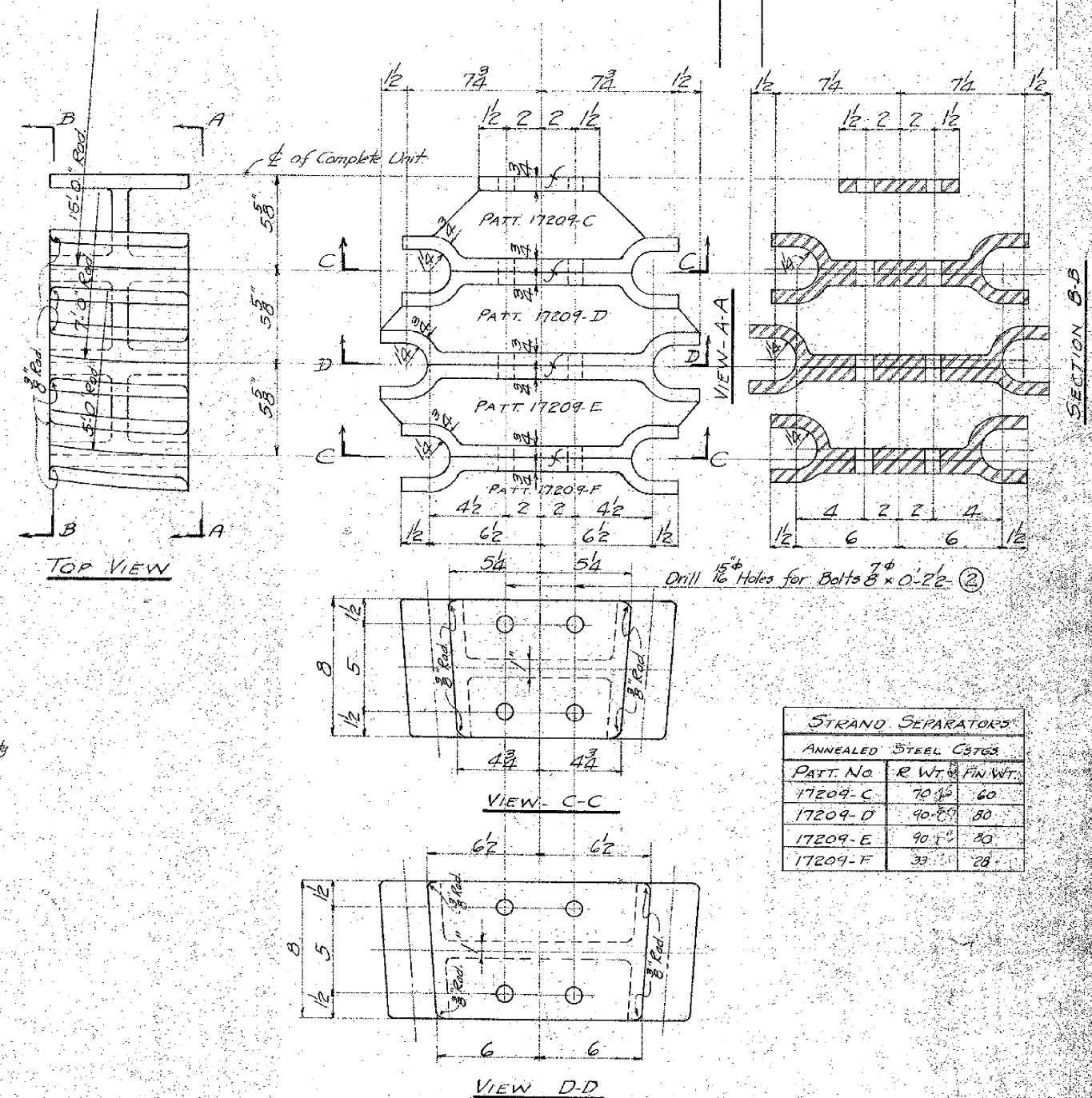
SPLAY CASTING TOP SECTION - PATT 17209-A

ANNEALED STEEL CASTING
ROUGH WT. 200# FIN. WT. 195#

SPRAY CASTING BOTTOM SECTION - PATT. 17209-B

ANNEALED STEEL CASTING
ROUGH WT. 200# FIN. WT. 195#
ACT. RGH. WT. 190#

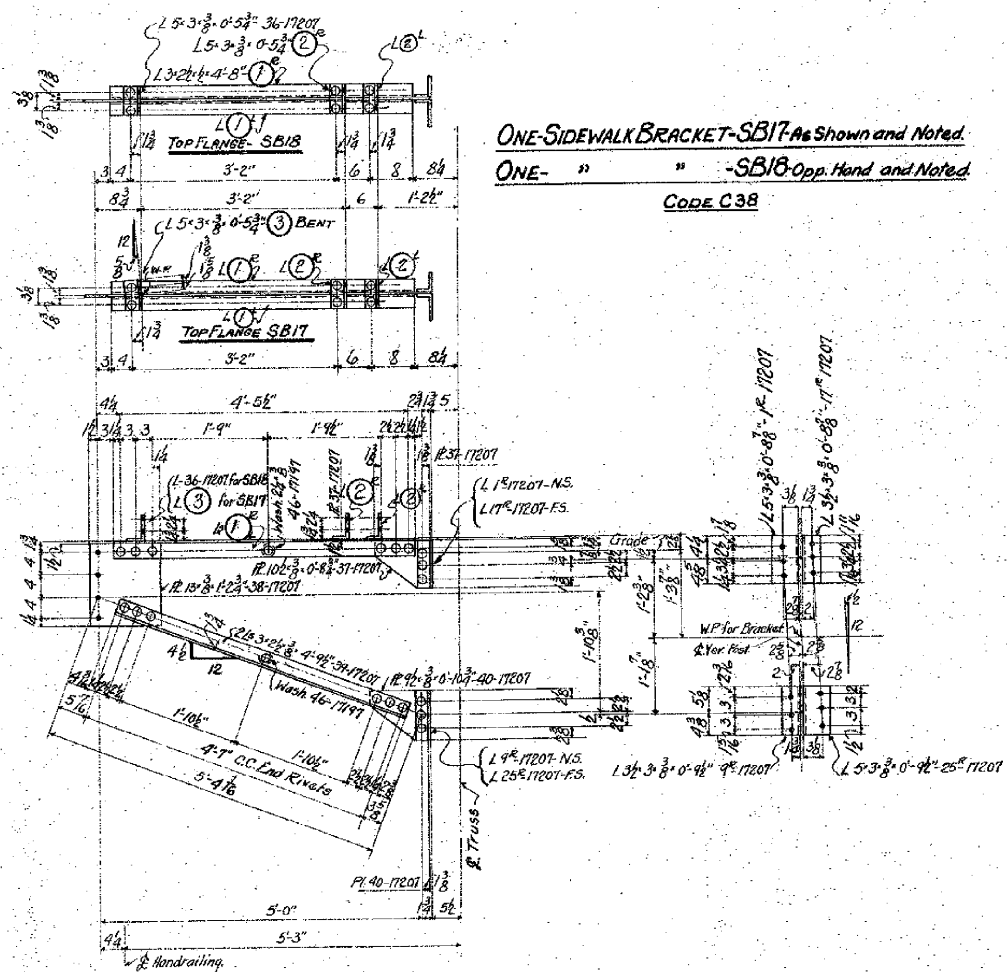
4- COMPLETE SPLAY CASTINGS- SCI



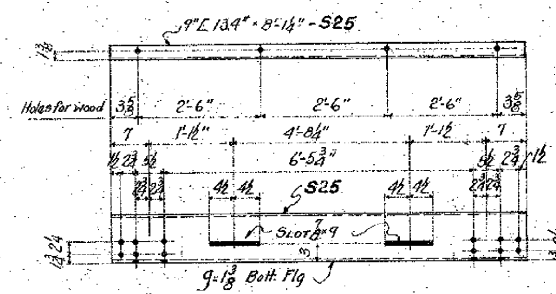
4-COMplete STRAND SEPARATORS-SC2

STRAND SEPARATORS		
ANNEALED STEEL C3763		
PART. NO.	R. WT.	FIN. WT.
17209-C	70.80	60
17209-D	90.80	80
17209-E	90.50	80
17209-F	33.00	28

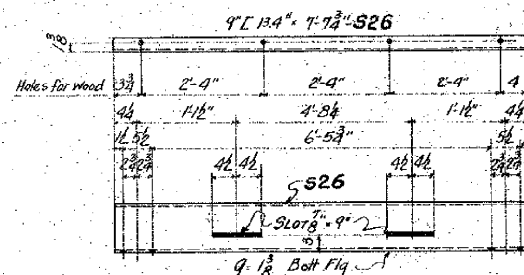
NO. REV'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
	W-642	C-51	66	
<p>STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO.</p> <p>SPLAY CASTINGS- STRAND SEPARATORS</p>				
<p>THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.</p>				
OR G.F. WOLFE	BY G.F. WOLFE		CHECKED <i>ELMER</i>	
DATE OCT 22 1927	SCALE 3"=1'-0"		DRAWING NO.	
APPROVED <i>G.F. Wolfe</i>	DATE NOV 23 1927		17209	
3 SHEETS				



ONE-SIDEWALK BRACKET-SB17 As Shown and Noted.
ONE- " " -SB18 Opp. Hand and Noted.
CODE C38

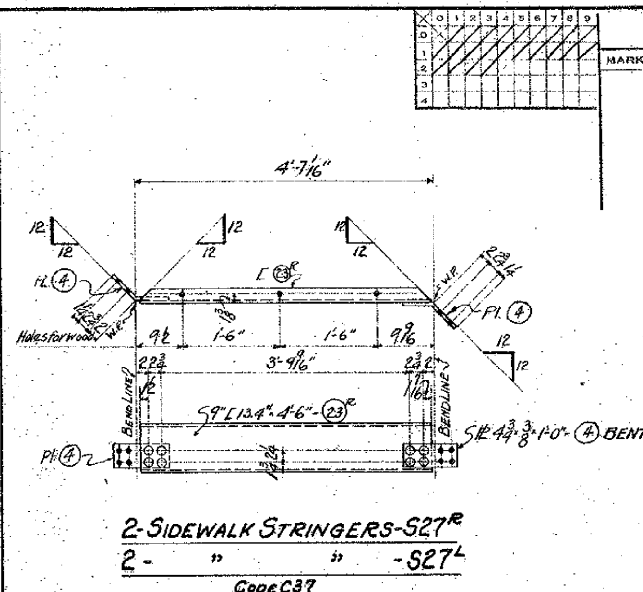


2-SIDEWALK STRINGERS-S25



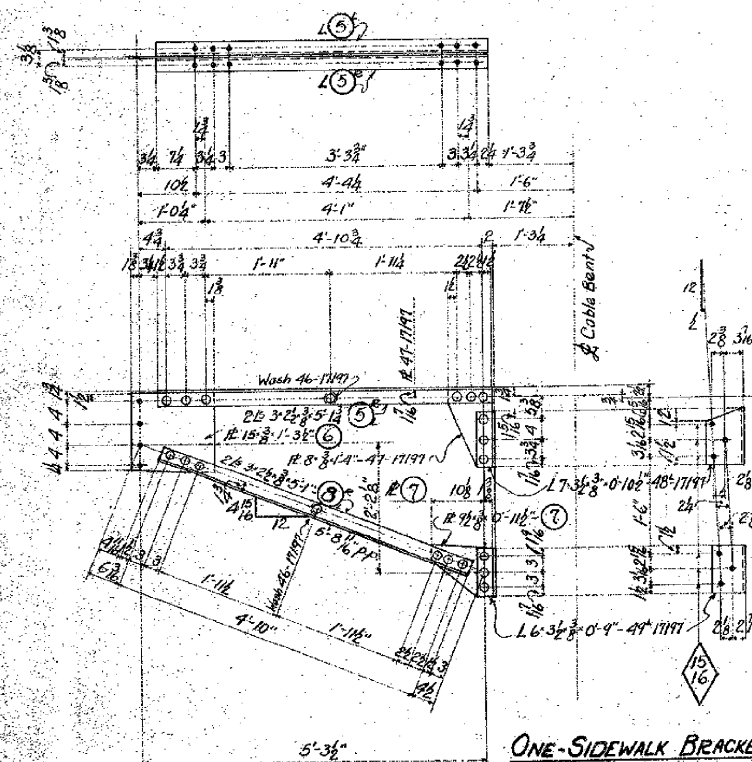
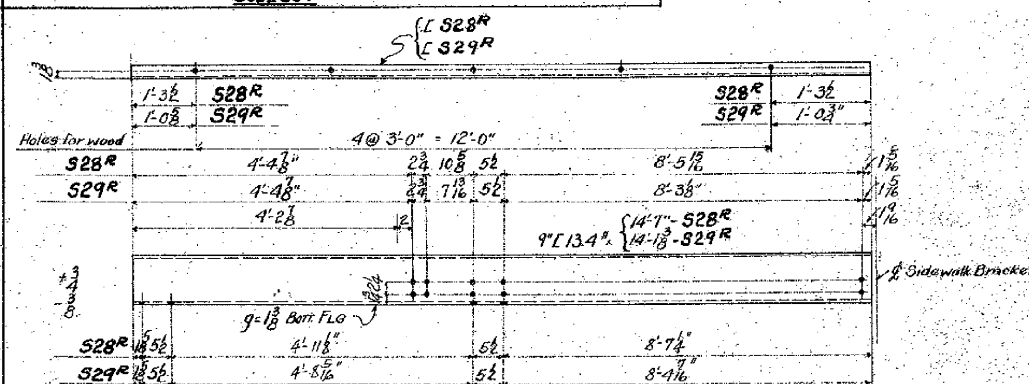
2-SIDEWALK STRINGERS-S26

CODE C37



2-SIDEWALK STRINGERS-S27R
2- " " -S27L
CODE C37

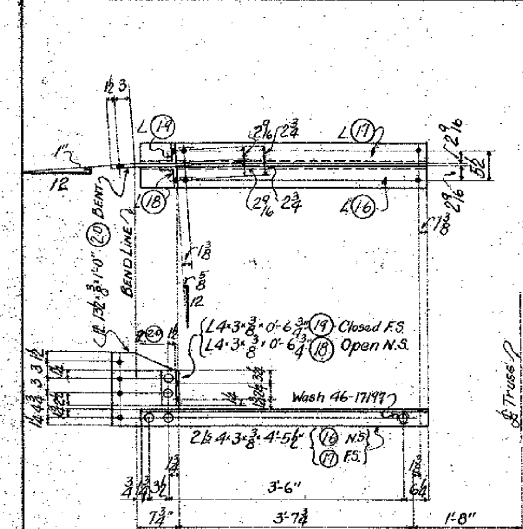
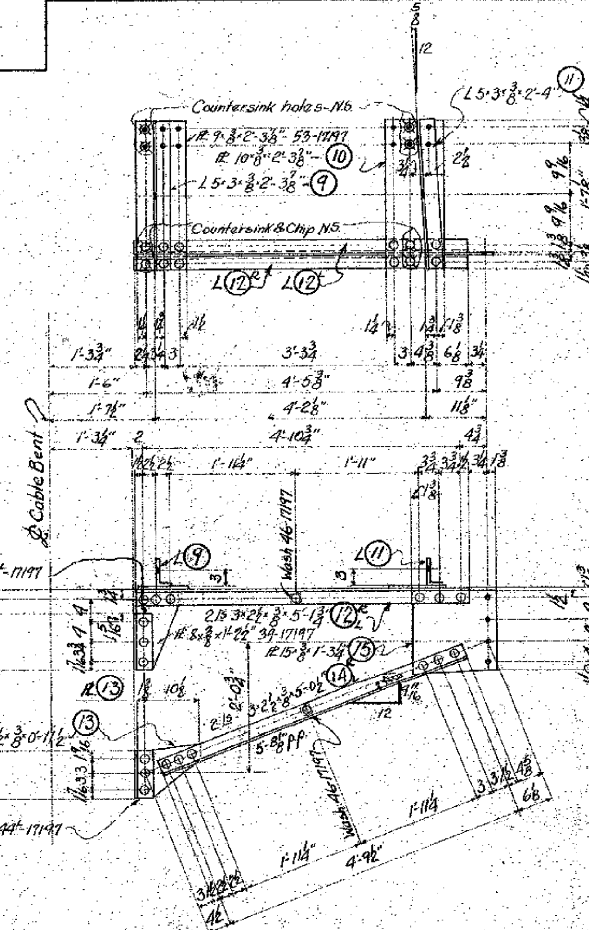
ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTHOR
	ONE-SIDEWALK STRINGER - S28R		
	ONE- " " -S28L		
	ONE- " " -S29R		
	ONE- " " -S29L		
	CODE C37		



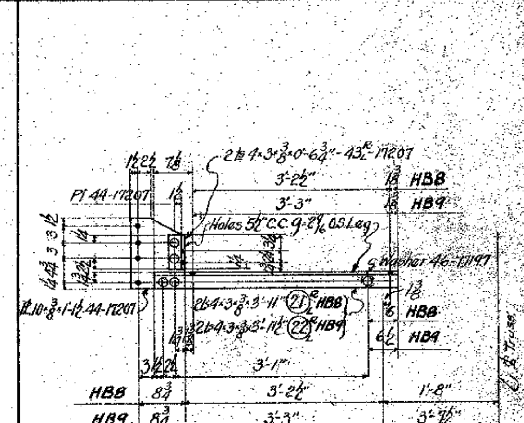
ONE-SIDEWALK BRACKET-SB15

ONE-SIDEWALK BRACKET-SB16

CODE C38



ONE-HANDRAILING BRACKET-HB7
CODE C38



ONE-HANDRAILING BRACKET-HB8
19- " " -HB9

CODE C38

Rivets - 3/8\"/>

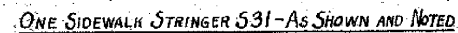
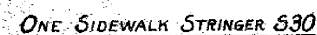
STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO.
SIDEWALK BRKTS, STRINGERS, HANDRAILING BRACKETS, SUSPENSION

THE
DRAY
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

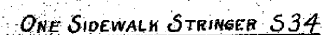
DR. J. TRININ
DATE 11-15-27
APPROVED G. F. Wolfe
DATE 11-30-27

TR. F. G. TRININ
SCALE 3/8\"/>

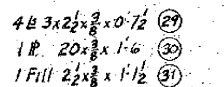
17210



ONE-	"	"	532-OPP. HAND	"	"
ONE	"	"	533-	"	"



ONE " " 535



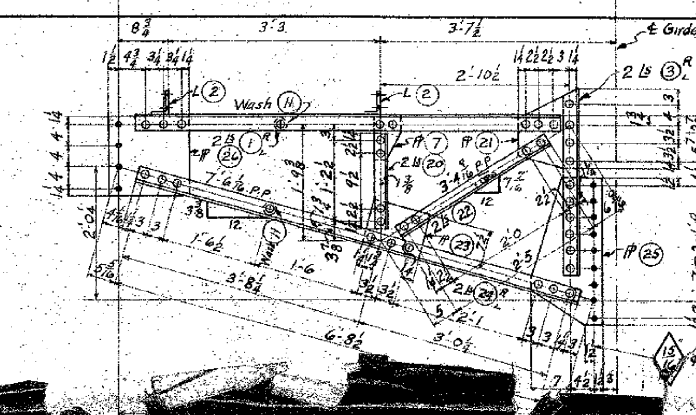
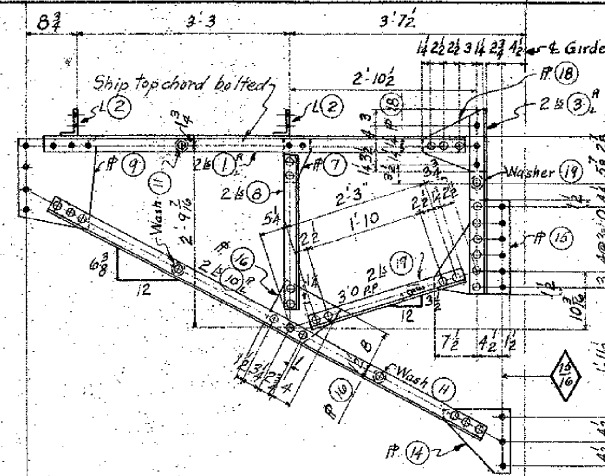
20 HANDRAILING BR'KTS-HB10
14 " " HB11

3- SIDEWALK STRINGERS S36^R AS SHOWN AND NOTED

3	"	"	S36 ^L OPP HAND	"	"
3	"	"	S37 ^R AS SHOWN	"	"
3	"	"	S37 ^L OPP HAND	"	"
2	"	"	S38 ^R AS SHOWN	"	"
ONE	"	"	S38 ^L OPP HAND	"	"
2	"	"	S39 ^R AS SHOWN	"	"
ONE	"	"	S39 ^L OPP HAND	"	"
ONE	"	"	S40 ^R AS SHOWN	"	"
ONE	"	"	S40 ^L OPP HAND	"	"
ONE	"	"	S41 ^R AS SHOWN	"	"
ONE	"	"	S41 ^L OPP HAND	"	"
ONE	"	"	S42 OPP HAND	"	"
ONE	"	"	S43 OPP HAND	"	"
ONE	"	"	S44 ^R AS SHOWN	"	"
ONE	"	"	S44 ^L OPP HAND	"	"
ONE	"	"	S45 ^R AS SHOWN	"	"
ONE	"	"	S45 ^L OPP HAND	"	"
2	"	"	S46 ^R AS SHOWN	"	"
ONE	"	"	S46 ^L OPP HAND	"	"
2	"	"	S47 ^R AS SHOWN	"	"
ONE	"	"	S47 ^L OPP HAND	"	"
ONE	"	"	S48 AS SHOWN	"	"
ONE	"	"	S49 AS SHOWN	"	"

CODE C 37

ONE- SIDEWALK BRACKET SB22
CODE C38



2 L 3 x 2 1/2 x 3/8 x 6' 5 1/2	① ^R
2 L 5 x 3 x 3/8 x 0' 5 3/4	②
2 L 3 1/2 x 3 x 3/8 x 2' 10 1/2	③ ^R
1 P 7 1/4 x 3/8 x 1' 6	④
1 P 10 1/2 x 3/8 x 1' 3 1/4	⑤
2 L 2 1/2 x 2 x 3/8 x 3' 3	⑥ ^R
1 P 5 x 3/8 x 0' 8	⑦
2 L 2 1/2 x 2 x 3/8 x 2' 4	⑧
1 P 14 x 3/8 x 1' 4"	⑨
2 L 3 x 2 1/2 x 3/8 x 7' 5 1/2	⑩ ^R
3 Washers 2 1/2 x (1 1/2 + 1 1/2)	⑪
1 L 3 x 2 1/2 x 3/8 x 4' 0 1/2	⑫
1 P 9 x 3/8 x 0' 10 1/2	⑬
1 P 11 x 3/8 x 0' 11 1/2	⑭

19	SIDEWALK BRACKETS	SB19
ONE	" "	SB20

CODE C38

1 Fl. $13\frac{1}{2} \times \frac{3}{8} \times 1'-6"$ (15)
1 Fl. $9\frac{1}{2} \times \frac{3}{8} \times 0'-11\frac{1}{2}"$ (16)
2 Ls. $2\frac{1}{2} \times 2 \times \frac{3}{8} \times 2'-5\frac{1}{2}"$ (17)
1 Fl. $10\frac{1}{2} \times \frac{3}{8} \times 0'-11\frac{3}{4}"$ (18)
1 Washer $2\frac{1}{2} \times \frac{3}{16}$ (19) $\frac{13}{16} \phi$ Hole

ONE - SIDEWALK BRACKET - SB21
CODE C38

Rivets: $\frac{3}{4}$ " ϕ
Open Holes $\frac{13}{16}$ " ϕ Unless Noted
Paint: One Coat of Red Lead

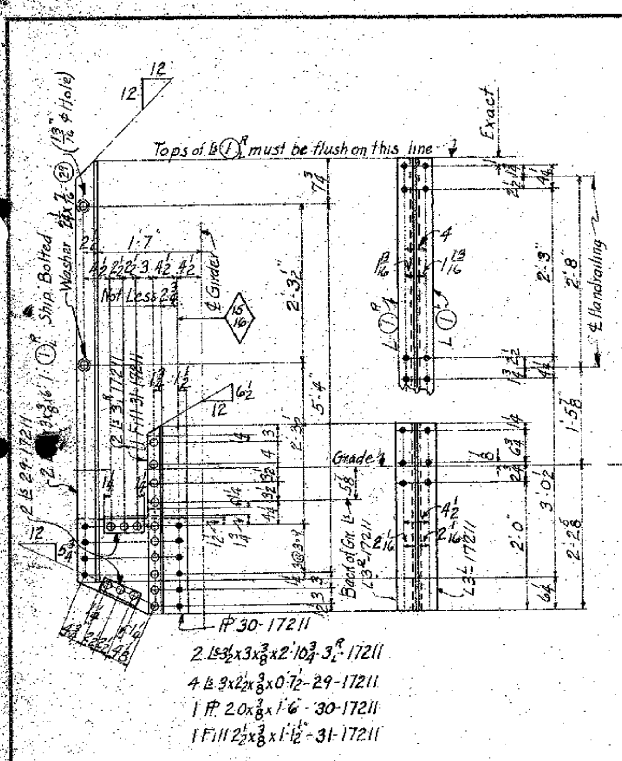
NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.

STANTON BRIDGE
OVER THE OHIO RIVER AT
STEBENVILLE OHIO

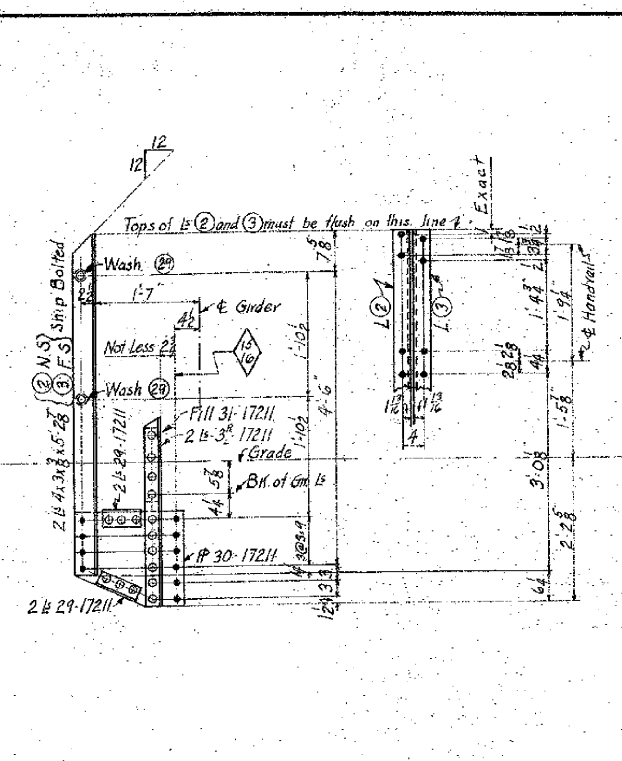
SIDEWALK STRGERS AND BRKTS. HANDRAILING POSTS-W VA APPR

THE
DRAYO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT
PITTSBURGH, PA

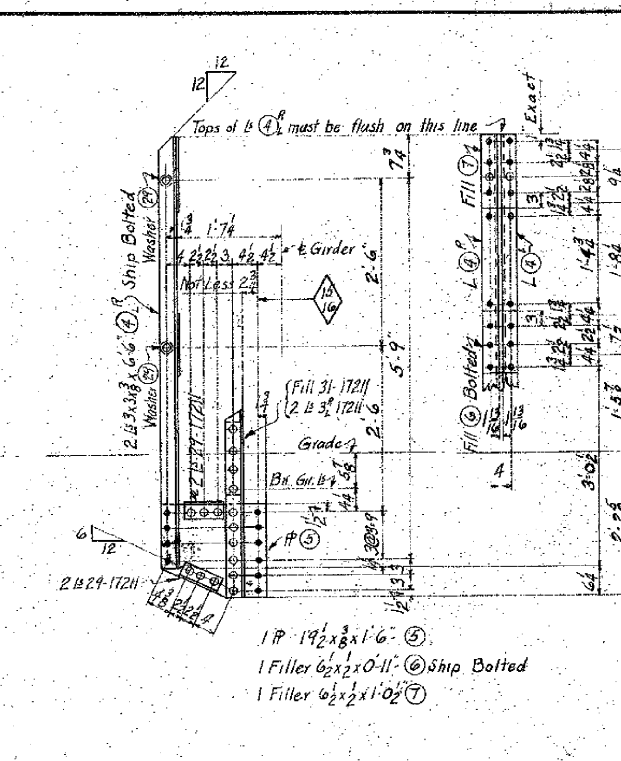
DR. S. Trinin R. Orval 12-3 CH. G. A. 1000-124-27
DATE 12-27-3- [REDACTED] G. NO. 11
APPROVED G. F. Wolf [REDACTED]



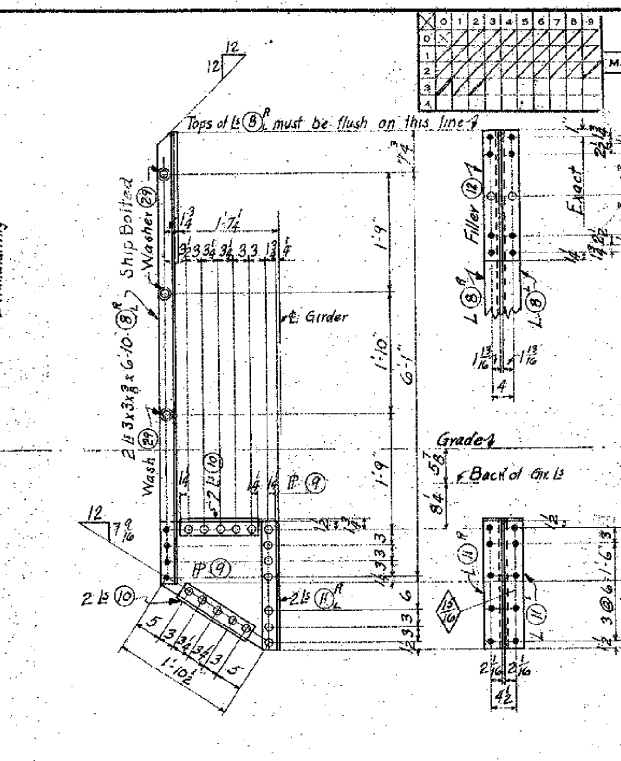
ONE-HANDRAILING BRACKET - HB12



ONE-HANDRAILING BRACKET - HB13

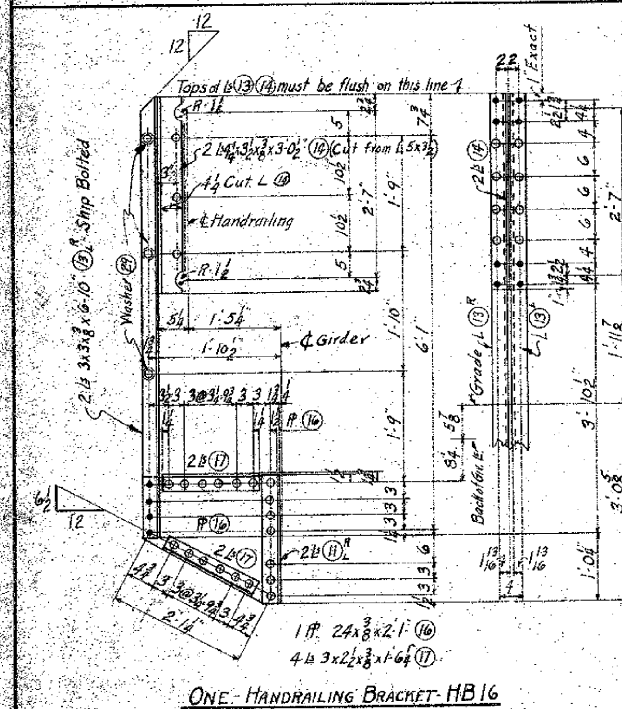


ONE-HANDRAILING BRACKET - HB14

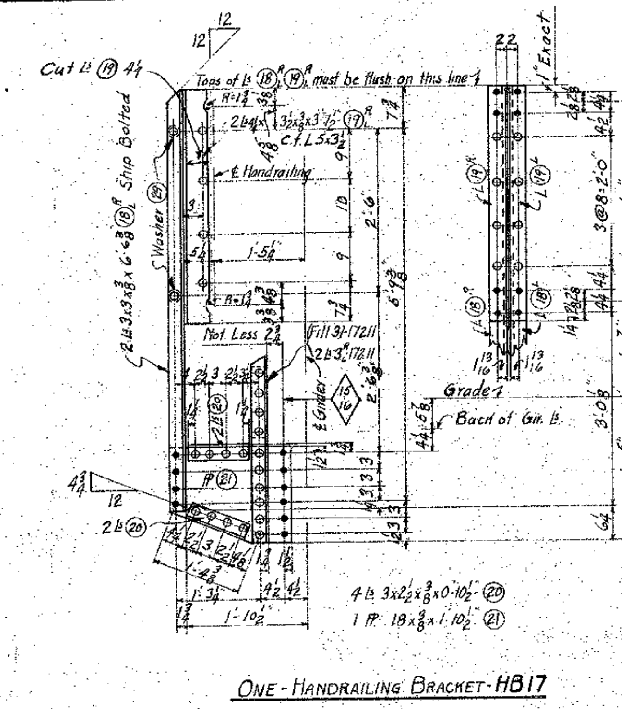


ONE-HANDRAILING BRACKET - HB15

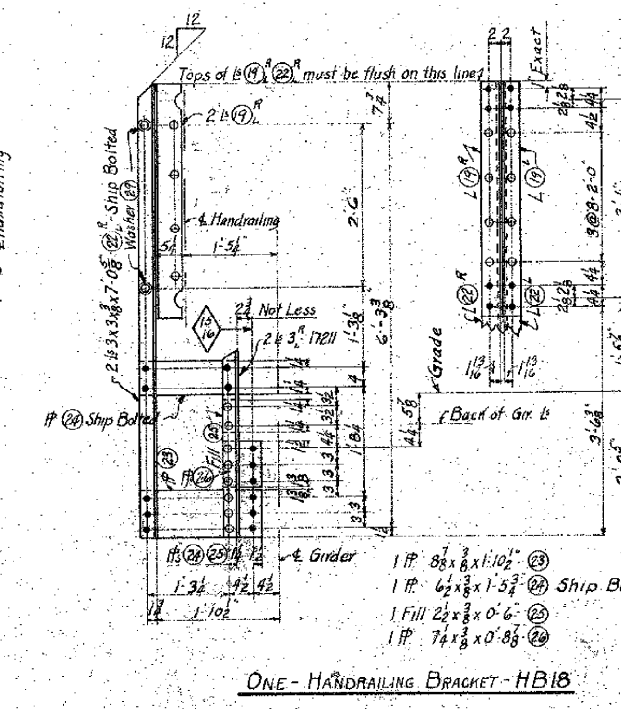
ALTERATIONS										MARK	DESCRIPTION	DATE	AUTH
NO.	BY	CHKD.	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE				
1													
2													
3													
4													



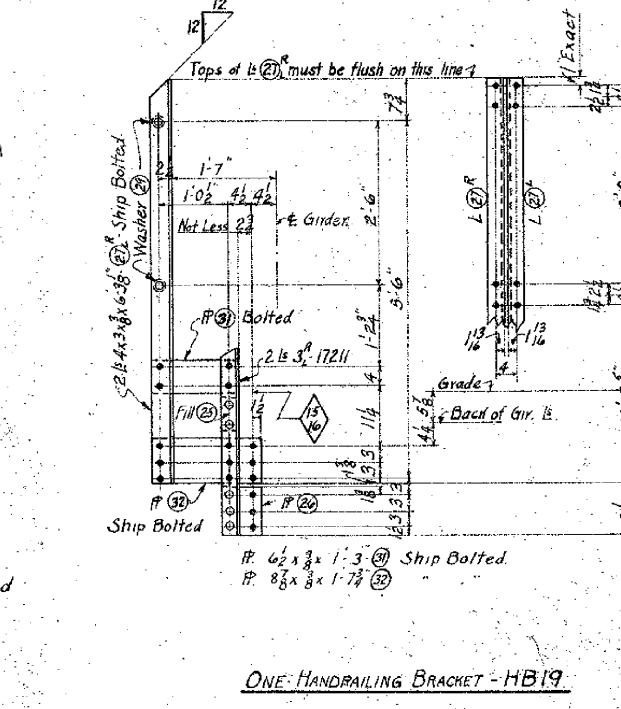
ONE-HANDRAILING BRACKET - HB16



ONE-HANDRAILING BRACKET - HB17

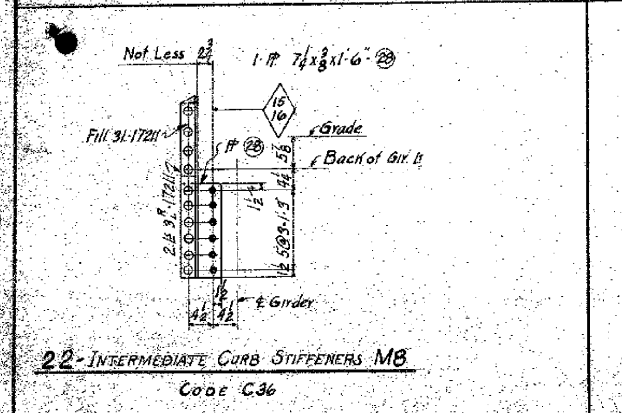


ONE-HANDRAILING BRACKET - HB18

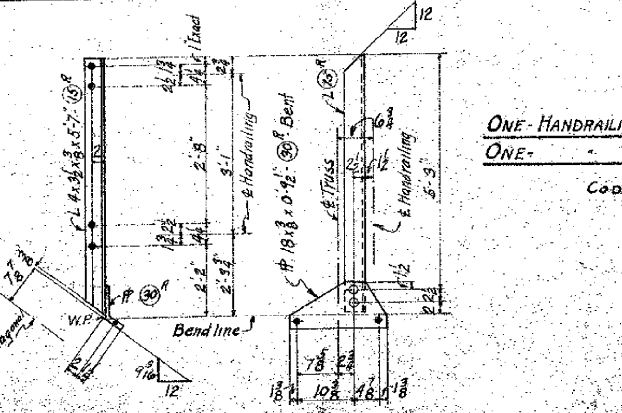


ONE-HANDRAILING BRACKET - HB19

ALTERATIONS										MARK	DESCRIPTION	DATE	AUTH
NO.	BY	CHKD.	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE				
1													
2													
3													
4													

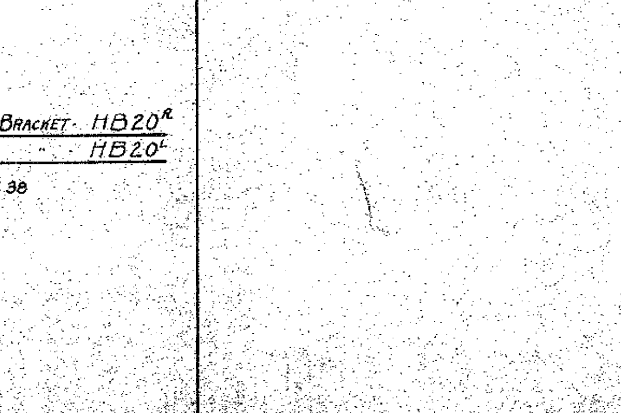


22-INTERMEDIATE CURB STIFFENERS MB



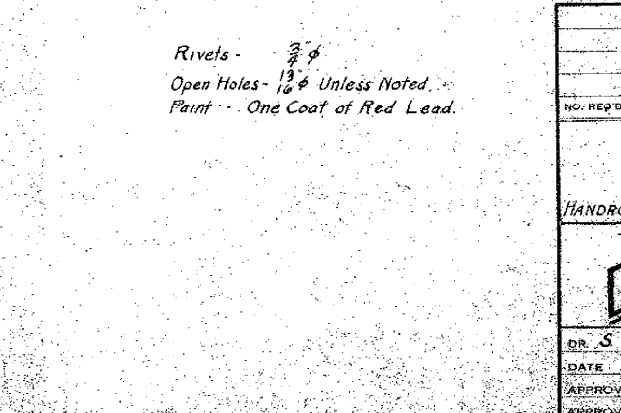
ONE-HANDRAILING BRACKET - HB20

Code C38



ONE-HANDRAILING BRACKET - HB20

Code C38

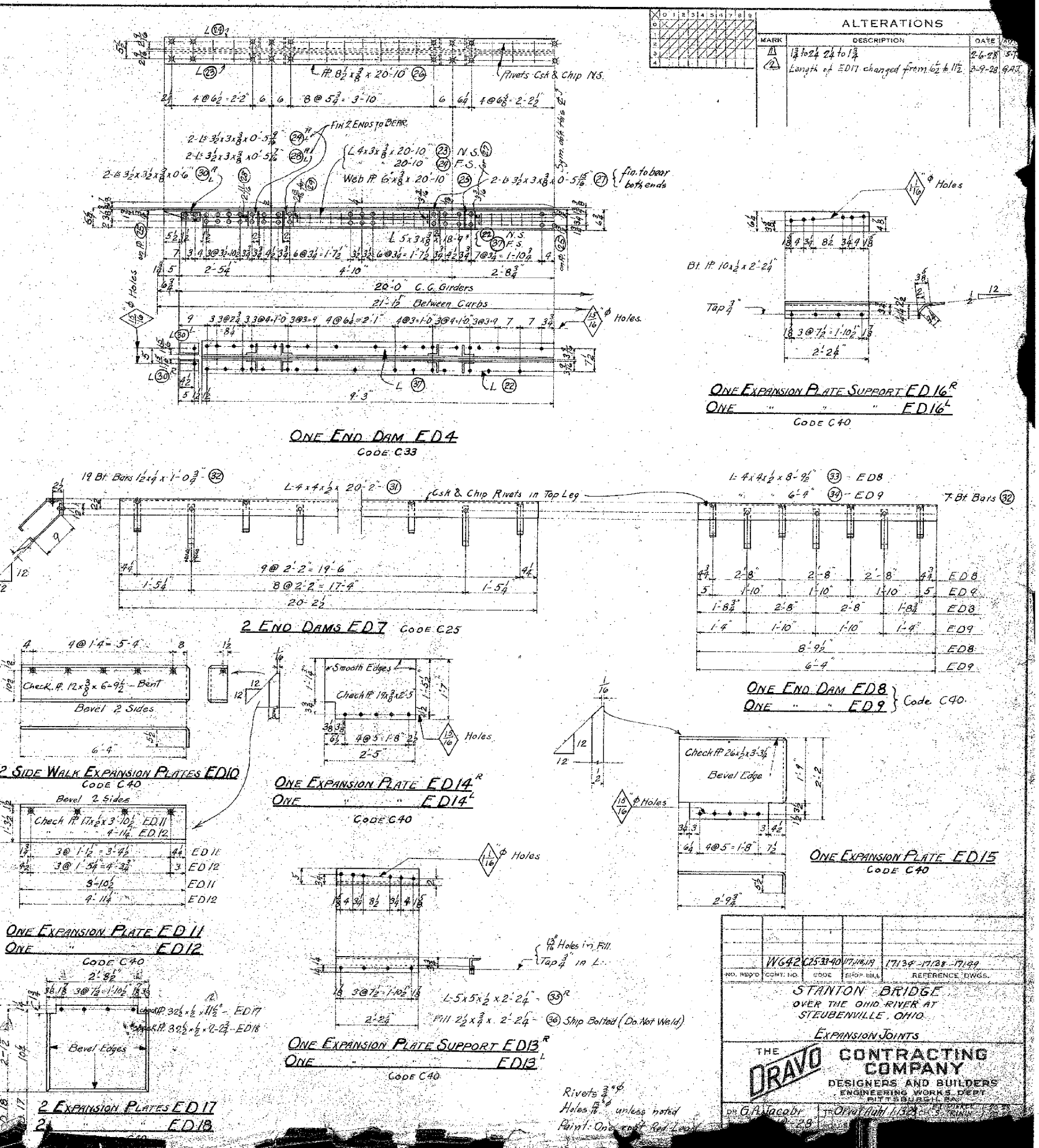
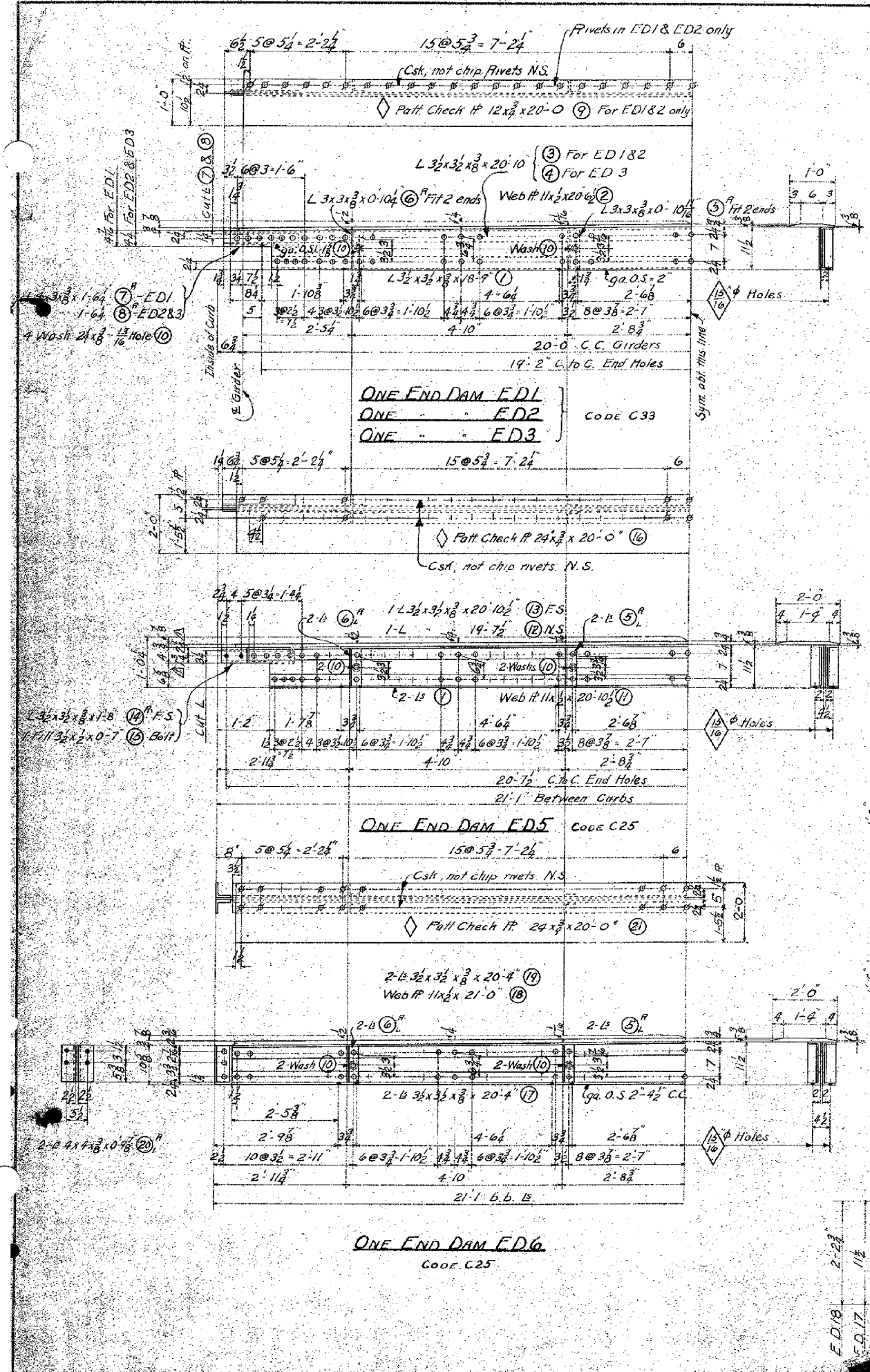


ONE-HANDRAILING BRACKET - HB20

Code C38

NO. REP'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
W642	C38	C38	107-108-109	
STANTON BRIDGE OVER THE OHIO RIVER, AT STUEBENVILLE, OHIO				
HANDG. DRMTS, CURB STIFFENERS - W.V.A. APPROACH				
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. S. TRIM	TR. ORVAL BELL	12-13-27	CHG. A. TACCHINI	12-28-27
DATE 12-10-27	SCALE 3/4" = 1'-0"	DATE 12-23-27	DRAWING NO.	17212
APPROVED G. F. WOLFE	DATE 12-23-27			
APPROVED	DATE			

Rivets - 3/8"
Open Holes - 1/2" Unless Noted.
Paint - One Coat of Red Lead.



ALTERATIONS		
MARK	DESCRIPTION	DATE
1	13 to 24 to 13	2-6-28
2	Length of ED17 changed from 6'2" to 11'2"	2-9-28

W642C253140V174119 17134-17138-17139

STANTON BRIDGE
OVER THE OHIO RIVER AT
STUBENVILLE, OHIO

EXPANSION JOINTS

THE
DRAYO
CONTRACTING
COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

DR. G. A. JACOBI

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36

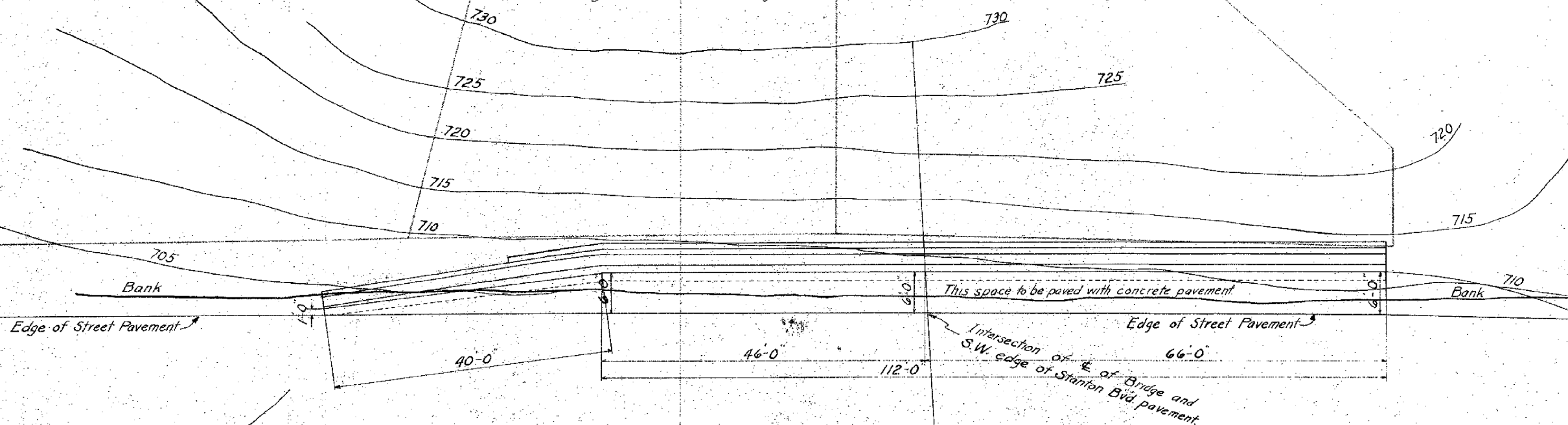
ALTERATIONS

MARK	DESCRIPTION	DATE	APPROVED

House
Owned By
Steubenville-Weirton Bridge Co.

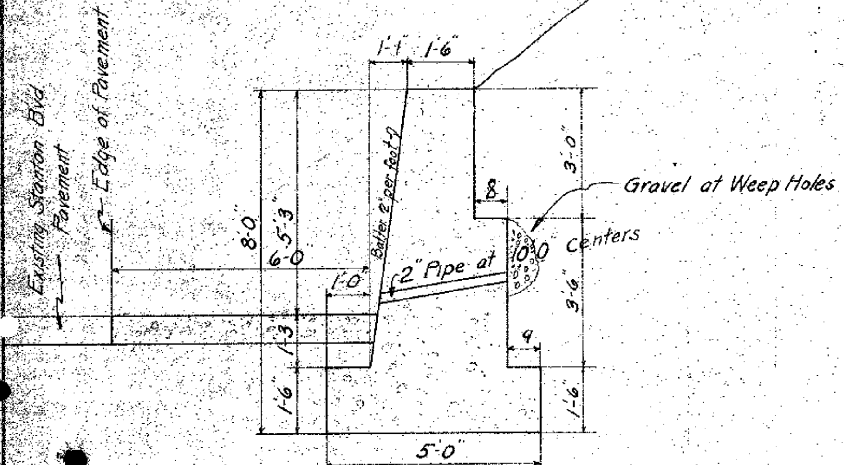
Lot Owned By Steubenville-Weirton Bridge Co.

Lot Owned By Steubenville-Weirton Bridge Co.



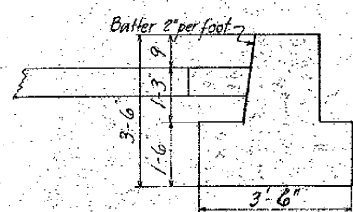
PLAN

Scale $\frac{1}{8}'' = 1'-0''$



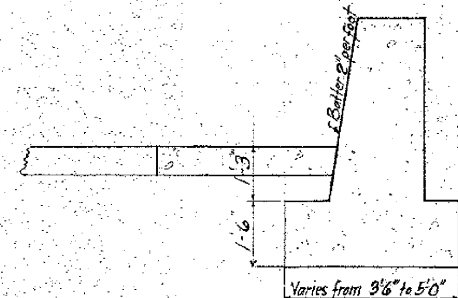
TYPICAL CROSS SECTION

Scale $\frac{1}{2}'' = 1'-0''$



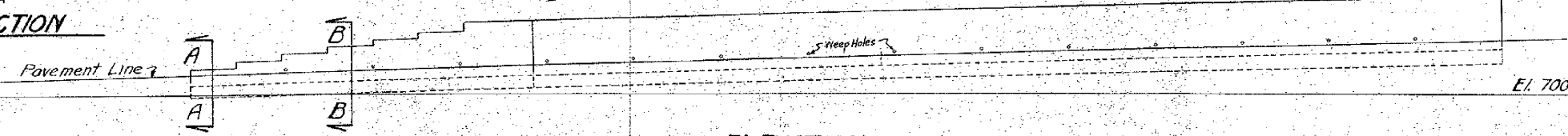
SECTION A-A AT END

Scale $\frac{1}{2}'' = 1'-0''$



SECTION B-B TYPICAL BETWEEN 8'-0" WALL and END

Scale $\frac{1}{2}'' = 1'-0''$



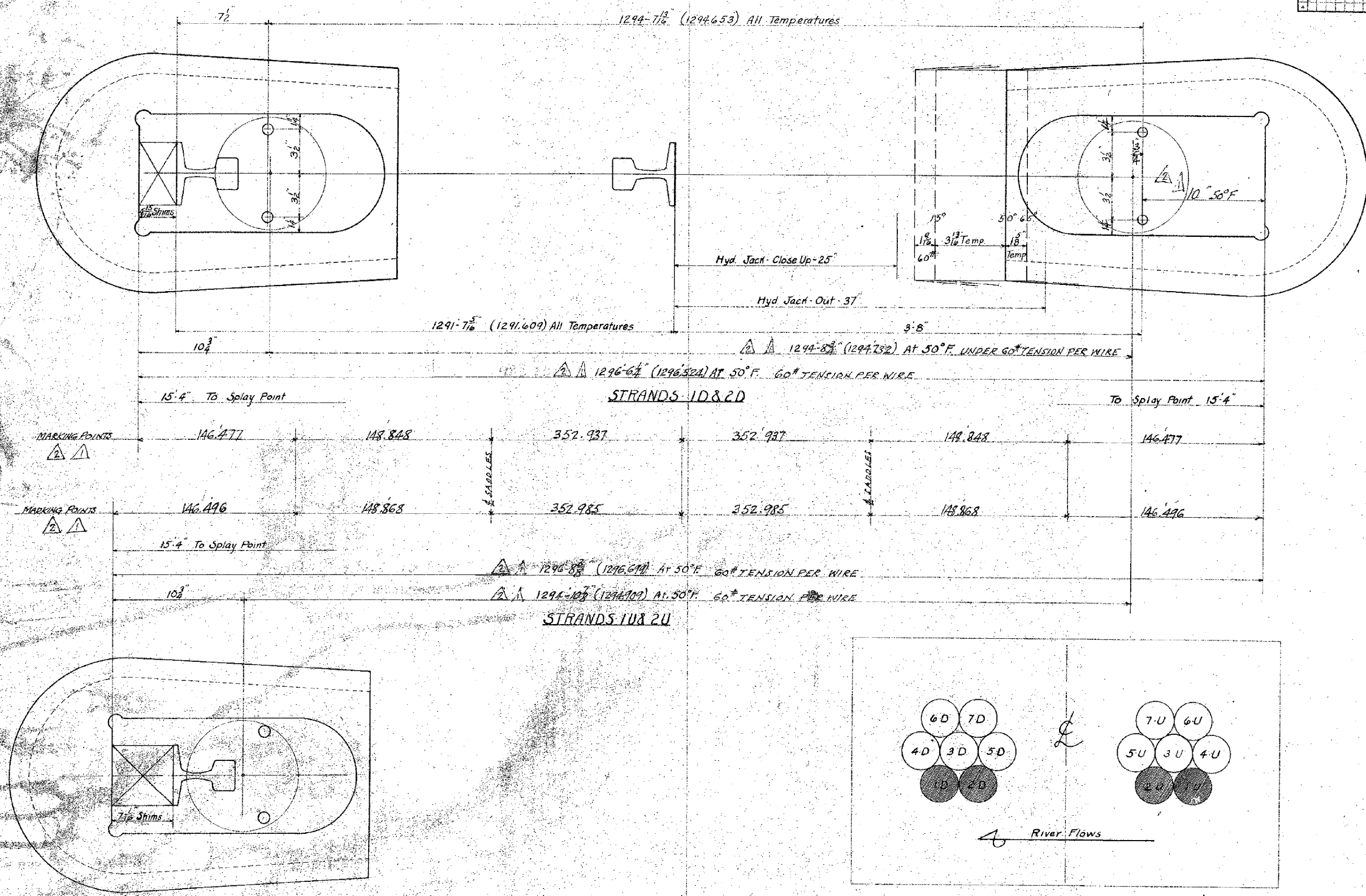
ELEVATION

Scale $\frac{1}{8}'' = 1'-0''$

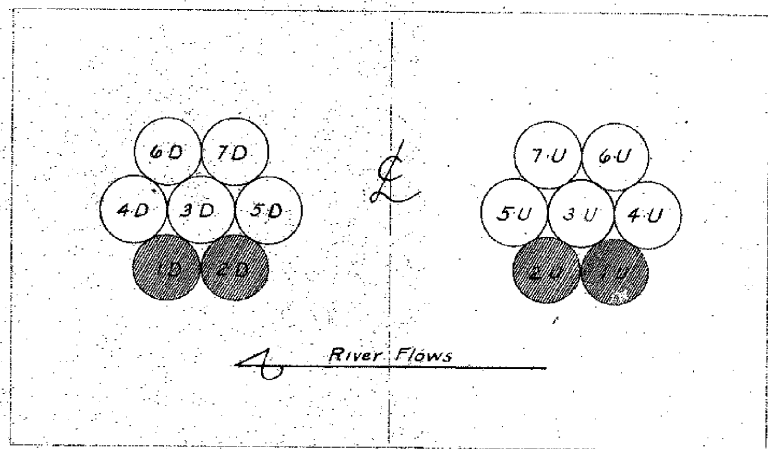
NO. 7642	CODE C.101	REFERENCE: BRIDGE
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO. STANTON BVD RETAINING WALL		
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.		
DR. G.F.W. & E.F.S.	TR. Orval Auhl / George S. Strain	DATE Jan. 18, 1928
APPROVED G.F.W.	DATE 1-20-28	17216

	0	1	2	3	4	5	6	7	8	9
0	X									
1		X								
2			X							
3				X						
4					X					

ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTHOR
A	MARKING POINTS ADDED AND LENGTH OF STRAND INCREASED	2/10/28	F.L.P.
A	LENGTH OF STRAND DECREASED TO SUIT FINAL SPAN LENGTH	2/20/28	F.L.P.



Temperature	Change
Fahr.	Inches
70°	+ 2 $\frac{3}{16}$
65°	+ 1 $\frac{8}{16}$
60°	+ 1 $\frac{1}{16}$
55°	+ $\frac{8}{16}$
50°	0 0
45°	- $\frac{8}{16}$
40°	- 1 $\frac{1}{16}$
35°	- 1 $\frac{5}{8}$
30°	- 2 $\frac{3}{16}$
25°	- 2 $\frac{1}{2}$
20°	- 3 $\frac{1}{4}$
15°	- 3 $\frac{13}{16}$
10°	- 4 $\frac{3}{8}$
5°	- 4 $\frac{7}{8}$
0°	- 5 $\frac{7}{16}$



1-	BOTTOM STRAND FOR DOWN STREAM CABLE MARK	1 D	ALIKE
1-	" " " " " "	2 D	
1	" " " " UP " "	1 U	ALIKE
1	" " " " " "	2 U	


WG42 C102 17217

NO. REQ'D CONT. NO. GDSR SHOP BILL REFERENCE DWGS.

STANTON BRIDGE

OVER THE OHIO RIVER AT STEUBENVILLE OHIO

DETAIL OF BOTTOM STRANDS



THE DRAVO COMPANY

DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

DR. E. L. Pierce TR. Orval Auhl F-228 CH. G. A. Jacobi F-14-228

DRAWING NO.

17218

DATE Dec. 27 - 1928	SCALE 3" = 1'-0"	DRAWN BY
APPROVED G.F. Wolfe	DATE 1-19-29	CHECKED

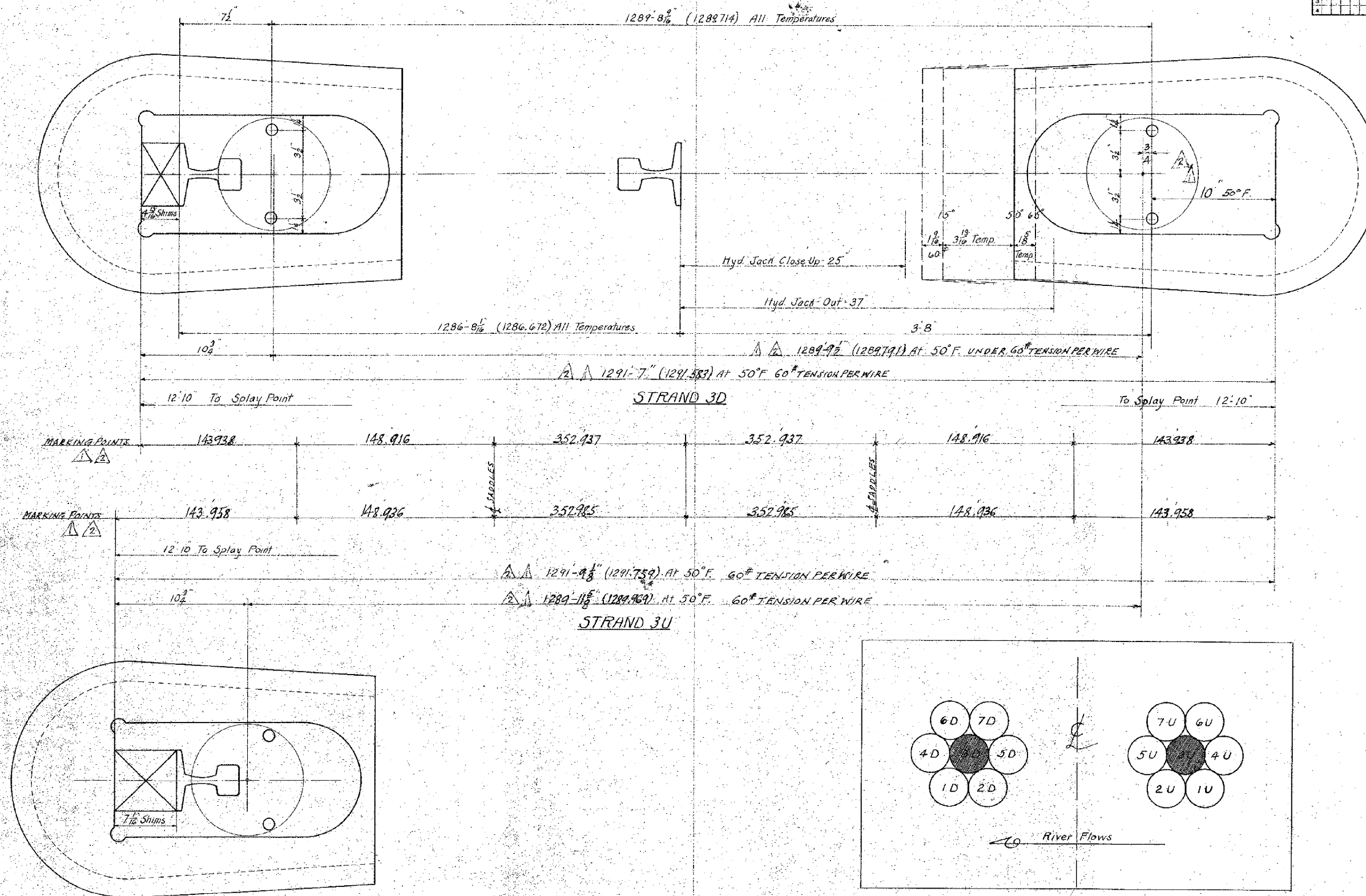
0	1	2	3	4	5	6	7	8	9

ALTERATIONS

MARK	DESCRIPTION	DATE	AUTH.
1	MARKING POINTS ADDED AND LENGTH OF STRAND INCREASED	2-10-28	E.L.P.
2	LENGTH OF STRAND DECREASED TO SUIT FINAL SPAN LENGTH.	2-20-28	E.L.P.

Temperature	Change
Fahrenheit	Inches
70°	+ 2 3/16
65°	+ 1 7/8
60°	+ 1 1/2
55°	+ 1 1/8
50°	0.0
45°	- 3/16
40°	- 1/2
35°	- 1 1/8
30°	- 2 1/8
25°	- 2 3/4
20°	- 3 1/4
15°	- 3 7/8
10°	- 4 3/8
5°	- 4 9/8
0	- 5 1/8

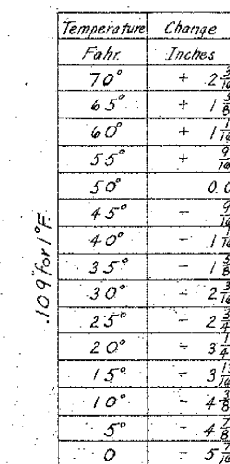
109° for 1° F.



1 CENTER STRAND FOR DOWN STREAM CABLE MARK 3 D
1 Up 3 U

NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
W642	C102		172/7	
STANTON BRIDGE OVER THE OHIO RIVER AT STEBENVILLE, OHIO.				
DETAILS OF CENTER STRAND				
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. E. L. Pierce		Original Auth. 1228		CH. G. H. J. 1228
DATE DEC. 27 '27		SCALE 3" = 1'-0"		DRAWING NO.
APPROVED G. F. Wolfe		DATE 1-14-28		172/9

ALTERATIONS				
MARK	DESCRIPTION	DATE	AUTH	
1	MARKING POINTS ADDED AND LENGTH OF STRAND INCREASED	2-10-28	E.L.P.	
2	LENGTH OF STRAND DECREASED TO HIT FINAL SPAN LENGTH	2-20-28	E.L.P.	



1 OUTSIDE - CENTER STRAND FOR DOWN STREAM CABLE MARK 4 D				} ALIKE
1	"	"	5 D	
1	"	Up	4 U	
1	"	"	5 U	} ALIKE

NO. REC'D CONT. NO. CODE SHOP BILL REFERENCE DWGS.

W642 C102 17217

STANTON BRIDGE
OVER THE OHIO RIVER AT
STEUBENVILLE, OHIO

DETAIL OF OUTSIDE-CENTER STRANDS

THE
DRAVO
CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
PITTSBURGH, PA.

DR. E. L. Pierce
DATE Dec. 28 - 27 SCALE 3" = 1'-0"
APPROVED G.F. Wolfe DATE 1-14-28

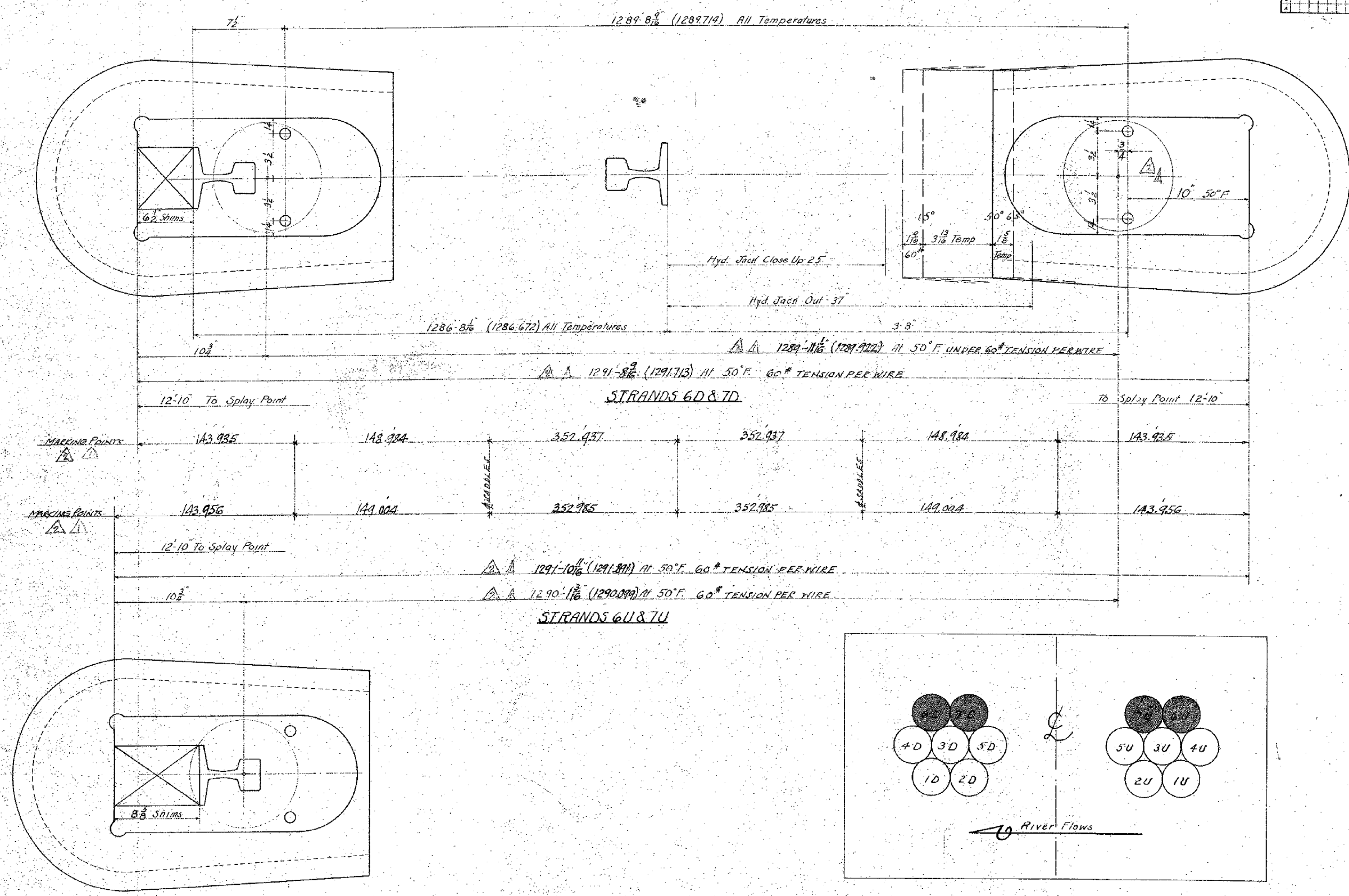
AT DRAVO Bldg. 7-328 CH. & N. 92nd St. PHOENIX, ARIZ.

DRAWING NO. 17220

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

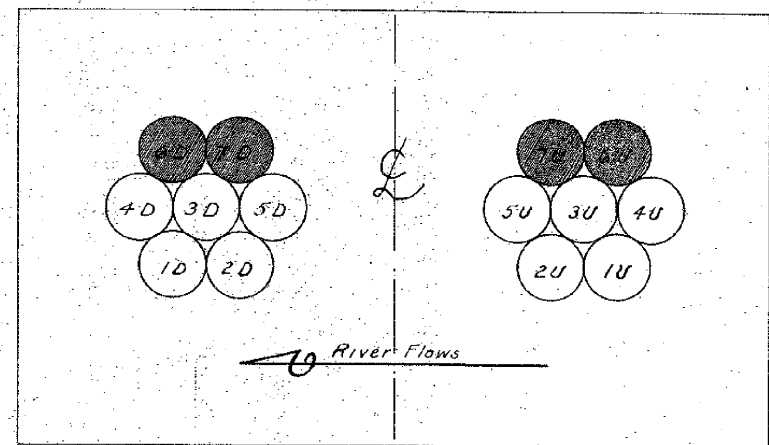
ALTERATIONS

MARK	DESCRIPTION	DATE	AUTHOR
Δ	MARKING POINTS ADDED AND LENGTH OF STRAND INCREASED	2-10-28 E.L.P.	
Δ	LENGTH OF STRAND DECREASED TO SUIT FINAL SPAN LENGTH	2-20-28 E.L.P.	



.109 for 1°F

Temperature Fahr.	Change Inches
70°	+ 2 3/16
65°	+ 1 8/16
60°	+ 1 1/16
55°	+ 9/16
50°	+ 0.0
45°	- 9/16
40°	- 1 1/16
35°	- 1 8/16
30°	- 2 3/16
25°	- 2 1/16
20°	- 3 1/16
15°	- 3 13/16
10°	- 4 3/16
5°	- 4 7/16
0°	- 5 1/16



1	UPPER STRAND FOR DOWN STREAM CABLE MARK	6 D	
1	"	7 D	ALIKE
1	"	6 U	
1	"	7 U	ALIKE

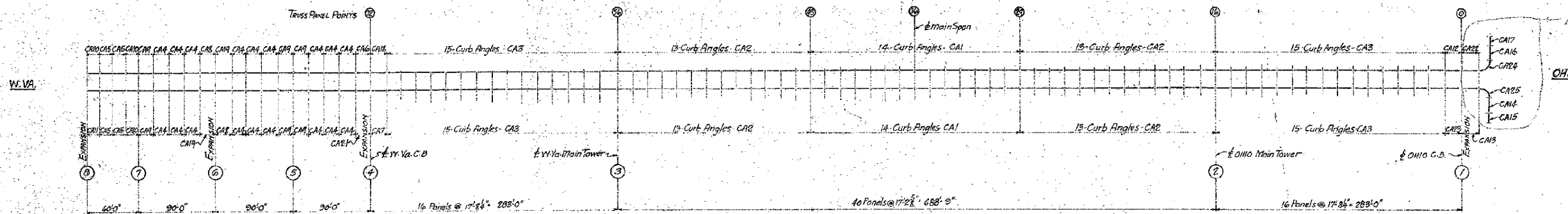
W642	C102	17217
NO. REQ'D	CONT. NO.	GOES
REFERENCE DWGS.		
STANTON BRIDGE		
OVER THE OHIO RIVER AT		
STUBENVILLE, OHIO		
DETAIL OF TOP STRANDS		
THE DRAY COMPANY		
DESIGNERS AND BUILDERS		
ENGINEERING WORKS DEPT.		
PITTSBURGH, PA.		
DR. E.L. Pierce	IR. Orval Ruhl	CH. G.A. Jacob
DATE Dec 29-27	SCALE 3"-1'-0"	DATE 1-14-28
APPROVED G.F. Wolfe	DATE 1-14-28	17221

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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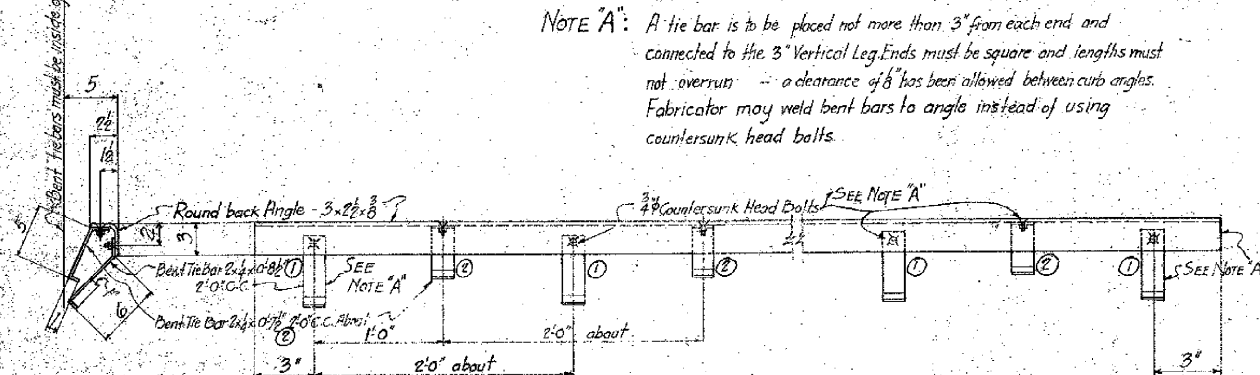
ALTERATIONS

MARK	DESCRIPTION	DATE	AUTH



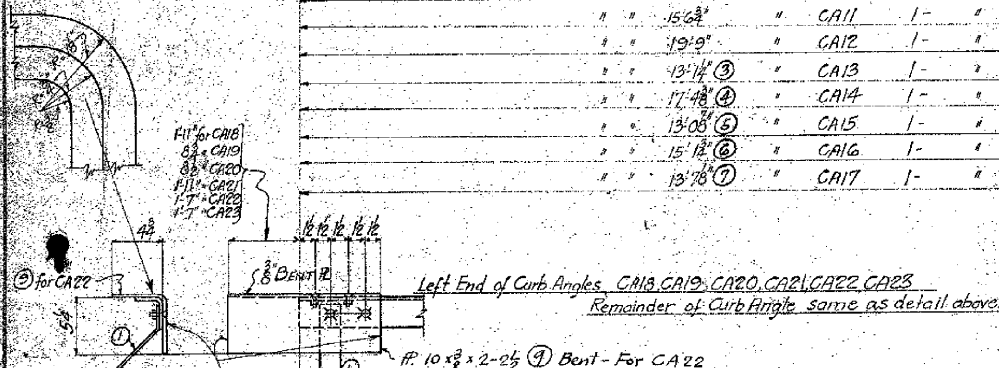
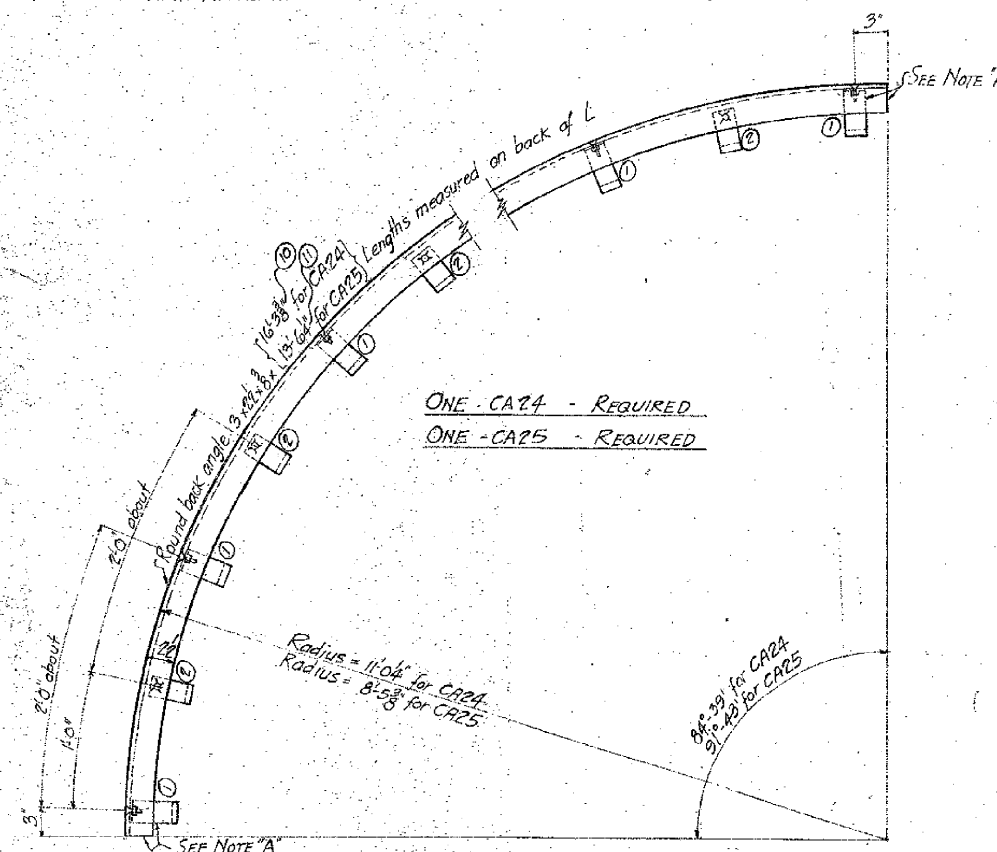
SEE DRAWING 17141 for DETAIL AT CURB - SUSPENDED SPANS
 " " 17147 " " " " " W. VA. APPROACH

NOTE 'A': A tie bar is to be placed not more than 3" from each end and connected to the 3" Vertical Leg. Ends must be square and lengths must not overrun a clearance of 8" has been allowed between curb angles. Fabricator may weld bent bars to angle instead of using countersunk head bolts.



CURB L 17'-2 1/2" mark CA1 28-REQUIRED

" "	17'-2 1/2"	"	CA2	52-	"
" "	17'-8 1/2"	"	CA3	60-	"
" "	17'-5 1/2"	"	CA4	18-	"
" "	14'-8 3/8"	"	CA5	4-	"
" "	19'-3 3/8"	"	CA6	1-	"
" "	16'-6"	"	CA7	1-	"
" "	19'-18"	"	CA8	2-	"
" "	18'-5 3/8"	"	CA9	6-	"
" "	15'-6 1/2"	"	CA10	2-	"
" "	19'-9"	"	CA12	1-	"
" "	13'-14" ③	"	CA13	1-	"
" "	17'-4 1/8" ④	"	CA14	1-	"
" "	13'-0 1/2" ⑤	"	CA15	1-	"
" "	15'-12" ⑥	"	CA16	1-	"
" "	13'-7 1/8" ⑦	"	CA17	1-	"



CURB L 16'-6" mark CA18 1-REQUIRED

" "	19'-18"	"	CA19	2-	"
" "	15'-6 1/2"	"	CA20	1-	"
" "	19'-5 1/2"	"	CA21	1-	"
" "	13'-14" ⑧	"	CA22	1-	"
" "	19'-9"	"	CA23	1-	"

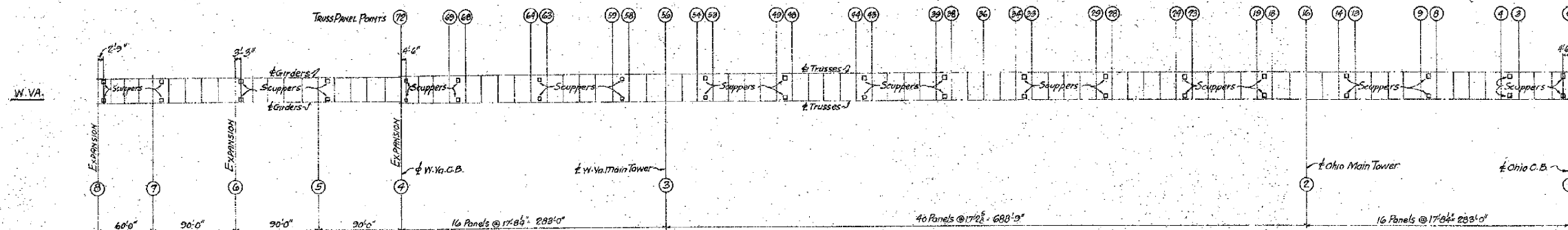
Paint - None

NO. REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
WG42	CA1	122.138		
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO.				
ERECTION DIAGRAM and DETAILS - CURB ANGLES				
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
DR. S. TRININ	TR. S. TRININ	1-25-78	CH. G. A. JACOBI	1-25-78
DATE 1-25-78	SCALE 1/2" = 1'-0"			
APPROVED G. F. WOLFE	DATE 1-27-78			
APPROVED	DATE			

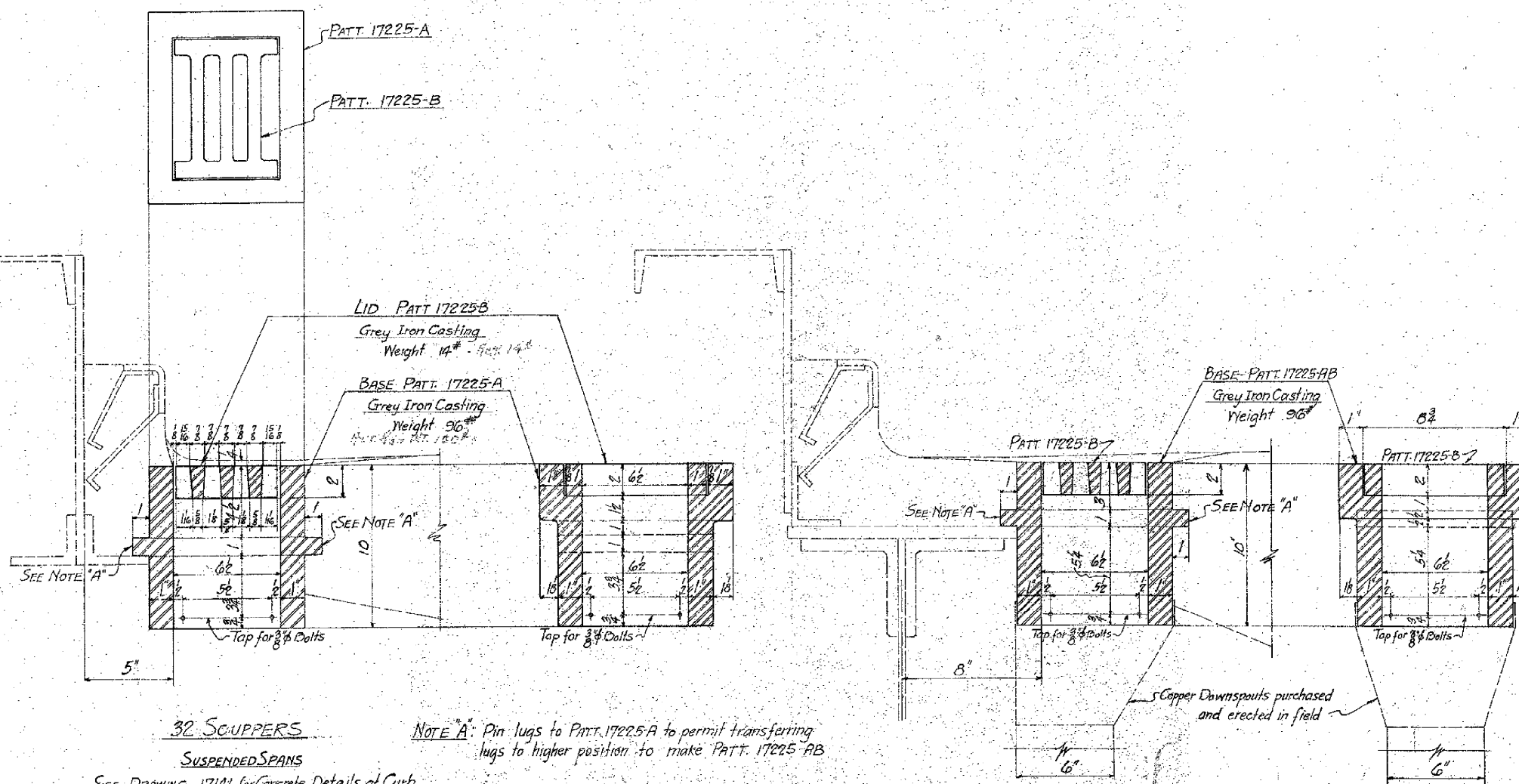
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ALTERATIONS

MARK	DESCRIPTION	DATE	AUTH'D



NOTE: Place scuppers in center of panels longitudinally unless dimensioned.



32 SCUPPERS

SUSPENDED SPANS

SEE DRAWING 17141 for Concrete Details at Curb

NOTE A: Pin lugs to PATT. 17225-A to permit transferring lugs to higher position to make PATT. 17225-AB

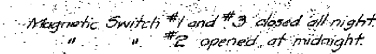
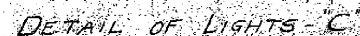
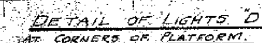
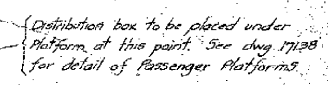
8 - SCUPPERS

W. VA. APPROACH

SEE DRAWING 17147 for Concrete Details at Curb

					</		


ALTERATIONS		
MARK	DESCRIPTION	DATE & SIGNATURE



TABULATION OF LIGHTS.			
NO. REQD	LIGHT	WATTS	TOTAL WATT
2	A	2225	100
4	B	2225	200
7	C	200	1400
4	D	200	800
3	E	200	600
2	F	50	100
2	G	50	100
2	H	75	150
4	I	200	800
MAXIMUM -			3650
Cut out after Midnight -			1600
			2050

W-642 C-72 129

NO.	REQ'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
STANTON BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO. LIGHTING SYSTEM.					

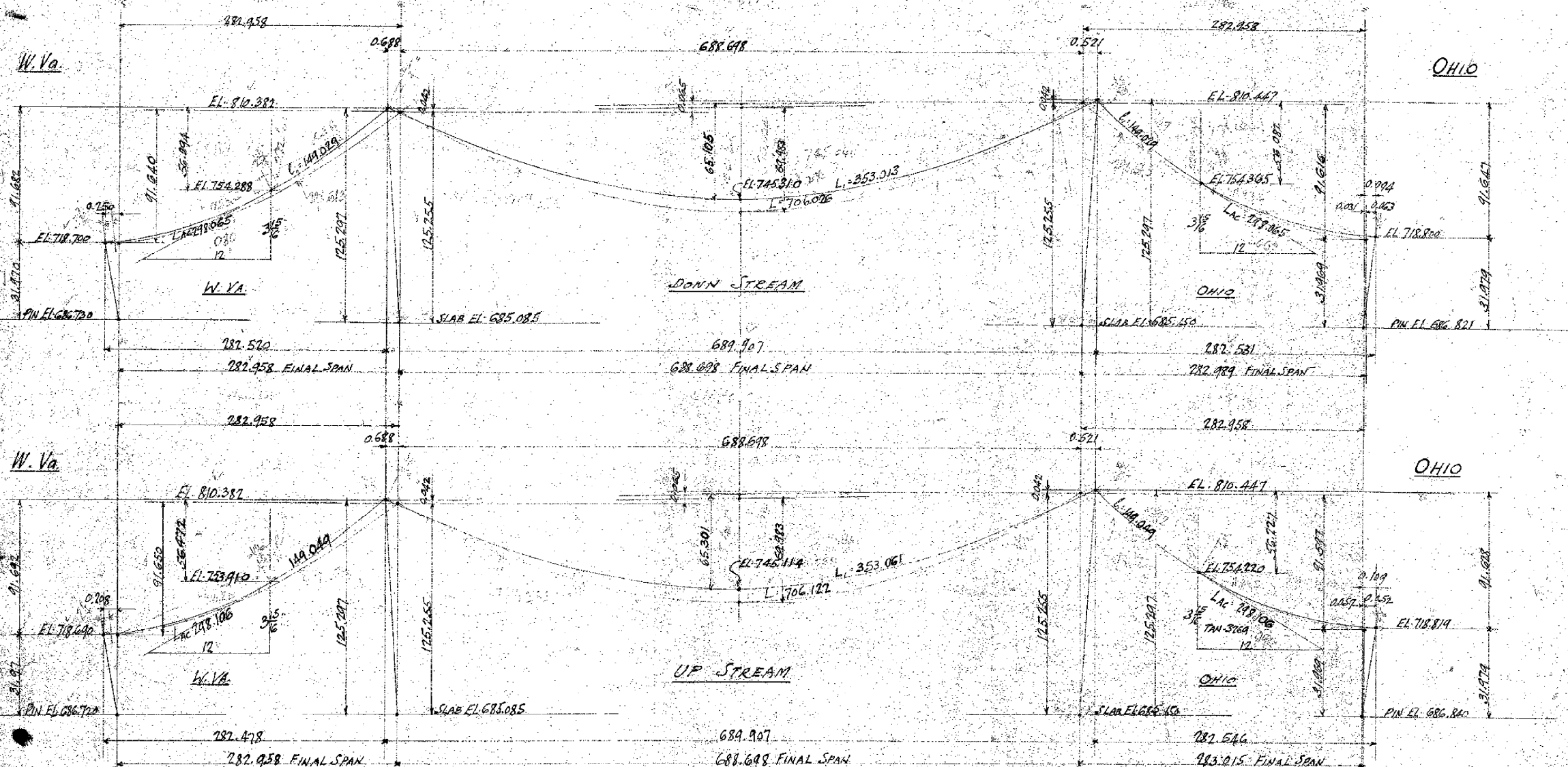


THE DRAVO CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT.
CITY SQUARE BLDG.
PITTSBURGH, PA.

DR. G.F. Wolfe	MR. G.E. Wolfe	CL. L.T. Wolfe
DATE FEB. 24, 1928	SCALE 1/4" = 1'-0"	DRAWING NO.

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39

ALTERATIONS			
MARK	DESCRIPTION	DATE	AUTH'D



NO. REG'D	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS.
Position of Cable UNDER DEAD LOAD OF CABLE AT 50°F STANTON BRIDGE OVER OHIO RIVER AT STEUBENVILLE, OHIO				
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.				
OR BY PERCE	IN FLD	BY	DATE	SCALE
APPROVED	DATE	DATE	DATE	DATE

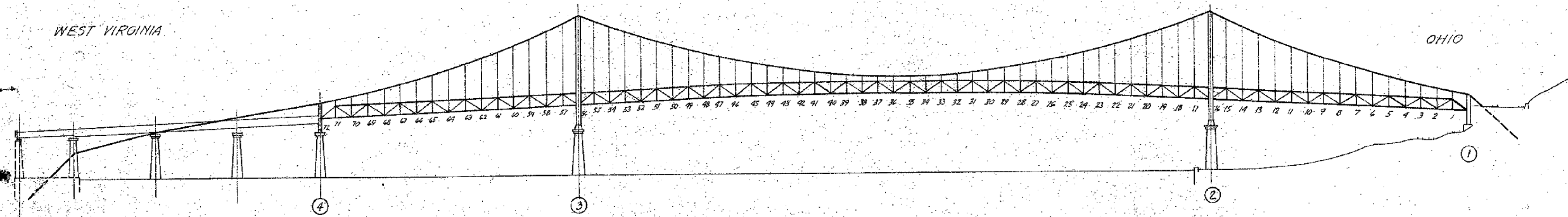
WEST VIRGINIA

OHIO

1	2	3	4	5	6	7	8	9

ALTERATIONS

MARK	DESCRIPTION	DATE	AUTH



SUSPENDER LENGTHS AT NORMAL TEMPERATURE (50°F)											
UPSTREAM						DOWNSTREAM					
Panel Points	Elev. Cable Point	Elev. Top Chord	Length of Top Chord	Length of Suspender	Stretch	Panel Points	Elev. Cable Point	Elev. Top Chord	Length of Top Chord	Length of Suspender	Stretch
0	718.720					0	718.720				
1	721.691	715.930	5.761	19.754	0.859	1	721.691	715.930	5.741	19.714	0.822
2	725.031	716.681	8.350	23.323	0.870	2	725.031	716.681	8.313	23.251	0.873
3	728.737	717.433	11.304	29.228	0.877	3	728.737	717.433	11.253	29.126	0.917
4	732.812	718.184	14.628	35.872	1.07	4	732.812	718.184	14.565	35.748	1.12
5	737.256	718.936	18.320	43.253	1.29	5	737.256	718.936	18.248	43.109	1.35
6	742.067	719.688	22.379	51.369	1.53	6	742.067	719.688	22.300	51.211	1.61
7	747.246	720.439	26.807	60.225	1.79	7	747.246	720.439	26.724	60.007	1.89
8	752.794	721.191	31.603	69.814	2.08	8	752.794	721.191	31.519	69.846	2.20
9	758.709	721.943	36.766	80.137	2.38	9	758.709	721.943	36.643	79.971	2.52
10	764.992	722.695	42.297	91.198	2.71	10	764.992	722.695	42.218	91.040	2.87
11	771.643	723.446	48.197	103.000	3.07	11	771.643	723.446	48.125	102.854	3.25
12	778.663	724.198	54.465	116.536	3.43	12	778.663	724.198	54.402	115.473	3.64
13	786.050	724.950	61.100	128.806	3.83	13	786.050	724.950	61.049	128.702	4.06
14	793.806	725.702	68.104	142.814	4.25	14	793.806	725.702	68.067	142.738	4.51
15	801.930	726.453	75.477	157.566	4.75	15	801.930	726.453	75.457	157.513	4.98
16	810.421	727.205				16	810.421	727.205			
17	819.599	727.957	75.662	157.928	4.69	17	819.599	727.957	75.657	157.918	4.96
18	829.127	728.708	81.459	168.502	4.97	18	829.127	728.708	81.450	168.505	4.952
19	839.005	729.460	87.695	179.814	5.26	19	839.005	729.460	87.689	179.788	5.261
20	849.233	730.212	94.301	191.806	5.56	20	849.233	730.212	94.303	191.770	5.56
21	859.810	730.964	101.281	204.502	5.86	21	859.810	730.964	101.281	204.460	5.86
22	870.737	731.716	108.614	217.902	6.17	22	870.737	731.716	108.614	217.902	6.17
23	881.914	732.468	116.301	232.002	6.48	23	881.914	732.468	116.301	232.002	6.48
24	893.341	733.220	124.331	246.802	6.79	24	893.341	733.220	124.331	246.802	6.79
25	905.018	733.972	132.704	262.302	7.10	25	905.018	733.972	132.704	262.302	7.10
26	916.945	734.724	141.429	278.502	7.41	26	916.945	734.724	141.429	278.502	7.41
27	929.122	735.476	150.504	295.402	7.72	27	929.122	735.476	150.504	295.402	7.72
28	941.549	736.228	159.929	313.002	8.03	28	941.549	736.228	159.929	313.002	8.03
29	954.226	736.980	169.704	331.202	8.34	29	954.226	736.980	169.704	331.202	8.34
30	967.153	737.732	179.829	350.002	8.65	30	967.153	737.732	179.829	350.002	8.65
31	980.330	738.484	190.304	369.402	8.96	31	980.330	738.484	190.304	369.402	8.96
32	993.757	739.236	201.129	389.402	9.27	32	993.757	739.236	201.129	389.402	9.27
33	1007.434	740.000	212.304	410.002	9.58	33	1007.434	740.000	212.304	410.002	9.58
34	1021.361	740.752	223.829	431.202	9.89	34	1021.361	740.752	223.829	431.202	9.89
35	1035.538	741.504	235.704	453.002	10.20	35	1035.538	741.504	235.704	453.002	10.20
36	1050.065	742.256	247.929	475.402	10.51	36	1050.065	742.256	247.929	475.402	10.51

Total: 1272.391

Total: 1270.847

Total Length of Suspenders for Bridge = 9676.312 feet

Spacing of Cable Bands on Cable (at 50°F)
Cable under Tension from own weight

Panel No.	U.S.	D.S.	Measured on Cable	Measured on Top of Cable
0-1	71.72	17.903	17.896	
1-2	70.71	17.918	17.961	
2-3	69.70	18.039	18.032	
3-4	68.69	18.118	18.111	
4-5	67.68	18.205	18.199	
5-6	66.67	18.299	18.292	
6-7	65.66	18.398	18.391	
7-8	64.65	18.505	18.498	
8-9	63.64	18.619	18.612	
9-10	62.63	18.739	18.732	
10-11	61.62	18.867	18.860	
11-12	60.61	18.990	18.983	
12-13	59.60	19.109	19.133	
13-14	58.59	19.285	19.278	
14-15	57.58	19.436	19.429	
15-16	56.57	19.593	19.637	
16-17	55.56	19.741	19.789	
17-18	54.55	19.866	19.953	
18-19	53.54	19.945	20.038	
19-20	52.53	20.030	20.123	
20-21	51.52	20.125	20.209	
21-22	50.51	20.223	20.296	
22-23	49.50	20.326	20.384	
23-24	48.49	20.438	20.473	
24-25	47.48	20.554	20.564	
25-26	46.47	20.674	20.654	
26-27	45.46	20.799	20.750	
27-28	44.45	20.929	20.840	
28-29	43.44	21.064	20.930	
29-30	42.43	21.204	21.020	
30-31	41.42	21.349	21.110	
31-32	40.41	21.499	21.200	
32-33	39.40	21.654	21.290	
33-34	38.39	21.814	21.380	
34-35	37.38	21.979	21.470	
35-36	36.37	22.149	21.560	
Total	353.079	353.032	352.984	352.938

FORMULA FOR STRETCH DEDUCTION
FOR SUSPENDER ROPES

$$E = 8,970,000 \text{ lbs. per } D^2$$

$$\text{Panel Load} = \begin{cases} 17.5 \times 2155 = 37600 \text{ lbs. U.S.} \\ 17.5 \times 2335 = 40900 \text{ lbs. D.S.} \end{cases}$$

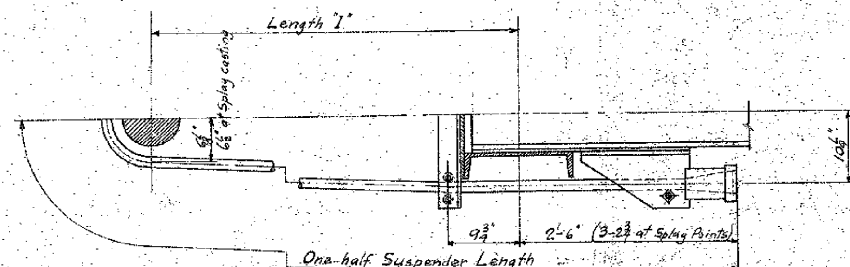
$$\text{Effective Area of Rope} = 1.058 D^2$$

$$\text{Assumed permanent stretch} = \frac{\text{Length}}{1000}$$

$$\text{Stretch Deduction} = L \left(\frac{37600}{2 \times 1.058 \times 8,970,000} \right) = .003 \times L \quad \text{Up stream}$$

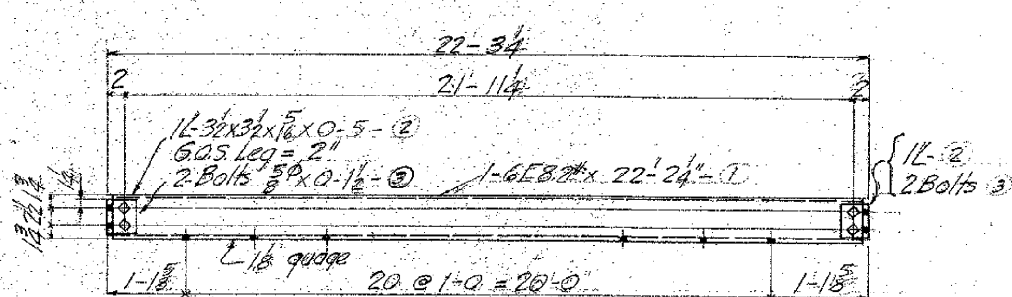
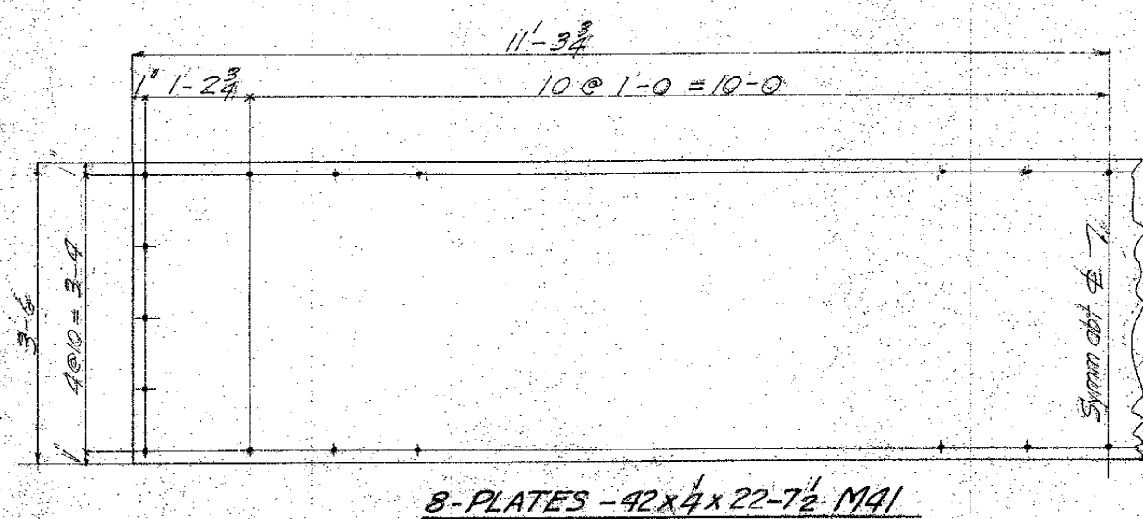
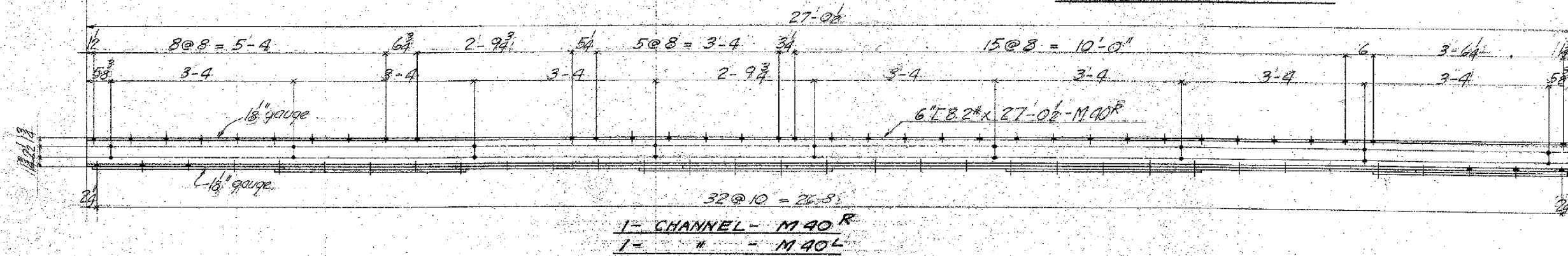
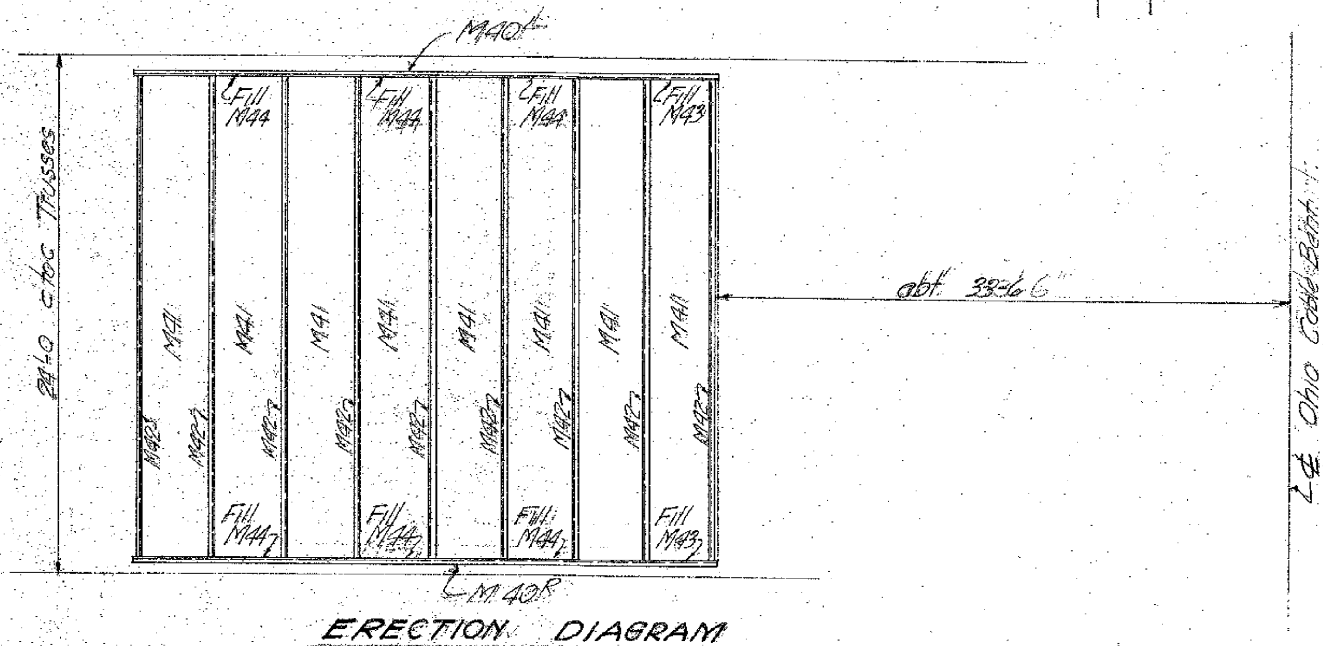
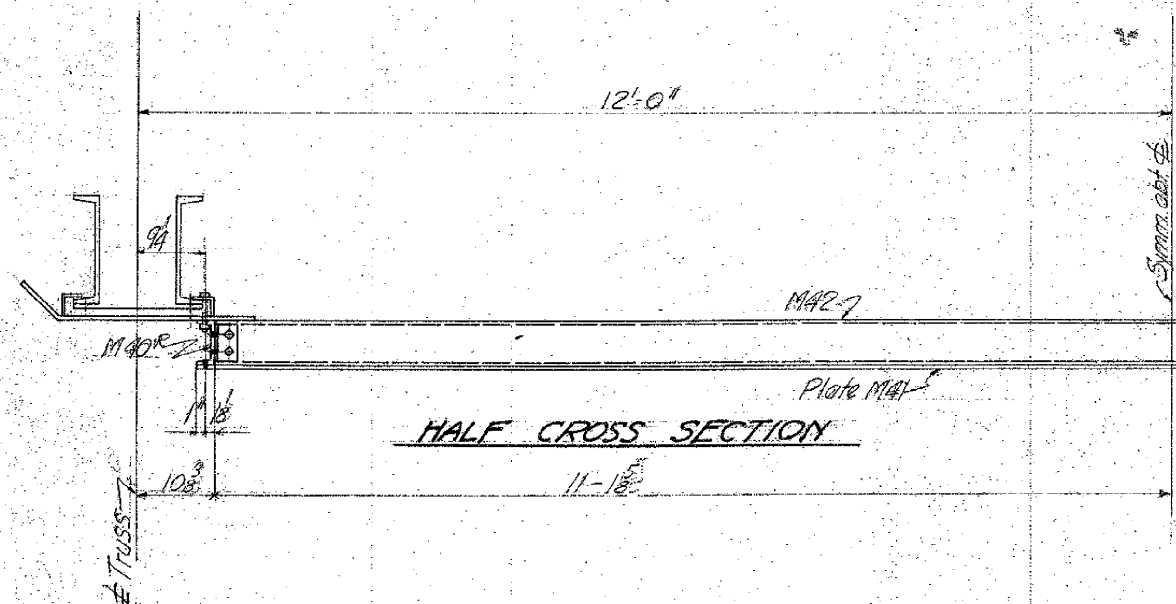
$$= L \left(\frac{40900}{2 \times 1.058 \times 8,970,000} \right) = .00316 \times L \quad \text{Down stream}$$

Note:
Actual Elevations vary from Elevations
given in table owing to variation in Elevations
of Piers #1, 2, 3, 4.

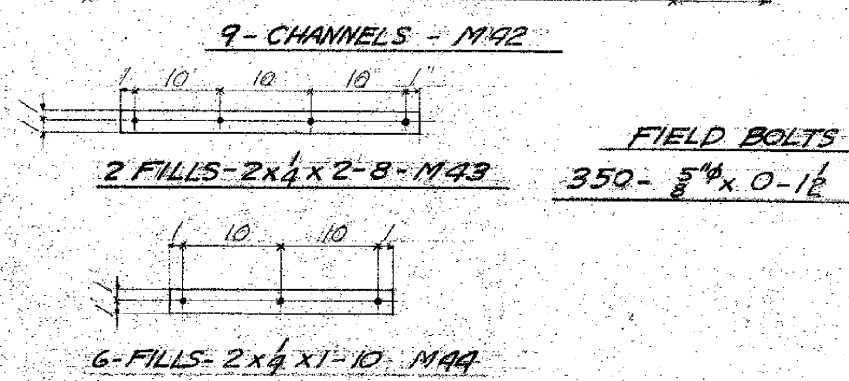


W 642		NO. RECD.		CONT. NO.		CODE		SIGN. BILL		REFERENCE DWGS.	
STANTON BRIDGE OVER THE OHIO RIVER AT STUBENVILLE, OHIO SUSPENDER LENGTHS											
THE DRAYO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. CINCINNATI, OHIO											
DR. G. A. Jacobi				TR.				J. F. L. Pierce			
DATE 5-7-1928				SCALE				DRAWING NO.			
APPROVED				DATE				17235			
APPROVED				DATE							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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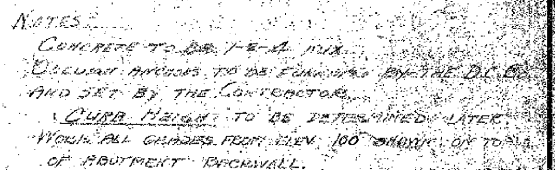
Notes:-
Open Holes $\frac{11}{16} \phi$
Paint: One Coat Red Lead



W-642 C-74 162 17223

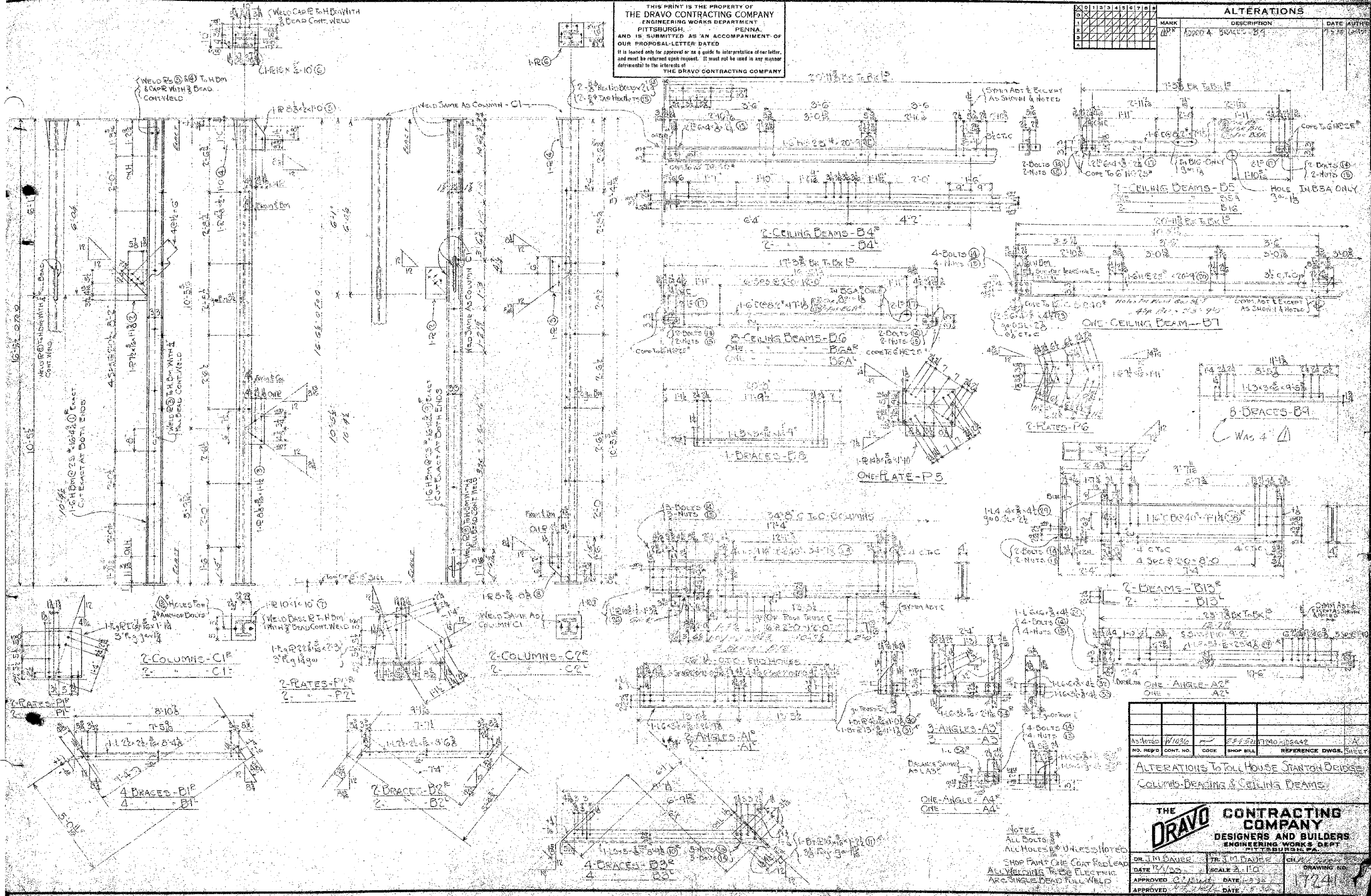
NO. RECD.	COST NO.	CODE	SHOP BILL	REFERENCE DWGS.
<p align="center">FORT STEUBEN BRIDGE OVER THE OHIO RIVER AT STEUBENVILLE, OHIO. <i>SMOKE SCREENS</i></p> <hr/> <div style="float: left; width: 30%;"> THE DRAVO </div> <div style="clear: both;"></div> <p align="right">CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.</p>				

DR. G.F.W./fe	TR.	CH 3 ^d Edition 3-16-78
DATE 8-15-28	SCALE 1" = 1'-0"	DRAWING NO.
APPROVED G.F.W./fe	DATE 8-16-28	17238
APPROVED _____	DATE _____	

[illegible][illegible]

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ENGINEERING WORKS DEPARTMENT
PITTSBURGH, PENNA.
AND IS SUBMITTED AS AN ACCOMPANIMENT OF
OUR PROPOSAL-LETTER DATED
It is loaned only for approval or as a guide to interpretation of our letter,
and must be returned upon request. It must not be used in any manner
detrimental to the interests of
THE DRAGO CONTRACTING COMPANY

ALTERATIONS										MARK	DESCRIPTION	DATE	AUTH
1	2	3	4	5	6	7	8	9	10	ADP	Added 4 BRACES-B9	12-28-36	LD



As noted	W1036	889-92	1740-105412	A
NO. RECD	CONT. NO.	CODE	SHOP BILL	REFERENCE DWGS. SHEET

ALTERATIONS TO TOLL HOUSE STANTON BRIDGE
COLUMNS-BRACING & CEILING BEAMS

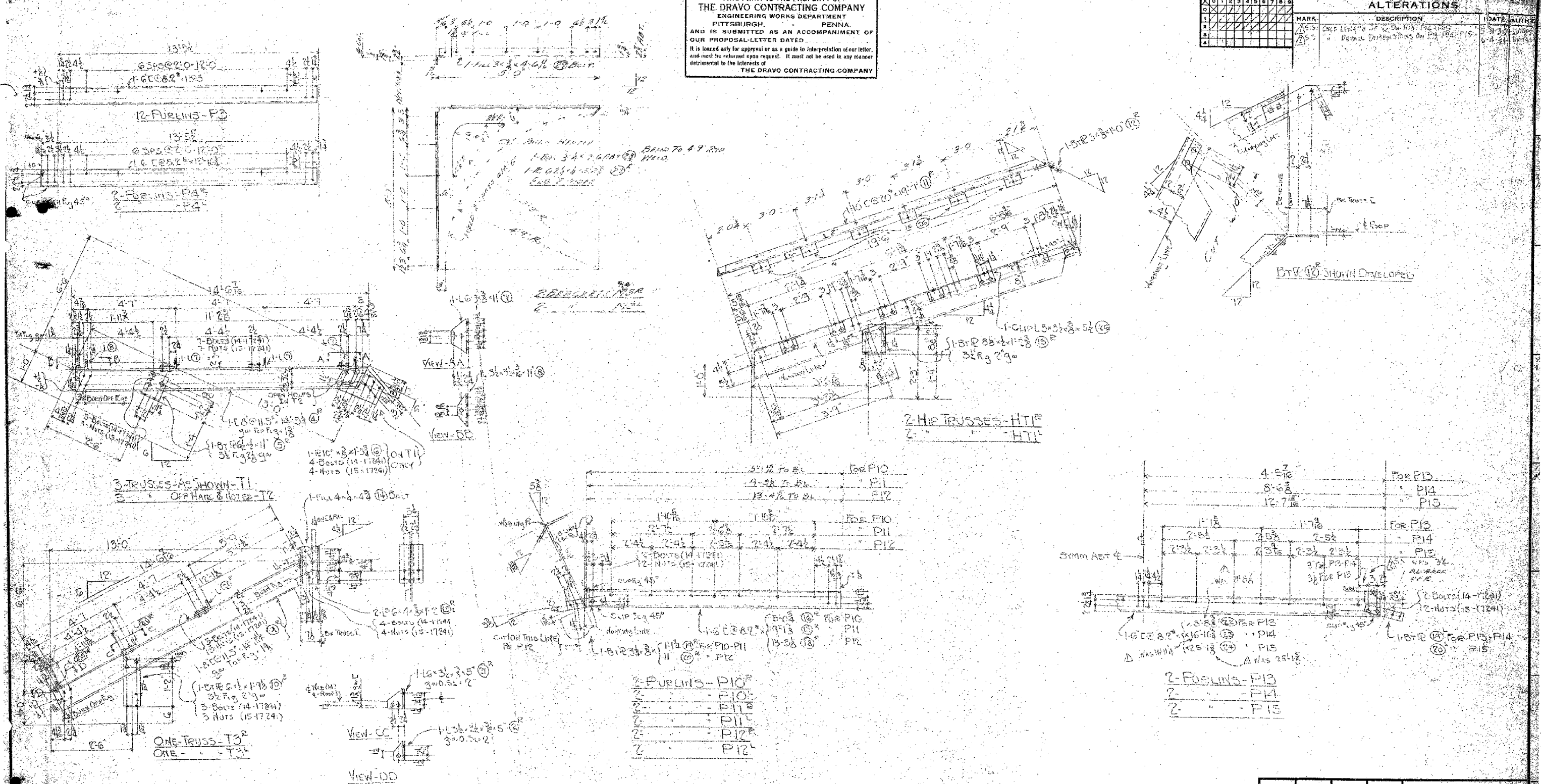
THE DRAGO
CONTRACTING COMPANY
DESIGNERS AND BUILDERS
ENGINEERING WORKS DEPT
PITTSBURGH, PA.

DR. J. M. DAUER	TR. J. M. DAUER	CH. J. M. DAUER
DATE 12/23	SCALE 3/16	DRAWING NO.
APPROVED C. J. DAUER	DATE 12/23	1724
APPROVED	DATE	

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prejudicial to the interests of
THE DRAVO CONTRACTING COMPANY

ALTERATIONS										DATE	AUTH.
NO.	1	2	3	4	5	6	7	8	9		
1											
2											
3											
4											

MARK	DESCRIPTION	DATE	AUTH.
AS	CHG LENGTH OF 12' IN P13, P14, P15	6-4-34	
AS	Revised Dimensions On P13, P14, P15	6-4-34	



Notes
All bolts 5/8"
All holes 1/2"
Shop paint one coat red lead

As per 10/30	674	1042-10442-117241	B
NO. REV'D	CONT. NO.	CODE	SHOP BILL
ALTERATIONS TO TOLL HOUSE STATION BRIDGE		PURLINS & TRUSSES	
THE DRAVO CONTRACTING COMPANY DESIGNERS AND BUILDERS ENGINEERING WORKS DEPT. PITTSBURGH, PA.			
DR. J. M. BAUER	TR. J. M. BAUER	CH. J. M. BAUER	DRAWING NO.
DATE 7/22/35	SCALE 3/4" = 1'-0"	DATE 1-3-34	17242
APPROVED C. C. BAUER	DATE 1-3-34		

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ENGINEERING WORKS DEPARTMENT
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and must be returned upon request. It must not be used in any manner
detrimental to the interests of
THE DRAVO CONTRACTING COMPANY



NO. RECD	CONT. NO.	CODE
THE DRAVO		
DR.		
DATE		