



**CUY-90-14.90**

**PID 77332/85531**

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**APPENDIX EX-01**

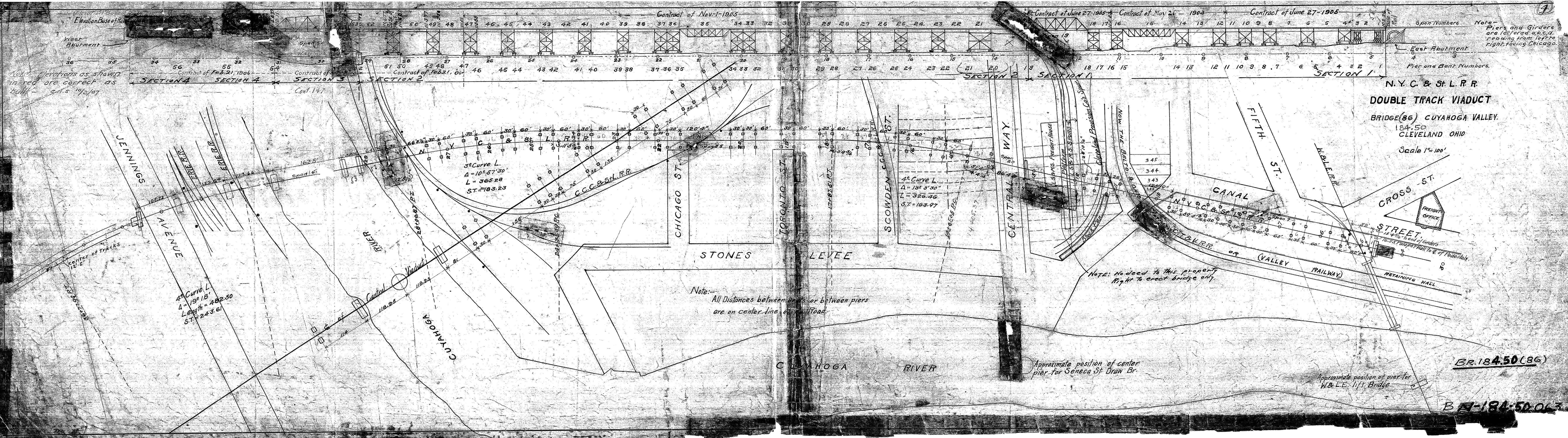
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**NS Lift Bridge Plans  
(Reference Document)**

State of Ohio  
Department of Transportation  
Jolene M. Molitoris, Director

**Innerbelt Bridge  
Construction Contract Group 1 (CCG1)**





Note: Elevations as shown in red are correct as built - 9/15 10/2/07

Note: Piers and Girders are lettered a,b,c,d, reading from left to right, facing Chicago.

Note: All Distances between bents or between piers are on center line of Railroad

Note: No deed to this property Right to erect bridge only.

Approximate position of center pier for Seneca St Draw Br.

Approximate position of pier for W&L.E. lift Bridge

BR. 184.50 (86)

BR. 184.50.063

N.Y.C. & St. L.R.R.  
**DOUBLE TRACK VIADUCT**  
 BRIDGE (86) CUYAHOGA VALLEY.  
 184.50  
 CLEVELAND OHIO  
 Scale 1"=100'

Contract of Nov-1-1905  
 Contract of June 27-1905  
 Contract of May 26-1903  
 Contract of June 27-1905  
 Contract of Feb. 21, 1906  
 Contract of Feb. 21, 1906  
 Contract of Feb. 21, 1906

SECTION 4 SECTION 4 SECTION 3 SECTION 2 SECTION 2 SECTION 1 SECTION 1 SECTION 1

Span Numbers  
 Pier and Bent Numbers

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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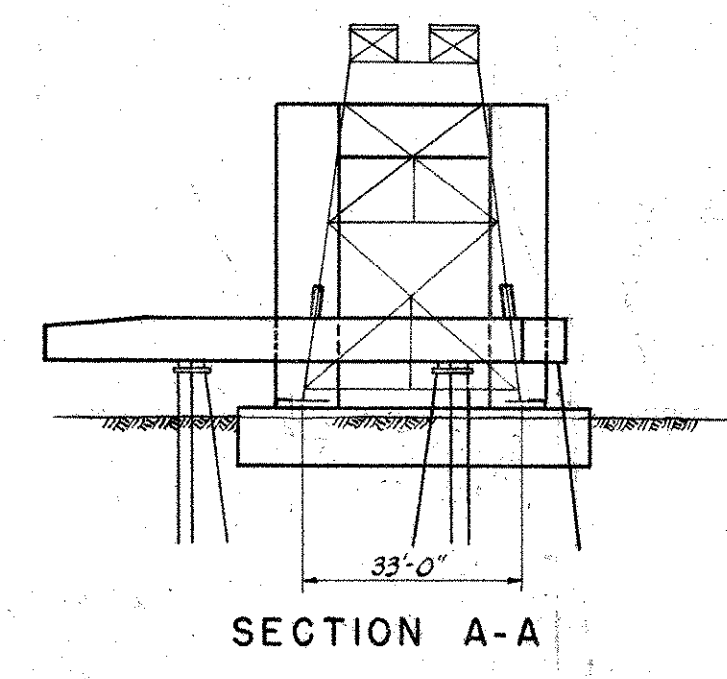
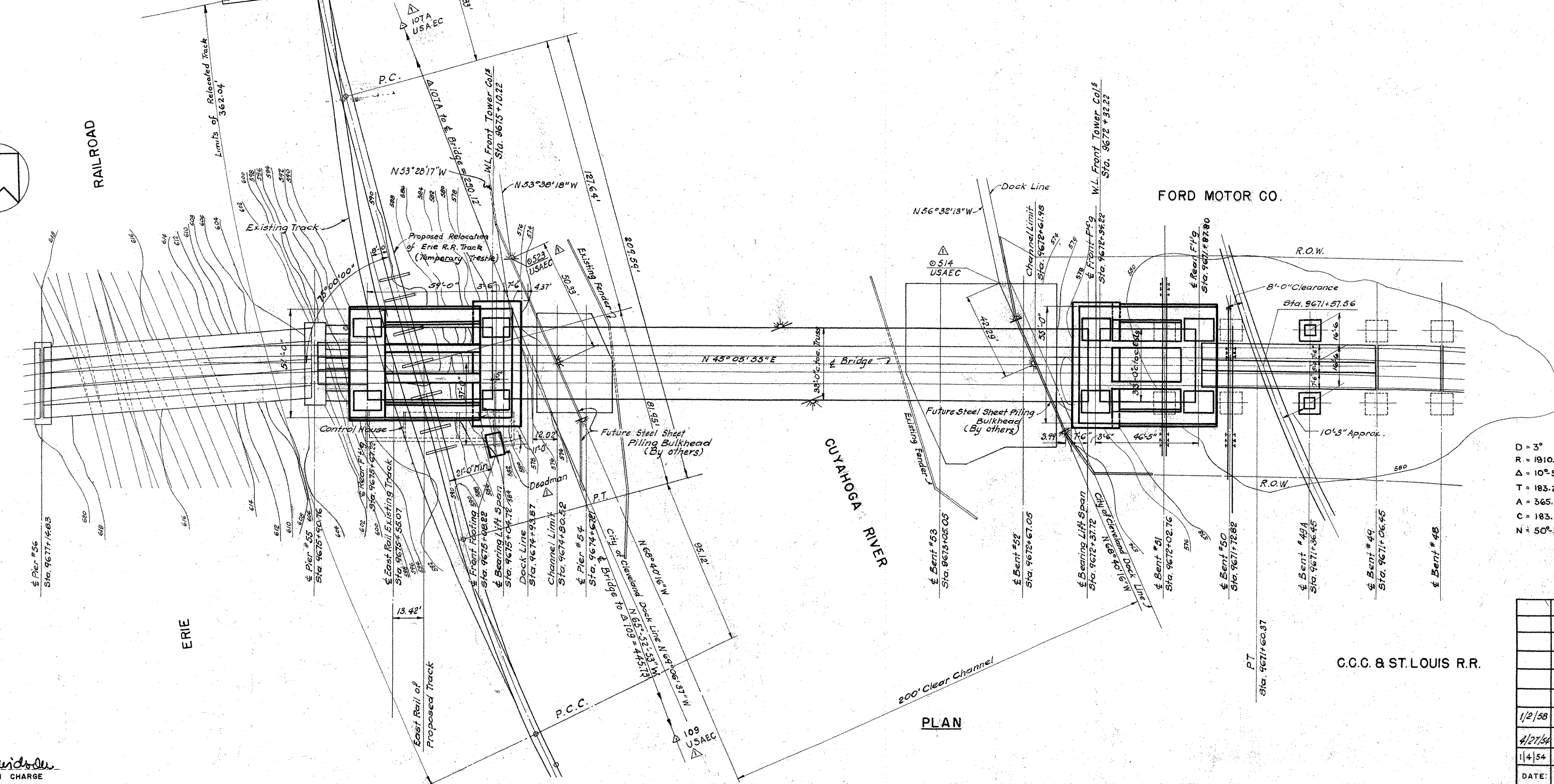
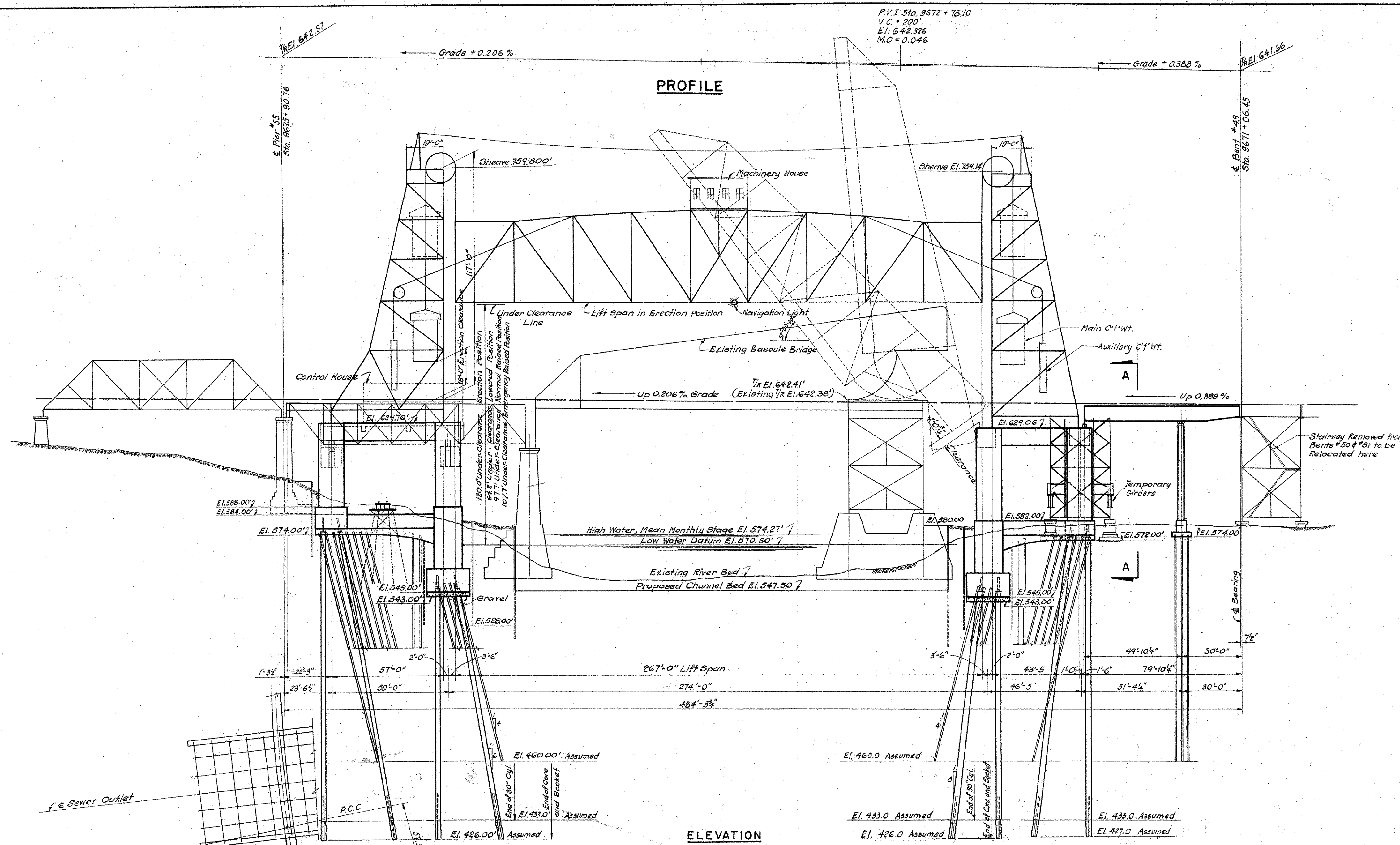
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36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

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

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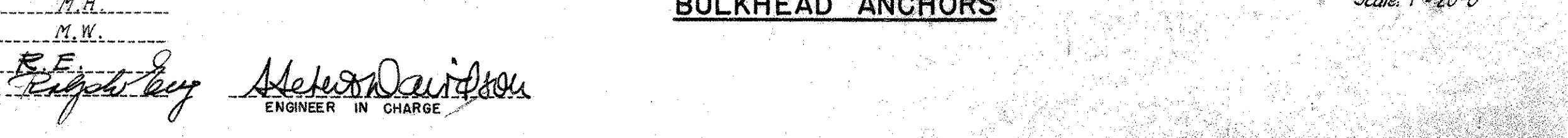
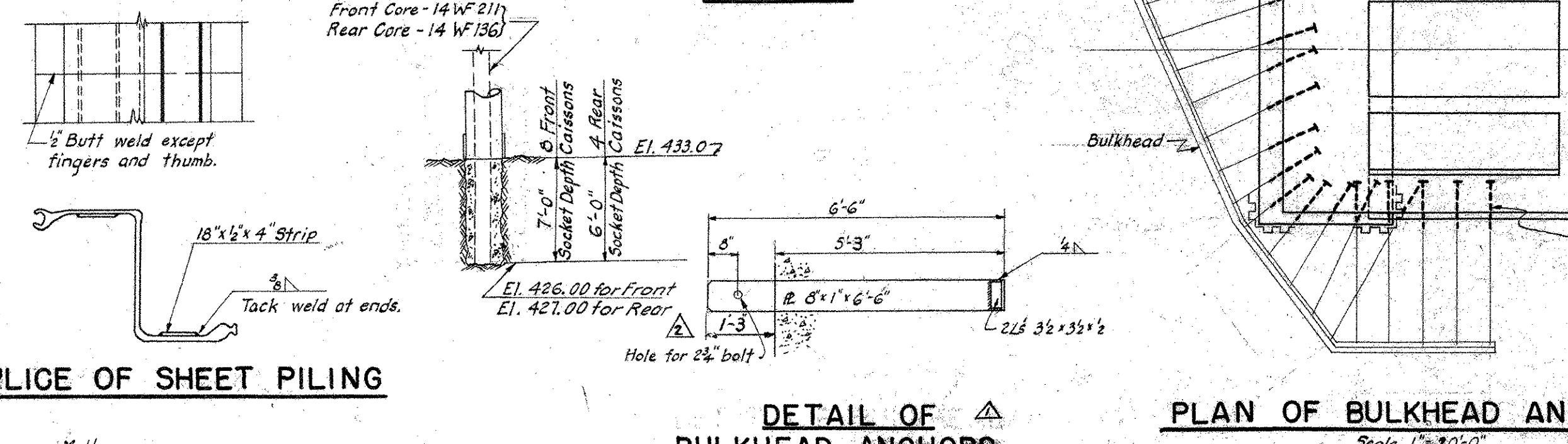
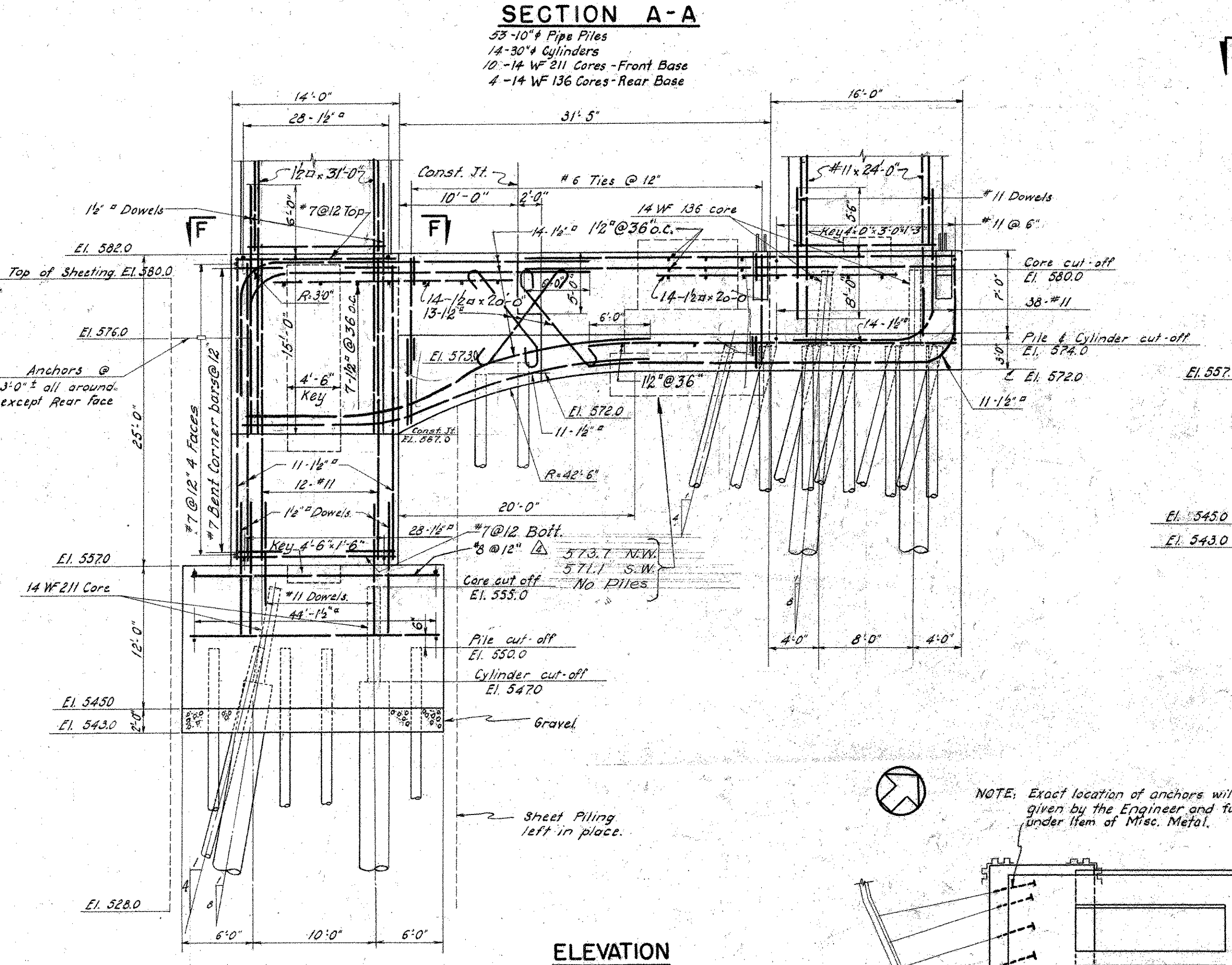
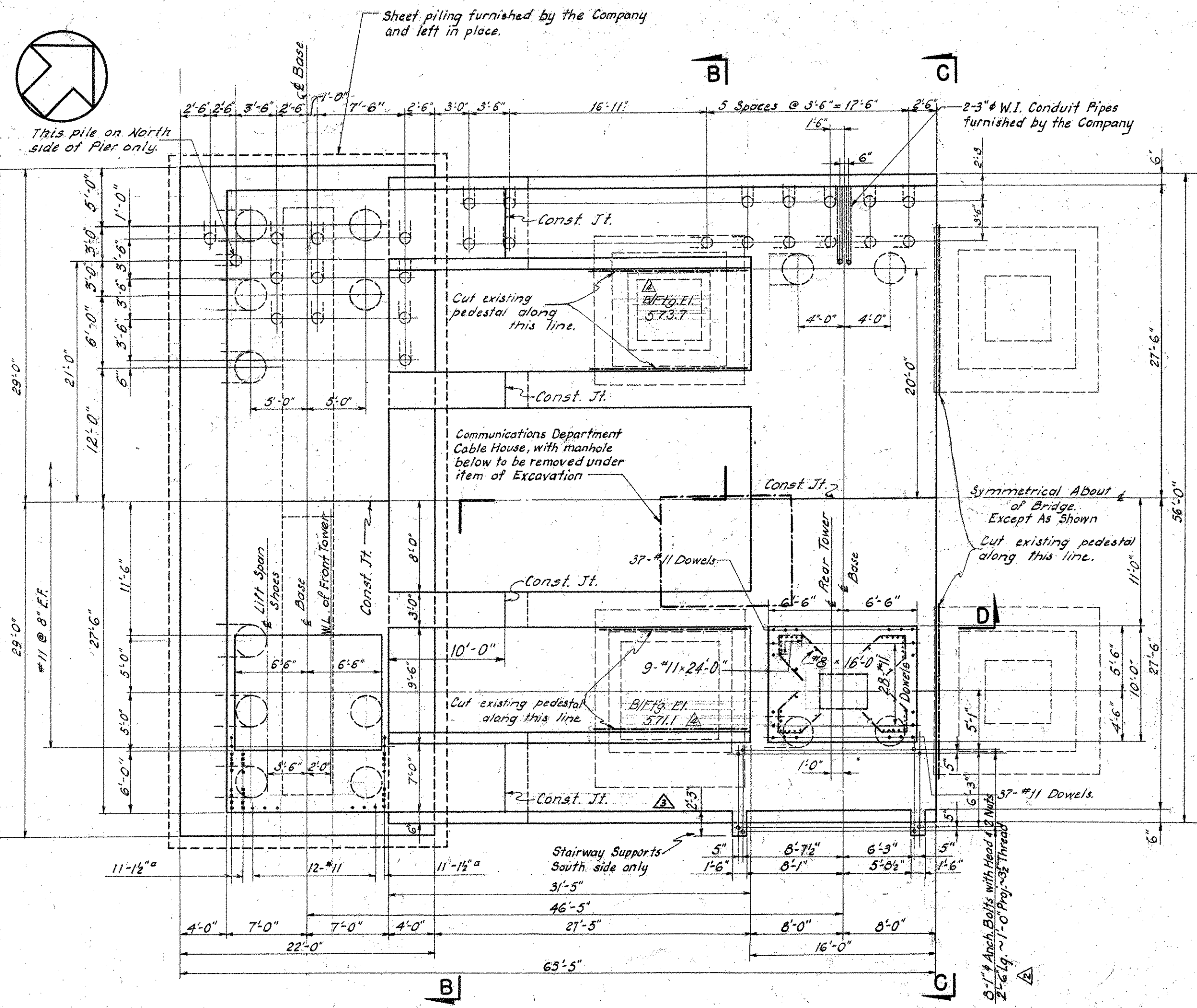
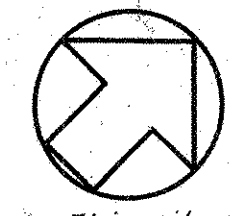
NOTE: All Elevations refer to Mean Tide of New York, El. 0.0, Plane of Reference (Low Water Datum) El. 5.70.5 ft.

D = 3"  
 R = 1910.06'  
 Δ = 10° 57' 20"  
 T = 183.23'  
 A = 365.18  
 C = 183.17  
 N = 50° 34' 55"

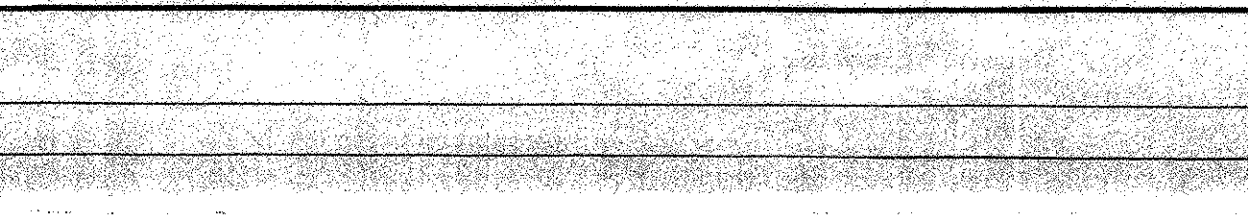
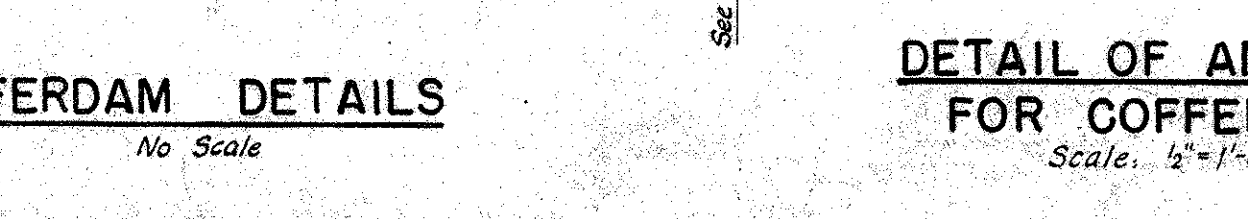
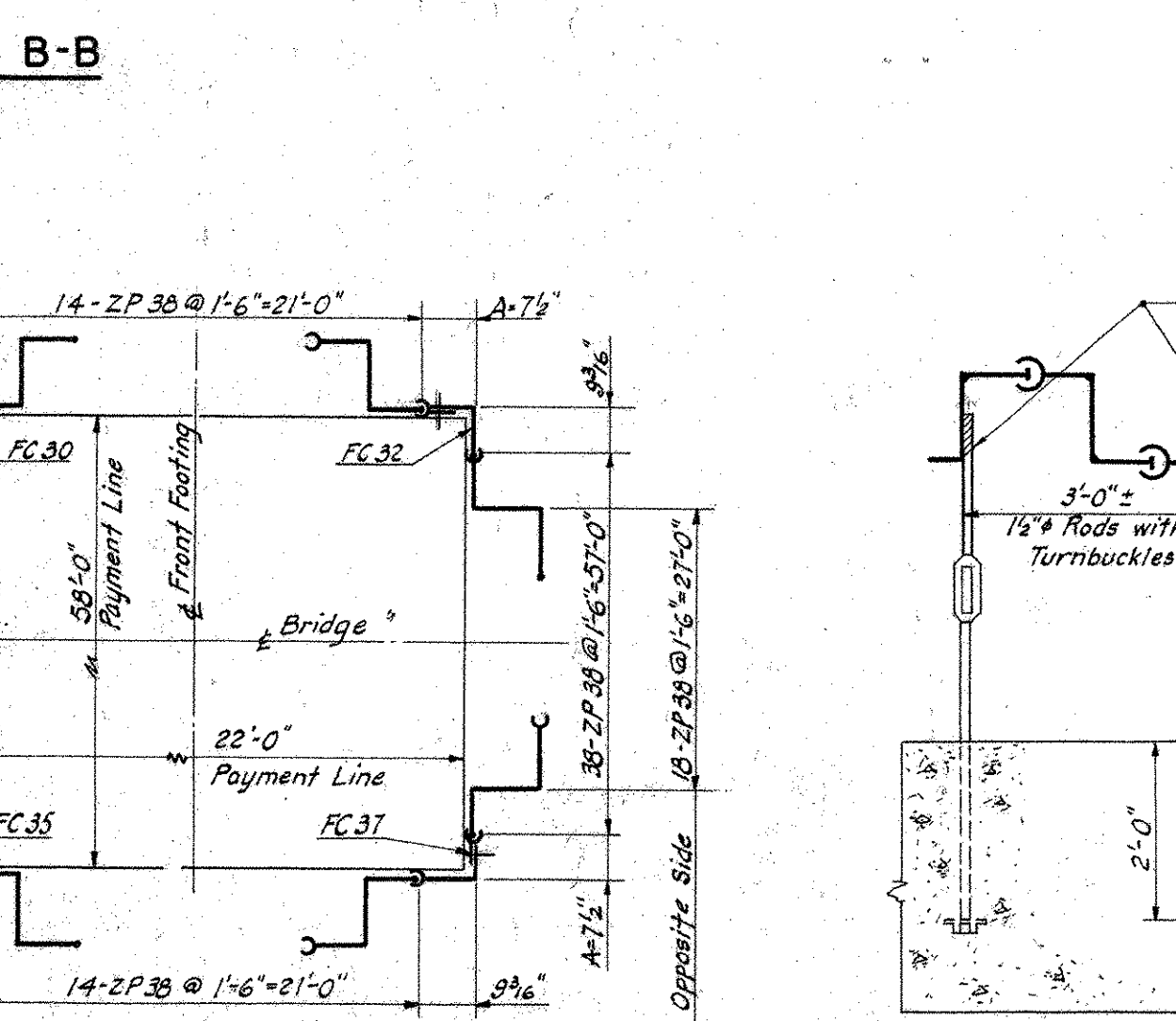
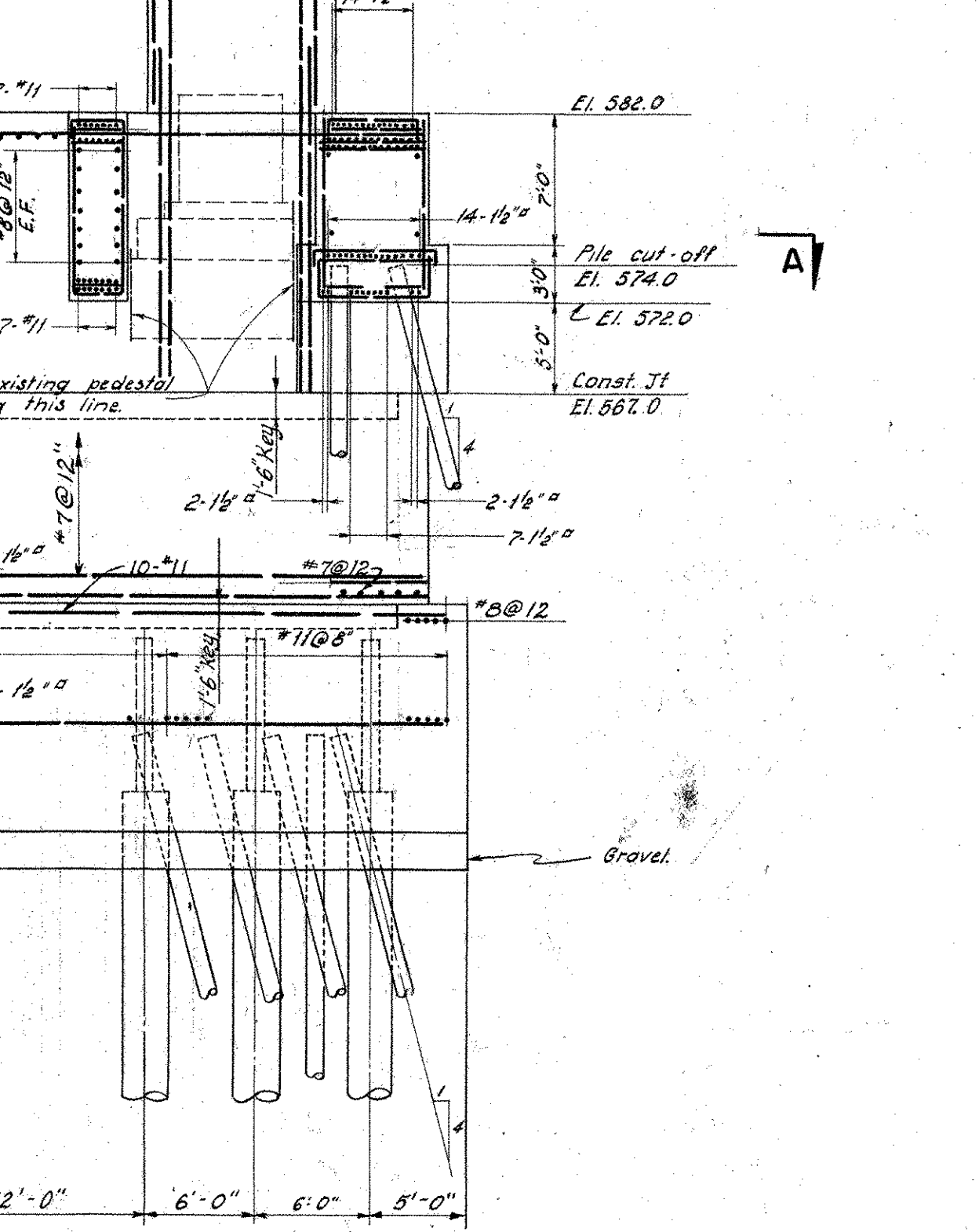
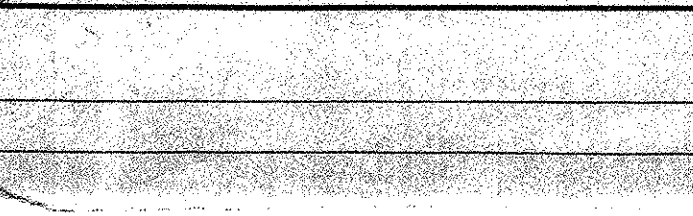
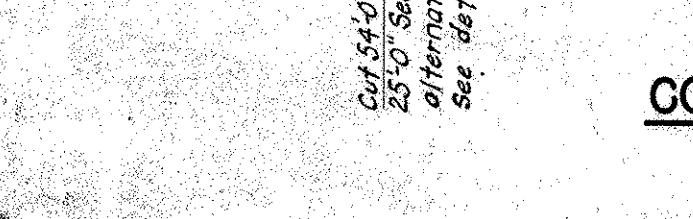
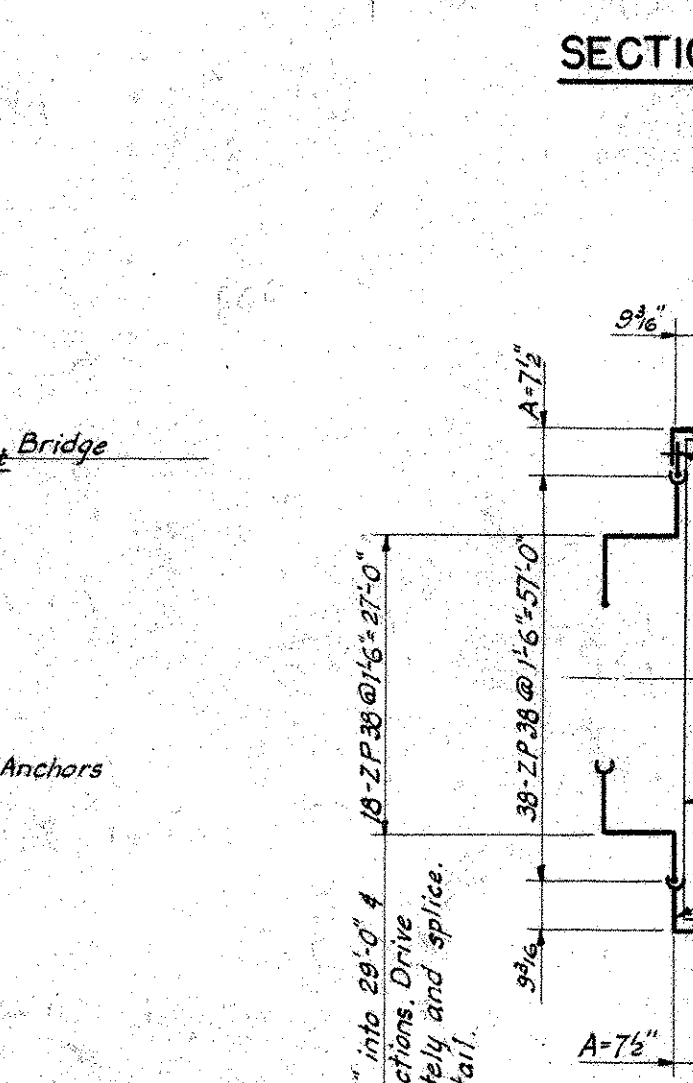
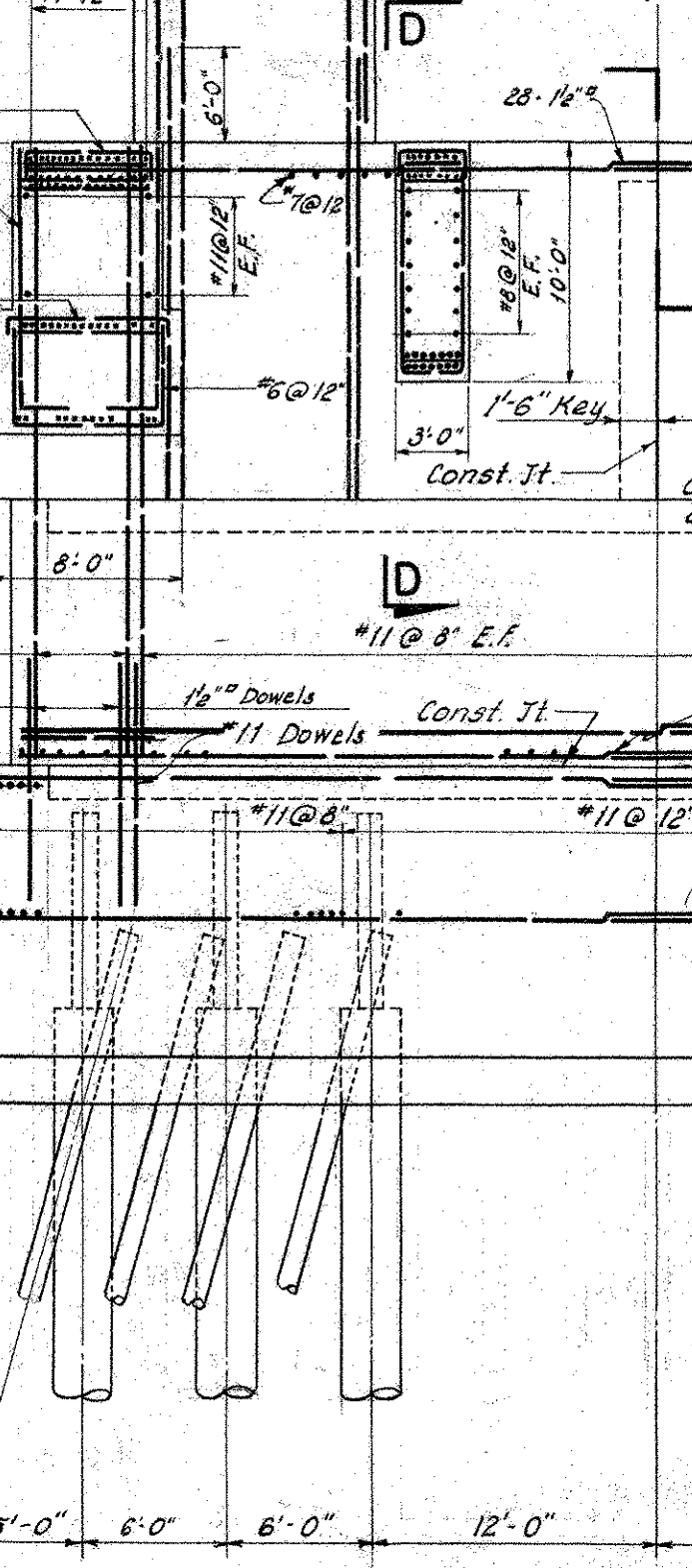
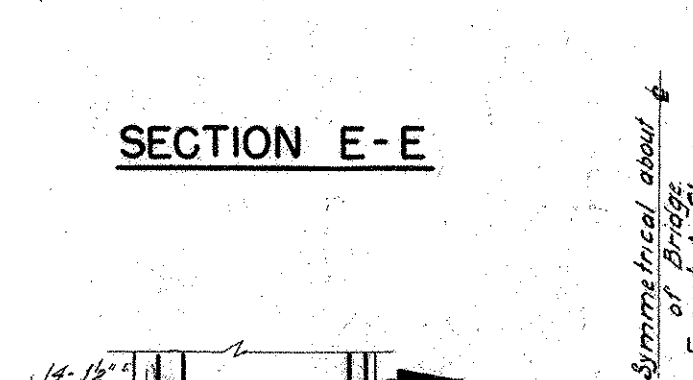
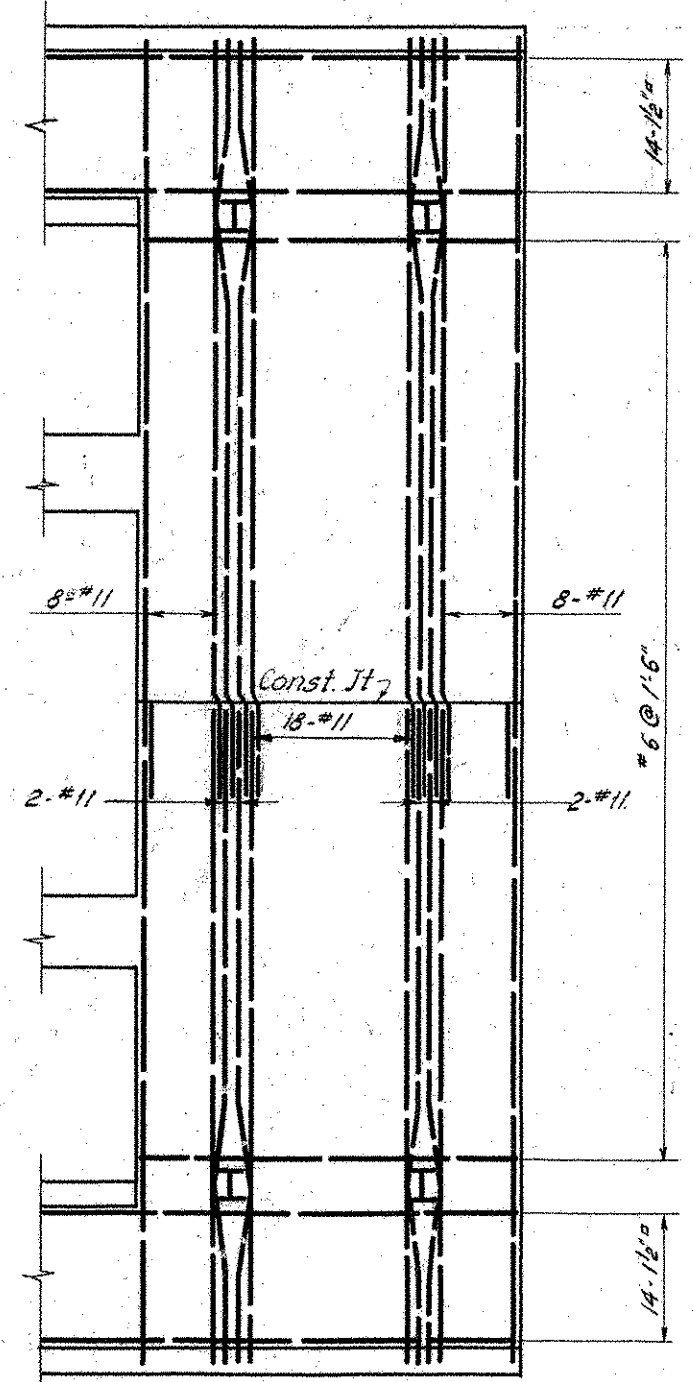
N.Y.C. & ST. L.R.R. NICKEL PLATE DISTRICT		OFFICE OF CHIEF ENGINEER CLEVELAND, OHIO	
PROPOSED DOUBLE TRACK VERTICAL LIFT BRIDGE NO. 184.50 (U.S. NO. 15) OVER CUYAHOGA RIVER CLEVELAND, OHIO			
GENERAL PLAN & ELEVATION			
1/2/58	Structs between W. Pier & Pier 55	R.E.	
4/27/58	Minor Revisions	R.E.	
1/4/58	Deadman & Survey Trac	E.S.W.	
DATE:	REVISIONS	BY	

DRAWN: G.F.F.  
 CHECKED: R.E.E.S.W.  
 IN CHARGE: *Robert Sanderson*  
 ENGINEER IN CHARGE

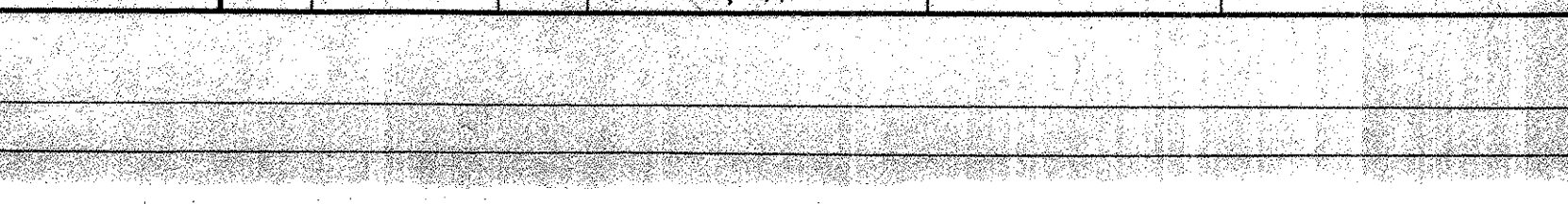
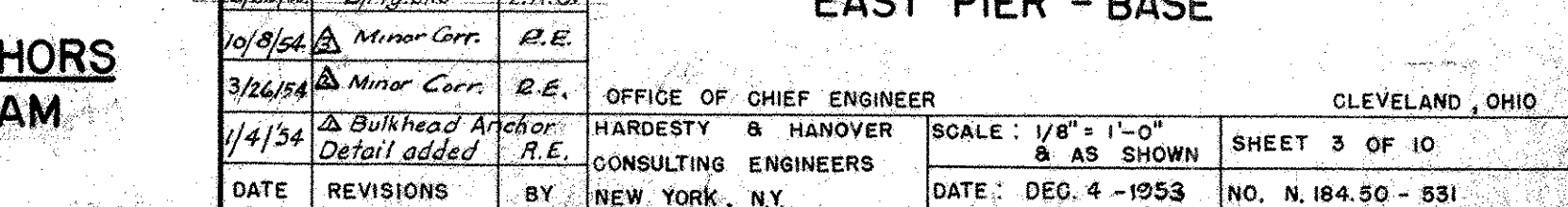
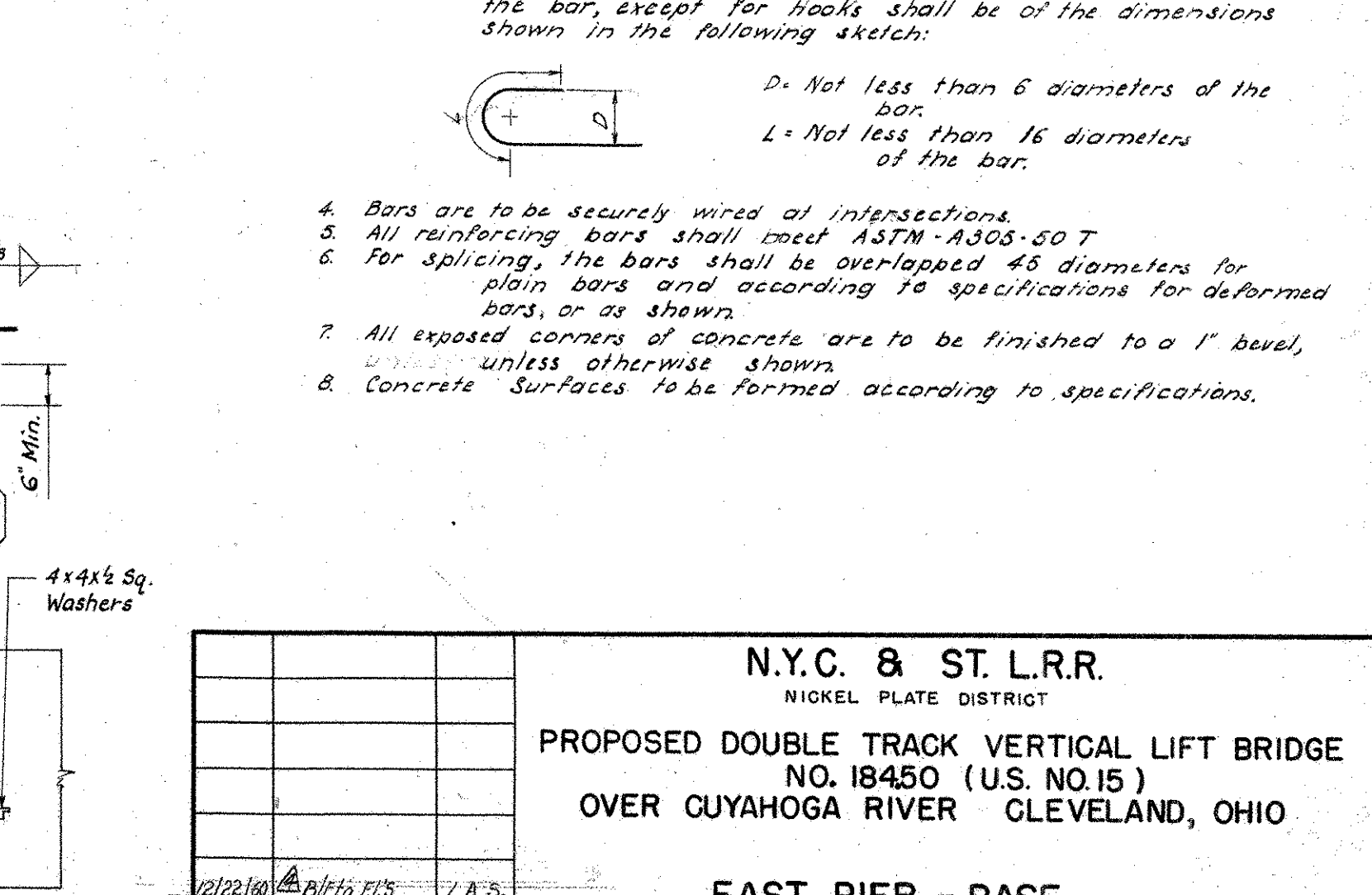
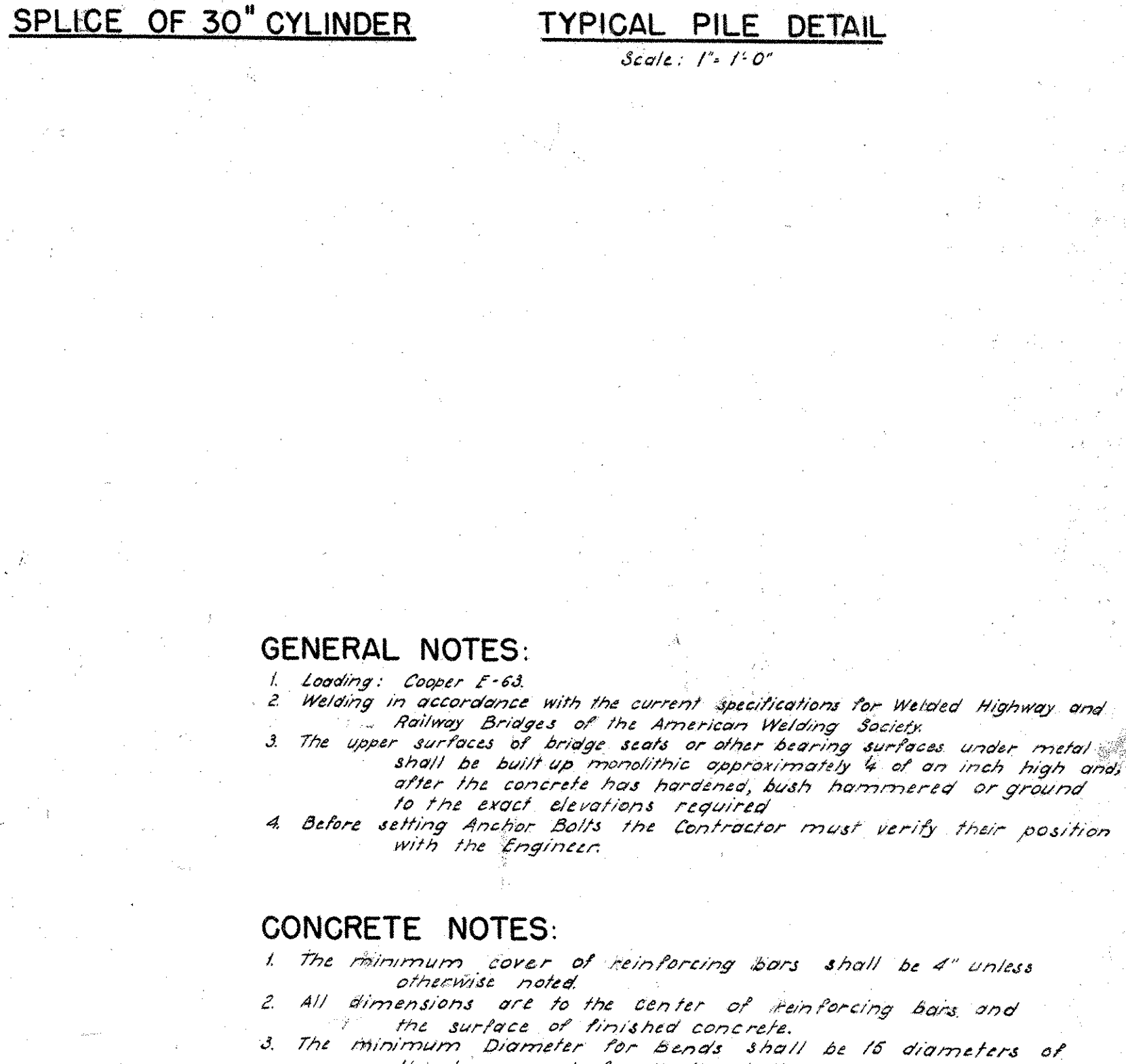




SPlice of SHEET PILING  
FRONT CORE - 14 WF 211  
REAR CORE - 14 WF 136



SPlice of SHEET PILING  
FRONT CORE - 14 WF 211  
REAR CORE - 14 WF 136



SPlice of SHEET PILING  
FRONT CORE - 14 WF 211  
REAR CORE - 14 WF 136

- GENERAL NOTES:**
- Loading: Cooper E-63.
  - Welding in accordance with the current specifications for Welded Highway and Railway Bridges of the American Welding Society.
  - The upper surfaces of bridge seats or other bearing surfaces under metal shall be built up monolithic approximately 1/4 of an inch high and, after the concrete has hardened, bush hammered or ground to the exact elevations required.
  - Before setting Anchor Bolts the Contractor must verify their position with the Engineer.

- CONCRETE NOTES:**
- The minimum cover of reinforcing bars shall be 4" unless otherwise noted.
  - All dimensions are to the center of reinforcing bars and the surface of finished concrete.
  - The minimum diameter for bars shall be 1/2 diameters of the bar, except for hooks shall be of the dimensions shown in the following sketch:
- 
- Bars are to be securely wired at intersections.
  - All reinforcing bars shall coast ASTM A305-50 T.
  - For splicing, the bars shall be overlapped 48 diameters for plain bars and according to specifications for deformed bars, or as shown.
  - All exposed corners of concrete are to be finished to a 1" bevel, unless otherwise shown.
  - Concrete surfaces to be formed according to specifications.

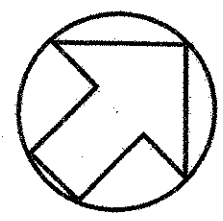
N.Y.C. & ST. L.R.R.		CLEVELAND, OHIO	
NICKEL PLATE DISTRICT		NO. 18450 (U.S. NO. 15)	
PROPOSED DOUBLE TRACK VERTICAL LIFT BRIDGE		OVER CUYAHOGA RIVER (CLEVELAND, OHIO)	
EAST PIER - BASE		SHEET 3 OF 10	
DATE	REVISIONS	BY	DATE
12/22/10	1/15/11	J.A.S.	1/15/11
1/19/11	Minor Corr.	R.E.	
3/26/11	Minor Corr.	R.E.	
1/4/11	Bulkhead Anchor Detail added	R.E.	

OFFICE OF CHIEF ENGINEER  
HARDESTY & HANOVER  
CONSULTING ENGINEERS  
NEW YORK, N.Y.

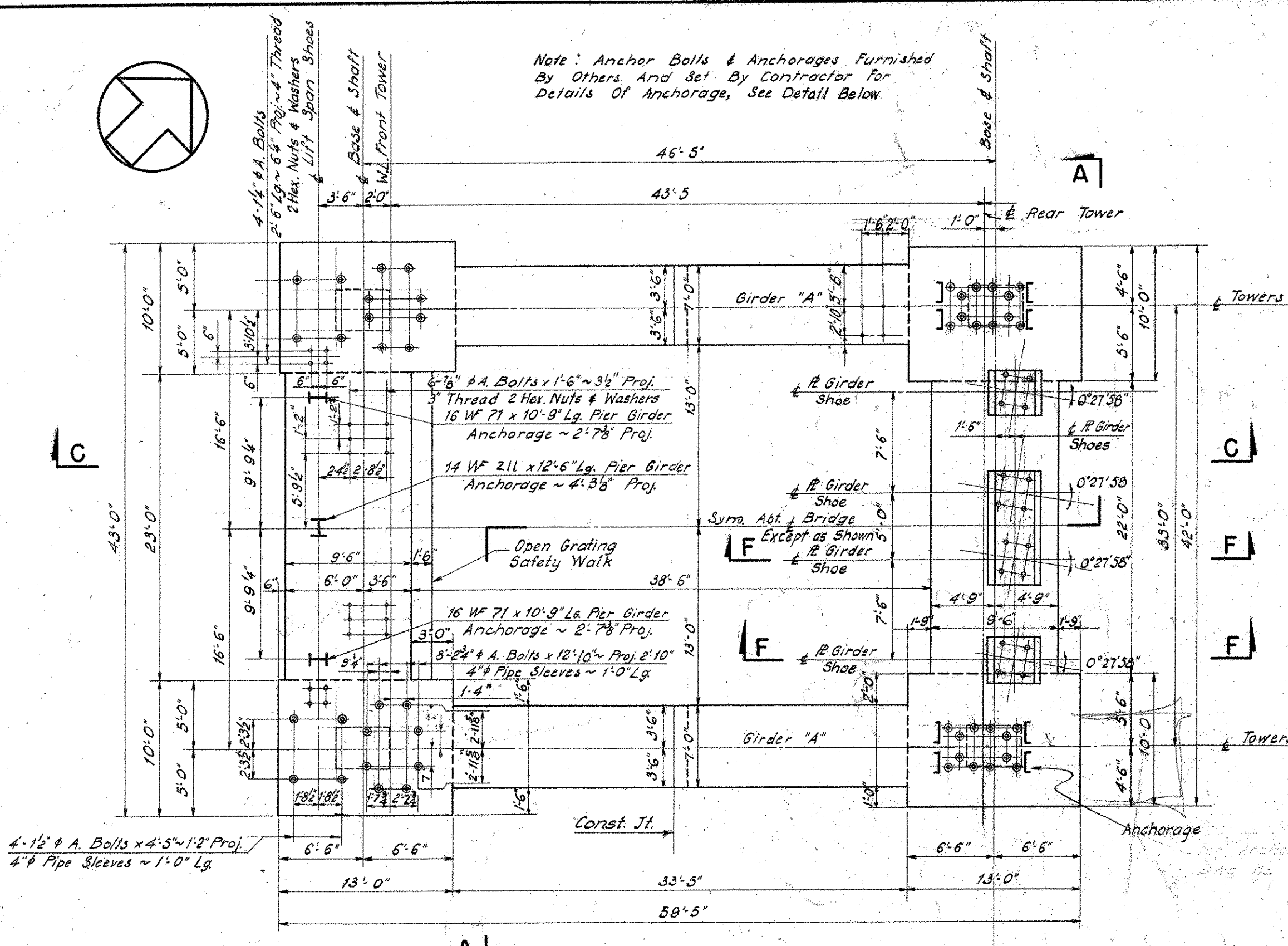
SCALE: 1/8" = 1'-0"  
& AS SHOWN

DATE: DEC. 4 - 1953  
NO. N. 184-50 - 531

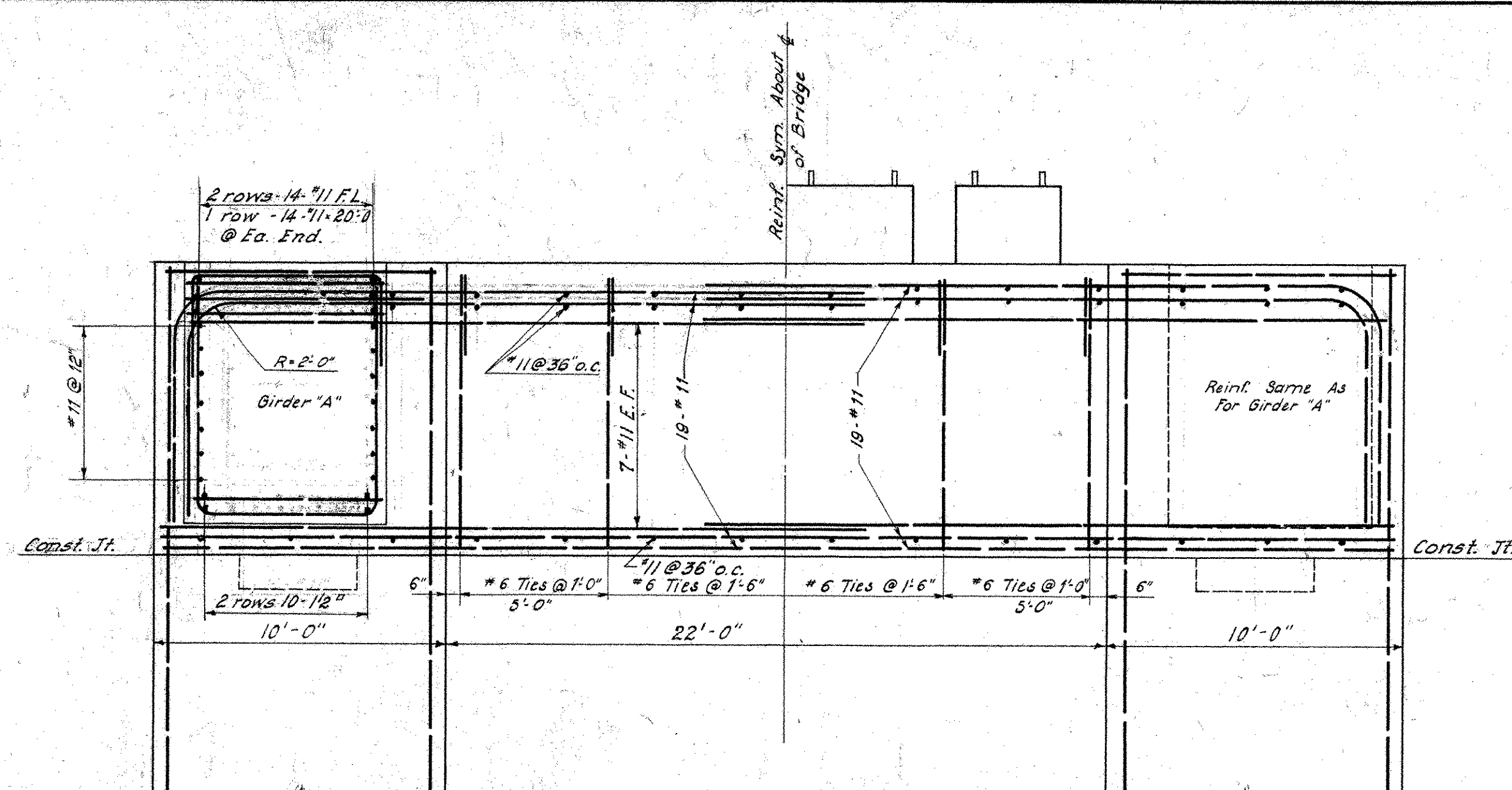




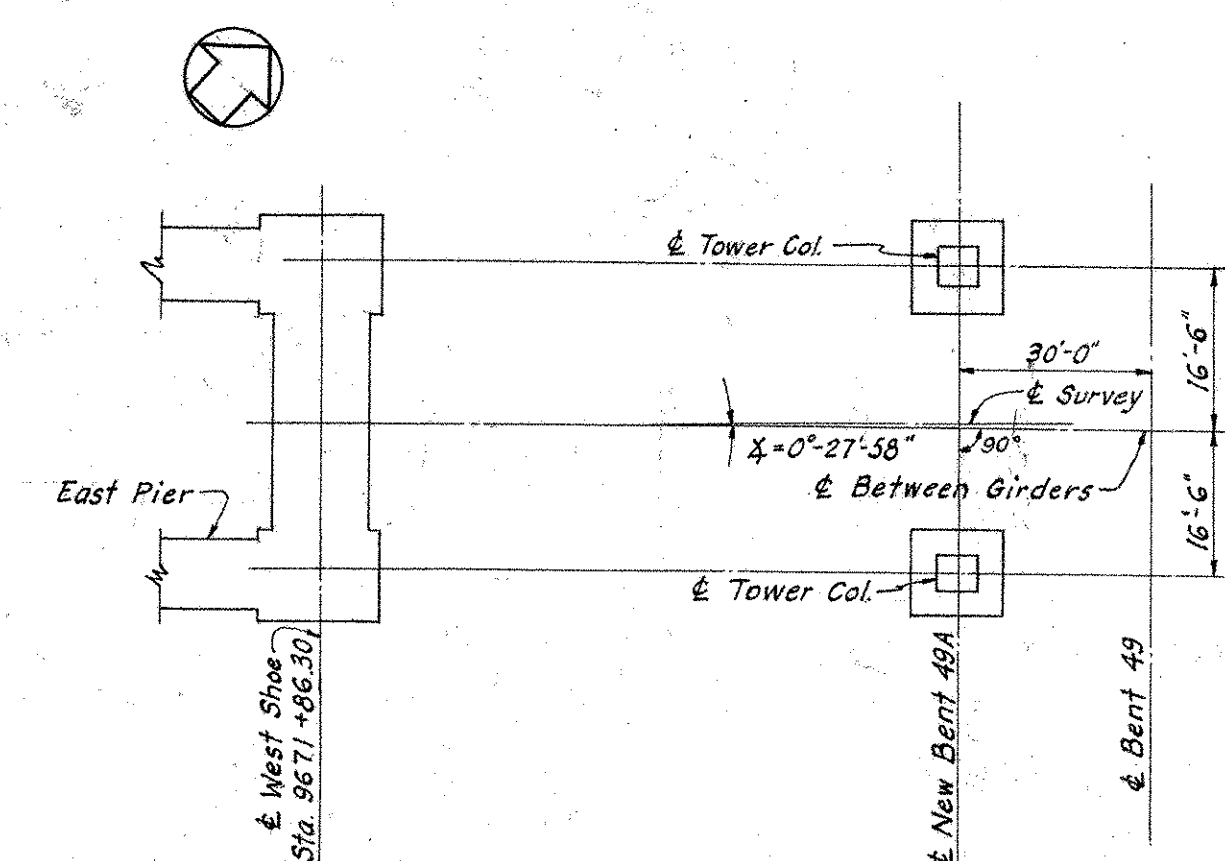
Note: Anchor Bolts & Anchorages Furnished By Others, and Set By Contractor For Details of Anchorages, See Detail Below



PLAN

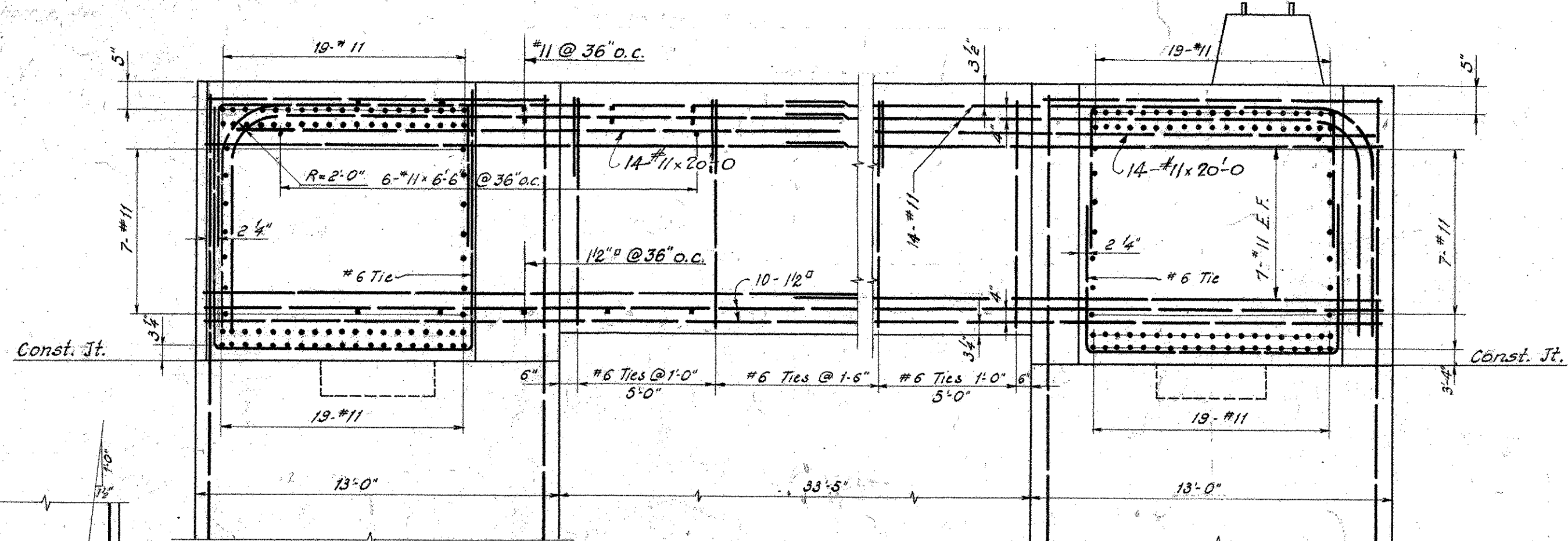


SECTION A-A



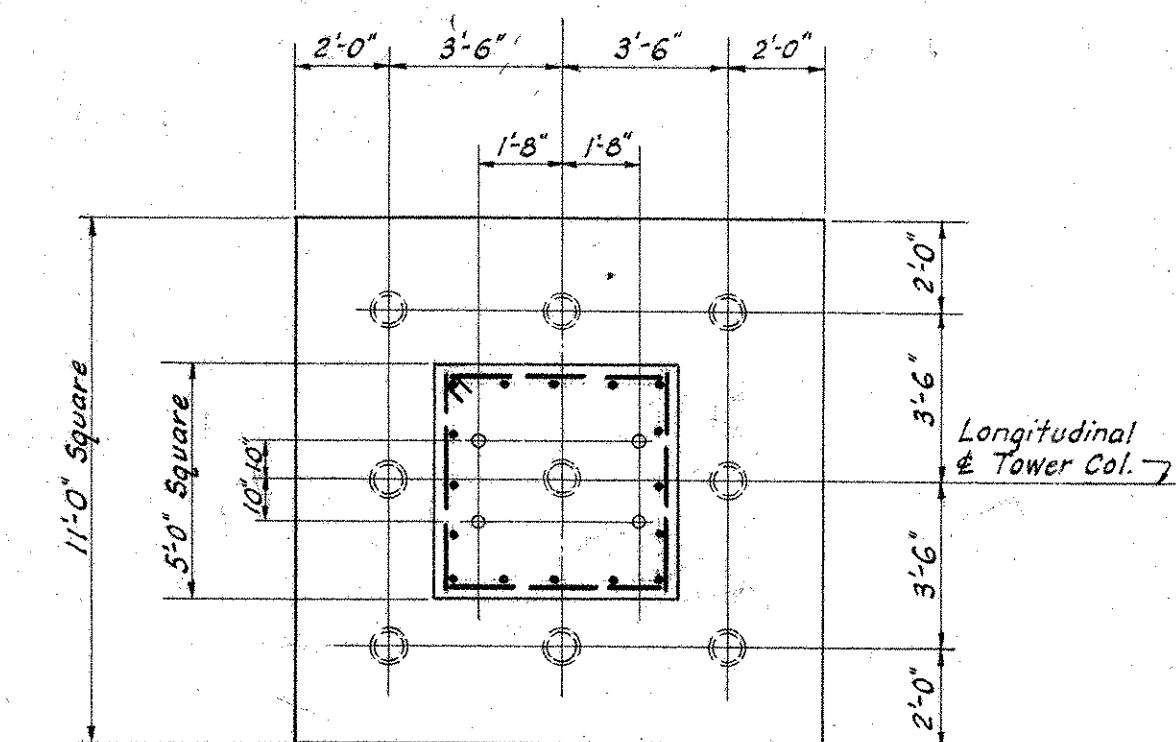
LOCATION PLAN BENT 49-A

Scale: 1"=20'-0"

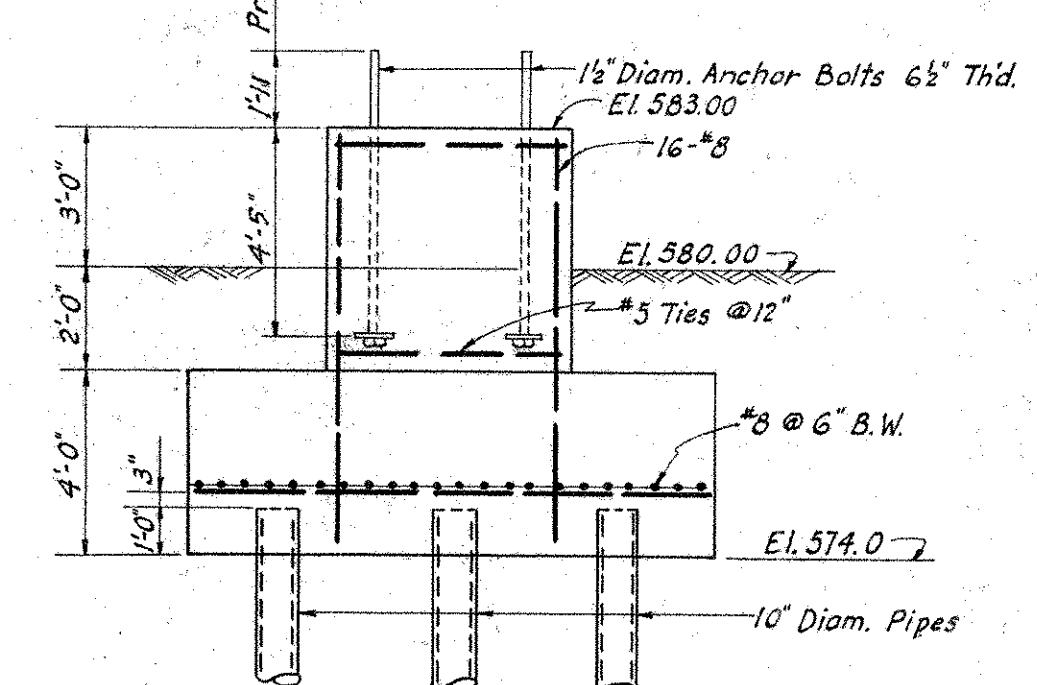


SECTION C-C

Scale: 1/4"=1'-0"



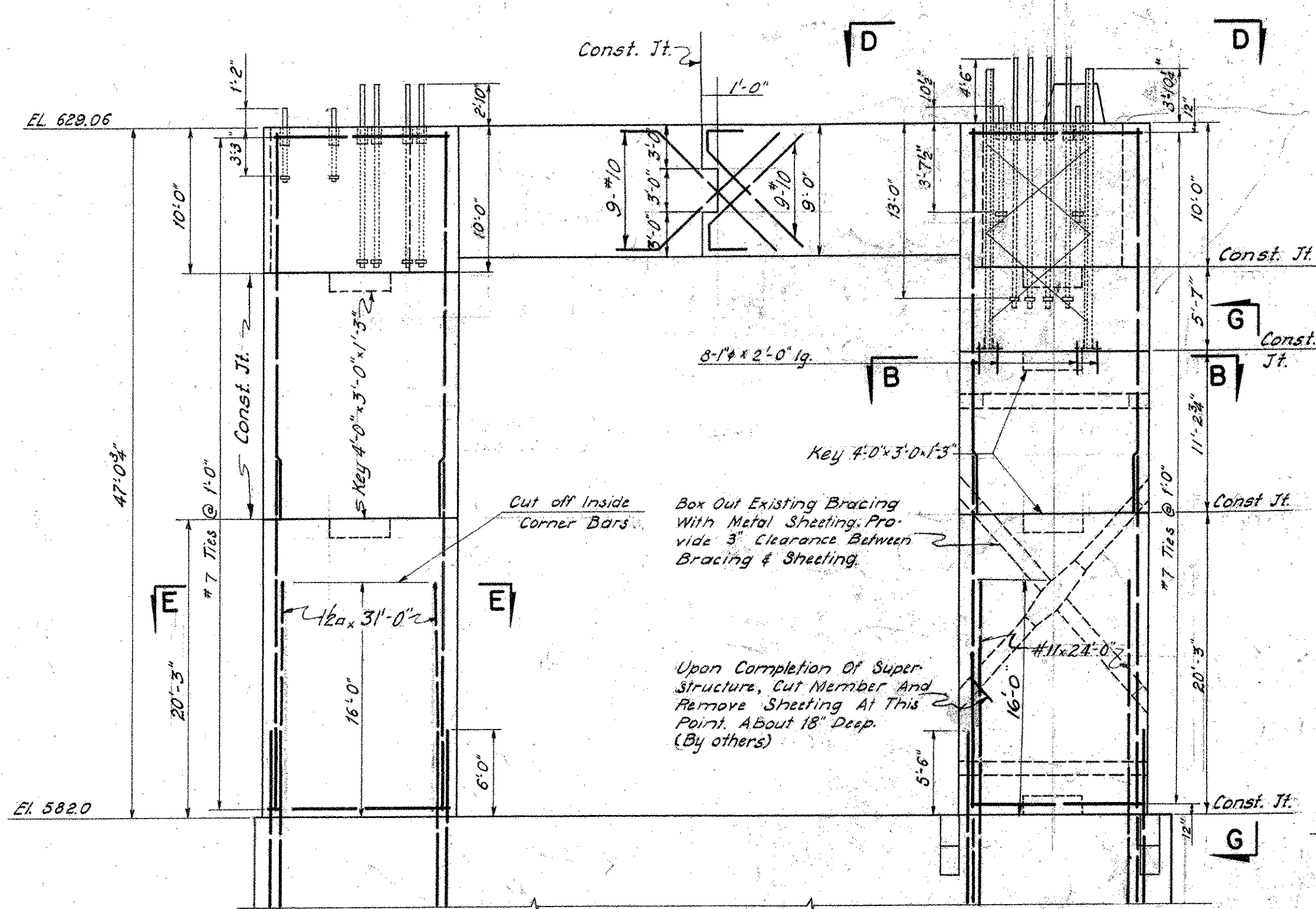
PLAN



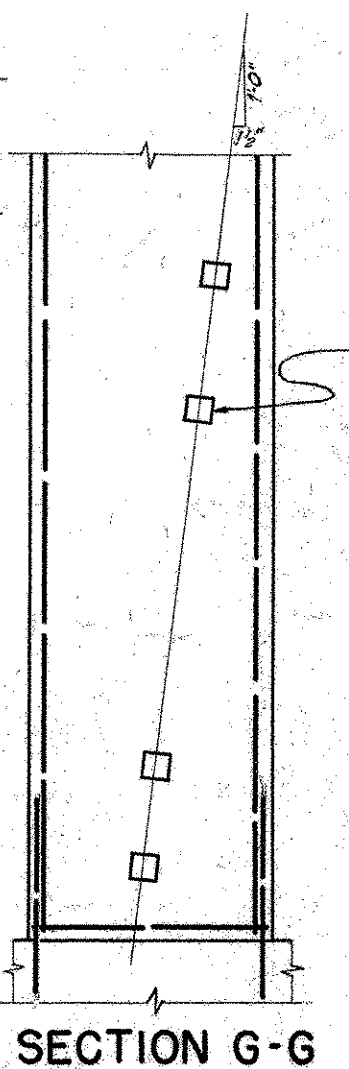
ELEVATION

DETAILS OF PEDESTALS FOR BENT 49-A

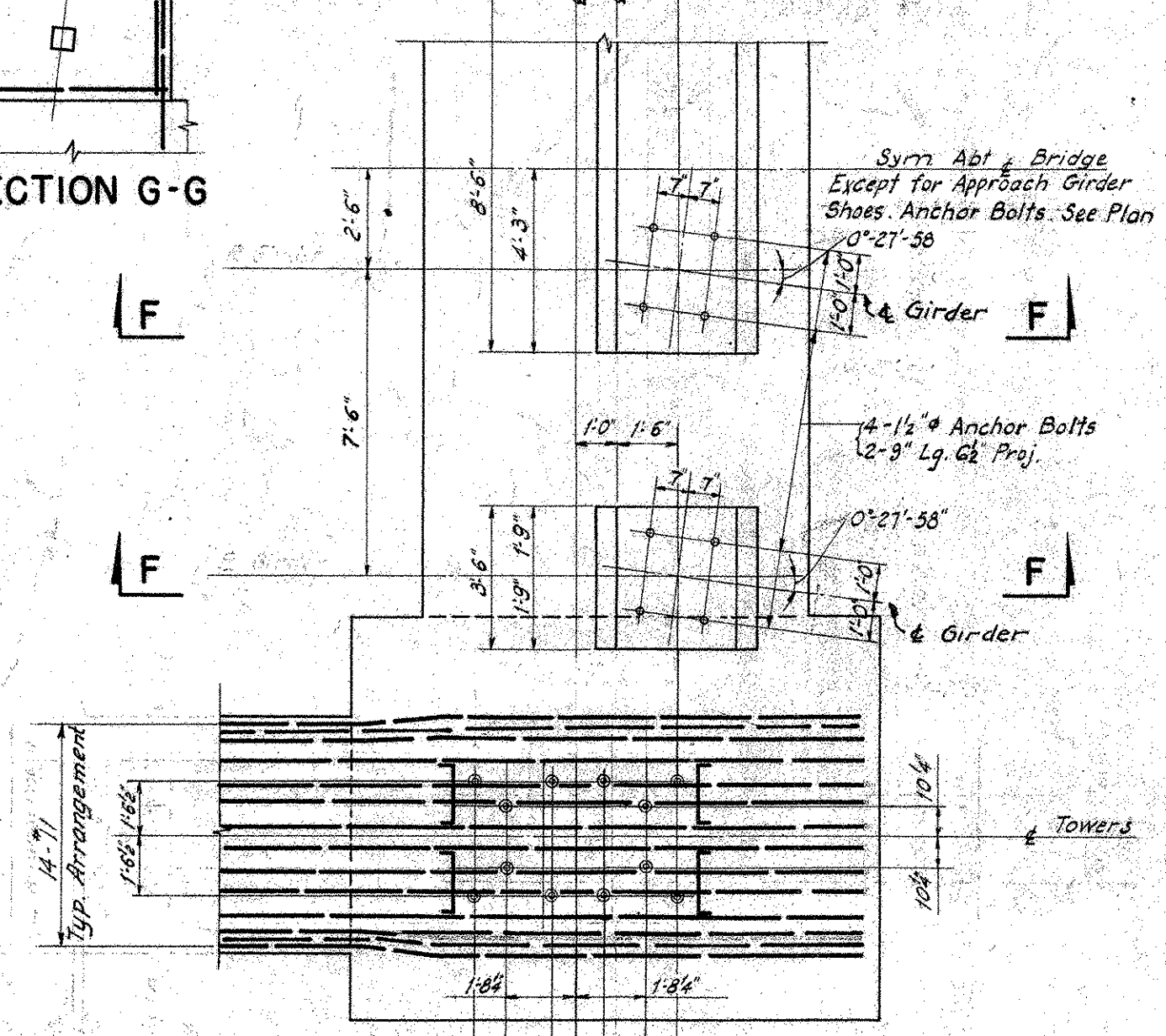
Scale: 1/4"=1'-0"



ELEVATION

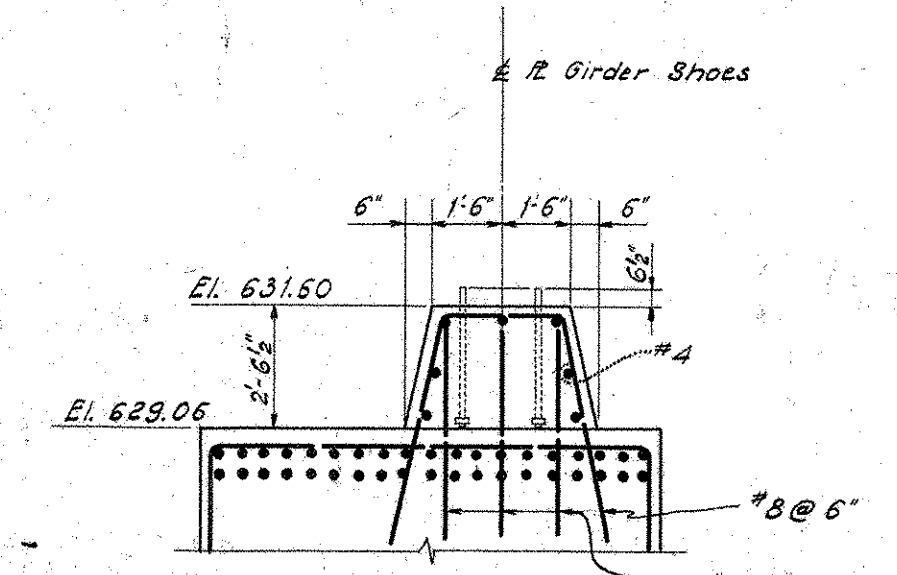


SECTION G-G



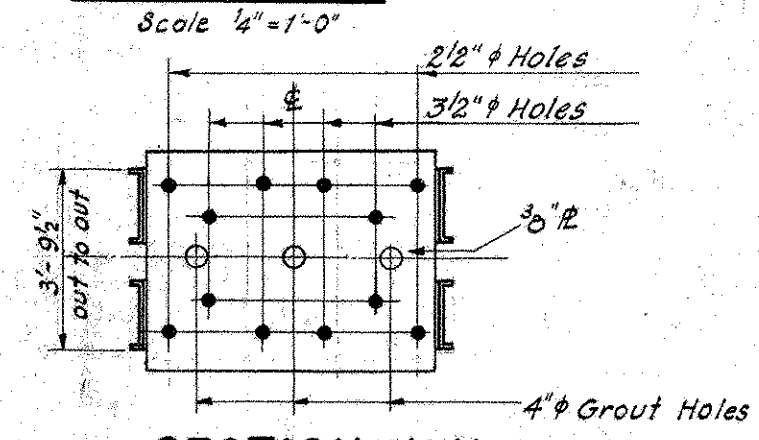
SECTION D-D

Scale: 1/4"=1'-0"

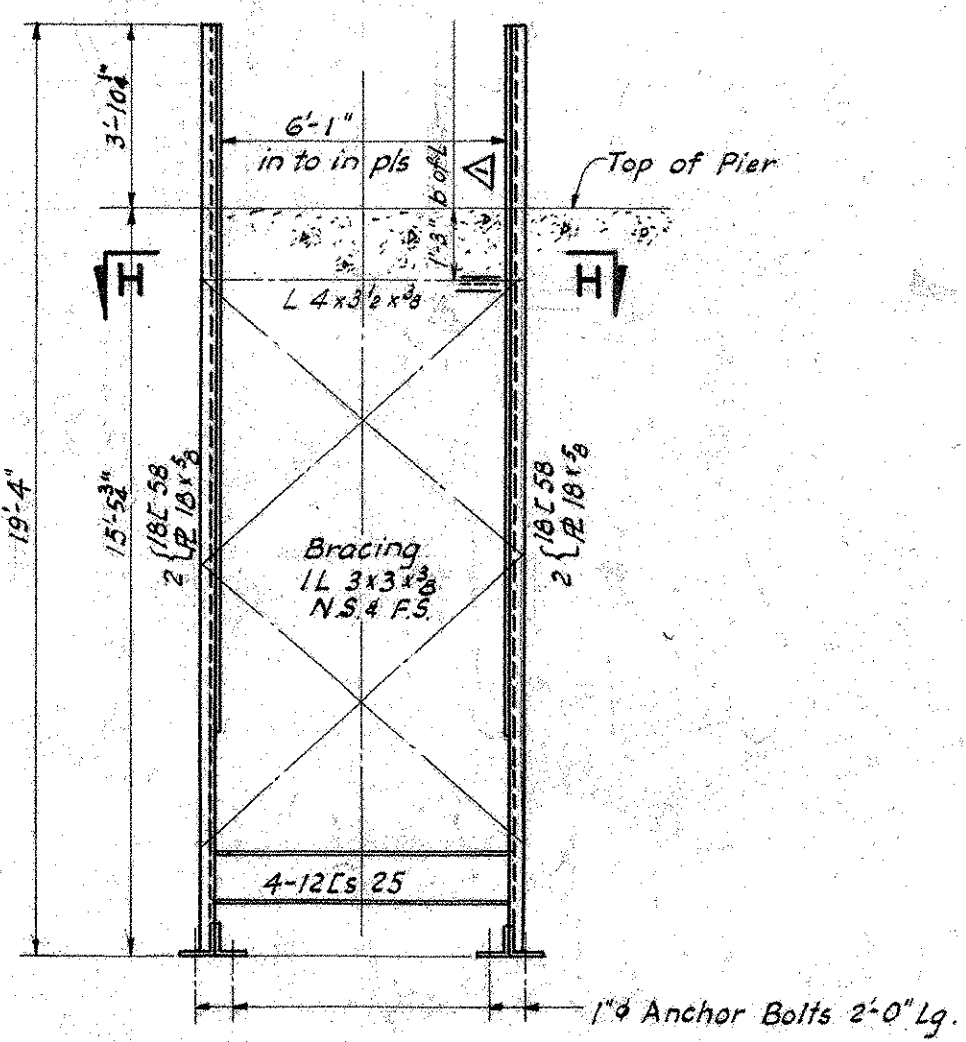


SECTION F-F

Scale: 1/4"=1'-0"



SECTION H-H



REAR TOWER LEG ANCHORAGE

Scale: 1/4"=1'-0"

NOTE:  
For General Notes, See Dwg. No. 3.

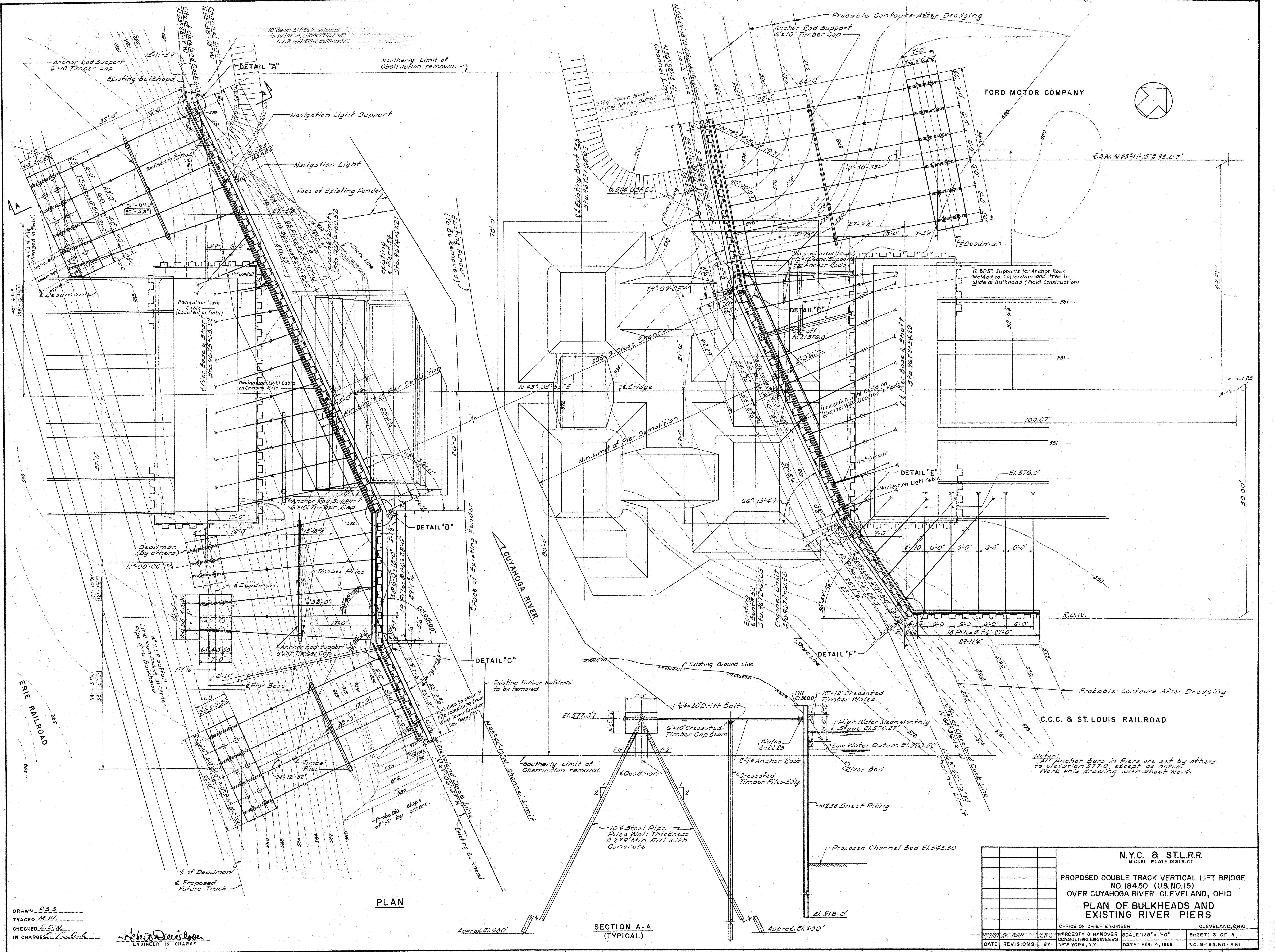
DRAWN M.H.  
TRACED M.W.  
CHECKED F. J. [Signature]  
IN CHARGE H. David [Signature]  
ENGINEER IN CHARGE

<b>N.Y.C. &amp; ST. L.R.R.</b> NICKEL PLATE DISTRICT <b>PROPOSED DOUBLE TRACK VERTICAL LIFT BRIDGE</b> NO. 184.50 (U.S. NO. 15) OVER CUYAHOGA RIVER CLEVELAND, OHIO <b>EAST PIER-SHAFTS AND GIRDERS</b> <b>EAST APPROACH PEDESTALS</b>			
DATE	REVISIONS	BY	OFFICE OF CHIEF ENGINEER HARDESTY & HANOVER CONSULTING ENGINEERS NEW YORK, N.Y.
1/14/54	Minor Corr.	R.E.	OFFICE OF CHIEF ENGINEER CLEVELAND, OHIO
1/14/54	As Dim. added	R.E.	HARDESTY & HANOVER CONSULTING ENGINEERS NEW YORK, N.Y.
DATE	REVISIONS	BY	SCALE: AS SHOWN DATE: DEC. 4-1953 NO. N. 184.50-531
			SHEET: 4 OF 10









PLAN

SECTION A-A (TYPICAL)

DRAWN *R.S.S.*  
 CHECKED *E.S.W.*  
 IN CHARGE *R.S.S.*

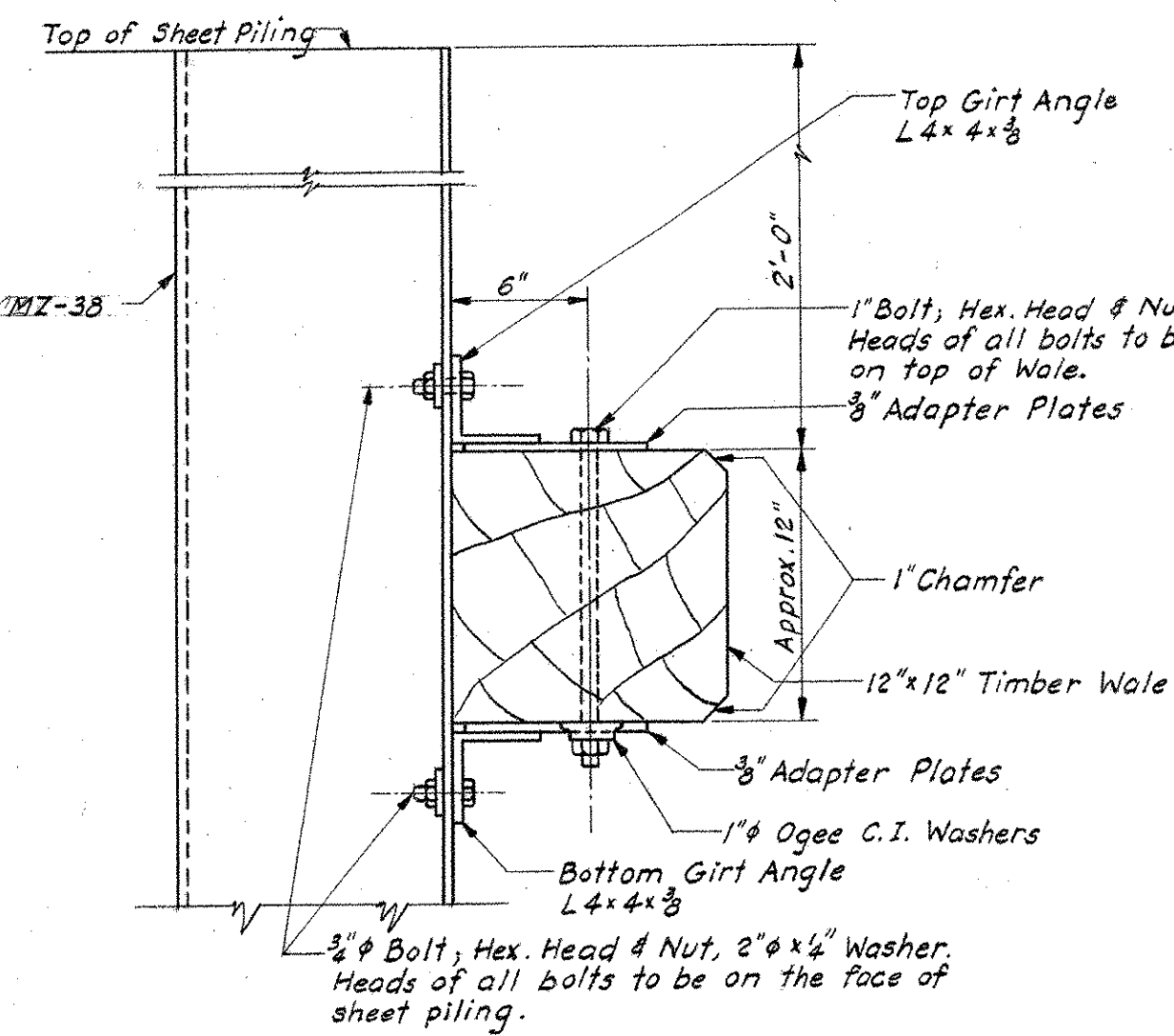
*Heber Davidson*  
 ENGINEER IN CHARGE

<b>N.Y.C. &amp; ST.L.R.R.</b> NICKEL PLATE DISTRICT	
PROPOSED DOUBLE TRACK VERTICAL LIFT BRIDGE NO. 184.50 (U.S. NO. 15) OVER CUYAHOGA RIVER CLEVELAND, OHIO	
<b>PLAN OF BULKHEADS AND          EXISTING RIVER PIERS</b>	
OFFICE OF CHIEF ENGINEER HARDESTY & HANOVER CONSULTING ENGINEERS NEW YORK, N.Y.	CLEVELAND, OHIO SCALE: 1/8" = 1'-0" DATE: FEB. 14, 1958
DATE: 1/27/50 REVISIONS:	SHEET: 3 OF 5 NO. N-184.50-531

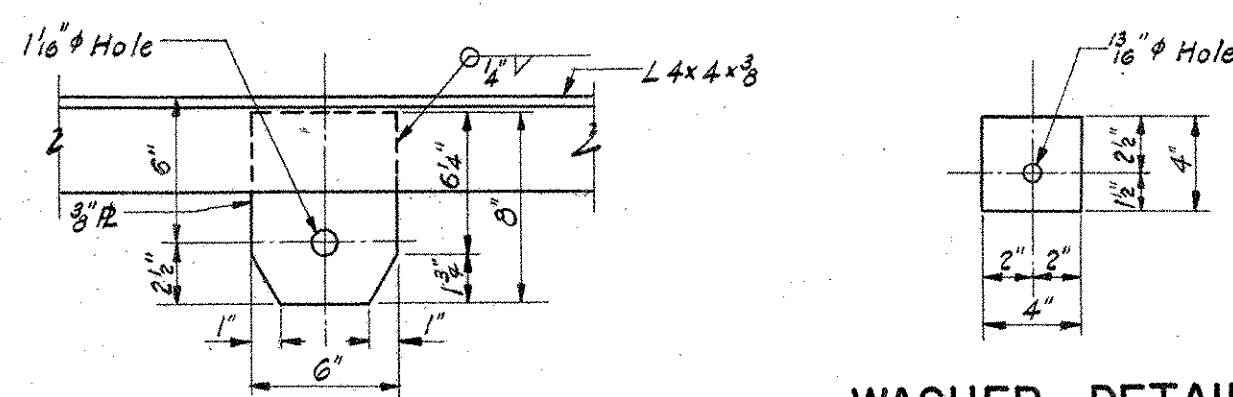
Notes:  
 All Anchor Bars in Piers are set by others to elevation 577.0, except as noted. Note this drawing with Sheet No. 4.



**NOTE:**  
The line of the timber wale shall be approximately straight. Any space between the face of the steel sheet piling and the back of the wale angles shall be filled at each bolt with a 4" x 4" steel plate washers.

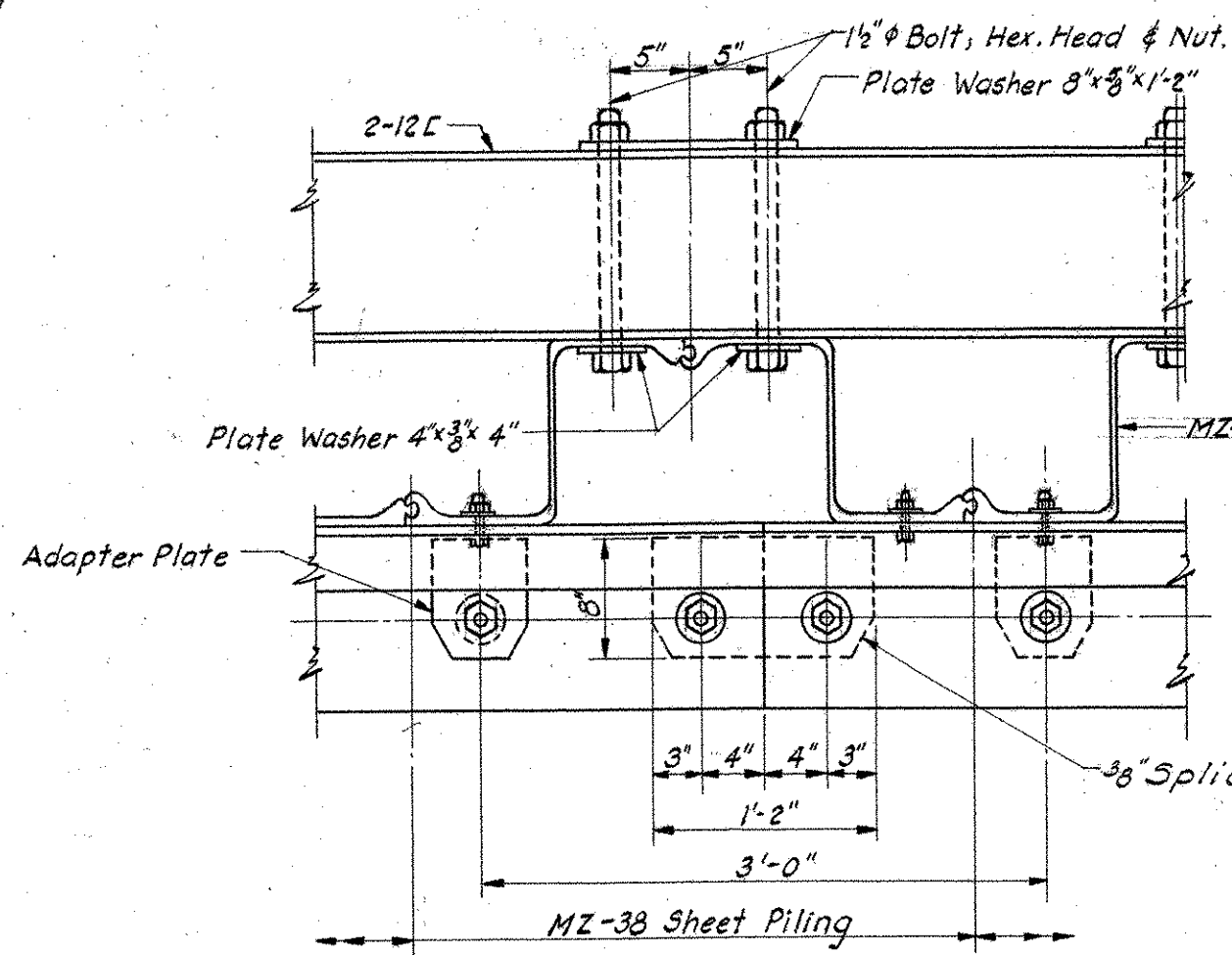


**SECTION - TIMBER WALE**  
Scale: 1/4" = 1'-0"

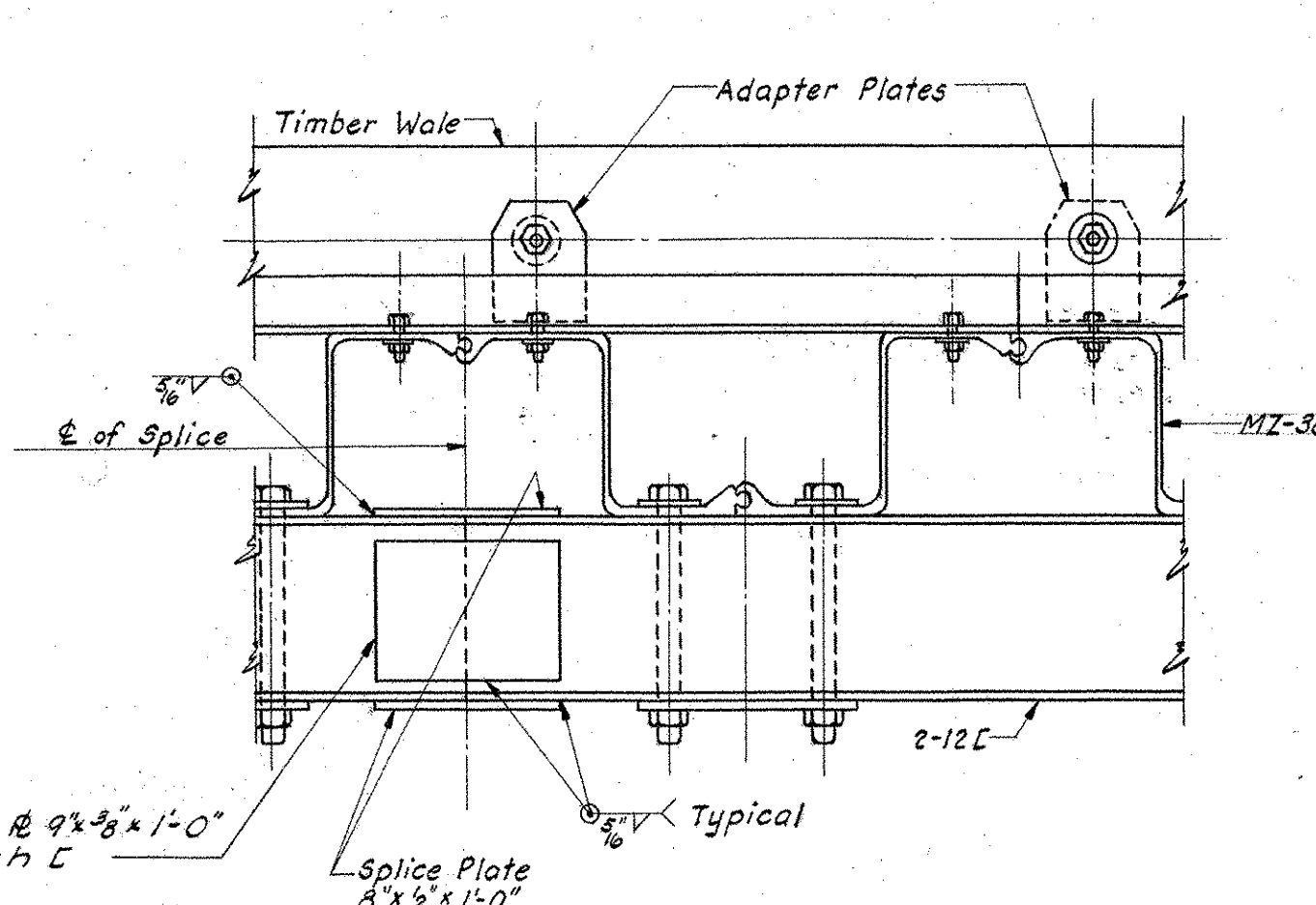


**ADAPTER PLATE DETAIL**  
Scale: 1/2" = 1'-0"

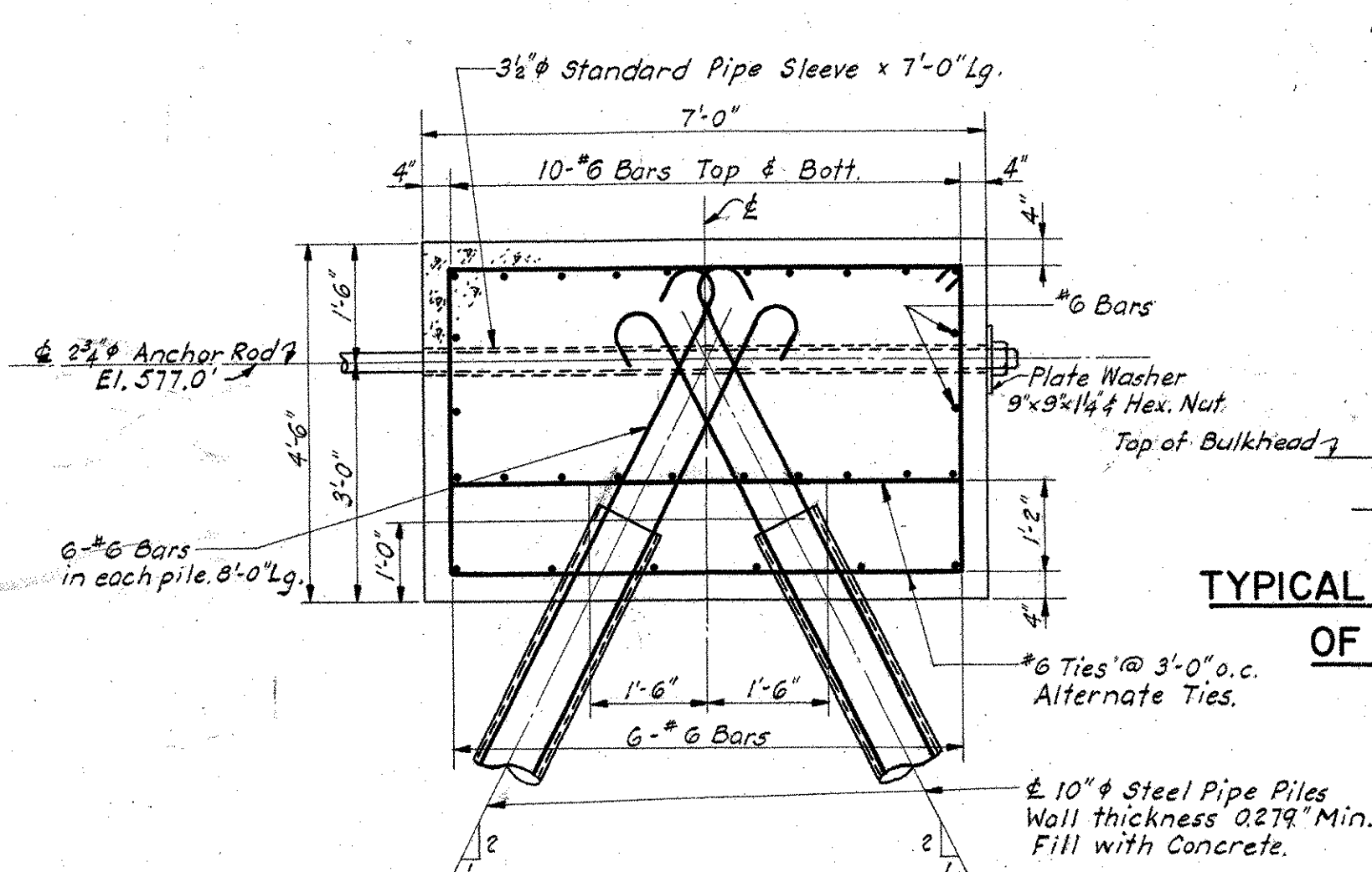
**WASHER DETAIL**  
Scale: 1/2" = 1'-0"



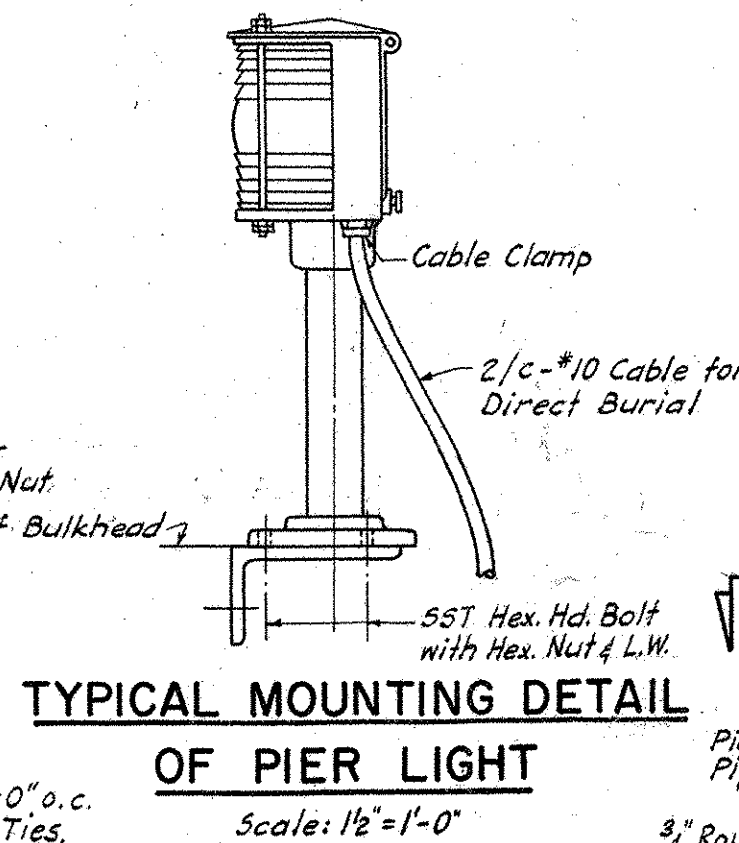
**TYPICAL TIMBER WALE SPLICE**



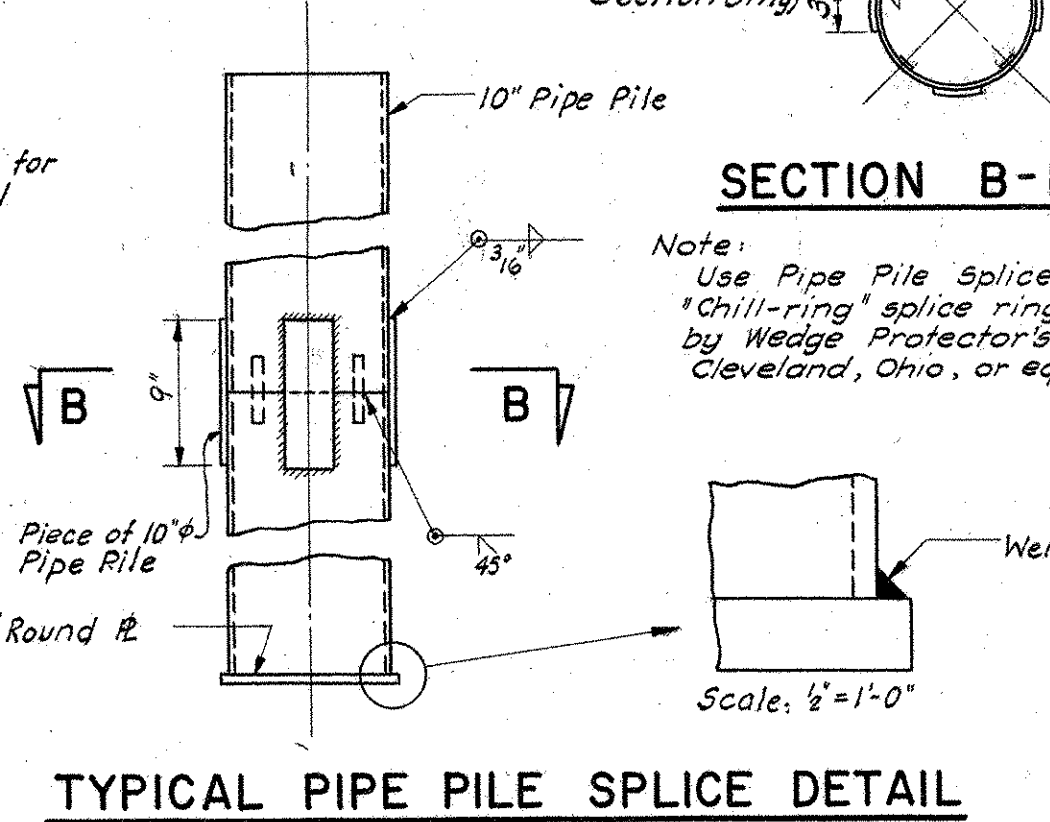
**TYPICAL CHANNEL SPLICE**



**SECTION - TYPICAL DEADMAN**  
Scale: 1/2" = 1'-0"



**TYPICAL MOUNTING DETAIL OF PIER LIGHT**  
Scale: 1/2" = 1'-0"

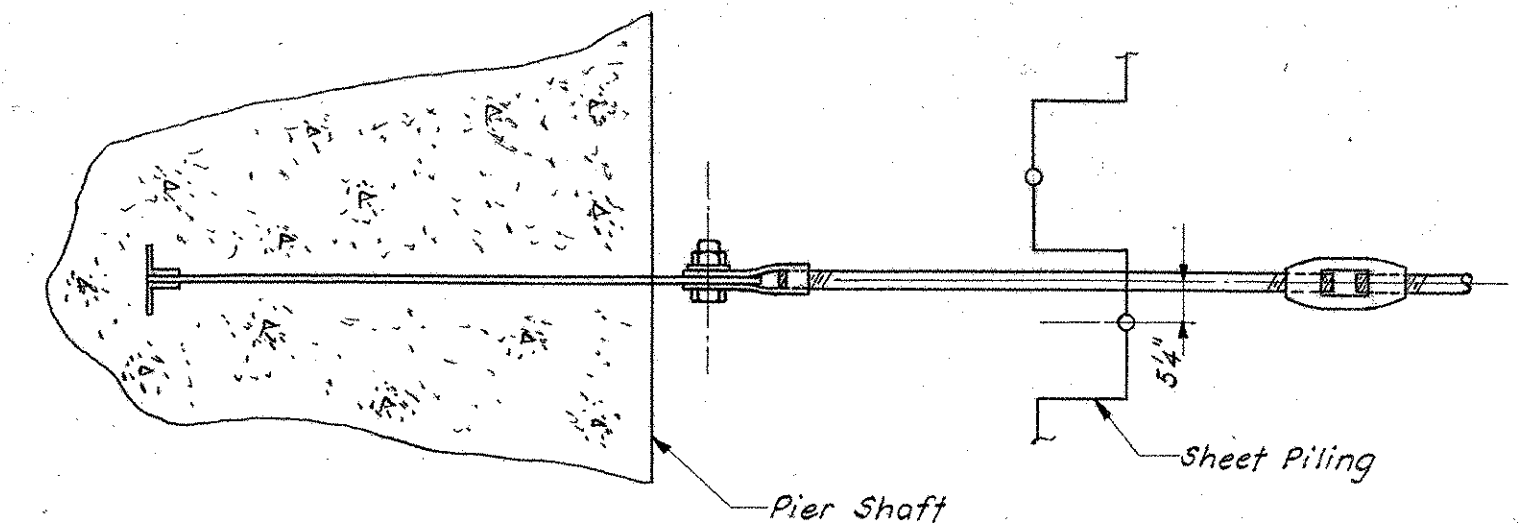


**TYPICAL PIPE PILE SPLICE DETAIL**

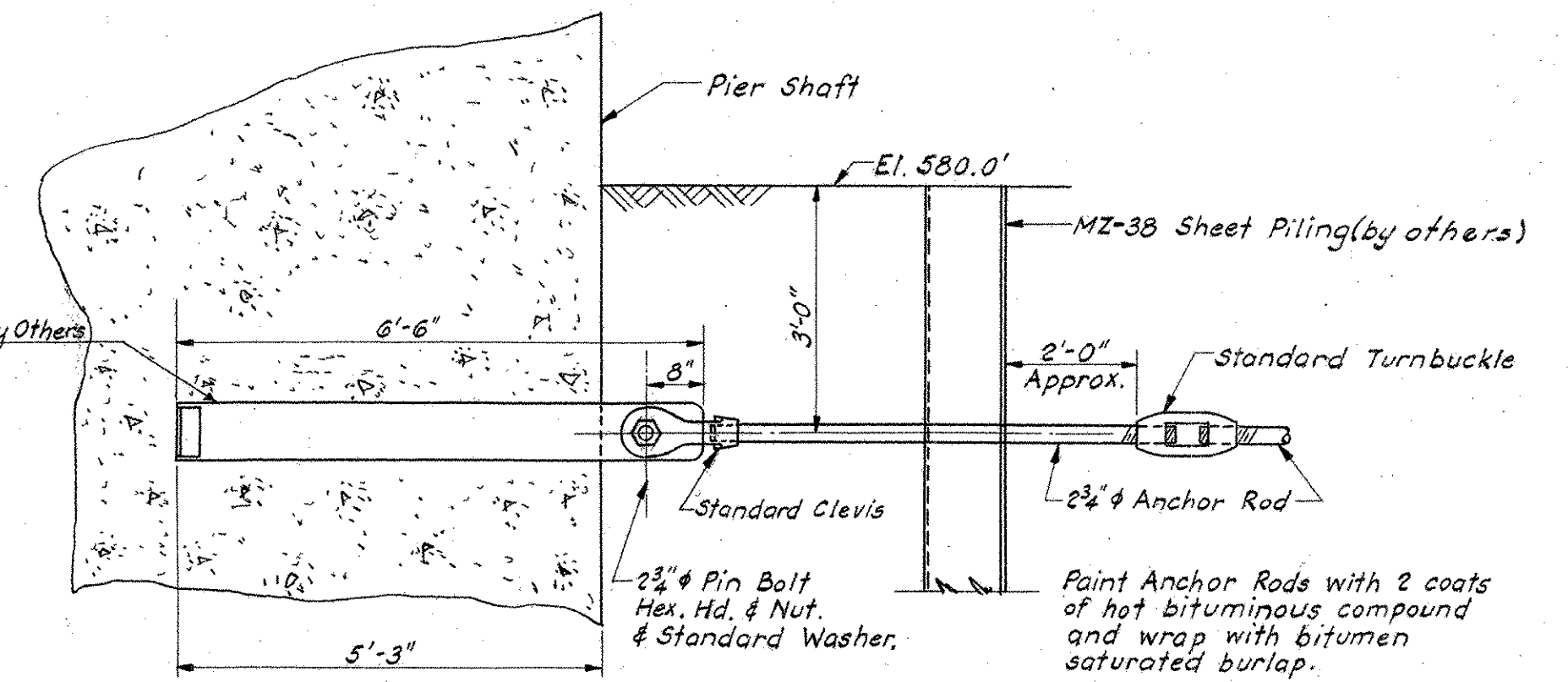
Material for Anchor Bar - By Others:  
2 - L3 3/4 x 3/4 x 6 x 0-7 Lg.  
1 - R 8 x 1 x 6-6 Lg.

**SECTION B-B**

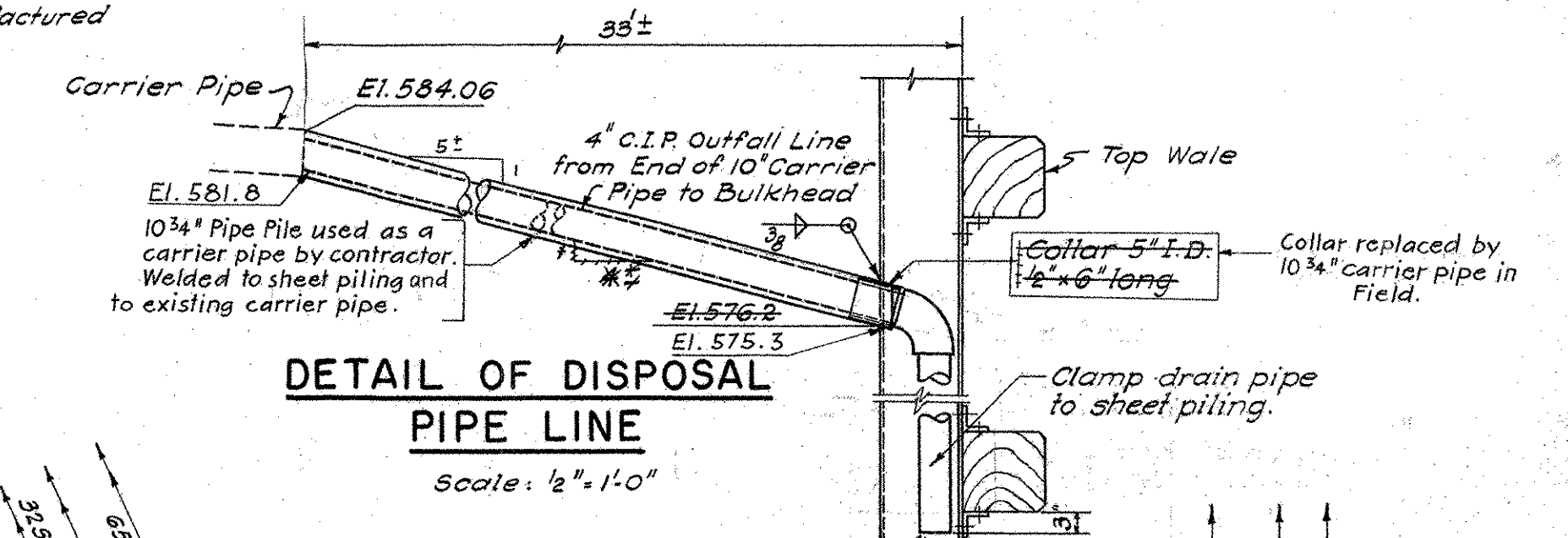
Note: Use Pipe Pile Splice as shown, or "Chill-ring" splice rings as manufactured by Wedge Protector's, Inc. Cleveland, Ohio, or equal.



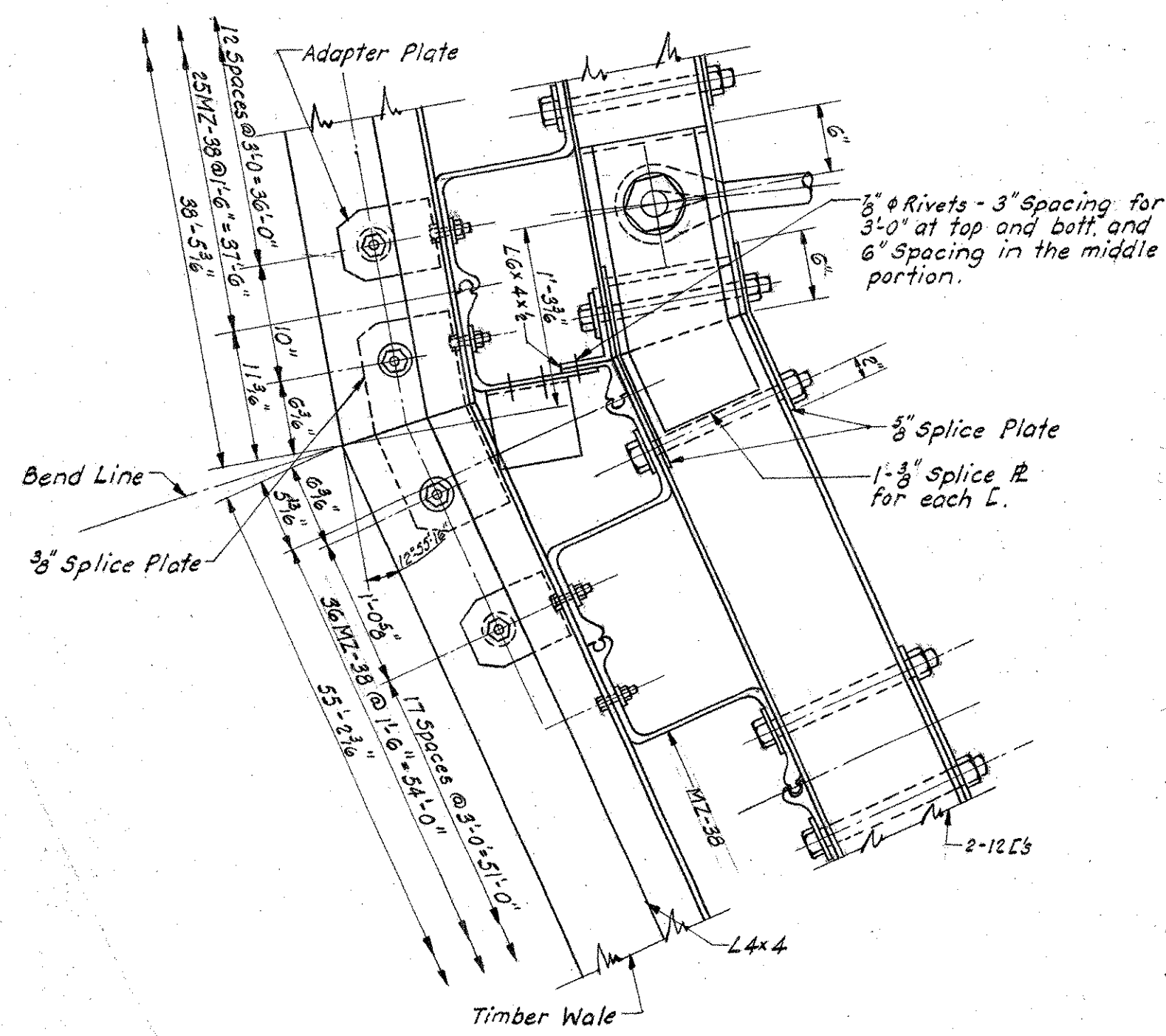
**PLAN - TYPICAL ANCHOR BAR DETAIL**  
Scale: 1/2" = 1'-0"



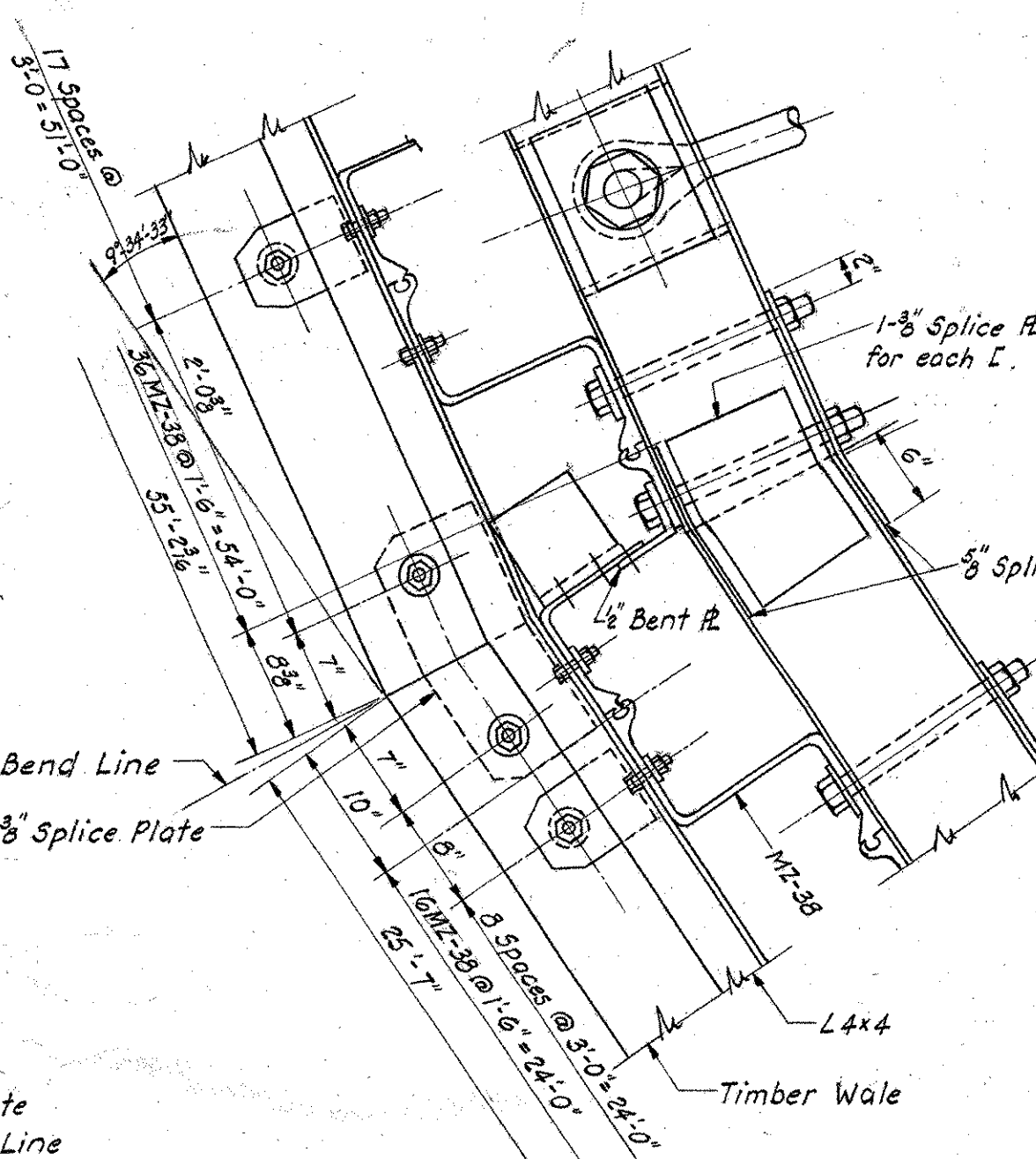
**SECTION - TYPICAL ANCHOR BAR DETAIL**  
Scale: 1/2" = 1'-0"



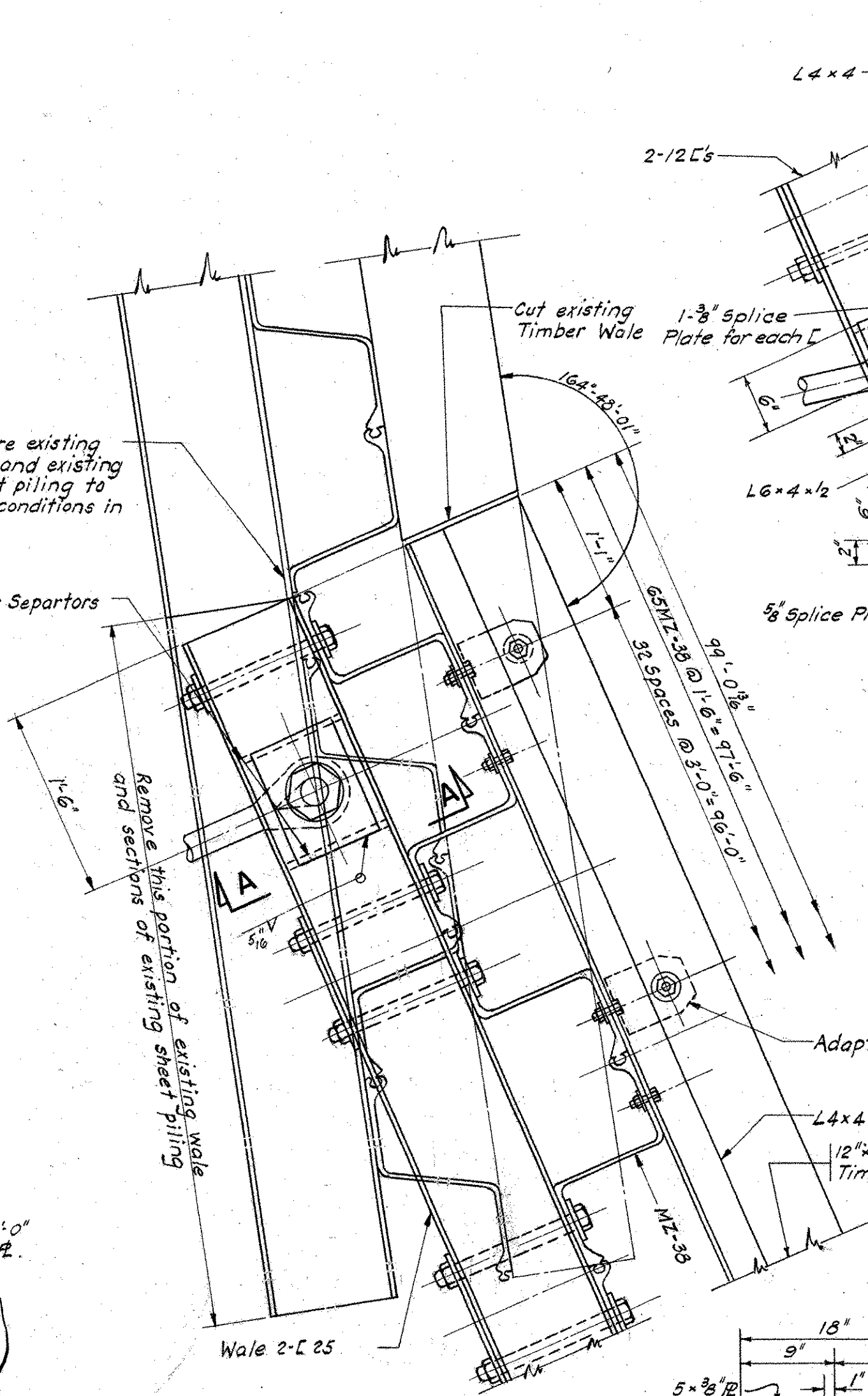
**DETAIL OF DISPOSAL PIPE LINE**  
Scale: 1/2" = 1'-0"



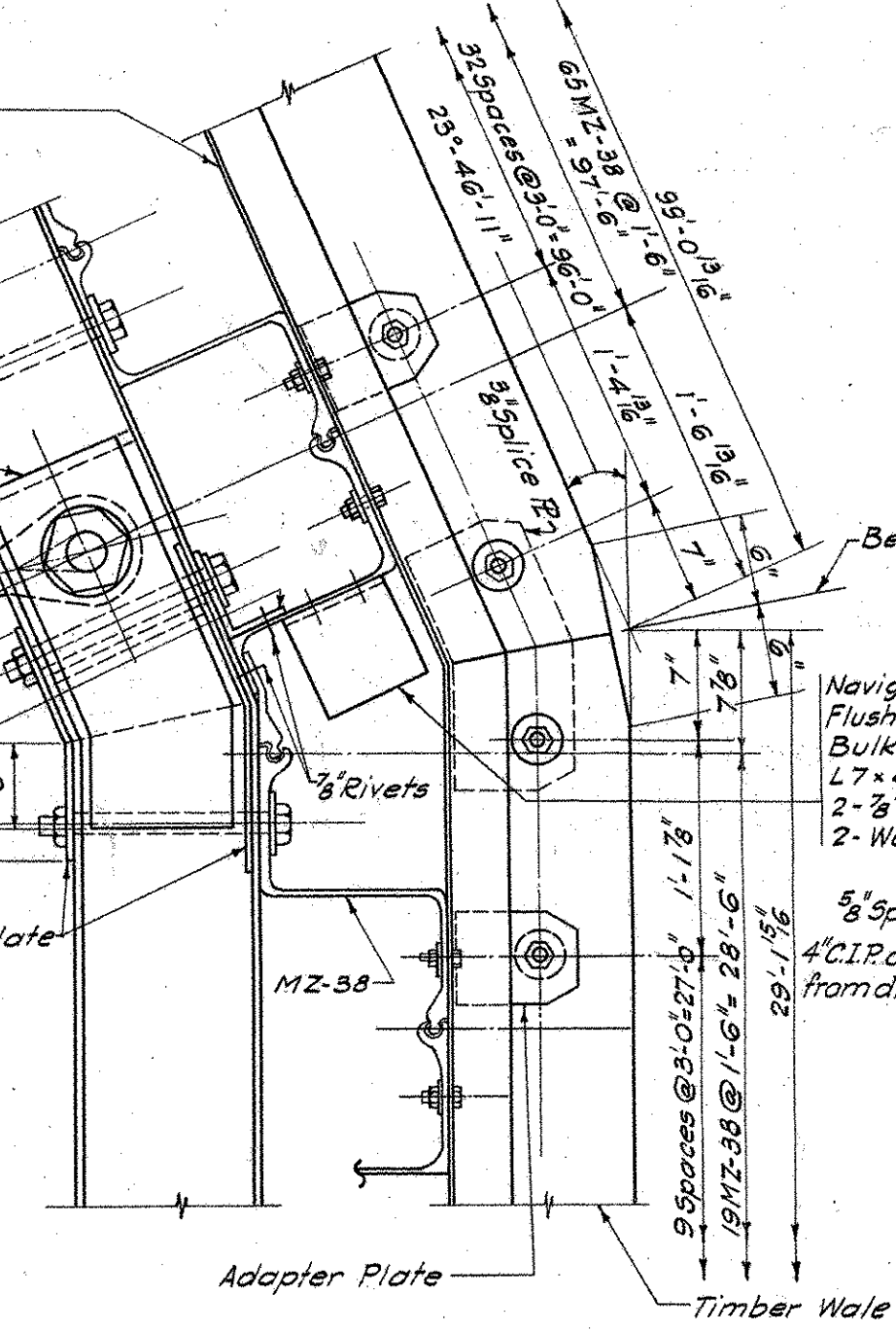
**DETAIL "D"**



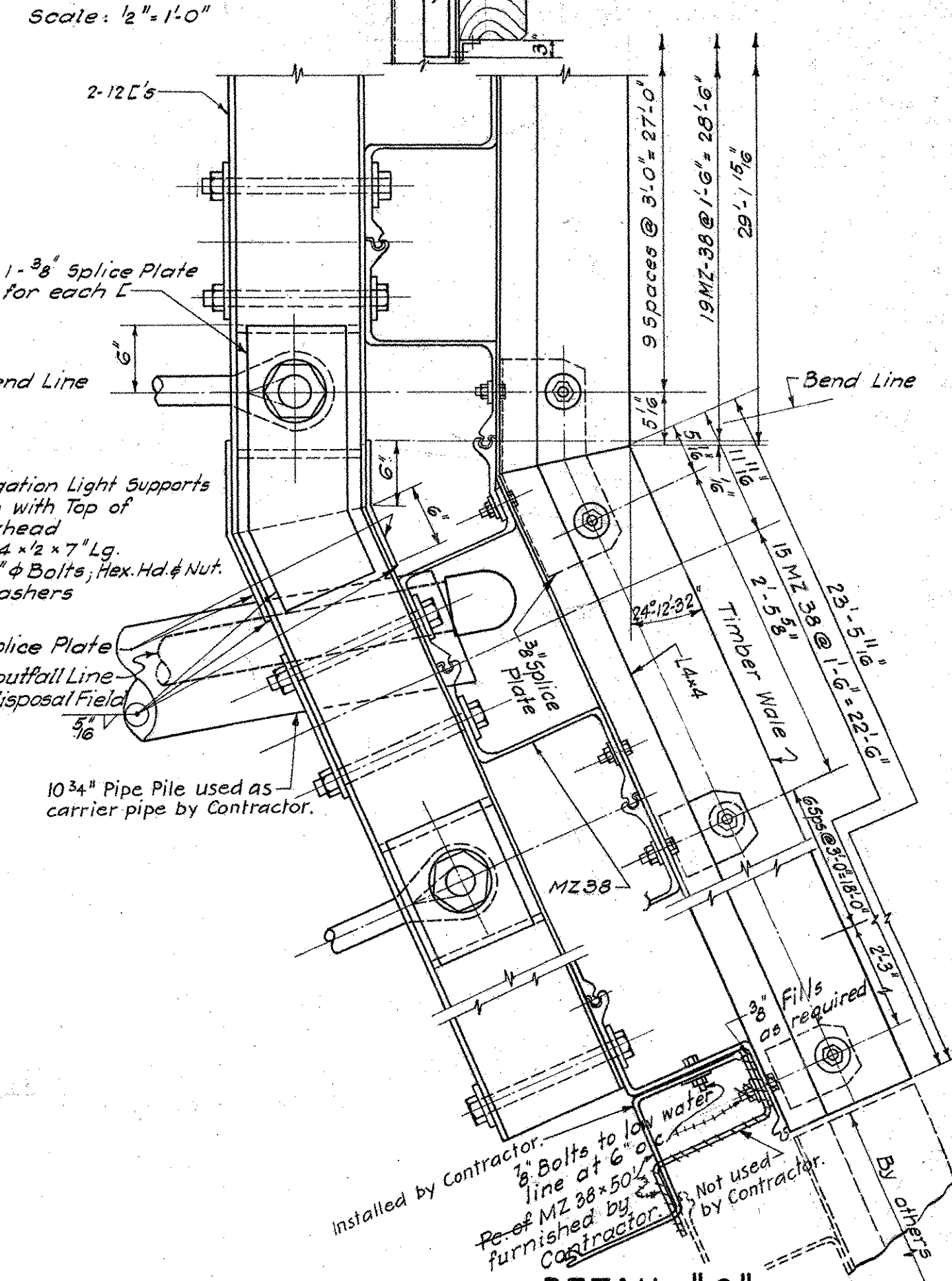
**DETAIL "E"**



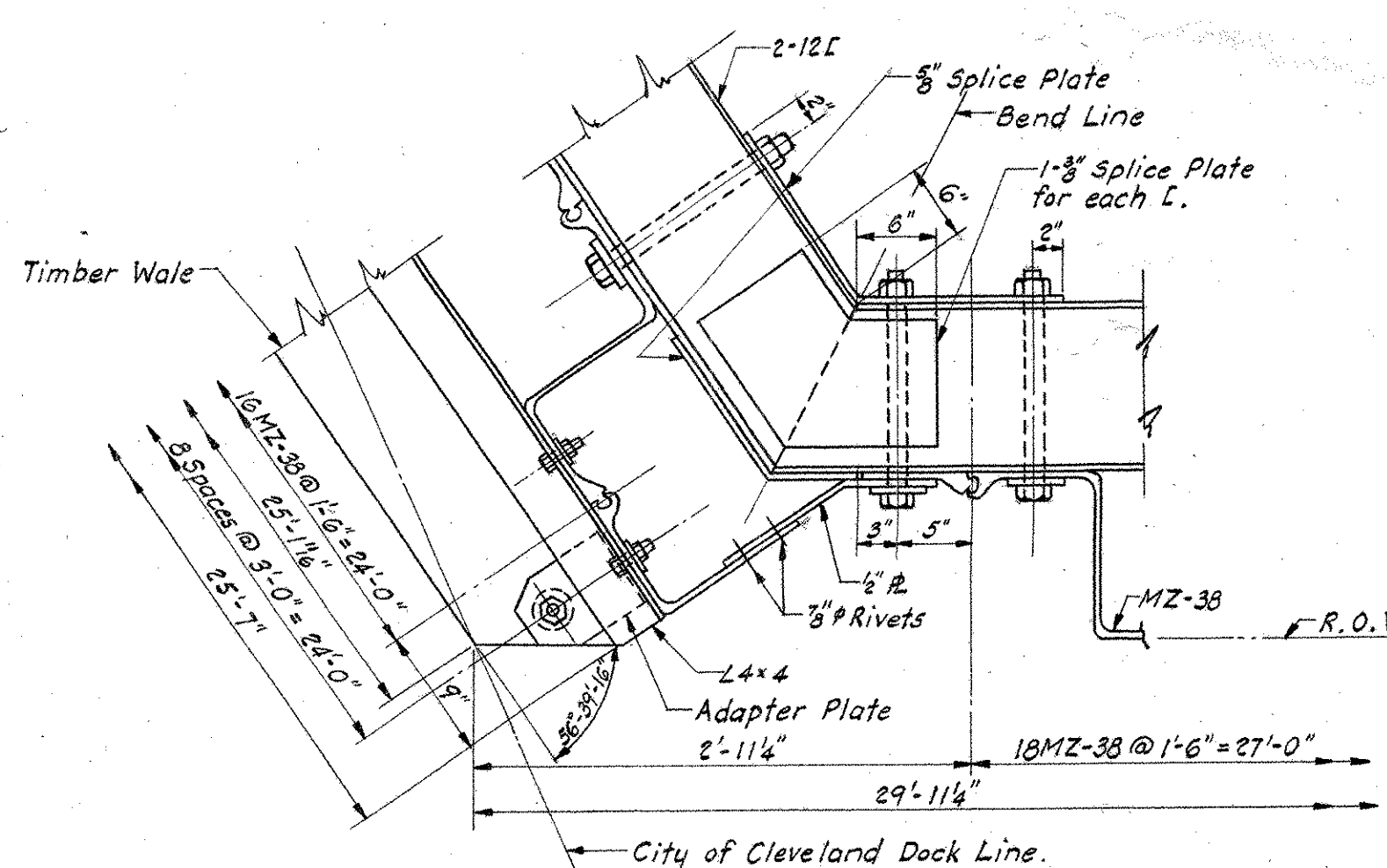
**DETAIL "A"**



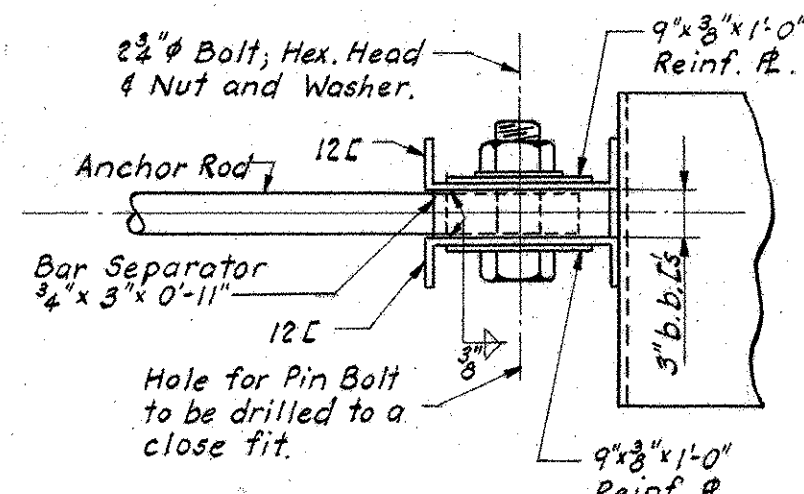
**DETAIL "B"**



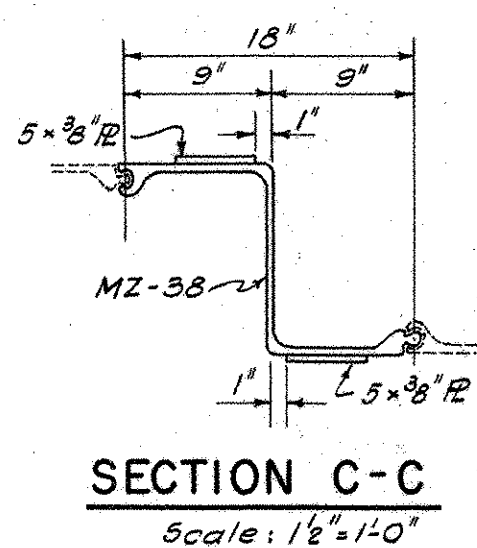
**DETAIL "C"**



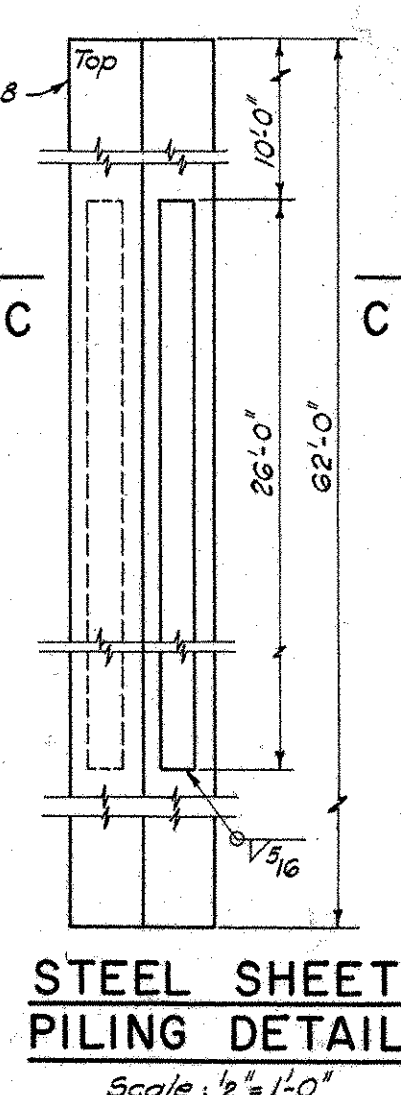
**DETAIL "F"**



**SECTION A-A**



**SECTION C-C**  
Scale: 1/2" = 1'-0"



**STEEL SHEET PILING DETAIL**  
Scale: 1/2" = 1'-0"

**NOTES:**  
Work this drawing with Sheet No. 3.

<b>N.Y.C. &amp; ST. L.R.R.</b> NICKEL PLATE DISTRICT <b>PROPOSED DOUBLE TRACK VERTICAL LIFT BRIDGE</b> <b>NO. 184.50 (U.S. NO. 15)</b> <b>OVER CUYAHOGA RIVER CLEVELAND, OHIO</b> <b>BULKHEAD DETAILS</b>			
OFFICE OF CHIEF ENGINEER	HARDESTY & HANOVER	CONSULTING ENGINEERS	NEW YORK, N. Y.
DATE	REVISIONS	BY	
SCALE: 1" = 1'-0" & AS NOTED		SHEET: 4 OF 5	
DATE: FEB. 14, 1958		NO. N-184.50-531	

DRAWN P.S.S.  
 TRACED P.L.  
 CHECKED E.S.W.  
 IN CHARGE T.M.  
**Hebert Dava**  
 ENGINEER IN CHARGE

Note: Detail 'L' on Sheet 5 used by Contractor instead of Detail 'A'