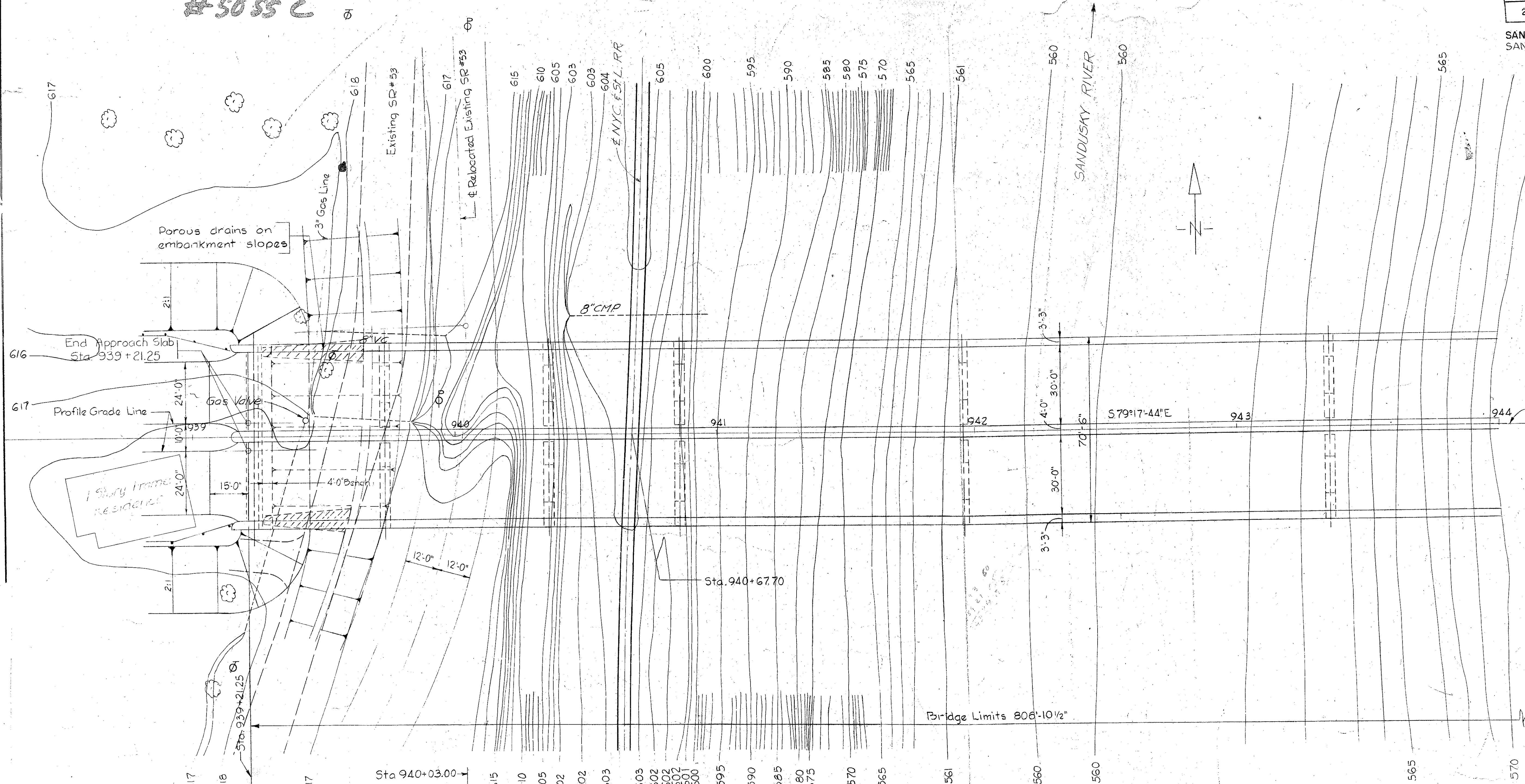


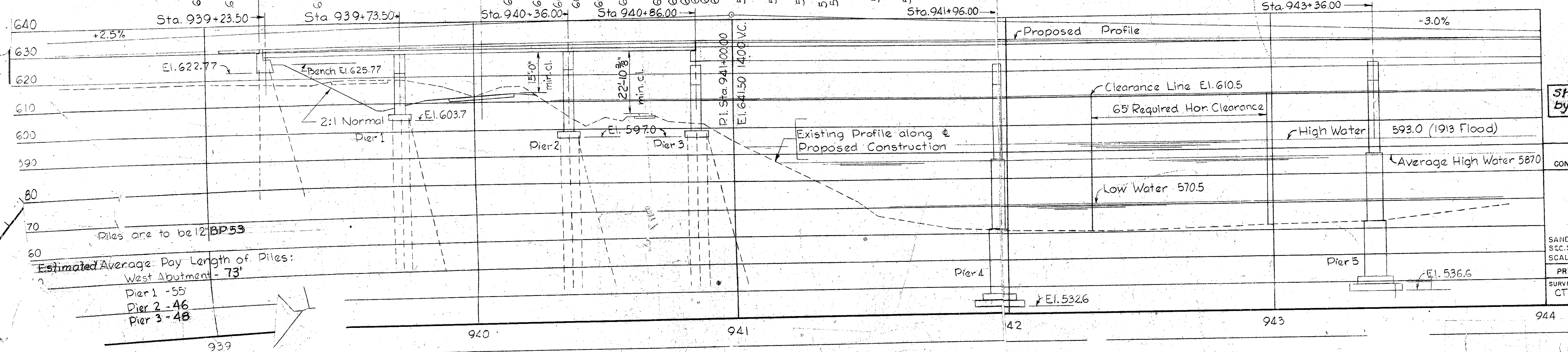
#5055 C



FOUNDATION INFORMATION:
 Foundation design & foundation quantities are based on a study of borings made at the site. This information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office at Toledo but the State assumes no responsibility for the accuracy thereof.

Proposed Construction
 U.S. 20 Bypass

B.M. #23 - RR Spike in 18' elm
 225' Rt. Sta. 938+15, El. 618.19
 B.M. #24 - RR Spike in 13' elm
 200' Lt. on E. river bank, El. 578.54



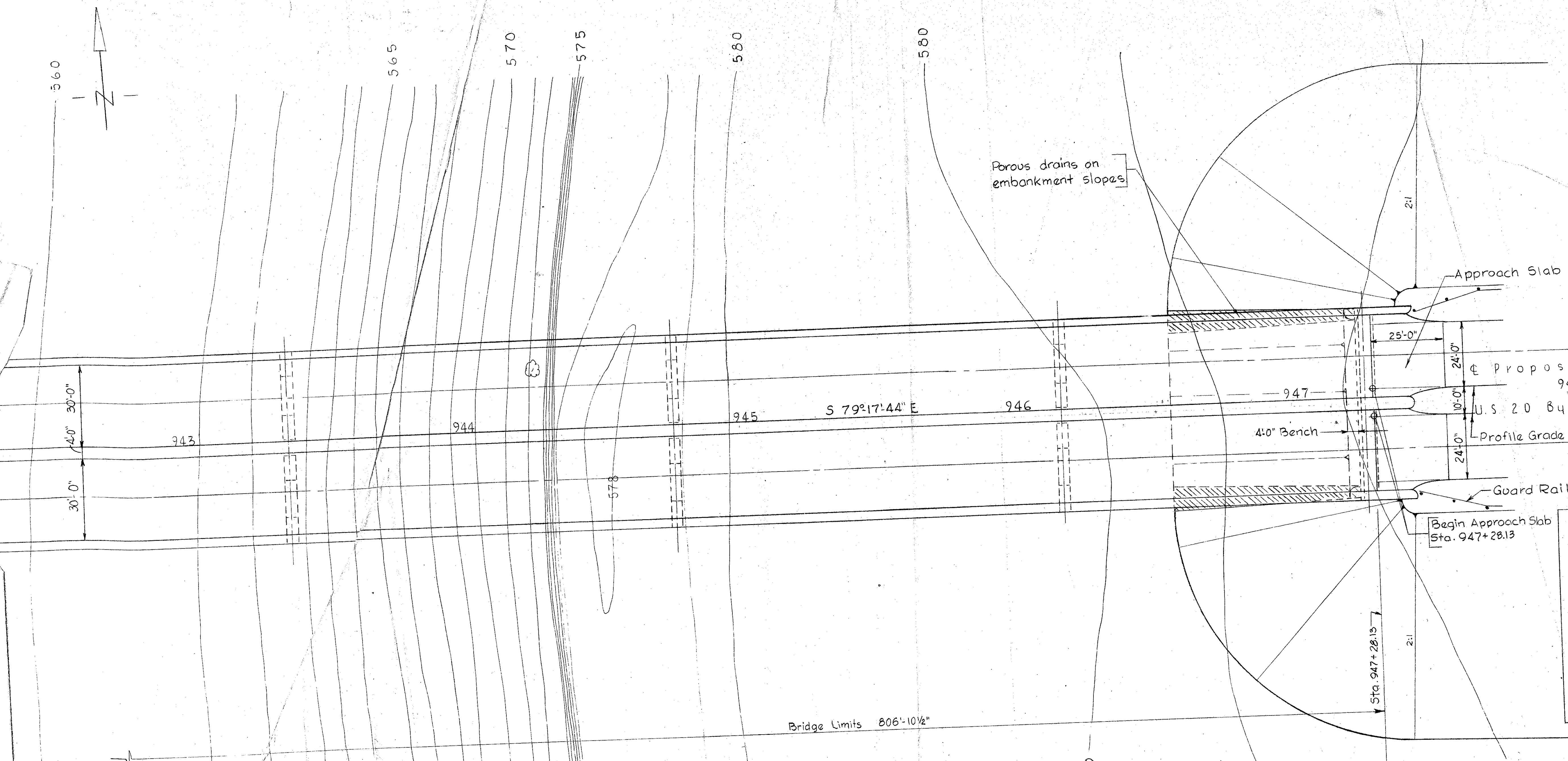
Sheets 149 thru 172 super
 by Sheets 149A thru 172A.

CONSOER, TOWNSEND & ASSO
 CONSULTING ENGINEERS

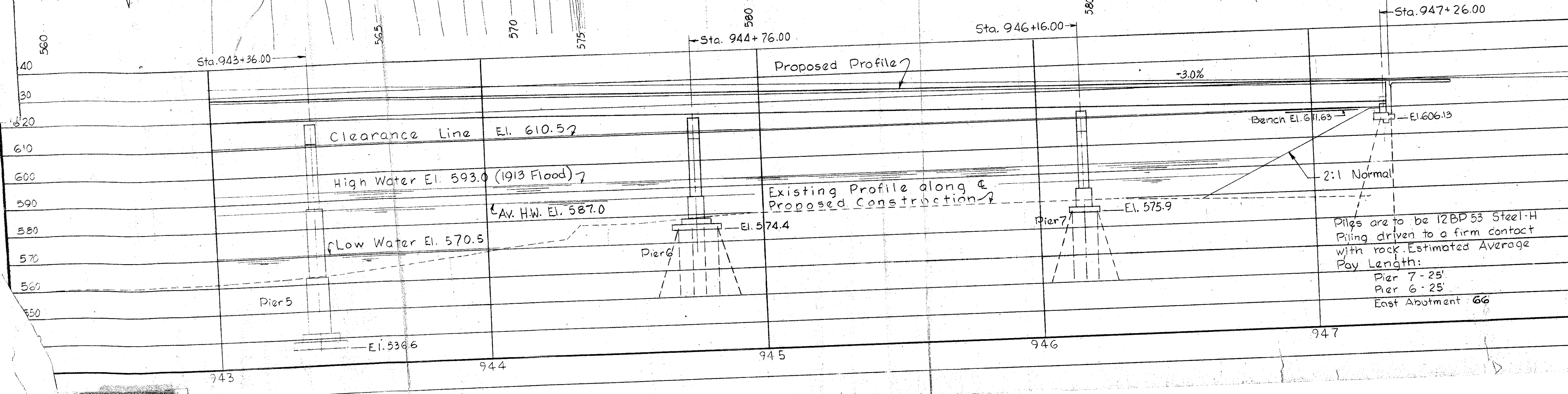
SITE PLAN
 BRIDGE NO. SA-20 -
 OVER SANDUSKY RIVER
 SB 53, AND NYC. & ST. L. RR.
 SANDUSKY CO.
 SEC. SAN-20-1762
 SCALE 1" = 20' STA 9'

PRESENT TOPOGRAPHY			
SURVEYED CT&A	DRAWN IH GDW	TRACED -	DESIGN CT&A

Estimated Average Pile Length of Piles:
 West Abutment - 73'
 Pier 1 - 55'
 Pier 2 - 46'
 Pier 3 - 48'



PROPOSED STRUCTURE
 TYPE: Continuous Steel Beam - 3 Spans
 Continuous Plate Girder - 5 Spans
 with reinforced concrete deck
 and substructure.
 SPAN: 50'-62.5'-50'-110'-140'-140'-140'-110'
 1/4 Bearings
 ROADWAY: 6'4\"/>



**Sheets 149 thru 172 superseded by
 sheets 149A thru 172A.** 2-10-56
 Rev. 15-3
 Rev. 3-3

CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILLINOIS

SITE PLAN
 BRIDGE NO. SA 20 180
 OVER SANDUSKY RIVER,
 S.R. 53, AND N.Y.C. & ST.L. RR.
 U.S. 20
 SANDUSKY CO. SAN-20-17.62
 SCALE 1"=20'
 STA. 939+21.25 TO 947+26.13

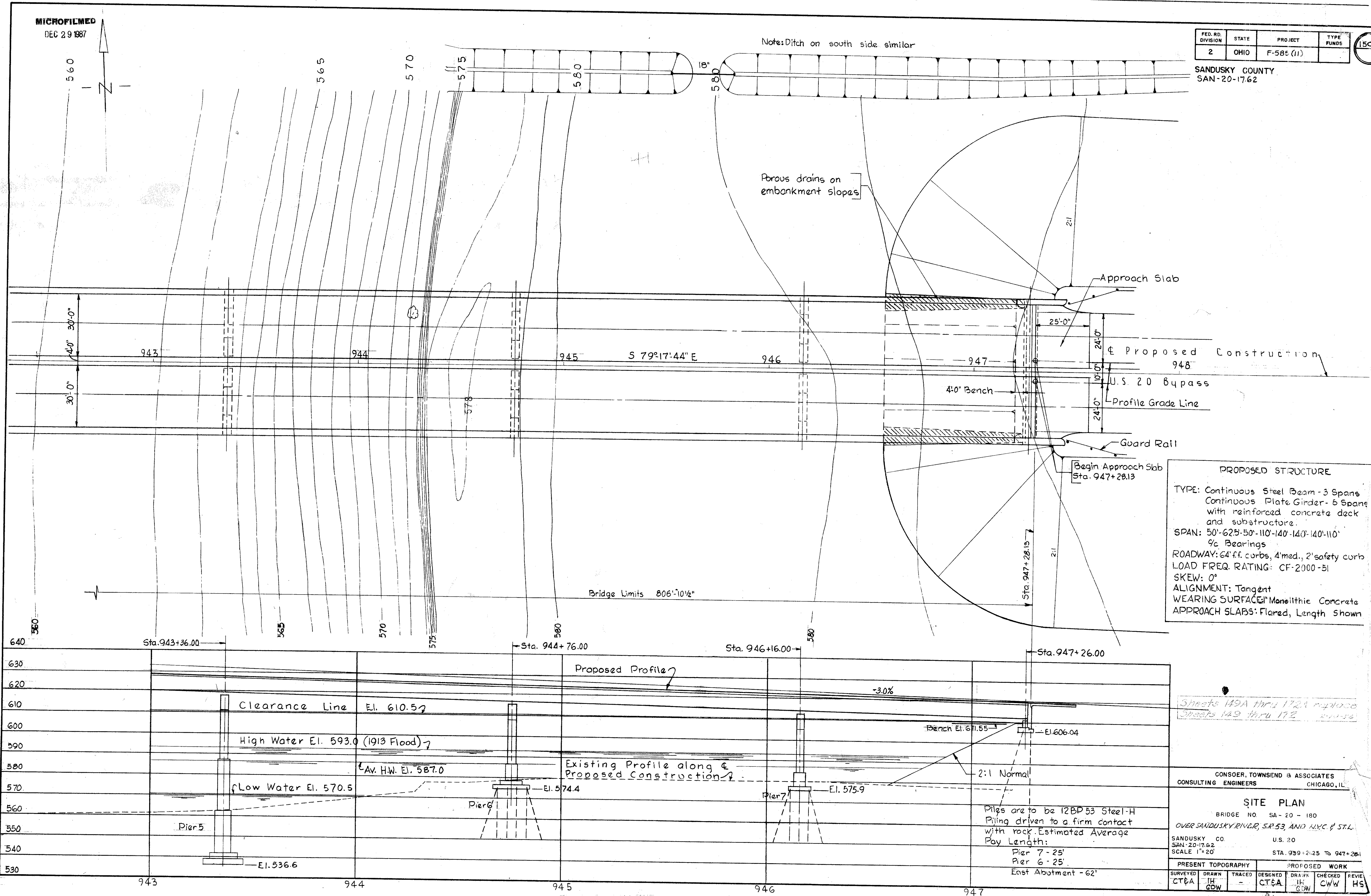
PRESENT TOPOGRAPHY			PROPOSED WORK		
SURVEYED	DRAWN	TRACED	DESIGNED	DRAWN	CHECKED
CT&A	IH	-	CT&A	IH	CWV
	GDW			GDW	

Piles are to be 12BD 53 Steel-H
 Piling driven to a firm contact
 with rock. Estimated Average
 Pile Length:
 Pier 7 - 25'
 Pier 6 - 25'
 East Abutment - 66'

MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-58E (11)	

SANDUSKY COUNTY
SAN-20-17.62



PROPOSED STRUCTURE

TYPE: Continuous Steel Beam - 3 Spans
Continuous Plate Girder - 5 Spans
with reinforced concrete deck and substructure.

SPAN: 50'-625'-50'-110'-140'-140'-110'
1/4 Bearings

ROADWAY: 64' ff. curbs, 4' med., 2' safety curb

LOAD FREQ. RATING: CF-2000-51

SKEW: 0°

ALIGNMENT: Tangent

WEARING SURFACE: Monolithic Concrete

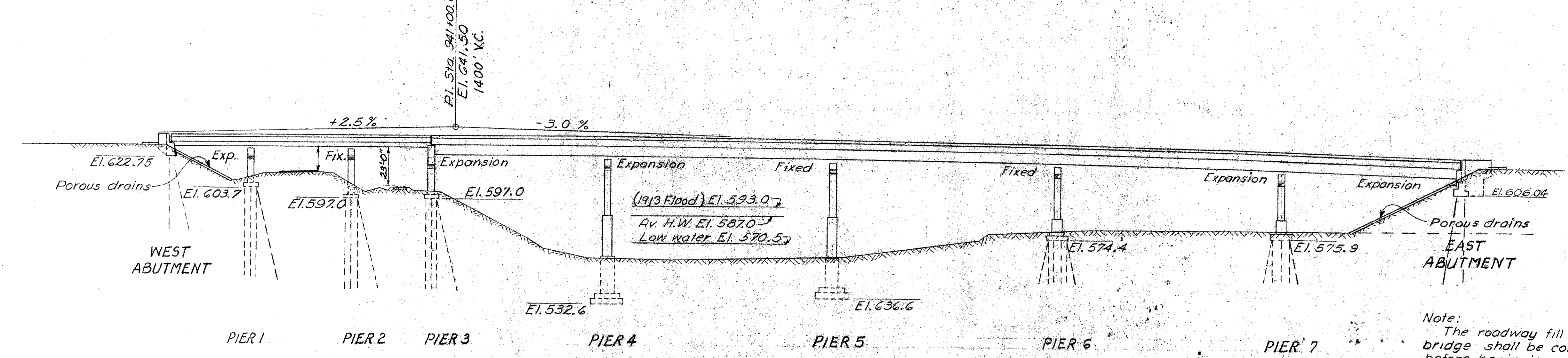
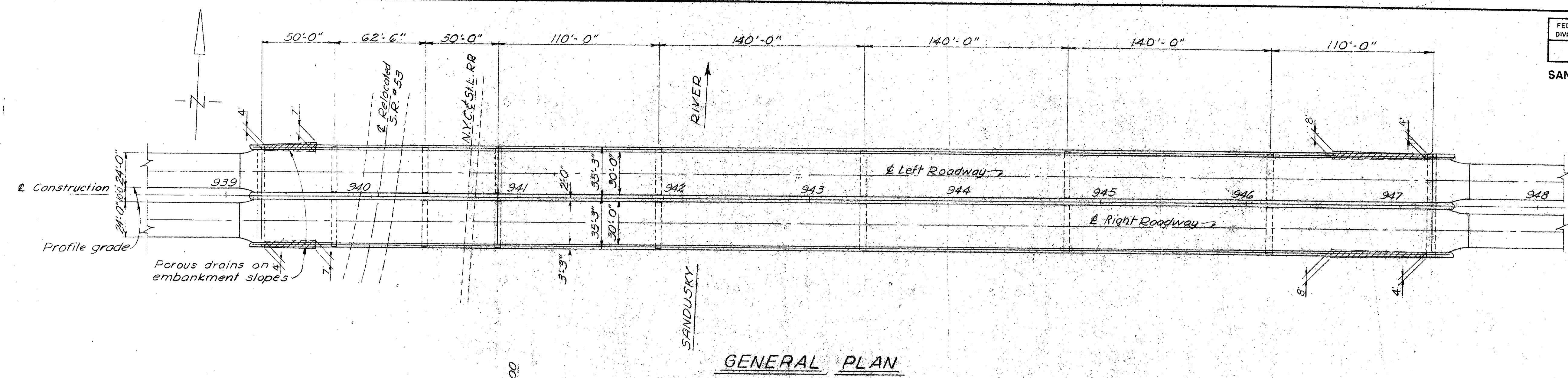
APPROACH SLABS: Flared, Length Shown

*Sheets 149A thru 172A replace
Sheets 149 thru 172*

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILL.

SITE PLAN
BRIDGE NO SA-20-180
OVER SANDUSKY RIVER, S.R. 53 AND N.W.C. & S.T.L.
SANDUSKY CO. U.S. 20
SAN-20-17.62 STA. 939+21.25 TO 947+28.1
SCALE 1"=20'

PRESENT TOPOGRAPHY				PROPOSED WORK			
SURVEYED	DRAWN	TRACED	DESIGNED	DRAWN	CHECKED	REVIEWED	
CT&A	JH GDW		CT&A	JH GDW	CWW	HS	



Note:
The roadway fill at the east end of the bridge shall be completed to rough grade before beginning construction of Pier 8 and Construction of the East Abutment shall not begin until the roadway fill has been in place for at least two months.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super	PIERS							Gen'l		
					W. Abut.	E. Abut.	1	2	3	4	5		6	7
E-2	3251	Cu.yds	Unclassified excavation											
E-2	391	Cuyds	Rock excavation											
E-2	Lump Sum		Cofferdams, cribs and sheeting											
S-1	1,802	Cuyds.	Class "C" concrete, superstructure, including abutment parapets	1,802										
S-1	440	Cuyds.	Class "C" concrete, pier caps on all piers											
S-1	211	Cuyds.	Class "E" concrete, abutments		91	120								
S-1	740	Cuyds.	Class "E" concrete, pier footings											
S-1	192	Cu.yds.	Class "E" concrete, abutment footings			192								
S-4	703,472	Lbs.	Reinforcing steel	479,512	15,202	208,570	188							
S-7	2,534,182	Lbs.	Structural steel	2,534,182										
S-8	2,534,182	Lbs.	Field painting of structural steel											
S-14	1,608	Lin.ft.	Railing, (aluminum rail & supports and concrete parapet)	1,608										
S-16	Lump Sum		First test pile, steel 12 BP 53											
S-18	11,050	Lin.ft.	Steel piles, 12BP 53											
S-29	51	Cu.yds.	Porous drains on embankment slopes											
S-1	624	Cuyds.	Class "E" concrete, shafts of Piers 1, 2, 3, and upper shafts of Piers 4, 5, 6 and 7											
S-1	492	Cuyds.	Class "E" concrete, lower shafts of Piers 6 and 7 and intermediate shafts of Piers 4 and 5											
S-1	484	Cuyds.	Class "E" concrete, lower shafts of Piers 4 and 5											

ELEVATIONS ALONG ROADWAY					
LOCATION	STATION	ELEVATION	LOCATION	STATION	ELEVATION
± Brg. West Abut.	939+23.50	631.70	± Brg. Pier 5	943+36.00	630.19
1/4 Pt. Span 1	939+36.00	631.76	1/4 Pt. Span 6	943+71.00	629.76
1/2 Pt. Span 1	939+48.50	631.80	1/2 Pt. Span 6	944+06.00	629.27
3/4 Pt. Span 1	939+61.00	631.84	3/4 Pt. Span 6	944+41.00	628.74
± Brg. Pier 1	939+73.50	631.88	± Brg. Pier 6	944+76.00	628.16
1/4 Pt. Span 2	939+86.00	631.91	1/4 Pt. Span 7	945+11.00	627.53
1/2 Pt. Span 2	940+04.75	631.94	1/2 Pt. Span 7	945+46.00	626.85
3/4 Pt. Span 2	940+20.38	631.95	3/4 Pt. Span 7	945+81.00	626.13
± Brg. Pier 2	940+36.00	631.95	± Brg. Pier 7	946+16.00	625.36
1/4 Pt. Span 3	940+48.50	631.95	1/4 Pt. Span 8	946+43.50	624.71
1/2 Pt. Span 3	940+61.00	631.94	1/2 Pt. Span 8	946+71.00	624.04
3/4 Pt. Span 3	940+73.50	631.93	3/4 Pt. Span 8	946+98.50	623.34
± Brg. Pier 3	940+86.00	631.91	± Brg. East Abut.	947+26.00	622.61
1/4 Pt. Span 4	941+13.50	631.84			
1/2 Pt. Span 4	941+41.00	631.74			
3/4 Pt. Span 4	941+68.50	631.61			
± Brg. Pier 4	941+96.00	631.45			
1/4 Pt. Span 5	942+31.00	631.21			
1/2 Pt. Span 5	942+66.00	630.92			
3/4 Pt. Span 5	943+01.00	630.58			

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-15-56

CONSOER, TOWNSEND & ASSOCIATE
CONSULTING ENGINEERS CHICAGO, ILLIN.

GENERAL PLAN & ELEVATION
& ESTIMATED QUANTITIES
BRIDGE NO. SA-20-180
OVER SANDUSKY RIVER
S.R. 53, AND N.Y.C. & ST.L. RR.

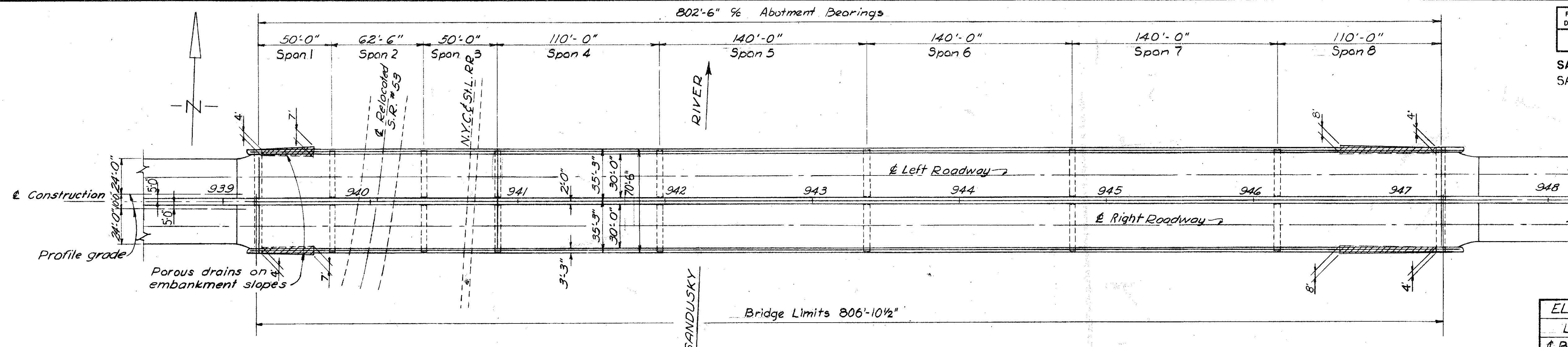
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WFP	WHS		WJI		
W			WFP		

MICROFILMED
DEC 29 1987

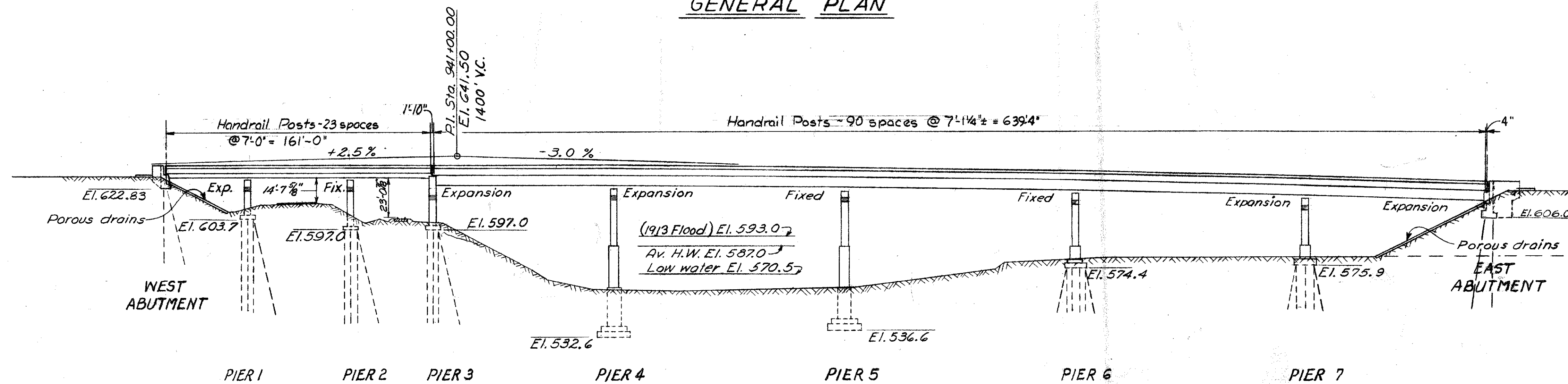
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

151A

SANDUSKY COUNTY
SAN 20-17.62



GENERAL PLAN



GENERAL ELEVATION

LOCATION	STATION	ELEVATION
Br. West Abut.	939 + 23.50	631.70
1/4 Pt. Span 1	939 + 36.00	631.76
1/2 Pt. Span 1	939 + 48.50	631.80
3/4 Pt. Span 1	939 + 61.00	631.84
Br. Pier 1	939 + 73.50	631.88
1/4 Pt. Span 2	939 + 89.13	631.91
1/2 Pt. Span 2	940 + 04.75	631.94
3/4 Pt. Span 2	940 + 20.38	631.95
Br. Pier 2	940 + 36.00	631.95
1/4 Pt. Span 3	940 + 48.50	631.95
1/2 Pt. Span 3	940 + 61.00	631.94
3/4 Pt. Span 3	940 + 73.50	631.93
Br. Pier 3	940 + 86.00	631.91
1/4 Pt. Span 4	941 + 13.50	631.84
1/2 Pt. Span 4	941 + 41.00	631.74
3/4 Pt. Span 4	941 + 68.50	631.61
Br. Pier 4	941 + 96.00	631.45
1/4 Pt. Span 5	942 + 31.00	631.21
1/2 Pt. Span 5	942 + 66.00	630.92
3/4 Pt. Span 5	943 + 01.00	630.58
Br. Pier 5	943 + 36.00	630.19
1/4 Pt. Span 6	945 + 71.00	629.76
1/2 Pt. Span 6	944 + 06.00	629.27
3/4 Pt. Span 6	944 + 41.00	628.74
Br. Pier 6	944 + 76.00	628.16
1/4 Pt. Span 7	945 + 11.00	627.53
1/2 Pt. Span 7	945 + 46.00	626.85
3/4 Pt. Span 7	945 + 81.00	626.13
Br. Pier 7	946 + 16.00	625.36
1/4 Pt. Span 8	946 + 43.50	624.71
1/2 Pt. Span 8	946 + 71.00	624.04
3/4 Pt. Span 8	946 + 98.50	623.34
Br. East Abut.	947 + 26.00	622.61

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super	W. Abut.	E. Abut.	PIERS							Gen'l.	As Built	
							1	2	3	4	5	6	7			
E-2	3,190	Cu. yds.	Unclassified excavation		62	785	78	747	73	7,240	7,098	781	739		C-23-13	3,190
E-2	90	Cu. yds.	Rock excavation						187	745					C-23-242	90
E-2		Lump Sum	Cofferdams, cribs and sheeting (Pier 4 & 5)											Lump		
E-2		"	" " " " (Pier 1, 2, 3, 6 & 7)											Lump		
S-1	1,911	Cu. yds.	Class "C" concrete, superstructure, including abutment parapets	1,905	2	4									C-15-109*	
S-1	406	Cu. yds.	Class "C" concrete, pier caps on all piers				47	47	64	62	62	62	62		C-22-34*	
S-1	190	Cu. yds.	Class "E" concrete, abutments		90	100									C-22-21*	
S-1	812	Cu. yds.	Class "E" concrete, pier footings				32	36	32	200	200	196	116		C-10-72*	
S-1	95	Cu. yds.	Class "E" concrete, abutment footings		95										C-22-97*	
S-1	583	Cu. yds.	Class "E" concrete, shafts of Piers 1, 2, 3 and upper shafts of Piers 4, 5, 6, and 7.				44	66	67	113	107	99	87		C-22-41*	
S-1	477	Cu. yds.	Class "E" concrete, lower shafts of Piers 6 and 7 and intermediate shafts of Piers 4 and 5						190	190	54	43			C-22-15*	
S-1	485	Cu. yds.	Class "E" concrete, lower shafts of Piers 4 and 5						265	220						
S-4	220,365	Lbs.	Reinforcing steel	493,062	4,428	11,219	7,469	9,212	7,974	52,430	59,337	44,741	31,293	646	C-22-16, 233	720,345
S-7	2,581,490	Lbs.	Structural steel	2,581,490						53,578	58,549				C-23-30, 223	2,611,619
S-8	6,581,490	Lbs.	Field painting of structural steel	6,581,490											C-23-30, 223	2,611,619
S-14	1,608	Lin. ft.	Railing, (aluminum rail and supports and concrete parapet)	1,608												
S-16	Lump sum		First test pile											Lump		
S-18	11,153	Lin. ft.	Steel piles, 12BP53		1,374	1,236	6,540	4,472	1,344			2,495	1,500		C-12-72	11,153
S-29	46,522	Cu. yds.	Porous drains on embankment slopes											52	C-23-6	46

* These changes were made on the original plans. (Sheet 151)

727,847 Plan Quantity
- 7,482 As Built Revisions
720,365 Proposed Quantity (Revised Plans)
703,472 Proposal Quantity
+ 16,893 Change Order Quantity

Sheets 142A thru 172A
Sheets 143 thru 172

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

GENERAL PLAN & ELEVATION & ESTIMATED QUANTITIES
BRIDGE NO. 5A-20-180

OVER SANDUSKY RIVER, S.P. 53, AND N.Y.C. & S.T.L. R.R.
SANDUSKY CO. F-585 (11)
SEC. SAN. 20-17.62 STA. 939+2.25 TO 947+28.18

DESIGNED	WFP	DRAWN	WHS	TRACED	-	CHECKED	WJJ	REVIEWED	HSM	DATE	11-30-55	REVISED	
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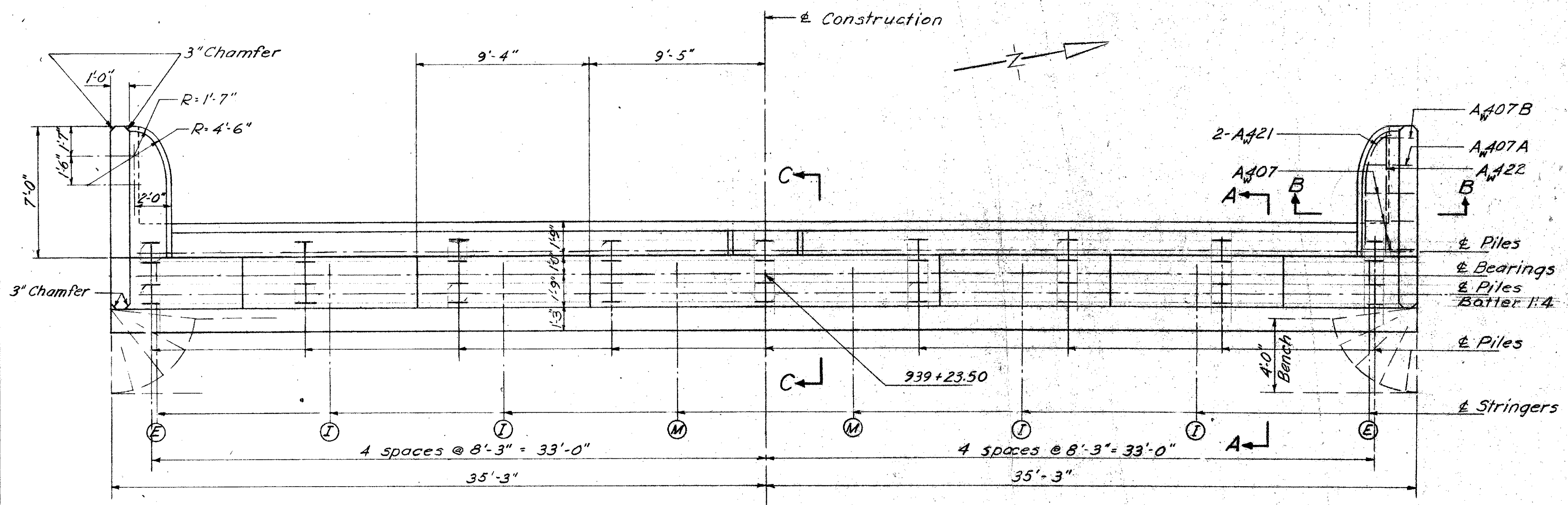


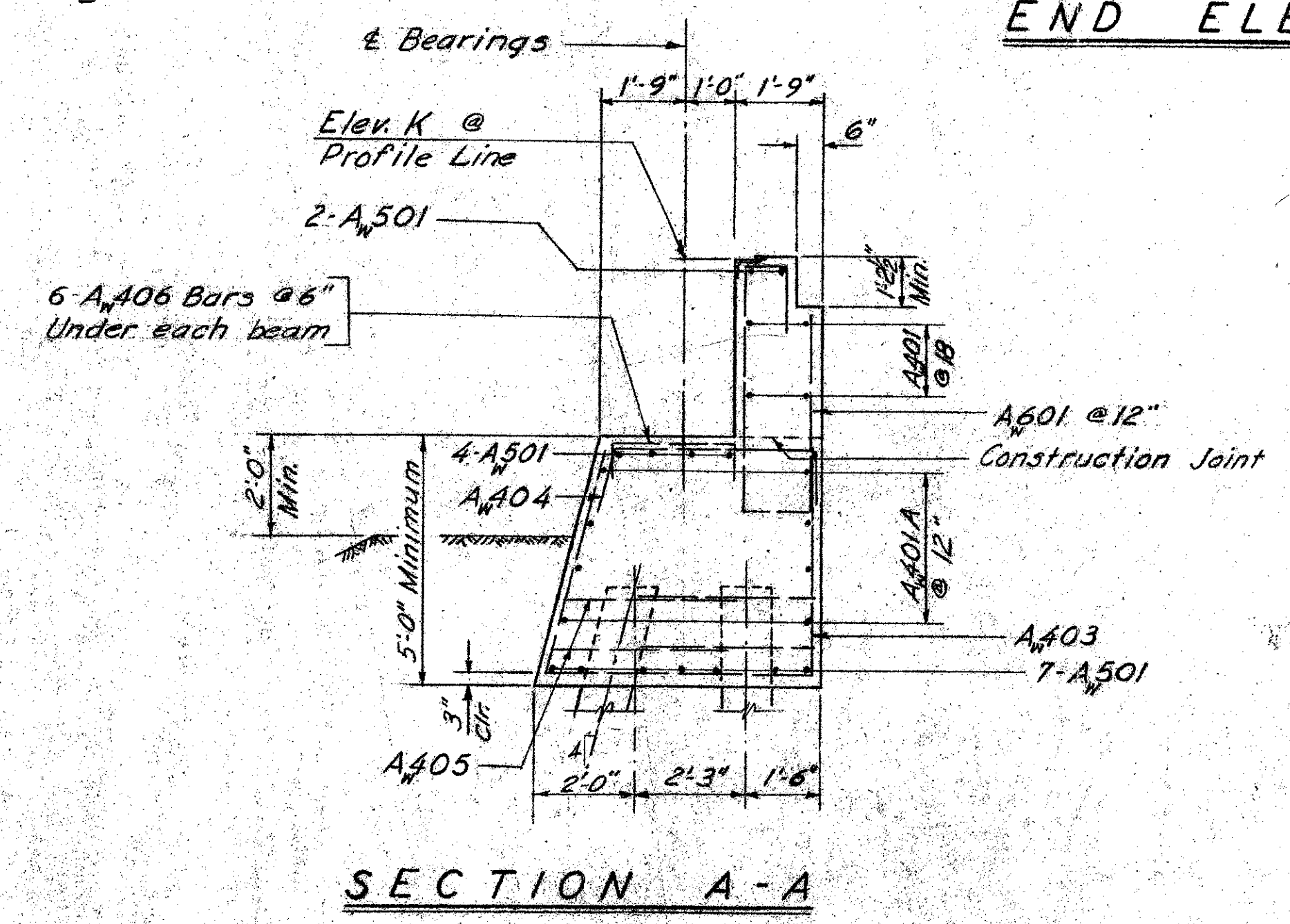
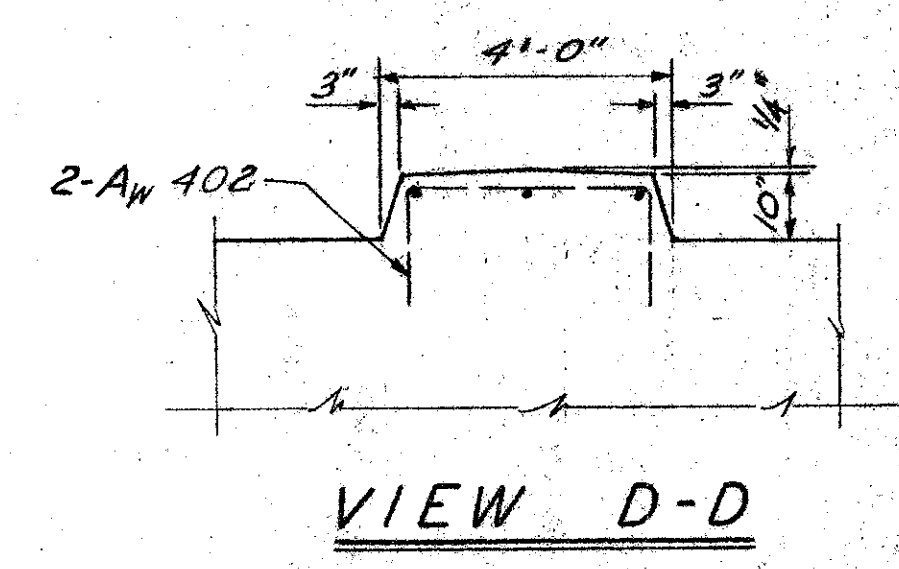
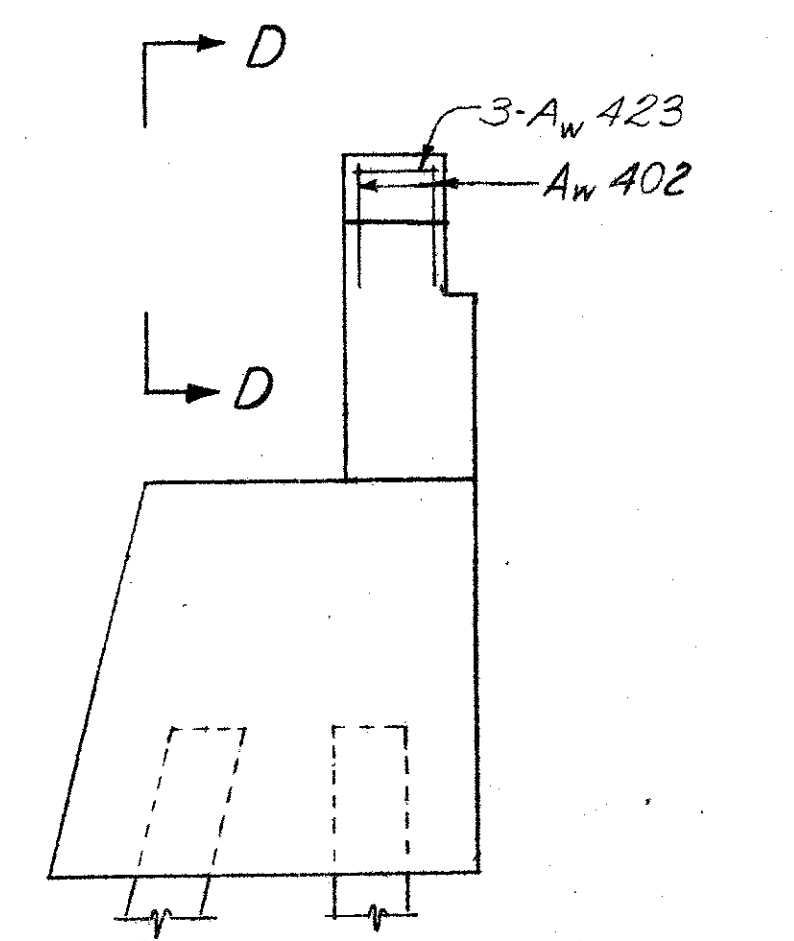
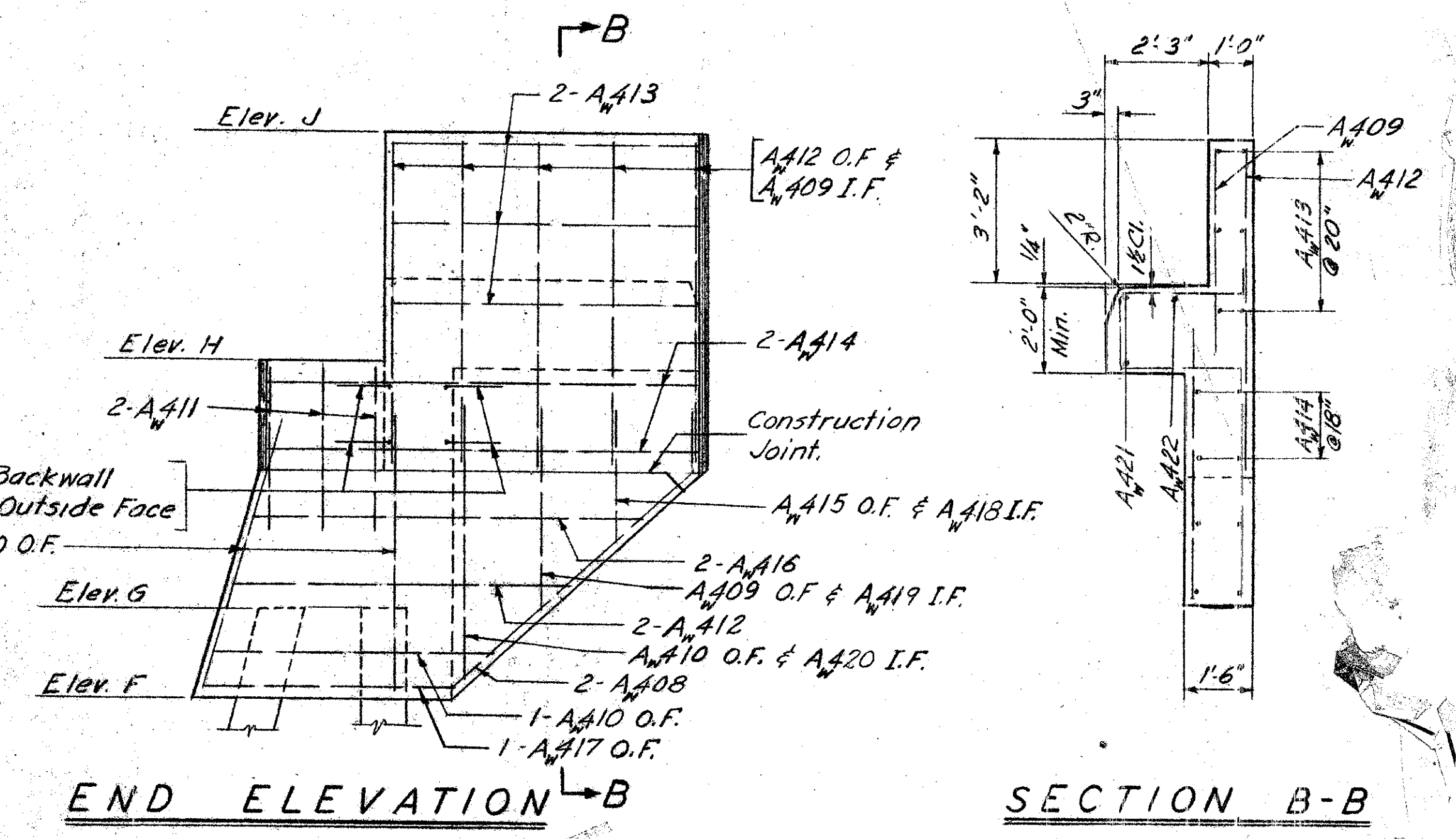
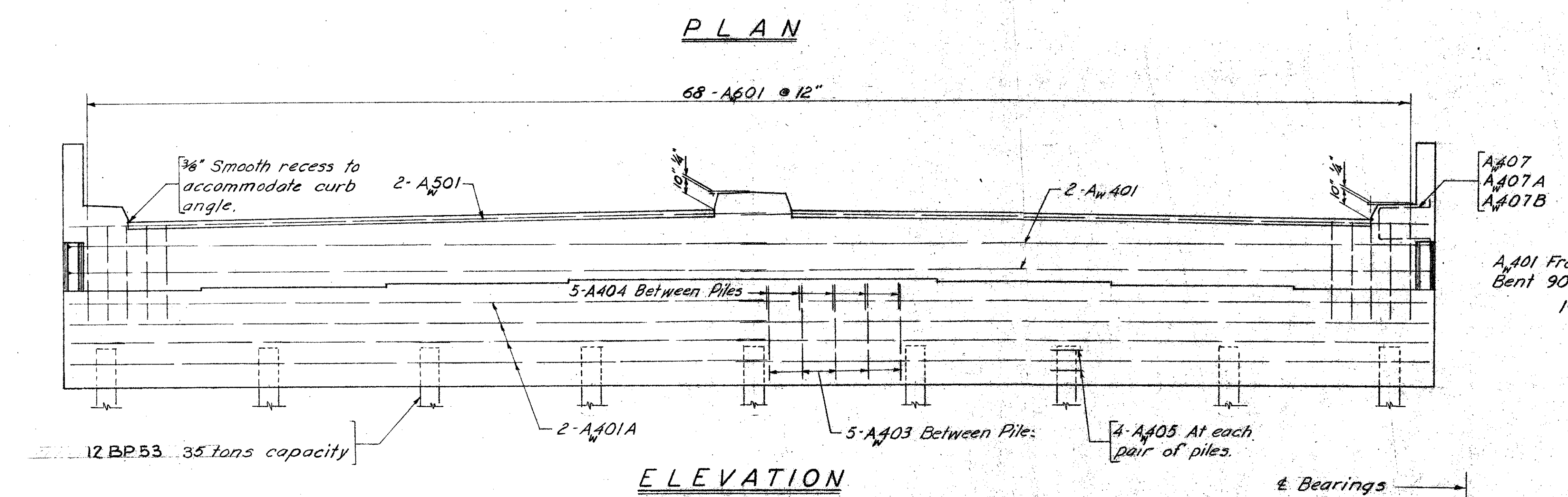
TABLE OF BEAM SEAT ELEVATIONS

Top Of Concrete At & Stringers

BEAM	E	I	I	M	M	I	I	E
ELEVATION	627.75	627.90	628.04	628.19	628.19	628.04	627.90	627.75

TABLE OF ELEVATIONS

POINT	F	G	H	J	K
ELEVATION	622.75	624.75	630.20	635.27	631.62



Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

WEST ABUTMENT DETAIL

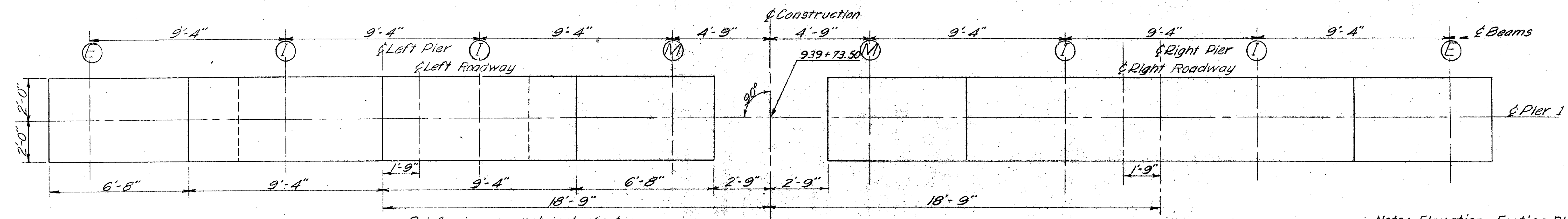
BRIDGE NO. SA-20-180
OVER THE SANDUSKY RIVER,
S. R. 53, AND N.Y.C. & ST. L. R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
WJ	KCB		WFP		

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(II)	

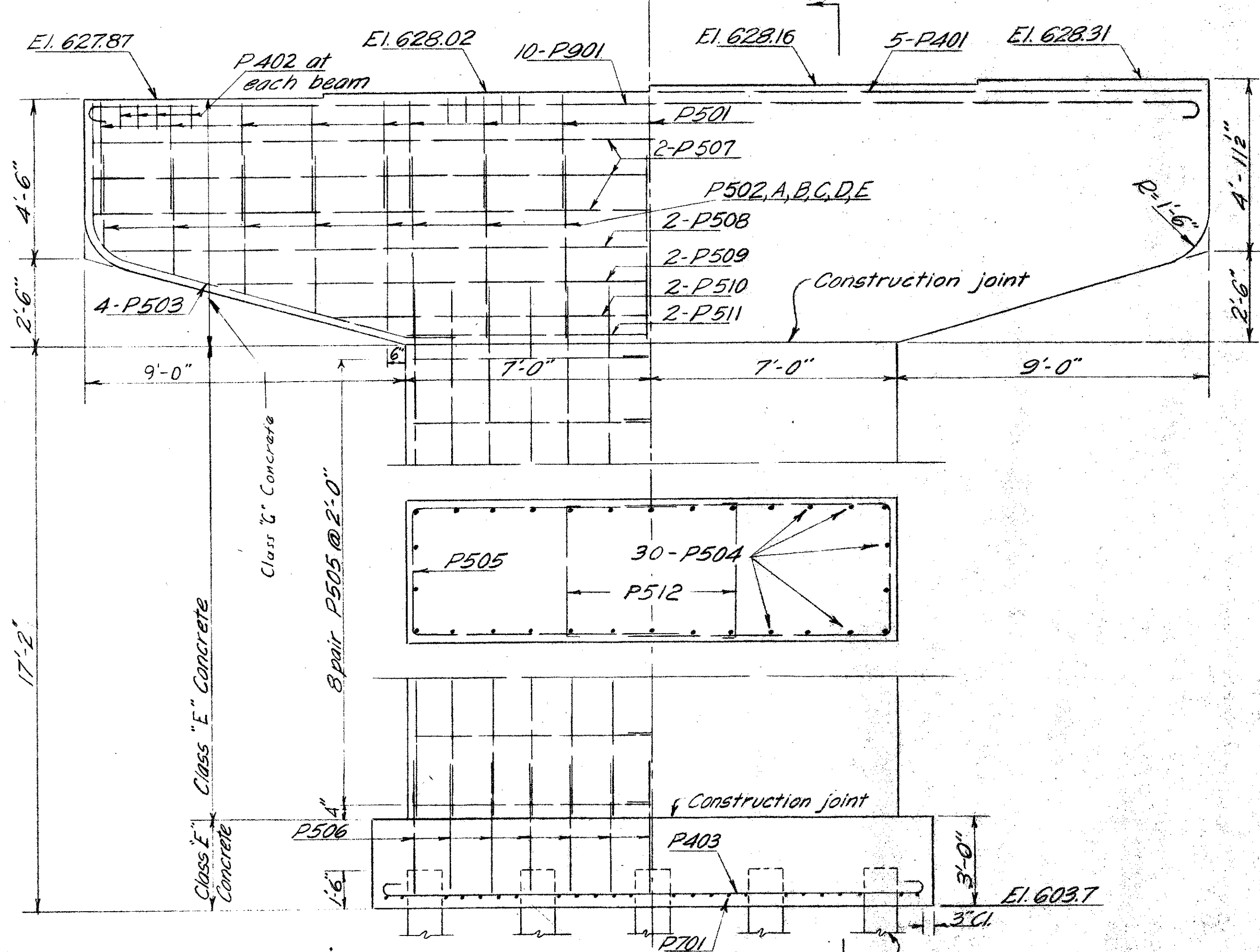
SANDUSKY COUNTY

153

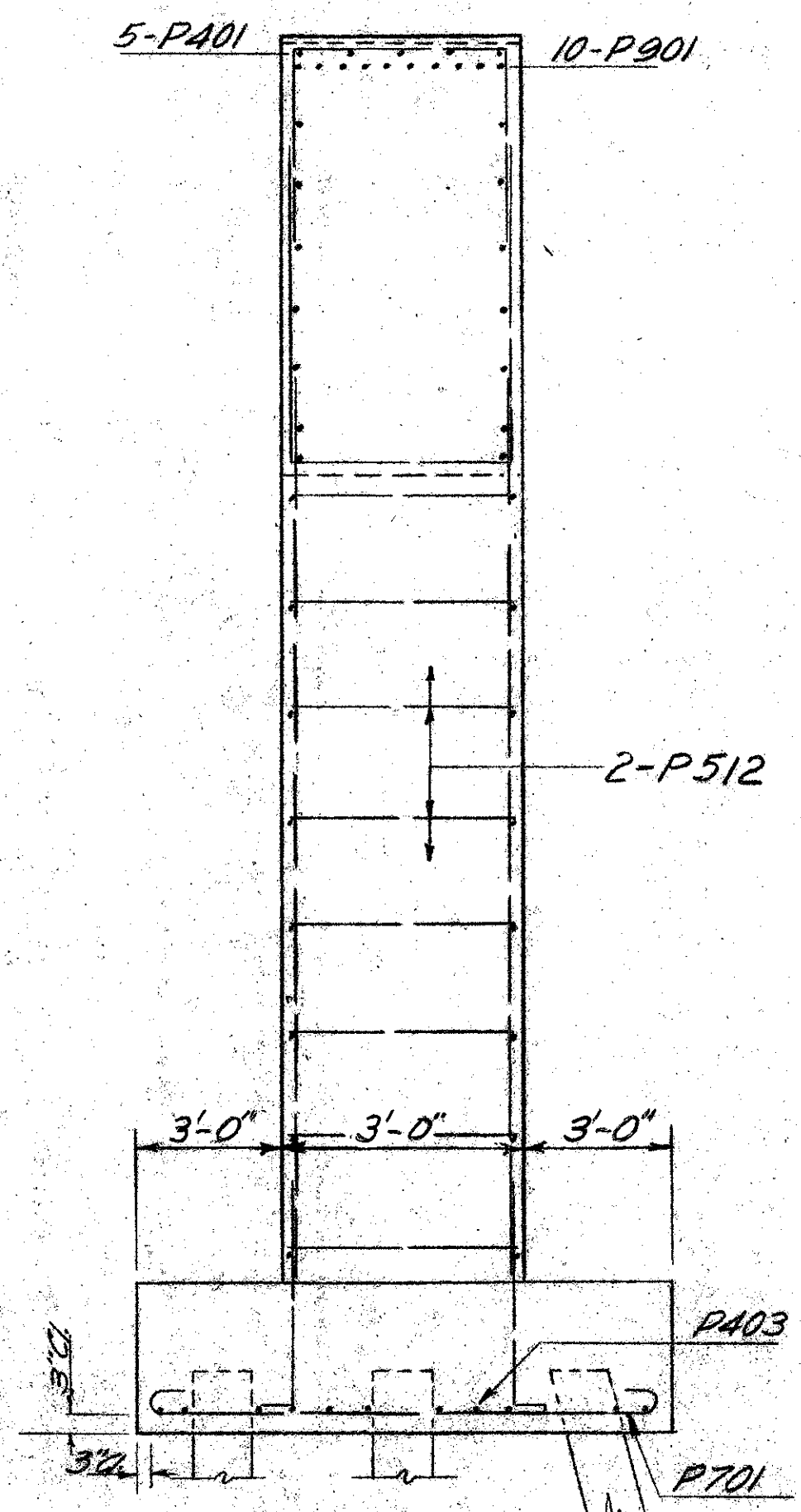


PLAN

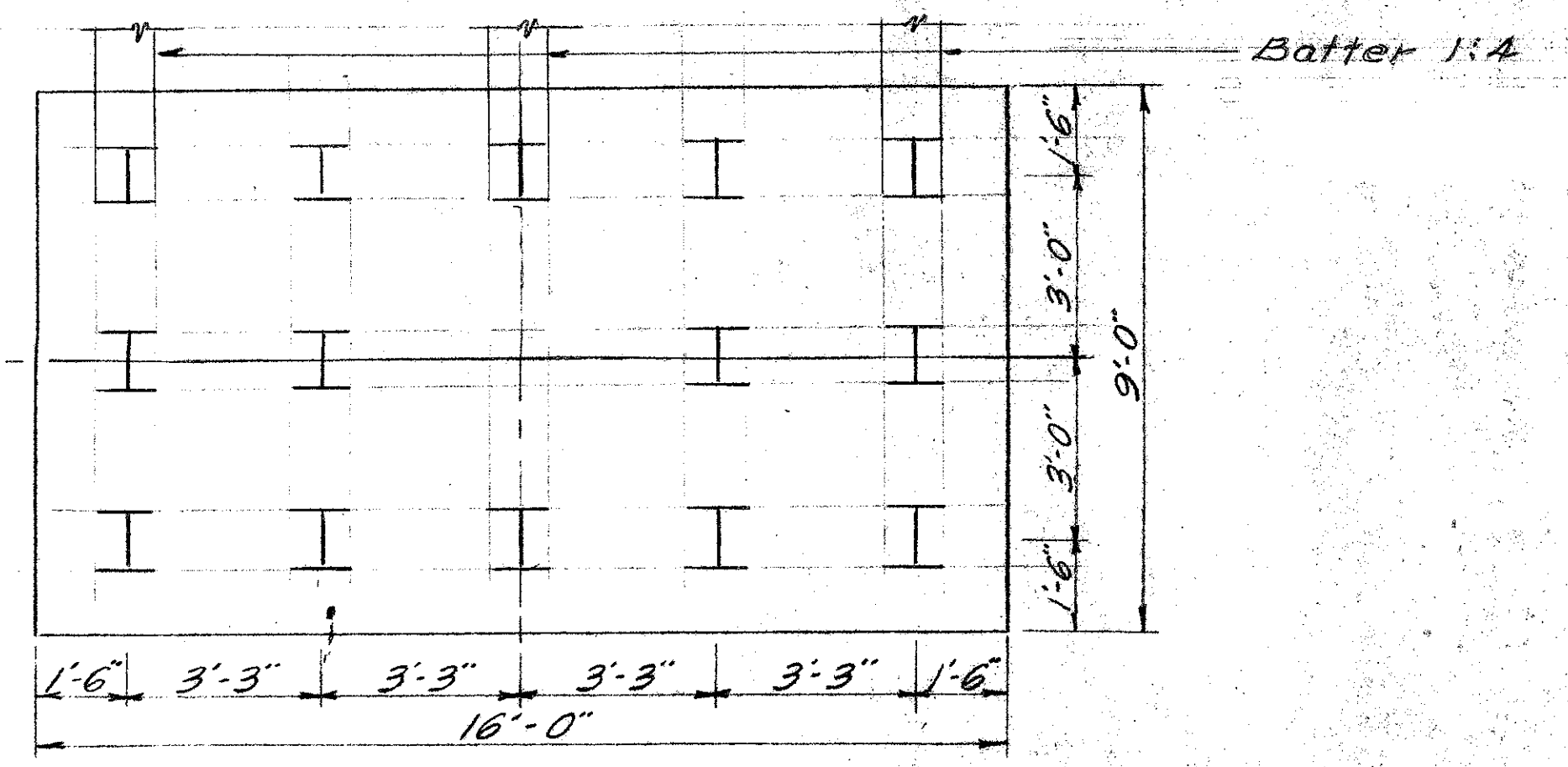
Note: Elevation, Footing Plan and Section A-A shown for Left Pier. Right Pier similar



ELEVATION



SECTION A-A



FOOTING PLAN

Sheets 149 thru 172 superseded by Sheets 149A thru 172A

CONSOER. TOWNSEND & ASSOCI./CONSULTING ENGINEERS CHICAGO

PIER 1 DETAILS

BRIDGE NO SA-20-180 OVER THE SANDUSKY RIVER, S.R.53, AND N.Y.C. & ST.L. R.R.

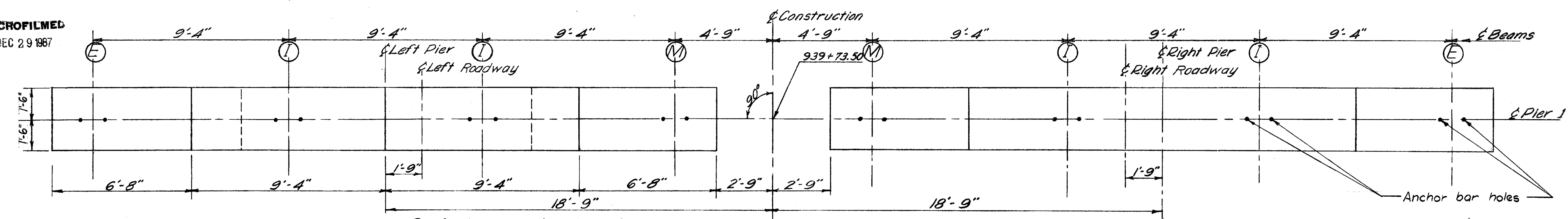
DESIGNED HJJ	DRAWN DRH	TRACED	CHECKED HFP	REVIEWED	DATE
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MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

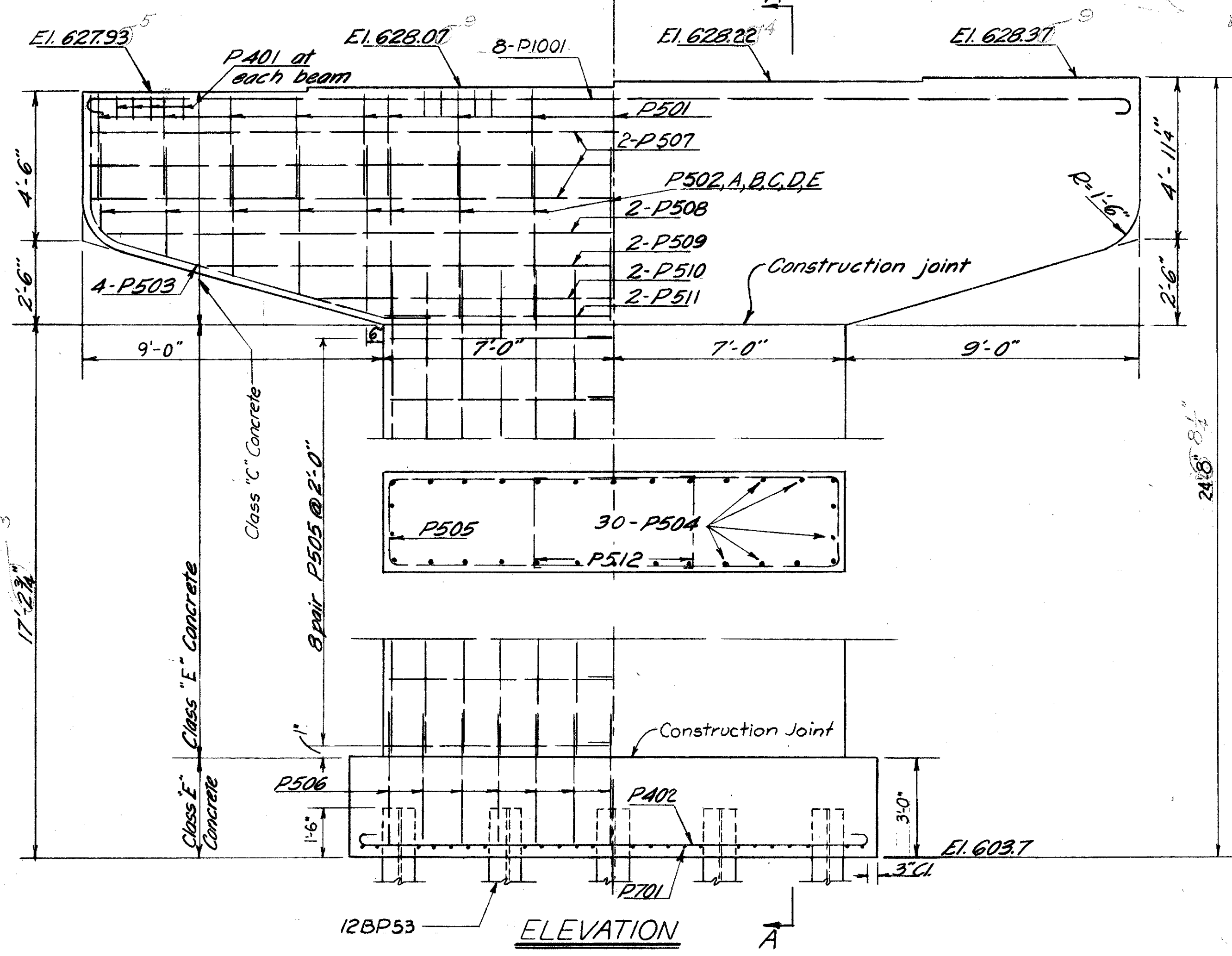
SANDUSKY COUNTY
SAN. 20-17.62

153A

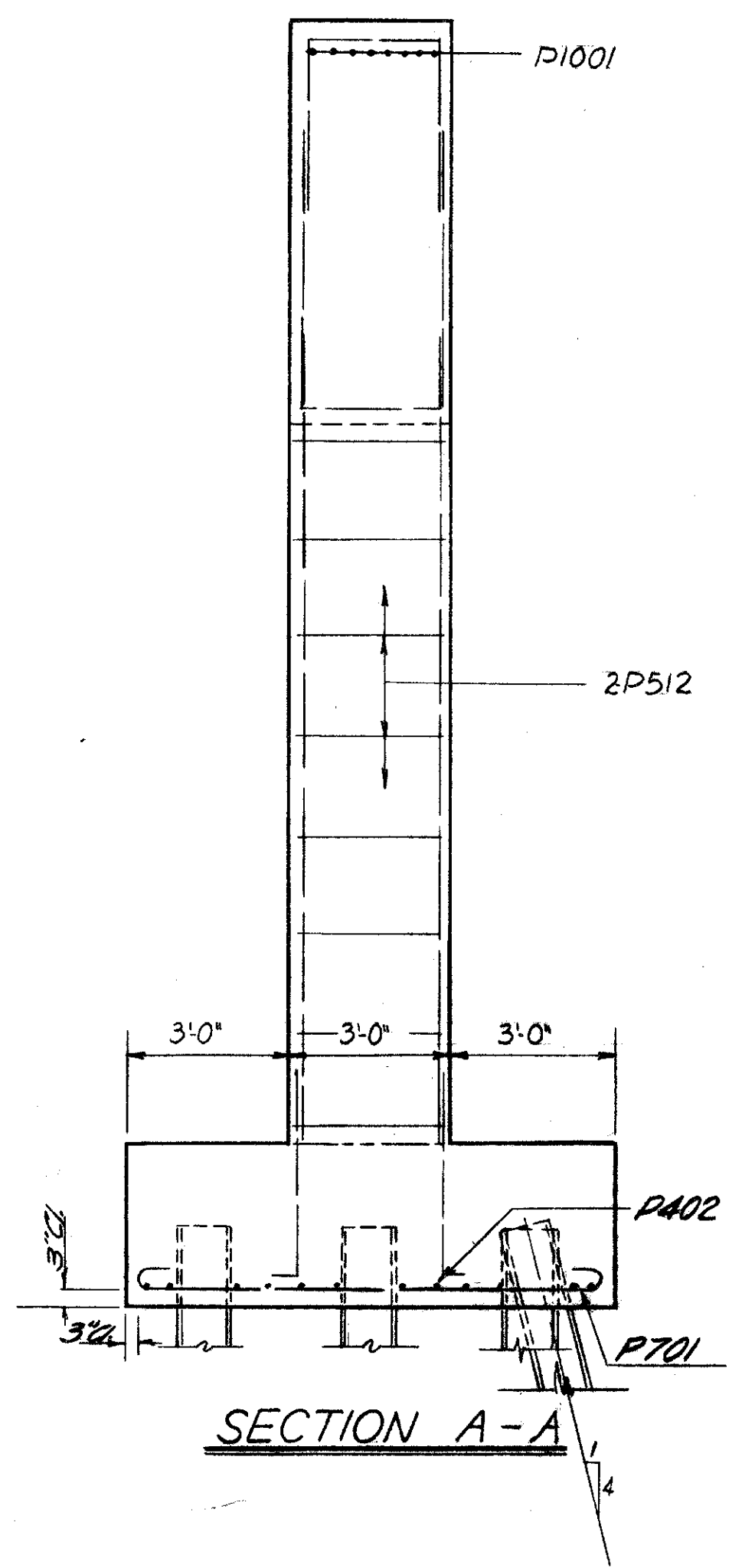


PLAN

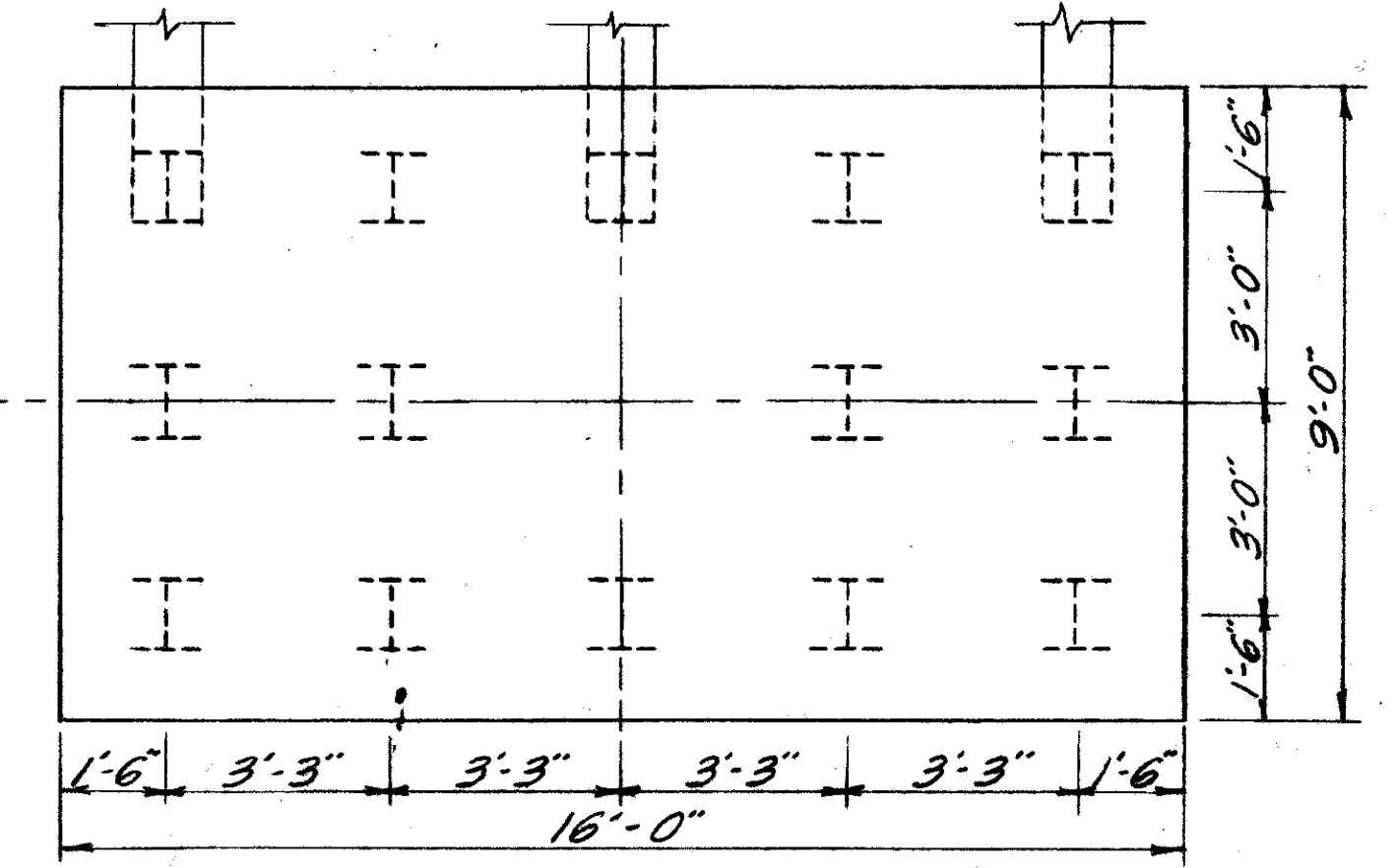
Note: Elevation, Footing Plan and Section A-A shown for Left Pier. Right Pier similar.
Special care shall be taken in placing reinforcing steel in the bridge seat to clear anchor bolts.



ELEVATION



SECTION A-A



FOOTING PLAN

Sheets 153A thru 172A replace
Sheets 149 thru 172

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

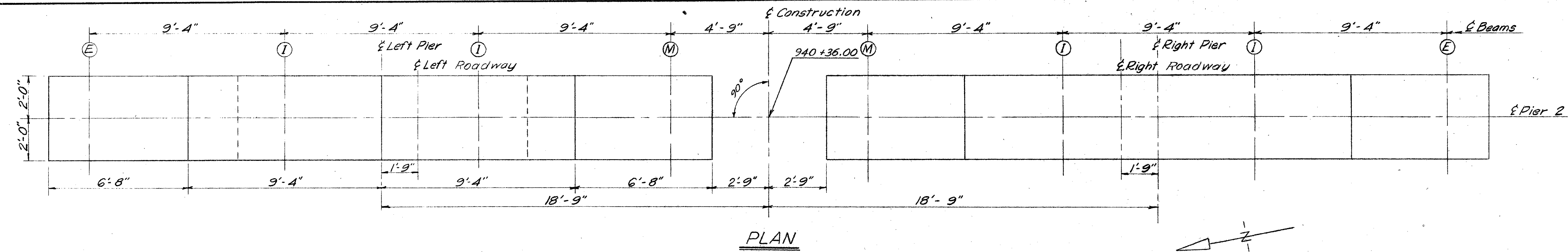
PIER 1 DETAILS
BRIDGE NO SA-20-180

OVER SANDUSKY RIVER, SR 53, AND N.Y.C. & S.T.L. R.R.
SANDUSKY CO. F-585(11)
SEC SAN 20-1762 STA. 939+21.25 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJ	DRH	-	WFP	HSM	11-30-55	4-17-56

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

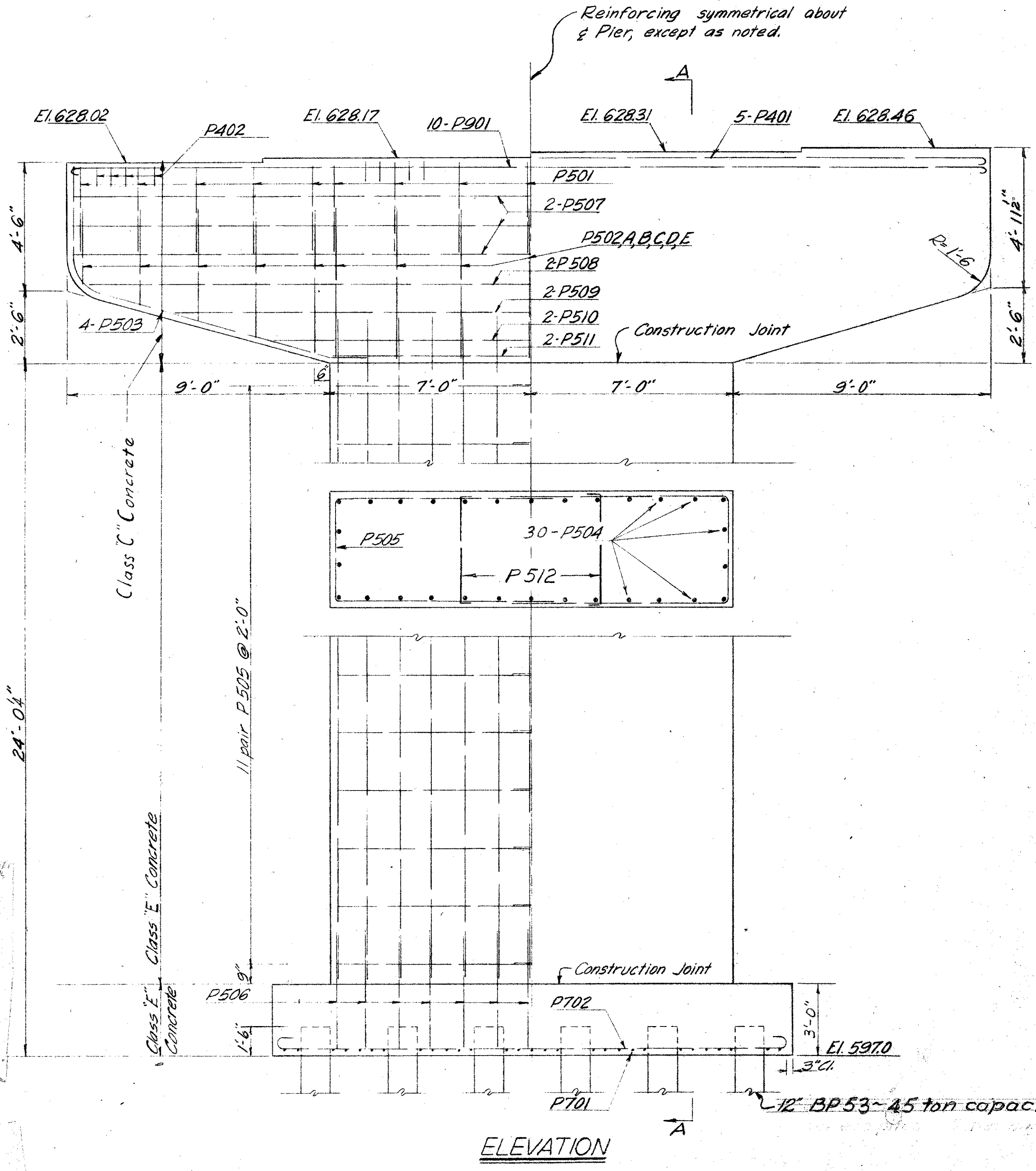
SANDUSKY COUNTY 157



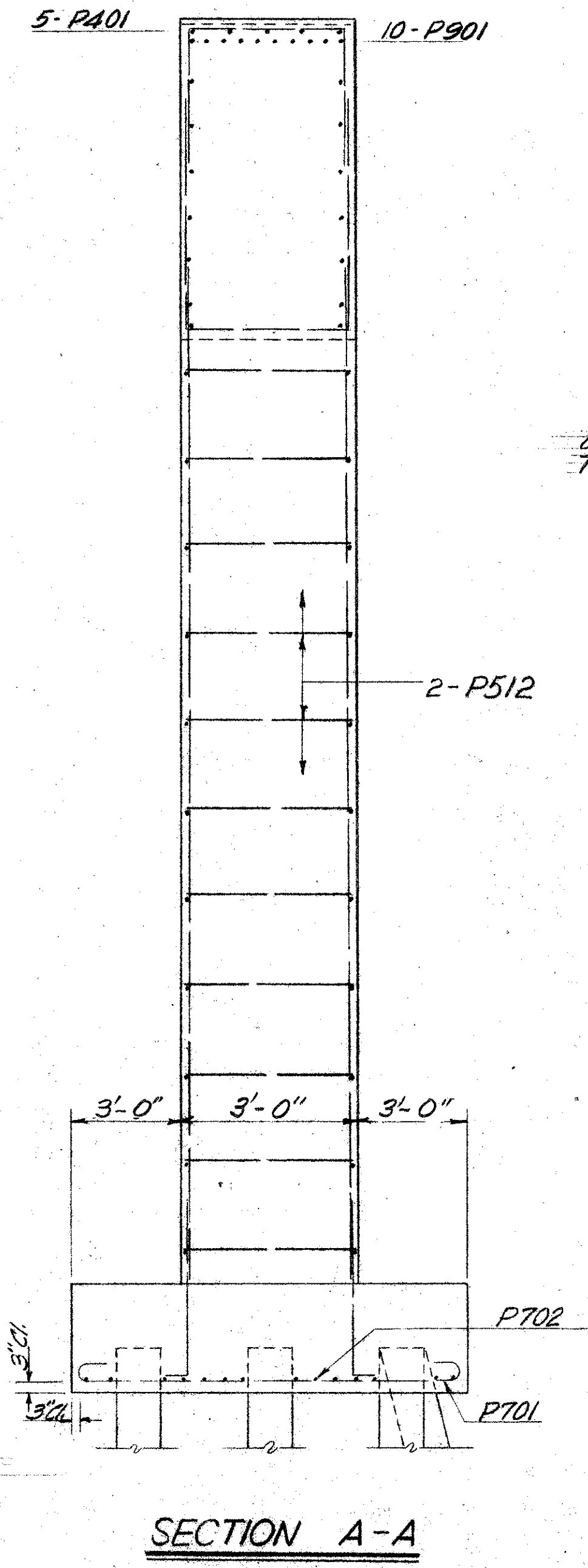
PLAN

Reinforcing symmetrical about \bar{x} Pier, except as noted.

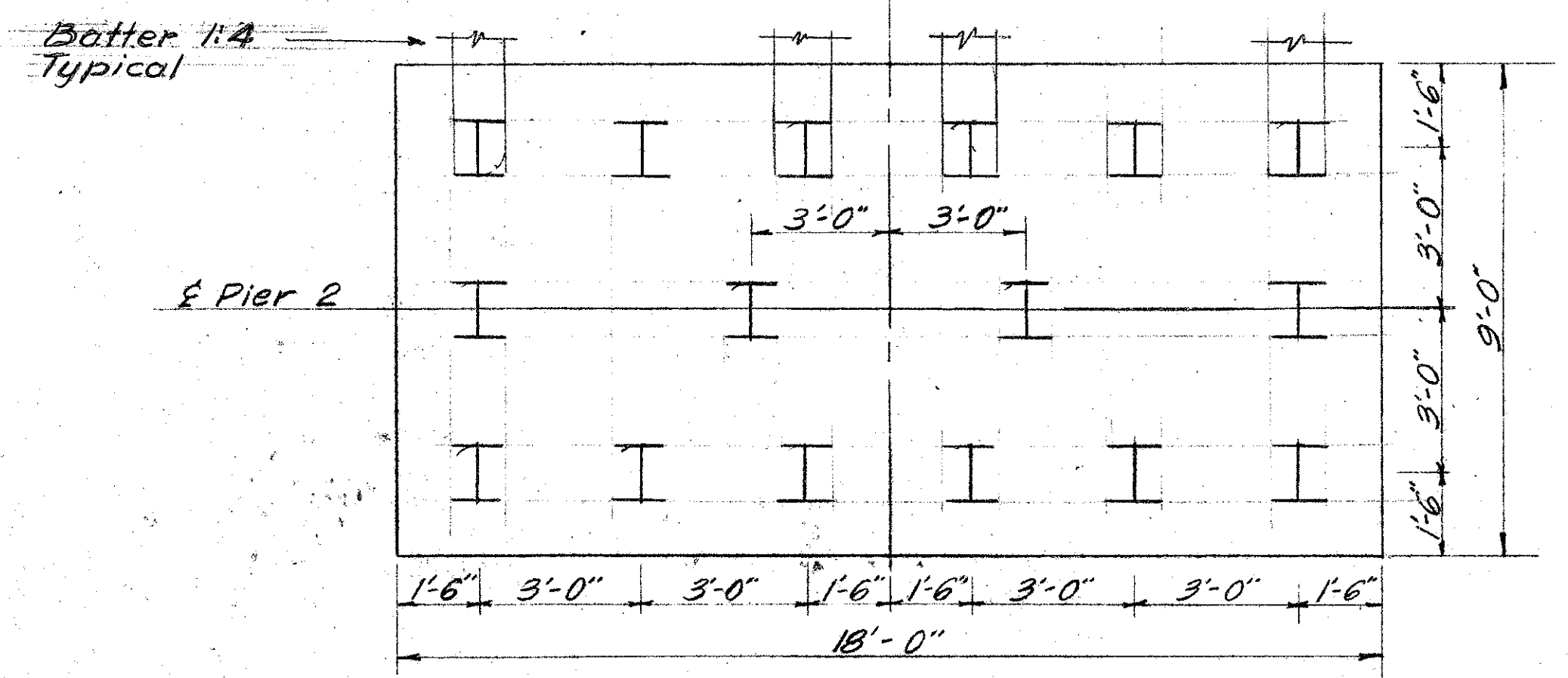
Special care shall be taken in placing reinforcing steel in the bridge seat to clear anchor bolts.



ELEVATION



SECTION A-A



FOOTING PLAN

Note: Elevation, Footing Plan & Sect. shown for left bridge - Right similar.

Sheets 149 thru 172 supers
Sheets 149A thru 172A.

CONSOER. TOWNSEND & ASS.
CONSULTING ENGINEERS CHICAGO, ILLINOIS

PIER 2 DETAILS
BRIDGE NO. SA-20-180
OVER THE SANDUSKY RIVER,
S.R. 53, AND N.Y.C. & ST. L. R.R.

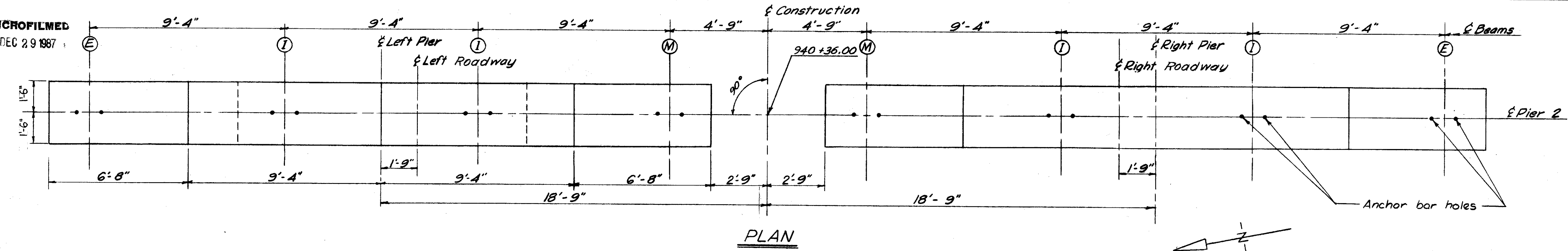
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJ	DPH		WFP			

MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

154 A

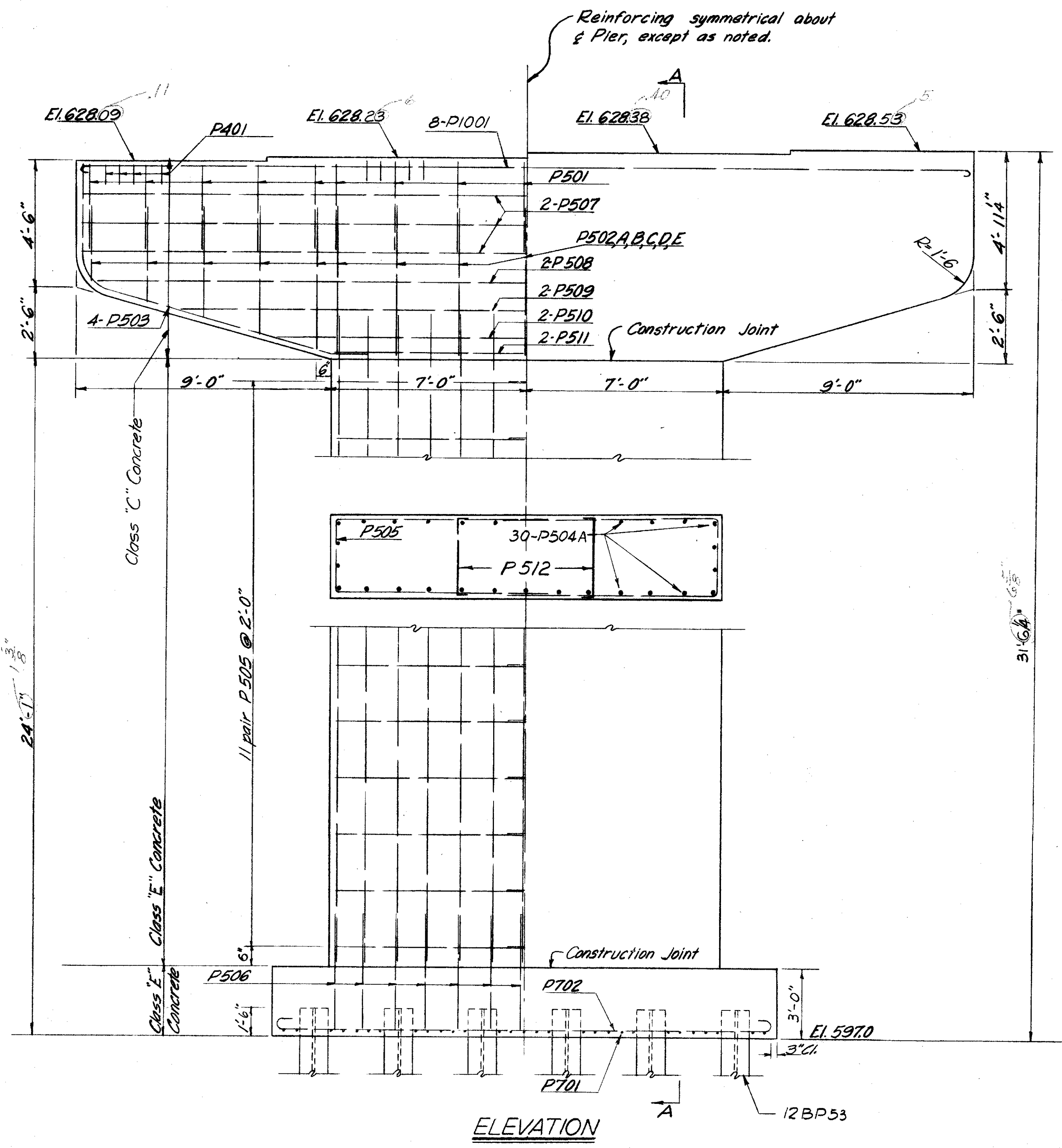
SANDUSKY COUNTY
SAN. 20-17.62



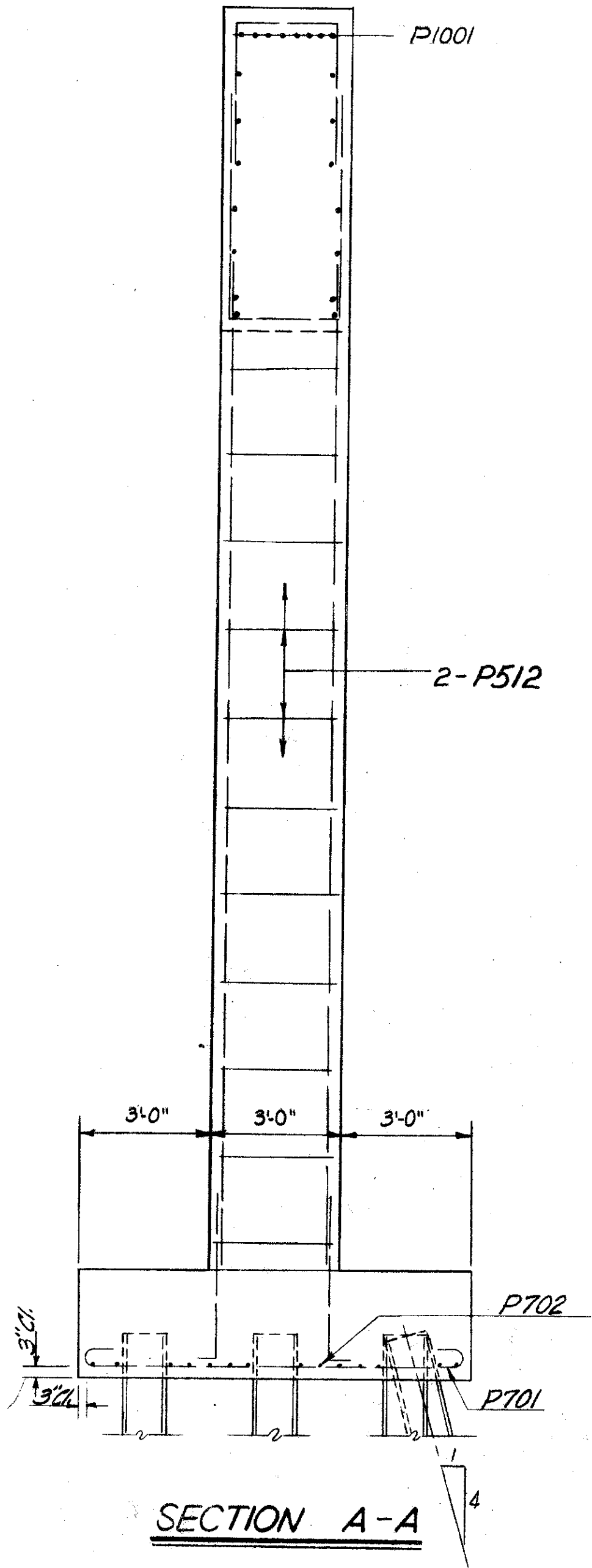
PLAN

Reinforcing symmetrical about
center line of Pier, except as noted.

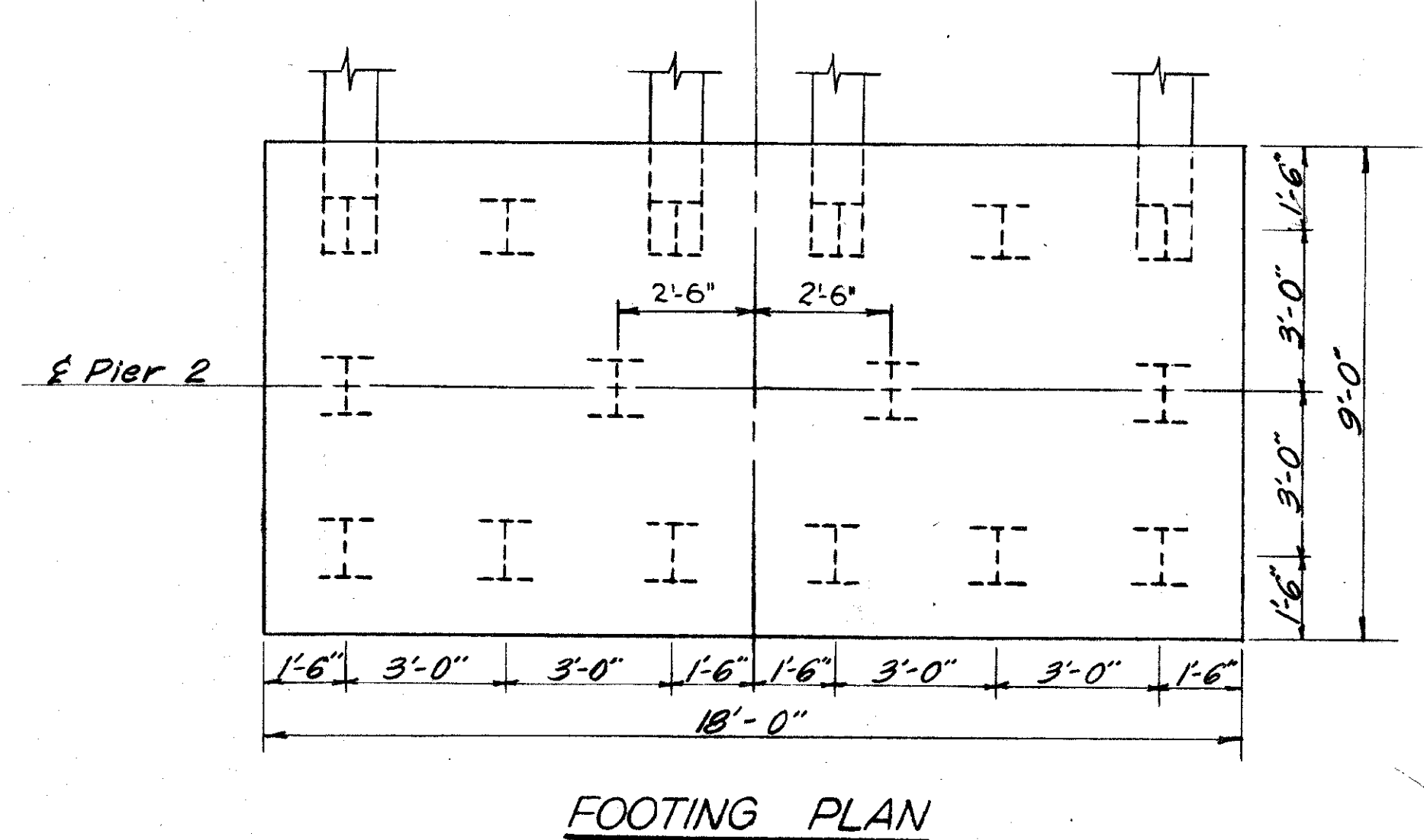
Special care shall be taken in placing
reinforcing steel in the bridge seat to
clear anchor bolts.



ELEVATION



SECTION A-A



FOOTING PLAN

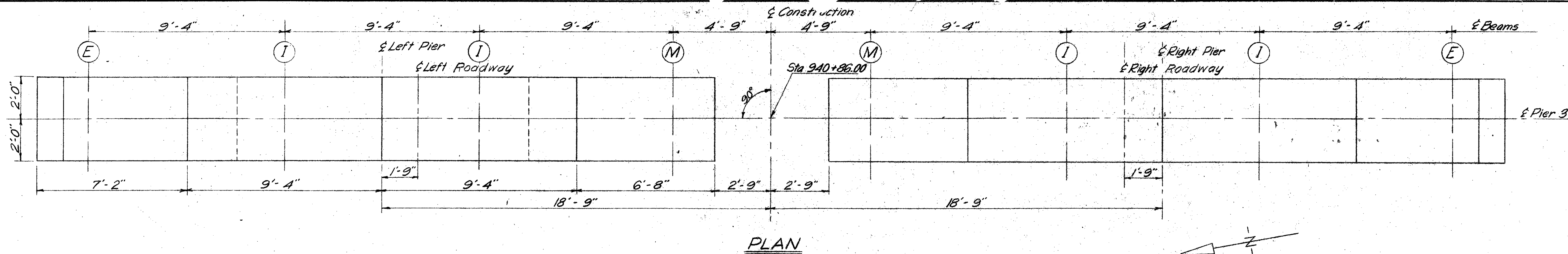
Note: Elevation, Footing Plan & Section A-A
shown for left bridge - Right Bridge
similar.

Sheets 149A thru 172A replace
Sheets 149 thru 172

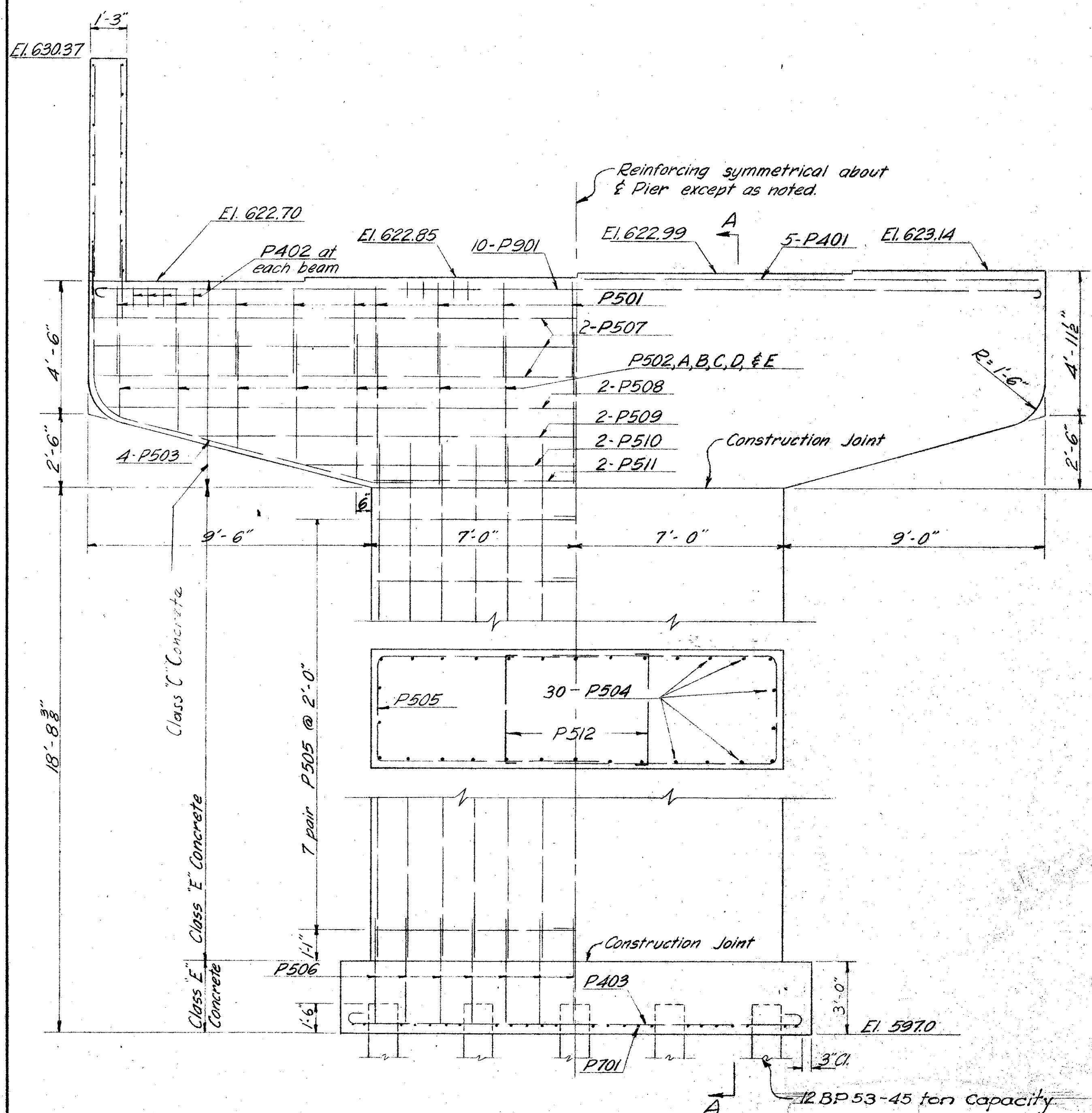
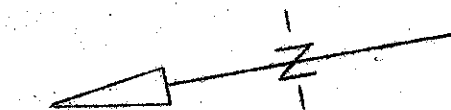
CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILLINOIS						
PIER 2 DETAILS						
BRIDGE NO. SA-20-180						
OVERSANDUSKY RIVER, S.R.53, AND NYC & ST.L. R.R.						
SANDUSKY CO. F-585(11)						
SEC. SAN. 20-17.62 STA. 939+2125 TO 941+2813						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJU	DPH	-	WEP	HSM	11-30-55	4-17-56

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-535(11)	

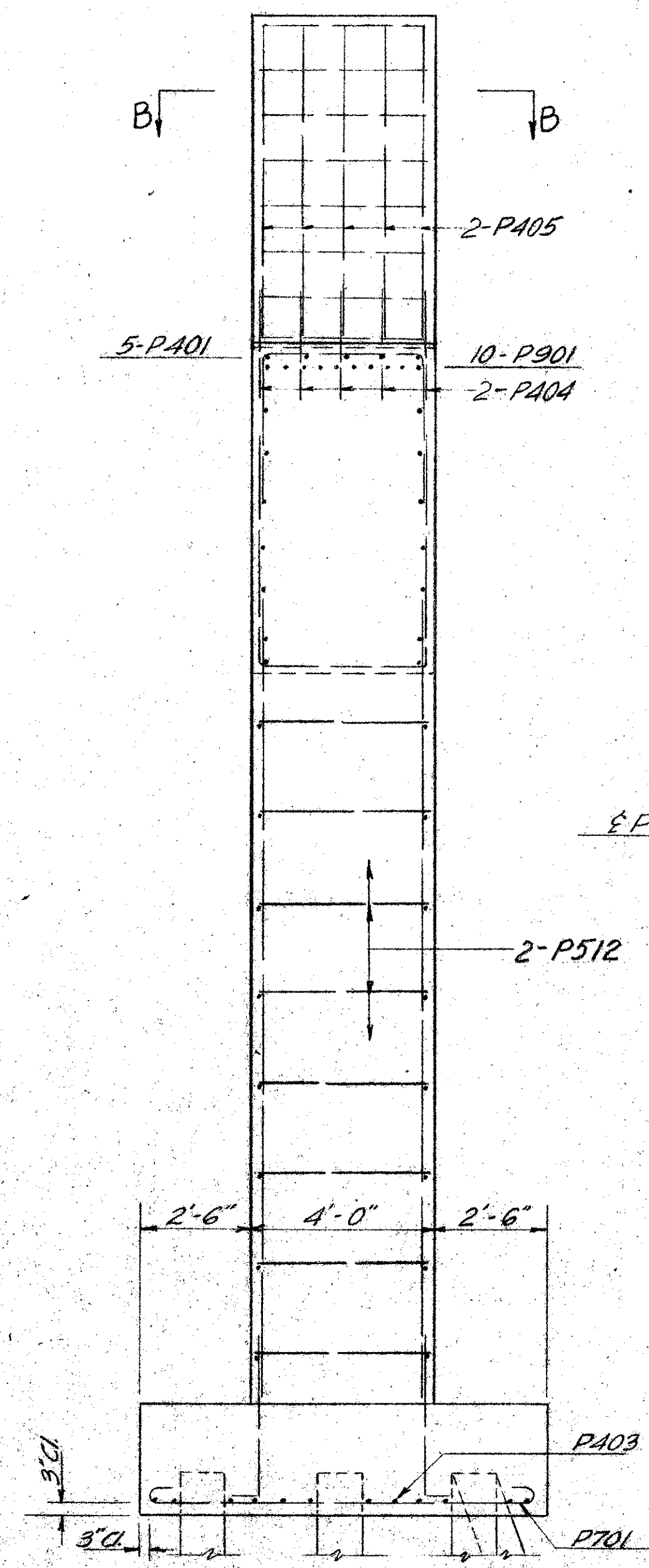
SANDUSKY COUNTY



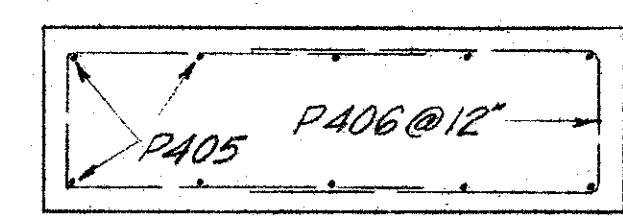
PLAN



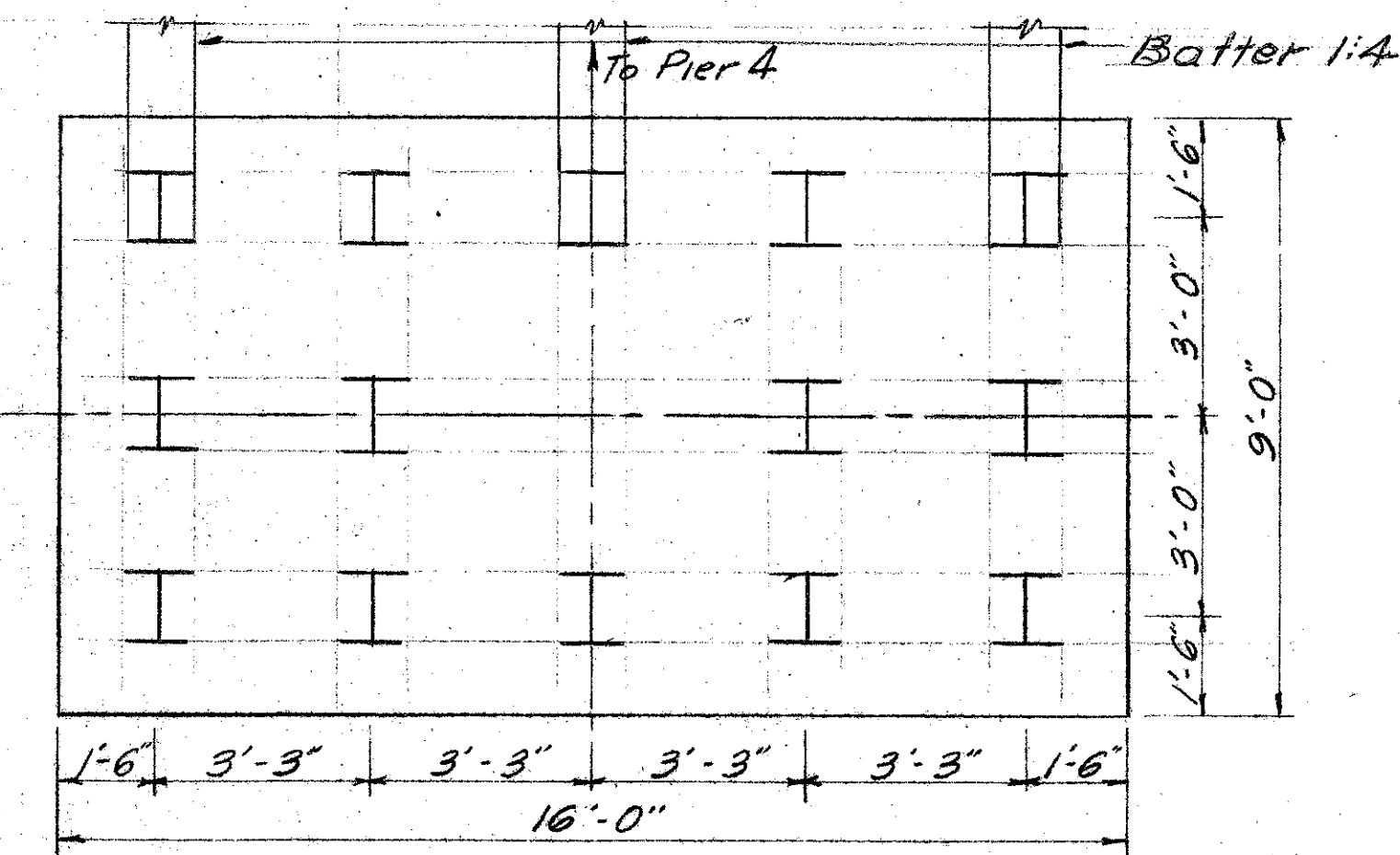
ELEVATION



SECTION A-A



SECTION B-B



FOOTING PLAN

Sheets 149 thru 172 superseded
Sheets 140A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLIN

PIER 3 DETAILS

BRIDGE NO. SA-20-180
OVER THE SANDUSKY RIVER,
S.R. 53, AND N.Y.C. & ST.L.R.R.

Note: Elevation, Footing Plan, & Section A-A shown
for Left Bridge - Right Bridge similar.

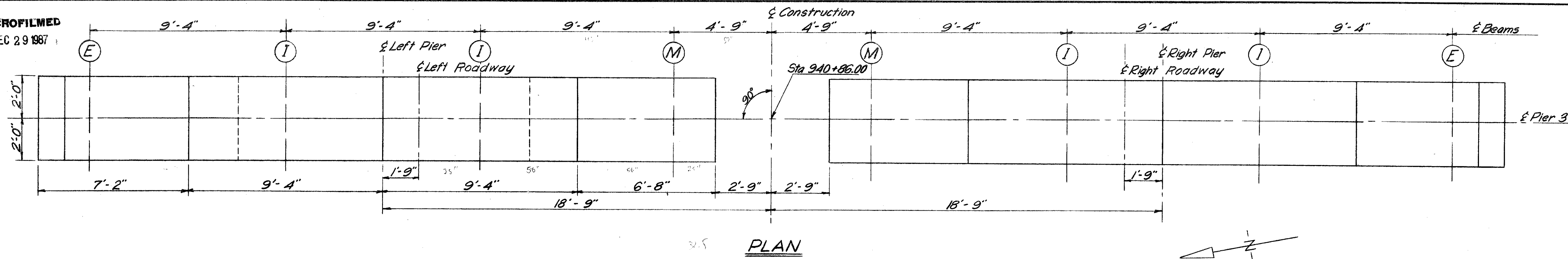
⊗ Indicates battered pile on 1:4 batter.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED
WJW	SAM		WFP	

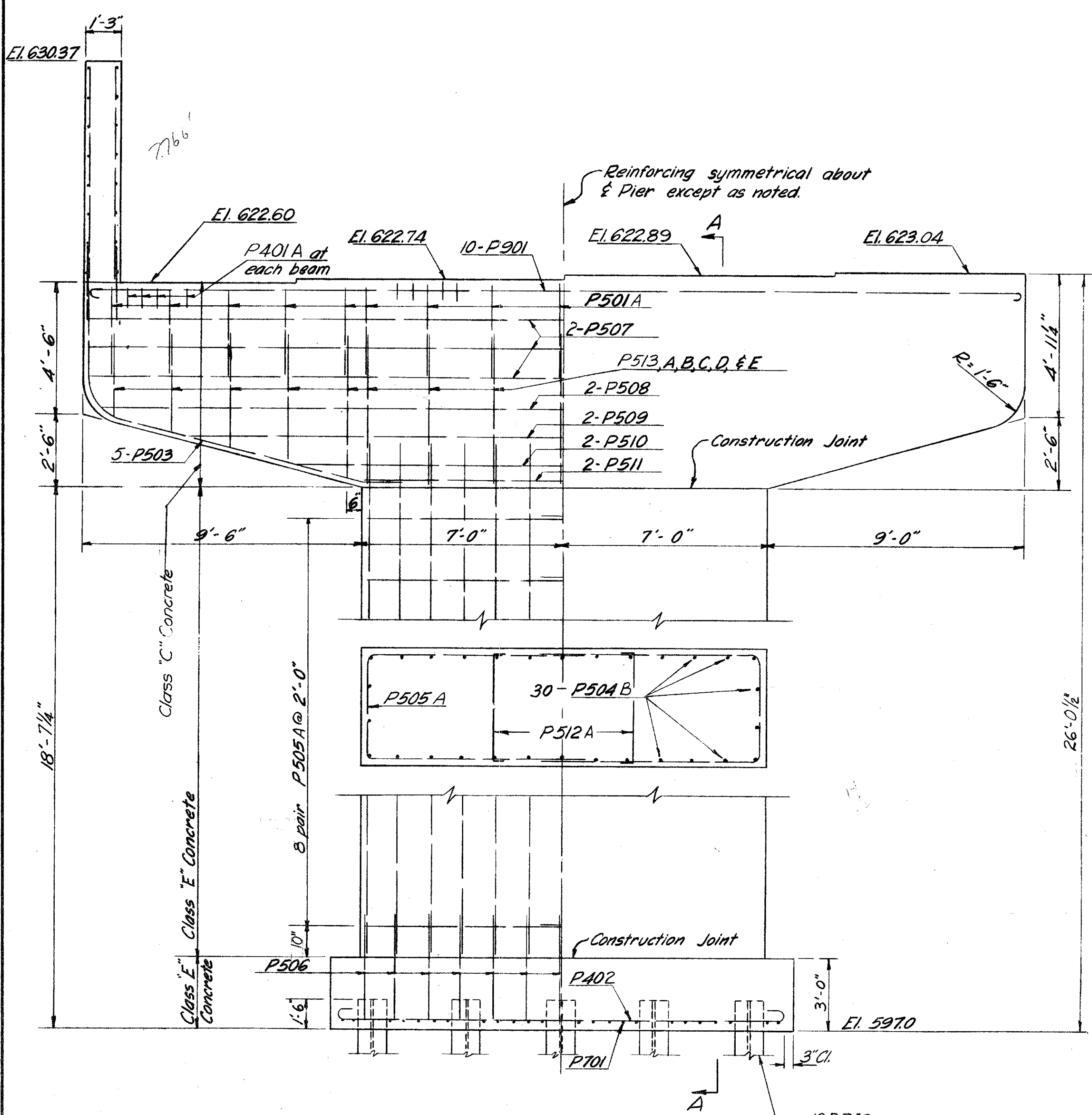
MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

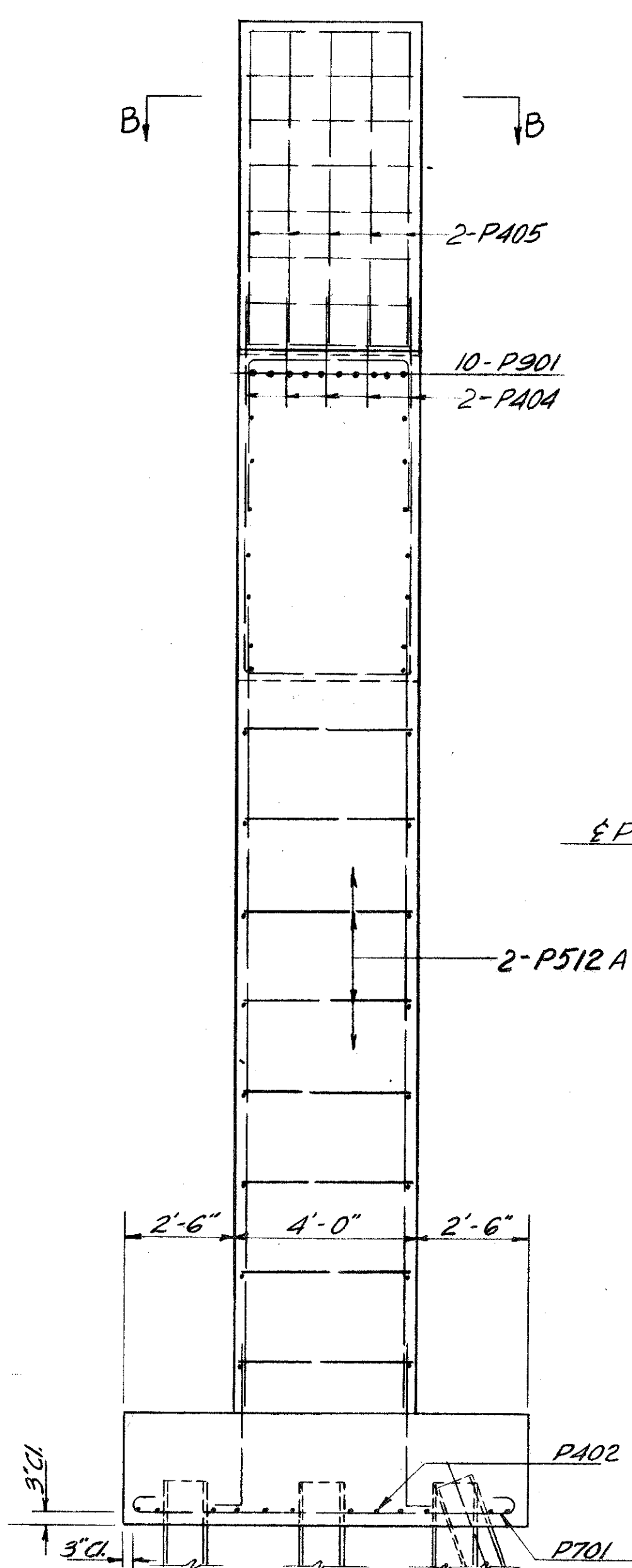
SANDUSKY COUNTY
SAN. 20-17.62



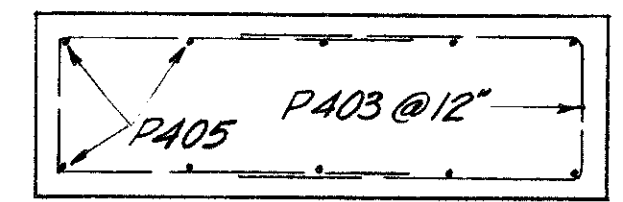
PLAN



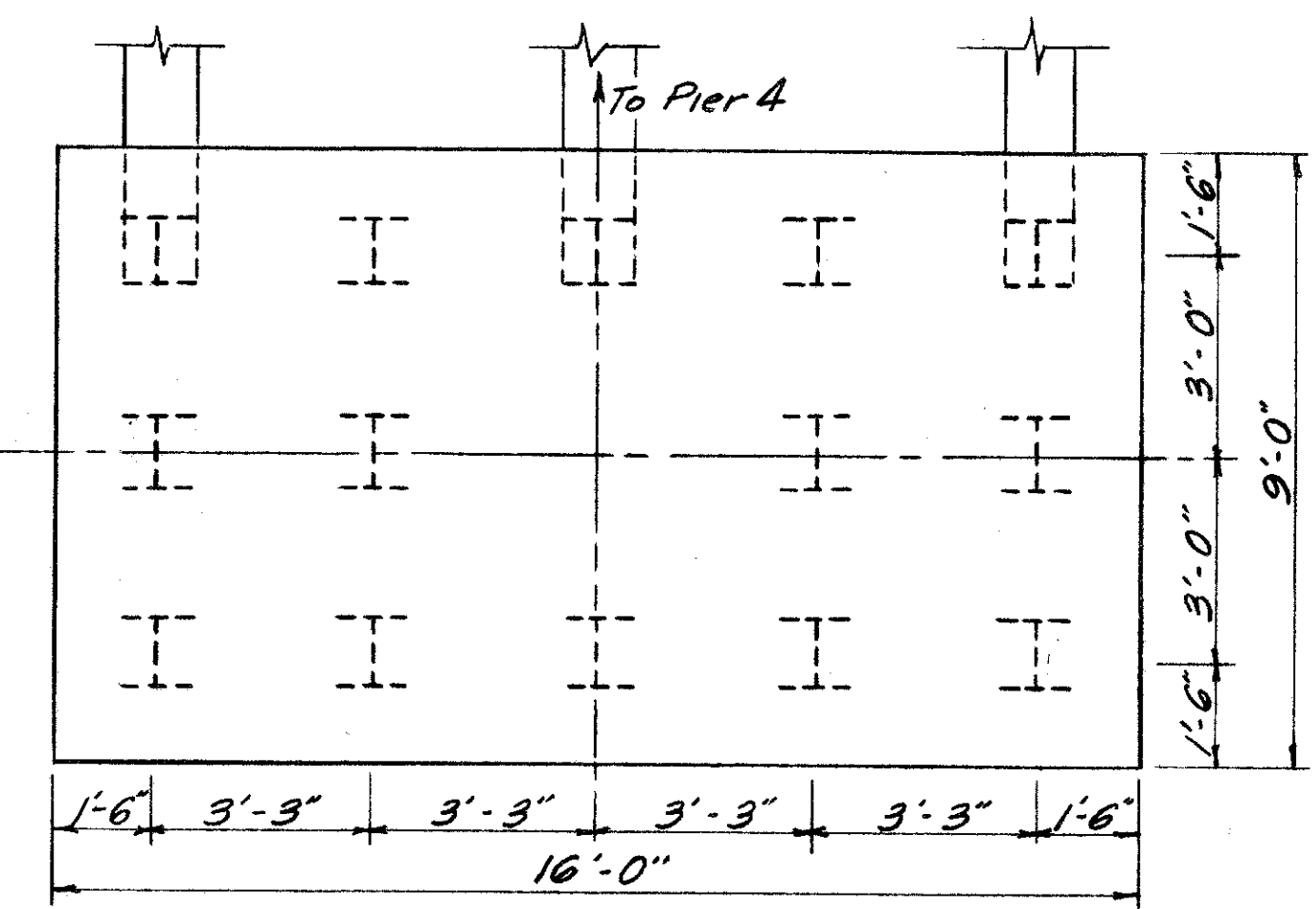
ELEVATION



SECTION A-A



SECTION B-B



FOOTING PLAN

Sheets 149A thru 172A replace
Sheets 149 thru 172 2-10-56.

Note: Elevation, Footing Plan, & Section A-A shown
for Left Bridge - Right Bridge similar.

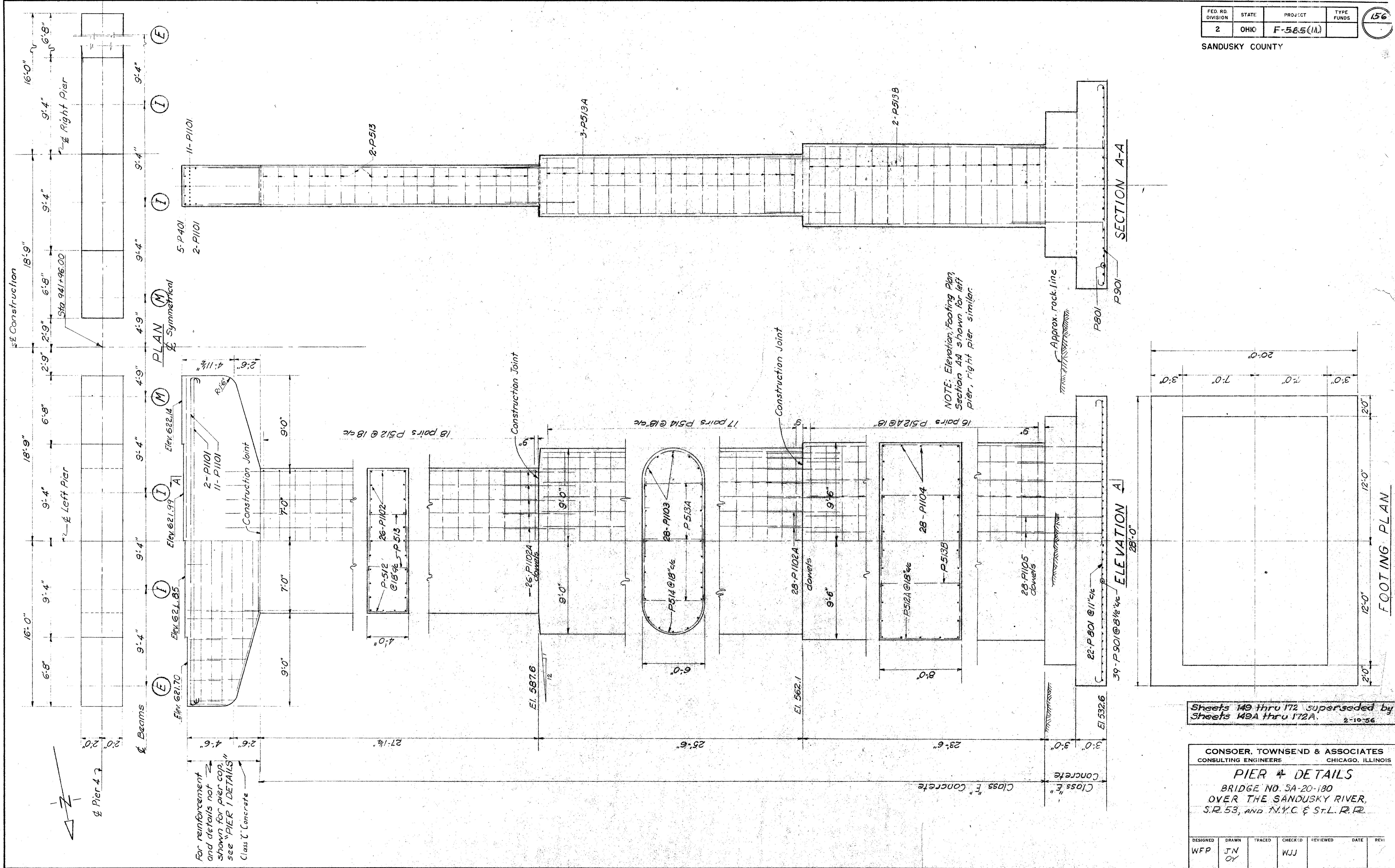
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

PIER 3 DETAILS

BRIDGE NO. SA-20-180
OVER SANDUSKY RIVER, S.R.53, AND N.Y.C. & ST. L. R.R.
SANDUSKY CO. F-585(11)
SEC. SAN. 20-17.62 STA. 939+21.25 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJ	SAM	-	WFP	HSM	11-30-55	

SANDUSKY COUNTY



NOTE: Elevation, Footing Plan, Section A-A shown for left pier, right pier similar.

For reinforcement and details not shown for pier cap, see "PIER 1 DETAILS" Class "C" Concrete

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

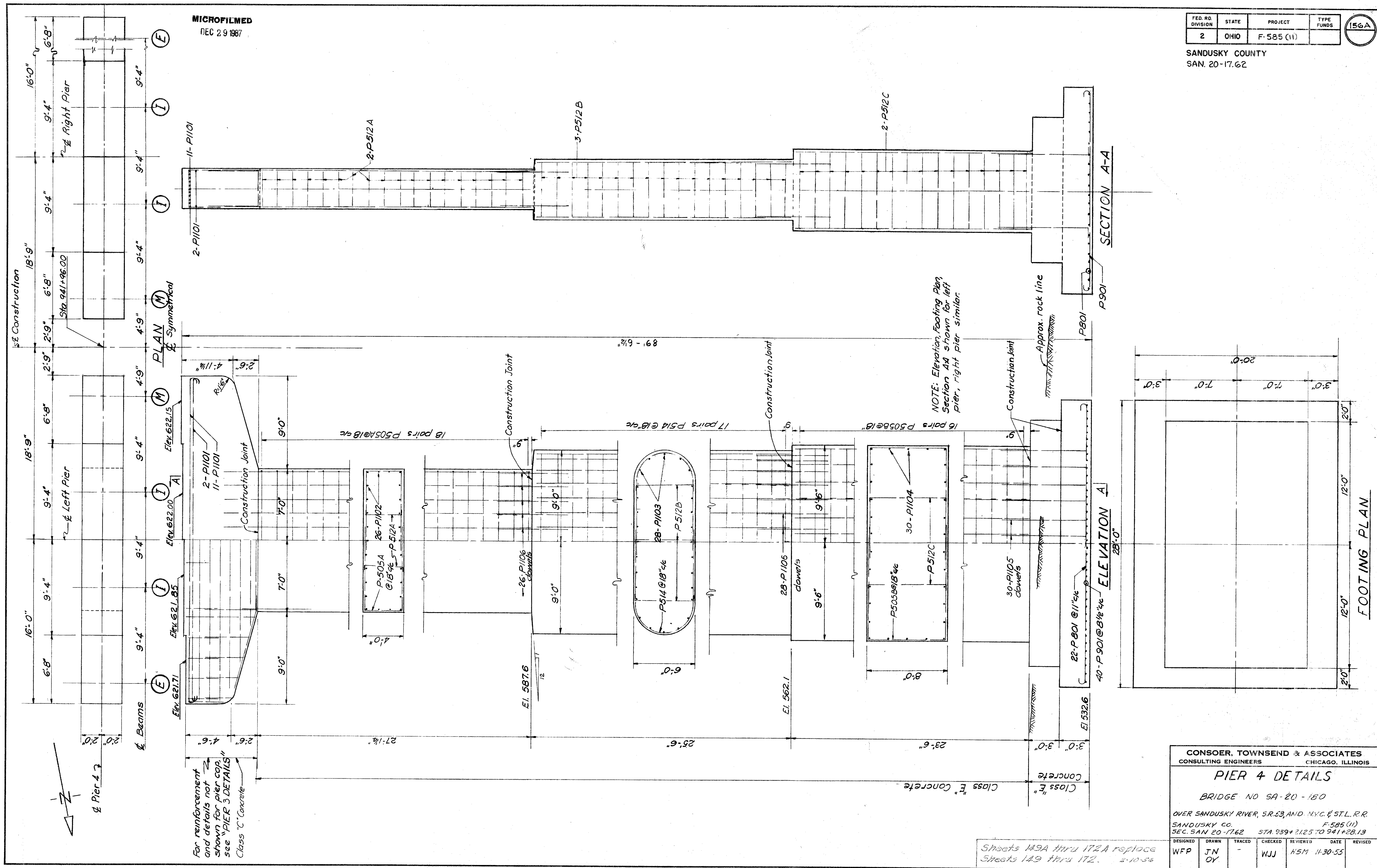
CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILLINOIS
PIER 4 DETAILS
 BRIDGE NO. SA-20-180
 OVER THE SANDUSKY RIVER,
 S.R. 53, AND N.Y.C. & ST.L.R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVI
WFP	JN 01		WJJ			

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

156A

SANDUSKY COUNTY
SAN. 20-17.62



MICROFILMED
DEC 29 1987

PLAN M Symmetrical

SECTION A-A

ELEVATION A-A

FOOTING PLAN

NOTE: Elevation, Footing Plan, Section AA shown for left pier, right pier similar.

For reinforcement and details not shown for pier cop. see "PIER 3 DETAILS" Class "C" Concrete

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

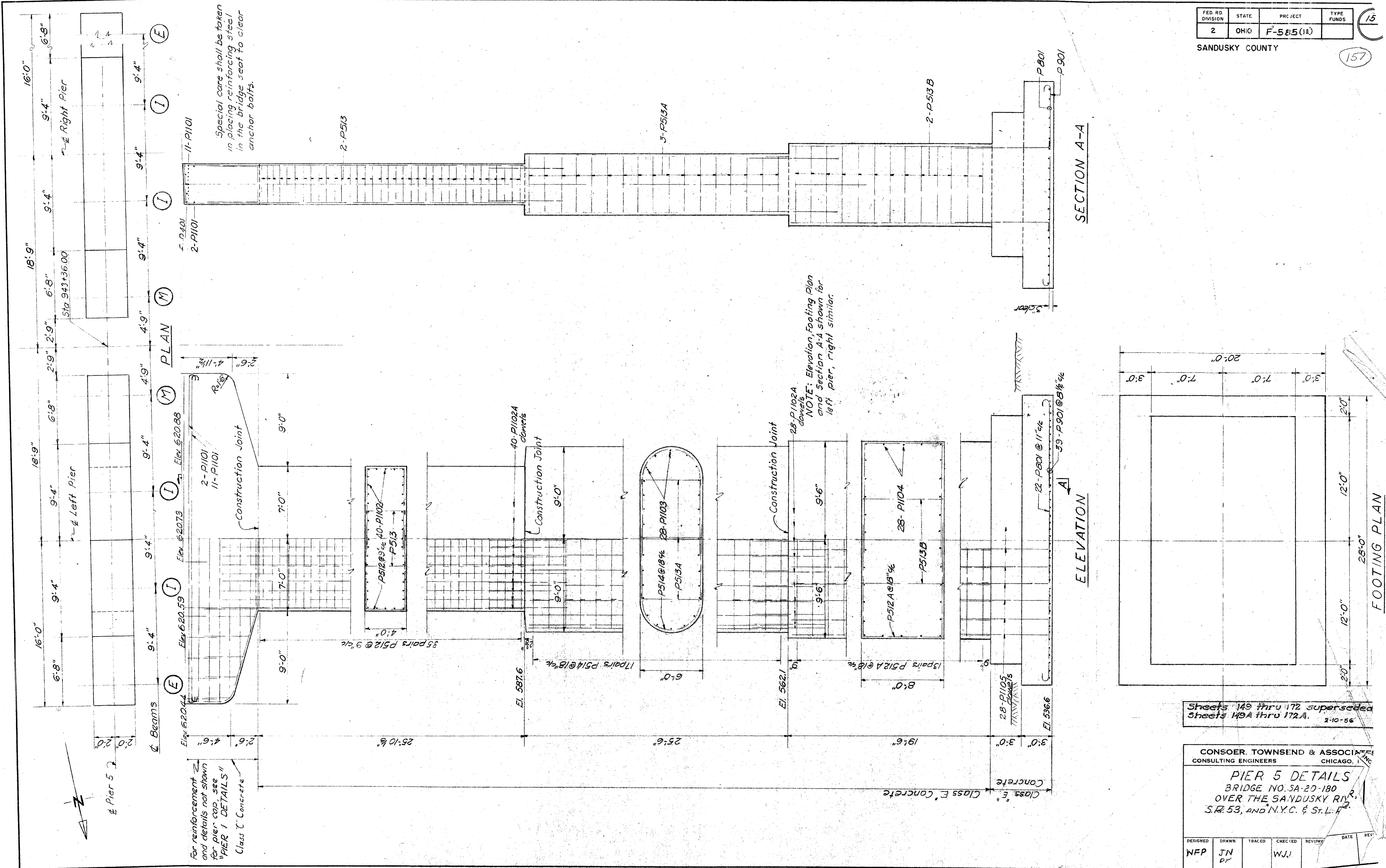
PIER 4 DETAILS

BRIDGE NO SA-20-180

OVER SANDUSKY RIVER, S.R. 23, AND N.Y.C. & ST.L. R.R.
SANDUSKY CO. F-585 (11)
SEC. SAN 20-17.62 STA. 939+2.125 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WFP	JN DY	-	WJJ	HSM	11-30-55	

Sheets 149A thru 172A replace
Sheets 149 thru 172. 2-10-56



Sheets 149 thru 172 superseded
 Sheets 149A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILL.

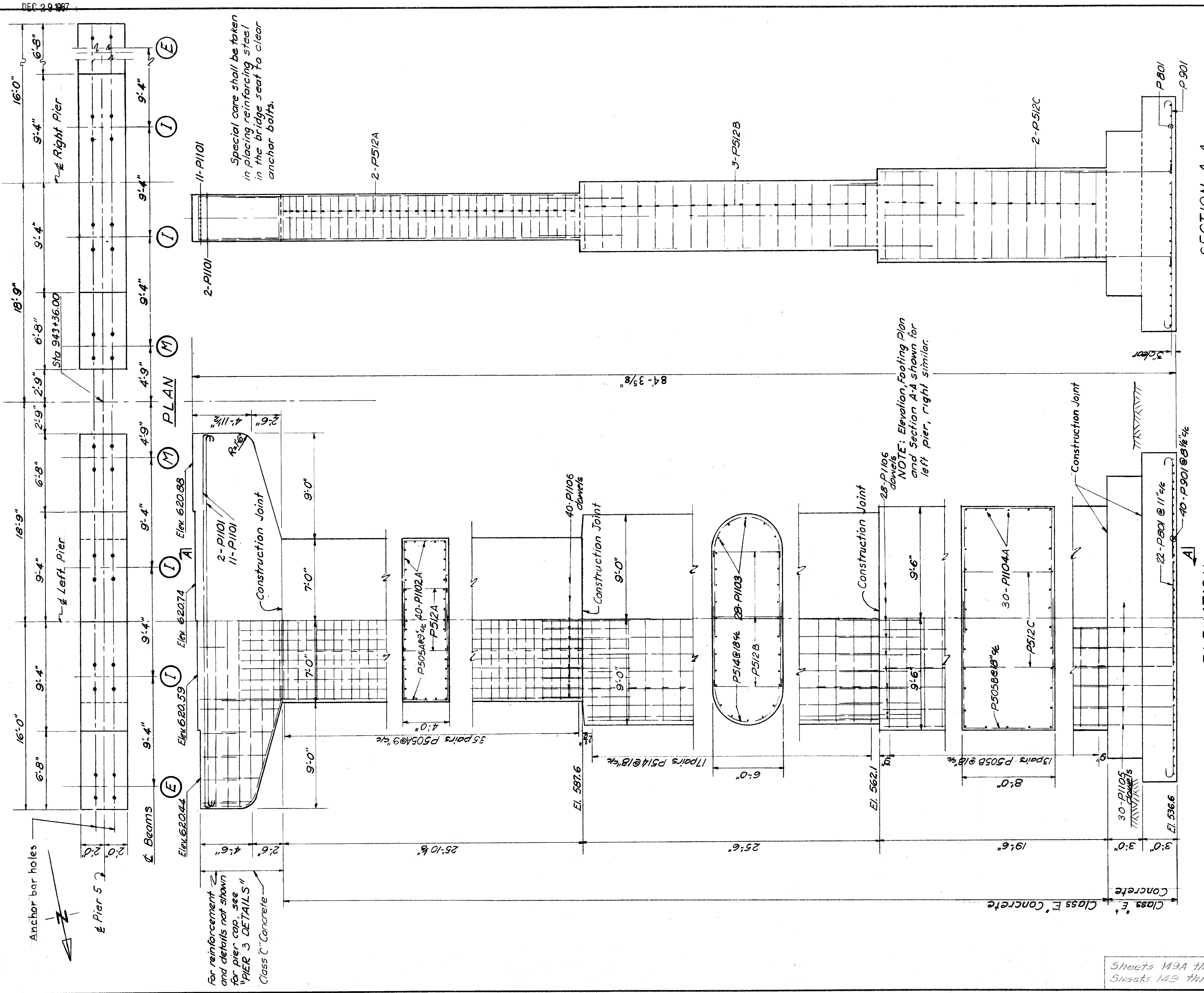
PIER 5 DETAILS
 BRIDGE NO. 5A-20-180
 OVER THE SANDUSKY RIVER,
 S.R. 53, AND N.Y.C. & S.T.L.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REV.
NFP	JN		WJ			

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

157A

SANDUSKY COUNTY
SAN. 20-17.62



SECTION A-A

ELEVATION

FOOTING PLAN

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

PIER 5 DETAILS

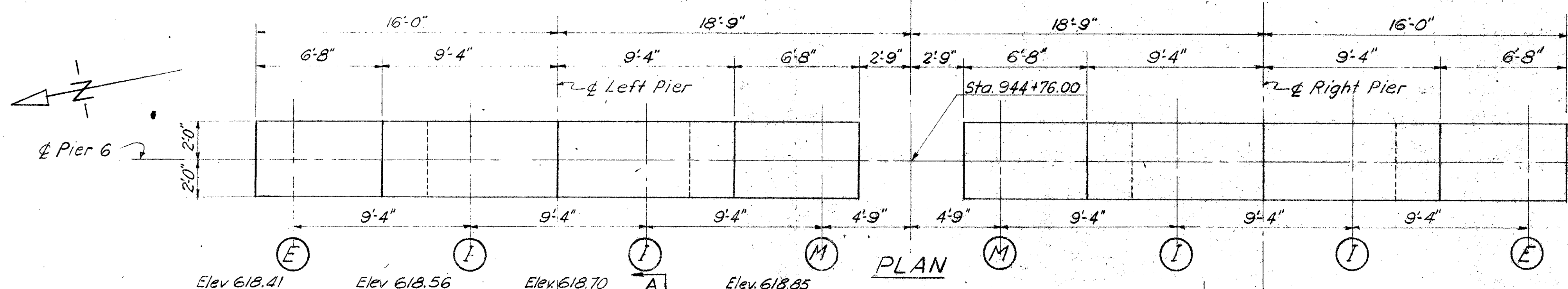
BRIDGE NO SA-20-180

OVERSANDUSKY RIVER, SR 53 AND NYC & STL R.R.

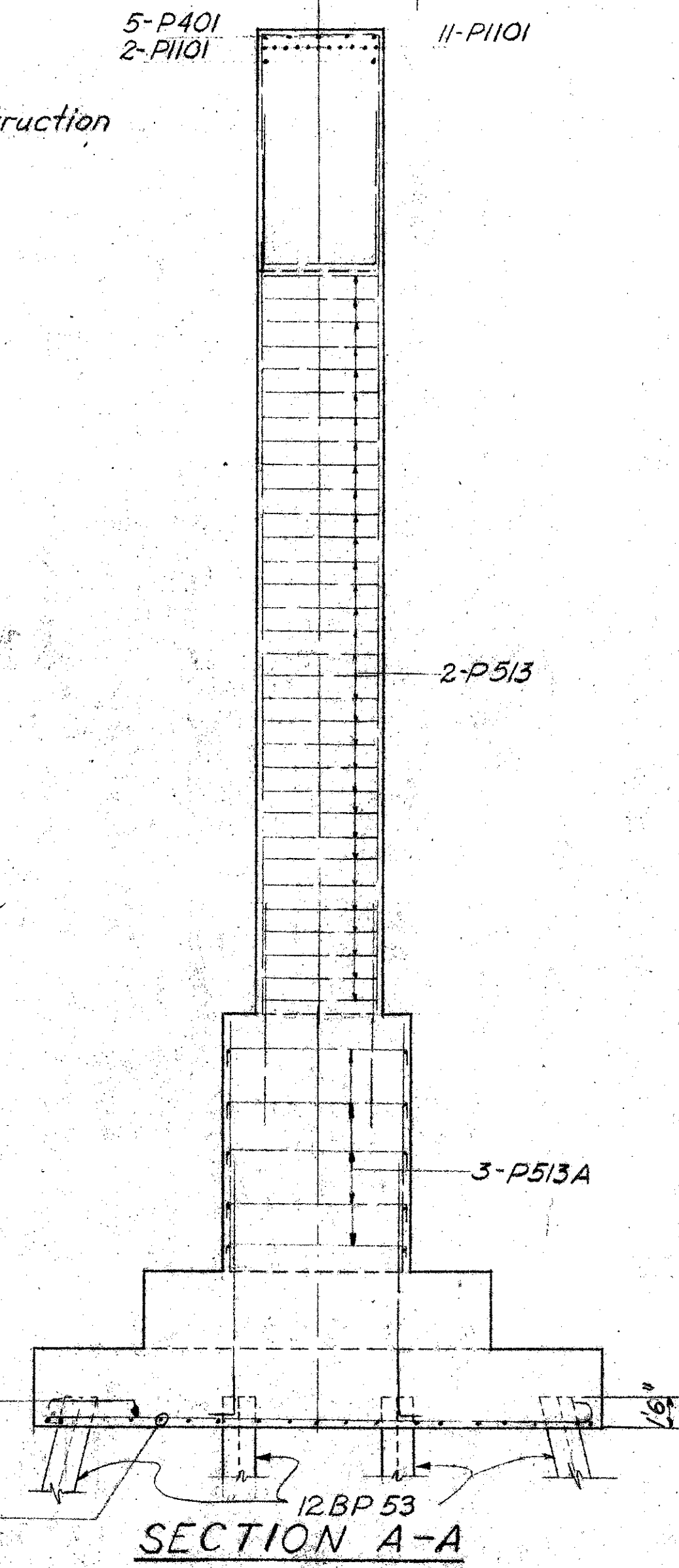
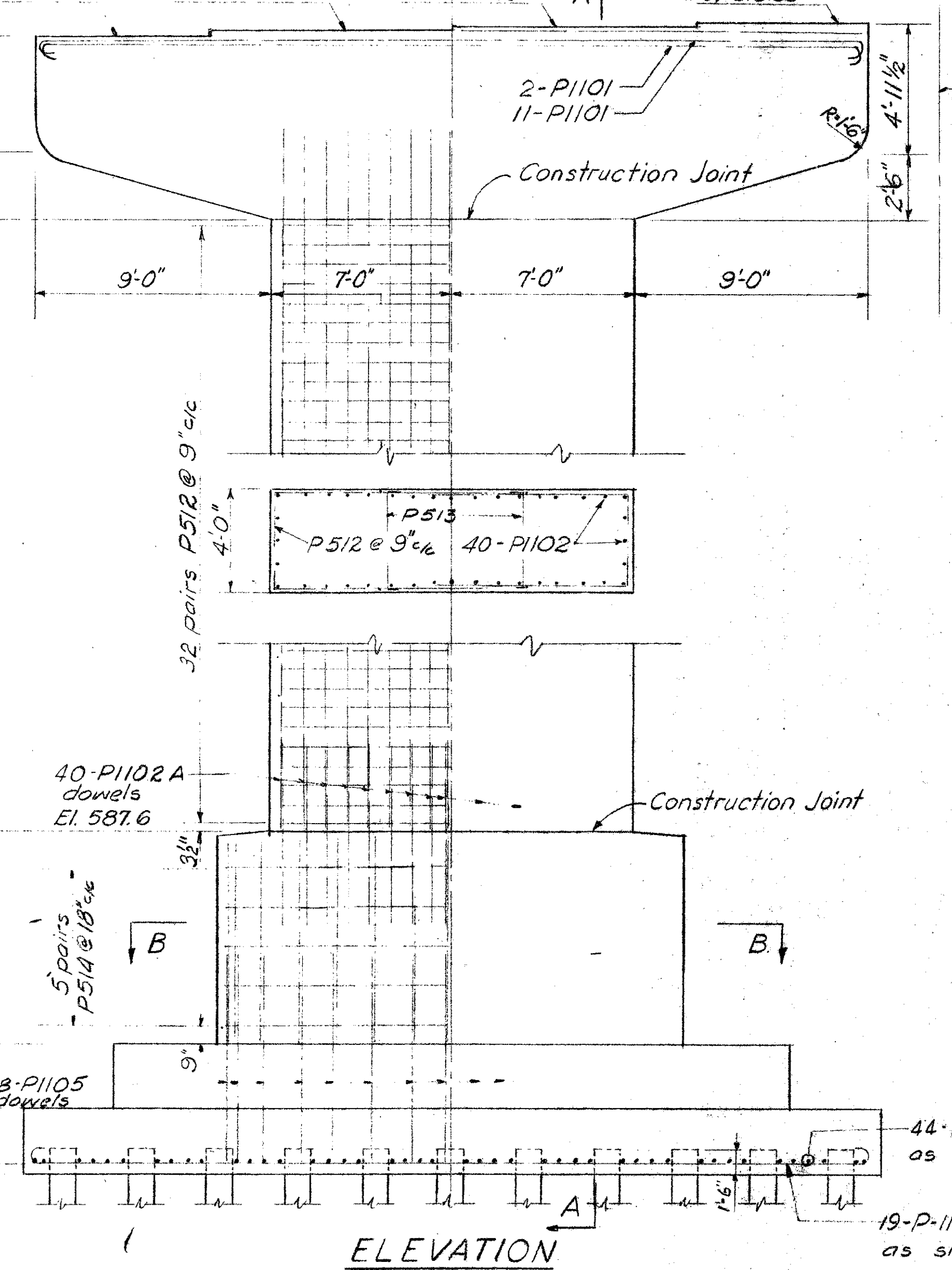
SANDUSKY CO F-585 (11)
SEC SAN 20-17.62 STA 939+21.25 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NFP	JN		WJJ	H.S.M.	11-30-58	

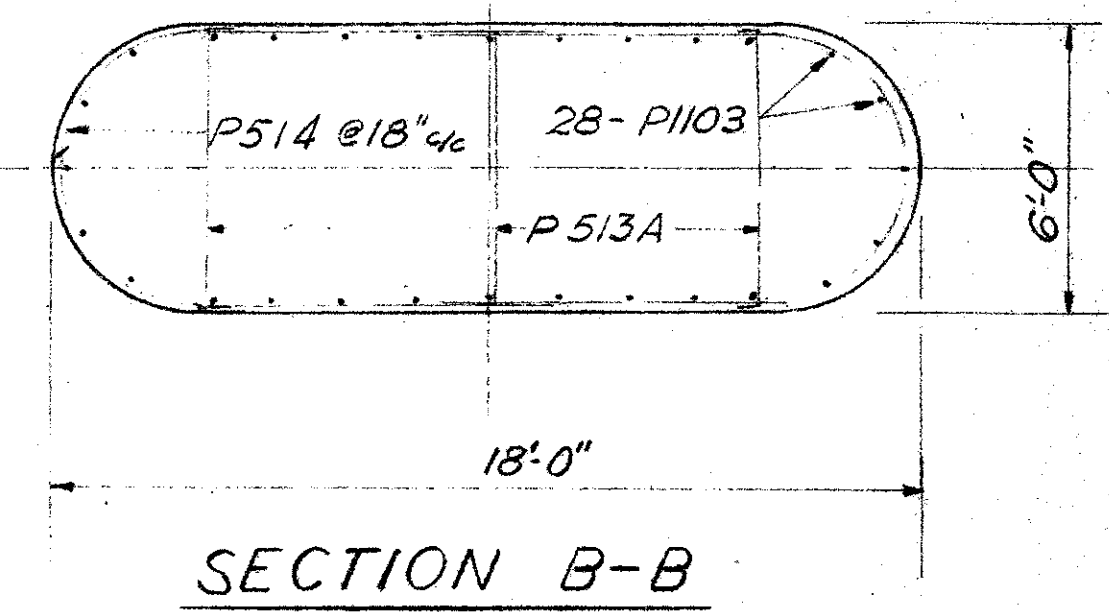
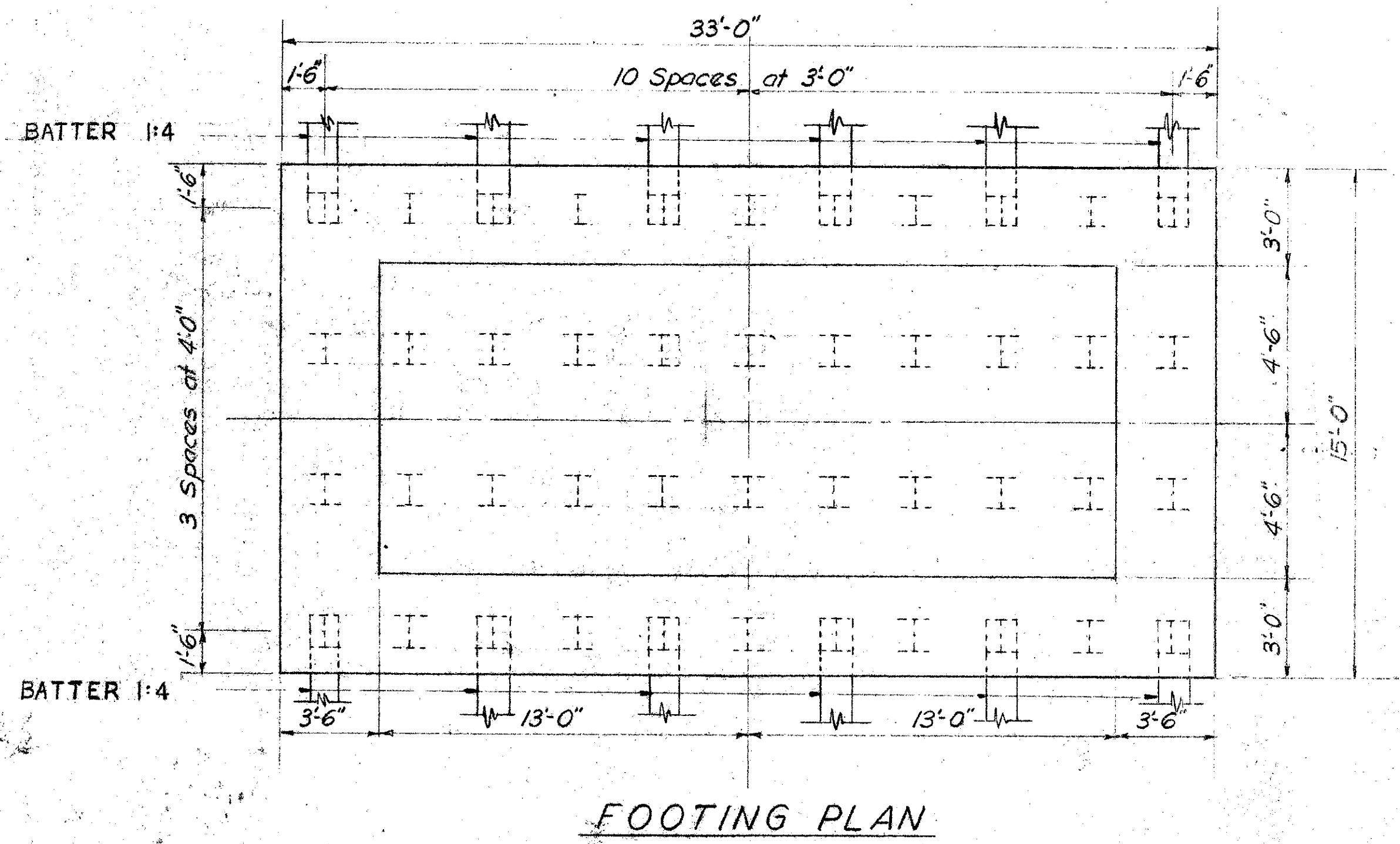
Sheets 149A thru 172A replace
Sheets 149 thru 172 2-10-56



For reinforcement and details not shown for pier cap, see "PIER 1 DETAILS"



Special care shall be taken in placing reinforcing steel in the bridge seat to clear anchor bolts.



NOTE: Elevation, Footing Plan and Section A-A shown for left pier, right pier similar.

Sheets 149 thru 172 superseded by sheets 149A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

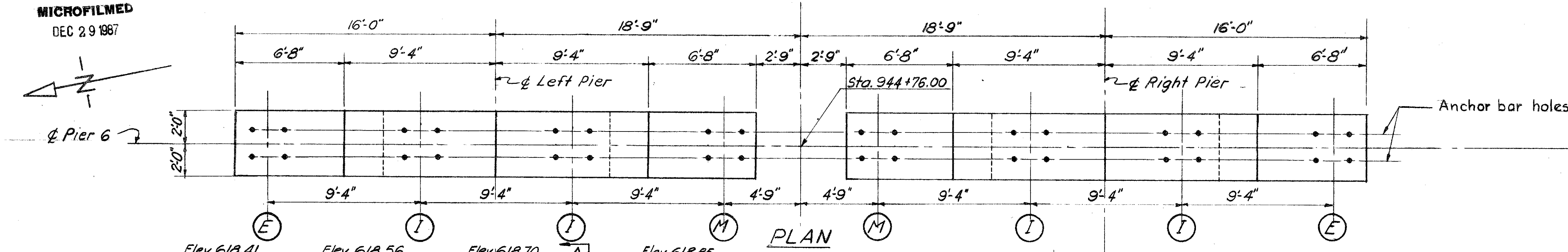
PIER 6 DETAILS
BRIDGE NO. SA-20-180
OVER THE SANDUSKY RIVER,
S.R. 53, AND N.Y.C. & ST.L. R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
WFP	JN DY		WJJ		

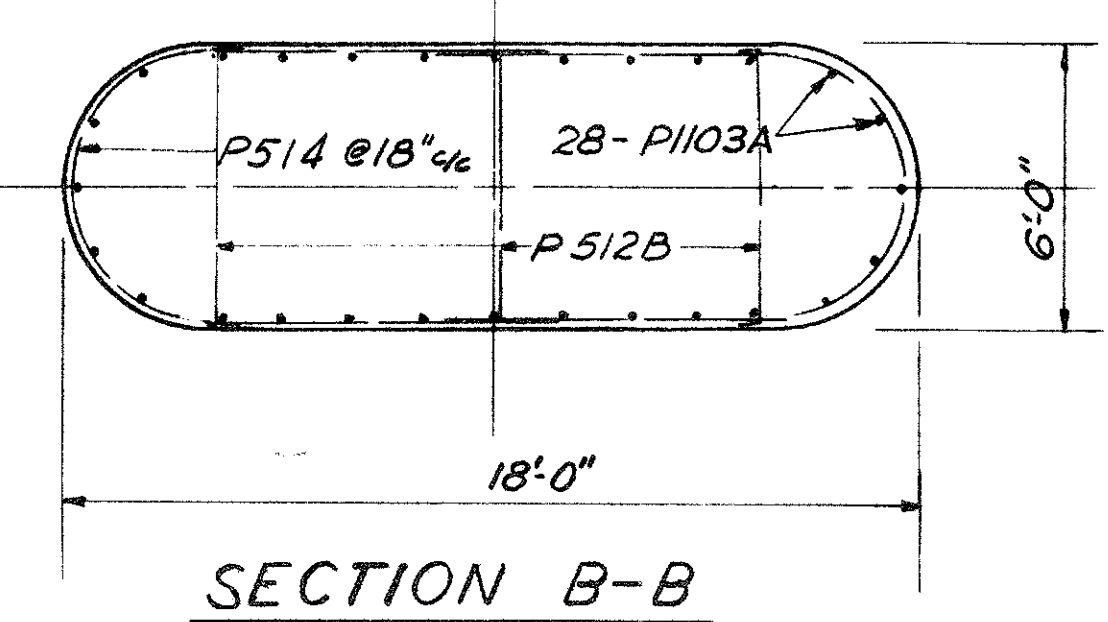
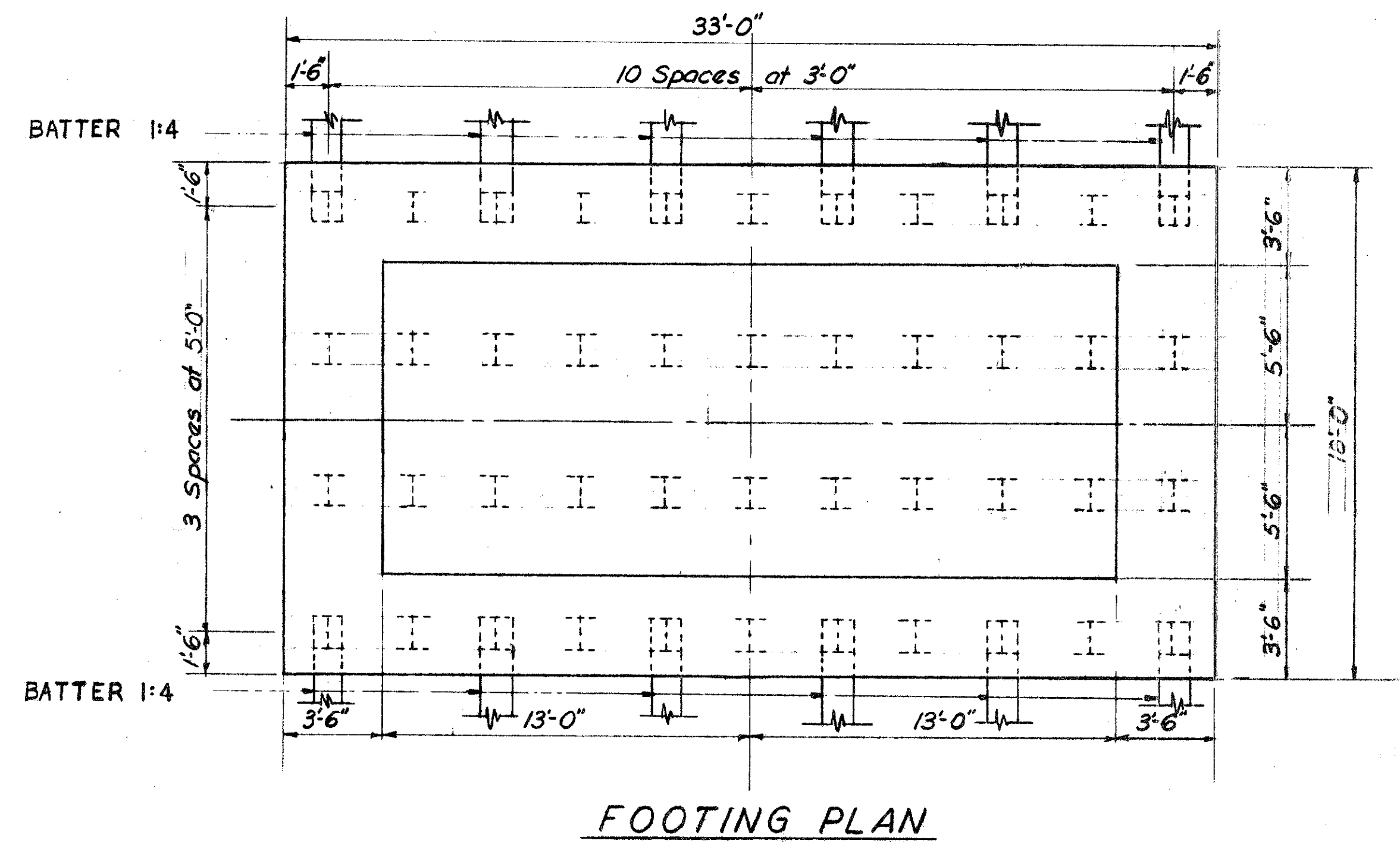
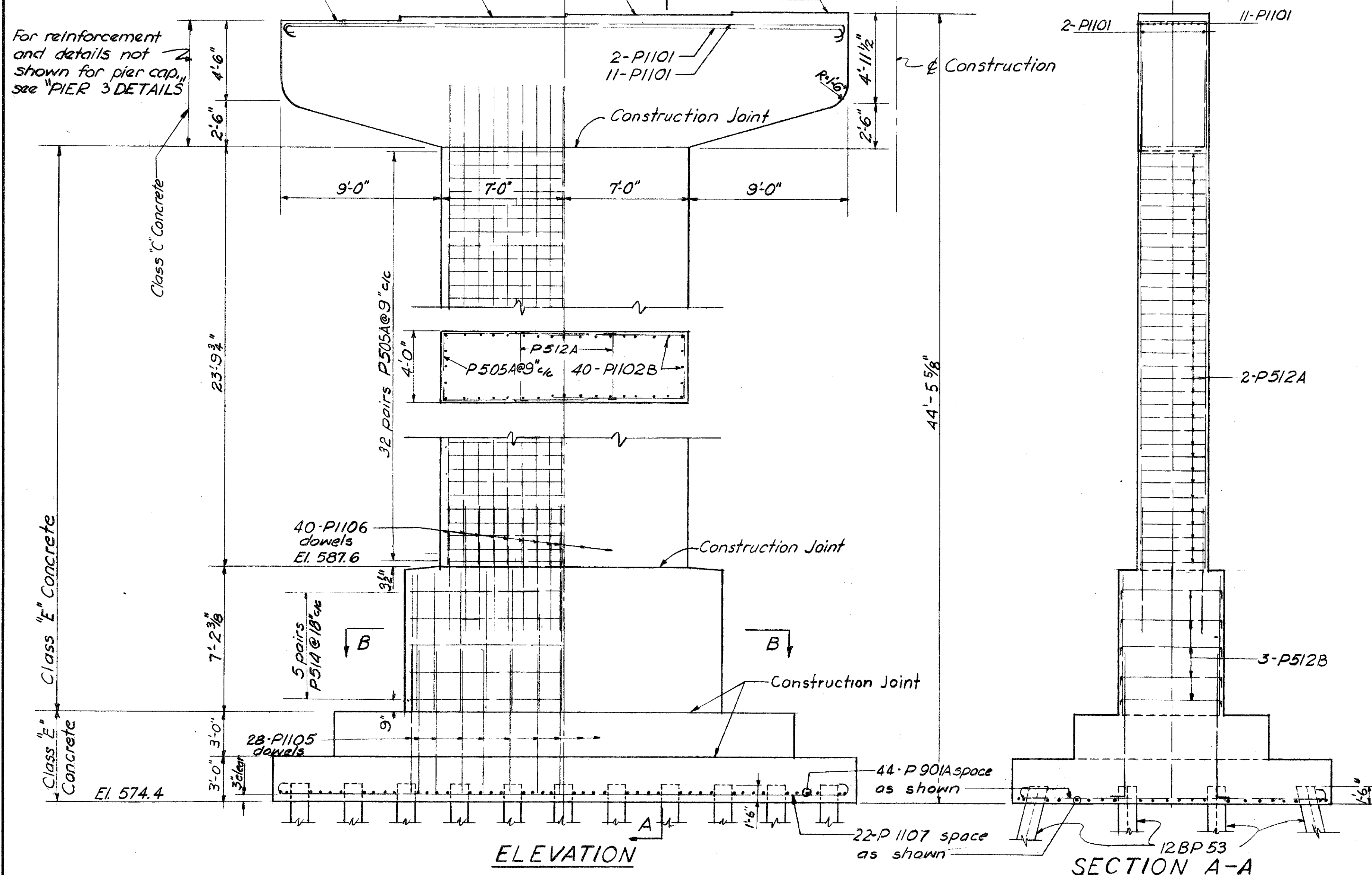
MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	158A

SANDUSKY COUNTY
SAN. 20-17.62



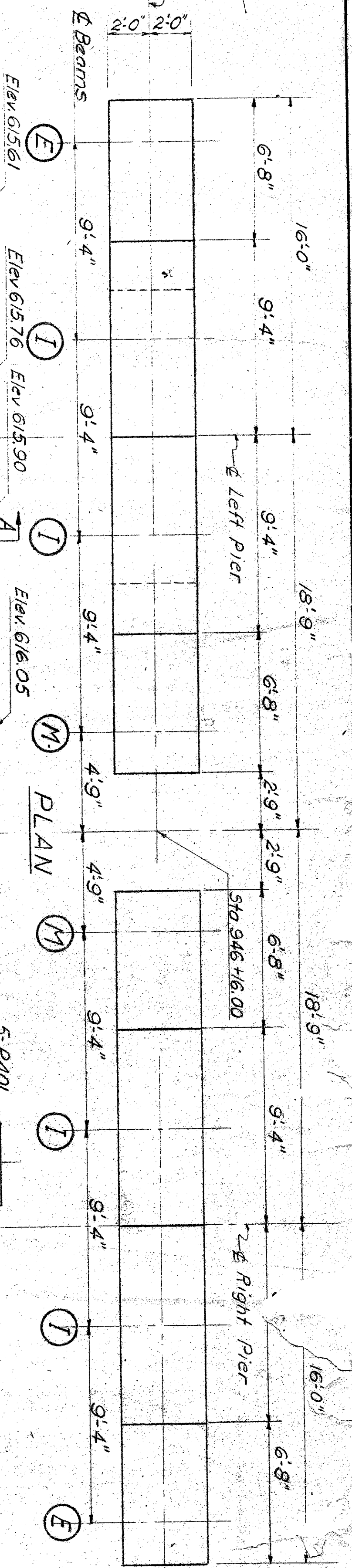
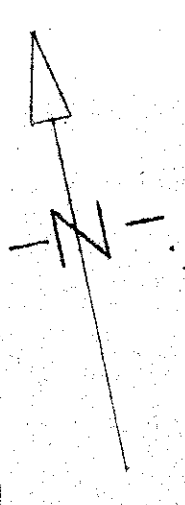
Special care shall be taken in placing reinforcing steel in the bridge seat to clear anchor bolts.



NOTE: Elevation, Footing Plan and Section A-A shown for left pier, right pier similar.

Sheets 142A thru 172A replace Sheets 149 thru 172. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILLINOIS						
PIER 6 DETAILS						
BRIDGE NO SA-20-180						
OVER SANDUSKY RIVER, SR 53, AND N.Y.C. & ST.L. R.R.						
SANDUSKY CO. F-585(11)						
SEC. SAN. 20-17.62 STA 939+21.25 TO 941+28.13						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WFP	JN DY	-	WJJ	H.S.M.	11-30-55	



For reinforcement and details not shown for pier cap see PIER 1 DETAILS

Class "C" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

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Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

Class "E" concrete

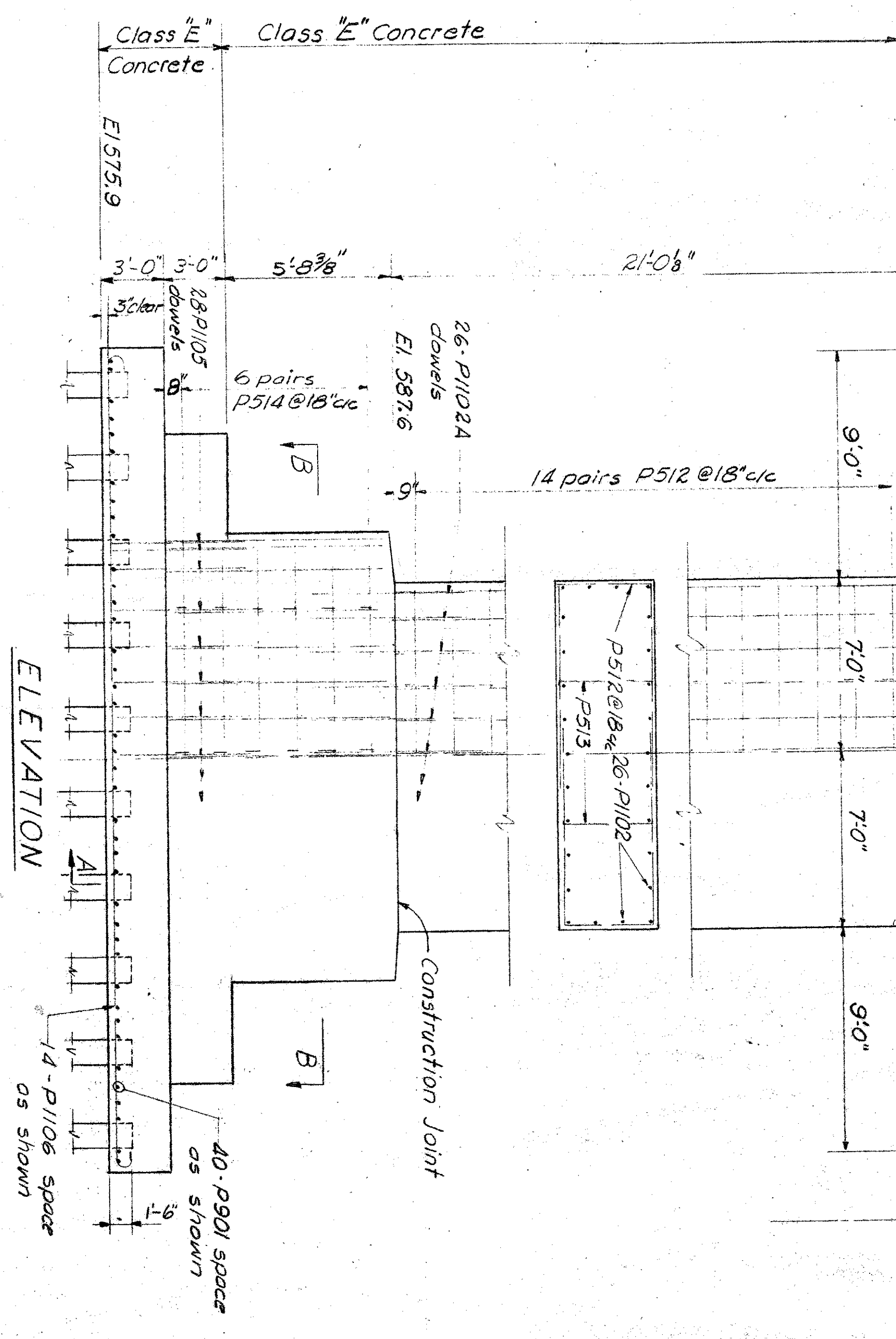
Class "E" concrete

Class "E" concrete

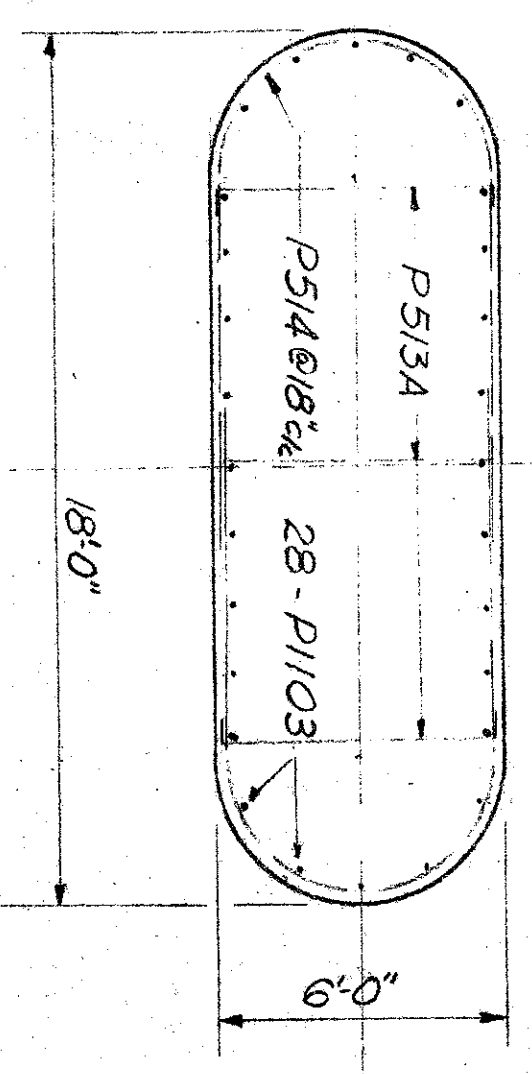
Class "E" concrete

Class "E" concrete

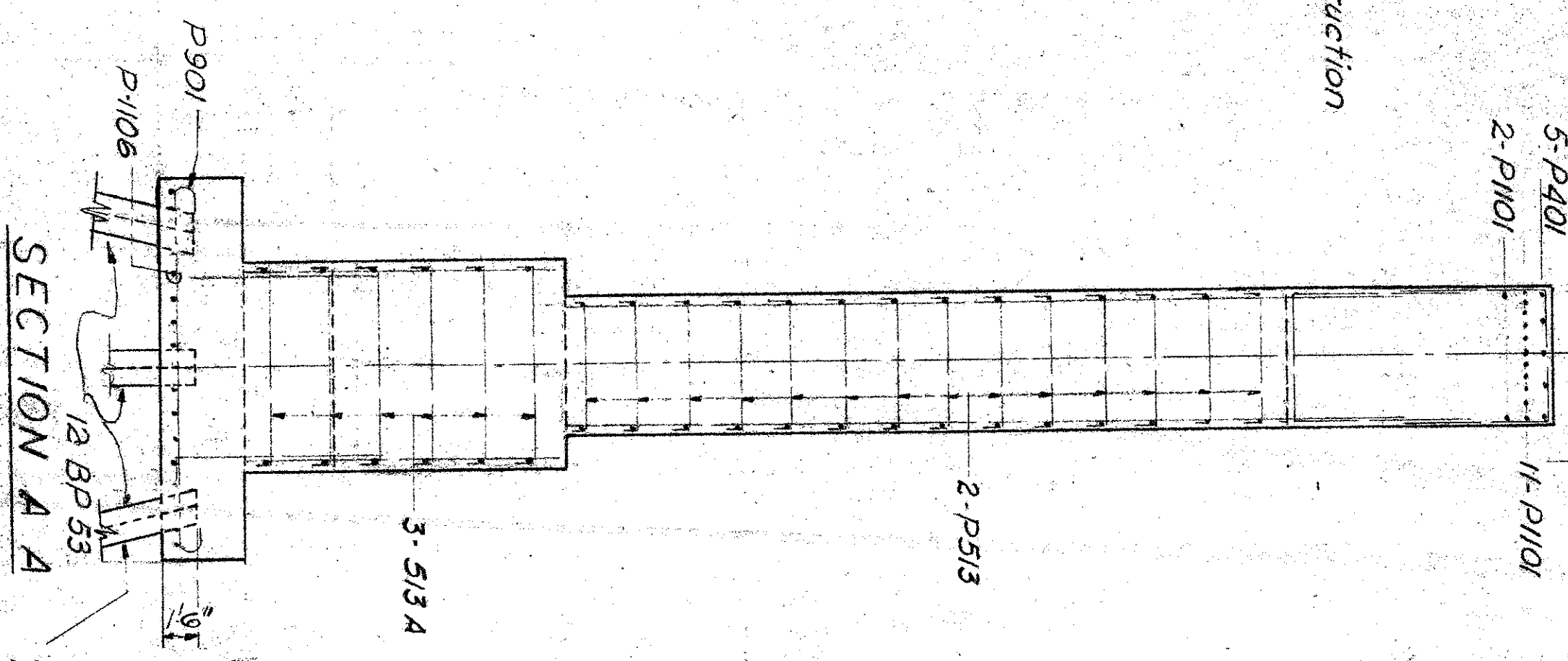
Class "E" concrete



ELEVATION

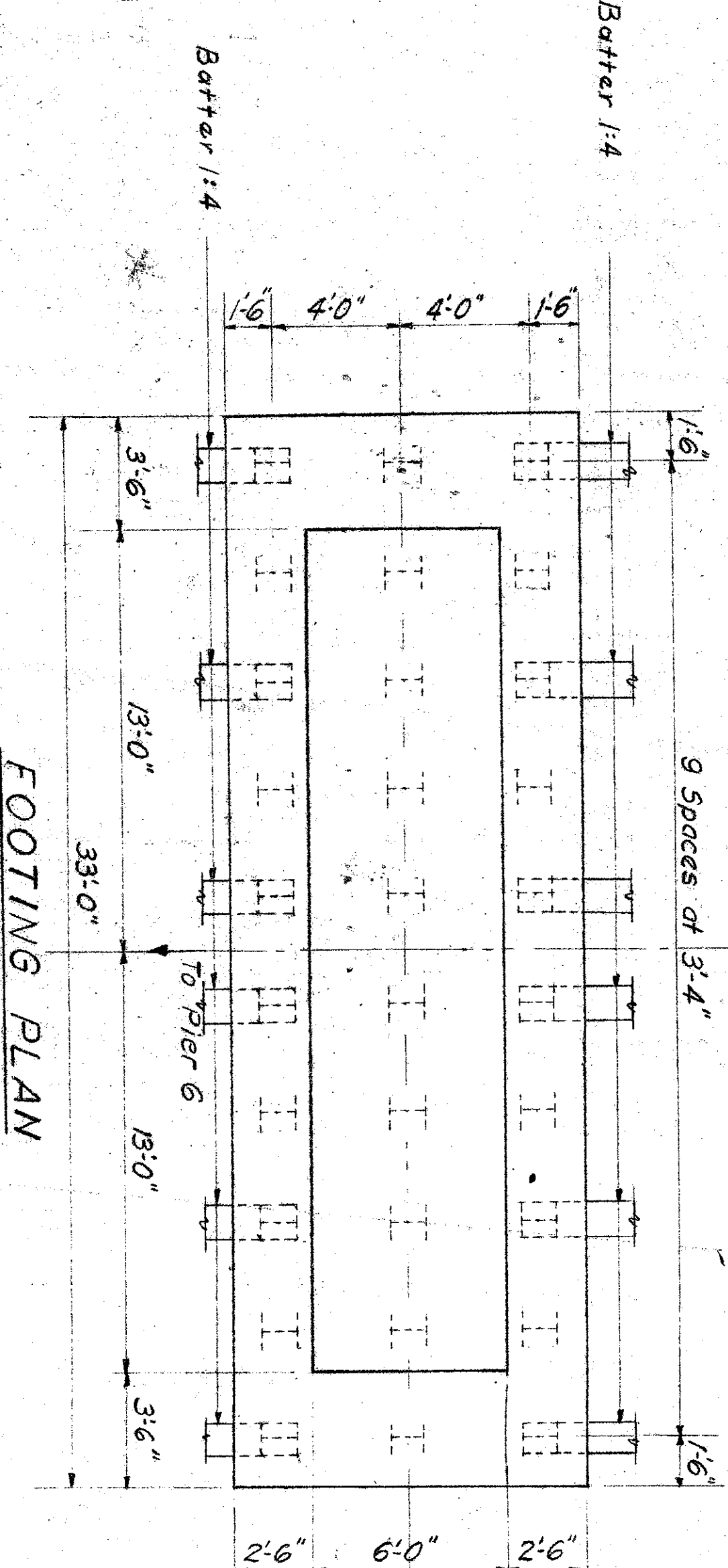


SECTION B-B



SECTION A A

Batter alternate piling 1:4 in outside rows.



FOOTING PLAN

DESIGNED
 WFP

CONSIGNED
 P.T.P.

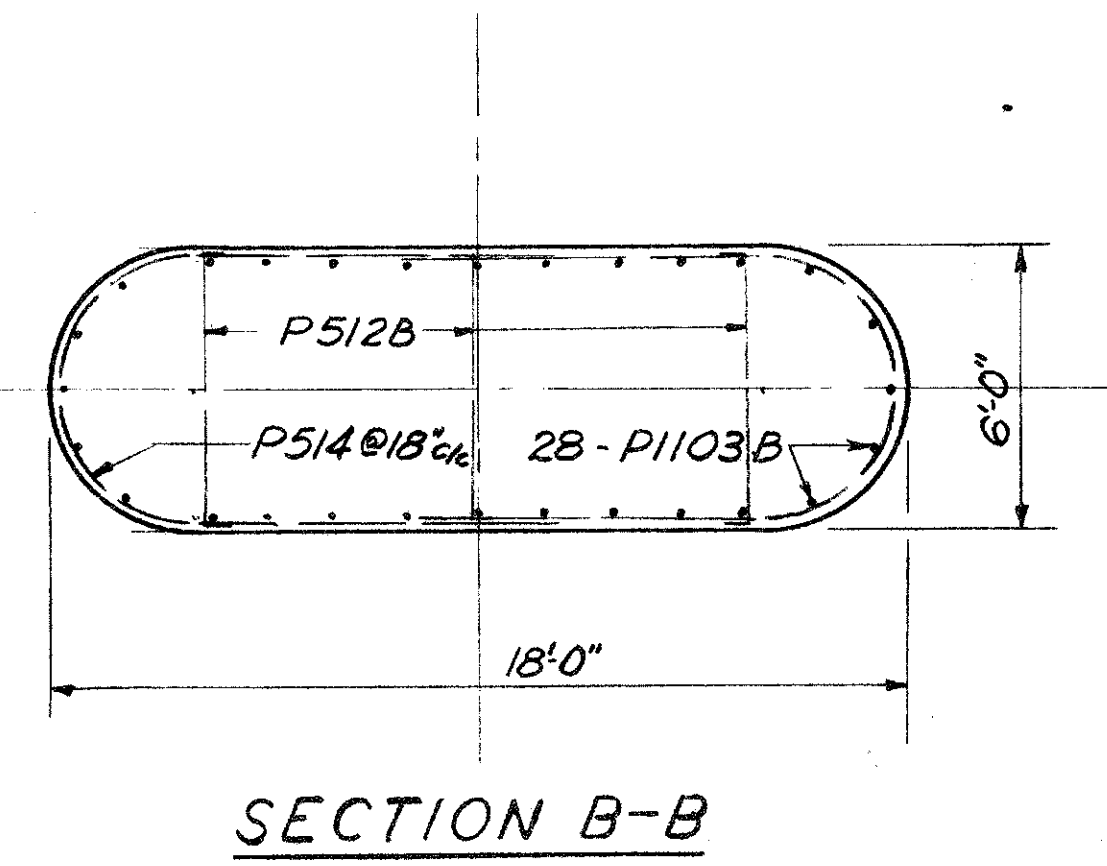
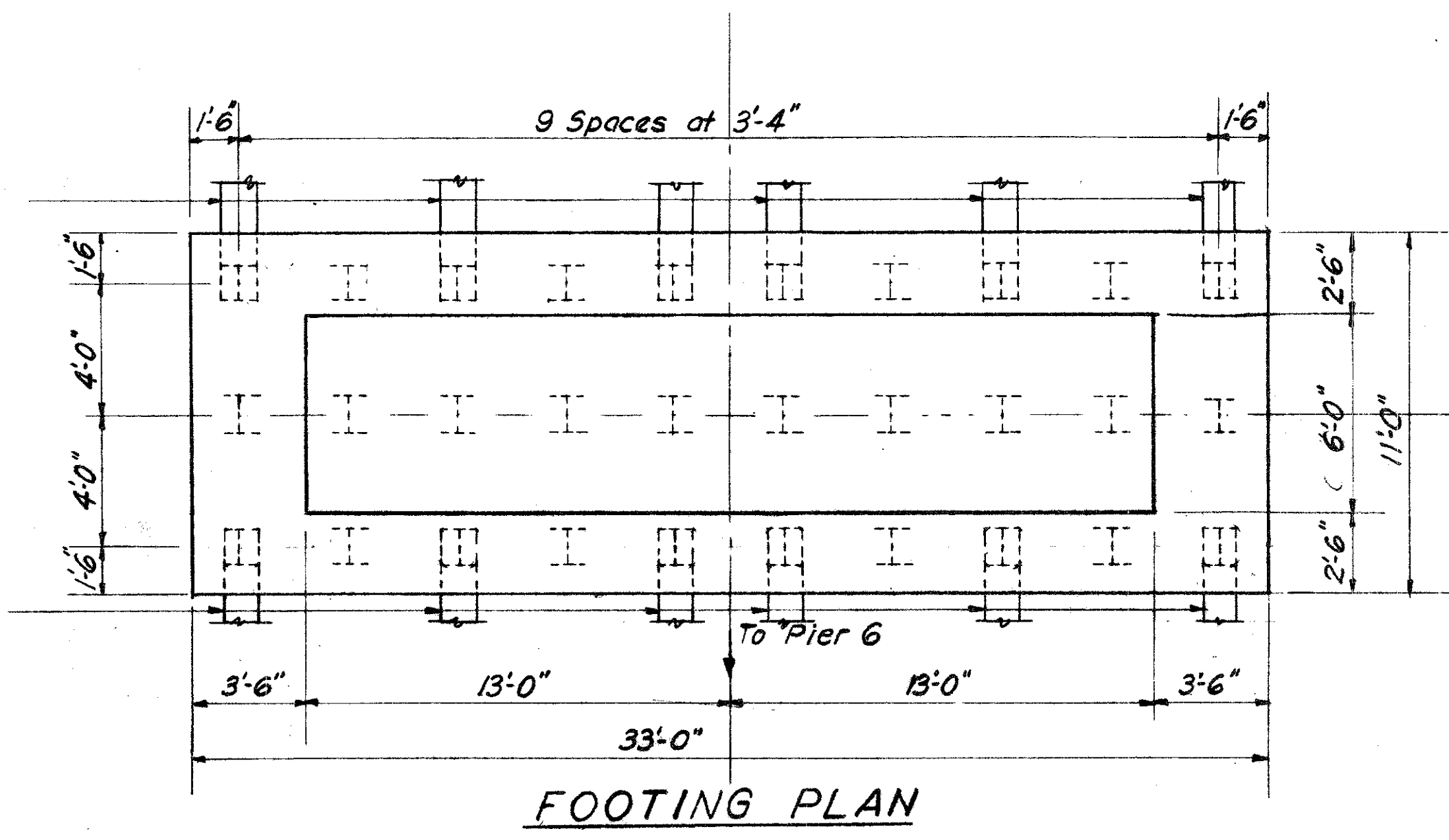
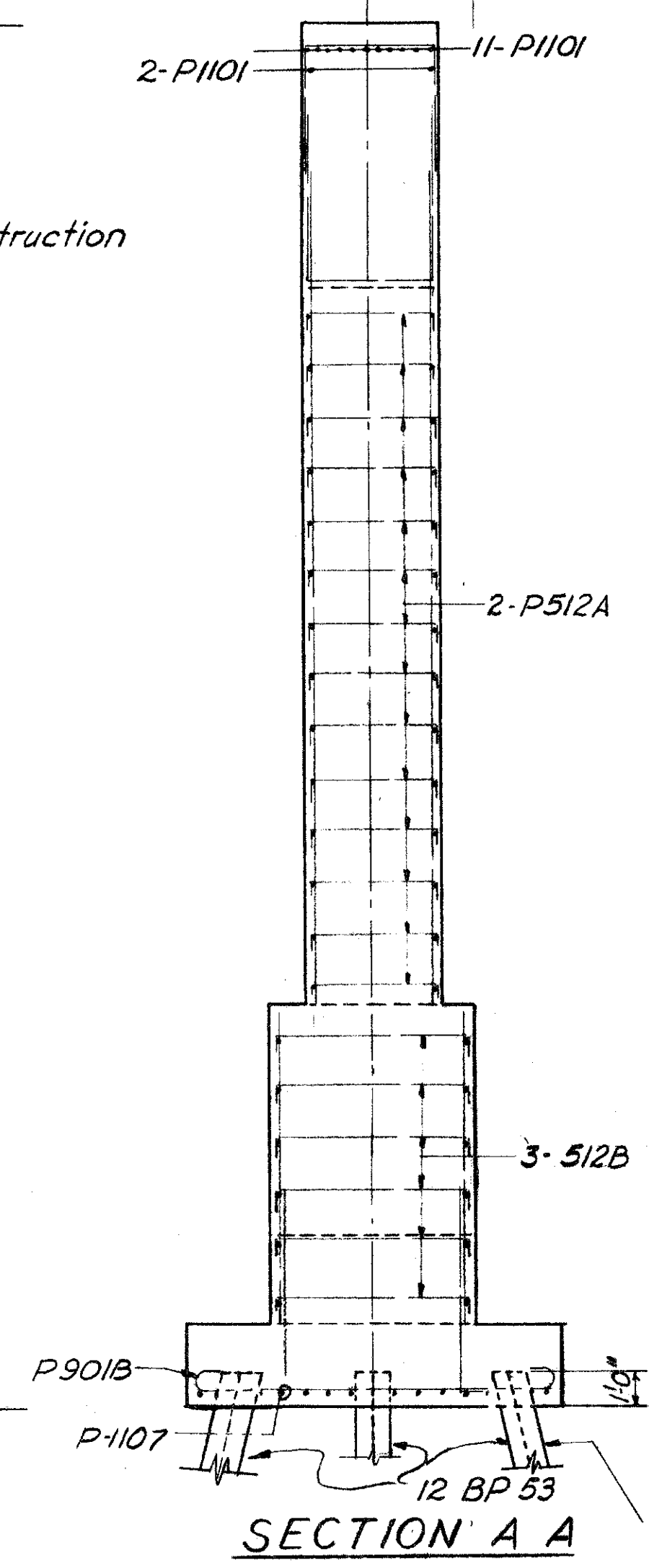
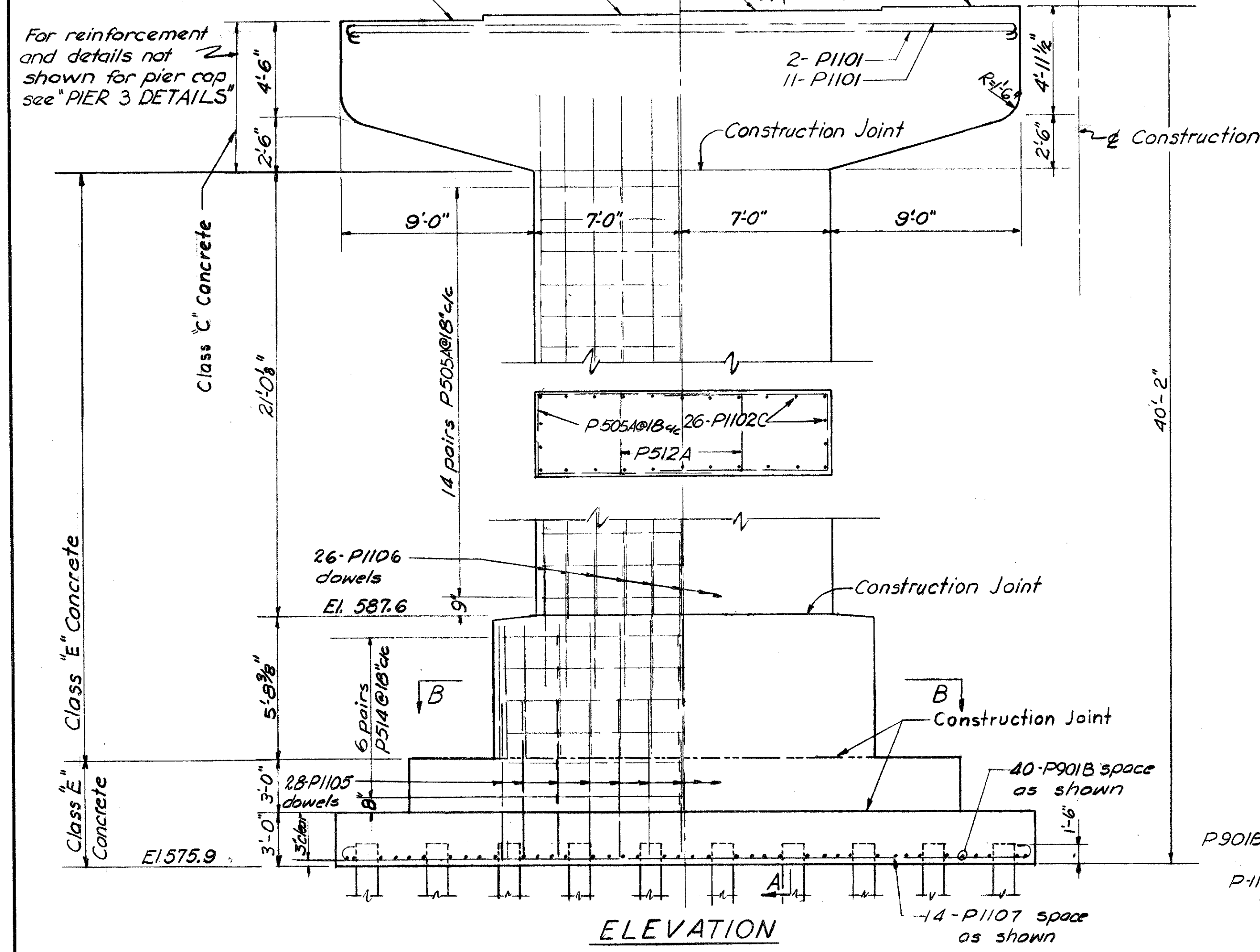
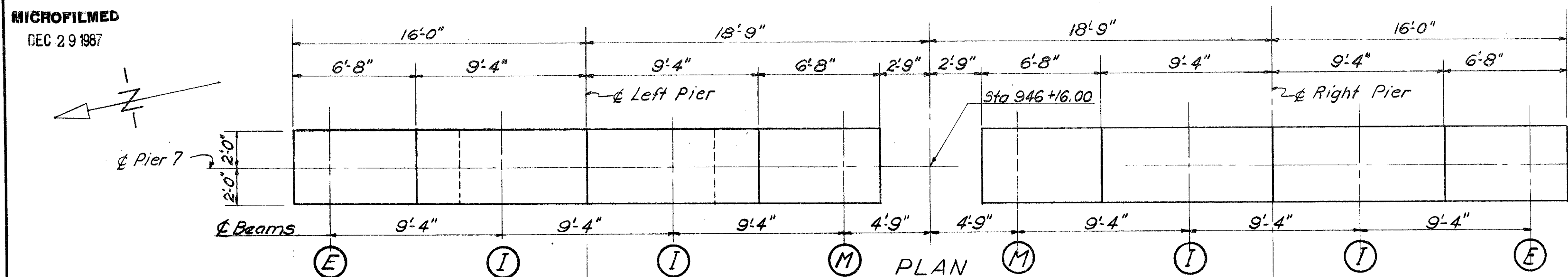
CONSIGNED
 S.R.

Sheets 148 thr
 by Sheets 149

MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	159A

SANDUSKY COUNTY
SAN. 20-17.62

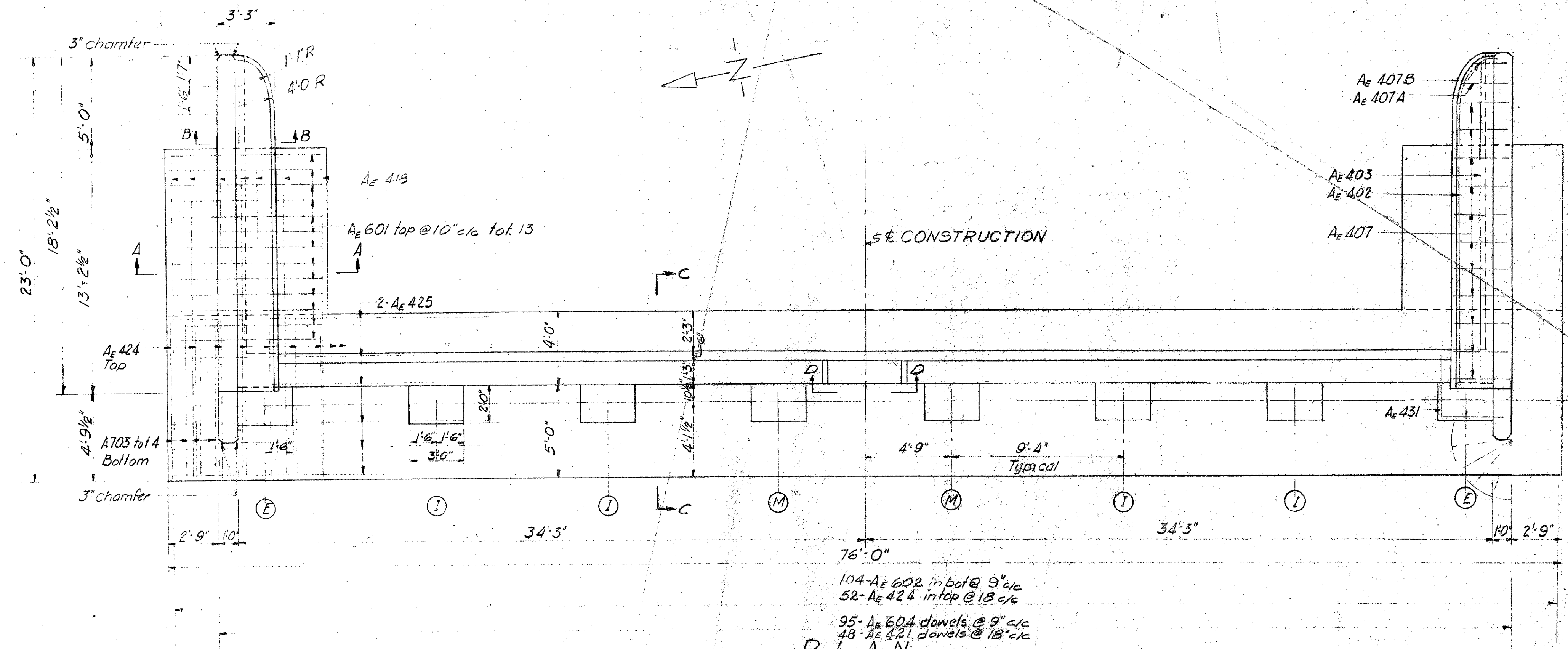


Sheets 149A thru 172A replace
Sheets 149 thru 172. 6/10-56

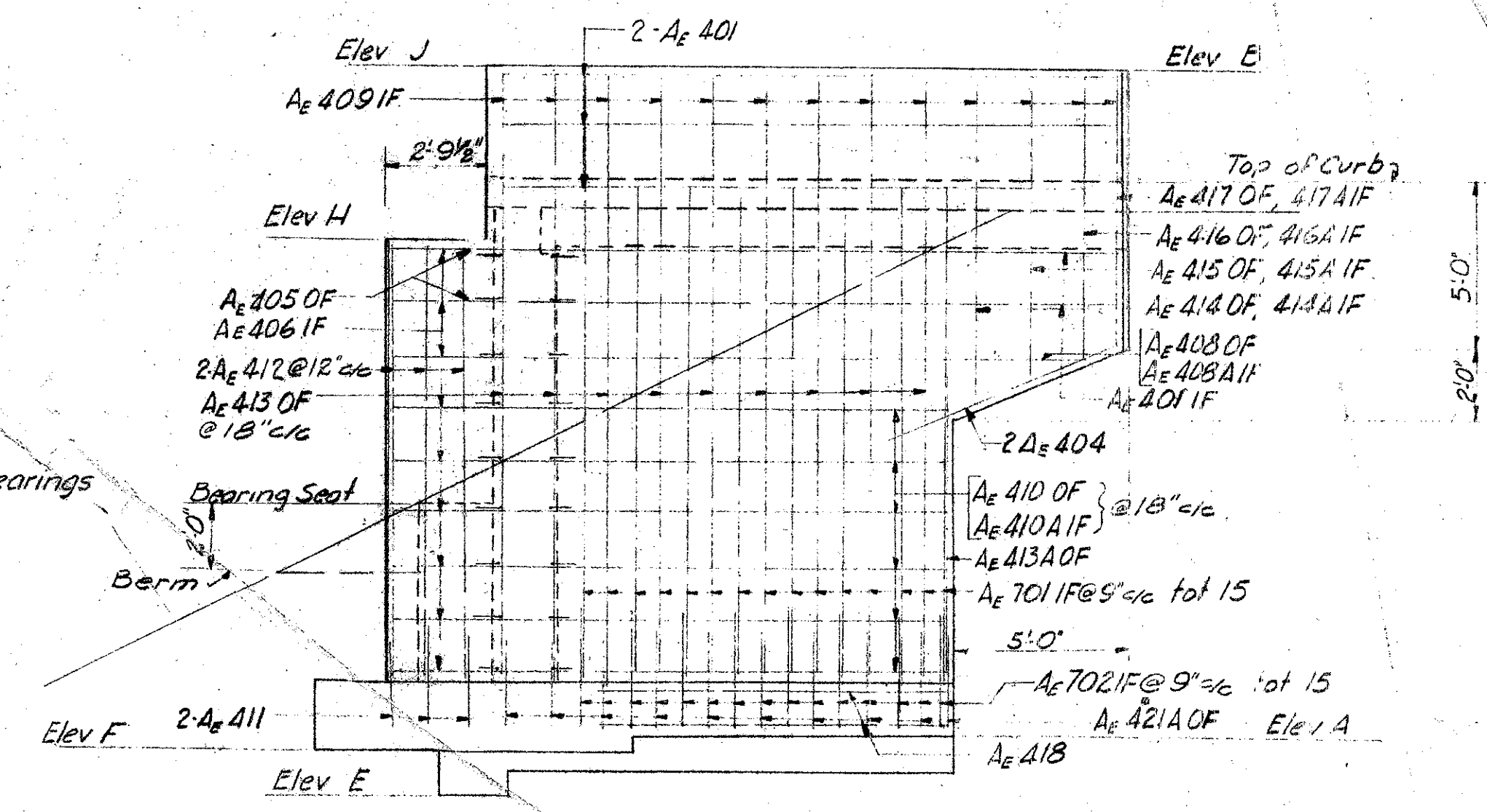
CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILLINOIS					
PIER 7 DETAILS					
BRIDGE NO. SA-20-180					
OVER SANDUSKY RIVER, SR 53, AND N.Y.C. & ST. L. R.R.					
SANDUSKY CO. F-585(11)					
SEC. SAN. 20-17.62 STA. 939+21.25 TO 941+28.13					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
WFP	JN DY	-	WJJ	HSM	11-30-55

FED. RD. DIVISION	STATE	PROJECT	TYPE FUN.
2	OHIO	F-585(11)	

SANDUSKY COUNTY

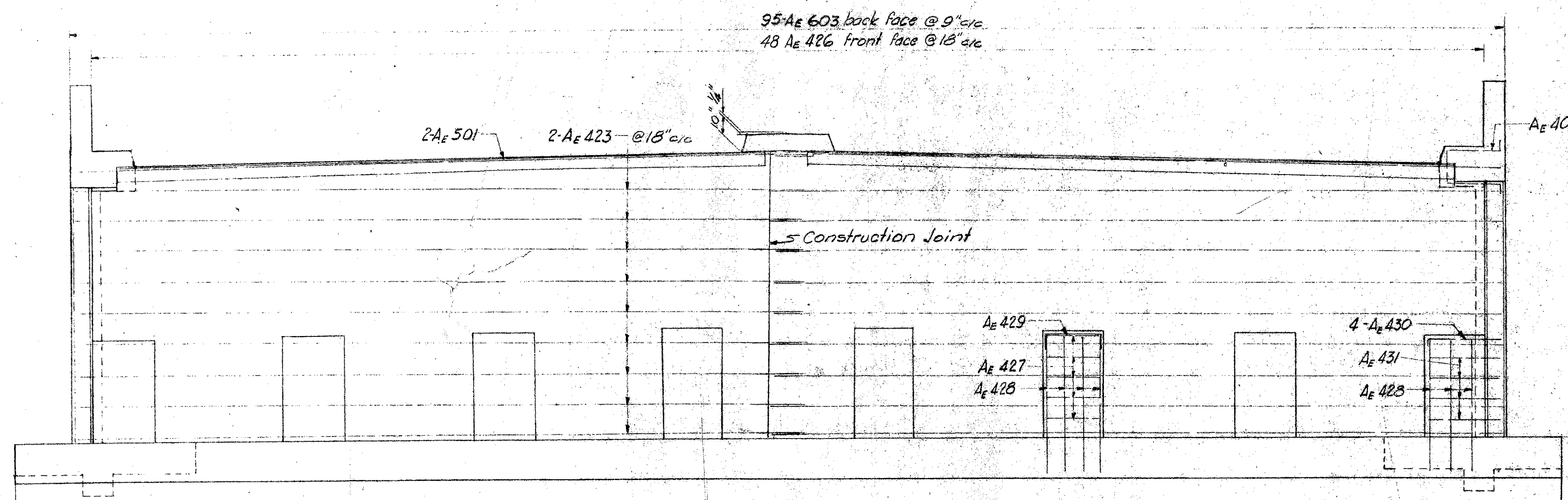


PLAN



END ELEVATION

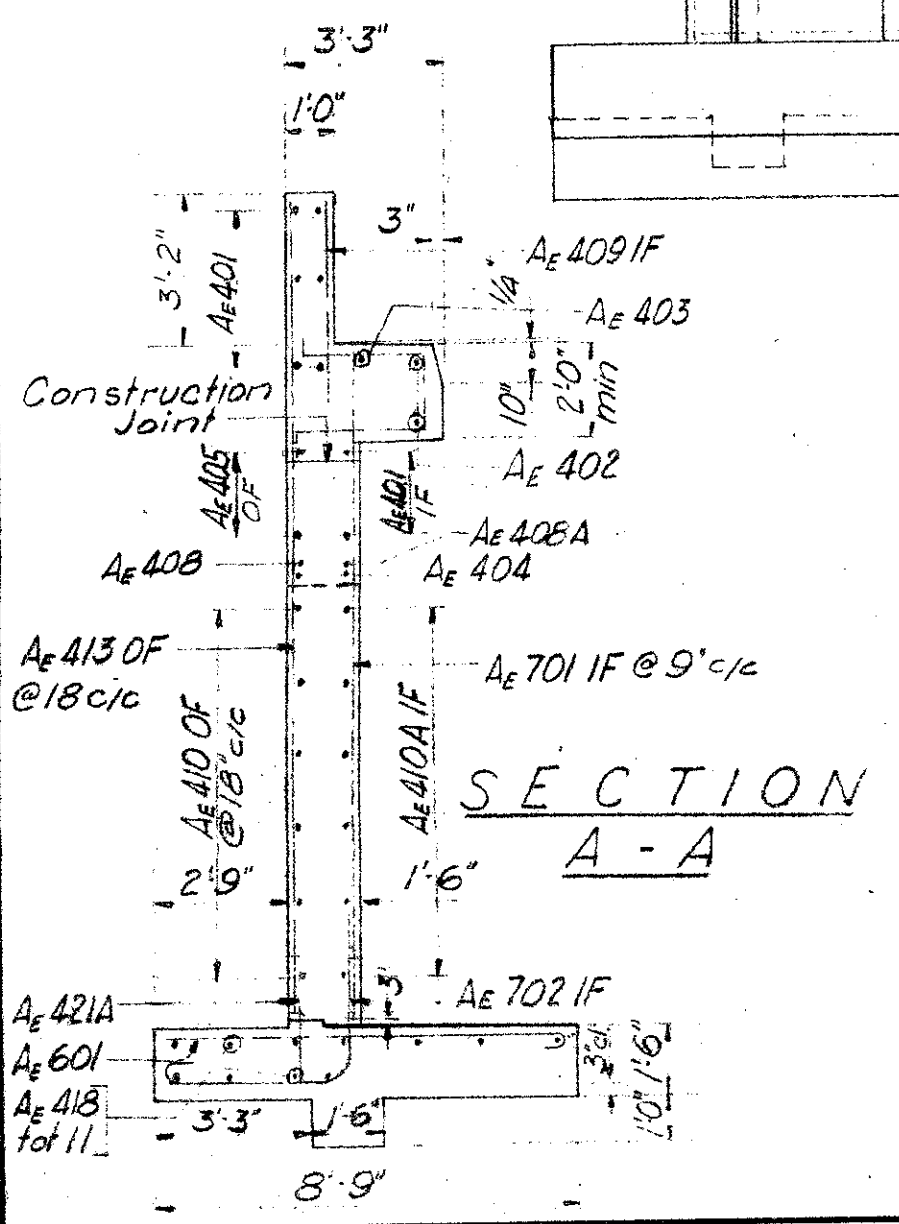
Point	A	B	E	F	H	J	K
Elev.	606.54	625.57	604.79	606.04	621.09	626.16	622.58



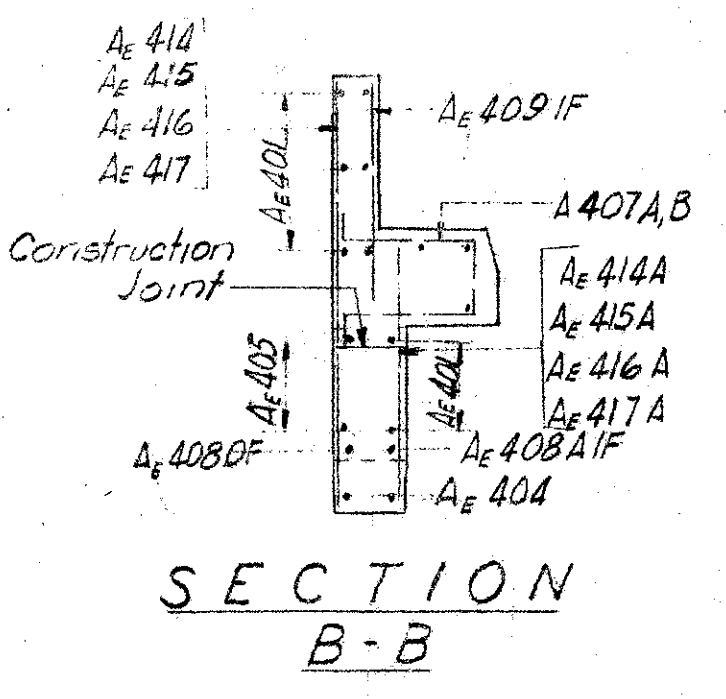
ELEVATION

PROCEDURE: The embankment shall be placed and compacted to the height of the earth bench, after which excavation shall be made for the abutment and side walls. Pour toe of footings against neat lines.

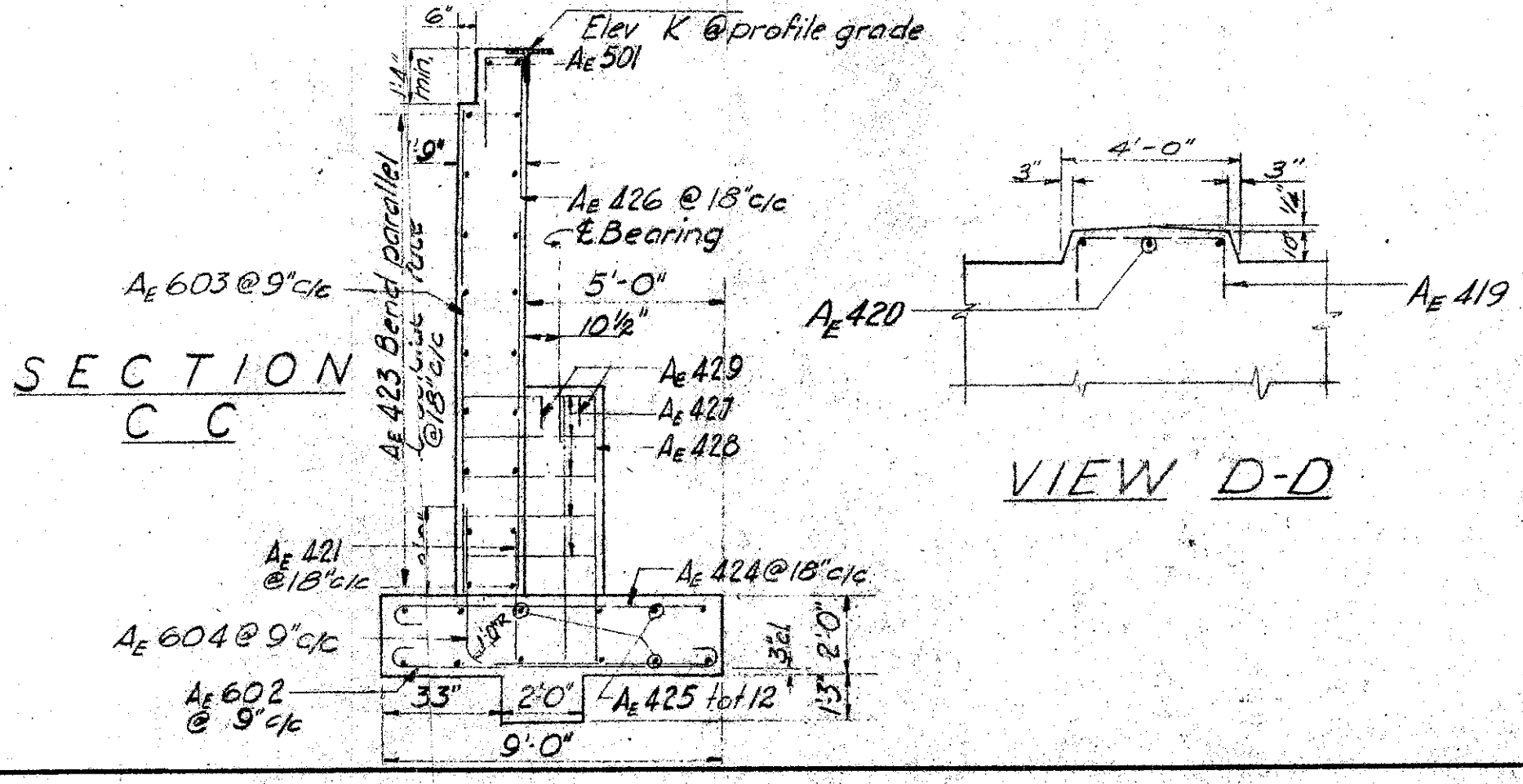
This sheet will be revised redesign of the footing of piling.



SECTION A-A



SECTION B-B



SECTION C-C

VIEW D-D

Beam	Top of Concrete @ Stringer					
	E	I	M	I	I	G
Elev.	613.54	613.69	613.83	613.98	613.83	613.69

CONSOER, TOW
CONSULTING ENGINEER

EAST ABUT

BRIDGE 1
OVER THE S.
S.R.53, AND N.Y.

Sheets 149 thru 172 superseded by
Sheets 149A thru 172A. 2-10-56

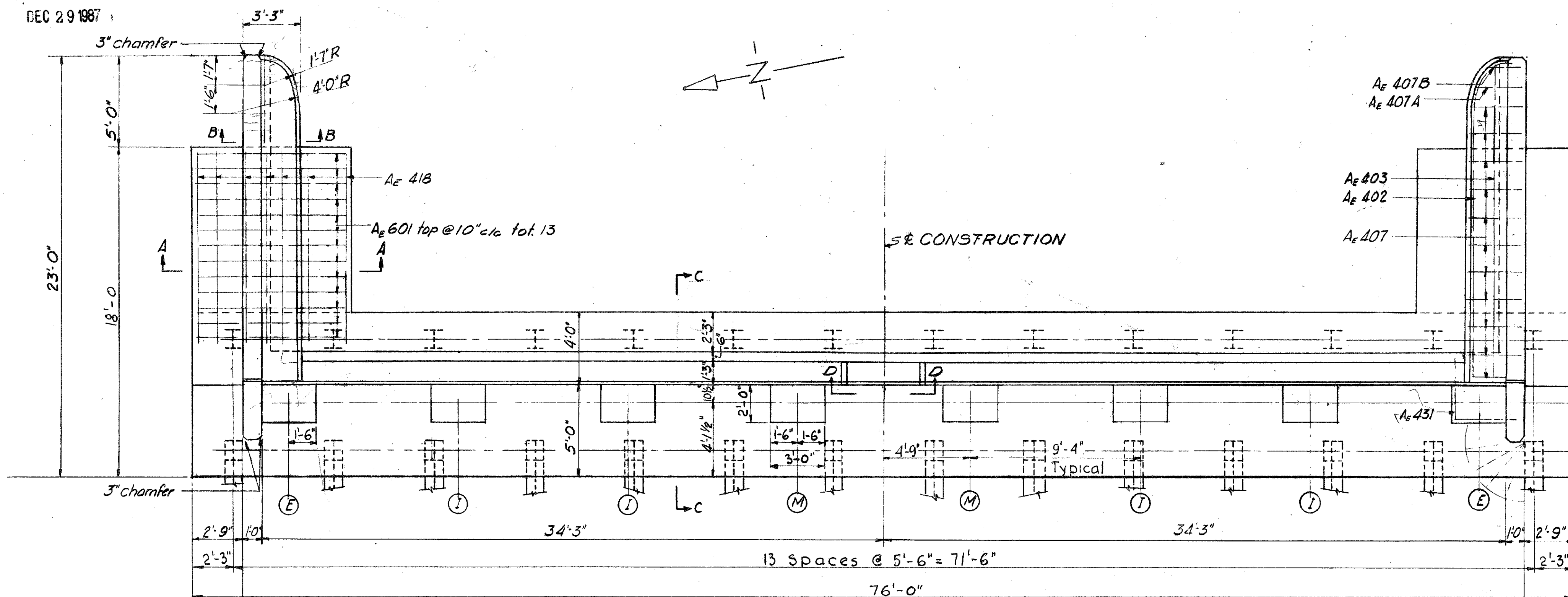
DESIGNED	DRAWN	TRACED
DY	DY	

MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

160A

SANDUSKY COUNTY
SAN. 20-17.62



95-A_E 604 dowels @ 9" c/c
48-A_E 421 dowels @ 18" c/c

PLAN

95-A_E 603 back face @ 9" c/c
48-A_E 426 front face @ 18" c/c
48-A_E 422 @ 18" c/c

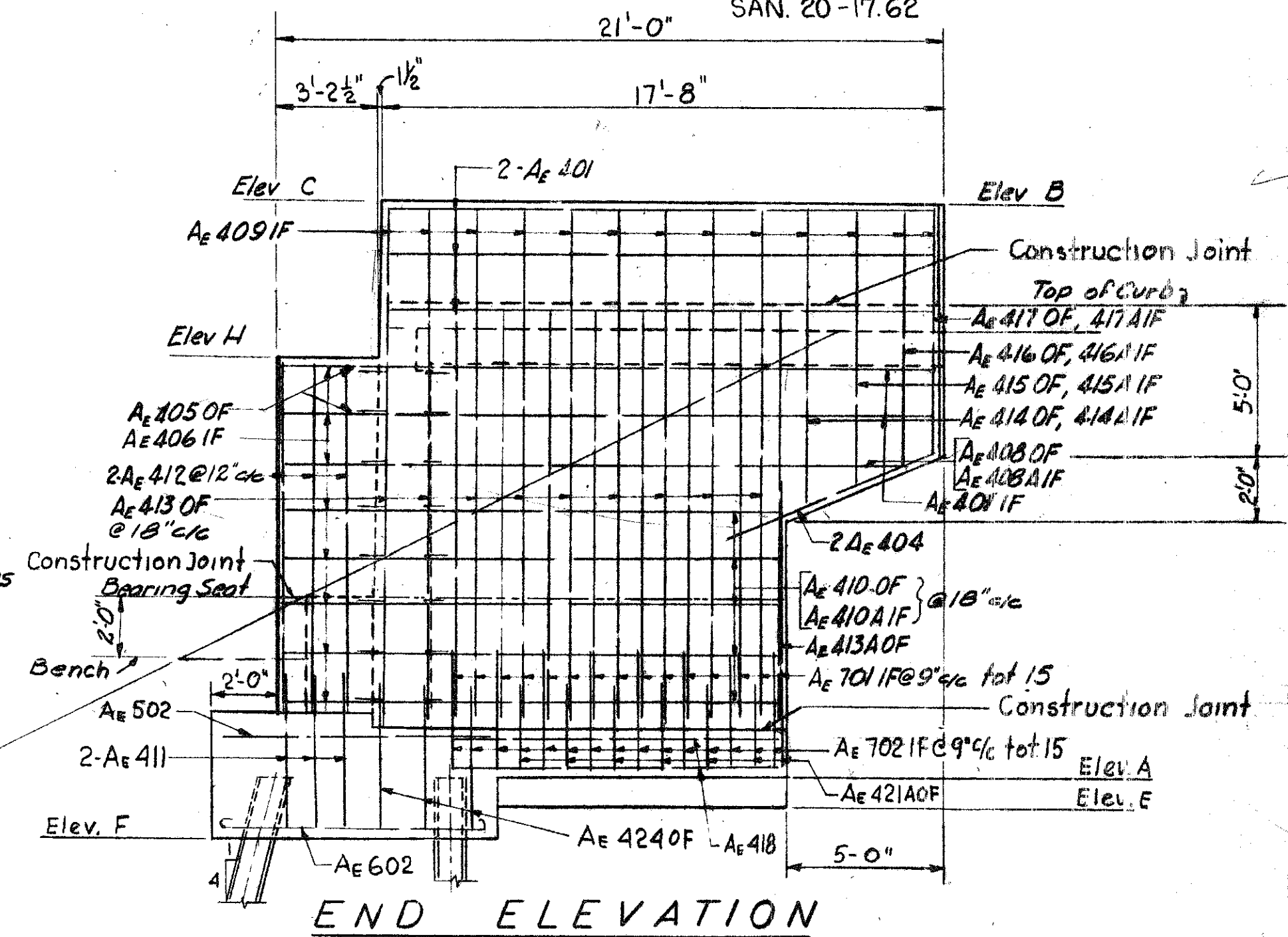
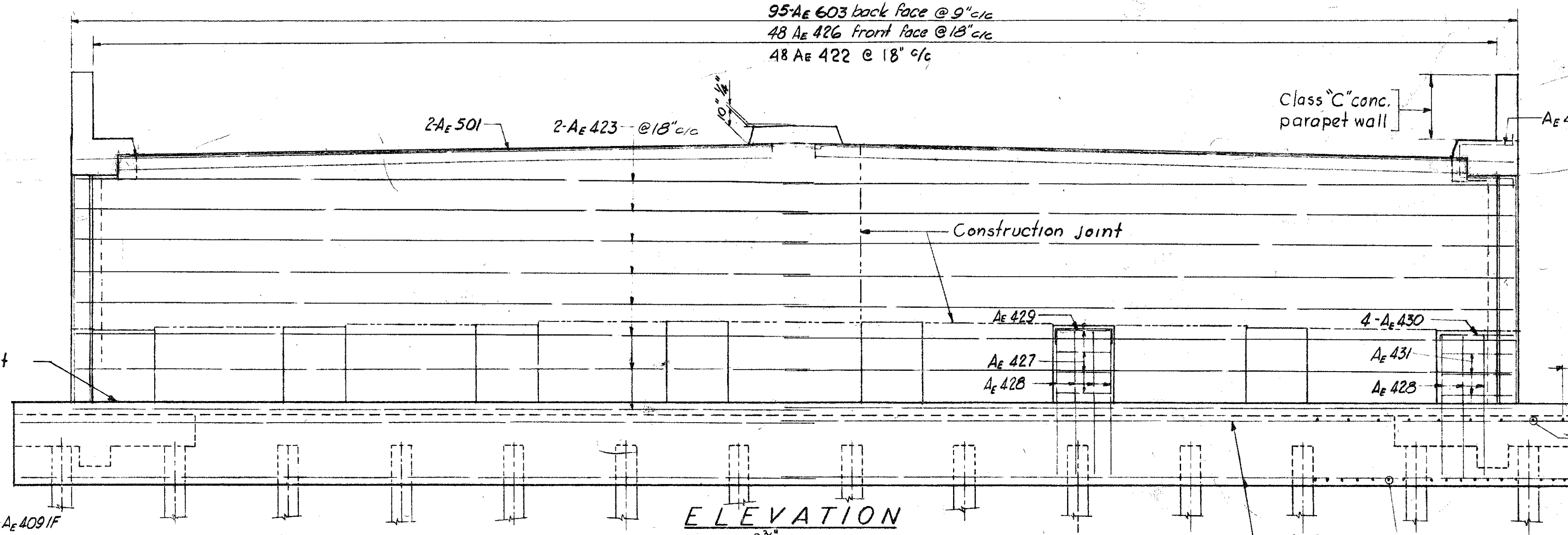


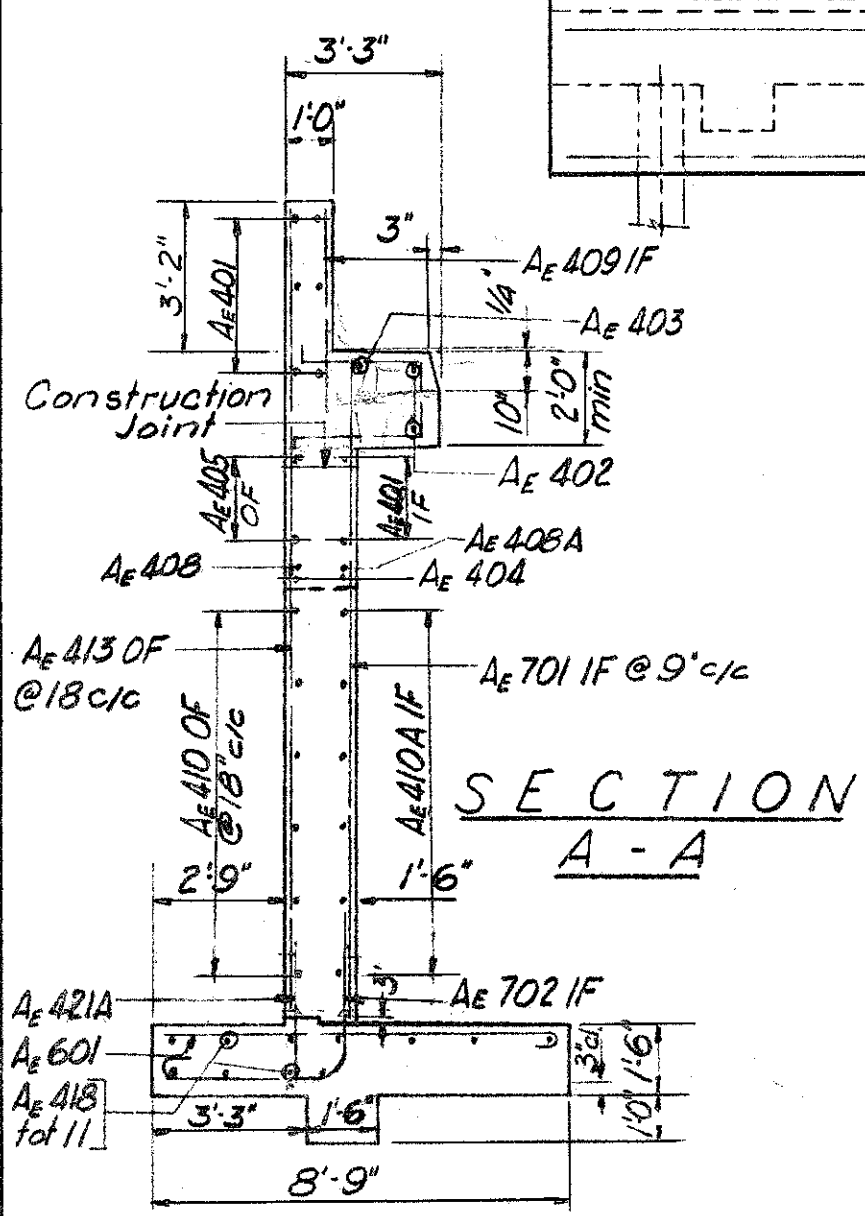
TABLE OF ELEVATIONS

Point	A	B	C	D	E	F	H
Elev.	608.04	625.68	626.16	622.58	607.04	606.04	621.09

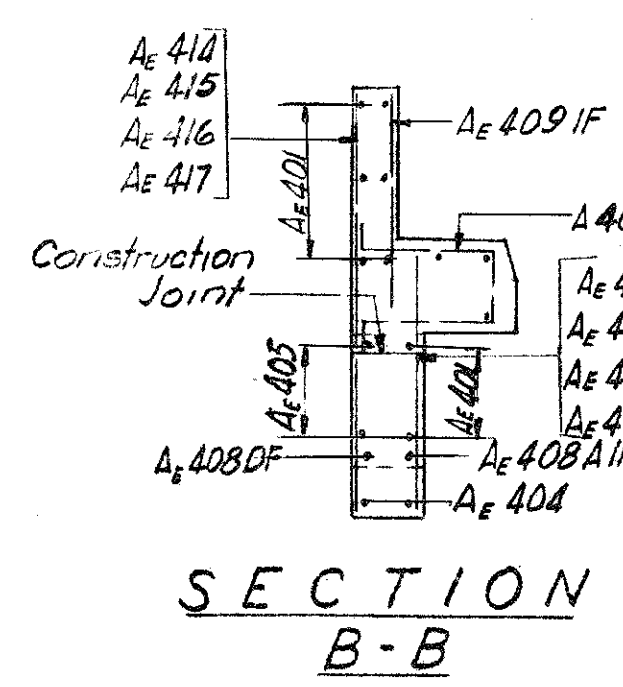


ELEVATION

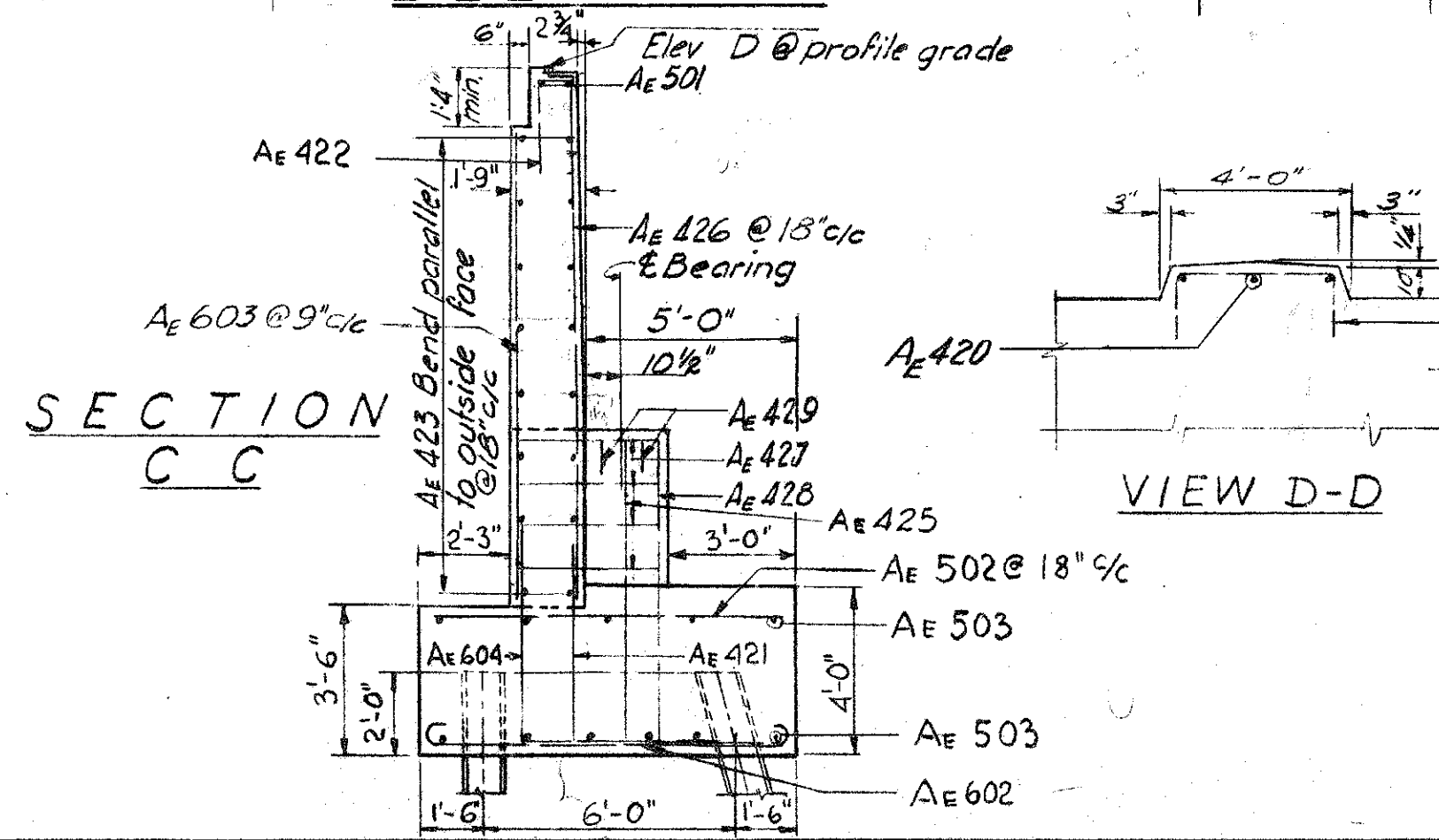
PROCEDURE: The embankment shall be placed and compacted to the height of the earth bench, after which excavation shall be made for the abutment and side walls.



SECTION A-A



SECTION B-B



SECTION C-C

VIEW D-D

TABLE OF BEAM SEAT ELEVATIONS
Top of Concrete @ Stringer

Beam	E	I	I	M	M	I	I	E
Elev.	613.55	613.70	613.85	613.99	613.99	613.85	613.70	613.55

CONSOER. TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

EAST ABUTMENT DETAILS
BRIDGE NO SA 20-180

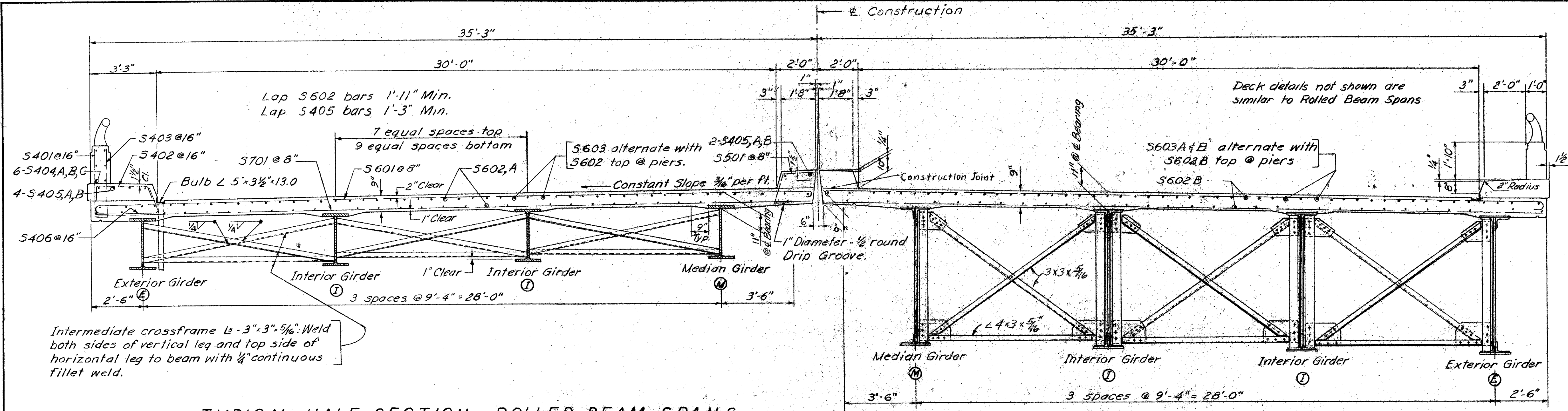
OVERSANDUSKY RIVER, SR 53, AND N.Y.C. & ST.L. R.R.
SANDUSKY CO. F-585 (11)
SEC. SAN. 20-17.62 STA. 939+21.25 TO 941+28.13

DESIGNED	DY	TRACED	-	CHECKED	C.W.W.	REVIEWED	H.S.M.	DATE	11-30-55	REVISED	
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Sheets 149A thru 172A replace
Sheets 149 thru 172.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

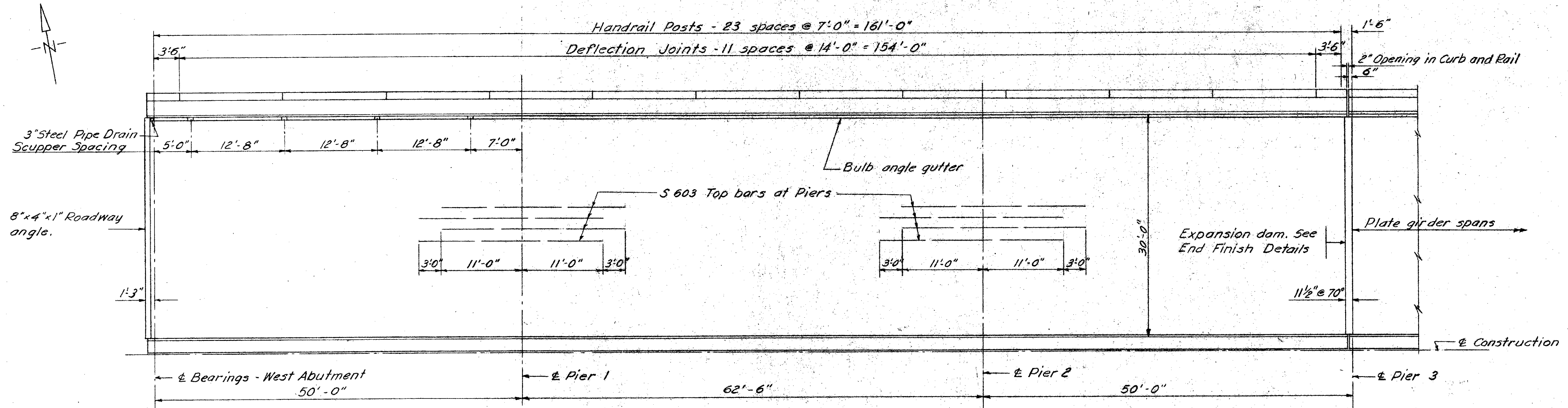
SANDUSKY COUNTY



Note: Deck details are symmetrical about centerline construction. Slab thickness shown is 1" for monolithic wearing surface. Reinforcing steel in parapets to be paid for under Item 5-4.

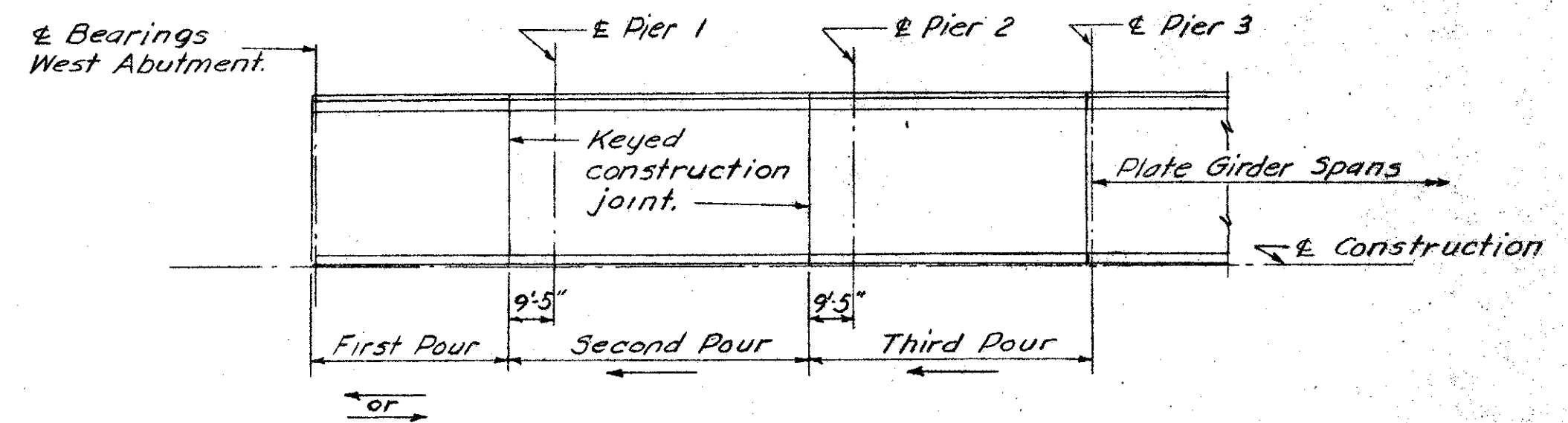
TYPICAL HALF SECTION - ROLLED BEAM SPANS

TYPICAL HALF SECTION - PLATE GIRDER SPANS



FLOOR PLAN - SPANS 1 THRU 3

Note: Left Bridge shown Right Bridge similar.



CONCRETE POURING SEQUENCE - SPANS 1 THRU 3

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS
TYPICAL SECTIONS AND FLOOR PLAN - SPANS 1 THRU 3
BRIDGE NO. SA-20-180
OVER THE SANDUSKY RIVER,
S.R. 53 AND N.Y.C. & ST. L. R.R.

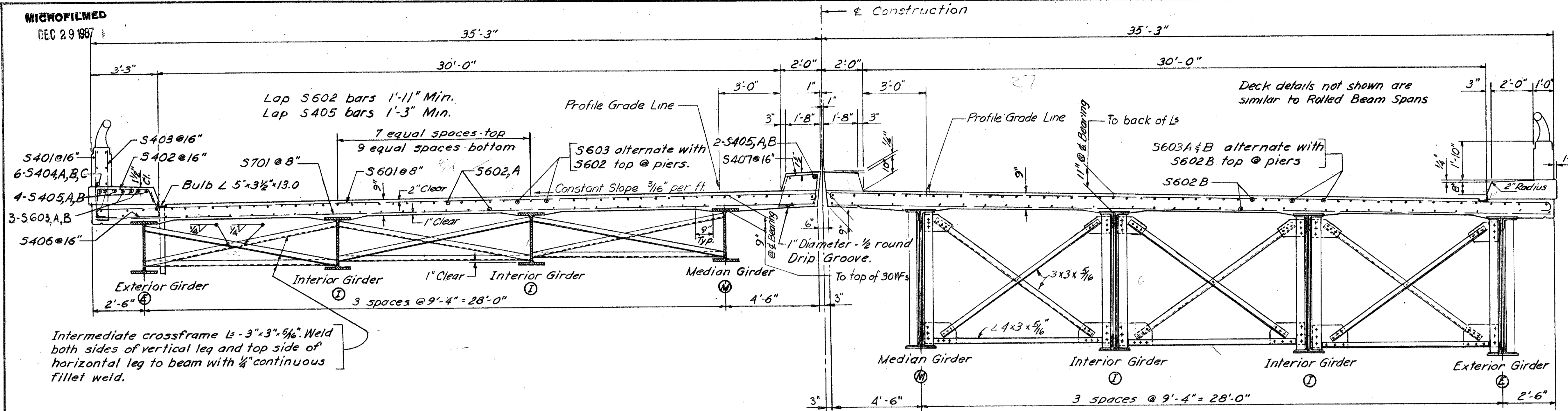
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJ	KCB		WFP			

MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

SANDUSKY COUNTY
SAN. 20-17.62

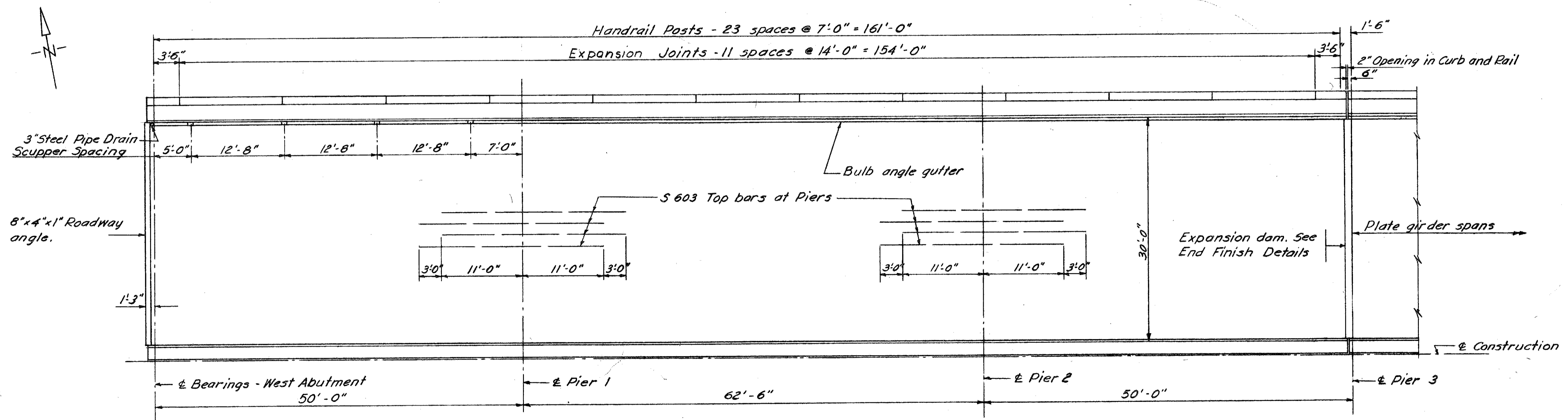
161A



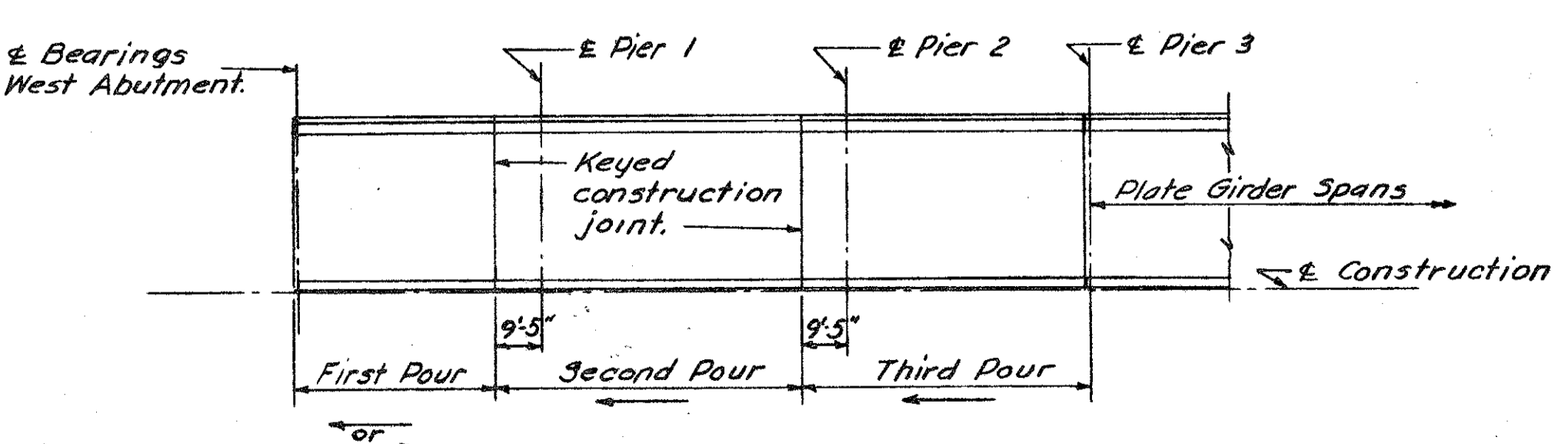
Note: Deck details are symmetrical about \pm Construction.
Slab thickness shown includes 1" for monolithic wearing surface.
Reinforcing steel in parapet to be paid for under Item 5-4.

TYPICAL HALF SECTION - ROLLED BEAM SPANS

TYPICAL HALF SECTION - PLATE GIRDER SPANS



FLOOR PLAN - SPANS 1 THRU 3

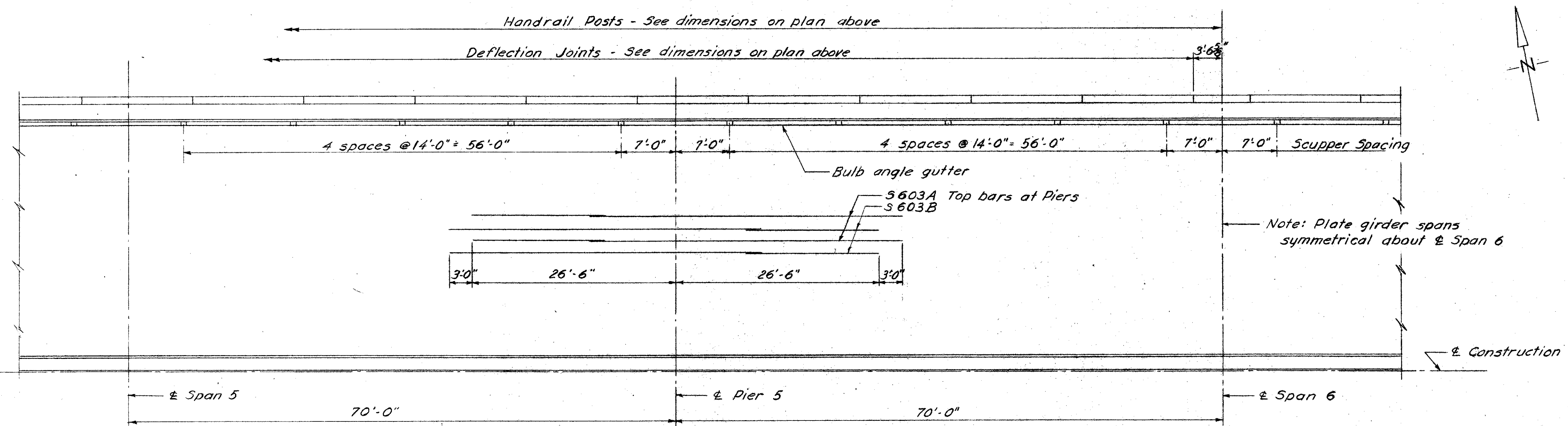
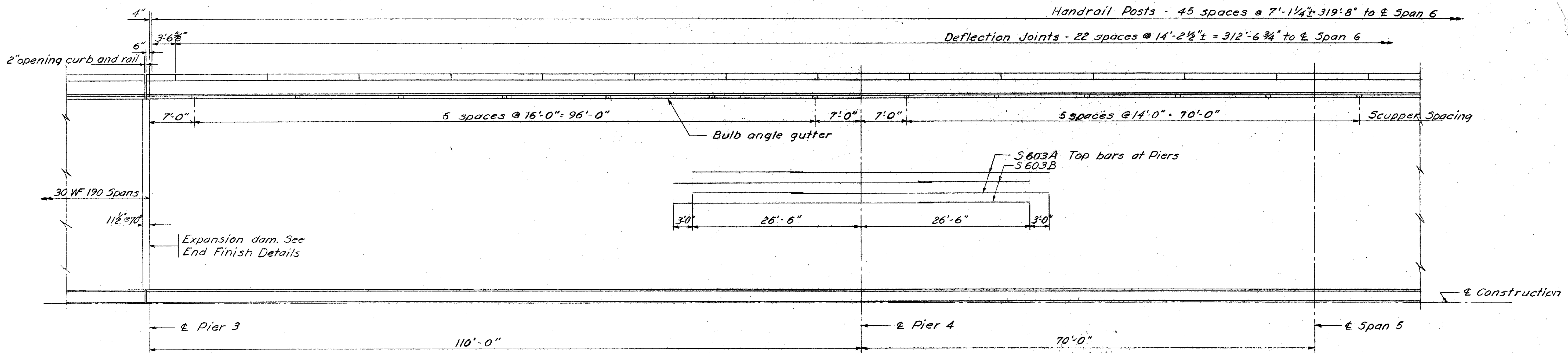


CONCRETE POURING SEQUENCE - SPANS 1 THRU 3

Note: Left Bridge shown Right Bridge similar.

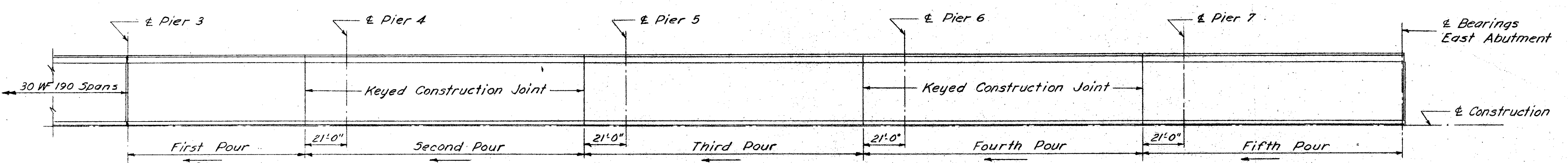
CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILLINOIS					
TYPICAL SECTIONS AND FLOOR PLAN - SPANS 1 THRU 3					
BRIDGE NO SA-20-180 OVER SANDUSKY RIVER, SR 53, AND IXC & ST.L.R.R. SANDUSKY CO. F-585 (11) SEC. SAN. 20-17.62 STA. 939+21.25 TO 941+28.13					
DESIGNED WJ	DRAWN KCB	TRACED -	CHECKED WFP	REVIEWED H.S.M.	DATE 11-30-55

Sheets 149A thru 172A replace
Sheets 149 thru 172 2-10-56



FLOOR PLAN - SPANS 4 THRU 8

Note: Left Bridge shown Right Bridge similar.



CONCRETE POURING SEQUENCE - SPANS 4 THRU 8

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

DESIGNED		DRAWN		TRACED		CHECKED		REVIEWED		DATE		REVISED	
WJL		HCB		S		WFP							

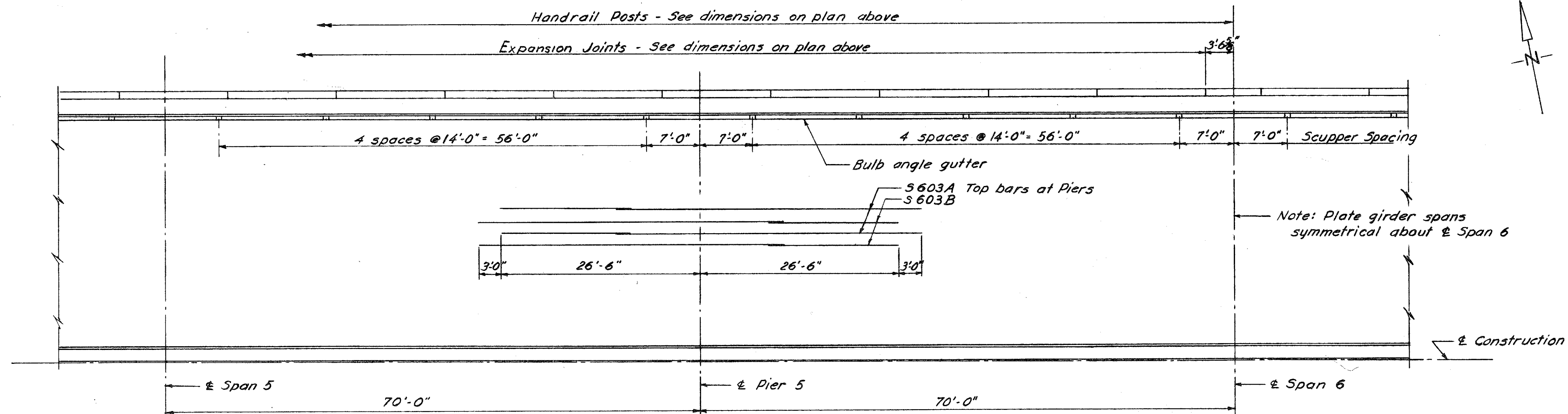
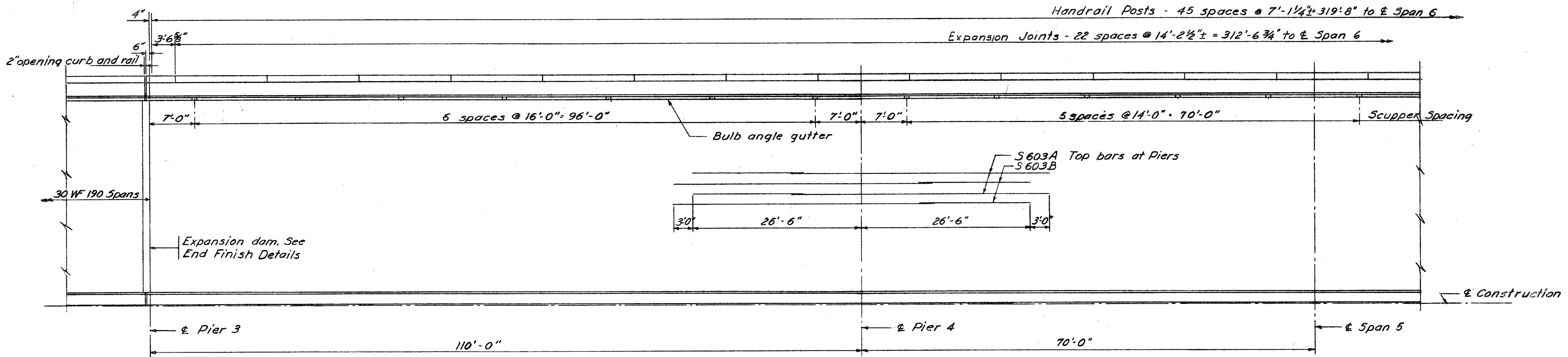
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

FLOOR PLAN - SPANS 4 THRU 8
BRIDGE NO. SA-20-190
OVER THE SANDUSKY RIVER,
S.R. 53, AND N.Y.C. & ST. L. R.R.

MICROFILMED
DEC 29 1987

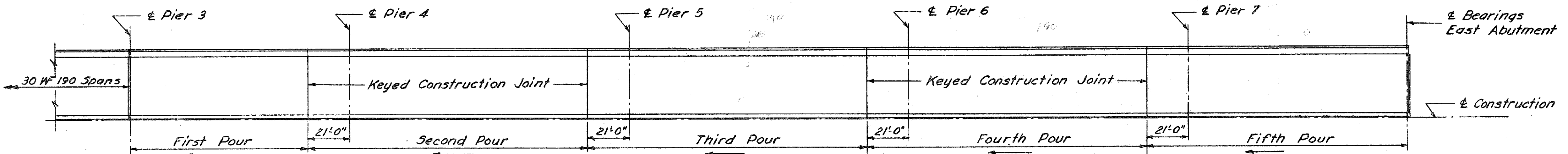
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (1)	162A

SANDUSKY COUNTY
SAN. 20-17.62



FLOOR PLAN - SPANS 4 THRU 8

Note: Left Bridge shown Right Bridge similar.



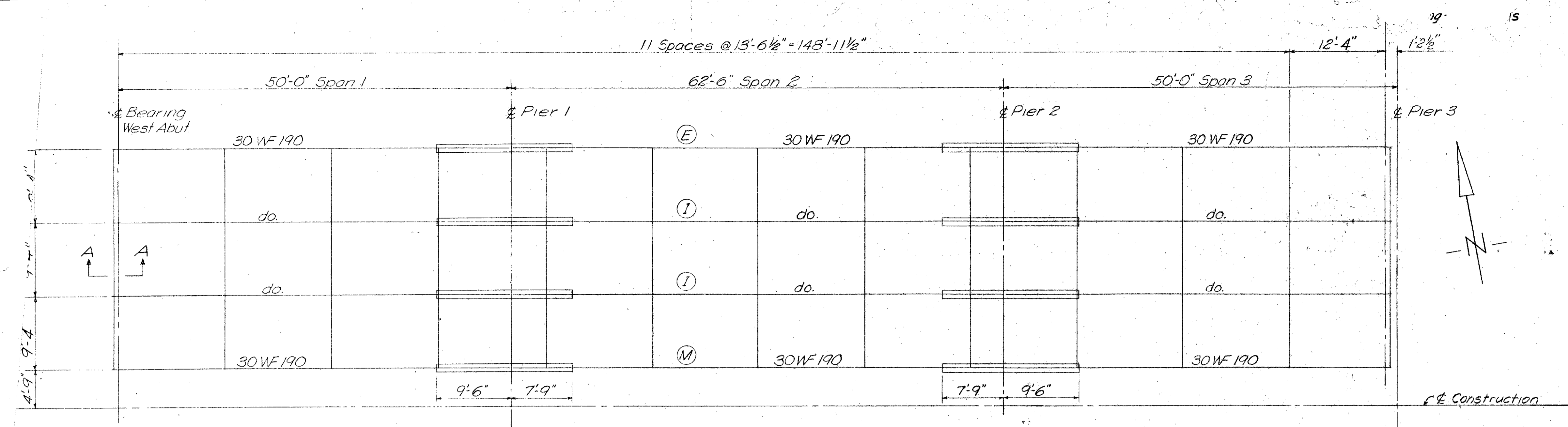
CONCRETE POURING SEQUENCE - SPANS 4 THRU 8

Sheets 149A thru 172A replace
 Sheets 149 thru 172. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILLINOIS	
FLOOR PLAN - SPANS 4 THRU 8	
BRIDGE NO. SA-20-180	
OVER SANDUSKY RIVER, S.R. 53 AND N.Y.C. & ST.L. R.R. SANDUSKY CO. F-585 (1) SEC. SAN. 20-17.62 STA. 935+21.25 TO 941+28.13	
DESIGNED WJJ	DRAWN HCB
TRACED -	CHECKED WFP
REVIEWED HS/M	DATE 11-30-55
REVISED	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

SANDUSKY COUNTY 163



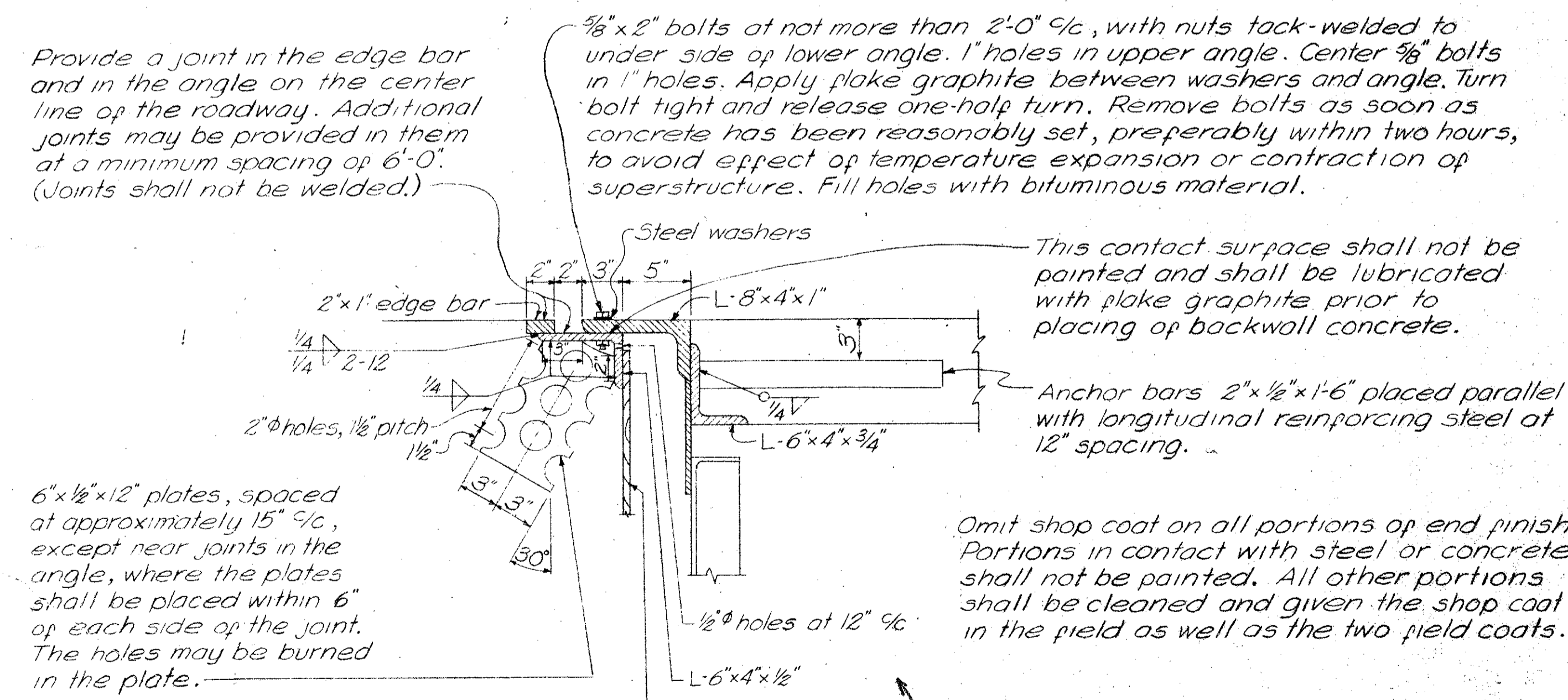
MOMENT PLATE SIZES	
LOCATION	PIERS 1 & 2
TOP	13 1/2" x 9 1/16" x 17'3"
BOTTOM	16 1/2" x 7 1/16" x 17'3"

CROSSFRAMES may be shifted a few inches to miss butt welds in beam splices.

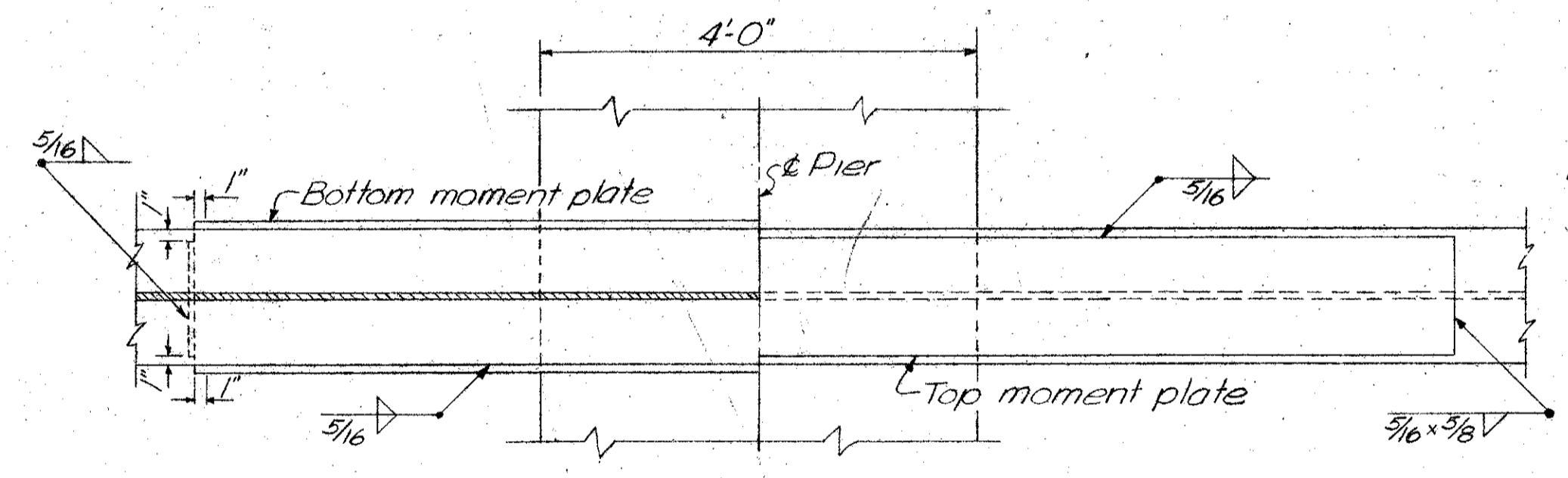
Note: Left Bridge shown - Right Bridge similar.

FRAMING PLAN

- BEAM SPLICE WELDING PROCEDURE:**
1. Raise the abutment and Pier 3 ends of the beams 1".
 2. Butt weld the beam flanges and web.
 3. Weld the bottom and top moment plates.
 4. Lower the beam ends to final position.

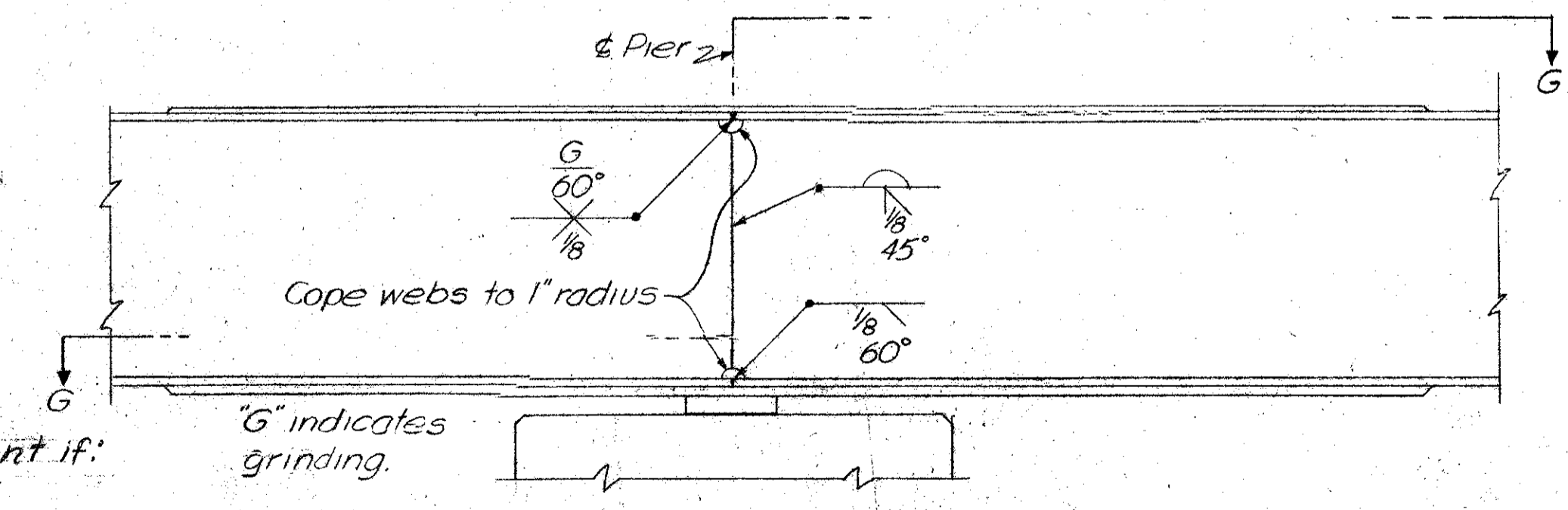


SECTION A-A



SECTION G-G

NO CAMBERING of beams is required but the beams shall be so fabricated that any curved beams will be placed with the convex flange up.



BEAM SPLICE DETAILS

This detail may be used for East abutment if:
 L-8" x 4" x 1" is changed to L-9" x 4" x 1"
 L-6" x 4" x 3/4" is changed to L-9" x 4" x 7/8"
 L-6" x 4" x 1/2" is changed to L-8" x 4" x 1/2"
 3" Bearing of 1" L is changed to 4" at 70°F

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILLINOIS

FRAMING PLAN
 SPANS 1, 2 & 3
 BRIDGE NO. SA-20-180
 OVER SANDUSKY RIVER,
 S.R. 53, AND N.Y.C. & ST. L. R.R.

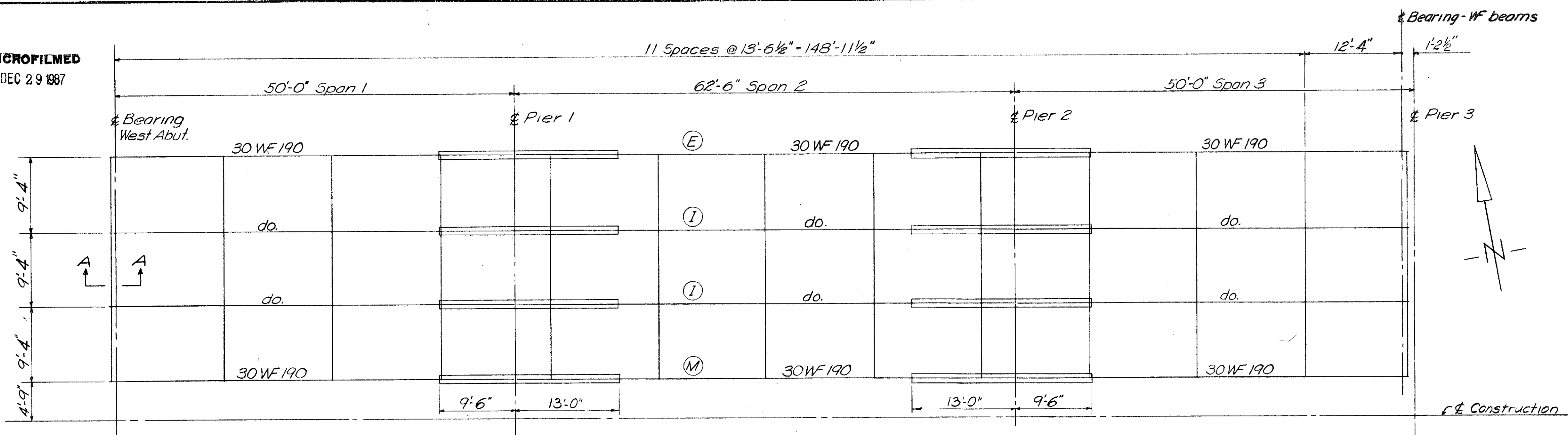
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISE
WCL	DHF		WFP			

MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

163A

SANDUSKY COUNTY
SAN. 20-17.62



CROSSFRAMES may be shifted a few inches to miss butt welds in beam splices.

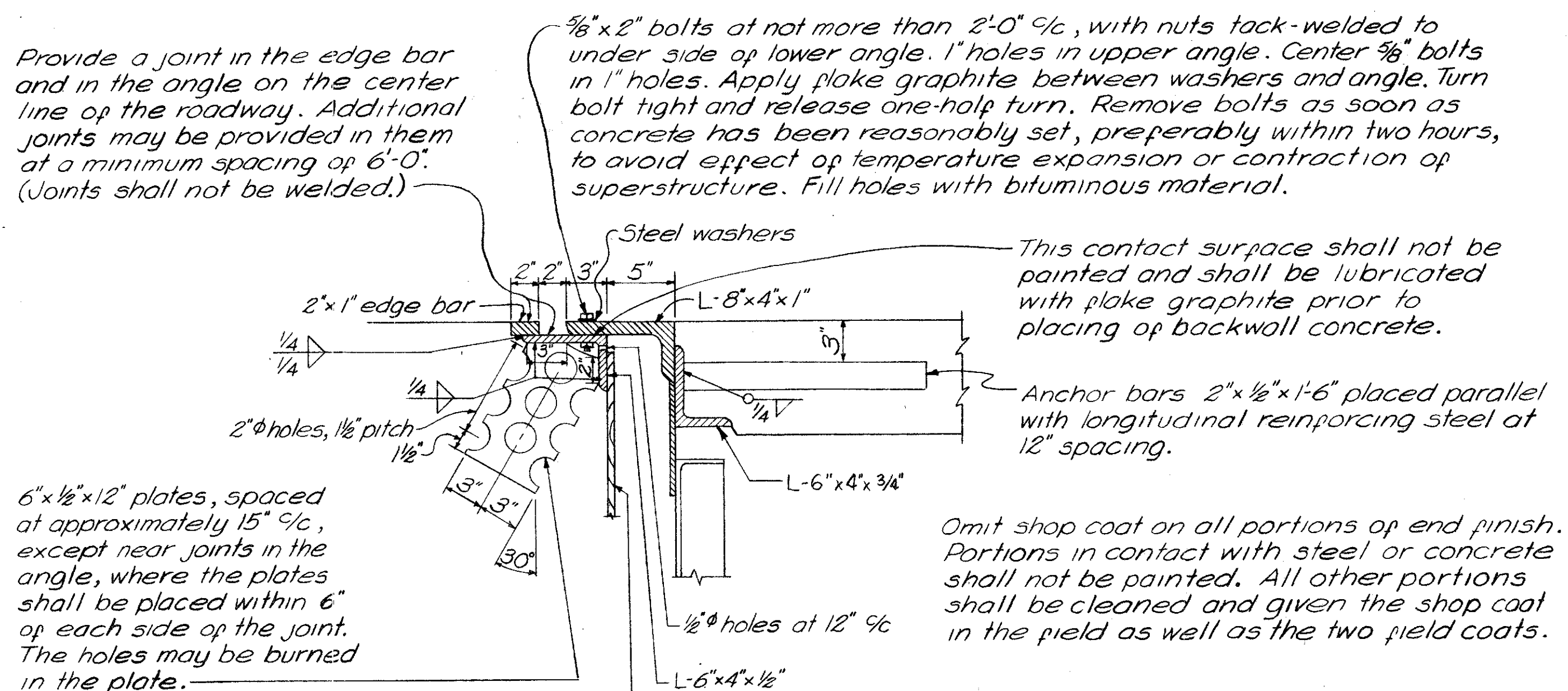
Note: Left Bridge shown - Right Bridge similar.

MOMENT PLATE SIZES

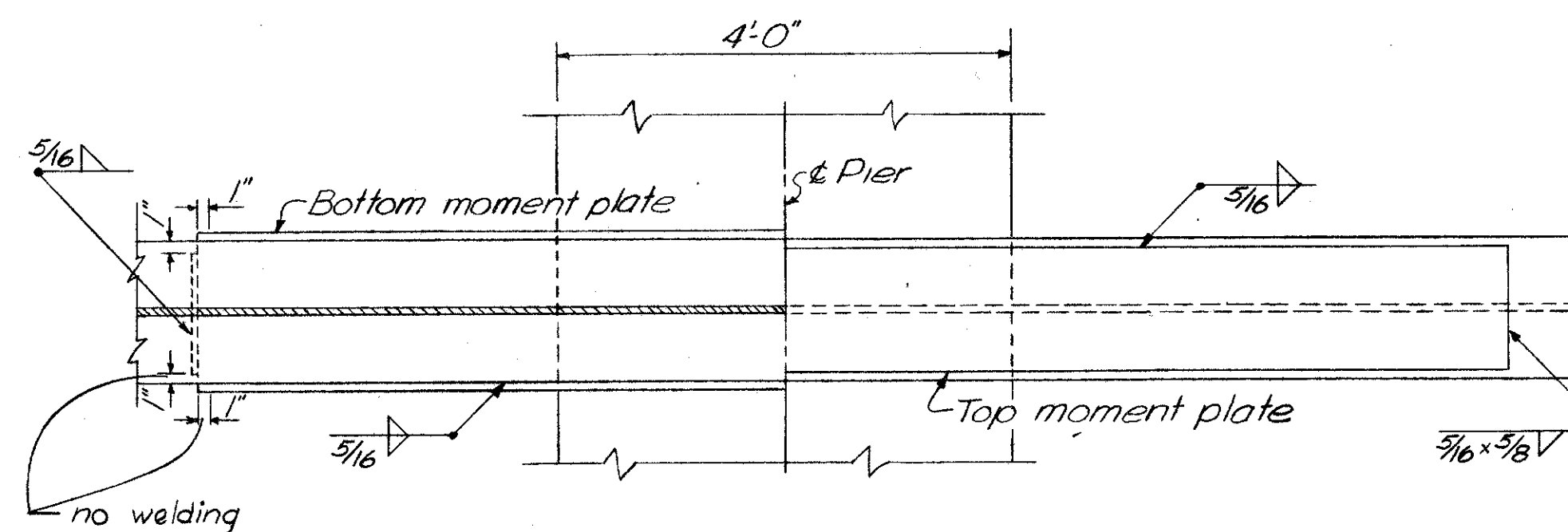
LOCATION	PIERS 1 & 2
TOP	13 1/2" x 9/16" x 22'-6"
BOTTOM	16 1/2" x 7/16" x 22'-6"

FRAMING PLAN

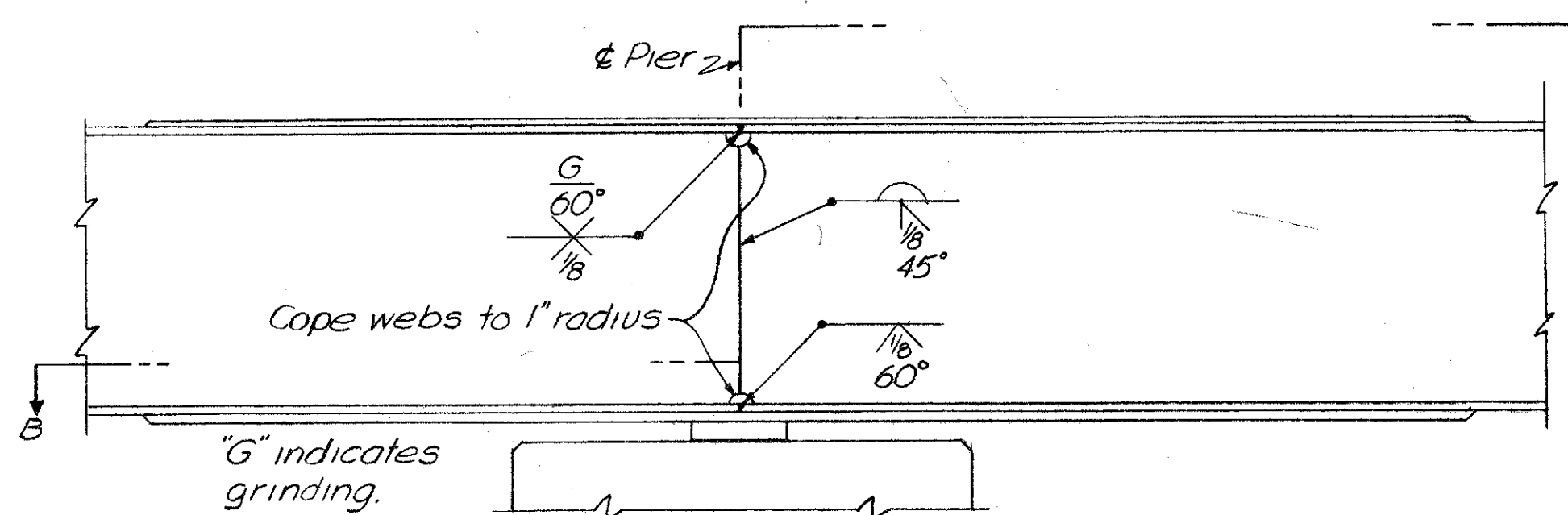
- BEAM SPLICE WELDING PROCEDURE:
1. Raise the abutment and Pier 3 ends of the beams 1'.
 2. Butt weld the beam flanges and web.
 3. Weld the bottom and top moment plates.
 4. Lower the beam ends to final position.



SECTION A-A



SECTION B-B



BEAM SPLICE DETAILS

Location	DEFLECTION AND CAMBER			
	Outside Beams End Span	Inside Beams Middle Span	Outside Beams End Span	Inside Beams Middle Span
Deflection due to weight of steel	1/16"	1/16"	1/16"	1/16"
Deflection due to remaining dead load	1/4"	1/4"	3/16"	3/16"
Convexity required for vertical curve	1/8"	1/4"	1/8"	1/4"
Sum of Deflection and Convexity	7/16"	9/16"	3/8"	1/2"
Required Camber	none	none	none	none

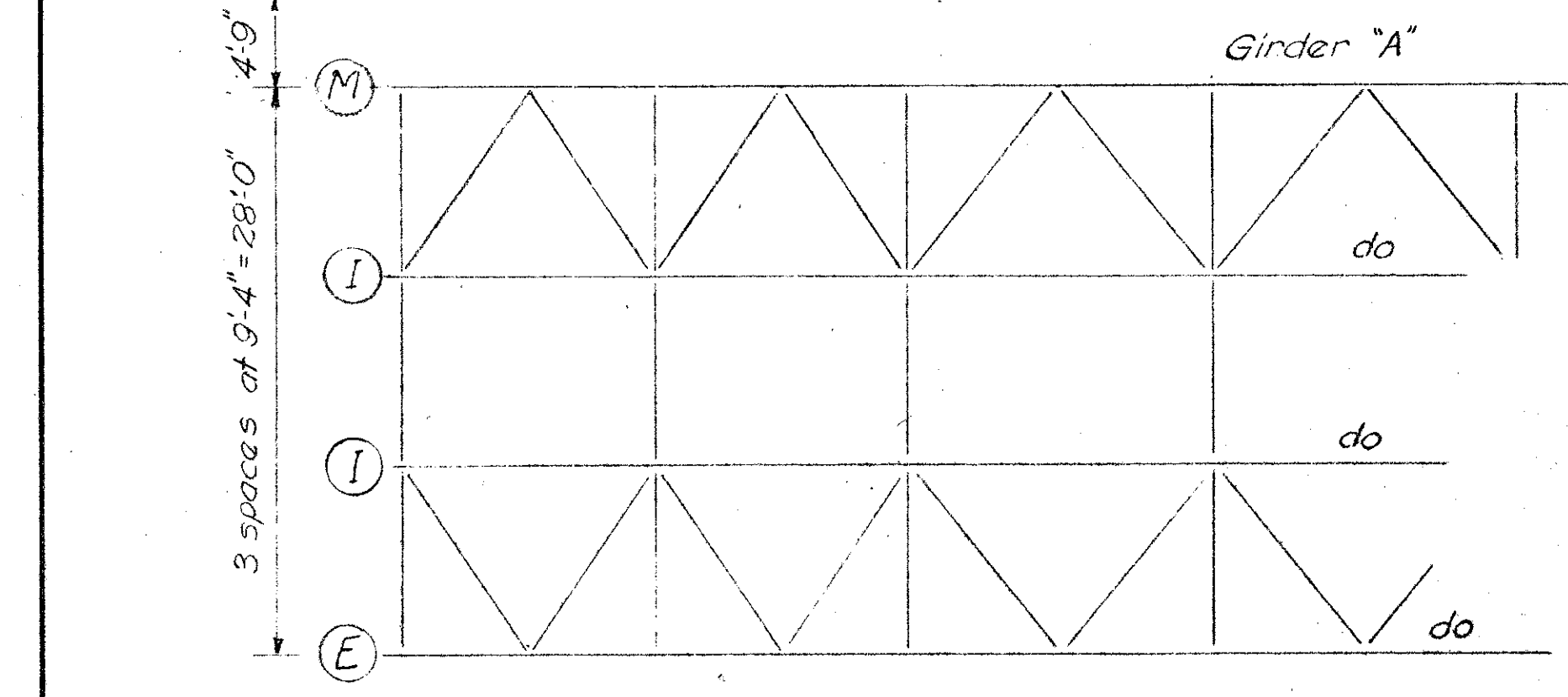
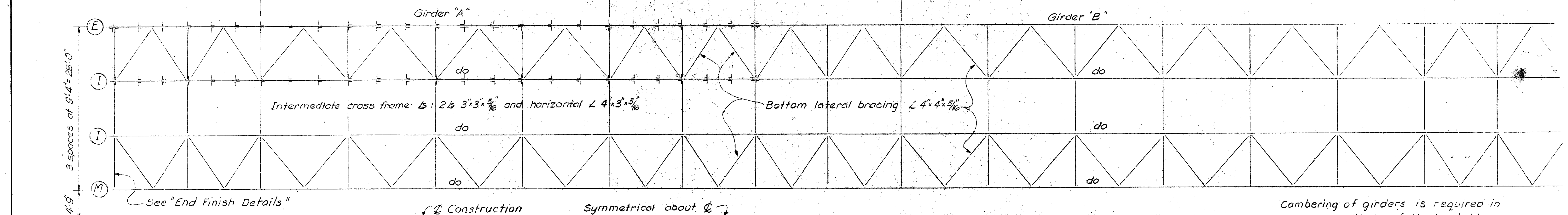
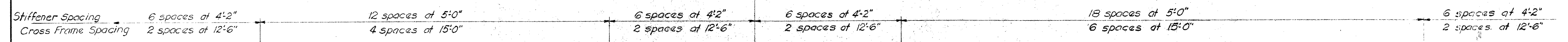
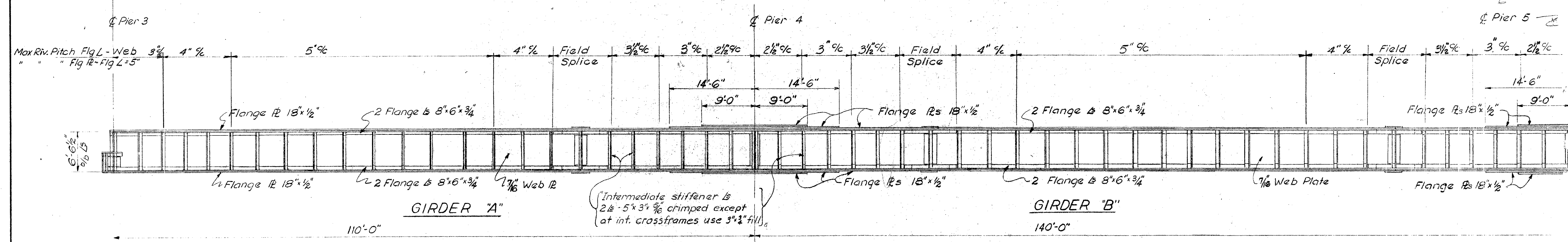
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

FRAMING PLAN
SPANS 1, 2 & 3
BRIDGE NO. SA-20-160

OVER SANDUSKY RIVER, SR. 53, AND N.Y.C. & ST. L. R.R.
SANDUSKY CO. F-585(11)
SEC. SAN. 20-17.62 STA. 929+21.25 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WCU	DMF	-	WFP	HSM	11-30-55	

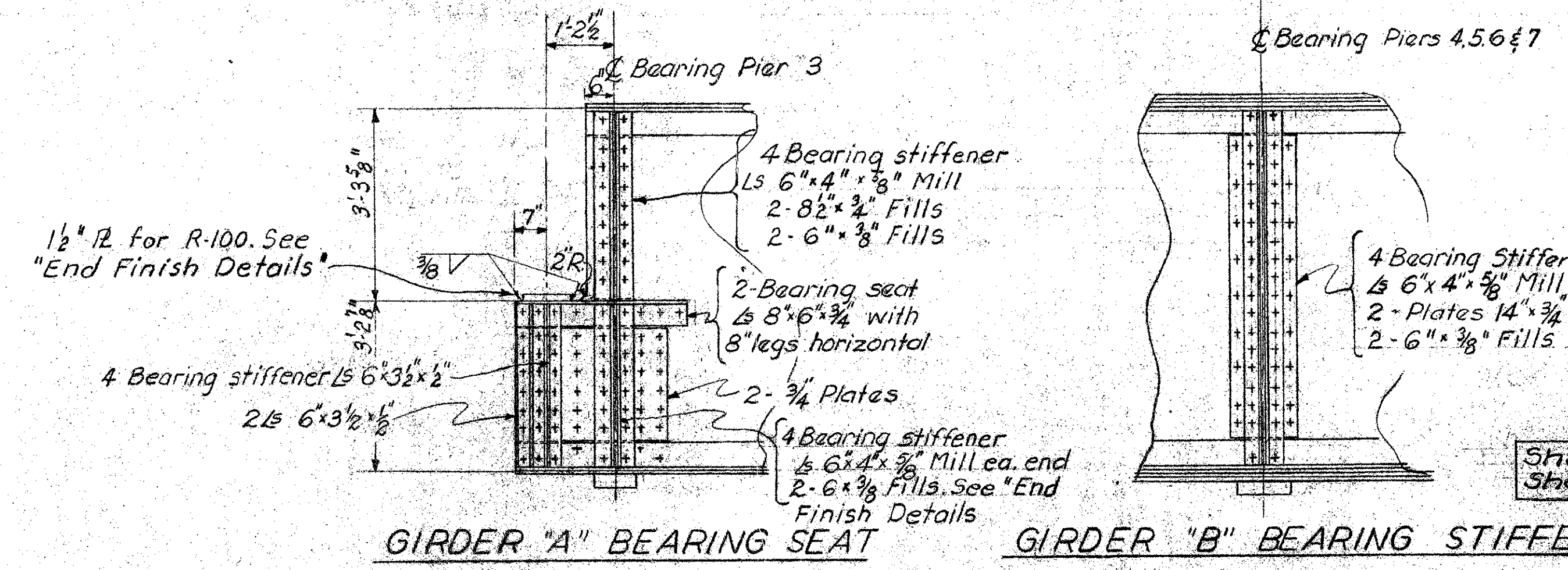
Sheets 149A thru 172A replace
Sheets 149 thru 172. 2-10-56



PLAN - STRUCTURAL STEEL FRAMING

Cambering of girders is required in accordance with the following table.

Location	DEFLECTION & CAMBER					
	110' Spans			140' Spans		
	E	I	M	E	I	M
Deflection due to weight of steel	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
Deflection due to remaining dead load	5/8"	3/8"	1/2"	7/8"	1/2"	5/8"
Convexity required for vertical curve	3/4"	3/4"	3/4"	1 1/8"	1 1/8"	1 1/8"
Sum of Deflection and Convexity	1 1/2"	1 1/4"	1 3/8"	2 1/8"	1 3/4"	1 7/8"
Required Camber	1 1/2"	1 1/4"	1 3/8"	2 1/8"	1 3/4"	1 7/8"



Sheets 149 thru 172 superseded by Sheets 149A thru 172A 2-10-56

Rivets shall be 7/8" φ

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

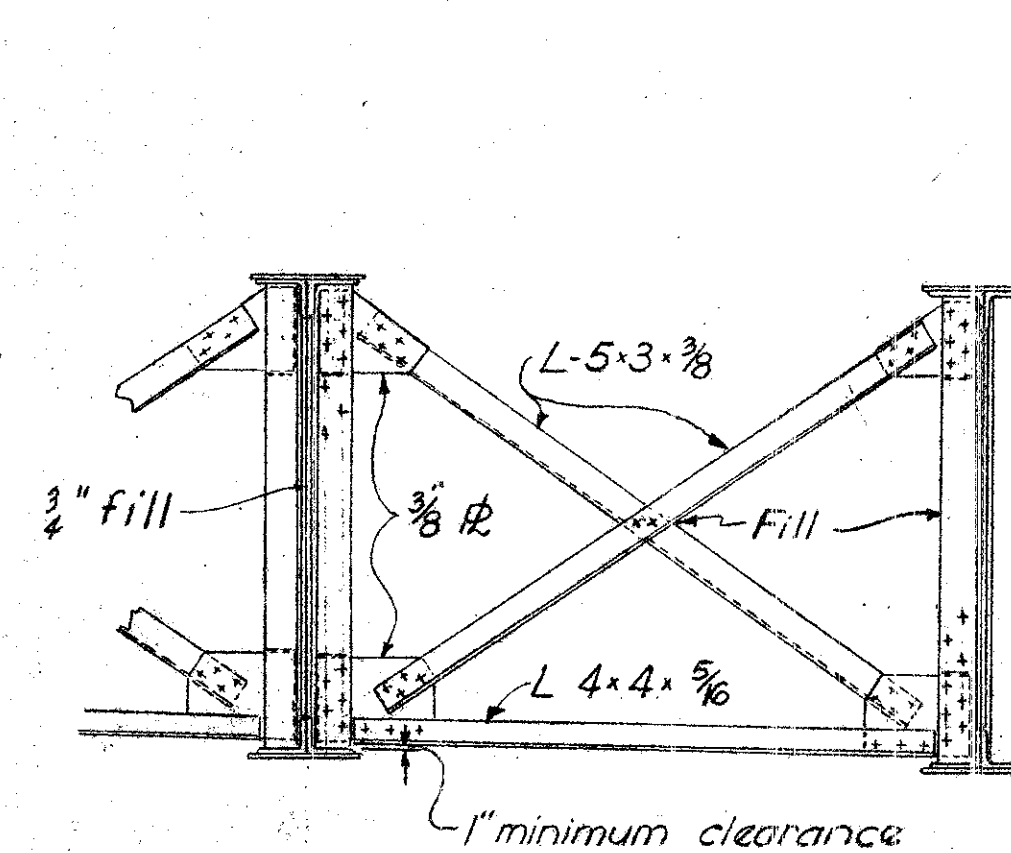
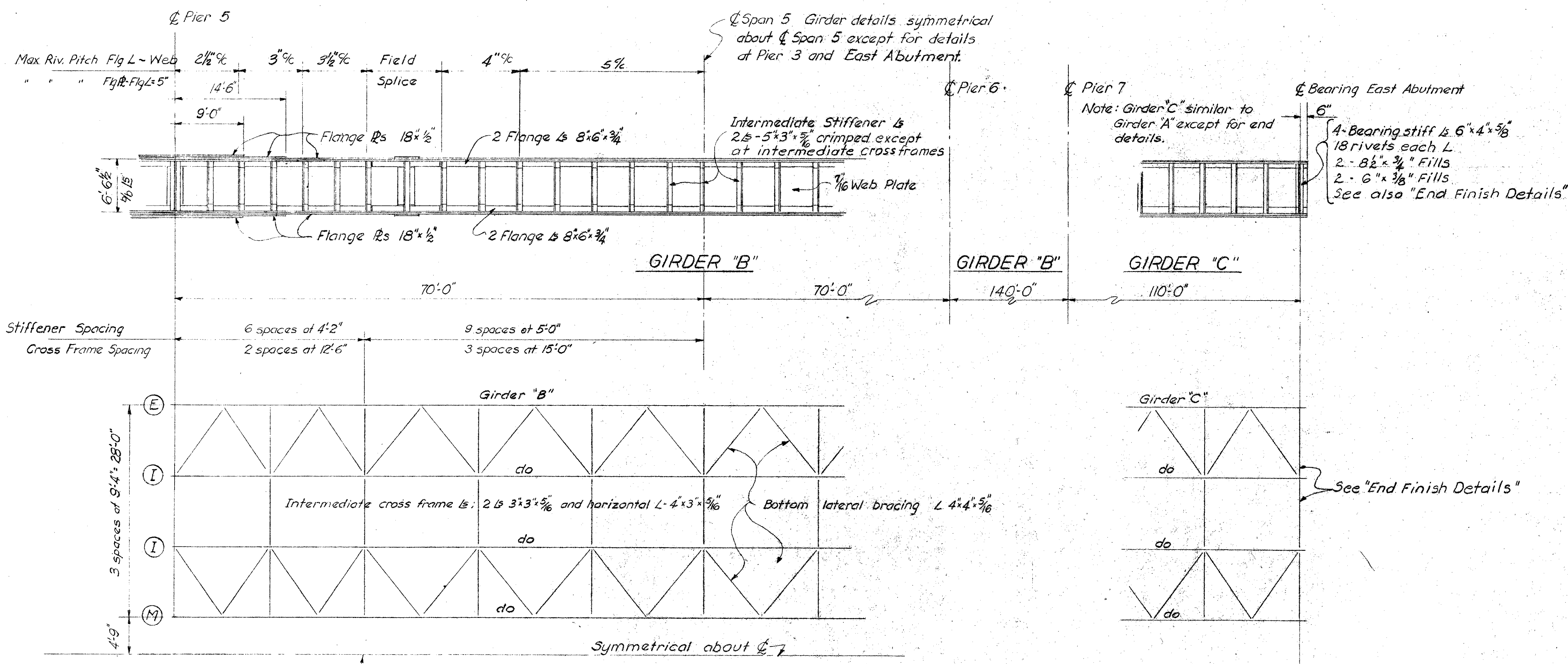
STRUCTURAL STEEL FRAMING
PLAN & GIRDER DETAILS #1
BRIDGE NO SA-20-180
OVER THE SANDUSKY RIVER,
S.R. 53, SANDUSKY & STL. RR.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	BY
WFP	JN		WJJ			

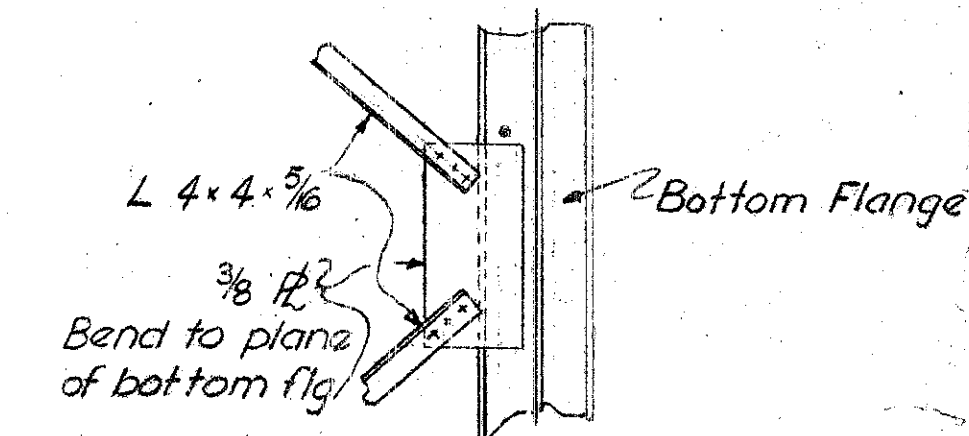
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

SANDUSKY COUNTY

165

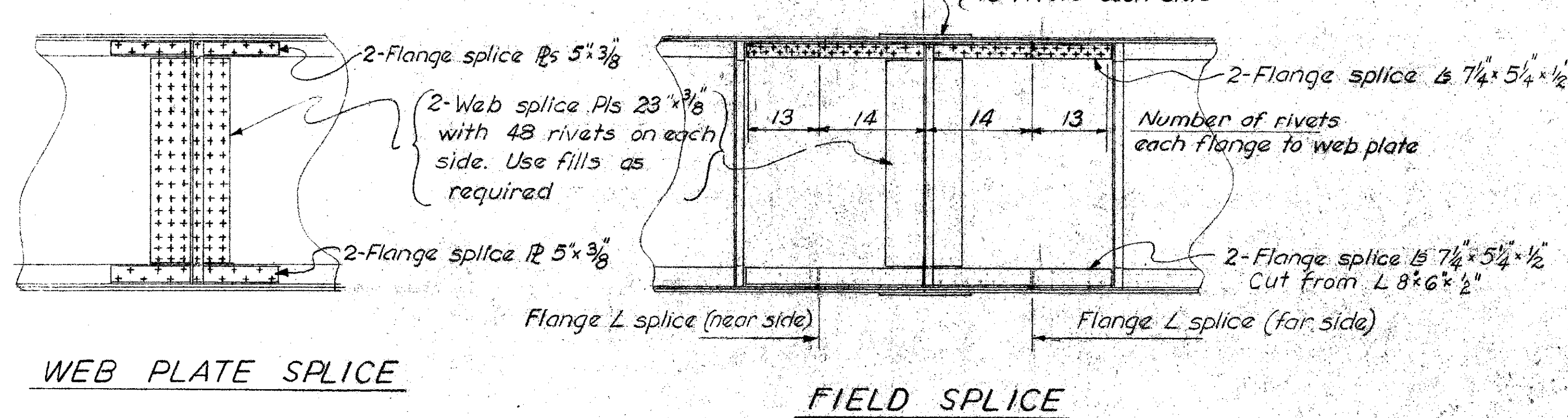
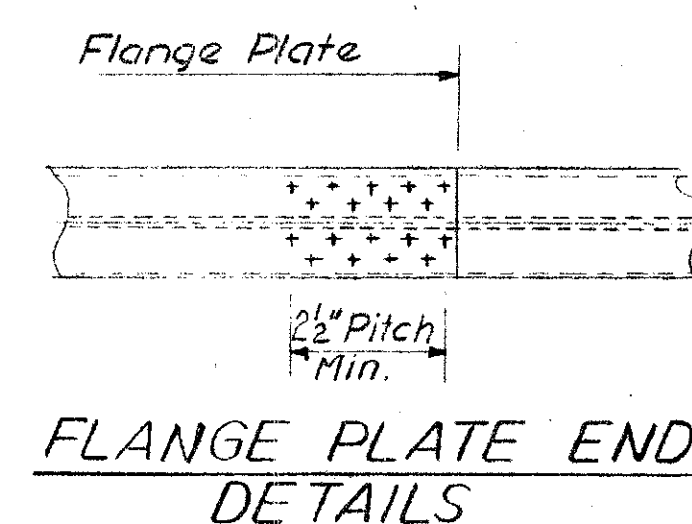


CROSS FRAME
PIERS 4,5,6,7



LATERAL BRACING
CONNECTION

PLAN-STRUCTURAL STEEL FRAMING



Sheets 149 thru 172 superseded by
 sheets 149A thru 172A. 2-10-56

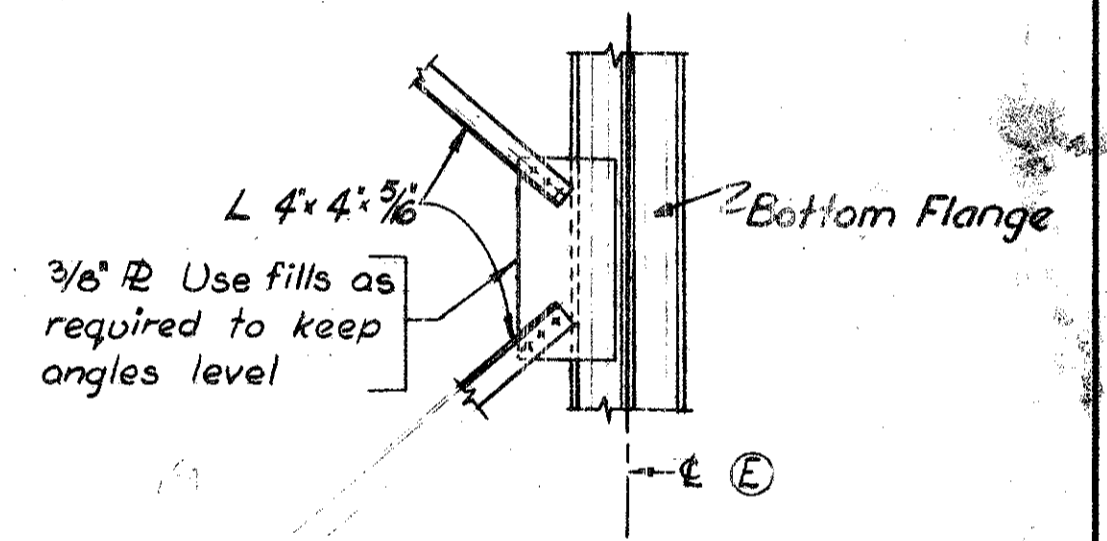
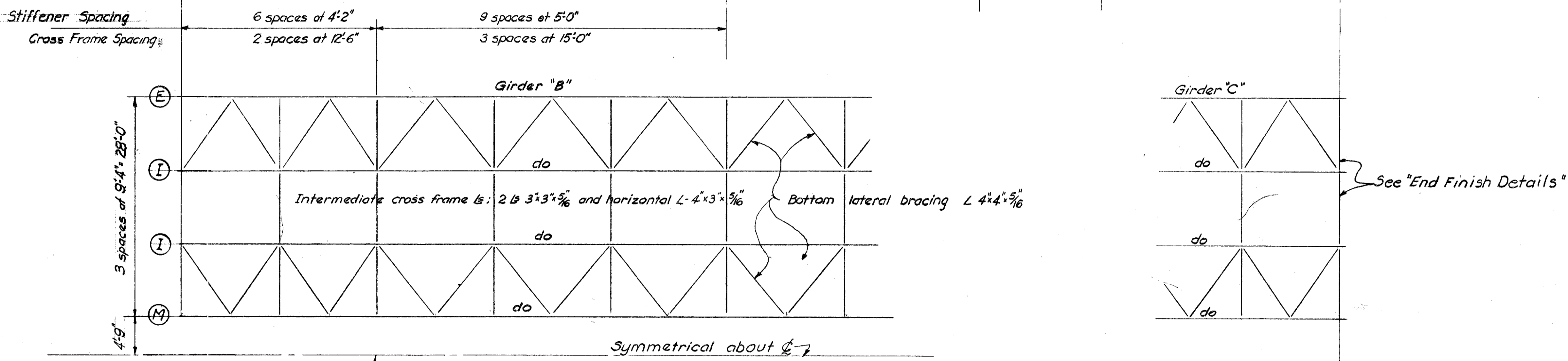
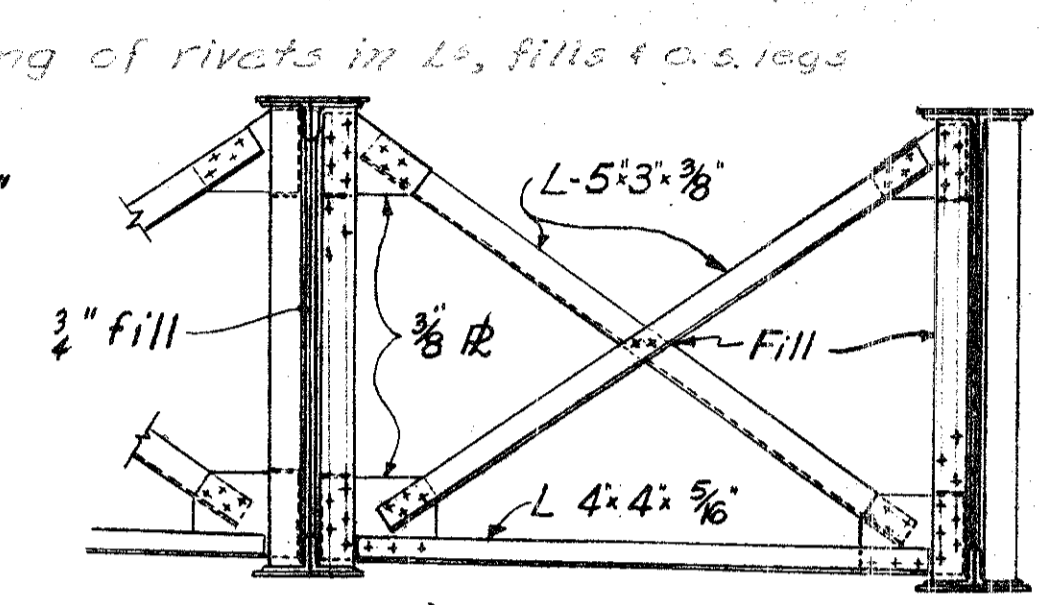
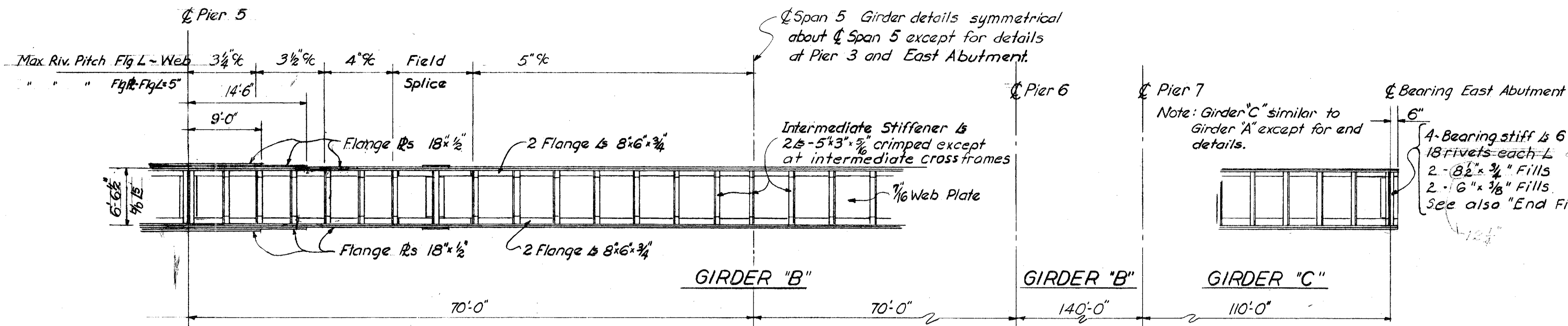
CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILLINOIS
 STRUCTURAL STEEL FRAMING
 PLAN GIRDER DETAILS # 2
 BRIDGE NO. SA-20-180
 OVER THE SANDUSKY RIVER,
 S.R. 53, AND N.Y.C. & ST. L. R.R.

DESIGNED	DRAWN	TRACED	CHECK'D	REVIEWED	DATE	REVISED
WFP	JN		KJJ			

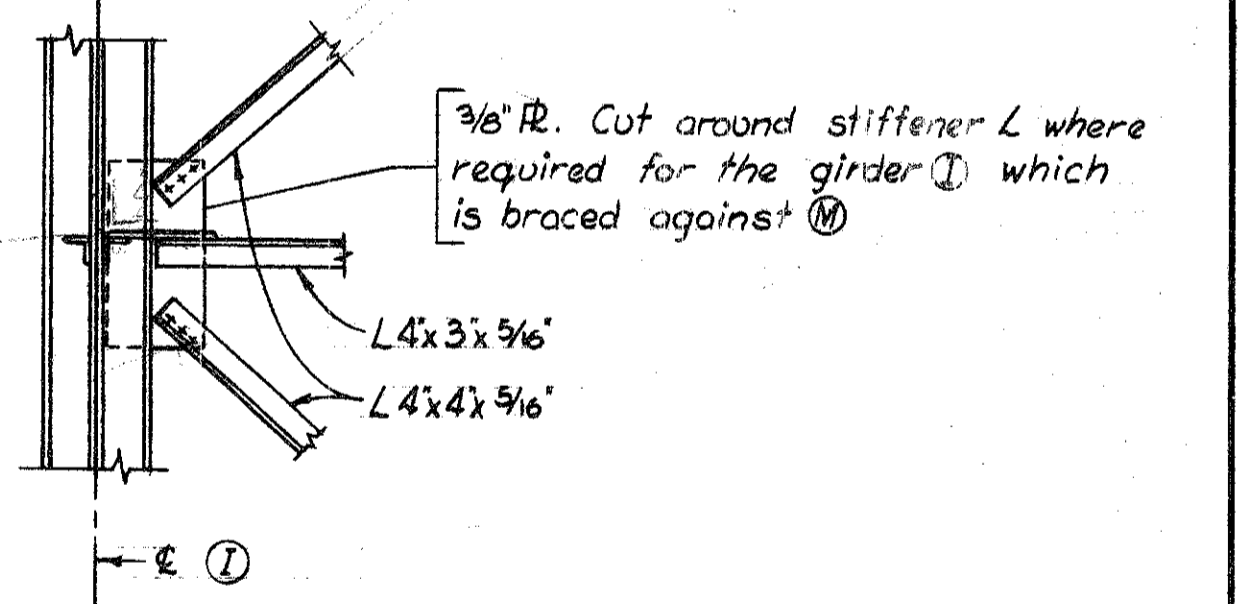
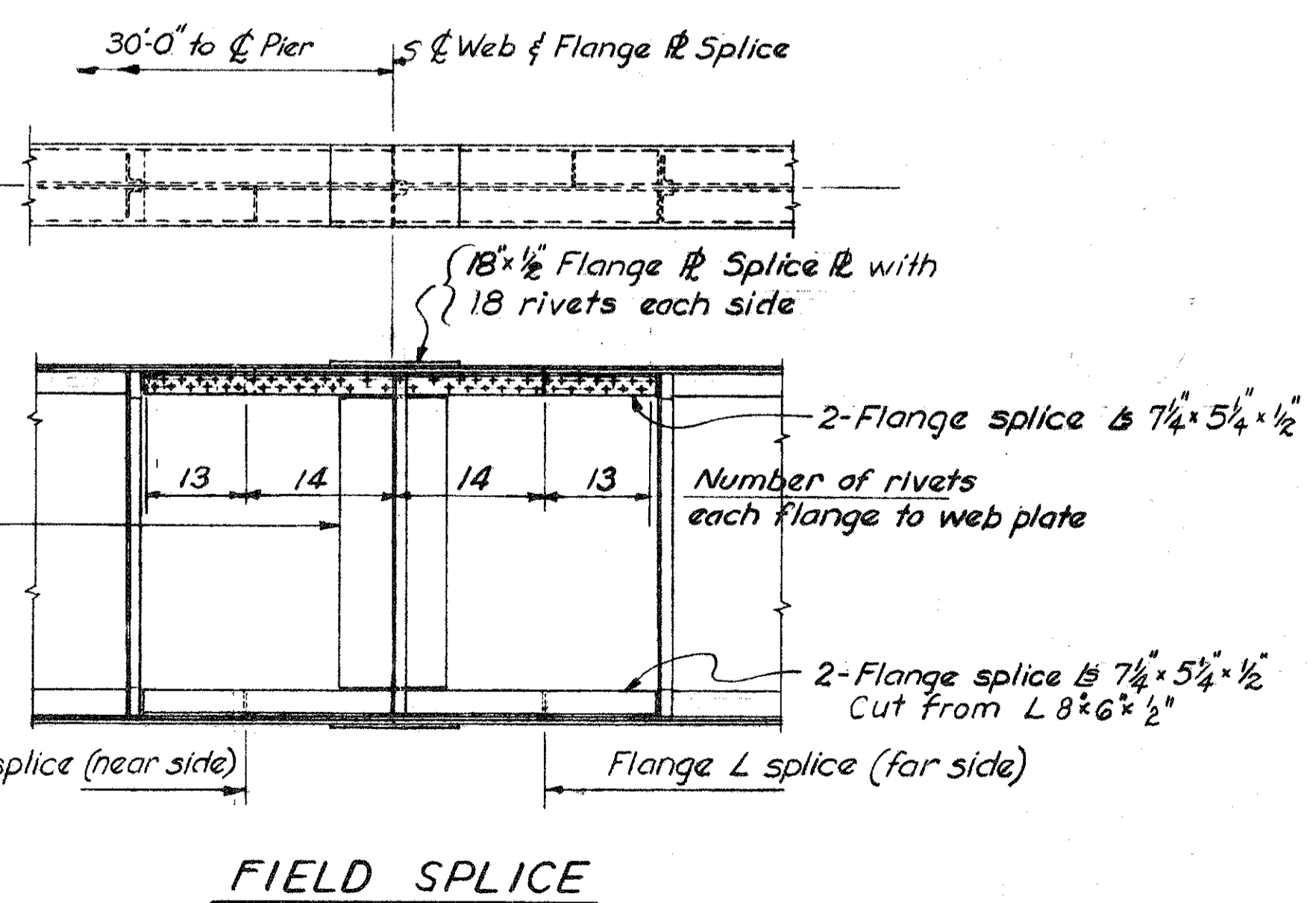
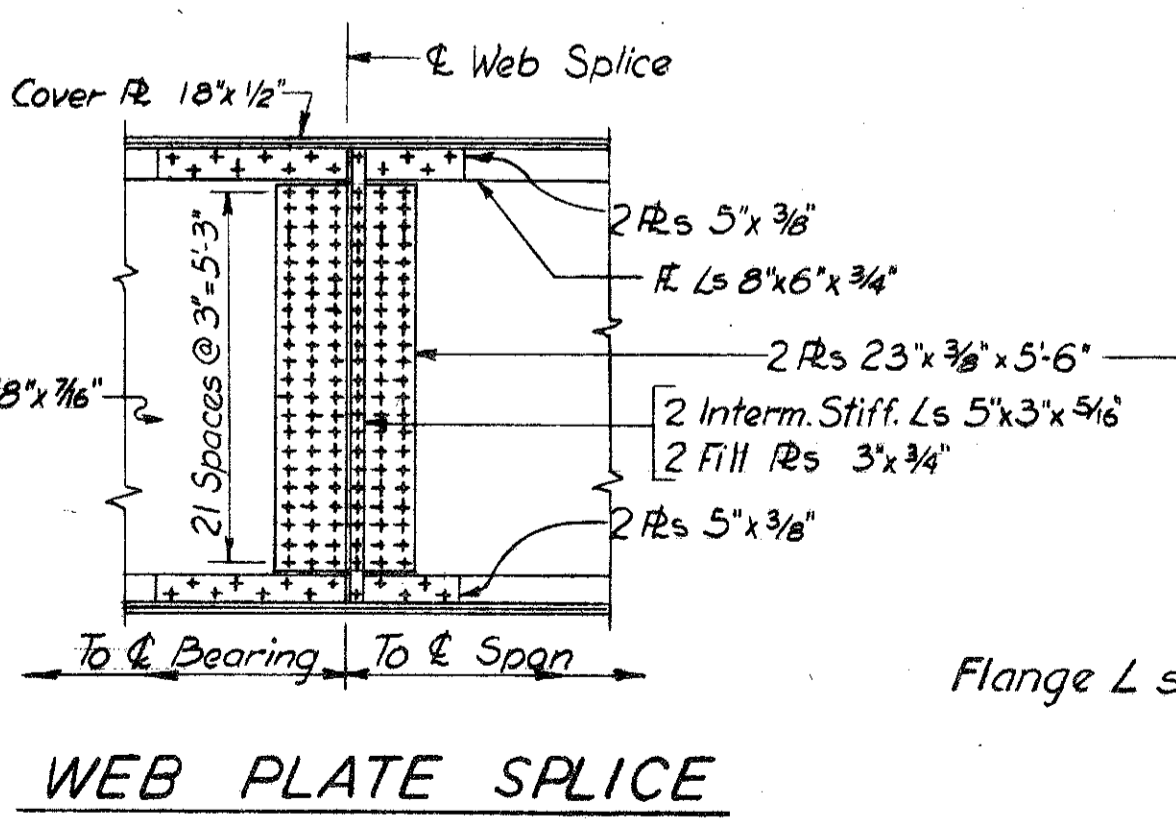
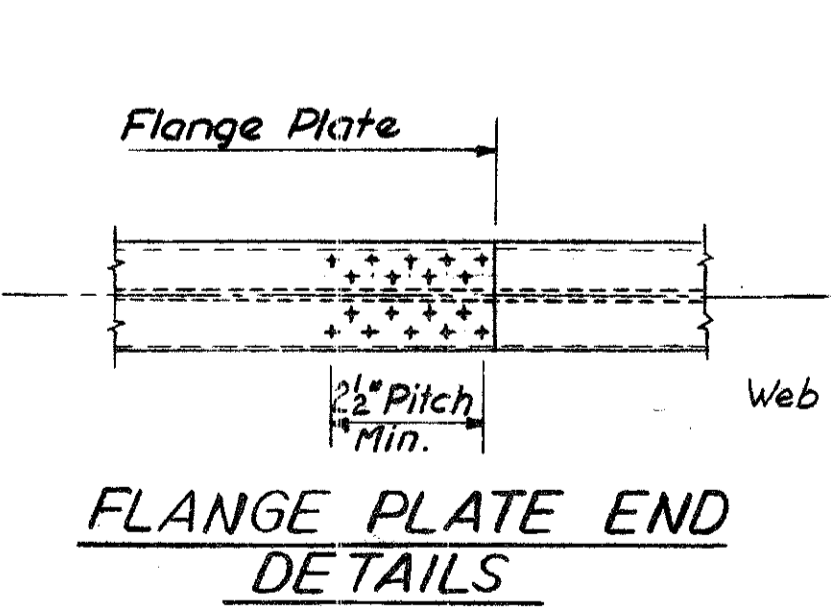
MICROFILMED
DEC 29 1987

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	165A

SANDUSKY COUNTY
SAN. 20-17.62



PLAN-STRUCTURAL STEEL FRAMING



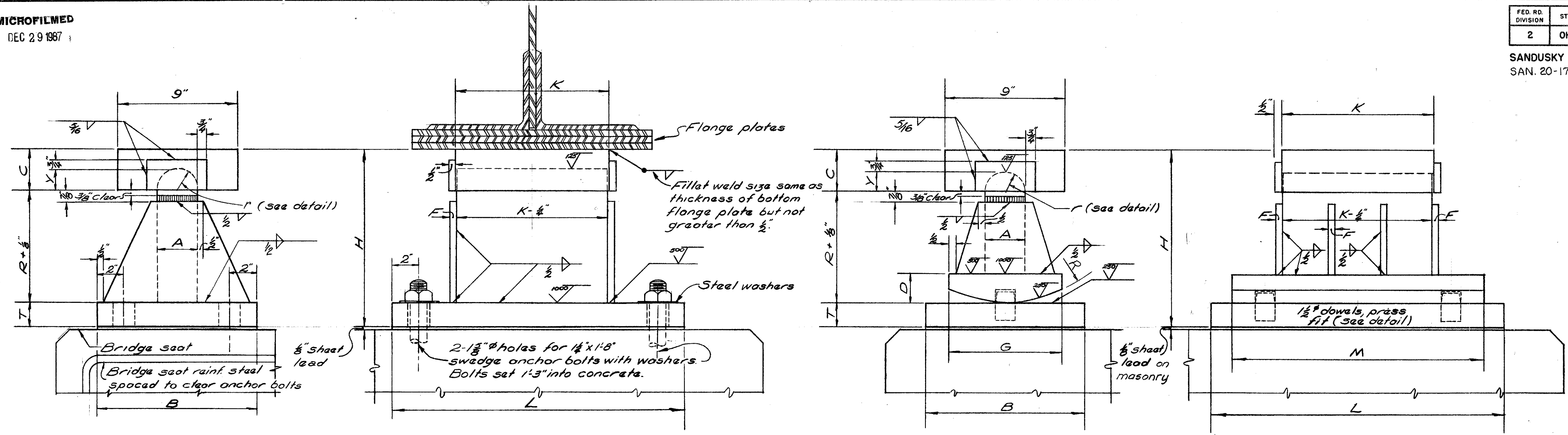
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

STRUCTURAL STEEL FRAMING
PLAN GIRDER DETAILS # 2
BRIDGE NO. SA-20-180

OVER SANDUSKY RIVER, S.R. 53, AND N.Y.C. ST. L. R.R.
SANDUSKY CO. F-585 (11)
SEC. SAN. 20-17.62 STA. 939+21.25 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REV EWD	DATE	REVISED
WEP	JN	-	WJJ	HSM	11-30-55	4-17-56

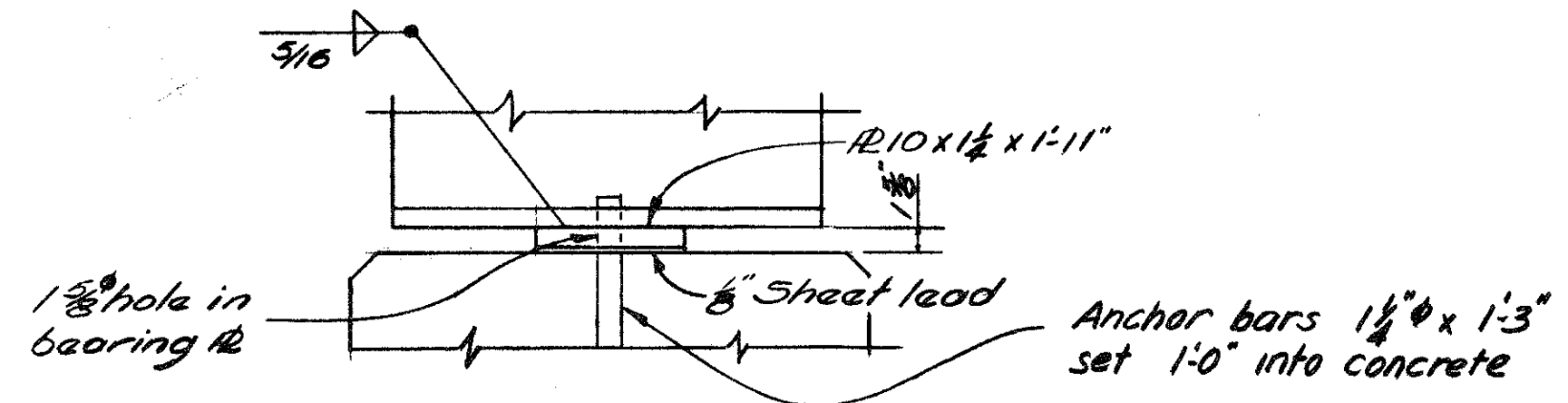
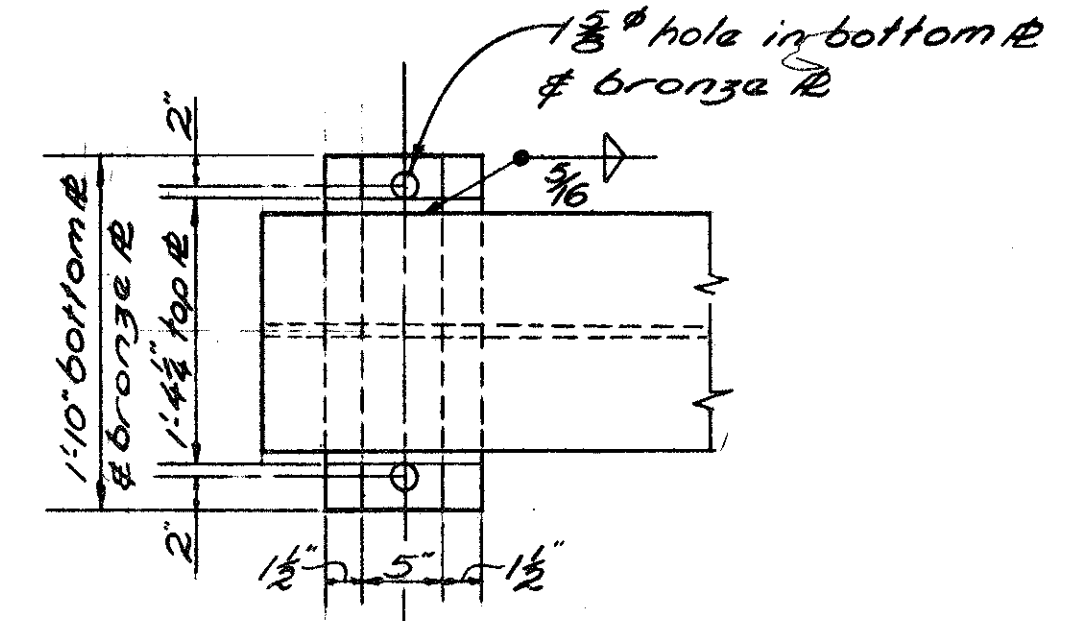
Sheets 149A thru 172A replace
Sheets 149 thru 172. 2-10-56



STRUCTURAL STEEL BOLSTER
See table below for additional dimensions

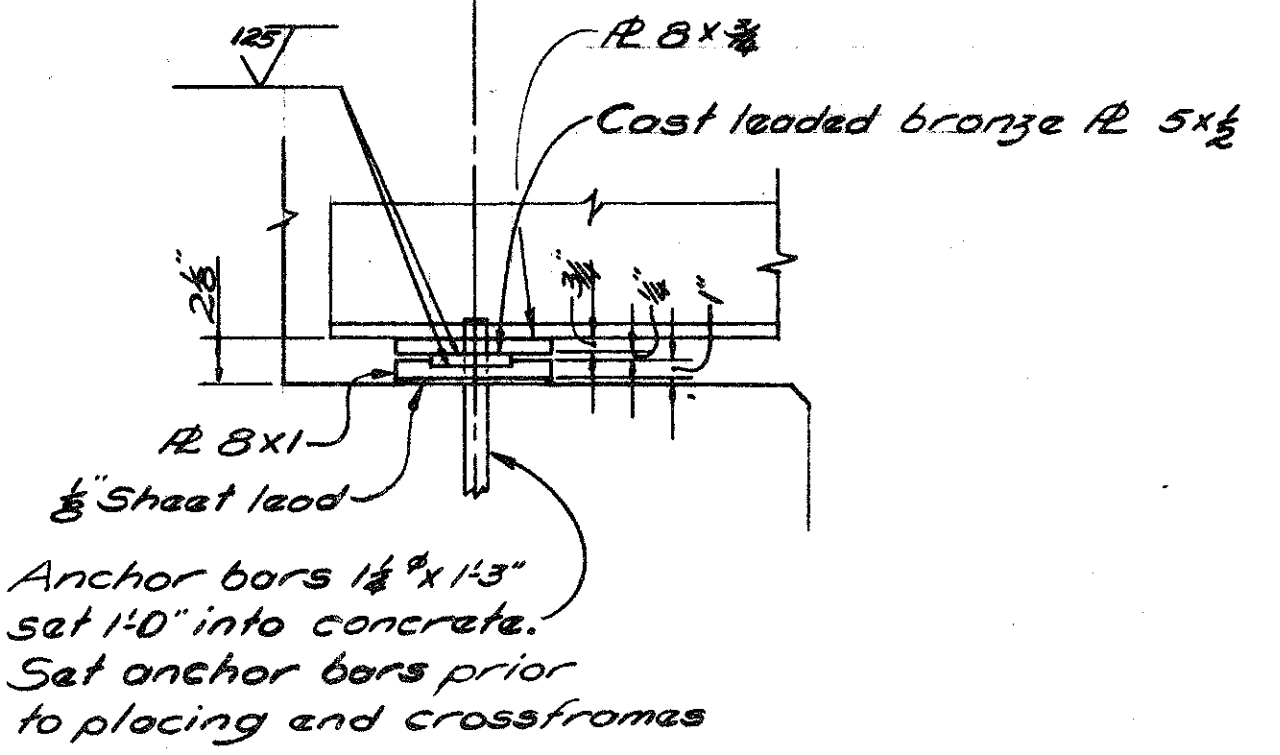
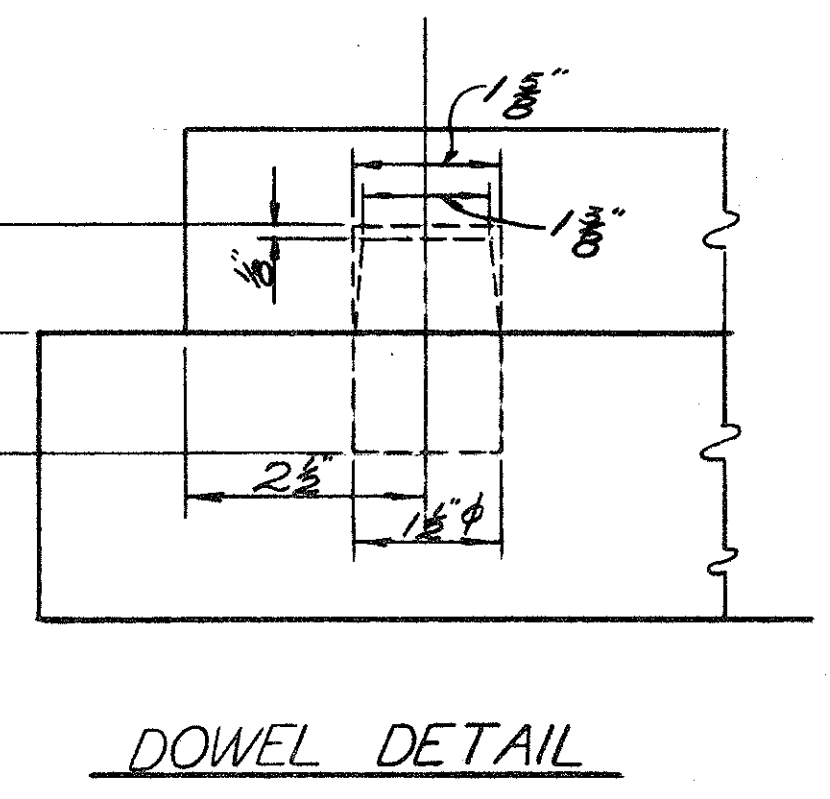
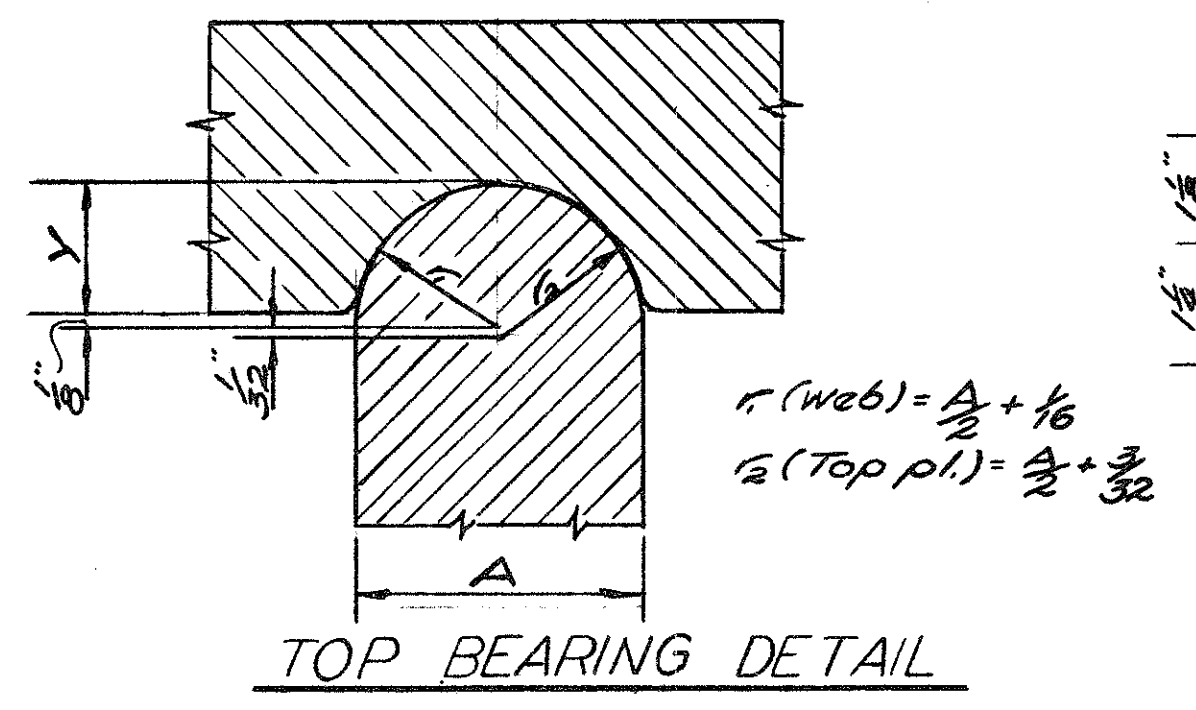
STRUCTURAL STEEL ROCKER
See table below for additional dimensions

Bolster No.	Rocker No.	Dimensions (inches)													Weight each (lb)		Maximum Load (lb)
		A	B	C	D	F	G	H	K	L	M	R	T	Y	Bolster	Rocker	
R-75	2 1/2	8	2 1/2	1 3/4	1/2	7	9 1/2	9	18	16	5 1/2	1 1/2	1 1/2			205	75,000
R-150	3	12	3	2 1/2	1/2	8 1/2	13 1/2	11 1/2	22	19	8 1/2	1 3/4	1 1/2	360	400	150,000	
R-200	3	16	3 1/2	2 1/2	1/2	9	16 1/2	12	24	21	10 1/2	2 1/4	1 1/2	540	605	200,000	
B-375	R-375	4	24	4	3 1/2	1/2	14	20 1/2	16	29	26	13	3 1/2	1 1/2	1247	1430	375,000

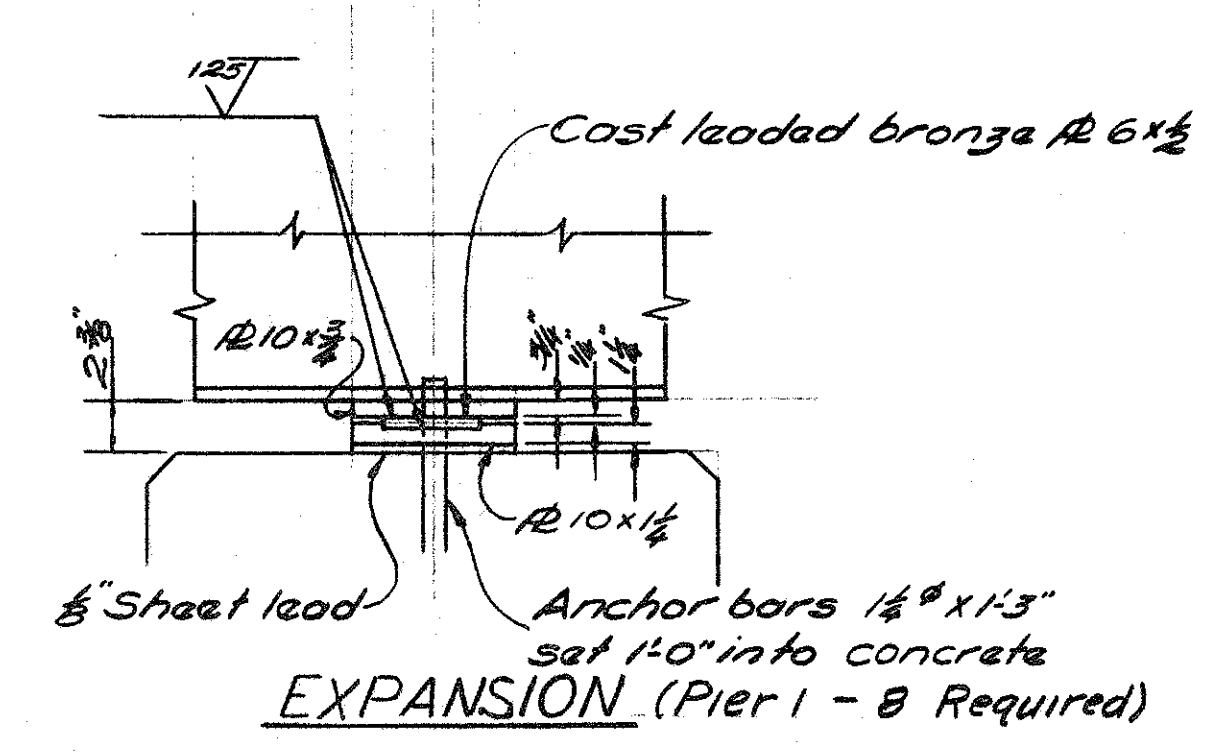
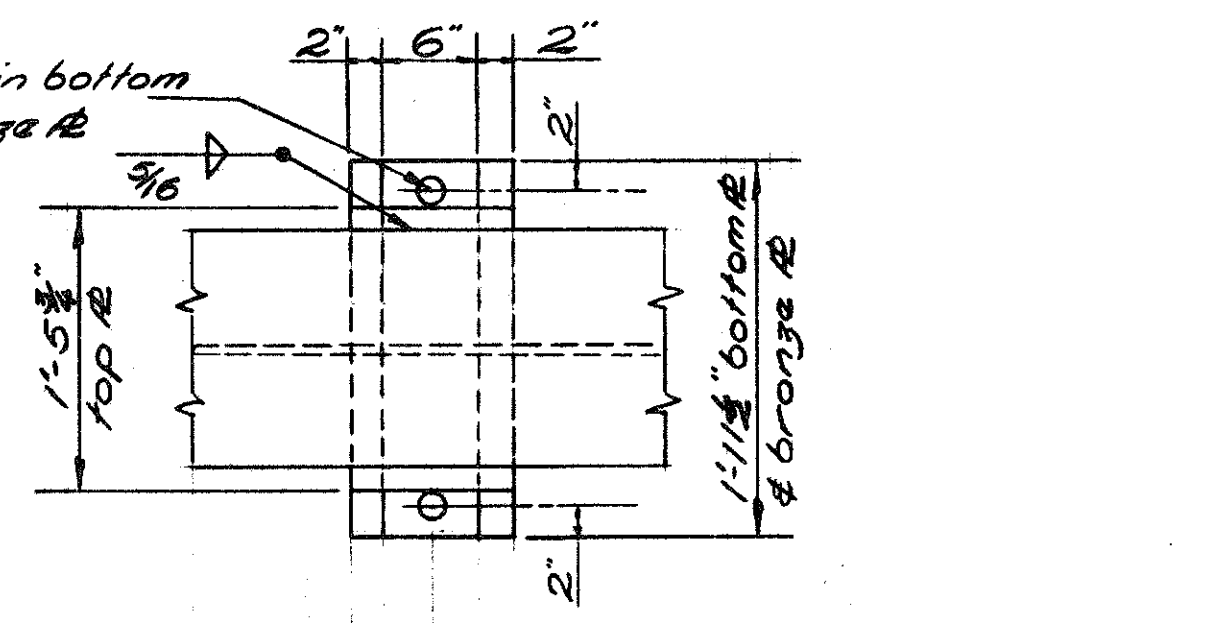


FIXED (Pier 2 - 8 Required)

LOCATION	ROCKER NO.	BOLSTER NO.
Pier 3	R-75	B
	R-200	B
Pier 4	R-375	B
Pier 5		B-375
Pier 6		B-375
Pier 7	R-375	B
East Abutment	R-150	B



WEST ABUT. BEARING PLATES
(8 Required)
CSB-1-55



PIERS 1 & 2 BEARING PLATES

Sheets 149A thru 172A replace
Sheets 149 thru 172. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

BEARING ASSEMBLIES

BRIDGE NO. SA-20-130
OVER SANDUSKY RIVER, SR 53, AND N.Y.C. & ST.L. R.R.
SANDUSKY
SEC. SAN. 20-17.62 STA 939+21.25 TO 941+28.13
F-585 (11)

DESIGNED RPH	DRAWN RPH	TRACED DMF	CHECKED DMF	REVIEWED H.S.M.	DATE 11-30-55	REVISED
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REFERENCE shall be made to supplemental specification No. S-114 Dated Aug. 30, 1955

GENERAL

NOTES

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585(11)	

SANDUSKY COUNTY

PILES shall be driven to a minimum bearing capacity of 35 tons for the West abutment and 45 tons for Piers 1, 2 & 3. The length of penetration of every pile shall be at least 80% of the estimated average pay length of the piles in the pertinent pier or abutment as indicated on the plans unless a lesser penetration is approved by the Director. A 15,000 Ft. lb. hammer required.

AT PIERS 6 and 7, piles shall be driven to firm contact with rock which shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is at least 3 tons per pile if a 7000 ft. lb. steam hammer is used, or 5 tons per pile if a steam hammer or drop hammer of 15,000 ft. lb. or greater energy is used and if the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation reports. If the energy rating of the hammer is between these values, the required formula capacity shall be determined by interpolation. (The design load is 35 tons per pile @ Piers 6 & 7 & 45 T @ E. Abutment.) FOOTINGS shall extend a minimum of 3" into solid rock or to the elevation shown whichever is lower.

EXCAVATION QUANTITY includes the removal of fill material between the top of the earth bench and the bottom of the abutment.

PAINT, both shop and field, shall be applied by brushing. Spray application will not be permitted.

CONSTRUCTION CLEARANCE of 19'-6" vertically above top of railroad tracks and 8'-0" horizontally from the center of tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, six sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the railroad company.

ALIGNING RAILROAD TRACKS: After the contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the supervision of the railroad company, nothing in Sec. E-2.04, E-2.08 or G-8.07 of the specifications shall be construed to hold the contractor liable for aligning and re-surfacing the railroad tracks.

UTILITIES: The Contractor shall provide and maintain adequate protection to prevent damage to existing utilities. The Contractor shall cooperate with the utility companies in the necessary removal or reconstruction of any utility lines.

PLANS of this bridge are for bidding purposes. Additional details for construction will be furnished to the Contractor before the award of the contract.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 10-1-51, together with revisions thereof dated 7-15-52, 4-1-52 and 2-1-55.

WELDING of structural steel shall be Class "A" except as otherwise noted. Any welds shown as field welds may, at the option of the contractor, be made in the shop. Class "B" welding is shown thus:

SURFACE FINISH OF CONCRETE: Parapets, curb faces, fascias of deck and exposed surfaces of piers, 1, 2, 3, abuts., and wing walls shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

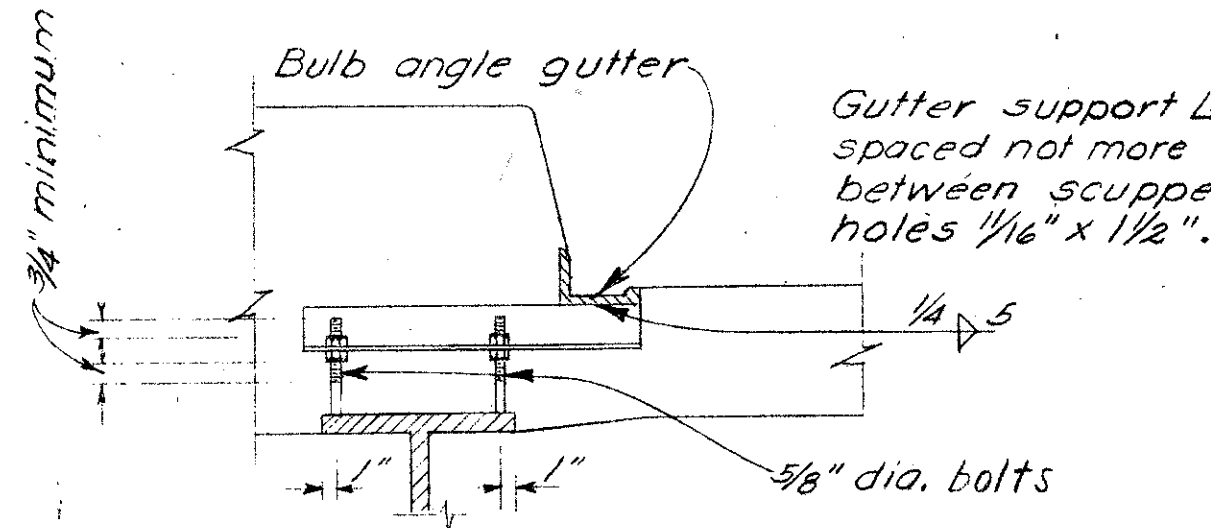
POROUS DRAINS, extending from face of West Abutment to El. 608 and East Abutment to El. 580, shall be provided at all four corners and median of the bridge. The drains shall be 4 ft. wide tapered to 7'-0" width at west abutment, and 8'-0" width at East Abutment. GRAVEL, if used as the coarse aggregate, shall be according to Sec. M-3.93 instead of M-3.91 for Class "C" concrete, superstructure gravel meeting the requirements of Sec. M-3.93 also may be used for other concrete in this structure.

WELDED STEEL: The steel for the 30WF190 beams shall conform to ASTM Designation A-373. All other structural steel shall conform to either ASTM A-7 (as per Sec. M-2.4 (a) of the Construction and Materials Specifications) or to A-373.

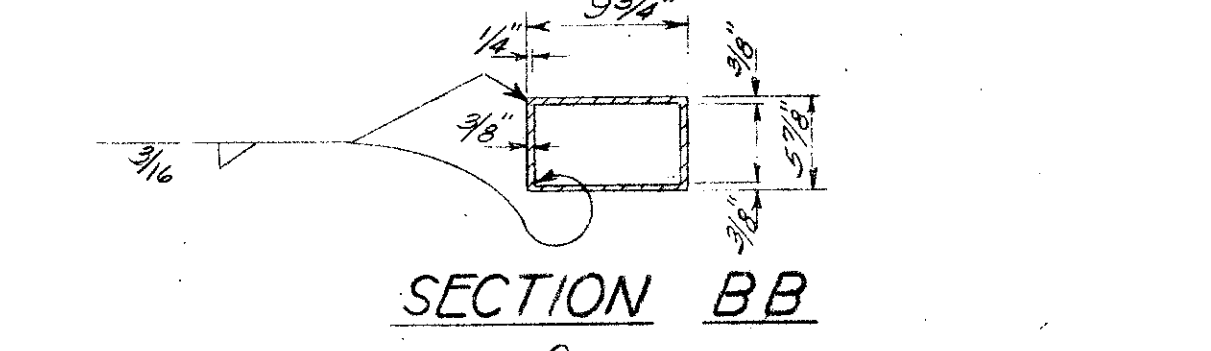
REINFORCING STEEL CLEARANCE from face of concrete shall be 2" except where otherwise noted.

DECK CONSTRUCTION PROCEDURE: The deck slab shall be placed in sections, between construction joints, in the numerical order and the direction shown in "Concrete Pouring Sequence".

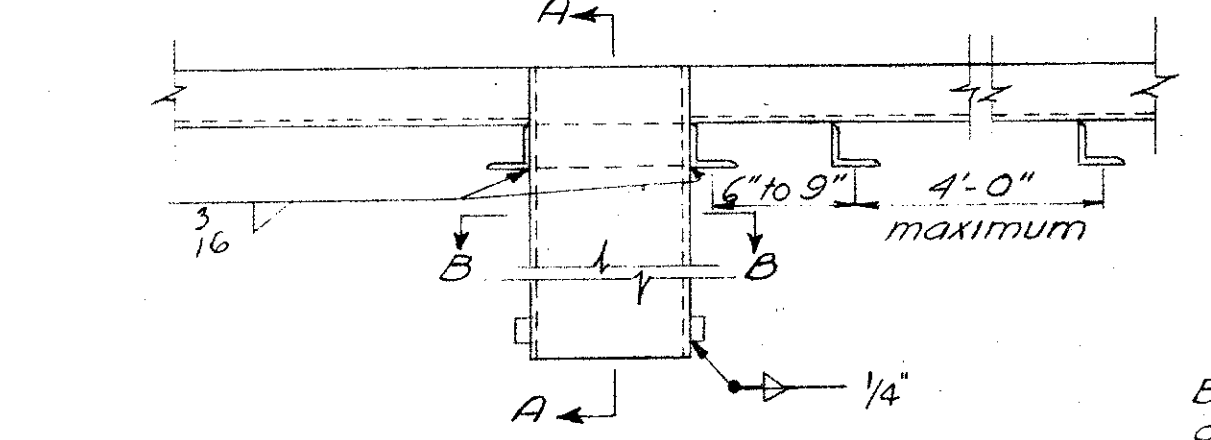
CONSTRUCTION PROCEDURE: No piling shall be driven or other work done for piers No. 6 and 7 until the fill between Sta. 946+40 and 955+00 has been completed to rough grade. Construction of the East abutment including driving of piles shall not begin until the roadway fill has been in place at least 2 months. Fill shall be completed to subgrade elevation at the East abutment and subsequently excavated. As soon as the fill is completed check points shall be established near the East bridge limits and a periodic check made of any settlement.



GUTTER SUPPORT

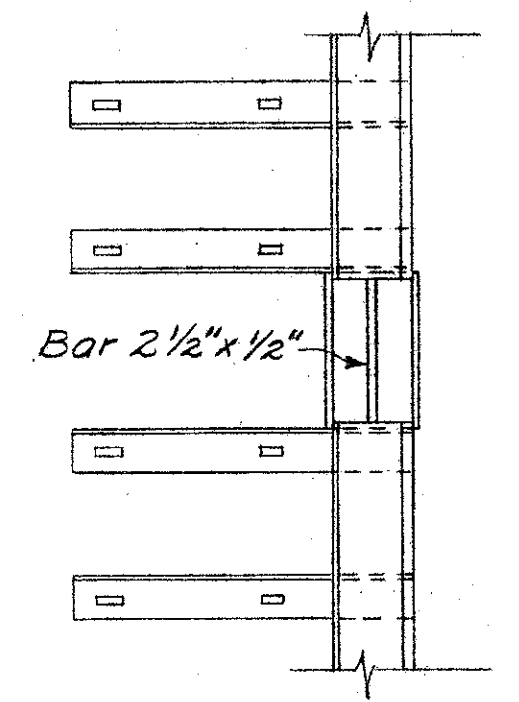


SECTION BB

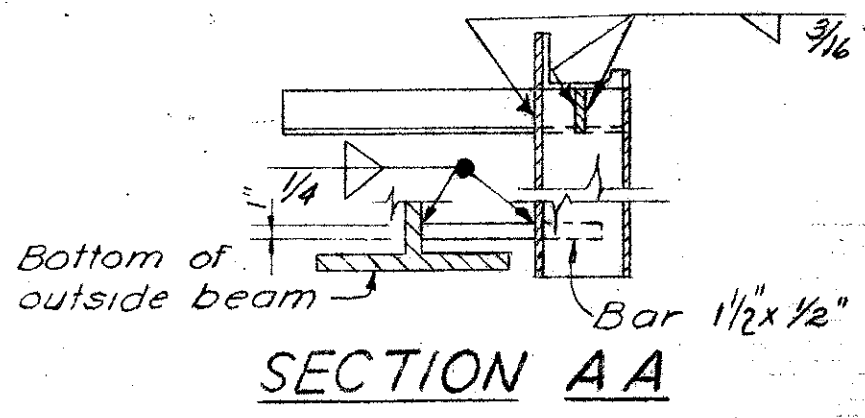


REAR ELEVATION

GUTTER AND SCUPPER DETAILS



PART PLAN



SECTION AA

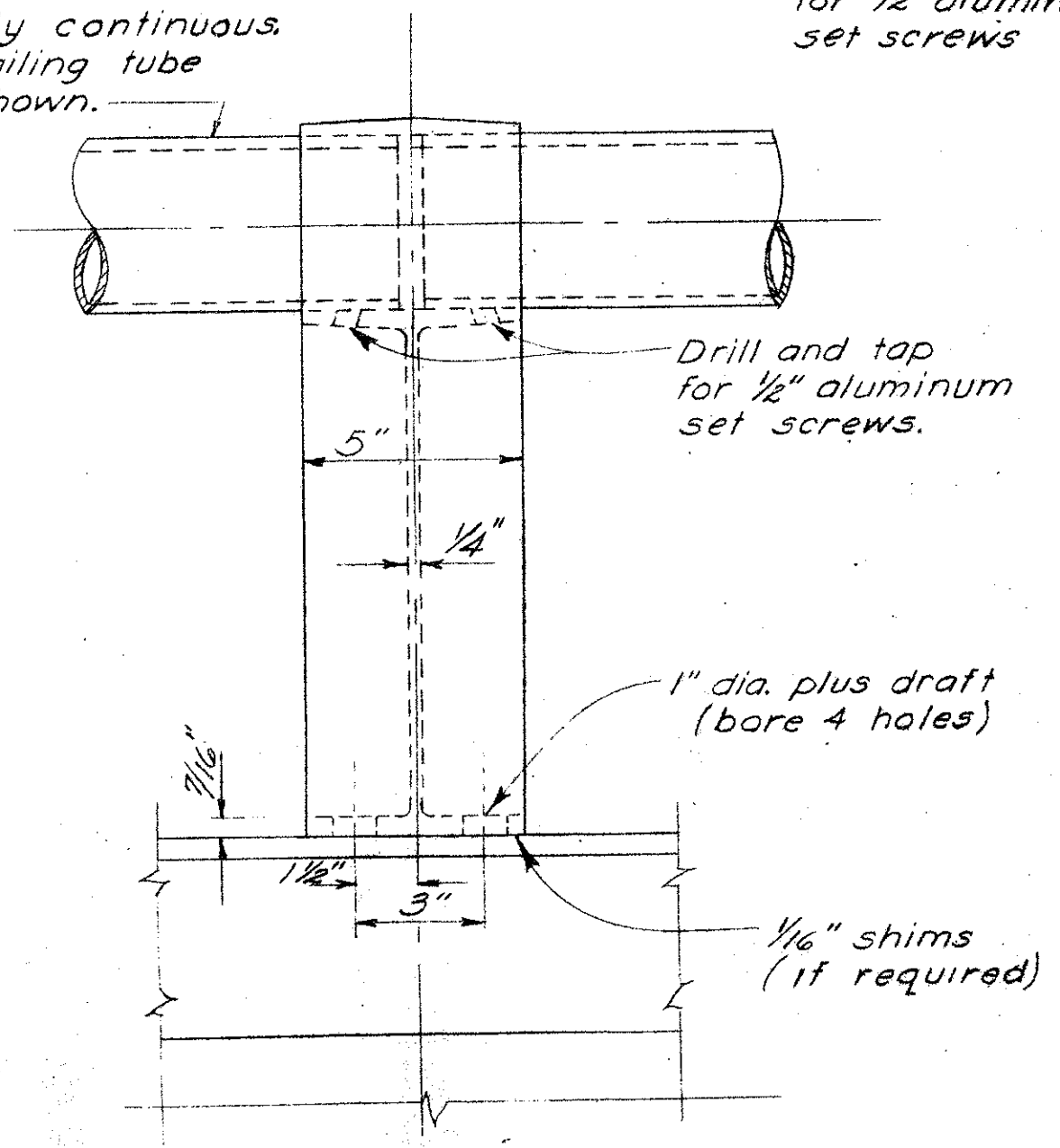
GUTTER AND SCUPPER NOTES

When scupper spacings exceed 25 feet milled joints will be permitted in bulb angles, but individual lengths shall be made as long as practicable.

Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.

Welding of scuppers shall be continuous fillet weld.

4" O.D. x 3/16 wall aluminum tube. Railing is generally continuous. Where necessary, railing tube shall be joined as shown.



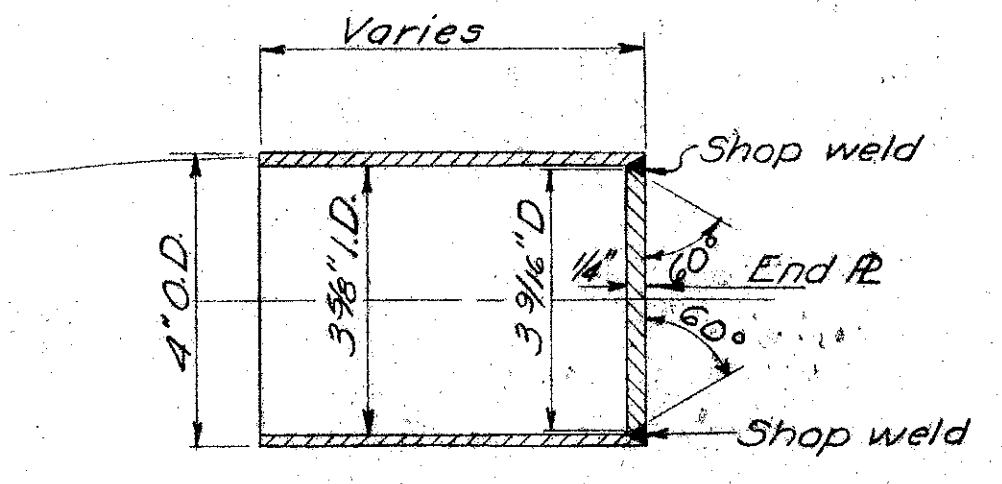
ALUMINUM RAILING TYPE B

Drill and tap for 1/2" aluminum set screws

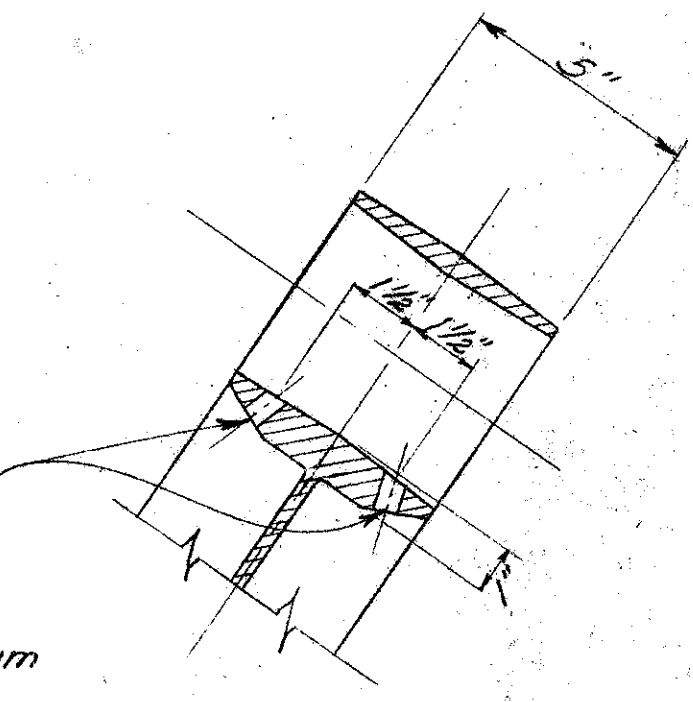
Drill and tap for 1/2" aluminum set screws.

1" dia. plus draft (bore 4 holes)

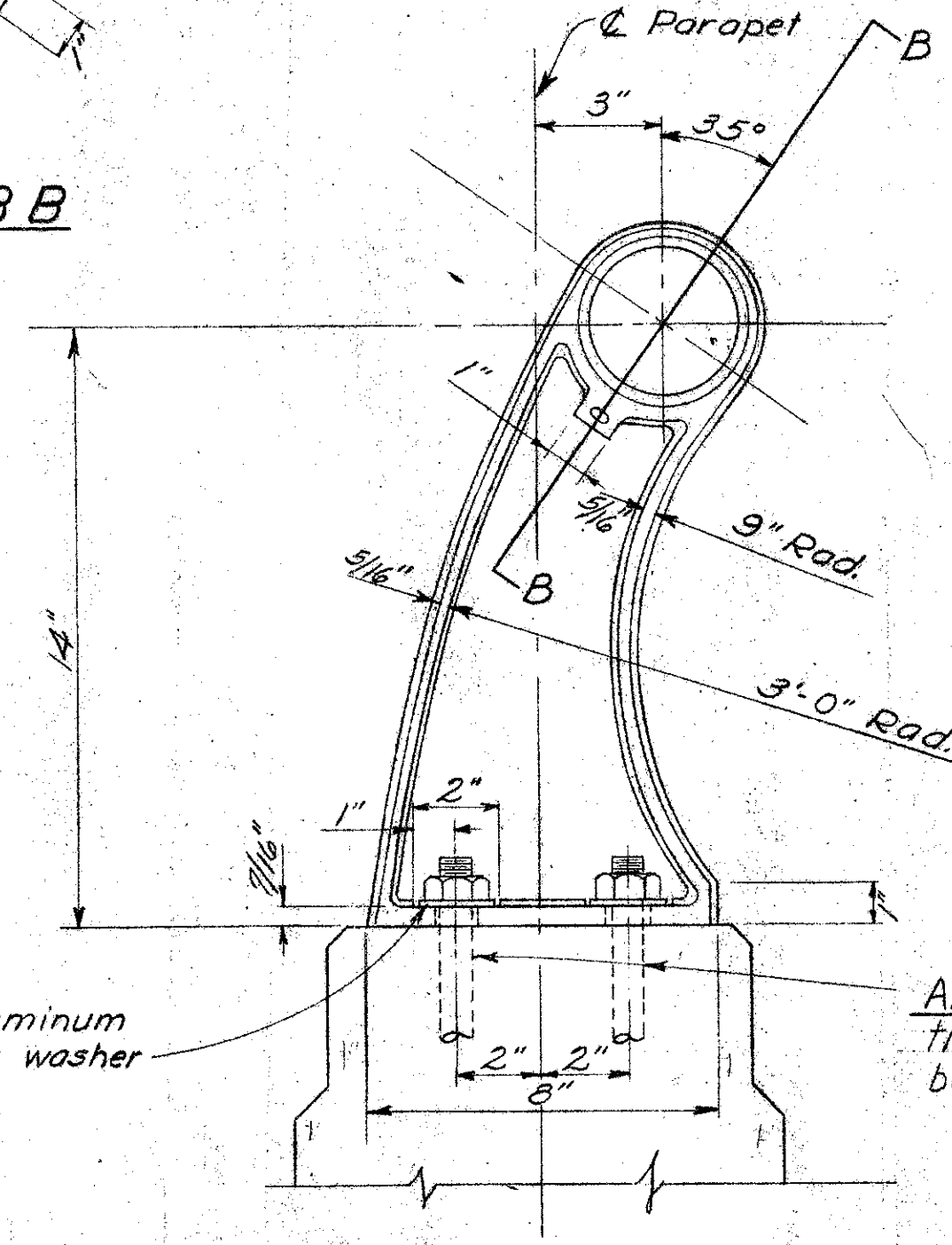
1/16" shims (if required)



DETAIL OF RAIL ENDS
4 Required



SECTION BB



ANCHOR BARS shall be 3/4" diameter aluminum bars, threaded and fitted with aluminum nut, at both ends, and embedded 1'-0" into concrete.

Aluminum lock washer

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

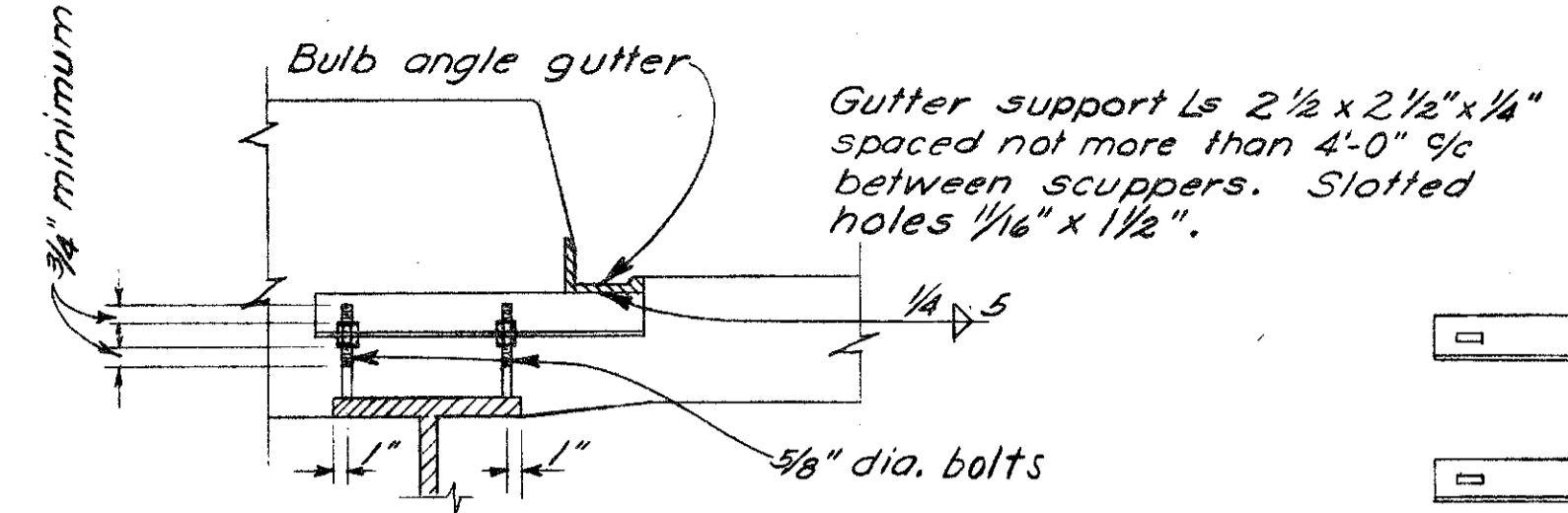
CONSOER. TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS
**RAILING AND SCUPPER
DETAILS, AND GENERAL NOTES**
BRIDGE NO. SA-20-180
OVER SANDUSKY RIVER,
S.R. 53, AND N.Y.C. & S.T.L. RR

DES.	CHECKED	REVIEWED	DATE
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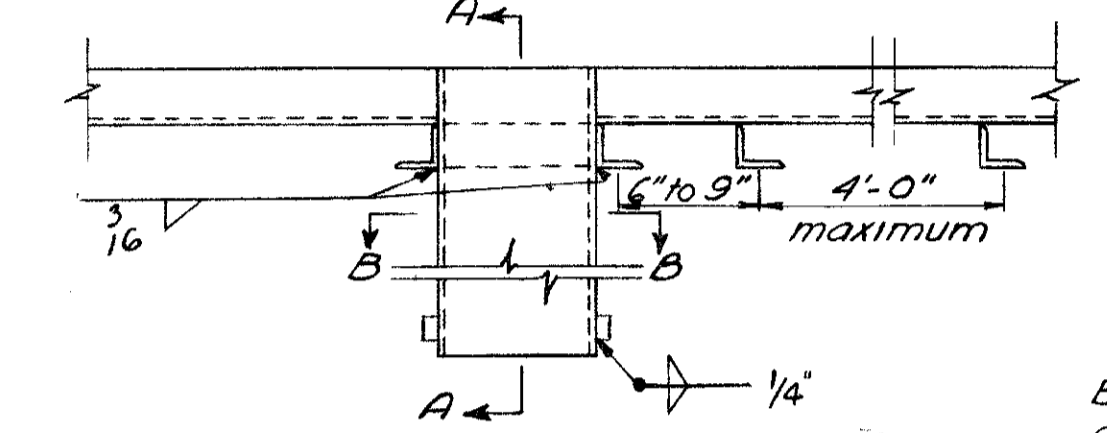
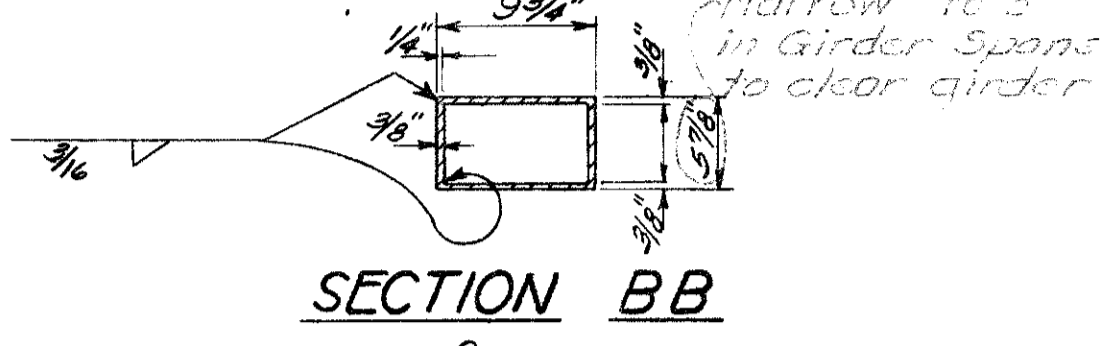
GENERAL

NOTES

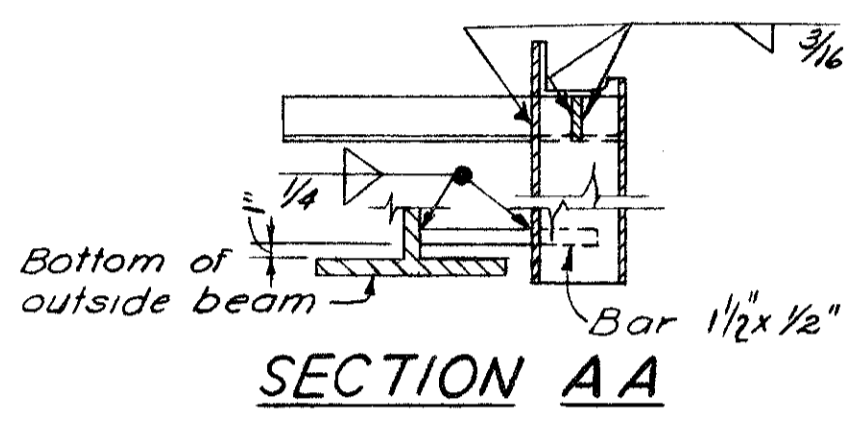
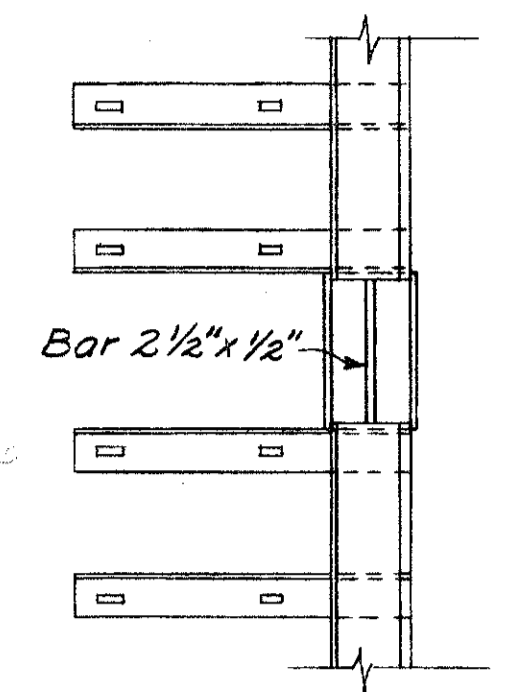
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS	167A
2	OHIO	F-585 (1)		



GUTTER SUPPORT



GUTTER AND SCUPPER DETAILS



GUTTER AND SCUPPER NOTES

When scupper spacings exceed 25 feet milled joints will be permitted in bulb angles, but individual lengths shall be made as long as practicable.

Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.

Welding of scuppers shall be continuous fillet weld.

REFERENCE shall be made to Supplemental Specifications No. S-114 dated Aug. 30, 1955.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 10-1-51, together with revisions thereof dated 7-15-52, 4-1-52 and 2-1-55.

WELDING of structural steel shall be Class "A" except as otherwise noted. Any welds shown as field welds may, at the option of the contractor, be made in the shop. Class "B" welding is shown thus.

SURFACE FINISH OF CONCRETE: Parapets, curb faces, fascias of deck and exposed surfaces of piers, abutts., and wing walls shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

POROUS DRAINS, extending from face of West Abutment to El. 608 and East Abutment to El. 580, shall be provided at all four corners and median of the bridge. The drains shall be 4 ft. wide tapered to 7'-0" width at the W. Abutment and 8'-0" at the E. Abutment.

GRAVEL, if used as the coarse aggregate, shall be according to Sec. M-3.93 instead of M-3.91 for Class "C" concrete, superstructure gravel meeting the requirements of Sec. M-3.93 also may be used for other concrete in this structure.

WELDED STEEL: The steel for the 30WF190 beams shall conform to ASTM Designation A-373. All other structural steel shall conform to either ASTM A-7 (as per Sec. M-7.4 (a) of the Construction and Materials Specifications) or to A-373.

REINFORCING STEEL CLEARANCE from face of concrete shall be 2" except where otherwise noted.

DECK CONSTRUCTION PROCEDURE: The deck slab shall be placed in sections, between construction joints, in the numerical order and the direction shown in "Concrete Pouring Sequence".

CONSTRUCTION PROCEDURE: No piling shall be driven or other work done for Piers No. 6&7 until the fill between Sta. 946+40 and 955+00 has been completed to rough grade. Construction of the East Abutment including driving of piles shall not begin until the roadway fill has been in place at least two months. Fill shall be completed to subgrade elevation at the East Abutment and subsequently excavated. As soon as the fill is completed check points shall be established near the East bridge limits and a periodic check made of any settlement.

SANDUSKY COUNTY SAN. 20-1762
 PILES shall be driven to a minimum bearing capacity of 35 tons for the West abutment and 45 tons for Piers 1, 2 & 3. The length of penetration of every pile shall be at least 80% of the estimated average pay length of the piles in the pertinent pier or abutment as indicated on the plans unless a lesser penetration is approved by the Director. A 15,000 Ft. lb. hammer required. At Piers 6&7 and E. Abut., piles shall be driven to firm contact with rock which shall be considered as obtained when the capacity according to the formula in Sec. S-18.05 is at least 65 tons per pile if a 7000 ft. lb. steam hammer is used, or 50 tons per pile if a steam hammer or drop hammer of 15,000 ft. lb. or greater energy is used and if the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation reports. If the energy rating of the hammer is between these values, the required formula capacity shall be determined by interpolation. (The design load is 35 tons per pile @ Piers 6 & 7 & 45 tons @ E. Abutment.)
 FOOTINGS shall extend a minimum of 1'-0" into solid rock or to the elevation shown, whichever is lower.

EXCAVATION QUANTITY includes the removal of fill material between the top of the earth bench and the bottom of the abutment.

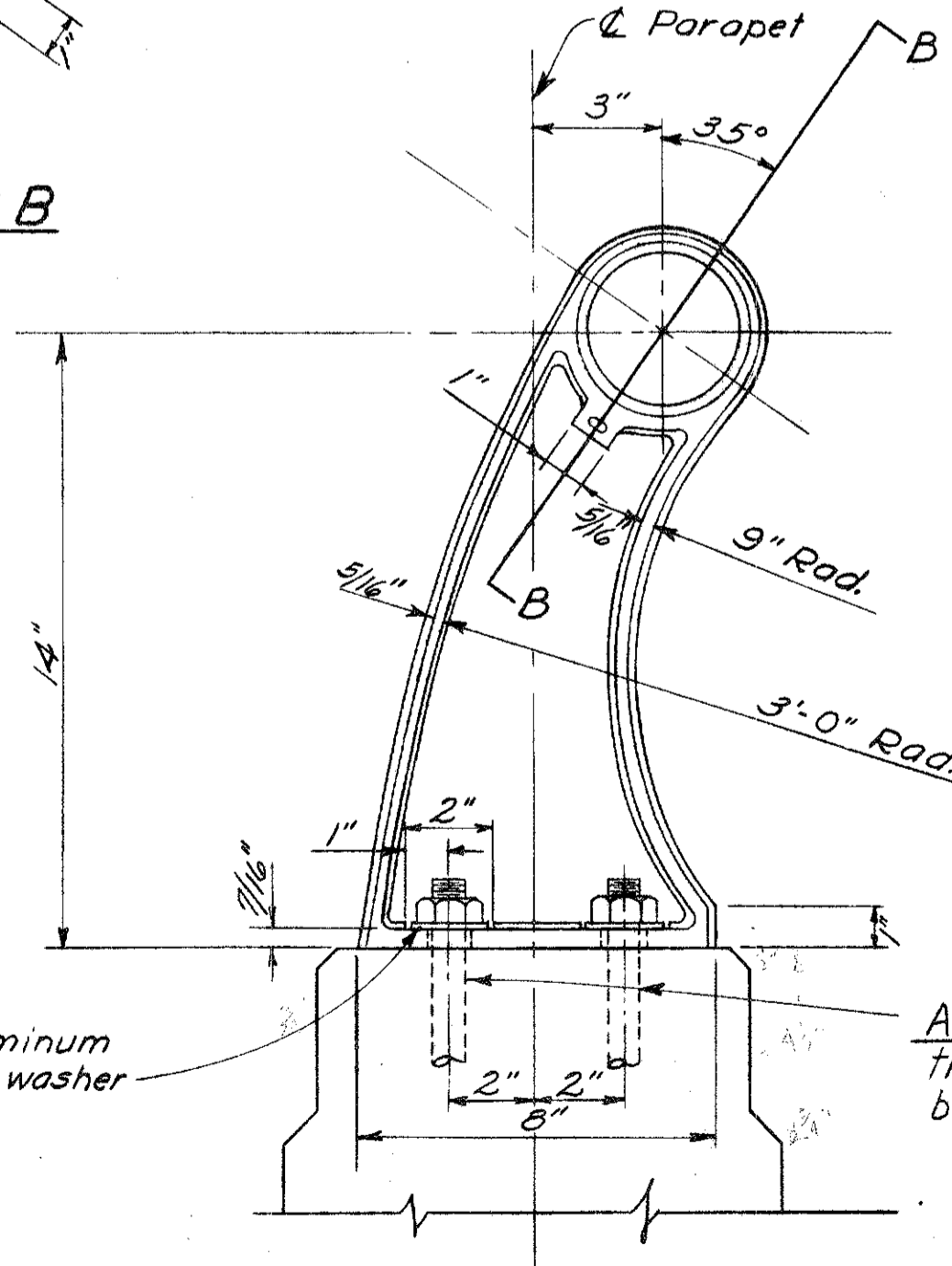
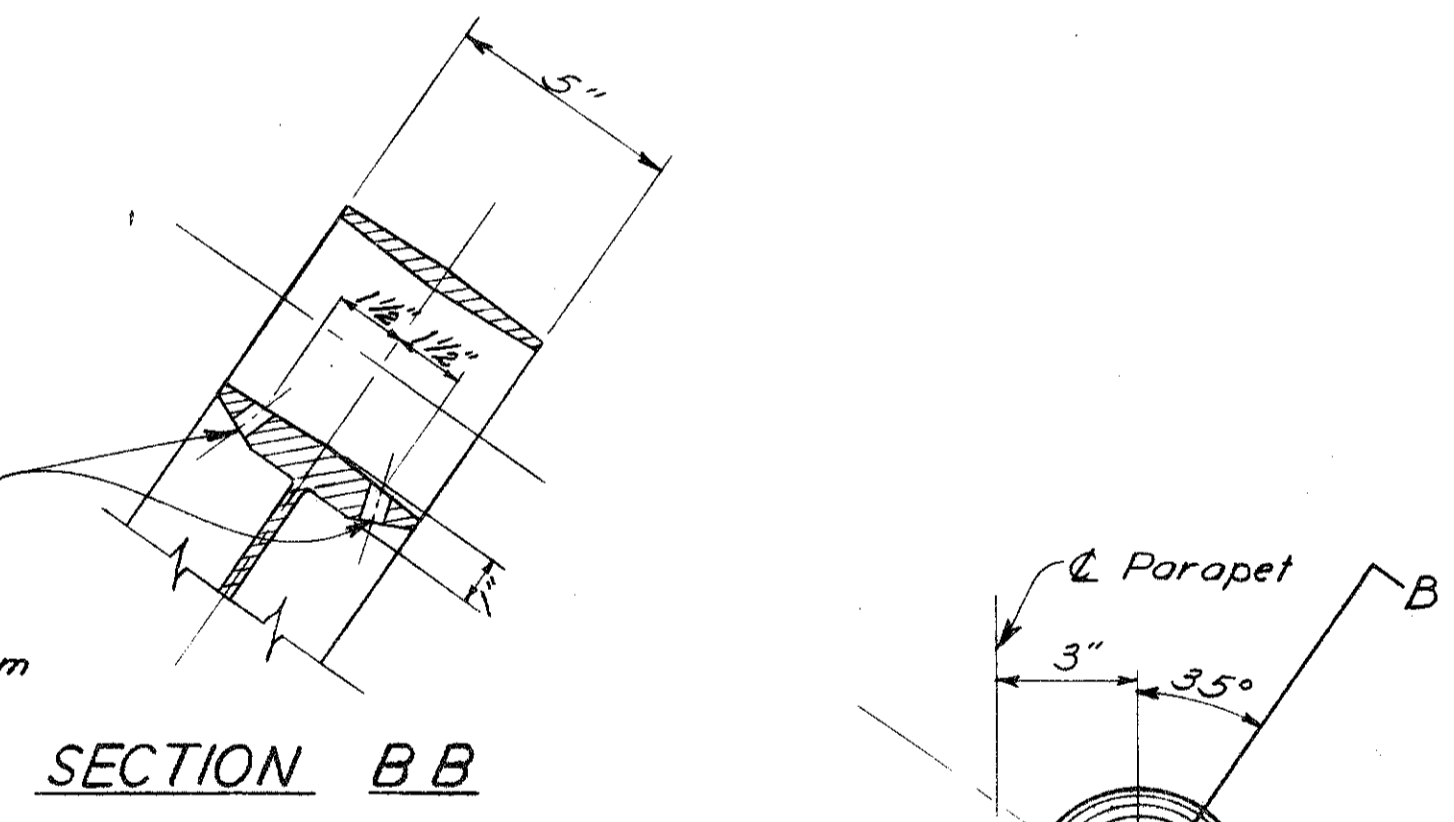
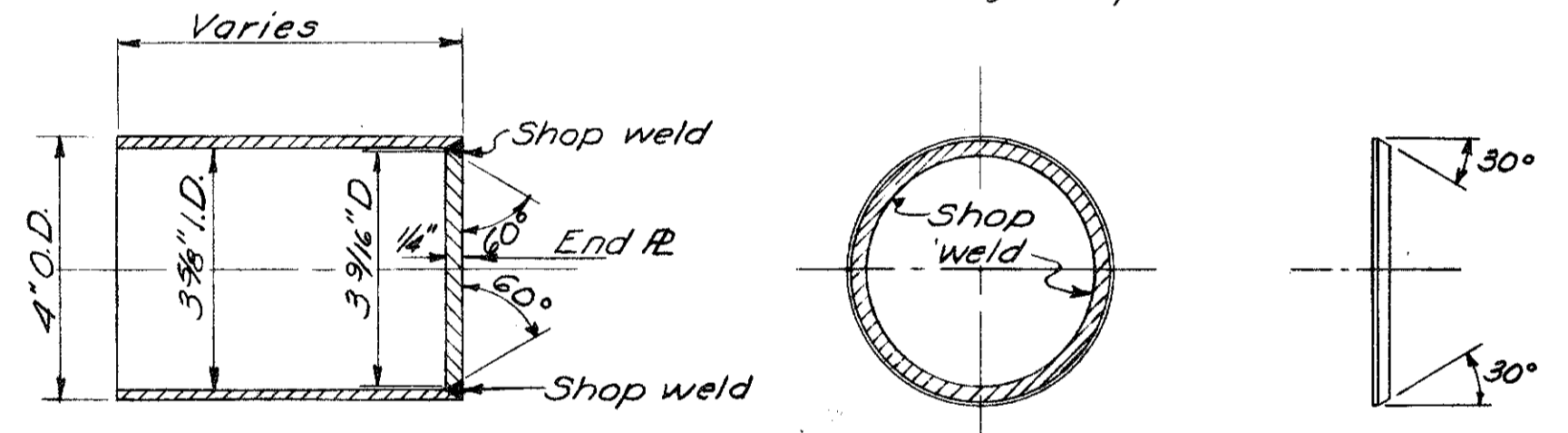
PAINT, both shop and field, shall be applied by brushing. Spray application will not be permitted.

CONSTRUCTION CLEARANCE of 19'-6" vertically above top of railroad tracks and 8'-0" horizontally from the center of tracks shall be maintained at all times.

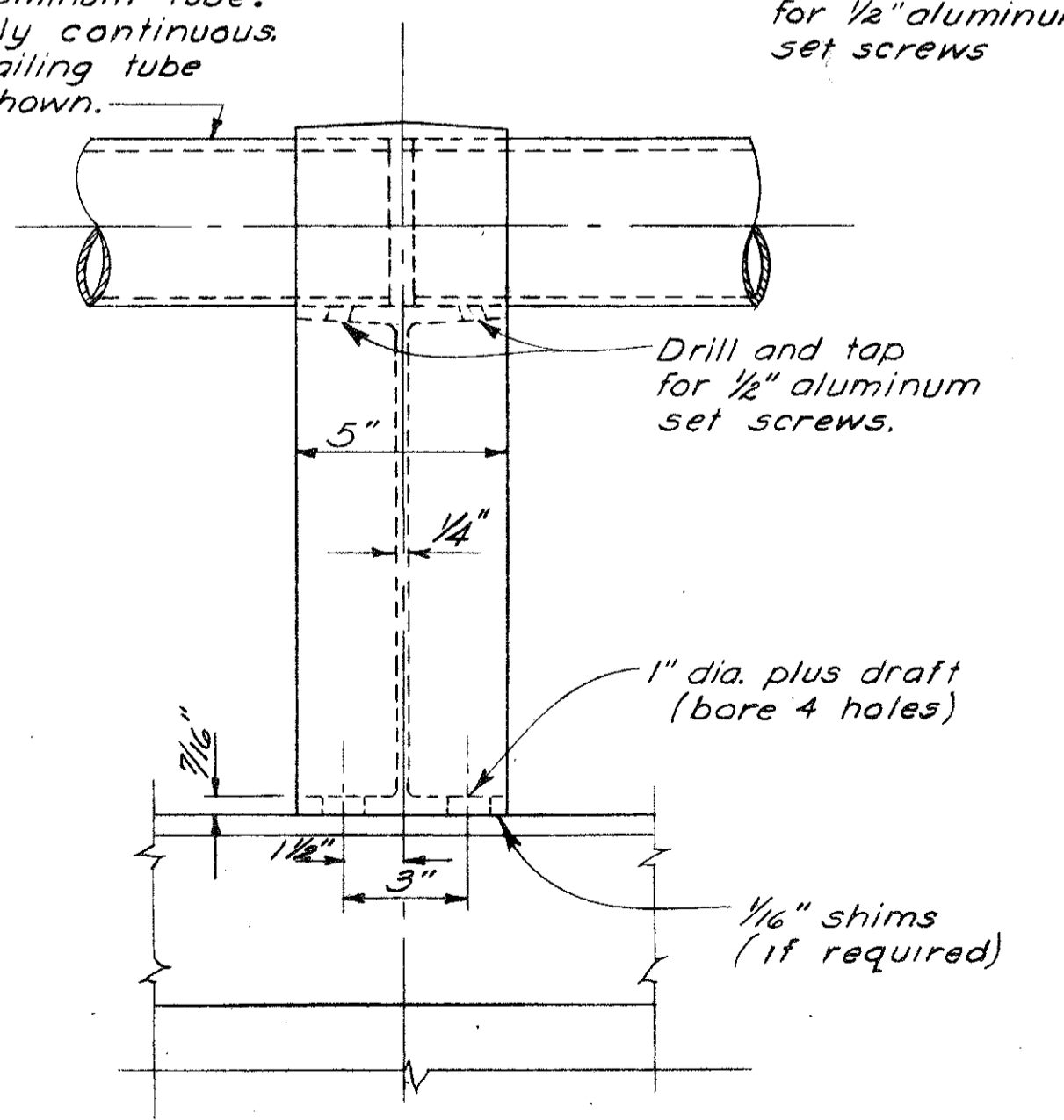
SHEETING AND BRACING: Before construction is started, six sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the railroad company.

ALIGNING RAILROAD TRACKS: After the contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the supervision of the railroad company, nothing in Sec. E-2.04, E-2.08 or G-3.07 of the specifications shall be construed to hold the contractor liable for aligning and re-surfacing the railroad tracks.

UTILITIES: The Contractor shall provide and maintain adequate protection to prevent damage to existing utilities. The Contractor shall cooperate with the utility companies in the necessary removal or reconstruction of any utility line.



4" O.D. x 3/16 wall aluminum tube. Railing is generally continuous. Where necessary, railing tube shall be joined as shown.



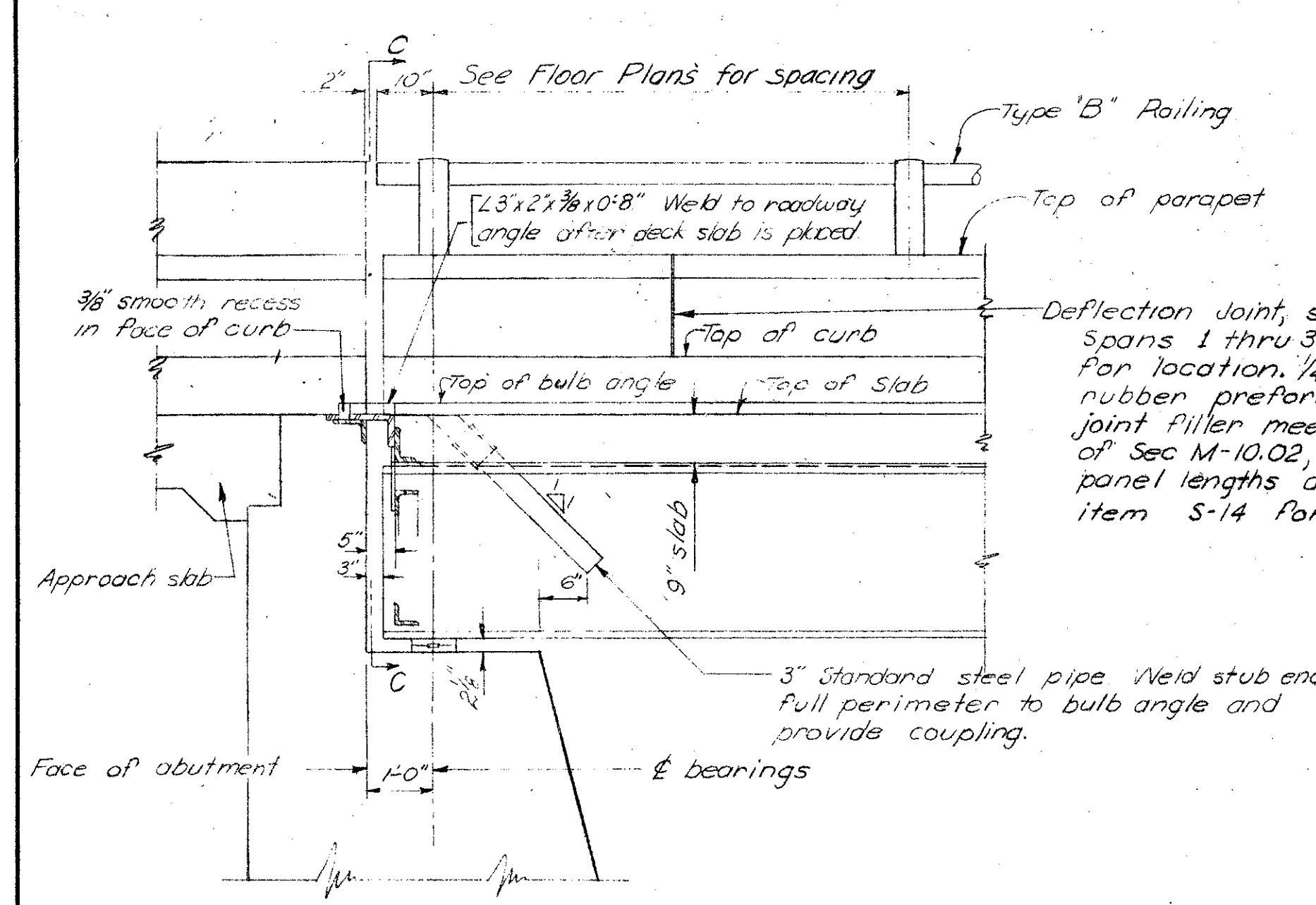
CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILLINOIS					
RAILING & SCUPPER DETAILS AND GENERAL NOTES					
BRIDGE NO SA-20-180 OVER SANDUSKY RIVER, SR 53, AND NYC & ST. L. R.R.					
SANDUSKY CO. F-585 (1)					
SEC. SAN. 20-1762 STA. 939+21.25 TO 941+28.13					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
WFP	WHS	-	WJJ	HSM	11-30-55
					4-17-56

Sheets 149A thru 172A replace Sheets 149 thru 172. 2-10-56

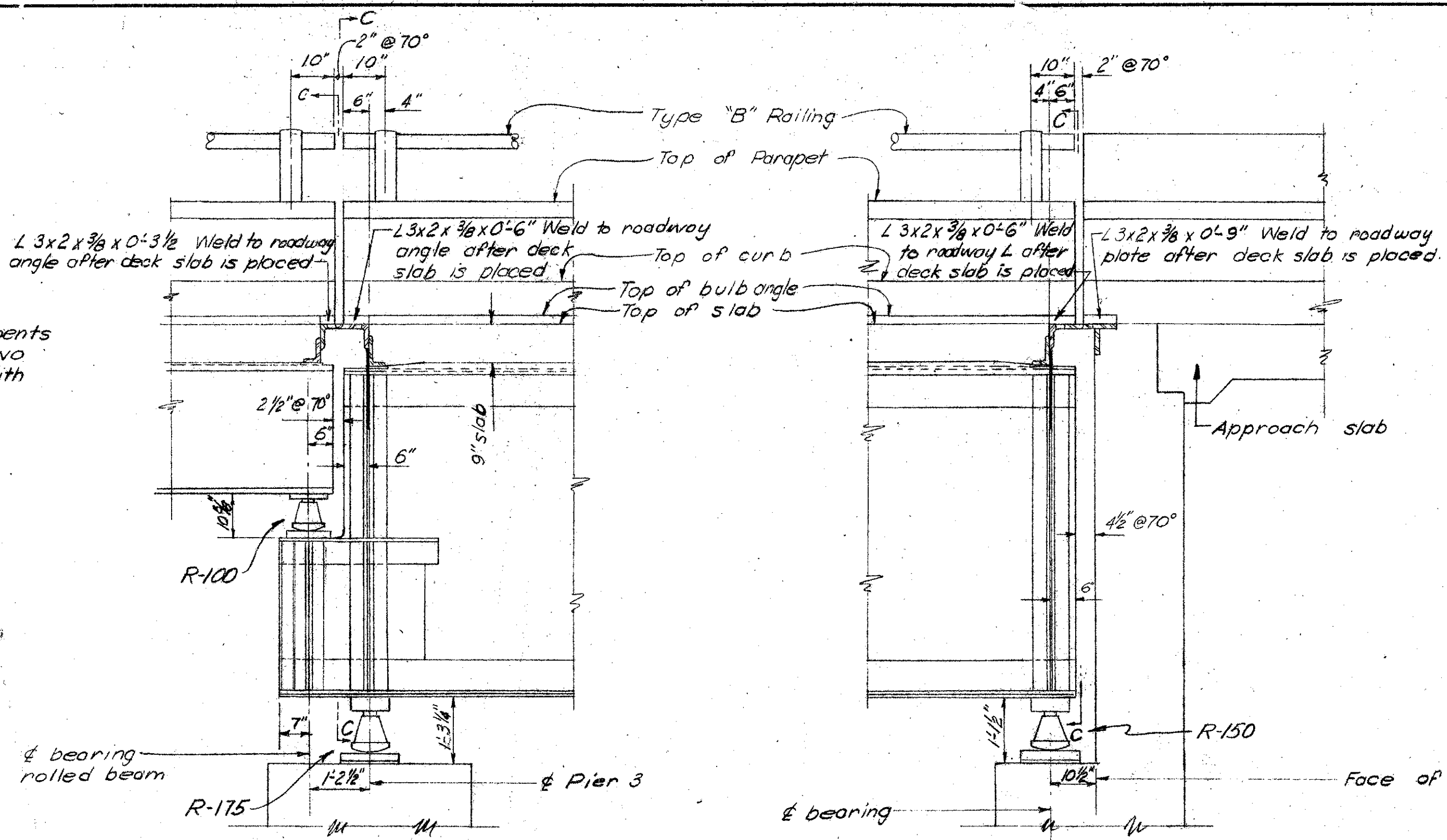
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F583(11)	

SANDUSKY COUNTY

16



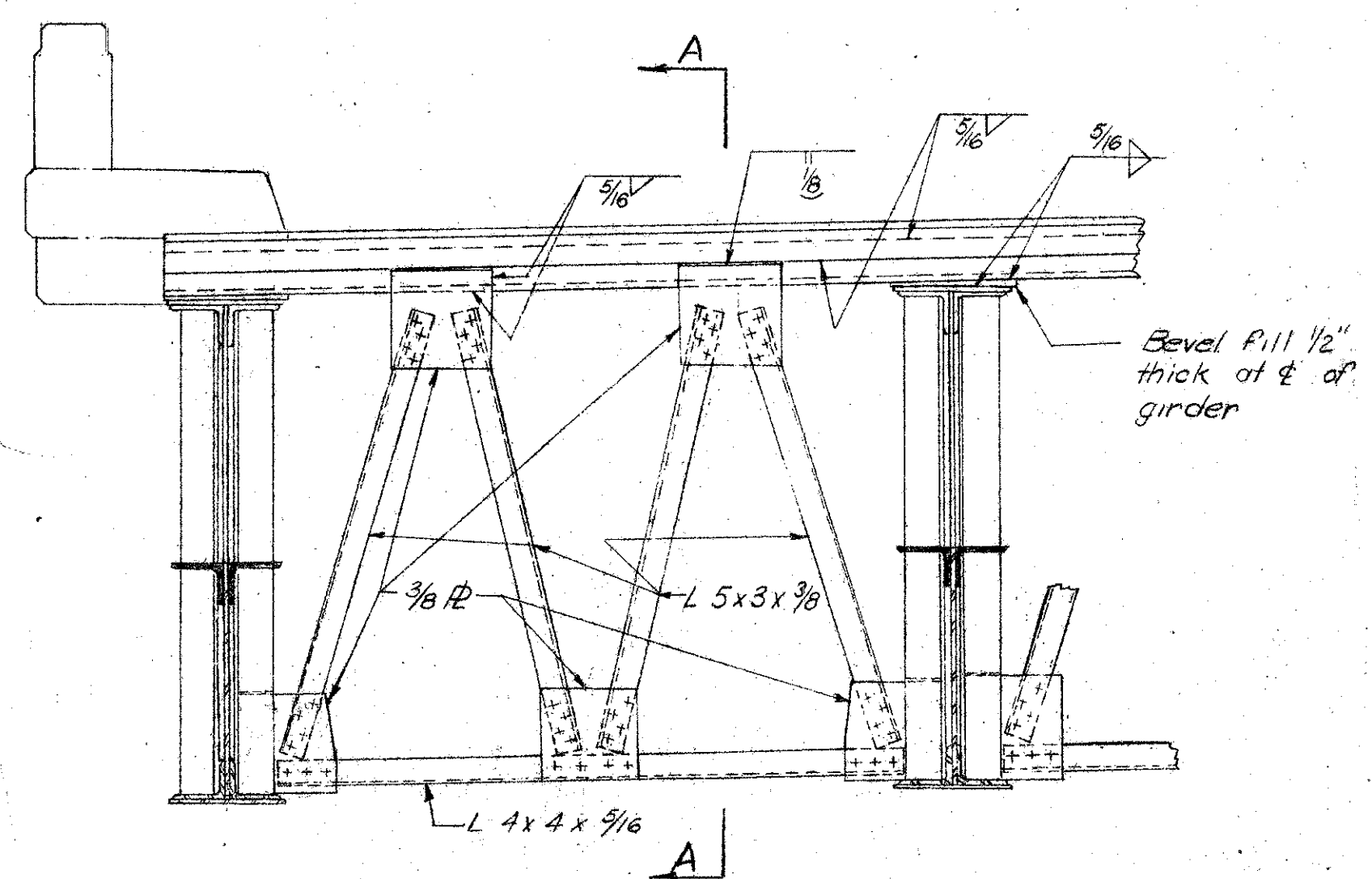
AT WEST ABUTMENT



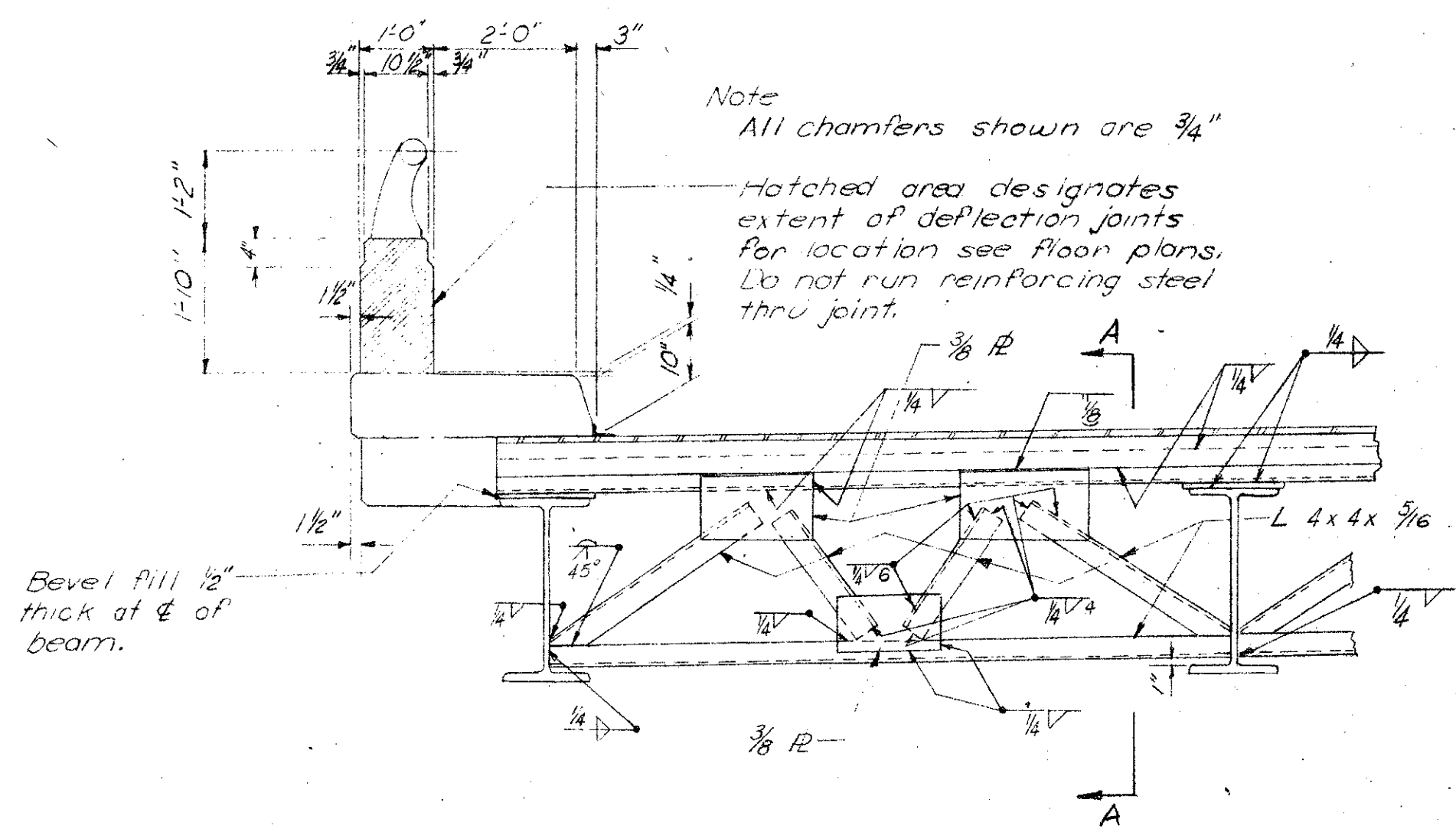
AT PIER 3

AT EAST ABUTMENT

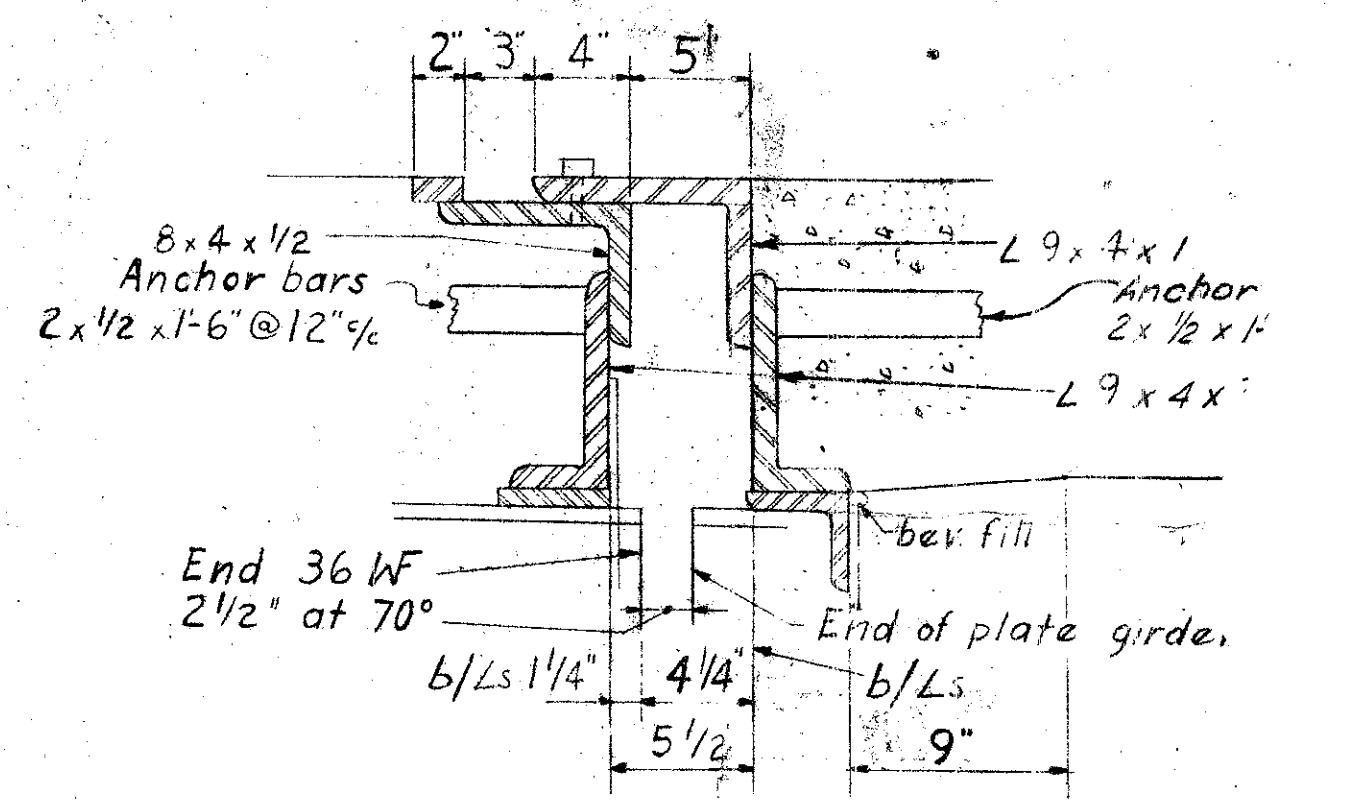
SECTION A-A
Looking normal to roadway



AT PIER 3 AND EAST ABUTMENT

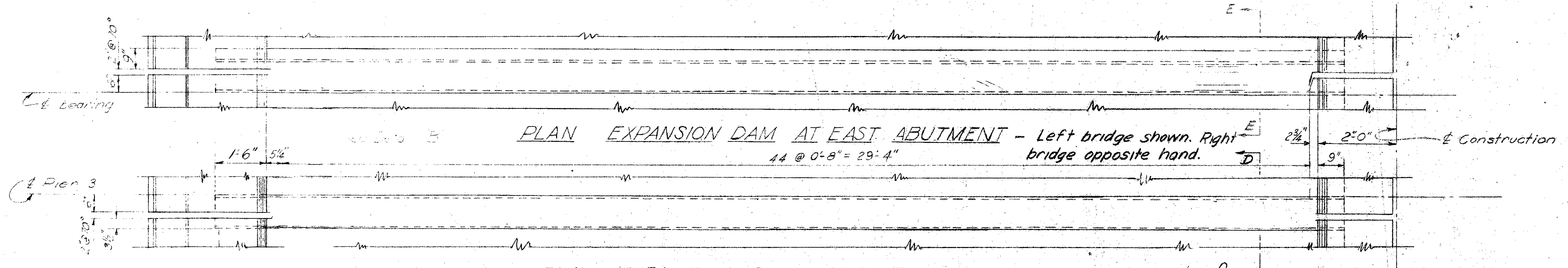


AT WEST ABUTMENT



SECTION D-D

SECTION C-C



PLAN EXPANSION DAM AT PIER 3 - Left bridge shown. Right bridge opposite hand.

Sheets 149 thru 172 superseded by Sheets 149A thru 172A. 2-10-56

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS, CHICAGO, ILLINOIS

END FINISH DETAILS

BRIDGE NO. SA-20-180
OVER THE SANDUSKY RIVER,
S.R. 53, AND N.Y.C. & ST. L. R.R.

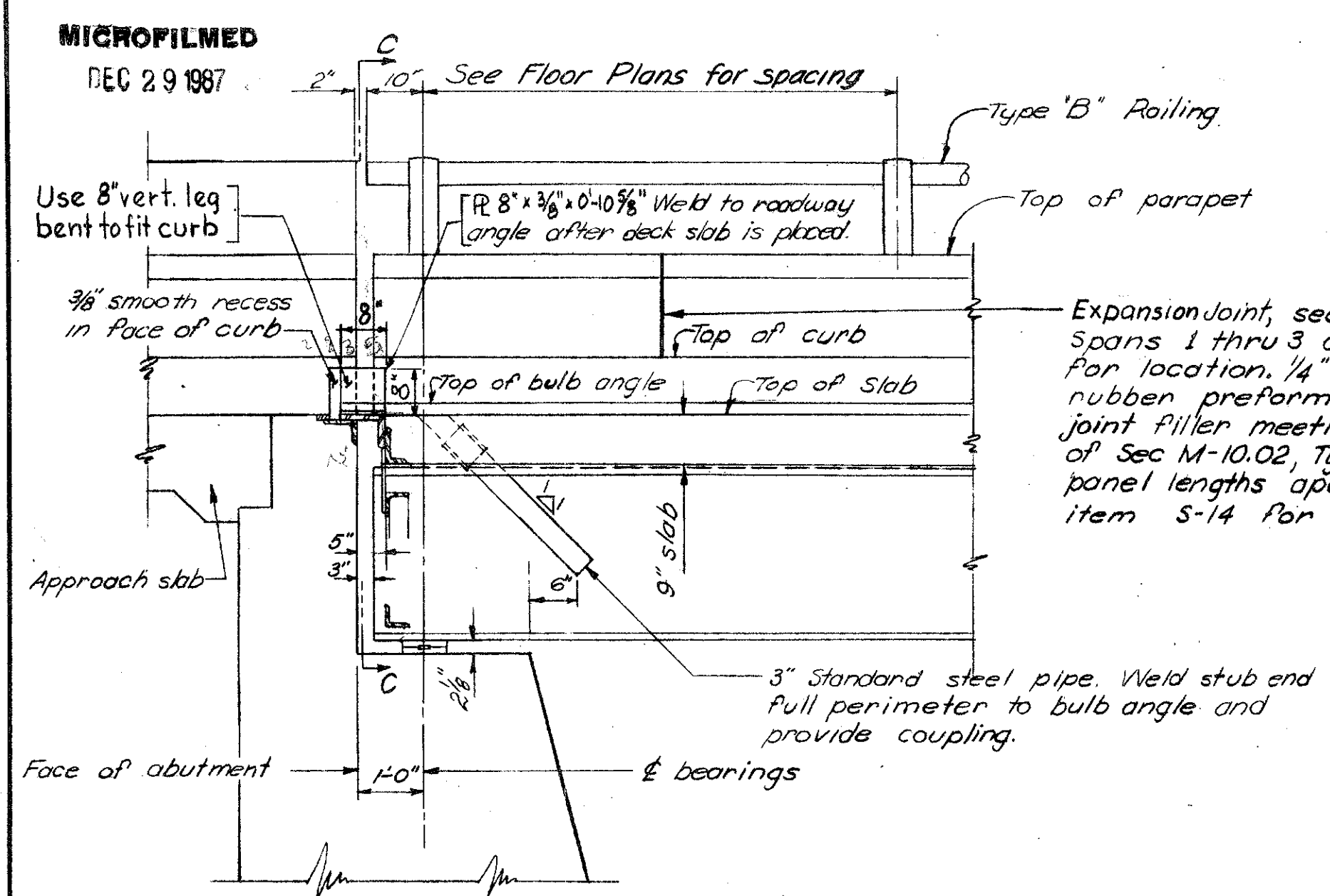
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JTH	JTH		WJL			
Ohio Sta			WEP			

MICROFILMED
DEC 29 1987

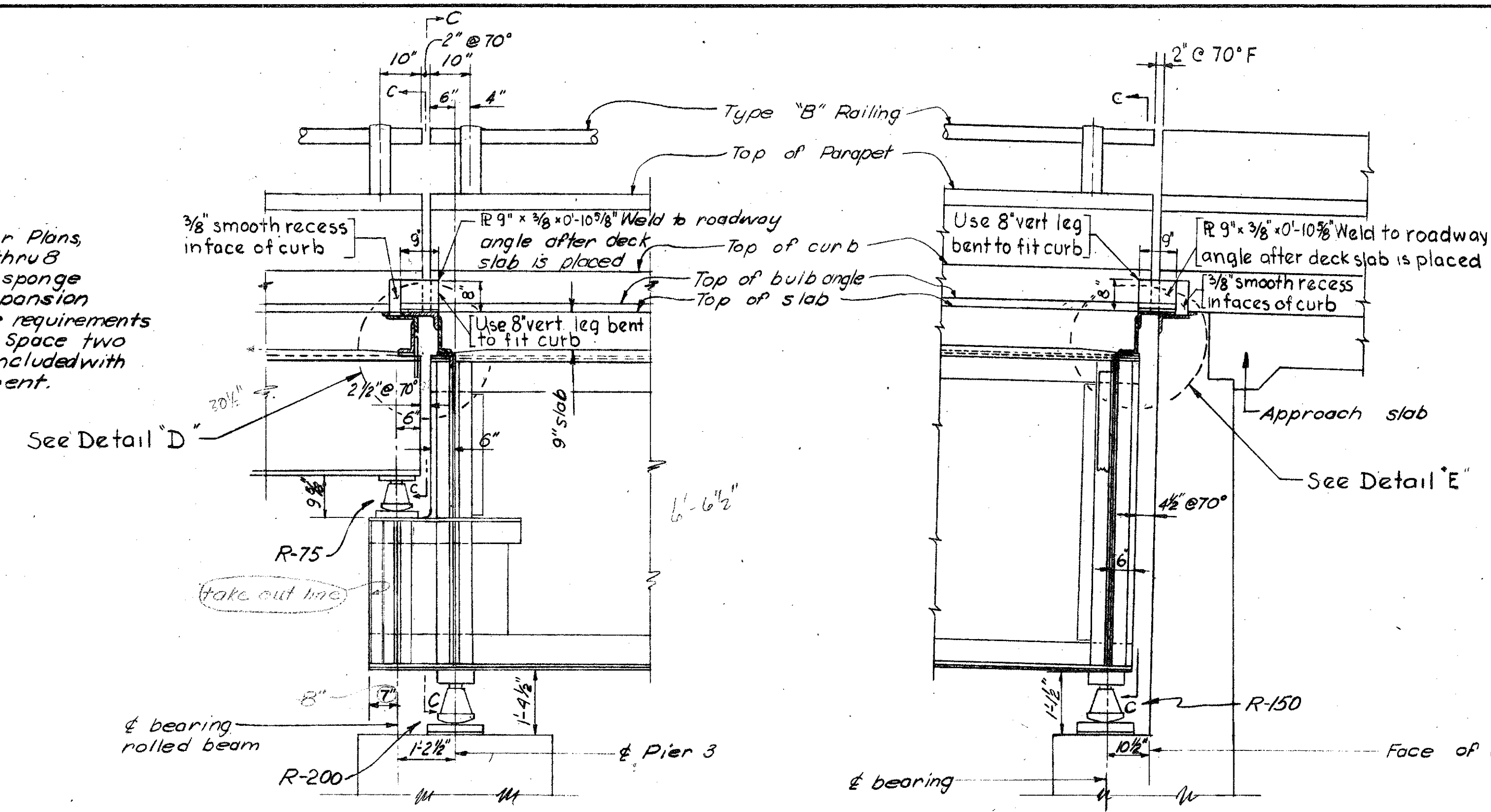
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-585 (11)	

SANDUSKY COUNTY
SAN. 20-17.62

168A



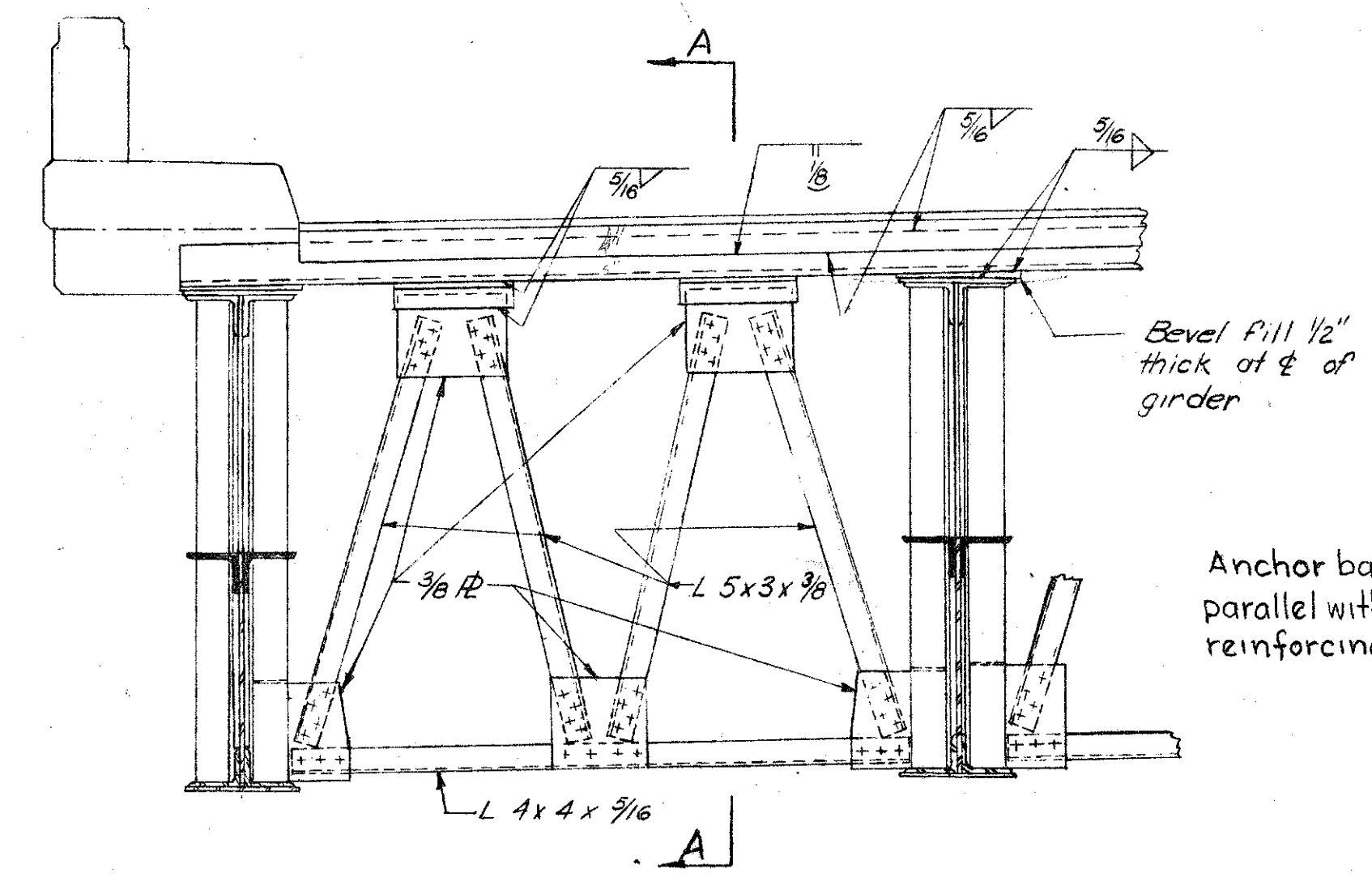
AT WEST ABUTMENT



AT PIER 3

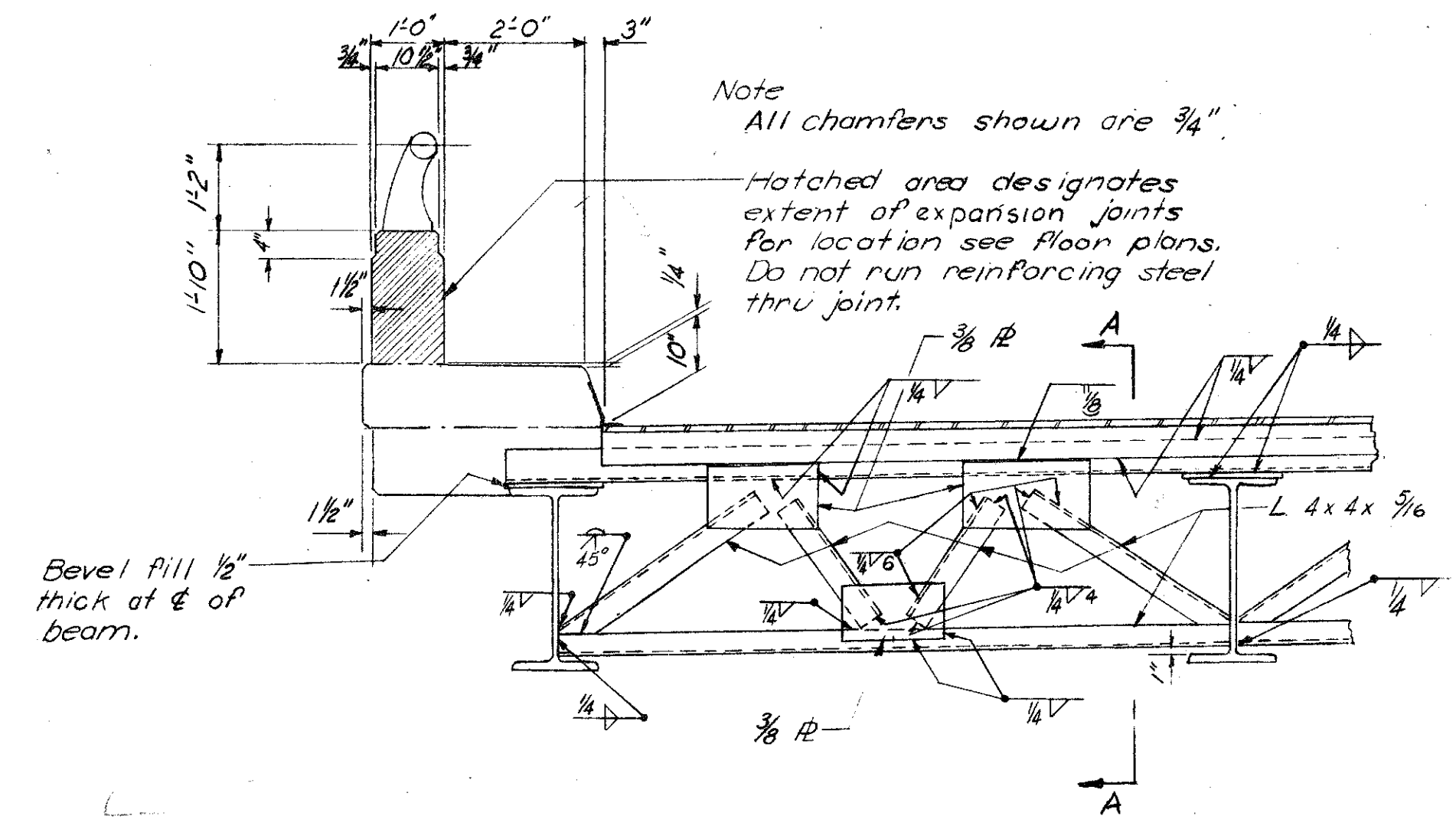
AT EAST ABUTMENT

SECTION A-A
Looking normal to roadway

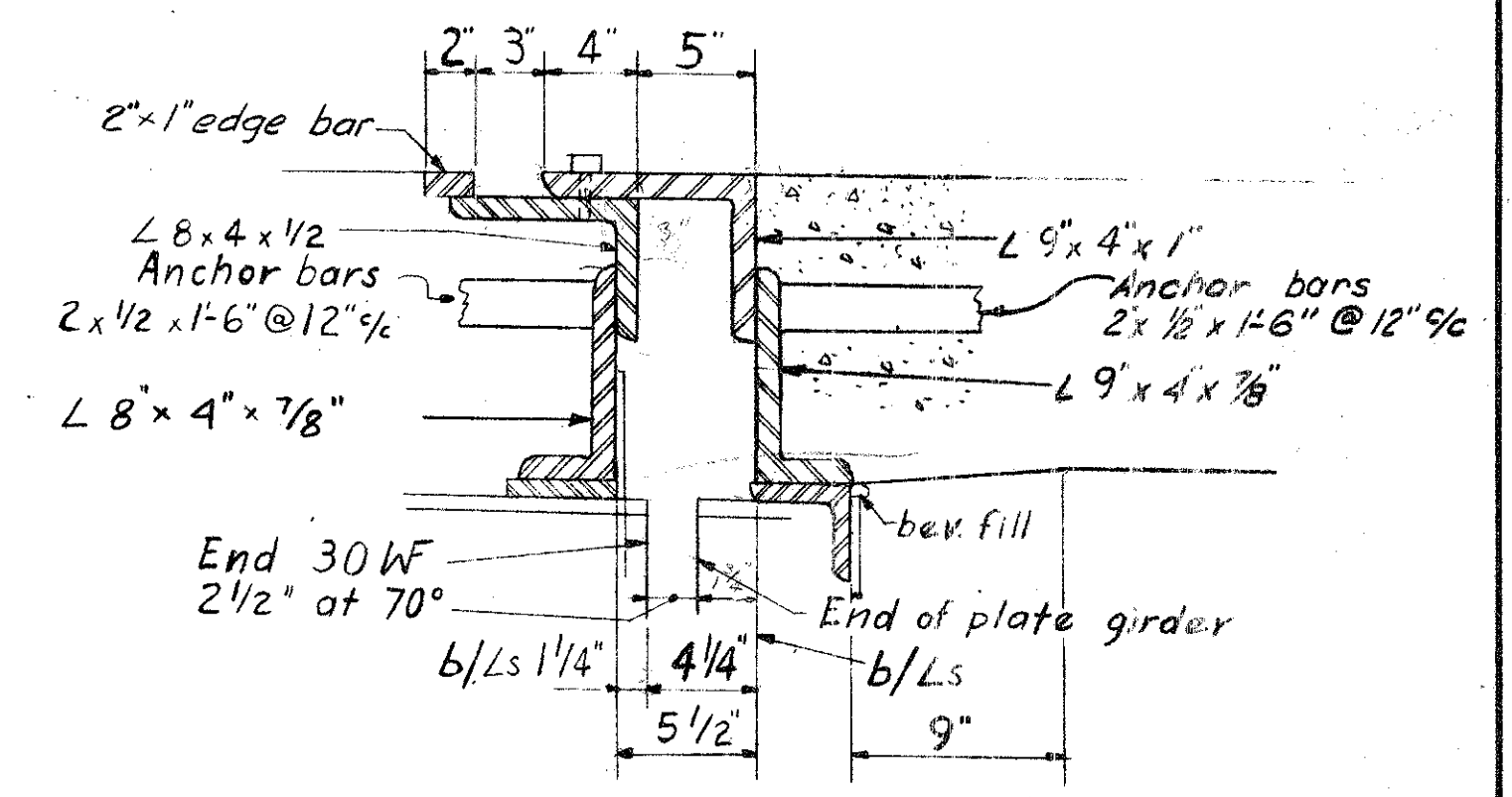


AT PIER 3 AND EAST ABUTMENT

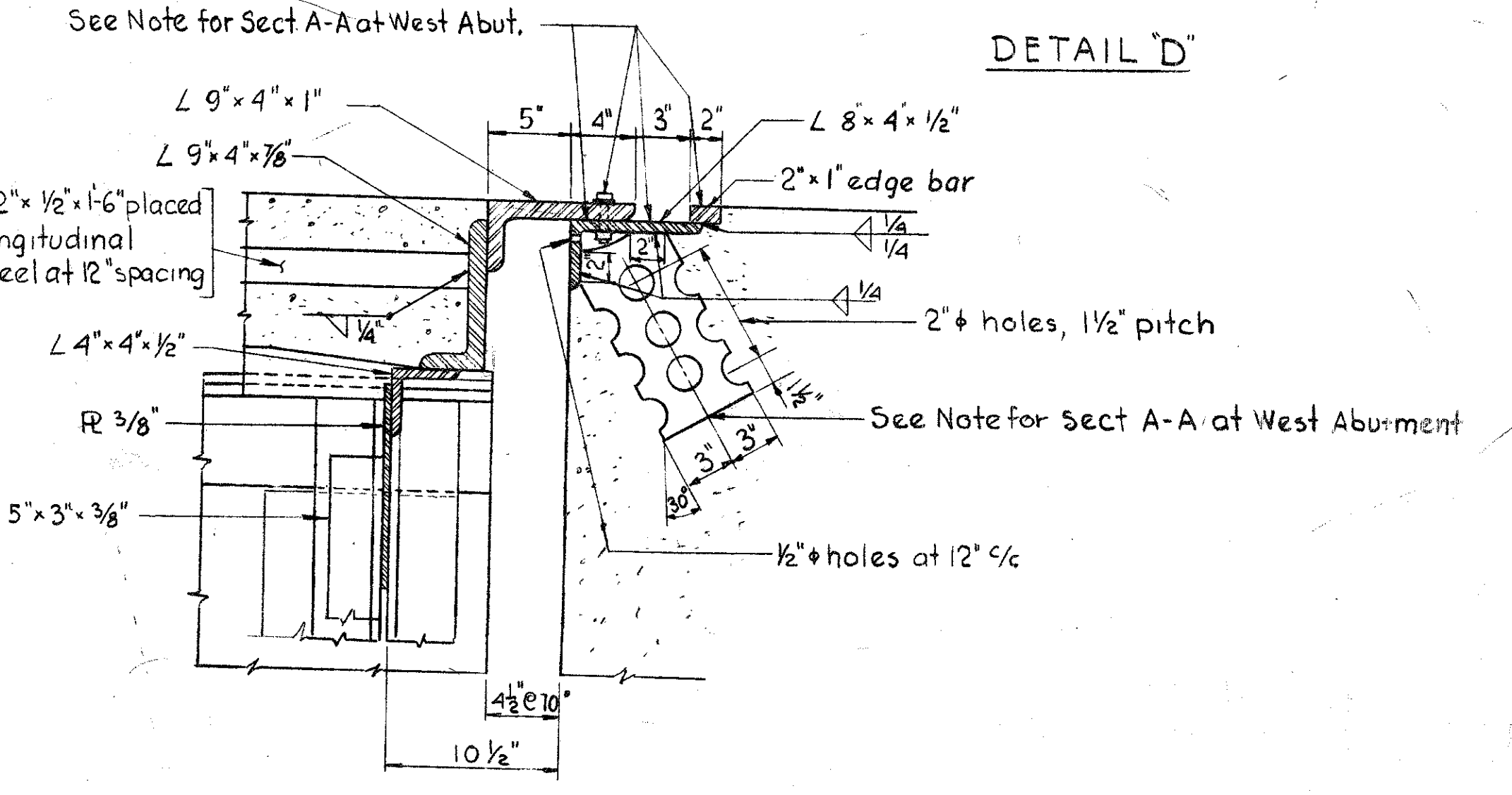
SECTION C-C



AT WEST ABUTMENT



DETAIL D



DETAIL E

Notes for Section 'A-A' on Sheet 163 are applicable to Detail 'D' and Detail 'E' also

CONSOER. TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

END FINISH DETAILS
BRIDGE NO SA-20-180

OVER SANDUSKY RIVER SR 53 AND NVC & STL. R.R.
SANDUSKY CO. F-585 (11)
SEC. SAN 20-17.62 STA. 939+2125 TO 941+28.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
JTH	JTH	-	NLL	HSM	11-30-55	4-17-58

Sheets 149A thru 172A replace
Sheets 149 thru 172. 2-10-56