

10/10/43

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042 (10)	

106
133

OTT. 2-16.48
2.5 miles west of Port Clinton, Ohio

EXISTING BRIDGE DATA

Upstream Bridge: OTT.19-0323 in Oak Harbor, Ohio 8.9 miles upstream.
 Type: Concrete Slab on Continuous Steel Beams. Reinf. Conc. Substructure.
 Spans: 64', 80', 80', 64'
 Date Built: 1932
 Skew: 30° L.F.
 Roadway: 24' f/r curbs
 Condition: Fair
 Clear Opening: 4507 sq.ft. below bottom of beams.

Downstream Bridges:
 At New York Central Railroad 1.4 miles downstream
 Type: Simple span plate girders. Lift span = 114'. Conc. substructure.
 Spans: 69'-7", 69'-4", 70'-0", 114'-0", 47'-0"
 Clear Spans: 52', 63', 60', 106', 30'
 Skew: None
 No. of Tracks: Two
 Condition: Fair
 Clear Opening: 5545 sq.ft. below bottom of plate girder.
 Date Built: 1919

At Existing S.R. 2 in Port Clinton Ohio 2.5 miles downstream.
 Type: Haunched plate girder. Lift span. Concrete substructure.
 Clear Spans: 60', 80', 60'
 Skew: None
 Roadway: 40' f/r curbs.
 Condition: Good
 Clear Opening: 3015 sq.ft. below water elev. 572'
 Date Built: 1933

FOUNDATION SOUNDINGS

Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling information made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

Drainage Area = 578 sq. miles
 Waterway Opening below L.W.D. Elev. 570.50 = 3700 sq.ft.

PROPOSED STRUCTURES

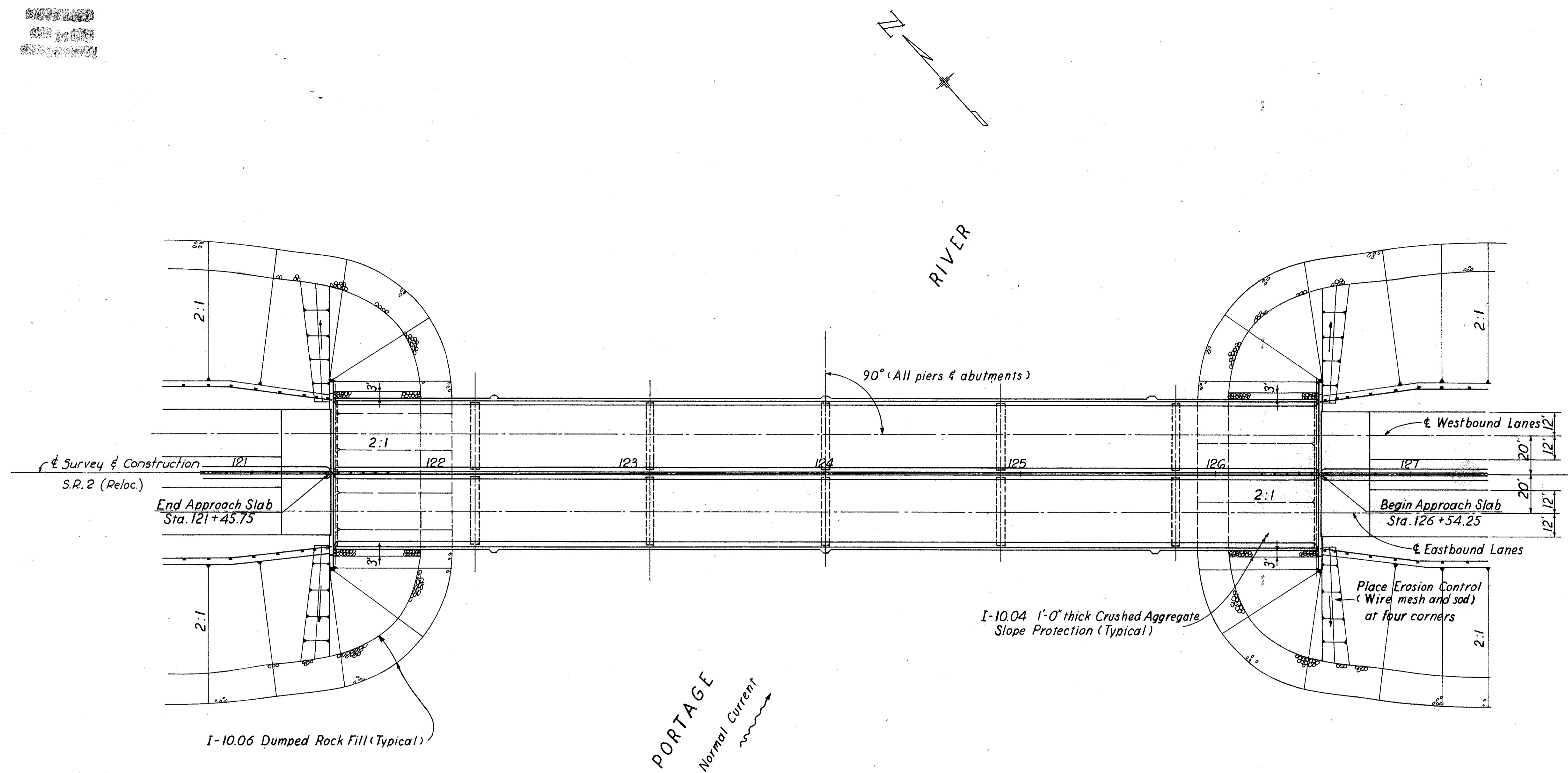
Type: Continuous steel beam with reinforced concrete deck. Reinforced concrete T type piers and stub abutments.
 Spans: 72'-0", 90'-0", 90'-0", 90'-0", 90'-0", 72'-0" bridge
 Roadway: 70' f/r of 2'-3" Safety Curbs including 6' concrete median.
 Load Frequency: CF400 (S7)
 Skew: 0°
 Wearing Surface: 1" monolithic concrete
 Approach Slabs: AS-1-54 (25'-0" Long)
 Alignment: Tangent

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 CONSULTING ENGINEERS
 TOLEDO OHIO

SITE PLAN

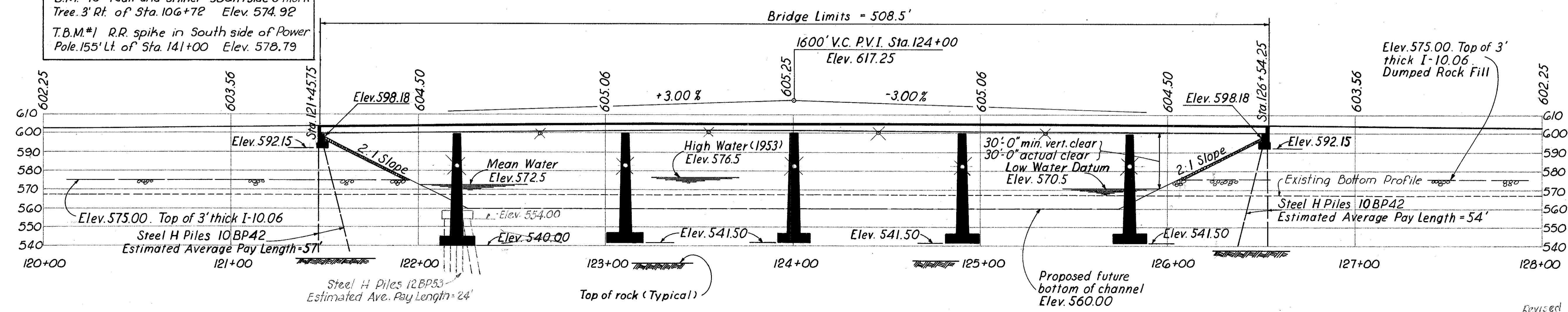
BRIDGE NO. OTT. 2-1844
 OVER PORTAGE RIVER
 OTTAWA COUNTY STA. 121+45.75 to
 Scale: 1" = 30' STA. 126+54.25

PRESENT TOPOGRAPHY		PROPOSED WORK		
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED
S-M-B	T.W.D.	T.W.D.	T.W.D., O.M.B.	B.J.H.



BENCH MARKS

B.M.#10 Nail and shiner South side 6" Thorn Tree 3' Rt. of Sta. 106+72 Elev. 574.92
 T.B.M.#1 R.R. spike in South side of Power Pole 155' Lt. of Sta. 141+00 Elev. 578.79



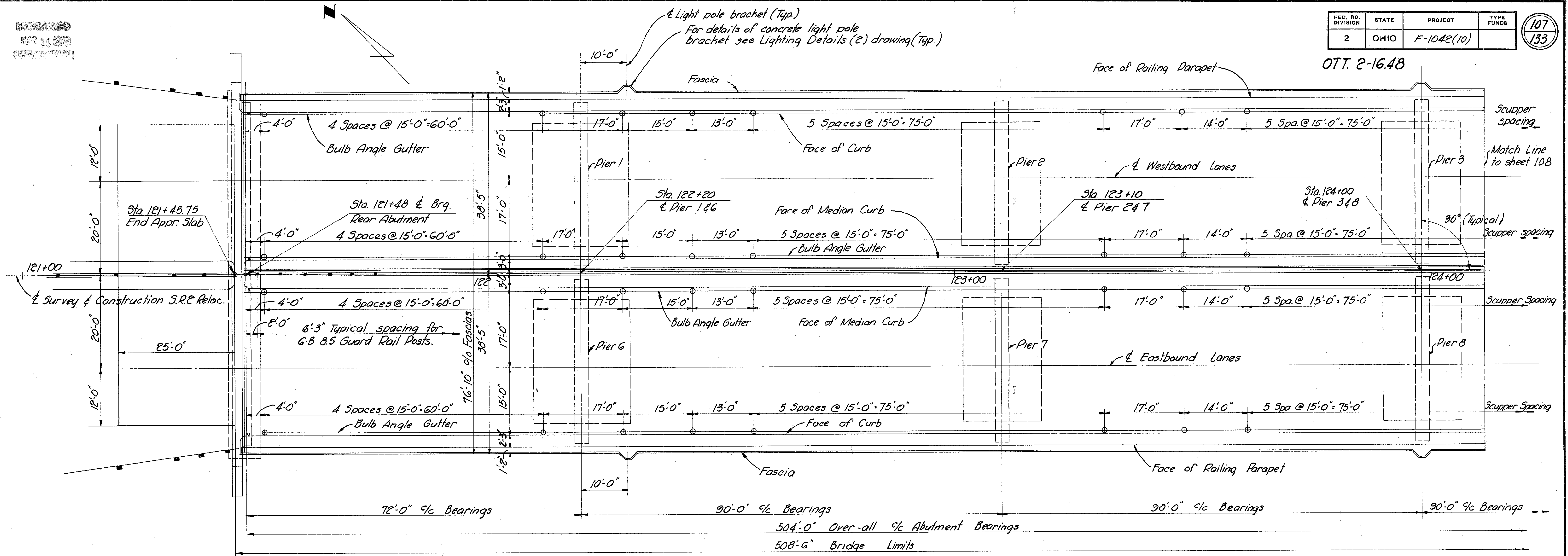
Revised 1-27-67 J.R.R.

REVISED
MAR 14 1963

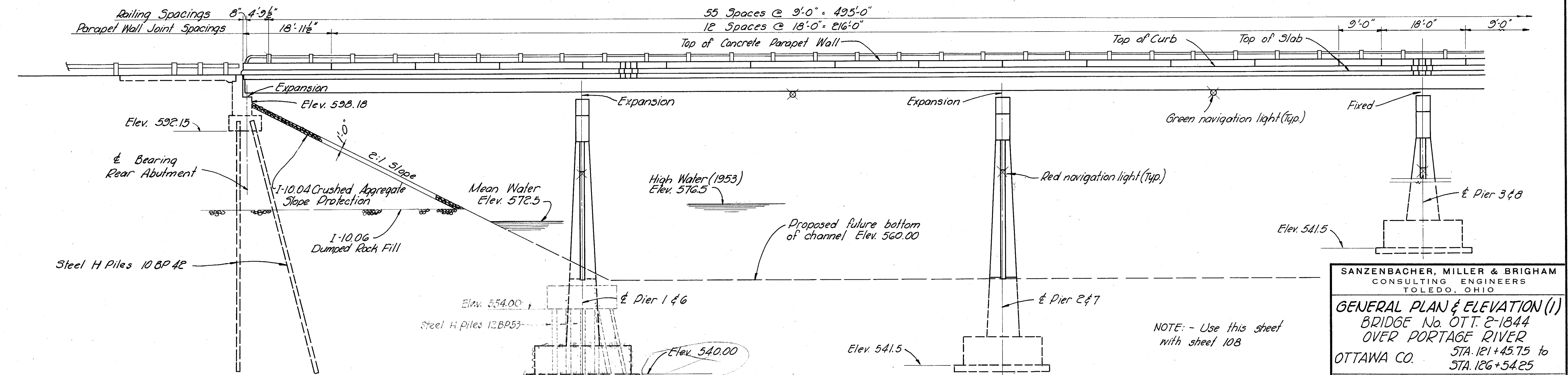
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	

107
133

OTT. 2-1648



PART GENERAL PLAN



PART GENERAL ELEVATION

NOTE: - Use this sheet with sheet 108

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TOLEDO, OHIO

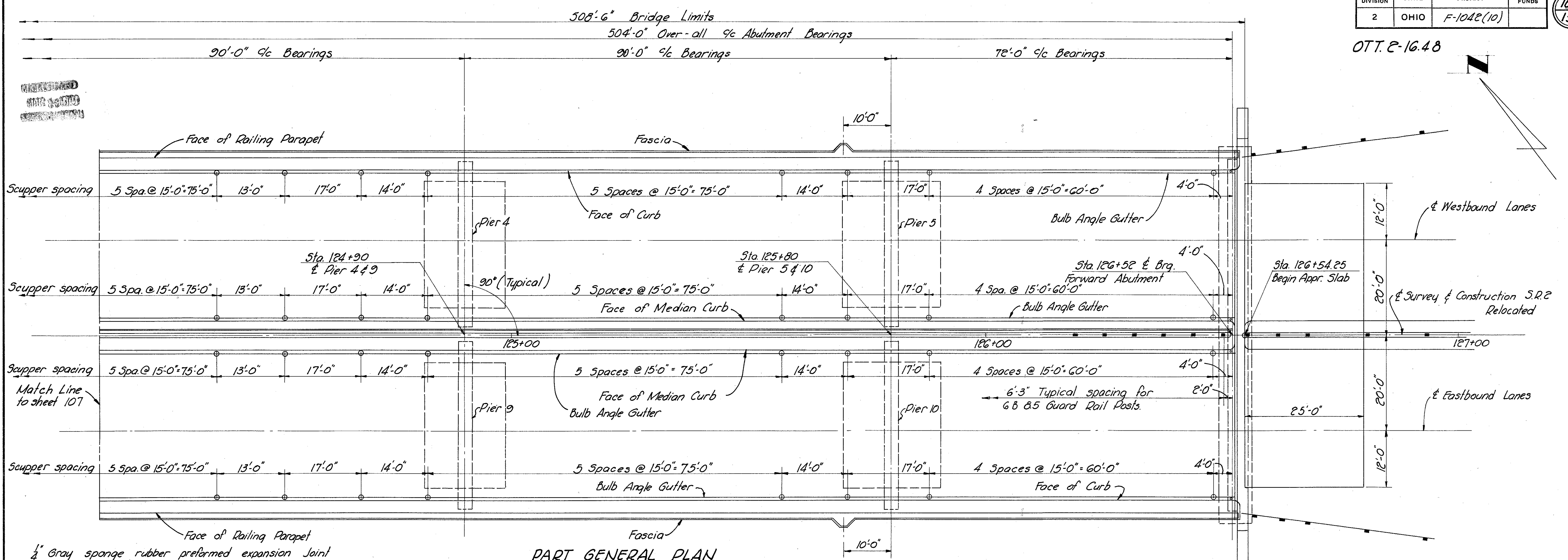
GENERAL PLAN & ELEVATION (1)
BRIDGE No. OTT. 2-1844
OVER PORTAGE RIVER
OTTAWA CO. STA. 121+45.75 to STA. 126+54.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VGP	VGP	BB	JHY	BJH	2-12-63	1-7-67, 10-6

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	

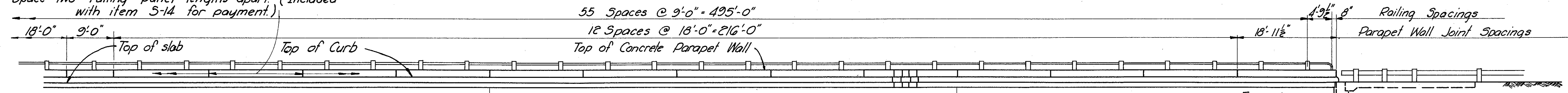
108
133

OTT. 2-16.48



PART GENERAL PLAN

1/2" Gray sponge rubber preformed expansion joint filler meeting the requirements of Sec. M-10.02, Type I. Space two railing panel lengths apart. (Included with item 5-14 for payment.)



PART GENERAL ELEVATION

Proposed future bottom of channel Elev. 560.00

Low Water Datum Elev. 570.5

2:1 Slope
I-10.04 Crushed Aggregate Slope Protection
I-10.06 Dumped Rock Fill

NOTE: - Use this sheet with sheet 107

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TOLEDO, OHIO

GENERAL PLAN & ELEVATION (2)
BRIDGE NO. OTT. 2-1844
OVER PORTAGE RIVER
OTTAWA CO. STA. 121+45.75 to STA. 126+54.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VGP	VGP	BB	JHY	BJH	2-12-63	

REINFORCING STEEL LIST (BRIDGE No. OTT. 2-1844)

OTT. 2-16.48

Abutments				Piers				Bending Diagrams				Piers Cont.				Superstructure							
Mark	No.	Length	Weight	Shape	Mark	No.	Length	Weight	Shape					Mark	No.	Length	Weight	Shape	Mark	No.	Length	Weight	Shape
R 801	28	40'-6"	3028	S	F 1101	300	11'-10"	18861	B					P 656	20	7'-3"	218	B	S 701	674	38'-5"	52925	S
R 601	120	14'-3"	2568	B	F 801	196	29'-8"	15525	B					P 657	20	7'-1"	213	B	S 702	674	38'-9"	50629	S
R 602	128	16'-0"	3076	B	P 1101	30	40'-8"	6482	B					P 658	20	6'-11"	208	B	S 601	674	38'-5"	38891	S
R 603	20	13'-9"	411	B	P 1102	130	35'-2"	24289	S					P 659	20	6'-9"	203	B	S 602	674	36'-9"	37204	S
R 604	24	4'-0"	144	S	P 1103	40	19'-6"	4144	B					P 660	20	6'-7"	198	B	S 603	1750	37'-10"	99443	S
R 605	24	10'-2"	366	S	P 1001	160	21'-0"	14458	S					P 661	20	35'-2"	1056	S	S 604	260	36'-0"	14059	S
R 606	8	23'-0"	276	S	P 1002	180	24'-0"	18589	S					P 662	20	31'-10"	956	S	S 605	36	7'-0"	378	B
R 607	8	21'-3"	255	S	P 701	160	30'-0"	9811	S					P 663	20	25'-6"	766	S	S 606	24	9'-2"	330	B
R 608	4	19'-3"	116	S	P 702	180	27'-6"	10118	S					P 664	20	19'-1"	573	S	S 607	12	9'-6"	171	B
R 609	8	8'-5"	101	S														S 608	12	10'-2"	183	B	
R 610	8	9'-0"	108	S																			
R 501	64	23'-7"	1574	S	P 601	20	19'-8"	591	S														
R 502	120	8'-10"	1106	B	P 602	20	19'-5"	583	S														
R 503	112	7'-0"	818	B	P 603	20	19'-2"	576	S														
R 504	232	6'-4"	1532	B	P 604	20	18'-11"	568	S														
R 505	16	8'-0"	134	S	P 605	20	18'-8"	561	S														
R 506	4	9'-7"	40	S	P 606	20	18'-5"	553	S														
R 507	4	18'-3"	76	S	P 607	20	18'-2"	546	S														
R 508	4	8'-7"	36	S	P 608	20	17'-10"	536	S														
R 509	8	7'-10"	65	S	P 609	20	17'-7"	528	S														
R 510	8	7'-1"	59	S	P 610	20	17'-4"	521	S														
R 511	8	6'-6"	54	S	P 611	20	13'-2"	396	S														
R 512	8	5'-10"	49	S	P 612	20	13'-0"	391	S														
R 513	8	5'-2"	43	S	P 613	20	12'-10"	386	S														
R 514	8	6'-11"	58	S	P 614	20	12'-8"	381	S														
R 515	36	12'-8"	476	S	P 615	20	12'-6"	376	S														
					P 616	20	12'-4"	370	S														
					P 617	20	12'-2"	365	S														
					P 618	20	12'-1"	363	S														
					P 619	20	11'-11"	358	S														
					P 620	20	11'-9"	353	S														
					P 621	20	11'-7"	348	S														
					P 622	20	11'-5"	343	S														
					P 623	20	11'-3"	338	S														
					P 624	20	11'-1"	333	S														
					P 625	20	11'-0"	330	S														
					P 626	20	10'-10"	325	S														
					P 627	20	10'-8"	320	S														
					P 628	20	10'-6"	315	S														
					P 629	20	10'-4"	310	S														
					P 630	20	10'-2"	305	S														
					P 631	20	11'-7"	348	B														
					P 632	20	9'-5"	283	B														
					P 633	20	11'-3"	338	B														
					P 634	20	9'-2"	275	B														
					P 635	20	10'-11"	328	B														
					P 636	20	8'-11"	268	B														
					P 637	20	10'-7"	318	B														
					P 638	20	8'-8"	260	B														
					P 639	20	10'-3"	308	B														
					P 640	20	8'-5"	253	B														
					P 641	20	9'-11"	298	B														
					P 642	20	9'-9"	293	B														
					P 643	20	9'-7"	288	B														
					P 644	20	9'-5"	283	B														
					P 645	20	9'-3"	278	B														
					P 646	20	9'-1"	273	B														
					P 647	20	8'-11"	268	B														
					P 648	20	8'-9"	263	B														
					P 649	20	8'-5"	253	B														
					P 650	20	8'-3"	248	B														
					P 651	20	8'-1"	243	B														
					P 652	20	7'-11"	238	B														
					P 653	20	7'-9"	233	B														
					P 654	20	7'-7"	228	B														
					P 655	20	7'-5"	223	B														

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and first two digits where four are used, indicate the bar size number. For example, a P501 is a No. 5 size bar, and a P1101 is a No. 11 size.

REPLACEMENT BARS			
RE 1101	6	7'-7"	242 S
RE 1001	2	7'-3"	62 S
RE 901	1	6'-10"	23 S
RE 801	1	6'-6"	17 S
RE 701	7	6'-3"	89 S
RE 601	12	5'-11"	107 S
RE 501	2	5'-7"	12 S

* Included with Item S-14 for payment.

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TOLEDO, OHIO

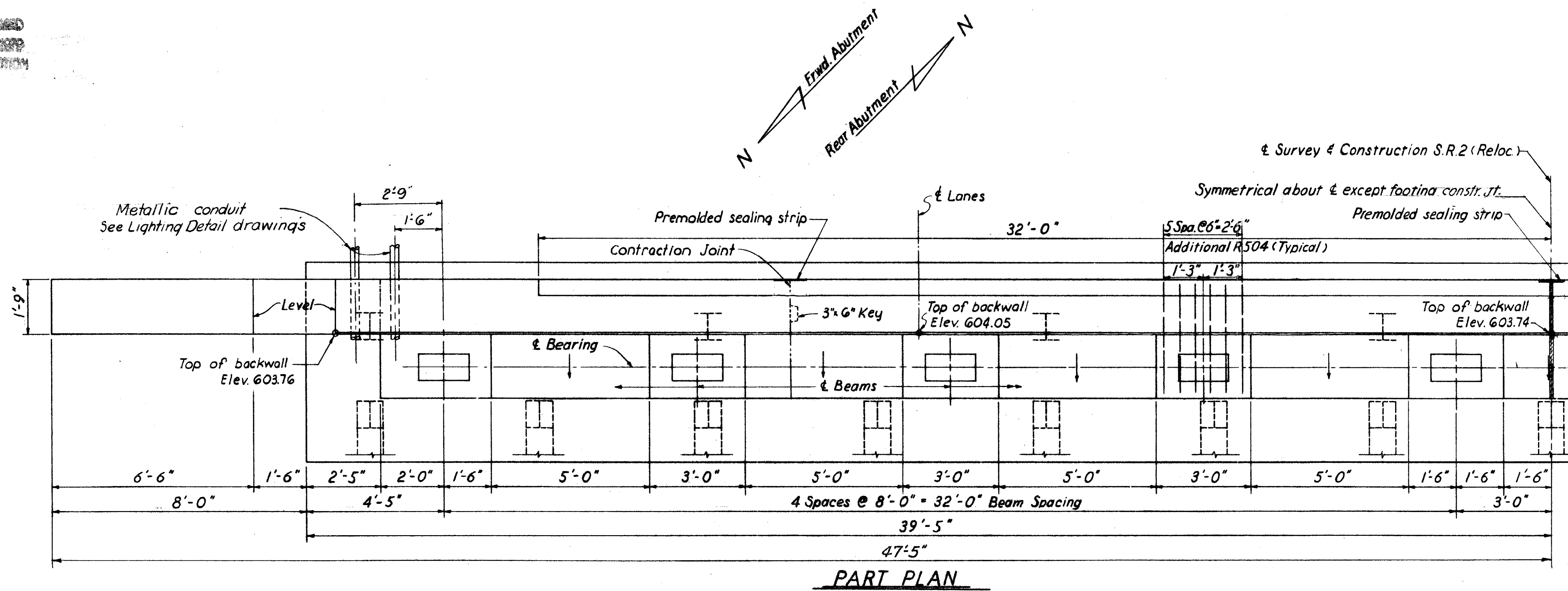
REINFORCING STEEL

BRIDGE No. OTT. 2-1844
OVER PORTAGE RIVER

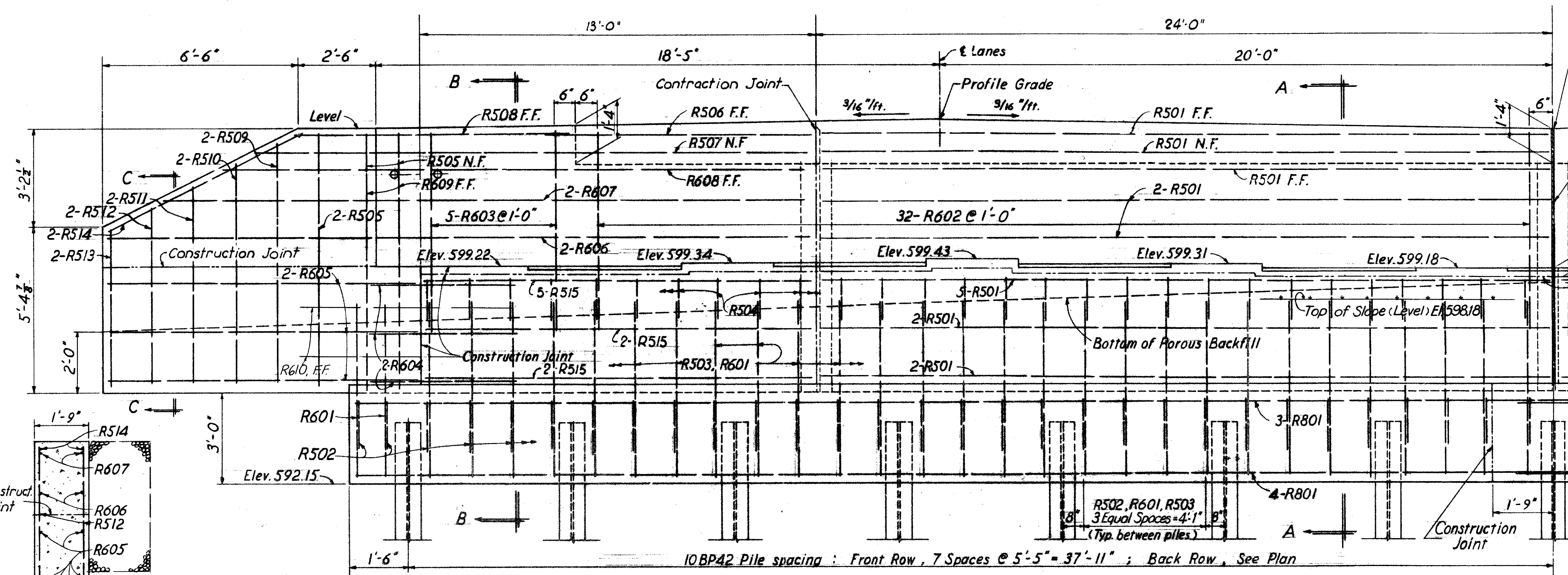
Sta. 121+45.75 to
Sta. 126+54.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JHY	TWD		JHY AJB	BJH	2-12-63	

OTT. 2-16.48



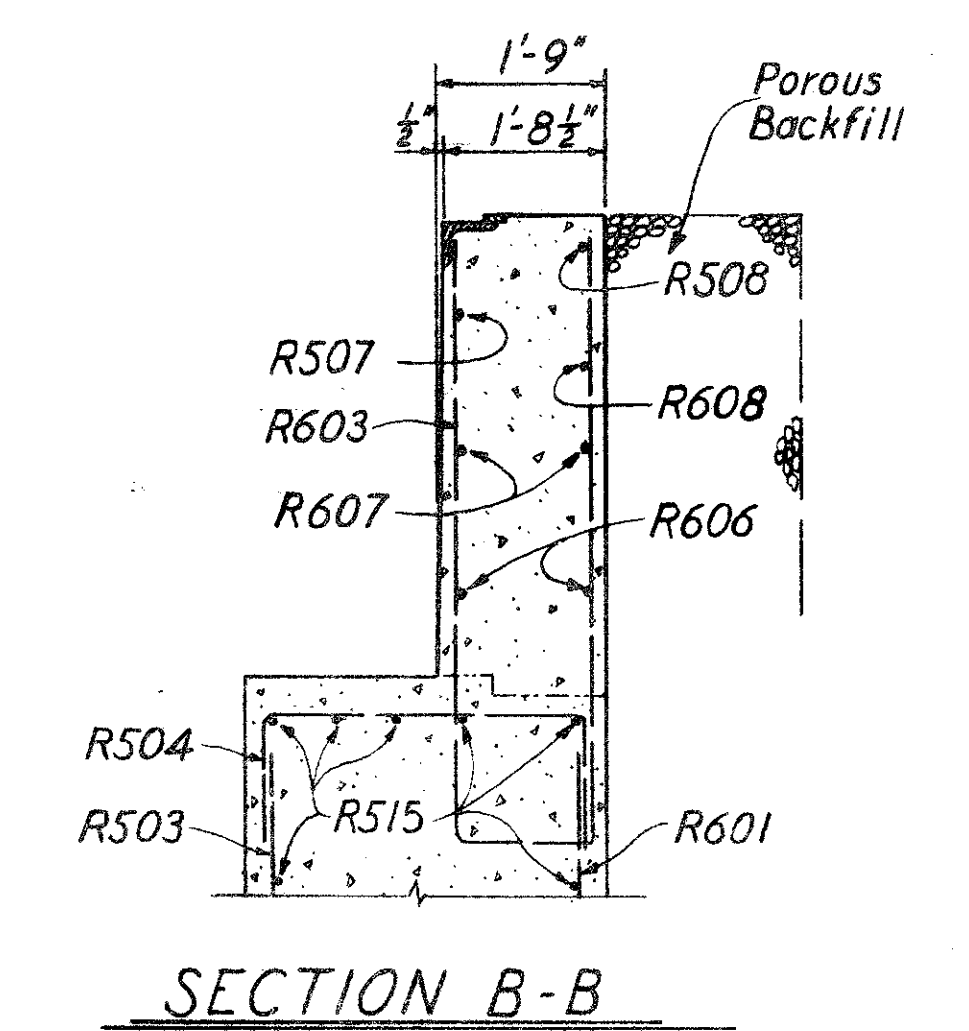
PART PLAN



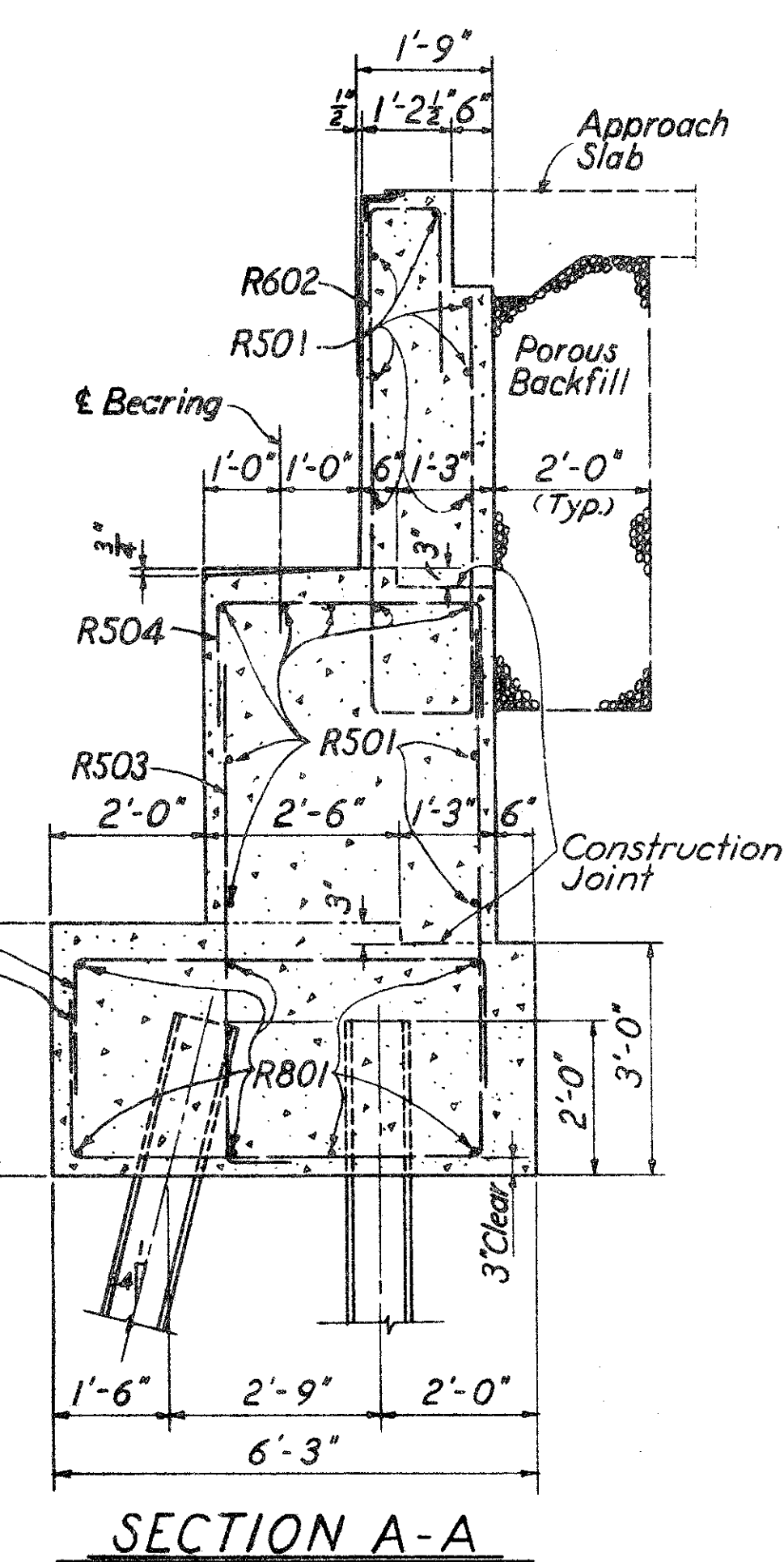
PART ELEVATION

N.F. = Near Face
F.F. = Far Face

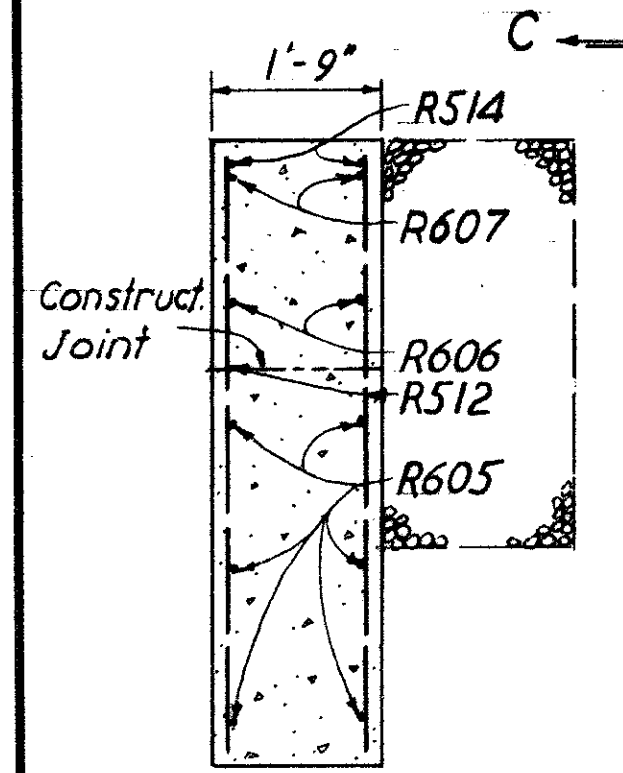
POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefore in excess of that required for construction of abutment, shall be considered as paid for in the bid price per cu.yd. paid for porous backfill.



SECTION B-B



SECTION A-A



SECTION C-C

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CONSULTING ENGINEERS
TOLEDO, OHIO

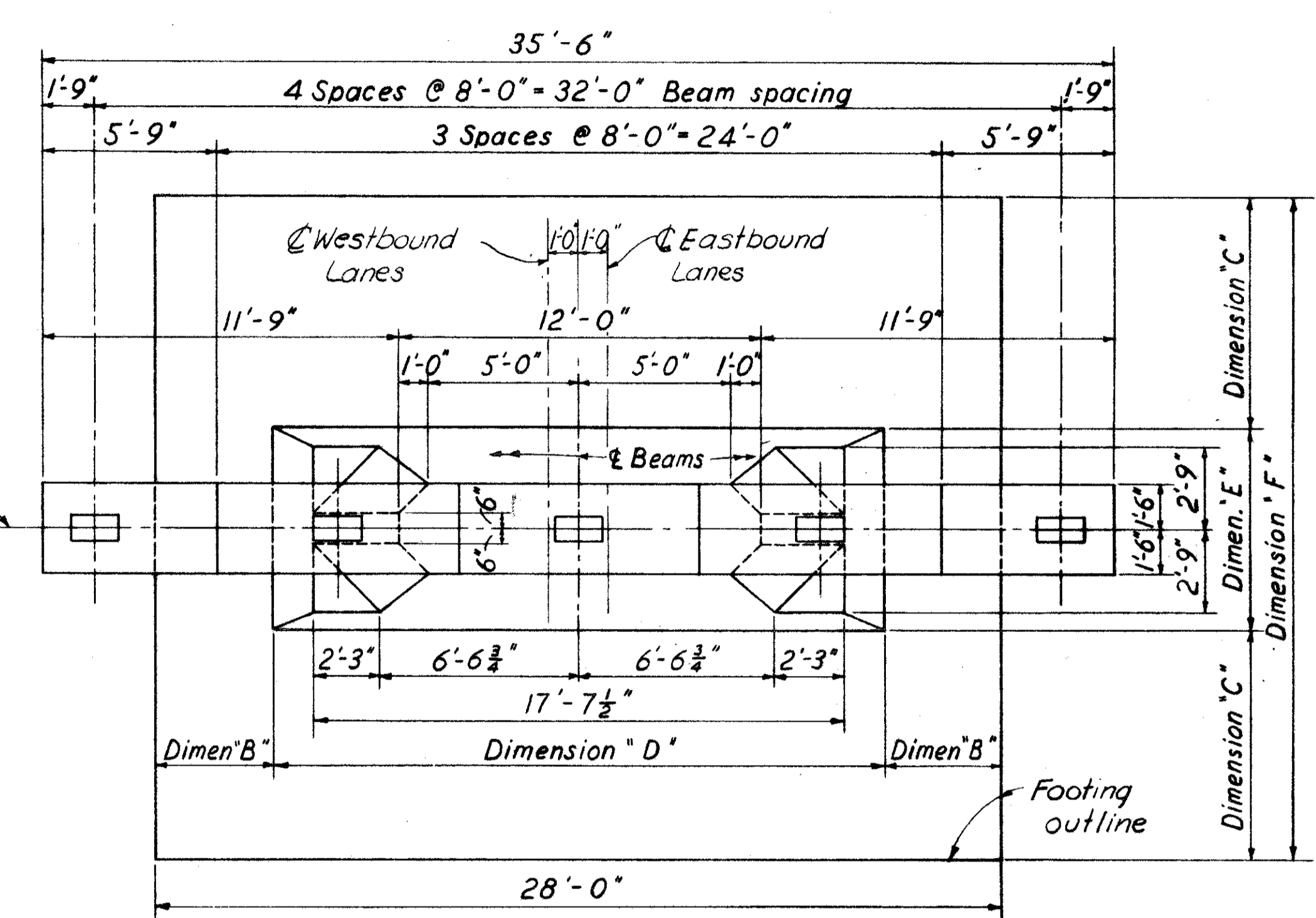
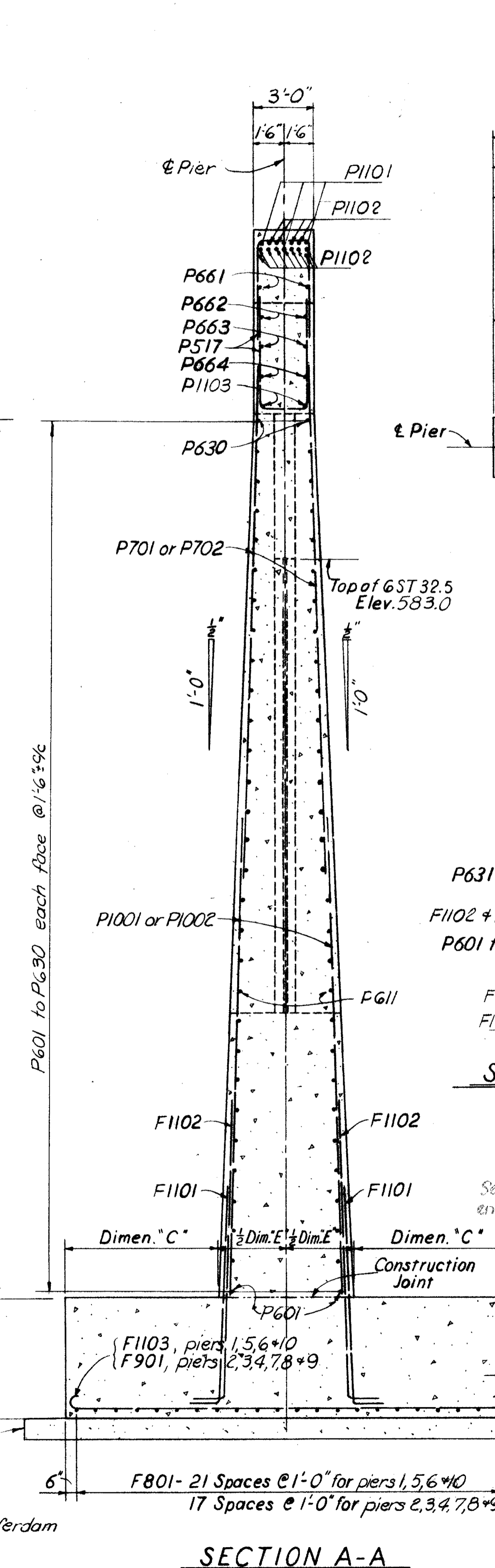
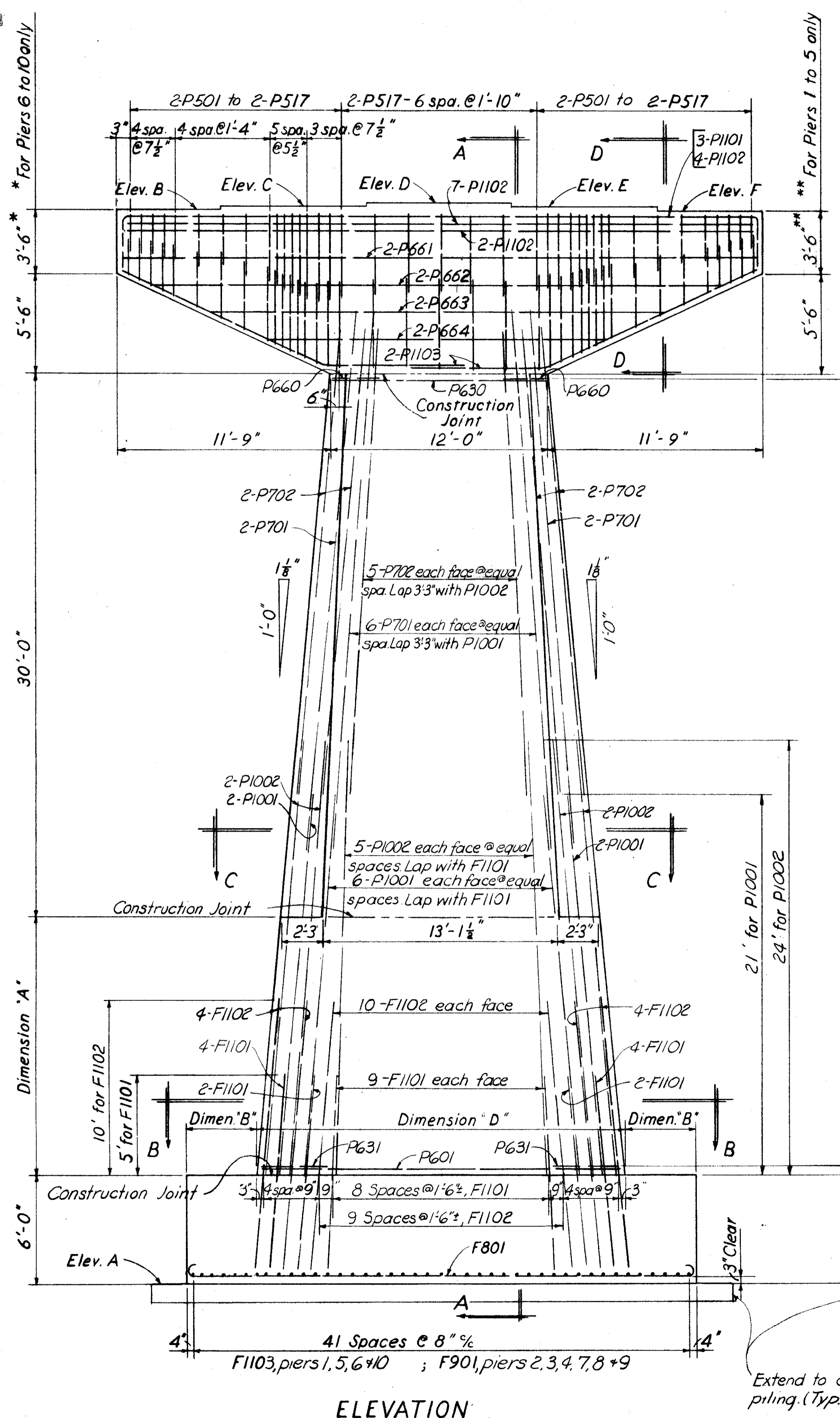
ABUTMENTS
BRIDGE No. OTT 2-1844
OVER PORTAGE RIVER
OTTAWA COUNTY STA. 121 + 45.75 to
STA. 126 + 54.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VGP	OMB		JHY	B.J.H.	2-12-63	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	

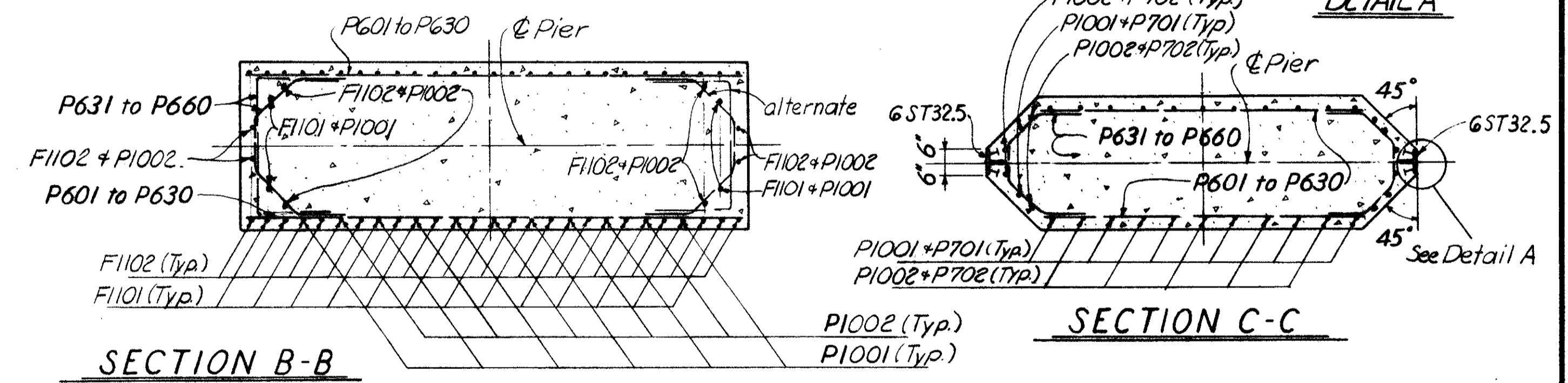
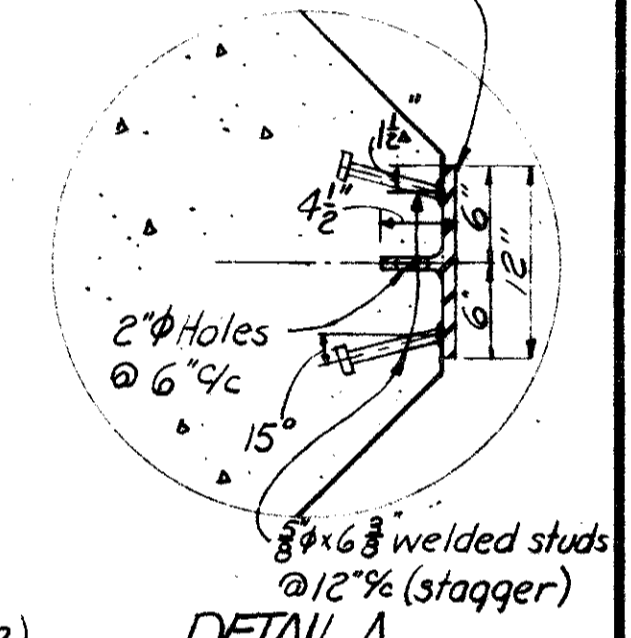
112
133

OTT. 2-16.48

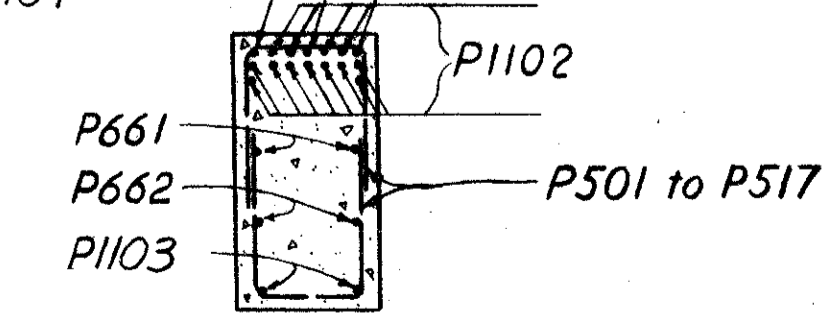


BRIDGE SEAT REINFORCING:
Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat in Piers 3 & 8 so as to avoid interference with the drilling of anchor bar holes.

Cor-Ten, Mayari-R or Wrought Iron or approved equal. Included in Item S-7 for payment.



	ELEVATION						DIMENSION					
	A	B	C	D	E	F	A	B	C	D	E	F
Pier 1	540	599.22	599.35	599.44	599.32	599.19	14'-2 1/2"	8'-10 1/2"	7'-7 1/2"	20'-3 1/2"	6'-8 1/2"	22'-0"
Pier 2 & 4	541.5	599.68	599.80	599.90	599.77	599.65	13'-1 1/2"	3'-11 1/2"	5'-8 1/2"	20'-1"	6'-7 1/2"	18'-0"
Pier 3	541.5	599.83	599.95	600.05	599.92	599.80	13'-3 3/4"	3'-11 1/2"	5'-8 1/2"	20'-1 1/2"	6'-7 1/2"	18'-0"
Pier 5	541.5	599.22	599.35	599.44	599.32	599.19	12'-8 1/2"	4'-0"	7'-8 1/2"	20'-0"	6'-6 1/2"	22'-0"
Pier 6	540	599.19	599.32	599.44	599.35	599.22	14'-2 1/2"	8'-10 1/2"	7'-7 1/2"	20'-3 1/2"	6'-8 1/2"	22'-0"
Pier 7 & 9	541.5	599.65	599.77	599.90	599.80	599.68	13'-1 1/2"	3'-11 1/2"	5'-8 1/2"	20'-1"	6'-7 1/2"	18'-0"
Pier 8	541.5	599.80	599.92	600.05	599.95	599.83	13'-3 3/4"	3'-11 1/2"	5'-8 1/2"	20'-1 1/2"	6'-7 1/2"	18'-0"
Pier 10	541.5	599.19	599.32	599.44	599.35	599.22	12'-8 1/2"	4'-0"	7'-8 1/2"	20'-0"	6'-6 1/2"	22'-0"



Note: See Lighting Details (1) drawing for details of navigation light bracket attachment to GST 32.5

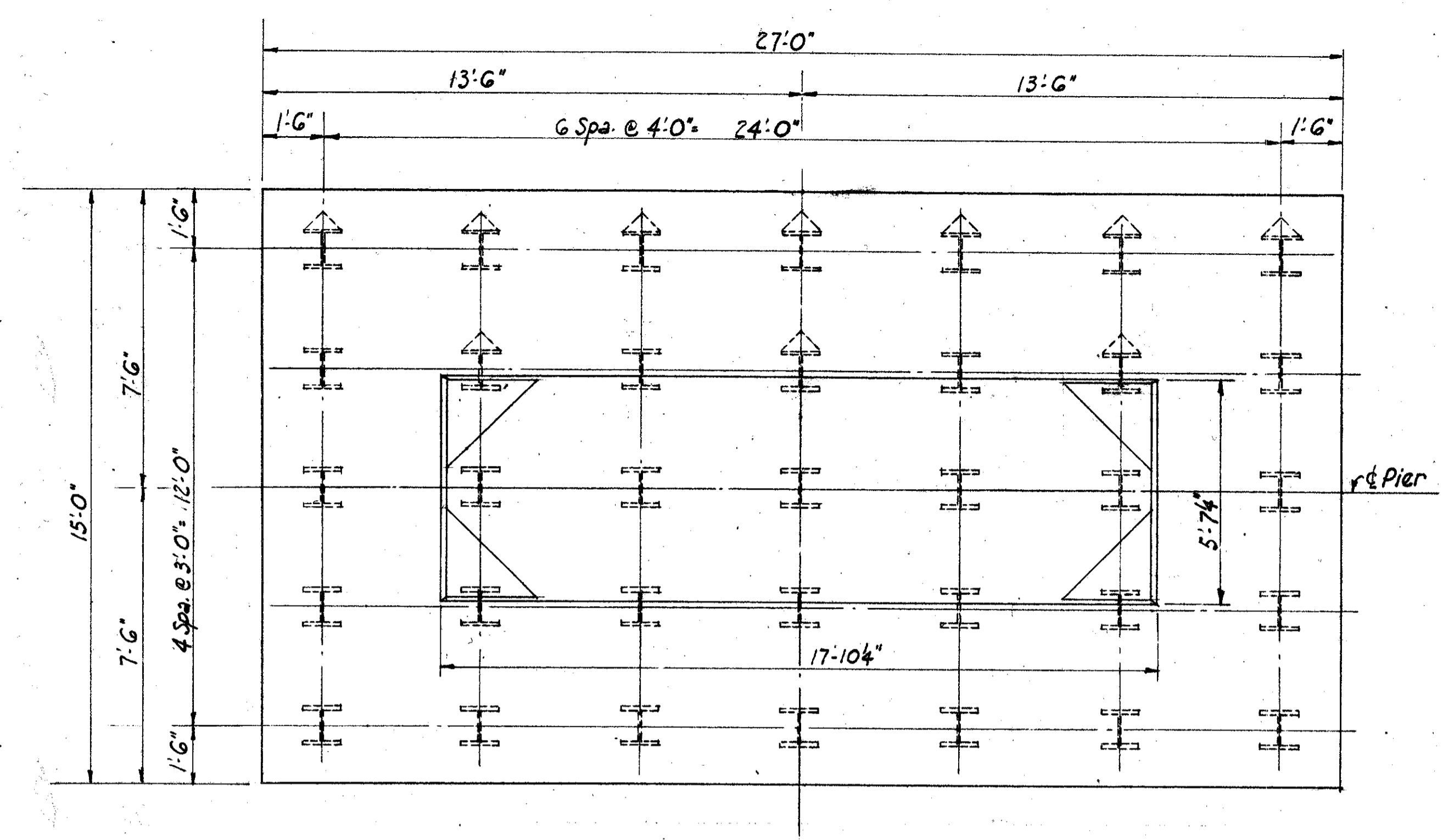
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CONSULTING ENGINEERS
TOLEDO, OHIO

PIERS
BRIDGE No. OTT. 2-1844
OVER PORTAGE RIVER

OTTAWA COUNTY STA. 121 + 45.75 to STA. 126 + 54.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
BJH	OMB		JHY	BJH	2-12-63	7767 J.O.E.

OTT-2-16.48

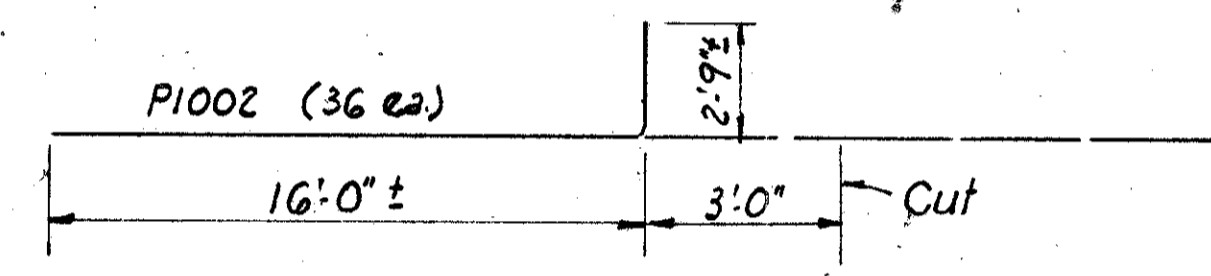
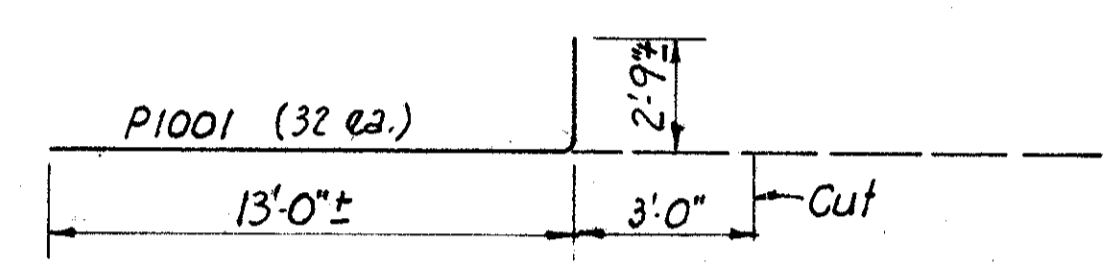
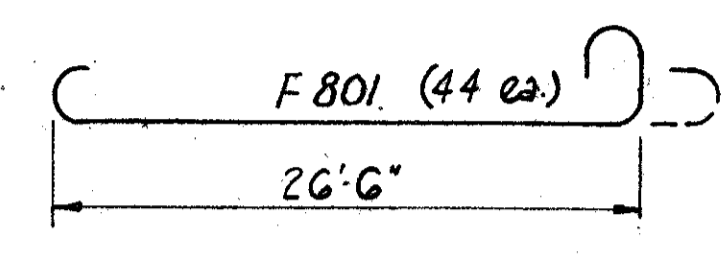
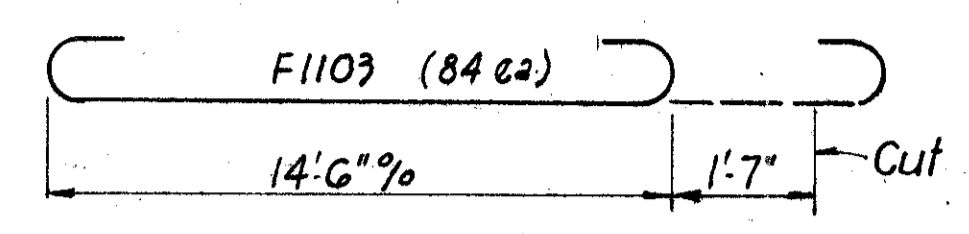


PLAN OF FOOTING

Indicate pile battered 1:4

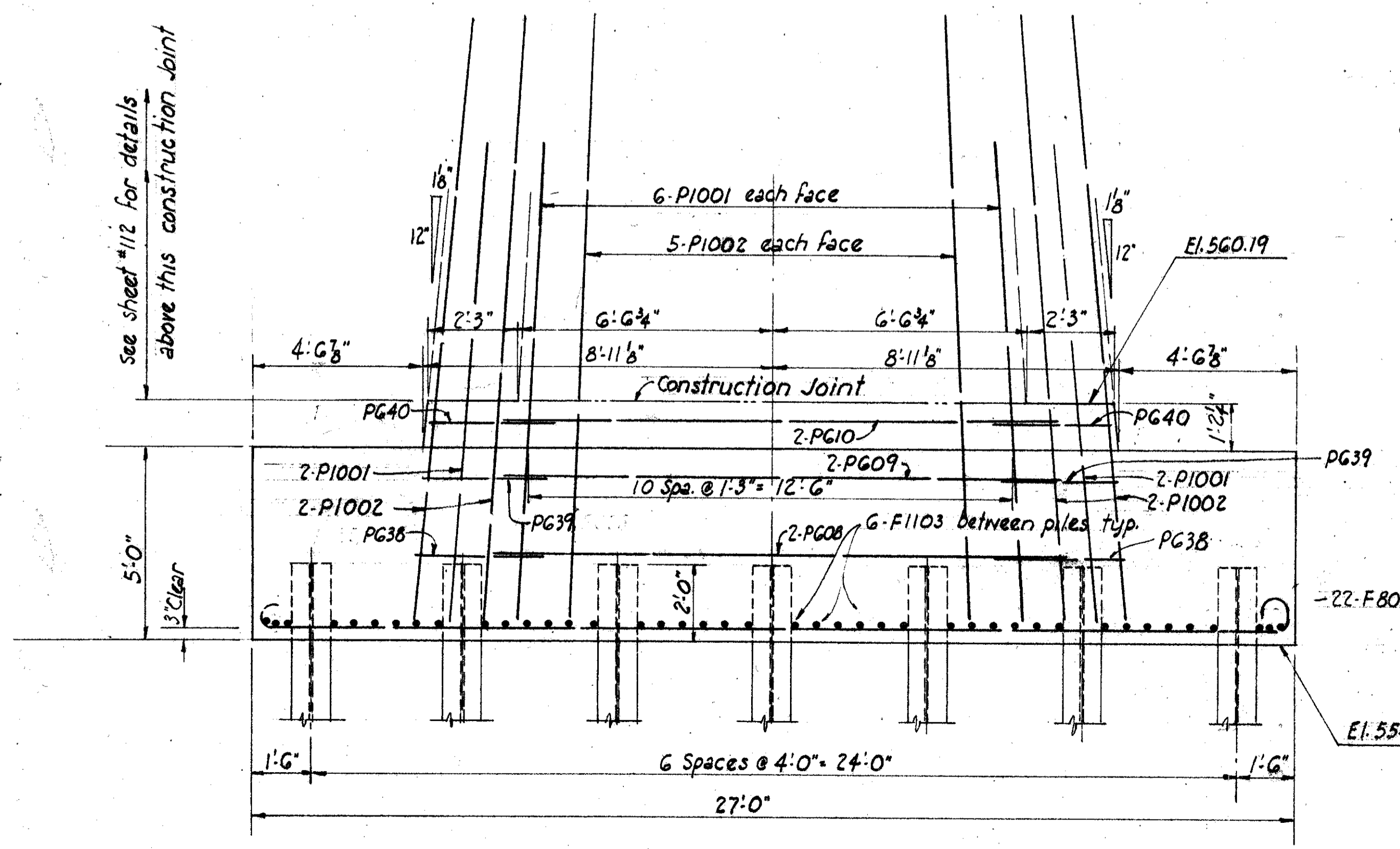
The following bars furnished for the original design are not required:

Bar Mark	No.
F1101	60
F1102	72
PG01 thru PG07	4 ea.
PG31 thru PG37	4 ea.

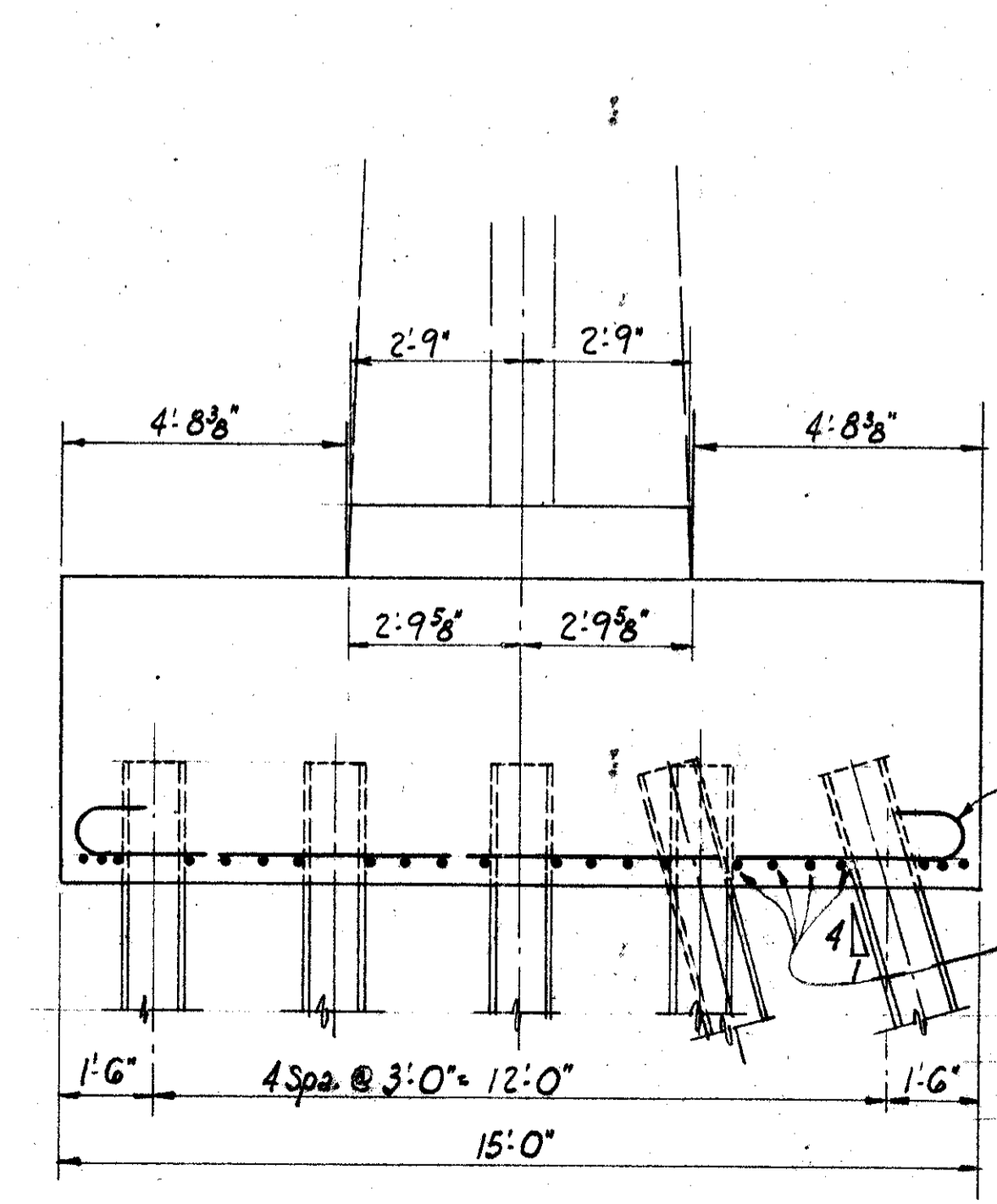


REINFORCING STEEL CHANGES

F1103, F801, P1001 and P1002 shall be cut and or rebent as shown in these sketches.



PARTIAL ELEVATION



VIEW A-A

All piles 12BP53 steel - design load 40 Tons.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 1 & G
MODIFICATION DETAILS
BRIDGE NO. OTT-2-1844
OVER PORTAGE RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.R.	J.D.R.		Ray			

OTT. 2-1648

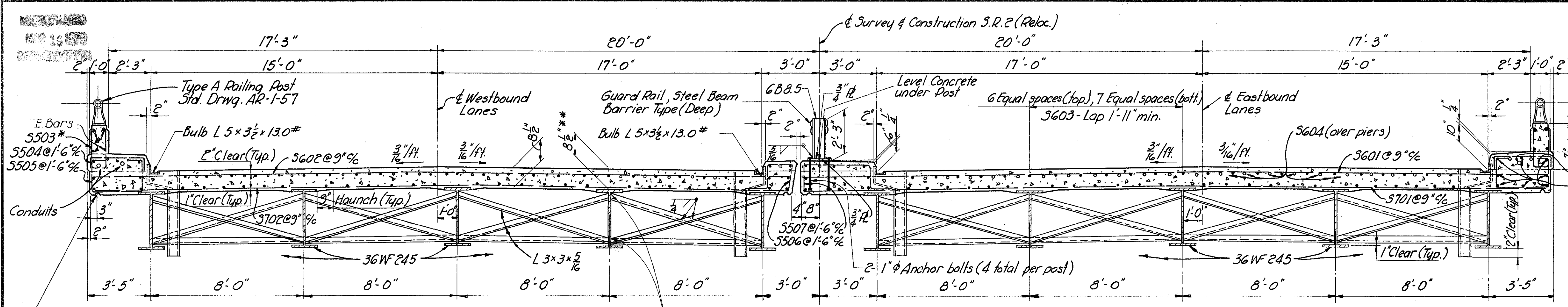
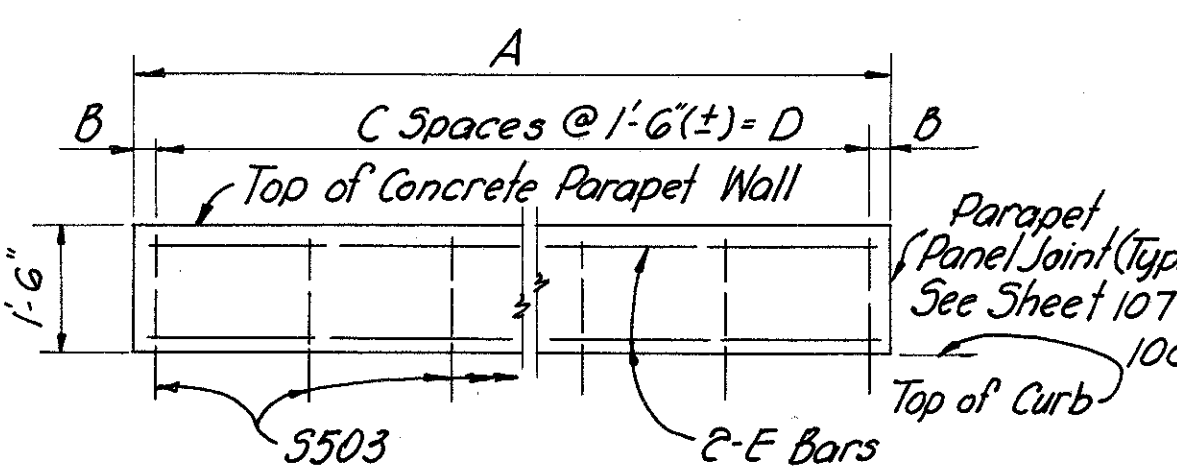


DIAGRAM SHOWING STAGGER OF 5604 BARS OVER PIERS



PARAPET WALL DIMENSIONS & BARS

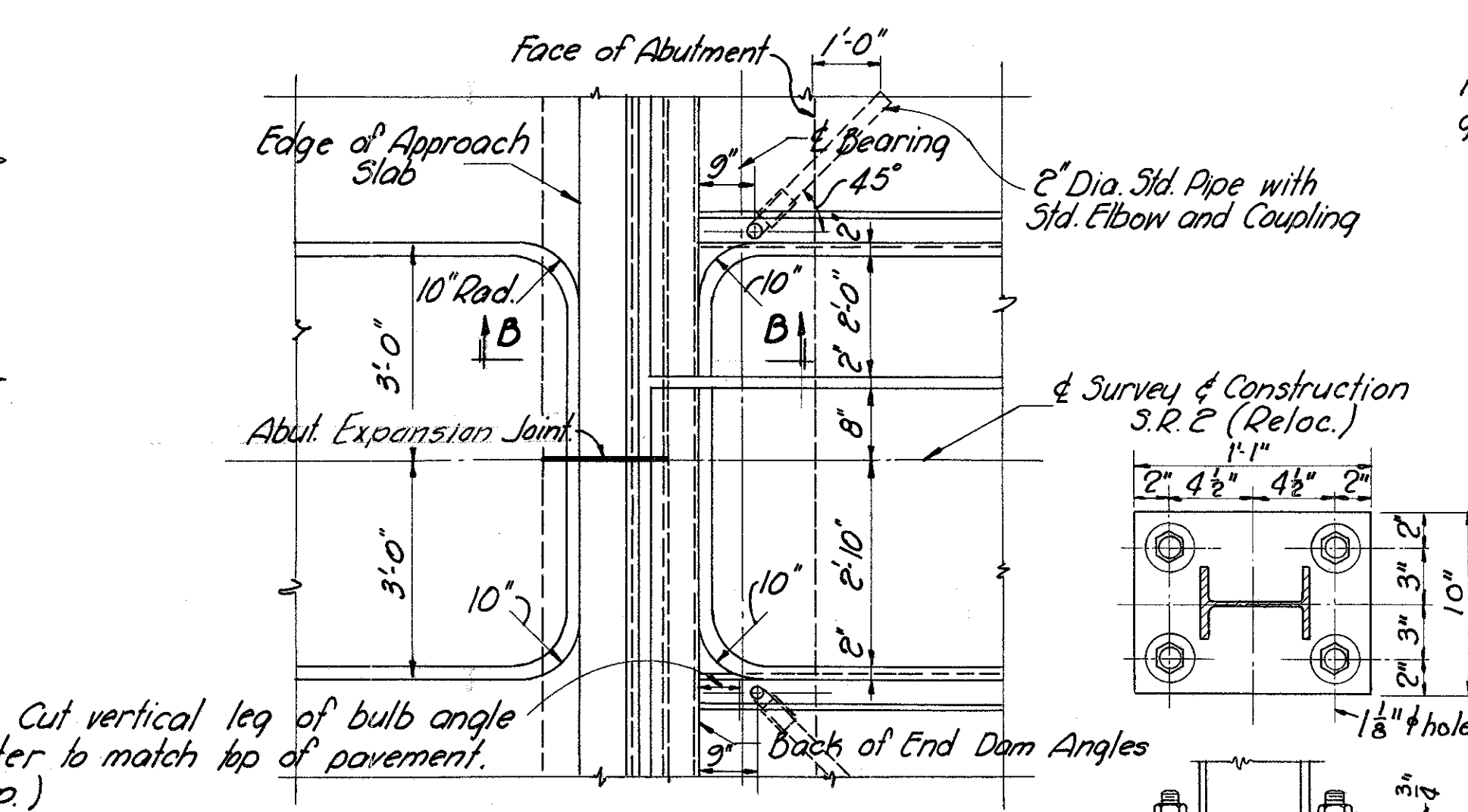
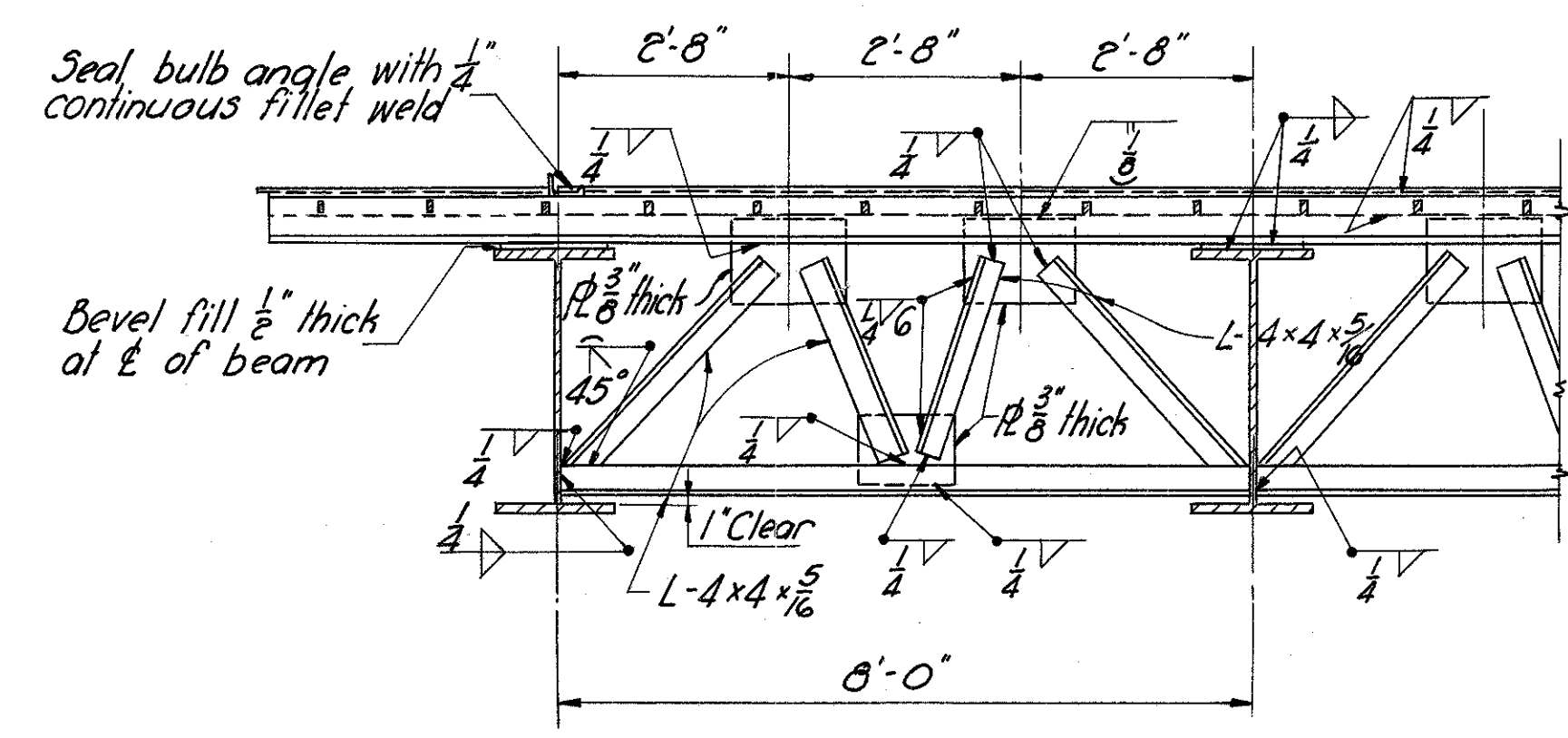
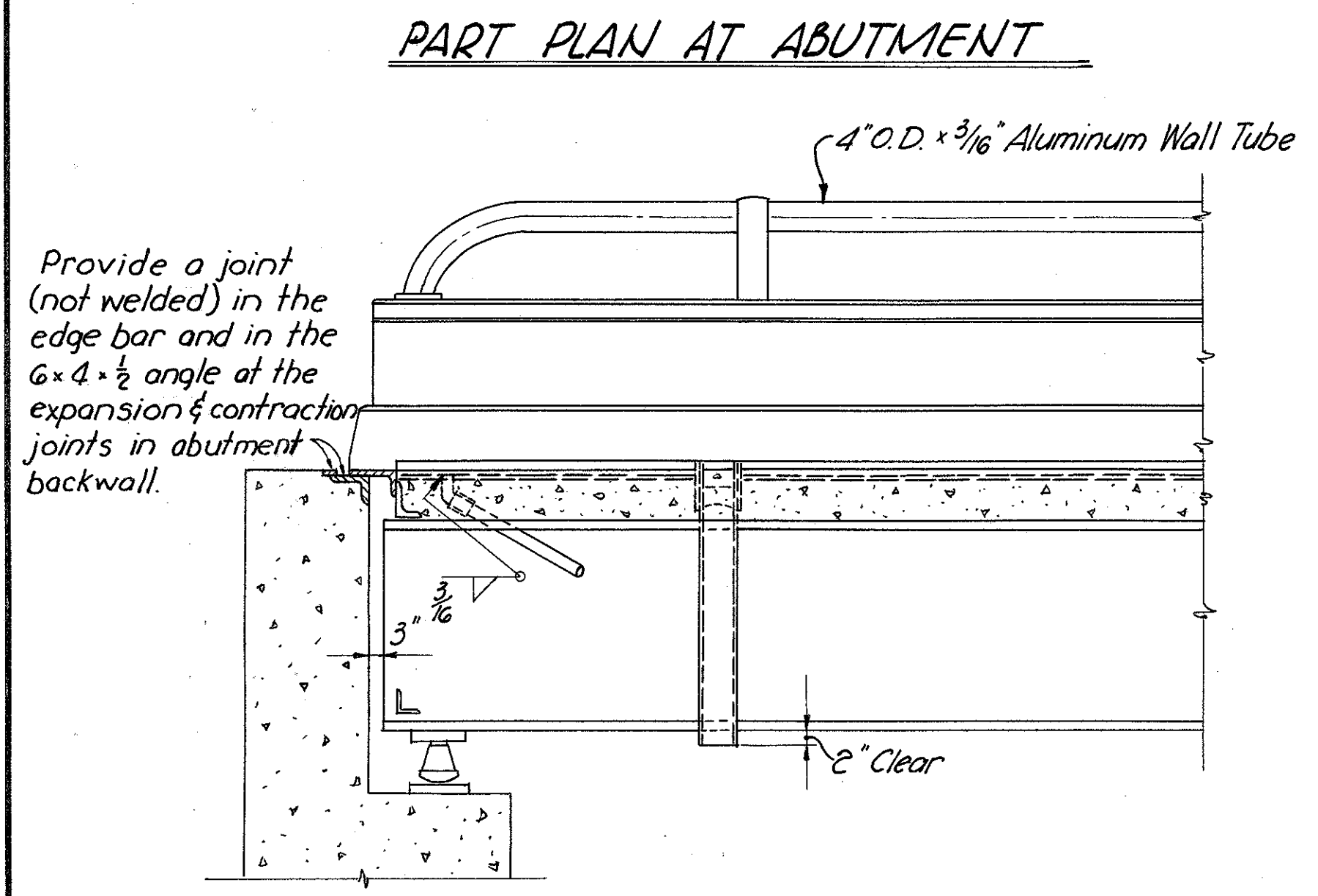
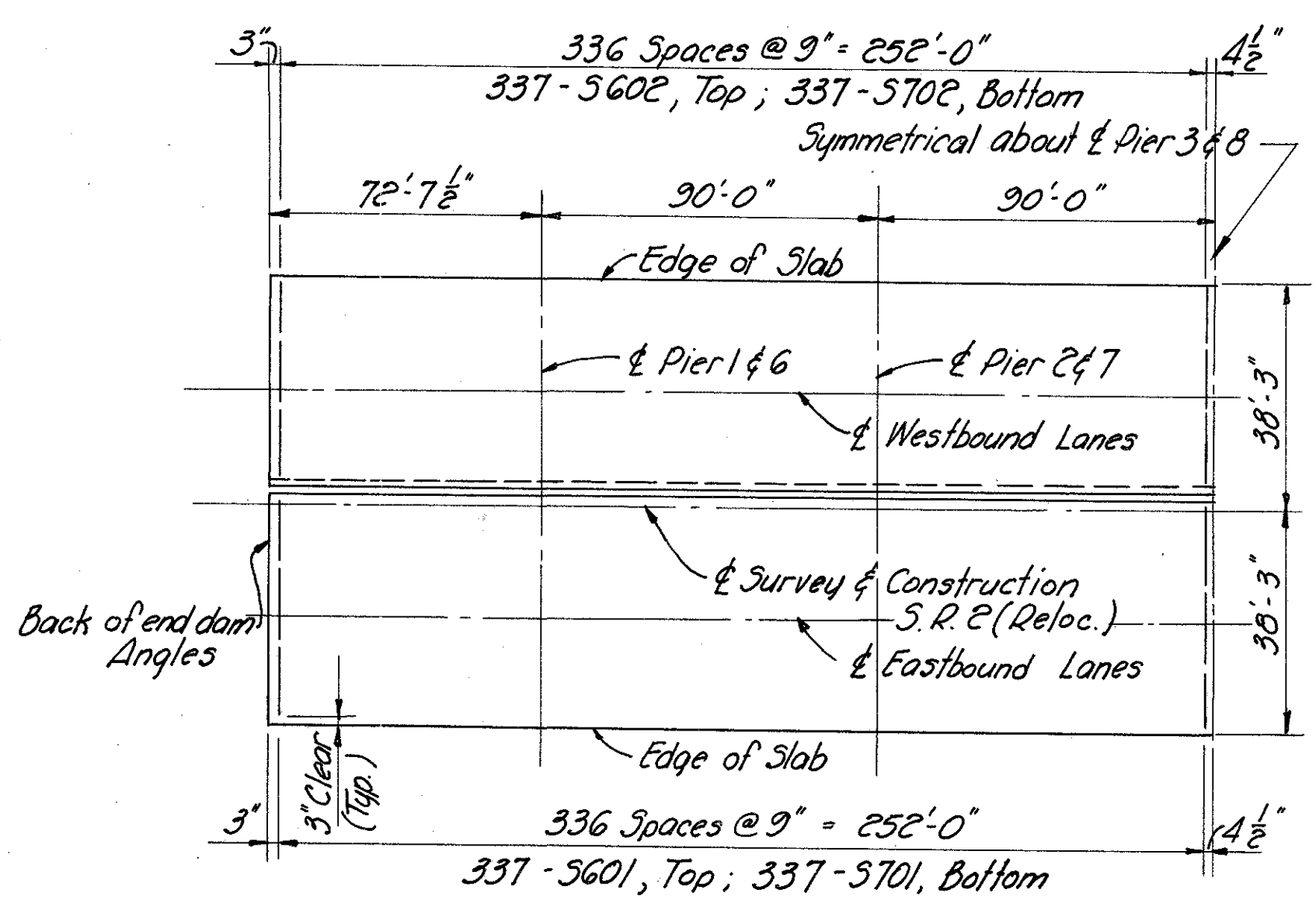
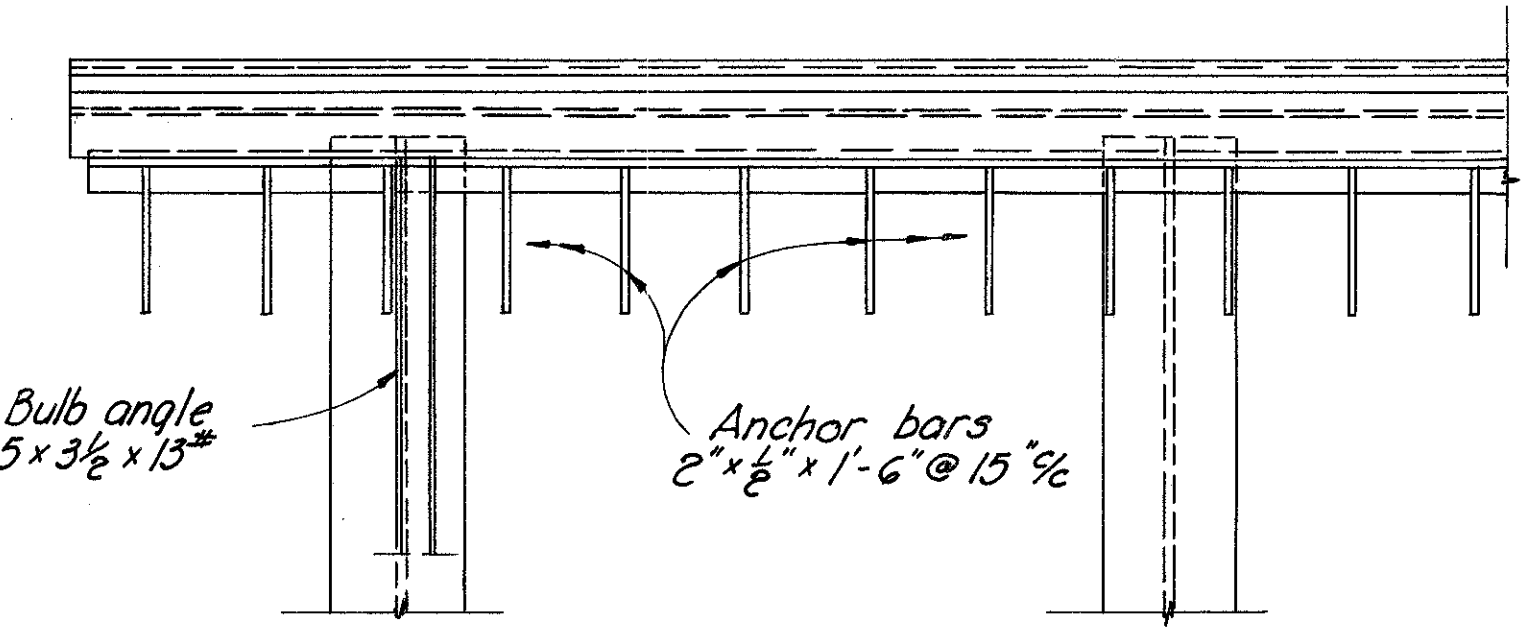
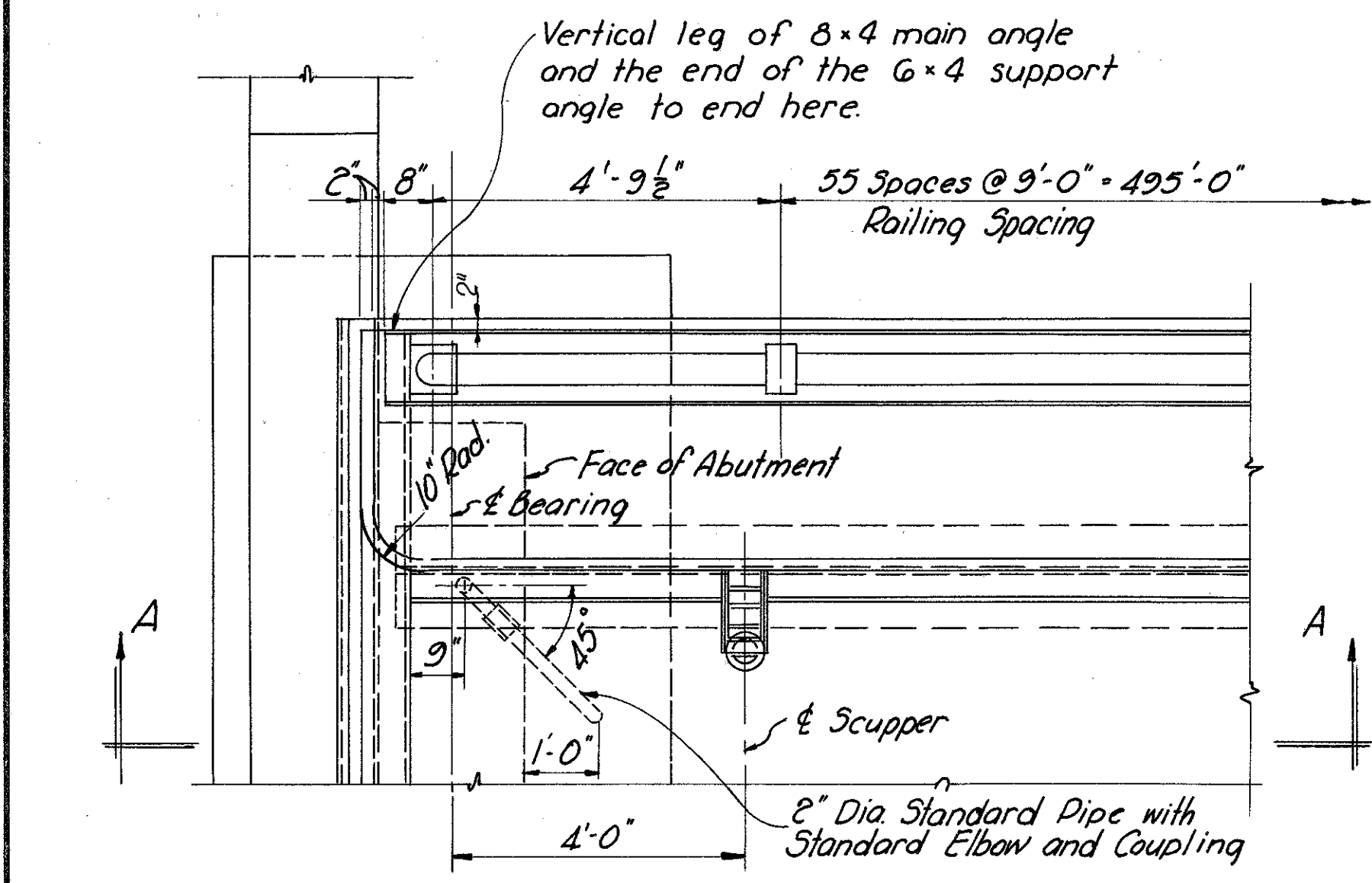
Panel	A	B	C	D	No. of Bars	F
End	18'-11 1/2"	3"	12"	18'-5 1/2"	13	5501
Intermediate	18'-0"	3"	12"	17'-6"	13	5502
Intermediate	9'-0"	3"	6"	8'-6"	7	5508

1" Dia. 1/2" round Drip Groove (Typ.) * See Parapet Wall Details for spacing

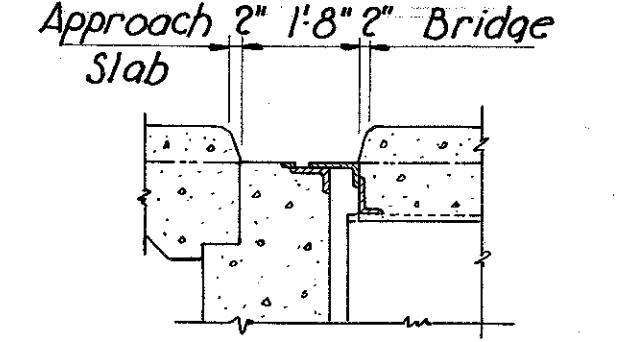
** This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Slab thickness shown includes 1" Monolithic Wearing Surface.

Weld both sides of vertical leg and top side of horizontal leg to beam web with 1/4" continuous fillet weld.

TRANSVERSE SECTION OF DECK



The posts, plates, anchor bolts, washers and nuts for the median barrier guard rail shall be galvanized in accordance with Sec. M-7.4(d).



SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. OTT. 2-1644
OVER PORTAGE RIVER

OTTAWA COUNTY STA. 121+45.75 to STA. 126+54.25

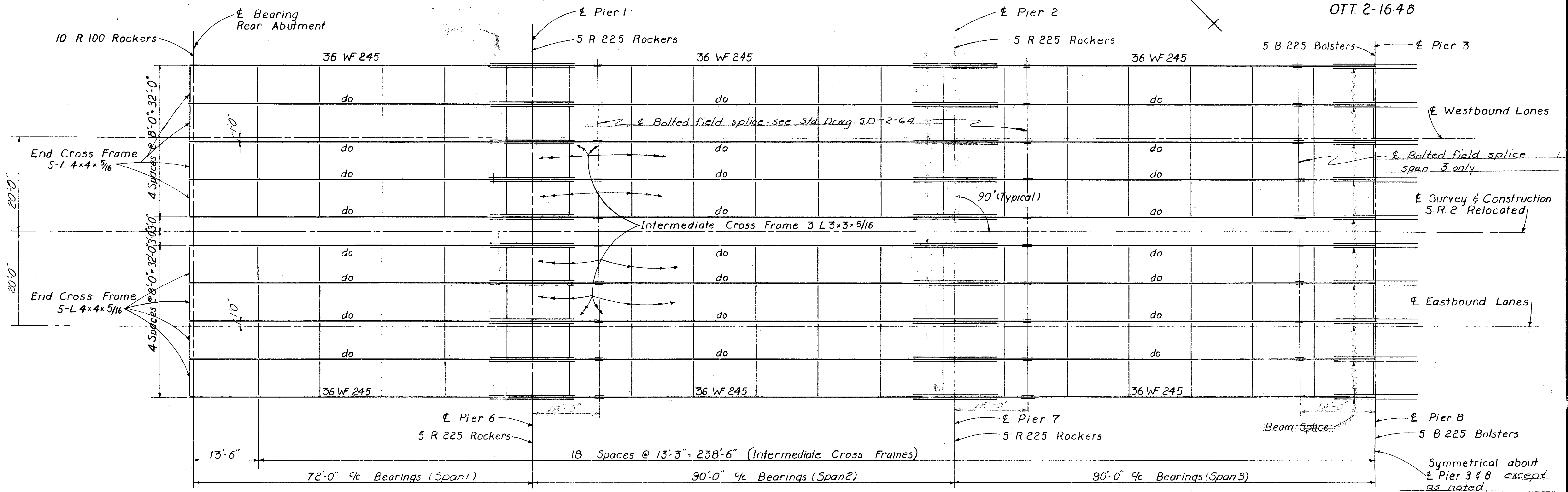
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
OMB	OMB	BB	JHY	BJH	2-12-63

MAR 16 1979

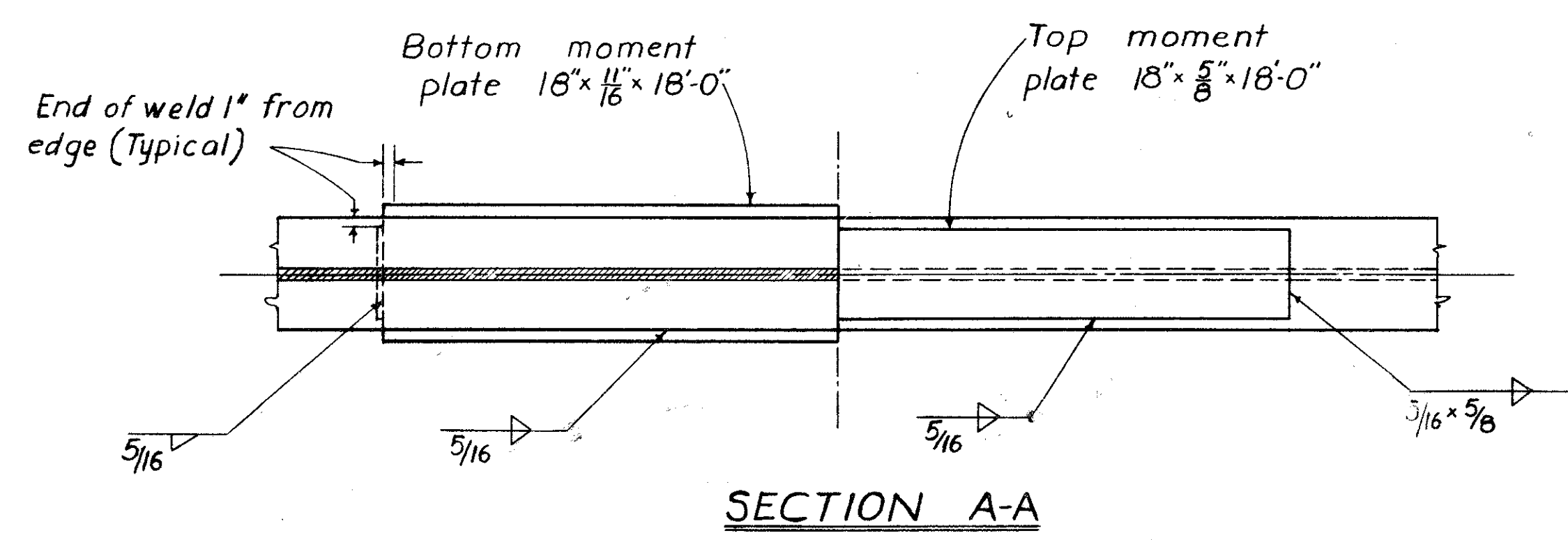
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	

114
133

OTT. 2-1648

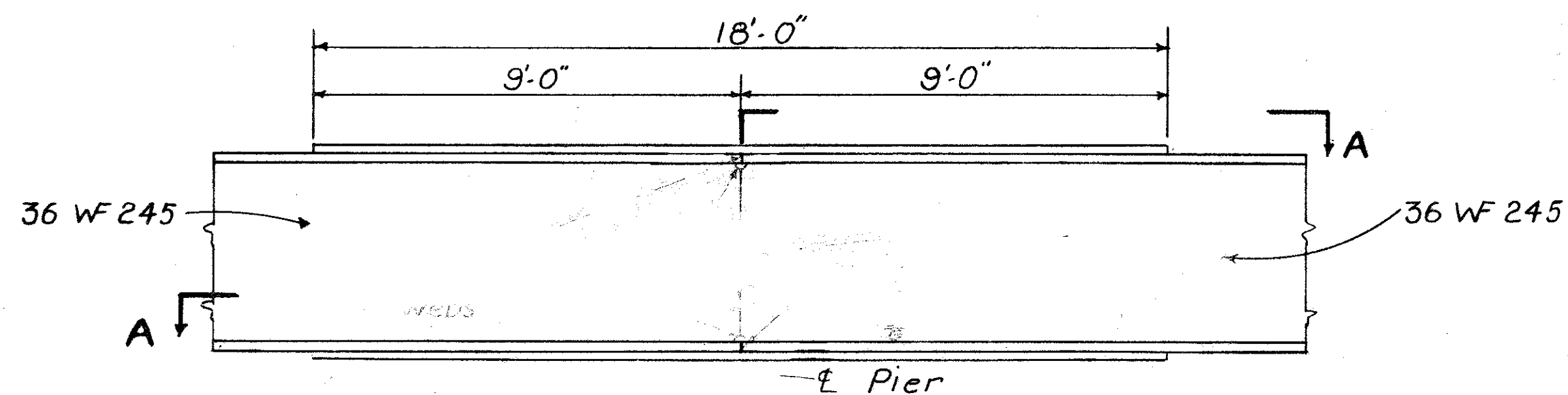


HALF STEEL FRAMING PLAN



SECTION A-A

Beam	DEFLECTION AND CAMBER											
	Exterior						Interior					
Span	1	2	3	4	5	6	1	2	3	4	5	6
Deflection due to weight of steel	1/8"	3/16"	1/8"	1/8"	3/16"	1/8"	1/8"	3/16"	3/16"	3/16"	3/16"	1/8"
Deflection due to remaining D.L.	7/16"	9/16"	9/16"	9/16"	9/16"	7/16"	3/8"	1/2"	1/2"	1/2"	1/2"	3/8"
Convexity required for vertical curve	1/4"	7/16"	7/16"	7/16"	7/16"	1/4"	1/4"	7/16"	7/16"	7/16"	7/16"	1/4"
Sum of deflection & convexity	13/16"	1 3/16"	1 1/8"	1 1/8"	1 3/16"	1 3/16"	3/4"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	3/4"
Required camber	13/16"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/16"	1 3/16"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/16"



MOMENT PLATE DETAIL

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DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.G.P	V.G.P		JHY	BJH	2-12-63	