

RECORDED
MR 14/06

FED. RO. DIVISION	STATE	PROJECT	TYPE FUND'S
2	OHIO	F-1042(10)	106 133

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' 1/4 ft 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' 1/4 ft 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 soundings 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

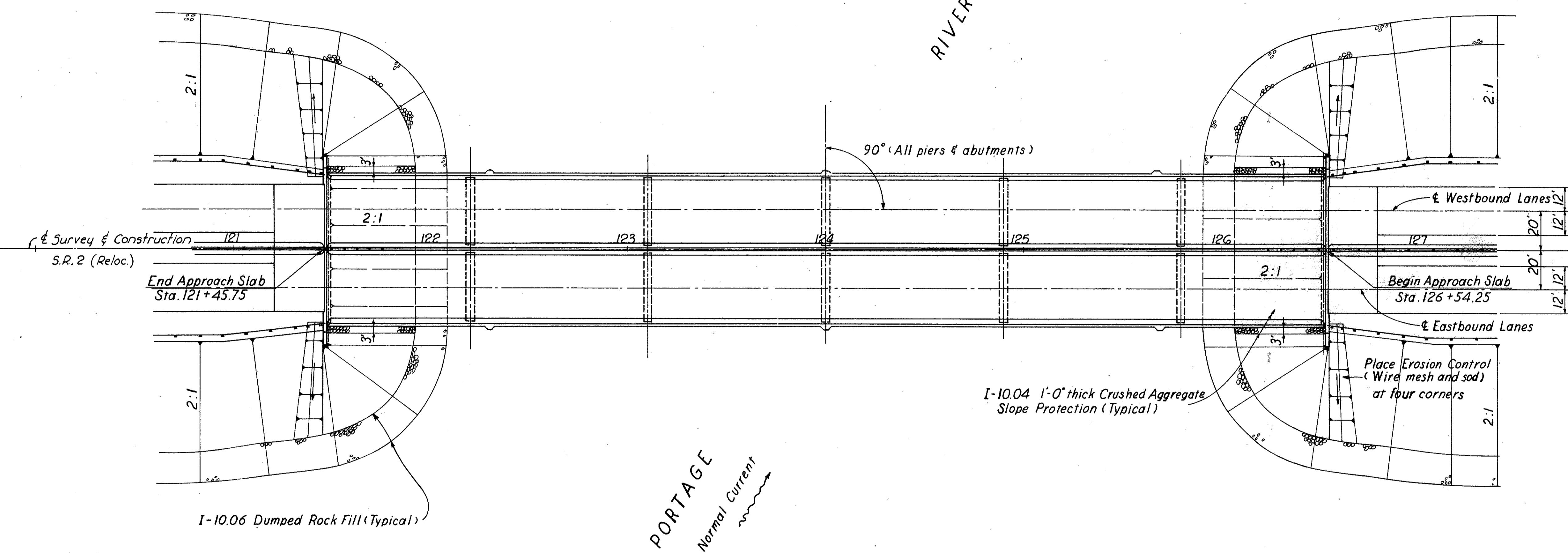
Type: Continuous steel beam with reinforced concrete deck. Reinforced concrete T type piers and stub abutments.

Spans: 72' 0", 90' 0", 90' 0", 90' 0", 72' 0" bgs
Roadway: 70' 1/4 of 2'-3' Safety Curbs including 6' concrete median.
Load Frequency: CF 400 (57)
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

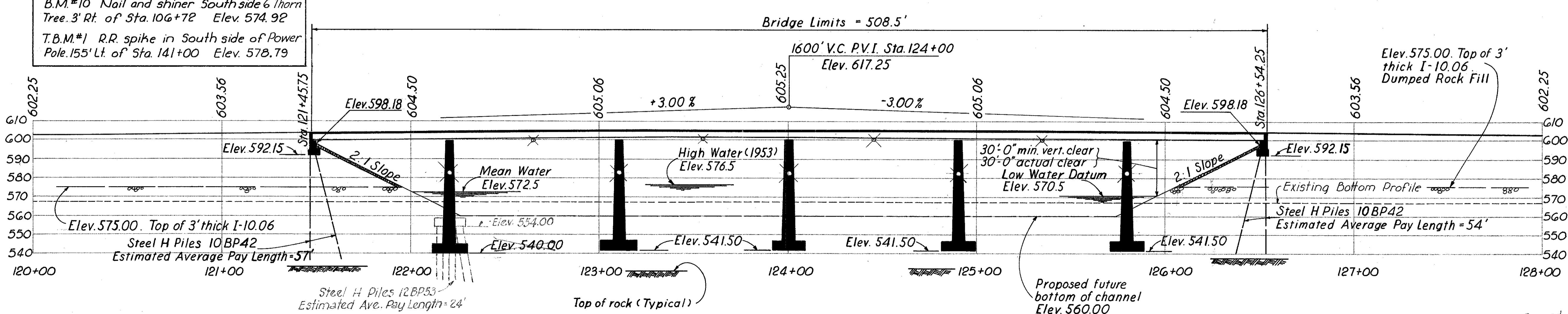
SITE PLAN
BRIDGE NO. OTT. 2-1844
OVER PORTAGE RIVER
OTTAWA COUNTY STA. 121+45.75 to STA. 126+54.25
Scale: 1" = 30'

PRESENT TOPOGRAPHY	PROPOSED WORK
SURVEYED DRAWN S.M.B. T.W.D.	DESIGNED DRAWN CHECKED REVIEWED T.W.D. TWD.OMB. B.I.H. FCM 2/26/63



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

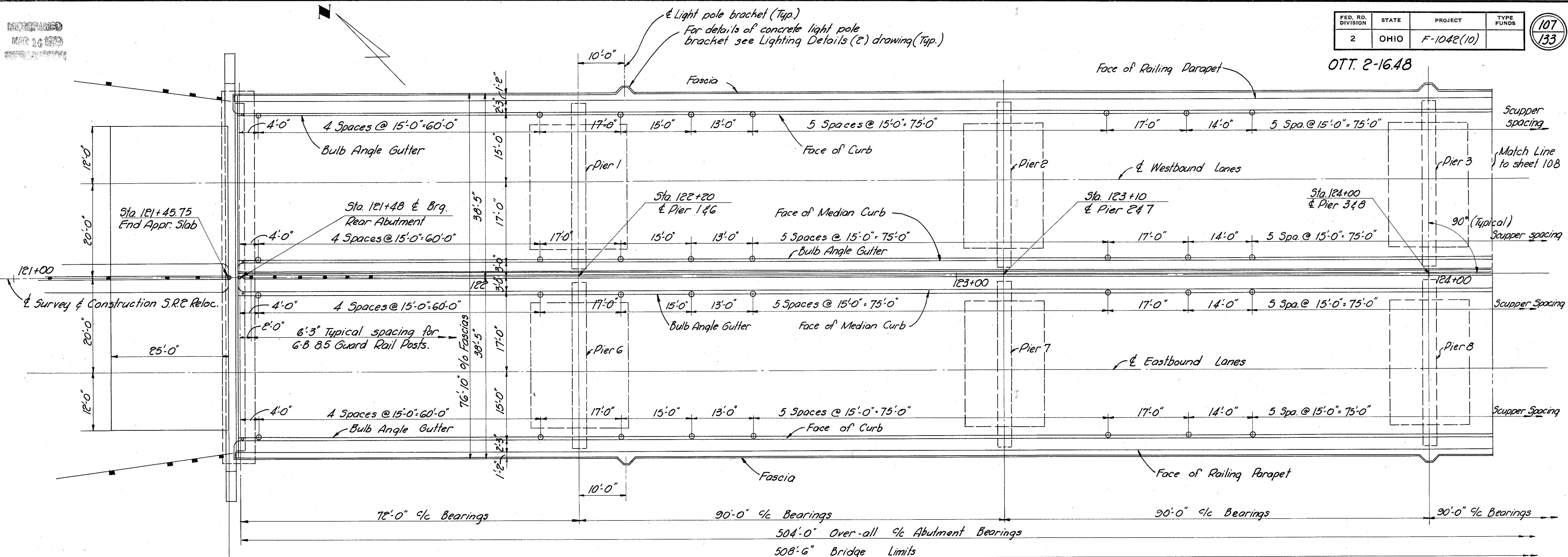


FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	

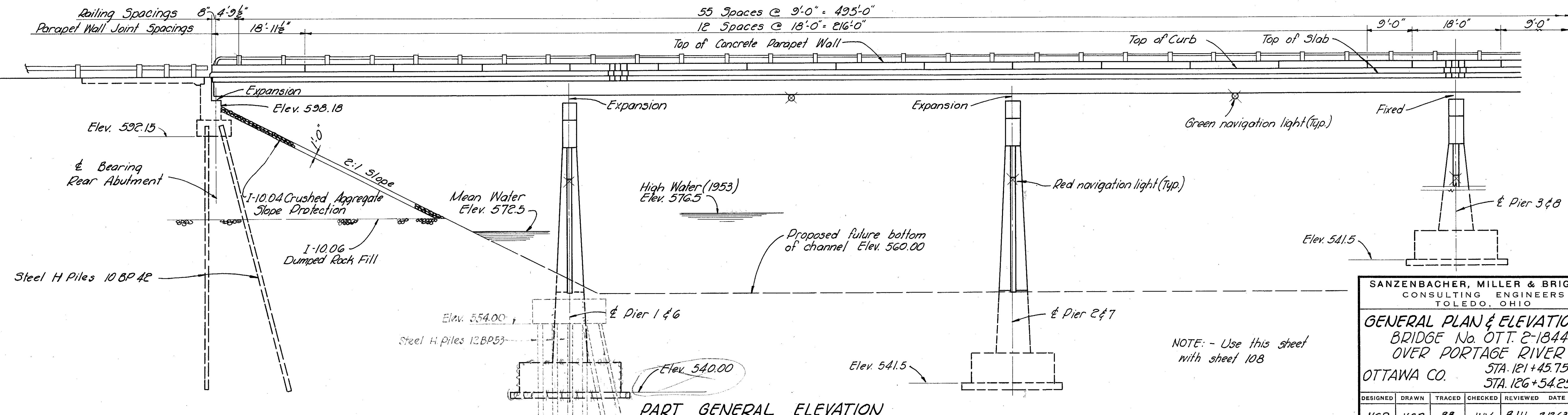
107
133

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OTT. 2-16.48



PART GENERAL PLAN



NOTE: - Use this sheet
with sheet 108

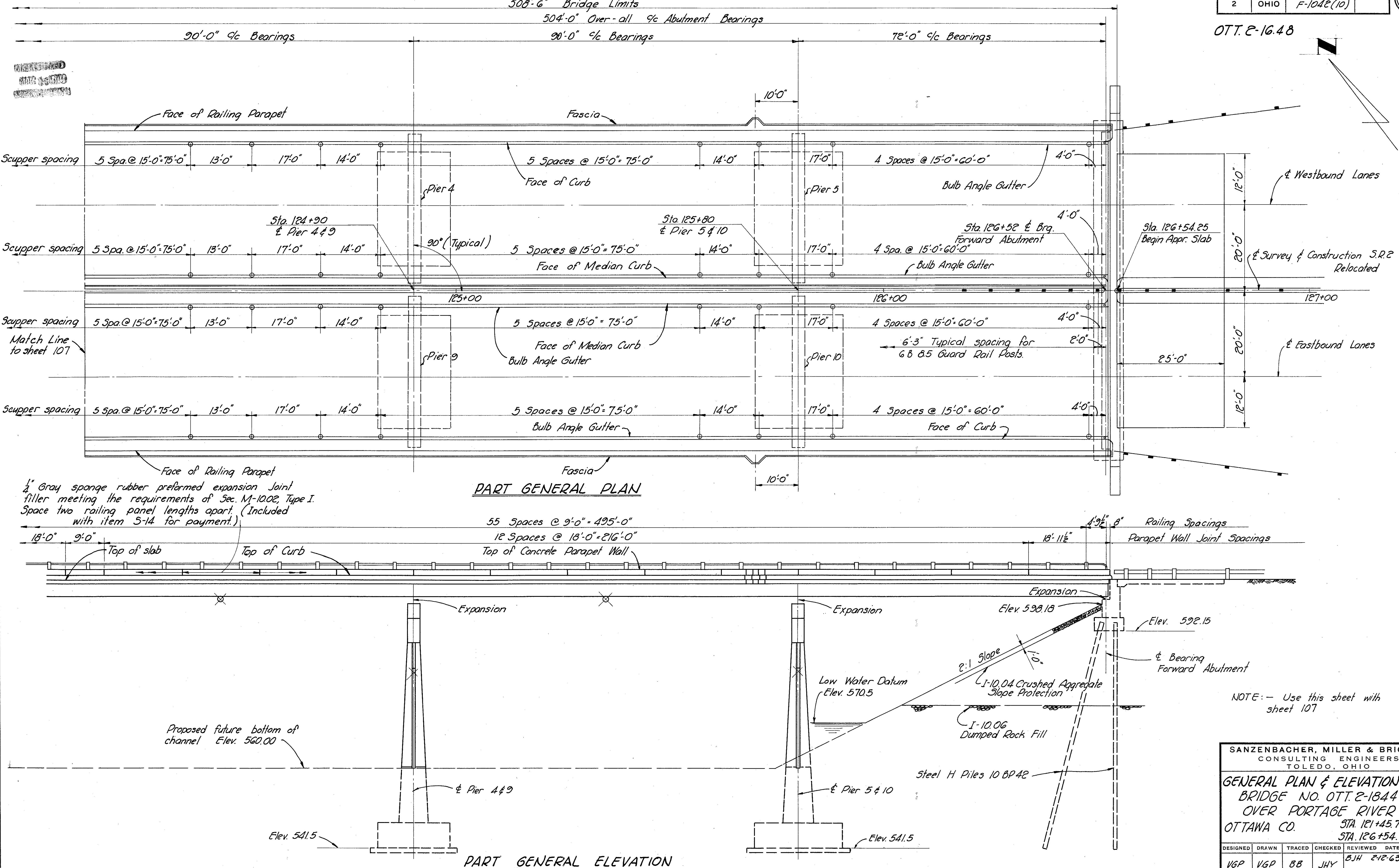
**SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO**

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	1-27-67 JDR

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	108 133

OTT. E-16.48



MICROFILED
MAR 16 1979
REPRODUCTION

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

109
133

OTT. 2-16.48

ESTIMATED QUANTITIES (BRIDGE NO. OTT. 2-1844)													
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS		PIERS					SUPER- STRUCT.	GENERAL	
				REAR	FORWARD	1	2	3	4	5	6	7	8
E-2	Lump Sum	Cofferdams, cribs and sheeting				162					162		
E-2	6858 Cu.Yds.	Unclassified excavation		179	179	760	590	590	590	720	760	590	590
S-1	1207 Cu.Yds.	Class "C" concrete, superstructure				100					100		
S-1	1502 Cu.Yds.	Class "C" concrete, piers above footings				150	149	150	149	147	150	149	150
S-1	260 Cu.Yds.	Class "E" concrete, abutments		130	130	75							
S-1	1220 Cu.Yds.	Class "E" concrete, pier footings				137	112	112	137	137	112	112	112
S-1	280 Cu.Yds.	Class "E" concrete, pier subfootings				030	26	26	31	030	26	26	31
S-3	54 Lin.Ft.	Waterproofing, premolded sealing strip				27	27						
S-4	552031 Lbs.	Reinforcing steel		8284	8285	24201	21553	21553	24201	24201	21553	21553	24201
S-7	1,497,000 Lbs.	Structural steel				1870	1870	1870	1870	1870	1870	1870	1870
S-8	1,497,000 Lbs.	Field painting of structural steel				1870	1870	1870	1870	1870	1870	1870	1870
S-9	48 Sq.Ft.	1" Preformed expansion joint filler				24	24						
S-14	1012 Lin.Ft.	Railing (type A aluminum rail and supports, concrete parapet)											
S-14	506 Lin.Ft.	Barrier railing (type I-15.11, double faced with galvanized steel posts and bolts), as per plan											
S-16	Lump Sum	First test pile											
S-18	2550 Lin.Ft.	Steel piles, 10 BP 42		1310	1240								
S-18	1680 Lin.Ft.	Steel piles, 12 BP 53				840				840			
S-29	82 Cu.Yds.	Porous backfill				41	41						
S-29	136 Each	Scuppers, including supports										136	
I-10	954 Sq.Yds.	Crushed aggregate slope protection											954
S-101	1207 Each	Water-reducing, set-retarding admixture											1207
S-25	NAVIGATIONAL LIGHTING & BRIDGE ROADWAY LIGHTING PROVISIONS												
	SEE SHEET NO. 116 FOR ESTIMATED QUANTITIES												

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 "Reinforced Concrete Approach Slabs" revised 7-5-62, RB-1-55 "Rockers and Bolsters" revised 2-2-59, AR-1-57 "Aluminum Railing with Concrete Parapet" revised 4-2-62, SD-1-63, sheets 2,3,§4, dated 11-12-63, SD-2-64 dated 11-25-64 and to Supplemental Specification S-101 "Water-reducing, Set-retarding Admixtures for Concrete" dated 7-12-62 and 5307 revised 10-1-64.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

PROCEDURE: Following the removal and displacement of peat in the vicinity of station 119+00 to station 122+10 as shown on the plan cross sections and line sheets, and the construction of roadway embankments up to the finished spill-thru slope and to the level of the subgrade for a distance of 400 feet back of the abutments. After a waiting period of 60 days after embankment is in place, excavation can be made for the abutments and the piles driven. Rear and forward piers shall be constructed after the embankment is made. Granular embankment materials shall be placed in such a manner that any rock placed as part of the embankment will not interfere with pile driving.

EXCAVATION QUANTITY for the abutments includes the removal of materials between the surface of the proposed embankment and the bottom of the abutments. Pier excavation quantities are computed from existing mean bottom (elev. 567.0) to bottom of pier subfootings. The contractor shall maintain existing mean bottom (elev. 567.0) within the waterway opening.

PILE shall be driven to a minimum bearing capacity of 35 tons per pile.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 40 tons per sq. ft.

PIER FOOTINGS shall extend a minimum of one (1) foot into hard glacial till or to the elevation shown, whichever is lower.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

FOR NOTES ON ITEMS S-25 NAVIGATIONAL LIGHTING & BRIDGE ROADWAY LIGHTING PROVISIONS SEE SHEETS 116A, 116B & 116C

SANZENBACHER, MILLER & BRIGHAM CONSULTING ENGINEERS TOLEDO OHIO

ESTIMATED QUANTITIES & GENERAL NOTES
BRIDGE NO. OTT. 2-1844
OVER PORTAGE RIVER
OTTAWA COUNTY STA. 121+45.75 to STA. 126+54.25

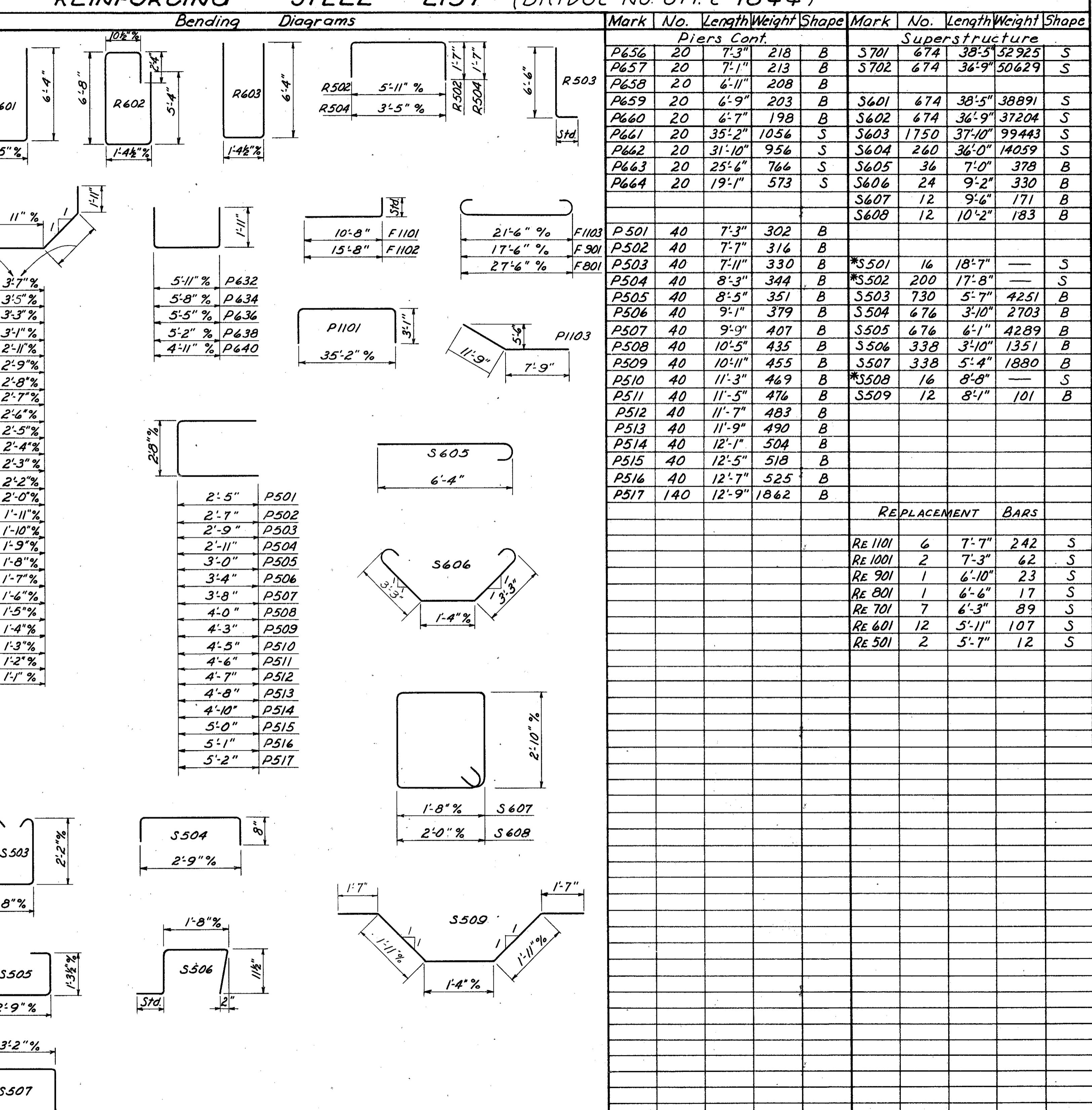
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JHY	TWD	JCS	BUH	FCM	2-12-63	JHY

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	110 133

OTT. 2-16.48

REINFORCING STEEL LIST (BRIDGE No. OTT. 2-1844)									
Mark	No.	Length	Weight	Shape	Mark	No.	Length	Weight	Shape
<i>Abutments</i>									
R801	28	40'-6"	3028	S	F1101	300	11'-10"	18861	B
					F1102	360	16'-10"	32197	B
					F1103	168	24'-8"	22017	B
R601	120	14'-3"	2568	B	F901	252	20'-0"	17136	B
R602	128	16'-0"	3076	B	F801	196	29'-8"	15525	B
R603	20	13'-9"	411	B	P1101	30	40'-8"	6482	B
R604	24	4'-0"	144	S	P1102	130	35'-2"	24289	S
R605	24	10'-2"	366	S	P1103	40	19'-6"	4144	B
R606	8	23'-0"	276	S	P1001	160	21'-0"	14458	S
R607	8	21'-3"	255	S	P1002	180	24'-0"	18589	S
R608	4	19'-3"	116	S					
R609	8	8'-5"	101	S	P701	160	30'-0"	9811	S
R610	8	9'-0"	108	S	P702	180	27'-6"	10118	S
R501	64	23'-7"	1574	S	P601	20	19'-8"	591	S
R502	120	8'-10"	1106	B	P602	20	19'-5"	583	S
R503	112	7'-0"	818	B	P603	20	19'-2"	576	S
R504	232	6'-4"	1532	B	P604	20	18'-11"	568	S
R505	16	8'-0"	134	S	P605	20	18'-8"	561	S
R506	4	9'-7"	40	S	P606	20	18'-5"	553	S
R507	4	18'-3"	76	S	P607	20	18'-2"	546	S
R508	4	8'-7"	36	S	P608	20	17'-10"	536	S
R509	8	7'-10"	65	S	P609	20	17'-7"	528	S
R510	8	7'-1"	59	S	P610	20	17'-4"	521	S
R511	8	6'-6"	54	S	P611	20	13'-2"	396	S
R512	8	5'-10"	49	S	P612	20	13'-0"	391	S
R513	8	5'-2"	43	S	P613	20	12'-10"	386	S
R514	8	6'-11"	58	S	P614	20	12'-8"	381	S
R515	36	12'-8"	476	S	P615	20	12'-6"	376	S
					P616	20	12'-4"	370	S
					P617	20	12'-2"	365	S
					P618	20	12'-1"	363	S
					P619	20	11'-11"	358	S
					P620	20	11'-9"	353	S
					P621	20	11'-7"	348	S
					P622	20	11'-5"	343	S
					P623	20	11'-3"	338	S
					P624	20	11'-1"	333	S
					P625	20	11'-0"	330	S
					P626	20	10'-10"	325	S
					P627	20	10'-8"	320	S
					P628	20	10'-6"	315	S
					P629	20	10'-4"	310	S
					P630	20	10'-2"	305	S
					P631	20	11'-7"	348	B
					P632	20	9'-5"	283	B
					P633	20	11'-3"	338	B
					P634	20	9'-2"	275	B
					P635	20	10'-11"	328	B
					P636	20	8'-11"	268	B
					P637	20	10'-7"	318	B
					P638	20	8'-8"	260	B
					P639	20	10'-3"	308	B
					P640	20	8'-5"	253	B
					P641	20	9'-11"	298	B
					P642	20	9'-9"	293	B
					P643	20	9'-7"	288	B
					P644	20	9'-5"	283	B
					P645	20	9'-3"	278	B
					P646	20	9'-1"	273	B
					P647	20	8'-11	268	B
					P648	20	8'-9"	263	B
					P649	20	8'-5"	253	B
					P650	20	8'-3"	248	B
					P651	20	8'-1"	243	B
					P652	20	7'-11"	238	B
					P653	20	7'-9"	233	B
					P654	20	7'-7"	228	B
					P655	20	7'-5"	223	B

* Included with Item S-14 for payment.



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.

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TOLEDO, OHIO

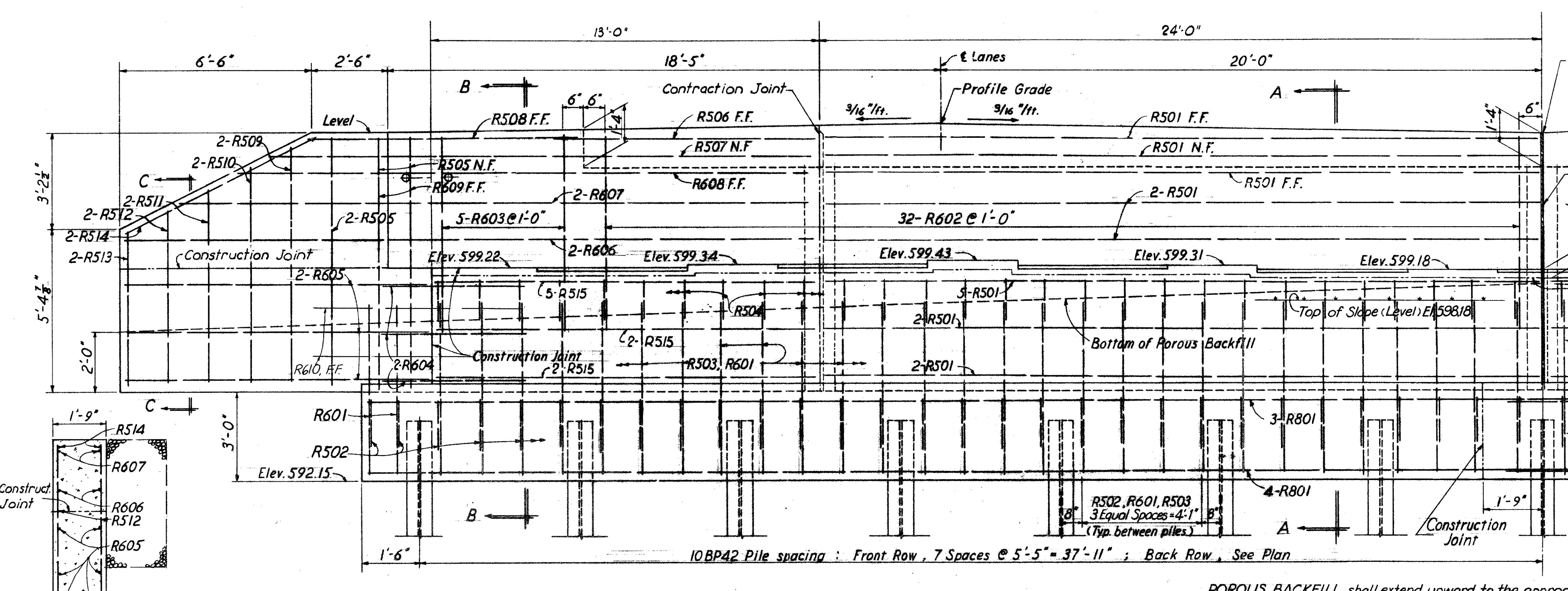
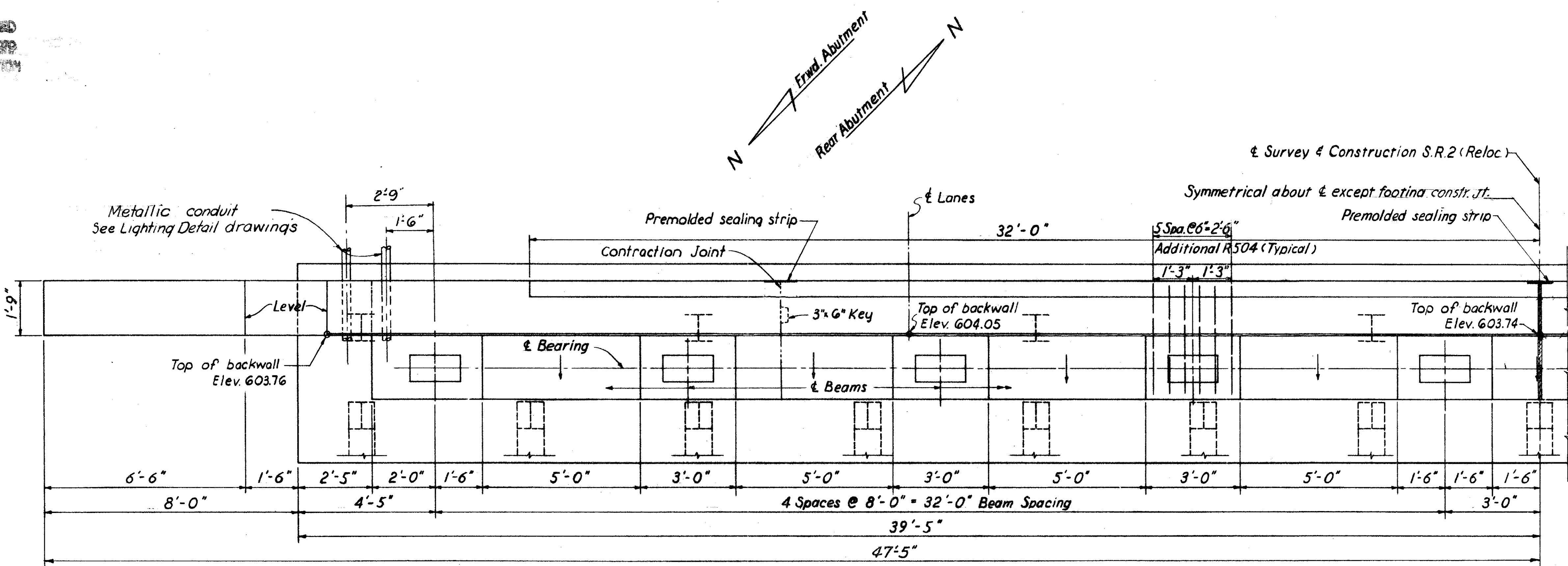
REINFORCING STEEL
BRIDGE NO. OTT. 2-1844
OVER PORTAGE RIVER

Sta. 121+45.75 to
OTTAWA CO. Sta. 126+54.25
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED
JHY TWD JHY AJB BJH 2-26-63

DOWNLOADED
MAR 13 1999

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	1/33

OTT. 2-16.48



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.

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CONSULTING ENGINEERS
TOLEDO, OHIO

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

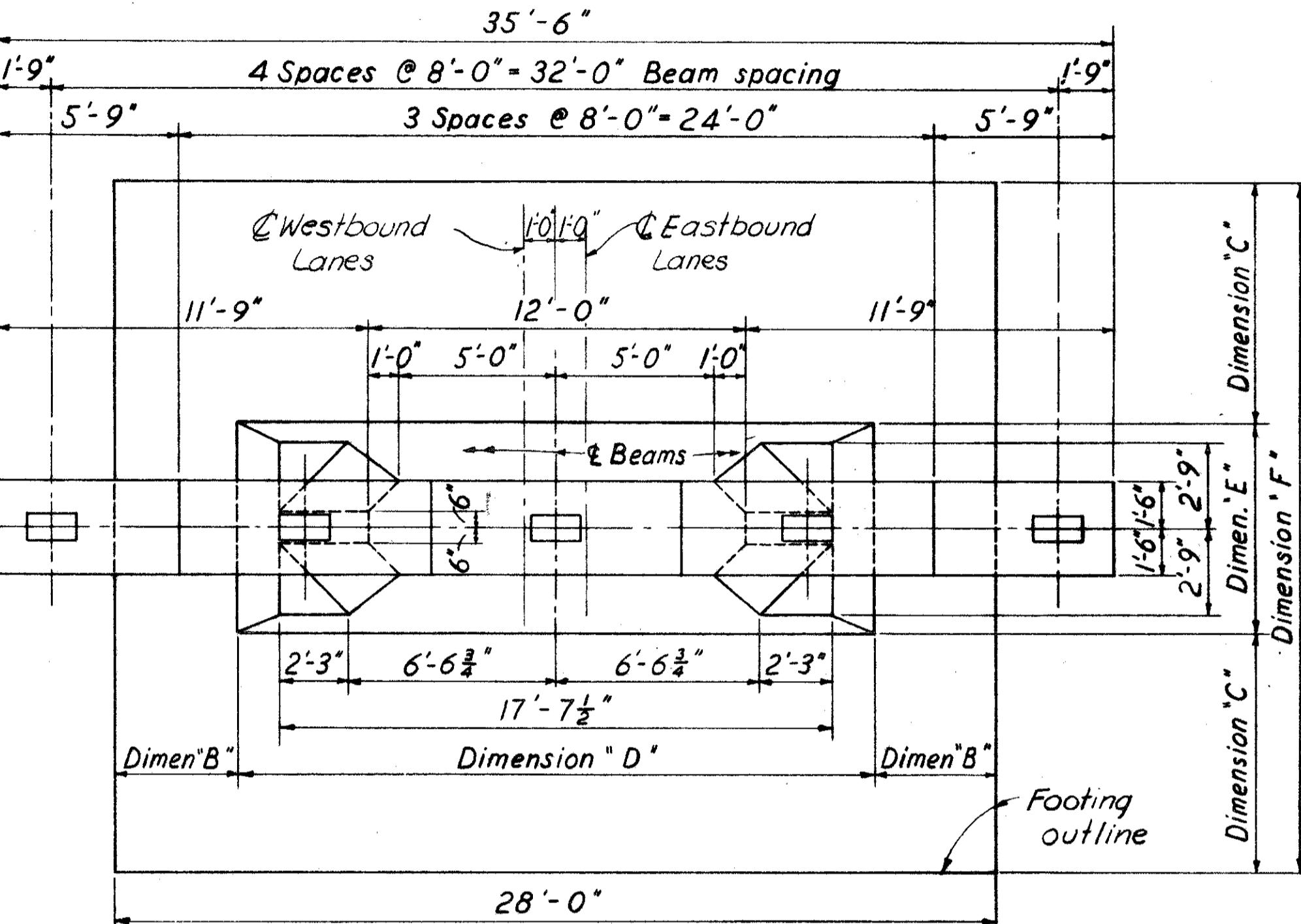
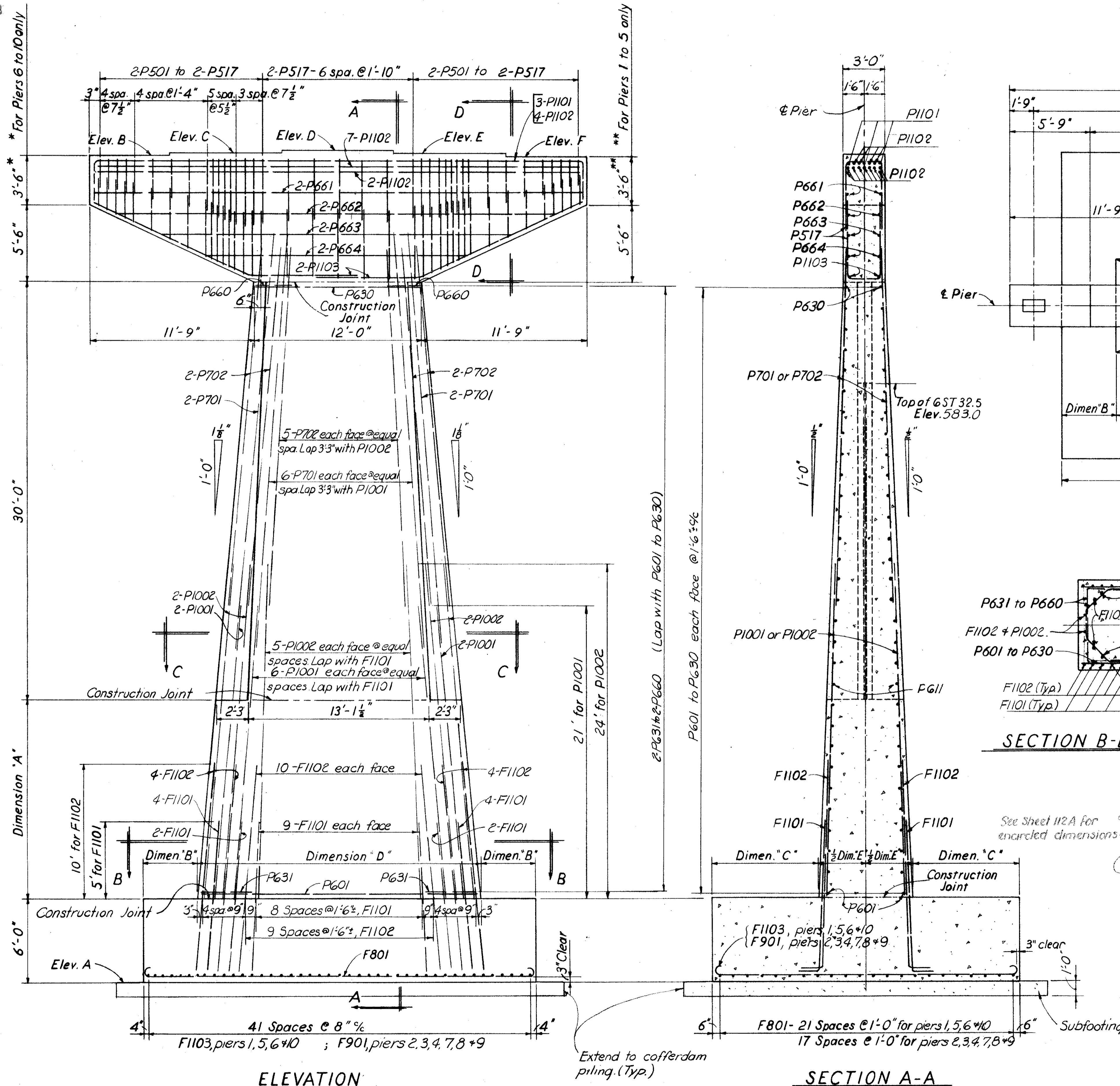
STA. 121+45.75 to
OTTAWA COUNTY STA. 126+54.25

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

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

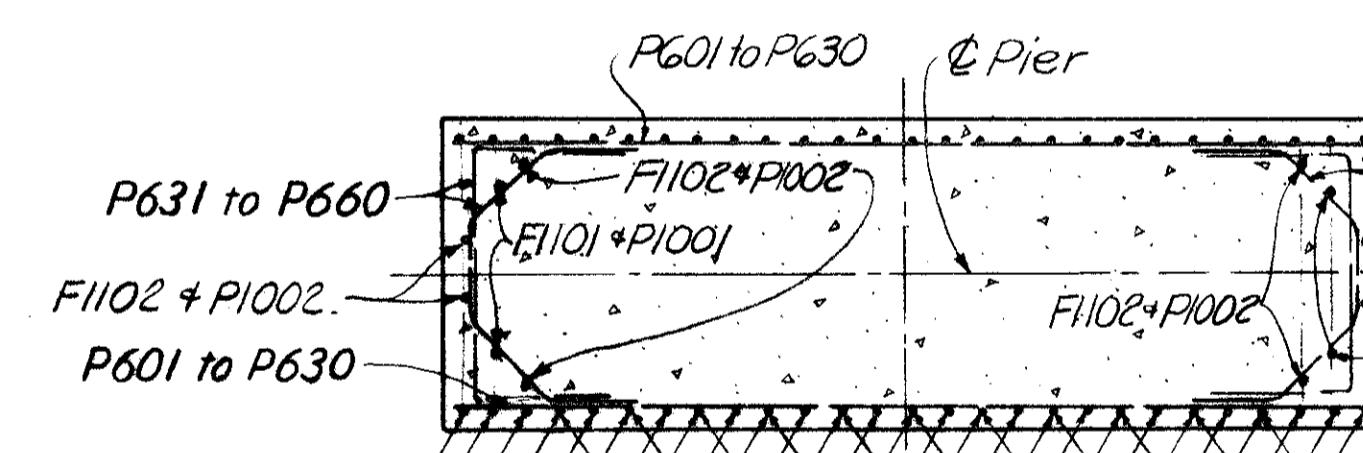
OTT. 2 - 16.48

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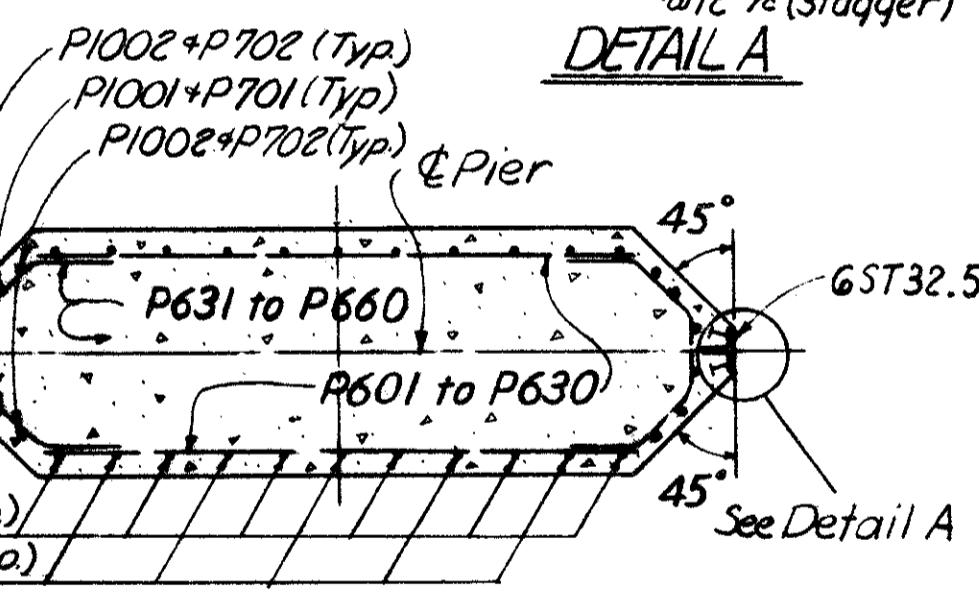


PLAN

Except Pier 166 - See Sheet 112 A



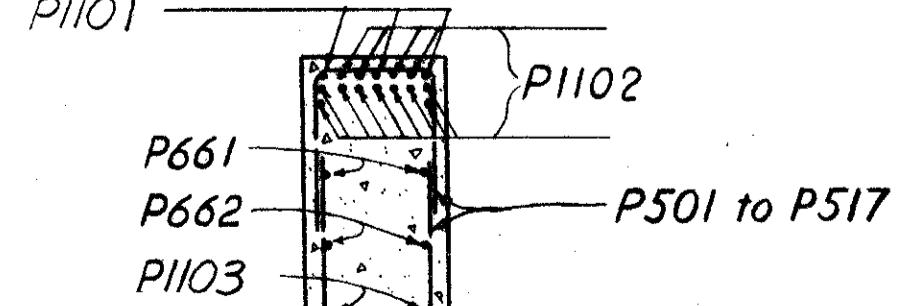
SECTION B



SECTION C-C

	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 $\frac{1}{4}$ "	3'-10 $\frac{1}{2}$ "	7'-7 $\frac{1}{2}$ "	20'-3 $\frac{1}{2}$ "	6'-8 $\frac{1}{2}$ "	22'-0"
Pier 2 & 4	541.5	599.68	599.80	599.90	599.77	599.65	13'-1 $\frac{1}{4}$ "	3'-11 $\frac{1}{2}$ "	5'-8 $\frac{1}{2}$ "	20'-1"	6'-7 $\frac{1}{4}$ "	18'-0"
Pier 3	541.5	599.83	599.95	600.05	599.92	599.80	13'-3 $\frac{5}{8}$ "	3'-11 $\frac{1}{4}$ "	5'-8 $\frac{1}{2}$ "	20'-1 $\frac{1}{2}$ "	6'-7 $\frac{1}{4}$ "	18'-0"
Pier 5	541.5	599.22	599.35	599.44	599.32	599.19	12'-8 $\frac{1}{4}$ "	4'-0"	7'-8 $\frac{5}{8}$ "	20'-0"	6'-6 $\frac{1}{4}$ "	22'-0"
Pier 6	540	599.19	599.32	599.44	599.35	599.22	14'-2 $\frac{1}{4}$ "	3'-10 $\frac{1}{2}$ "	7'-7 $\frac{1}{2}$ "	20'-3 $\frac{1}{2}$ "	6'-8 $\frac{1}{2}$ "	22'-0"
Pier 7 & 9	541.5	599.65	599.77	599.90	599.80	599.68	13'-1 $\frac{3}{4}$ "	3'-11 $\frac{1}{2}$ "	5'-8 $\frac{1}{2}$ "	20'-1"	6'-7 $\frac{1}{4}$ "	18'-0"
Pier 8	541.5	599.80	599.92	600.05	599.95	599.83	13'-3 $\frac{5}{8}$ "	3'-11 $\frac{1}{4}$ "	5'-8 $\frac{1}{2}$ "	20'-1 $\frac{1}{2}$ "	6'-7 $\frac{1}{4}$ "	18'-0"
Pier 10	541.5	599.19	599.32	599.44	599.35	599.22	12'-8 $\frac{1}{4}$ "	4'-0"	7'-8 $\frac{5}{8}$ "	20'-0"	6'-6 $\frac{1}{4}$ "	22'-0"

See Sheet II



**SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO**

PIERS

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

TA. 121 + 45.75 10
TA. 126 + 54.25

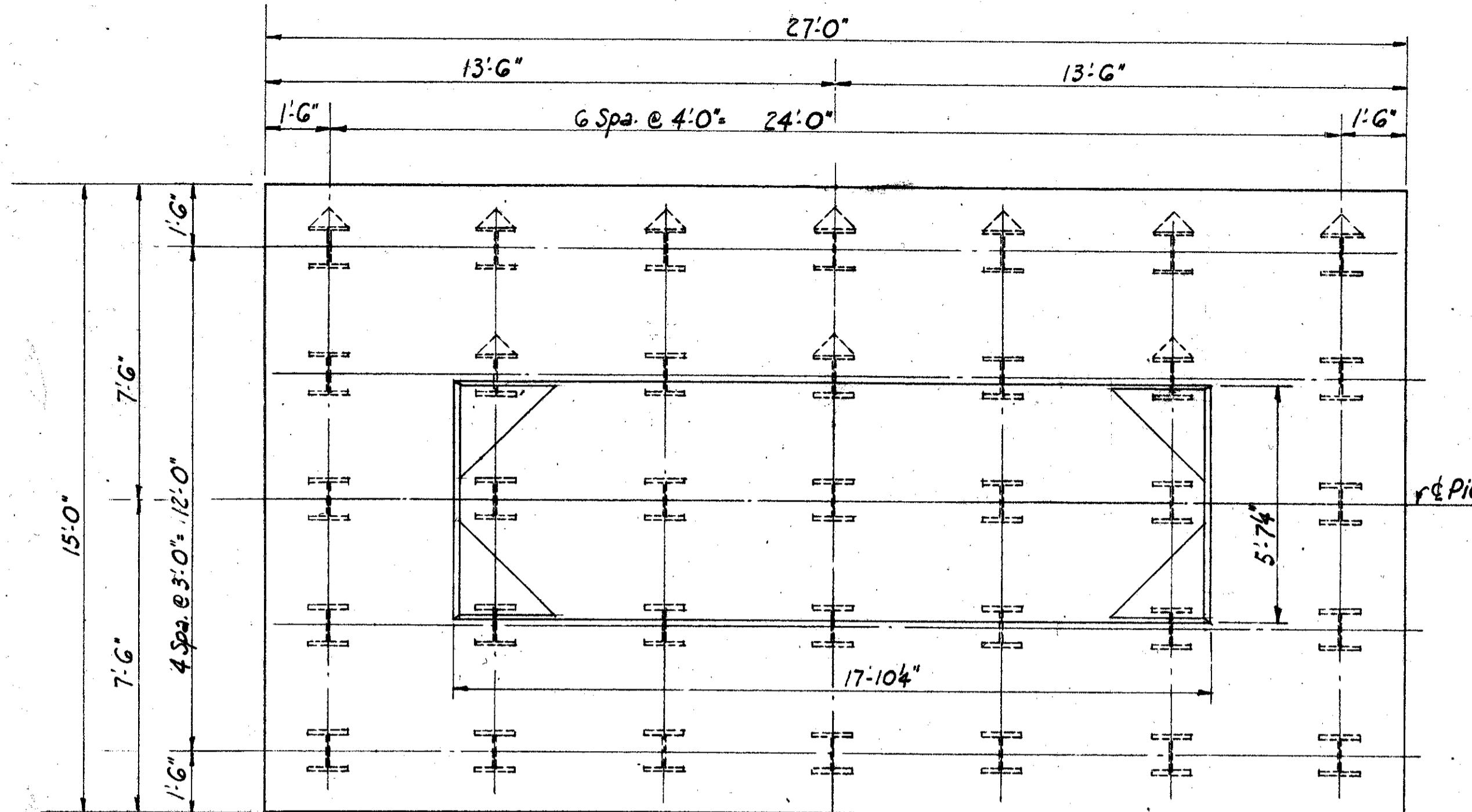
SECTION D-D

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

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

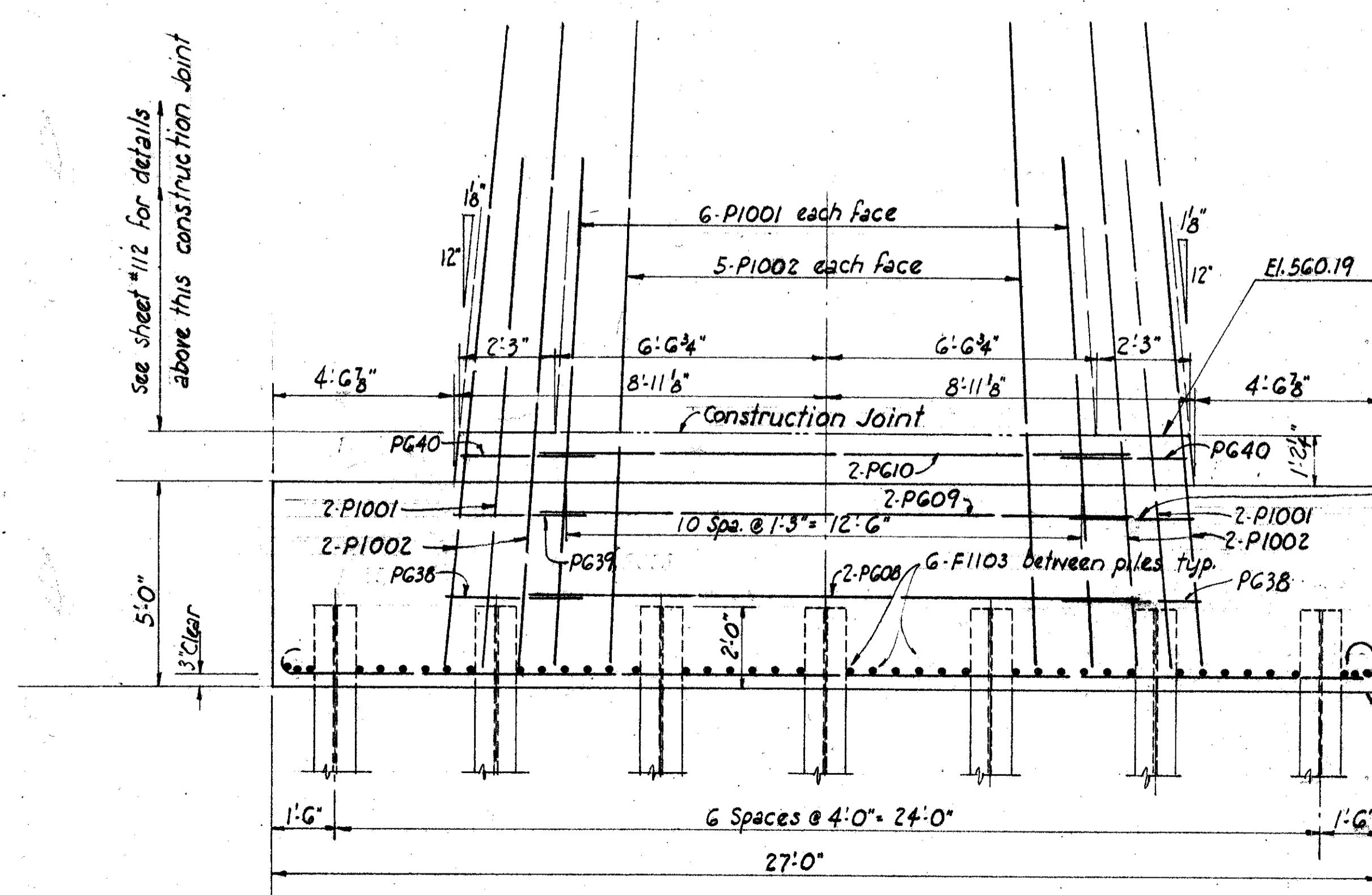
112A
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OTT-2-16.48



PLAN OF FOOTING

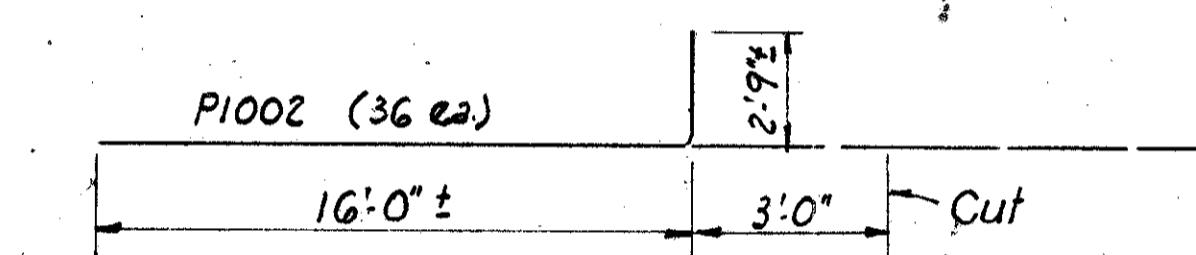
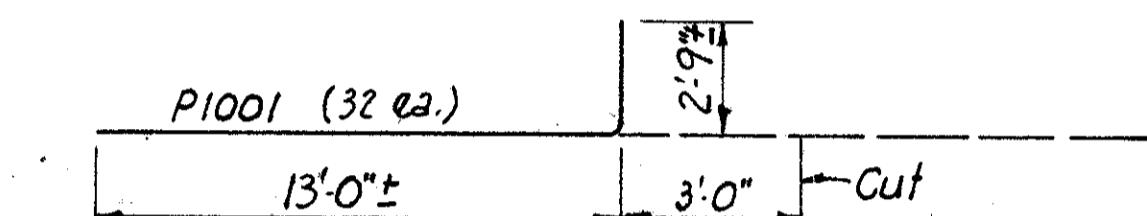
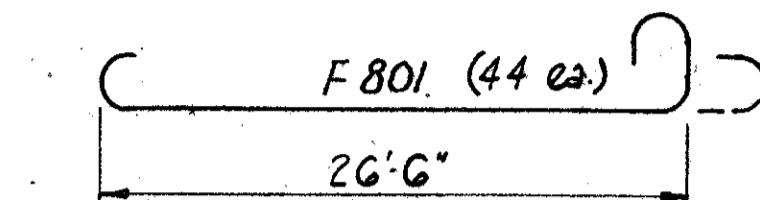
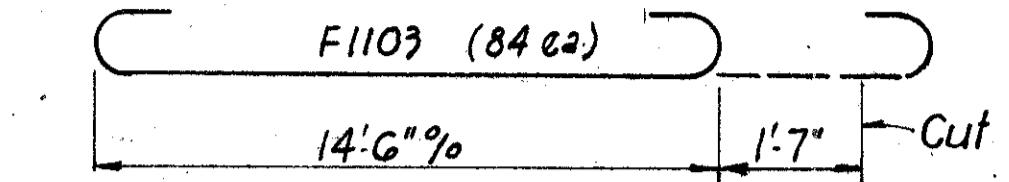
Indicate pile battered 1:4

See sheet #112 for details
above this construction joint

PARTIAL ELEVATION

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

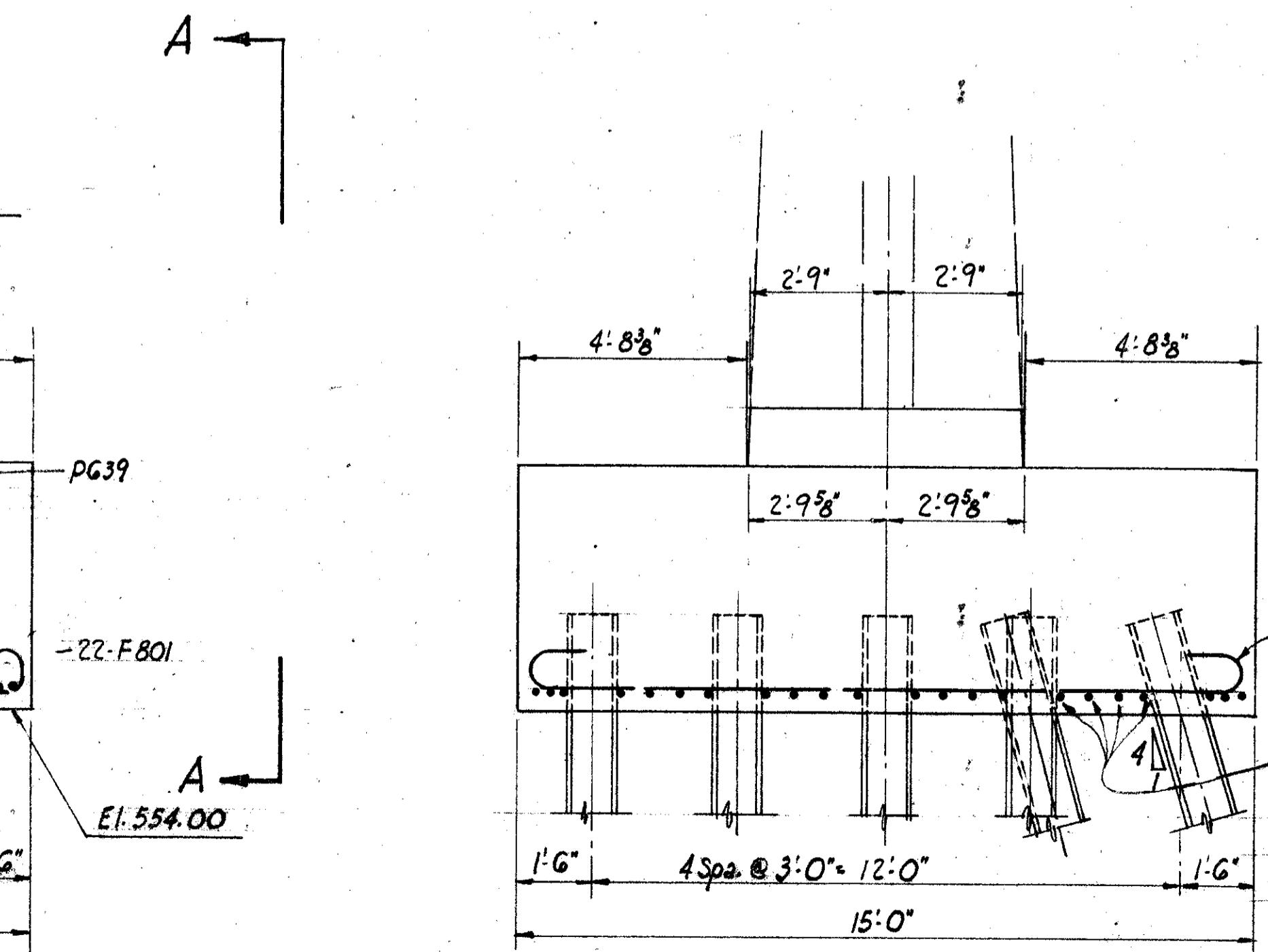
Bar Mark No.
 F1101 60
 F1102 72
 PG01 thru PG07 4 ea.
 PG31 thru PG37 4 ea.



REINFORCING STEEL CHANGES

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

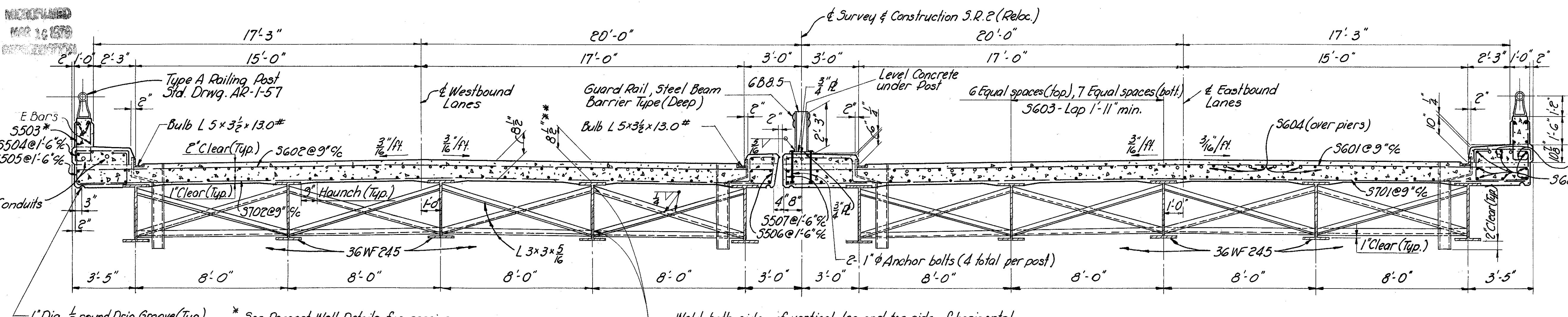
All piles 12 BP53 steel - design load 40 Tons.



VIEW A-A

Batter all piles in outside row,
alternate piles in second row
opposite embankment

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
PIER 1 & 6 MODIFICATION DETAILS BRIDGE NO. OTT-2-1844 OVER PORTAGE RIVER					
DESIGNED J.D.R.	DRAWN J.D.R.	TRACED	CHECKED Ray	REVIEWED	DATE
REVISED					

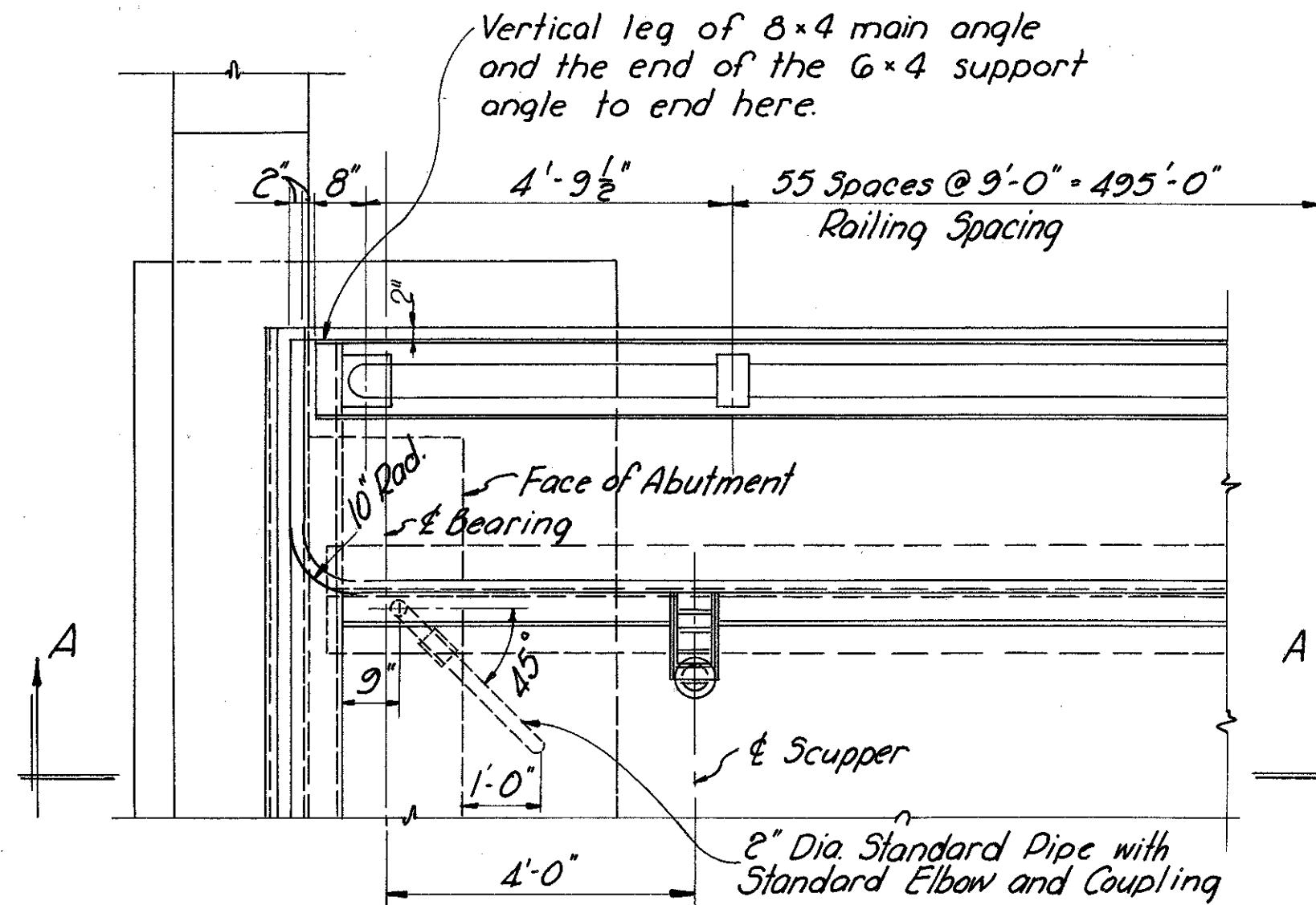


* See Parapet Wall Details for spacing.

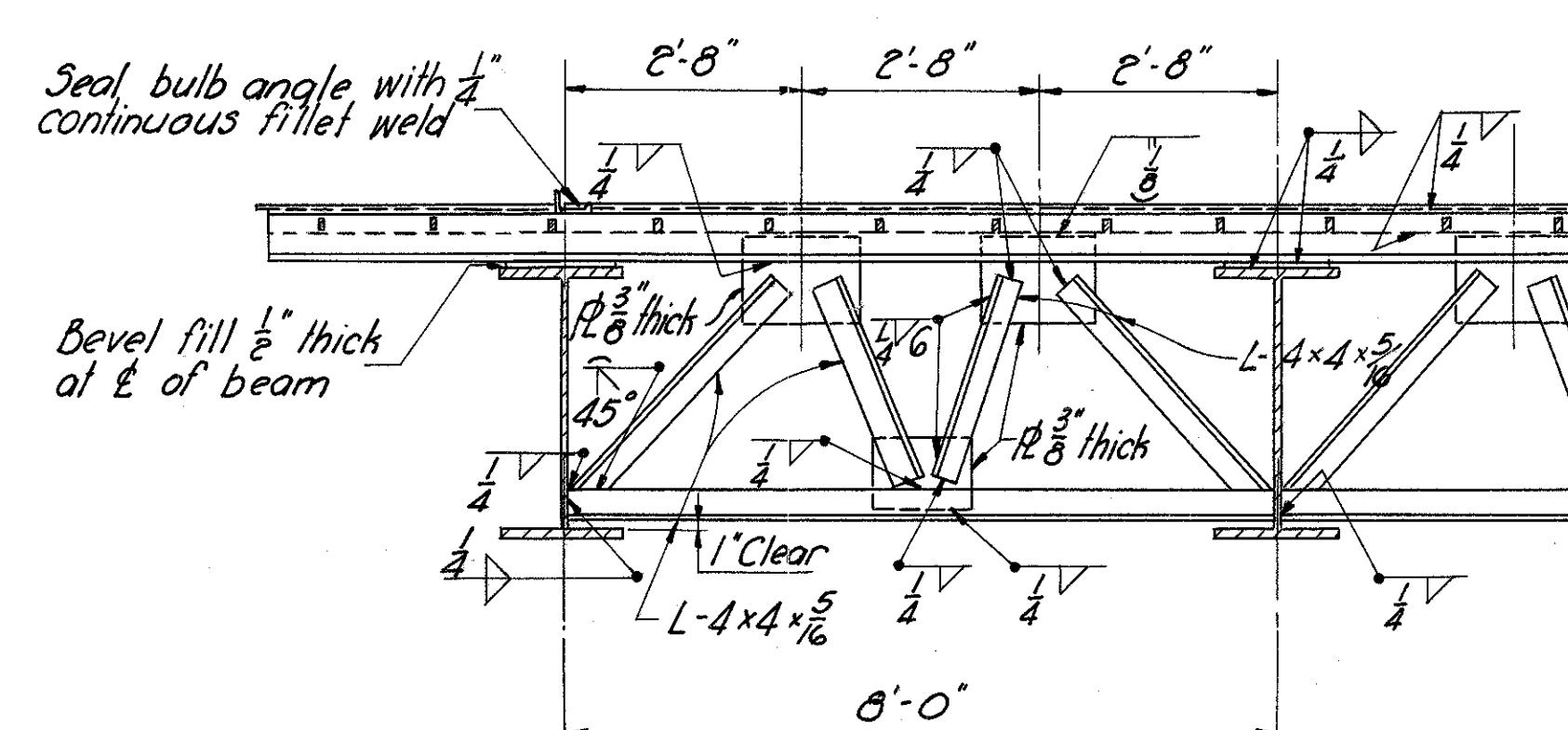
* * This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Slab thickness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

Weld both sides of vertical leg and top side of horizontal leg to beam web with $\frac{1}{8}$ " continuous fillet weld.

TRANSVERSE SECTION OF DEC.



PART PLAN AT ABUTMENT



PART END DAM ELEVATION

Cut vertical leg of
gutter to match top of p
(Typ.)

DETAILS AT ENDS OF MEDIAN CURB

MEDIAN RAILING POST DETAILS

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TOLEDO, OHIO**

SUPERSTRUCTURE DETAILS

BRIDGE No. OTT. 2-1844

OVER PORTAGE RIVER

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).

Approach 2" 1:8" 2" Bridge
Slab

DETAIL B-B

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TOLEDO, OHIO**

SUPERSTRUCTURE DETAILS

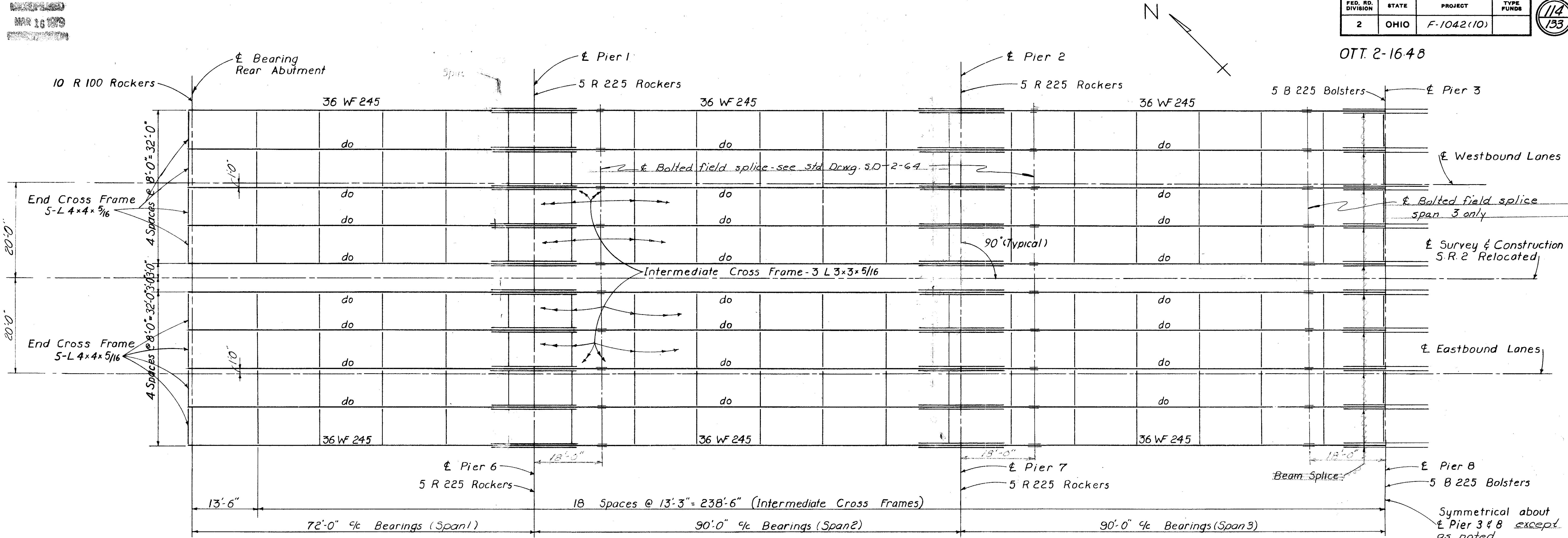
BRIDGE No. OTT. 2-1844

OVER PORTAGE RIVER

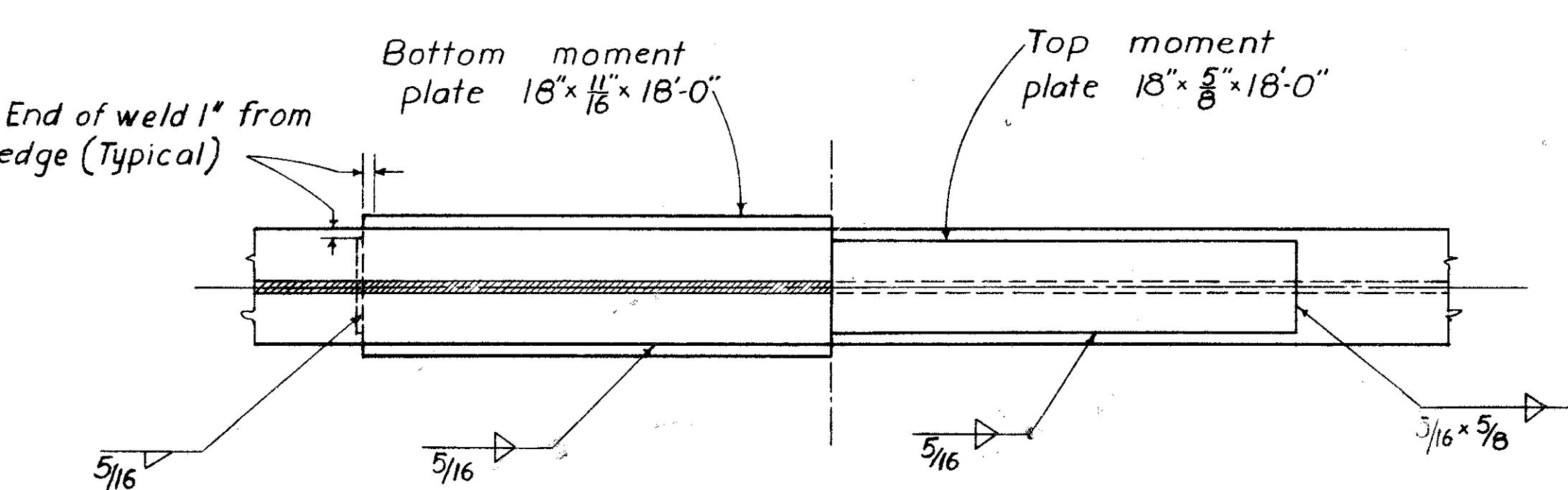
MAILED
MAR 16 1979

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-1042(10)	114 133

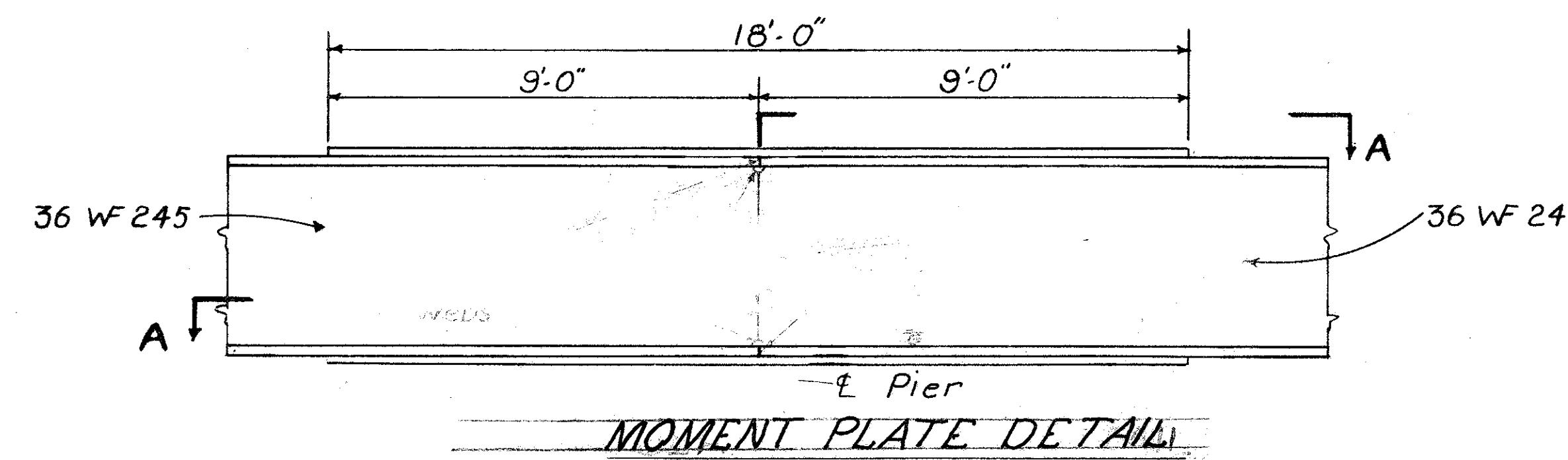
114
133



HALF STEEL FRAMING PLAN



SECTION A-A



Beam	Exterior						Interior					
	1	2	3	4	5	6	1	2	3	4	5	6
Span	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 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"	13/16"	13/16"	13/16"	13/16"	13/16"	3/4"	1/8"	1/8"	1/8"	1/8"	3/4"
Required camber	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"	13/16"

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CONSULTING ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. OTT. 2-1844
OVER PORTAGE RIVER
Sta. 121+45.75 To
OTTAWA Co.
Sta. 126+54.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.G.P	V.G.P		J.HY	BJH	2-2-63	10-28-63