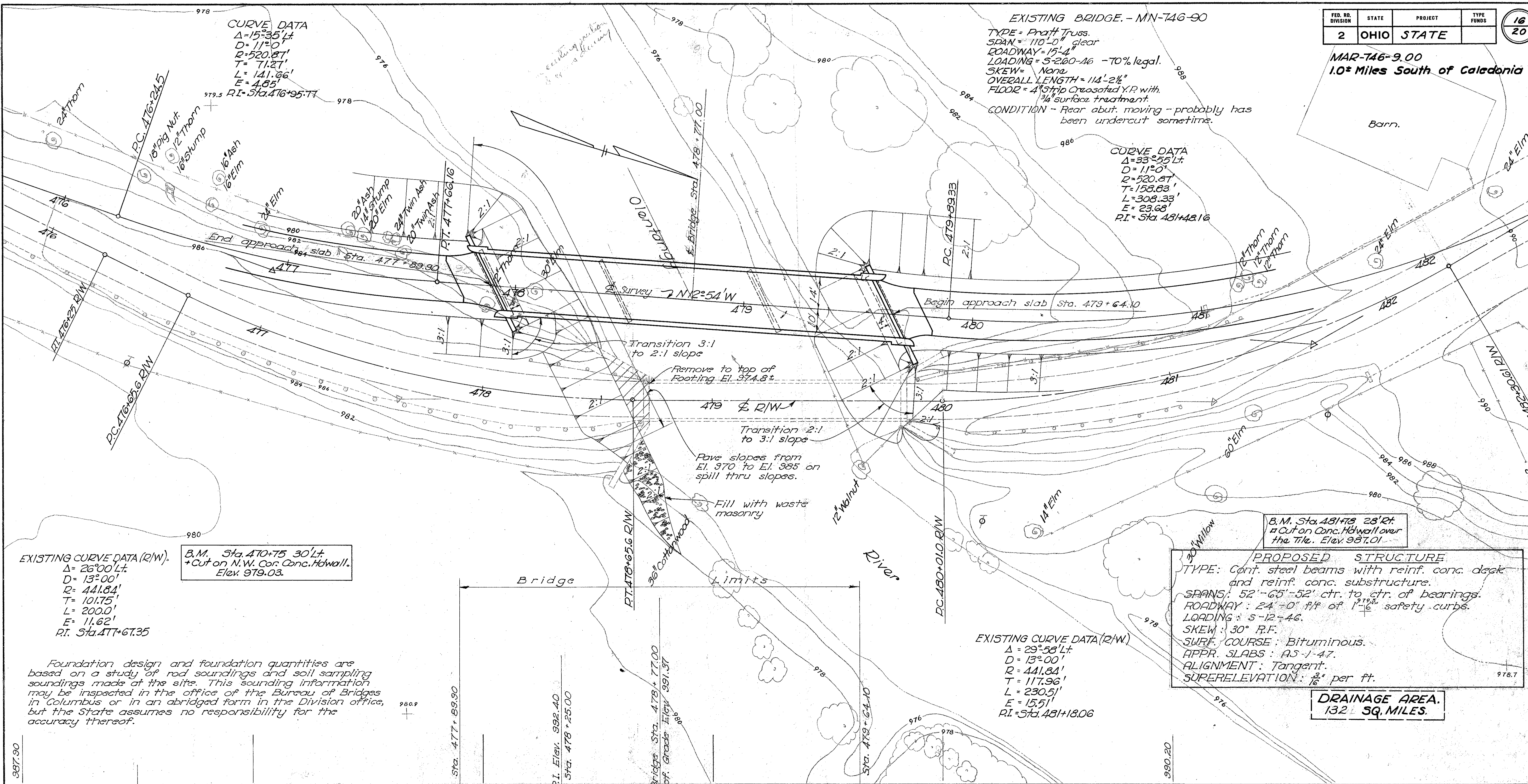


MAR-746-9.00
1.0 Miles South of Caledonia

EXISTING BRIDGE. - MN-746-90
TYPE - Pratt Truss.
SPAN - 110' 0" clear
ROADWAY - 15' 4"
LOADING - S-200-46 - 70% legal.
SKEW - None
OVERALL LENGTH - 114' 2 1/2"
FLOOR - 4" Strip Cressed Y.P. with 3/4" surface treatment.
CONDITION - Rear abut. moving - probably has been undercut sometime.

CURVE DATA
 $\Delta = 33^\circ 55' L$
 $D = 11^\circ 0'$
 $R = 520.87'$
 $T = 158.83'$
 $L = 308.33'$
 $E = 23.68'$
 $P.I. = Sta. 481+48.16$

CURVE DATA
 $\Delta = 15^\circ 35' L$
 $D = 11^\circ 0'$
 $R = 520.87'$
 $T = 158.83'$
 $L = 308.33'$
 $E = 23.68'$
 $P.I. = Sta. 476+95.77$



EXISTING CURVE DATA (R/W).
 $\Delta = 26^\circ 00' L$
 $D = 13^\circ 00'$
 $R = 441.84'$
 $T = 101.75'$
 $L = 200.0'$
 $E = 11.62'$
 $P.I. = Sta. 477+67.35$

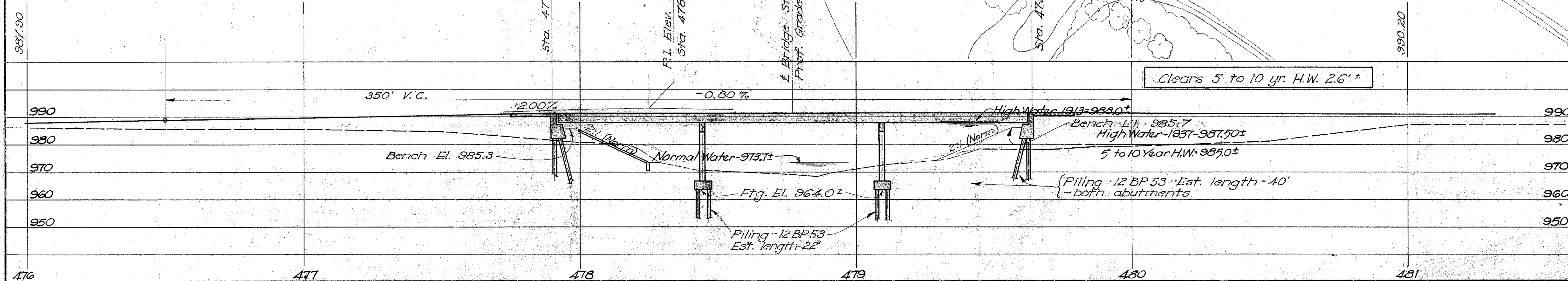
B.M. Sta. 470+75 30' L.
+ Cut on N.W. Cor. Conc. Hwall.
Elev. 979.03.

Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division office, but the State assumes no responsibility for the accuracy thereof.

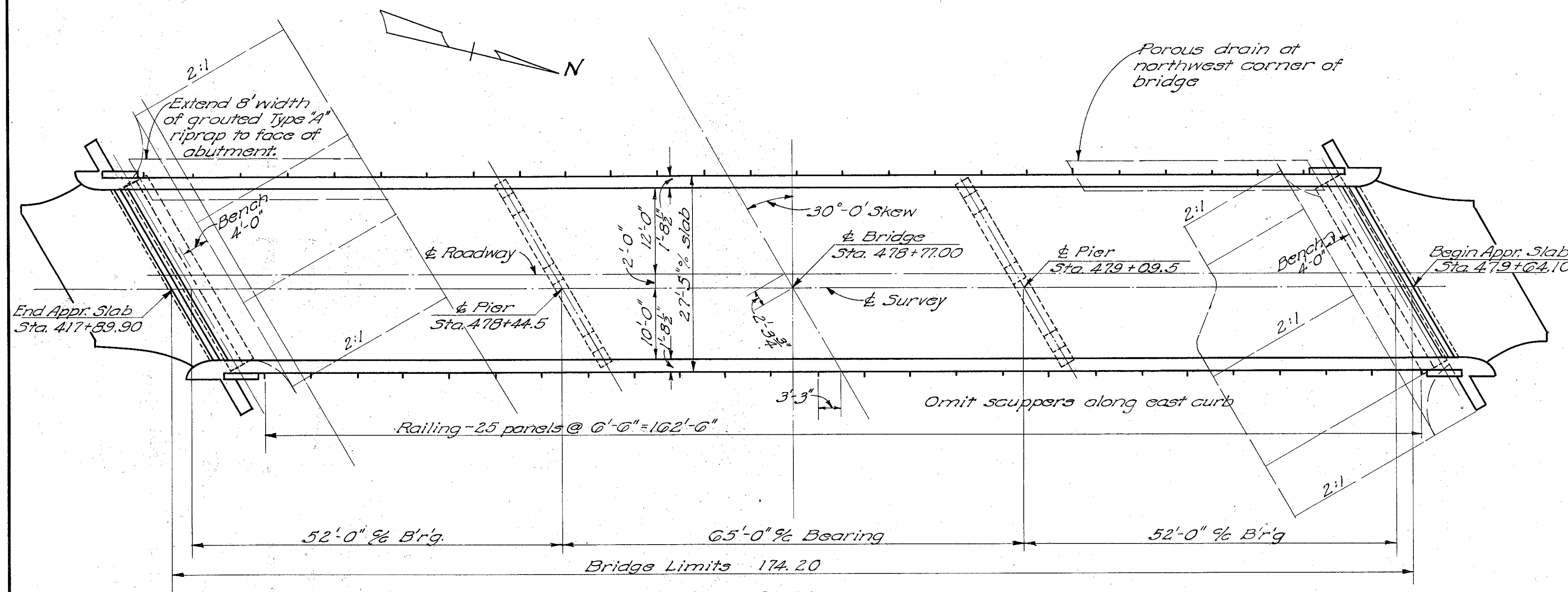
PROPOSED STRUCTURE
TYPE: Cont. steel beams with reinf. conc. deck and reinf. conc. substructure.
SPANS: 52'-65'-52' ctr. to ctr. of bearings.
ROADWAY: 24'-0" P.F. of 1'-6" safety curbs.
LOADING: S-12-46.
SKEW: 30° R.F.
SURF. COURSE: Bituminous.
APPR. SLABS: AS-1-47.
ALIGNMENT: Tangent.
SUPERELEVATION: 3/16 per ft.

DRAINAGE AREA.
132 SQ. MILES.

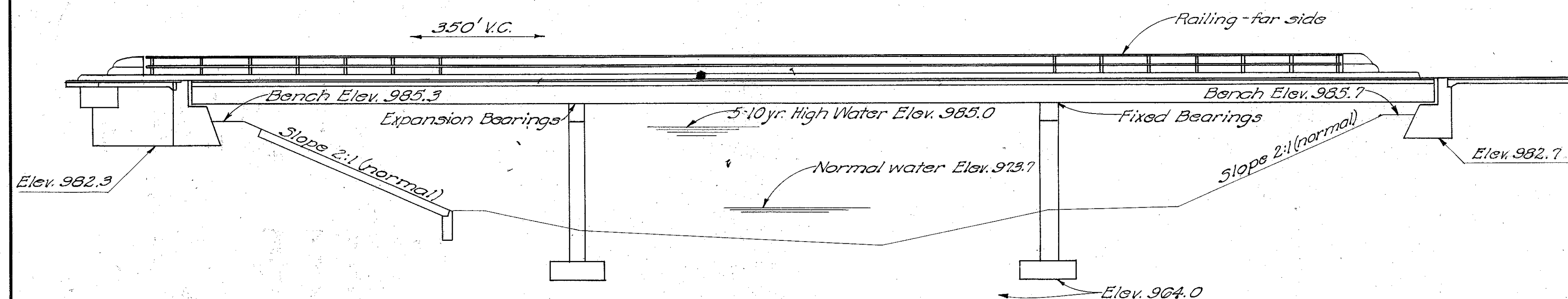
EXISTING CURVE DATA (R/W).
 $\Delta = 29^\circ 58' L$
 $D = 13^\circ 00'$
 $R = 441.84'$
 $T = 117.96'$
 $L = 230.5'$
 $E = 15.51'$
 $P.I. = Sta. 481+18.06$



STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES	
SITE PLAN	
BRIDGE NO. MN-746-90 OVER OLENTANGY RIVER	
MARION CO.	S. R. 746
SEC. MAR-746-9.00 STA. 478+77.00	
SCALE 1" = 20'	
PRESENT TOPOGRAPHY	PROPOSED WORK
SURVEY'D aerial Survey	DRAWN aerial Survey
DESIGN J.N.B.	CHECKED J.N.B.
REVIEW'D C.H.A.	REVIEW'D C.H.A.



GENERAL PLAN



GENERAL ELEVATION
(Piling for piers and abutments not shown)

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Supers	Abut.	Pier	Gen'l.	
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump	
E-2	287	Cu.Yd.	Unclassified Excavation		70	165	52	
E-3	80	Cu.Yd.	Channel Excavation				80	
S-1	18	Cu.Yd.	Class "E" concrete, toe wall				18	
S-1	115	Cu.Yd.	Class "C" concrete, Superstructure	115				
S-1	32	Cu.Yd.	Class "C" concrete, Pier Caps & Columns			32		
S-1	79	Cu.Yd.	Class "E" concrete, Abutments		79			
S-1	37	Cu.Yd.	Class "E" concrete, Pier Footings			37		
S-3	455	Sq.Yd.	Type "C" waterproofing	455				
S-4	38639	Lb.	Reinforcing steel	22150	5690	10690	103	
S-7	104200	Lb.	Structural steel	104200				
S-8	104200	Lb.	Field painting of structural steel	104200				
S-14	348	Lin.Ft.	Railing (Steel with concrete end posts)	348				
S-16	Lump	Sum	First test pile				Lump	
S-18	1170	Lin.Ft.	Steel piling, 12 BP 53		640	530		
S-24	Lump	Sum	Removal of existing structure				Lump	
S-29	6	Cu.Yd.	Porous drains on embankment slopes				6	
I-10	402	Sq.Yd.	Type "A" riprap				402	
T-35	32	Cu.Yd.	Asphaltic Concrete Surface Course, Type "A" or "C" (85-100)	32				

GENERAL NOTES

REFERENCE shall be made to Standard Drawing C3B-3-47, revised 7-27-49.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. The floor beams shall be carefully dismantled and piled on the right-of-way for disposal by the State's forces. The remainder of the removed materials shall become the property of the Contractor. The south abutment shall be removed and the slopes dressed as shown on the Site Plan. The north abutment shall be removed to 6" below the finished ground lines and the slopes dressed to 2:1. Removal of earth and dressing of slopes shall be included with removal of existing structure for payment. Suitable waste masonry may be disposed of as bank protection at the direction of the Engineer.

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

PILING shall be driven with a steam hammer of not less than 7000# energy per blow, to firm contact with shale for the pier piles and preferably to firm contact with shale for the abutment piles. The required penetration shall be considered as attained when the capacity according to the formula in Sec. 5-18.05 is at least 55 tons per pile for the pier piles and 40 tons for the abutment piles if a 7,000# hammer is used, or 45 tons for the pier piles and 30 tons for the abutment piles if a 15,000# hammer is used and if the length of penetration of the pier piles, and preferably of the abutment piles, approximately equals the depth to shale according to the bridge foundation investigation report. If the energy rating of the hammer is between these values, the required formula capacity shall be determined by interpolation. (The design load is 36 tons per pile for the pier piles and 27 tons for the abutment piles.)

PAINTING, both shop and field, shall be according to Item 5-8 except that the paint shall be applied by brushing. Spray application will not be permitted.

STEEL FOR END FINISH need not be copper-bearing.

METAL WASHERS of approximately 3" diameter shall be provided on the anchor bolts, between the railing posts and the fascia of the deck to hold the railing in accurate alignment. Washers shall be used only to the extent necessary for this purpose. The space between each railing post and the face of the concrete shall be thoroughly and neatly filled with "Leadite" or approved equivalent to exclude moisture. Payment for washers and filling shall be considered as included in the contract price per lin. ft. of railing.

SURFACE FINISH OF CONCRETE: Railing end posts, curb faces and fascias of deck shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item 5-1.

POROUS DRAIN, extending from face of abutment to Elev. 978.0±, shall be placed on and flush with embankment slope at the northwest corner of the bridge. The drain shall be 4 ft. wide and one ft. thick and shall be centered under the scuppers. It shall be composed of No. 1 or No. 12 gravel, stone, or slag. Construction procedure shall conform essentially to Item 1-9. Trench excavation shall be included for payment with the price per cu. yd. bid for "Porous drains on embankment slopes."

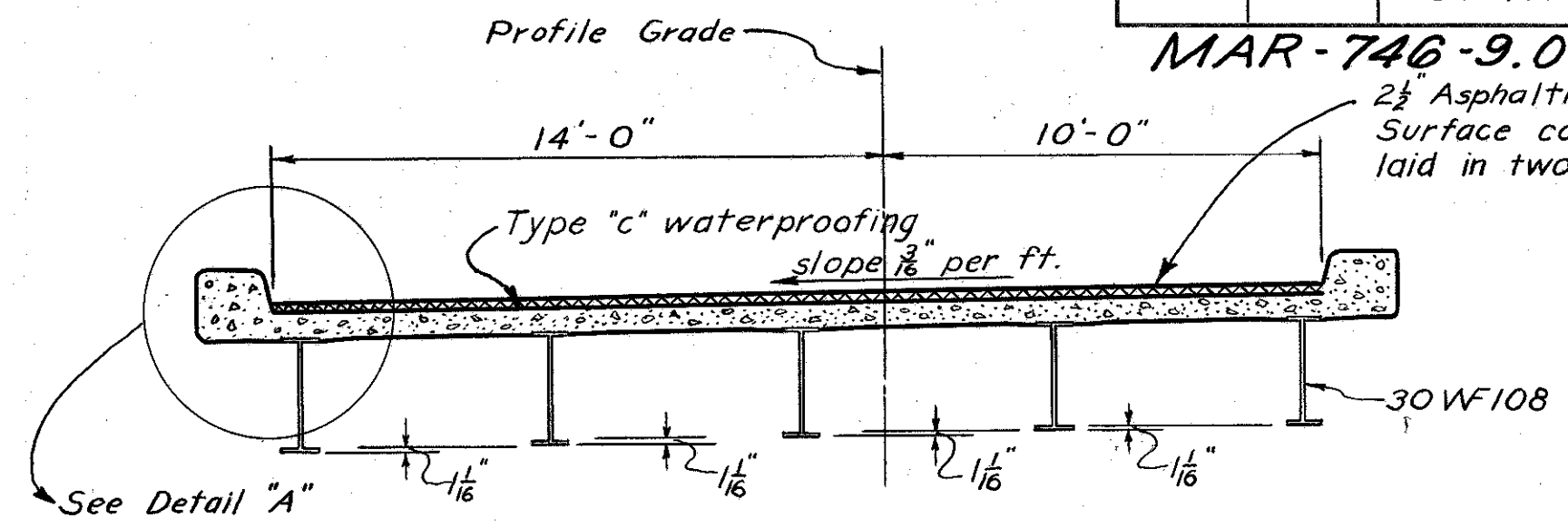
SLOPE PAVING may be either riprap or concrete slab. If riprap is constructed using stone, concrete blocks or broken concrete, it shall be grouted over an 4 ft. width, centered under the scuppers at the southwest corner of bridge. At this corner of the bridge an 4 ft. width of paving shall be extended to face of abutment. The upper extended portion of the slope paving, whether constructed as riprap or a concrete slab, shall be depressed 6" at the center to form a gutter. This depression shall be tapered to zero in the upper two feet of the stream bank paving (below extended portion). Grouting as described above shall be included with Item 1-10 "Type A riprap" for payment.

REINFORCING STEEL shall be 2" clear of surface of concrete except as otherwise shown.

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."

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES AND RAILROAD CROSSINGS			
GENERAL PLAN & ELEVATION, NOTES & ESTIMATED QUANTITIES BRIDGE No. MN-746-90 OVER OLENTANGY RIVER			
MARION COUNTY SEC. MAR-746-9.00 STA. 478+77.00			
DESIGNED	DRAWN	TRACED	CHECKED
REK	REK	JDJ	RHN
REVIEWED		DATE	REVISION
BFG		WHE 9-21-53	11-16-53

MAR-746-9.00

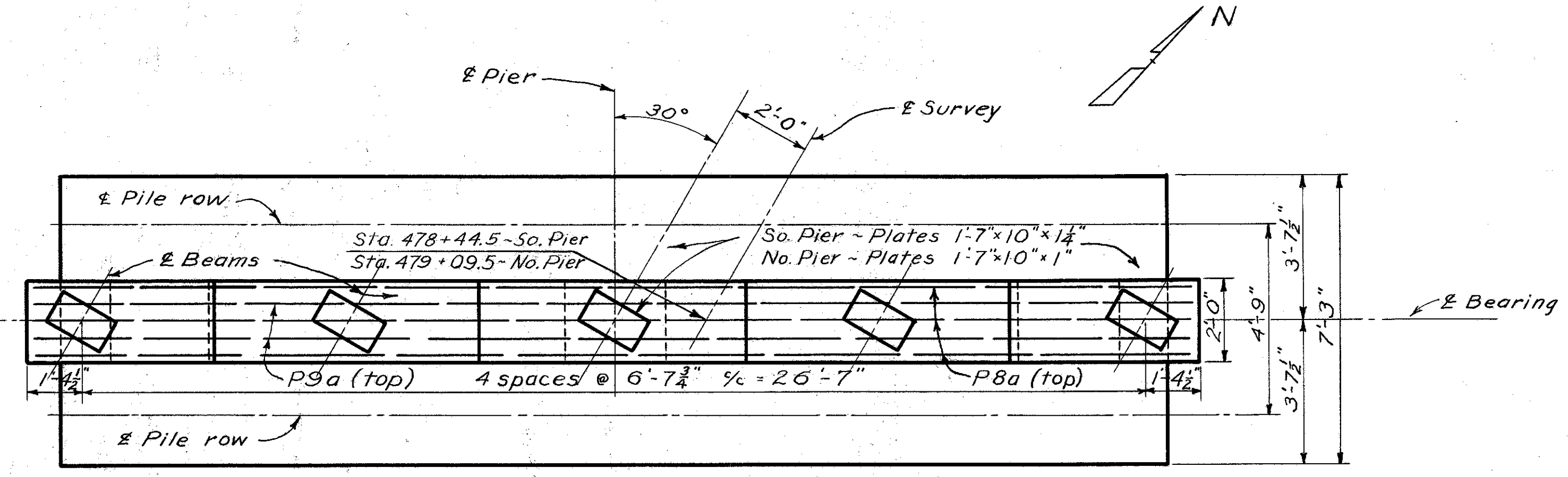
2½ Asphaltic Concrete
Surface course, Item T-35,
laid in two 1¼" Courses.


ROADWAY CROSS-SECTION

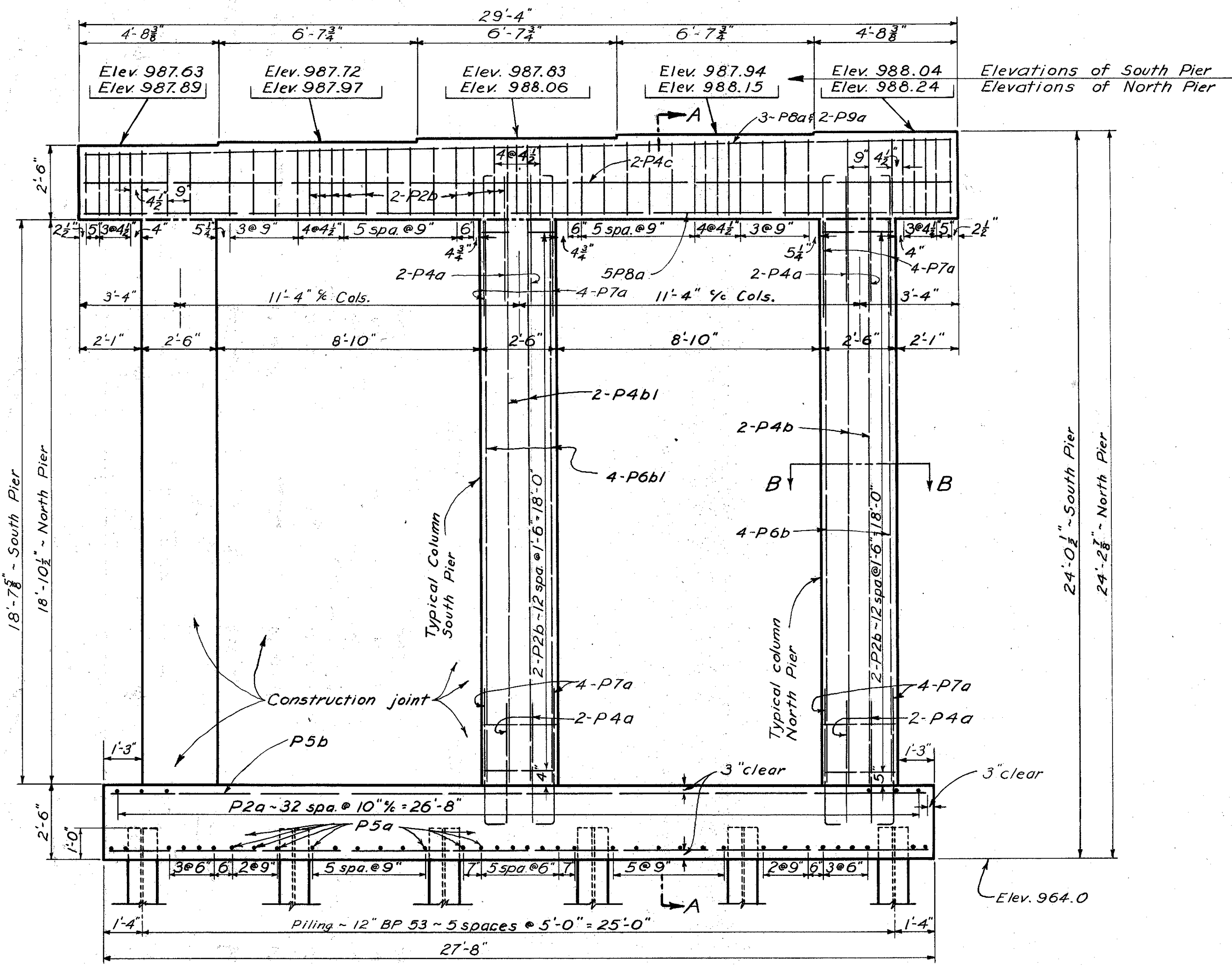
Details are same as Std. Dwg. CSB-3-47
except as otherwise shown.

CAMBERING of beams is required in accordance with this table

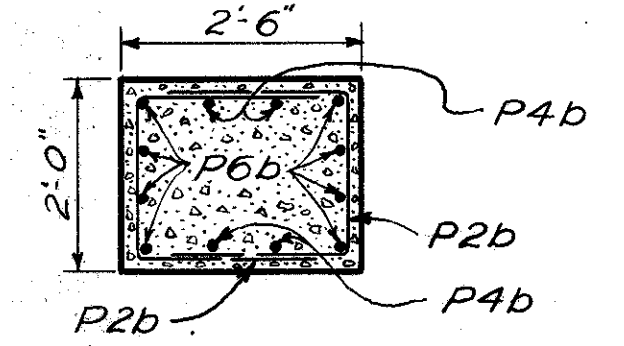
DEFLECTION AND CAMBER		
Location	END SPANS	MIDDLE SPAN
Deflection due to weight of steel.	$\frac{1}{16}$ "	$\frac{1}{16}$ "
Deflection due to remaining dead load.	$\frac{1}{4}$ "	$\frac{5}{16}$ "
Camber required for vertical curve.	$\frac{3}{8}$ "	$\frac{1}{2}$ "
Sum of Deflection and camber.	$\frac{11}{16}$ "	$\frac{7}{8}$ "
Required Shop Camber	$\frac{3}{4}$ "	$\frac{7}{8}$ "



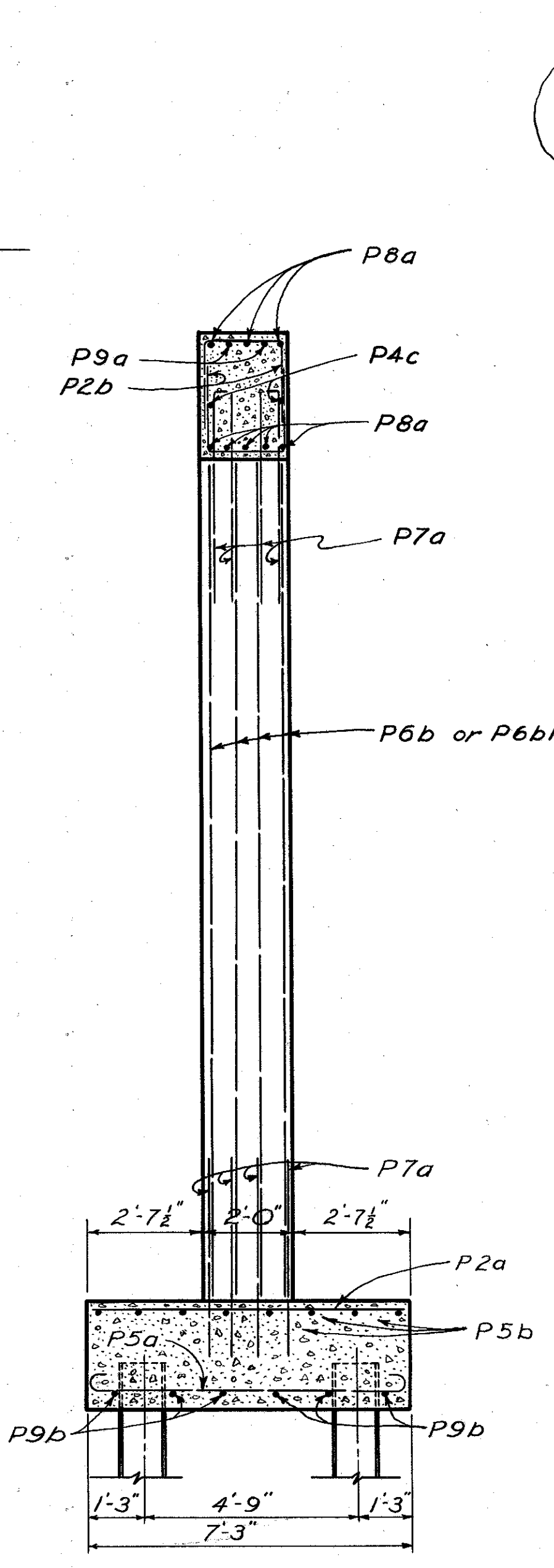
PIER PLAN



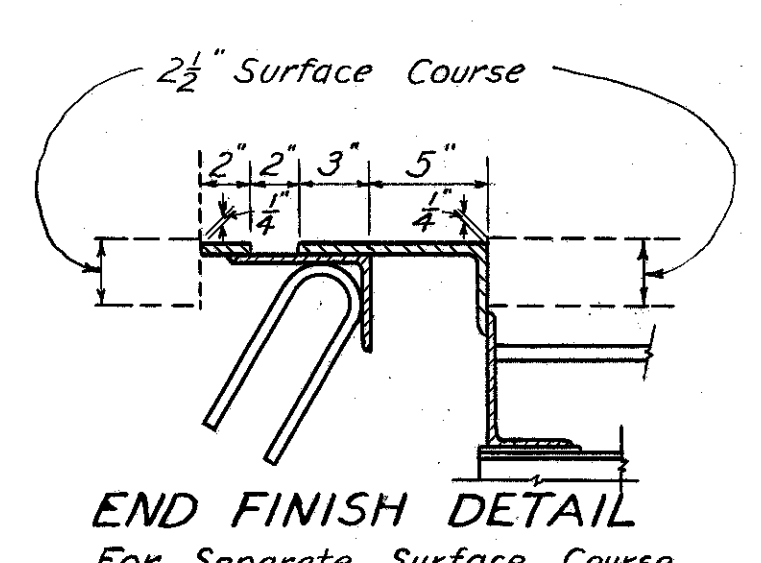
PIER ELEVATION



SECTION B-B

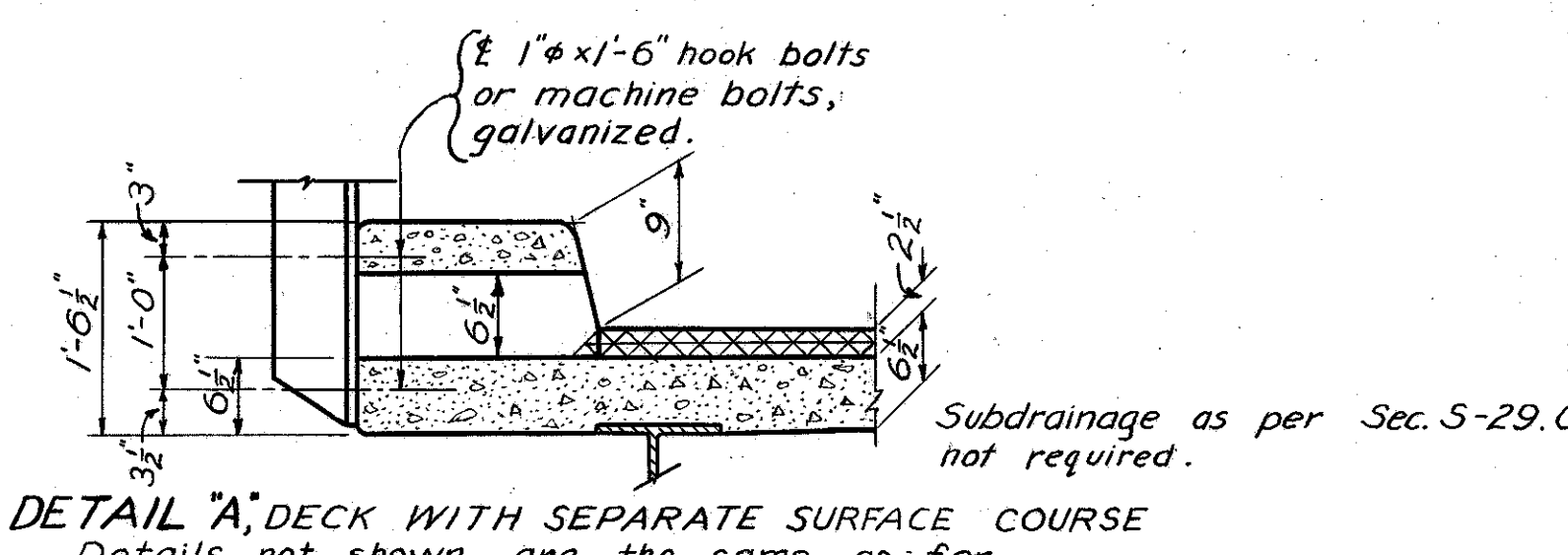


SECTION A-A



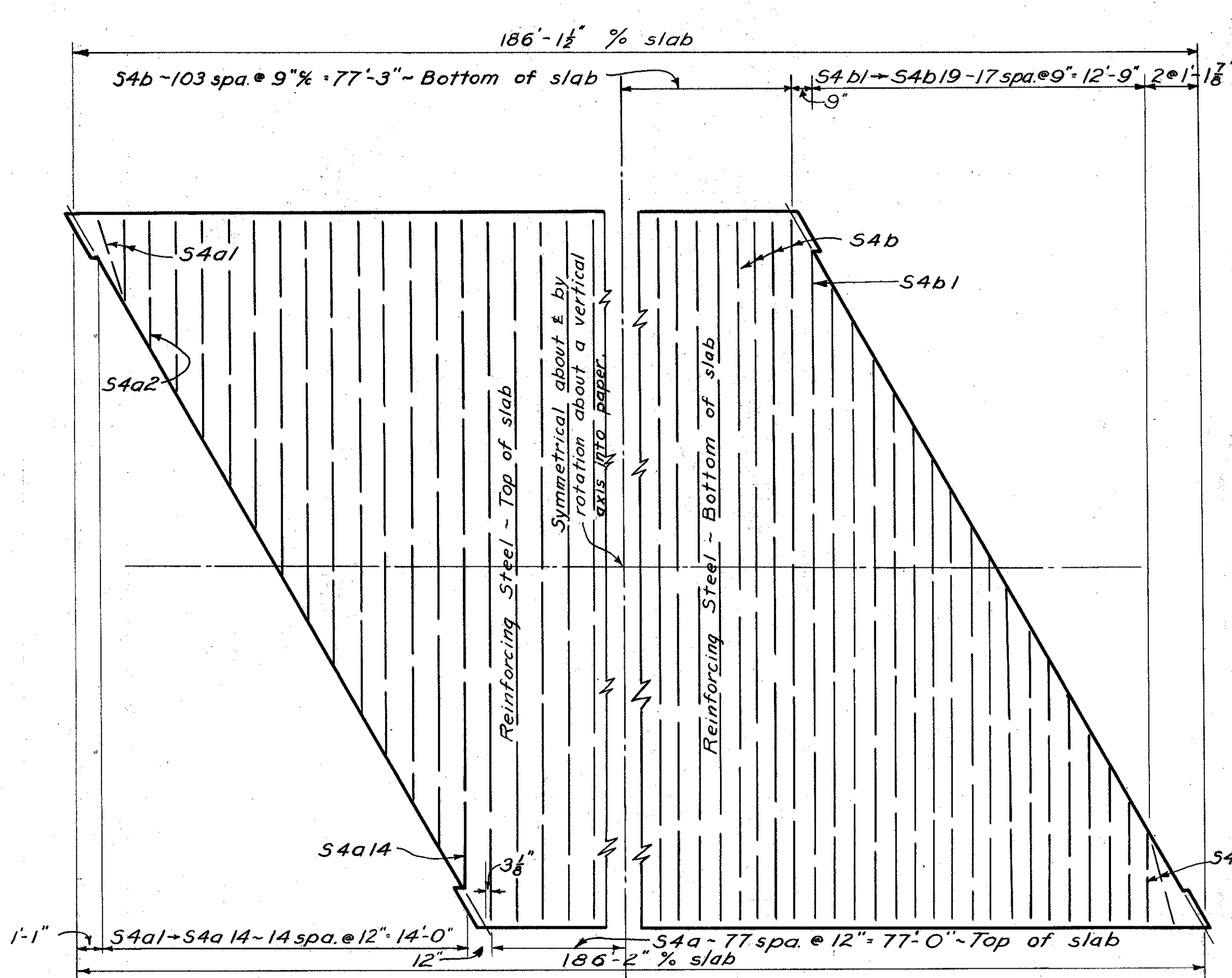
END FINISH DETAIL

For Separate Surface Course



DETAIL 'A' DECK WITH SEPARATE SURFACE COURSE

Details not shown are the same as for deck with monolithic surface.



SLAB TRANSVERSE REINFORCEMENT

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES AND RAILROAD CROSSINGS			
PIER AND SUPERSTRUCTURE DETAILS BRIDGE NO. MN-746-90 OVER OLENTANGY RIVER			
MARION COUNTY SEC-MAR-746-9.00			
STA. 478+77.00			
DESIGNED	DRAWN	TRACED	CHECKED
REK	REK	DGM	R.H.N.
REVIEWED		DATE	REVISED
WFG		9-22-53	

MAR-746-9.00

REINFORCING STEEL LIST

MARK	SIZE	NO.	LENGTH	WEIGHT	SHR	BENDING DIAGRAMS	MARK	SIZE	NO.	LENGTH	WEIGHT	SHR	BENDING DIAGRAMS	MARK	SIZE	NO.	LENGTH	WEIGHT	SHR	BENDING DIAGRAMS	MARK	SIZE	NO.	LENGTH	WEIGHT	SHR	BENDING DIAGRAMS
Superstructure							Superstructure (cont'd)							Pier (cont'd)							Abutments						
55a	3/8"	16	26'-0"	625	S		54b10	3/8"	2	14'-1"	29	B		P4b	3/8"	12	18'-9"	235	S		A4a	1"	12	29'-5"	1210	S	
55b	3/4"	60	36'-0"	3244	S		54b11	3/8"	2	12'-9"	27	B		P4b1	3/8"	12	18'-6"	232	S		A4a1	1"	8	23'-3"	632	S	
54a	3/8"	155	28'-2"	4554	B		54b12	3/8"	2	11'-6"	24	B		P4c	3/8"	4	29'-0"	121	S		A4a2	1"	8	22'-10"	621	S	
54a1	5/8"	4	3'-9"	16	B		54b13	3/8"	2	10'-2"	21	B		P2a	1/2"	66	6'-9"	298	S		A5a	3/4"	28	14'-9"	620	B	
54a2	3/8"	2	5'-6"	11	B		54b14	3/8"	2	8'-10"	18	B		P2b	1/2"	352	5'-4"	1254	B		A5a1	3/4"	28	5'-7"	235	B	
54a3	3/8"	2	7'-2"	15	B		54b15	3/8"	2	7'-7"	16	B		A8a	1"	12	29'-5"	1210	S		A5a2	3/4"	9	9'-1"	123	B	
54a4	3/8"	2	8'-11"	19	B		54b16	3/8"	2	6'-3"	13	B		A8a1	1"	8	22'-10"	621	S		A5a3	3/4"	8	9'-1"	109	S	
54a5	3/8"	2	10'-7"	22	B		54b17	3/8"	2	4'-11"	10	S		A8a2	1"	8	22'-10"	621	S		A5a4	3/4"	8	8'-6"	102	B	
54a6	3/8"	2	12'-4"	26	B		54b18	3/8"	4	3'-8"	8	S		A5a5	3/4"	8	8'-8"	104	S		A5a5	3/4"	8	8'-6"	104	S	
54a7	3/8"	2	13'-6"	15	B								A5a	3/4"	38	10'-11"	433	B		A4a	3/8"	38	10'-11"	433	B		
54a8	3/8"	2	15'-3"	19	B								A4a1	3/8"	38	12'-1"	479	B		A4a1	3/8"	38	12'-1"	479	B		
54a9	3/8"	2	17'-0"	22	B								A4b	3/8"	32	8'-10"	295	B		A4b	3/8"	32	8'-10"	295	B		
54a10	3/8"	2	18'-8"	24	B								A4c	3/8"	10	22'-8"	236	S		A4c	3/8"	10	22'-8"	236	S		
54a11	3/8"	2	20'-5"	27	B								A4c1	3/8"	10	22'-2"	231	S		A4c1	3/8"	10	22'-2"	231	S		
54a12	3/8"	2	22'-2"	29	B								A4d	3/8"	2	7'-4"	15	S		A4d	3/8"	2	7'-4"	15	S		
54a13	3/8"	2	23'-11"	31	B								A4d1	3/8"	1	6'-4"	7	S		A4d1	3/8"	1	6'-4"	7	S		
54a14	3/8"	2	25'-11"	34	B								A4d2	3/8"	2	8'-2"	17	S		A4d2	3/8"	2	8'-2"	17	S		
54a			27'-0"										A4d3	3/8"	1	7'-3"	5	S		A4d3	3/8"	1	7'-3"	5	S		
54b	3/8"	206	27'-0"	5801	S								A4d4	3/8"	1	5'-8"	6	S		A4d4	3/8"	1	5'-8"	6	S		
54b1	3/8"	2	25'-9"	54	S																						
54b2	3/8"	2	24'-5"	51	S																						
54b3	3/8"	2	23'-2"	48	S																						
54b4	3/8"	2	21'-10"	46	S																						
54b5	3/8"	2	20'-7"	43	S																						
54b6	3/8"	2	19'-3"	40	S																						
54b7	3/8"	2	17'-11"	37	S																						
54b8	3/8"	2	16'-8"	35	S																						
54b9	3/8"	2	15'-4"	32	S																						

NOTE: The bar size designations shown above do not correspond with the size designations given in the January 1, 1953 edition of the Construction and Material Specifications.

* To be included for payment with price bid per lin. ft., Item 5-14.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

REINFORCING STEEL LIST

BRIDGE No. MN-746-90
OVER OLENTANGY RIVER

MARION COUNTY
SEC. MAR-746-9.00 STA. 478 + 77.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
REK	REK	JDJ	RHN	WFC	9-22-53	