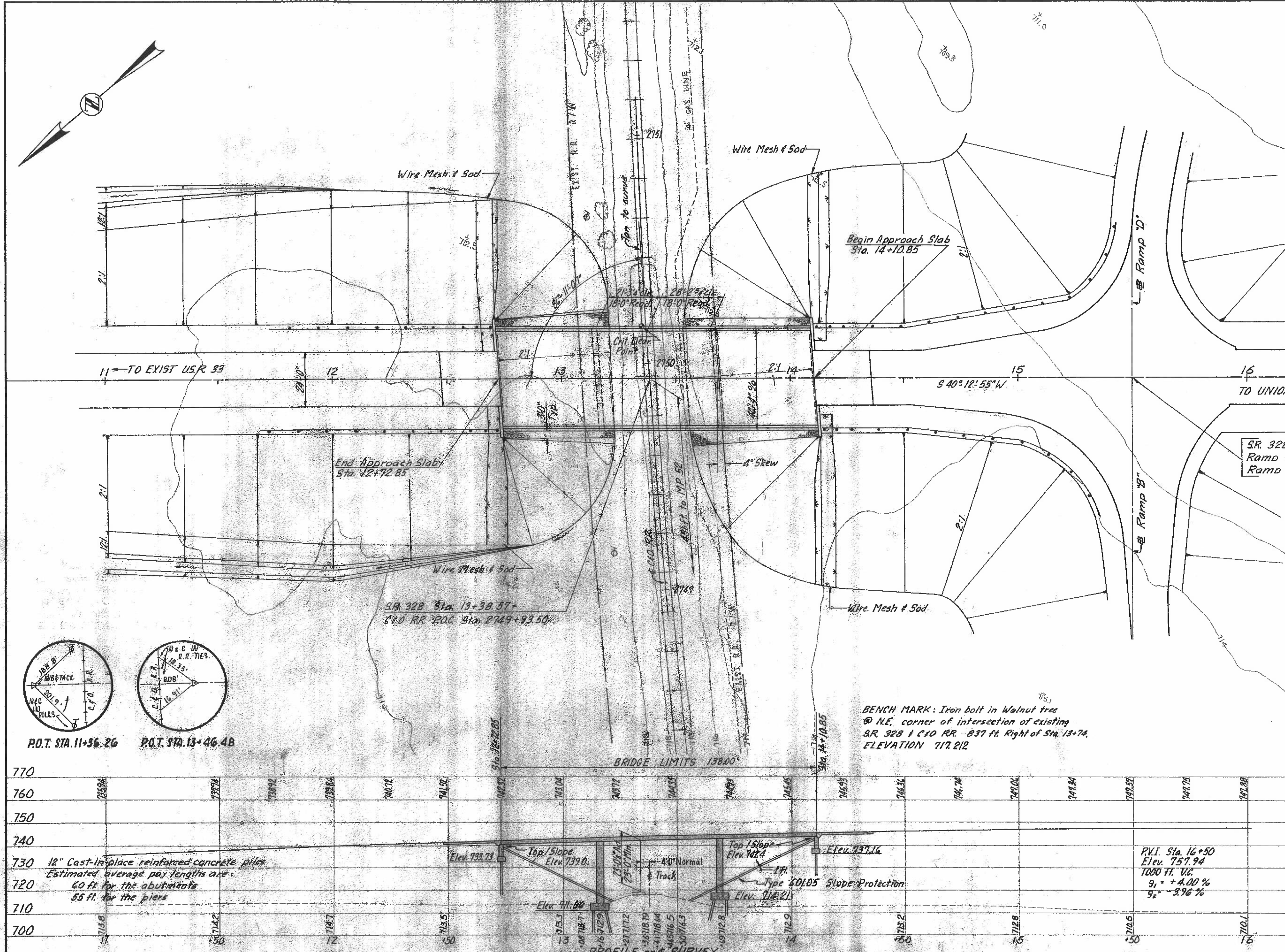
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

262/303

HOCKING COUNTY
HOC-33-10.50
2 Miles S.E. of Logan

MICROFILMED APR 16 1985



TRAFFIC SR 328 - 4440 ADT (1980)
C&O R.R. 2 Trains/day (present)

BENCH MARK: Iron bolt in Walnut tree @ N.E. corner of intersection of existing S.R. 328 & C&O RR. 837 ft. Right of Sta. 13+74. ELEVATION 717.212

12" Cast-in-place reinforced concrete piles
Estimated average pay lengths are:
60 ft. for the abutments
55 ft. for the piers

PROPOSED STRUCTURE

TYPE: Continuous reinforced conc. slab and reinforced concrete substructure.
SPANS: 42'-52.5'-42' c/c Brgs.
ROADWAY: 44 ft. f/f parapet.
LOAD FREQUENCY: CF 130 (57).
SKEW: 4°-00' R.F.
WEARING SURFACE: 1" Monolithic concrete.
APPROACH SLAB: AS-1-54 (25' Long).
ALIGNMENT: Tangent.

"C&O.Ry. Designation Bridge FH 521"

LOUIS BERGER AND ASSOCIATES
CONSULTING ENGINEERS
ORANGE, N.J. COLUMBUS, OHIO HARRISBURG

SITE PLAN
BRIDGE No HOC-328-1158
OVER C&O RR

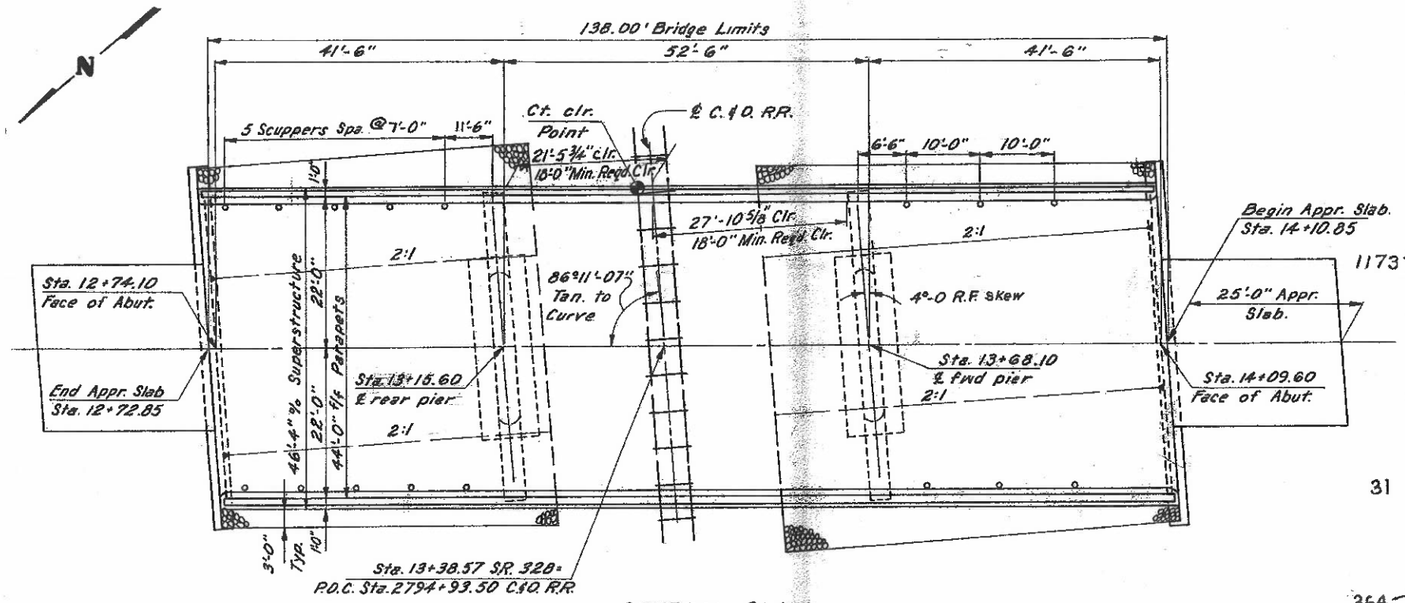
HOCKING COUNTY Sta. 12+72.85
Sec: HOC-33-10.50 to
Scale: 1"=20' Sta. 14+10.85

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerotech	TAH	RWM	RCW RWM	HWR	RVG

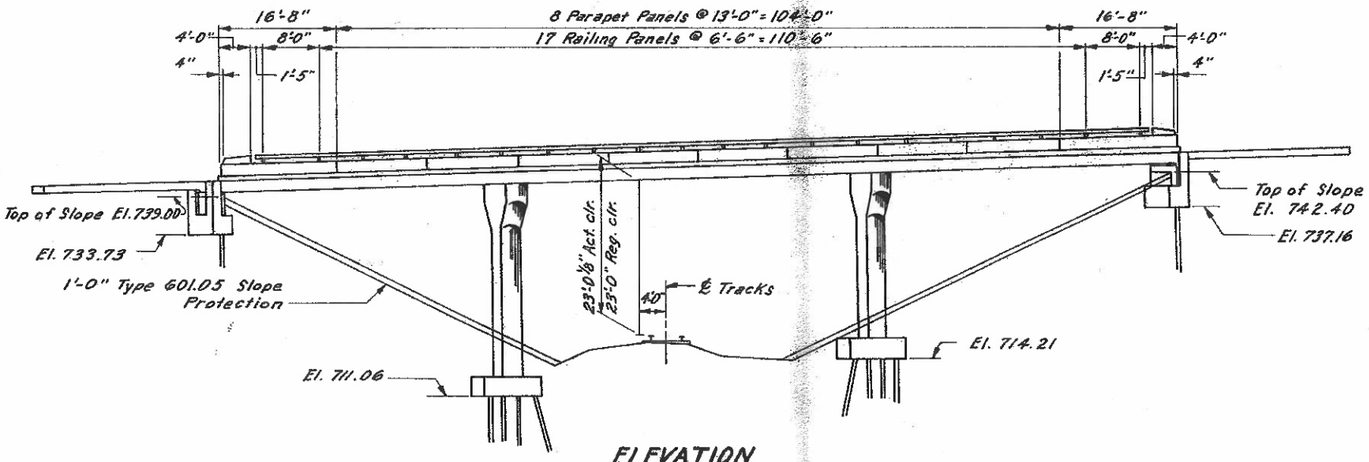
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

263
303

HOCKING COUNTY
HOC-33-10.50



GENERAL PLAN



ELEVATION

SHEETING AND BRACING: Before construction is started, eight 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. 503.04 and 503.09 of the Construction and Material Specifications, subject to the Supervision of the Railroad Company, nothing in Sec. 503.04, 503.09, 108.04 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

RAILROAD AERIAL LINES will be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not distrubed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

ESTIMATED QUANTITIES

	ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER	GENERAL		
	503	Lump	Sum	Cofferdams, cribs & sheeting.				Lump		
	503	303	Cu. Yds.	Unclassified excavation	118	185				
	505	Lump	Sum	First test pile				Lump		
1173	307	~~2940~~	Lin. Ft.	12" Cast-in-place reinforced concrete piles	960	1980			-1767	1173
	509	115,660	lbs.	Reinforcing steel	6386	~~14,133~~	~~95149~~			
		115,765				14,200	95,175			
	511	452	Cu. Yds.	Class "C" concrete, superstructure			452			
	511	143	Cu. Yds.	Class "C" concrete, piers above footings		143				
	511	67	Cu. Yds.	Class "E" concrete, abutments	67					
	511	50	Cu. Yds.	Class "E" concrete, pier footings		50				
	517	275	Lin. Ft.	Railing type 1			275			
	518	20	Cu. Yds.	Porous backfill	20					
	518	87	Lin. Ft.	6" perforated, helical C.M.P including specials 707.06	87					
31	518	~~42~~	Lin. Ft.	6" non-perforated helical C.M.P 707.06 31	~~42~~				-11	31
	518	16	Each	Scuppers, (6"ᵠ cast iron or wrought iron pipe)			16			
	601	630	Sq. Yds.	Crushed aggregate slope protection				630		
364	808	~~452~~	Units.	Water-reducing, set-retarding admixture		364	~~452~~		-88	364
	825	790	Sq. Yds.	Concrete Surface Treatment			790			

Checked 1-5-67 HWR.

GENERAL NOTES

REFERENCE shall be made to Standard Drawings BR-1-65 sheet 1 revised 11-24-65, CS-2-65 sheet 1 and 2 dated 6-1-65 and to Supplement Specifications 808 dated 1-13-67 and 825 dated 1-1-67.

DESIGN SPECIFICATION: 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.

DESIGN DATA: Design Loading - CF 130 (57)
Concrete Class "C" - basic unit stress 1,333 p.s.i.
Concrete Class "E" - basic unit stress 1,133 p.s.i.
Reinforcing Steel - ASTM A15, A16, A160, Deformed Intermediate or Hard Grade. basic unit stress 20,000 p.s.i.

PROCEDURE: The embankment shall be placed and compacted up to the finished spillthru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and piers.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and the piers.

PREBORED HOLES: Holes for the abutment piles may be prebored at the Contractors option and expense, and shall meet the requirements of 507.13

PILES shall be driven to a minimum bearing capacity of 30 tons per pile for the abutment and 45 tons per pile for the piers.

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

CONSTRUCTION CLEARANCE of 20'-0" Vertically above the top of the railroad rails and 8'-0" Horizontally from the center of track shall be maintained at all times.

LOUIS BERGER AND ASSOCIATES
CONSULTING ENGINEERS
ORANGE, N.J. COLUMBUS, OHIO HARRISBURG, PA.

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

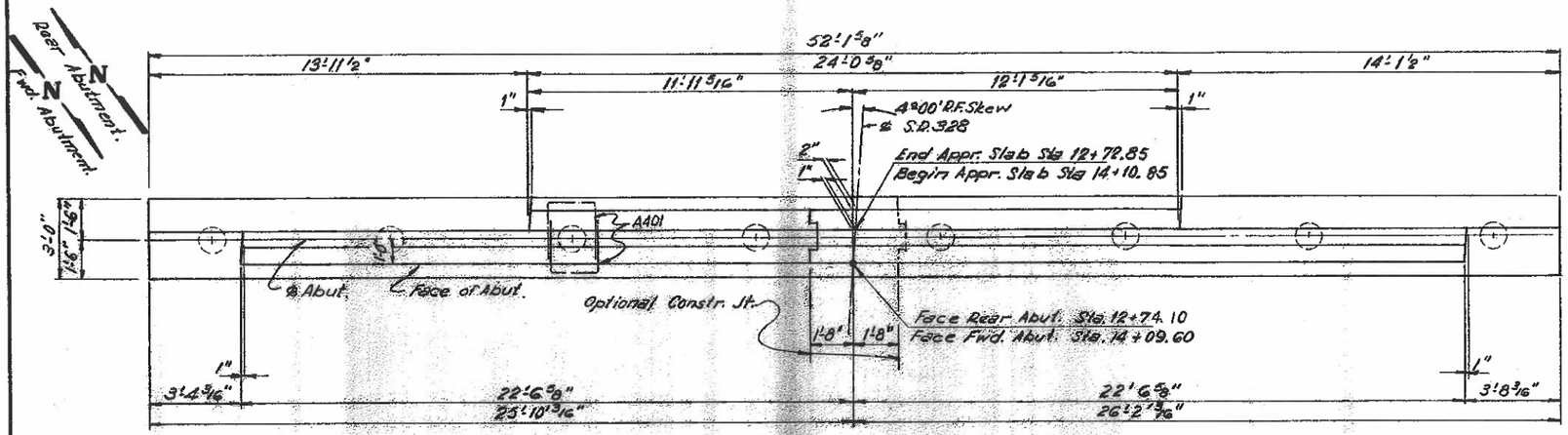
BRIDGE NO. HOC-328-1158
OVER C&O RAILROAD
HOCKING COUNTY Sta. 12+72.85 to 14+10.85

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RWM	RCW	HRJ	HWR	RWM	11/1/67	6-21-6

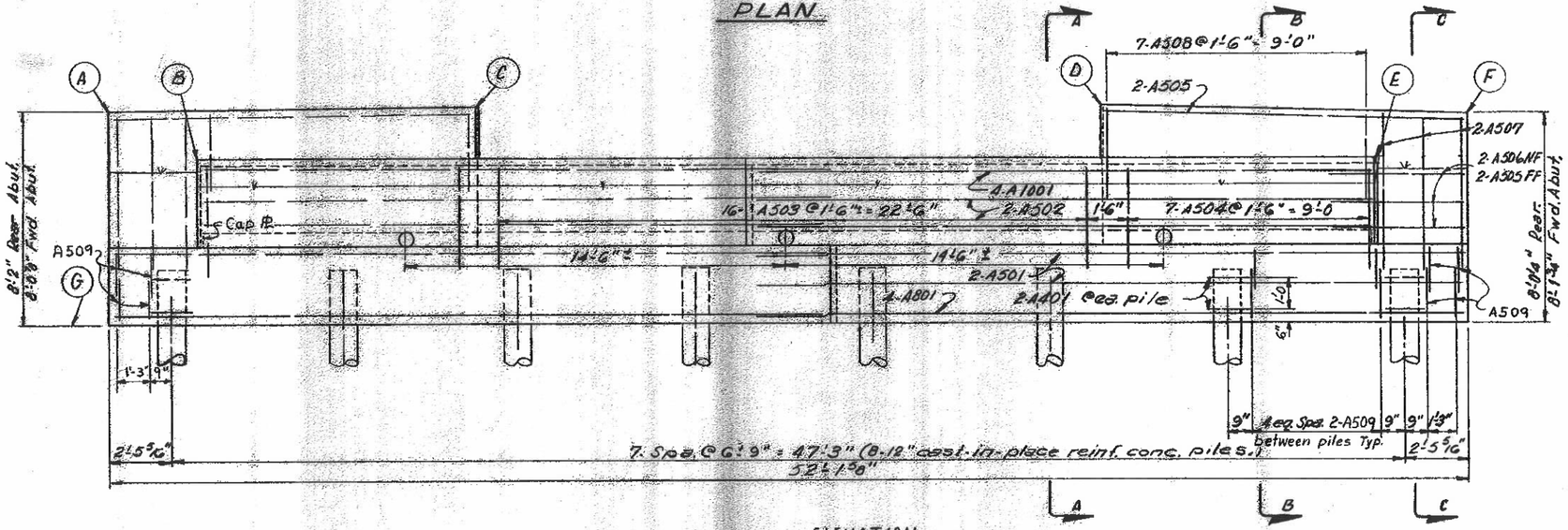
G.F.J. Revised As-Built 4-27-72

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

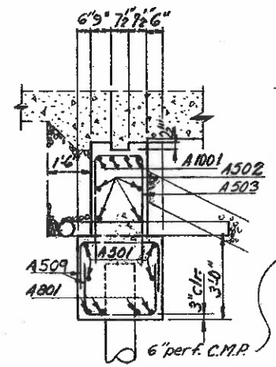
HOCKING COUNTY
HOC-33-10.50



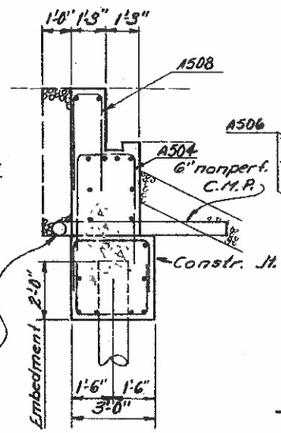
PLAN



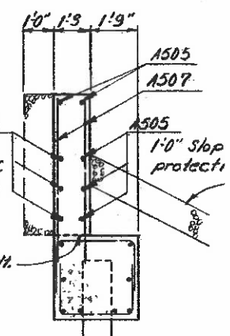
ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

CONCRETE shall be class "E" and payment will be made on this basis, but class "C" concrete may be used for any or all parts of the abutments.

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 the abutment, shall be considered as paid for in the bid price per cu.yd. paid for porous backfill.

TABLE OF ELEVATIONS

LOCATION	A	B	C	D	E	F	G
Rear Abutment	741.90	740.12	742.12	742.06	740.02	741.75	739.73
Fwd. Abutment	745.23	743.45	745.45	745.48	743.51	745.30	737.16

LOUIS BERGER AND ASSOCIATES
CONSULTING ENGINEERS
ORANGE, N.J. COLUMBUS, OHIO HARRISBURG

ABUTMENT DETAILS
BRIDGE Nº HOC-328-1158 over
C. & O. RAILROAD
HOCKING COUNTY STA. 12+72.85 to 14+10.85

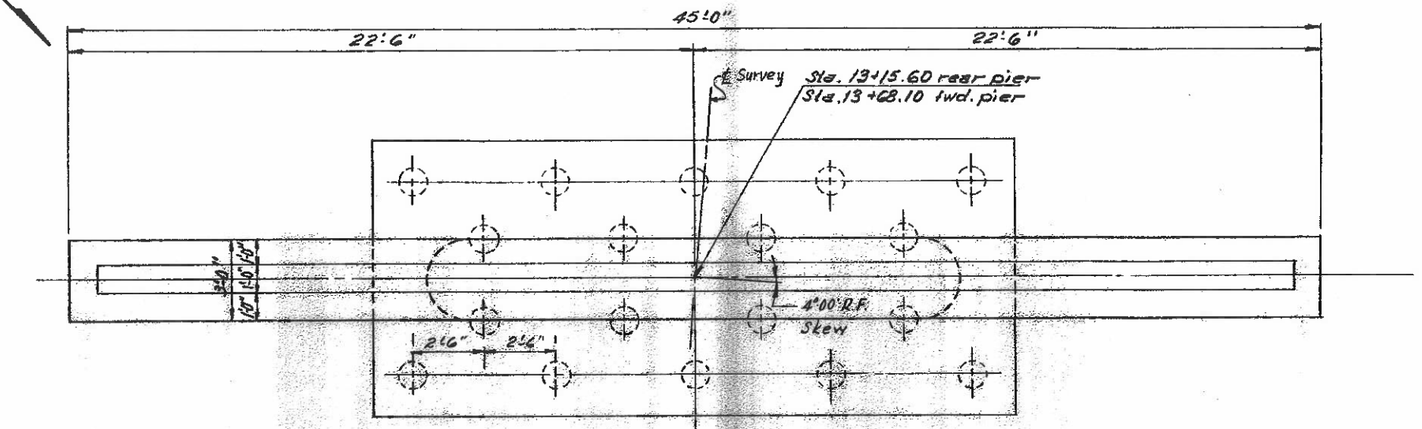
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
RWM	RCW		HWR	RWM	1/11/67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

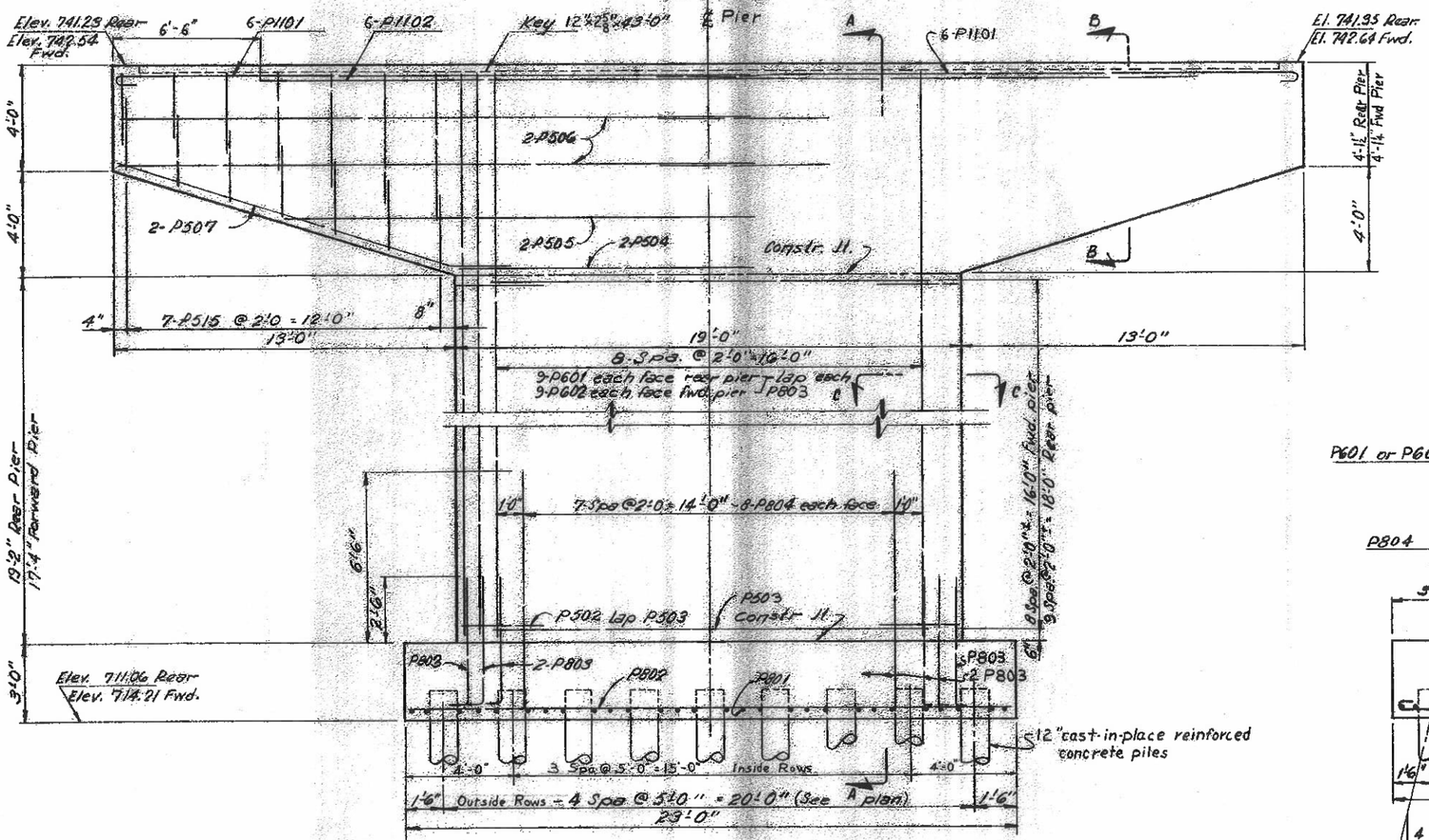
265
303

HOCKING COUNTY
HOC-33-10.50

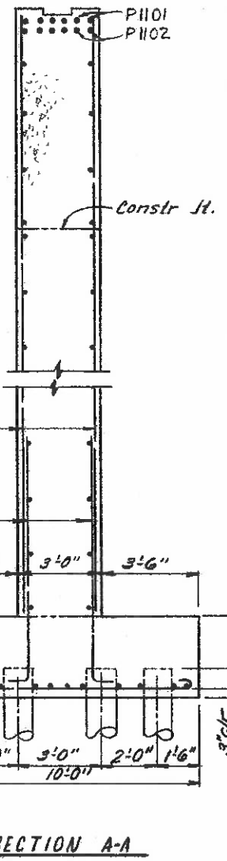
N



PLAN

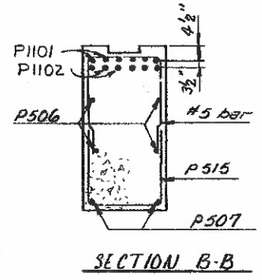


ELEVATION

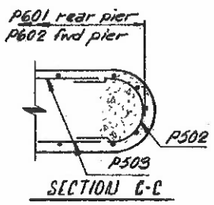


SECTION A-A

Batter all piles in outside row toward tracks.



SECTION B-B



SECTION C-C

LOUIS BERGER AND ASSOCIATES
CONSULTING ENGINEERS
ORANGE, N.J. COLUMBUS, OHIO HARRISBURG,

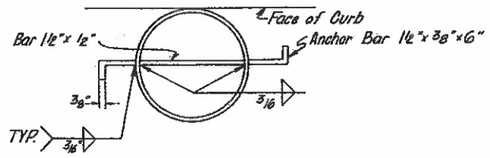
PIER DETAIL
BRIDGE No HOC-328-11.58
OVER C & O RAILROAD
HOCKING COUNTY STA 12+72.85 to 14+10.85

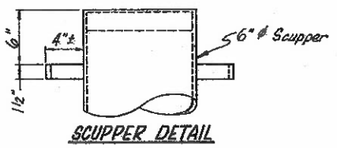
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVD
RWM	RCW.		HWR	RWM	1/11/67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

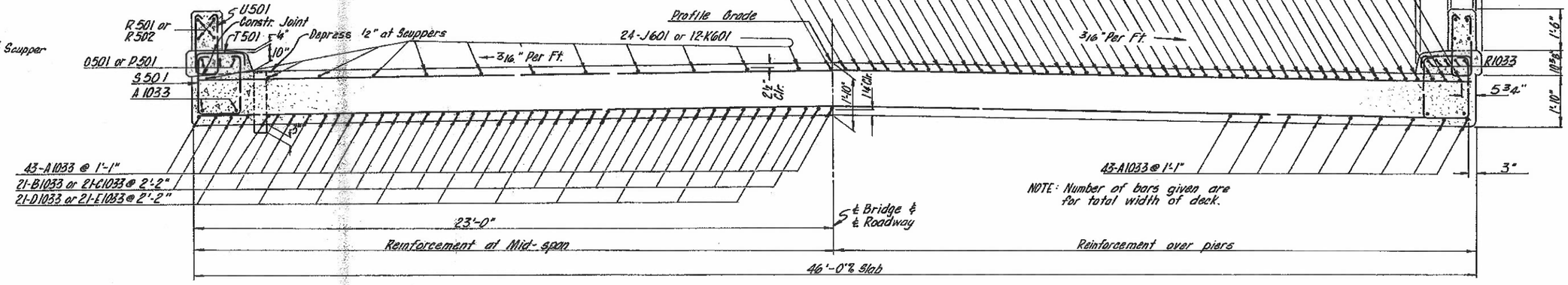
266
303

HOCKING COUNTY
HOC-33-10.60

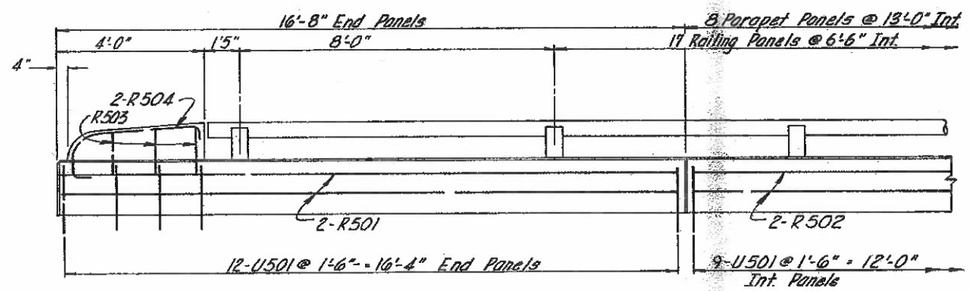




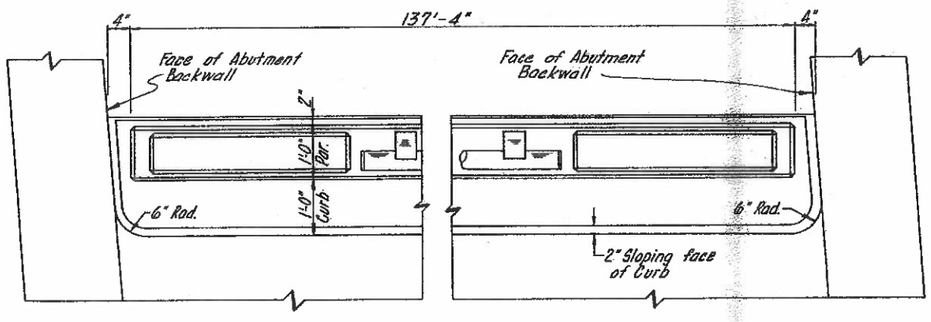
SCUPPER DETAIL



SECTION THRU DECK



PARAPET DETAILS
(For Details not shown see Std Dwg BR-1-65)



DETAIL OF CURB ENDS

GENERAL NOTES

See STANDARD DRAWING CS-2-65 for the following:
Sheet 1: PART PLAN, SECTION A-A, and PLACEMENT DIAGRAM FOR F, G, & H BARS IN SKEWED STRUCTURES, for placement of longitudinal and transverse reinforcing steel.
Sheet 2: SLAB DATA table for reinforcing steel placement dimensions. NOTES - SKEW, CURB, CONCRETE, REINFORCING STEEL CLEARANCE & CONSTRUCTION JOINTS.
CHAMBER of 5/8" in the end spans and ¾"in the center span shall be provided to allow for dead load deflection. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of falsework members.
SLAB THICKNESS shown includes 1" for monolithic wearing surface.
"M" and "N" BARS may be furnished in one length as shown in the steel list or in pairs of equal length lapped thirty diameters at the centerline of the roadway, or they may be furnished in pairs of different length in order to place the lap beyond a longitudinal construction joint at the centerline of the roadway, at the option of the contractor. Determination of the pay quantity will be according to the number and length of bars as shown in the steel list.

LOUIS BERGER AND ASSOCIATES
CONSULTING ENGINEERS
ORANGE, N. J. COLUMBUS, OHIO HARRISBURG,

SUPERSTRUCTURE DETAILS
BRIDGE Nº HOC-328-1158 over C. & O. RAILROAD
HOCKING COUNTY STA. 12+72.85 to 14+10.85

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVI
R.W.M.	R.C.W.	J.M.M.	H.W.R.	R.W.M.	1-11-67	

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

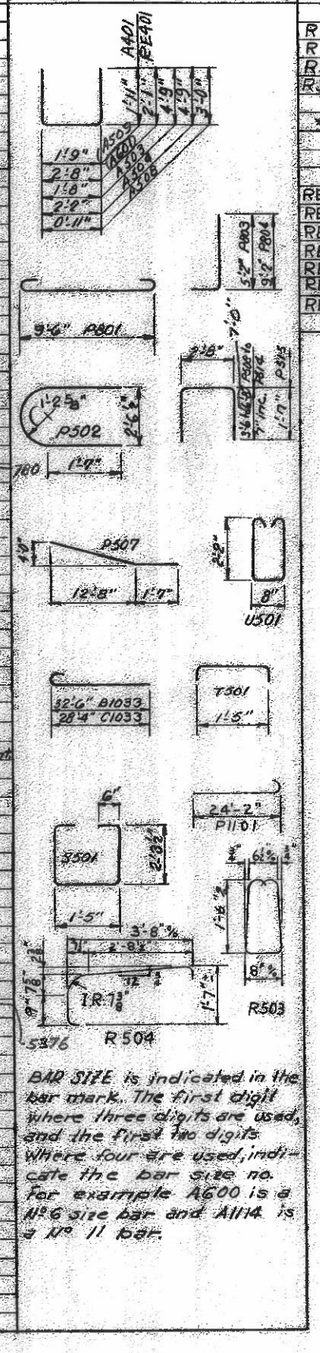
267
30

HOCKING COUNTY
HOC - 33 - 10.50

REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SHP.
ABUTMENTS				
A1001	16	24'-0"	1652	S
A801	16	27'-2"	1160	S
A501	16	26'-8"	445	S
A502	16	23'-2"	387	S
A503	32	10'-11"	398	B
A504	28	11'-5"	333	B
A505	20	13'-8"	285	S
A506	12	5'-0"	63	S
A507	24	6'-9"	169	S
A508	28	6'-8"	195	B
A509	156	6'-7	1071	B
A401	64	5'-4"	228	B
PIERS				
P1101	24	25'-9	3283	B
P1102	12	32'-0"	2040	S
P801	56	11'-8"	1745	B
P802	24	22'-6"	1441	S
P803	48 6'-9"	(6'-10"	(748)	B
P804	32	19'-10	1320	B
		10'-1"	861	
P601	24	27'-0"	973	S
P602	24	25'-2"	907	S
P502	38	7'-0"	277	B
P503	38	16'-0"	634	S
P504	4	19'-0"	79	S
P505	4	32'-0"	134	S
P506	16	23'-2"	387	S
P507	8	14'-10"	124	B
P508	9'-5"	(8'-9"	372	
to	4 each	to	(358	B
P514	11'-5"	(10'-9"	14" Increment	
P515	28	5'-7"	163	B
SUPERSTRUCTURE				
F1133	96	31'-4"	15981	S
G1133	47	13'-4"	3829	S
H1133	47	10'-0"	2497	S
A1033	141	48'0"	29123	S
B1033	42	33'-11"	6131	B
C1033	42	29'-0"-5	(5340	B
D1033	21	30'-6"	2756	S
E1033	21	22'-2"	2003	S
R1033	20	28'-10"	2483	S
M701	126	45'-7	11746	S
J601	48	28'-6"	2055	S
K601	24	25'-8	925	S
N601	83	45'-7	5683	S
O501	6	26'-10"	168	S
P501	12	29'-9"	372	S
S501	316	6'-5"	2115	B
T501	316	2'-6"	824	B
U501	192	5'-7"	1118	B

BENDING DIAGRAMS



BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size no. For example A600 is a N° 6 size bar and A1114 is a N° 11 bar.

MARK	No.	LENGTH	WEIGHT	SHP.
RAILING				
R501	16	16'-4"	*	S
R502	72	12'-8"	*	S
R503	8	4'-2	*	B
R504	12	5'-4	*	B

* Included with Item 517 for Payment

REPLACEMENT BARS				
RE1101	2	8'-7"		S
RE1001	3	8'-2"		S
RE801	1	7'-6"		S
RE701	1	7'-3"		S
RE601	1	6'-11"		S
RE501	1	6'-7"		S
RE401	2	5'-3"		B

FINAL DECK ELEVATIONS

	Rear Abut.	Center Rr. End Span	Rear Pier	Center of Ctr. Span	Forward Pier	Center Fwd. End Span	Forward Abut.
Left Curb Line	741.87	742.51	743.10	743.78	744.40	744.86	745.30
Right Curb Line	741.96	742.60	743.18	743.85	744.47	744.93	745.36

LOUIS BERGER AND ASSOCIATES
CONSULTING ENGINEERS
ORANGE, N. J. COLUMBUS, OHIO HARRISBURG

REINFORCING STEEL LIST & DECK ELEVATIONS
BRIDGE N° HOC-328-1158 over C. & O. RAILROAD
HOCKING COUNTY SR 328 Sta 12+ to Sta 14+

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	
RWM	RCW		HWR	RWM	11/16/67	6-2