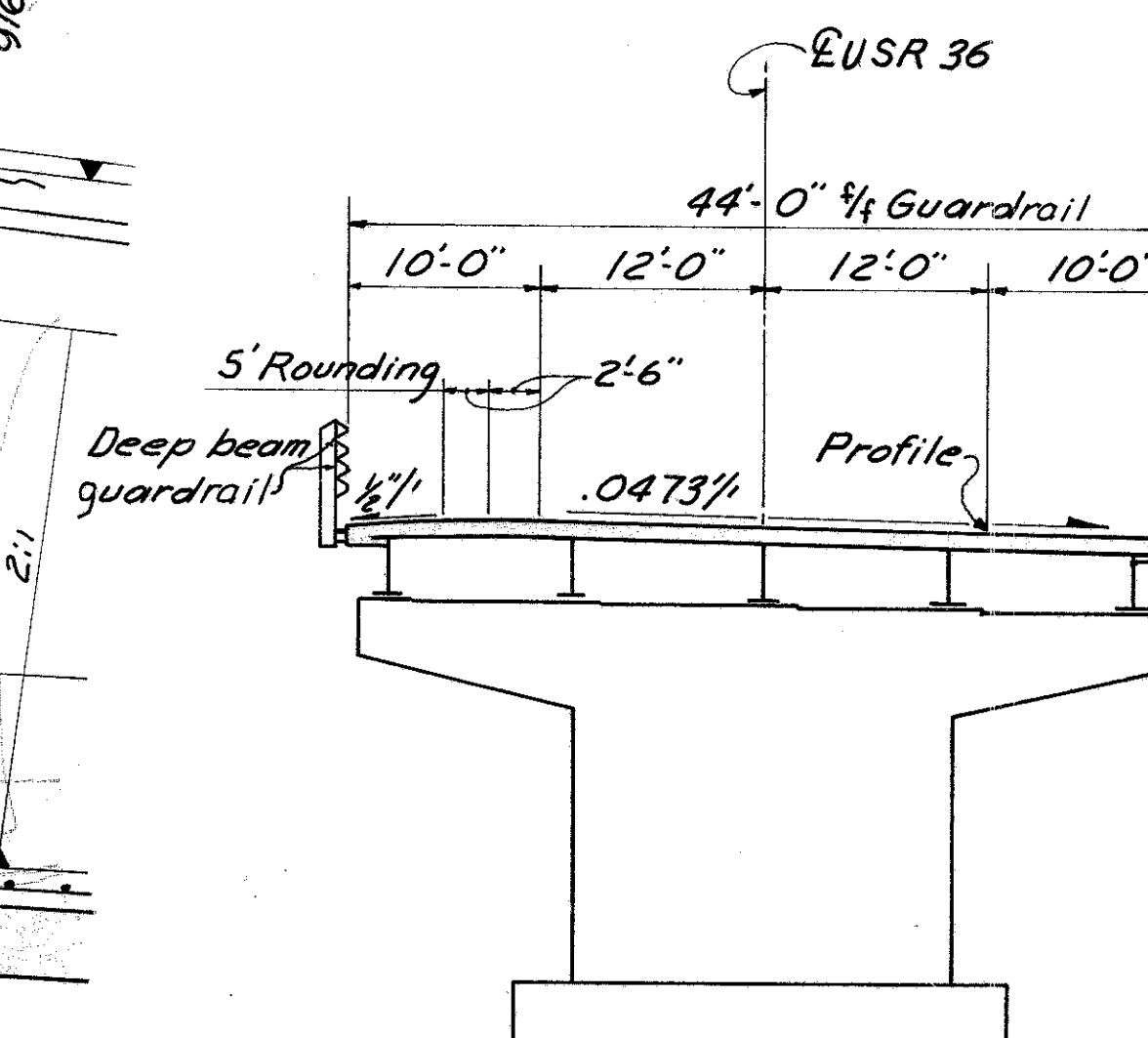


DEL-36-1.32



SECTION

PROPOSED STRUCTURE

TYPE: 3 Span continuous steel beam with reinforced concrete deck and substructure.

SPANS: 54.0', 67.0', 54.0'

LOADING: HS 20-44

ROADWAY: 44'-0" $\frac{1}{4}$ Guardrail

SKEW: None

WEARING SURFACE: 1" Monolithic

APPROACH SLABS: AS 1-67 (25' Long)

ALIGNMENT: 1°28'00" Curve

SUPERELEVATION: .0473%

CURVE DATA

D_c : 1°28'00"
 Δ : 14°31'05"
 R : 3906.53'
 T : 497.60'
 E : 31.56'
 PC : Sta. 95+88.64
 In Bearing N. 58°18'57"E.
 1989 ADT = 4301

BURGESS & NIPLE LIMITED — CONSULTING ENGINEERS					
COLUMBUS, OHIO					
1/7					
SITE PLAN					
BR. N° DEL-36-0185					
OVER					
BLUES CREEK					
Scale 1"=20'			Sta. 97+81.49		
DELAWARE COUNTY			Sta. 99+58.51		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISION
DW	LEH	LEH	EC	7-17-70	
	2-11-70	2-11-70		WBR	4/17/70

EXISTING STRUCTURE

TYPE: Single span concrete girder with reinforced deck on cross T concrete substructure.

REPAIRED WITH: 2 span steel beam with timber deck & steel "H" piling center support.

CONDITION: POOR

SPAN: 59.6' $\pm$ $\frac{1}{4}$ Abutments

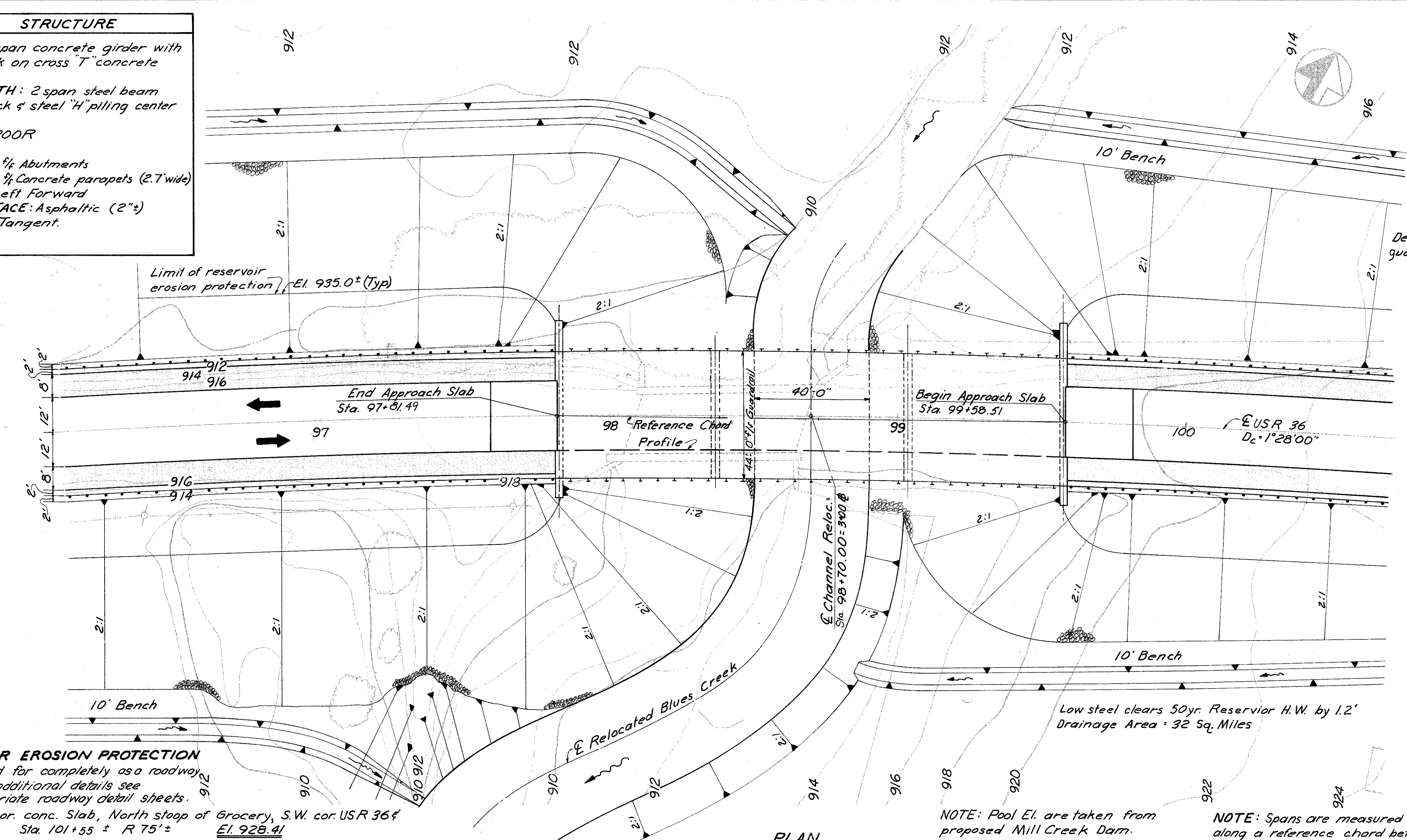
ROADWAY: 21' $\pm$ $\frac{1}{4}$ Concrete parapets (2.7' wide)

SKEW: 18° $\pm$ Left Forward

WEARING SURFACE: Asphaltic (2" $\pm$)

ALIGNMENT: Tangent.

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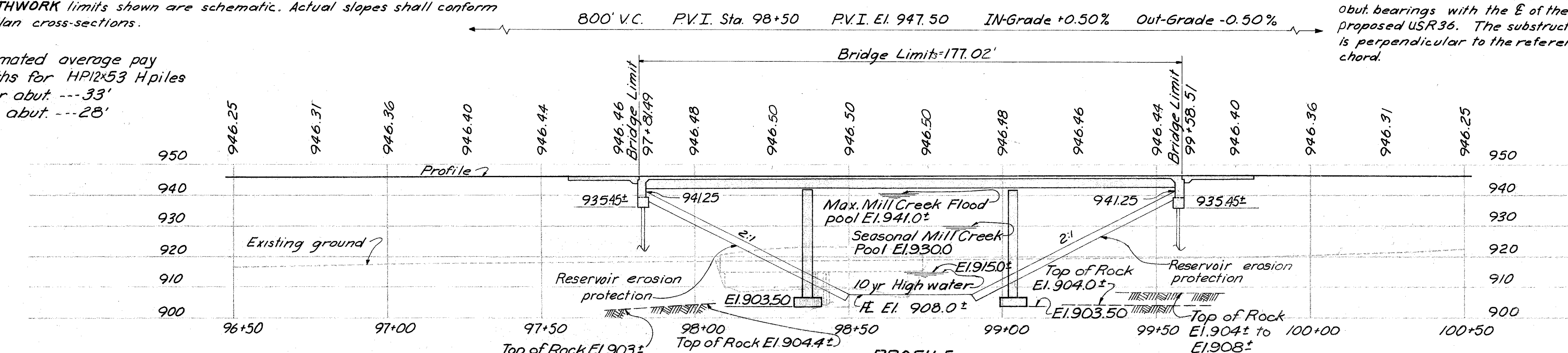
PLAN

RESERVOIR EROSION PROTECTION
 will be paid for completely as a roadway item. For additional details see the appropriate roadway detail sheets.

BM: N.E. cor. conc. Slab, North slop of Grocery, S.W. cor. USR 36 & Co.Rd. 163. Sta. 101+55 $\pm$ R 75' $\pm$ El. 928.41

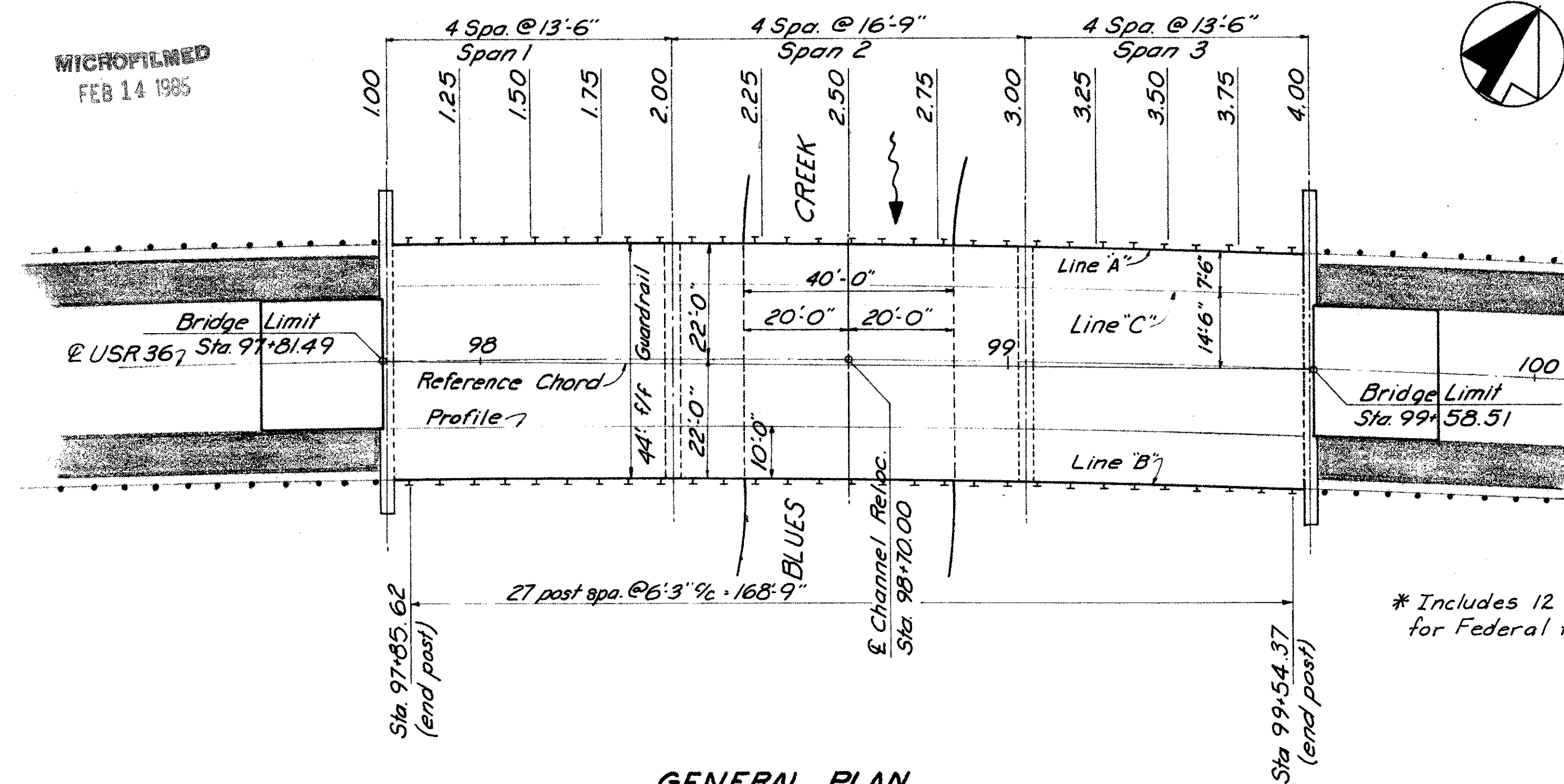
EARTHWORK limits shown are schematic. Actual slopes shall conform to plan cross-sections.

Estimated average pay lengths for HPI2x53 Hpiles
 Rear abut. --- 33'
 Fwd. abut. --- 28'

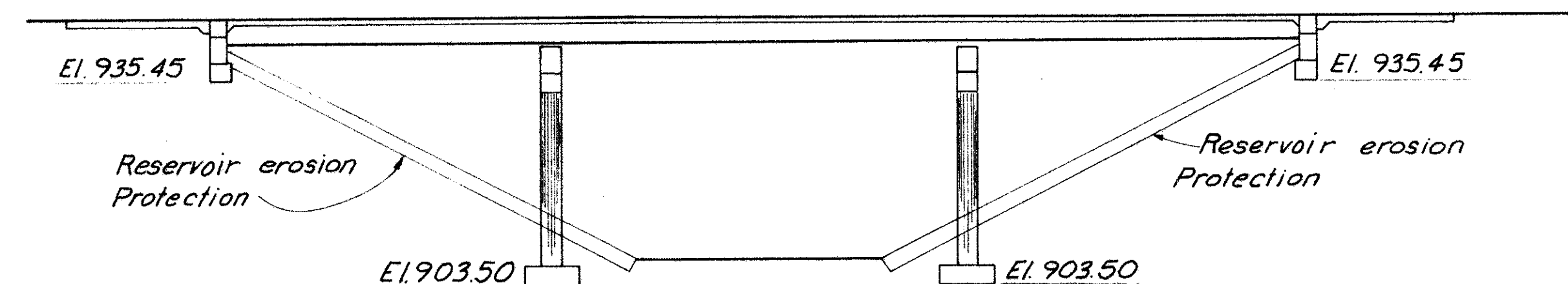


PROFILE

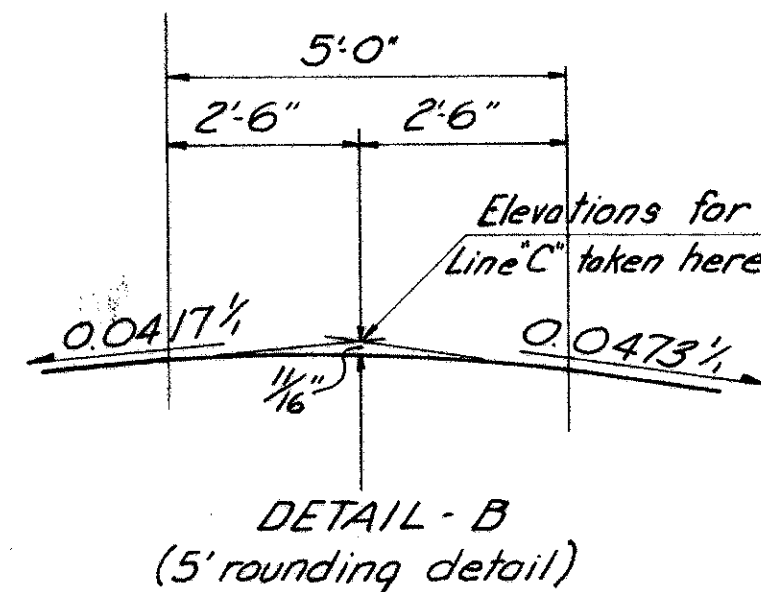
MICROFILMED
FEB 14 1985



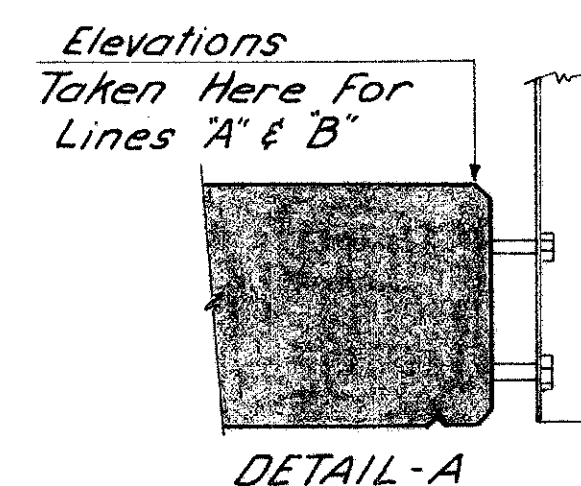
GENERAL PLAN



GENERAL ELEVATION
(Abutment piling not shown)



DECK ELEVATIONS BEFORE PLACEMENT OF SUPERSTRUCTURE CONCRETE			
Point	Line A	Line B	Line C
1.00	947.41	946.00	947.72
1.25	947.45	946.03	947.76
1.50	947.46	946.05	947.77
1.75	947.45	946.04	947.76
2.00	947.44	946.03	947.75
2.25	947.46	946.05	947.77
2.50	947.47	946.06	947.79
2.75	947.45	946.04	947.77
3.00	947.42	946.01	947.74
3.25	947.43	946.01	947.74
3.50	947.43	946.01	947.74
3.75	947.41	946.00	947.72
4.00	947.37	945.96	947.68



* Includes 12 cu. yds. non-participating for Federal funds.

REFERENCE shall be made to Standard Drawings AS-1-67 revised 6-12-69; SD-1-69 dated 6-12-69 and to RB-1-55 revised 2-2-59 Supplemental Specifications 808 dated 11-14-69, and 836 dated 1-1-71.

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1965, including the Ohio "Supplement to these Specifications."

DESIGN DATA:

DESIGN LOADING: HS20-44
CONCRETE: Class C - unit stress 1,200 psi for superstructure - unit stress 1,333 psi for substructure.
Structural Steel - ASTM A36 - unit stress 20,000 psi
Reinforcing Steel - ASTM A615, A616, or A617 - unit stress 20,000 psi

EMBANKMENT CONSTRUCTION: The embankment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation shall then be made for the abutments and for Piers No. 1 & 2 and piling driven.

ABUTMENT EXCAVATION QUANTITY includes the removal of embankment for the construction of the abutments.

FOOTINGS shall extend a minimum of 3' into bedrock or to the elevation shown, whichever is lower.

WELDS on non-stress-carrying members are shown thus:

ESTIMATED QUANTITIES BR. NO. DEL-36-0185

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	PIER	GEN.
202	Lump	Sum	Structure removed				Lump
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump
503	203	Cu. yd.	Unclassified excavation, including rock		59	144	
505	Lump	Sum	Test pile				Lump
507	430	Lin. ft.	Steel piles, HP12 x 53		430		
509	98,020	Lbs.	Reinforcing steel	72,301	8,004	17,715	
511	258	Cu. yd.	Class C concrete, superstructure	258			
511	167	Cu. yd.	Class C concrete, piers above footings			167	
511	63	Cu. yd.	Class C concrete, abutments above footings		63		
511	74	Cu. yd.	Class C concrete, footings		34	40	
512	88	Lin. ft.	Premolded sealing strip		88		
513	169,500	Lbs.	Structural steel	169,500			
514	169,500	Lbs.	Field painting of structural steel	169,500			
516	74	Sq. ft.	1/4" preformed expansion joint filler		74		
517	354.04	Lin. ft.	Railing (two deep beam rails with posts & bolts)	354.04			
516	88	Sq. ft.	1" preformed expansion joint filler	36	52		
518	51	Cu. yd.	Porous backfill		51		
518	100	Lin. ft.	6" perforated, helical corrugated metal pipe including specials, 707.01		100		
518	60	Lin. ft.	6" non-perforated, helical corrugated metal pipe, 707.01		60		
808	258	Units	Chemical Admixture for Concrete Type A, B or D.	258			
516	20	Sq. ft.	1/2" elastomeric bearing pad			20	

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with bedrock. If the length of penetration is approximately equal to the depth of bedrock according to the bridge foundation investigation report, firm contact shall be considered as attained when the capacity according to the formula in 507.05 is not less than the following value for a pile hammer of the indicated energy ratings:

66 tons per pile using an 11,000 ft. lb. hammer
60 tons per pile using a 15,000 ft. lb. hammer or greater

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 44 tons per pile for the abutment piles.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. Abutments shall be removed to Elev. 908±. Piers shall be removed to Elev. 902±. The portions of the existing structure removed shall become the property of the contractor.

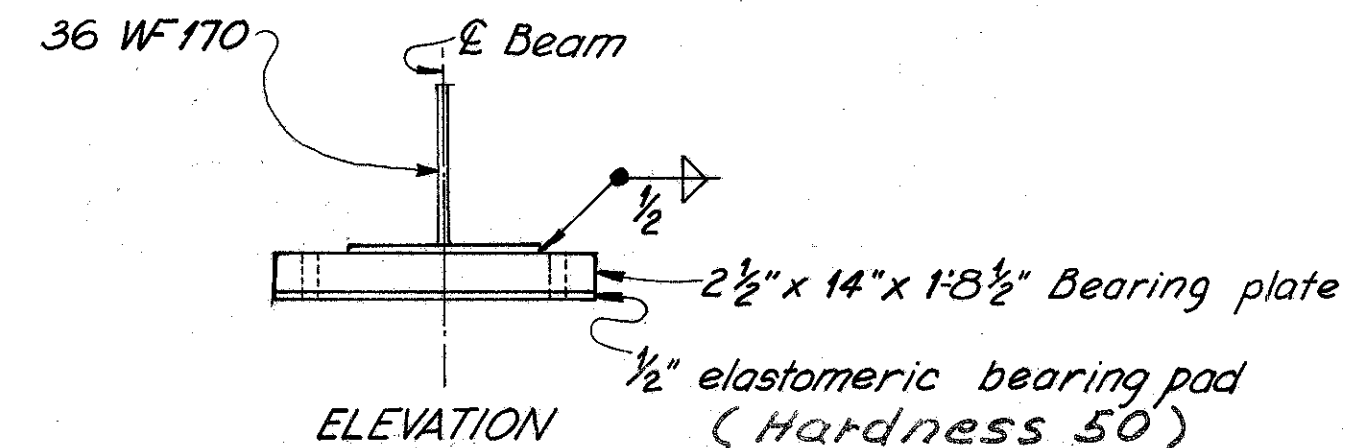
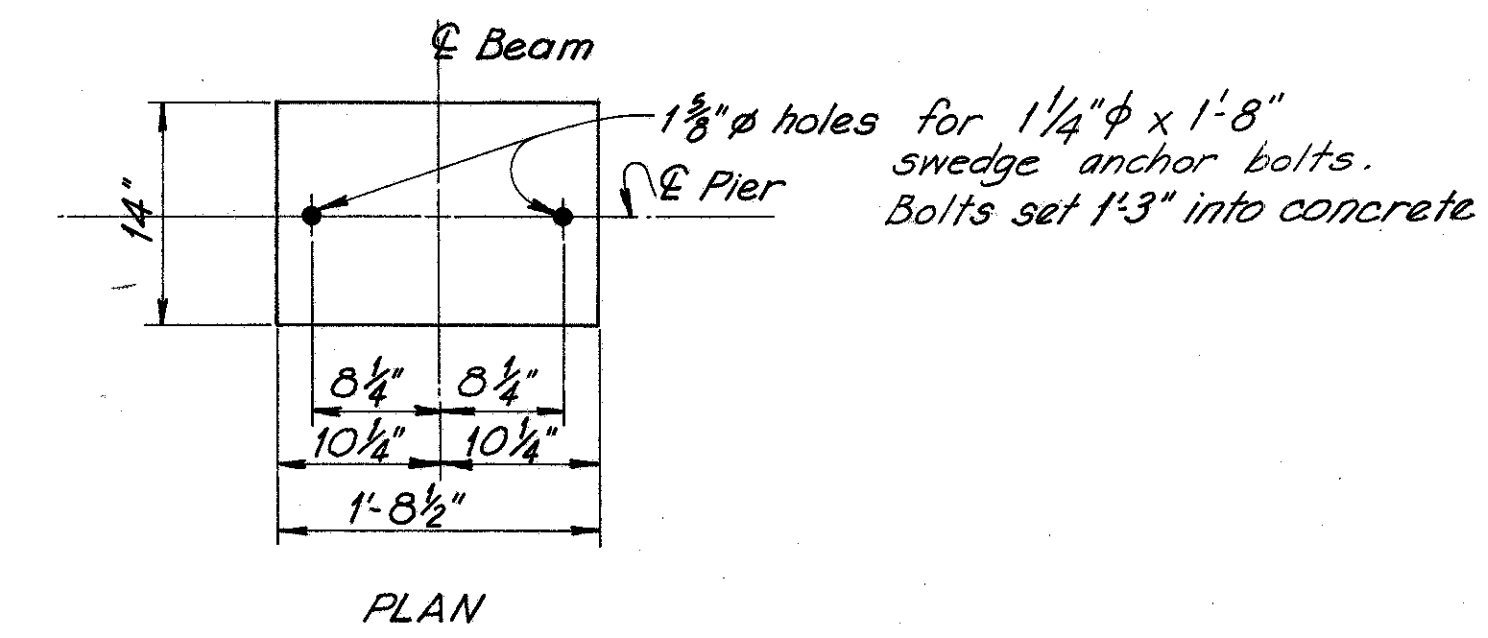
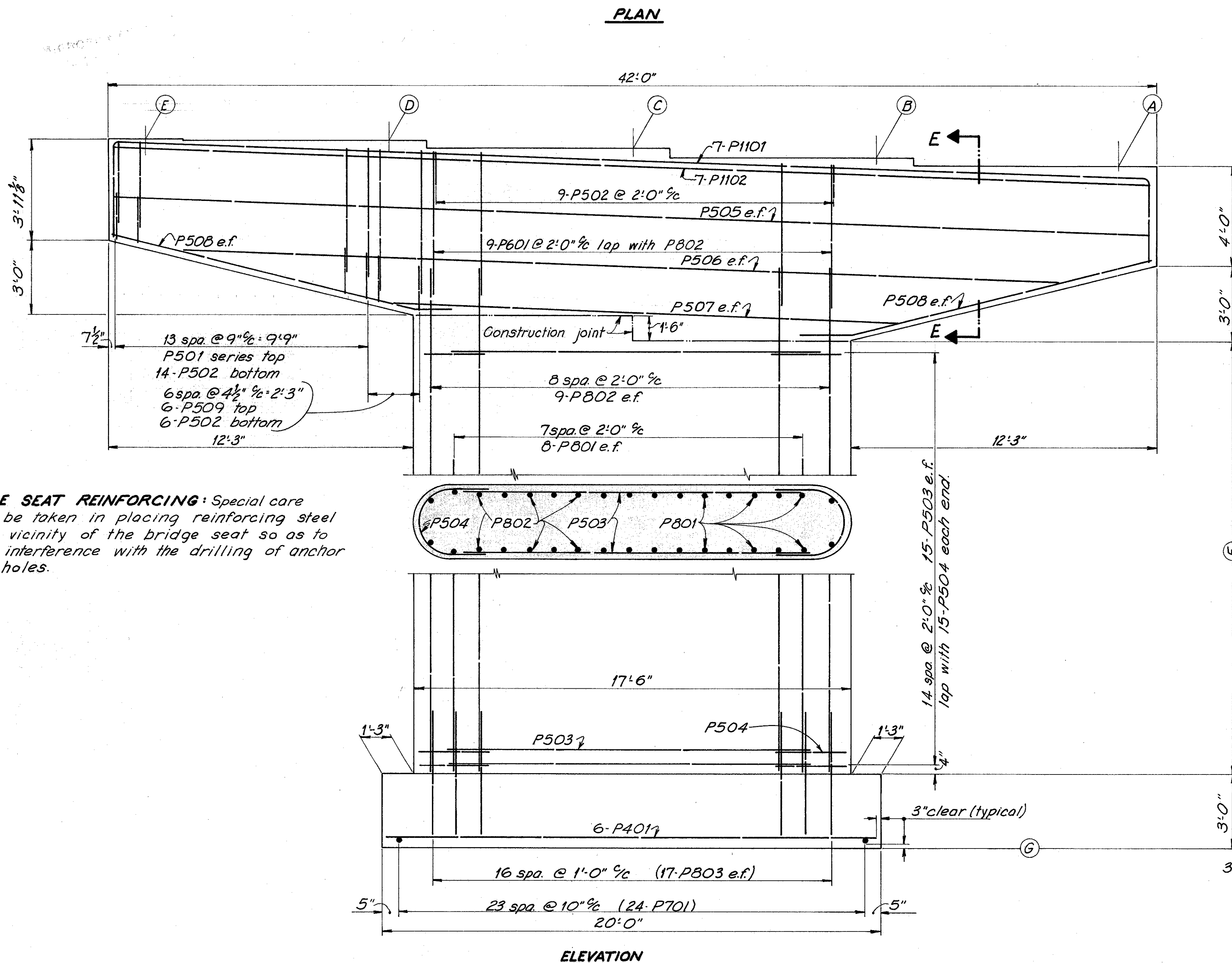
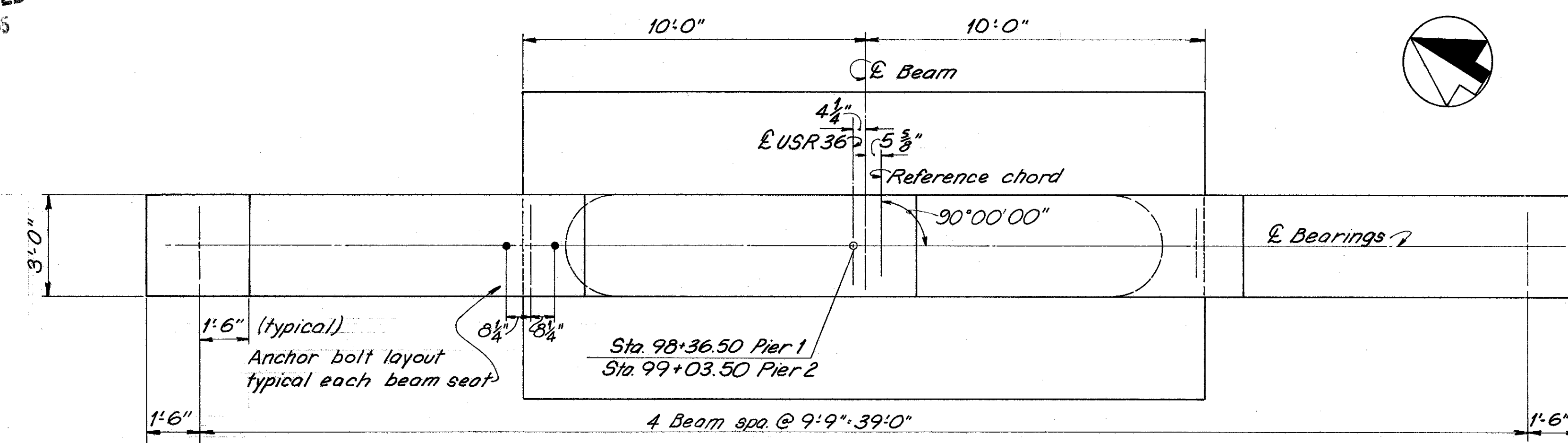
FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 8 tons per sq. ft.

BURGESS & NIPLE LIMITED — CONSULTING ENGINEERS
COLUMBUS, OHIO

GENERAL PLAN & ELEVATION
ESTIMATED QUANTITIES & GENERAL
NOTES, BR. NO. DEL-36-0185
OVER BLUES CREEK

DELaware COUNTY
Sta. 97+81.49
Sta. 99+58.51

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
M.I.G.	LEN		TEL	7-17-70	
2-10-70	2-12-70		4-9-70	WLR 4/17/70	



PIER BEARING PLATE DETAILS

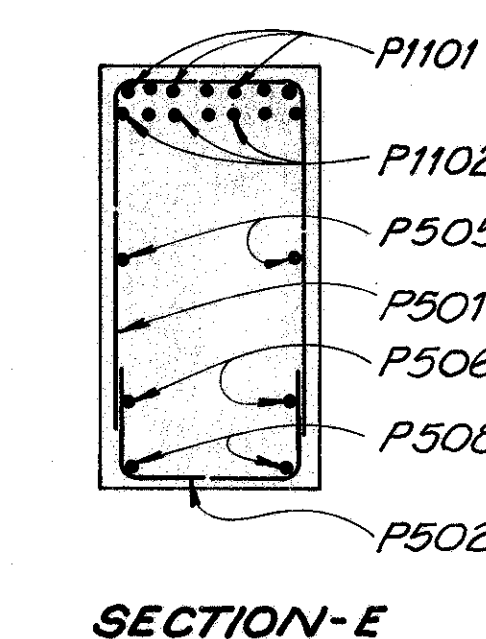
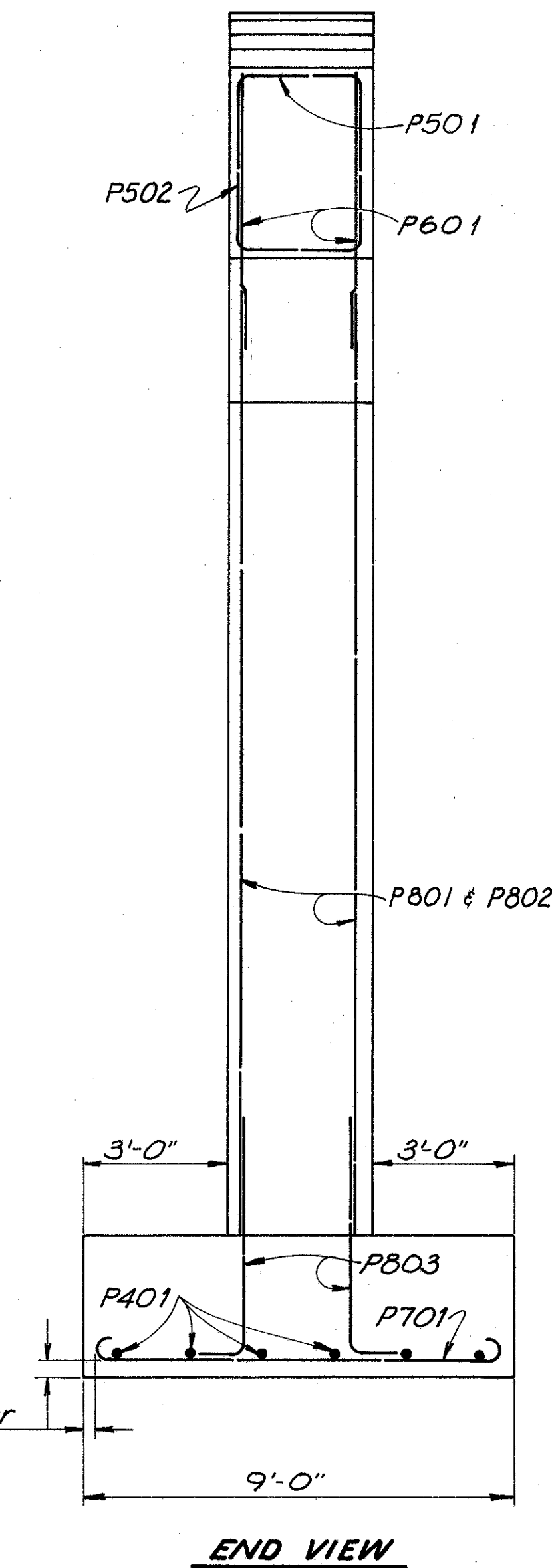


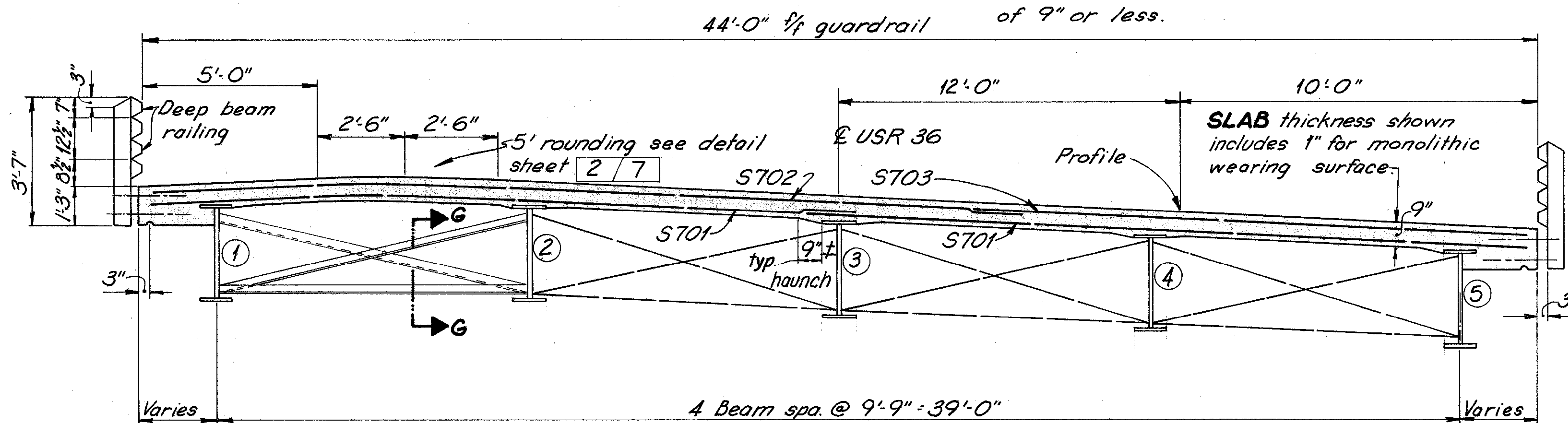
TABLE OF ELEVATIONS AND DIMENSIONS		
POINT	PIER 1	PIER 2
(A)	942.08	942.06
(B)	942.54	942.52
(C)	943.00	942.98
(D)	943.46	943.44
(E)	943.51	943.49
(F)	28'-6 7/8"	28'-6 5/8"
(G)	903.50	903.50

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

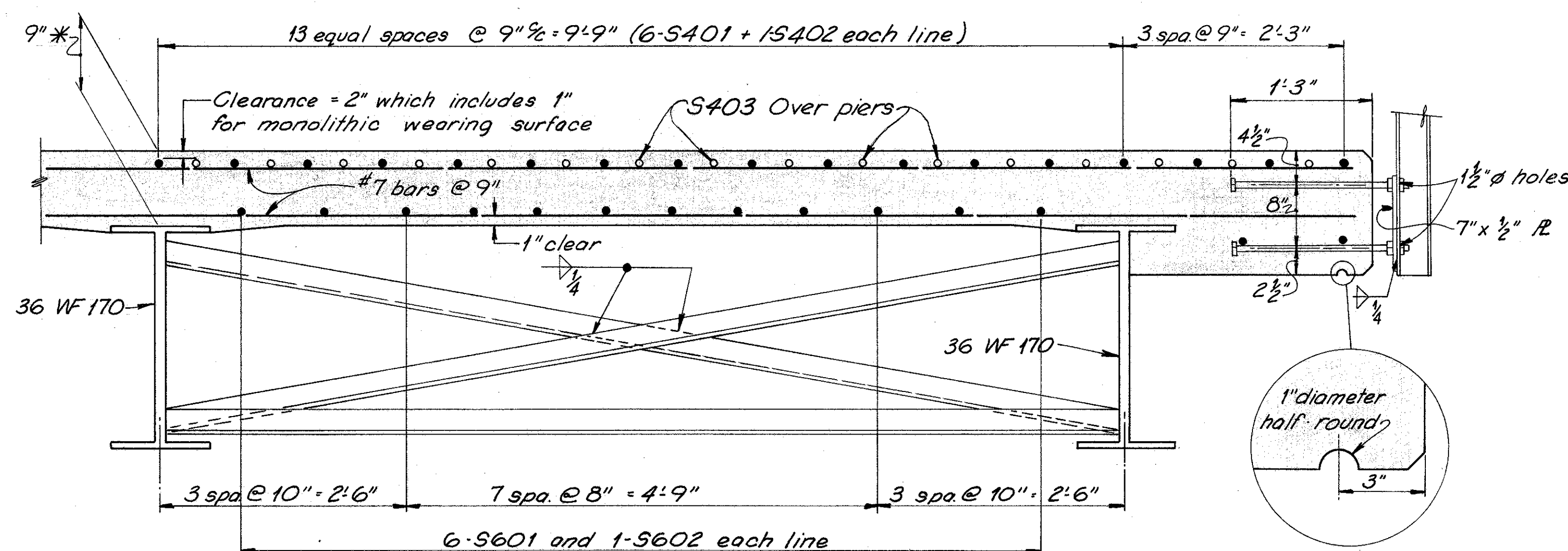


LEGEND:
e.f. each face

BURGESS & NIPLE LIMITED — CONSULTING ENGINEERS					
COLUMBUS, OHIO					
PIER DETAILS					
BR. NO. DEL-36-0185					
OVER					
BLUES CREEK					
DELAWARE COUNTY					
Sta. 97+81.49					
Sta. 99+58.51					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
M.I.G.	M.I.G.	LEH	T.E.U.	7-17-70	3-24-72
1-28-70	1-30-70	6/26/70	4-3-70	W.B.R. 4-17-70	

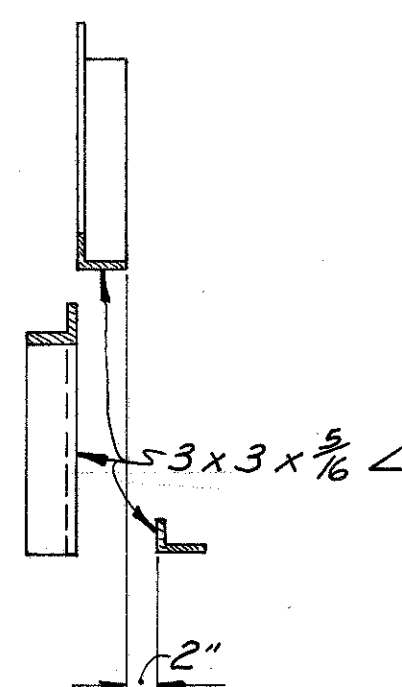


TRANSVERSE SECTION



PART TRANSVERSE SECTION

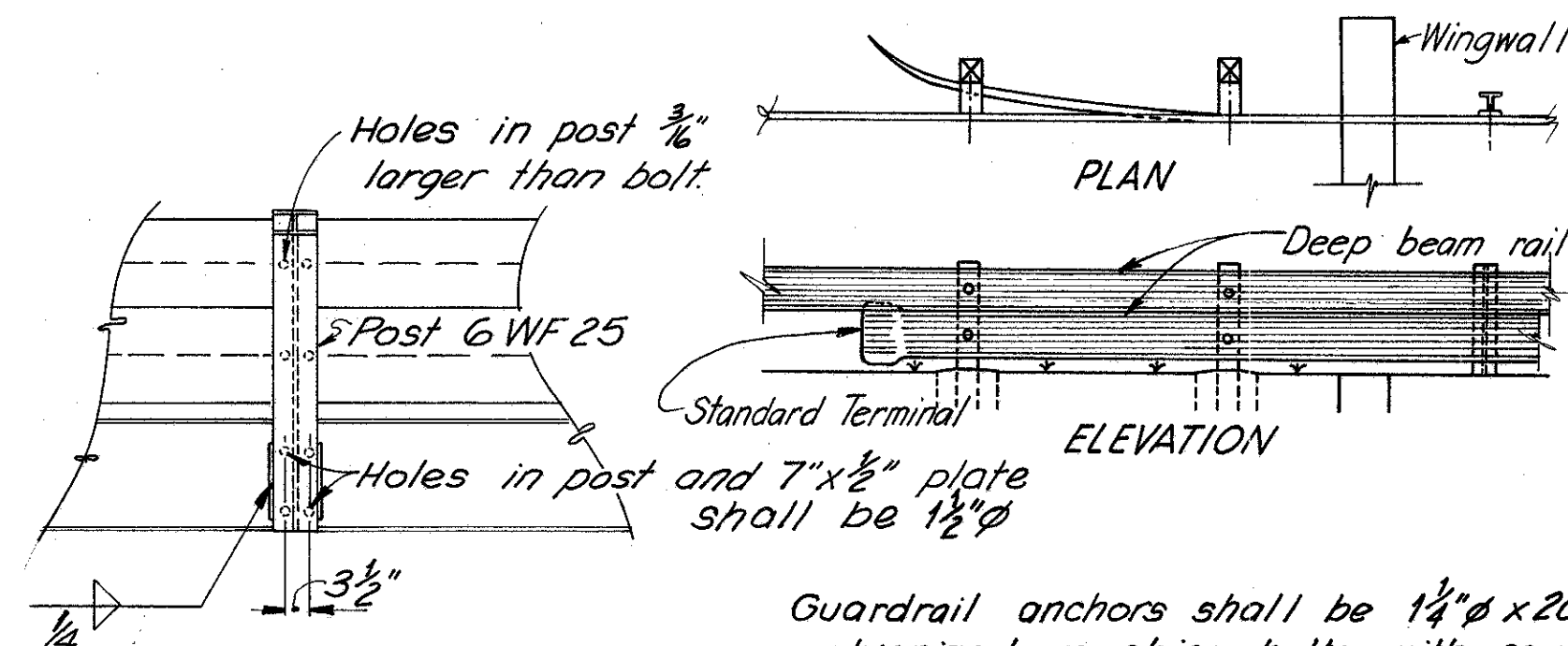
***DECK SLAB DEPTH:** The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange may not have the exact camber or conformation required to place it parallel to the finished grade.



SECTION-G

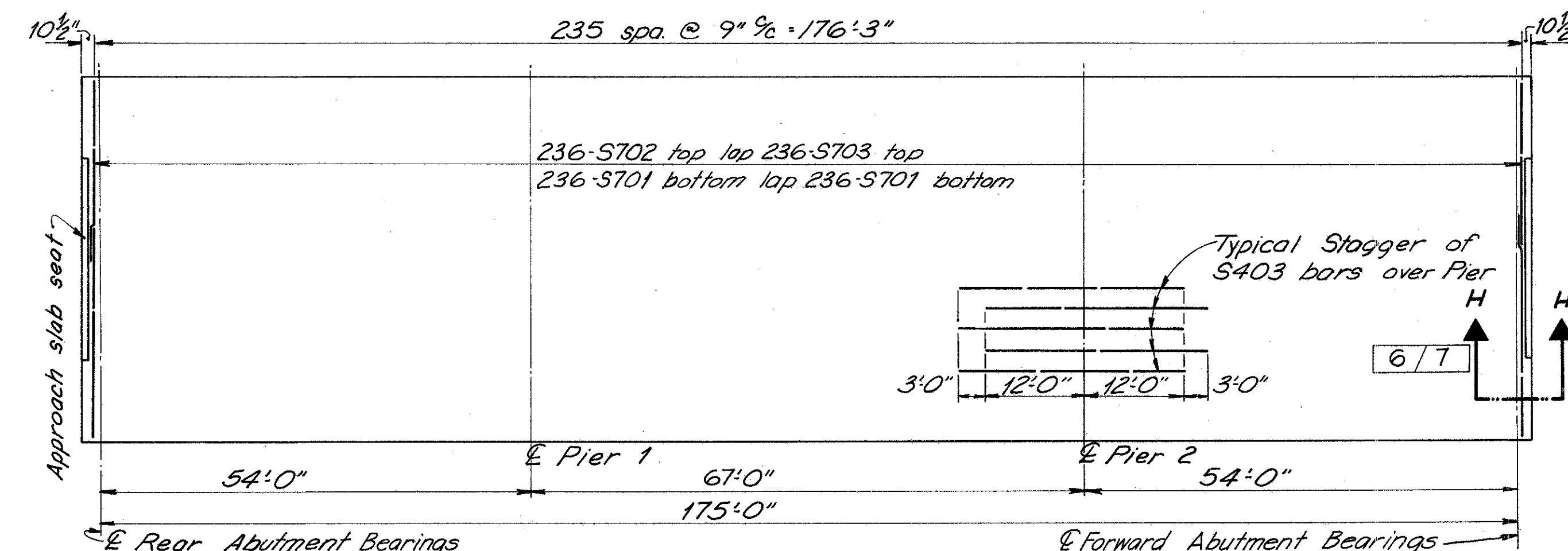
Weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld.

That portion of the lower guard rail which projects beyond the bridge limits shall be included with the bridge railing for payment.

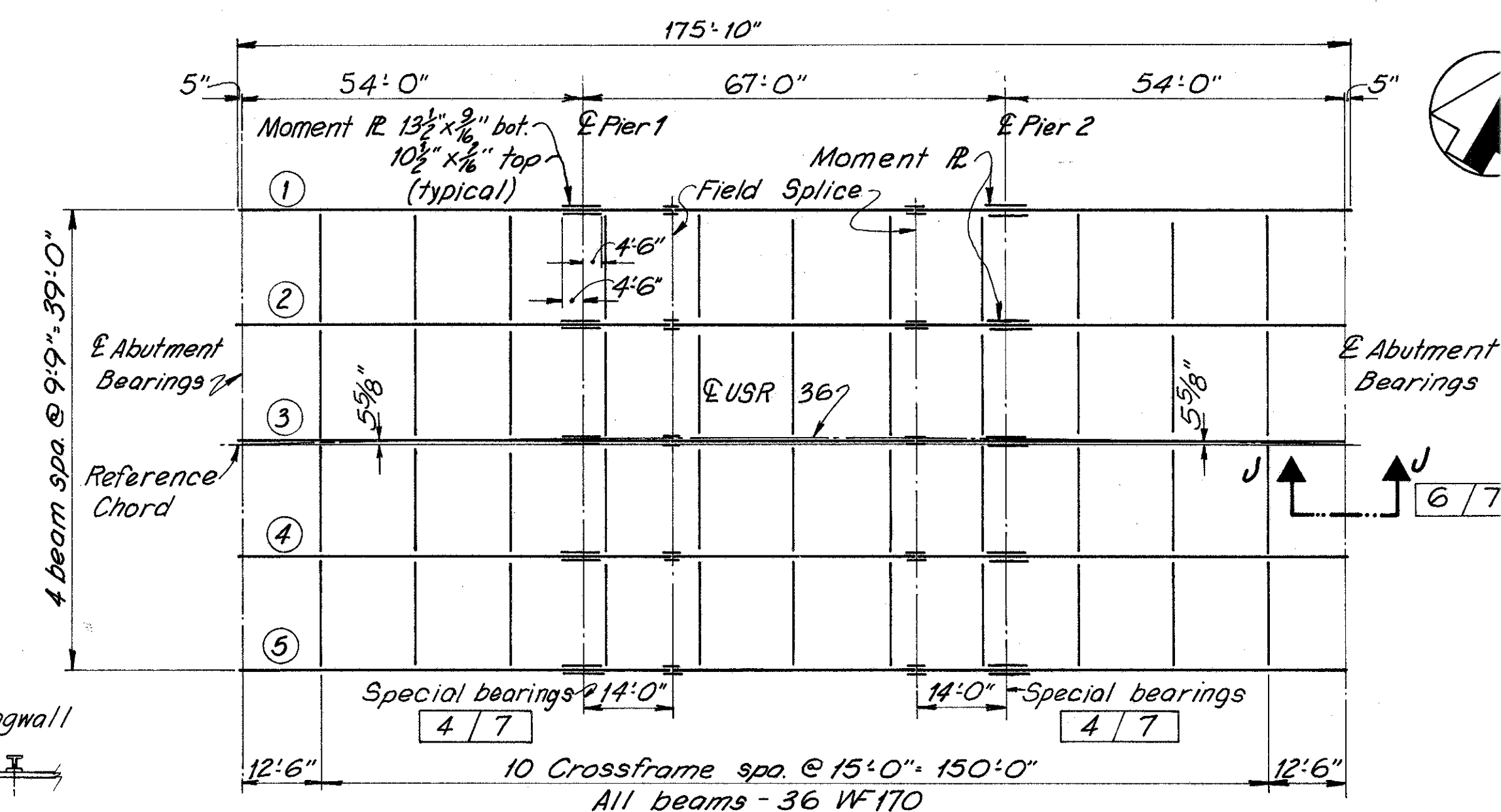


GUARDRAIL DETAILS

Guardrail anchors shall be 1 1/4" x 20" galvanized machine bolts with square heads. Thread 8" length and provide 3 hexagonal nuts per bolt. Fasten bolts rigidly to form before placing concrete. Bolt material according to ASTM A325.



SLAB REINFORCING PLAN

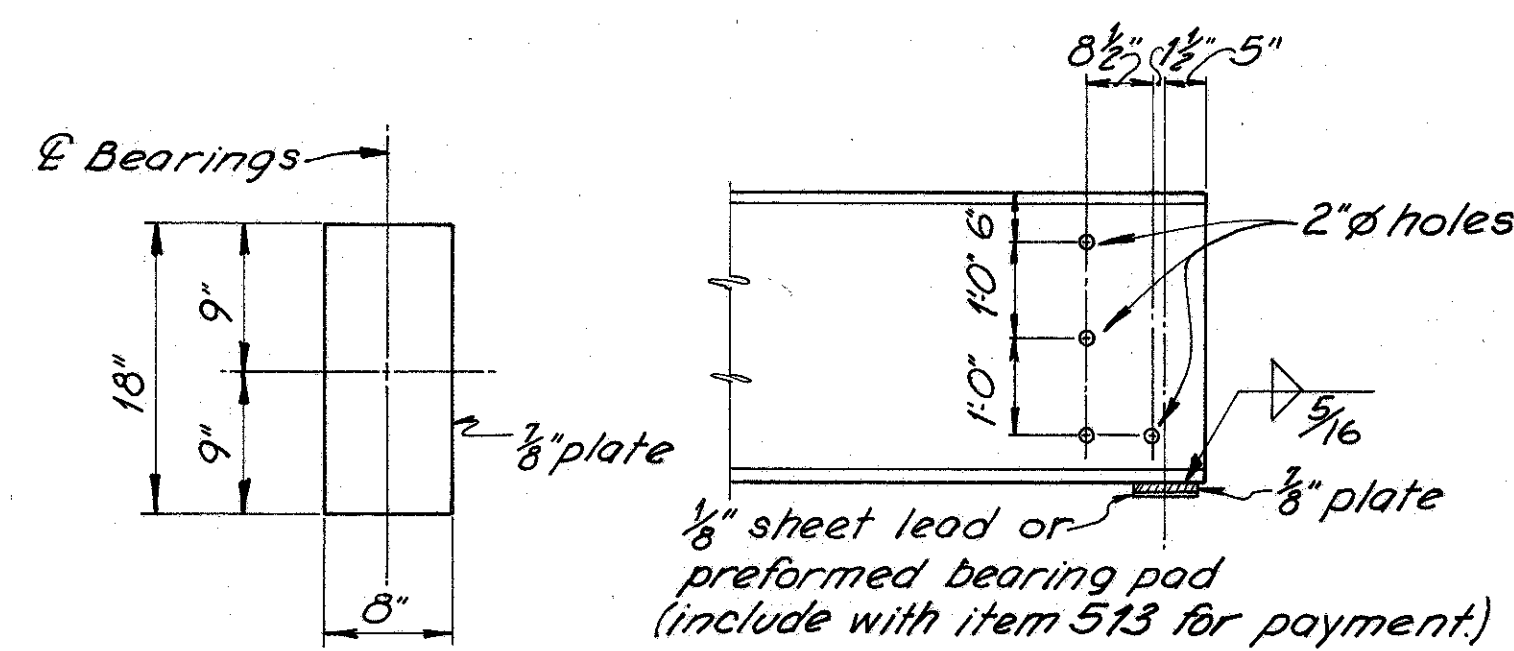


STRUCTURAL STEEL FRAMING PLAN

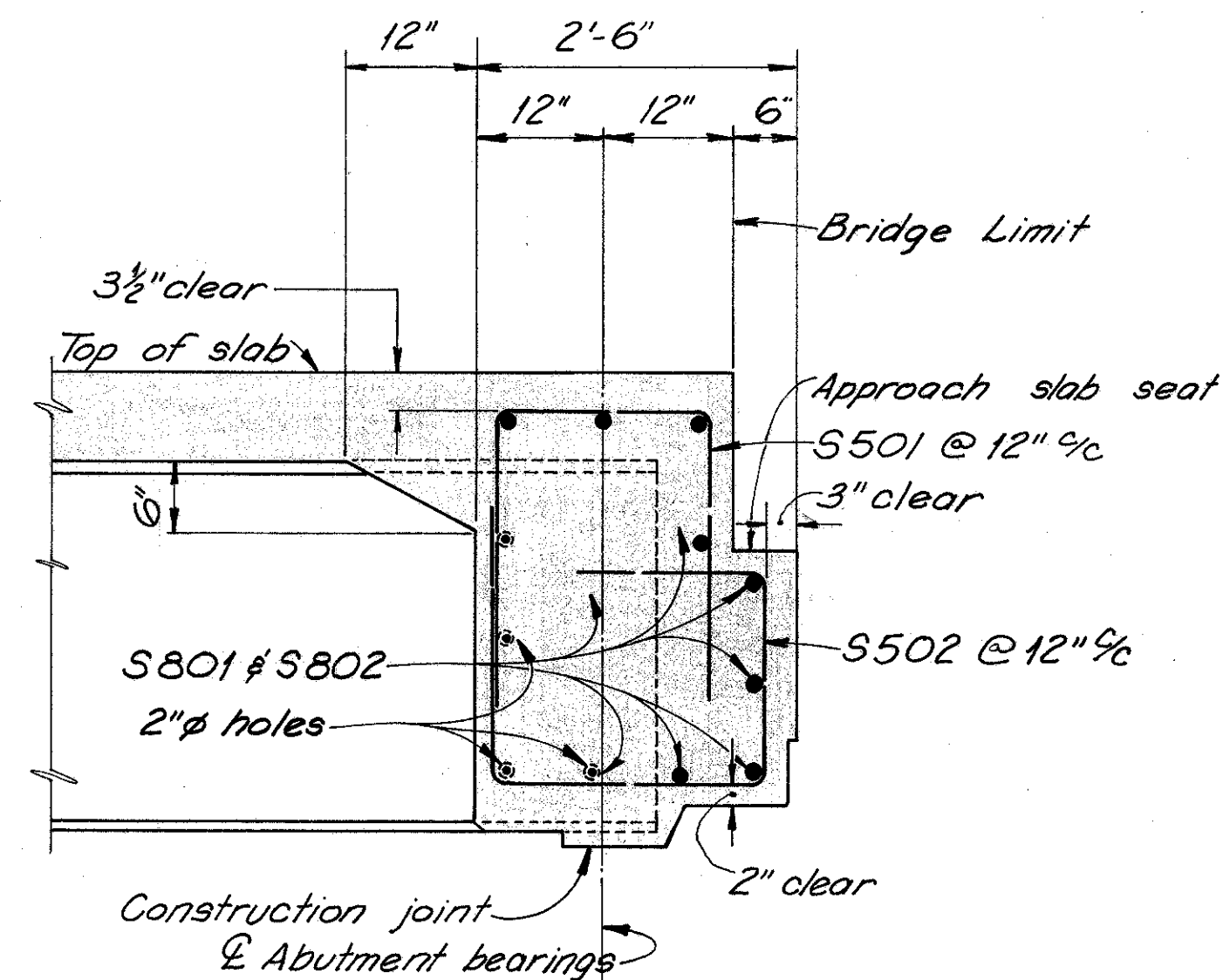
For details of Bolted Field Splice see SD-1-69, Sh.4 of 4.
For details of Moment Plates see SD-1-69, Sh.3 of 4.

BURGESS & NIPLE LIMITED — CONSULTING ENGINEERS					
COLUMBUS, OHIO					
5 / 7					
SUPERSTRUCTURE DETAILS					
BR. NO. DEL-36-0185					
OVER					
BLUES CREEK					
Sta. 97+81.49					
Sta. 99+58.51					
DELAWARE COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
M.T.G.	M.T.G.	LEH	T.E.U.	7-17-70	
1-22-70	2-6-70	6-29-70	3-24-70	WLR 4-17-70	

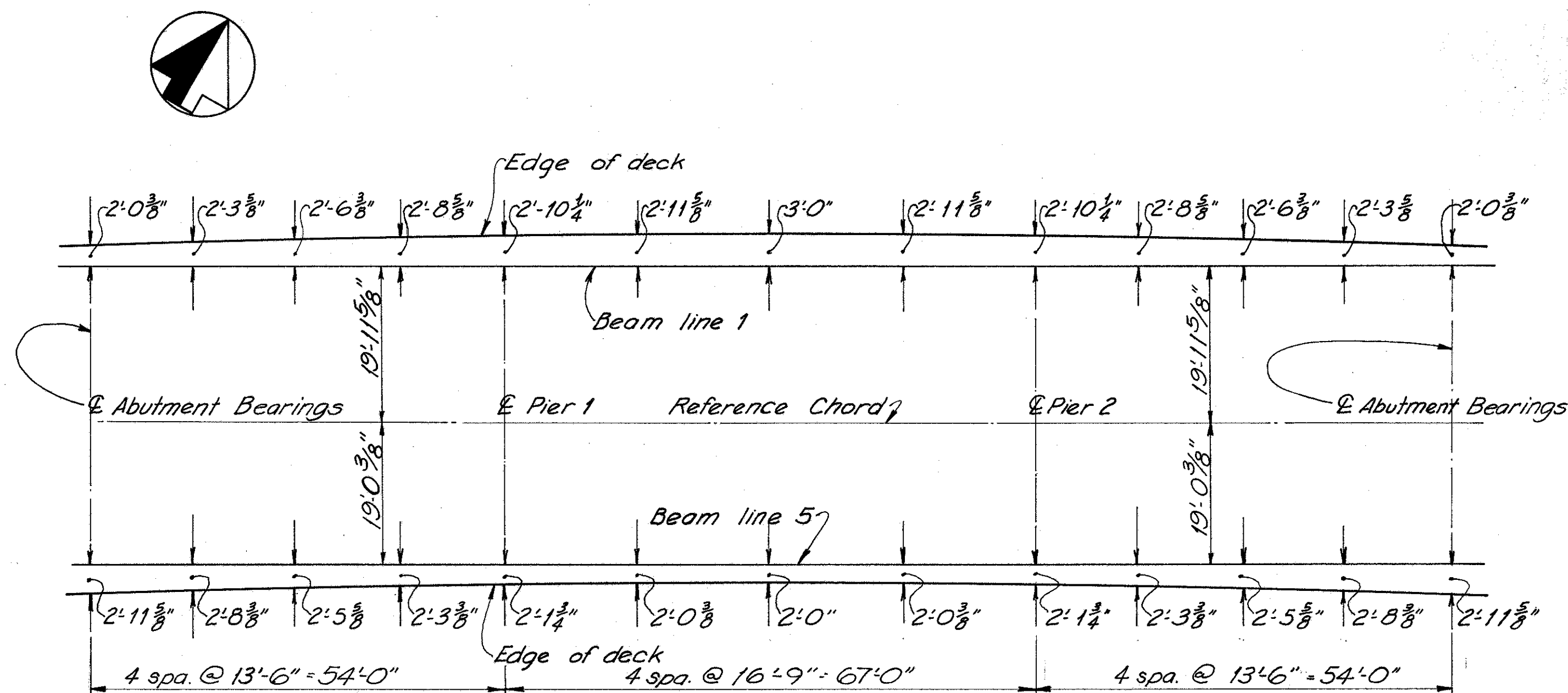
MICROFILMED
FEB 14 1985



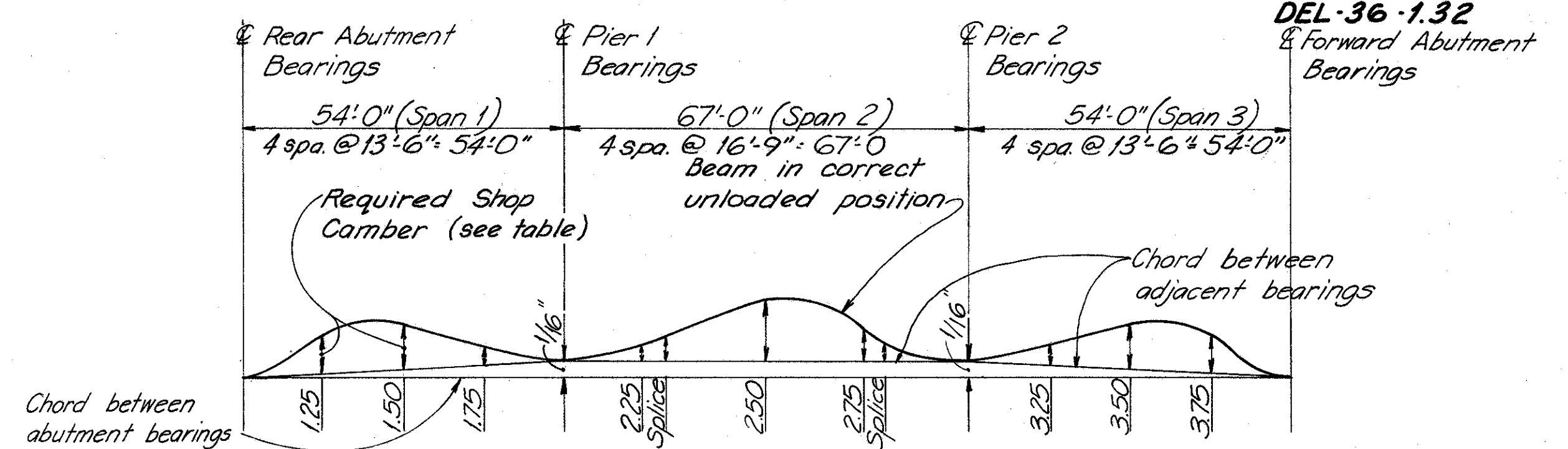
SECTION-J
BEARING PLATE DETAILS



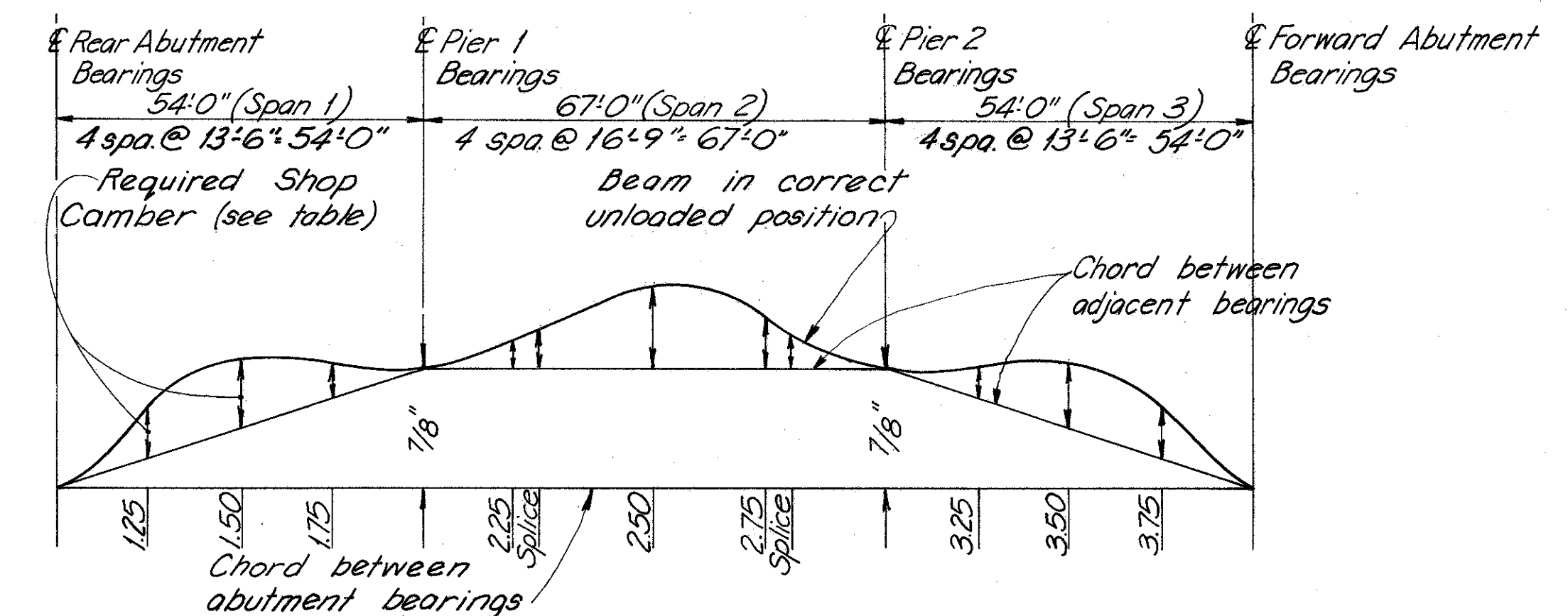
SECTION-H



SLAB FASCIA OFFSETS AT QUARTER POINTS



POINT	SPAN 1				SPAN 2				SPAN 3		
	1.25	1.50	1.75	Splice	2.50	2.75	3.00	Splice	3.25	3.50	3.75
Steel weight deflection	0.035	0.042	0.019	0.023	0.053	0.030	0.023	0.019	0.042	0.035	
Remaining dead load deflection	0.290	0.346	0.159	0.194	0.437	0.246	0.194	0.159	0.346	0.290	
Vertical curve adjustment	0.042	0.054	0.041	0.055	0.084	0.064	0.055	0.041	0.055	0.042	
Horizontal curve adjustment	-0.041	-0.053	-0.041	-0.055	-0.083	-0.065	-0.055	-0.041	-0.053	-0.041	
Total	0.326	0.389	0.178	0.217	0.491	0.275	0.217	0.178	0.390	0.326	
Required Shop Camber	5/16"	3/8"	3/16"	3/16"	1/2"	3/8"	3/16"	3/16"	3/8"	5/16"	



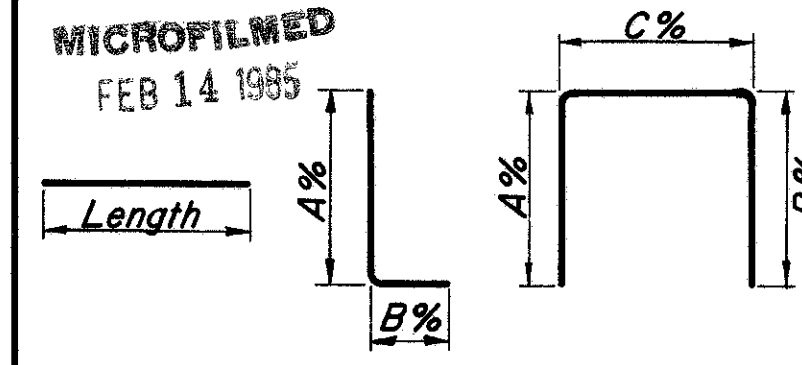
POINT	SPAN 1				SPAN 2				SPAN 3		
	1.25	1.50	1.75	Splice	2.50	2.75	3.00	Splice	3.25	3.50	3.75
Steel weight deflection	0.035	0.042	0.019	0.023	0.053	0.030	0.023	0.019	0.042	0.035	
Remaining dead load deflection	0.290	0.346	0.159	0.194	0.437	0.246	0.194	0.159	0.346	0.290	
Vertical curve adjustment	0.042	0.054	0.041	0.055	0.084	0.064	0.055	0.041	0.055	0.042	
Horizontal curve adjustment	0.036	0.047	0.037	0.048	0.073	0.058	0.048	0.037	0.047	0.036	
Total	0.403	0.489	0.256	0.320	0.647	0.398	0.320	0.256	0.490	0.403	
Required Shop Camber	3/8"	1/2"	1/4"	5/16"	3/8"	3/8"	3/16"	3/16"	1/2"	3/8"	

BURGESS & NIPLE LIMITED — CONSULTING ENGINEERS
COLUMBUS, OHIO

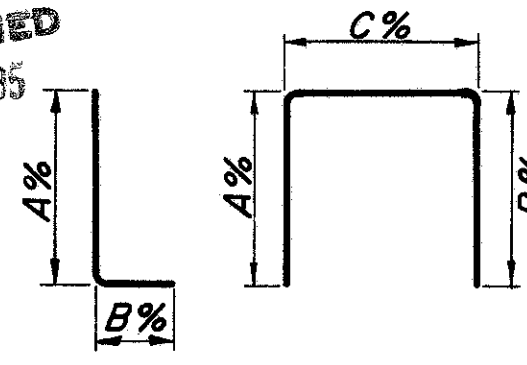
SUPERSTRUCTURE DETAILS
BR. NO. DEL-36-0185
OVER
BLUES CREEK

Sta. 97+81.49
Sta. 99+58.51
DESIGNED M.I.G. DRAWN M.I.G. TRACED LEH CHECKED TEH REVIEWED DATE 7-17-70
1-22-70 2-4-70 6-20-70 3-24-70 WLR 4-17-70

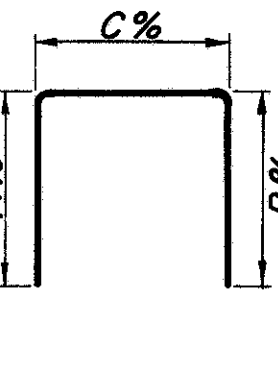
MICROFILMED
FEB 14 1985



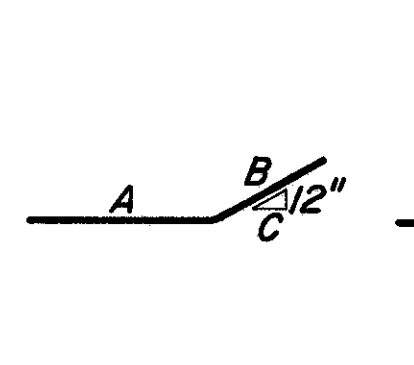
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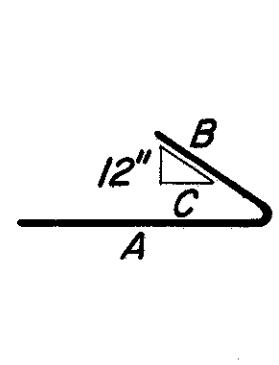
TYPE 2



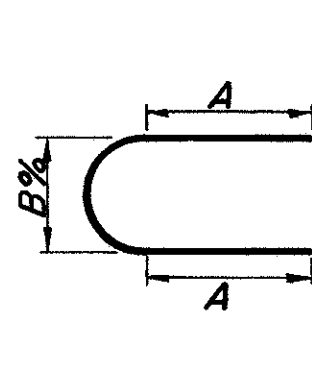
TYPE 3



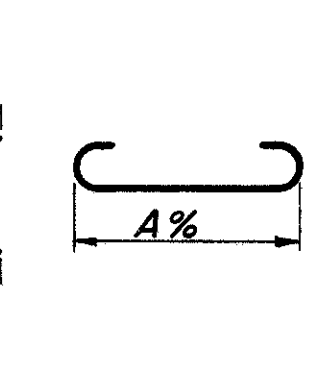
TYPE 4



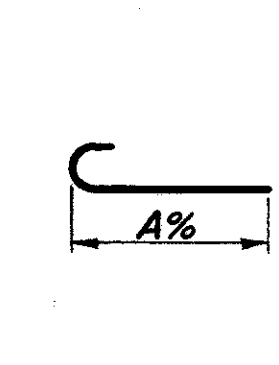
TYPE 5



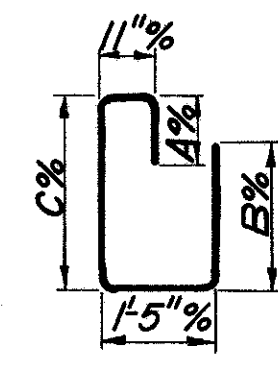
TYPE 6



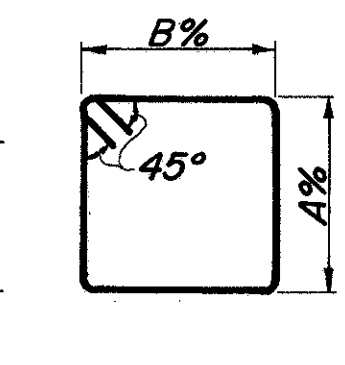
TYPE 7



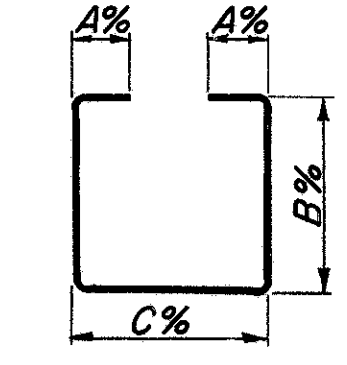
TYPE 8



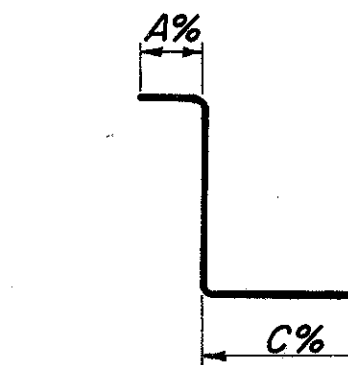
TYPE 9



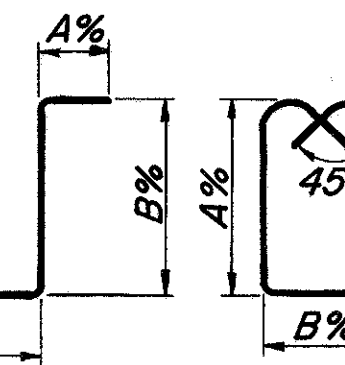
TYPE 10



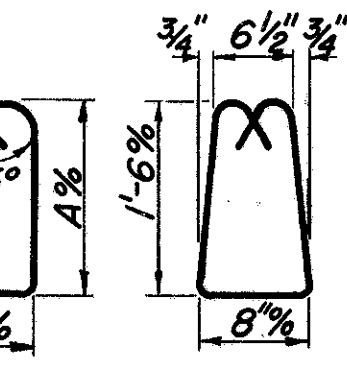
TYPE 11



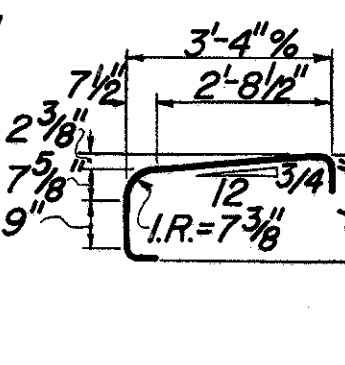
TYPE 12



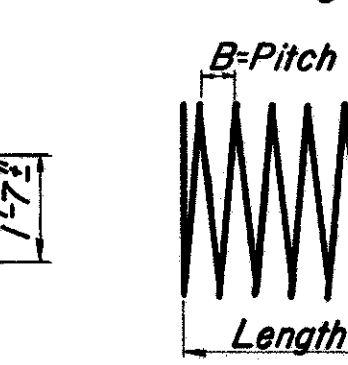
TYPE 13



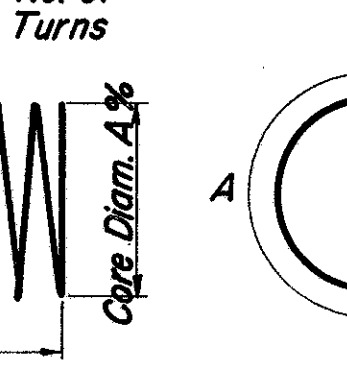
TYPE 14



TYPE 15



TYPE 16



TYPE 17

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

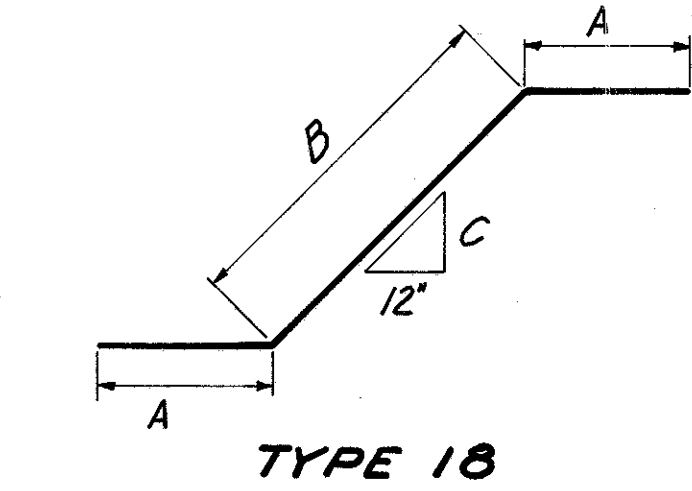
DEL-36-132

87
97

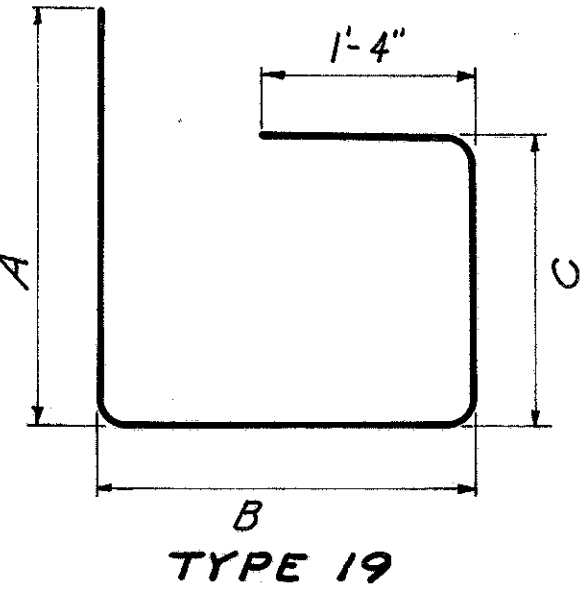
ABUTMENT						
MARK	NUMBER	LENGTH	TYPE	A	B	C
A1001	16	33'-8"	1			
A801	16	26'-3"	1			
A601	156	4'-9"	18	1'-0"	2'-9"	12"
A501	136	6'-5"	3	2'-1"	2'-1"	2'-6"
A502	60	12'-1"	3	5'-7"	5'-1"	2'-2"
A503	16	25'-10"	1			
A504	16	33'-0"	1			
A505	6	12'-2"	4	9'-6"	2'-8"	2'-0"
A506	4	9'-6"	1			
A507	8	6'-6"	1			
A508	8	3'-6"	1			
A509	6	9'-2"	4	6'-6"	2'-8"	2'-0"
A510	4	19'-11"	3	9'-0"	9'-0"	2'-2"
A511	4	21'-11"	3	10'-0"	10'-0"	2'-2"
A512 "S"	1 set 5 bars	10'-7" 15'-11"	3	4'-4" 7'-0"	4'-4" 7'-0"	2'-2"
A513 "S"	1 set 7 bars	10'-7" 18'-7"	3	4'-4" 8'-4"	4'-4" 8'-4"	2'-2"
A401	56	5'-4"	3	1'-11"	1'-11"	1'-9"

PIER						
MARK	NUMBER	LENGTH	TYPE	A	B	C
P1101	14	48'-0"	3	3'-6 1/2"	3'-6 1/2"	41'-6"
P1102	14	41'-0"	1			
P801	32	21'-5"	1			
P802	36	31'-11"	1			
P803	68	6'-2"	2	5'-3"	1'-1"	
P701	48	10'-2"	7	8'-6"		
P601	36	6'-3"	1			
P501 "S"	4 sets 13 bars	8'-11" 13'-11"	3	3'-3" 5'-9"	3'-3" 5'-9"	2'-8"
P502	98	6'-5"	3	2'-0"	2'-0"	2'-8"
P503	60	14'-6"	1			
P504	60	7'-4"	6	1'-7"	2'-8"	
P505	4	41'-0"	1			
P506	4	35'-0"	1			
P507	4	20'-0"	1			
P508	8	14'-1"	4	12'-6"	1'-7"	
P509	28	14'-8"	3	6'-1 1/2"	6'-1 1/2"	2'-8"
P401	12	19'-6"	1			

SUPERSTRUCTURE						
MARK	NUMBER	LENGTH	TYPE	A	B	C
S801	24	30'-0"	1			
S802	24	16'-2"	1			
S701	472	22'-11"	1			
S702	236	28'-11"	1			
S703	236	16'-11"	1			
S601	312	30'-0"	1			
S602	52	8'-2"	1			
S501	80	5'-5"	3	2'-0"	2'-0"	1'-8"
S502	80	7'-6"	19	2'-6 1/2"	2'-1"	1'-9"
S401	354	30'-0"	1			
S402	59	4'-2"	1			
S403	116	27'-0"	1			



TYPE 18



TYPE 19

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, indicates the bar size number. For example, A601 is a No. 6 size bar and P1101 is a No. 11 size bar.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the length of the spiral along the axis of the spiral. The "No. of Turns" shown is the length divided by the pitch plus 3 turns (total number of closed coils).

1/2 closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lbs. per lin. ft. will be paid for as reinforcing steel and is included in the tabulated quantities of spiral bars.

"S" - Series

REPLACEMENT BARS						
MARK	NUMBER	LENGTH	TYPE	A	B	C
RE1101	1	8'-6"	1			
RE1001	1	8'-2"	1			
RE801	1	7'-6"	1			
RE701	3	7'-2"	1			
RE601	1	6'-11"	1			
RE501	1	6'-7"	1			
RE401	1	6'-3"	17			

BURGESS & NIPLE LIMITED — CONSULTING ENGINEERS			
COLUMBUS, OHIO			
7 / 7			
REINFORCING STEEL LIST			
BR. NO. DEL-36-0185			
OVER			
BLUES CREEK			
Sta. 97+81.49			
DELAWARE COUNTY Sta. 99+58.51			
DESIGNED	DRAWN	TRACED	CHECKED
M.I.G. LEH	TEH	TEH	TEH
2-4-70	2-5-70	4-3-70	4-17-70