

MICROFILMED
JUL 1984

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

293-A
344

MAR-23-15.67
WYA-23-0.00

PROPOSED BRIDGE DATA

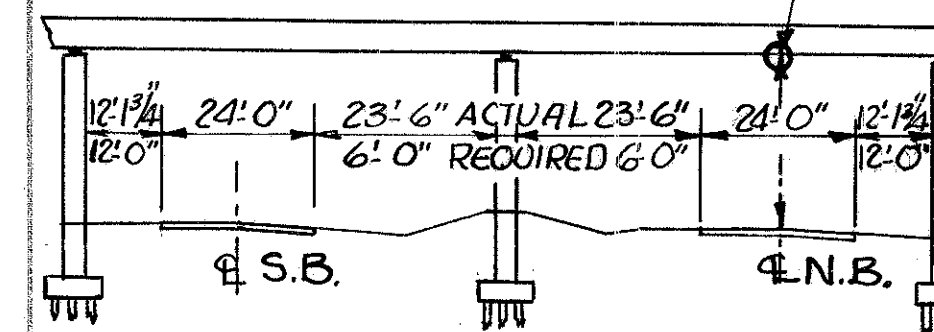
TYPE: Continuous Steel Beam with reinforced concrete deck and substructure.
SPANS: 56'-9" - 81'-0" - 81'-0" - 56'-9"
ROADWAY: 24'-0" w/ 2'-0" Safety Curbs
LOAD FREQUENCY: CF 130 (57)
SKEW: 39° 20' 00" R.F.
APPROACH SLABS: A5-1-54 (25' Long) (Special)
RAILING: Aluminum rail and supports and concrete parapet.
WEARING SURFACE: 1" Monolithic Concrete.
ALIGNMENT: Tangent.

TRAFFIC 1986

Co. Rd. 26 USR 23
AVERAGE DAILY TRAFFIC
Total Vehicles 460
Equiv. Pass. Vehicles 520 24,070

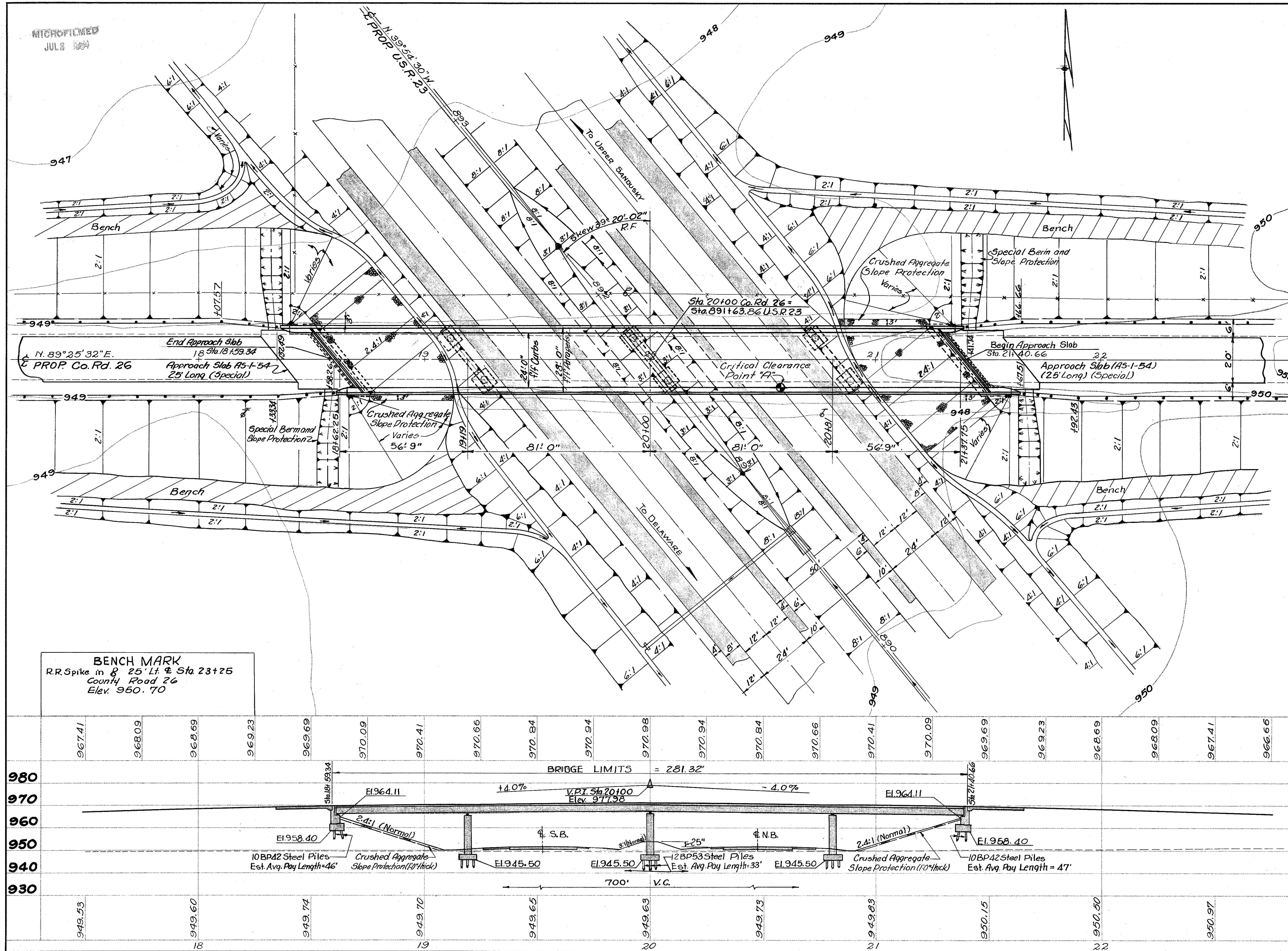
CLEARANCE DIAGRAM

Critical Clearance Point "A"
Actual 15'-1"; Required 15'-0"



CLEARANCES SHOWN NORMAL
TO PROPOSED U.S.R. 23

BENCH MARK
R.R. Spike in S 25' Lt. & Sta. 23+25
County Road 26
Elev. 950.70



BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD.
CONSULTING ENGINEERS
249 S. PAINT ST. CHILLICOTHE, OHIO

SITE PLAN
BRIDGE No. MAR-23-1693
U.S.R. 23 UNDER COUNTY ROAD 26
MARION COUNTY STA. 891+63.86 U.S.R. 23

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
BAR	BAR	P.J.M.	NK	NK	8/25/66	

MAR-23-15.67
WYA-23-0.00

~GENERAL NOTES~

REFERENCE shall be made to Standard Drawings BR-1-65 (Sheet 1) revised 11-24-65, RB-1-55 revised 2-2-59, SD-1-65 dated 11-8-65, AS-1-54 revised 8-10-65, and Supplemental Specifications 808 revised 7-13-67, 811 dated 7-7-67, 825 dated 7-1-67, and 828 dated 7-1-67.

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.

- Design Loading : OF-130 (57)
Concrete Class C : basic unit stress 1,333 p.s.i.
Concrete Class E : basic unit stress 1,133 p.s.i.
Structural Steel : ASTM A36, basic unit stress-20,000 p.s.i.
Reinforcing Steel : ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress-20,000 p.s.i. Except, spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the sub-grade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and piles driven.

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

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Section 50705 is not less than the following value for a pile hammer of the indicated energy rating.

- For the abutment piles
28 tons per pile using a 7,000 ft. lb. hammer
28 tons per pile using an 11,000 ft. lb. hammer
28 tons per pile using a 15,000 ft. lb. or greater hammer.

- For the pier piles (with a hammer of not less than 11,000 ft. lbs. per blow.)
50 tons per pile using an 11,000 ft. lb. hammer
50 tons per pile using a 15,000 ft. lb. or greater hammer

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 28 tons per pile for the abutment piles and 50 tons per pile for the pier piles.

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

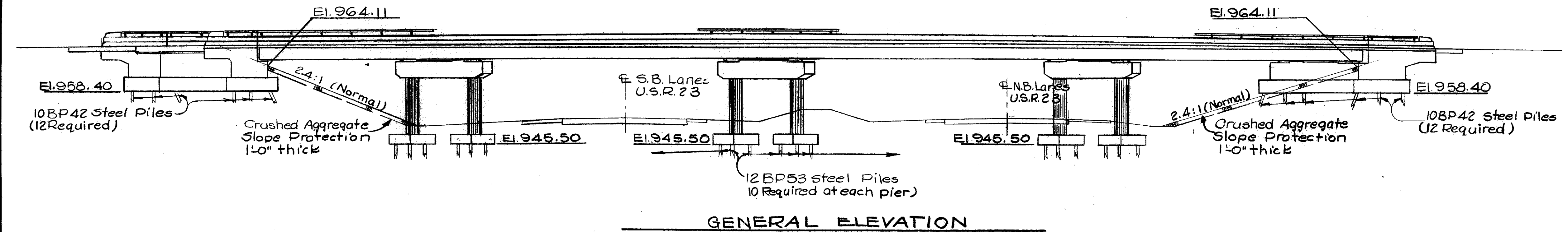
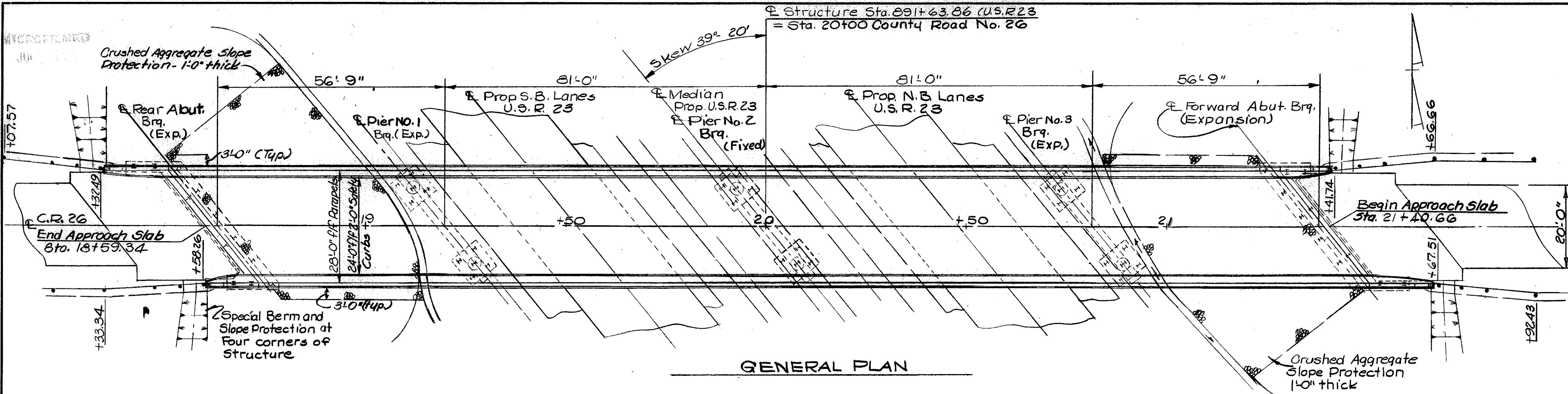
UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to co-operate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD.
Consulting Engineers
249 S. Paint Street Chillicothe, Ohio

GENERAL PLAN & ELEVATION
EST. QUANTITIES & GEN. NOTES
BRIDGE NO. MAR-23-1693
U.S.R. 23 UNDER COUNTY ROAD 26
MARION COUNTY U.S.R. 23
STA. 891+63.86

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIEWED
F.H.S.	D.J.M.		6/23/66	PNL	8/25/66	

Rev. 4-7-67



ESTIMATED QUANTITIES									
ITEM	QUANTITY	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER.	GENERAL	AS BUILT	
503	317	Cu. Yds.	Unclassified Excavation	219	98				
505	Lump	Sum	First Test Pile				Lump		
507	1,120	Lin. Ft.	Steel Piles 10BP42	1,120					
507	1,000	Lin. Ft.	Steel Piles 12BP53		1,000				
509	94,811	Lbs.	Reinforcing Steel	11,772	17,392	65,647			
511	261	Cu. Yds.	Class "C" Concrete, Superstructure			261			
511	67	Cu. Yds.	Class "C" Concrete, Pier Caps and Columns		67				
511	84	Cu. Yds.	Class "E" Concrete, Abutments above Footings	84					
511	108	Cu. Yds.	Class "E" Concrete, Footings	70	38				
513	213,000	Lbs.	Structural Steel			213,000			
514	213,000	Lbs.	Field Painting of Structural Steel			213,000			
517	612.50	Lin. Ft.	Bridge Railing, Type I.	56.33		556.17			
518	26	Cu. Yds.	Porous Backfill	26					
518	64	Lin. Ft.	6" Perforated, Helical C.M.P. including Specials, 707.06	64					
518	48	Lin. Ft.	6" Non-Perforated, Helical C.M.P., 707.06	48					
518	12	Each	Scuppers, including supports			12			
601	512	Sq. Yds.	Crushed Aggregate Slope Protection				512		
808	261	Units	Water-reducing, Set-retarding Admixture			261			
825	1,112	Sq. Yds.	Concrete Surface Treatment	52		1060			
828	62	Lin. Ft.	Joint Sealer (enddam)			62			

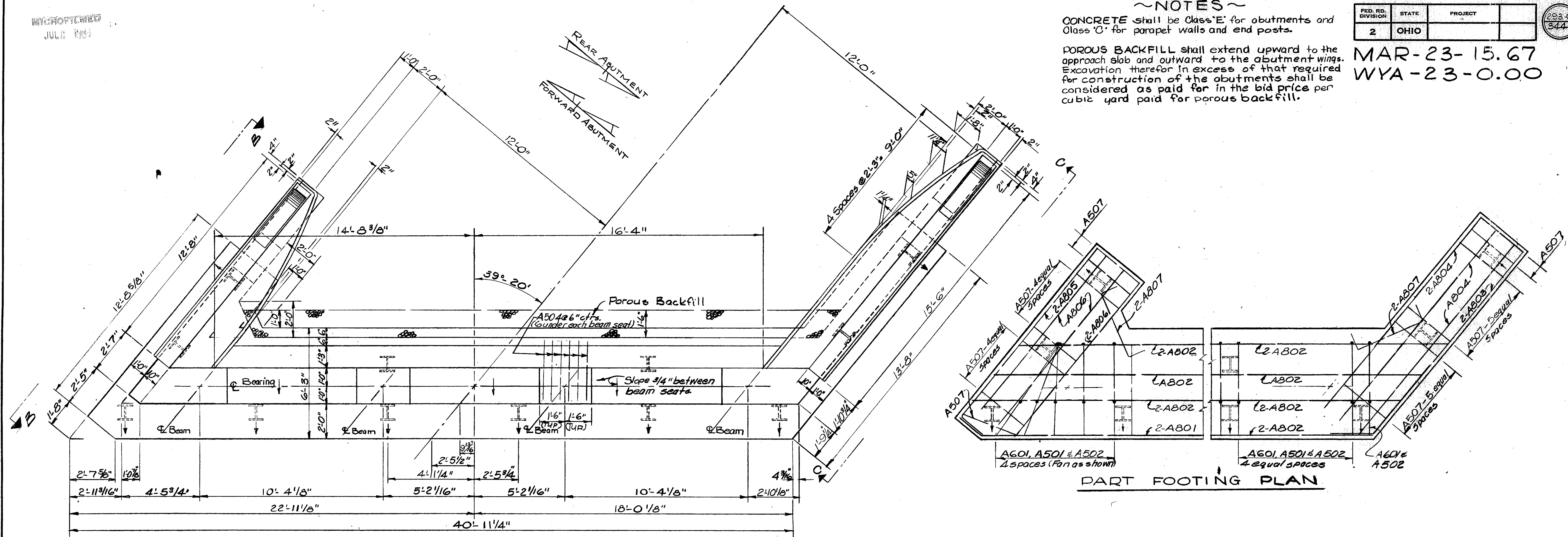
HYDROGRAPHIC
JUL 1951

~NOTES~
CONCRETE shall be Class 'E' for abutments and Class 'C' for parapet walls and end posts.
POROUS BACKFILL shall extend upward to the approach slab and outward to the abutment wings. Excavation therefor in excess of that required for construction of the abutments shall be considered as paid for in the bid price per cubic yard paid for porous backfill.

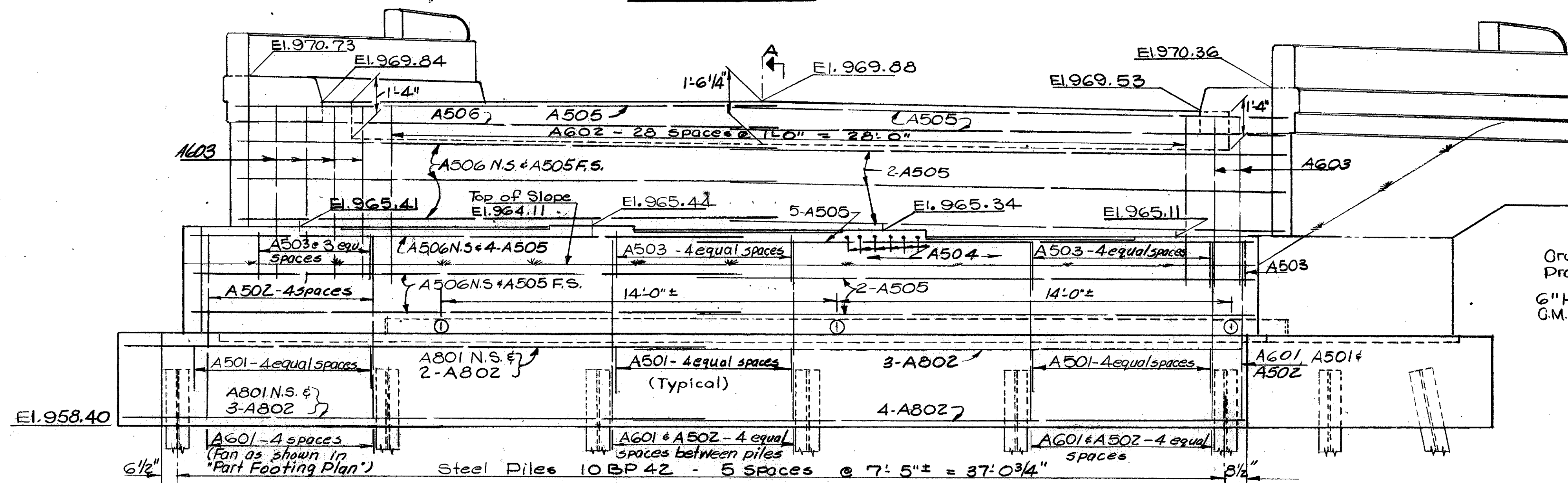
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

293-C
344

MAR-23-15.67
WYA-23-0.00

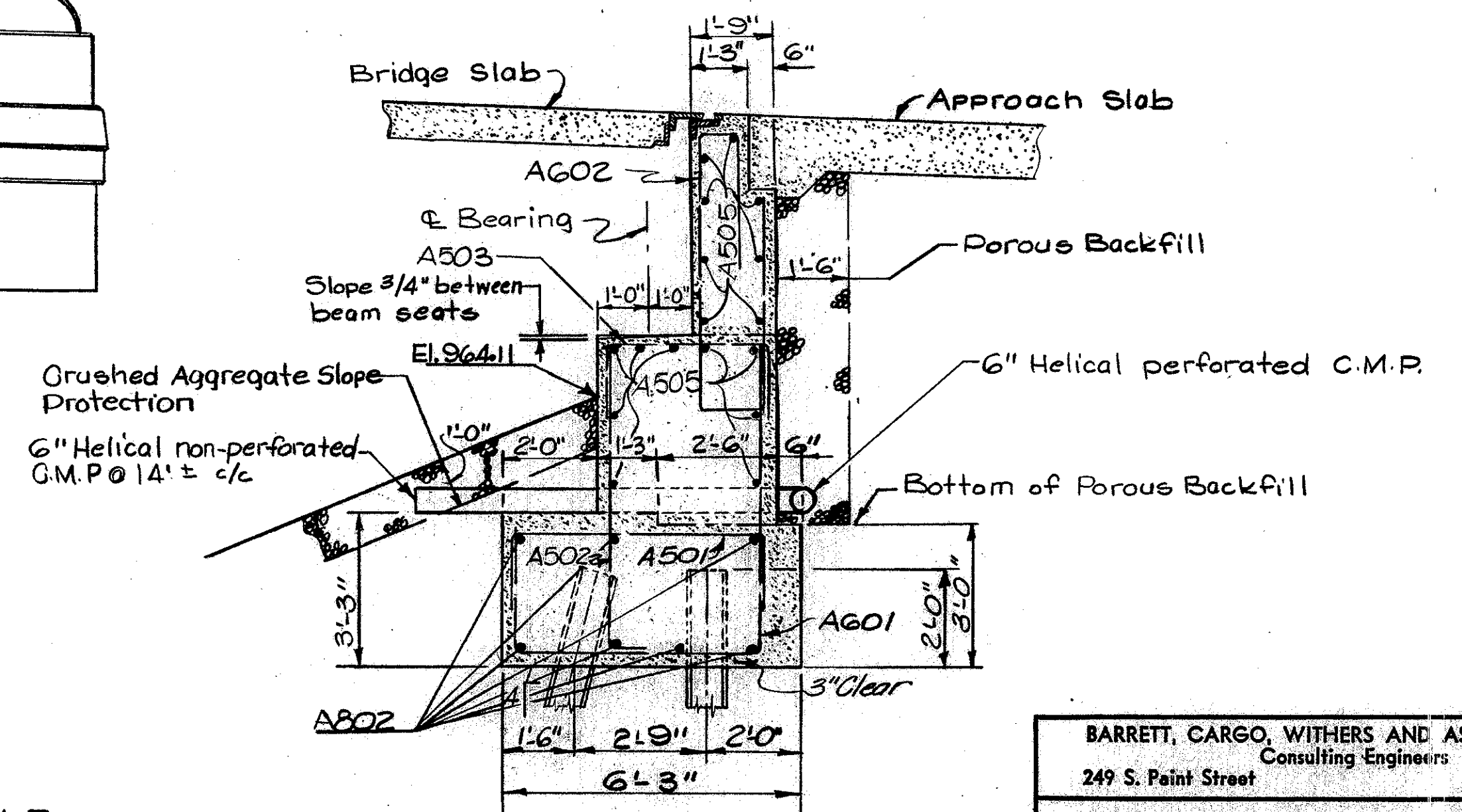


PART FOOTING PLAN



ELEVATION

LEGEND
Indicates battered pile and direction of batter
N.S. Indicates Near Side
F.S. Indicates Far Side



SECTION A-A

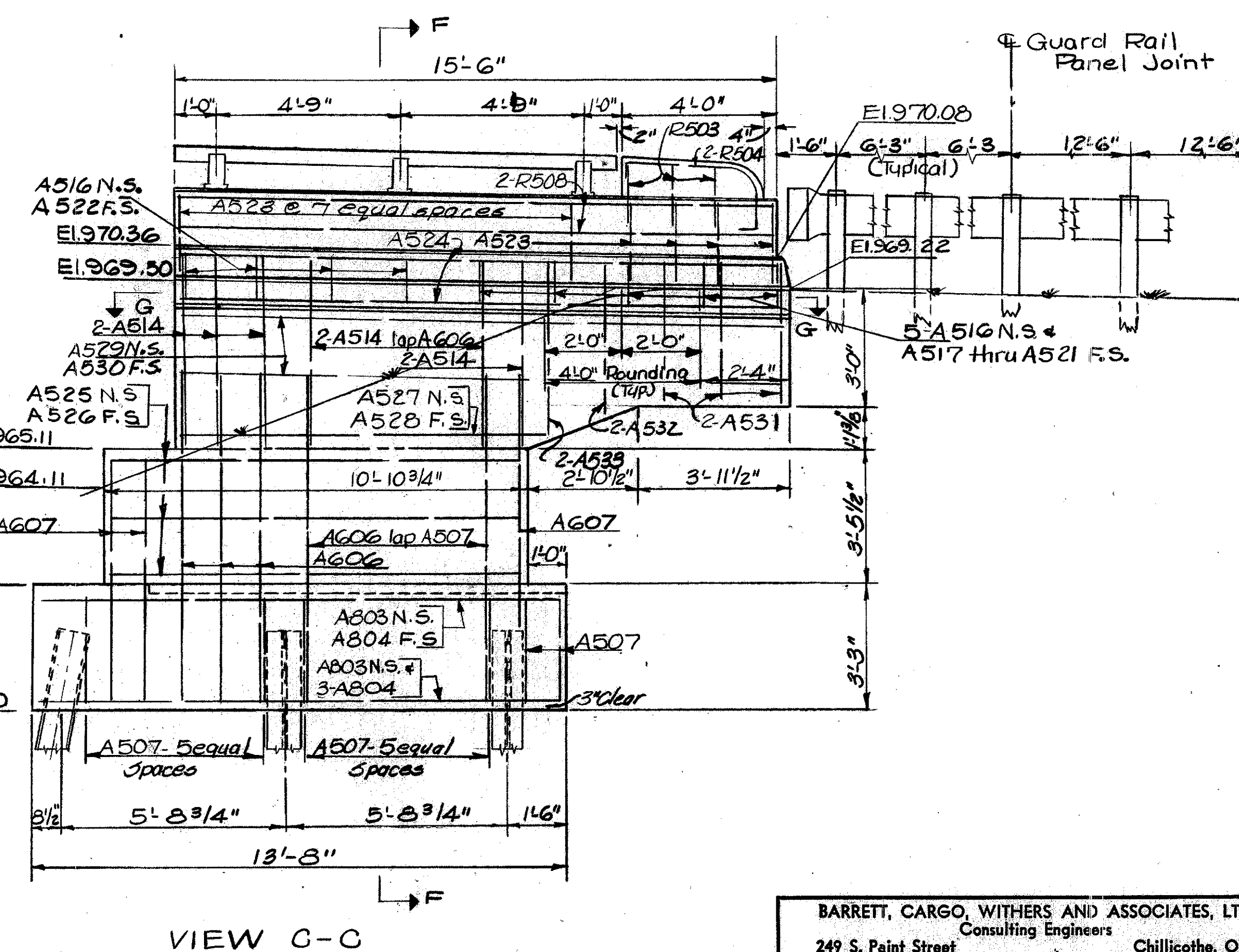
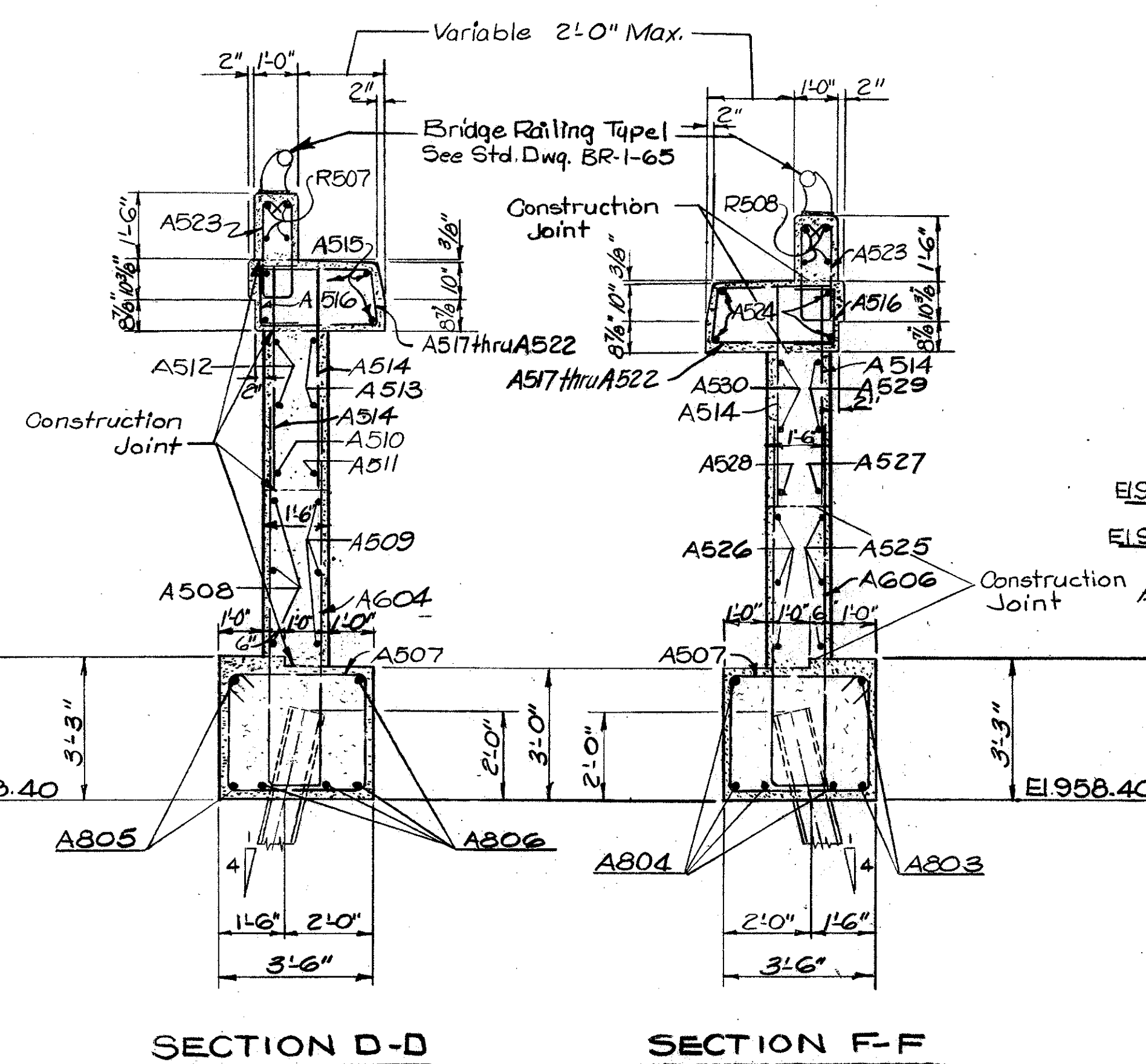
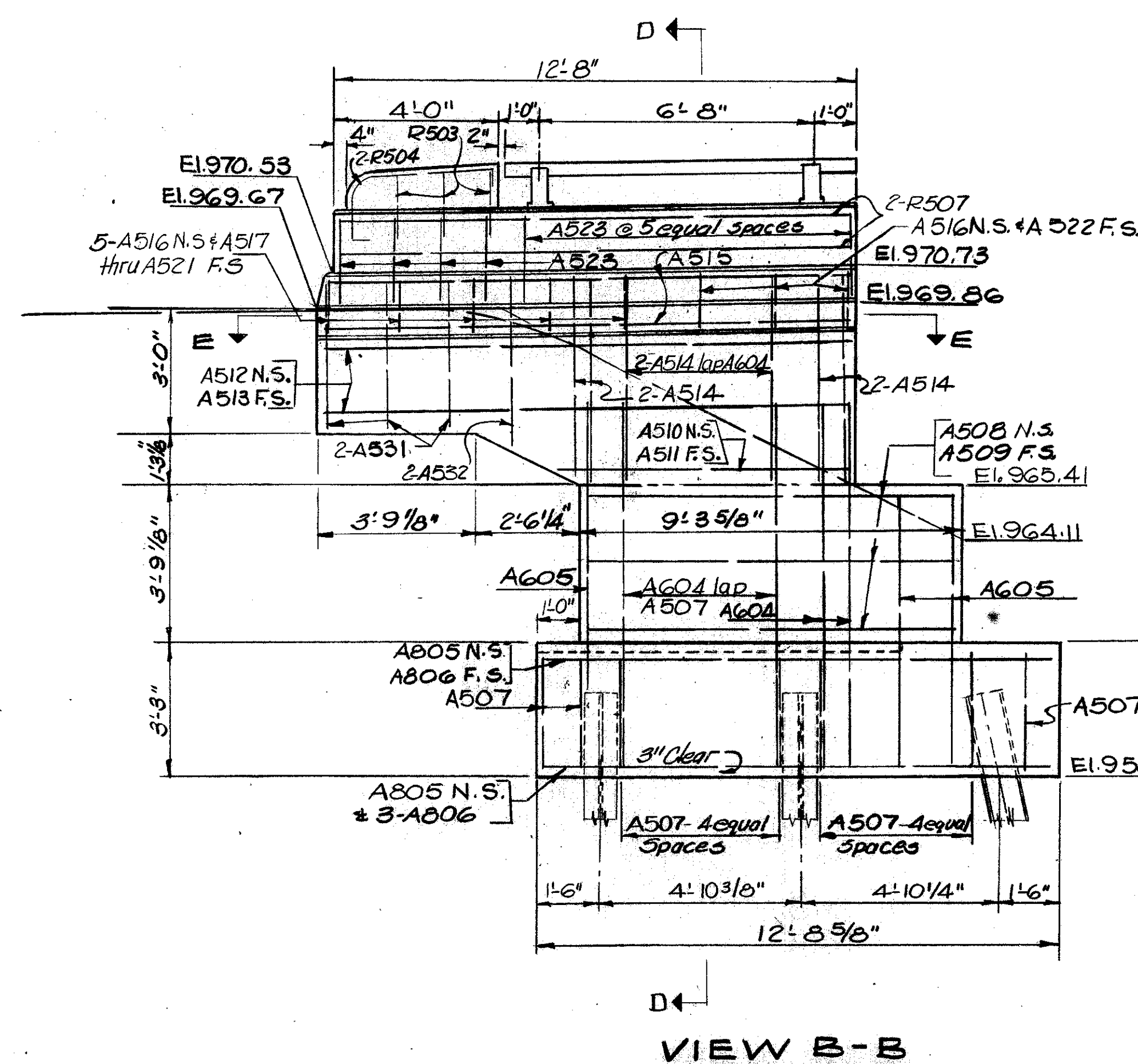
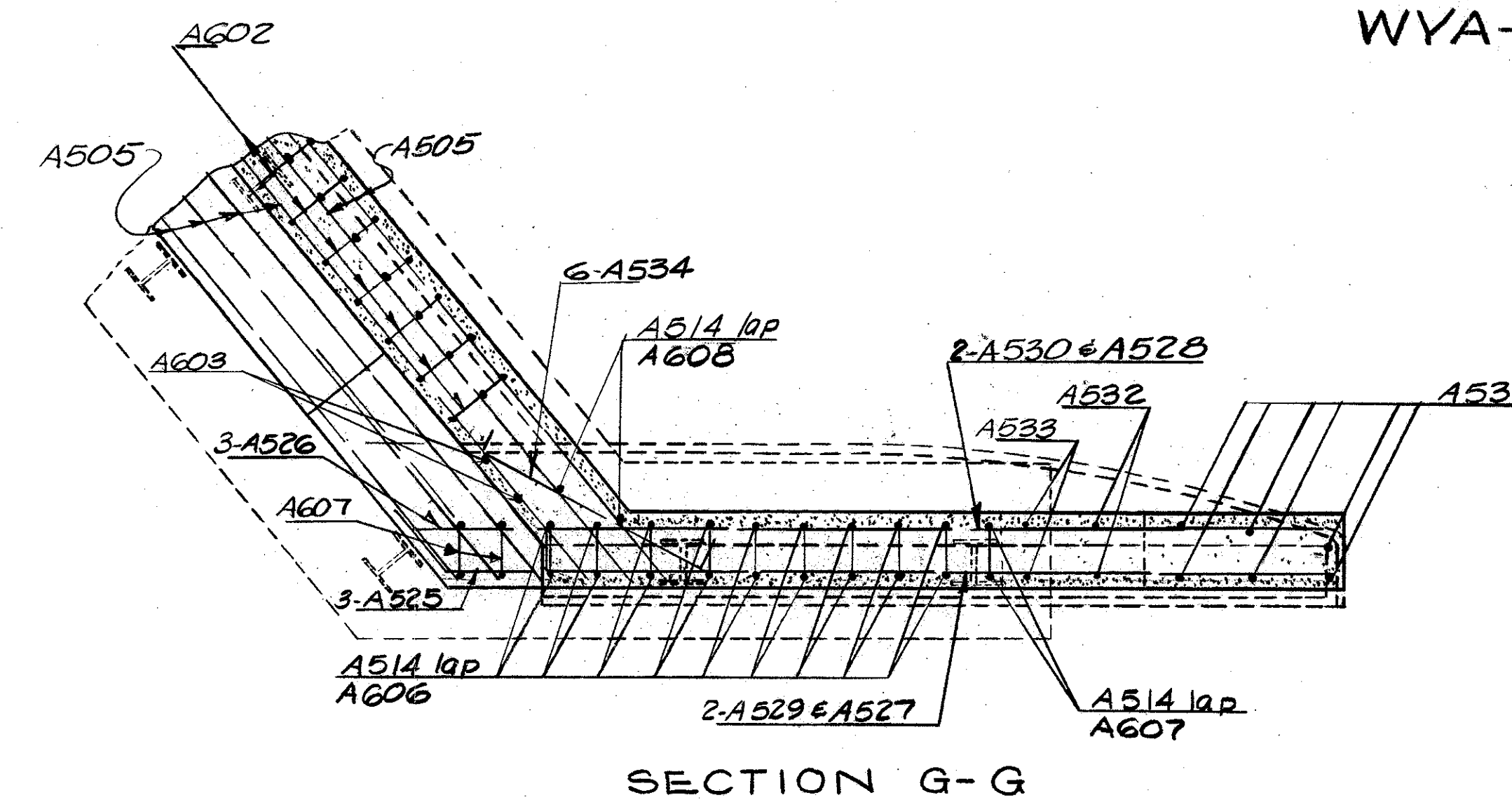
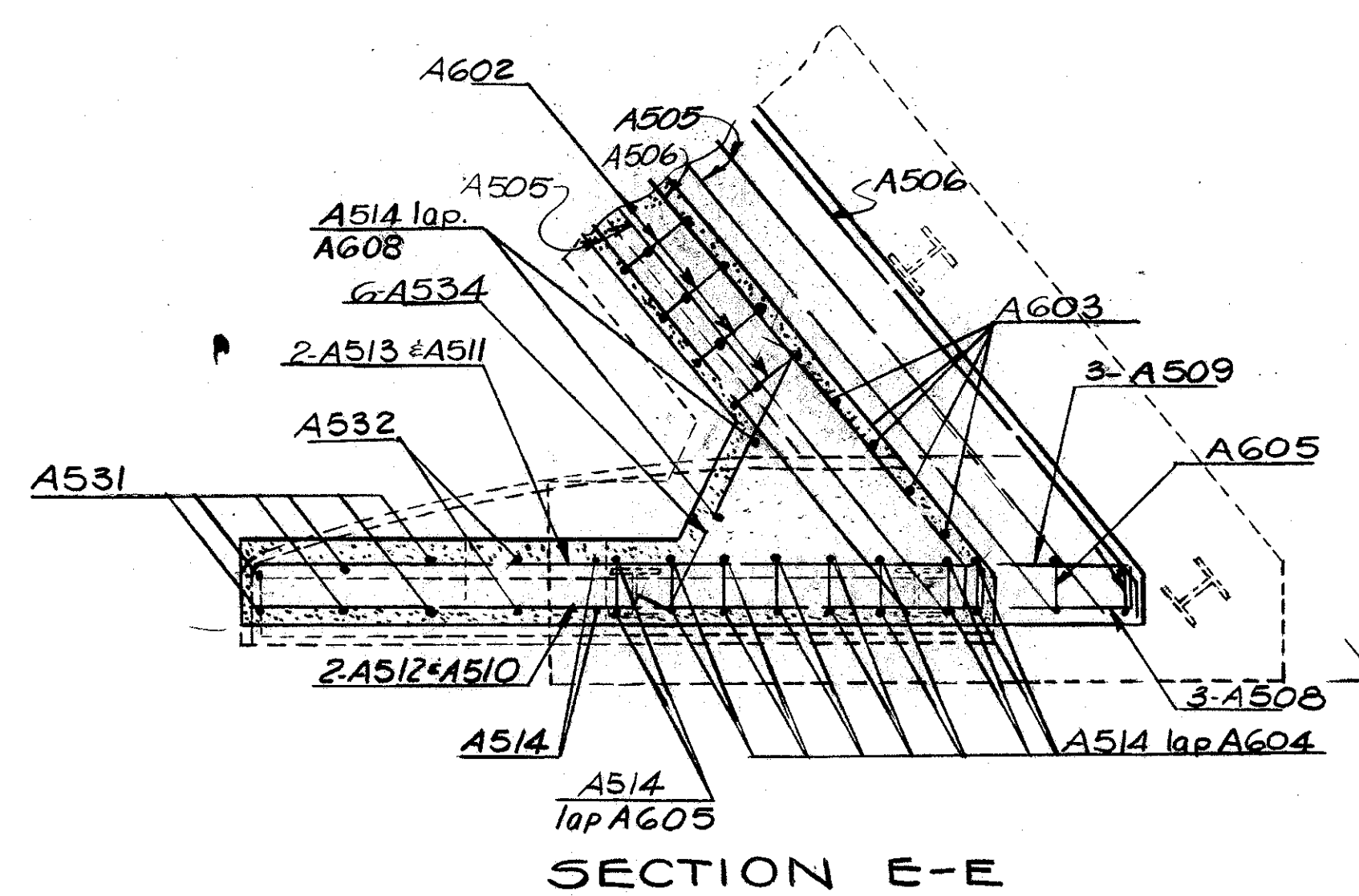
BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD.
249 S. Paint Street
Chillicothe, Ohio

ABUTMENT DETAILS
BRIDGE NO. MAR-23-16 93
U.S.R.23 UNDER COUNTY ROAD 26
MARION COUNTY
STA. 891 + 63.86
U.S.R.23

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
F.H.S.	B.M.				8/25/66	

MAR-23-15.67
WYA-23-0.00

Note: For additional details of Railing and End Post see Standard Drawing BR-1-65, Sheet 1.



LEGEND
N.S. indicates Near Side
F.S. indicates Far Side

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Consulting Engineers
249 S. Paint Street Chillicothe, Ohio

ABUTMENT DETAILS
BRIDGE NO. MAR-23-1693
U.S.R.23 UNDER COUNTY ROAD 26
MARION COUNTY U.S.R. 23
STA. 891+63.96

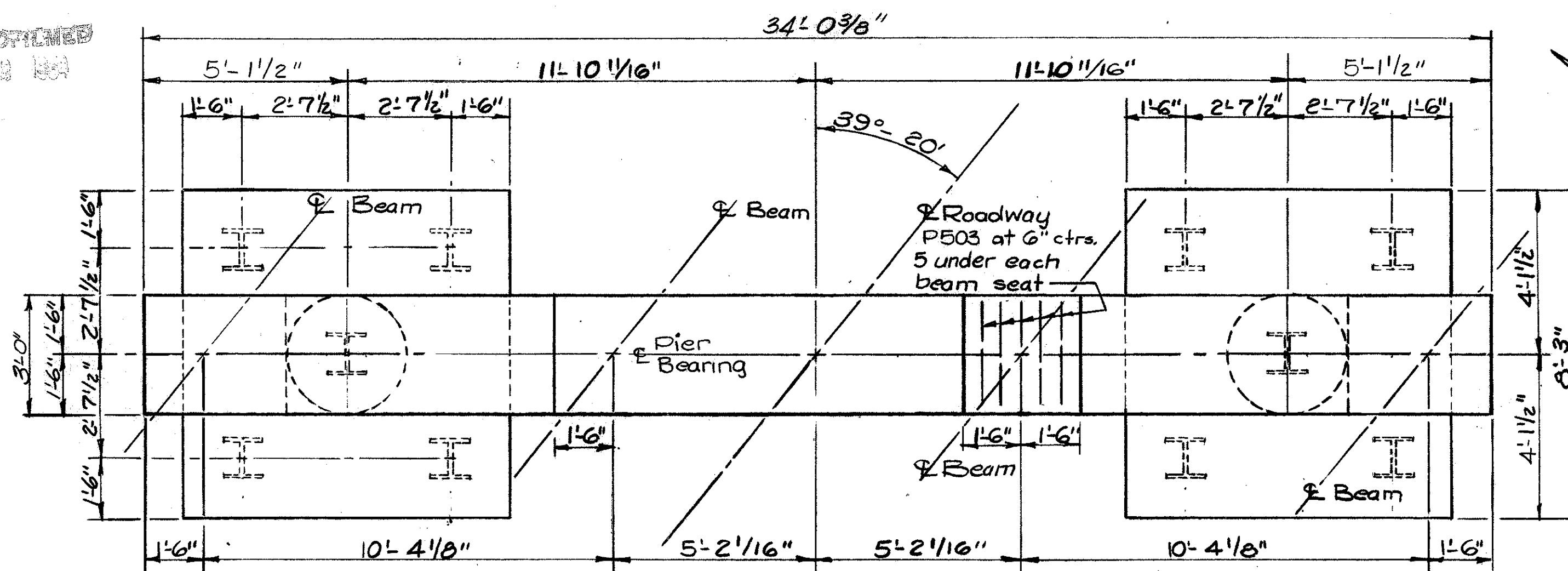
SCALE		DATE		DATE		DATE	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIEWED	DATE
FHS	FHS BIM		NK	NK	8/25/66		

MICROFILMED
JUL 2 1968

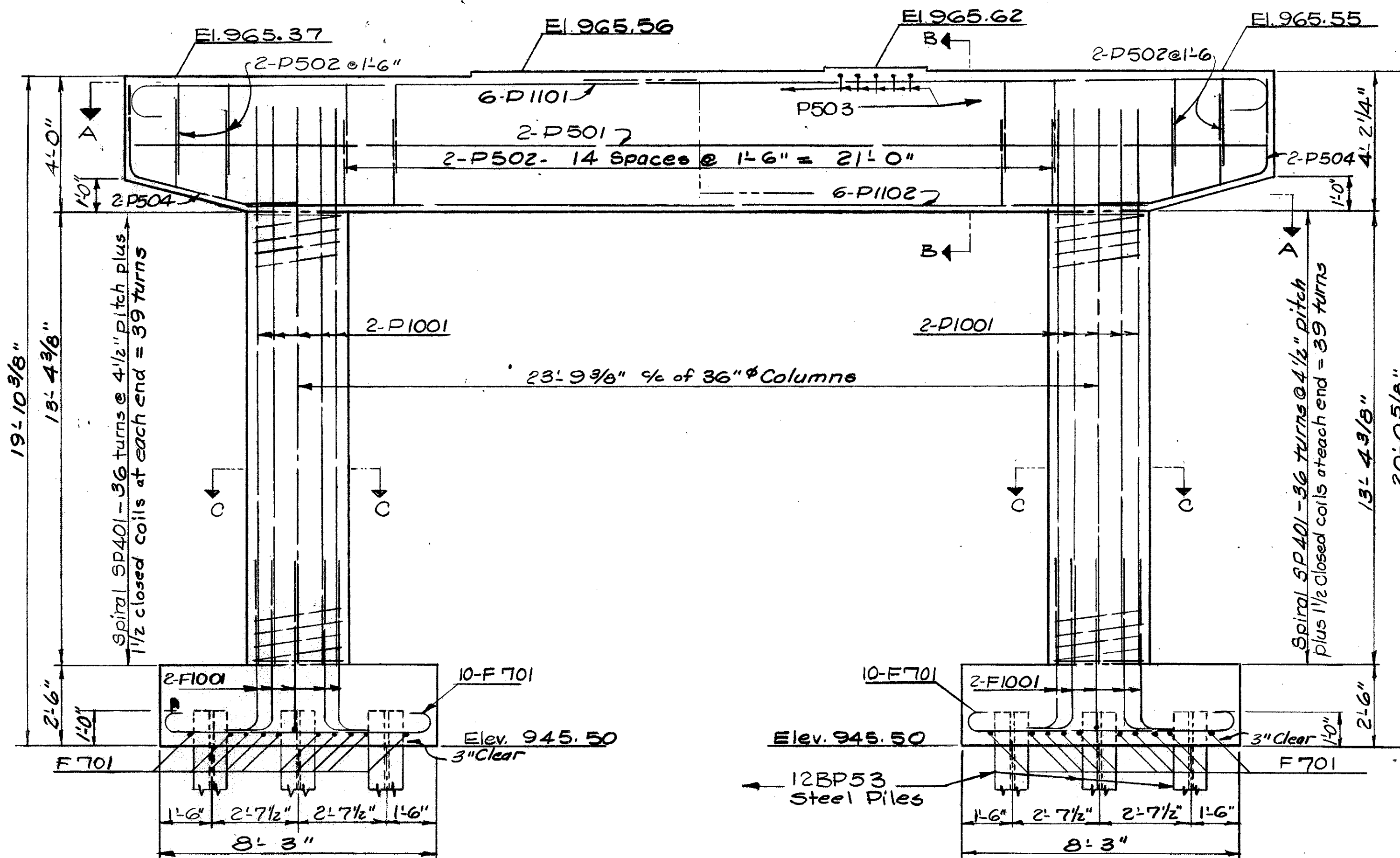
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

293-E
344

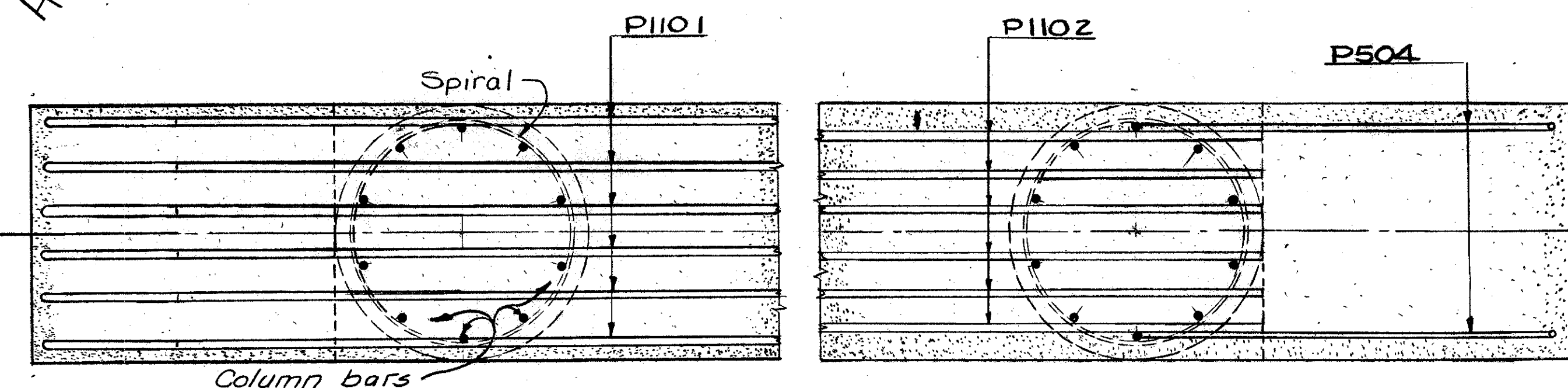
MAR-23-15.67
WYA-23-0.00



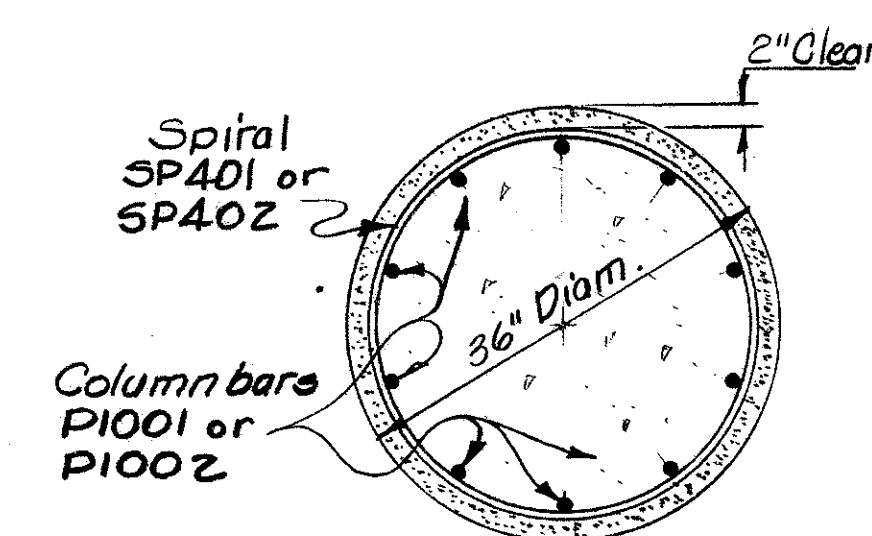
PLAN - PIER NO. 1



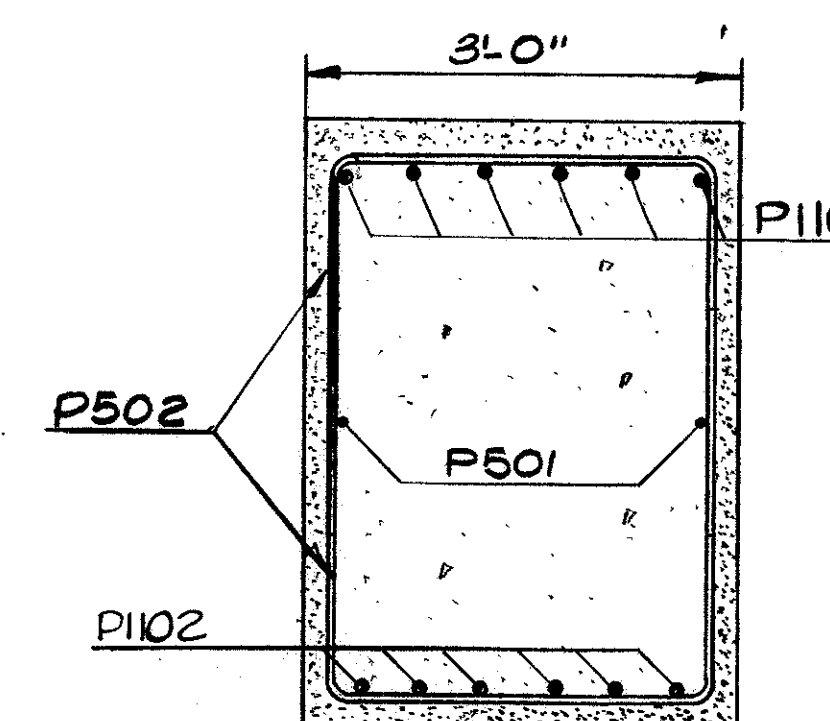
ELEVATION PIER NO. 1



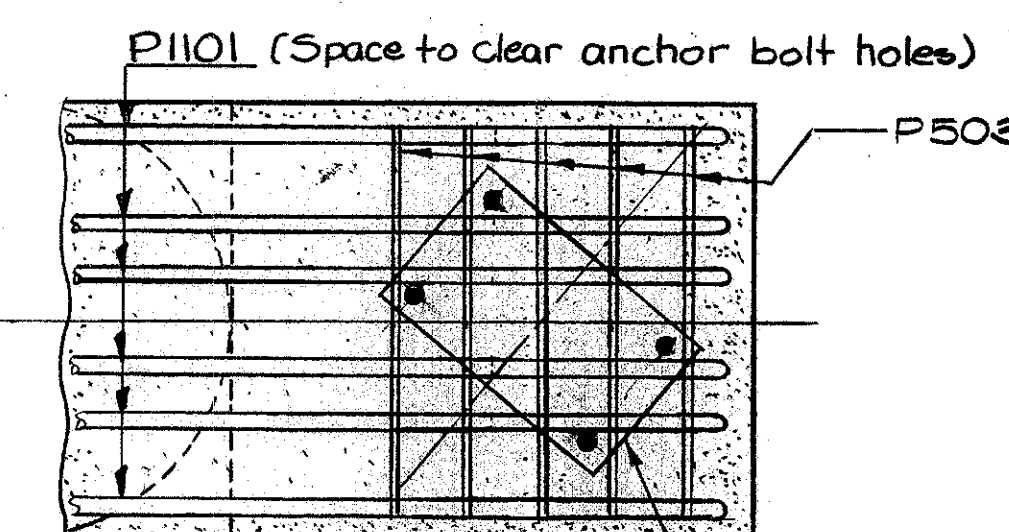
SECTION A-A



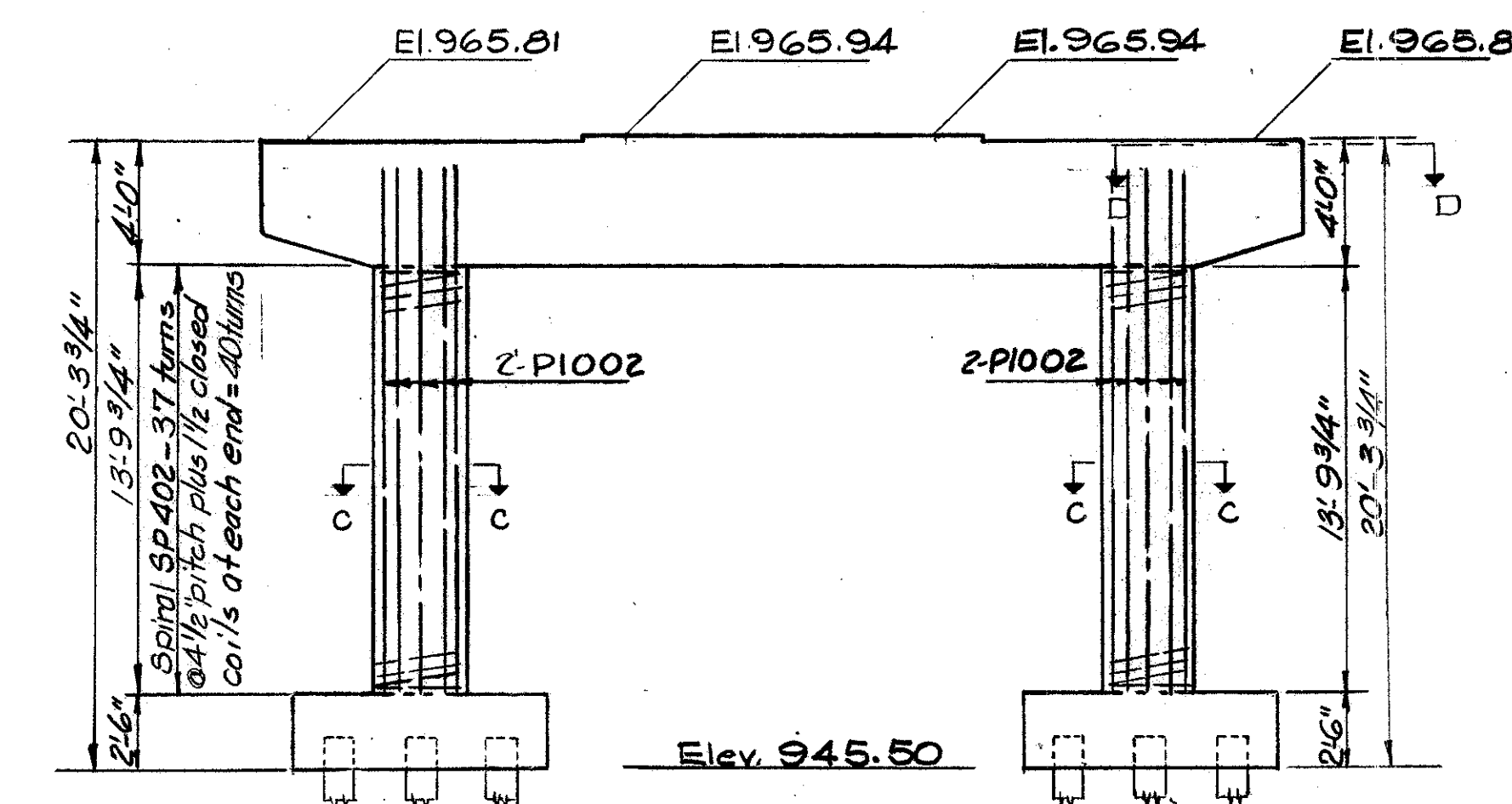
SECTION C-C



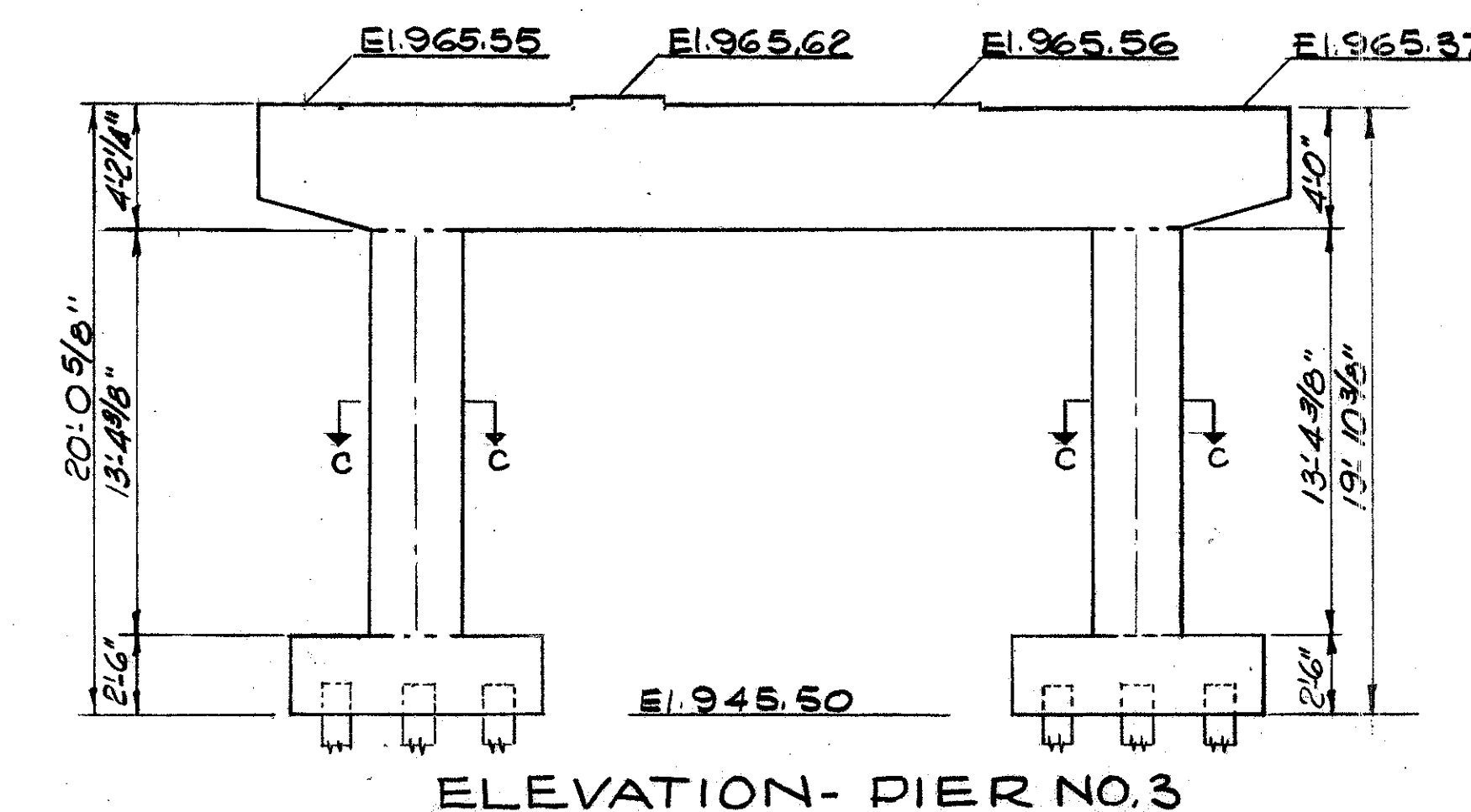
SECTION B-B



SECTION D-D



ELEVATION - PIER NO. 2



ELEVATION - PIER NO. 3

~ NOTES ~
All details, dimensions and reinforcing steel not shown on Pier No. 2 and 3 are identical to Pier No. 1.

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat on Pier No. 2, so as to avoid interference with the drilling of anchor bolt holes.

CONCRETE shall be Class 'C' for caps and columns and Class 'E' for footings

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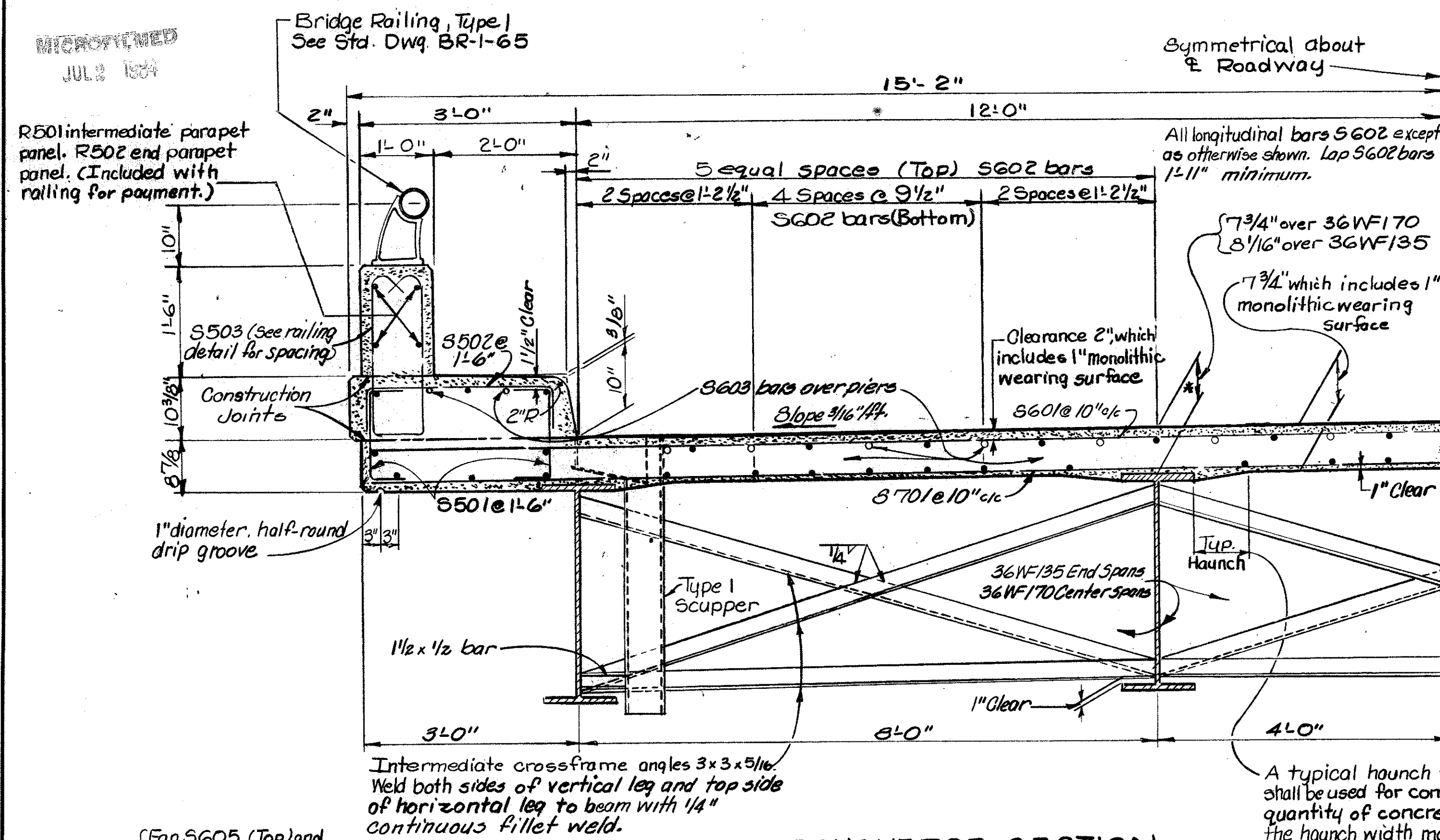
PIER DETAILS
BRIDGE NO. MAR-23-1693
U.S.R. 23 UNDER COUNTY ROAD 26
MARION COUNTY STA. 891+63.86 U.S.R. 23

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
F.H.S.	P.J.M.				8/15/66	

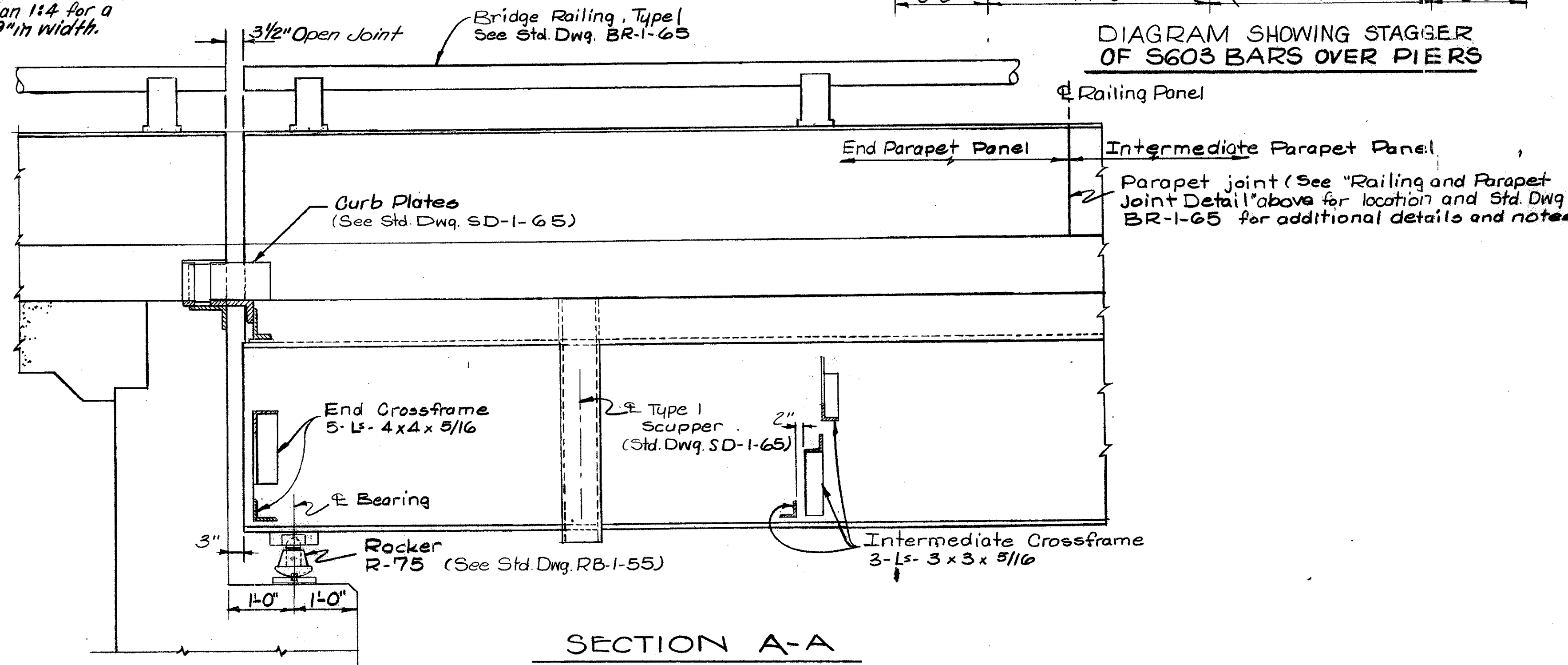
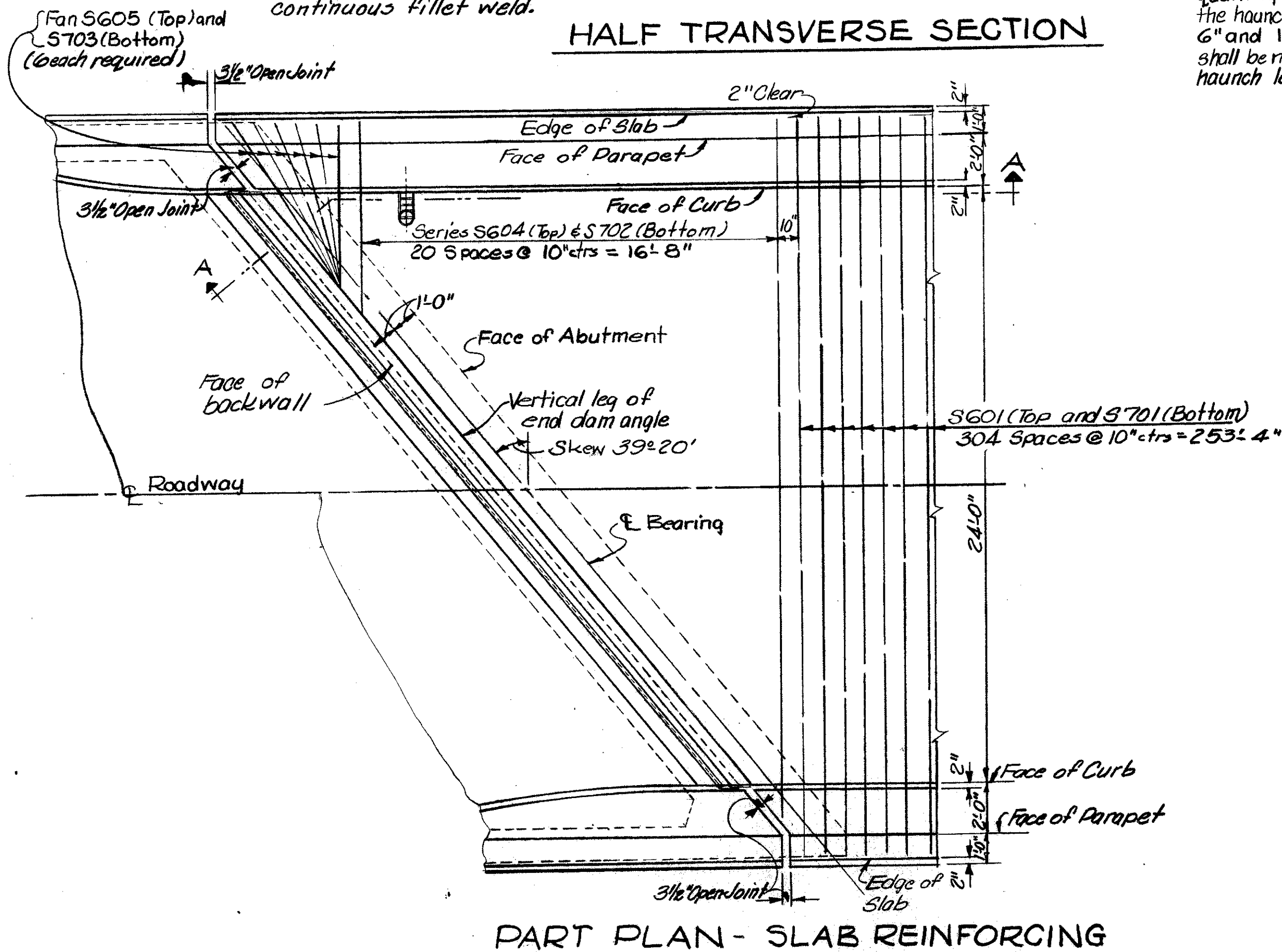
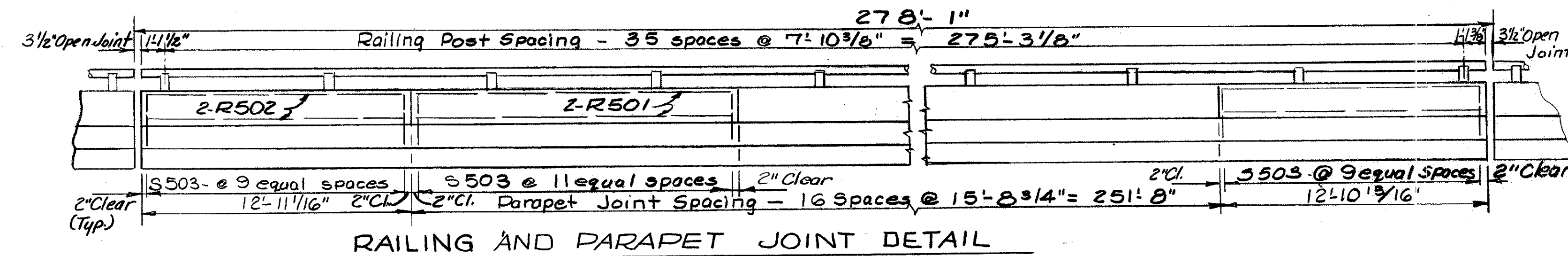
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WYA-23-0.00



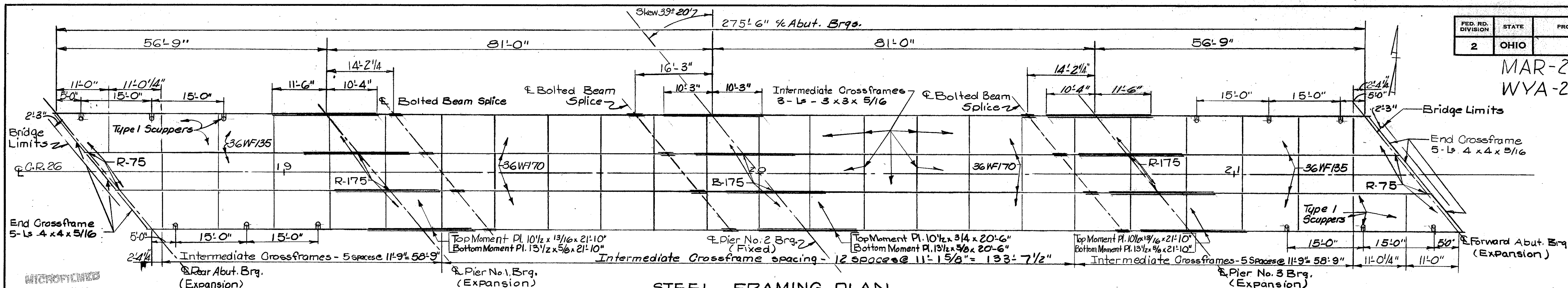
*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specifications.



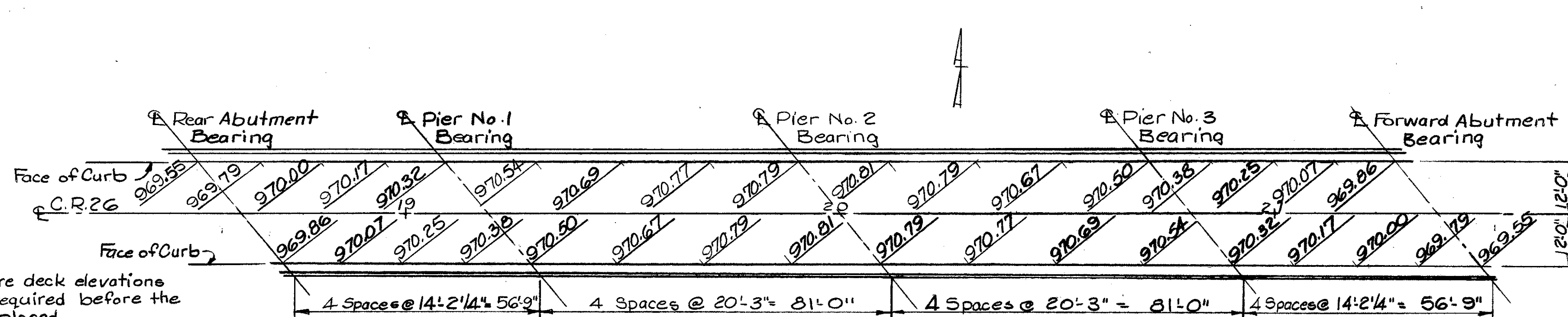
NOTE:
For additional superstructure details see Std. Dwg. SD-1-65

BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD. Consulting Engineers 249 S. Paint Street Chillicothe, Ohio						
SUPERSTRUCTURE DETAILS						
BRIDGE NO MAR-23-1693						
U.S.R. 23 UNDER COUNTY ROAD 26						
MARION COUNTY U.S.R. 23						
STA. 891+63.86						
SCALE	DATE	DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED
F.H.S.	P.J.M.					

MAR-23-15.67
WYA-23-0.00

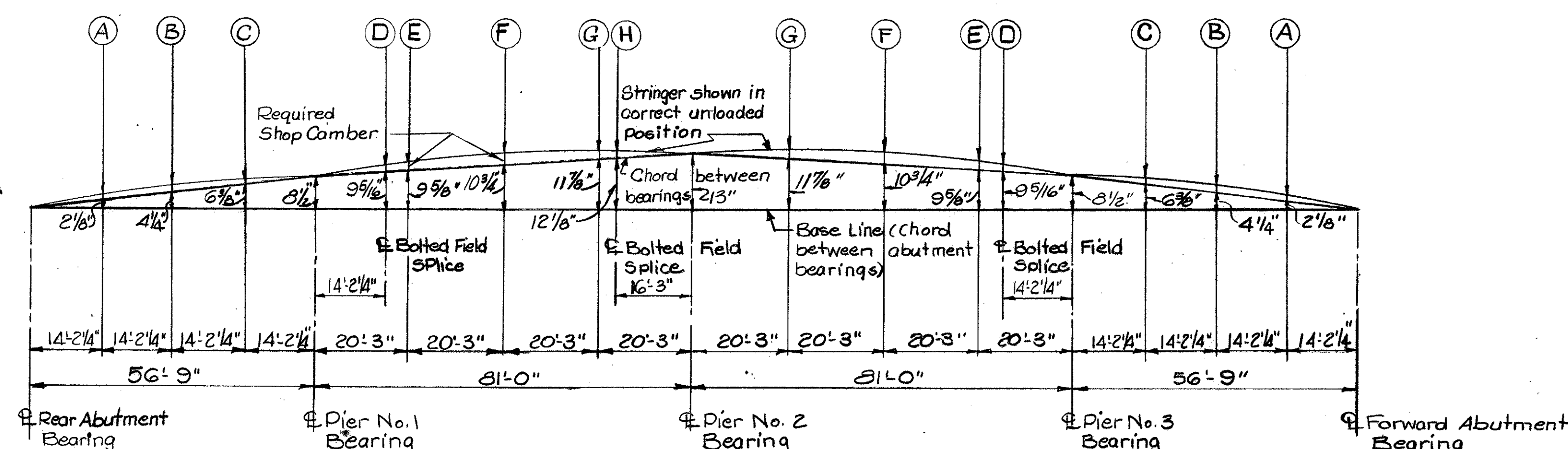


STEEL FRAMING PLAN

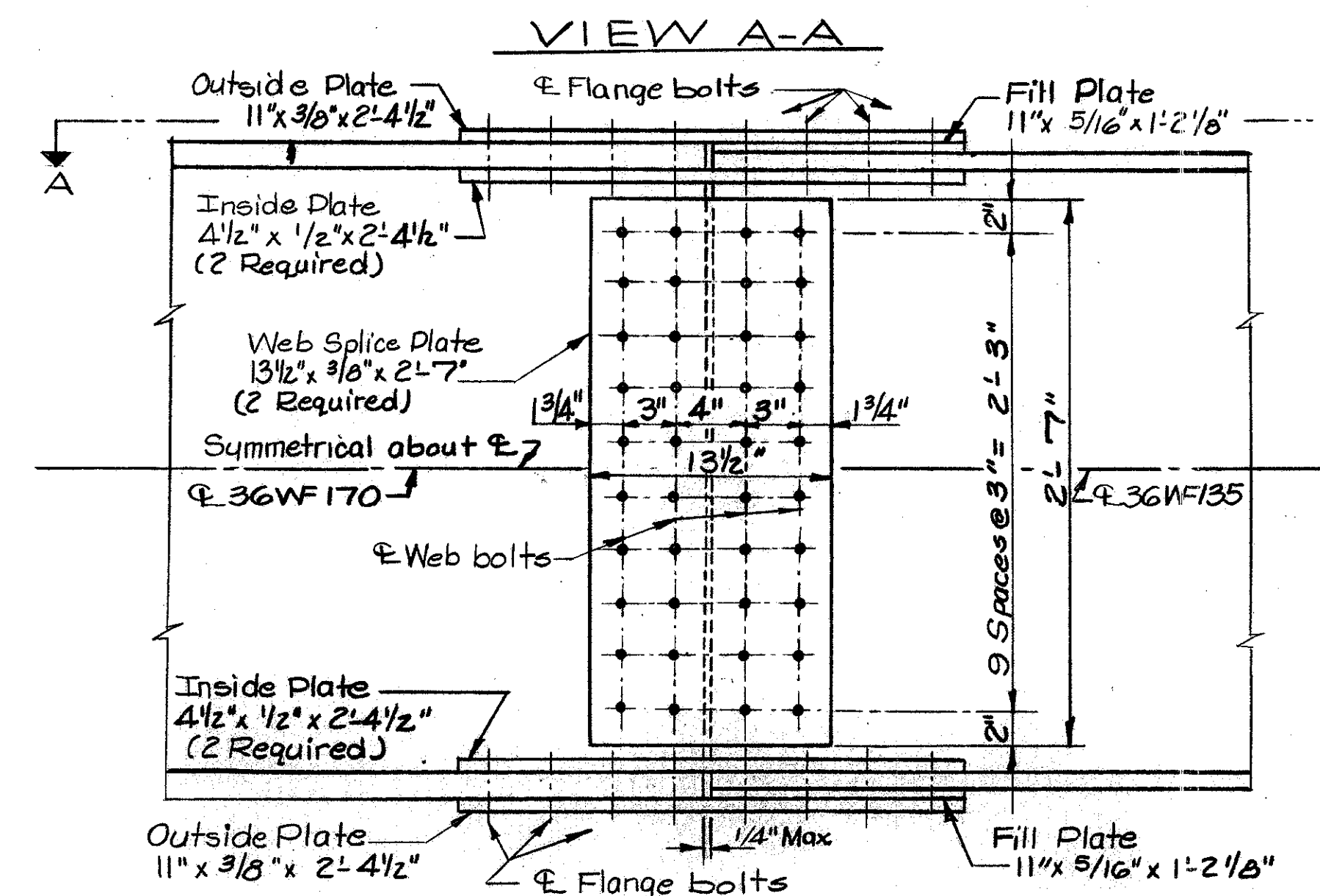
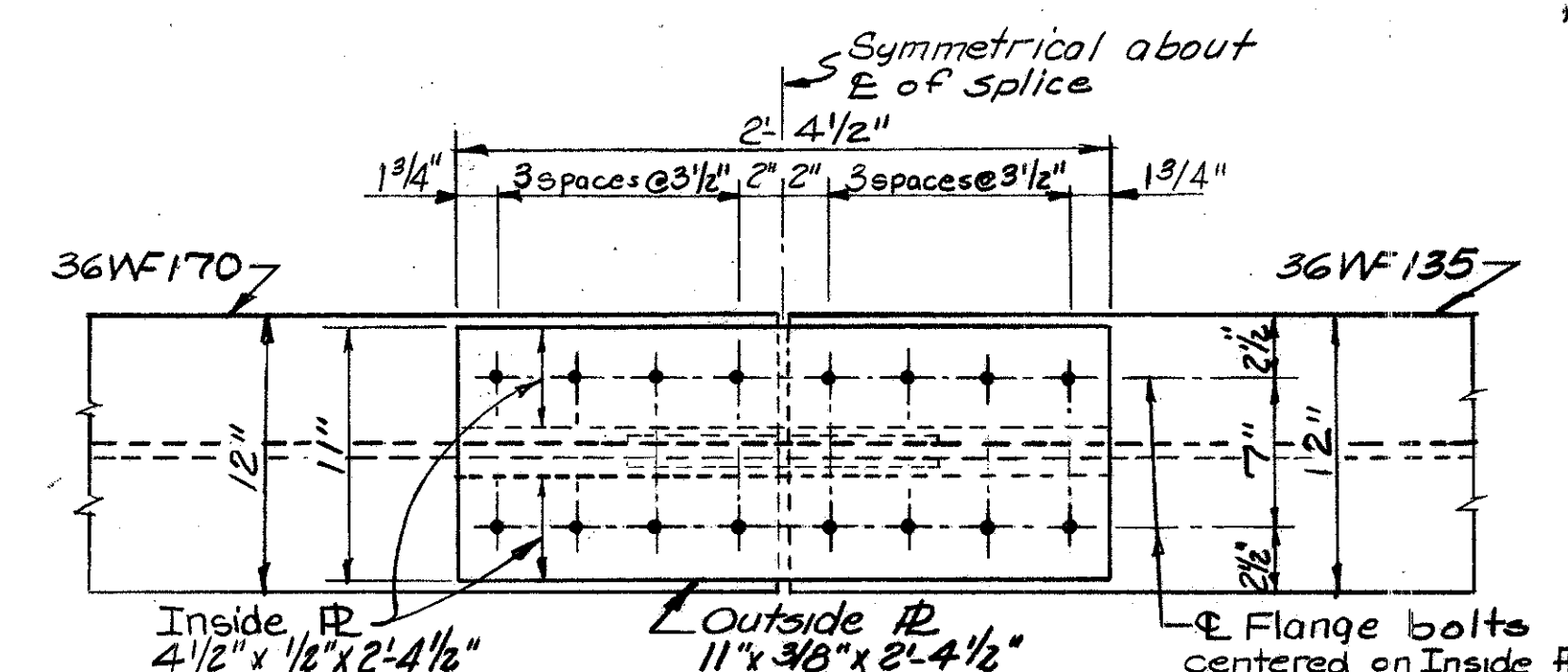


ELEVATION DIAGRAM

NOTE: Elevations shown are deck elevations at face of curb, required before the concrete deck is placed. Elevations are located at bearing points, quarter points and mid points of spans.



FIT-UP DIAGRAM



BOLTED BEAM SPLICE DETAIL

	DEFLECTION				AND				CAMBER			
	SPANS NO. 1 & 4				SPANS NO. 2 & 3				SPAN NO. 2			
	1/4 Point A	Center Point B	3/4 Point C	Splice Point D	1/4 Point E	Center Point F	3/4 Point G	Splice Point H				
Deflection Due to Weight of Steel	0.04"	0.04"	0.01"	0.05"	0.08"	0.13"	0.07"	0.05"				
Deflection Due to Remaining Dead Load	0.22"	0.23"	0.07"	0.23"	0.35"	0.56"	0.31"	0.22"				
Adjustment Required for Vertical Curve	0.41"	0.55"	0.41"	0.25"	0.34"	1.12"	0.84"	0.72"				
Required Shop Camber	1 1/16"	1 3/16"	1/2"	1 5/16"	1 1/4"	1 3/16"	1 1/4"	1"				

NOTE: For additional details and notes see Std. Dwg. SD-1-65. For bolted splice details 36WF170 beam to 36WF170 beam, (in 2nd span) see Std. Dwg. SD-1-65. For additional notes see "GENERAL NOTES".

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249 S. Paint Street
Chillicothe, Ohio

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAR-23-1693
U.S.R. 23 UNDERCOUNTY ROAD 26
MARION COUNTY
STA. 891+63.86 U.S.R. 23

SCALE: DATE: DESIGNED: DRAWN: TRACED: CHECKED: REVISED: DATE: REVISED:

NOTED
JUL 3 1967

REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

MAR-23-15.67
WYA-23-0.00

NOTES

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 number. For example, A501 is a No. 5 size bar and A1001 is a No. 10 size.

RAILING STEEL in the parapet wall is included in Item 517. Railing for payment.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown is the "length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1 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 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

ONE ABUTMENT

Bar Number	Number Required	Length	Shape	Weight
A801	2	20'-11"		112
A802	12	21'-9"		697
A803	2	15'-10"		85
A804	4	14'-0"		150
A805	2	13'-11"		74
A806	4	11'-3"		120
A807	4	5'-10"		62

A601	26	13'-11"		543
A602	29	13'-10"		603
A603	6	6'-2"		56
A604	7	18'-6"		195
A605	3	14'-4"		65
A606	9	17'-8"		239
A607	3	13'-8"		62
A608	4	9'-1"		55

A501	26	8'-4"		226
A502	26	6'-9"		183
A503	25	6'-4"		165
A504	24	4'-5"		111

A505	27	20'-0"		563
A506	7	19'-7"		143
A507	27	11'-11"		336
A508	3	9'-6"		30
A509	3	8'-11"		28
A510	1	7'-8"		8
A511	1	7'-0"		7

A512	2	13'-2"		27
A513	2	12'-7"		26
A514	42	5'-1"		223
A515	2	24'-2"		50

A516	17	2'-8"		47
A517	2	2'-10"		6
A518	2	4'-0"		8
A519	2	5'-0"		10
A520	2	5'-8"		12
A521	2	6'-0"		13
A522	7	6'-2"		45

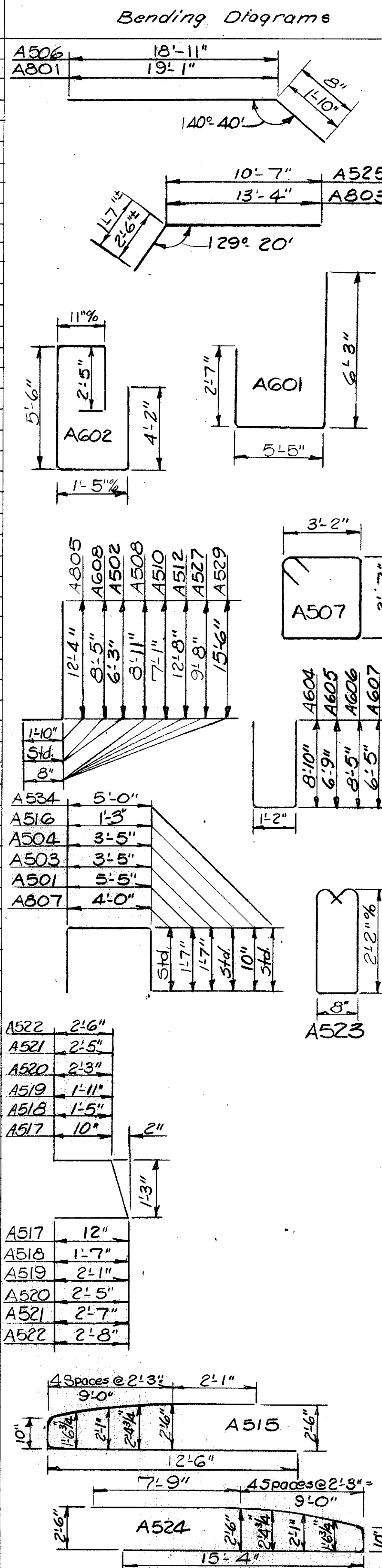
A523	22	5'-7"		128
A524	2	32'-8"		68
A525	3	12'-2"		38
A526	3	11'-6"		36

A527	1	10'-2"		11
A528	1	9'-11"		10
A529	2	16'-0"		33
A530	2	15'-9"		33

A531	12	3'-6"		44
A532	4	3'-10"		16
A533	2	4'-6"		9
A534	12	6'-0"		75

TOTAL ONE ABUTMENT 5,886

TOTAL TWO ABUTMENTS 11,772



THREE PIERS

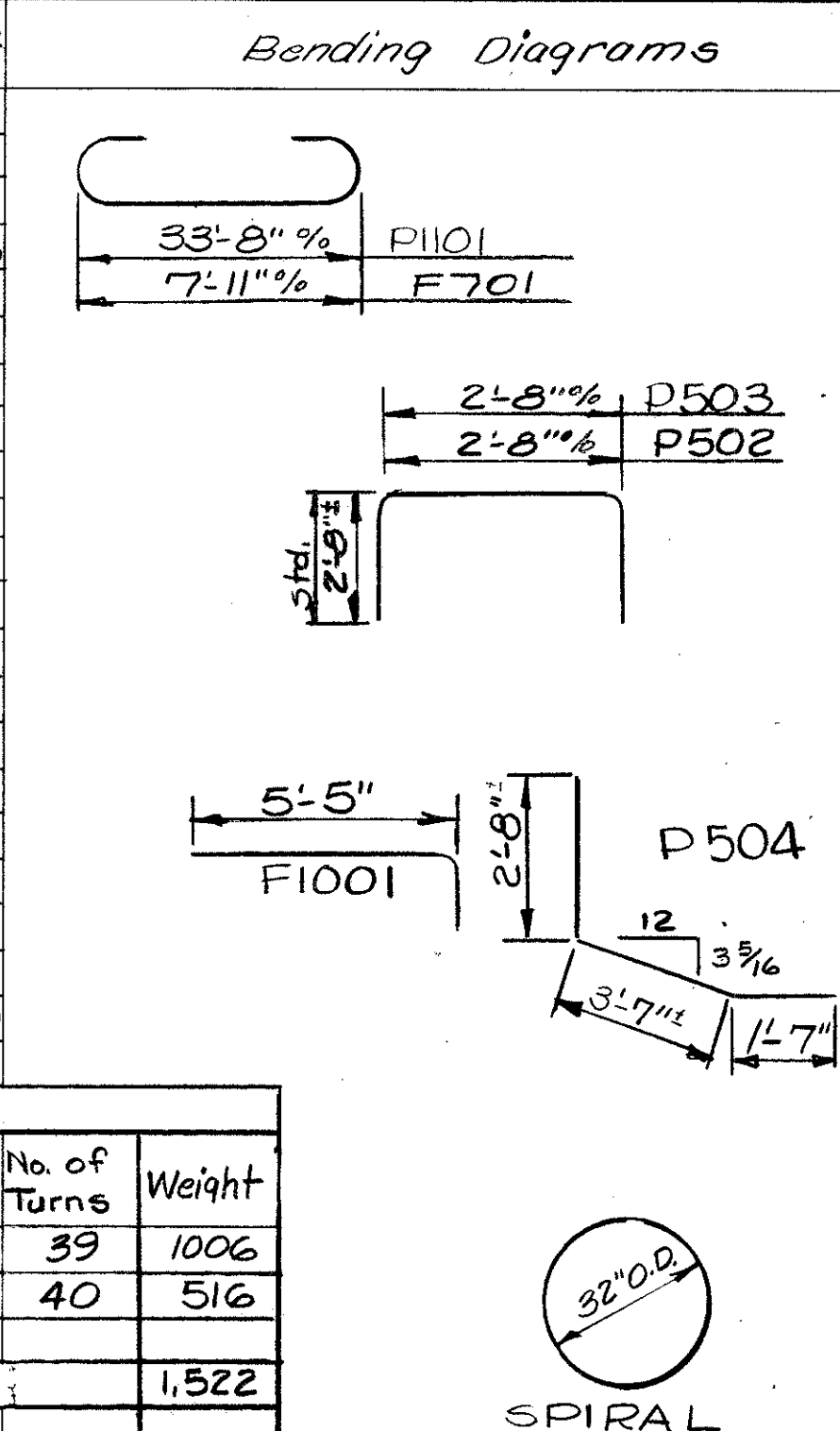
P1101	18	36'-10"		3,523
P1102	18	26'-3"		2,558
P1001	40	16'-6"		2,840
P1002	20	17'-0"		1,463

P501	6	33'-8"		211
P502	114	7'-9"		921
P503	60	3'-8"		229
P504	12	7'-8"		96

F1001	60	6'-6"		1,678
F701	120	9'-7"		2,351

SUB-TOTAL THREE PIERS 15,870

Bar Number	Number Required	Core Diam.	Length	Pitch	No. of Turns	Weight
SP401	4	32"	13'-4 3/8"	4 1/2"	39	1006
SP402	2	32"	13'-9 3/4"	4 1/2"	40	516
TOTAL SPIRAL						1,522
TOTAL THREE PIERS						17,392



SUPERSTRUCTURE

S701	305	29'-8"		18,495	Incr.
Series S702	2 Series 21 bars to 28'-0"	7'-8"		1,531	1'-0 3/16"
S703	12	6'-8"		164	

S601	305	29'-8"		13,591	
S602	408	36'-4"		22,266	
S603	57	32'-6"		2,782	Incr.
Series S604	25 Series 21 bars to 28'-0"	7'-8"		1,125	1'-0 3/16"
S605	12	6'-8"		120	

S501	744	2'-3"		1,746	
S502	372	3'-6"		1,358	
S503	424	5'-7"		2,469	

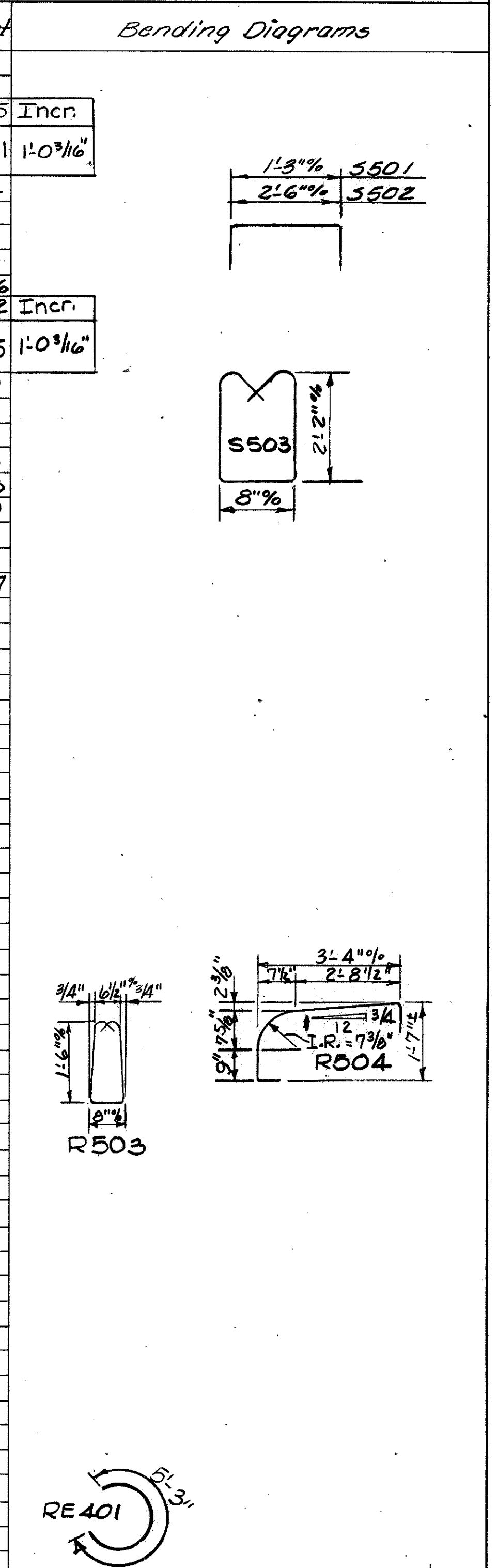
TOTAL SUPERSTRUCTURE 65,647

RAILING STEEL

R501	128	15'-4"		
R502	16	12'-7"		
R503	12	4'-2"		
R504	8	5'-4"		
R505	None			
R506	None			
R507	8	12'-4"		
R508	8	15'-2"		

REPLACEMENT STEEL

RE1101	1	7'-6"		
RE1001	1	7'-2"		
RE801	1	6'-6"		
RE701	2	6'-2"		
RE601	3	5'-11"		
RE501	1	5'-7"		
RE401	1	5'-3"		



BARRETT, GARGO, WITHERS AND ASSOCIATES, LTD.
Consulting Engineers
245-249 S. Paint Street Chillicothe, Ohio

REINFORCING STEEL LIST
BRIDGE NO. MAR-23-1693
U.S.R.23 UNDERCOUNTY ROAD 26
MARION COUNTY U.S.R.23
STA. 891+63.86

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
F.H.S.	P.J.M.				8/25/66	