

MICROFILMED  
JUL 14 1936

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
**CLA-40-5.62**  
CLARK COUNTY  
MAD RIVER & SPRINGFIELD TOWNSHIPS

I-IG-70-2 (3) 46

FED. RD. DIVISION	STATE	PROJECT	1
2	OHIO	I-IG-70-2(3)46	582

CLARK COUNTY  
CLA-40-5.62

PROPERTY LINE SYMBOLS

PROPERTY LINE	---
EXISTING RIGHT OF WAY	—R/W7
PROPOSED RIGHT OF WAY	—LA7
PROPOSED LIMITED ACCESS	—LA & R/W7
PROPOSED LIMITED ACCESS RIGHT OF WAY	---

CONVENTIONAL SIGNS

COUNTY LINE	---
TOWNSHIP LINE	---
SECTION LINE	---
CORPORATION LINE	---
CENTER LINE	---
FENCE LINE	—x—x—x—
POLE LINE	—o—o—o—
RAILROAD	—x—x—x—
GUARD RAIL	—x—x—x—
DRAIN PIPE	—x—x—x—
TREES AND STUMPS	—x—x—x—
WORK LIMITS	—x—x—x—

INDEX OF SHEETS

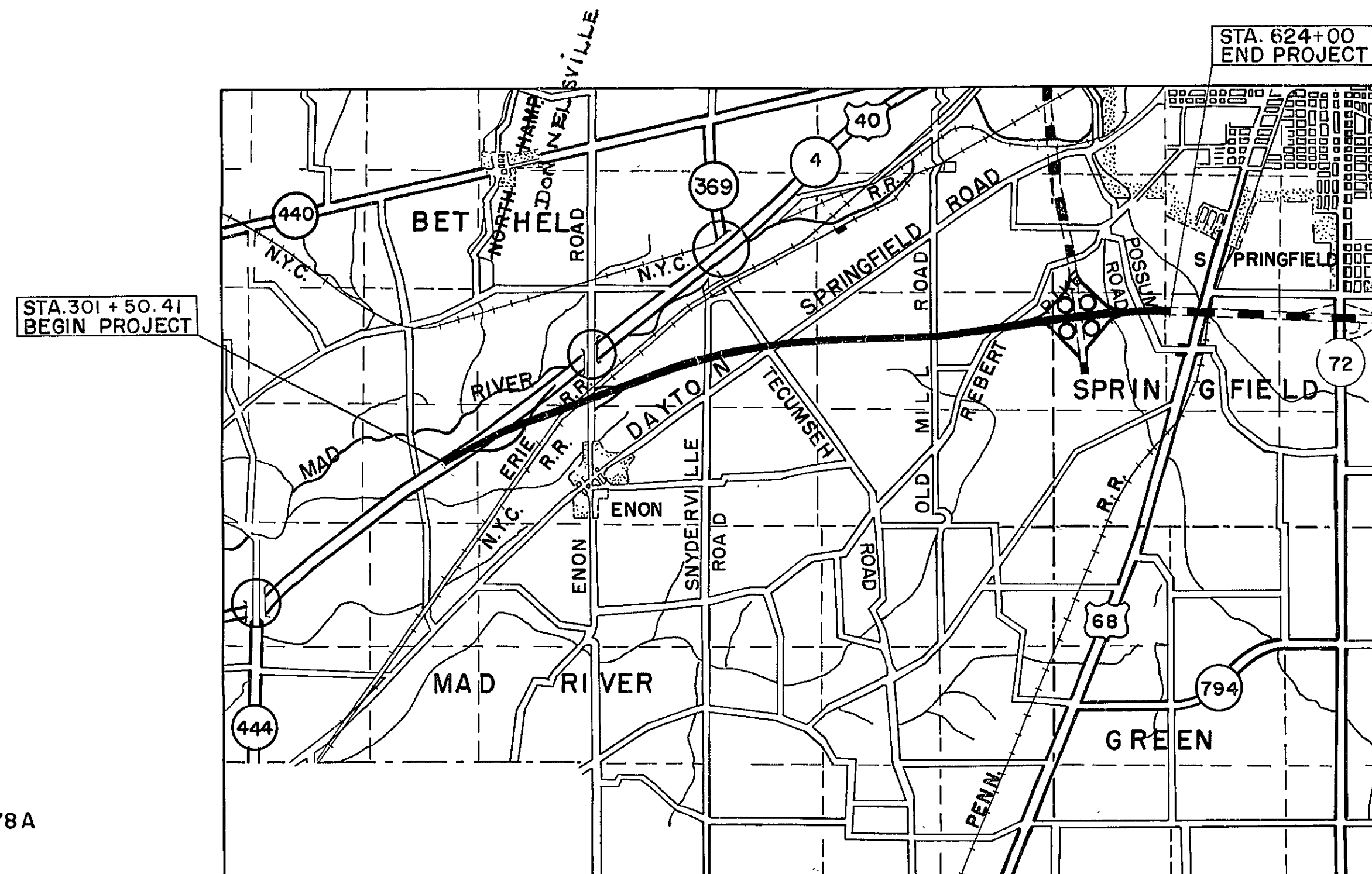
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INDEX OF SHEETS CONT.

SHT. NOS. 446-452, 454, 531-533 WERE DELETED FROM THE PLANS.



DELIVERY POINT ENON RD. SIDING AT BEARD'S ELEVATOR  
AVERAGE HAUL FROM SIDING - 2.58 MILES  
ENON R.R. NY C R.R. DT & I R.R.

LOCATION MAP



PORTION TO BE IMPROVED STATE HIGHWAYS  
OTHER ROADS

PORTION TO BE IMPROVED UNDER SEPARATE CONTRACT SCALES

PLAN 1" = 50'  
PROFILE - HORIZONTAL 1" = 50'  
PROFILE - VERTICAL 1" = 10'  
CROSS SECTIONS 1" = 10'

Sheet Nos. 543, 557, 558 & 574 revised  
and Sh. Nos. 5435, 5575, 5585 & 5745 Added 4-12-67  
Sheets 484 & 486 revised 8-19-65  
Sheet No. 467 revised 10-18-65  
Sheet Nos. 456 & 458 revised 11-18-65  
Sheet No. 512 revised 1-4-66  
Sheet No. 527 revised 4-18-66  
Sheet No. 527-A added 4-18-66

SUPPLEMENTAL SPECIFICATIONS

L-120 REV.	1-2-62	S-101	7-12-62
CE-101.04	5-22-56	S-307	10-1-64
I-125 REV.	6-26-61	T-335	10-28-63
I-127 REV.	1-15-62		
I-212 REV.	6-23-61	M-206.7	9-28-62
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M-106.6(d) REV.	4-1-58	M-106.11	1-26-61

STANDARD DRAWINGS

FAC I-1	2-25-64	I-14-G	1-22-52	S P-53	6-30-61	L-J NO.1	7-1-55	I-8 C.B. NO. 2-2A & B	2-1-63
FAC I-2	2-25-64	I-15 NO.1	11-15-60	HW-C	7-15-57	RT-1	9-1-64	L-1	4-1-50
B-T-70-71	11-15-60	I-15 NO.5-A	2-1-63	HW-E	2-1-63	T-35	1-2-56	I-8 M.H. NO.2	2-1-63
B-T-71 R	3-2-53	I-15 NO.2-A	8-17-60	HW-A & B	7-15-57	T-J	9-12-60	AS-1-54	7-5-62
DR-1	1-3-55	I-15 NO.6	2-1-63			I-8 C.B. NO.5	2-1-63	SD-2-64	11-25-54
G-707	4-1-64	F-2	2-1-63	I-21-23	8-1-56	I-8 C.B. NO.6	2-1-63	SD-1-63 (SHTS. 2, 3, 4)	11-12-63
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I-12	2-1-63			L-3-A	4-1-50	I-8 C.B. NO.8	2-1-63	FSB-1-62	1-15-63

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER

DATE

FILE NO. CLA-40-5.62 CLARK COUNTY  
DATE OF LETTING 196  
CONTRACT NO.

PREPARED AND RECOMMENDED BY  
SHAFFER, PARRETT AND ASSOCIATES  
CONSULTING ENGINEERS  
MANSFIELD OHIO WOOSTER

1963 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

THE RIGHT-OF-WAY FOR THIS IMPROVEMENT WILL BE PROVIDED BY THE STATE OF OHIO.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THESE PLANS AND ESTIMATES.

APPROVED: *Oliver M. Leggett*  
DATE: May 28 1964 DIVISION DEPUTY DIRECTOR

APPROVED: *C. H. Anderson*  
DATE: 5-24-65 ENGINEER OF BRIDGES

APPROVED: *R. V. Dickton*  
DATE: 5-26-65 ENGINEER OF LOCATION & DESIGN

APPROVED: *P. E. Shultz*  
DATE: 5-26-65 DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED: *T. H. Borne*  
DATE: 6-4-65 DEPUTY DIRECTOR OF RIGHT-OF-WAY

APPROVED: *E. W. Wilson*  
DATE: 6-4-65 DEPUTY DIRECTOR OF PLANNING & PROGRAMMING

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_ FIRST ASSISTANT DIRECTOR

APPROVED: *J. E. Washburn*  
DATE: 6/4/65 DIRECTOR OF HIGHWAYS

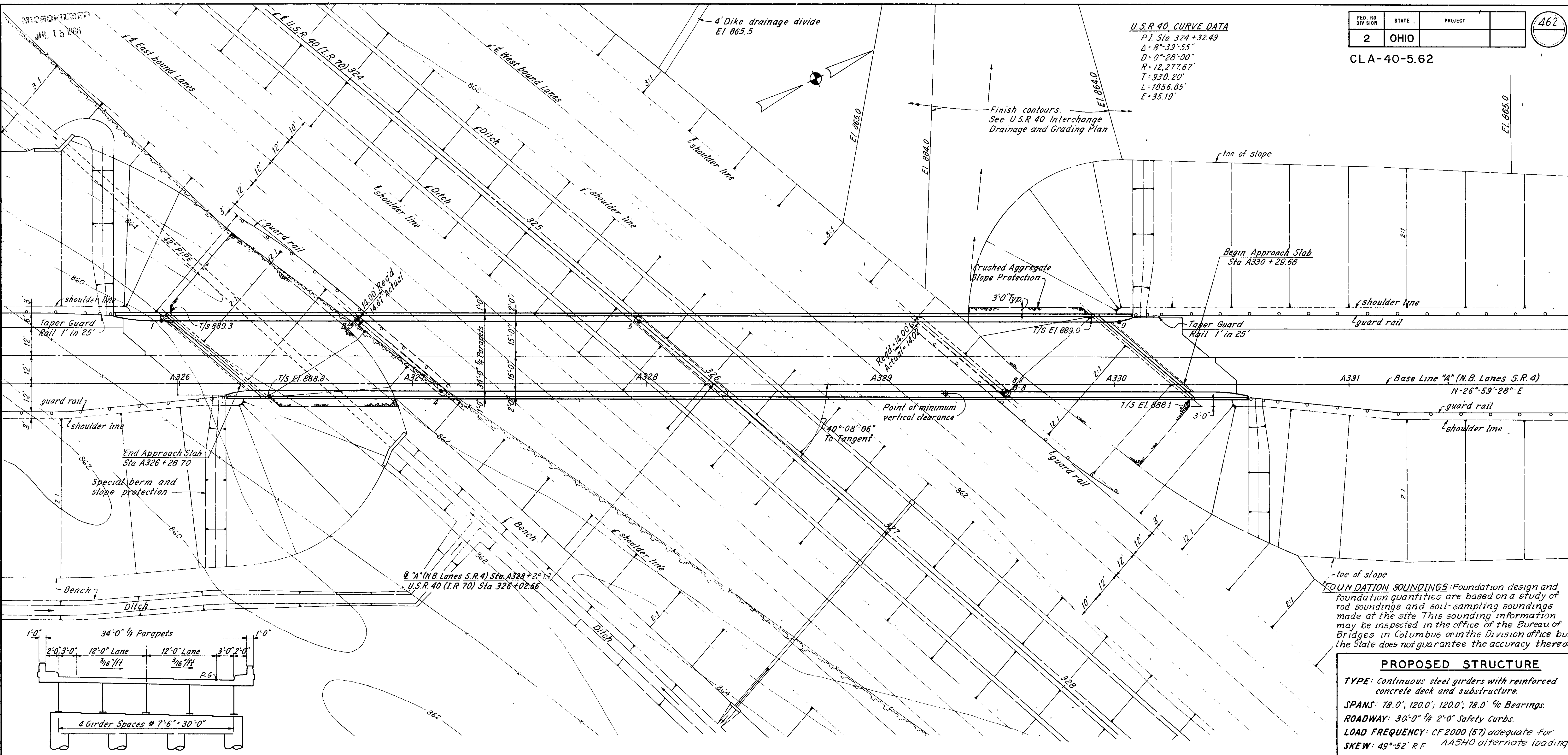
SHEET 522 Revised 2-2-66

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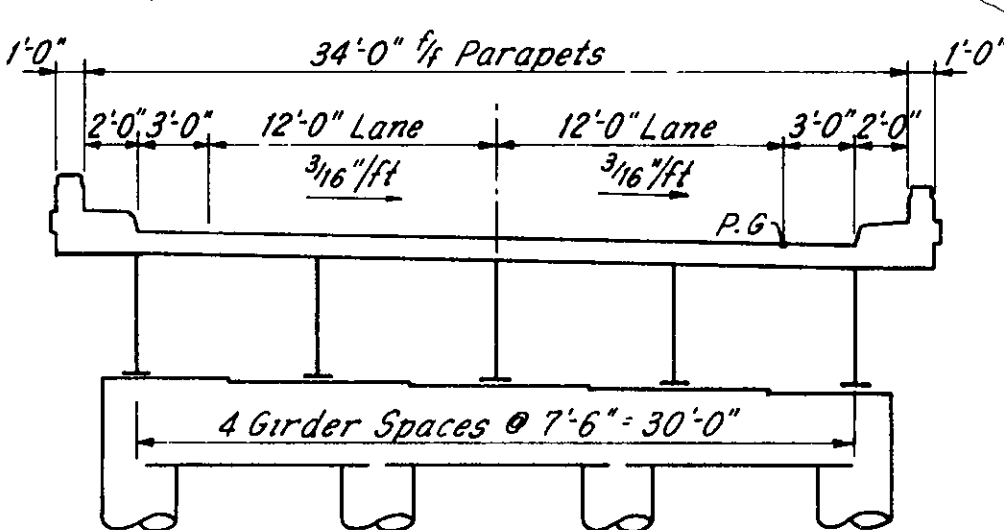
CLA-40-5.62

**U.S.R 40 CURVE DATA**

P.I. Sta 324 + 32.49  
 $\Delta = 8^\circ 39' 55''$   
 $D = 0^\circ 28' 00''$   
 $R = 12,277.67'$   
 $T = 930.20'$   
 $L = 1856.85'$   
 $E = 35.19'$

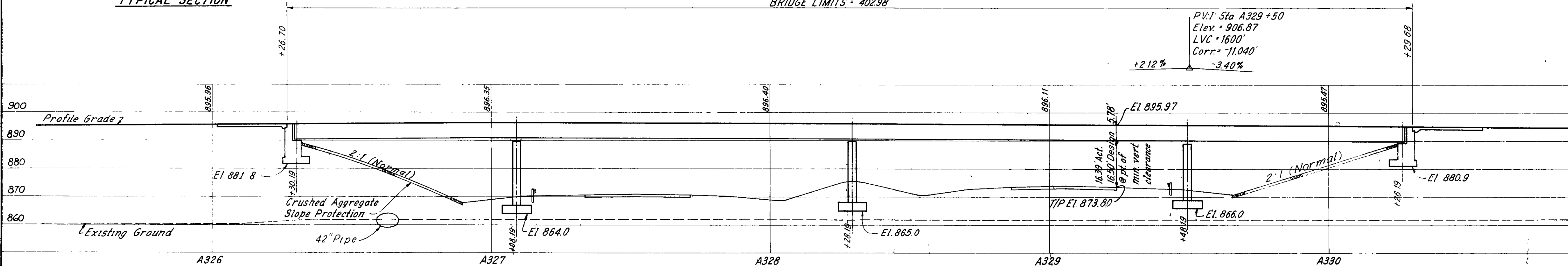


**FOUNDATION SOUNDINGS:** Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office but the State does not guarantee the accuracy thereof.



TYPICAL SECTION

BRIDGE LIMITS = 402.98'



**PROPOSED STRUCTURE**  
**TYPE:** Continuous steel girders with reinforced concrete deck and substructure.  
**SPANS:** 78.0'; 120.0'; 120.0'; 78.0' 1/8 Bearings.  
**ROADWAY:** 30'-0" 1/8 2'-0" Safety Curbs.  
**LOAD FREQUENCY:** CF 2000 (57) adequate for  
**SKEW:** 49°-52' R.F. AASHTO alternate loading  
**WEARING SURFACE:** 1" monolithic concrete  
**APPROACH SLABS:** AS-1-54 (25'-0" long)  
**ALIGNMENT:** Tangent  
**AVERAGE DAILY TRAFFIC:** 8500 (1975) N.B. S.R. 4

**FOUNDATION INVESTIGATION LEGEND**  
 • Indicates core boring.  
 - Indicates rod sounding.

SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 MANSFIELD, OHIO.

**SITE PLAN**  
 BRIDGE NO. CLA-40-0607  
 UNDER NORTH BOUND LANES S.R. 4  
 CLARK COUNTY USR 40  
 STA. 324 + 97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JCB	Zora	HL	DGC			

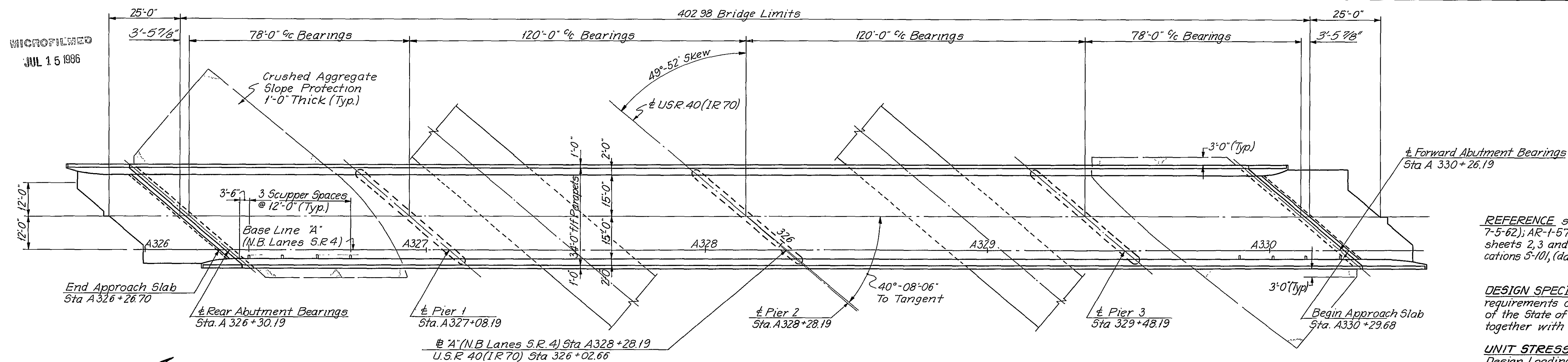


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FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CLA-40-5.62



GENERAL PLAN

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54, (revised 7-5-62); AR-1-57, (revised 4-2-62); F5B-1-62, (revised 1-15-63); 5D-1-63, sheets 2, 3 and 4 of 4, (dated 11-12-63); and to Supplemental Specifications 5-101, (dated 7-12-62) and 5-307, (revised 10-1-64).

DESIGN SPECIFICATIONS: These structures conform 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.

UNIT STRESSES:  
Design Loading - CF 2000 (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. (ASTM A7 and A373 steel not permitted)  
Reinforcing Steel - ASTM A15, A516, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i., except spiral reinforcing may be plain.  
Structural grade with basic unit stress of 18,000 p.s.i.

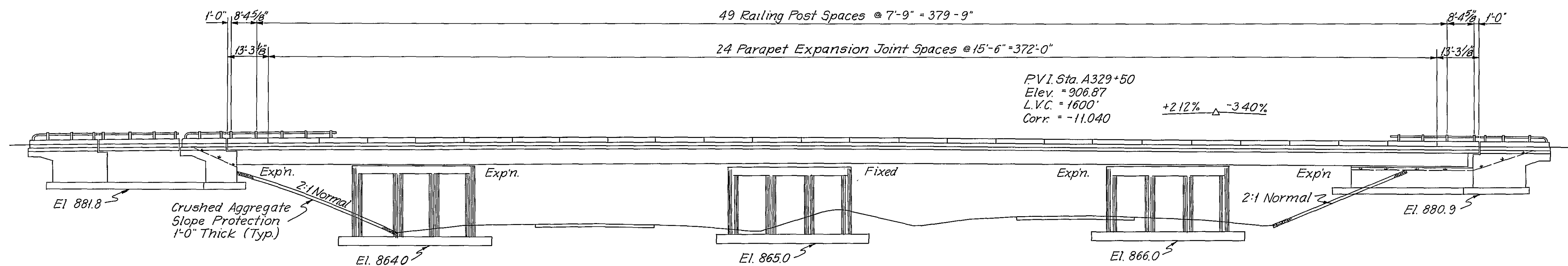
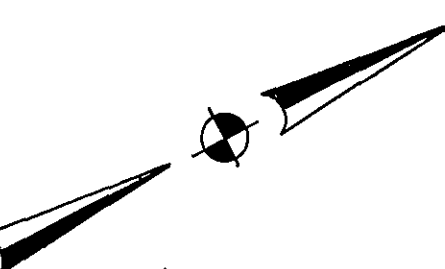
WELDING shall be Class "A", except as shown. Any welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus: B

DECK PLACING PROCEDURE: In placing the deck concrete, construction joints will be permitted parallel to the transverse reinforcing steel and near the middle of any span. Because of the flow of curing water from the surface of previously-placed deck concrete, the sequence of pours shall be upgrade, starting at the lowest points in the grade line.

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

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru 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 piers. The embankment for U.S.R. 40 shall be placed and compacted up to the level of the subgrade after which excavation may be made for the piers.

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



GENERAL ELEVATION

ESTIMATED QUANTITIES

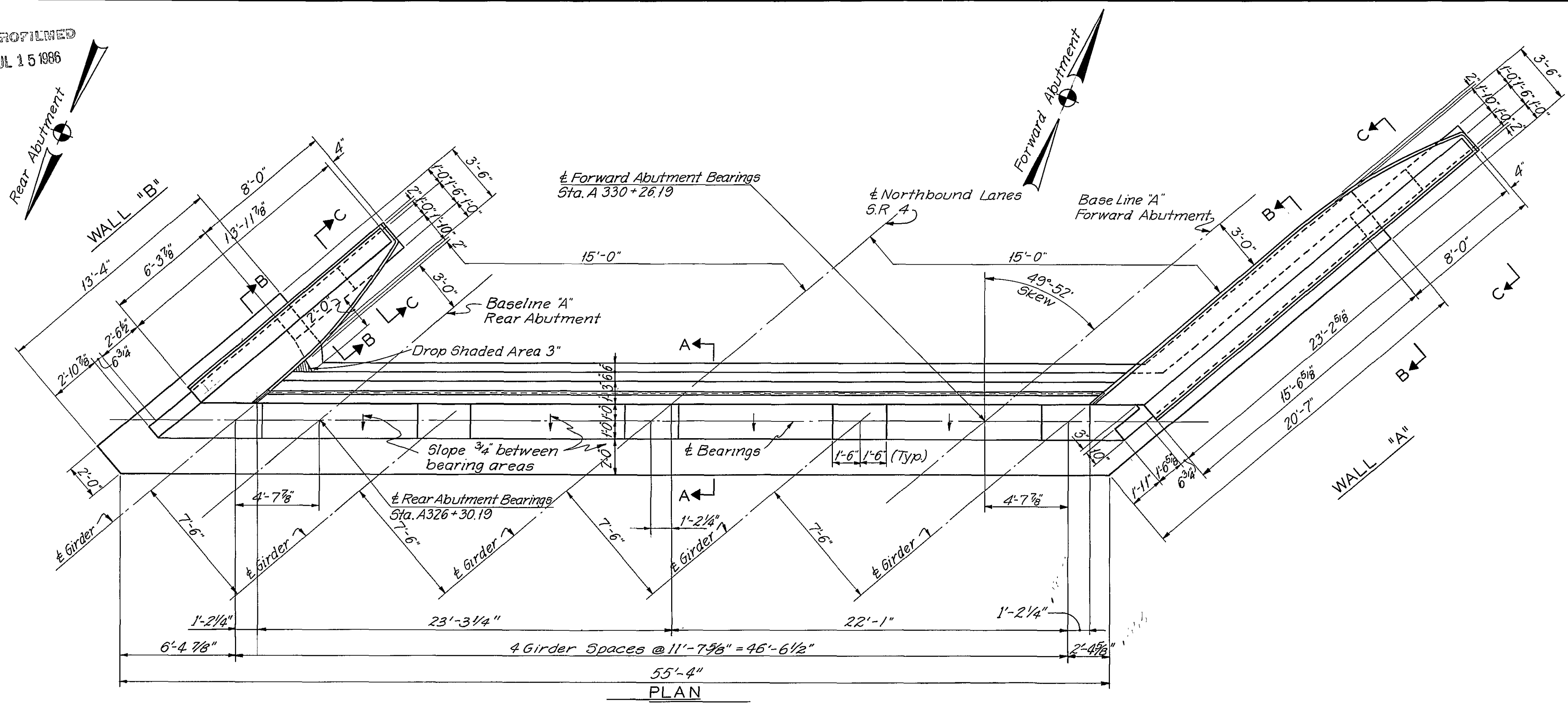
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN'L.
E-2	782	Cu. Yds.	Unclassified Excavation		341	441	
5-1	472	Cu. Yds.	Class "C" concrete, superstructure	472			
5-1	112	Cu. Yds.	Class "C" concrete, piers above footings			112	
5-1	249	Cu. Yds.	Class "E" concrete, abutments		249		
5-1	133	Cu. Yds.	Class "E" concrete, pier footings			133	
5-4	199,026	Lbs.	Reinforcing steel	129,681	13,780	55,565	
5-7	470,789	Lbs.	Structural steel	470,789			
5-8	470,789	Lbs.	Field painting of structural steel	470,789			
5-14	871.46	Lin. Ft.	Railings, (Type A aluminum rail and supports, and concrete parapet)	797.04	74.42		
5-29	57	Cu. Yds.	Porous backfill		57		
5-29	8	Each	Scuppers, including supports	8			
5-29	100	Lin. Ft.	6" helical C.M.P., M-6.4(h), non-perforated		100		
5-29	96	Lin. Ft.	6" perforated helical C.M.P., M6.4(h) including specials		96		
1-10	844	Sq. Yds.	Crushed aggregate slope protection				844
1-127	5	Each	Delineators type C-2 bracket mounted				5
5-101	472	Each	Water reducing, set-retarding admixture	472			

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MANSFIELD, OHIO.

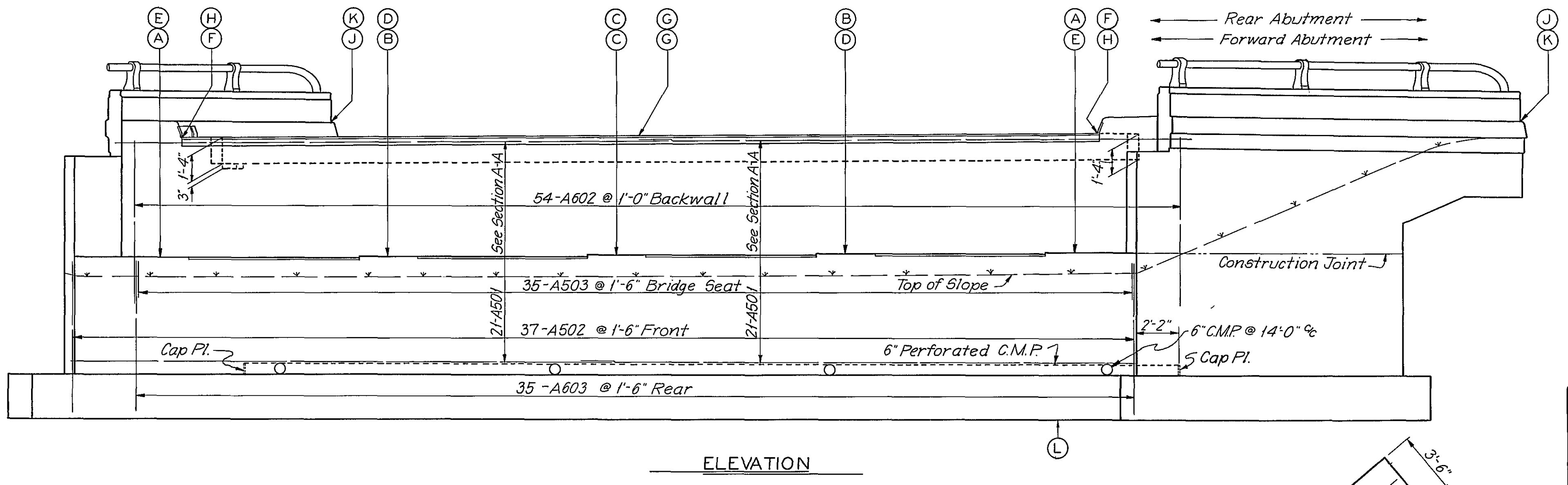
**GENERAL PLAN, GENERAL NOTES  
AND ESTIMATED QUANTITIES**  
BRIDGE NO. CLA-40-0607  
UNDER NORTHBOUND LANES S.R. 4  
CLARK COUNTY U.S.R. 40  
STA. 324+97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	LK	LK	DGC			

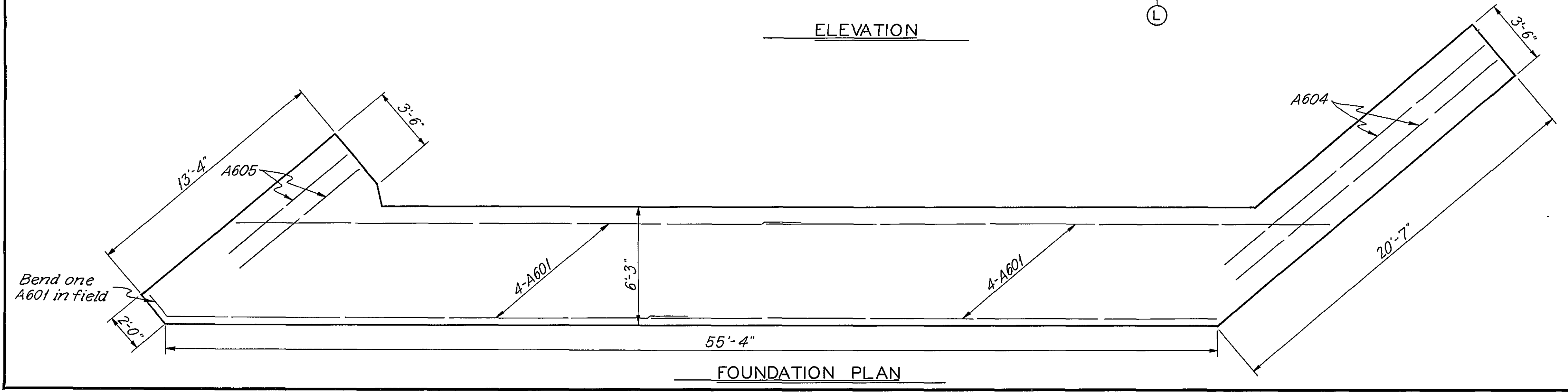
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**NOTES**  
**FOUNDATION BEARING PRESSURE:** Abutment footings are designed for a maximum bearing pressure of 1.8 tons per sq ft.  
**CONCRETE:** All abutment concrete shall be Class "E" except parapets which shall be Class "C".  
**BRIDGE SEAT REINFORCING:** 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 bar holes.  
**POROUS BACKFILL** shall extend upward to the subgrade elevation and for the full length of the abutment. Excavation therefor, 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.  
**NOTATION:** FF - Front Face, RF - Rear Face, E.F. - Each Face.  
**ABUTMENT DETAILS:** See Sheet 465  
**GENERAL NOTES:** See Sheet 463



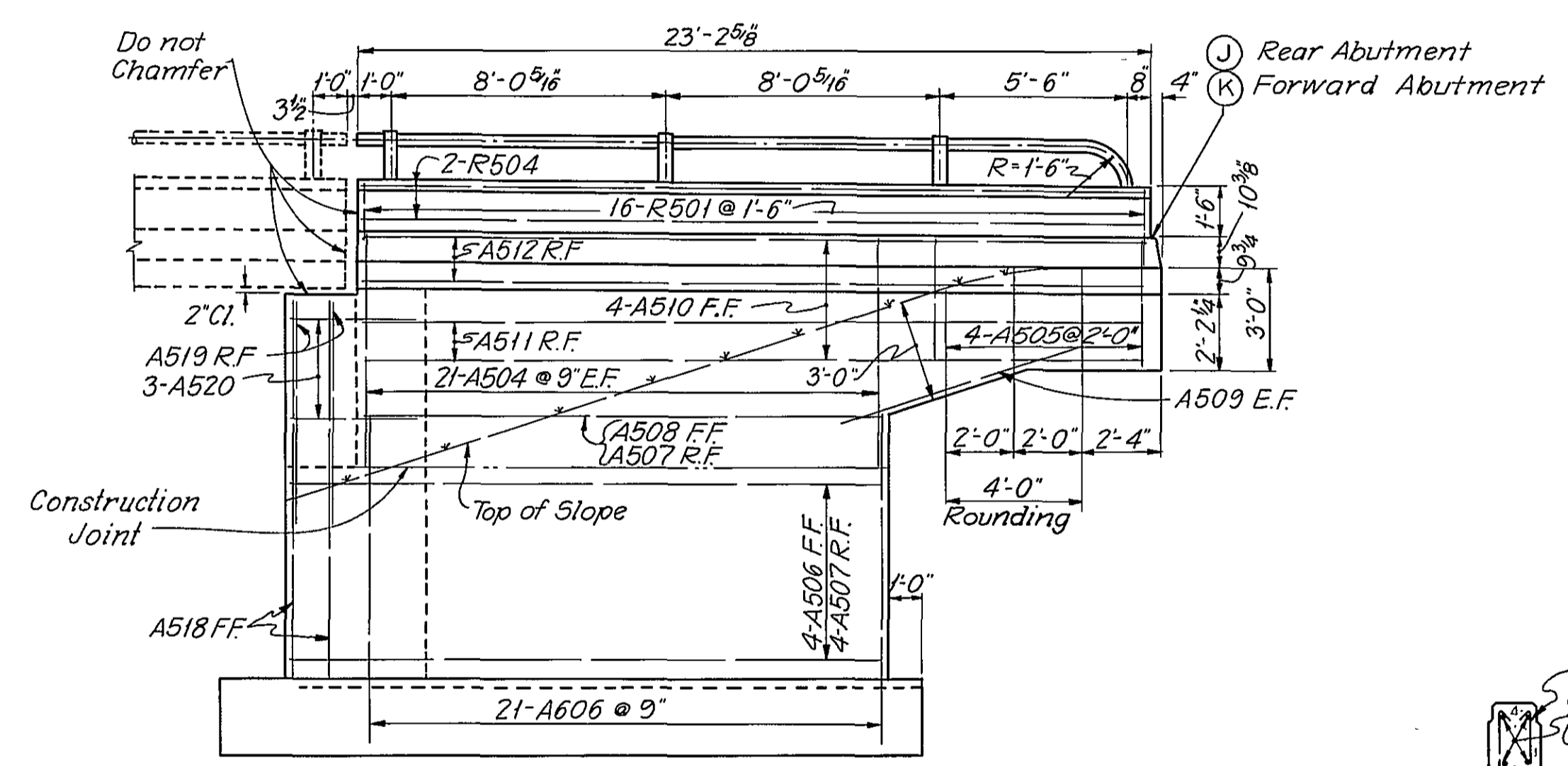
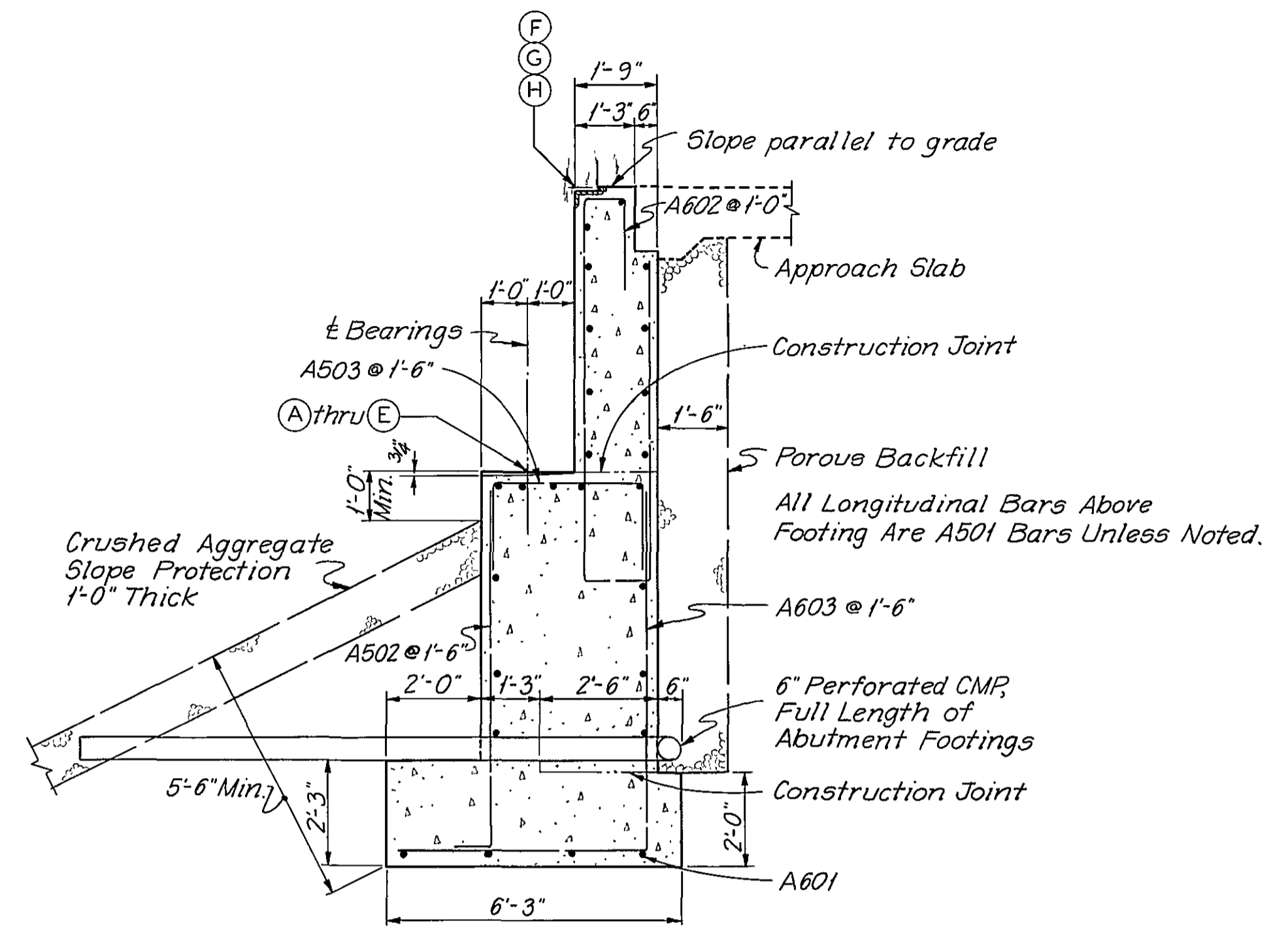
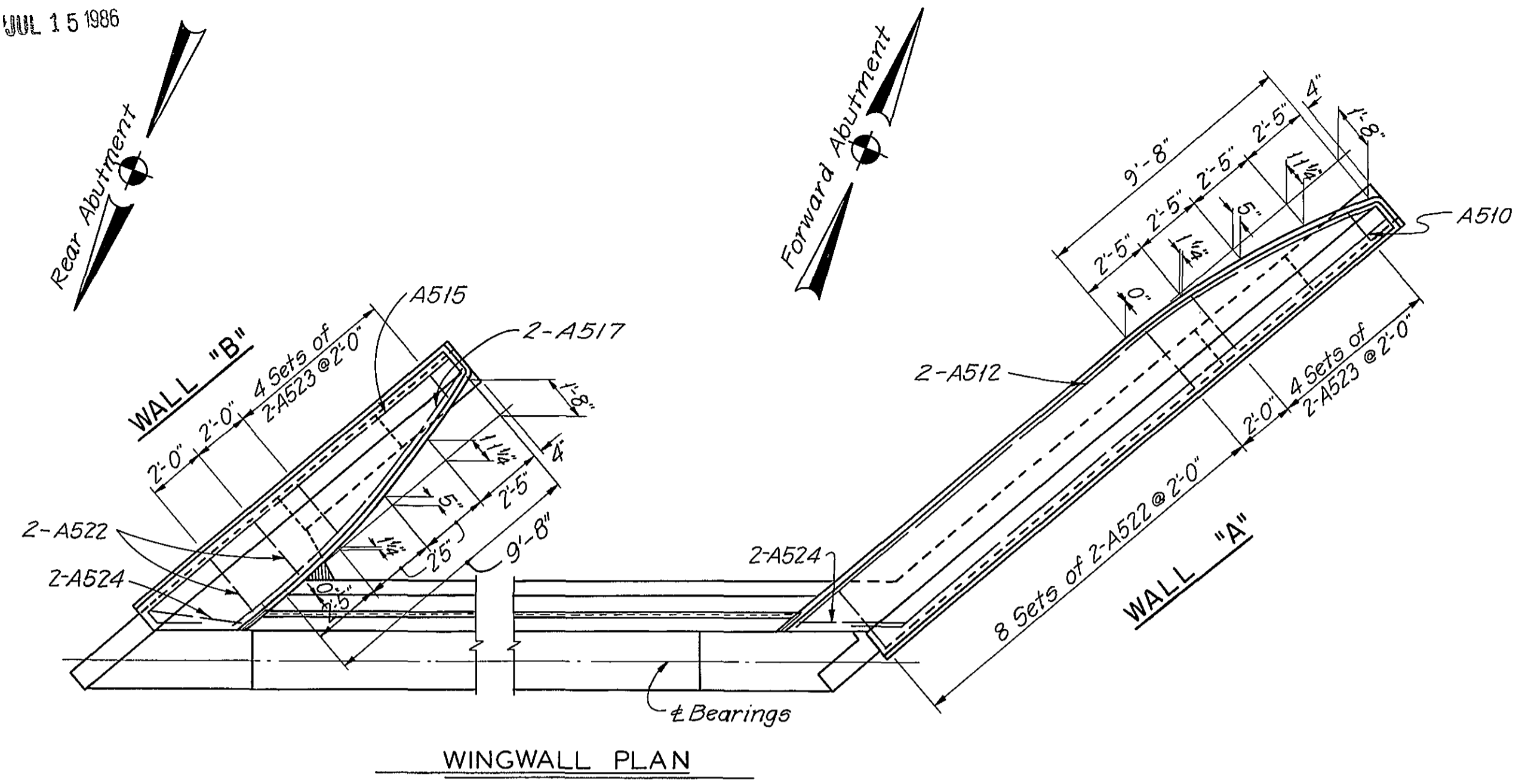
LOCATION	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(K)	(L)
Rear Abutment	890.29	890.23	890.16	890.08	890.01	896.36	896.22	896.07	897.09	896.86	881.80
Forward Abutment	889.86	889.67	889.48	889.29	889.09	895.92	895.54	895.15	895.72	895.74	880.90



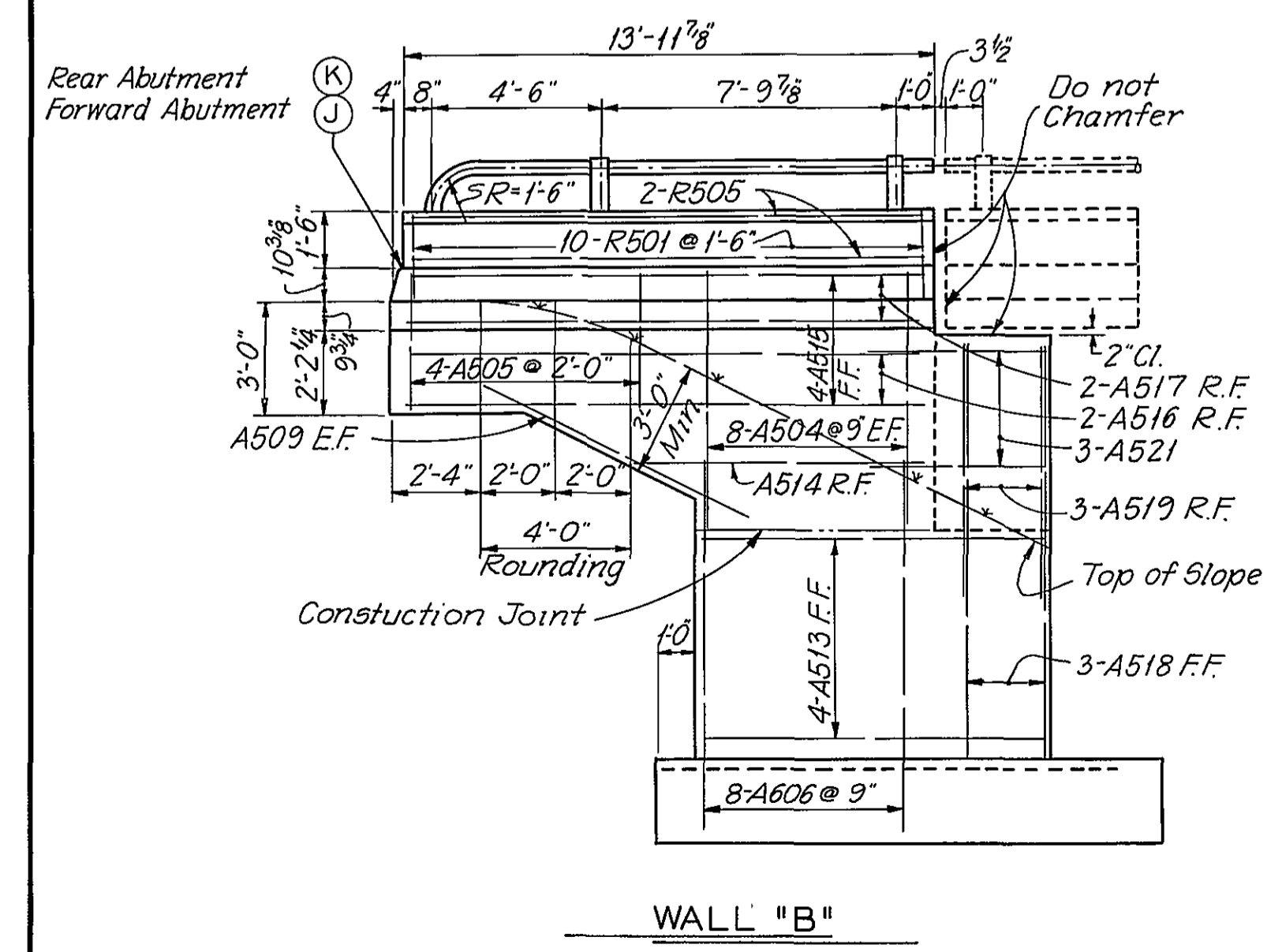
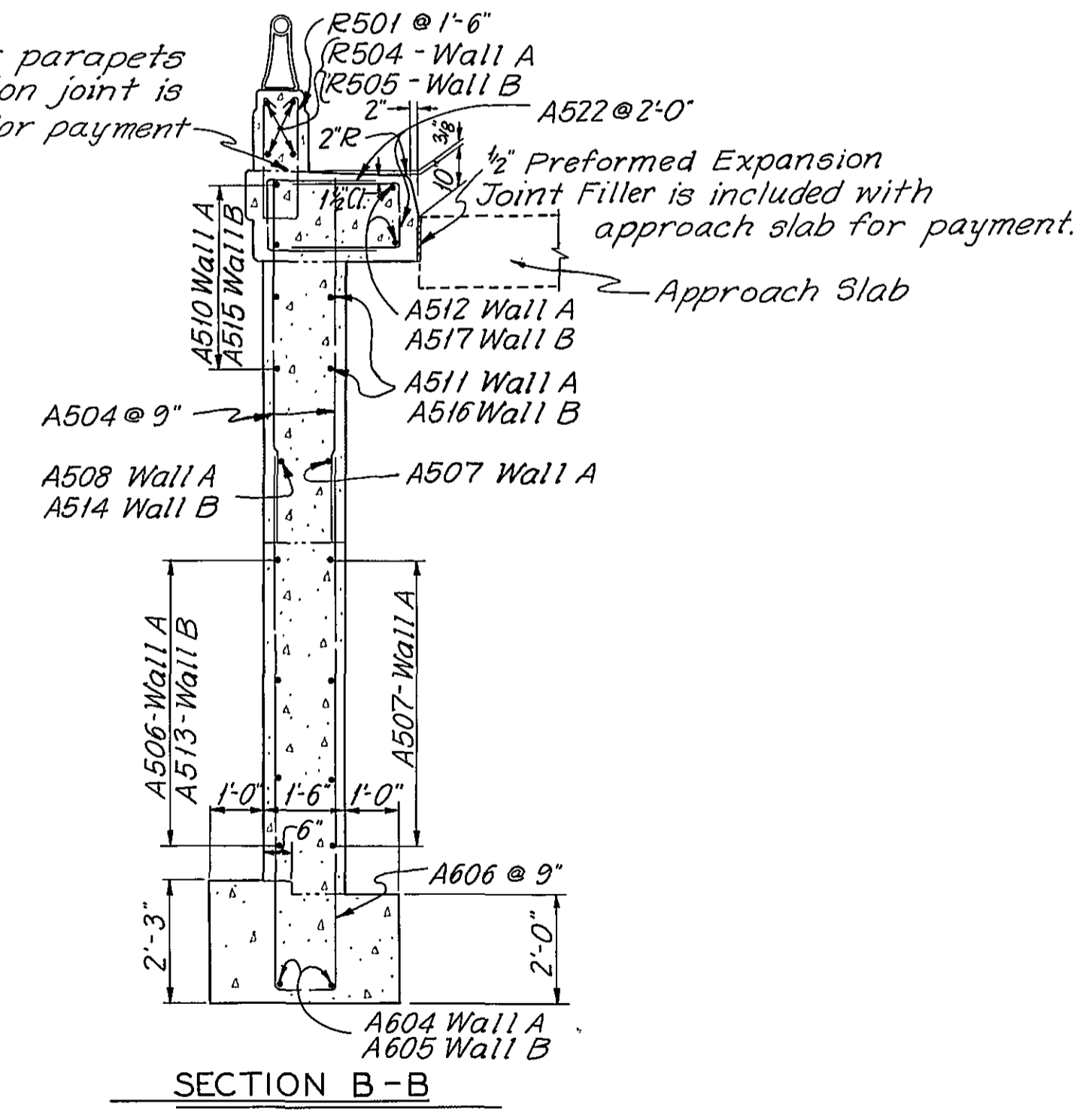
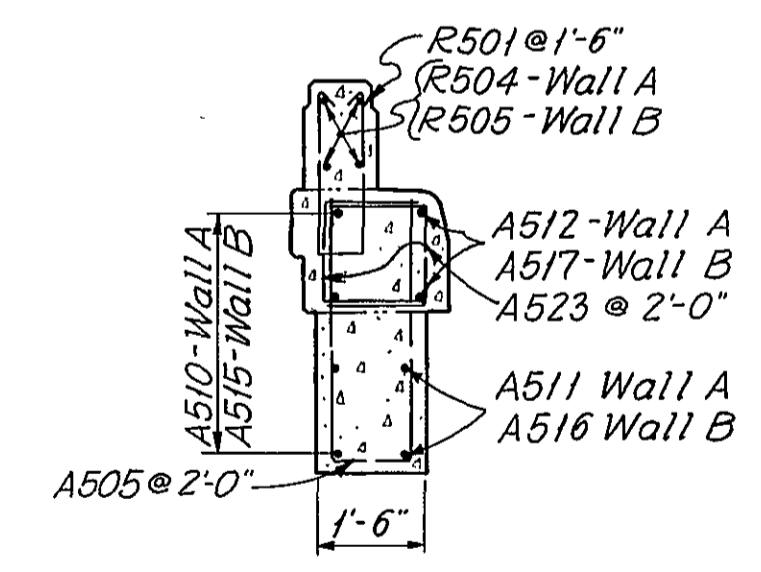
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 Consulting Engineers  
 MANSFIELD, OHIO.

**ABUTMENTS-1**  
 BRIDGE NO. CLA.-40-0607  
 UNDER NORTHBOUND LANES S.R.4  
 CLARK COUNTY U.S.R. 40  
 STA. 324 + 97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	LK	DGC			



Class "C" concrete for parapets above this construction joint is included with railing for payment



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MANSFIELD, OHIO.

**ABUTMENTS-2**  
BRIDGE NO. CLA-40-0607  
UNDER NORTHBOUND LANES S.R. 4  
CLARK COUNTY U.S.R. 40  
STA. 324+97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	LK	DGC			



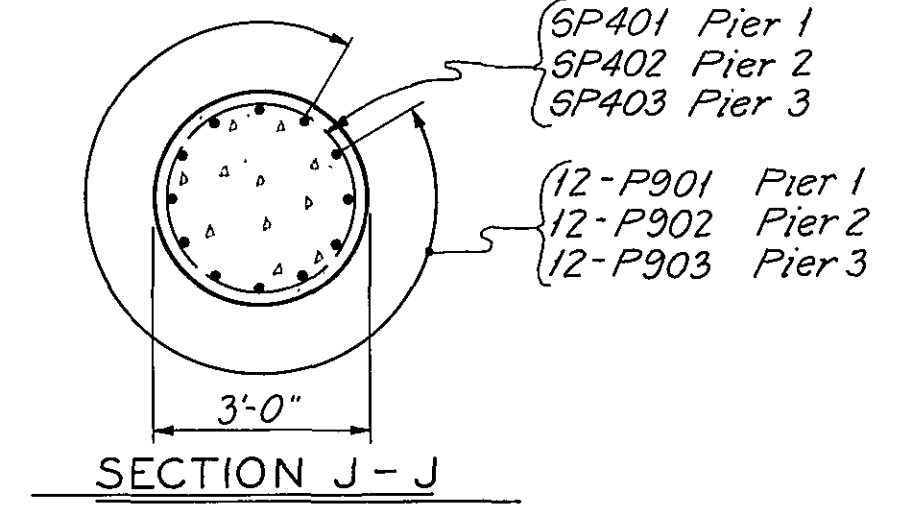
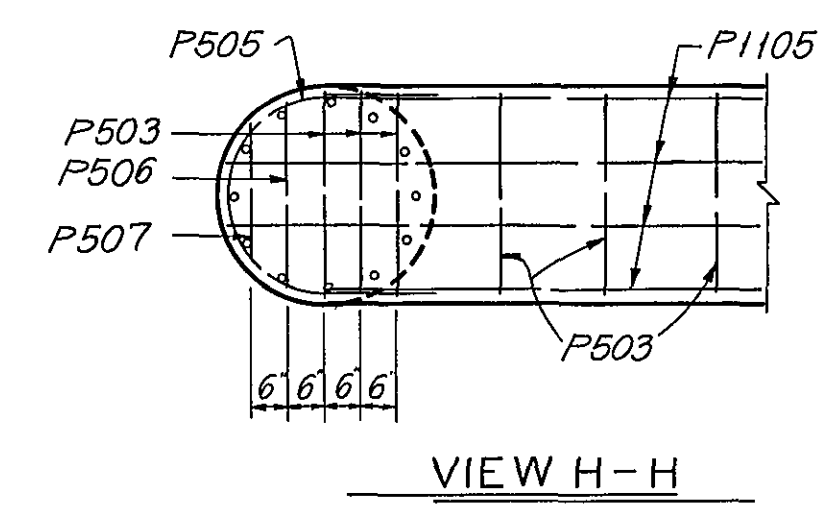
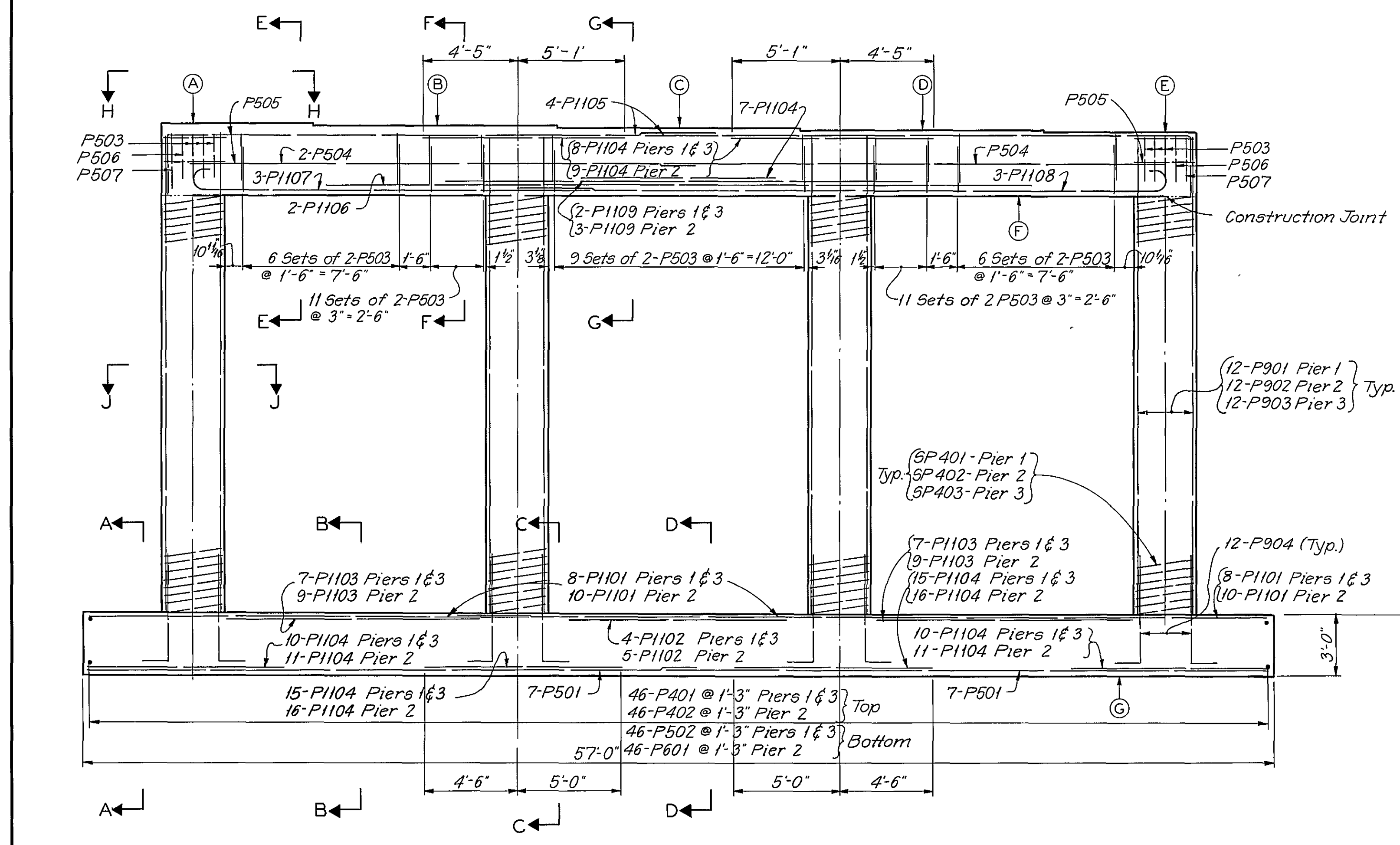
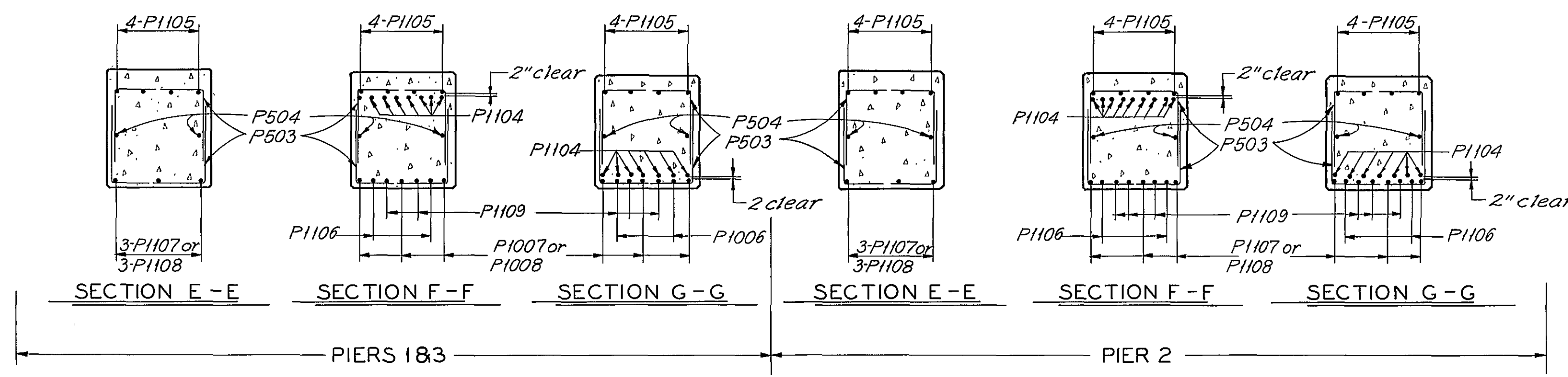
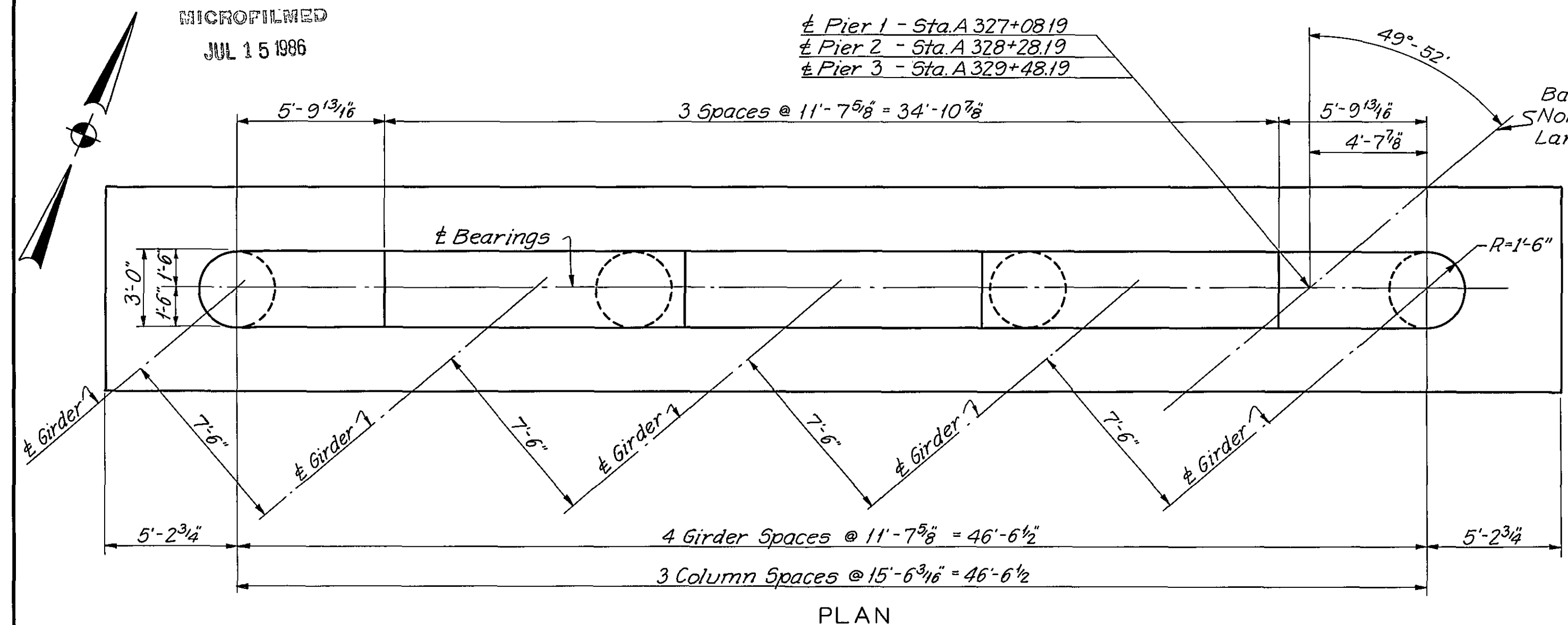
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± Pier 1 - Sta. A 327+08.19  
± Pier 2 - Sta. A 328+28.19  
± Pier 3 - Sta. A 329+48.19

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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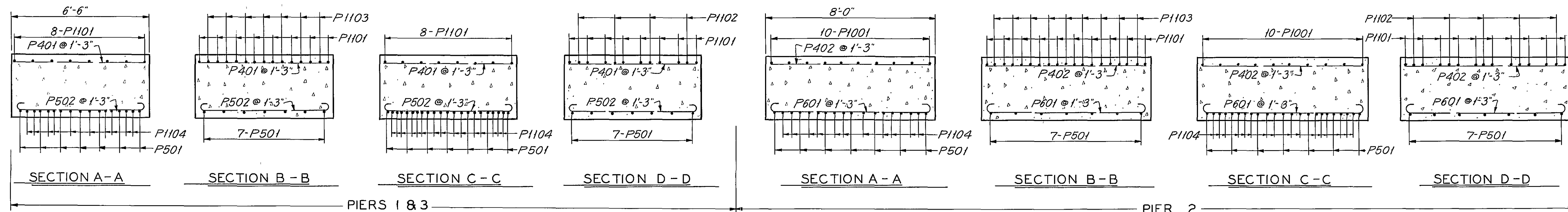
CLA-40-5.62



LOCATION	A	B	C	D	E	F	G
Pier 1	890.48	890.39	890.30	890.20	890.10	887.10	864.00
Pier 2	890.19	890.06	889.93	889.80	889.66	886.66	865.00
Pier 3	890.22	890.05	889.89	889.72	889.54	886.54	866.00

LOCATION	A	B	C	D	E	F	G
Pier 1	890.52	890.43	890.34	890.24	890.14	887.10	864.00
Pier 2	890.23	890.10	889.97	889.84	889.70	886.66	865.00
Pier 3	890.26	890.09	889.93	889.76	889.58	886.54	866.00

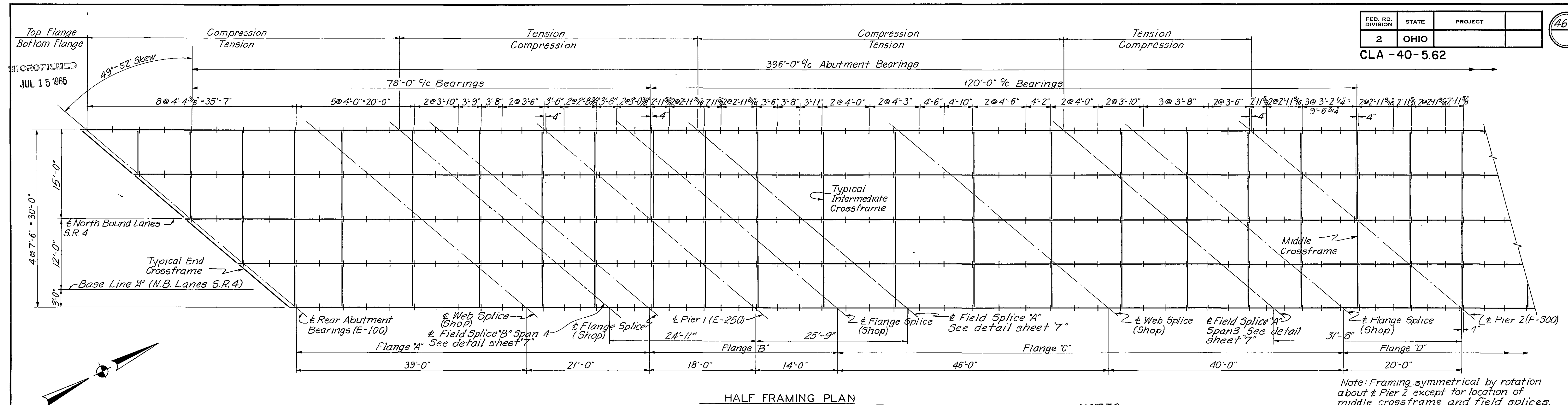
**NOTES:**  
**CONCRETE:** All concrete for pier footings shall be Class "E". All concrete for piers above footings shall be Class "C".  
**BRIDGE SEAT REINFORCING:** Special care shall be taken in the placing of reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.  
**FOUNDATION BEARING PRESSURE:** Pier footings are designed for a maximum soil bearing pressure of 2.25 tons per sq. ft.  
**GENERAL NOTES:** See Sheet 463



SHAFFER, PARRETT, AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**PIERS**  
BRIDGE NO. CLA-40-0607  
UNDER NORTHBOUND LANES S.R. 4  
CLARK COUNTY U.S.R. 40  
STA. 324 + 97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	LK	DGC			11-18-65



**NOTES:**  
**INTERMEDIATE STIFFENERS** shall have contact bearing with the compression flange but may have a clearance of not more than 1/8 inch from the tension flange. In shop painting, care shall be taken to make certain that paint is forced through from one side to the other of the 1/8 inch opening of the intermediate stiffeners.

**ERECTION PROCEDURE:** The Contractor shall submit to the Director, for approval, 3 prints showing his proposed erection procedure for the plate girders.

**BEARINGS:** See FSB-1-62 for the following: E-100 Abutments; E-250 Piers 1 and 3; F-300 Pier 2

**END CROSSFRAMES, END DAMS, GUTTERS, SCUPPERS, AND CURB PLATE DETAILS:** See 5D-1-63, Sheets 2, 3 and 4 of 4. Use 4x4x3/8 angles in place of 4x4x5/16 angles for end crossframes.

**RAILING:** See AR-1-57

**RAILING POST, PARAPET EXPANSION JOINT & SCUPPER SPACING:** See Sheet 2

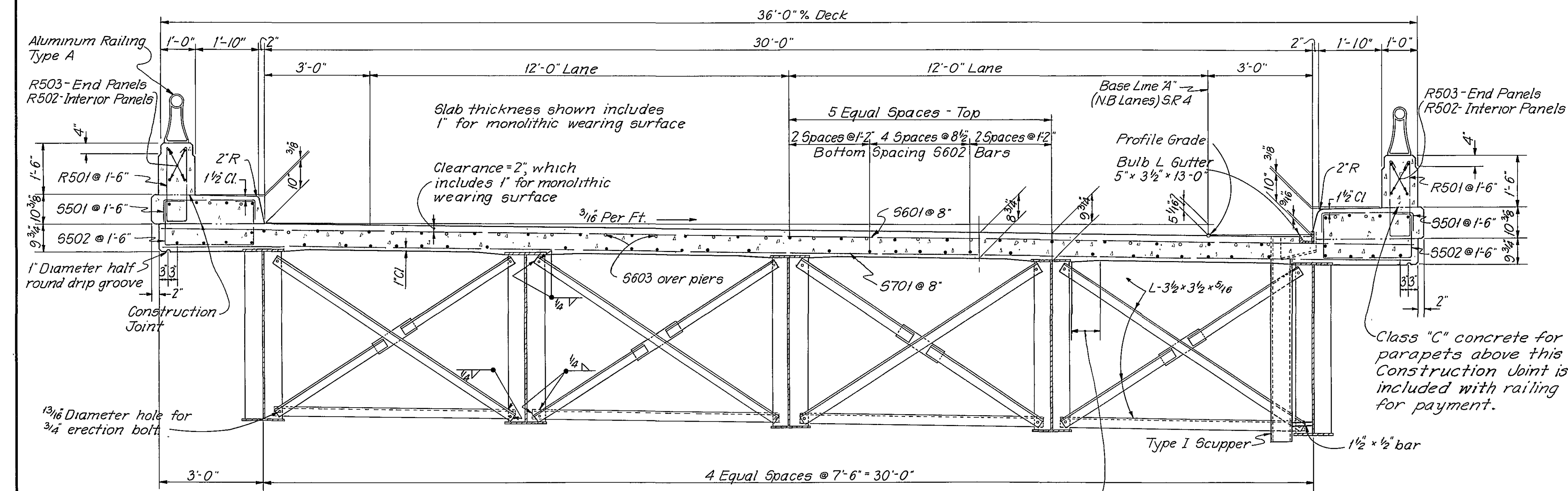
**CONCRETE:** All superstructure concrete shall be Class "C".  $f_c = 1333$  p.s.i.

**DECK SLAB DEPTH:** The distance shown from top of deck slab to top of girder web 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 girder 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. 5-1.25 of the Construction and Material Specifications.

**SHOP SPLICES:** If additional shop splices are necessary, their location and detail shall be submitted to the Director for approval prior to ordering of material.

**GENERAL NOTES:** See Sheet 463

**BUTT WELDS** in girder webs and flanges shall be radiographed in accordance with Supplemental Specification 5-307.



All longitudinal bars S602 except as otherwise shown. Lap S602 bars 1'-11" minimum

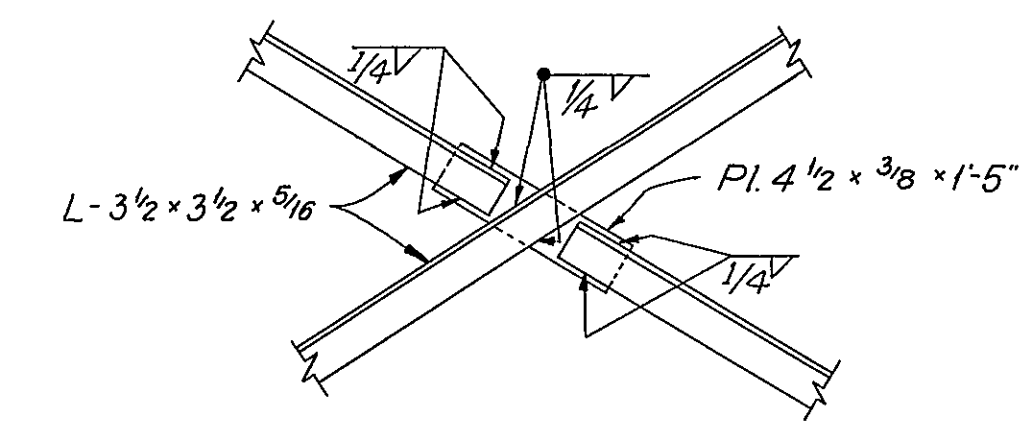
A typical haunch width of 9" shall be used for computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall not be more than 1:4 for a haunch less than 9" in width.

**CAMBERING** of girders at quarter points is required in accordance with the following table:

	DEFLECTION AND CAMBER																
	OUTSIDE GIRDER							INSIDE GIRDER									
	END SPANS		MIDDLE SPANS			END SPANS		MIDDLE SPANS		END SPANS		MIDDLE SPANS					
	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	
Deflection due to weight of steel	0	0	0	0	3/16	3/16	1/4	3/16	3/16	0	0	0	3/16	3/16	1/4	3/16	3/16
Deflection due to remaining dead load	0	1/16	0	0	5/8	11/16	7/8	5/8	5/8	0	1/16	0	9/16	11/16	3/4	9/16	9/16
Convexity required for vertical curve	1/4	5/16	1/4	1/4	9/16	11/16	7/8	9/16	9/16	1/4	5/16	1/4	9/16	11/16	3/4	9/16	9/16
Sum of deflection and convexity	1/4	3/8	1/4	1/4	1 1/8	1 1/16	1 1/8	1 3/8	1 3/8	1/4	3/8	1/4	1 1/8	1 1/16	1 3/8	1 5/16	1 5/16
Required camber	0	0	0	0	1 1/8	1 1/16	1 1/8	1 3/8	1 3/8	0	0	0	1 1/8	1 1/16	1 3/8	1 5/16	1 5/16

\* Span 3 - Adjacent to Pier 2. \*  $1 \frac{5}{16}$   $1 \frac{3}{16}$  \*

GIRDER MATERIAL	
Web	58 x 3/8
Flange "A"	14 x 5/8
Flange "B"	20 x 1 1/4
Flange "C"	14 x 1
Flange "D"	20 x 1 5/8
Intermediate Stiffeners	2(6 x 3/8)
End Stiffeners	2(6 x 3/8)
Pier Bearing Stiffeners	4(6 x 3/8)

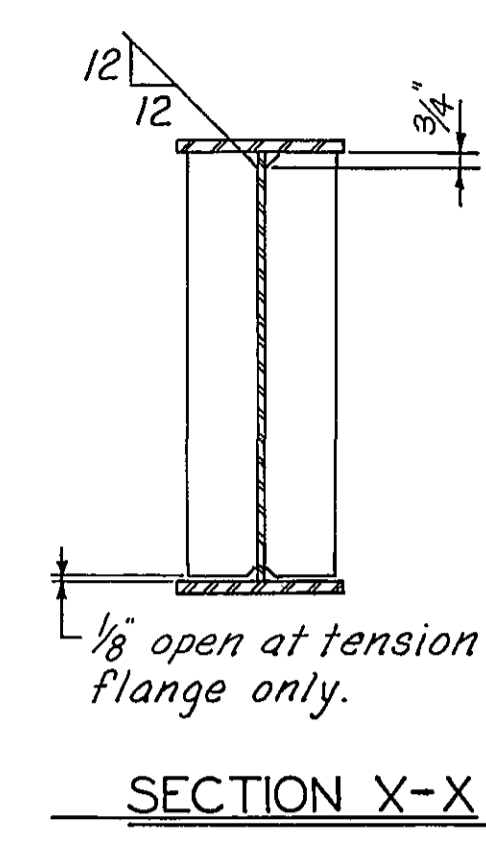
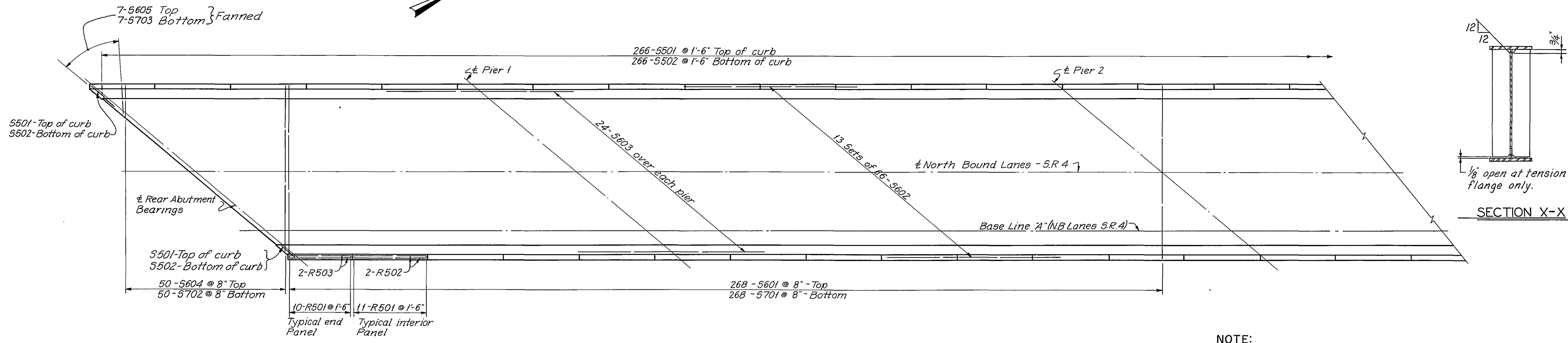


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**SUPERSTRUCTURE - I**  
 BRIDGE NO. CLA - 40 - 0607  
 UNDER NORTHBOUND LANES S.R. 4  
 CLARK COUNTY U.S.R. 40  
 STA. 324 + 97.32

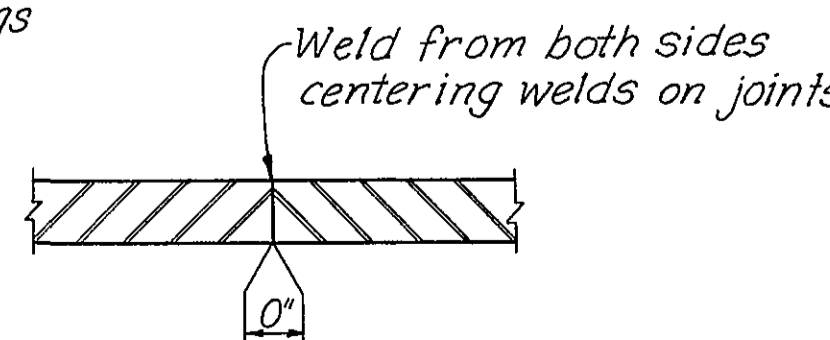
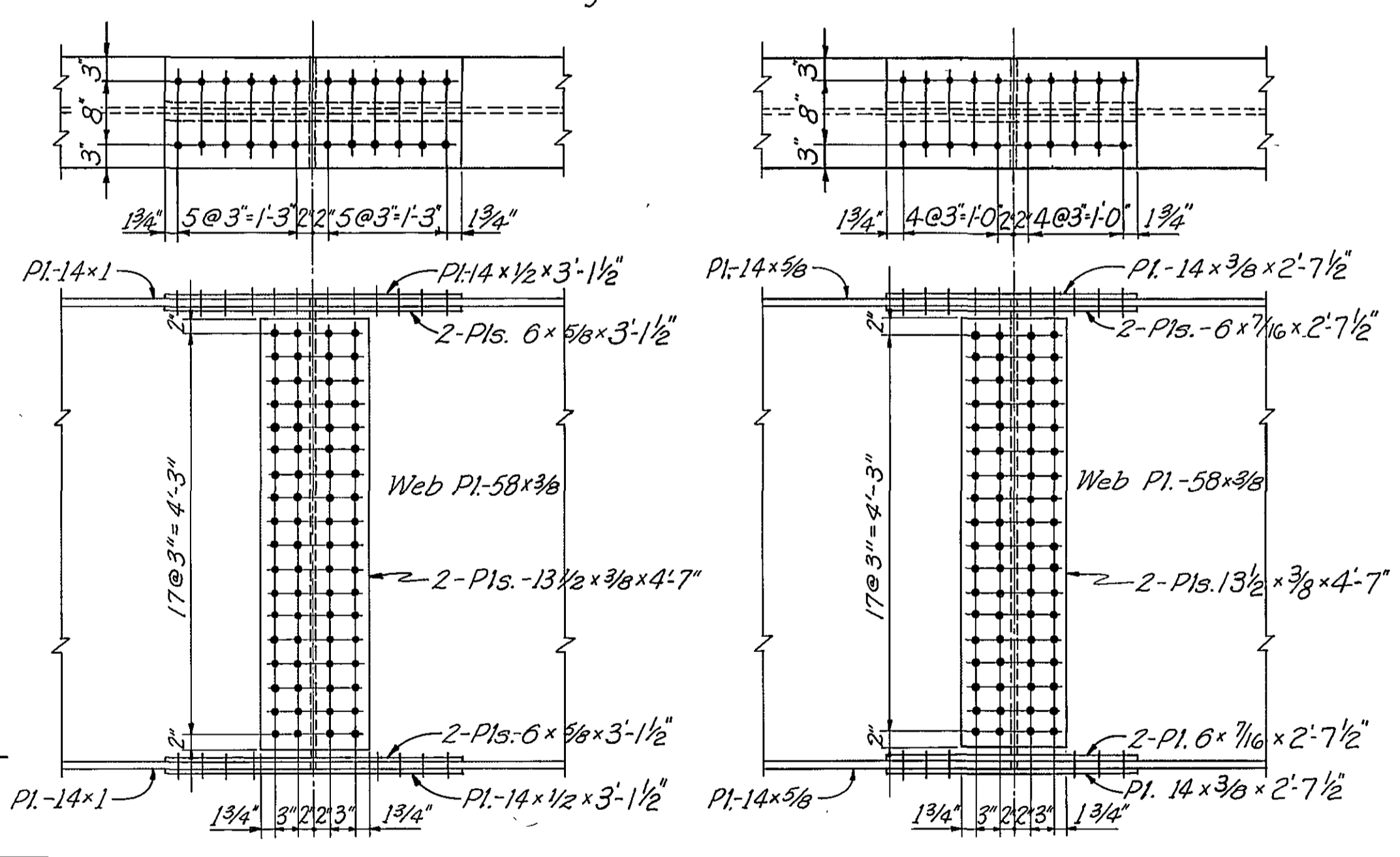
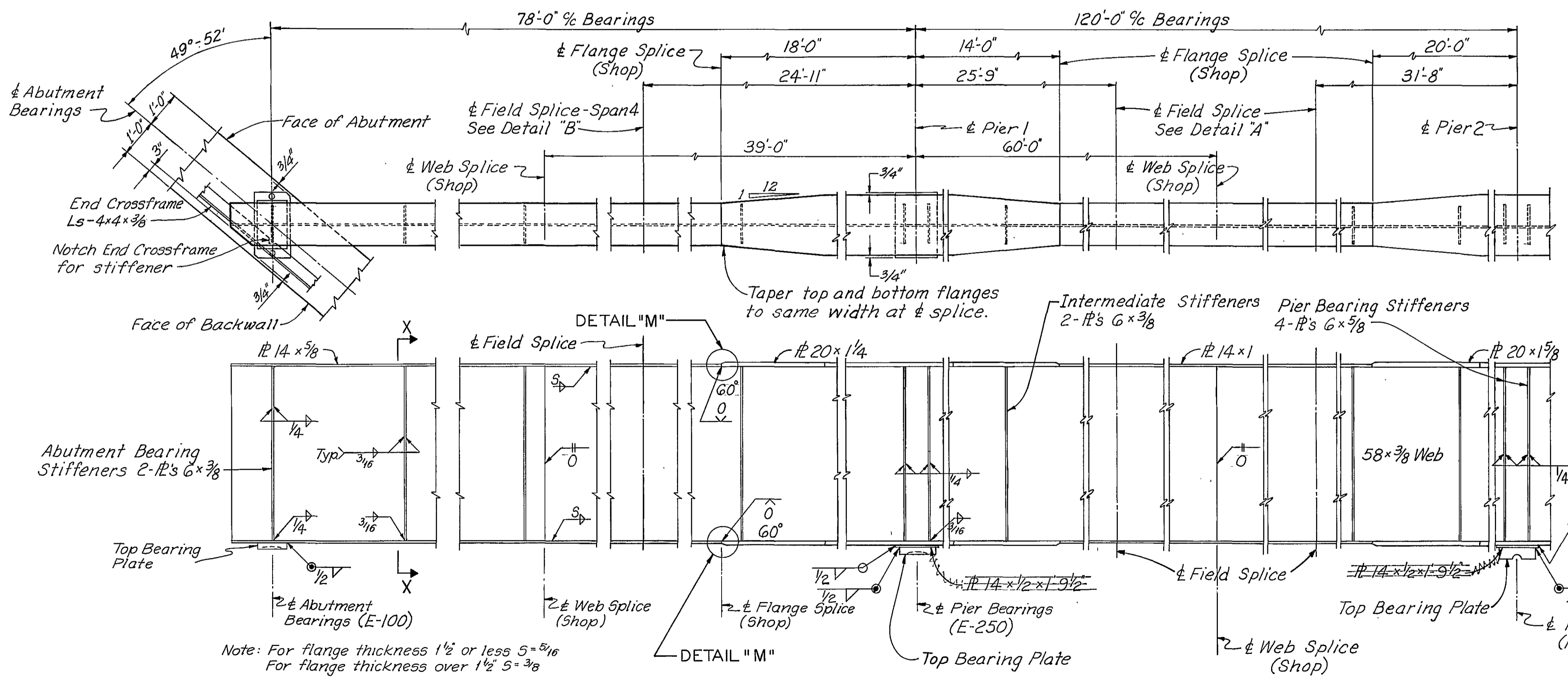
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RA.K.	RA.K.	L.K.	DGC			10-13-65





**NOTE:**

1. Place bolt head on exposed side of fascia girder.
2. Place nuts on top surface of lower flange splice.
3. Washers may be omitted as allowed in Sec. 5-7.10.



Note: For flange thickness 1 1/2 or less 5-5/16  
For flange thickness over 1 1/2 5-3/8

**NOTES:**  
Detail "M"; see sheet 469  
Bolted Field Splice Notes; see sheet 469  
Superstructure Notes; see sheet 467

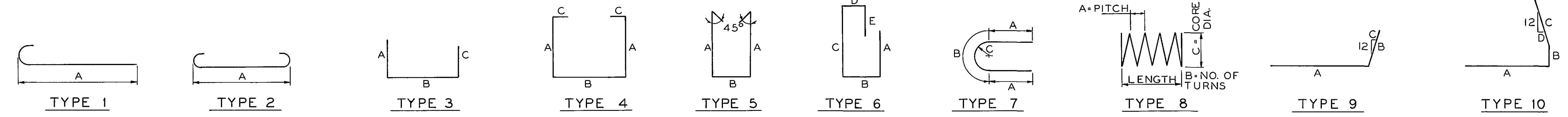
All full penetration welds shall be back-gouged and welded after welding farside.

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**SUPERSTRUCTURE - 2**  
BRIDGE NO. CLA-40-0607  
UNDER NORTHBOUND LANES S.R. 4  
CLARK COUNTY U.S.R. 40  
STA. 324 + 97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK.	RAK.	LK.	DGC			11-18-65





ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R501	52	5'-7"	5	2'-2"	8"				303
R504	8	22'-10"	Str.						*
R505	8	13'-7"	Str.						*
A501	84	28'-2"	Str.						2468
A502	74	8'-2"	3	7'-8"	7 1/2"	0			631
A503	70	6'-10"	3	1'-10"	3'-5"	1'-10"			499
A504	116	6'-8"	Str.						807
A505	16	7'-11"	3	3'-6"	1'-2"	3'-6"			132
A506	8	18'-10"	9	17'-4"	1'-7"	14 1/2"			157
A507	10	15'-2"	Str.						158
A508	2	15'-10"	9	14'-4"	1'-7"	14 1/2"			33
A509	8	8'-0"	Str.						67
A510	8	23'-7"	9	22'-1"	1'-7"	14 1/2"			197
A511	4	23'-2"	Str.						97
A512	4	25'-0"	Str.	Bend	in field				104
A513	8	11'-0"	10	9'-0"	7"	1'-7"	14 1/2"		92
A514	2	9'-6"	10	7'-6"	7"	1'-7"	14 1/2"		20
A515	8	15'-9"	10	13'-9"	7"	1'-7"	14 1/2"		131
A516	4	13'-9"	Str.						57
A517	4	11'-10"	Str.	Bend	in field				49
A518	10	11'-0"	Str.						115
A519	10	6'-8"	Str.						70
A520	6	7'-7"	3	3'-8"	6"	3'-8"			47
A521	6	9'-7"	3	4'-8"	6"	4'-8"			60
A522	40	5'-1"	3	2'-0"	1'-4"	2'-0"			212
A523	32	②	3	①	1'-4"	①			130
A524	8	5'-11"	3	2'-5"	1'-4"	2'-5"			49
A601	16	29'-9"	Str.						715
A602	108	19'-1"	6	6'-11"	1'-5"	8'-4"	11"	2'-2"	3095
A603	70	12'-9"	3	7'-8"	5'-3"	0			1341
A604	4	18'-0"	Str.						108
A605	4	8'-3"	Str.						50
A606	58	20'-6"	3	9'-8"	1'-2"	9'-8"			1786
TOTAL WEIGHT									13,780

① 1'-11" to 11". Vary 8 each by 4".  
 ② 4'-11" to 2'-11". Vary 8 each by 8".  
 \* These railing bars are included in Item S-14 for payment.

PIERS

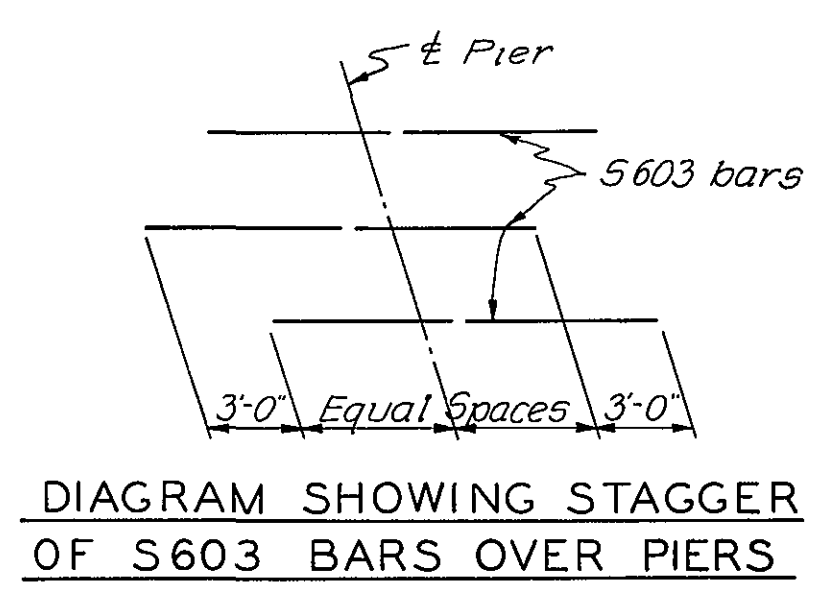
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P401	92	6'-0"	Str.						369
P402	46	7'-6"	Str.						230
P501	42	29'-1"	Str.						1274
P502	92	7'-2"	2	6'-0"					688
P503	276	6'-9"	3	2'-2"	2'-8"	2'-2"			1943
P504	12	24'-1"	Str.						301
P505	12	7'-4"	7	1'-7"	4'-2"	1'-4"			92
P506	6	6'-7"	3	2'-2"	2'-6"	2'-2"			41
P507	6	6'-0"	3	2'-2"	1'-11"	2'-2"			38
P601	46	8'-10"	2	7'-6"					610
P901	48	22'-11"	Str.						3741
P902	48	21'-6"	Str.						3509
P903	48	20'-4"	Str.						3318
P904	144	6'-7"	3	5'-7"	1'-3"				3222
P1101	78	21'-2"	Str.						8773
P1102	13	10'-6"	Str.						725
P1103	46	12'-3"	Str.						2994
P1104	225	9'-6"	Str.						11,357
P1105	24	28'-10"	3	26'-4"	2'-10"				3676
P1106	6	34'-0"	Str.						1084
P1107	9	20'-7"	1	19'-0"					984
P1108	9	32'-8"	1	31'-1"					1562
P1109	7	22'-6"	Str.						837
SP401	4	20'-1"	8	4 1/2"	57	32"			1496
SP402	4	18'-8"	8	4 1/2"	53	32"			1391
SP403	4	17'-6"	8	4 1/2"	50	32"			1310
TOTAL WEIGHT									55,565

**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 P1101 is a No.11 size bar.  
**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 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 S-4. 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.

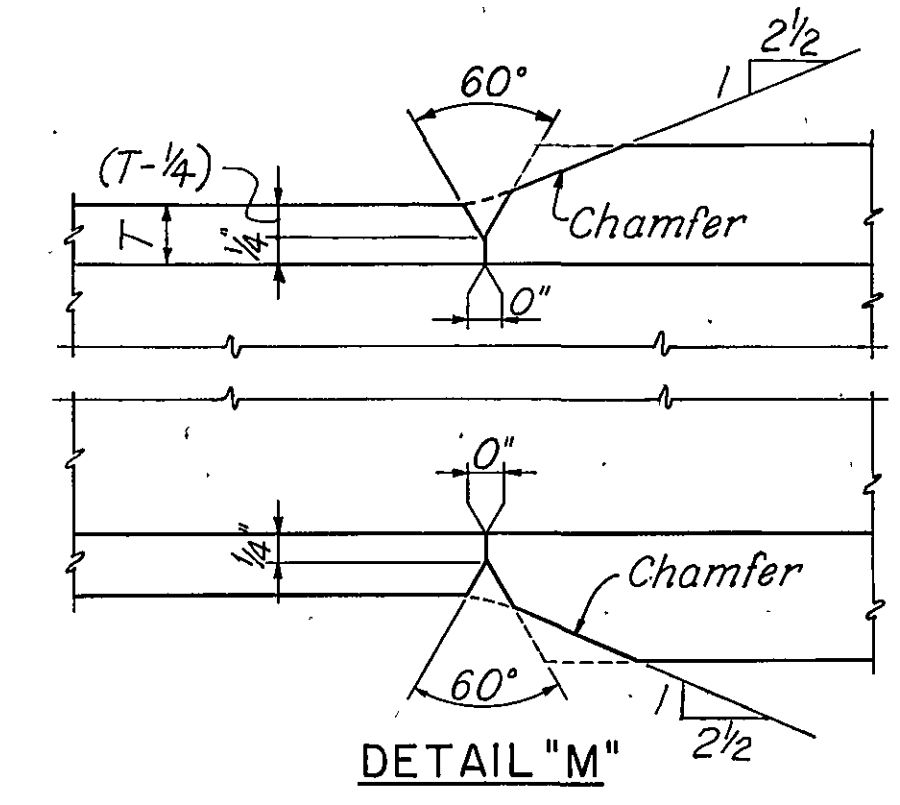
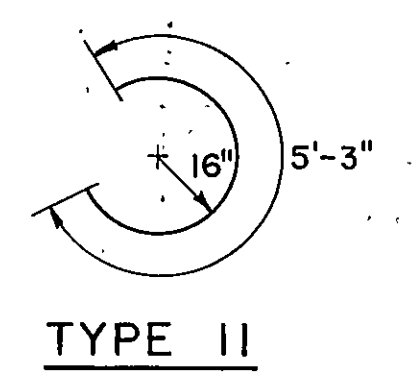
SUPERSTRUCTURE

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R501	568	5'-7"	5	2'-2"	8"				3308
R502	192	15'-2"	Str.						*
R503	16	12'-11"	Str.						*
S501	536	3'-6"	3	7 1/2"	2'-6"	7 1/2"			1957
S502	536	5'-11"	4	1'-4"	2'-6"	7 1/2"			3308
S601	535	35'-8"	Str.						28,661
S602	858	32'-5"	Str.						41,776
S603	72	38'-4"	Str.						4145
S604	100	Varies	Str.	34'-2" to 6'-7"	Vary 2 each by 6 3/4"				3060
S605	14	6'-0"	Str.						126
S701	535	35'-8"	Str.						39,003
S702	100	Varies	Str.	34'-2" to 6'-7"	Vary 2 each by 6 3/4"				4165
S703	14	6'-0"	Str.						172
TOTAL WEIGHT									129,681

**BOLTED FIELD SPLICES**  
**DESIGN SPECIFICATIONS** conform to the requirements set forth on sheet 463, except; strength of splice is based on Section 1.6.31 of the A.A.S.H.O. "Standard Specifications for Highway Bridges" dated 1961, together with current revisions thereof.  
**UNIT STRESSES:** Structural Steel-ASTM A36-basic unit stress 20,000 p.s.i. bending; 12,000 p.s.i. shear. High Strength Bolts-ASTM A325-basic unit stress 13,500 p.s.i. shear; 40,000 p.s.i. bearing.  
**MATERIAL:** Splice plates and bolts shall be according to Item S-7. Bolts shall be 1" diameter, High Strength. The splice weight shall be included under Item S-7, Structural Steel, for payment.  
**FIELD ASSEMBLY:** In the final assembly of parts to be bolted, each girder shall be so supported that drift pins may be placed in a sufficient number of holes (not less 25% for field erection), to provide and maintain accurate alignment of holes and parts. Heavy driving of drifts pins will not be permitted. Sufficient bolts shall be installed and brought to a snug tight condition to bring all parts of the splice into complete contact before the member is released. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-the-nut method. Drift pins shall then be replaced with bolts and tightened in the same manner. Bolt lengths determined by the use of Table No.1 in Sec. S-7.10 shall be adjusted to the next 1/4 inch length increment.



MARK	NUMBER	LENGTH	TYPE
RE400	1	5'-3"	11
RE500	2	5'-7"	Str.
RE600	5	5'-11"	Str.
RE700	3	6'-3"	Str.
RE900	1	6'-10"	Str.
RE1100	2	7'-6"	Str.



Butt welds on girder flange plates shall be ground flush, the finish grinding being parallel to the direction of stress.

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 MANSFIELD, OHIO.

**REINFORCING STEEL**  
 BRIDGE NO. CLA-40-0607  
 UNDER NORTHBOUND LANES S.R. 4  
 CLARK COUNTY U.S.R. 40  
 STA. 324 + 97.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	LK.	LK.	DGC			