



Channel Work including Rock Protection
& Embankment West of Channel to be
Constructed under Project Jac-35-B.49.
Prior to this Project



Average Daily Traffic
Year 2006 = 4,450
31.5% Trucks = 1,400

Drainage Area = 5.39 Sq. Mi.
 Q50 = 1,591 CFS
 Velocity (Avg.) = 5.8 FPS
 Depth of Flow = 5.4 Ft.
 Q25 = 1,282 CFS
 Q100 = 1,940 CFS

TYPE: Continuous Steel Beam with Composite Concrete Deck.

SPANS: 68'-9", 86'-0", 93'-3" & 74'-6"

ROADWAY: 2@40'-0" F/F Concrete
Parapets.

LOADING: HS20-44 (Case II) and
Alternate Military
Loading.

SKEW: 45°-13'-45" Right Forward.

ALIGNMENT: Tangent.

WEARING SURFACE: Monolithic Concrete.

APPROACH SLAB: AS-1-81 (25' Long)



ARCHITECTS • ENGINEERS • INTERIOR DESIGNERS
111 Merchant Street, Cincinnati, Ohio 45246 513/772-1117

SITE PLAN

BRIDGE NO. JAC-35-1149 L/R
OVER C&O R.R. & HORSE CREEK

DESIGNED WBS	DRAWN JEB	TRACED —	CHECKED JET	REVIEWED WBS	DATE 5/14/86	REVIEWED
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ESTIMATED QUANTITIES

JAC-35-11.46

OHIO
FHWA
REGION 5

310
442

ITEM	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE						RIGHT BRIDGE					
				ABUT'S	PIERS	SUPER	GENERAL			ABUT'S	PIERS	SUPER	GENERAL		
503	1748	Cu. Yds.	Unclassified Excavation.	408	466					408	466				
505	L.S.	Lump Sum	Pile Driving Equipment Mobilization.				L.S.						L.S.		
507	6450	Lin. Ft.	Steel Piles, HP 12x53	1,836	1,389					1,836	1,389				
507	174	Each	Steel Points.	36	51					36	51				
509	122,206	Lbs.	Reinforcing steel, Grade 60.	12,573	47,137	—				12,673	49,223	—			
511	876	Cu. Yds.	Class S Concrete, Superstructure, See Proposal Note.			438						438			
511	319	Cu. Yds.	Class C Concrete, Pier above Footings.		155						164				
511	282	Cu. Yds.	Class C Concrete, Abutments above Footings.	141						141					
511	510	Cu. Yds.	Class C Concrete Footings.	112	143					112	143				
513	64,628	Lbs.	Structural Steel A588 (AISC Category I)			320,814						320,814			
513	7080	Each	Welded Stud Shear Connectors.			3540						3540			
516	118	Lin. Ft.	Structural Expansion Joint, including 3" Strip Seal			59						59			
516	44	Lin. Ft.	PVC Waterstop, as per plan.	22						22					
518	173	Cu. Yds.	Porous Rockfill	86						87					
518	200	Lin. Ft.	6" Perforated Helical Corrugated Steel Pipe, 70701	100						100					
518	144	Lin. Ft.	6" Non-Perforated Helical Corrugated Steel Pipe, including Special 70701	72						72					
518	6	Each	Scupper, including Supports, as per plan.			3						3			
601	207	Cu. Yds.	Remove & Replace Rock Channel Protection, Type B w/ Filter, as per plan.				103						104		
601	4083	Sq. Yds.	Crushed Aggregate Slope Protection.				1,750						2,333		
824	217,984	Lbs.	Epoxy Coated Reinforcing Steel, Grade 60.	7276		101,717				7275		101,716			
Special	2807	Sq. Yds.	Sealing of Concrete Surfaces (Epoxy), See Proposal Note.	169	452	771				169	475	771			
625			See Sheet 292 for Lighting Summary												

GENERAL NOTES:

REFERENCE: SHALL BE MADE TO STANDARD DRAWINGS:
AS-1-81 DATED 11/27/81 SHEETS 1, 2, & 3
BR-1 DATED 5/29/79
FB-1-82 DATED 5/10/82
RB-1-55 REVISED 2/2/59
SD-1-69 DATED 6/12/69 SHEETS 1, 3 & 4
EXJ-2-81 REVISED 4/2/84 SHEETS 1 & 2
GR-1 DATED 1/11/85
GR-3 DATED 1/21/85
MC-7 DATED 10/15/76
HL-5 DATED 9/6/73
AND TO SUPPLEMENTAL SPECIFICATION:
836 DATED 11/12/85
824 DATED 10/8/82

DESIGN SPECIFICATIONS: THIS STRUCTURE COMFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING THE 1984 INTERIM SPECIFICATIONS AND THE OHIO SUPPLEMENT TO THESE SPECIFICATIONS.

DESIGN LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING.

CONCRETE: CLASS S - COMPRESSIVE STRENGTH 4500
CLASS C - COMPRESSIVE STRENGTH 4000

REINFORCING STEEL: ASTM A615, A616 or A617--GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.

STRUCTURAL STEEL: ASTM A588 - YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, TOP AND BOTTOM MAT.

MONOLITHIC WEARING SURFACE: IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

ROCK CHANNEL PROTECTION: UNDER THIS ITEM THE EXISTING ROCK CHANNEL PROTECTION AND FILTER SHALL BE CAREFULLY REMOVED AND REPLACED. WORK SHALL BE DONE PER 601.08. THE FILTER MATERIAL SHALL BE REPLACED IN KIND. IF A FABRIC FILTER WAS USED IT SHALL BE NEATLY CUT FOR REMOVAL. NEW FILTER FABRIC SHALL BE USED TO REPLACE THE OLD AND SHALL OVERLAP THE EXISTING PER 601.08.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

STRIP SEALS AND EXTRUSIONS: FOR EXPANSION JOINT SHALL BE WATSON/BROWN/ACME, D.S. BROWN, OR APPROVED EQUIVALENT. DRAWINGS OF THE SEALS SHOWING DIMENSIONS, DIMENSIONAL TOLERANCES AND WEIGHT PER FOOT SHALL BE SUBMITTED WITH THE REQUEST FOR DESIGN APPROVAL. SEALS FOR BRIDGE DECK JOINTS SHALL BE FURNISHED IN ONE CONTINUOUS PIECE. SHOP SPLICES SHALL BE MADE BY A VULCANIZED PROCESS.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 70 TONS PER PILE WHICH INCLUDES AN ALLOWANCE OF 34 TONS PER PILE FOR DOWNDRAW AND THE DESIGN LOAD FOR THE PIER NO. 1 AND NO. 3 PILES IS 45 TONS PER PILE AND PIER NO. 2 IS 65 TONS PER PILE.

CONSTRUCTION SEQUENCE: SEE PROJECT GENERAL NOTES FOR SEQUENCE OF CONSTRUCTION.

EMBANKMENT: SEE PROJECT GENERAL NOTES FOR EMBANKMENT CONSTRUCTION AND INSTRUMENTATION.

CONSTRUCTION CLEARANCE: OF 15'0" HORIZONTALLY IN EACH DIRECTION FROM THE CENTER OF THE C & O TRACK AND 23'0" VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE RAIL SHALL BE MAINTAINED AT ALL TIMES.

PILE POINTS: STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED PILING. THE STEEL POINTS SHALL BE FURNISHED BY THE ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS INC., P.O. BOX 688, FRANKLIN LAKE, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVENUE, P.O. BOX 10559, PORTLAND, OREGON 97210 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR.

PILES: SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES AT THIS STRUCTURE, THE SPILL-THRU SLOPE EMBANKMENT AT THE FORWARD ABUTMENT SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BEHIND THE ABUTMENT. THE EXCAVATION FOR THE FOOTINGS AND THE INSTALLATION OF THE PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT AND THE EMBANKMENT AT THE REAR ABUTMENT IS COMPLETED AND THE EMBANKMENT HAS EXPERIENCED A WAITING PERIOD OF 60 DAYS. THE DIRECTOR MAY SHORTEN THE WAITING PERIOD IF THE CONTRACTOR'S FIELD MEASUREMENTS INDICATE THAT 90 PERCENT CONSOLIDATION HAS BEEN ATTAINED. THIS NOTE DOES NOT APPLY TO THE CENTER PIER (PIER NO. 2) OF THIS STRUCTURE.

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111 Merchant Street, Cincinnati, Ohio 45246 513/772-1117

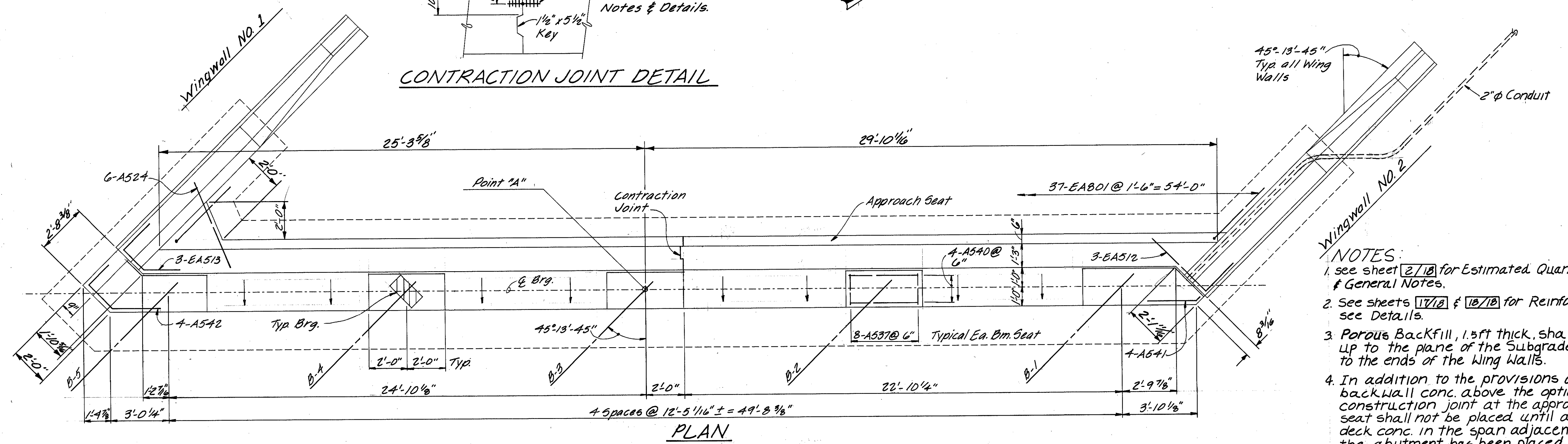
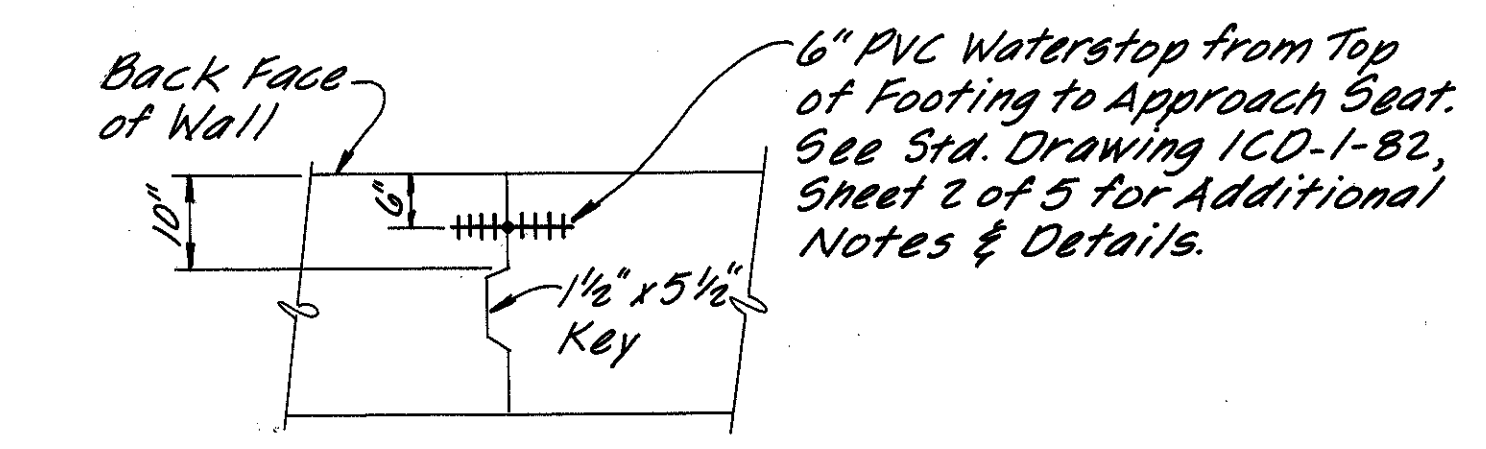
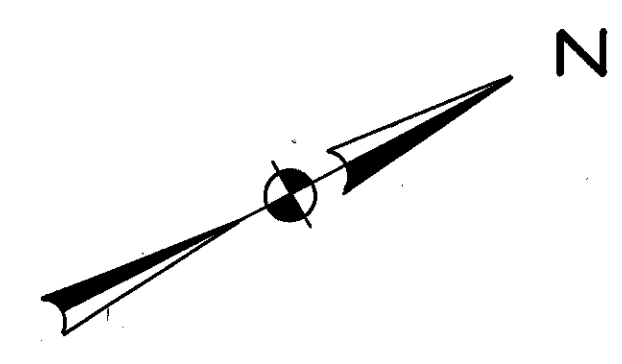
ESTIMATED QUANTITIES
& GENERAL NOTES
BRIDGE NO. JAC-35-1149 L/R
OVER C&O R.R. & HORSE CREEK

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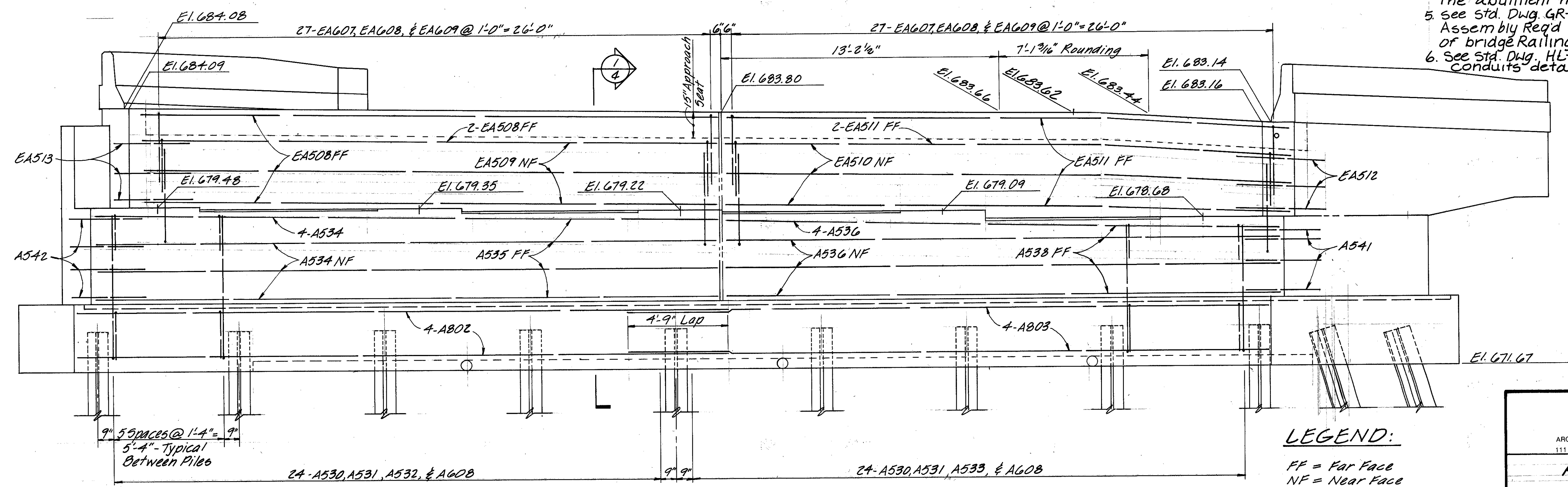
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JAN 3 1991

JAC-35-11.46

OHIO
FHWA
REGION 5
311
442



- NOTES:**
1. see sheet 2/18 for Estimated Quantities & General Notes.
 2. See sheets 17/18 & 18/18 for Reinforcing see Details.
 3. Porous Backfill, 1.5ft thick, shall extend up to the plane of the Subgrade & laterally to the ends of the Wing Walls.
 4. In addition to the provisions of 511.08, back wall conc. above the optional construction joint at the approach slab seat shall not be placed until after the deck conc. in the span adjacement to the abutment has been placed.
 5. see Std. Dwg. GR-3 for conc. Insert Anchor Assembly Req'd to Attach Guardrail to Ends of bridge Railing.
 6. See Std. Dwg. HL-5 for additional Lighting Conduits details.



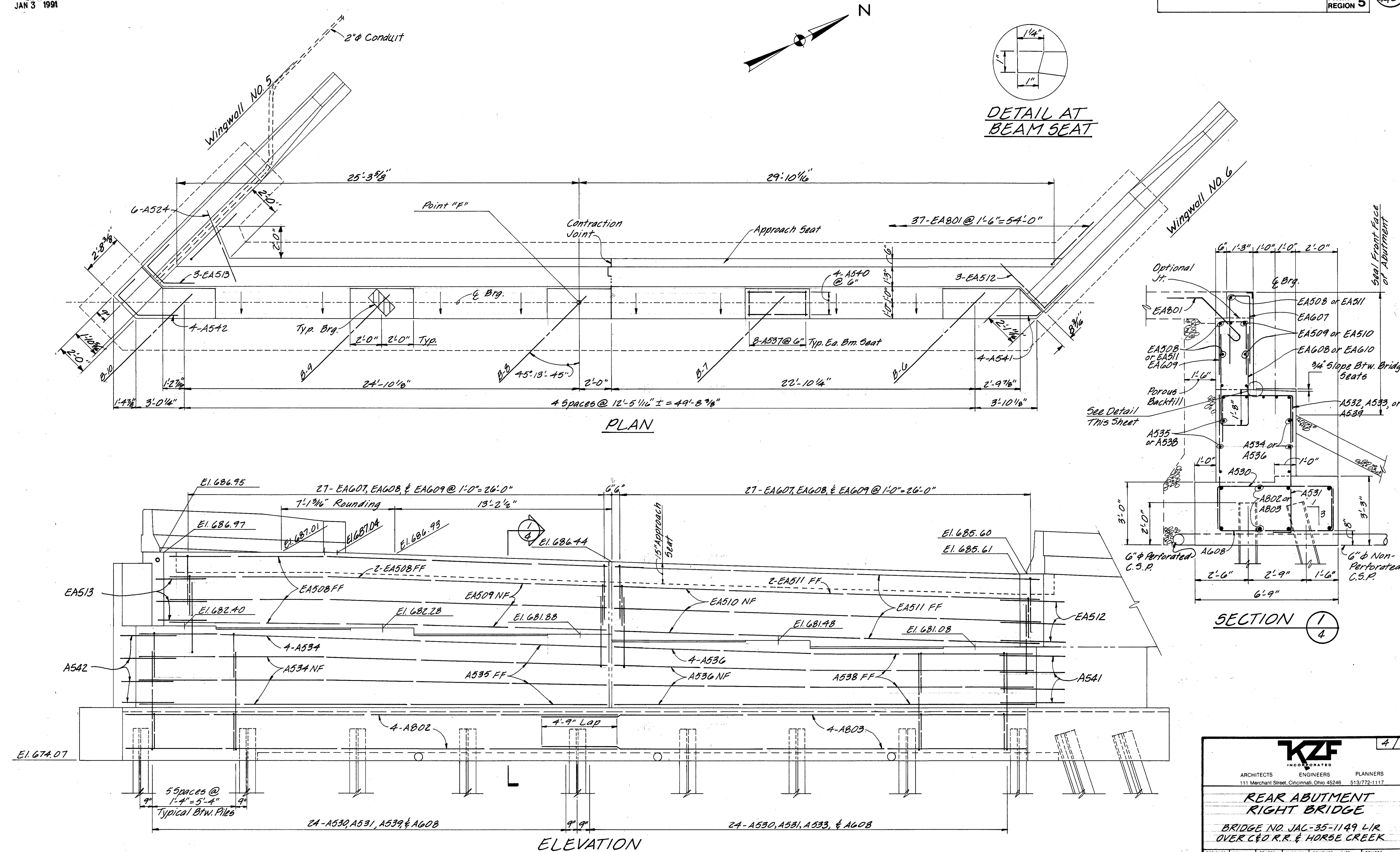
LEGEND:
FF = Far Face
NF = Near Face
El. = Elevation

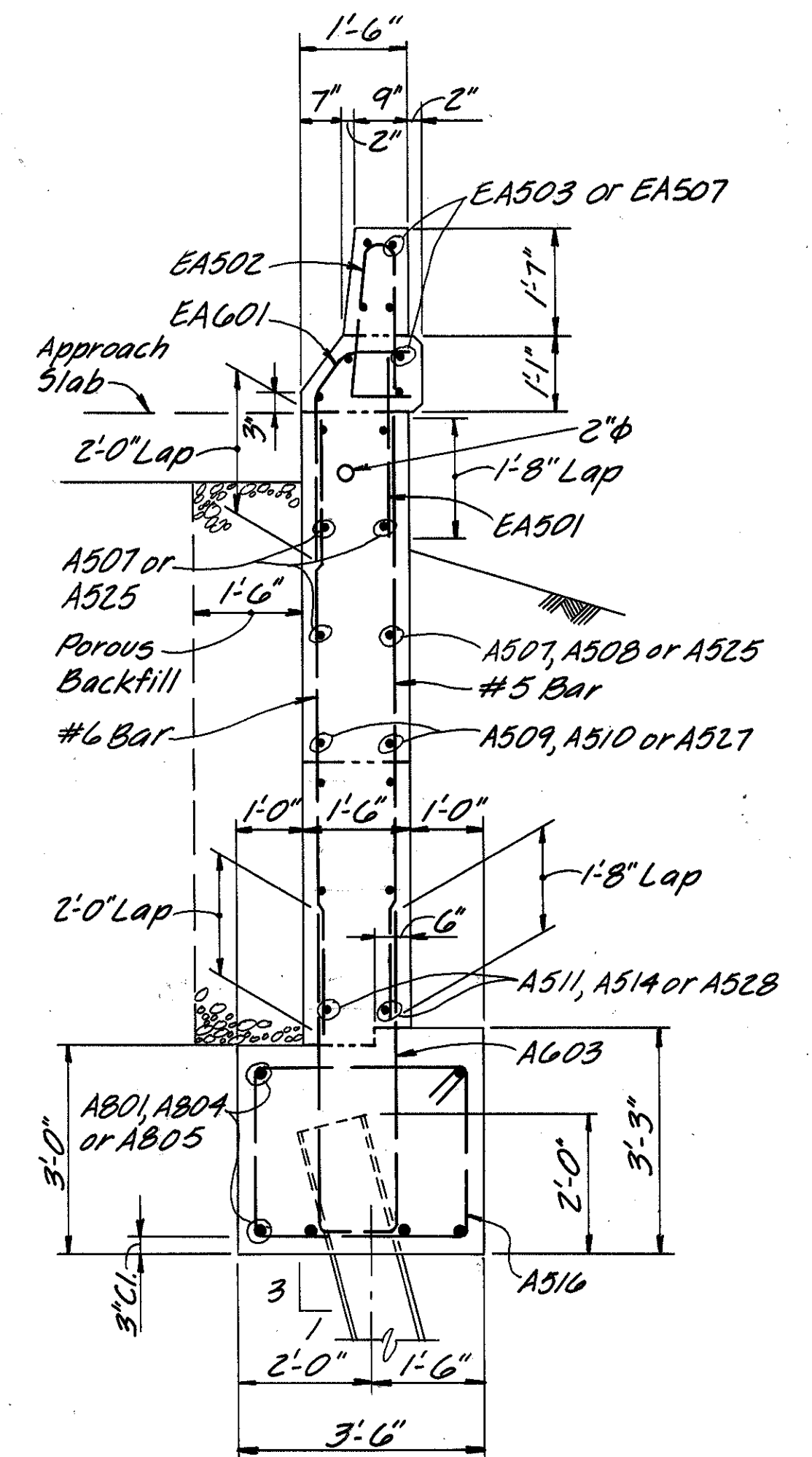
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111 Merchant Street, Cincinnati, Ohio 45246 513/772-1117

**REAR ABUTMENT
LEFT BRIDGE**

BRIDGE NO. JAC-35-1149 LR
OVER C&O R.R. & HORSE CREEK

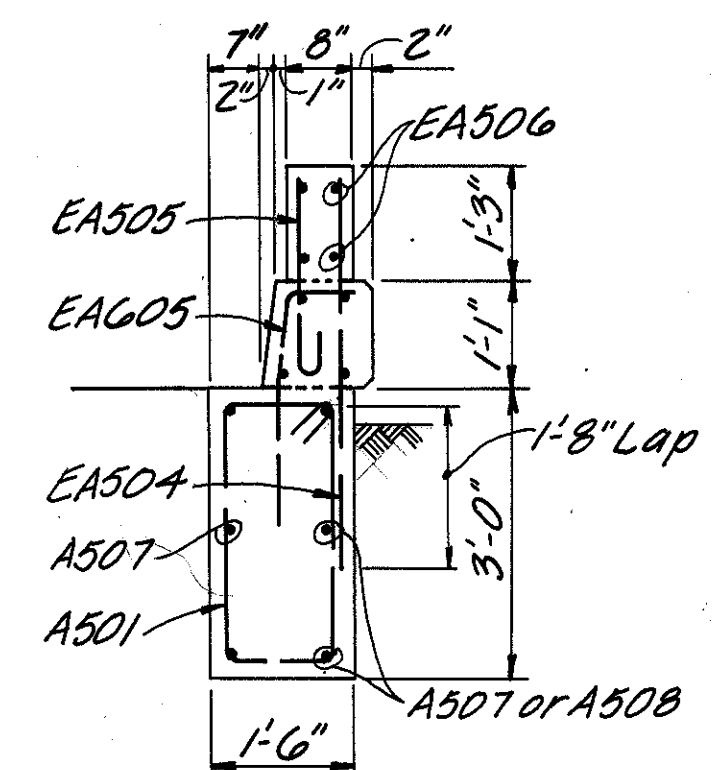
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WINGWALL ELEVATION NO.2 & NO.6

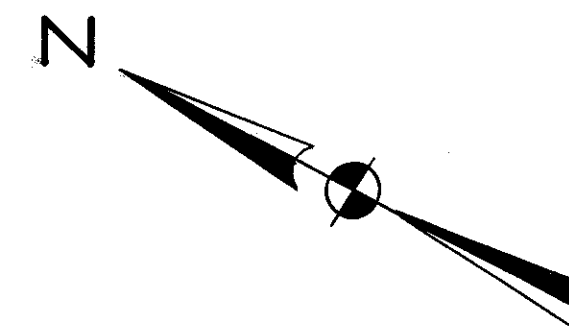
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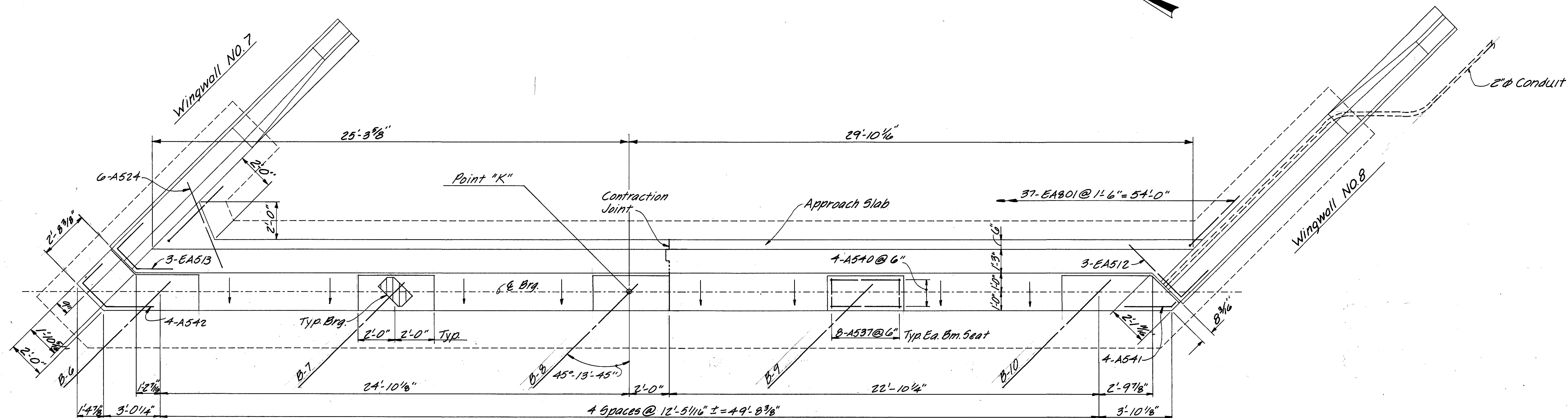
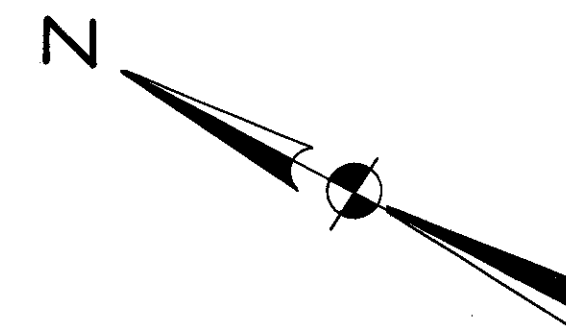
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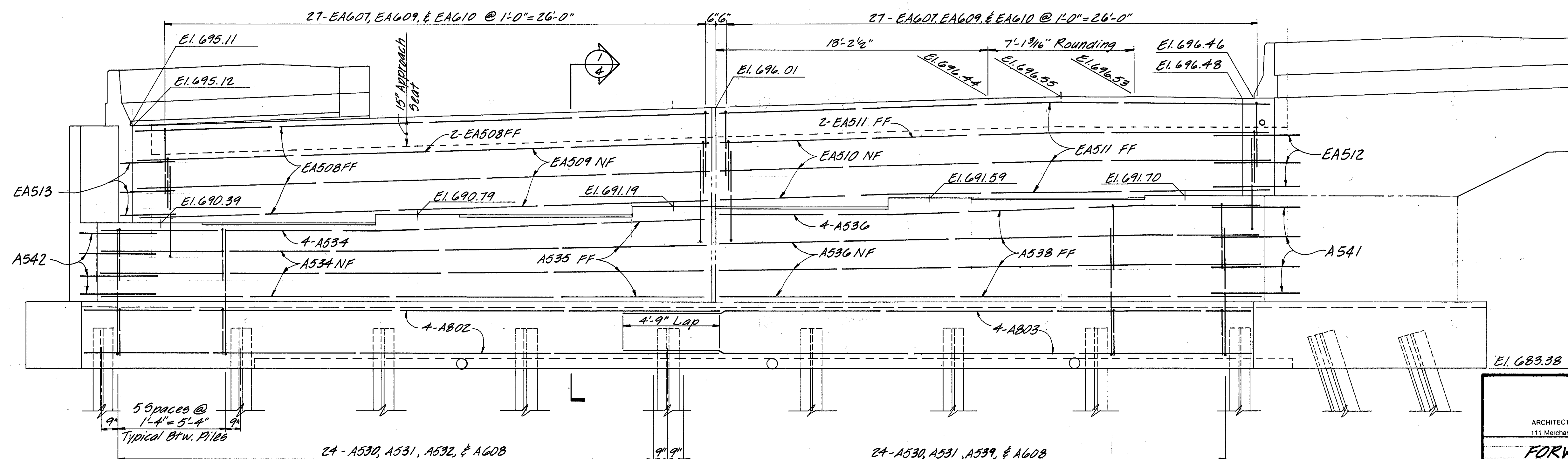
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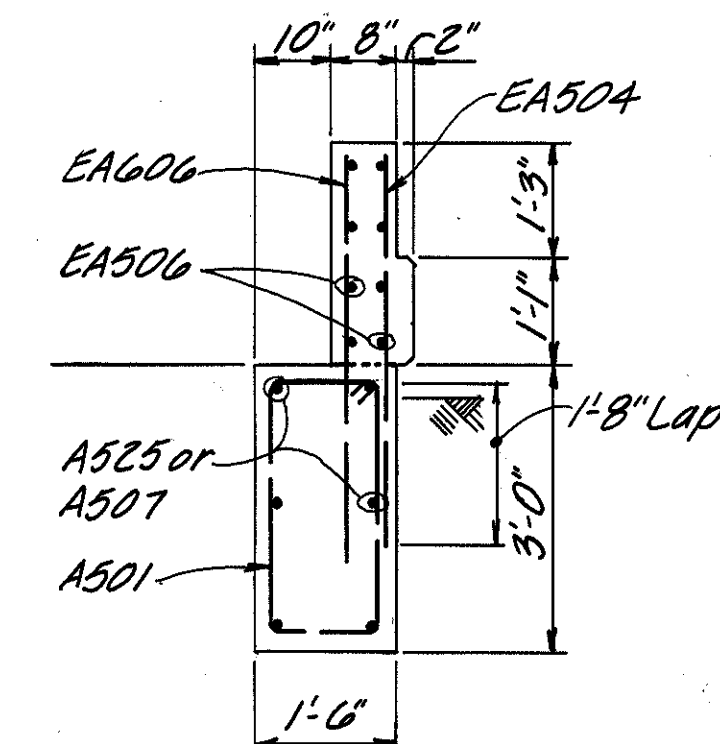
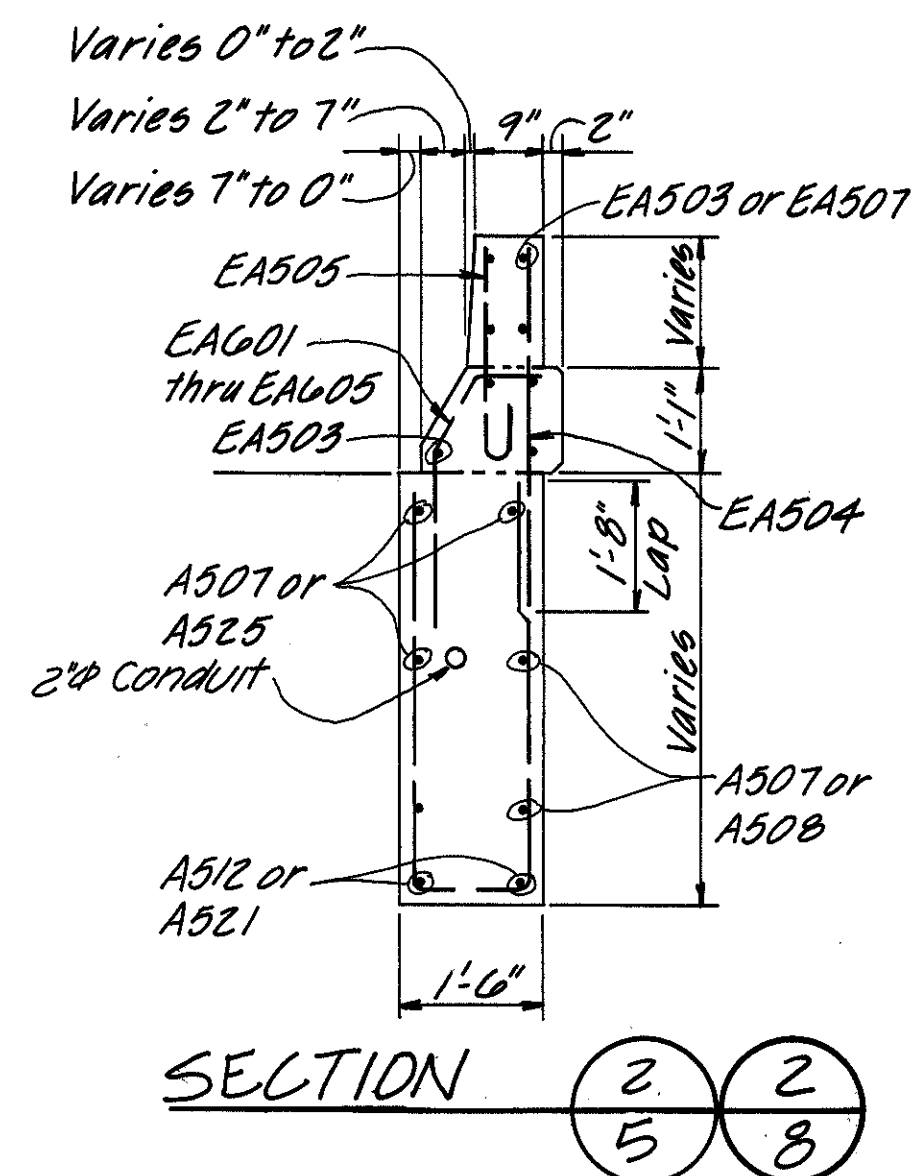
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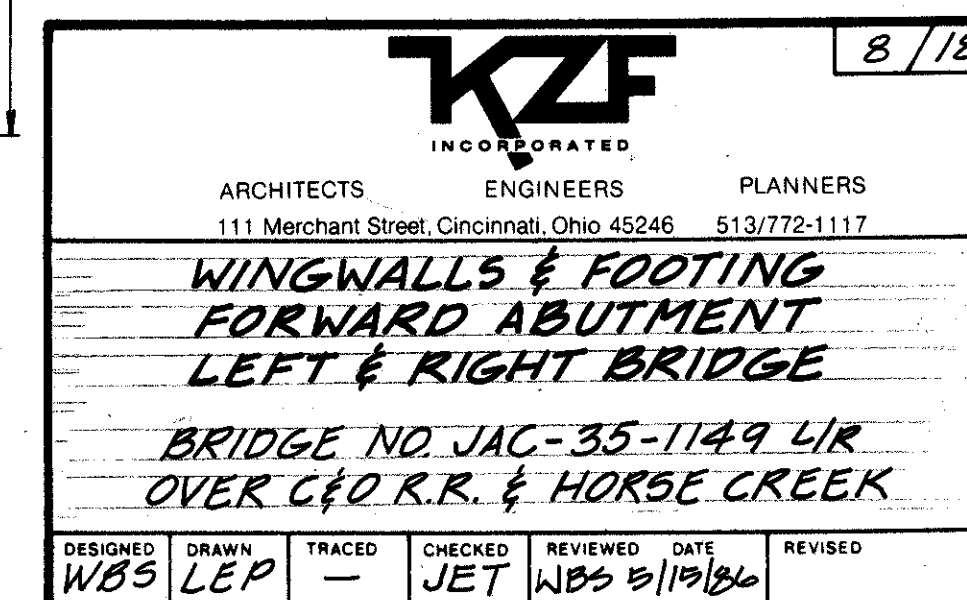
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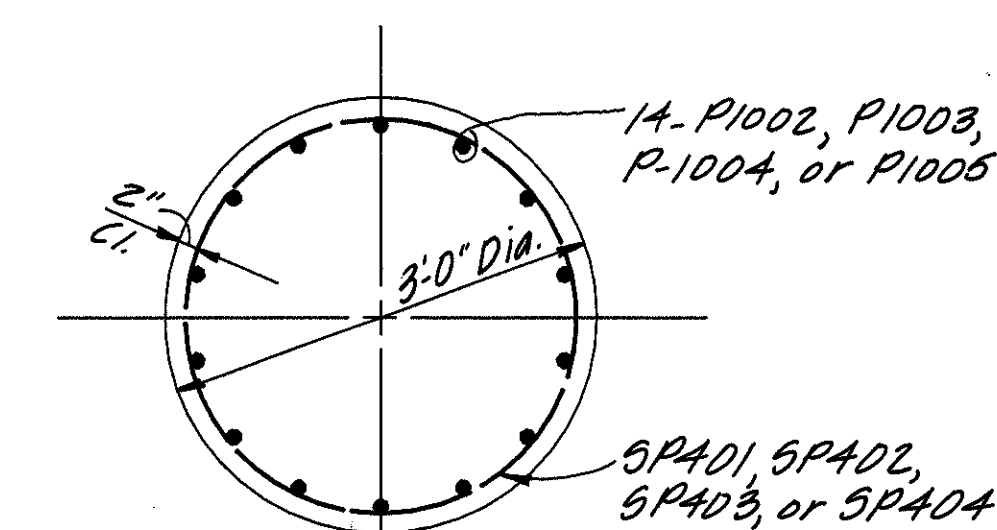


ELEVATION

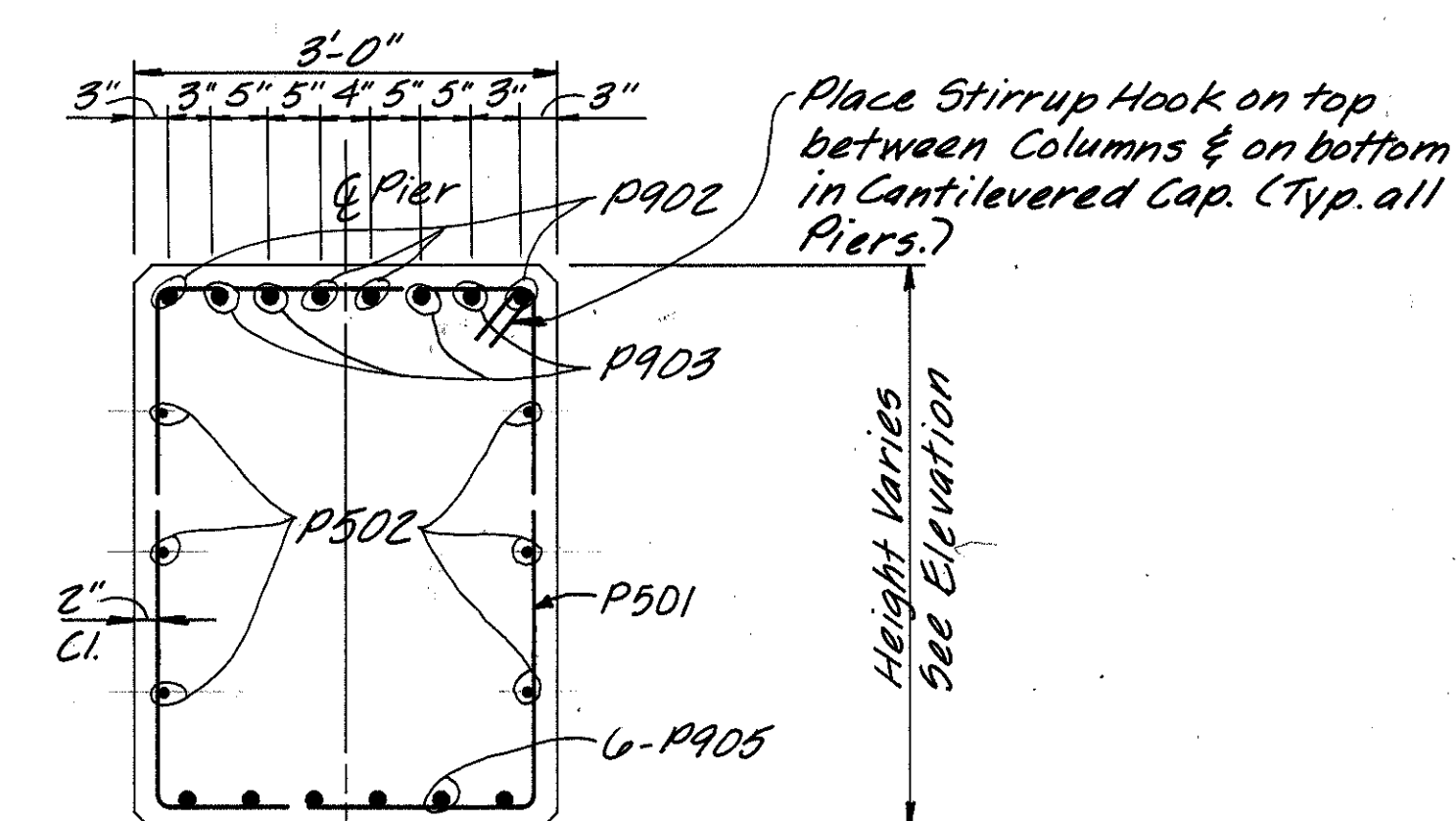


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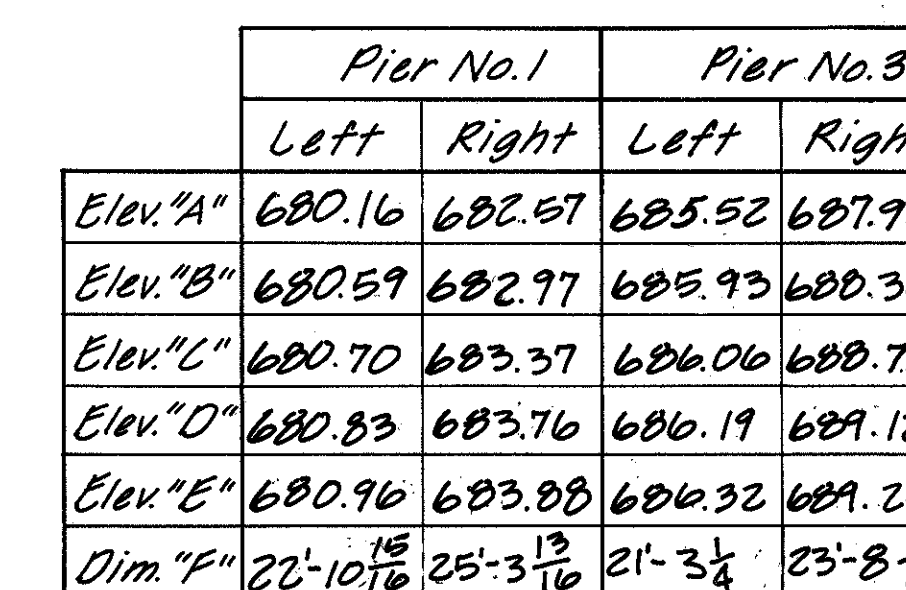


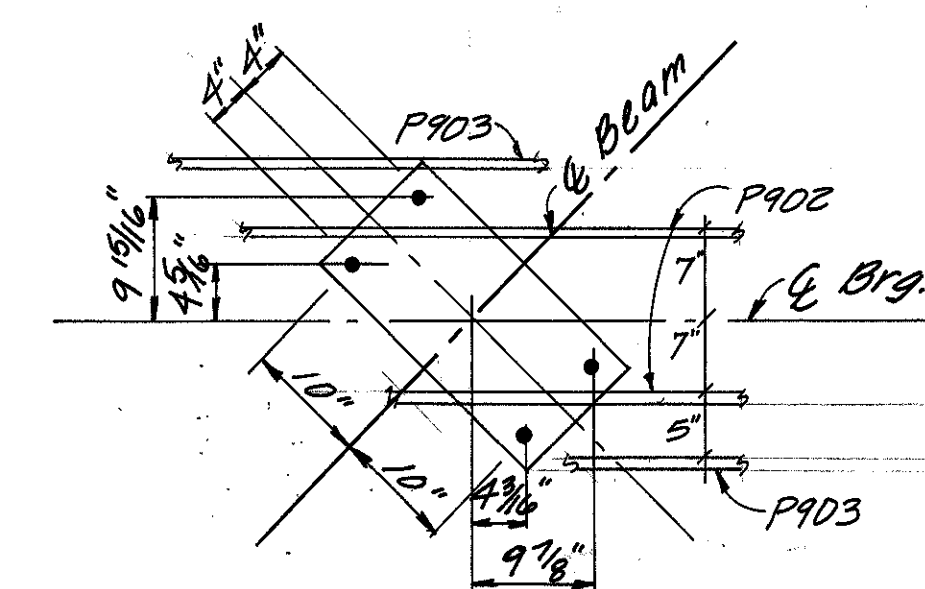
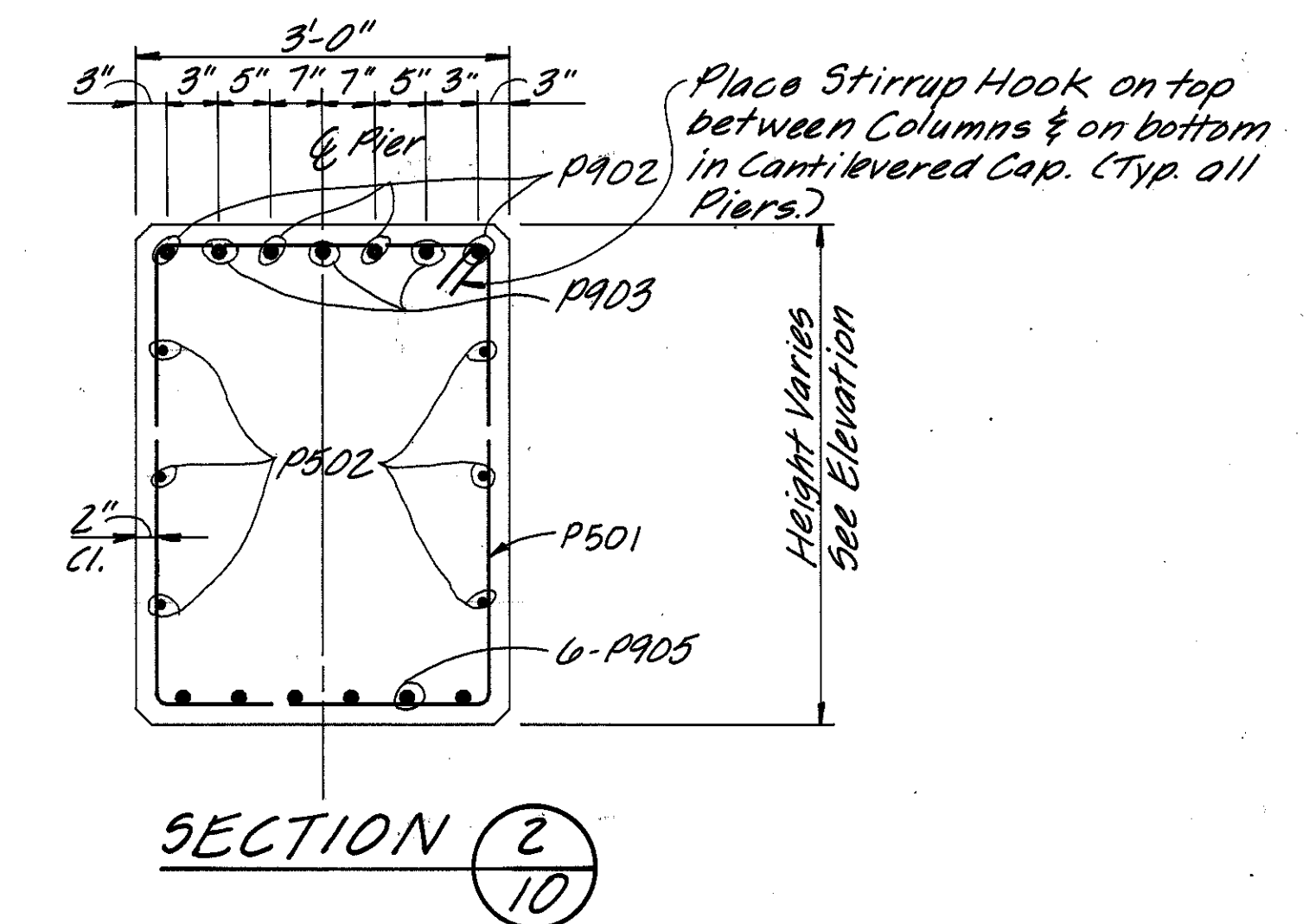
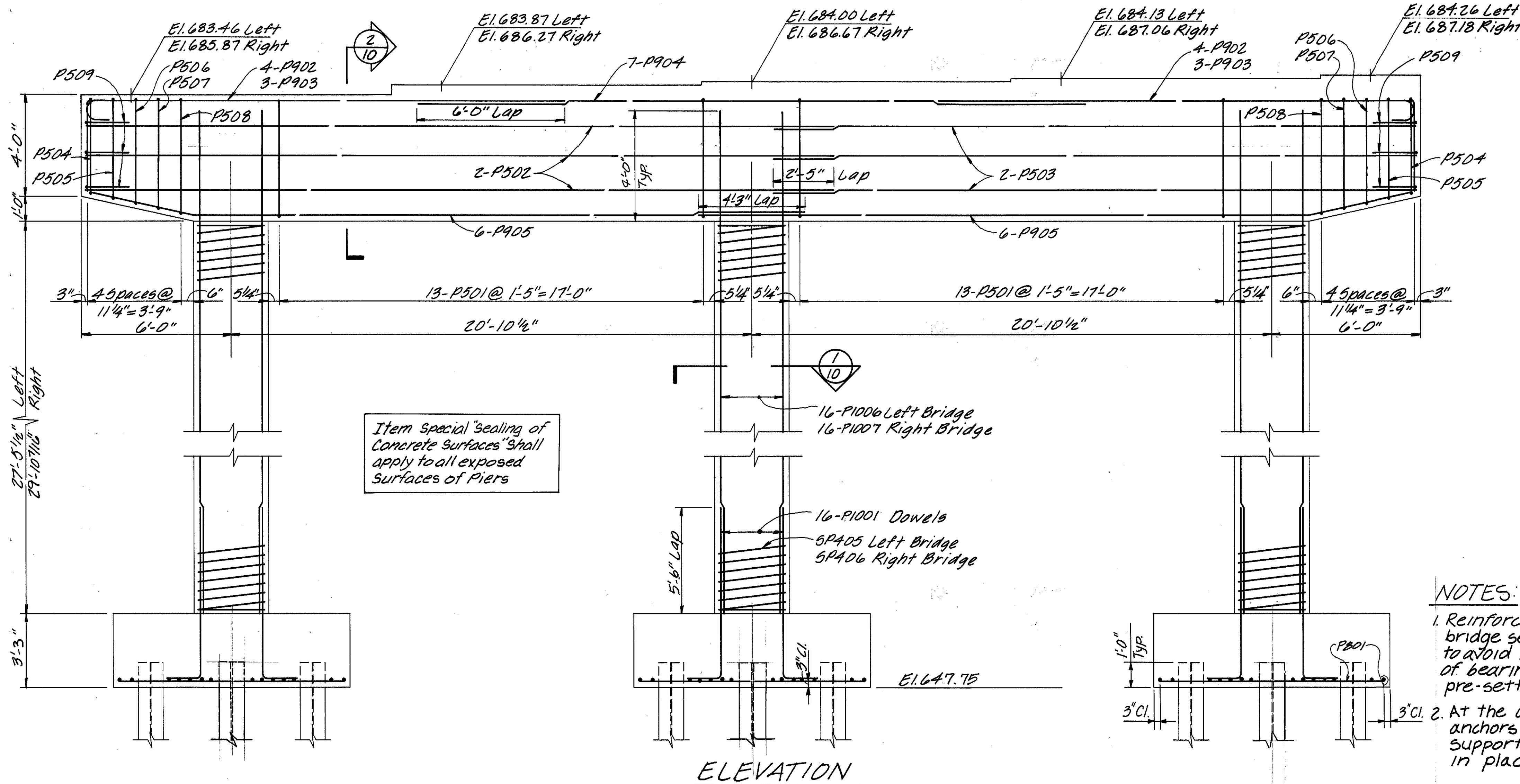
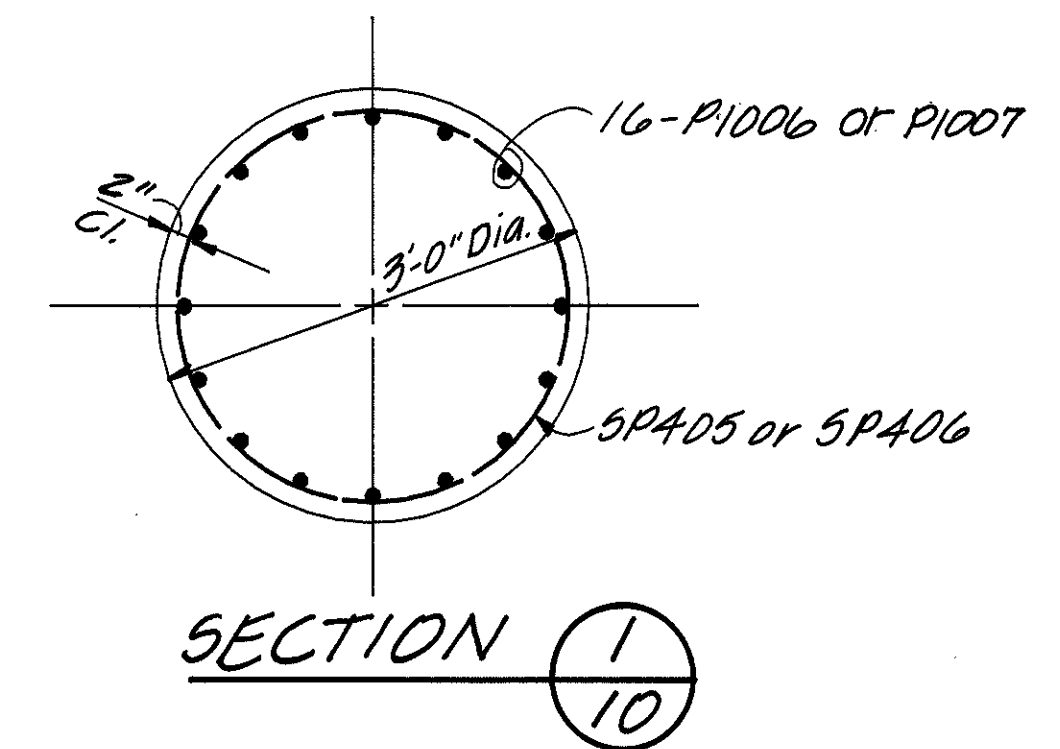
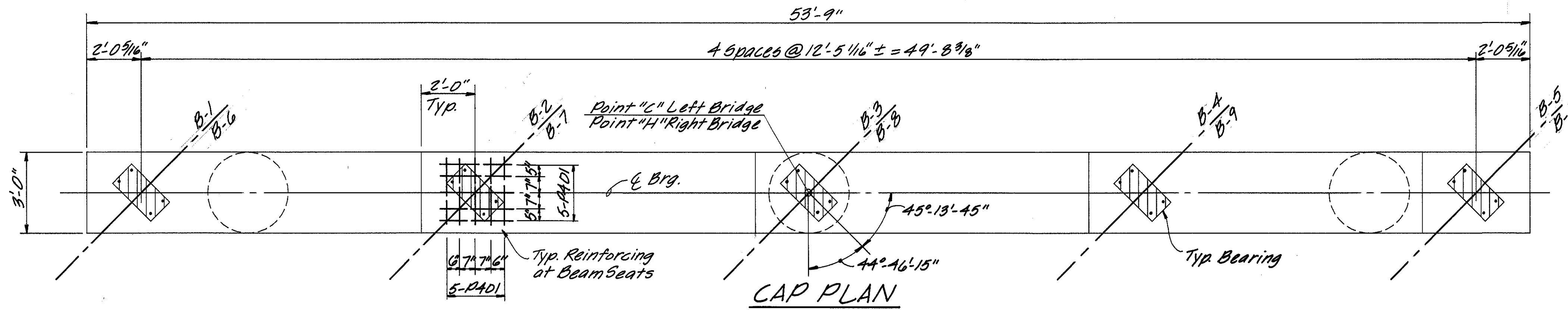
SECTION (1)
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SECTION 2
9

1. See Sheet 2/18 for General Notes & Quantities.
2. See Sheets 17/18 & 18/18 for Reinforcing Steel Details.
3. See Sheet 16/18 for Layout Diagram.
4. See Sheet 10/18 for Anchor Bolt Layout.
5. See Sheet 11/18 for Footing Details.



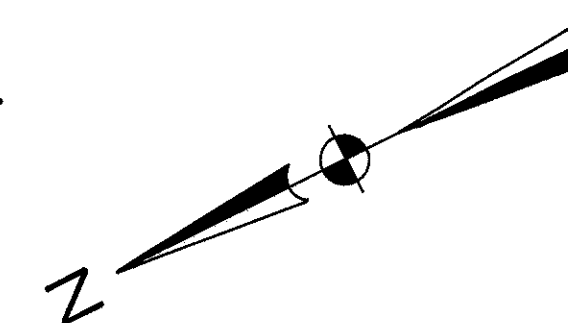
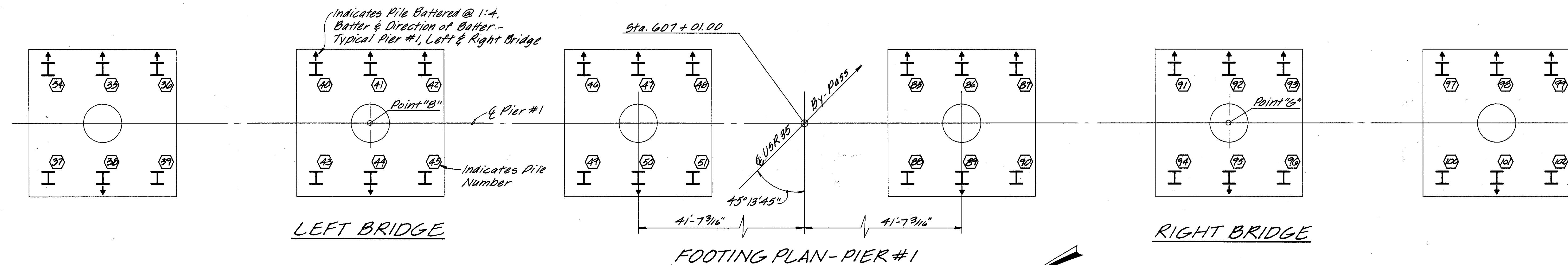
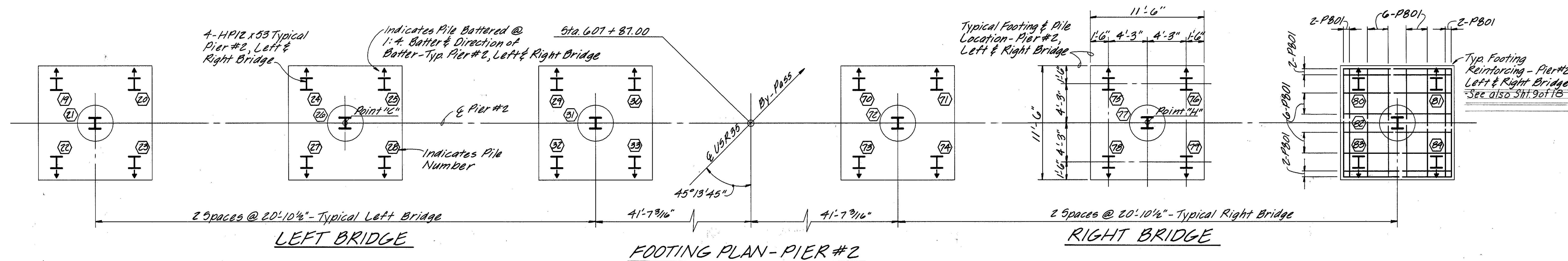
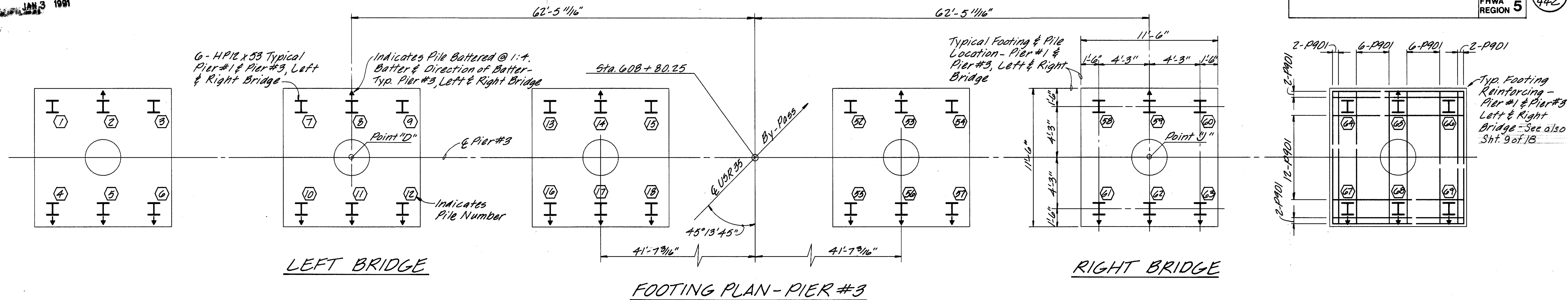


ANCHOR BOLT LAYOUT

NOTES:

1. Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors.
2. At the option of the Contractor, bearing anchors (or formed holes), located & supported by templates, may be cast in place.

KZF INCORPORATED		10/18
ARCHITECTS	ENGINEERS	PLANNERS
111 Merchant Street, Cincinnati, Ohio 45246 513/772-1117		
PIER NO. 2 LEFT & RIGHT BRIDGE		
BRIDGE NO. JAC-35-1149 LIR OVER C&O R.R. & HORSE CREEK		
DESIGNED MP	DRAWN LEP	CHECKED WBS
TRACED —	REVIEWED GTW	DATE 5/15/86



KZF INCORPORATED		11 / 18	
ARCHITECTS	ENGINEERS	PLANNERS	
111 Merchant Street, Cincinnati, Ohio 45246		513/772-1117	
PIER FOOTINGS			
BRIDGE NO. JAC-35-1149 WIR OVER C&O R.R. & HORSE CREEK			
DESIGNED MP	DRAWN LEP	TRACED -	CHECKED WBS
REVIEWED GTW		DATE 5/13/86	REVISED



1. See Sheet 2/16 for General Notes & Quantities.
2. See next Sheet for Additional Details & Layout Diagram.
3. See Sheet 15/18 for Intermediate Crosstrames.
4. See Std. Drwg. 5D-1-69 for additional Splice, Scupper, & Crossframe Details.
5. When a shape or plate is designated (CVN) the material shall meet specified minimum notch toughness requirement as specified in T11.01 of C15.
6. In lieu of A588 steel, A36 steel, galvanized, may be furnished for bearings, except for upper plate element of bearings. This A36 Steel shall be included with the A588 Steel quantity for payment.
7. High Strength Bolts shall be 1" diameter A325.
8. A588 Steel is to be left unpainted. See C15 513.221 for cleaning Requirements.
9. For fixed bearing & rockers see Std. Drwg's. FB-1 & RB-1.

12/18



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FRAMING PLAN

BRIDGE NO. JAC-35-1149 LR
OVER C&D R.R. & HORSE CREEK

DESIGNED
WBS

DRAWN
LEP

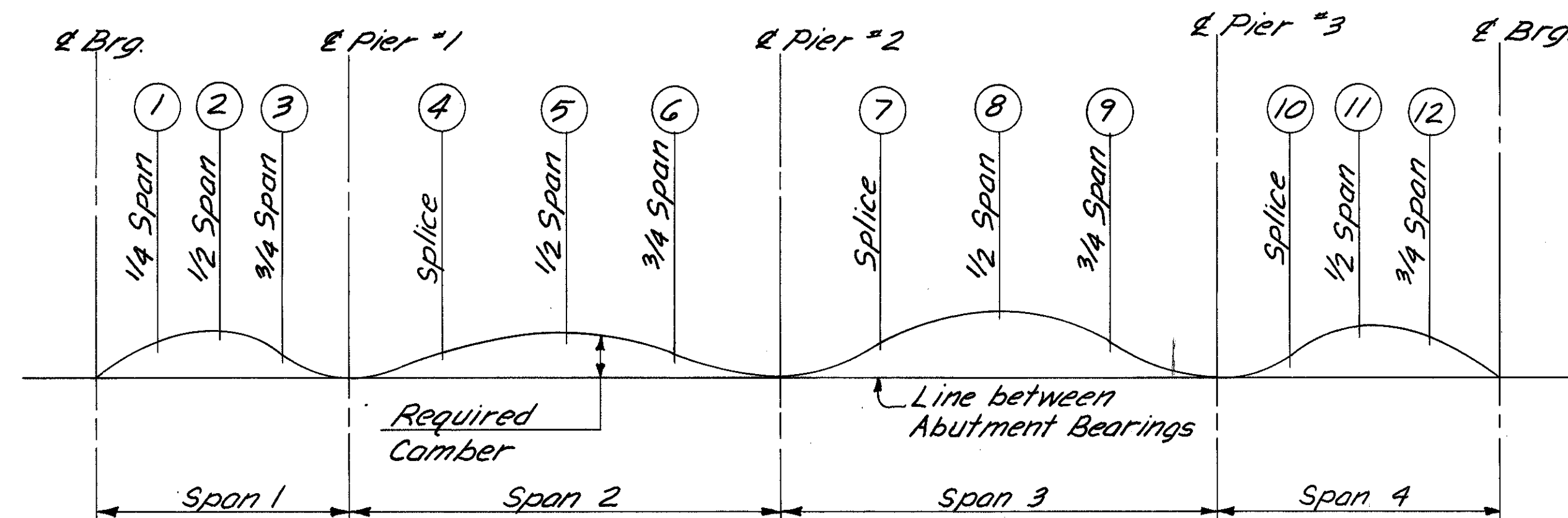
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REVIEWED
WBS 5/18/80

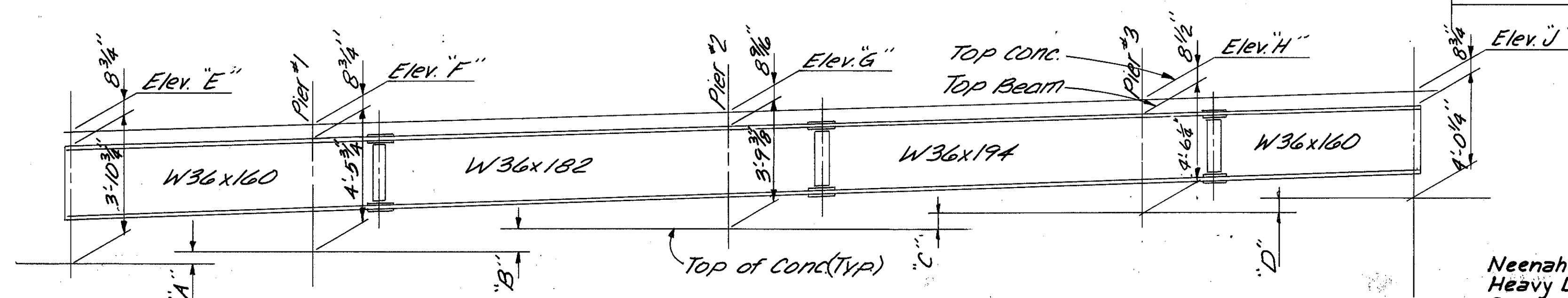
DATE

REVISED



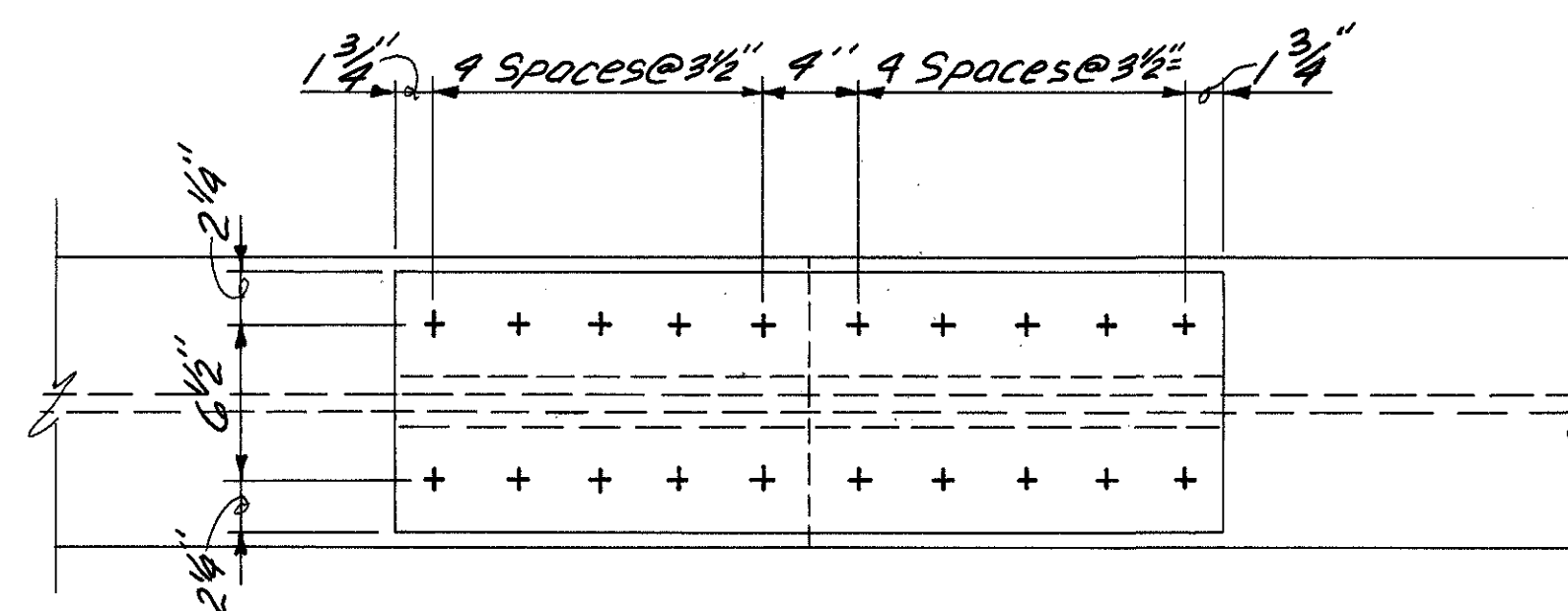
LAYOUT DIAGRAM

DEFLECTION & CAMBER TABLE												
DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
D.L. Steel Beam	3/32"	1/8"	1/16"	3/32"	1/8"	1/16"	3/32"	7/32"	1/8"	1/16"	5/32"	1/8"
Remaining D.L.	23/32"	7/8"	7/16"	11/32"	15/16"	1/2"	19/32"	11/32"	3/4"	1/2"	11/32"	7/8"
Total Camber	13/16"	1"	1/2"	7/16"	1 1/16"	9/16"	11/16"	1 1/16"	7/8"	9/16"	1 3/16"	1"

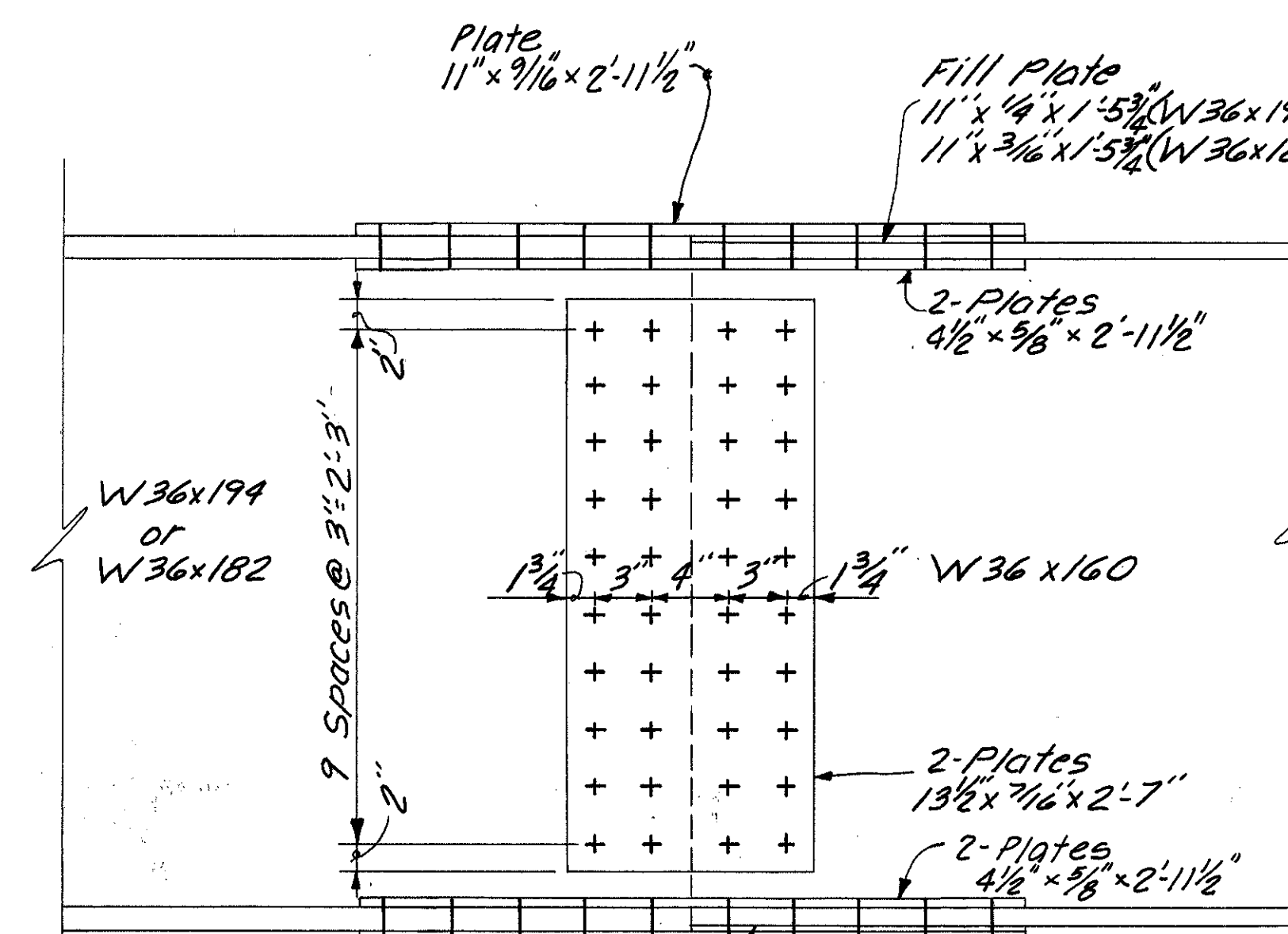


ELEVATION LAYOUT

	BEAM	DIM. A	DIM. B	DIM. C	DIM. D	EI. E	EI. F	EI. G	EI. H	EI. J
Left Bridge	B-1	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68331	68537	68795	69075	69273
	B-2	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68372	68578	68836	69116	69315
	B-3	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68385	68591	68849	69129	69328
	B-4	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68398	68604	68862	69142	69341
	B-5	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68411	68617	68875	69155	69354
Right Bridge	B-6	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68571	68778	69036	69315	69514
	B-7	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68611	68818	69076	69355	69554
	B-8	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68651	68858	69116	69395	69594
	B-9	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68691	68897	69155	69435	69634
	B-10	1'-5 3/4"	3'-3 1/16"	2'-0 3/4"	2'-5 5/8"	68703	68909	69167	69447	69645

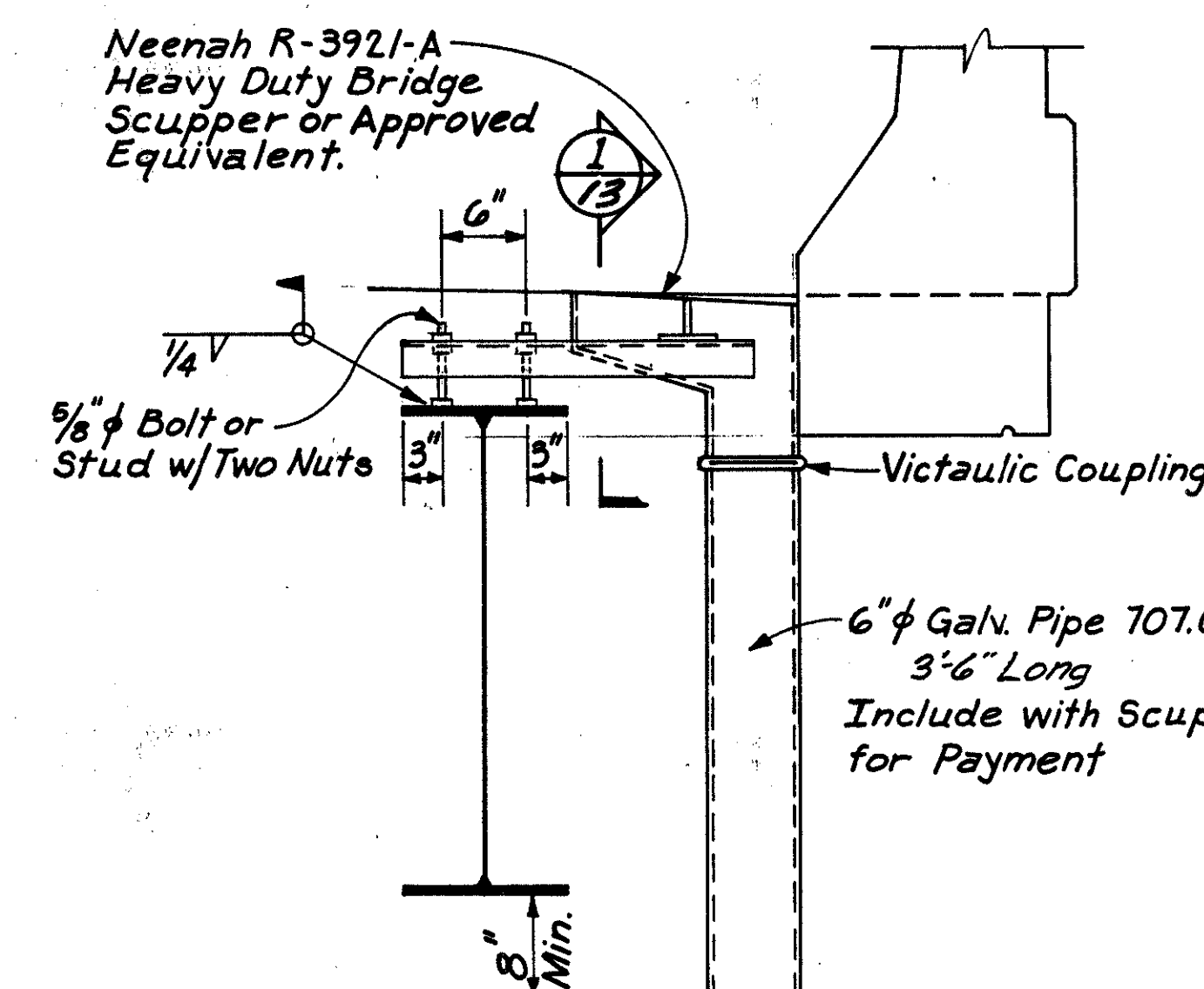


PLAN

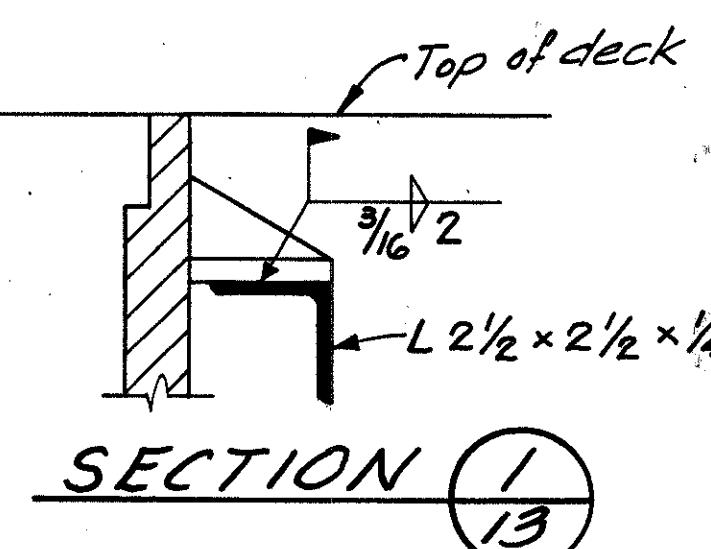
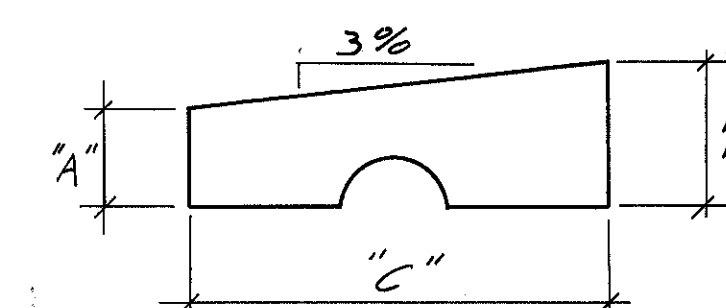


ELEVATION

SPICE DETAIL NO. 1 & NO. 3



SCUPPER DETAIL

ELEVATION
SPICE DETAIL NO. 2

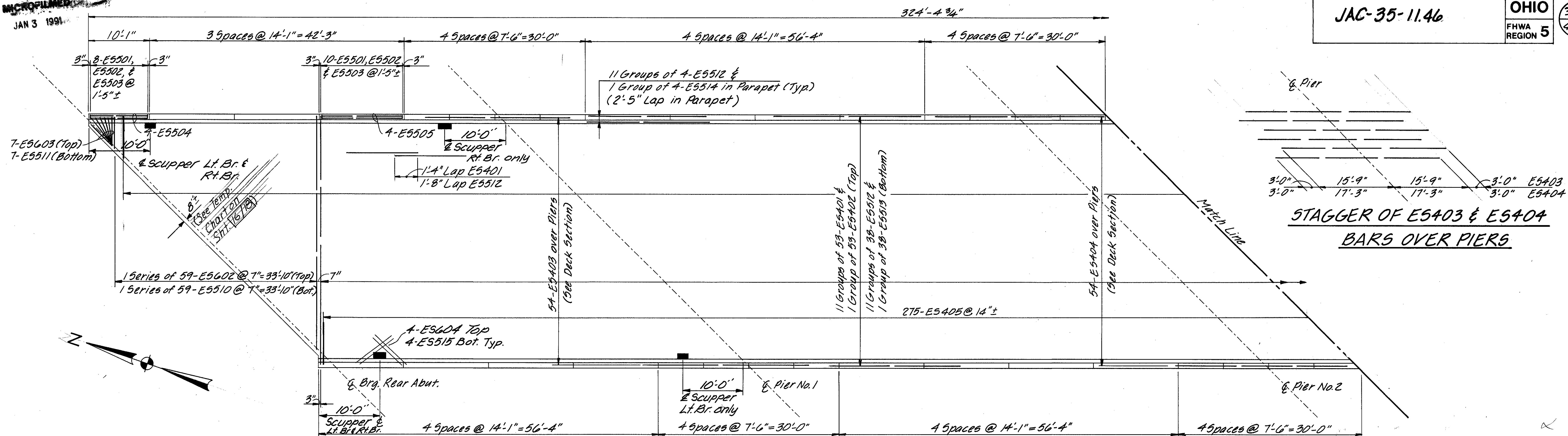
BEVELED SOLE PLATE

TYPE	A	B	C
R-100	2 3/8"	2 5/8"	9"
R-125	2 7/8"	3 1/8"	9"
R-250	3 3/8"	3 5/8"	9"
F-250	3 9/16"	3 1/16"	11"

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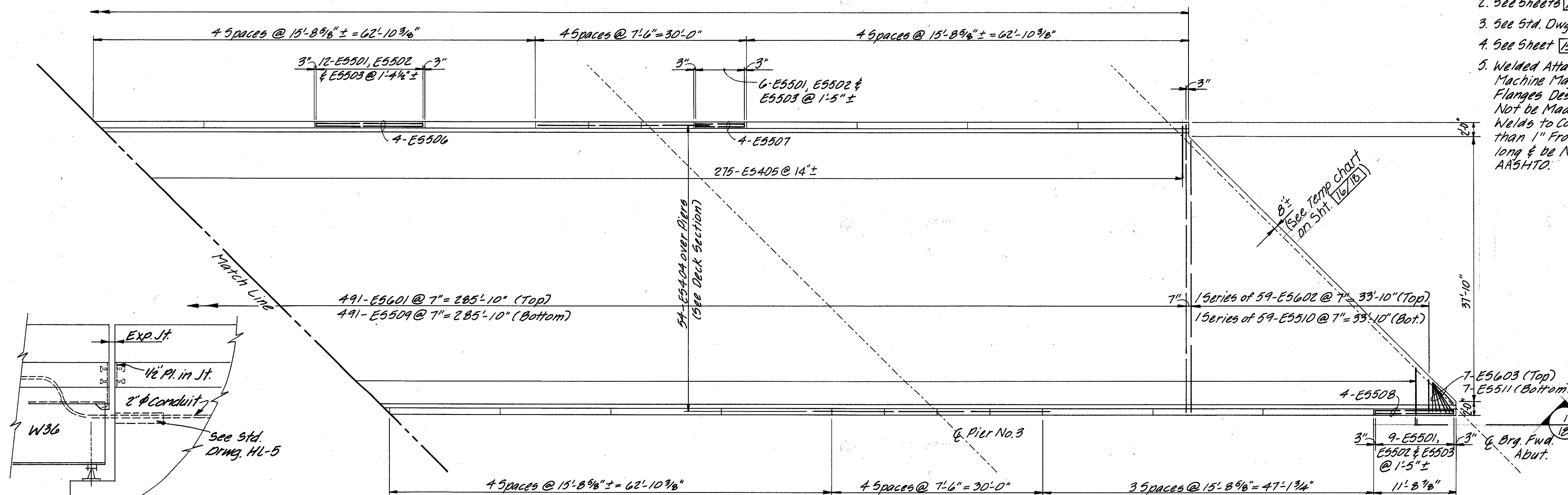
FRAMING DETAILS
BRIDGE NO. JAC-35-1149 LIR
OVER C&O R.R. & HORSE CREEK

DESIGNED: WBS DRAWN: KJO TRACED: JET CHECKED: WBS REVIEWED: DATE: 5/15/86



NOTES

1. See Sheet 2/18 for General Notes & Quantities.
2. See Sheets 17/18 & 18/18 for Reinf. Steel Details.
3. See Std. Dwg. BR-1 for Additional Bridge Railing Details.
4. See Sheet 15/16 for Additional Deck Details.
5. Welded Attachment of Supports for Conc. Deck Finishing Machine May be Made to Areas of the Fascia Stringer Flanges Designated "Compression". Attachments Shall Not be Made to Areas Designated "Tension". Fillet Welds to Compression Flanges Shall be Not Closer than 1" From Edge of Flange, be Not More than 2" long & be Not Smaller than the Min. Size Required by AASHTO.



DECK PLAN

SECTION 1
(Typ. 4 outside corners.) 18



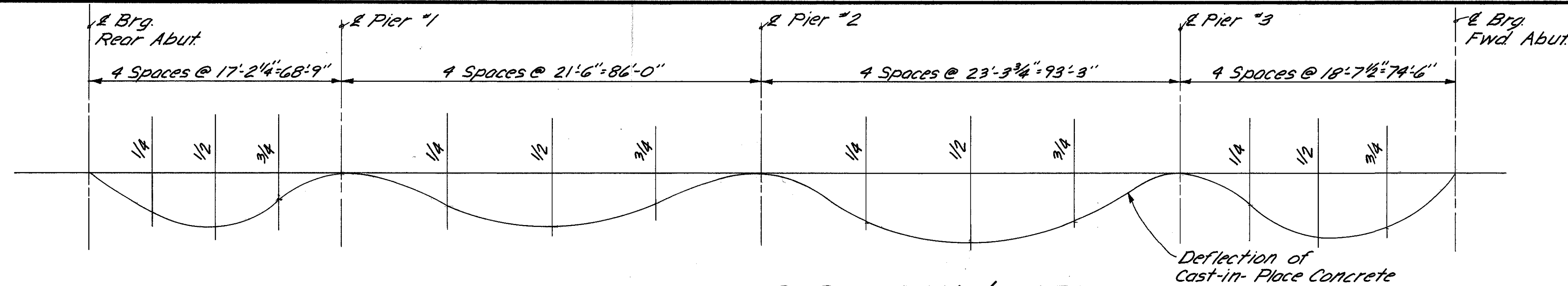
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DECK PLAN

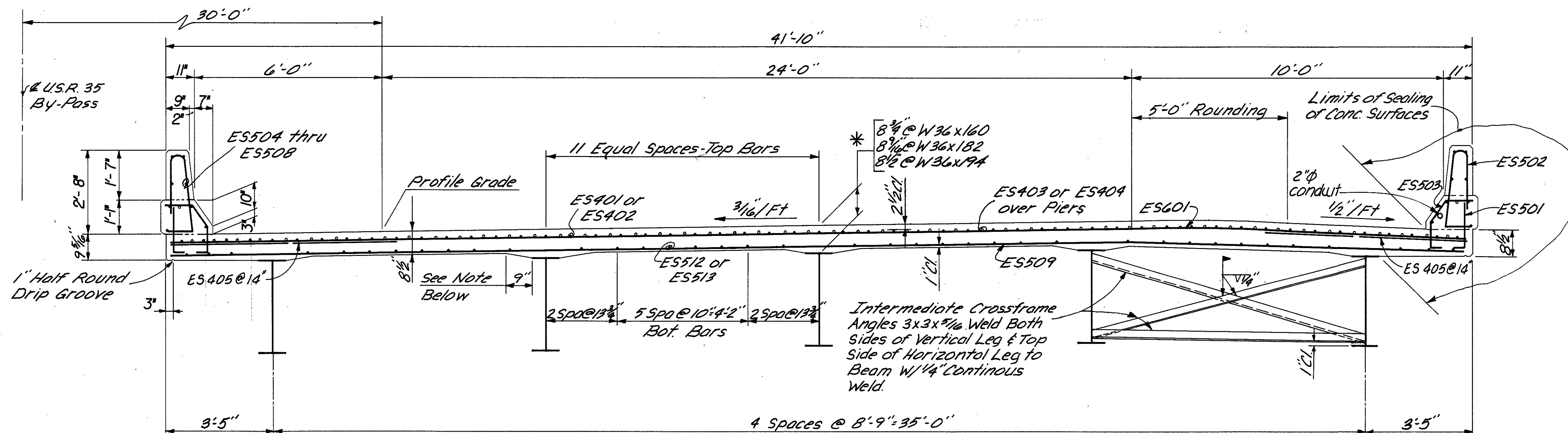
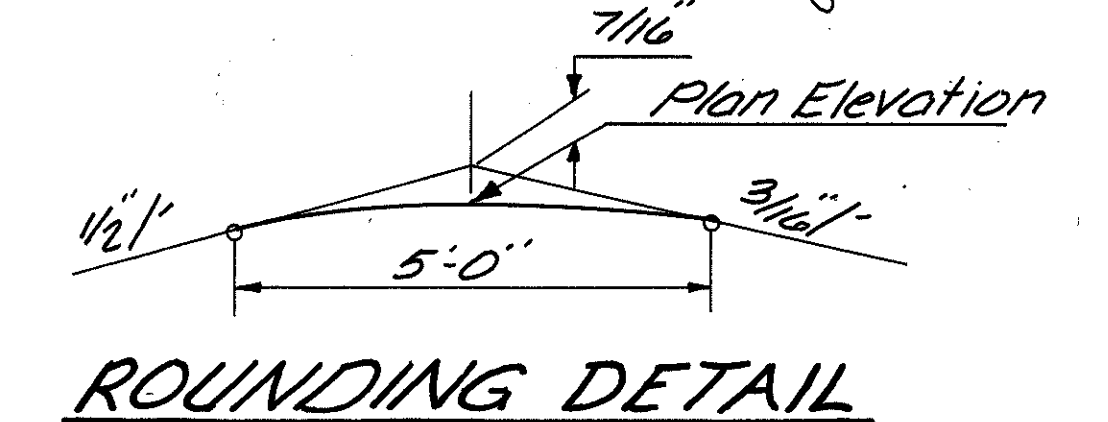
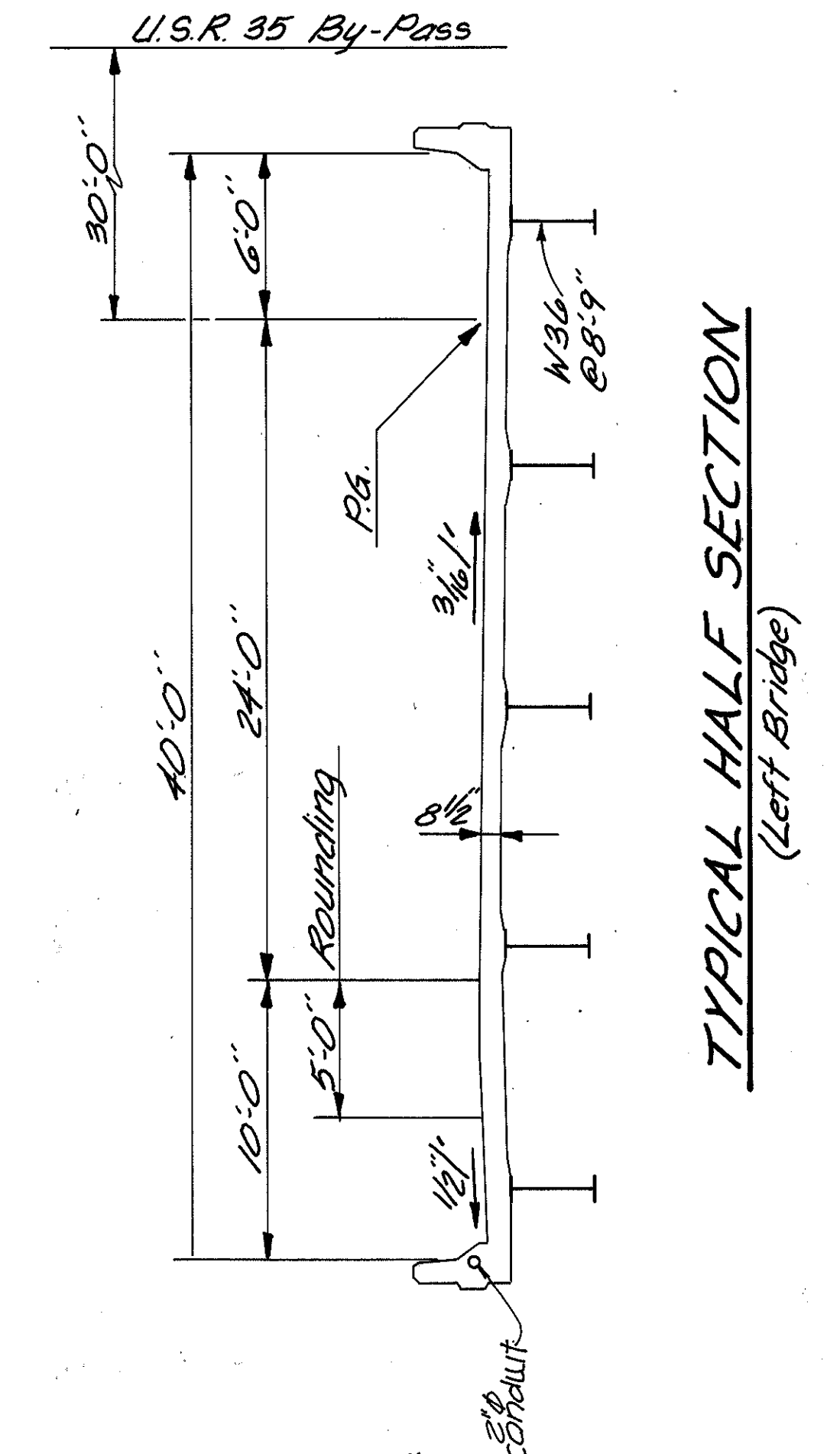
BRIDGE NO. JAC-35-1149 LIR
OVER C&O RR. & HORSE CREEK

DESIGNED GTW	DRAWN LEP	TRACED -	CHECKED JET	REVIEWED DATE WBS 5/15/86	REVISED
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SCREED DIAGRAM & TABLE

LOCATION		± Brg.	1/4	1/2	3/4	± Pier	1/4	1/2	3/4	± Pier	1/4	1/2	3/4	± Pier	1/4	1/2	3/4	± Brg.
LEFT BRIDGE	Station	605+6832	605+8551	606+0270	606+1989	606+3707	606+5857	606+8007	607+0157	607+2307	607+4639	607+6970	607+9301	608+1632	608+3289	608+4945	608+6601	608+8257
	Profile Grade	683.049	683.564	684.080	684.596	685.111	685.756	686.401	687.046	687.691	688.391	689.090	689.789	690.489	690.986	691.483	691.979	692.476
	Gutter Elevation (63'5" Lt.)	683.169	683.685	684.200	684.716	685.231	685.876	686.521	687.166	687.811	688.511	689.210	689.910	690.609	691.106	691.603	692.100	692.596
	Cast-in-Place Conc. Deflection	0	.060	.073	.036	0	.044	.075	.039	0	.068	.114	.064	0	.040	.089	.075	0
	Screed Elevation	683.17	683.75	684.27	684.75	685.23	685.92	686.60	687.21	687.81	688.58	689.32	689.97	690.61	691.15	691.69	692.18	692.60
RIGHT BRIDGE	Station	606+0747	606+2466	606+4184	606+5903	606+7622	606+9772	607+1922	607+4072	607+6222	607+8553	608+0884	608+3216	608+5547	608+7203	608+8859	609+0516	609+2172
	Profile Grade	684.223	684.739	685.254	685.770	686.286	686.931	687.576	688.221	688.866	689.565	690.264	690.964	691.663	692.160	692.657	693.154	693.651
	Gutter Elevation (24'7" Lt.)	684.140	684.655	685.171	685.686	686.202	686.847	687.492	688.137	688.782	689.481	690.181	690.880	691.580	692.076	692.573	693.070	693.567
	Cast-in-Place Conc. Deflection	0	.060	.073	.036	0	.044	.075	.039	0	.068	.114	.064	0	.040	.089	.075	0
	Screed Elevation	684.14	684.72	685.24	685.72	686.20	686.89	687.57	688.18	688.78	689.55	690.30	690.94	691.58	692.12	692.66	693.15	693.57
LEFT BRIDGE	Station	606+5703	606+7422	606+9141	607+0859	607+2578	607+4728	607+6878	607+9028	608+1178	608+3509	608+5841	608+8172	609+0503	609+2159	609+3816	609+5472	609+7128
	Profile Grade	685.710	686.226	686.741	687.257	687.772	688.417	689.062	689.707	690.352	691.052	691.751	692.451	693.150	693.647	694.144	694.641	695.137
	Gutter Elevation (24'7" Rt.)	685.626	686.142	686.658	687.173	687.689	688.334	688.979	689.624	690.269	690.968	691.668	692.367	693.066	693.563	694.060	694.557	695.054
	Cast-in-Place Conc. Deflection	0	.060	.073	.036	0	.044	.075	.039	0	.068	.114	.064	0	.040	.089	.075	0
	Screed Elevation	685.63	686.20	686.73	687.21	687.69	688.38	689.05	689.66	690.27	691.04	691.78	692.43	693.07	693.60	694.15	694.62	695.05
RIGHT BRIDGE	Station	606+9618	607+1336	607+3055	607+4774	607+6493	607+8643	608+0793	608+2943	608+5093	608+7243	608+9755	609+2086	609+4418	609+6074	609+7730	609+9386	610+1043
	Profile Grade	686.884	687.400	687.916	688.431	688.947	689.592	690.237	690.882	691.527	692.226	692.926	693.625	694.324	694.821	695.318	695.815	696.312
	Gutter Elevation (63'5" Rt.)	687.005	687.520	688.036	688.551	689.067	689.712	690.357	691.002	691.647	692.346	693.046	693.745	694.445	694.941	695.438	695.935	696.432
	Cast-in-Place Conc. Deflection	0	.060	.073	.036	0	.044	.075	.039	0	.068	.114	.064	0	.040	.089	.075	0
	Screed Elevation	687.01	687.58	688.11	688.59	689.07	689.76	690.43	691.04	691.65	692.41	693.16	693.81	694.45	694.98	695.53	696.01	696.43



A Haunch Width of 9" shall be used for Computing quantity of Conc. However, the Haunch Width may Vary Between 6" & 12".

TRANSVERSE DECK SECTION
(Right Bridge Shown)

* The Distance Shown from Top of Deck Slab to Top of Steel Beam is the Design Dim. The Quantity of Deck Conc. to be Paid for shall be Based on this Dim. Even though Deviation from it may be Necessary Because the Top Flange of the Beam May Not Have the Exact Camber or Conformation Req'd. to Place it Parallel to the Finish Grade.

See Sheet 14/18 for Deck Plan & Additional Notes

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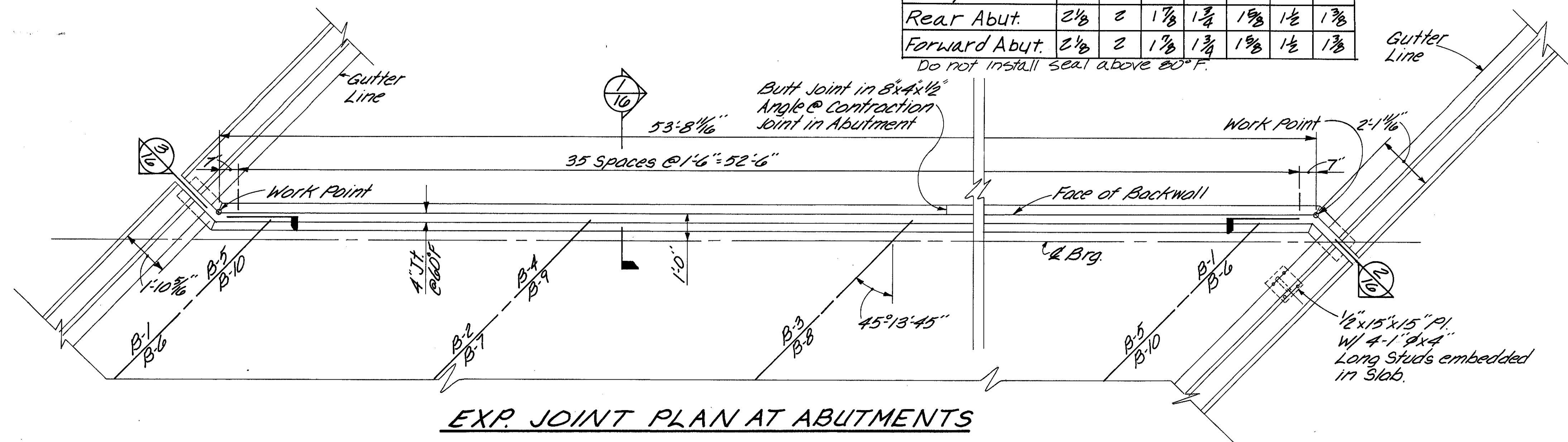
DECK SECTION & DETAILS
BRIDGE NO. JAC-35-114.9 L/R
OVER C&O R.R. & HORSE CREEK

DESIGNED: GTN DRAWN: KJO TRACED: JET CHECKED: JET REVIEWED: DATE: 5/15/86 REVISION:

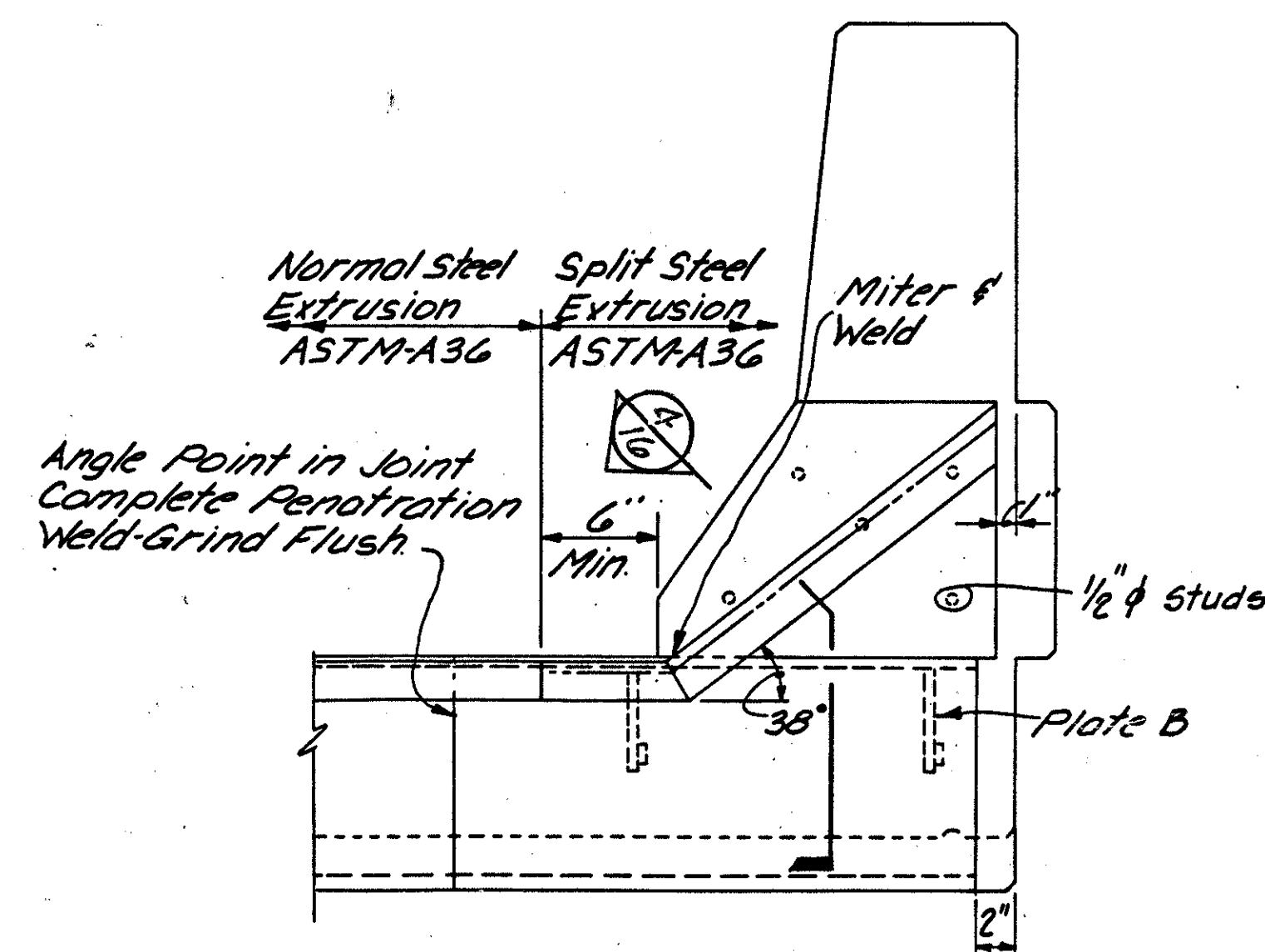
DIMENSION "A"

Temp.	30°F	40°F	50°F	60°F	70°F	80°F	90°F
Rear Abut.	2 1/8	2	1 7/8	1 3/4	1 5/8	1 1/2	1 1/8
Forward Abut.	2 1/8	2	1 7/8	1 3/4	1 5/8	1 1/2	1 1/8

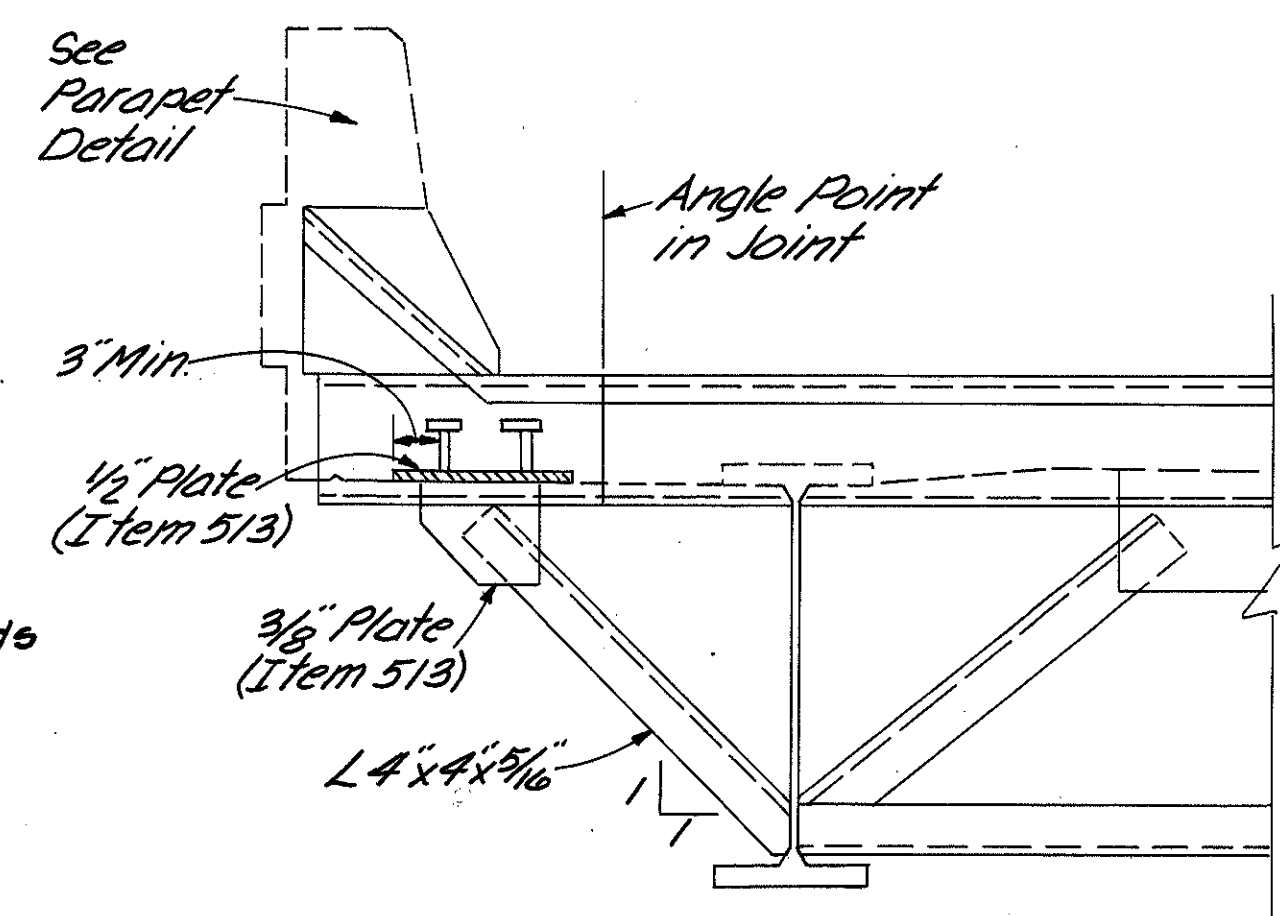
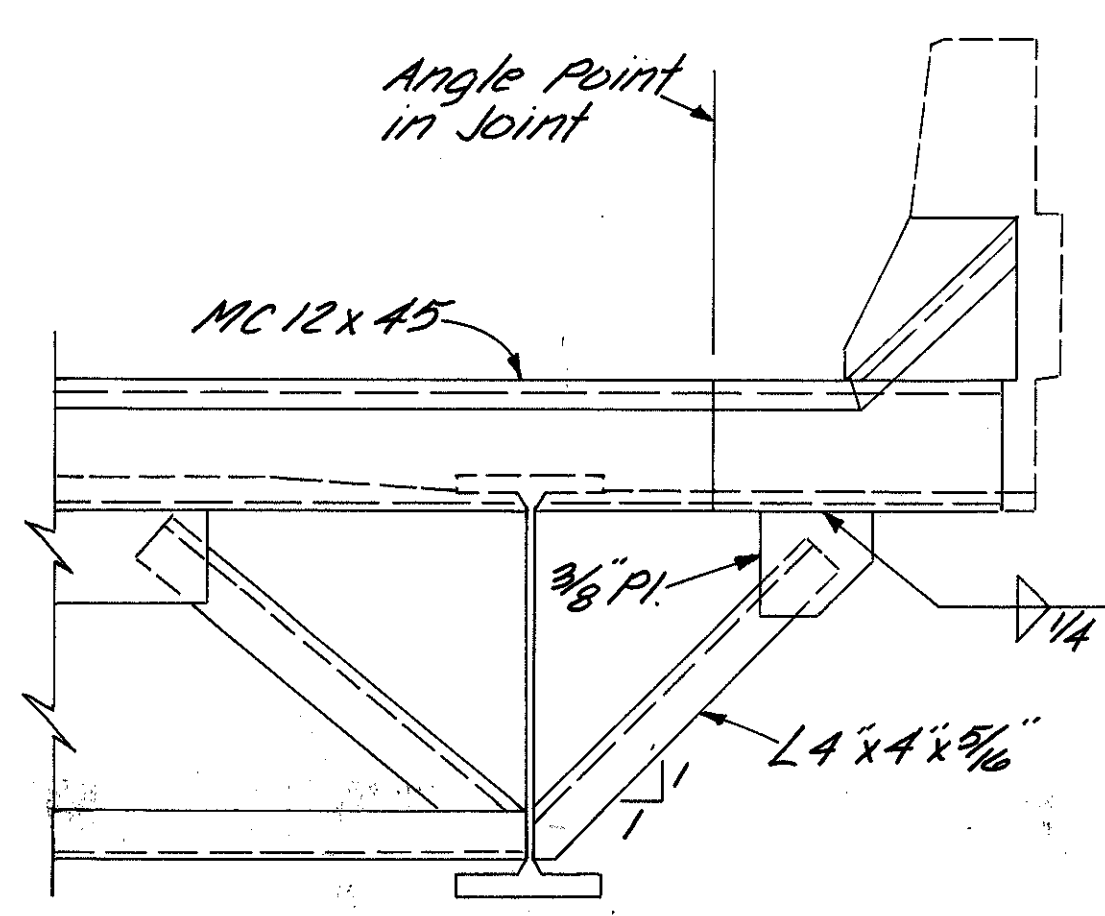
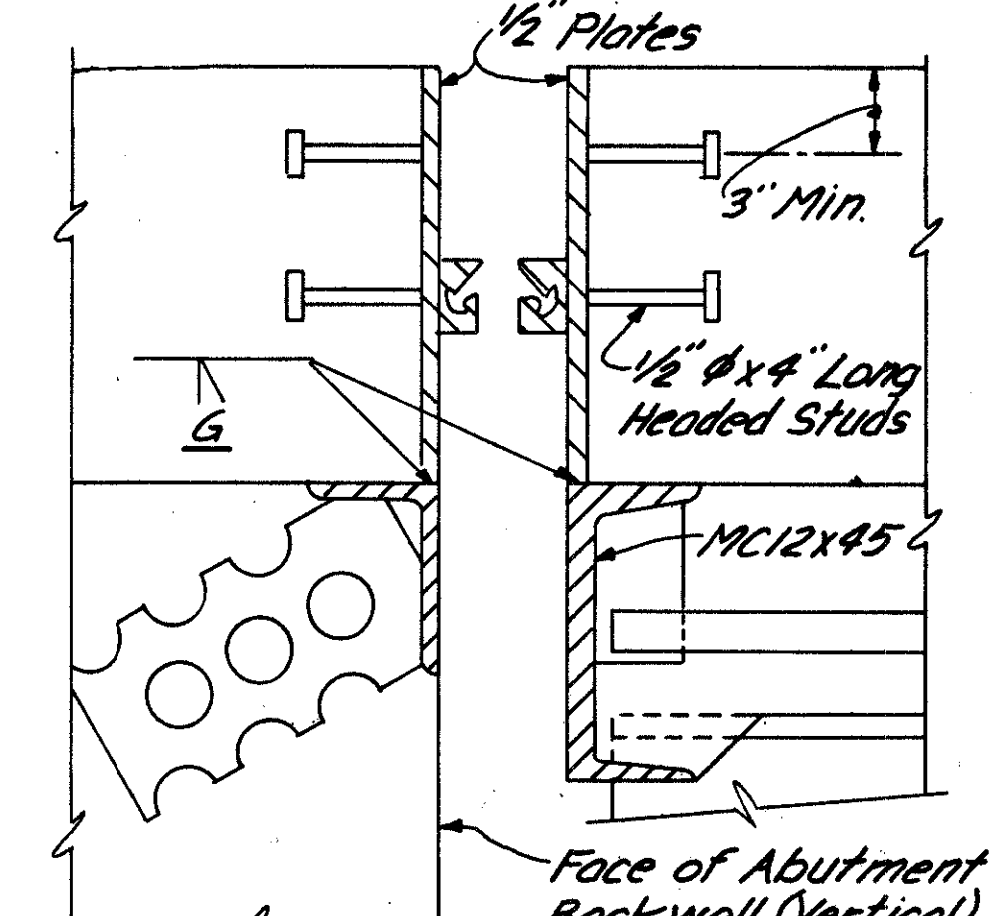
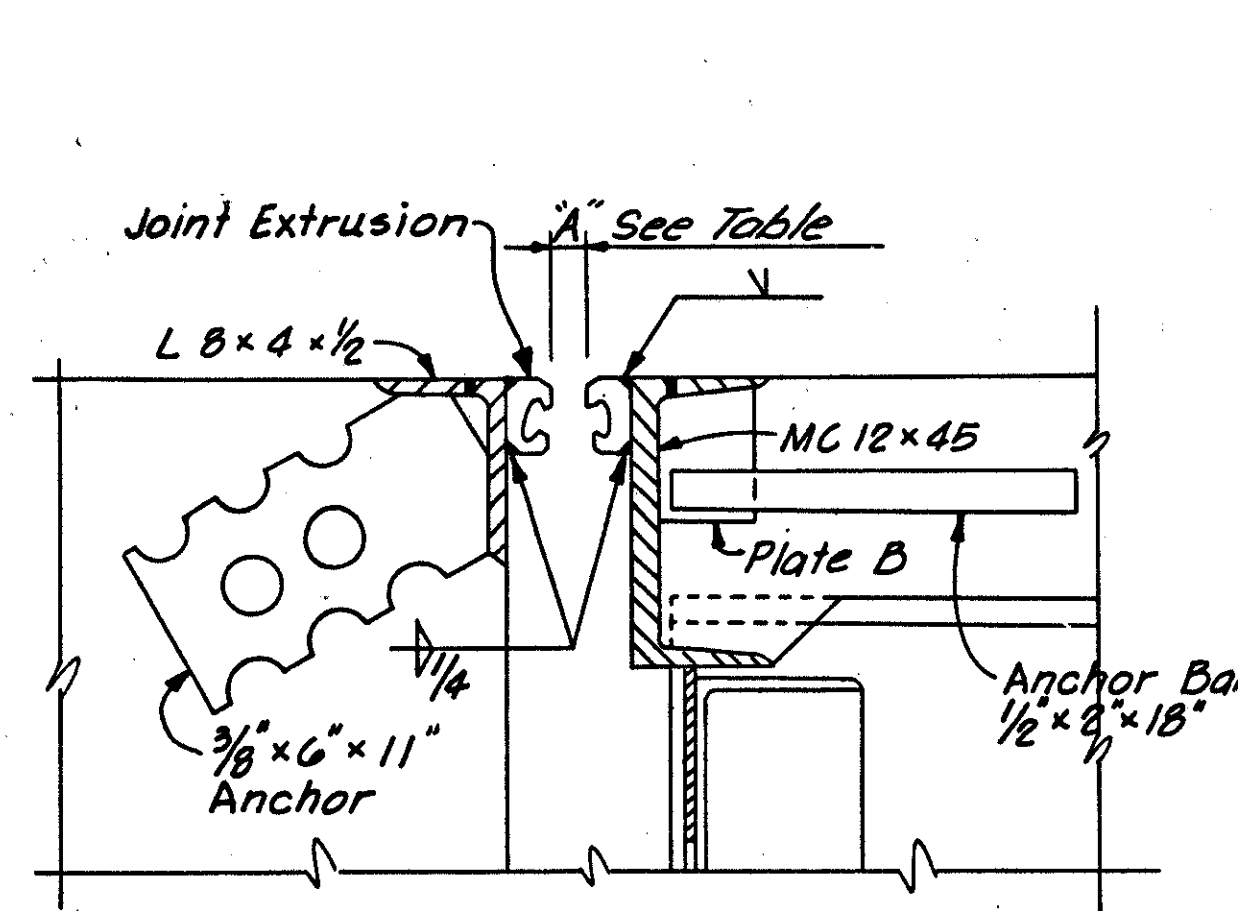
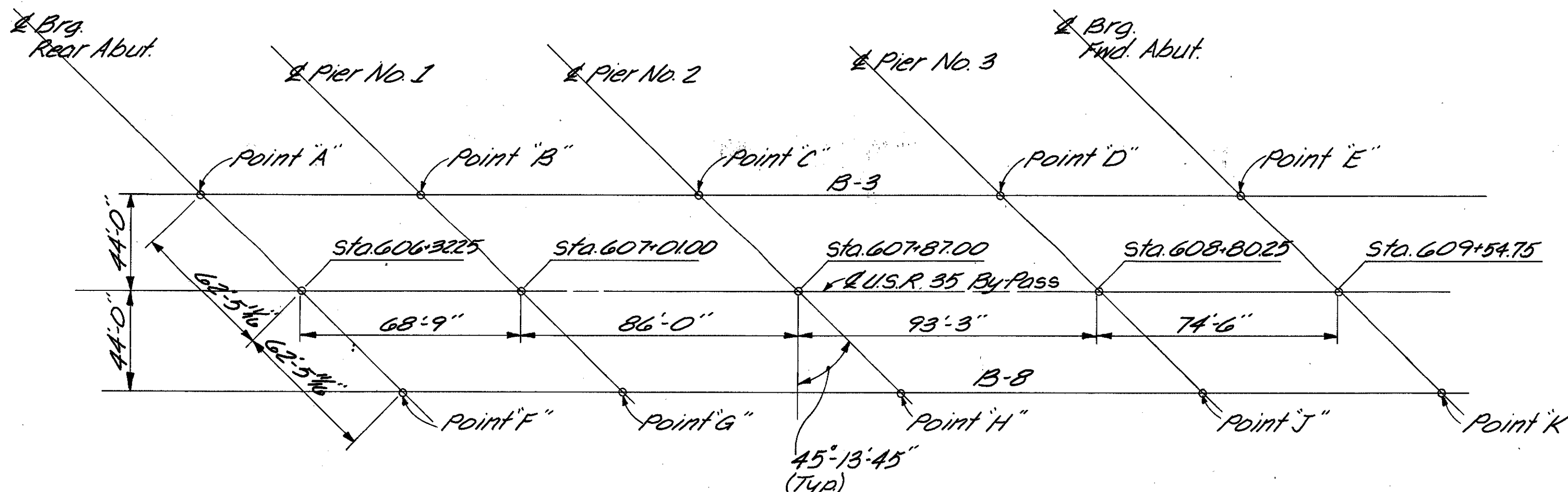
Do not install seal above 80°F.



EXP. JOINT PLAN AT ABUTMENTS



PARAPET DETAIL

SECTION 2
16SECTION 3
16SECTION 4
16SECTION 1
16

LAYOUT DIAGRAM

JAC-35-11.46

OHIO

324

FHWA

442

STRIP SEAL NOTES

REFERENCE: REFERENCE SHALL BE MADE TO STANDARD DRAWINGS EXJ-2-81 FOR ADDITIONAL DETAILS INCLUDING WELDING REQUIREMENTS AND TEMPORARY SUPPORT BARS.

MATERIALS: STRUCTURAL STEEL FOR THE STRIP SEAL EXPANSION-CONTRACTION JOINT SHALL CONFORM TO ASTM A588 OR A36 WITH SYSTEM B FIELD PAINT ON EXPOSED STEEL SURFACES. FIELD PAINT SHALL CONSIST OF TWO PRIME COATS AND ONE FINISH COAT.

THE PREFORMED STRIP SEAL SHALL BE EXTRUDED POLYCHOROPRENE MATERIAL MEETING THE REQUIREMENTS OF ASTM D2628. DUE TO THE CONFIGURATIONS OF THE STRIP SEAL, THE RECOVERY TESTS ARE NOT APPLICABLE. PHYSICAL PROPERTIES SHALL MEET THE REQUIREMENTS SPECIFIED IN TABLE "C" THIS SHEET.

LUBRICANT-ADHESIVE USED TO INSTALL THE PREFORMED STRIP SEALS SHALL BE A POLYURETHANE AND HYDROCARBON SOLVENT MIXTURE AS SPECIFIED BY THE SEAL MANUFACTURER (UNLESS OTHERWISE APPROVED BY THE DIRECTOR). IT SHALL HAVE SUITABLE CONSISTENCY AT THE TEMPERATURE AT WHICH THE SEALS ARE INSTALLED AND SHALL BE COMPATIBLE WITH THE SEALS AND THE STEEL EXTRUSIONS.

PREPARATIONS FOR INSTALLATION: TO AVOID THE SUBSEQUENT CONTAMINATION OF PREPARED SURFACES, ALL SURFACES OF ELASTOMERIC STRIP SEALS SHALL BE CLEANED WITH METHYL ETHYL KETONE (MEK), TOLUENE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS.

THE BONDING SURFACES OF THE STEEL EXTRUSIONS (THE INTERIOR OF THE ANCHOR GROOVES) SHALL BE PREPARED TO GRADE SA 3, ASTM D2200. PREPARATION SHALL BE ACCOMPLISHED NOT MORE THAN 24 HOURS PRIOR TO ADHESIVE BONDING.

INSTALLATION: IMMEDIATELY PRIOR TO APPLICATION OF LUBRICANT-ADHESIVE, BONDING SURFACES SHALL BE CLEAN, DRY AND WARMER THAN 45°F AND THEY SHALL BE MAINTAINED AT OR ABOVE THIS TEMPERATURE UNTIL THE ADHESIVE HAS CURED. LUBRICANT-ADHESIVE SHALL BE APPLIED LIBERALLY TO BOTH STEEL AND ELASTOMERIC BONDING SURFACES USING A STIFF BRUSH IF NECESSARY TO ACHIEVE A COMPLETE AND RELATIVELY UNIFORM COATING. THEN THE BULBED EDGES OF THE ELASTOMERIC SEAL SHALL BE INSERTED INTO THE ANCHOR GROOVES. AFTER INSTALLATION, EXCESS LUBRICANT-ADHESIVE SHALL BE REMOVED FROM THE EXPOSED SEAL SURFACES.

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE LINEAR FOOT OF SEALED JOINT SYSTEM, MEASURED HORIZONTALLY ALONG THE JOINT CENTERLINES AND BETWEEN THE OUTER LIMITS OF THE FABRICATED JOINT. FURNISHED AND PLACED, INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT IN PLACE, WHICH INCLUDES THE JOINT ARMOR, ANCHORING DEVICES, TEMPORARY SUPPORTS AND END CROSSFRAME GUSSET PLATES. PAYMENT SHALL BE MADE PER LINEAR FEET FOR ITEM 516 "STRUCTURAL EXPANSION JOINTS, INCLUDING ELASTOMERIC STRIP SEALS."

CONSTRUCTION PROCEDURE

1. ABUTMENT BACKWALL CONCRETE SHALL NOT BE PLACED UNTIL AFTER SUPERSTRUCTURE CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
2. PLACE BACKWALL CONCRETE DURING STABLE OR RISING AMBIENT TEMPERATURES AND CONCLUDE PLACEMENT AT OR IMMEDIATELY BEFORE THE DAY'S PEAK AMBIENT TEMPERATURE.
3. NOT MORE THAN FOUR HOURS PRIOR TO THE DAY'S PEAK AMBIENT TEMPERATURE, SET ABUTMENT EXPANSION JOINT WIDTH TO DIMENSION "A" WHICH SHALL BE DETERMINED FROM TABLE.
4. LOOSEN TEMPORARY JOINT ARMOR BOLTS AFTER INITIAL SET OF CONCRETE, PREFERABLY NOT LATER THAN TWO HOURS AFTER CONCLUSION OF CONCRETE PLACEMENT.

TABLE C (PHYSICAL PROPERTIES OF SEAL ELEMENT)		
PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN. R.S.L.	2000	D412
ELONGATION AT BREAK, MIN. PERCENT	250	D412
HARDNESS, TYPE A DUROMETER	50 MIN. 65 MAX.	D2240 (MODIFIED)
OVEN AGING, 70 HR. AT 212°F TENSILE STRENGTH, LOSS, MAX. ELONGATION, LOSS, MAX. HARDNESS, TYPE A DUROMETER (POINTS CHANGE)	20 PERCENT 20 PERCENT 0 TO +10	D573
OZONE RESISTANCE 20 PERCENT STRAIN, 300 PPHM, IN AIR AT 104°F WIPED WITH TOLUENE TO REMOVE SURFACE CONTAMINATION	NO CRACKS	D1149

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EXPANSION JOINT DETAILS
BRIDGE NO. JAC-35-1149 LIR
OVER C&O R.R. & HORSE CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JET	KJO	-	GTW	WBS	9/15/86	

Mark	Number	Length	Weight	Shape	Left Bridge		Right Bridge	
					Rear	Forward	Rear	Forward
EA801	148	5'-1"	2009	Bt.	37	37	37	37
EA601	70	3'-9"	394	Bt.	16	19	16	19
EA602	8	3'-8"	44	Bt.	2	2	2	2
EA603	8	3'-8"	44	Bt.	2	2	2	2
EA604	8	3'-7"	43	Bt.	2	2	2	2
EA605	20	3'-7"	108	Bt.	8	2	8	2
EA606	12	4'-3"	77	Str.		6		6
EA607	216	7'-1"	2297	Bt.	54	54	54	54
EA608	108	9'-9"	1582	Bt.	54		54	
EA609	216	6'-1"	1973	Bt.	54	54	54	54
EA610	108	9'-11"	1609	Bt.		54		54
EA501	62	3'-3"	210	Str.	14	17	14	17
EA502	62	5'-3"	339	Bt.	14	17	14	17
EA503	48	14'-10"	142	Str.	16	8	16	8
EA504	64	4'-7"	306	Str.	16	16	16	16
EA505	52	2'-8"	145	Bt.	16	10	16	10
EA506	64	4'-4"	289	Str.	16	16	16	16
EA507	16	18'-4"	306	Str.		8		8
EA508	20	28'-9"	600	Str.	5	5	5	5
EA509	12	27'-11"	349	Str.	3	3	3	3
EA510	12	26'-6"	332	Str.	3	3	3	3
EA511	20	30'-1"	627	Str.	5	5	5	5
EA512	12	4'-10"	60	Bt.	3	3	3	3
EA513	12	5'-3"	66	Bt.	3	3	3	3
A801	24	14'-2"	908	Str.	6	6	6	6
A802	32	30'-0"	2563	Str.	8	8	8	8
A803	32	31'-1"	2655	Str.	8	8	8	8
A804	12	12'-0"	384	Str.	6		6	
A805	12	15'-9"	505	Str.		6		6
A806	8	6'-0"	128	Bt.	2	2	2	2
A807	8	9'-3"	198	Bt.	2	2	2	2
A601	7	9'-1"	95	Str.	7			
A602	7	9'-7"	101	Str.			7	
A603	62	10'-1"	939	Bt.	14	17	14	17
A604	14	8'-2"	172	Str.	7		7	
A605	14	8'-8"	182	Str.		7		7
A606	10	9'-5"	141	Str.		10		
A607	10	10'-1"	151	Str.				10
A608	192	12'-9"	3677	Bt.	48	48	48	48
A501	24	8'-2"	205	Bt.	6	6	6	6
A502	8	6'-5"	54	Bt.	2	2	2	2
A503	4	6'-11"	29	Bt.	2		2	
A504	4	7'-7"	32	Bt.	2		2	
A505	8	8'-1"	67	Bt.	2	2	2	2
A506	4	8'-9"	37	Bt.	2		2	
A507	28	16'-8"	487	Str.	10	4	10	4
A508	8	19'-4"	161	Str.	2	2	2	2
A509	8	9'-0"	75	Str.	3	1	3	1
A510	6	11'-8"	73	Str.	1	2	1	2
A511	32	11'-4"	378	Str.	8	8	8	8
A512	8	7'-1"	59	Str.	4		4	
A513	7	8'-10"	64	Str.	7			
A514	19	9'-4"	185	Str.	6		13	
A515	8	7'-2"	60	Str.		4		4
A516	80	11'-6"	960	Bt.	18	22	18	22
A517	10	9'-10"	103	Str.				10
A518	4	7'-3"	30	Bt.		2		2
A519	4	9'-3"	39	Bt.		2		2
A520	4	10'-3"	43	Bt.		2		2
A521	8	7'-5"	62	Str.		4		4
A522	2	14'-7"	30	Str.		1		1

Mark	Number	Length	Weight	Shape	Left Bridge			Right Bridge		
					No. 1	No. 2	No. 3	No. 1	No. 2	No. 3
P1001	264	9'-11"	11,265	Bt.	42	48	42	42	48	42
P1002	42	26'-11"	4868	Str.	42					
P1003	42	29'-3"	5286	Str.				42		
P1004	42	28'-3"	4563	Str.			42			
P1005	42	27'-8"	5000	Str.						42
P901	384	11'-0"	14,362	Str.	96		96	96		96
P902	48	20'-6"	3346	Bt.	8	8	8	8	8	8
P903	44	22'-5"	3354	Bt.	8	6	8	8	6	8
P904	46	26'-11"	4210	Str.	8	7	8	8	7	8
P905	72	28'-8"	7018	Bt.	12	12	12	12	12	12
P1006	48	31'-5"	6489	Str.		48				
P1007	48	33'-10"	6988	Str.					48	
P801	192	11'-0"	5639	Str.		96			96	
P501	156	15'-2"	2468	Bt.	26	26	26	26	26	26
P502	36	30'-0"	1126	Str.	6	6	6	6	6	6
P503	36	25'-10"	970	Str.	6	6	6	6	6	6
P504	12	13'-4"	167	Bt.	2	2	2	2	2	2
P505	12	13'-9"	172	Bt.	2	2	2	2	2	2
P506	12	14'-2"	177	Bt.	2	2	2	2	2	2
P507	12	14'-7"	182	Bt.	2	2	2	2	2	2
P508	12	15'-0"	188	Bt.	2	2	2	2	2	2
P509	36	5'-8"	213	Bt.	6	6	6	6	6	6
P401	300	2'-8"	535	Str.	50	50	50	50	50	50
SP401	3	22'-11"	1280	Bt.	3					
SP402	3	25'-3"	1406	Bt.				3		
SP403	3	21'-3"	1191	Bt.			3			
SP404	3	23'-8"	1320	Bt.						3
SP405	3	27'-5"	1522	Bt.		3				
SP406	3	29'-10"	1652	Bt.					3	

Mark	Number	Length	Weight	Shape	Left Bridge		Right Bridge	
					Rear	Forward	Rear	Forward
A523	18	8'-4"	156	Str.		7	4	7
A524	24	5'-0"	125	Str.	6	6	6	6
A525	12	20'-2"	252	Str.		6		6
A526	4	15'-3"	64	Str.		2		2
A527	4	12'-6"	52	Str.		2		2
A528	16	12'-10"	214	Str.		8		8
A529	10	9'-2"	96	Str.		10		
A530	192	9'-3"	1852	Bt.	48	48	48	48
A531	192	6'-9"	1352	Bt.	48	48	48	48
A532	72	8'-4"	626	Bt.	24	24		24
A533	72	7'-6"	563	Bt.	24	24	24	
A534	28	29'-9"	869	Str.	7	7	7	7
A535	16	28'-9"	480	Str.	4	4	4	4
A536	28	26'-6"	774	Str.	7	7	7	7
A537	160	1'-6"	250	Str.	40	40	40	40
A538	16	25'-6"	426	Str.	4	4	4	4
A539	48	9'-4"	467	Bt.			24	24
A540	80	3'-6"	292	Str.	20	20	20	20
A541	16	4'-0"	67	Bt.	4	4	4	4
A542	16	5'-5"	90	Bt.	4	4	4	4
A543	18	7'-10"	147	Str.	11		7	

Mark	Number	Length	Weight	Shape	Superstructure	
					Left	Right
ES601	982	41'-6"	61,211	Str.	491	491
ES602	4	Varies			2	2
ES602	Series of 59	39'-1" to 5'-3"	7857	Str.	Series of 59	Series of 59
ES603	28	4'-10"	203	Str.	14	14
ES604	24	10'-0"	360	Str.	12	12
ES501	982	2'-5"	2479	Bt.	491	491
ES502	982	5'-3"	5377	Bt.	491	491
ES503	982	3'-0"	3073	Bt.	491	491
ES504	8	9'-7"	80	Str.	4	4
ES505	120	13'-7"	1700	Str.	60	60
ES506	120	15'-3"	1909	Str.	60	60
ES507	192	7'-0"	1402	Str.	96	96
ES508	8	11'-3"	94	Str.	4	4
ES509	982	41'-6"	42,505	Str.	491	491
ES510	4	Varies			2	2
ES510	Series of 59	39'-1" to 5'-3"	5456	Str.	Series of 59	Series of 59
ES511	28	4'-10"	141	Str.	14	14
ES512	1012	30'-0"	31,665	Str.	506	506
ES513	76	12'-4"	977	Str.	38	38
ES514	16	20'-7"	343	Str.	8	8
ES515	24	10'-0"	250	Str.	12	12
ES401	1166	30'-0"	23,367	Str.	583	583
ES402	106	8'-8"	614	Str.	53	53
ES403	108	34'-6"	2489	Str.	54	54
ES404	216	37'-6"	5411	Str.	108	108
ES405	1100	6'-1"	4470	Str.	550	550



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111 Merchant Street, Cincinnati, Ohio 45246 513/772-1117

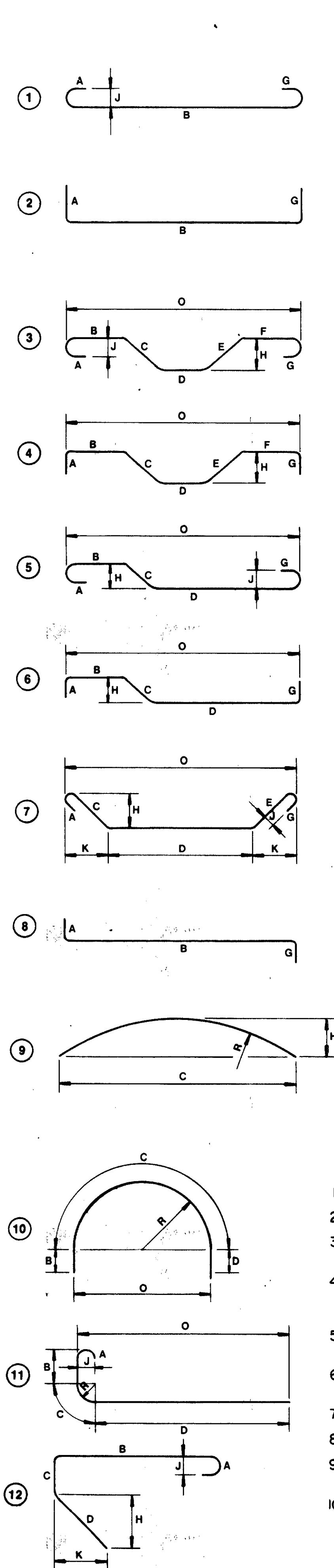
REINFORCING STEEL LIST

BRIDGE NO. JAC-35-1149 L/R
OVER C&O R.R. & HORSE CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GTW	MHW	—	JET	WBS	5/15/86	

JAN 4 1920

Dimensions For Bending													
Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
EA801	5	1'-1"	2'-0"	2'-0"	0			0	1'-5"	0'-8"			3'-5"
EA601	14		0'-9"	0'-10"	2'-8"				0'-6"		0'-8 1/2"		
EA602	14		0'-8"	0'-10"	2'-8"				0'-5"		0'-8 1/2"		
EA603	14		0'-8"	0'-9"	2'-8"				0'-4"		0'-8 1/2"		
EA604	14		0'-7"	0'-9"	2'-8"				0'-3"		0'-8 1/2"		
EA605	14		0'-7"	0'-9"	2'-8"				0'-2"		0'-8 1/2"		
EA607	S10		3'-3"	0'-11"	3'-3"								
EA608	S10		4'-4"	1'-5"	4'-4"								
EA609	S10		2'-6"	1'-5"	2'-6"								
EA610	S10		4'-5"	1'-5"	4'-5"								
EA502	22												
EA505	75	0'-10"	2'-1"					0"		0'-5"			
EA512	2	3'-0"	2'-0"					0"					
EA513	16	0	2'-0"	1'-6"	2'-0"	0	0		1'-5"	0	1'-5"		
AB06	19		3'-0"	3'-0"					2'-2"		2'-2"		5'-2"
AB07	16	0	3'-0"	3'-6"	3'-0"	0	0		2'-2"	0	2'-2"		
AG03	S10		4'-8"	1'-2"	4'-7"								
AG08	S10		6'-1"	5'-4"	1'-8"								
A501	T1	0'-5 1/2"	1'-2"	2'-8"	1'-2"	2'-8"		0'-5 1/2"					
A502	S10		2'-9"	1'-2"	2'-9"								
A503	S10		3'-0"	1'-2"	3'-0"								
A504	S10		3'-4"	1'-2"	3'-4"								
A505	S10		3'-7"	1'-2"	3'-7"								
A506	S10		3'-11"	1'-2"	3'-11"								
A516	T1	0'-5 1/2"	3'-0"	2'-6"	3'-0"	2'-6"		0'-5 1/2"					
A518	S10		3'-2"	1'-2"	3'-2"								
A519	S10		4'-2"	1'-2"	4'-2"								
A520	S10		4'-8"	1'-2"	4'-8"								
A530	2	2'-1"	5'-4"					2'-1"					
A531	2	0'-10"	6'-1"					0"					
A532	2	2'-7"	3'-5"					2'-7"					
A533	2	2'-2"	3'-5"					2'-2"					
A539	2	3'-1"	3'-5"					3'-1"					
A541	19		2'-0"	2'-0"					1'-5"		1'-5"		3'-5"
A542	16	0	2'-0"	1'-8"	2'-0"	0	0		1'-5"	0	1'-5"		
P1001	2	1'-10"	8'-5"					0"					
P902	1	1'-3"	19'-3"					0"		0'-11 1/4"			
P903	2	3'-6"	19'-3"					0"					
P905	19		4'-4"	24'-6"					1'-0"		4'-3"		28'-9"
P501	T1	0'-5 1/2"	2'-8"	4'-8"	2'-8"	4'-8"		0'-5 1/2"					
P504	T1	0'-5 1/2"	2'-8"	3'-9"	2'-8"	3'-9"		0'-5 1/2"					
P505	T1	0'-5 1/2"	2'-8"	3'-11 1/2"	2'-8"	3'-11 1/2"		0'-5 1/2"					
P506	T1	0'-5 1/2"	2'-8"	4'-2"	2'-8"	4'-2"		0'-5 1/2"					
P507	T1	0'-5 1/2"	2'-8"	4'-4 1/2"	2'-8"	4'-4 1/2"		0'-5 1/2"					
P508	T1	0'-5 1/2"	2'-8"	4'-7"	2'-8"	4'-7"		0'-5 1/2"					
P509	S10		1'-8"	2'-7"	1'-8"								
SP401	SP1		0'-4 1/2"	22'-11"	2'-8"						64		
SP402	SP1		0'-4 1/2"	25'-3"	2'-8"						70		
SP403	SP1		0'-4 1/2"	21'-3"	2'-8"						60		
SP404	SP1		0'-4 1/2"	23'-8"	2'-8"						66		
SP405	SP1		0'-4 1/2"	27'-5"	2'-8"						76		
SP406	SP1		0'-4 1/2"	29'-10"	2'-8"						83		
E5501	2	0'-10 1/2"	1'-8"					0"					
E5502	22												
E5503	23	0'-9"											



NOTES:

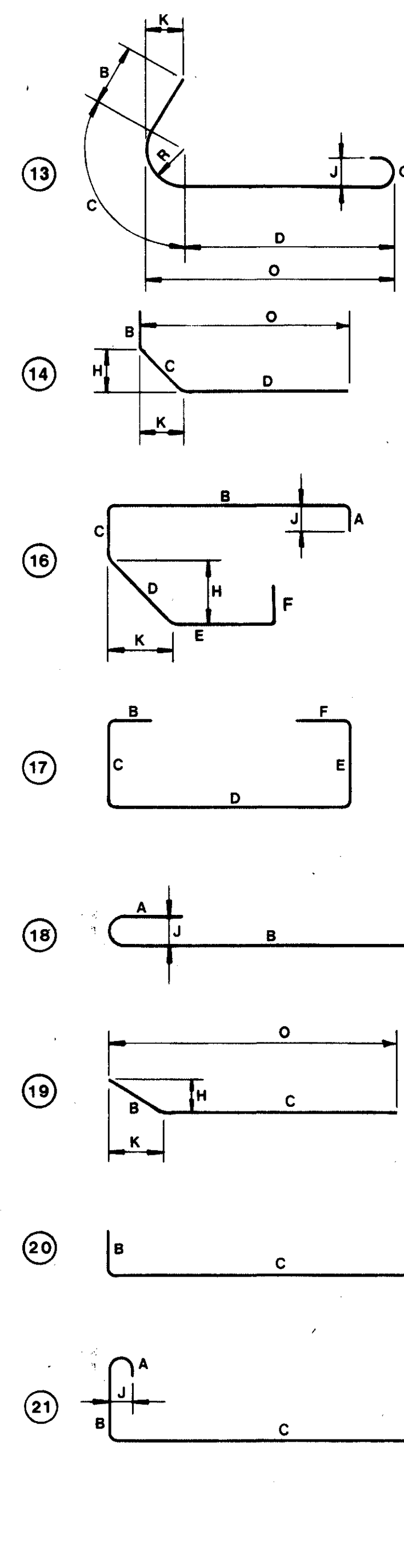
- FIGURES IN CIRCLES SHOW BAR TYPES.
- ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT A & G ON STD. 180° & 135° HOOKS.
- "J" DIMENSION ON HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
- WHERE "J" IS NOT SHOWN "J" WILL BE KEPT EQUAL TO OR LESS THAN "H". WHERE "J" CAN EXCEED "H" IT SHOULD BE SHOWN.
- "H" DIMENSION ON STIRRUPS TO BE SHOWN WHERE NECESSARY TO RESTRICT HOOKS.
- ALL BENDS SHOWN ARE BENT AROUND A STANDARD MANDREL, EXCEPT STIRRUP S11, TIES T3, SPIRALS SP1 AND WHERE RADIUS "R" IS INDICATED.
- RADIUS DIMENSION "R" IS TO OUTSIDE OF BAR.
- THE LENGTH OF BENT BARS IS MEASURED ALONG THE CENTERLINE.
- HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE LATEST ACI SPECIFICATIONS.
- FOR BAR TYPE SP1, THE NO. OF TURNS "K" IS THE LENGTH "C" DIVIDED BY THE PITCH "B", PLUS 3 TURNS (TOTAL NUMBER OF CLOSED COILS), EXPRESSED AS THE NEAREST WHOLE NUMBER. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT.

JAC-35-11.46

OHIO
FHWA
REGION 5

320
442

15 NOT USED



WHERE SLOPE IS 45° SHOW "H" ONLY
OTHERWISE SHOW "H" AND "K"

ENLARGED VIEW SHOWING
BAR BENDING DETAILS

KZF
INCORPORATED

ARCHITECTS • ENGINEERS • INTERIOR DESIGNERS
111 Merchant Street, Cincinnati, Ohio 45246 513/772-1117

BAR BENDING DETAILS

BRIDGE NO. JAC-35-1149 L/R
OVER C&O R.R. & HORSE CREEK

DESIGNED: GTW
DRAWN: MHW
TRACED: -
CHECKED: JET
REVIEWED: DATE: 1/25/1986
REVISED: