

The Bridge As-Built Plans and corresponding BrDR Models are provided for example only and may not represent the modeling techniques used by your agency.

DESCRIPTION OF PROJECT

Project:
Improvement: Two Bridges, Grading, Special Subbase, Bituminous Surface Treatment, Channel Change, Bin Type Metal Cribbing and drainage.

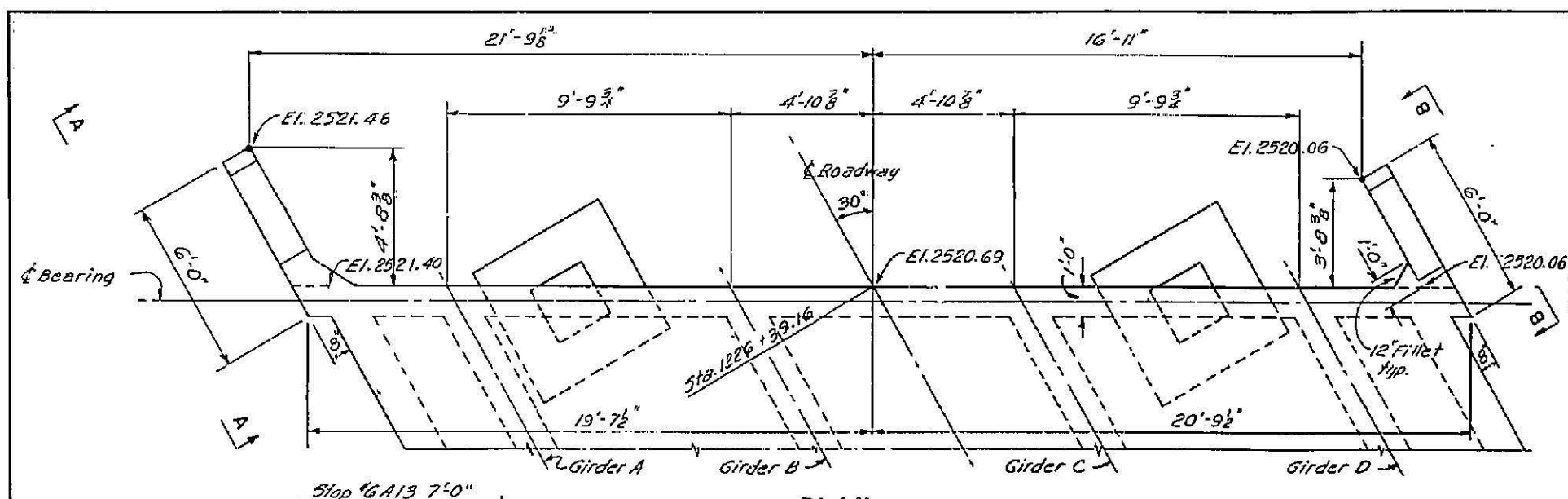
Stations: 1223+90 to 1277+89.42
Roadbed: 17' half width in cuts, 20' half width in fills
Length: 1.0226 miles

MICROFILMED
 APR 16 1976

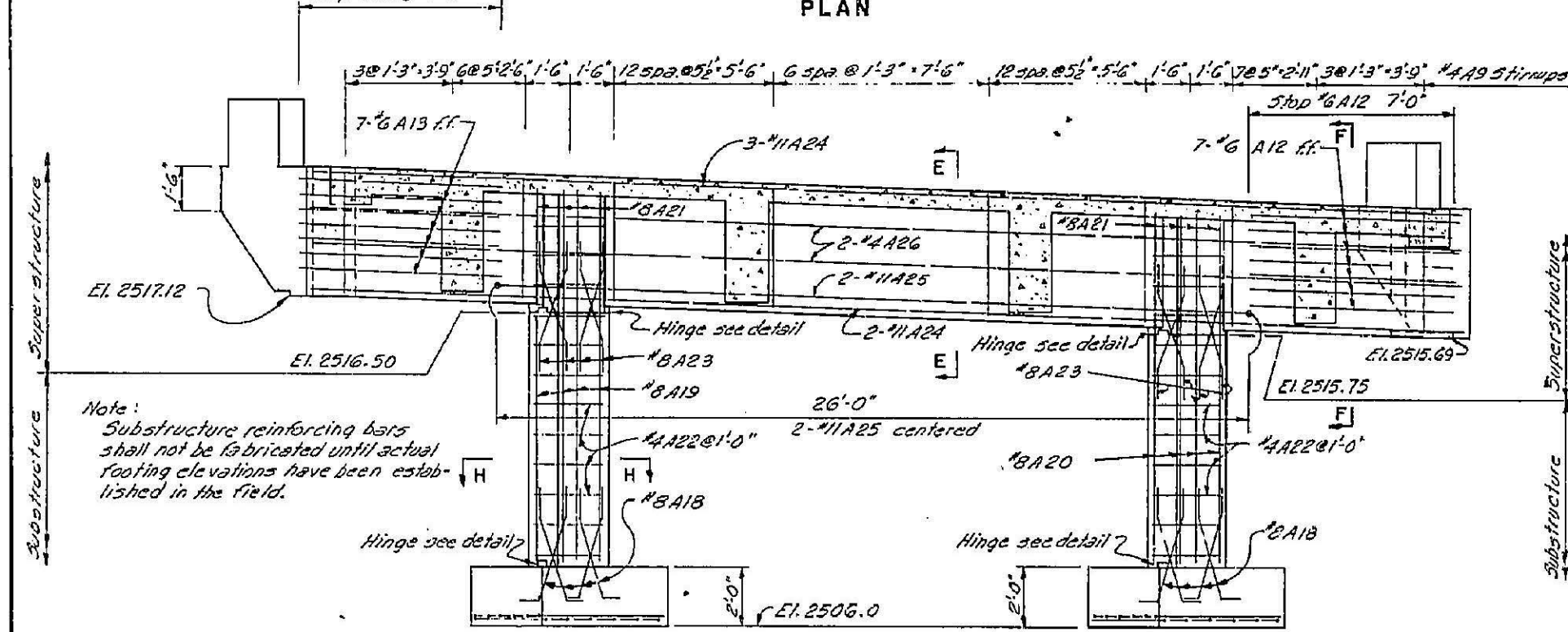
INDEX TO SHEETS	
SHEET	DESCRIPTION
1	Title Sheet
2	Typical Cross sections
3	Estimate of Quantities
4	General Notes and Detail of Quantities
5	Detail of Quantities - Continued
6-10	Plan and Profile
11-12	Bin Type Metal Cribbing
13	Channel Change
14	Embankment Foundation and Blind Drains
15	Horizontal Drains
16	Loose Riprap apron at culvert & down drain outlets
17	Embankment foundation drain
18	Special Concrete Inlet
19	Mass Diagram
20-28	Rattlesnake Creek Bridge - Sta. 1225+34 (R.G. 1873 - A thru I)
29-37	Rattlesnake Creek Bridge - Sta. 1228+15 (R.G. 1872 - A thru I)
38	Std. Spillway Inlet assemblies, slip joint and pipe anchors (Modified)
39	Std. monuments, markers & guide posts (Mod.)
Standards	
40	C-2(2) Turnout
41	C-3(2) Std. cut slope rounding and furrow ditches
42	C-4(3) Excavation & backfill details - (Pipe culverts)
43	C-5(6) Dote details
44	C-11(3) Std. concrete headwalls for pipe culverts
45	C-13(4) Steel end sections for pipe culverts
46	C-17(3) Underdrains and Embankment Foundation Drains
47	C-21A(1) Coupling Band Details
48	C-28(3) Standard Guard rail
49	C-28A(4) Standard Guard rail (Flare)
50	C-28B(3) Standard Guard rail (End anchors)
51	C-28C(3) Standard Guard rail connected to or mounted on structures
52	C-44(3) Bin type metal cribbing
53	C-44A(2) Installation of culvert in Bin type metal cribbing

DESIGN CLASSIFICATION

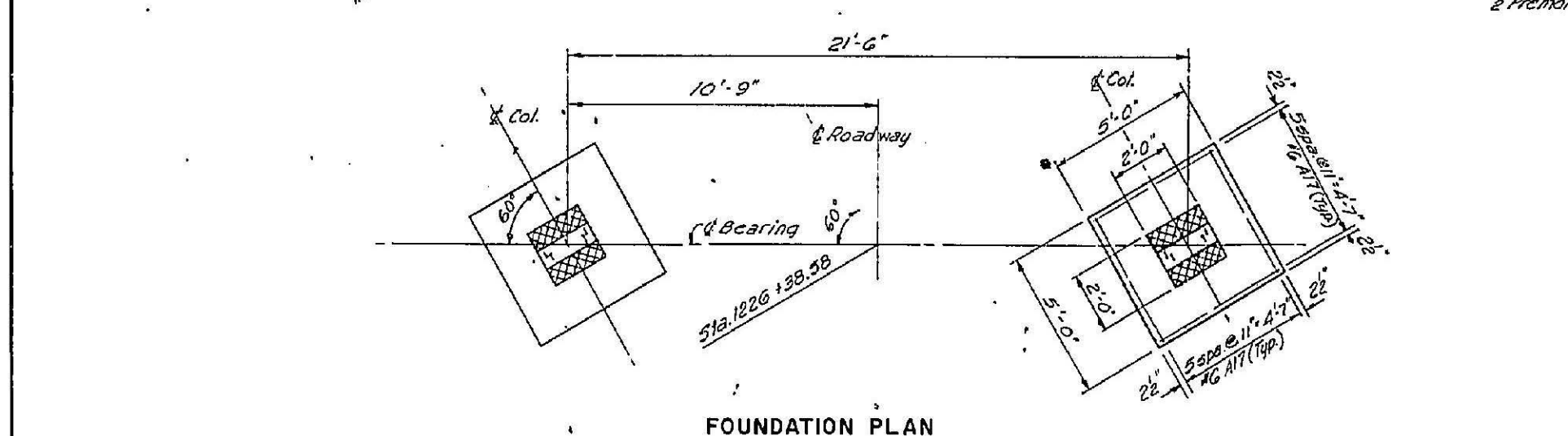
ADT (1972) 250
 ADT (1985) 450
 DNV 60
 D 50 %
 T 15 %
 V 40 MPH



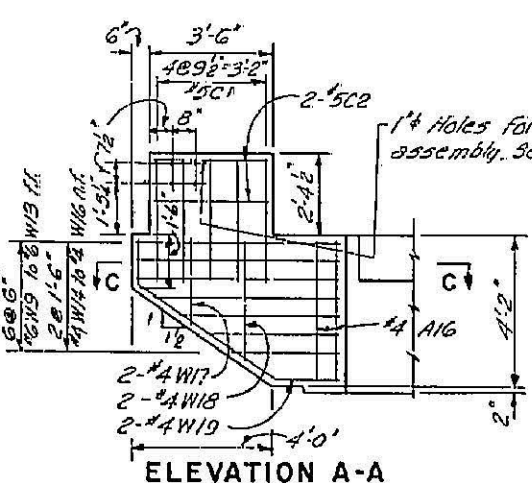
PLAN



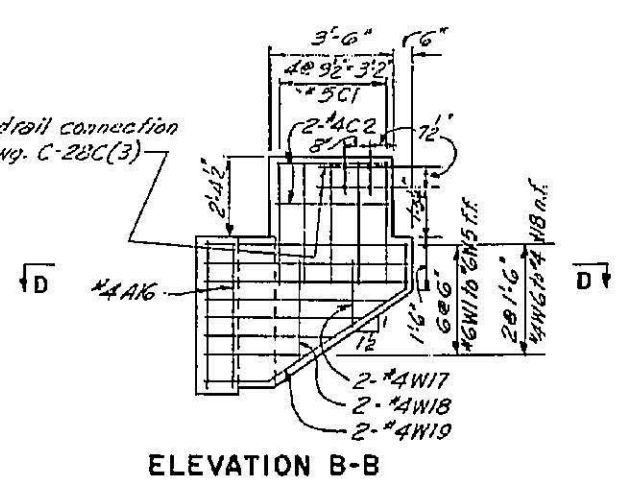
ELEVATION



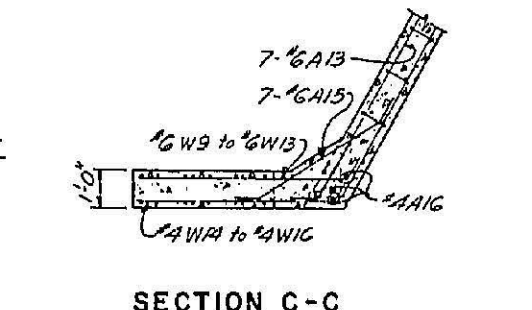
FOUNDATION PLAN



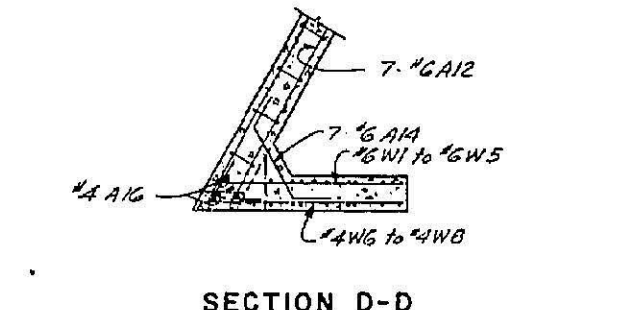
ELEVATION A-A



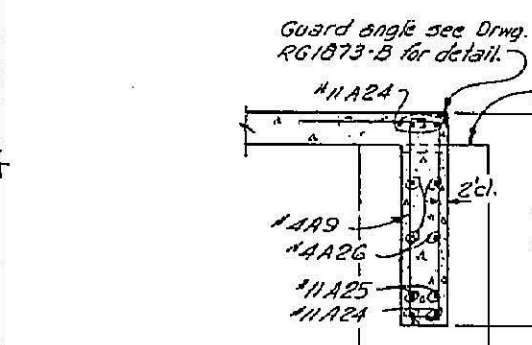
ELEVATION B-B



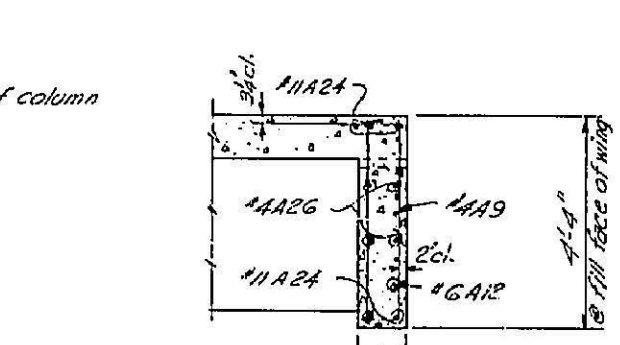
SECTION C-C



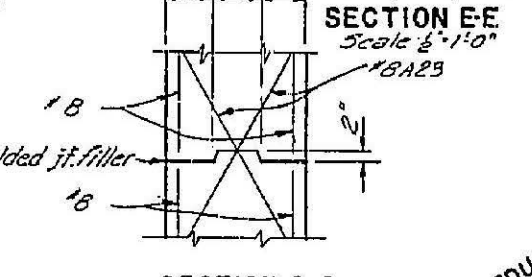
SECTION D-D



SECTION E-E

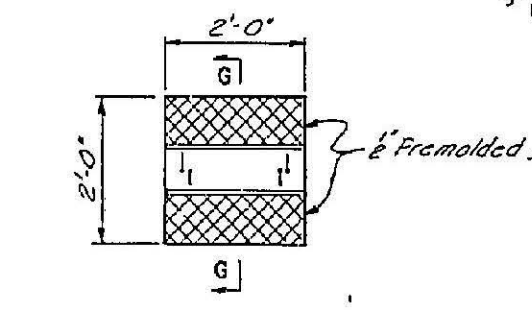


SECTION F-F (COLUMN NOT SHOWN)

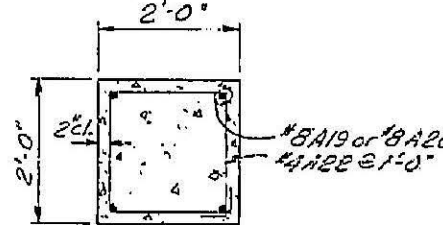


SECTION G-G

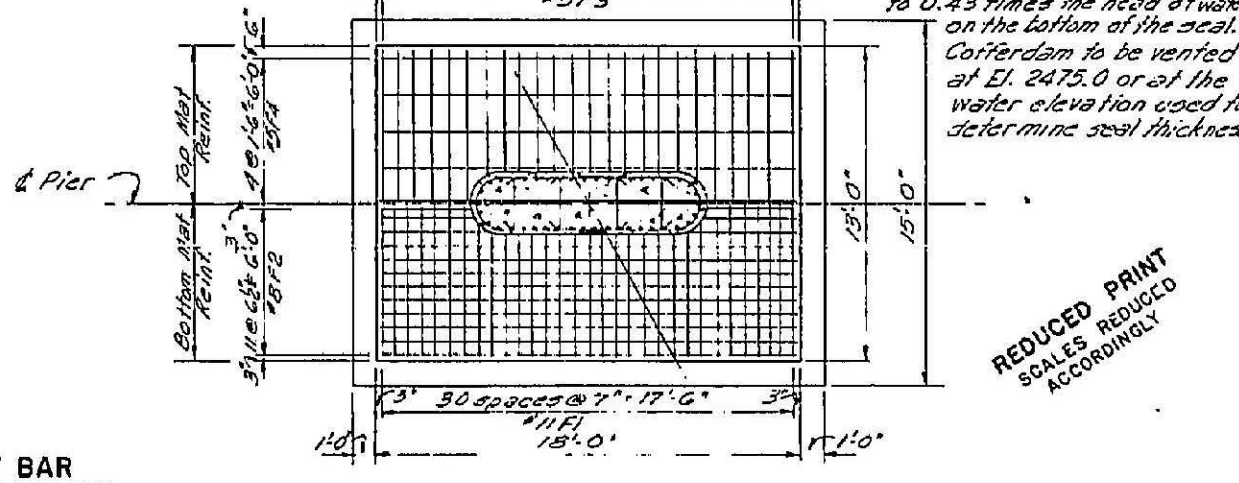
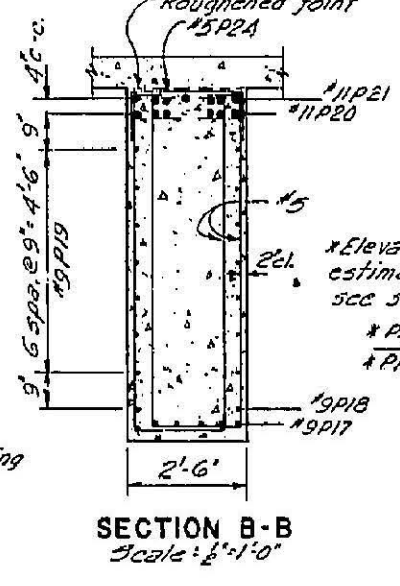
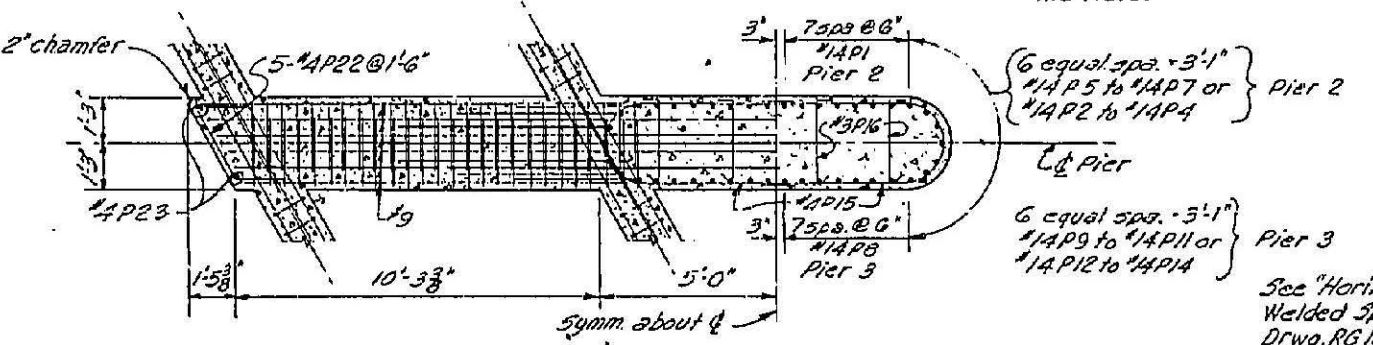
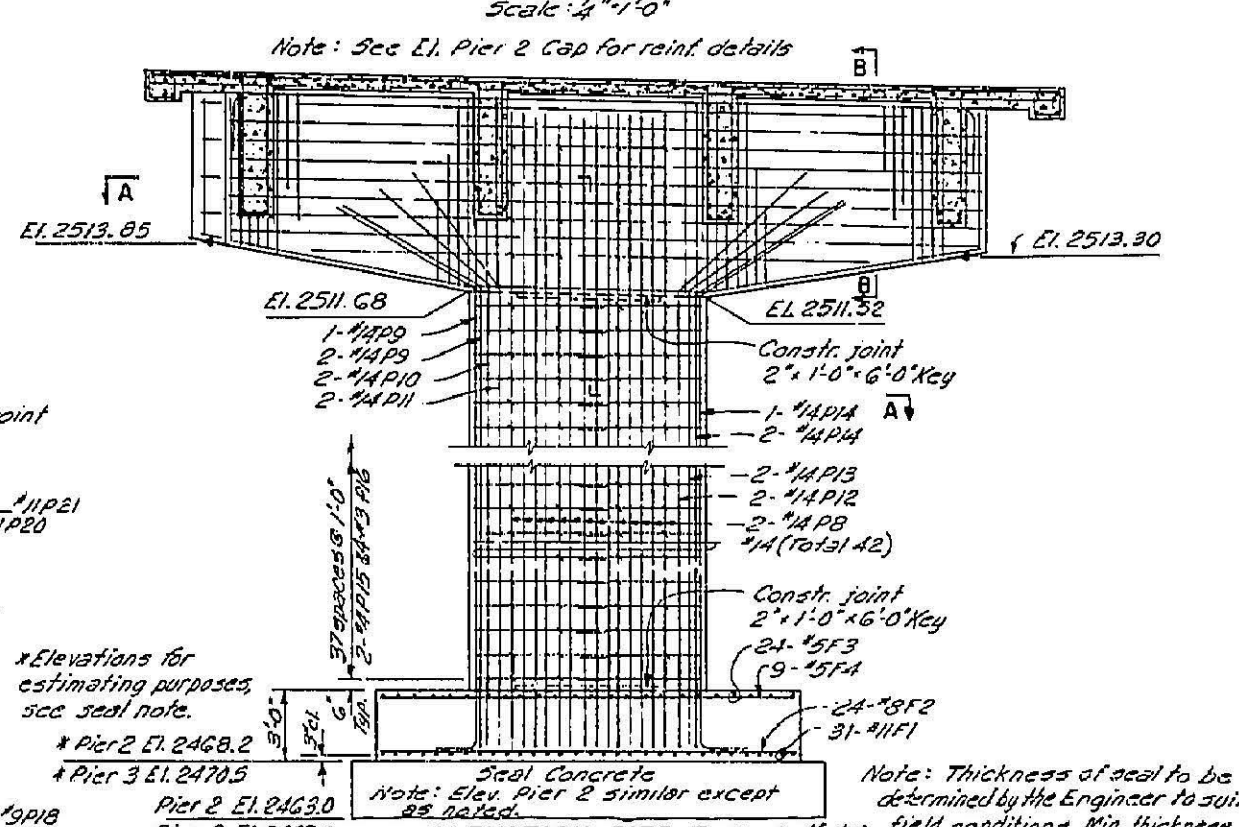
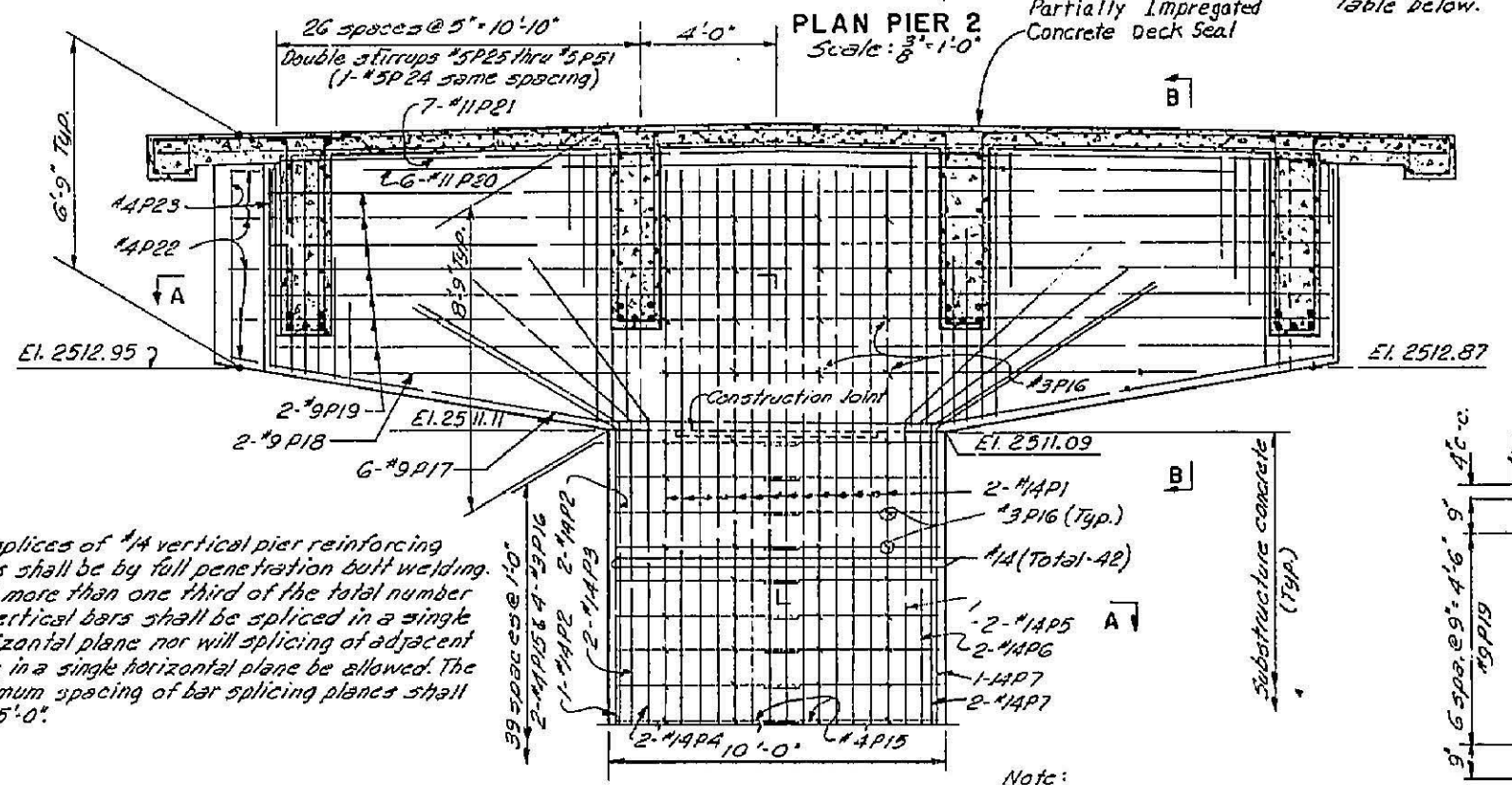
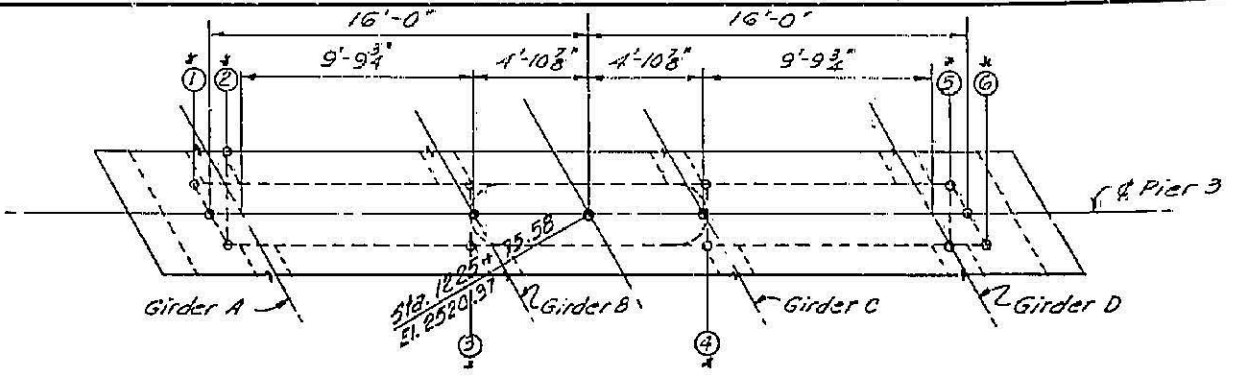
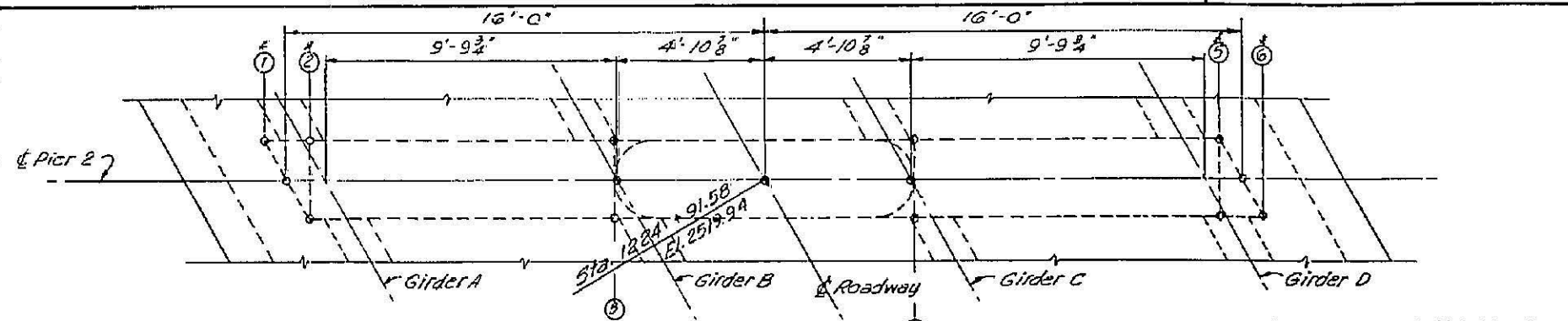
REDUCED PRINT
SCALES REDUCED
ACCORDINGLY



HINGE DETAIL



SECTION H-H

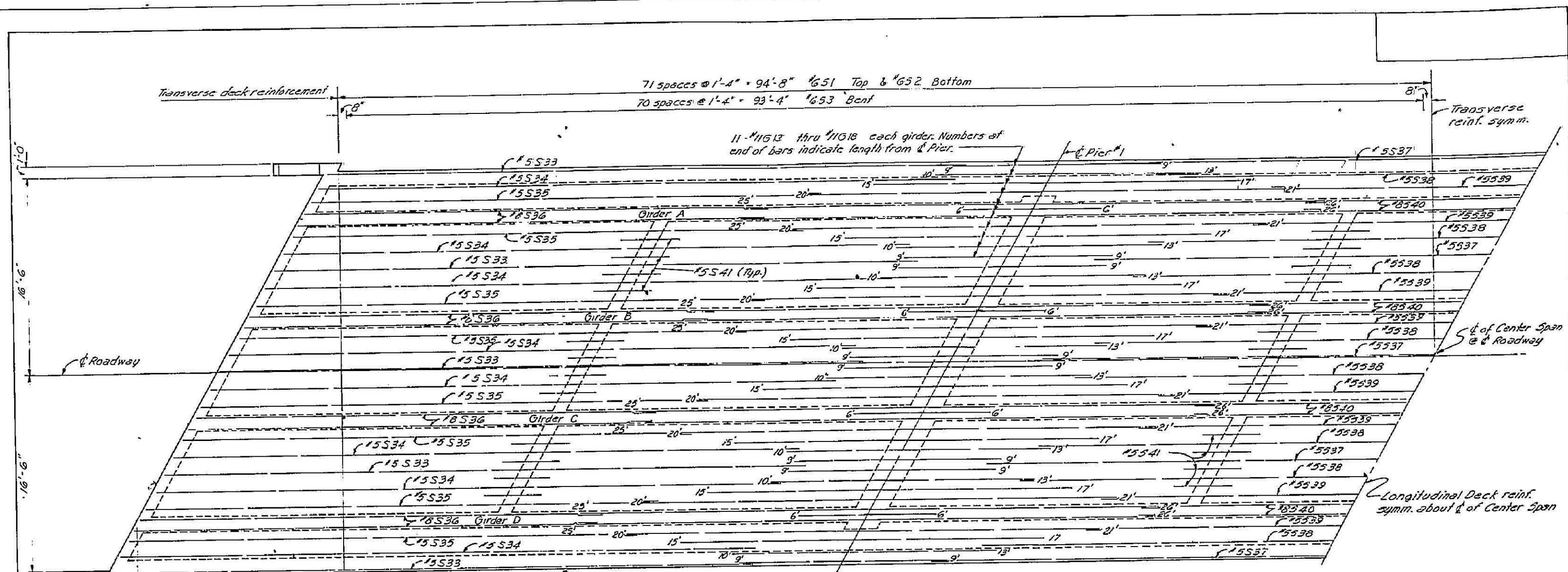


PIER CAP SOFFIT ELEVATIONS

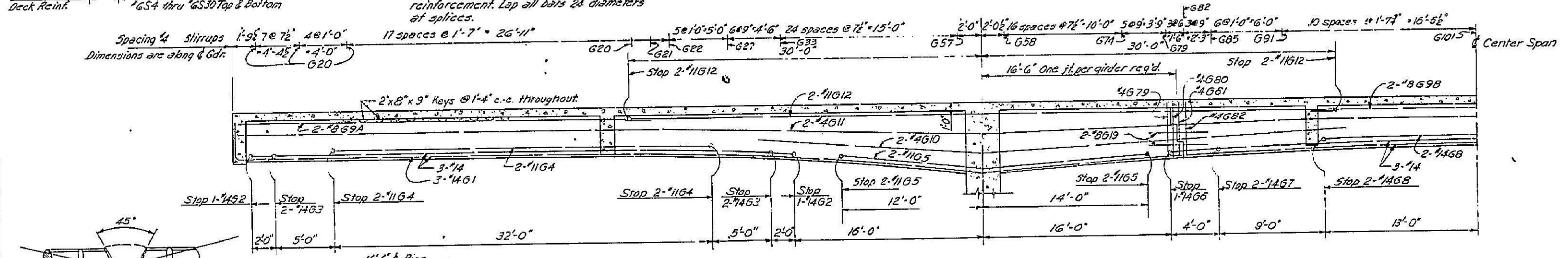
POINT	①	②	③	④	⑤	⑥
PIER 2	2513.07	2512.83	2511.11	2511.09	2512.75	2512.99
PIER 3	2513.99	2513.71	2511.68	2511.52	2513.18	2513.42



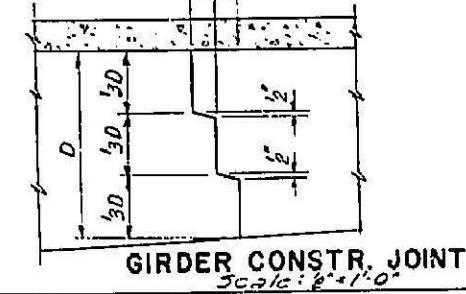
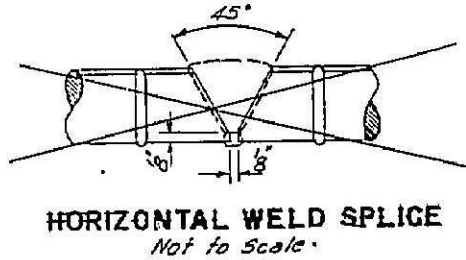
REDUCED PRINT
SCALES REDUCED
ACCORDINGLY



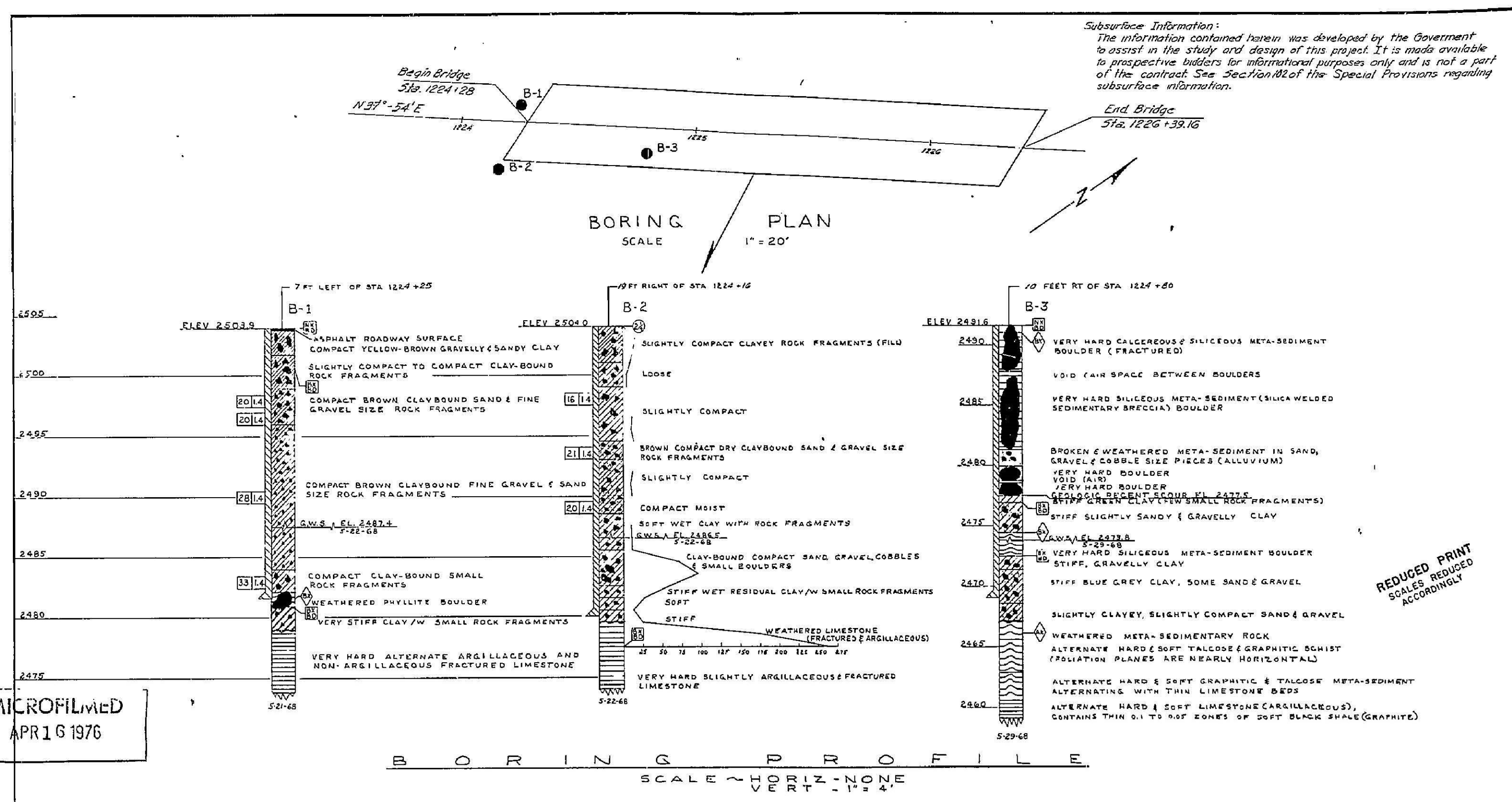
PART DECK PLAN



PART GIRDER ELEVATION



REDUCED PRINT
 SCALES REDUCED
 ACCORDINGLY



MICROFILMED
APR 16 1976

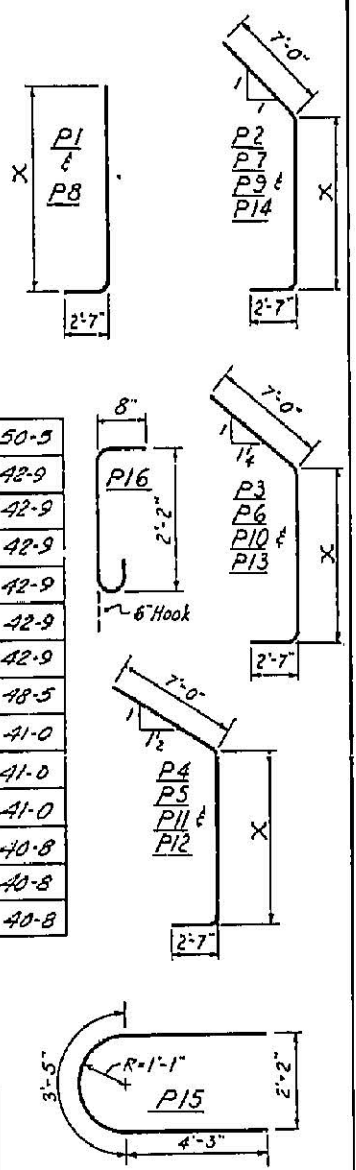
REDUCED PRINT
SCALES REDUCED
ACCORDINGLY

LEGEND OF DRILLING, SAMPLING & TESTING OPERATIONS		THE UNIFIED SOIL CLASSIFICATION SYSTEM		ROCK CLASSIFICATION	SOIL CONSISTENCY CLASSIFICATION
<p>ROTARY BORING</p> <p>TOP HOLE ELEV. B-NR</p> <p>DESCRIPTION OF MATERIAL, UNIT WEIGHT (POU/FT), % MOISTURE</p> <p>NO. OF SAMPLES (SIZES)</p> <p>BLOWS PER FOOT (DRIVEN BY MEANS OF A 140 LB HAMMER WITH A 30" DROP ON AS NOTED)</p> <p>QUALIFIED COMPRESSION STRENGTH (TONS/FT²)</p> <p>VANE SHEAR, SHEAR STRENGTH (POU/FT²)</p> <p>TS+TRIAL SHEAR</p> <p>DATE OF BORING</p>	<p>PENETRATION BORING</p> <p>TOP HOLE ELEV. B-NR</p> <p>NEW WATER ELEV. DATE MEASURED</p> <p>NO. COUNT RECORDED</p> <p>GRAPHIC PRESENTATION OF PENETRATION</p> <p>AVERAGE SHAFT FRICTION ABOVE THIS POINT (TONS/FT)</p> <p>DATE OF BORING</p>	<p>PLAN OF ANY BORING</p> <p>ALUSER BORING (DRY)</p> <p>JET BORING</p> <p>DIAMOND CORE BORING</p> <p>TEST PIT</p> <p>BT SIZES: (100) 3/4" x 1 1/8", 7/8" x 2 1/2", 1 1/4" x 2 3/4", 1 3/4" x 3 1/2"</p> <p>CASING SIZES: (100) 3/4" x 2 1/4", 1 1/4" x 3 1/2"</p>	<p>UNIFIED SOIL CLASSIFICATION SYSTEM</p> <p>MAJ. DIV. LETTER SYMBOL</p> <p>GROUP SYMBOL</p> <p>GROUP NAME</p> <p>GROUP DESCRIPTION</p> <p>GROUP CHARACTERISTICS</p>	<p>ROCK CLASSIFICATION</p> <p>SYMBOL</p> <p>NAME</p> <p>DESCRIPTION</p>	<p>SOIL CONSISTENCY CLASSIFICATION</p> <p>CONSISTENCY</p> <p>GRANULAR</p> <p>ADHESIVE</p> <p>PER. FT.</p> <p>VERY LOOSE</p> <p>VERY SOFT</p> <p>0 TO 5</p> <p>LOOSE</p> <p>SOFT</p> <p>5 TO 10</p> <p>SLIGHTLY COMPACT</p> <p>STIFF</p> <p>10 TO 30</p> <p>COMPACT</p> <p>VERY STIFF</p> <p>30 TO 50</p> <p>DENSE</p> <p>SAND</p> <p>35 TO 70</p> <p>VERY DENSE</p> <p>VERY HARD</p> <p>70</p> <p>STANDARD PENETRATION TEST: BLOWS PER FT. (SPT) NUMBER, 30" FREE-FALL BLOW USING A 140 LB. 2" DIA. SAMPLER</p>

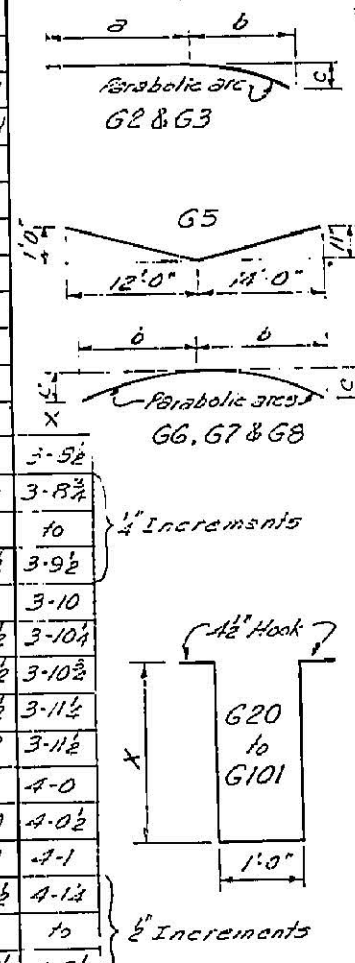
LOCATION	STRAIGHT BARS				BENT BARS				BENDING DIAGRAMS ALL DIMENSIONS ARE OUT TO OUT
	MARK	NO.	SIZE	LENGTH	MARK	NO.	SIZE	LENGTH	
Abut. #1									
Pile Cap longit.	A1	6	11	34-8					
hoops					A2	3	4	9-5	
Creep block longit.	A3	2	5	3-2					
Creep block ties					A4	3	4	5-2	
End diaph. longit.	A5	2	8	18-2					
"	A6	2	8	18-2					
"	A7	4	4	40-0					
"	A8	2	6	40-0					
stirrups					A9	2	6	11-11	
"					A10	3	4	11-7	
longit.	A11	2	8	7-6					
horiz.					A12	7	6	8-6	
"					A13	7	6	8-6	
"					A14	7	6	5-8	
"					A15	7	6	7-3	
Vert. Dowels	A16	0	4	4-0					
"	A17	2	8	2-0					
End Wings horiz.					W1	1	6	4-5	
"					W2	1	6	5-2	
"					W3	1	6	5-11	
"					W4	1	6	6-8	
"					W5	3	6	7-1	
"					W6	1	4	3-6	
"					W7	1	4	5-9	
"					W8	1	4	6-2	
"					W9	1	6	4-7	
"					W10	1	6	5-4	
"					W11	1	6	6-1	
"					W12	1	6	6-10	
"					W13	3	6	7-3	
"					W14	1	4	4-6	
"					W15	1	4	6-9	
"					W16	1	4	7-2	
vert.	W17	4	4	2-3					
"	W18	4	4	3-3					
Parapet Stirr.					C1	10	5	8-3	
horiz.	C2	8	4	3-3					
Abut. #2									
Footing horiz.	A17	2	4	4-8					
hinge bars					A18	8	8	5-2	
col. vert.	A19	4	8	5-4					
"	A20	4	8	7-5					
"	A21	8	8	3-6					
hoops					A22	23	4	7-5	
hinge bars					A23	8	8	5-3	
End diaph. longit.	A24	5	11	40-1					
"	A25	2	11	26-0					
"	A26	4	4	40-1					
stirr.					A9	5	4	11-11	
vert.	A16	10	6	4-0					
horiz.					A12	7	6	8-6	
"					A13	7	6	8-6	

LOCATION	STRAIGHT BARS				BENT BARS				BENDING DIAGRAMS ALL DIMENSIONS ARE OUT TO OUT
	MARK	NO.	SIZE	LENGTH	MARK	NO.	SIZE	LENGTH	
End diaph. horiz.					A14	7	6	5-8	
"					A15	7	6	6-4	
Wing Walls					W1	1	6	4-5	
"					W2	1	6	5-2	
"					W3	1	6	5-11	
"					W4	1	6	6-8	
"					W5	3	6	7-1	
"					W6	1	4	3-6	
"					W7	1	4	5-9	
"					W8	1	4	6-2	
"					W9	1	6	4-7	
"					W10	1	6	5-4	
"					W11	1	6	6-1	
"					W12	1	6	6-10	
"					W13	3	6	7-3	
"					W14	1	4	4-6	
"					W15	1	4	6-9	
"					W16	1	4	7-2	
Parapet stirrups					C1	10	5	8-3	
horiz.	C2	8	4	3-3					
Piers #2 & #3									
Footings bot. mat.	F1	6	11	12-8					
"	F2	4	8	17-8					
top	F3	4	8	12-8					
"	F4	1	8	17-8					
Pier #2 vert.					P1	28	14	53-0	
"					P2	3	14	52-4	
"					P3	2	14	52-4	
"					P4	2	14	52-4	
"					P5	2	14	52-4	
"					P6	2	14	52-4	
"					P7	3	14	52-4	
"					P8	28	14	51-0	
Pier #3 vert.					P9	3	14	50-7	
"					P10	2	14	50-7	
"					P11	2	14	50-7	
"					P12	2	14	50-3	
"					P13	2	14	50-3	
"					P14	3	14	50-3	
"					P15	15	6	11-11	
"					P16	3	4	3-4	

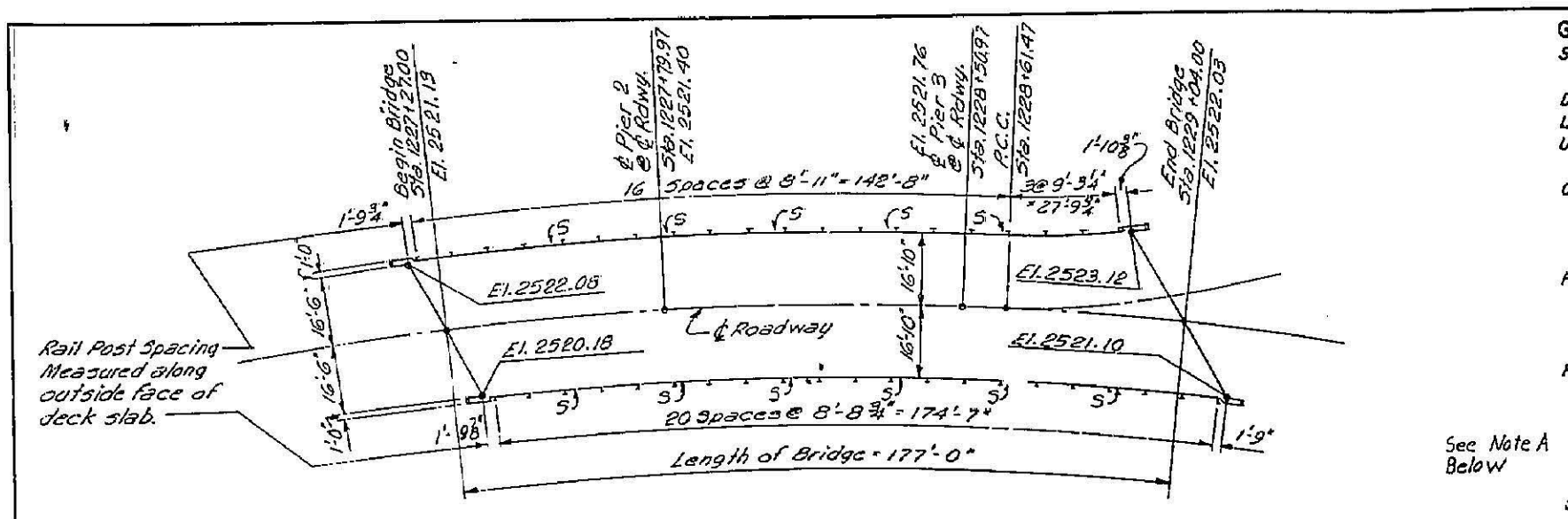
LOCATION	STRAIGHT BARS				BENT BARS				BENDING DIAGRAMS ALL DIMENSIONS ARE OUT TO OUT
	MARK	NO.	SIZE	LENGTH	MARK	NO.	SIZE	LENGTH	
Piers #1 & #2 Caps									
longit.					P17	12	9	32-0	
"	P18	4	9	26-0					
"	P19	28	9	31-8					
"	P20	12	11	26-0					
"					P21	14	11	35-6	
"					P22	20	4	5-4 1/2	
"					P23	8	4	6-0	
"					P24	108	5	4-8	
"					P25	8 ea.	5	15-11	
"					to of 27	to	to	to	
"					P51	216	5	19-11 1/2	
"									
"									



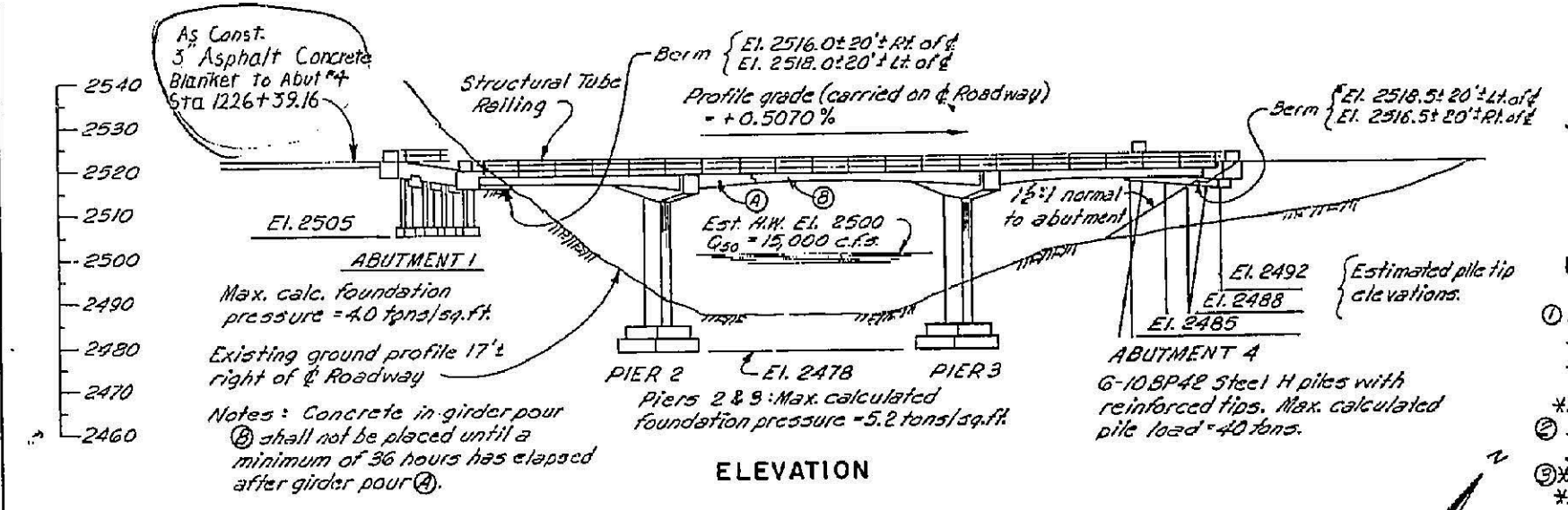
LOCATION	STRAIGHT BARS			BENT BARS			BENDING DIAGRAMS			
	MARK NO.	SIZE	LENGTH	MARK NO.	SIZE	LENGTH	ALL DIMENSIONS ARE OUT TO OUT			
Girder Longit.				G1	12	14	216-0	a	b	c
" "				G2	8	14	45-0	30-6	15-6	0-5 1/2
" "				G3	16	14	42-0	28-6	13-6	0-4 1/4
" "	G4	16	11	52-0						
" "				G5	16	11	26-0	a	b	c
" "				G6	4	14	52-0	0	25-0	0-5 1/2
" "				G7	8	14	44-0	0	22-0	0-6
" "				G8	8	14	26-0	0	13-0	0-2
" "	G9	16	8	35-6						
" "	G10	16	8	28-0						
" "	G10	16	4	51-0	1.5" splice allowed			Parabolic arcs		
" "	G11	8	4	216-0	5" splice allowed			G2 & G3		
" "	G12	16	11	60-0						
" "	G13	16	11	51-0						
" "	G14	16	11	41-0						
" "	G15	16	11	32-0						
" "	G16	16	11	23-0						
" "	G17	16	11	18-0						
" "	G18	8	11	12-0						
" Const. Jt.	G19	16	8	5-0						
" Stirrups Span-1				G20	2/16	4	9-2	3-5 1/2		
" "				G21	8	4	9-2 1/2	3-8 3/4		
" "				G22	10	3/4	10	10		
" "				G23	8	4	9-4 1/2	3-9 1/2		
" "				G24	8	4	9-5	3-10		
" "				G25	8	4	9-5 1/2	3-10 1/4		
" "				G26	8	4	9-6 1/2	3-10 3/4		
" "				G27	8	4	9-7 1/2	3-11 1/4		
" "				G28	8	4	9-8 1/2	3-11 3/4		
" "				G29	8	4	9-9 1/2	3-12 1/4		
" "				G30	8	4	9-10 1/2	3-13 1/4		
" "				G31	8	4	9-11 1/2	3-14 1/4		
" "				G32	8	4	9-12 1/2	3-15 1/4		
" "				G33	8	4	9-13 1/2	3-16 1/4		
" "				G34	8	4	9-14 1/2	3-17 1/4		
" "				G35	8	4	9-15 1/2	3-18 1/4		
" "				G36	8	4	9-16 1/2	3-19 1/4		
" "				G37	8	4	9-17 1/2	3-20 1/4		
" "				G38	8	4	9-18 1/2	3-21 1/4		
" "				G39	8	4	9-19 1/2	3-22 1/4		
" "				G40	8	4	9-20 1/2	3-23 1/4		
" "				G41	8	4	9-21 1/2	3-24 1/4		
" "				G42	8	4	9-22 1/2	3-25 1/4		
" "				G43	8	4	9-23 1/2	3-26 1/4		
" "				G44	8	4	9-24 1/2	3-27 1/4		
" "				G45	8	4	9-25 1/2	3-28 1/4		
" "				G46	8	4	9-26 1/2	3-29 1/4		
" "				G47	8	4	9-27 1/2	3-30 1/4		
" "				G48	8	4	9-28 1/2	3-31 1/4		
" "				G49	8	4	9-29 1/2	3-32 1/4		
" "				G50	8	4	9-30 1/2	3-33 1/4		
" "				G51	8	4	9-31 1/2	3-34 1/4		
" "				G52	8	4	9-32 1/2	3-35 1/4		
" "				G53	8	4	9-33 1/2	3-36 1/4		
" "				G54	8	4	9-34 1/2	3-37 1/4		
" "				G55	8	4	9-35 1/2	3-38 1/4		
" "				G56	8	4	9-36 1/2	3-39 1/4		
" "				G57	8	4	9-37 1/2	3-40 1/4		
" "				G58	8	4	9-38 1/2	3-41 1/4		
" "				G59	8	4	9-39 1/2	3-42 1/4		
" "				G60	8	4	9-40 1/2	3-43 1/4		



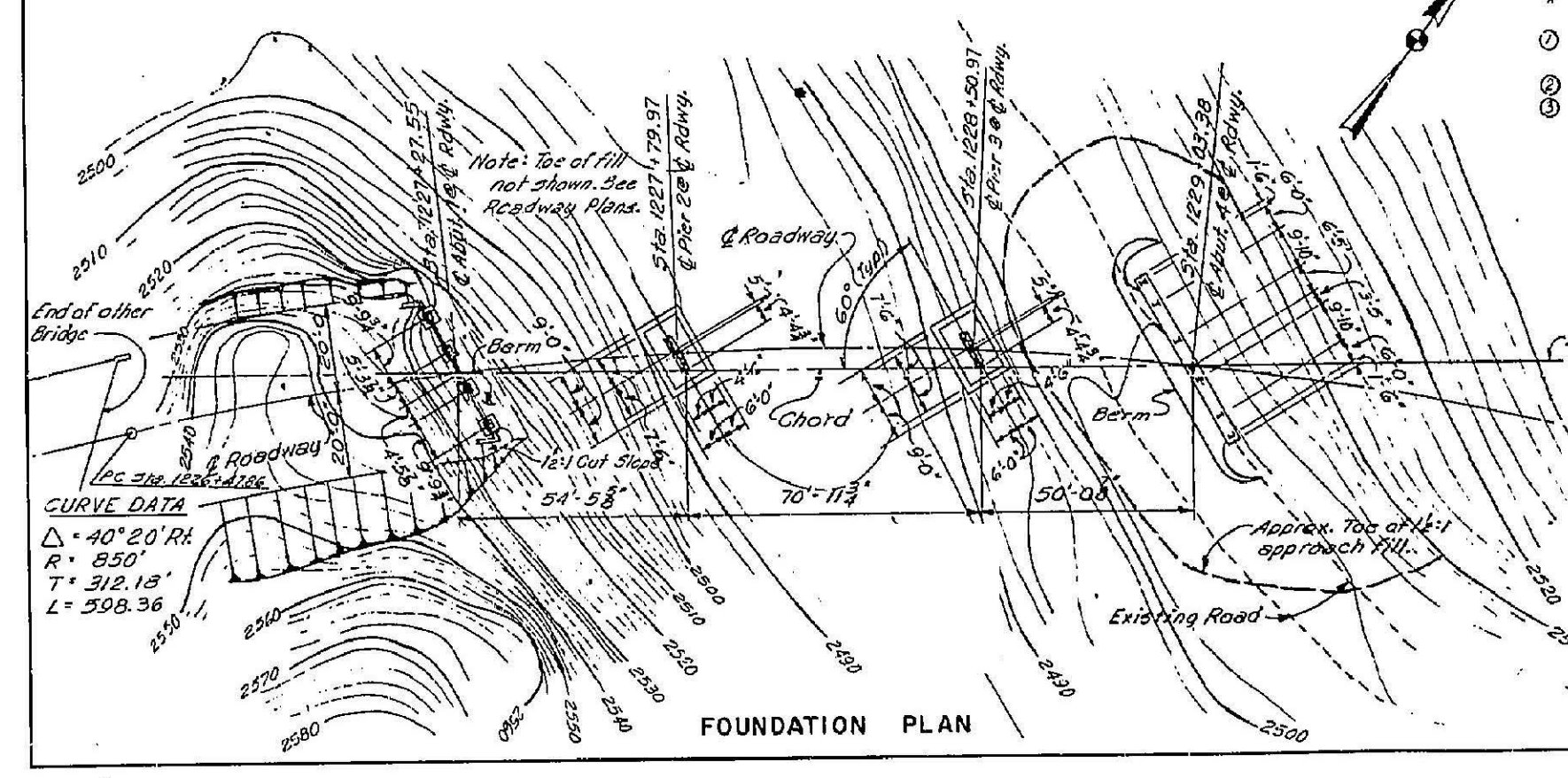
LOCATION	STRAIGHT BARS			BENT BARS			BENDING DIAGRAMS			
	MARK NO.	SIZE	LENGTH	MARK NO.	SIZE	LENGTH	ALL DIMENSIONS ARE OUT TO OUT			
Girder Stirrups Span-2				G61	8	4	12-3	5-3		
" "				G62	8	4	12-2	5-2 1/2		
" "				G63	8	4	12-0 1/2	5-1 3/4		
" "				G64	8	4	11-11 1/2	5-1 1/4		
" "				G65	8	4	11-0	5-0 1/2		
" "				G66	8	4	10-10	4-5 1/2		
" "				G67	8	4	10-9 1/2	4-5 1/4		
" "				G68	8	4	10-9 1/4	4-5 1/4		
" "				G69	8	4	10-9 1/2	4-5 1/4		
" "				G70	8	4	10-9 1/4	4-5 1/4		
" "				G71	8	4	10-9 1/2	4-5 1/4		
" "				G72	8	4	10-9 1/4	4-5 1/4		
" "				G73	8	4	10-9 1/2	4-5 1/4		
" "				G74	8	4	10-9 1/4	4-5 1/4		
" "				G75	8	4	10-9 1/2	4-5 1/4		
" "				G76	8	4	10-9 1/4	4-5 1/4		
" "				G77	8	4	10-9 1/2	4-5 1/4		
" "				G78	8	4	10-9 1/4	4-5 1/4		
" "				G79	8	4	10-9 1/2	4-5 1/4		
" "				G80	8	4	10-9 1/4	4-5 1/4		
" "				G81	8	4	10-9 1/2	4-5 1/4		
" "				G82	8	4	10-9 1/4	4-5 1/4		
" "				G83	8	4	10-9 1/2	4-5 1/4		
" "				G84	8	4	10-9 1/4	4-5 1/4		
" "				G85	8	4	10-9 1/2	4-5 1/4		
" "				G86	8	4	10-9 1/4	4-5 1/4		
" "				G87	8	4	10-9 1/2	4-5 1/4		
" "				G88	8	4	10-9 1/4	4-5 1/4		
" "				G89	8	4	10-9 1/2	4-5 1/4		
" "				G90	8	4	10-9 1/4	4-5 1/4		
" "				G91	8	4	10-9 1/2	4-5 1/4		
" "				G92	8	4	10-9 1/4	4-5 1/4		
" "				G93	8	4	10-9 1/2	4-5 1/4		
" "				G94	8	4	10-9 1/4	4-5 1/4		
" "				G95	8	4	10-9 1/2	4-5 1/4		
" "				G96	8	4	10-9 1/4	4-5 1/4		
" "				G97	8	4	10-9 1/2	4-5 1/4		
" "				G98	8	4	10-9 1/4	4-5 1/4		
" "				G99	8	4	10-9 1/2	4-5 1/4		
" "				G100	8	4	10-9 1/4	4-5 1/4		
" "				G101	8	4	10-9 1/2	4-5 1/4		
Deck Top Transv.	S1	1/4	6	33-4						
" Bolt "	S2	1/4	6	32-4						
" Bent "	S3	1/4	6	33-4						
" Top & Bolt "	S4	1/4	6	4-1						
" "	S5	1/4	6	33-0						
" "	S6	1/4	6	33-4						
" "	S7	1/4	6	33-0						
" "	S8	1/4	6	33-4						
" "	S9	1/4	6	33-0						
" "	S10	1/4	6	33-4						
" "	S11	1/4	6	33-0						
" "	S12	1/4	6	33-4						
" "	S13	1/4	6	33-0						
" "	S14	1/4	6	33-4						
" "	S15	1/4	6	33-0						
" "	S16	1/4	6	33-4						
" "	S17	1/4	6	33-0						
" "	S18	1/4	6	33-4						
" "	S19	1/4	6	33-0						
" "	S20	1/4	6	33-4						
" "	S21	1/4	6	33-0						
" "	S22	1/4	6	33-4						
" "	S23	1/4	6	33-0						
" "	S24	1/4	6	33-4						
" "	S25	1/4	6	33-0						
" "	S26	1/4	6	33-4						
" "	S27	1/4	6	33-0						
" "	S28	1/4	6	33-4						
" "	S29	1/4	6	33-0						
" "	S30	1/4	6	33-4						
" "	S31	1/4	6	33-0						
" "	S32	1/4	6	33-4						
" "	S33	1/4	6	33-0						
" "	S34	1/4	6	33-4						
" "	S35	1/4	6	33-0						
" "	S36	1/4	6	33-4						
" "	S37	1/4	6	33-0						
" "	S38	1/4	6	33-4						
" "	S39	1/4	6	33-0						
" "	S40	1/4	6	33-4						
" "	S41	1/4	6	33-0						
" "	S42	1/4	6	33-4						
" "	S43	1/4	6	33-0						
" "	S44	1/4	6	33-4						
" "	S45	1/4	6	33-0						
" "	S46	1/4	6	33-4						
" "	S47	1/4	6	33-0						
" "	S48	1/4	6	33-4						
" "	S49	1/4	6	33-0						
" "	S50	1/4	6	33-4						
" "	S51	1/4	6	33-0						
" "	S52	1/4	6	33-4						
" "	S53	1/4	6	33-0						
" "	S54	1/4	6	33-4						
" "	S55	1/4	6	33-0						
" "	S56	1/4	6	33-4						
" "	S57	1/4	6	33-0						
" "	S58	1/4	6	33-4						
" "	S59	1/4	6	33-0						
" "	S60	1/4	6	33-4						
" "	S61	1/4	6	33-0						
" "	S62	1/4	6	33-4						
" "	S63	1/4	6	33-0						
" "	S64	1/4	6	33-4						
" "	S65	1/4	6	33-0						
" "	S66	1/4	6	33-4						
" "	S67	1/4	6	33-0						
" "	S68	1/4	6	33-4						
" "	S69	1/4	6	33-0						
" "	S70	1/4	6	33-4						
" "	S71	1/4	6	33-0						
" "	S72	1/4	6	33-4						
" "	S73	1/4	6	33-0						
" "	S74	1/4	6							



PLAN



ELEVATION



FOUNDATION PLAN

GENERAL NOTES:
SPECIFICATIONS: Construction, Bureau of Public Roads FP-69 Design, A.A.S.H.O. Specifications for Highway Bridges 1965 with current Interim Specifications.
DEAD LOAD: Concrete, 150 Lbs. per cu. ft.; paving allowance, 25 Lbs. per sq. ft. of roadway surface.
LIVE LOAD: HS20-44 Loading, Impact I = 30% (1st Span length). Maximum I = 30%.
UNIT STRESSES: Allowable stresses in concrete and reinforcement are: $f_c = 4,320$ psi, $f_s = 20,000$ psi, $n = 10$. Concrete, deck only, $f_c = 1,200$ psi. Both concrete stresses are based on a 28 day compressive strength of $f_c = 3,300$ psi.
CONCRETE: All concrete shall be Class "A" except footing seals which shall be Class "B". Maximum size of coarse aggregate shall be 1 1/2". All concrete shall be mixed with Type II Portland Cement (Low Alkali) and an approved air entraining admixture. All Class "A" concrete shall be vibrated. No admixture containing calcium chloride will be allowed. Chamfer exposed corners unless otherwise noted.
FINISHING CONCRETE: The roadway slab and curbs shall be given a "Float Finish". All faces of concrete, end posts, outside faces of roadway slab, outside faces of the exterior girders, pier cap projection, and all exposed faces of end wings down to one foot below finished ground line shall be given a "Rubbed Finish". All other surfaces shall be given an "Ordinary Surface Finish".
REINFORCING STEEL: All reinforcing steel shall be billet steel deformed bars conforming to ASTM Specifications A615, Grade 40. The minimum cover to the face of any bar shall be 2" unless otherwise shown. All reinforcing bars thru size #11 shall be lapped 24 bar diameters at all splices unless otherwise shown and payment will be made only for splices indicated on the plans. ~~Splices shall be staggered and shall not be placed in the same section of a member. The length of lap shall not be less than 12" and the lap shall not be placed in the same section of a member. The length of lap shall not be less than 12" and the lap shall not be placed in the same section of a member.~~
STRUCTURAL STEEL PILES: Steel in piles and tips shall conform to ASTM A36. Pile splices, if necessary, shall be made with a single bevel butt weld which will develop the full section of the pile. The minimum length of any portion of a spliced pile shall be 10 feet. All piling shall be driven to a minimum bearing value of 45 tons, and to the approximate tip elevation shown. The use of a gravity hammer will not be permitted. A hammer capable of delivering at least 15,000 ft. lbs. of energy per blow shall be used. All piling shall have a reinforced pile tip as shown on the plans. Payment for pile tips shall be included in the contract item for Structural Steel Piles. (Furnished). Only those splices required for pile extensions to secure adequate pile bearings after the pile order length has been driven shall be paid for.
STEEL BRIDGE RAILING: All items of rail construction are included in the contract item for "Steel Bridge Railing" and includes the tubular rail, steel posts, and all rail and post securing bolts, nuts, and washers. All items of rail construction shall be galvanized according to ASTM A123 following fabrication. Tubular rails shall conform to ASTM A53 or A500. Plates and posts shall conform to ASTM A36. 3/4" x 1/2" bolts shall conform to ASTM A325. Portions of tubular rail that are curved shall be bent in the shop to fit the required curvature. The pay length for bridge railing shall be measured between insides of concrete end posts.
ESTIMATE:

UNIT	QUANTITY		TOTAL
	Bridge @ Sta. 1226+34	Bridge @ Sta. 1228+15	
Cu. Yds.	700	450	1150
Lin. Ft.	178	177	355
Each	5	6	11
Each	2	3	5
Cu. Yds.	135	100	235
Lump Sum	All Req'd	All Req'd	All Req'd
Cu. Yds.	97	48	145
Lbs.	123,600	137,000	310,600
Lin. Ft.	426	352	778

① Bridge excavation (Item 206 (2))
 Structural steel piles, finished (Item 600 (A))
 Structural steel piles driven (Item 600 (B) (2))
 Pile splices (Item 600 (A) (2))
 Structural Concrete Class "A" Superstructure (Item 601 (1))
 Structural Concrete Class "B" Substructure (Item 601 (2))
 Reinforcing steel (Item 602 (1))
 Steel Bridge Railing (Item 612 (2))
 * The above noted quantities shall constitute final pay quantities, except as adjusted to suit field conditions. (See F.H.W.A., FP-69, Section 103).
 ① Quantities computed below subgrade and includes excavation for benches of Sta. 1226+35 and at Sta. 1227+30
 ② 408 Cu. Yds. for Bridge at Sta. 1229+4 and 352 Cu. Yds. for Bridge at Sta. 1228+15.
 ③ Includes weight of guard angles.

MICROFILMED
 APR 16 1976

REDUCED PRINT
 SCALES REDUCED
 ACCORDINGLY

Note A: Fox-Howlett, Sleeves-Threaded Mechanical
 Butt Splices Replaced Splices in All #14
 Bars in stems of Girders.

See Roadway Plans for
 Slope Protection.

Bridge Chord

Existing Road

Approx. Top of 12:1
 approach fill.

70'-11 3/4"

50'-00"

5'-00"

5'-00"

5'-00"

5'-00"

5'-00"

5'-00"

5'-00"

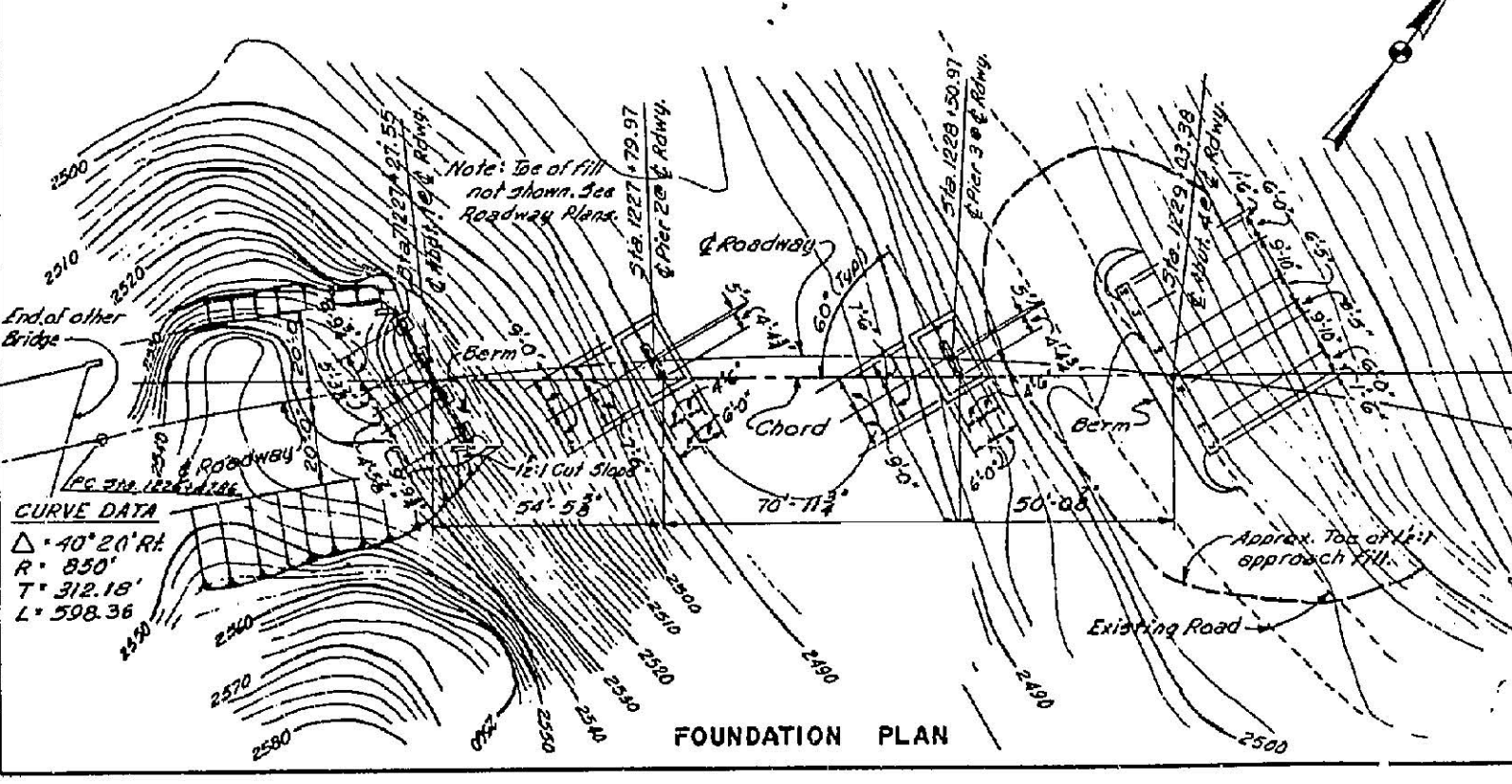
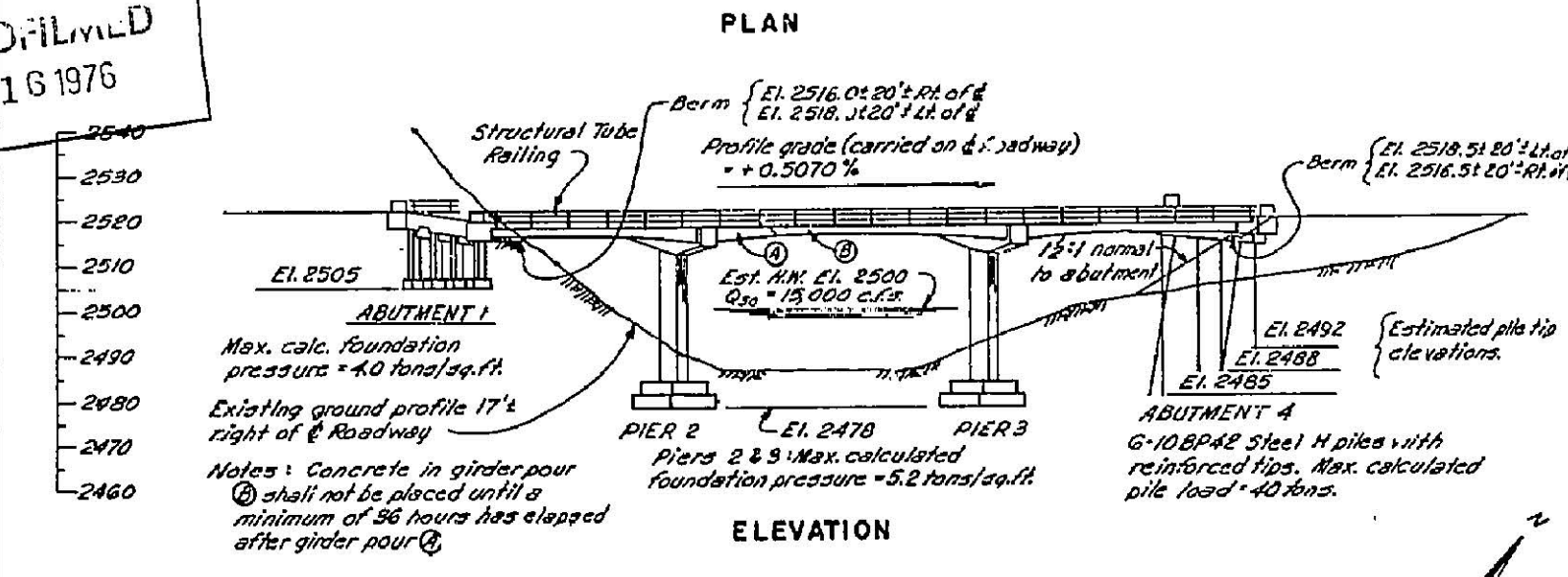
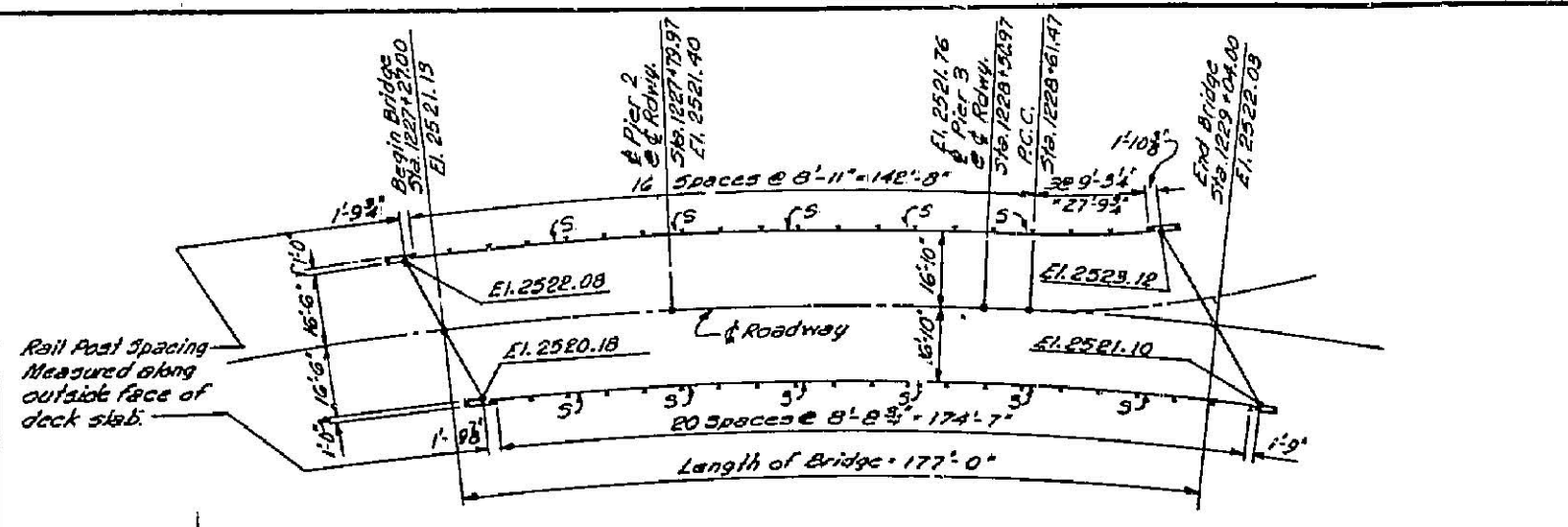
5'-00"

5'-00"

5'-00"

5'-00"

MICK DEWITT
APR 16 1976



GENERAL NOTES:

SPECIFICATIONS: Construction, Bureau of Public Roads FP-69 Design, A.A.S.H.O. Specifications for Highway Bridges 1965 with current Interim Specifications.

DEAD LOAD: Concrete, 150 Lbs. per cu. ft.; paving allowance, 25 Lbs. per sq. ft. of roadway surface.

LIVE LOAD: HS 20-44 Loading, Impact 1.15, (L = span length), Maximum I = 30 %.

UNIT STRESSES: Allowable stresses in concrete and reinforcement are -f_c = 1,320 psi, f_s = 20,000 psi, n = 10. Concrete, deck only, f_c = 1,200 psi. Both concrete stresses are based on a 28 day compressive strength of f_c = 3,300 psi.

CONCRETE: All concrete shall be Class "A" except footing seals which shall be Class "S". Maximum size of coarse aggregate shall be 1 1/2". All concrete shall be mixed with Type I Portland Cement (Low Alkali) and an approved air entraining admixture. All Class "A" concrete shall be vibrated. No admixture containing calcium chloride will be allowed. Chamfer exposed corners unless otherwise noted.

FINISHING CONCRETE: The roadway slab and curbs shall be given a "Float Finish". All faces of concrete, end posts, outside faces of roadway slab, outside faces of the exterior girders, pier cap projection, and all exposed faces of end wings down to one foot below finished ground line shall be given a "Rubbed Finish". All other surfaces shall be given an "Ordinary Surface Finish".

REINFORCING STEEL: All reinforcing steel shall be billet steel deformed bars conforming to A.S.T.M. Specifications A615, Grade 40. The minimum cover to the face of any bar shall be 2" unless otherwise shown. All reinforcing bars thru size #11 shall be lapped 24 bar diameters at all splices unless otherwise shown and payment will be made only for splices indicated on the plans. All #4 reinforcing bars greater than 60 feet in length shall have welded butt splices. Welding shall conform to the current edition of A.M.S. Specifications D.2.0, Test Method C-11. No. 601-D and the special provisions. Cost of welded splices shall be included in the unit item "Reinforcing Steel".

STRUCTURAL STEEL PILES: Steel in piles and tips shall conform to A.S.T.M. A36. Pile splices, if necessary, shall be made with a single bevel butt weld which will develop the full section of the pile. The minimum length of any portion of a spliced pile shall be 10 feet. All piling shall be driven to a minimum bearing value of 45 tons, and to the approximate tip elevation shown. The use of a gravity hammer will not be permitted. A hammer capable of delivering at least 15,000 ft. lbs. of energy per blow shall be used. All piling shall have a reinforced pile tip as shown on the plans. Payment for pile tips shall be included in the contract item for Structural Steel Piles, (terminated). Only those splices required for pile extensions to secure adequate pile bearings after the pile order length has been driven shall be paid for.

STEEL BRIDGE RAILING: All items of rail construction are included in the contract item for "Steel Bridge Railing" and includes the tubular rail, steel posts, and all rail and post securing bolts, nuts, and washers. All items of rail construction shall be fabricated according to A.S.T.M. A123 following fabrication. Tubular rails shall conform to A.S.T.M. A501 or A500. Plates and posts shall conform to A.S.T.M. A36. 3/4" dia. bolts shall conform to A.S.T.M. A325. Portions of tubular rail that are curved shall be bent in the shop to fit the required curvature. The pay length for bridge railing shall be measured between insides of concrete end posts.

ESTIMATE:

UNIT	QUANTITY		TOTAL
	Bridge @ Sta. 1225+34	Bridge @ Sta. 1228+15	
1 Bridge excavation (Item 206 (2))	700	450	1150
Structural steel piles, finished (Item 601.0)	178	177	355
Structural steel piles driven (Item 600.0 (2))	5	6	11
Pile Splices (Item 600.0 (2))	2	3	5
Cu. Yds. (Item 601.0)	135	100	235
Structural Concrete Class "A" Superstructure (Item 601.0)	Lump Sum	All Req'd.	All Req'd.
Structural Concrete Class "S" (Item 601.0)	Cu. Yds.	48	48
Reinforcing Steel (Item 602.0)	Lump Sum	All Req'd.	All Req'd.
Steel Bridge Railing (Item 612.0)	Lump Sum	All Req'd.	All Req'd.

* The above noted quantities shall constitute final pay quantities, except as adjusted to suit field conditions. (See F.H.W.A. FP-69, Section 109).

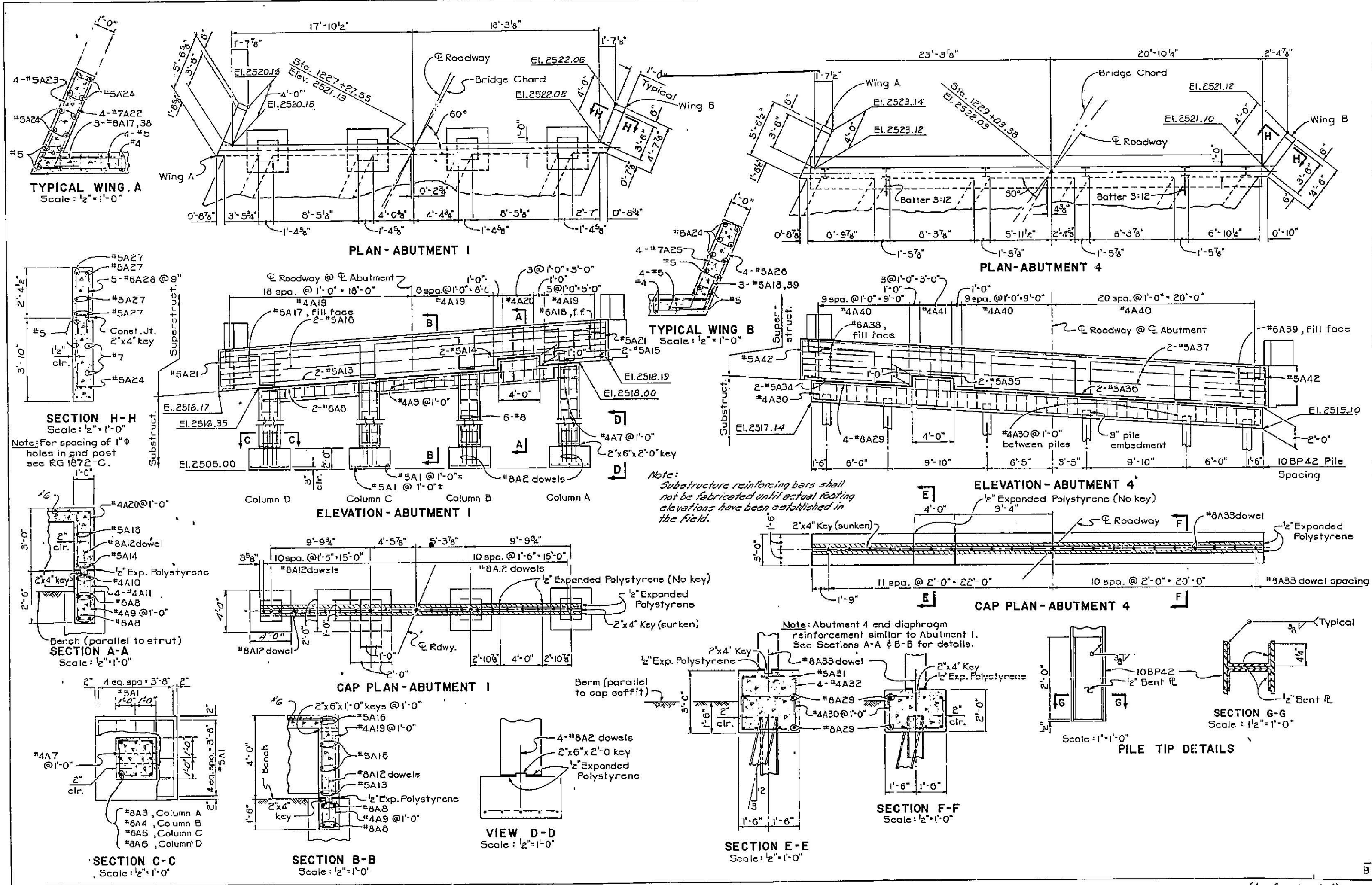
1 Quantities computed below subgrade and includes excavation for benches at Sta. 1226+35 and at Sta. 1227+30.

2 408 Cu. Yds. for Bridge at Sta. 1225+34 and 352 Cu. Yds. for Bridge at Sta. 1228+15.

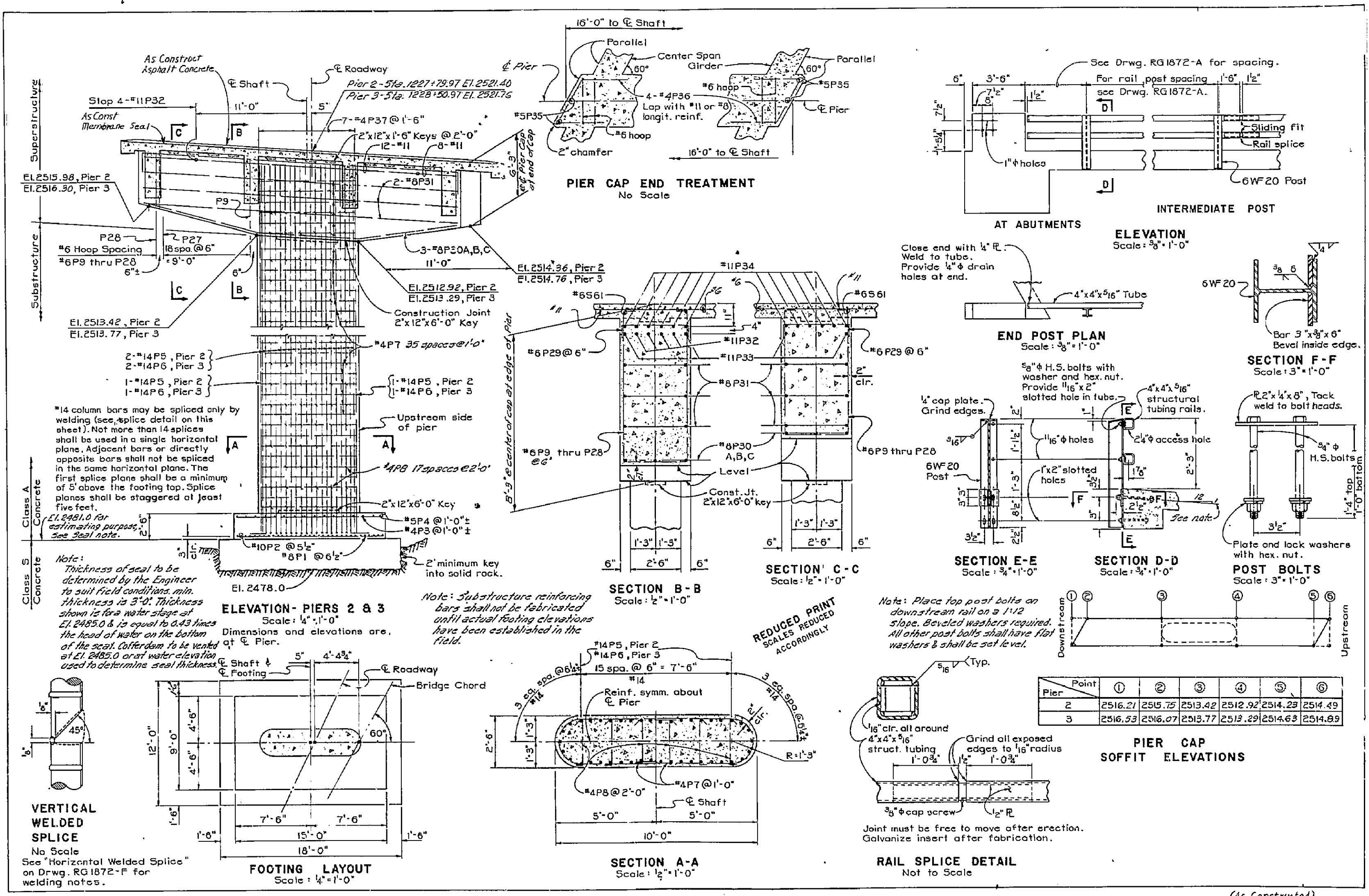
3 175,000 Lbs. for Bridge @ Sta. 1225+34 & 137,000 Lbs. for Bridge @ Sta. 1228+15 (incl. weights of guard angles).

4 426 L.W. Ft. for Bridge @ Sta. 1225+34 & 352 L.W. Ft. for Bridge @ Sta. 1228+15.

(As Constructed)



(11. Continued)



(As Constructed)

REDUCED PRINT
SCALES REDUCED
ACCORDINGLY

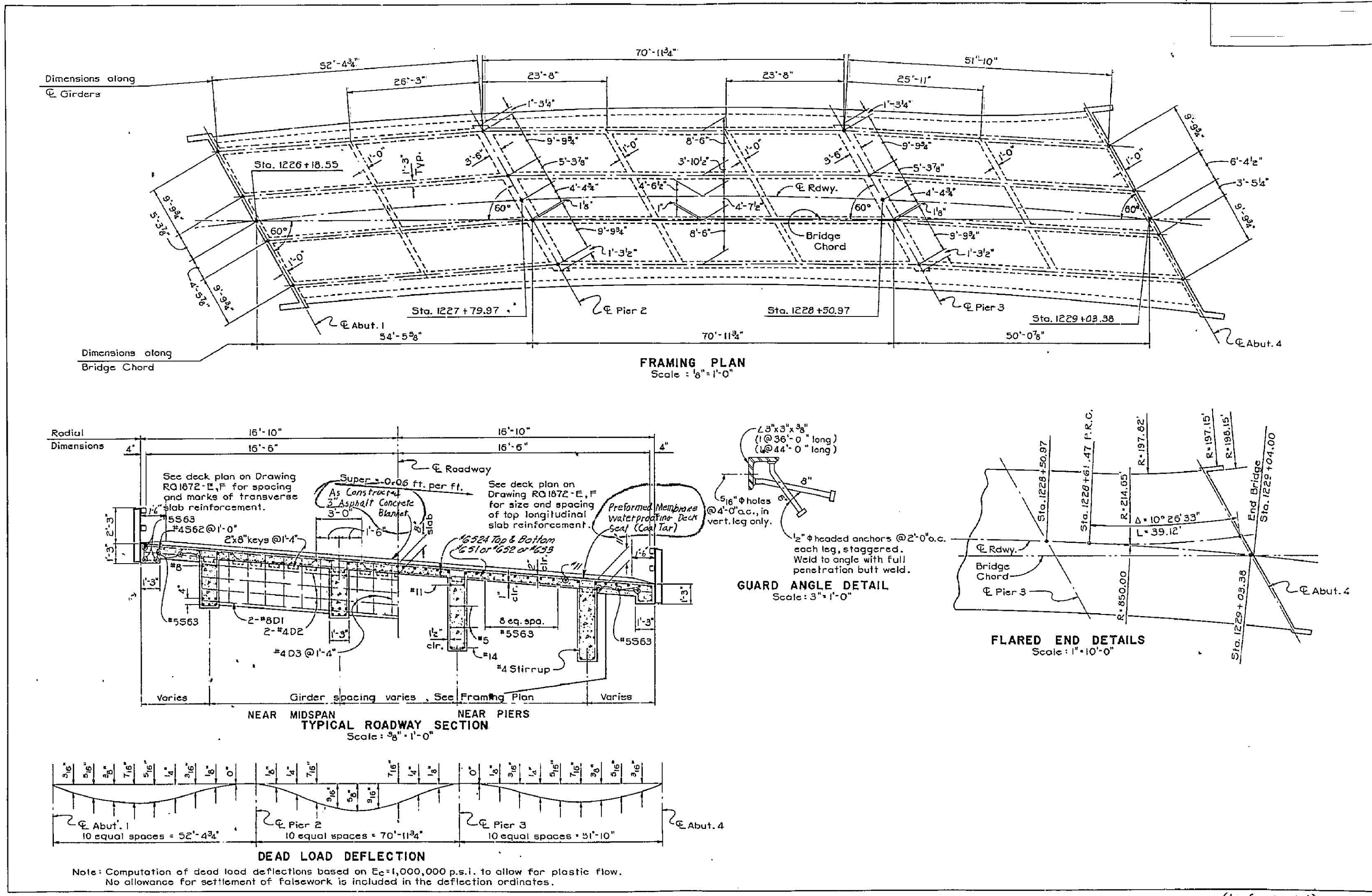
Note: Place top post bolts on downstream rail on a 1:12 slope. Beveled washers required. All other post bolts shall have flat washers & shall be set level.

Joint must be free to move after erection. Galvanize insert after fabrication.

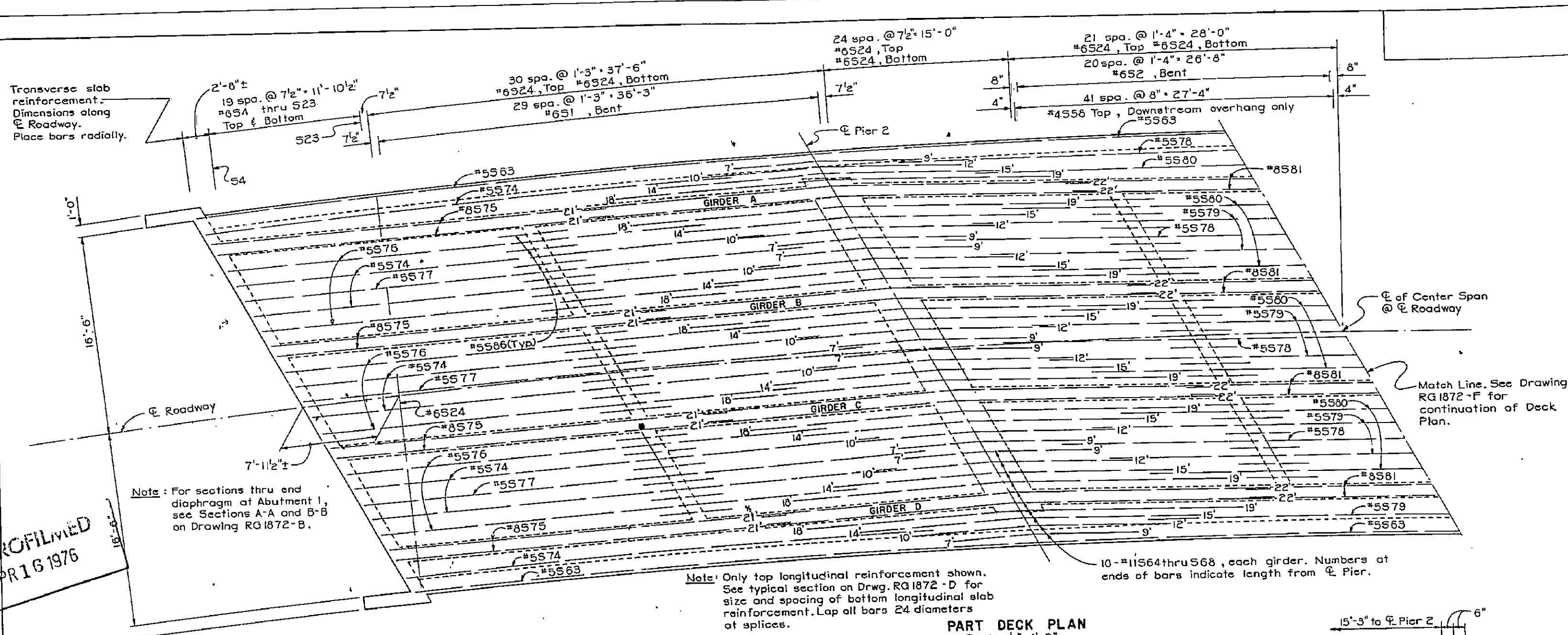
Note: 14 column bars may be spliced only by welding (see splice detail on this sheet). Not more than 14 splices shall be used in a single horizontal plane. Adjacent bars on directly opposite sides shall not be spliced in the same horizontal plane. The first splice plane shall be a minimum of 5' above the footing top. Splice planes shall be staggered at least five feet.

Note: Thickness of seal to be determined by the Engineer to suit field conditions. min. thickness is 3'-0". Thickness shown is for a water stage at El. 2485.0 & is equal to 0.43 times the head of water on the bottom of the seal. Cofferdam to be vented at El. 2485.0 or at water elevation used to determine seal thickness.

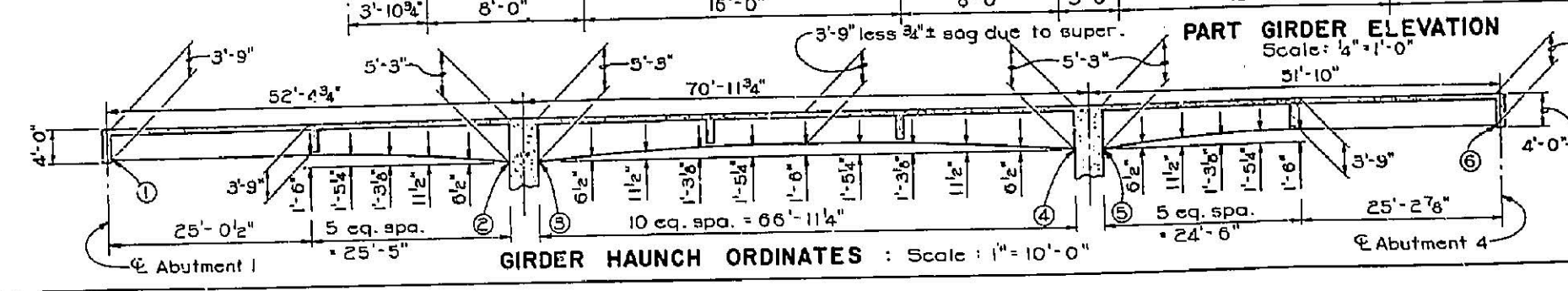
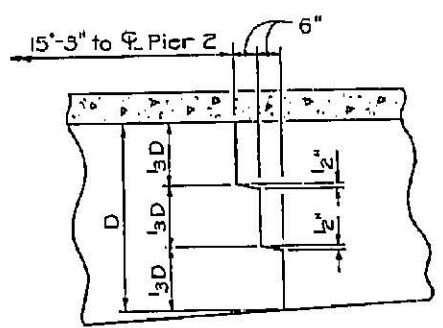
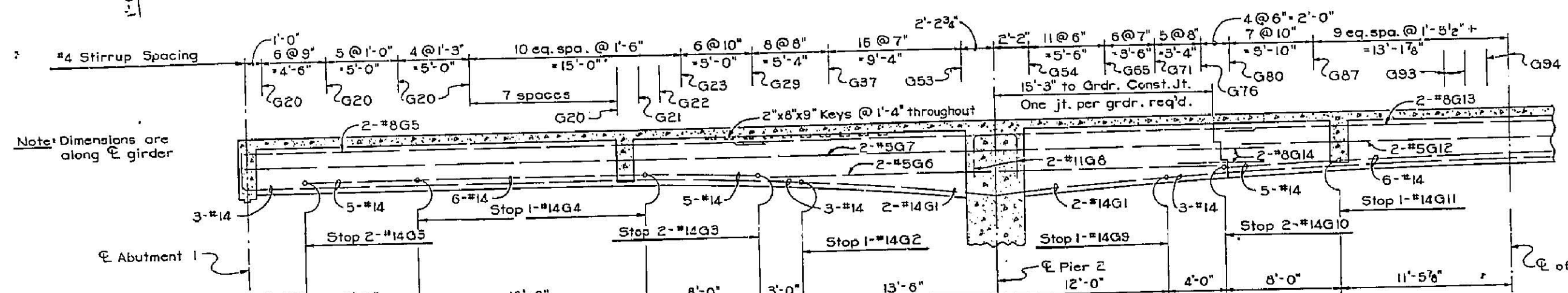
Note: Substructure reinforcing bars shall not be fabricated until actual footing elevations have been established in the field.



(As Constructed)



MICROFILMED
APR 16 1976

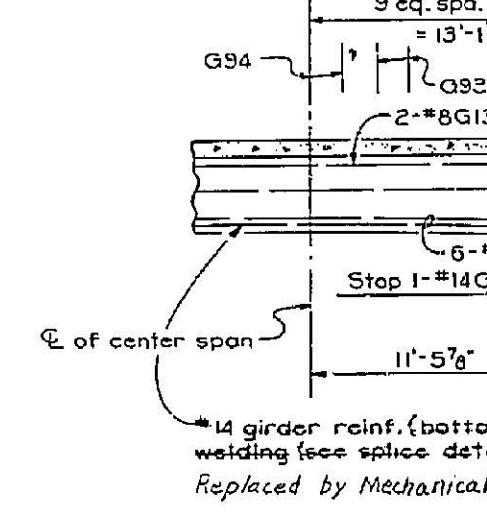
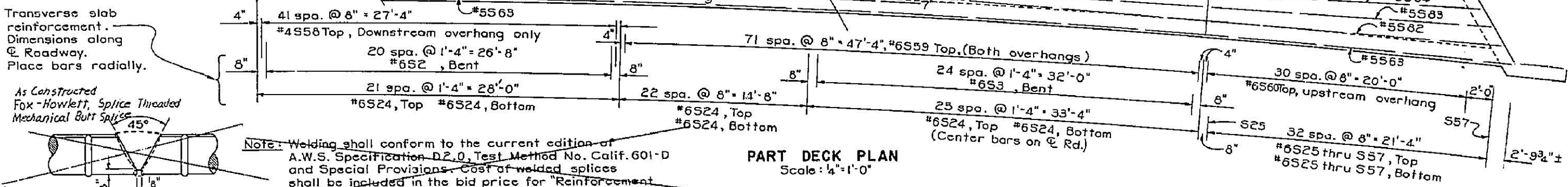
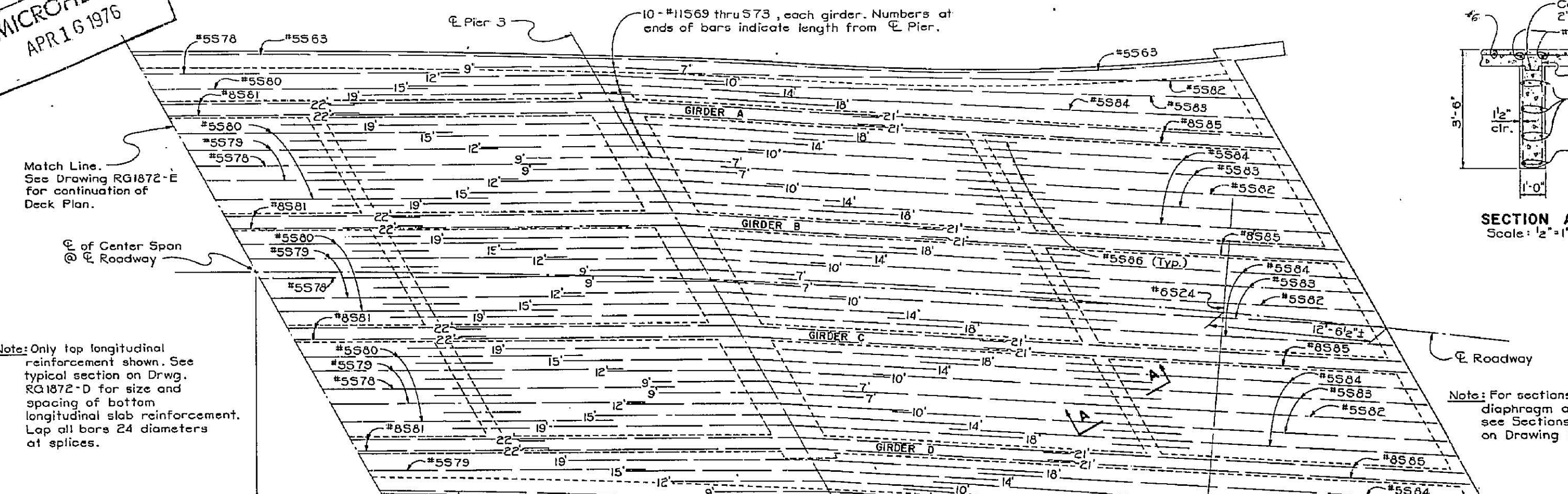


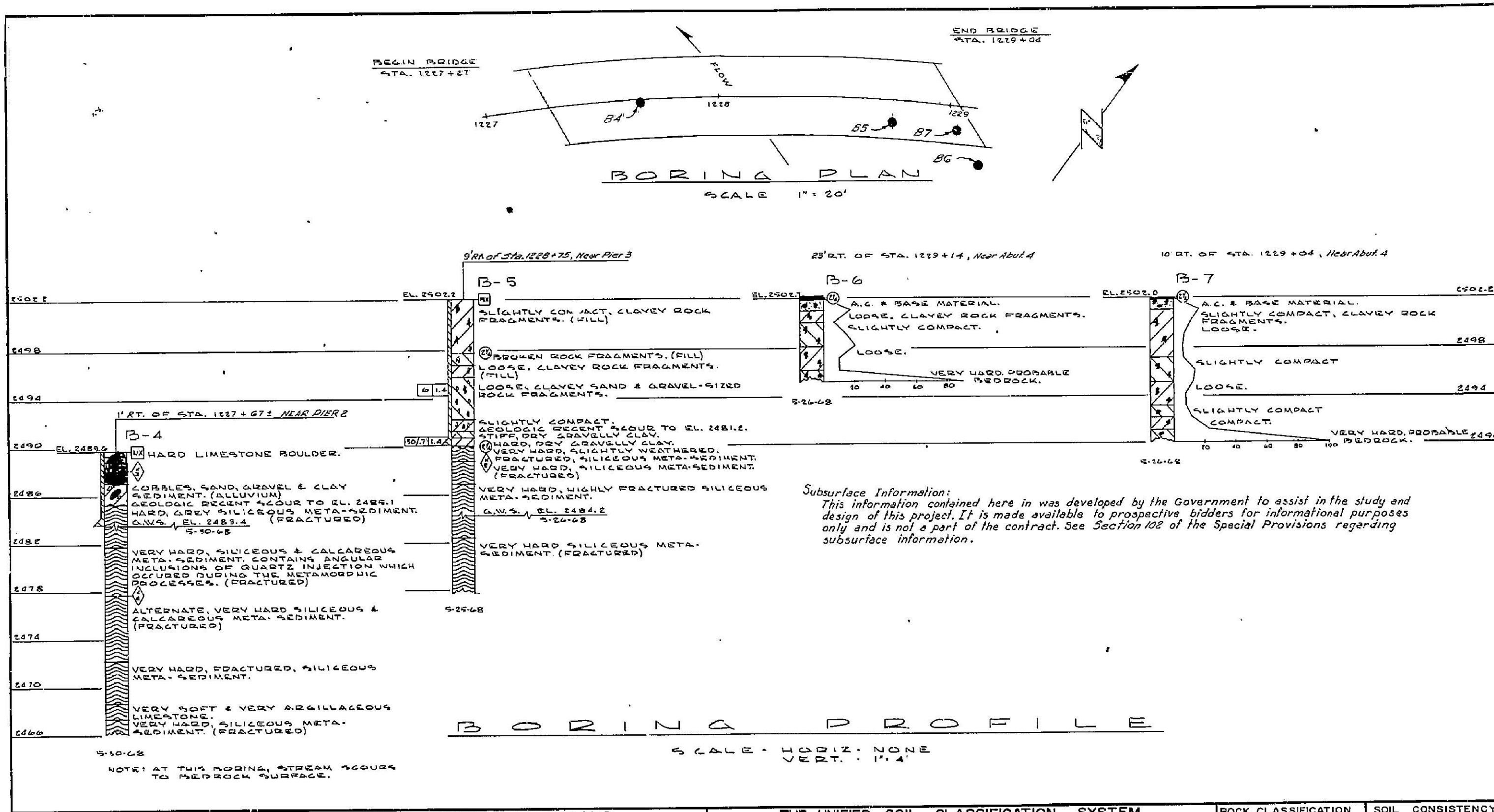
Girder	EI. ①	EI. ②	EI. ③	EI. ④	EI. ⑤	EI. ⑥
A	2518.18	2516.91	2516.92	2517.23	2517.25	2519.02
B	17.66	16.41	16.42	16.76	16.77	18.57
C	17.15	15.91	15.93	16.28	16.30	18.11
D	16.64	15.42	15.43	15.81	15.83	17.66

GIRDER SOFFIT ELEVATIONS Revised: 5/66

(As Constructed)

MICROFILMED
APR 16 1976



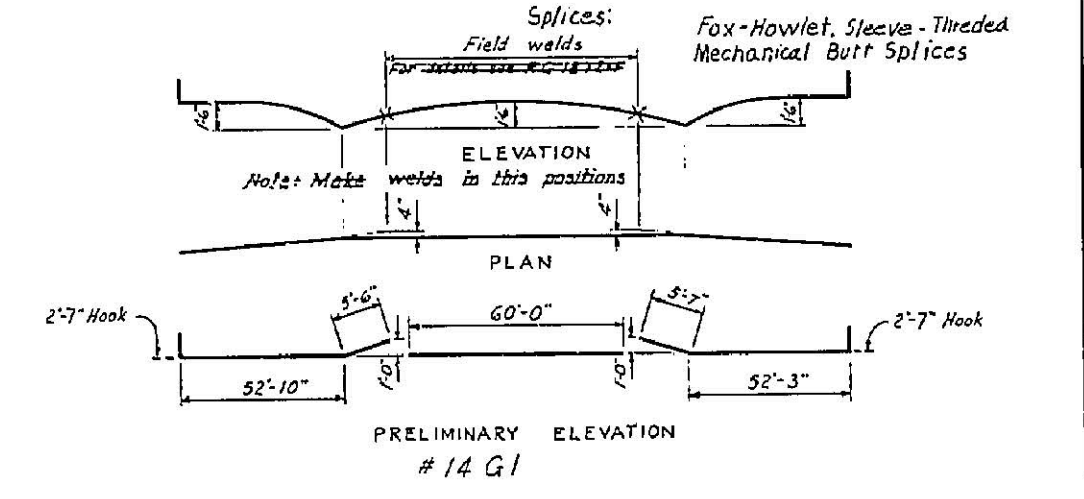


LEGEND OF DRILLING, SAMPLING & TESTING OPERATIONS		THE UNIFIED SOIL CLASSIFICATION SYSTEM		ROCK CLASSIFICATION		SOIL CONSISTENCY CLASSIFICATION	
ROTARY BORING	PENETRATION BORING	MAJOR DIVISION LETTER SYMBOL	NAME	SYMBOL	NAME	CONSISTENCY	BLOWS PER FT.
<ul style="list-style-type: none"> PLAN OF ANY BORING PENETROMETER (PUSH-COUPLED) 3 1/2" CONE PENETROMETER SAMPLER BORING (DRY) ROTARY BORING (WET) 	<ul style="list-style-type: none"> AUGER BORING (DRY) JET BORING DIAMOND CORE BORING TEST PIT 	<ul style="list-style-type: none"> GW GP GM GC GW GP GM GC 	<ul style="list-style-type: none"> WELL-GRADED SANDS OR GRAVELLY SAND MIXTURES, LITTLE OR NO FINES. POORLY-GRADED GRAVEL OR GRAVELLY SAND MIXTURES, LITTLE OR NO FINES. SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES. CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURES. WELL-GRADED SAND OR GRAVELLY SAND, LITTLE OR NO FINES. POORLY-GRADED SAND OR GRAVELLY SAND, LITTLE OR NO FINES. SILTY SAND, SAND-SILT MIXTURES. CLAYEY SAND, SAND-SILT MIXTURES. 	<ul style="list-style-type: none"> ML CL OL MH CH OH PT 	<ul style="list-style-type: none"> IGNEOUS ROCK SEDIMENTARY ROCK METAMORPHIC ROCK 	<ul style="list-style-type: none"> VERY LOOSE LOOSE SLIGHTLY COMPACT COMPACT VERY STIFF STIFF VERY STIFF VERY HARD VERY HARD 	<ul style="list-style-type: none"> 0 TO 5 5 TO 10 10 TO 20 20 TO 30 30 TO 50 50 TO 70 70 TO 100 100 TO 150 150 TO 200

LOCATION	STRAIGHT BARS			BENT BARS			BENDING DIAGRAMS ALL DIMENSIONS ARE OUT TO OUT		
	MARK NO.	SIZE	LENGTH	MARK NO.	SIZE	LENGTH			
SUBSTRUCTURE									
Piers 2 & 3 - Footing	P1	3/4	8	14-8					
" " "	P2	6/6	10	8-8					
" " "	P3	20	4	14-8					
" " "	P4	32	5	8-8					
Pier 2 Shaft - Vert.					P5	42	14	41-5	
" " "					P6	42	14	41-9	
Piers 2 & 3 Shaft - Hoops					P7	1/4	4	11-11	
" " - Auxiliary Ties					P8	2/16	4	3-4	
" " - Cap - Stirrups					P9	4ea.	6	20-5 1/2	
" " "					Thru of 20	Thru	Thru		
" " "					P28	80	6	17-0	
" " "					P29	80	6	5-2	
" " - Longit.					P30A	2	8	32-1	
" " "					P30B	2	8	32-0 1/2	
" " "					P30C	2	8	32-0 1/2	
" " "	P31	12	8	31-8					
" " "	P32	8	11	22-0					
" " "	P33	4	11	31-5					
" " - Vert. Ends	P35	8	5	5-6					
" " - Horiz. Ends	P36	16	4	7-6					
" " - Cap Stirrups	P37	14	4	13-5					
Abutment #1									
Column Footings	A1	40	5	3-8					
Fig. to Col. dowels	A2	16	8	3-9					
Column A - Vert.	A3	8	8	10-6					
" B "	A4	8	8	10-0					
" C "	A5	8	8	9-6					
" D "	A6	8	8	9-0					
Column ties	A7	4/4	4	7-5					
Strut - Longit.	A8	4	8	31-0					
" - ties	A9	2/4	4	3-5					
" - Shear Block	A10	2	4	3-8					
" " "					A11	4	4	4-8	
Strut to Backwall dowels	A12	21	8	2-0					
Backwall - Horiz.					A13	2	5	27-10	
" " "					A14	2	5	6-0	
" " "					A15	2	5	7-9	
" " "					A16	6	5	40-0	
" " "					A17	3	6	7-0	
" " "					A18	3	6	7-0	
" - Vert.					A19	33	4	11-8	
" " "					A20	4	4	9-5	
" " "	A21	2	5	3-8					
Abutments #1 & #2									
Wing A - Horiz.					A22	8	7	6-0	
" " "					A23	8	5	6-10	
All Wings - Vert.	A24	40	5	3-6					
Wing B - Horiz.					A25	8	7	6-0	
" " "					A26	8	5	5-10	
End Posts - Horiz.	A27	24	5	3-2					
" " - Vert.					A28	20	6	8-2	

LOCATION	STRAIGHT BARS			BENT BARS			BENDING DIAGRAMS ALL DIMENSIONS ARE OUT TO OUT	
	MARK NO.	SIZE	LENGTH	MARK NO.	SIZE	LENGTH		
Abutment #2								
Pile Cap - Longit.	A29	8	8	44-2				
" - Hoops					A30	4	4	9-5
" - Shear Block	A31	3	5	3-8				
" " "					A32	4	4	6-8
Cap to Backwall dowels	A33	22	8	2-0				
Backwall - Horiz.					A34	2	5	11-9
" " "					A35	2	5	6-0
" " "					A36	2	5	31-6
" " "					A37	6	5	47-10
" " "					A38	3	6	7-0
" " "					A39	3	6	7-0
" - Vert.					A40	40	4	11-4
" " "					A41	4	4	9-4
" " "	A42	2	5	3-8				
SUPERSTRUCTURE								
GIRDERS								
Full Length - Longit.					G1	8	14	181-6
Span 1 - Longit.					G2	4	14	41-10
" " "					G3	8	14	32-0
" " "					G4	4	14	16-0
" " "					G5	8	8	34-8
" Pier 2 - Longit.					G6	8	5	32-0
" Piers 2 & 3 - Longit.					G7	8	5	68-0
Span 2 - Longit.					G8	32	11	23-6
" " "					G9	4	14	47-0
" " "					G10	8	14	39-0
" " "					G11	4	14	23-0
" " "					G12	8	5	110-9
" " "					G13	8	8	35-6
" - Longit. & Const. Jt.					G14	16	8	6-0
" Pier 3 - Longit.					G15	8	5	30-0
Span 3 - Longit.					G16	4	14	43-8
" " "					G17	8	14	38-1
" " "					G18	4	14	26-0
" " "					G19	8	8	34-1
Span 1 - Stirrups					G20	92	4	8-7 1/2
" " "					G21	4	4	8-8 1/2
" " "					G22	4	4	8-8 1/2
" " "					G23	4	4	8-9 1/2
" " "					G24	4	4	8-9 3/4
" " "					G25	4	4	8-10 1/4
" " "					G26	4	4	8-11 1/4
" " "					G27	4	4	9-0 1/4
" " "					G28	4	4	9-0 3/4
" " "					G29	4	4	9-1 1/4
" " "					G30	4	4	9-2 1/4
" " "					G31	4ea.	4	9-3 1/4
" " "					Thru of 5	Thru	Thru	
" " "					G35	20	4	9-7 1/4
" " "					G36	4	4	9-8 1/4
" " "					G37	4	4	9-9 1/4
" " "					G38	4	4	9-10 1/4

LOCATION	STRAIGHT BARS			BENT BARS			BENDING DIAGRAMS ALL DIMENSIONS ARE OUT TO OUT
	MARK NO.	SIZE	LENGTH	MARK NO.	SIZE	LENGTH	
Span 1 - Stirrups					G39	4	9-11 1/4
" " "					G40	4	10-0 1/4
" " "					G41	4	10-2 1/4
" " "					G42	4	10-3 1/4
" " "					G43	4	10-4 1/4
" " "					G44	4	10-5 1/4
" " "					G45	4	10-7 1/4
" " "					G46	4ea.	10-8 1/4
" " "					Thru of 5	Thru	Thru
" " "					G53	32	11-6 1/4
Span 2 - Stirrups					G54	8	11-7 1/4
" " "					G55	8	11-8 1/4
" " "					G56	8	11-9 1/4
" " "					G57	8	11-10 1/4
" " "					G58	8ea.	11-2 1/4
" " "					Thru of 5	Thru	Thru
" " "					G62	10	10-10 1/4
" " "					G63	8	10-11 1/4
" " "					G64	8ea.	10-9 1/4
" " "					Thru of 6	Thru	Thru
" " "					G69	148	10-4 1/4



					G20	92	4	8-7 1/2	3-5
					G21	4	4	8-8 1/2	3-5 1/4
					G22	4	4	8-8 1/2	3-5 1/2
					G23	4	4	8-9 1/2	3-5 3/4
					G24	4	4	8-9 3/4	3-6
					G25	4	4	8-10 1/4	3-6 1/2
					G26	4	4	8-11 1/4	3-6 3/4
					G27	4	4	9-0 1/4	3-7 1/4
					G28	4	4	9-0 3/4	3-7 1/2
					G29	4	4	9-1 1/4	3-8
					G30	4	4	9-2 1/4	3-8 1/2
					G31	4ea.	4	9-3 1/4	3-8 3/4
					Thru of 5	Thru	Thru		
					G35	20	4	9-7 1/4	3-10 1/4
					G36	4	4	9-8 1/4	3-11 1/4
					G37	4	4	9-9 1/4	4-0
					G38	4	4	9-10 1/4	4-0 1/2

