

SEC 2

9475.65007

STATE OF IOWA
STATE HIGHWAY COMMISSION
DESIGN FOR
OVERHEAD CROSSING
PRIMARY ROAD SYSTEM PROJECT NO. U.G. 13 (B)
WEBSTER COUNTY
OCTOBER 1958

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	UG-13(B)	1958	1	11

CONSTRUCTION PLANS SHOWING PROJECT
AS BUILT

ONE COPY PREPARED BY Lyle R. Fitchell DATE April 15, 1960
RESIDENT ENGINEER

ONE COPY APPROVED AND FORWARDED TO AMES

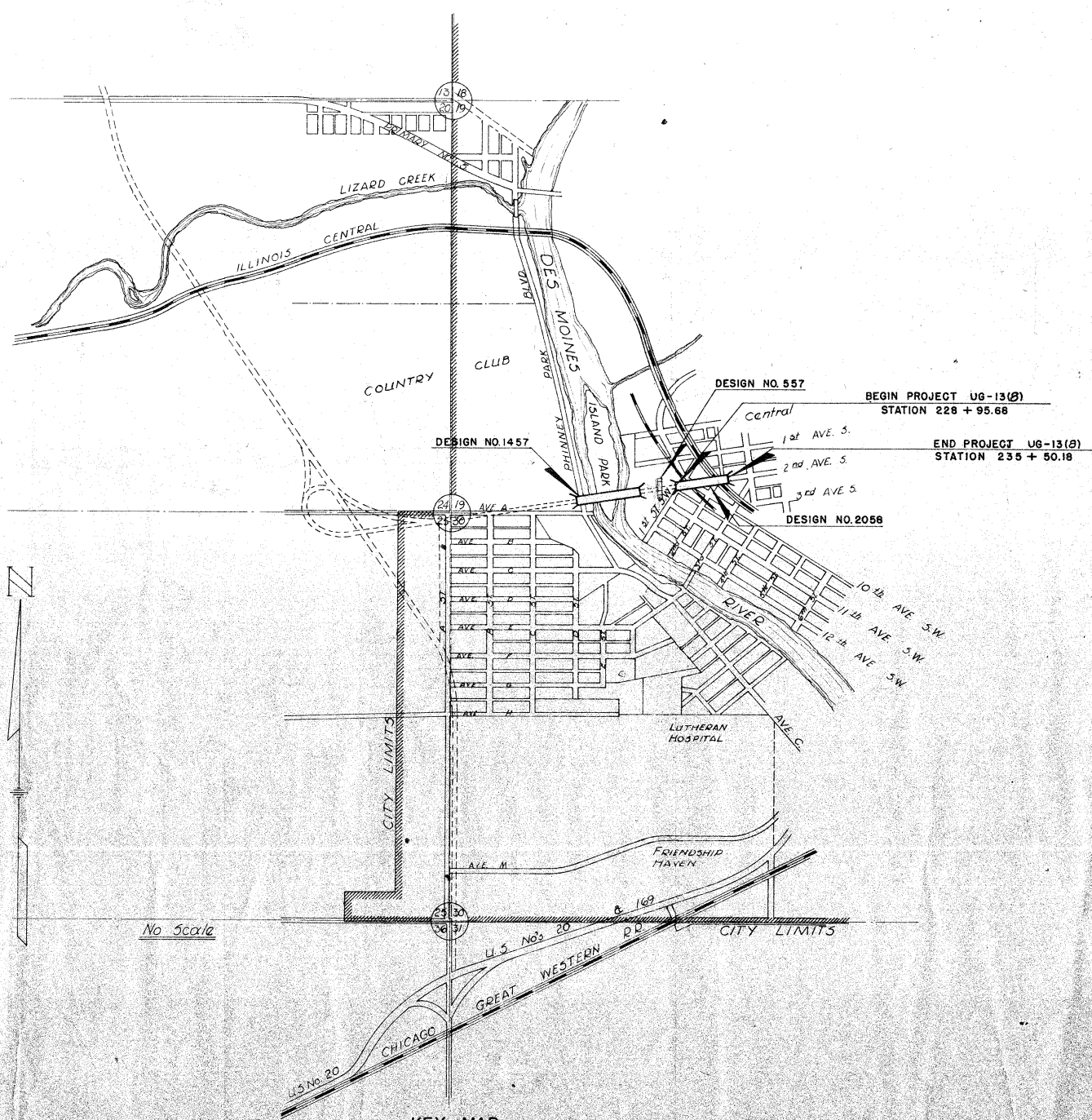
Steiner Silence DATE 4-22-60
DISTRICT ENGINEER

TWO COPIES TO BE MADE AND RETURNED TO:

STEINER SILENCE, DISTRICT ENGINEER

JAMES TORP, DIVISION MAINT. ENGINEER

13-Sheets



KEY MAP

PART OF CITY OF FORT DODGE, IOWA

DESIGN NO. 2058	STA. 228+95.68 to STA. 235+50.18
SECTION. 19	TWP. WAHKONSA
MULTISPAN CONTINUOUS PL. GIRDER BRIDGE 26°24' SKEW, 556'-0" x 58'-0" SECTION WITH 2-49'-0" APPROACH SPANS	
ESTIMATED QUANTITIES	
Concrete	2217.30 Cu. Yd.
Reinforcing Steel	393,360 lb.
Structural Steel	1,689,089 lb.
Furnished 10 BP 42" Steel Piling	6921 6564 Lin. Ft.
Test Piles 10 BP 42" Steel Piling	512 504 Lin. Ft.
Driving Piles 10 BP 42"	6921 6564 Lin. Ft.
Concrete Encased 10 BP 42" Steel Piling	513 437 Lin. Ft.
Excavation Cl. 22	7 Cu. Yd.
" " Cl. 24	230 360 Cu. Yd.
" " Cl. 20	1330 1330 Cu. Yd.
Lighting System (Non-participating)	Lump Sum

MILEAGE SUMMARY

BRIDGE AT STA. 228+95.68 to STA. 235+50.18 = 654.50' = 0.124 MI.

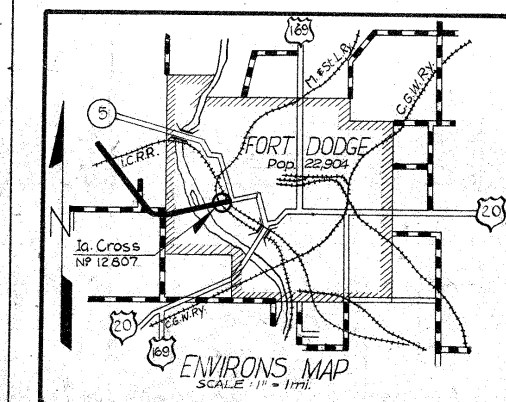
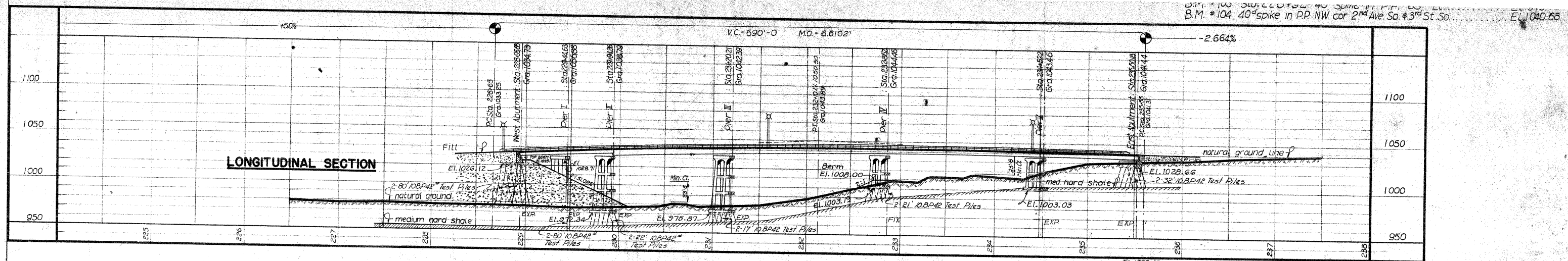
THIS BRIDGE WILL REQUIRE BRIDGE SIGN ASSEMBLIES, FURNISHED AND PLACED BY OTHERS, AS SPECIFIED IN S.B.T. INSTRUCTIONS NO. 11, REVISED MARCH 1, 1956

WORK ORDER NO 1 HEATING MATERIAL & PROTECTING 536.7 C.Y.
HEATING MATERIAL ONLY 16.3 C.Y.
WORK ORDER NO 2 FURNISH & PLACE 92'x6" PERFORATED & 30'x6" PLAIN CORRUGATED PIPE & APPROXIMATELY 100 TON EACH OF POROUS BACKFILL & ROCK IN FOOTING PIER NO. 4
FURNISH & PLACE 56'x24" CORRUGATED X-ROAD PIPE AT STATION 9+50 ON 2ND ST. S.W.
DECREASE ITEM 10 CLASS 24 EXCAVATION (QUANTITY INCLUDED AT LEFT)
WORK ORDER NO 3 INCREASE ITEM 3 STRUCTURAL STEEL (QUANTITY INCLUDED AT LEFT)

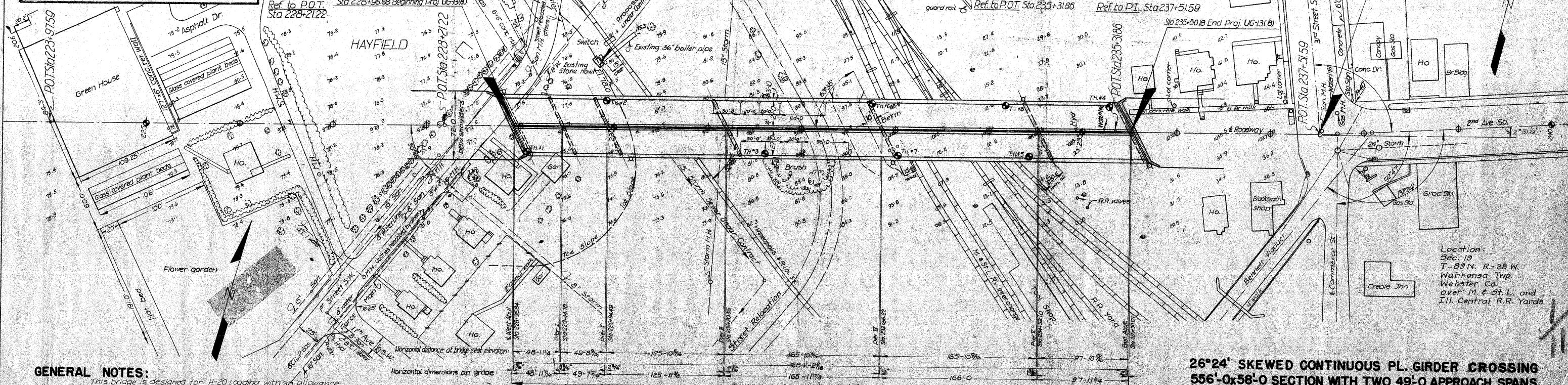
APPROVED
CHIEF ENGINEER
IOWA HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER

Revised 10-17-58, Lighting System made non-participating
Revised 4-22-59, Structural Steel Quantities Changed



ESTIMATED QUANTITIES				
ITEM	SUPERSTR.	ABUTMENTS	PIERS	TOTAL
CONCRETE	1149.9	203.6	863.8	2217.3 c.y.
REINFORCING STEEL	285.896	12.555	94909	393,360 lb.
STRUCTURAL STEEL	1,699,029	2046	4518	1,699,029
FURNISHED PILES 10BP42" SILEX			437	437 L.F.
CONCRETE 10BP42" SILEX			7	7 c.y.
EXCAVATION CL 24			360	360 c.y.
CL 20		260	1070	1330 c.y.
TEST PILES 10BP42"		224	280	504 L.F.
LIGHTING SYSTEM				LUMP SUM
DRIVING PILES 10BP42"		2046	4518	6564 L.F.



GENERAL NOTES:
This bridge is designed for H-20 loading with an allowance of 19" sq. ft. roadway for future wearing surface. Approach fills are not a part of this contract but are to be in place 90 days before abutment piles are driven. Bridge Contractor to level off and shape berms to elevations shown.

SPECIFICATIONS:
Design A.A.S.H.O. Series of 1953 with modifications shown on sheet B.
Construction: Std. Spec. Ia. State Highway Comm. Series of 1956 plus current Special Provisions.

Note: Soundings hereon shown for design purposes only and are not guaranteed for construction. Berms to be constructed at Pier IV as indicated, estimated as close 24 excavation.
Piling to be driven to full length shown or refusal with a minimum bearing of 30 tons each.
*Berm to be placed before construction of Pier No. 4.

SITUATION PLAN

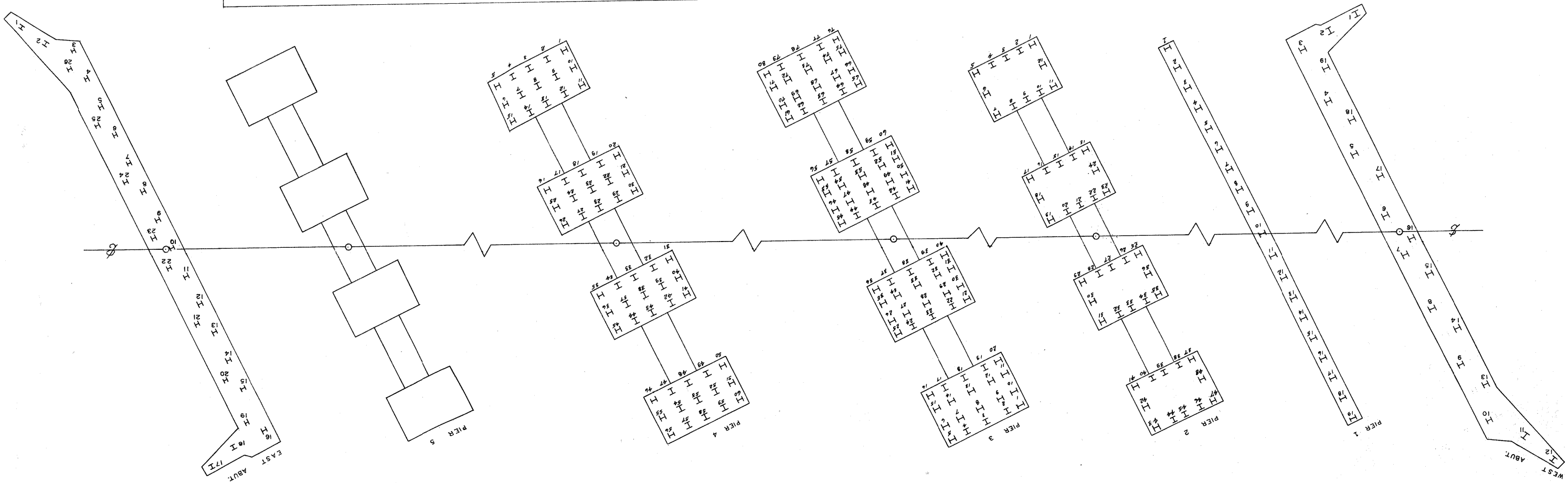
TEST PILE NOTE:
Item Test Piles 10BP42" is included all costs of test piles, labor and materials incidental to the furnishing and driving of test piles as located on Pier & Abutment sheets. The number of test piles is included in the total number of piles required for each Pier and Abutment.
Quantities given in Item: Furnish Piles 10BP42" and Driving Piles 10BP42" are for bidding purposes only and these piles are not to be ordered until after test piles are driven and lengths required to obtain at least 30 tons bearing capacity are determined.

26°24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0x58'-0 SECTION WITH TWO 49'-0 APPROACH SPANS
OVER M.&ST.L. & I.C. RAILROADS
CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL

SITUATION PLAN
STATION 228+95.68 TO STATION 235+50.18
WEBSTER COUNTY
IOWA CROSSING NO 12807

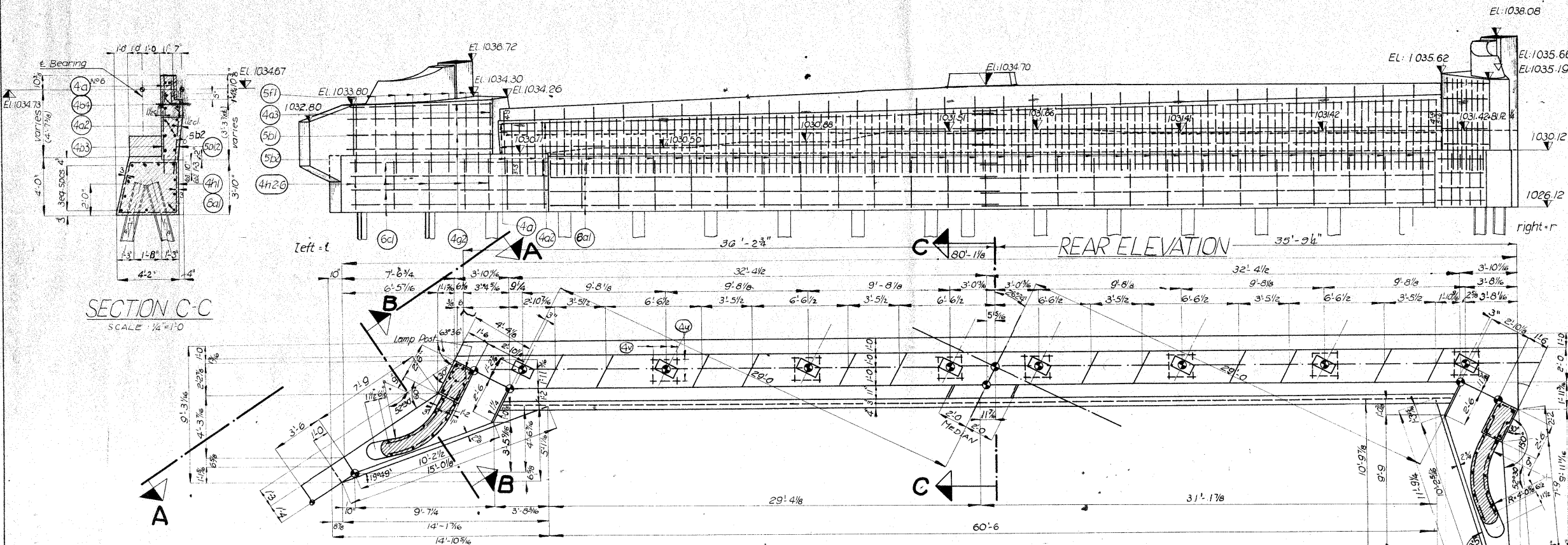
PILE NO.	LENGTH IN STRUCTURE	BEARING IN TONS	PILE NO.	LENGTH IN STRUCTURE	BEARING IN TONS	PILE NO.	LENGTH IN STRUCTURE	BEARING IN TONS
WEST ABUT.			PIER 2			PIER 3		
1	74.8	Ref.	41	22	Ref.	72	17.5	Ref.
2	74.7	Ref.	42	21.4	Ref.	73	17.6	Ref.
3.	75	Ref.	43	22	Ref.	74	17.6	Ref.
4	74.5	Ref.	44	21.6	Ref.	75	19.0	Ref.
5	75	Ref.	45	21.7	Ref.	76	19.6	Ref.
6	59.8	Ref.	46	21.2	Ref.	77	17.7	Ref.
7	74.6	Ref.	47	22	Ref.	78	17.5	Ref.
8	74.9	Ref.	48	22	Ref.	79	19.0	Ref.
9	60	Ref.	PIER 3			80	18.0	Ref.
10	74.7	Ref.	1	17.5	Ref.	PIER 4		
11	74.5	Ref.	2	19.0	Ref.	1	21.2	Ref.
12	74.8	Ref.	3	17.2	Ref.	2	18.8	Ref.
13	74.4	Ref.	4	17.3	Ref.	3	18.7	Ref.
14	74.7	Ref.	5	17.4	Ref.	4	18.6	Ref.
15	74.8	Ref.	6	17.5	Ref.	5	18.8	Ref.
16	75.0	Ref.	7	17.6	Ref.	6	18.7	Ref.
17	75.0	Ref.	8	17.5	Ref.	7	18.7	Ref.
18	74.6	Ref.	9	17.3	Ref.	8	18.8	Ref.
19	75.0	Ref.	10	17.4	Ref.	9	19.0	Ref.
PIER 1			11	17.4	Ref.	10	21.4	Ref.
1	78	Ref.	12	17.6	Ref.	11	21.3	Ref.
2	78	Ref.	13	17.4	Ref.	12	19.0	Ref.
3	77	Ref.	14	17.6	Ref.	13	18.9	Ref.
4	77.5	Ref.	15	17.5	Ref.	14	18.8	Ref.
5	77.0	Ref.	16	17.6	Ref.	15	18.7	Ref.
6	77.6	Ref.	17	17.2	Ref.	16	19.0	Ref.
7	77.6	Ref.	18	17.4	Ref.	17	19.0	Ref.
8	77.6	Ref.	19	17.6	Ref.	18	18.6	Ref.
9	77.9	Ref.	20	17.5	Ref.	19	18.7	Ref.
10	77.9	Ref.	21	17.2	Ref.	20	20.8	Ref.
11	78.0	Ref.	22	17.3	Ref.	21	20.5	Ref.
12	77.8	Ref.	23	17.6	Ref.	22	19.7	Ref.
13	78.0	Ref.	24	17.1	Ref.	23	19.0	Ref.
14	79.6	Ref.	25	17.3	Ref.	24	18.9	Ref.
15	79.0	Ref.	26	17.5	Ref.	25	18.8	Ref.
16	78.6	Ref.	27	17.2	Ref.	26	18.7	Ref.
17	79.0	Ref.	28	17.6	Ref.	27	19.0	Ref.
18	78.2	Ref.	29	17.5	Ref.	28	18.8	Ref.
19	79.3	Ref.	30	17.4	Ref.	29	19.9	Ref.
PIER 2			31	17.2	Ref.	30	21.0	Ref.
1	22	Ref.	32	17.5	Ref.	31	23.6	Ref.
2	22	Ref.	33	17.3	Ref.	32	23.7	Ref.
3	22	Ref.	34	17.2	Ref.	33	23.8	Ref.
4	22	Ref.	35	17.1	Ref.	34	19.0	Ref.
5	22	Ref.	36	17.0	Ref.	35	19.0	Ref.
6	22	Ref.	37	17.2	Ref.	36	18.9	Ref.
7	22	Ref.	38	17.2	Ref.	37	19.0	Ref.
8	22	Ref.	39	17.3	Ref.	38	20.9	Ref.
9	22	Ref.	40	17.4	Ref.	39	20.8	Ref.
10	22	Ref.	41	18.0	Ref.	40	23.6	Ref.
11	22	Ref.	42	18.4	Ref.	41	23.5	Ref.
12	22	Ref.	43	18.4	Ref.	42	20.7	Ref.
13	22	Ref.	44	18.5	Ref.	43	21.0	Ref.
14	22	Ref.	45	18.6	Ref.	44	20.9	Ref.
15	22	Ref.	46	18.8	Ref.	45	18.8	Ref.
16	22	Ref.	47	18.6	Ref.	46	18.2	Ref.
17	22	Ref.	48	18.4	Ref.	47	23.6	Ref.
18	22	Ref.	49	18.4	Ref.	48	23.7	Ref.
19	22	Ref.	50	18.0	Ref.	49	23.5	Ref.
20	22	Ref.	51	19.0	Ref.	50	23.4	Ref.
21	22	Ref.	52	17.5	Ref.	51	23.5	Ref.
22	22	Ref.	53	18.0	Ref.	52	18.0	Ref.
23	22	Ref.	54	17.8	Ref.	53	18.6	Ref.
24	22	Ref.	55	17.8	Ref.	54	18.5	Ref.
25	22	Ref.	56	18.5	Ref.	55	18.8	Ref.
26	22	Ref.	57	19.0	Ref.	56	18.7	Ref.
27	22	Ref.	58	18.5	Ref.	57	18.6	Ref.
28	22	Ref.	59	17.8	Ref.	58	23.0	Ref.
29	22	Ref.	60	18.0	Ref.	59	23.5	Ref.
30	22	Ref.	61	18.0	Ref.	60	23.5	Ref.
31	22	Ref.	62	17.3	Ref.			
32	22	Ref.	63	17.6	Ref.			
33	22	Ref.	64	19.5	Ref.			
34	22	Ref.	65	19.5	Ref.			
35	22	Ref.	66	19.4	Ref.			
36	22	Ref.	67	17.4	Ref.			
37	22	Ref.	68	17.6	Ref.			
38	21.6	Ref.	69	18.0	Ref.			
39	22	Ref.	70	18.0	Ref.			
40	21.7	Ref.	71	18.0	Ref.			

PILE NO.	LENGTH IN STRUCTURE	BEARING IN TONS	EAST ABUT.	
1	28.2	Ref.		
2	28.6	Ref.		
3	29.2	Ref.		
4	29.2	Ref.		
5	29.0	Ref.		
6	28.8	Ref.		
7	28.8	Ref.		
8	28.8	Ref.		
9	28.5	Ref.		
10	29.0	Ref.		
11	29.2	Ref.		
12	29.1	Ref.		
13	29.0	Ref.		
14	29.2	Ref.		
15	28.5	Ref.		
16	28.8	Ref.		
17	28.9	Ref.		
18	29.3	Ref.		
19	30	Ref.		
20	28.8	Ref.		
21	28.7	Ref.		
22	28.3	Ref.		
23	28.0	Ref.		
24	28.1	Ref.		
25	28.1	Ref.		
26	28.7	Ref.		



Temporary paving block made from 3' plan, cut to fit crown and fasten to backwall with 25 - 1/2" x 9' bolts @ 2' o.c. Remove plank and cut bolts flush when paving is placed. Include cost in price bid for concrete.

BM*103 Sta. 228+92.40° spike in P.P. 63' Lt. 978.63
BM*104 40° spike in P.P. NW corner 2nd Ave So & 3rd St So 1040.68

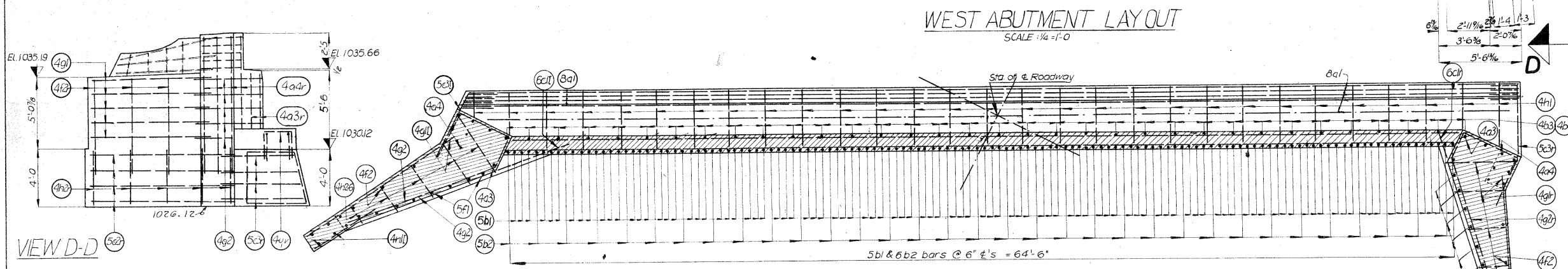


BILL OF REINFORCING					
BAR	LOCATION	SHAPE	Nº	LENGTH	WEIGHT
8a1	Bridge Seat Longitudinal	—	22	36'-9"	2159
4a2	Backwall Longitudinal FF & B.F.	—	16	32'-7"	348
5b1	Backwall Vertical B.F.	—	97	3'-5" x 4'-9"	413
5b2	" " " " " "	—	33	4'-3" x 5'-6"	168
4b3	" " " " " "	—	32	4'-0" x 5'-4"	100
4b4	" " " " " "	—	32	2'-6"	54
4a	Dowels Backwall Long & Median	△	22	2'-0"	30
6c1	Wing Footing Longitudinal B.F.	—	8	1'-16" x 2'-0"	355
5c2	" " " " " "	—	8	1'-16" x 2'-0"	75
5c3	Wing Footing Bridge Seat F.F.	△	8	5'-6" x 6'-9"	67
4g1	Wing Wall Longitudinal F.F.	—	11	var	72
4g2	Wing Wall Longitudinal FF & B.F.	—	11	5'-9" x 6'-0"	146
4a3	" " Vertical B.F.	—	6	3'-0" x 4'-0"	22
4a4	" " " " " "	—	12	3'-0" x 4'-0"	62
4f2	" " " " " "	—	6	6'-0" x 8'-5"	22
5f1	" " " " " "	—	16	6'-0" x 8'-5"	121
5g4	Lamp Post Hoops	□	10	7'-3"	76
4h1	Bridge Seat Hoops	□	29	14'-6"	281
4h26	Wing Footing Hoops	□	10	var	61
4n1	Butterfly Vertical	—	6	var	17
4p1	Wing Post	—	20	2'-9"	37
4r1	Wing Post Horizontal F.F.	—	6	6'-0"	24
4s1	" " " " " "	—	6	6'-0"	27
4t1	Butterfly Horizontal	—	2	4'-6"	6
6t2	Butterfly Slope	—	2	5'-0"	15
4u	Bench Step Reinforcing	□	14	6'-6"	61
4v	" " " " " "	□	21	6'-0"	84
Total:					4912

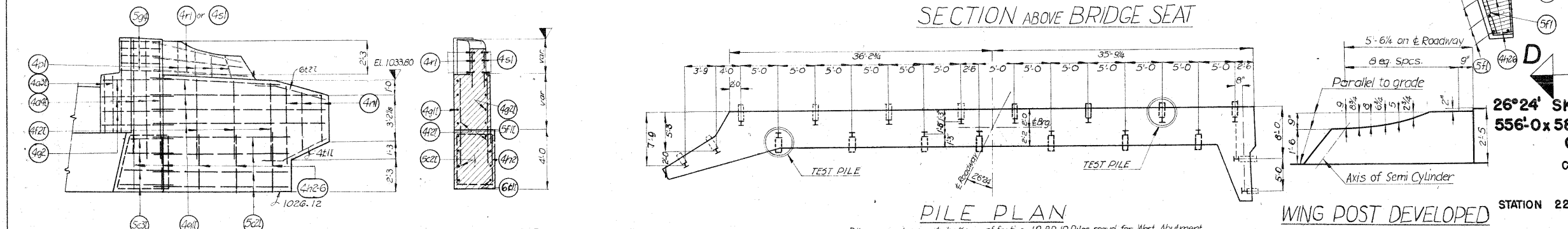
BAR DETAILS:

See sheet Nº3 for other bar details except for those listed below.

Note: All dimensions are out to out. All radii are to c. of bars.

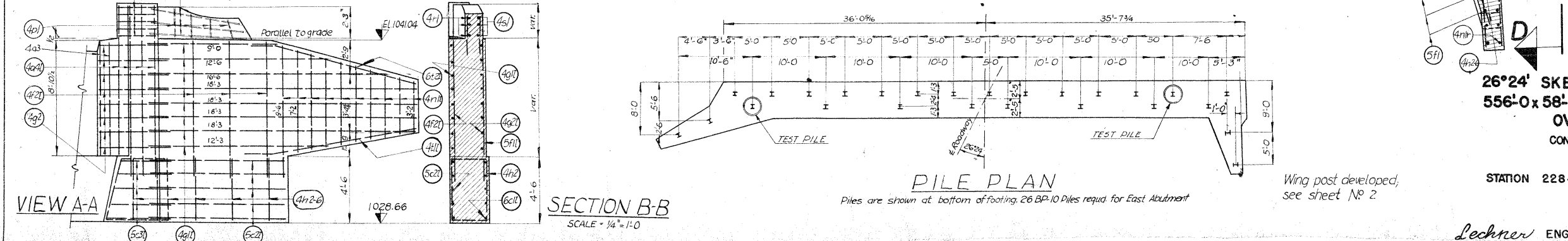
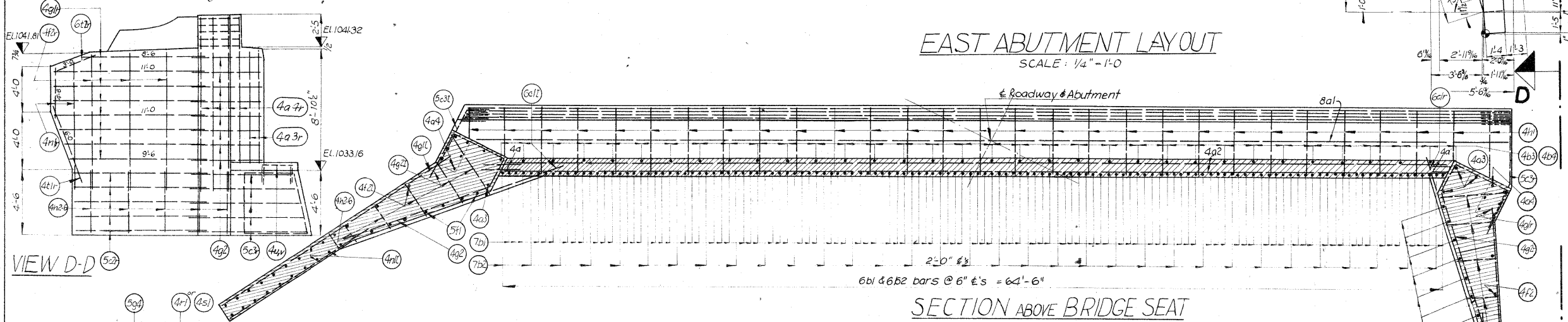
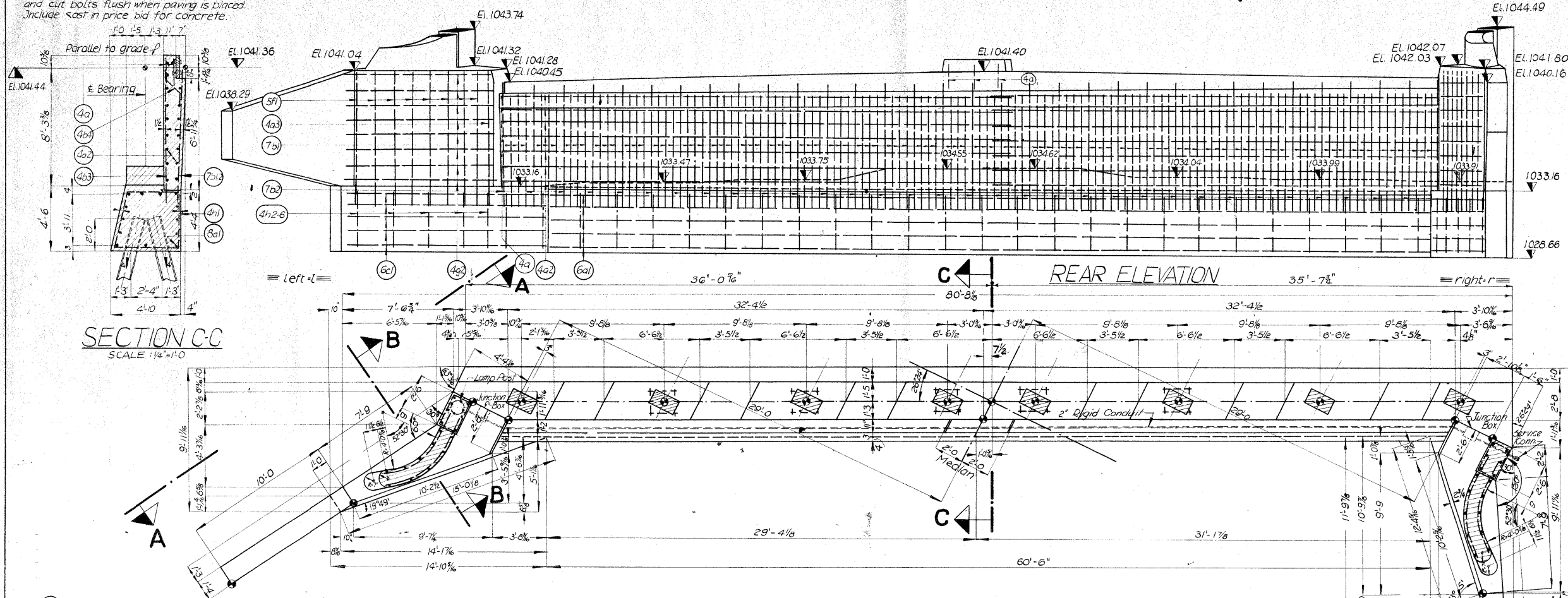


CONCRETE PLACEMENT QUANTITY			
ITEM:	W. ABUT.	E. ABUT.	TOTAL:
FOOTING	49.9	64.7	114.6 c.y.
BACKWALL	12.9	24.9	37.8 c.y.
WING & POST SEAT	11.6	24.3	35.9 c.y.
WINGPOST & RAIL	1.7	1.7	3.4 c.y.
BR. SEAT FILL	5.5	6.4	11.9 c.y.
	81.6 c.y.	122.0 c.y.	203.6

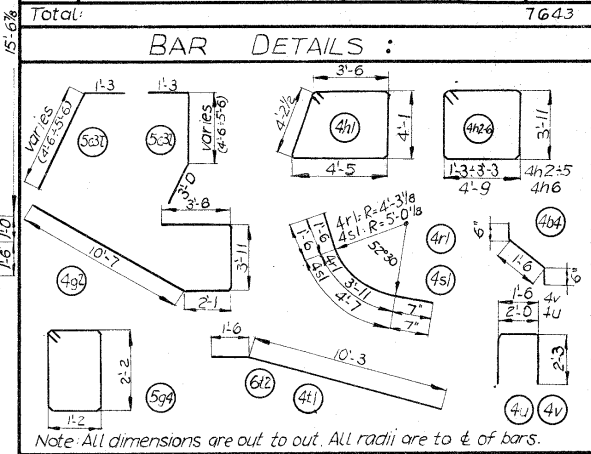


ESTIMATED QUANTITIES - 2 ABUTS.			
ITEM	W. ABUT.	E. ABUT.	TOTAL:
CONCRETE	81.6 c.y.	122.0 c.y.	203.6 c.y.
REINFORCING STEEL	4912 lbs.	7643 lbs.	12555 lbs.
FURNISH PILES 10" Ø P42*	1762'	2463'	4225'
DRIVING - " " "	7245	12419	19664
EXCAVATION CL 20	120	140	260 c.y.
* TEST PILES 10" Ø P42*	2880' x 160'	2880' x 160'	224' x 160'

26°24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0" x 58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M.&ST.L. & I.C. RAILROADS
CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL
SUBSTRUCTURE DETAILS
STATION 228+95.68 TO STATION 235+50.18
WEBSTER COUNTY
IOWA CROSSING Nº 12807
GENERAL NOTES - SEE SHEET Nº 3
Lectner
ENG. CO. JUNE 1958
SHEET 2 OF 11

[illegible]

BILL OF REINFORCING						
BAR	LOCATION	SHAPE	Nº	LENGTH	WEIGHT	
8a1	Bridge Seat Longitudinal	—	26	36-6	2 534	
4a2	Backwall Longitudinal FF & BF	—	30	32-7	2 653	
7b1	Backwall Vertical B.F.	—	97	7-7-92	1660	
7b2	— — — —	—	33	8-5-10-0	622	
4b3	— — — — F.F.	—	32	7-2-8-9	170	
4b4	— — Tie	⋄	32	2-6	53	
4a	Dowells-Backwall Long & Median	△	36	2-0	48	
6c1	Wing Footing Longitudinal BF	—	10	15-0	222	
5c2	— — — — F.F.	—	10	9-6	99	
5c3	Wing Footing Bridge Seat F.F.	⋄	10	8-4-6-3 2-4-7-9	81	
4g1	Wing Wall Longitudinal F.F.	—	16	var	144	
4g2	Wing Wall Longitudinal FF & BF	⋄	16	20-1	215	
4a3	— — — Vertical B.F.	—	6	3-0 3-6 3-0 3-9	37	
4a4	— — — — F.F.	—	12	6-0 2-0 3-0 11-3	93	
4f2	— — — — F.F.	—	6	3-0 9-6 3-0 8-9	37	
5f1	— — — — B.F.	—	16	4-0 9-3 8-0 10-0	161	
5g4	Lamp Post Hoops	□	10	7-3	76	
4h1	Bridge Seat Hoops	⋄	29	16-0	326	
4h2-6	Wing Footing Hoops	□	10	var	59	
4n1	Butterfly Vertical	—	24	var	94	
4p1	Wing Post — —	—	20	2-9	37	
4r1	Wing Post Horizontal F.F.	—	6	6-0	24	
4s1	— — — — B.F.	—	6	6-8	27	
4t1	Butterfly Horizontal	—	4	6-0 6-0 2-0 10-0	24	
6t2	Butterfly Slope	⋄	4	6-0 3-0 2-0 11-9	44	
4u	Bench Step Reinforcing	⋄	10	6-6	43	
4v	— — — —	⋄	15	6-0	60	



ABUTMENT NOTES:

All exposed corners of 90° or sharper, except vertical corners of wing posts are to be filleted with $\frac{3}{4}$ " dressed and beveled strip.

Minimum distance from face of concrete to $\pm$ of outside reinforcing bar is to be 2" unless otherwise shown or noted. All piling is to be driven to full penetration if possible; but in no case to less than 30 tons bearing capacity.

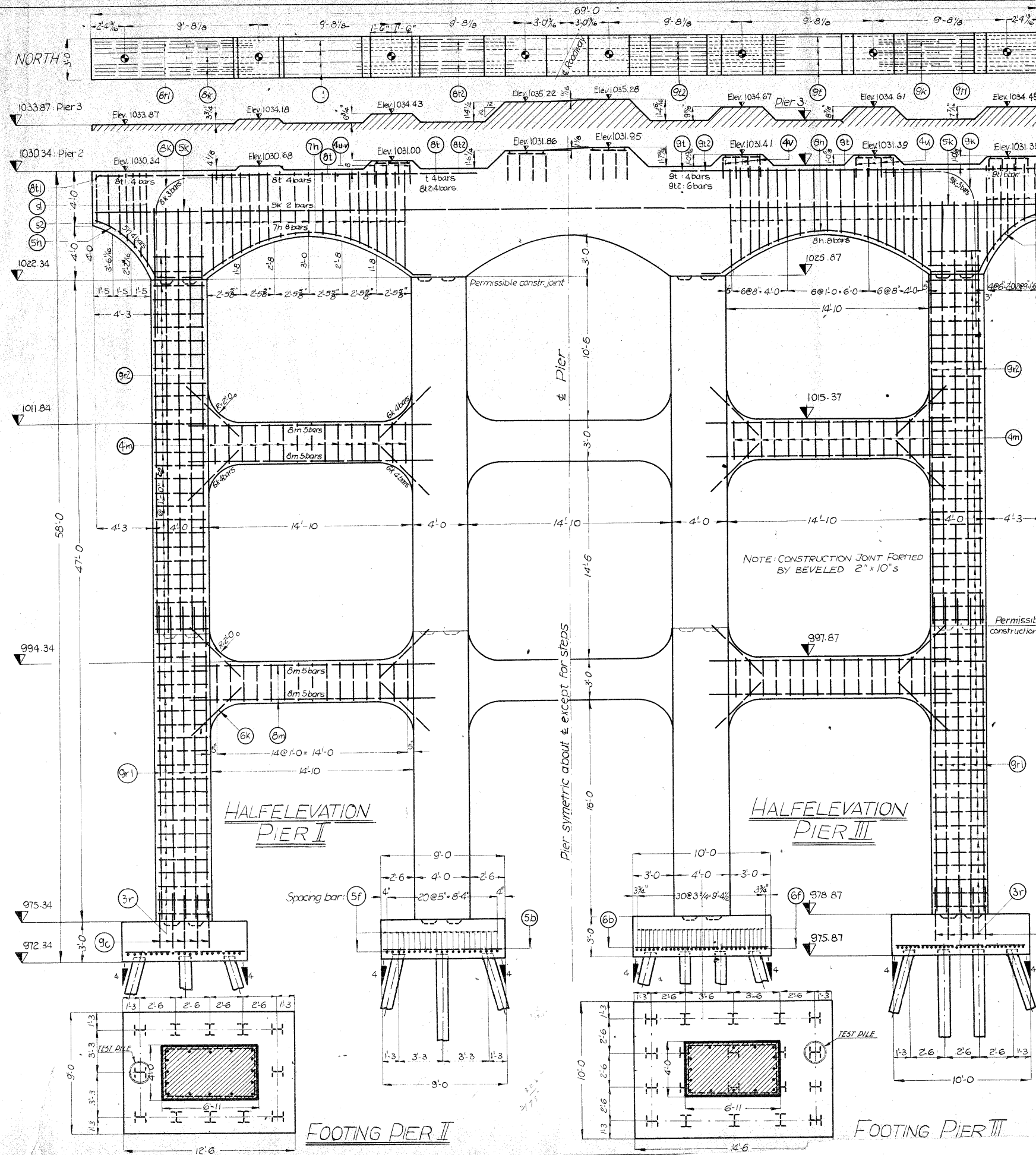
SPECIFICATIONS:

Design: A.A.S.H.O. Series of 1953
Construction: Iowa State Highway Commission
Series of 1956, plus current Special Provisions

26°24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0" x 58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M.&ST.L. & I.C. RAILROADS
CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL

SUBSTRUCTURE DETAILS
STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(C)
WEBSTER COUNTY
IOWA CROSSING N° 12 807

Lechner ENG. CO. JUNE 1958 SHEET 3 OF 1

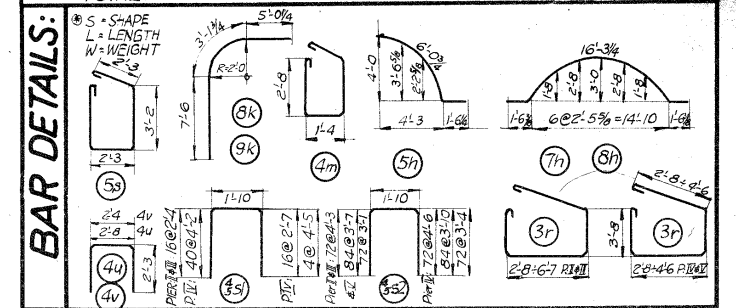


B.M. #103 Sta. 228+92 40° spike in P.P. 63' Lt. El. 978.63
 B.M. #104 40° spike in P.P. NW cor 2nd Ave So #3rd St. So El. 1040.68

CONCRETE PLACEMENT QUANTITIES					
ITEM	PIER I	PIER II	PIER III	PIER IV	PIER V
FOOTING	50.0	64.4	54.8	32.6	201.8 c.y.
FRAME COL-STRA	84.0	84.0	58.6	58.6	285.2 c.y.
BEAM-STR	23.5	52.4	51.8	54.5	143.4 c.y.
TOTAL	23.5	258.7	271.9	167.9	142.4

GENERAL NOTES: see sheet 5

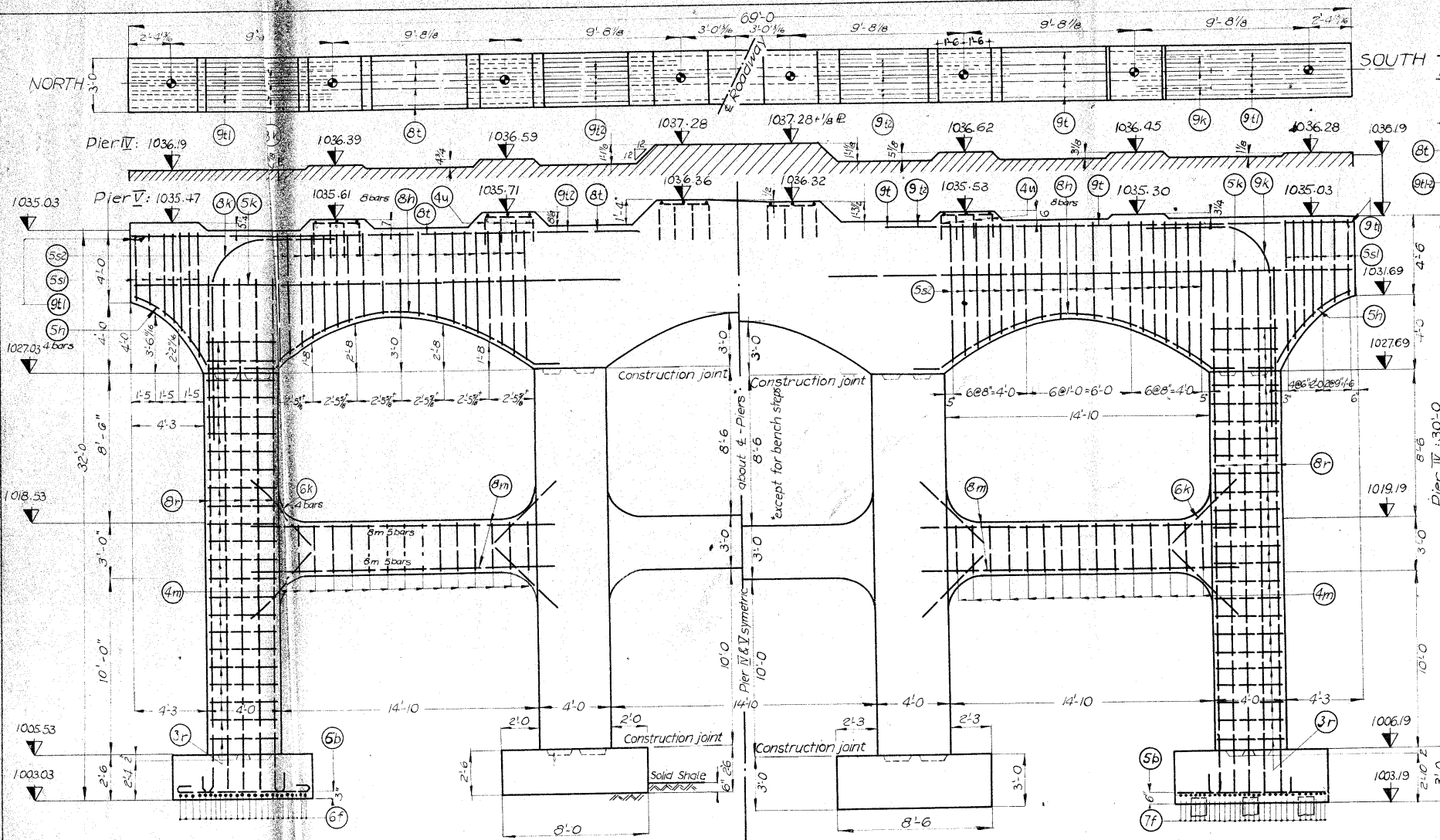
BILL of REINFORCEMENT-5 PIERS					
BAR	LOCATION	PIER I	PIER II	PIER III	PIER IV
5b	Footing	124 8-9 1/32	140 9-9 20/32	120 8-3 1/32	52 9-3 7/32
6b	—	84 12-3 1/32	124 14-3 26/32	116 14-3 33/32	96 12-3 17/64
5f	—	64 4-0 8/70	64 4-0 8/70	45 8-7 2/58	45 8-7 2/58
6f	—	196 var 1253	196 var 1253	96 var 538	96 var 538
7f	—	64 3-0 6 7/16	64 3-0 6 7/16	64 3-0 5 29/32	64 3-0 5 29/32
9c	Dowels	64 23-0 50/65	64 23-0 50/65	45 8-7 2/58	45 8-7 2/58
3r	COLUMN HOOP	196 var 1253	196 var 1253	96 var 538	96 var 538
8r	—	64 3-0 6 7/16	64 3-0 6 7/16	64 3-0 5 29/32	64 3-0 5 29/32
9r1	—	64 23-0 50/65	64 23-0 50/65	45 8-7 2/58	45 8-7 2/58
9r2	—	64 3-0 6 7/16	64 3-0 6 7/16	64 3-0 5 29/32	64 3-0 5 29/32
4m	Strut	90 8-7 5/16	90 8-7 5/16	45 8-7 2/58	45 8-7 2/58
8m	—	60 8-2 29/32	60 8-2 29/32	30 8-2 14/35	30 8-2 14/35
5k	Fillet	96 6-0 86/5	96 6-0 86/5	48 6-0 86/5	48 6-0 86/5
6k	BEAM Longit	4 350 146	4 350 146	4 350 146	4 350 146
8k	BEAM Corner	6 15-8 2/31	6 15-8 2/31	6 15-8 2/31	6 15-8 2/31
9k	—	6 15-8 320	6 15-8 320	6 15-8 320	6 15-8 320
5h	Canfil	8 7-7 63	8 7-7 63	8 7-7 63	8 7-7 63
7h	Bottom	24 19-4 948	24 19-4 1239	24 19-4 1239	24 19-4 1239
8h	—	38 11-6 456	56 var 533	56 var 562	56 var 533
5s1	Hoops	228 var 2165	228 var 2284	228 var 2165	228 var 2165
5s2	—	8 352 773	8 352 773	8 352 773	8 352 773
8t1	—	8 15-3 283	8 15-3 283	8 15-3 283	8 15-3 283
8t2	—	8 15-3 246	8 35-3 959	8 35-3 959	8 35-3 959
9t1	—	28 35-3 3356	12 13-3 541	12 13-3 541	12 13-3 541
9t2	—	12 11-6 469	12 11-6 469	12 11-6 469	12 11-6 469
4s1	Hoops	56 var 341	228 var 1987	12 7-2 57	12 7-2 57
4s2	—	12 7-2 57	12 7-2 57	12 7-2 57	12 7-2 57
4u	STEPS Reinforc	18 6-0 82	18 6-0 82	18 6-0 82	18 6-0 82
4v	—	8 35-8 572	8 35-8 572	8 35-8 572	8 35-8 572
7t	Beam Long	—	—	—	—
TOTAL		3951	24 147	29 444	19 547
TOTAL					17 220



ESTIMATED QUANTITIES - 5 PIERS					
ITEM	PIER I	PIER II	PIER III	PIER IV	PIER V
CONCRETE	23.5	258.7	271.9	167.9	142.4
REINFORCING	3951	24 147	29 444	19 547	17 220
PILE ENCASEMENT	433 513	1012	1330	1187	4518 L.F.
FINISHED PILES 10" DIA	466 20	466 20	466 15	466 19	466 15
EXCAVATION 12'0"	7	380	160	143	380
TEST PILES 10" DIA	156.2	2 6 22	38 2 6 22	4 2 6 22	880 L.F.
DRIVING PILES 10" DIA	146 70	466 20	796 15	506 19	466 15
TOTAL	1327.3	1009.0	1388.4	1170.7	2895.5

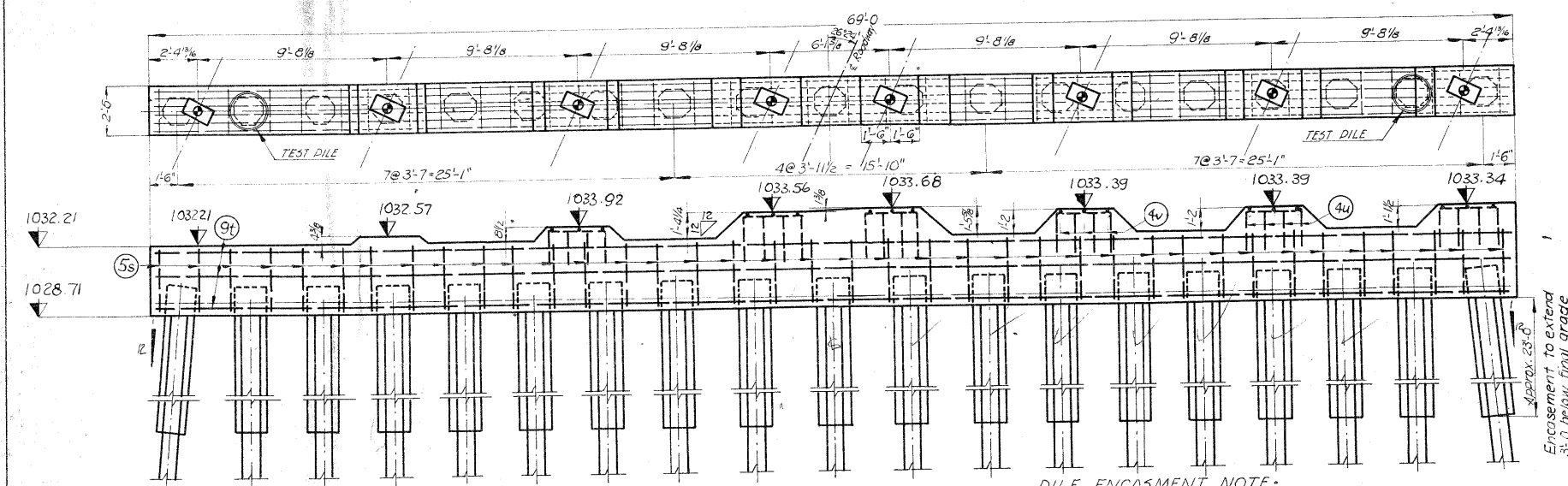
26'24' SKEWED CONTINUOUS PL. GIRDER CROSSING
 556'-0x58'-0 SECTION WITH TWO 49'-0 APPROACH SPANS
 OVER M.&ST.L. & I.C. RAILROADS
 CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL

SUBSTRUCTURE DETAILS
 STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(8)
 WEBSTER COUNTY
 IOWA CROSSING N° 12807
 PARKER ENG. CO. JUNE 1958 SHEET 4 OF 11



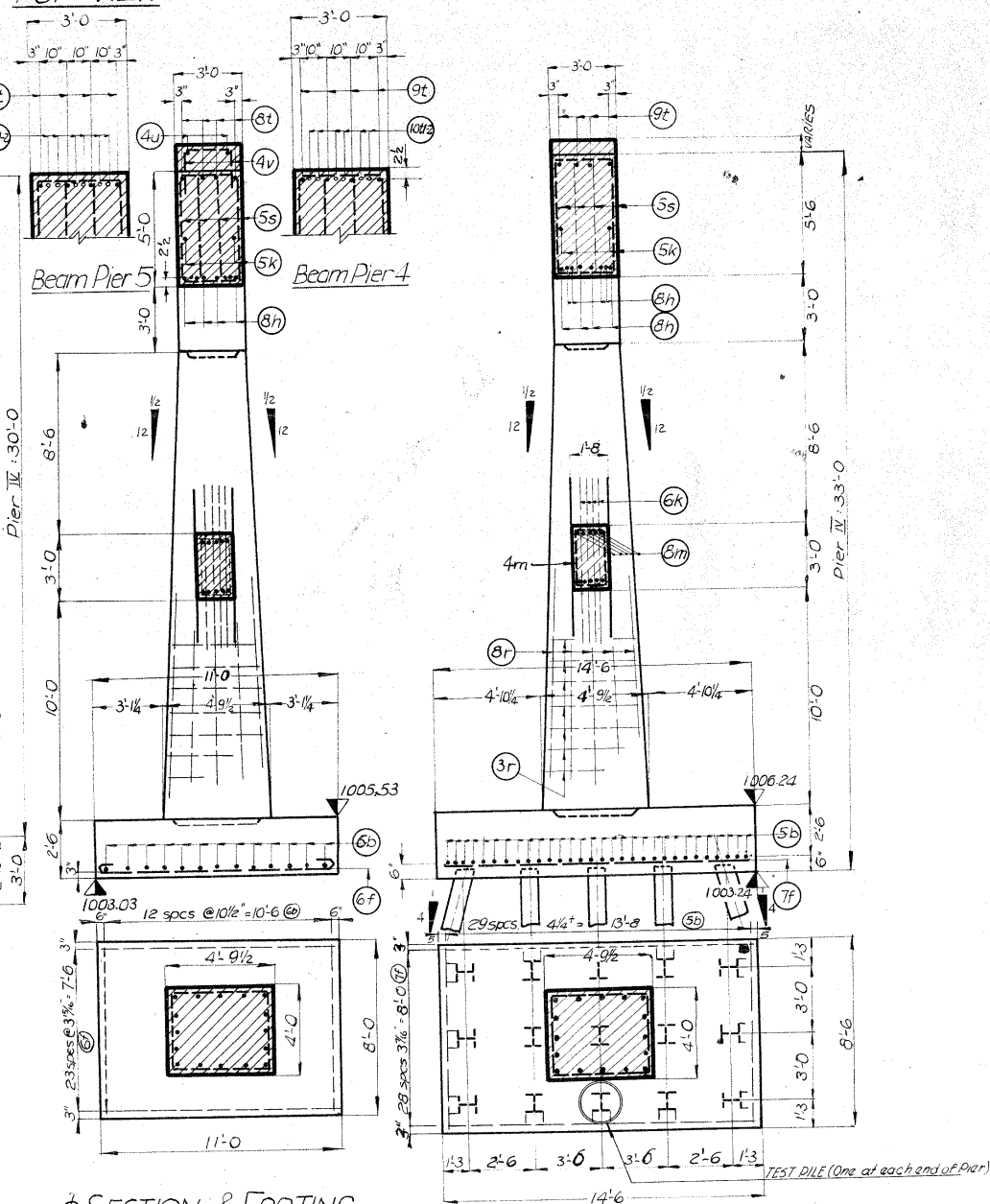
HALF ELEVATION PIER II

HALF ELEVATION PIER IV
 Except steps as shown for Pier II



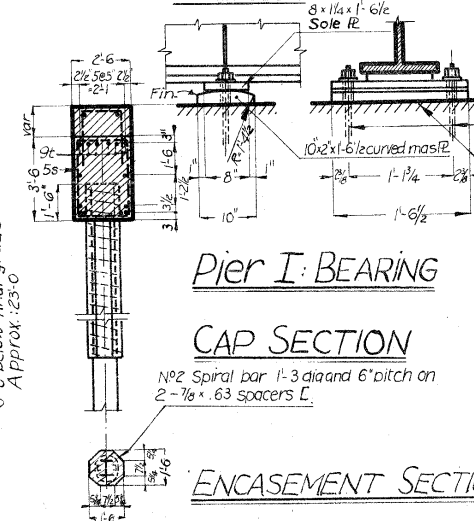
ELEVATION PIER I

PILE ENCASEMENT NOTE:
 Price bid for this item is to include furnishing and placing concrete and reinforcing steel as detailed for encasement, and excavating as necessary to place encasement. Cylindrical encasement 18 inches in diameter may be substituted for octagonal encasement shown.



SECTION & FOOTING
 Pier V

SECTION & FOOTING
 Pier IV



Pier I: BEARING

CAP SECTION

No. 2 Spiral bar 1-3 dia and 6" pitch on 2'-10" x .63 spacers L

ENCASEMENT SECTION

GENERAL NOTES: Footings to be carried min 6" into firm shale. Pier IV Alleposed corners or 90° or sharper, except vertical corners of wing posts are to be filleted with a 3/4" dressed and beveled strip. Minimum distance from face of concrete to 4" of outside reinforcing bar is to be 2" unless otherwise shown or noted. All piling is to be driven to full penetration if possible, but in no case to less than 30 tons bearing capacity. Anchor bolts to be preset.

26°24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0x58'-0 SECTION WITH TWO 49'-0 APPROACH SPANS
OVER M. & S.L. & I.C. RAILROADS

CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL

SUBSTRUCTURE DETAILS

STATION 228+95.68 TO STATION 235+50.18

PROJECT UG-13(8)

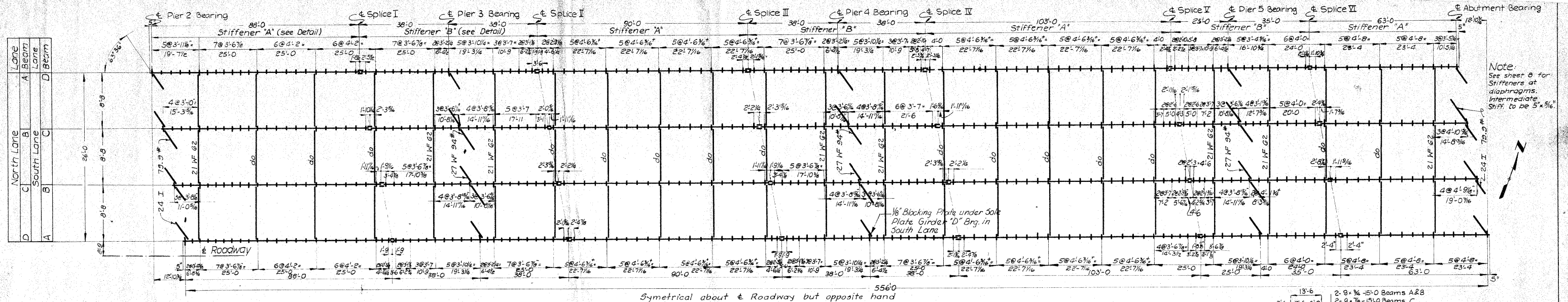
WEBSTER COUNTY

LOWA CROSSING NO. 12807

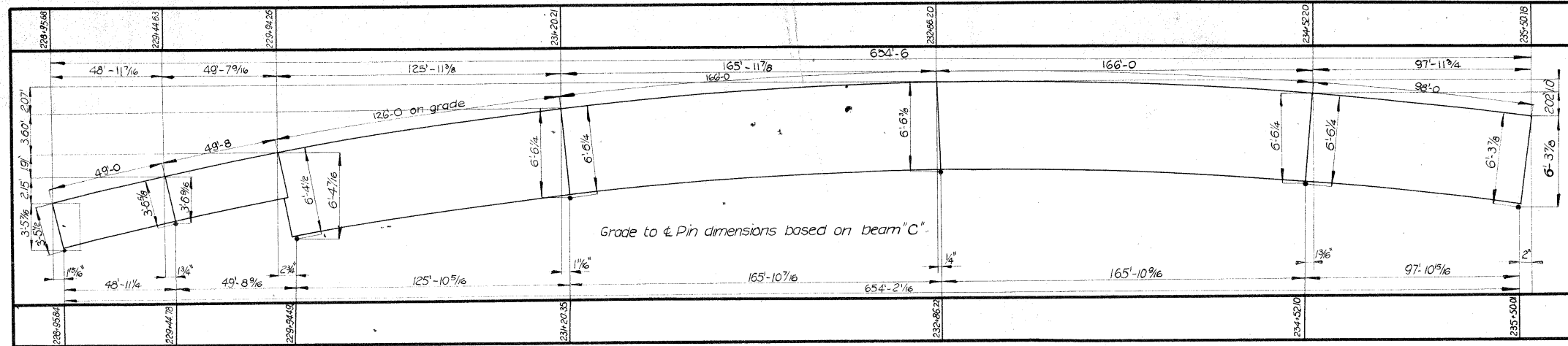
Lachner ENG. CO. JUNE 1958

SHEET 5 OF 11

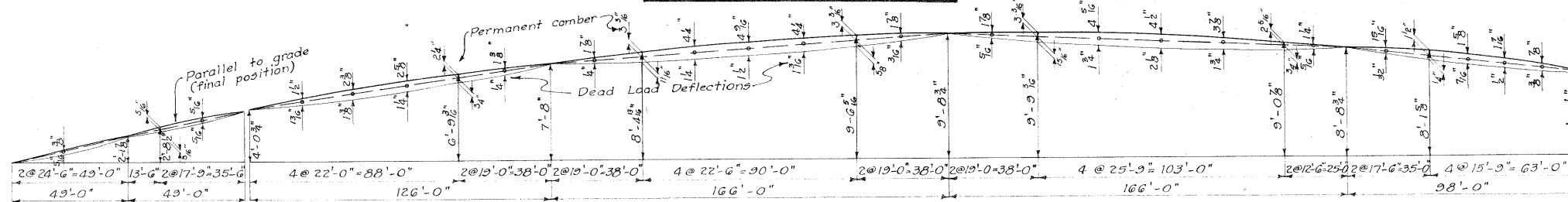
Webster Co. Project No UG-13(8) File No. 18761



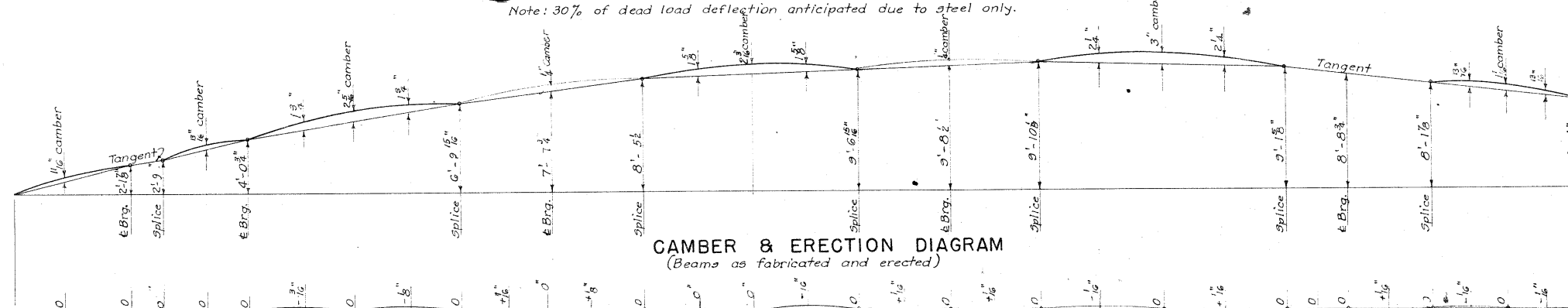
STRUCTURAL STEEL LAYOUT - PART FRAMING PLAN



GIRDER COORDINATE DIAGRAM



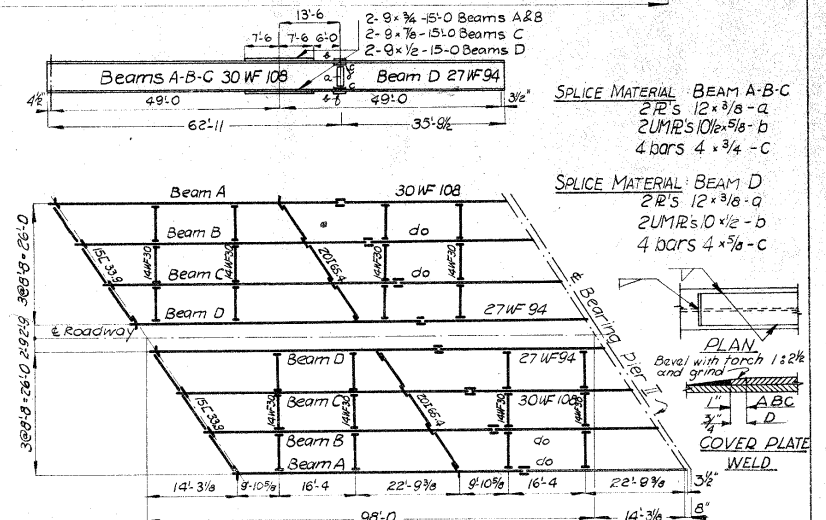
DEAD LOAD DEFLECTION & PERMANENT CAMBER DIAGRAM



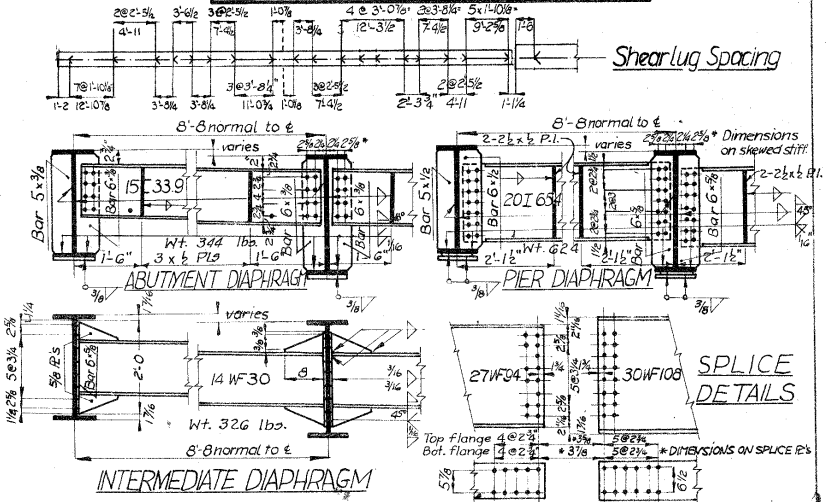
CAMBER & ERECTION DIAGRAM



SLAB THICKENING DIAGRAM



FRAMING PLAN - APPROACH SPANS



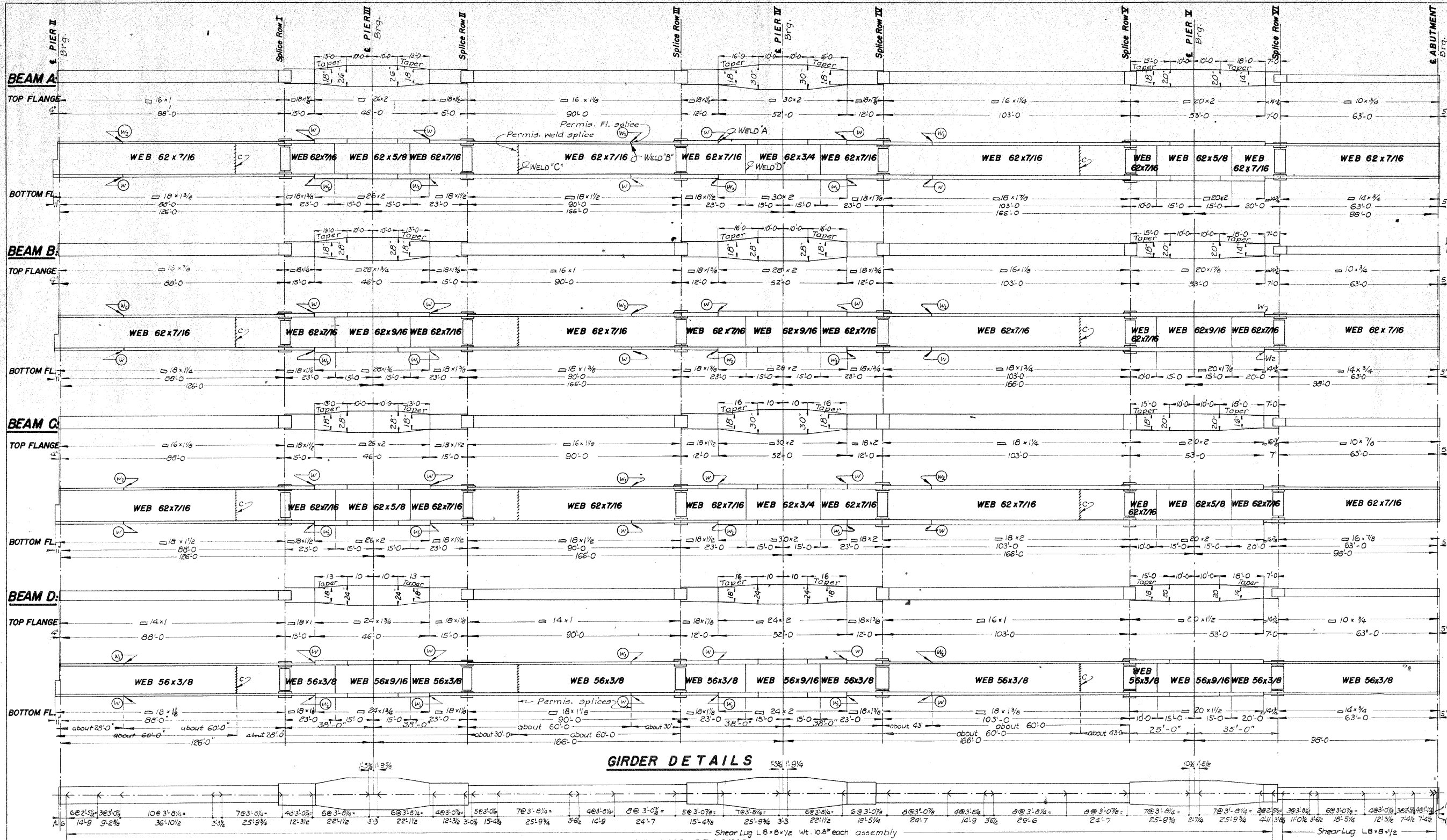
26' 24" SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0" x 58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M. & S.L. & I.C. RAILROADS

CONCRETE FLOOR & SUBSTRUCTURE - STEEL RAIL
SUPERSTRUCTURE DETAILS

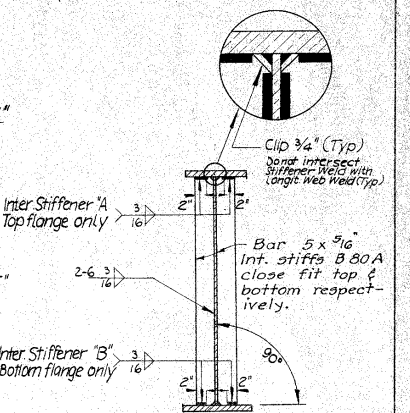
STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(B)
WEBSTER COUNTY
IOWA CROSSING NO. 12807

Leckner ENG. CO. JUNE 1958 SHEET 6 OF 11

Design No. 2058 Webster Co. Project No. UG-13(B) File No. 18761



WELDS AND SHEAR LUGS



WELD "B" FLANGE SPLICE DETAIL

WELD "A" FLANGE SPLICE DETAIL

WELD "C" WEB SPLICE DETAIL

WELD "D" WEB SPLICE DETAIL

FLANGE WELD DETAIL

NOTE:

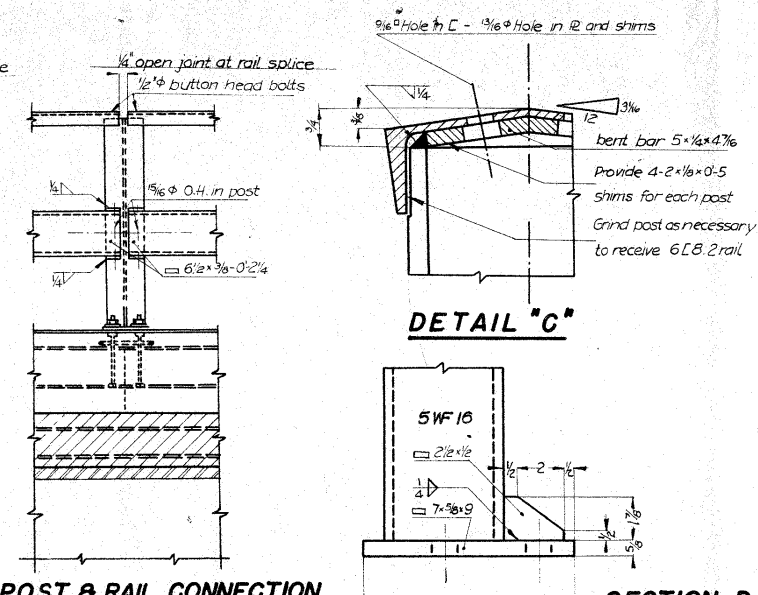
Shear lugs are spaced in multiples of transverse reinf. bar spacings and are located to clear the bottom transverse bars. Girder splice points are to be supported by falsework or other approved means, as directed by the engineer, and adjusted as closely as possible to dimensions shown on "DIAGRAM". GIRDERS AS FABRICATED AND ERECTED before riveting and bolting is completed.

See special weldnote on sheet 8 for BUTTWELDS marked (W) and (W) Weld "A", "B", "C" and "D" are bench welds.

Use 7/8" RIVETS or H.S. BOLTS.

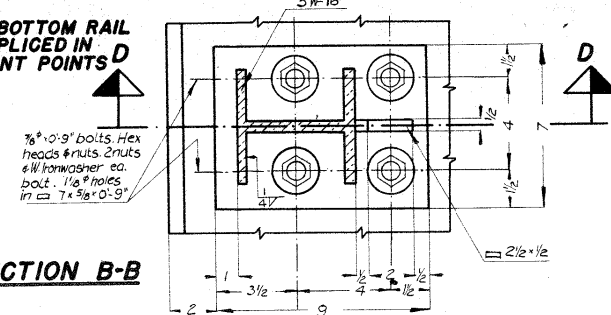
Weld Note: See sheet 8

26°24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0" x 58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M.&S.L. & I.C. RAILROADS
 CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL
SUPERSTRUCTURE DETAILS
 STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(B)
WEBSTER COUNTY
 IOWA CROSSING N° 12807
 Lechner ENG. CO. JUNE 1958 SHEET 7 OF 11

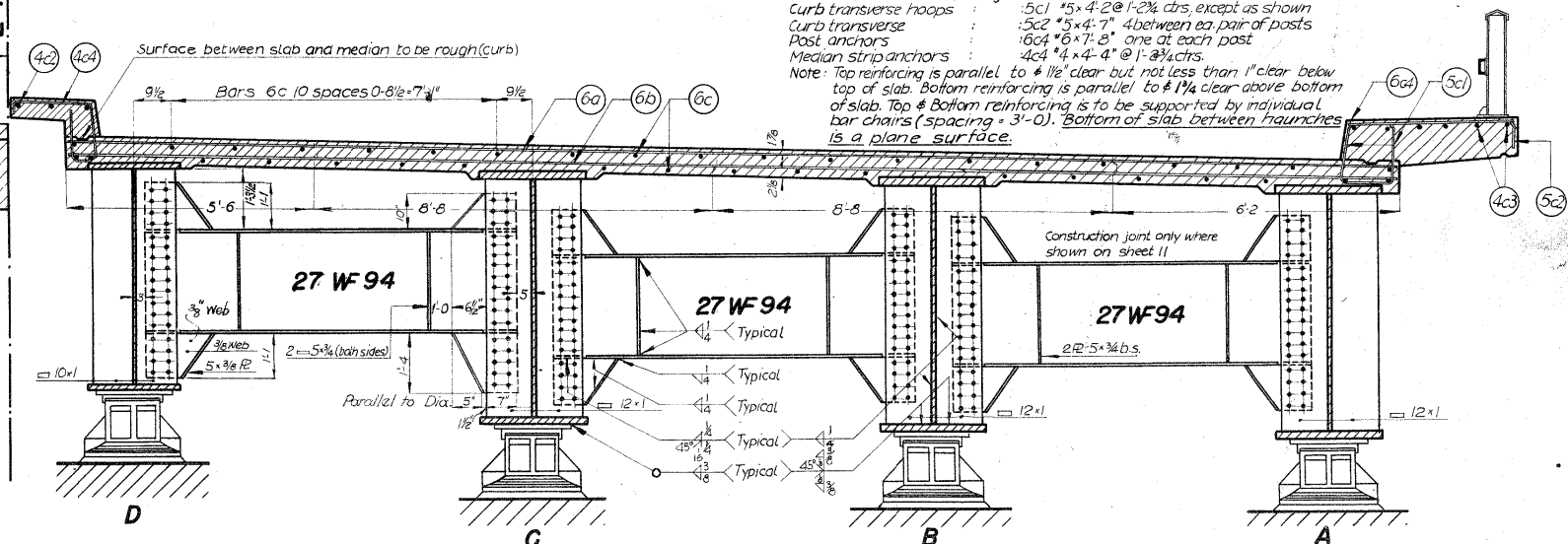


POST & RAIL CONNECTION AT SPLICE

**NOTE: TOP & BOTTOM RAIL
TO BE SPLICED IN
DIFFERENT POINTS**



SECTION B-B



HALF SECTION NEAR PIER V & III

Dier IV similar except for bearings

SUPERSTRUCTURE NOTES: This bridge is designed for H-20.44 loading, plus 19 lbs. per sq ft of roadway for future wearing surface with the following modifications:
 Except for the floor slab this bridge is designed so that an increase in the H-20 LL and impact of 100% will not increase the total unit stress to more than 150% of the specification stresses.
 The floor slabs as shown includes 1/2" of wearing surface. Field connections may be riveted or bolted except as noted or shown. Splice connections and Abutment and Pier diaphragm connections, if bolted, require "HIGH TENSILE STRENGTH BOLTS."
 The estimated weight for this connection is based on "HIGH TENSILE STRENGTH BOLTS."
 All open holes are to be 1 1/2" unless otherwise noted. All rivets and bolts are to be 7/8" unless otherwise noted. Bottom flanges are to be perpendicular to webs at reaction points. Beam splices are to be subpunched and reamed. Before reaming all beams are to be assembled to proper camber as shown on sheet "BEAMS AS FABRICATED and ERECTED" for inspection. After inspection all holes are to be reamed and all parts match-marked.
 Masonry plates are to be set in paint and canvas. Bearing surfaces of unfinished masonry plates are to be flat and true. Shop coat is to be omitted on tops of top flanges of beams and on other surfaces in contact with concrete. Parts inaccessible after erection are to be given three coats of paint in the shop. Forms for slab and curbs are to be supported by the beams.

WELD NOTE:

NOTE: Welding procedure shall comply with 1956 Specification of American Welding Society for Welded Highway and Railway Bridges. All welding shall be by the electric arc process, except for requirements of the Standard Spec. for Welded Highway and Railway Bridges, 1956 of the American Welding Society. All operators and processes shall be qualified in accordance with the foregoing specification for the type of electrode and position in which the work will be performed. The fabricator is to furnish to the Highway Commission satisfactory photographic evidence of the acceptability of transverse welds in the flange plates of the girders. Butt welds are to be photographed full width of flange. Butt welds u_2 are to be photographed at least half width of flange. These photographs are to show the internal structure of the welds and may be made by the use of X-ray, radium, radio active cobalt, or other approved process at the option of the fabricator. Cost of this photographic inspection is to be included in the price bid for structural steel.

26"x24" SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0"x58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M. & S.T.L. & I.C. RAILROADS

CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL

SUPERSTRUCTURE DETAILS

STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(a)

WEBSTER COUNTY

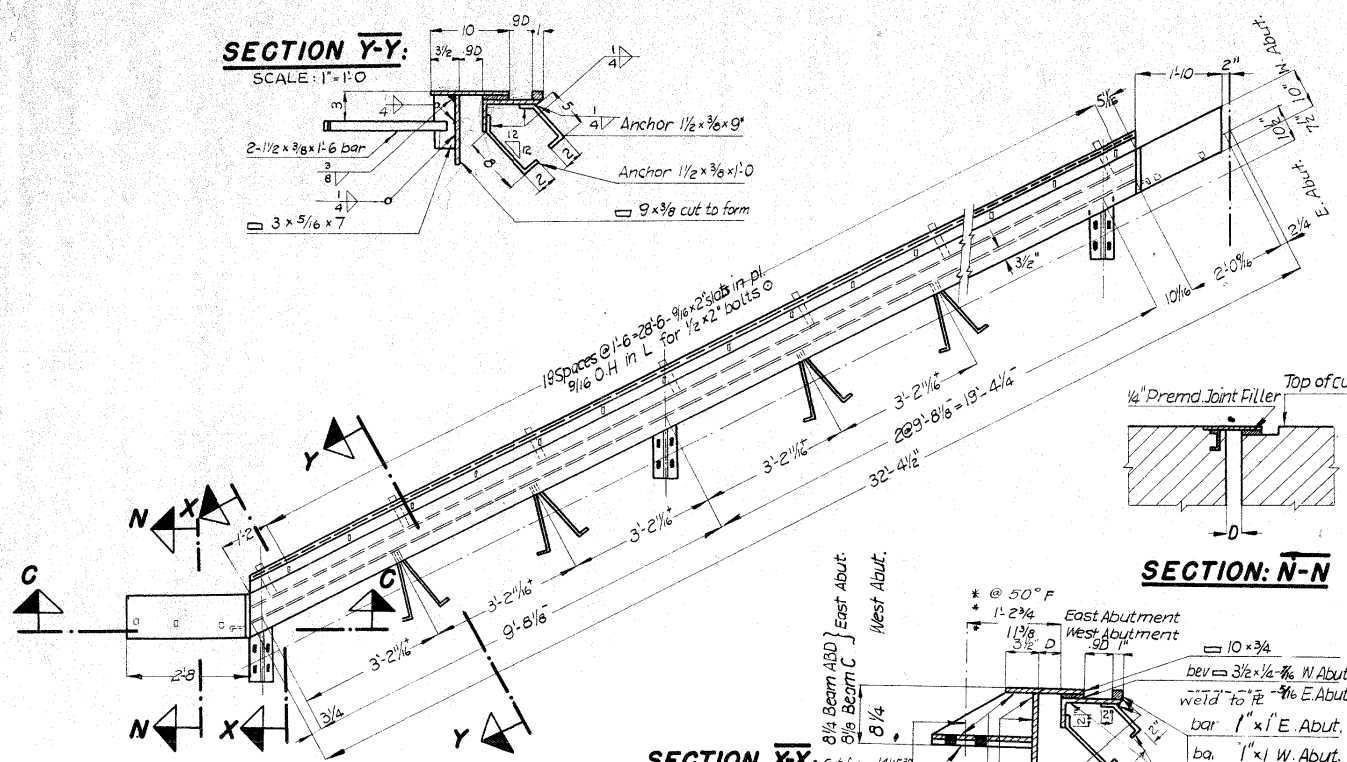
IOWA CROSSING N° 12807

Lechner ENG. CO

JUNE 1958

SHEET 8 OF 11

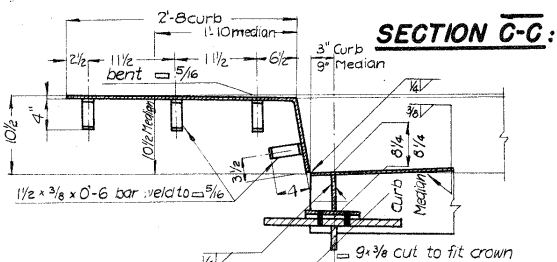
File No. 18761



SECTION X-X:

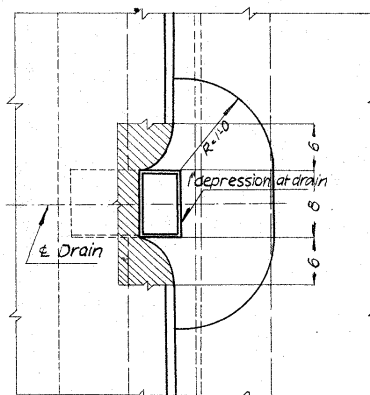
* Dimension D = 3" at a Temperature at 50°F parallel to & Roadway D increases 1/4" and 1/8" at E. & W. Abutments respectively for 40° drop in temperature and reduces same amount for 40° rise in temperature.

EXPANSION PLATE HALF PLAN, DETAILS & SECTIONS

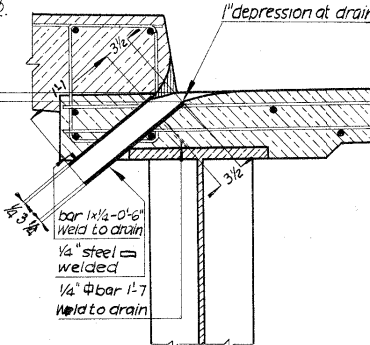


ROCKER SETTING TABLE							
	WEST AB.	PIER I	PIER II	PIER III	PIER IV	PIER V	EAST AB.
Temperature at any time of setting							
90°F	+ 1/4	+ 1/16	+ 1/16	+ 1/8	+ 0	+ 1/2	+ 13/16
50°F	-	-	-	-	-	-	-
10°F	- 1/4	- 1/16	- 1/16	- 1/8	- 0	- 1/2	- 13/16

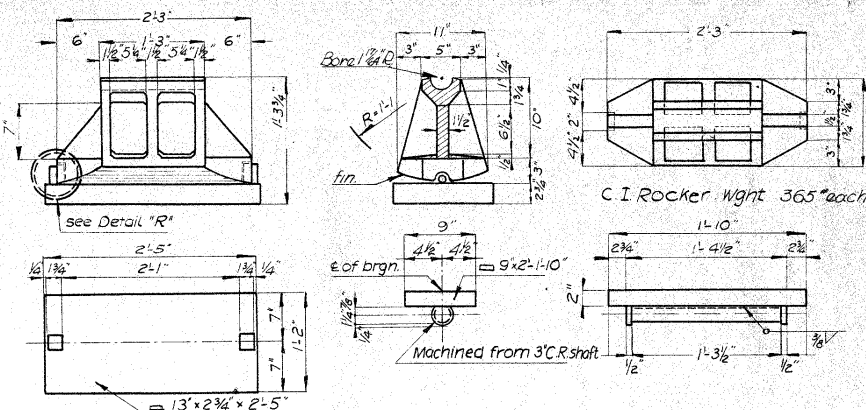
Note: Rockers tilted away from fixed shoe indicated "+."



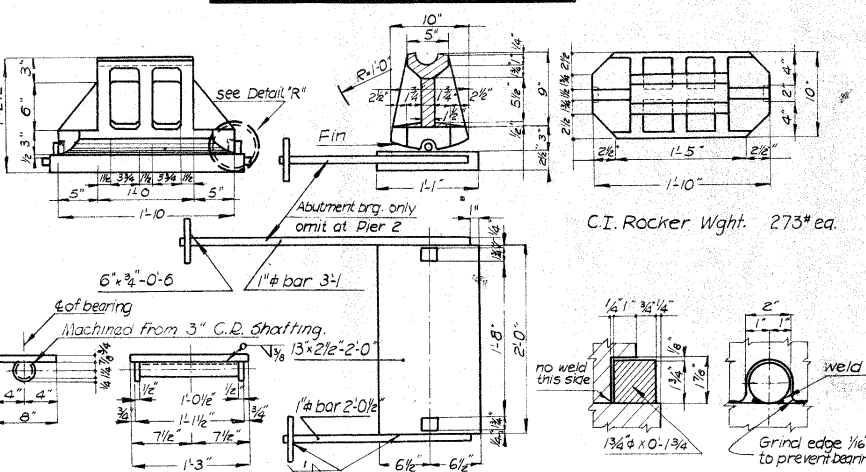
NOTE: DRAINSPACING MAY BE VARIED SLIGHTLY BETWEEN & OF REINFORCING BARS (6")



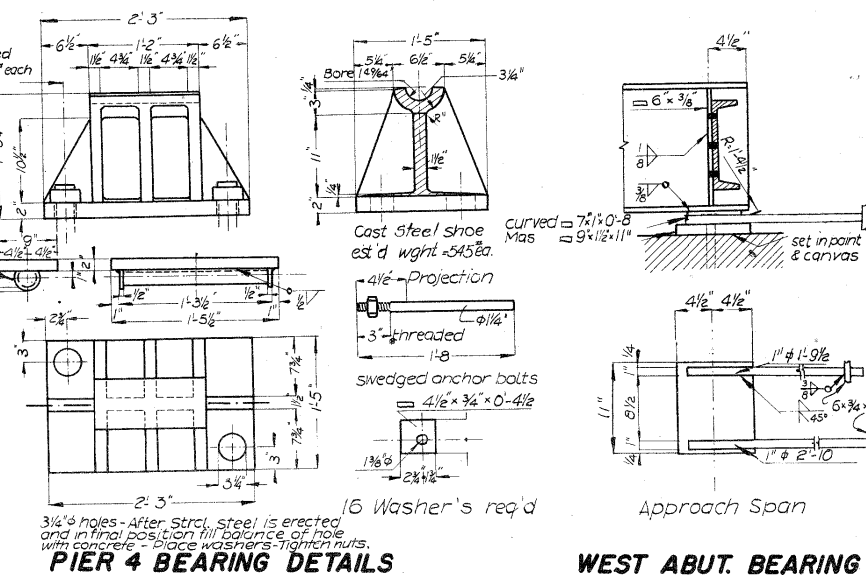
DRAIN DETAIL



PIER 3&5 BEARING DETAIL



EAST ABUTMENT & PIER 2 BEARING DETAIL



PIER 4 BEARING DETAILS

WEST ABUT. BEARING

LOADS	MAXIMUM NEGATIV MOMENT [FT.KIPS]																MAXIMUM POSITIV MOMENT [FT. KIPS]																								
	PIER I				PIER III				PIER IV				PIER V				SPAN I				SPAN II				SPAN III				SPAN IV				SPAN V				SPAN VI				
	BEAM	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D				
DEAD LOAD N°1	221	308	308	212	1980	2560	2560	1950	2310	2980	2980	2270	1515	1955	1955	1490	104	144	144	100	Same as Span I					845	1090	1090	830	810	1045	1045	795	1045	1350	1350	1030	392	505	505	403
DEAD LOAD N°2	230	3	67	79	1605	21	462	545	1920	25	553	654	1230	16	353	417	129	3	37	79						815	11	224	277	870	11	250	295	1060	14	304	360	392	5	112	137
UNIFORM LIVE LOAD	89	168	168	99	748	1415	1415	830	875	1655	1655	197	565	1070	1070	625	504	950	950	560		600	1135	1135	665	652	1235	1235	724	290	550	550	321	290	550	550	321	290	550	550	321
*CONCENTR. LL	78	147	147	87	217	410	410	241	238	450	450	263	185	350	350	205	*256	*286	*286	*256						217	410	410	241	231	437	437	256	243	460	460	270	144	272	272	160
IMPACT	48	91	91	53	178	336	336	157	192	364	364	213	146	276	276	162	72	82	*82	72						162	306	306	179	143	271	271	158	154	291	291	171	97	183	183	108
SIDE WALK	70	—	5	—	592	—	43	—	682	—	50	—	448	—	33	—	53	—	38	—					398	—	29	—	457	—	33	—	516	—	35	—	229	—	17	—	
TOTAL :	736	717	786	530	5320	4742	5226	3723	6217	5474	6052	3597	4089	3667	4037	2839	614	515	587	507					2941	2767	3009	2087	3111	2899	3171	2469	3670	3350	3675	2555	1544	1515	1639	1129	

* Truck Loading

LOADS	MAXIMUM REACTIONS [KIPS]																												
	WEST ABUT.				PIER I				PIER II				PIER III				PIER IV				PIER V				EAST ABUT.				
	BEAM	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
DEAD LOAD N°1	11.9	16.5	16.5	11.5	4.8	58.0	58.0	40.2	50.3	66.1	66.1	49.3	139.3	179.8	179.8	126.9	149.6	193.0	193.0	147.0	124.2	160.3	160.3	122.0	26.7	34.4	34.4	26.2	
DEAD LOAD N°2	14.1	2	4.1	4.8	46.8	6	13.4	16.0	49.6	7	14.2	16.9	122.5	1.6	35.2	41.6	133.4	1.7	38.4	45.3	109.0	1.4	31.4	37.1	25.0	3	7.2	8.5	10.8
UNIFORM LIVE LOAD	8.9	16.8	16.8	9.9	74.8	141.5	141.5	83.0	87.5	165.5	165.5	197	56.5	107.0	107.0	62.5	50.4	95.0	95.0	56.0	60.0	113.5	113.5	66.5	65.2	123.5	123.5	72.4	29.0
*CONCENTR. LL	26.2	29.4	29.4	26.2	11.9	22.5	22.5	14.1	11.9	22.5	22.5	13.1	11.9	22.5	22.5	13.1	11.9	22.5	22.5	13.1	11.9	22.5	22.5	13.1	11.9	22.5	22.5	13.1	11.9
IMPACT	7.5	8.4	8.4	7.5	8.6	16.2	16.2	9.7	8.4	13.5	13.5	9.1	11.7	22.0	22.0	12.9	11.7	21.9	21.9	12.8	11.3	21.2	21.2	12.4	5.6	10.6	10.6	6.2	
SIDE WALK	5.0	—	—	—	14.3	—	—	—	13.8	—	—	—	40.6	—	—	—	44.3	—	—	—	—	36.5	—	—	—	10.4	—	—	—
TOTAL:	64.7	54.5	58.8	50.0	141.3	131.3	145.1	99.9	157.7	137.7	152.2	114.5	377.5	322.7	359.3	251.2	407.0	344.6	384.5	280.0	339.1	292.3	325.0	235.5	92.8	92.6	100.3	68.5	

* Truck Loading

For Bearing Detail at Pier I see Sheet 5.

26°24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0"x58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M. & S.L. & I.C. RAILROADS

CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL

SUPERSTRUCTURE DETAILS

STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(8)

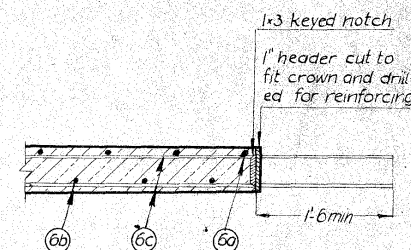
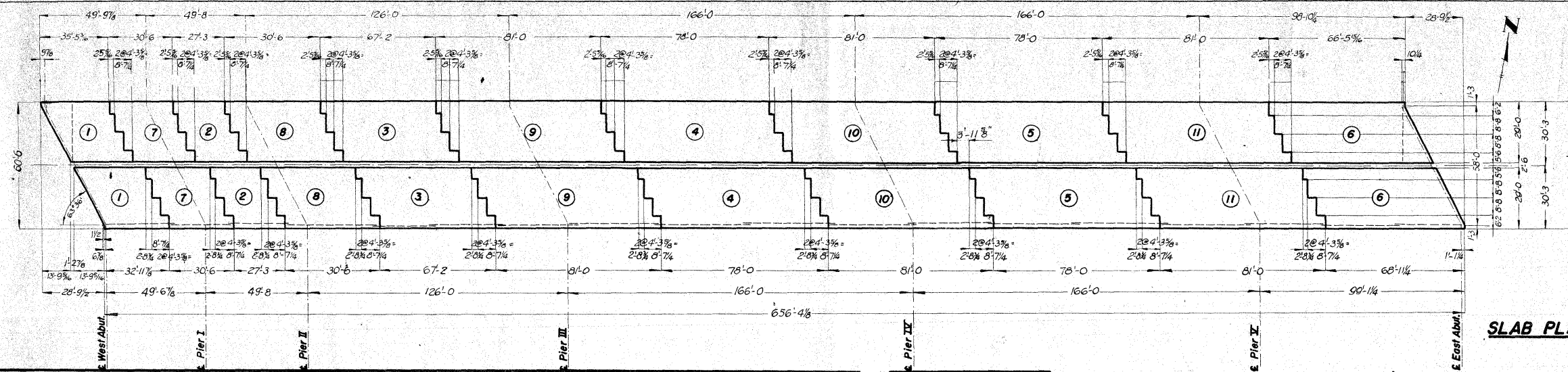
WEBSTER COUNTY

IOWA CROSSING N° 12807

Lechner ENG. CO.

JUNE 1958

SHEET 9 OF 11

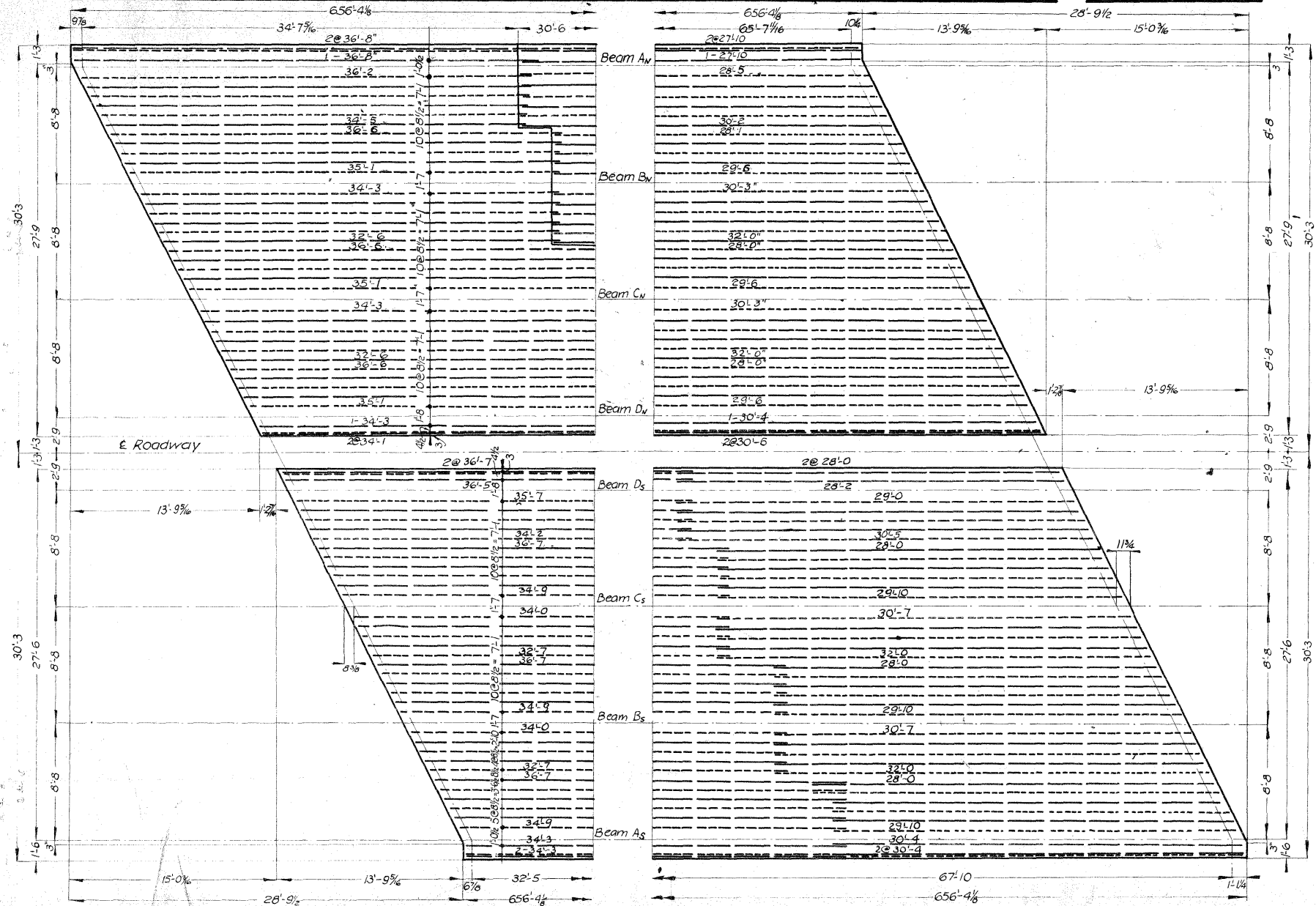


CONSTRUCTION JOINT DETAIL

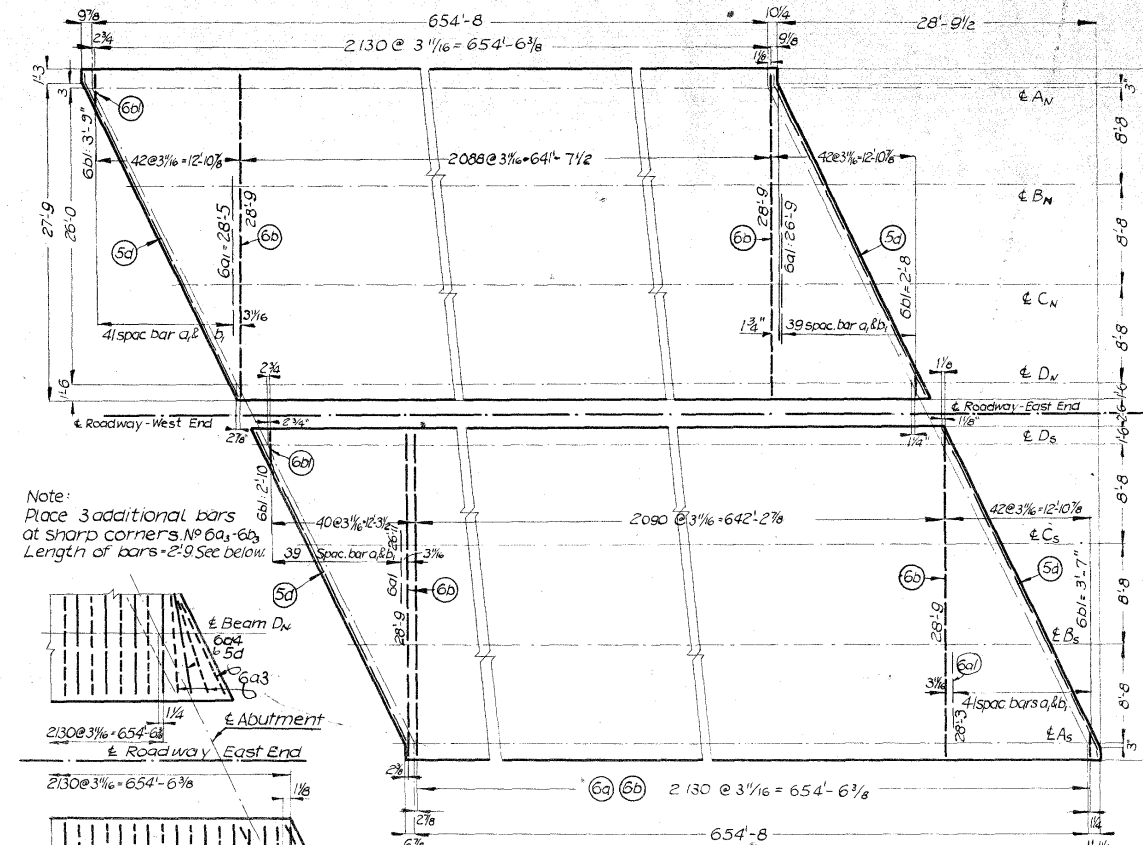
SLAB PLACEMENT DIAGRAM

CONCRETE PLACEMENT QUANTITIES													
SKEWED PART													
BRIDGE SECTION	1	2	3	4	5	6	7	8	9	10	11	CURB	MEDIAN
CY NORTH LANE	24.6	20.1	47.0	54.6	54.6	48.3	27.3	52.7	52.7	52.7	52.7	84.6	28.4
CY SOUTH LANE	24.4	20.1	47.0	54.6	54.6	48.6	21.3	52.7	52.7	52.7	52.7	84.6	28.4
SUM	49.0	40.2	94.0	109.2	109.2	96.9	48.6	105.4	105.4	105.4	105.4	169.2	56.8
TOTAL	1149.9 c.y.												

ESTIMATED QUANTITIES	
ITEM	QUANTITY
CONCRETE	1149.9 c.y.
REINFORCING ST.	235,836 lb
STRUCTURAL ST.	1,596,231 lb

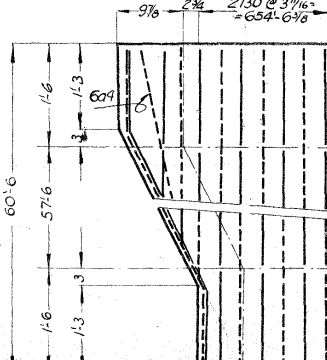


PART OF DETAIL 1 & 6"-Variable bars at west & east end (longitudinal)



PART OF DETAIL 1 & 6"-Variable transversal bars

SHARP CORNER DETAILS



26'x24' SKEWED CONTINUOUS PL. GIRDER CROSSING
556'-0"x58'-0" SECTION WITH TWO 49'-0" APPROACH SPANS
OVER M. & S.L. & I.C. RAILROADS
CONCRETE FLOOR & SUBSTRUCTURE-STEEL RAIL
SUPERSTRUCTURE DETAILS
STATION 228+95.68 TO STATION 235+50.18 PROJECT UG-13(2)
WEBSTER COUNTY
IOWA CROSSING NO. 12807
JUNE 1958 SHEET 11 OF 11