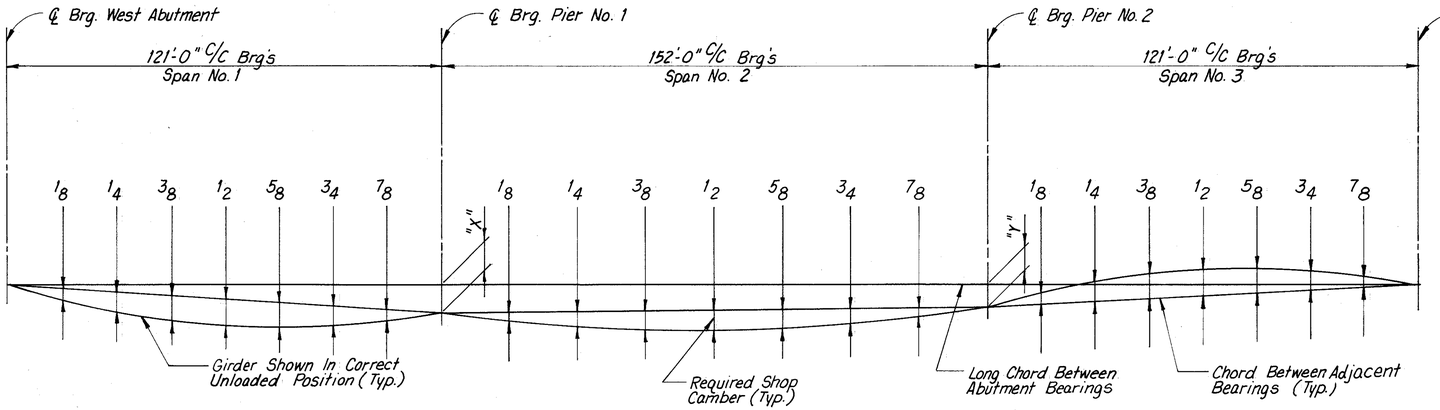
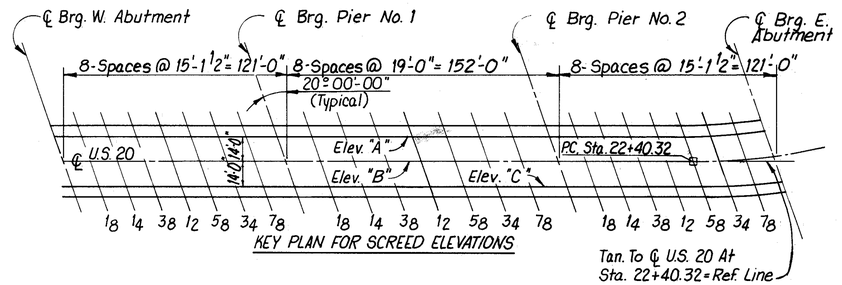
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

61
86

LAKE COUNTY
LAK-20-17.14



CAMBER & BLOCKING DIAGRAM



KEY PLAN FOR SCREED ELEVATIONS

DEFLECTION AND CAMBER — SPAN NO. 1

LOCATION	GIRDER A							GIRDER B							GIRDER C							GIRDER D							GIRDER E						
POINT	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8
Deflection Due To Weight Of Steel	3/16	3/8	7/16	7/16	5/16	3/16	1/16	3/16	3/8	7/16	3/8	5/16	3/16	1/16	3/16	5/16	3/8	5/16	1/4	1/8	1/16	3/16	5/16	3/8	5/16	1/4	1/8	1/16	3/16	5/16	5/16	5/16	1/4	1/8	1/16
Deflection Due To Remaining Dead Load	15/16	1 9/16	1 7/8	1 13/16	1 3/8	3/4	1/4	15/16	1 5/8	1 15/16	1 13/16	1 3/8	3/4	1/4	15/16	1 5/8	1 15/16	1 13/16	1 3/8	3/4	1/4	15/16	1 5/8	1 15/16	1 13/16	1 3/8	3/4	1/4	7/8	1 9/16	1 13/16	1 3/4	1 5/16	11/16	3/16
Adjustment For Horizontal & Vertical Curve	-1 5/8	-2 13/16	-3 1/2	-3 3/4	-3 1/2	-2 13/16	-1 5/8	-1 5/8	-2 13/16	-3 1/2	-3 3/4	-3 1/2	-2 13/16	-1 5/8	-1 5/8	-2 13/16	-3 1/2	-3 3/4	-3 1/2	-2 13/16	-1 5/8	-1 5/8	-2 13/16	-3 1/2	-3 3/4	-3 1/2	-2 13/16	-1 5/8	-1 5/8	-2 13/16	-3 1/2	-3 3/4	-3 1/2	-2 13/16	-1 5/8
Required Shop Chamber	-1/2	-7/8	-1 3/16	-1 1/2	-1 13/16	-1 7/8	-1 5/16	-1/2	-1 3/16	-1 1/8	-1 9/16	-1 13/16	-1 7/8	-1 3/8	-1/2	-7/8	-1 3/16	-1 5/8	-1 7/8	-1 15/16	-1 3/8	-1/2	-7/8	-1 3/16	-1 5/8	-1 7/8	-1 15/16	-1 3/8	-9/16	-1 5/16	-1 3/8	-1 11/16	-1 15/16	-2	-1 3/8

DEFLECTION AND CAMBER — SPAN NO. 2

LOCATION	GIRDER A							GIRDER B							GIRDER C							GIRDER D							GIRDER E						
POINT	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8
Deflection Due To Weight Of Steel	1/16	1/4	7/16	1/2	7/16	1/4	1/16	1/16	1/4	3/8	7/16	3/8	1/4	1/16	1/16	3/16	5/16	3/8	5/16	3/16	1/16	1/16	3/16	5/16	3/8	5/16	3/16	1/16	1/16	3/16	5/16	3/8	5/16	3/16	1/16
Deflection Due To Remaining Dead Load	1/4	7/8	1 1/2	1 3/4	1 1/2	1 3/16	3/16	5/16	1	1 11/16	2	1 11/16	1	5/16	5/16	1	1 11/16	2	1 11/16	1	5/16	5/16	1	1 11/16	2	1 11/16	1	5/16	5/16	1	1 11/16	2	1 3/4	1 1/16	5/16
Adjustment For Horizontal & Vertical Curve	-2 9/16	-4 7/16	-5 1/2	-5 7/8	-5 7/16	-4 5/16	-2 7/16	-2 9/16	-4 3/8	-5 7/16	-5 3/4	-5 7/16	-4 5/16	-2 7/16	-2 9/16	-4 3/8	-5 3/8	-5 11/16	-5 1/4	-4 1/16	-2 3/16	-2 11/16	-4 5/8	-5 13/16	-6 1/4	-5 11/16	-4 5/16	-2 3/16	-2 13/16	-4 7/8	-6 3/16	-6 13/16	-6 1/16	-4 1/2	-2 3/16
Required Shop Chamber	-2 1/4	-3 5/16	-3 9/16	-3 5/8	-3 1/2	-3 1/8	-2 3/16	-2 3/16	-3 1/8	-3 3/8	-3 5/16	-3 5/16	-2 5/16	-1 5/16	-2 3/16	-3 3/16	-3 3/8	-3 5/16	-3 1/4	-2 7/8	-1 13/16	-2 5/16	-3 7/16	-3 13/16	-3 7/8	-3 11/16	-3 1/8	-1 13/16	-2 7/16	-3 11/16	-4 3/16	-4 7/16	-4	-3 1/4	-1 13/16

DEFLECTION AND CAMBER — SPAN NO. 3

LOCATION	GIRDER A							GIRDER B							GIRDER C							GIRDER D							GIRDER E						
POINT	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1/8	1/4	3/8	1/2	5/8	3/4	7/8
Deflection Due To Weight Of Steel	1/16	3/16	5/16	7/16	7/16	3/8	3/16	1/16	3/16	5/16	3/8	7/16	3/8	3/16	1/16	1/8	1/4	5/16	3/8	5/16	3/16	1/16	1/8	1/4	5/16	3/8	5/16	3/16	1/16	1/8	1/4	5/16	5/16	3/16	1/16
Deflection Due To Remaining Dead Load	5/16	7/8	1 9/16	2 1/16	2 1/8	1 3/4	15/16	3/16	3/4	1 3/8	1 13/16	1 15/16	1 5/8	15/16	3/16	3/4	1 3/8	1 13/16	1 15/16	1 5/8	15/16	3/16	3/4	1 3/8	1 13/16	1 15/16	1 5/8	15/16	3/16	5/8	1 3/16	1 5/8	1 11/16	1 7/16	13/16
Adjustment For Horizontal & Vertical Curve	1/2	2 11/16	3 7/16	3 7/8	3 1/8	2 1/8	1/8	15/16	2 5/16	2 7/8	3 3/16	2 1/2	1 3/4	15/16	1/8	1 1/8	1 7/8	2 5/16	2 3/8	1 11/16	7/8	1/16	1 3/16	2 7/16	2 5/8	2 3/8	1 11/16	7/8	1/16	1 15/16	2 11/16	3 1/8	2 3/4	1 15/16	15/16
Required Shop Chamber	1/8	3/4	3 5/16	5 5/16	6 3/8	5 11/16	4 1/4	2 5/16	1/16	3 1/4	4 9/16	5 3/8	4 7/8	3/4	3/4	2 1/16	1/8	2 3/4	3 15/16	4 1/2	4 3/8	3/8	1/8	2 1/16	1/16	4 1/16	4 3/4	4 11/16	3 5/8	2	1/16	2 11/16	4 1/8	5 1/16	4 3/4	3 1/16	2

Note: A Positive Camber Means The Camber Above And A Negative Camber Means The Camber Below The Chord Between Adjacent Bearings In The Span. Required Deflections And Adjustments Are Given To The Nearest 1/16 Inch.

BLOCKING DIMENSIONS

GIRDER NO.	A	B	C	D	E
DIM. "X"	1'-11 3/4"	1'-11 3/4"	1'-11 3/4"	2'-0 3/4"	2'-1 13/16
DIM. "Y"	11" 1/16"	11 3/16	11 3/8	1'-0 5/8"	1'-1 13/16

TABLE OF SCREED ELEVATIONS

ELEVATION "A"				ELEVATION "B"				ELEVATION "C"			
LOCATION	STATION	OFFSET	ELEVATION	LOCATION	STATION	OFFSET*	ELEVATION	LOCATION	STATION	OFFSET	ELEVATION
℄ BRG. W. ABUT.	18+88.30	14'-0" LT.	622.749	℄ BRG. W. ABUT.	18+93.39	—	623.048	℄ BRG. W. ABUT.	18+98.49	14'-0" RT.	622.913
1 8	19+03.42	14'-0" LT.	623.074	1 8	19+08.52	—	623.387	1 8	19+13.61	14'-0" RT.	623.263
1 4	19+18.55	14'-0" LT.	623.419	1 4	19+23.64	—	623.746	1 4	19+28.74	14'-0" RT.	623.633
3 8	19+33.67	14'-0" LT.	623.773	3 8	19+38.77	—	624.113	3 8	19+43.86	14'-0" RT.	624.011
1 2	19+48.80	14'-0" LT.	624.131	1 2	19+53.89	—	624.483	1 2	19+58.99	14'-0" RT.	624.396
5 8	19+63.92	14'-0" LT.	624.499	5 8	19+69.02	—	624.865	5 8	19+74.11	14'-0" RT.	624.791
3 4	19+79.05	14'-0" LT.	624.893	3 4	19+84.14	—	625.270	3 4	19+89.24	14'-0" RT.	625.212
7 8	19+94.17	14'-0" LT.	625.332	7 8	19+99.27	—	625.721	7 8	20+04.36	14'-0" RT.	625.678
℄ PIER NO. 1	20+09.30	14'-0" LT.	625.836	℄ Pier No. 1	20+14.39	—	626.240	℄ PIER NO. 1	20+19.49	14'-0" RT.	626.210
1 8	20+28.30	14'-0" LT.	626.570	1 8	20+33.39	—	626.993	1 8	20+38.49	14'-0" RT.	626.980
1 4	20+47.30	14'-0" LT.	627.401	1 4	20+52.39	—	627.884	1 4	20+57.49	14'-0" RT.	627.848
3 8	20+66.30	14'-0" LT.	628.292	3 8	20+71.39	—	628.755	3 8	20+76.49	14'-0" RT.	628.776
1 2	20+85.30	14'-0" LT.	629.211	1 2	20+90.39	—	629.692	1 2	20+95.49	14'-0" RT.	629.730
5 8	21+04.30	14'-0" LT.	630.148	5 8	21+09.39	—	630.647	5 8	21+14.49	14'-0" RT.	630.738
3 4	21+23.30	14'-0" LT.	631.115	3 4	21+28.39	—	631.628	3 4	21+33.49	14'-0" RT.	631.784
7 8	21+42.30	14'-0" LT.	632.143	7 8	21+47.39	—	632.668	7 8	21+52.49	14'-0" RT.	632.888
℄ PIER NO. 2	21+61.30	14'-0" LT.	633.251	℄ Pier No. 2	21+66.39	—	633.766	℄ PIER NO. 2	21+71.49	14'-0" RT.	634.019
1 8	21+76.42	14'-0" LT.	634.142	1 8	21+81.52	—	634.643	1 8	21+86.61	14'-0" RT.	634.923
1 4	21+91.55	14'-0" LT.	635.031	1 4	21+96.64	—	635.518	1 4	22+01.74	14'-0" RT.	635.866
3 8	22+06.67	14'-0" LT.	635.895	3 8	22+11.77	—	636.369	3 8	22+16.86	14'-0" RT.	636.790
1 2	22+21.80	14'-0" LT.	636.711	1 2	22+26.84	—	637.175	1 2	22+31.99	14'-0" RT.	638.165
5 8	22+36.91	14.0290 LT.	637.402	5 8	22+42.01	0.0032'	637.922	5 8	22+46.87	14.0581 RT.	638.468
3 4	22+52.31	14.3237 LT.	638.031	3 4	22+57.01	0.3881'	638.598	3 4	22+61.44	14.6059 RT.	639.194
7 8	22+67.68	14.6060 LT.	638.593	7 8	22+71.83	1.3819'	639.204	7 8	22+75.95	15.7260 RT.	639.883
℄ BRG. E. ABUT.	22+82.90	14.8609 LT.	639.094	℄ BRG. E. ABUT.	22+86.49	2.9653'	639.754	℄ BRG. E. ABUT.	22+90.27	17.0133 RT.	640.532

For Elevation "B" Offsets Shown Are Dimensions Measured From The Reference Line In A Direction Parallel To The Centerline Of Bearing.

Note: The Elevations Shown Are Top Of Concrete Slab Elevations Which Are Required Before The Concrete Is Placed. Proper Allowance Has Been Made For The Deadload Deflections Caused By The Weight Of The Concrete Slab.

WOODRUFF, INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DEFLECTION, CAMBER & SCREED ELEVATION

U.S. ROUTE 20 OVER THE GRAND RIVER

BR. NO. - LAK-20-17.23 FROM STA. 18+91.00 TO STA. 22+89.56

LAKE COUNTY OHIO

MADE	TRACED	CHECKED	REVIEWED	REVISED
RJP	MAG	PG	AJM	
DATE 9-84	DATE 9-84	DATE 10-84	DATE 10/84	SHEET 14 / 22

U.S. 20 OVER GRAND RIVER