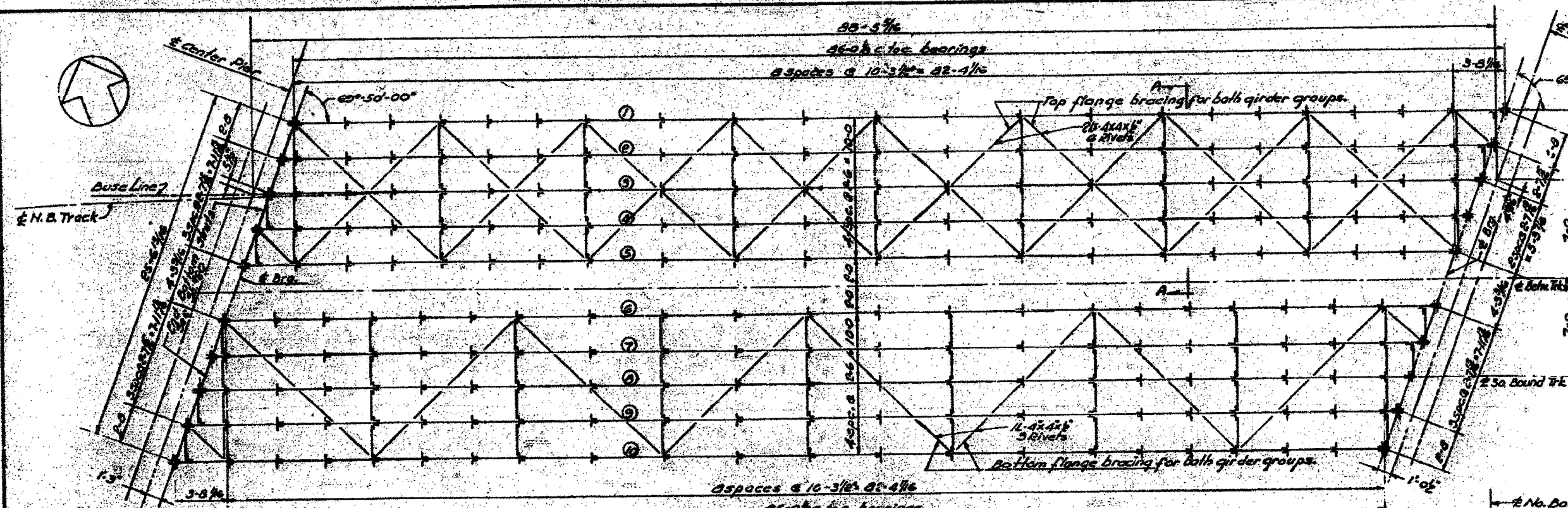


PROJECT NO.	55-70	DIST.	ST. CLAIR
DATE	7/19/40	SHEET	29

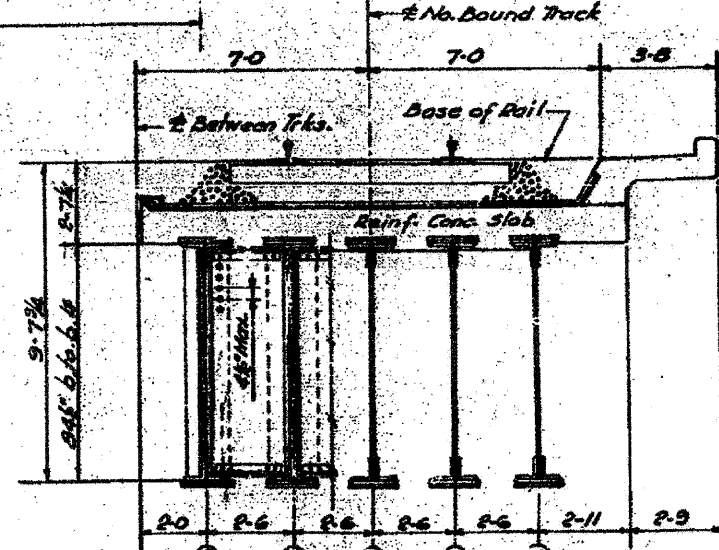
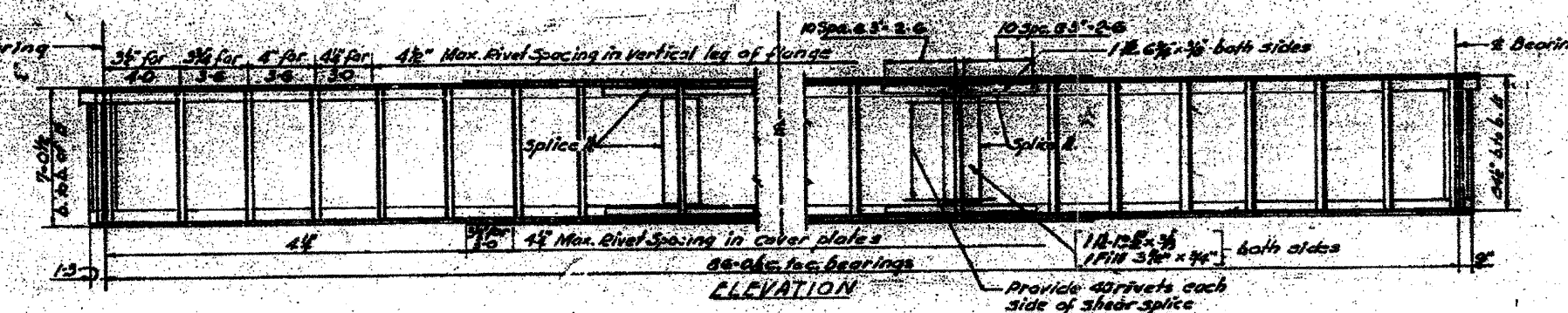


ELEVATIONS BACK OF BOTTOM FLANGE ANGLES & BEARING SHIM THICKNESS REQUIRED

Girder	@ Brg. Center Pier		@ Brg. South Pier	
	Elev.	Shim.	Elev.	Shim.
1	407.57	—	407.60	1/8"
2	407.57	1/8"	407.61	1/8"
3	407.07	1/8"	407.61	1/8"
4	407.07	1/8"	407.61	1/8"
5	407.07	1/8"	407.61	1/8"
6	407.58	1/8"	407.62	1/8"
7	407.08	1/8"	407.62	1/8"
8	407.08	1/8"	407.62	1/8"
9	407.08	1/8"	407.62	1/8"
10	407.08	1/8"	407.63	1/8"

Elevations are given @ the intersection of a Brg. & a Girder. Shim thickness is the total theoretical thickness required.

FRAMING PLAN - SPAN 3



DEAD LOAD PER TRACK

Ballast, Ties & Rail	2.73 ^k
Slab, Water, roof & Walk	3.00
Total	5.73^k
D.L. Girder, 10-1	1.15 ^k
D.L. Acc. 5-1/2	.18
D.L. Steel	.13
Total	2.06^k

MOMENTS & SHEAR FOR GIRDER No. 1 *

End Shear	Max. Moment
DL 62.5 ^k	DL 1950 ^k
LL 96.0	LL 1810
Imp. 62.8	Imp. 1172
Total 221.3^k	Total 4932^k

*Computed for 87 Span.

SECTION - ALL GIRDERS BOTH FLANGES

Grass	Net
8 Web 3-1/2" = 4.50"	4.50"
21 2-1/2" x 7/8" = 22.88"	19.50"
12 1-1/2" x 3/4" = 10.63"	9.22"
12 1-1/2" x 3/4" = 10.63"	9.22"
Total 46.74"	42.54"

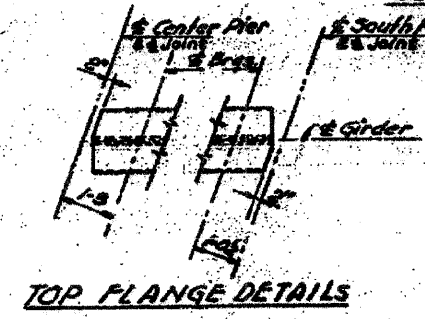
Grass I = 173,124 in⁴ Grass S.M. = 3940 in³
 Net I = 146,234 in⁴ Net S.M. = 3582 in³
 Allow 18,000 psi
 Unit Stress = $\frac{4932 \times 1000 \times 12}{3582} = 17,550 \text{ psi}$

IMPACT
 Vertical 60-90% = 45%
 Rolling 20-25-20%
 12.5 65% girder load

ADDITIONAL MATERIAL

Web 3-1/2" x 7/8" = 36.78"
 End Stiff. 4-1/2" x 3/4" x 1/2"
 Use 16 rivets per pair (Min)
 End Fills 1/2" x 3/4"
 Intermed. Stiff. 2-1/2" x 3/4" x 1/2"
 on fills of Diaphragms.
 2-1/2" x 3/4" on fills elsewhere.
 Rivet diameter = 7/8"

End Diaphragms & Intermed. Diaphragms
 6 in Top & Bottom 4x4 1/2" x 3/4" web.
 Lateral Plates & Horizontal Gussers 7/8"
 Top Lateral 2-1/2" x 3/4" x 1/2" rivets.
 Bottom Lateral 1 1/2" x 3/4" x 1/2" rivets.
 Web Splices at 16 points approx.
 Max. distance c.c. rivets on outside gage line
 of cover plates shall be 2 1/2"
 Min pitch 3/4" in bottom cover plate near 1/4
 of span on account of net section.



- NOTES**
1. For details of diaphragms, lateral bracing and connections see Sheet 29.
 2. For details of bearings see Sheet 28.
 3. For General Notes see 54.1.
 4. For Remaining Notes see 54.1.

STATE OF ILLINOIS
 DEPARTMENT OF PUBLIC WORKS & BLDGS.
 DIVISION OF HIGHWAYS
 &
 CITY OF EAST ST. LOUIS
EAST ST. LOUIS EXPRESSWAY
 L & N. R.R. OVER WEST BOUND EXPWAY, RAMP 1, EAST BOUND EXPWAY AND RAMP 2
 FRAMING PLAN - SPAN 3

H. W. LOCHNER, INC.
 ENGINEERS
 DATE JULY 1940 CHICAGO, ILLINOIS SHEET NO. 29

Designed By - L.K.
 Drawn By - H.M.K.
 Checked By - R.C. & P.A.E.