

**DEAD LOAD PER TRACK**

Balast, Ties & Rails 2.75  
 Slab, Water proof. & Walk 5.00  
 3.75 ft

**DEAD LOAD FOR GIRDER "I"**

D.L. = 5.75/5 1.15  
 D.L. ECG = 5.75 x 1.04/12.5 = .48  
 D.L. Girder .75  
 1.38 ft

**MOMENTS & SHEAR FOR GIRDER "I"**

End Shear	Max. Moment
D.L. 48.2	D.L. 478
L.L. 59.6	L.L. 599
Imp. 152	Imp. 154
147.6	1545

**IMPACT**

Vert. 60 - 48/500 = 33.6  
 Roll. 20 - 2.5 - 5/12.5 = 20.0  
 75.6%

**SECTION ALL GIRDERS BOTH FLGS.**

	Gross	Net
Web 76-3	3.56	3.56
2 6-6-3	16.88	13.00
	20.44	16.56
Gross I = 50,410 in <sup>4</sup>		Gross S.M. = 167 in <sup>3</sup>
Net I = 45,940 in <sup>4</sup>		Net S.M. = 1272 in <sup>3</sup>
Allowable Stress = 18,000 psi		Unit Stress = 1845 x 1000 / 1272 = 14600 psi

**Girders**

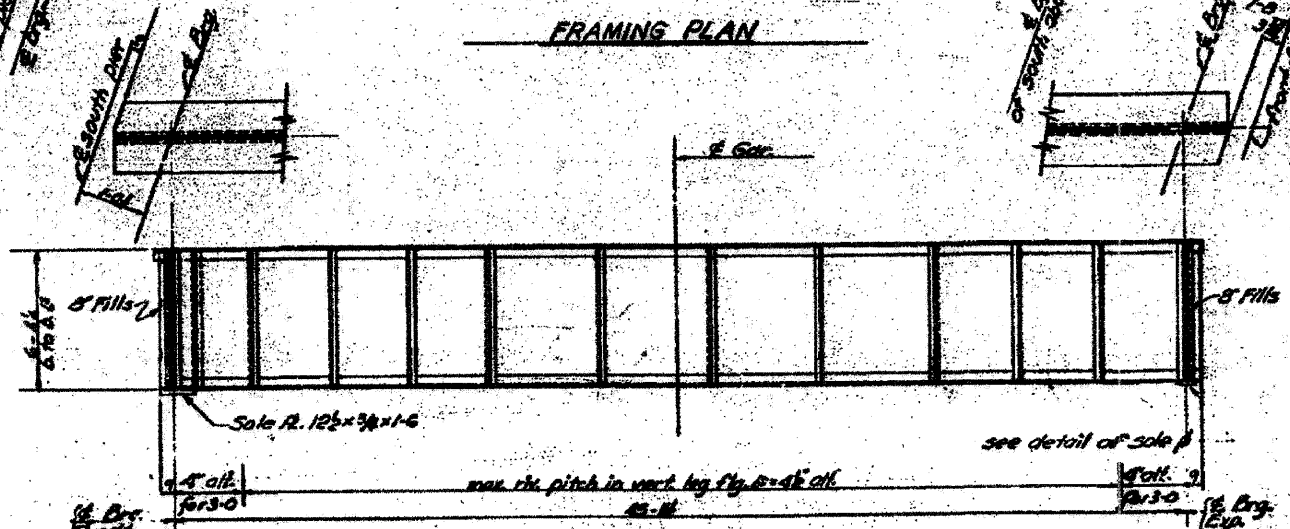
Web # 76-3 = 28.50"  
 Flg. 10 6-6-3  
 (Brig. Stiff. 18.5-4-4 (Cut from 6-4 L))  
 Fil B 8-4  
 (Use 13 Rivets Per Pair (Min))  
 Int. Stiff. 28.5-3-4 on fills @ Diaphragms.  
 2 8-5-8-4 on fills elsewhere.

**Diaphragms**

Web # 3 7/8"  
 Flg. 28 4-4-4  
 6 Rivets

**Top Laterals**

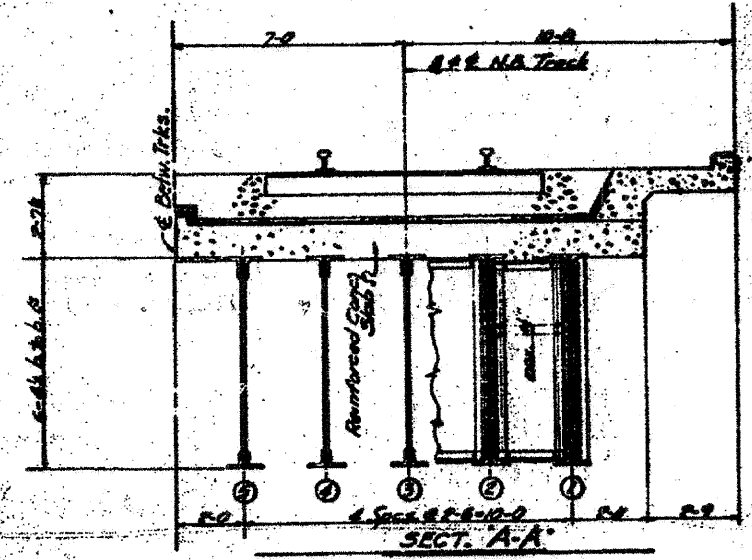
B 4-4-4 - 3 Rivets  
 Gusset R. 1/2"



**ELEV. BACK OF BOT. FLG. B & DRG. SHIM REQUIRED.**

Gtr.	Flg. Shim	Flg. Shim
1	408.27 0	408.15 0
2	408.29 0	408.15 0
3	408.29 1/8	408.15 1/8
4	408.29 1/2	408.15 1/2
5	408.30 1/2	408.16 1/2
6	408.30 3/4	408.16 3/4
7	408.30 1	408.17 1/2
8	408.31 1	408.17 1/2
9	408.31 1/2	408.17 1/2
10	408.31 3/4	408.17 3/4

Elevs. are given @ the intersection of E. Brg. & girders. Shim thickness is the total theoretical thickness req'd.



- NOTES:**
- ① - for details of diaphragm, lateral bracing & connections see sh. #20.
  - ② - for details of bearings see sh. #21.
  - ③ - for General Notes see sh. #1.
  - ④ - Rivets 1" Open Holes 1 1/2"
  - ⑤ - for Framing Notes see sh. #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 "1"  
 FRAMING PLAN SPAN 4  
 N.W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS  
 DATE JULY 1960 SHEET NO. 21

Designed By: L.L.  
 Drawn By: R.L.  
 Checked By: R.K. P.M.E.