

state of compression, the latter is that of tension; the proper condition of the two metals. It is noted, the formulae (3) of the Superintendant of the Texas bridges. Each beam performs its own part in supporting the load in proportion to its distance from the abutment  $\times \times$ . The formulae of calculation are as follows after Lewis  $\times \times$

The tensile resistance of the best American bar iron tables at 80,000 lbs per square inch. Its practical value is generally rated at about  $\frac{1}{2}$  the nominal value. In this design (strain sheet) the highest given value of iron is 16,000 lbs; being somewhat below any probable rate of fibrous separation in any previous data.

One half length of bridge & load

Weight of iron	24,000 lbs
" Timber	15,000 "
" Load	184,000
" Moment	25,000
	<u>248,000 lbs</u> total weight sustained by one rib

Therefore  $\frac{248,000}{2} = 124,000$  lbs on each post or in other words, there is a concentration of 124,000 lbs on each floor beam at the point of suspension.