pressure plus the sum of the transverse components of the initial tensions in the rods meeting at one end.

Initial Tension.—To allow for the stresses caused in adjustable members, the stress in each such member is to be increased by the amount given in the following table:

½ in.	0.50 tons.	1½ in.	2.00 tons.
¾ "	0.75 "	1⅝ "	2.25 "
1 "	1.00 "	1¾ "	2.50 "
1⅛ "	1.25 "	1⅞ "	2.75 "
1¼ "	1.50 "	2 "	3.00 "
1⅜ "	1.75 "		

Square or flat bars are to receive the allowance for equivalent round rods.

Connection for Lateral Systems.—Whenever it be possible the lateral rods of both upper and lower systems are to be connected directly to the chord pins. But if the rod exceed one and three-quarters inches diameter, bent eyes are not to be employed. Lower lateral rods are not to be attached to the floor beams unless the latter be rivetted to the posts. To make the lateral rods clear the joists, wooden lateral struts resting on the floor beams, and having wrought iron jaws at their ends attached to the chord pins, are to be employed for the joists to rest upon. These wooden struts are to be bolted every two or three feet through the top flange of the floor beam by half inch bolts. Should the sizes of the lateral rods be such as to prevent the use of bent eyes, pins dropped vertically through the jaws are to be employed.

Stresses in End Lower Lateral Struts.—In figuring the stresses in a lower lateral strut at the roller end of a bridge the stress caused by the wind pressure is to be added to the transverse component of the initial tension in the end lateral rod, and from the sum is to be substracted the product of the pressure on the windward shoe, when the bridge is empty and subjected to the greatest wind pressure, by the co-efficientof friction of iron upon iron, which is about 0·25 for this case.

Stiffened End Panels.—In any panel of a bridge, where the longitudinal component of the greatest allowable working stress in the lower lateral rod exceeds the tension in the lower chord of that panel caused by the dead load alone, the bottom chord of that panel must be made to resist both tension and compression.

Where two channels are employed for the lower chord section, the effective area of the webs alone must be counted upon to resist tension.

Top Chord and Batter Brace Sections.—The top chord and batter braces shall consist of two channels with a plate above and latticing below, the lattice bars being rivetted together where they cross. Broad lacing with two rivets at each end may be substituted for the latticing.

The top plates must be of the same section throughout, the increase of section from the ends to the middle being obtained by thickening the webs of the channels.

Post Sections.—Posts are to consist of two channels with lattice bars rivetted together where they cross, or as in the chords and batter braces, broad lacing may be substituted for the latticing. The upper ends of the posts may be either rigidly attached to the upper chords by plates or may be hinged on the upper chord pins.

Upper Lateral Strut Sections.—Upper lateral struts are to be formed of two channels bars laced or latticed and rigidly attached at their ends to the chords.

Sections of Bars.—Wherever practicable, the ratio of the width to depth of bars is to be made as nearly as possible equal to one to four.

Working Tensile Stresses.—The intensities of working stresses for iron in tension in the various members are to be as given in the following table:

Members.	Working stresses in tons of 2,000" per sq. in.	
	Class A.	Class B and C
Main diagonals and lower chord bars.	5.00	6.25
Centre diagonals, counters and hip verticals.	4.00	5.00
Flanges of rolled beams.	5.00	6.00
Flanges of built beams (net section.)	4.00	5.00
Lateral rods and vibration rods.	7.50	7.50
Beam hangers.	3.00	4.00

Working Compressive Stresses.—For struts composed of two channels with plates or lacing or latticing the following formula are to be used in finding the intensities of working compressive stresses.

For chords, batter braces and posts in bridges of class A.

$$p = \frac{\dfrac{f}{1 + \dfrac{H^2}{C}}}{4 + \dfrac{H}{20}} \quad \text{and } p = \frac{\dfrac{f}{1 + \dfrac{H^2}{C}}}{4 + \dfrac{H}{30}}$$

For lateral struts in class A and all compressive members in classes B and C, p being the intensity of working stress,

$$H = \frac{\text{length of strut.}}{\text{least diameter of strut.}}$$

$$f = \begin{cases} 38{,}500 \text{ for two fixed ends.} \\ 38{,}500 \text{ for one fixed end and one hinged end.} \\ 37{,}800 \text{ for two hinged ends.} \end{cases}$$

$$\text{and } C = \begin{cases} 5{,}820 \text{ for two fixed ends.} \\ 3{,}000 \text{ for one fixed end and one hinged end.} \\ 1{,}900 \text{ for two hinged ends.} \end{cases}$$

Where I beams are employed for intermediate lateral struts or end lower lateral struts, the intensities of working stresses are to be found by dividing the ultimate resistances, as given by the maker, by the product of the area of the sections and the expression

$\left\{4 + \dfrac{H}{80}\right\}$, H — being the number of diameters.

For the flanges of rolled beams the intensities of working compressive stress are to be taken equal to five tons for bridges of class A, and six tons for bridges of classes B and C. For the flanges of built beams the intensities of working compressive stress are to be taken equal to four tons on the gross section for class A, and five tons on the gross section for classes B and C.

Working Shearing and Bending Stresses.—The intensities of working shearing stresses on pins and rivets are to be three tons for bridges of class A, and three and three-quarters tons for bridges of classes B and C. The intensities of working bending stresses on pins are to be seven and a half tons for bridges