large moment of inertia. Bending moment has then been worked out for a single load as a function of thrust and deflection. Deflection has been eliminated from the moment deflection relation to yield and equation expressing moment as a function of the thrust, the position of the load and the position of the section at which the moment is required.

Thrust has been found by the method of least work. It depends on the work done in bending the stiffening girders, stretching the cables including backstays and that due to temperature strains. It must therefore be worked out independently for each case. The following solution allows for the work done in bending only and will generally give results within 5%.

Work done in bending the girder = $F = \frac{1}{2EI} M^2 dx$

Where

M is bending moment at a point due to load W.
E is modulus of elasticity
and I is moment of inertia of floor
Differnentiating the above equation w.r.t thrust H,
equating it to zero and putting $M = M^o - Hay$

$$H = \frac{M^o ydx}{a \quad y^2 dx}$$

where

H = thrust due to load W

M^o = bending moment in girder assuming no cable.

To find the influence line for H, assume a single load W and let
$M^o = Wam^o$

where

$m^o = 1/2(1 - z)(1 + x) \quad X < Z$

and $m^o = 1/2(1 + z)(1 - x) = 1.2(1 - 2)(1 + x) - (x - z) ; X > Z$