regime of Hooke's law. There is no phase of a nonlinear law elasticity and consequently, the relations of elastic loading shown remain valid.

CONCLUSIONS

The graphical method described allows the resolution of problems relative to elastic loading in a more varied manner than that of the calculations. It allows a better examination of the variables that can be worked on to bring back the end of the vector of load on, or at the interior, of the elastic boundary. Furthermore, using the Tresca criterion makes the graphical construction remarkably easy.

APPENDIX.—NOTATION

The following letter symbols have been adopted for use in this paper:

k = $\dfrac{r_e}{r_i}$;

L = longitudinal load;

M = k^2;

p_e = external pressure;

p_h = hydrostatic pressure;

p_i = internal pressure;

p_l = $-\dfrac{L}{\left(r_e^2 - r_i^2\right)}$;

p_e', p_i', p_l' = projections of p_i, p_l, p_e onto the plane π;

r, θ, z = cylindrical coordinates;

r_e = external radius;

r_i = internal radius;

V = minor axis of the ellipse;

V_1, V_2, V_3 = components used to define the angle, ψ;

W = major axis of the ellipse;

W_1, W_2, W_3 = components used to define the angle, ψ;

Z = axes pointing in the direction (1, 1, 1);

Z_0 = $\frac{1}{\sqrt{3}}\left(p_i + p_l + p_e\right)$;

σ_c = elastic limit for pure compression;

σ_M = major stress;

σ_m = minor stress;

σ_0 = elastic limit for pure tension;

σ_r = radial stress;

σ_z = longitudinal stress;

σ_θ = circumferential stress;

χ_1, χ_2 = components used to define the angle, ψ;

ψ = angle V, p'_e; and

$\overrightarrow{OP}$ = load vector.