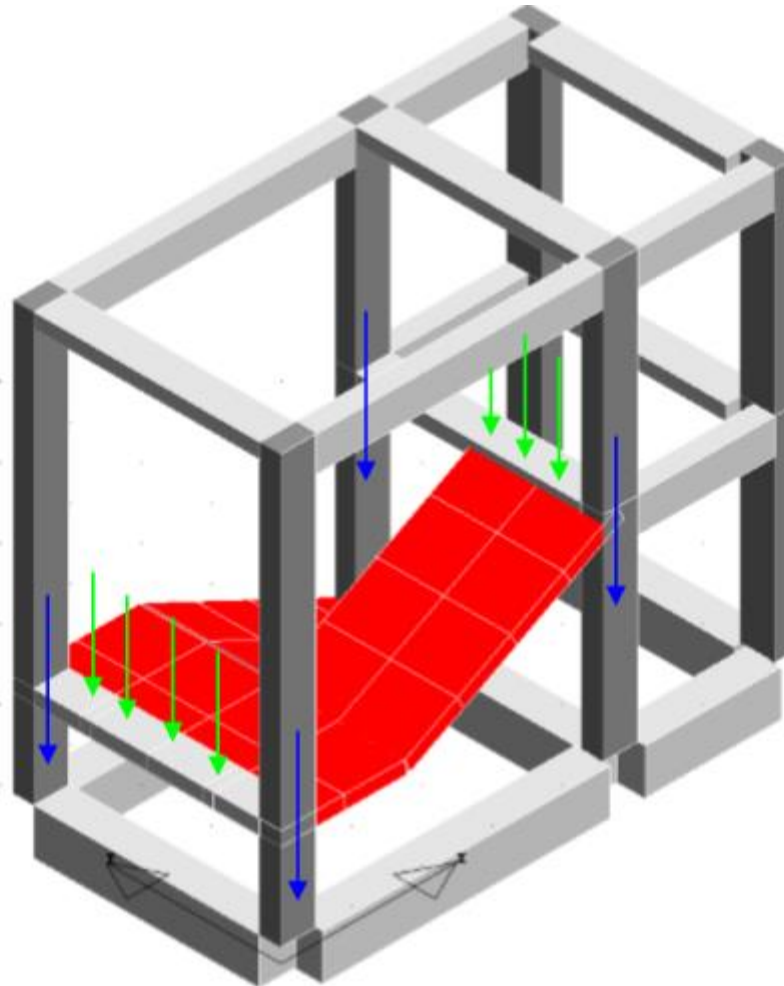


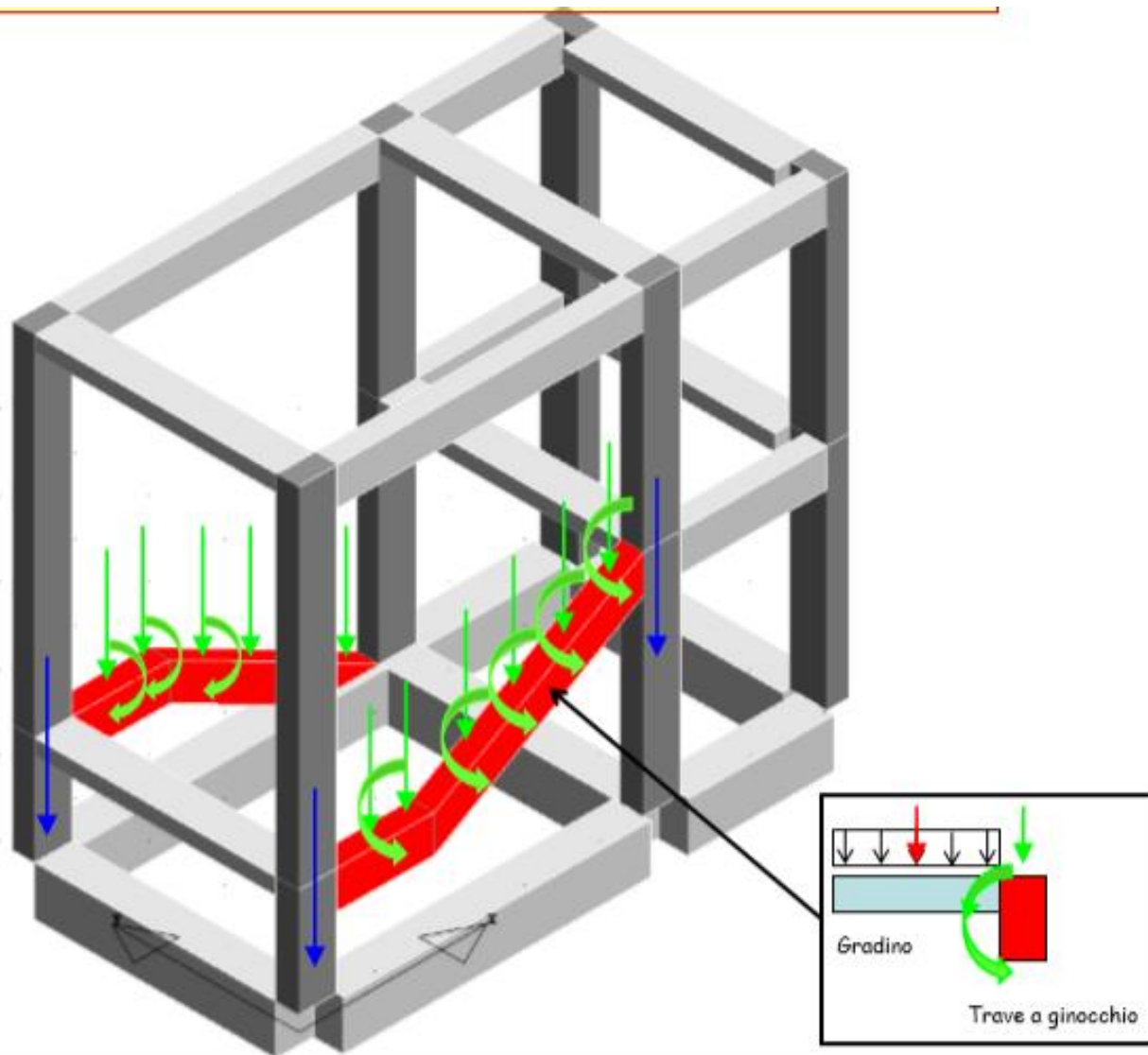
Soluzione 1.

Soletta Rampante Le rampe sono strisce di solaio rampanti



Soluzione 2.

Gradini a sbalzo da **Travi a Ginocchio**.



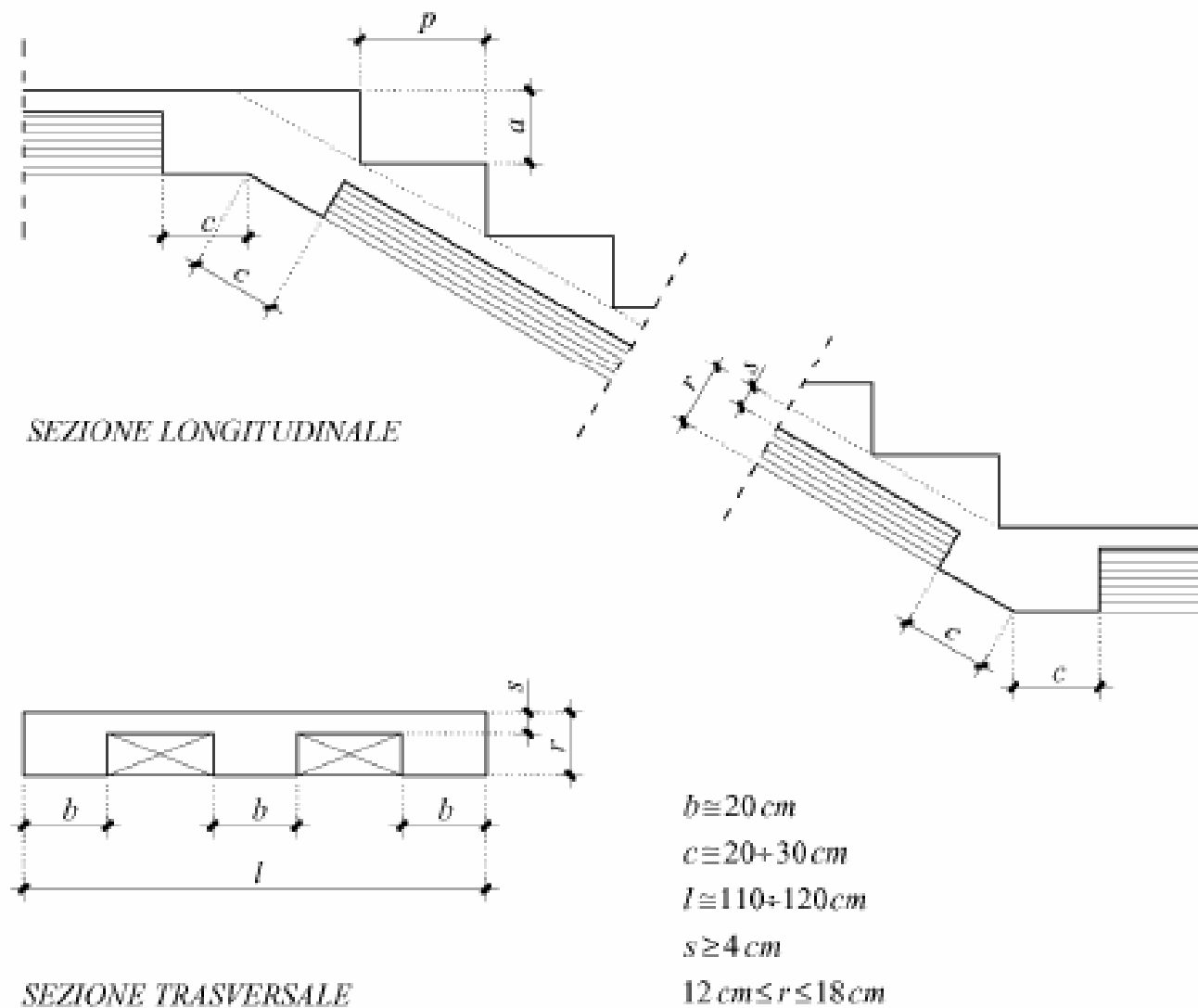
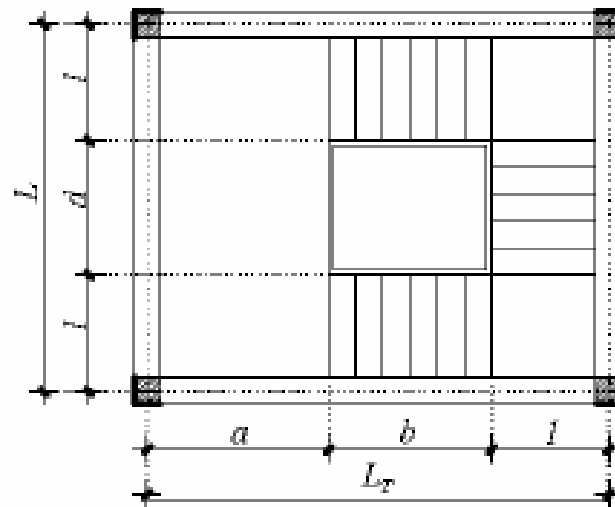
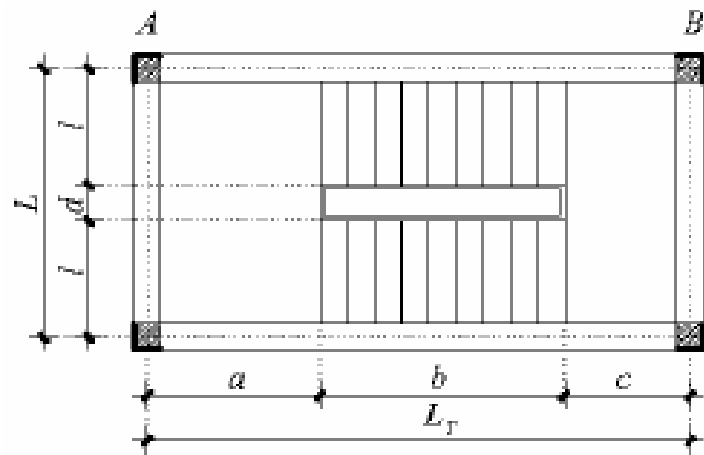


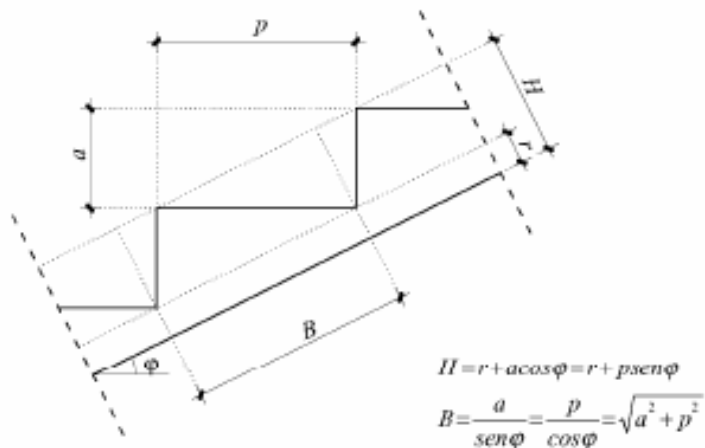
fig. 18 - Soletta latero-cementizia a due ginocchi



carico ripartito sulle rampe = g'

carico ripartito sui pianerottoli = g

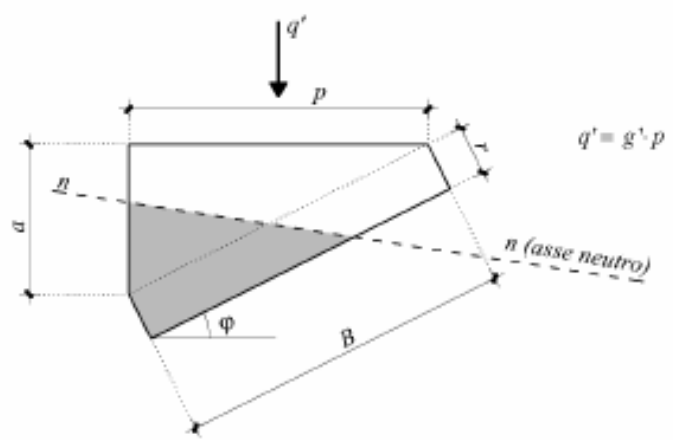
fig. 52 - Vano scala a due e tre rampe



$$H = r + a \cos \varphi = r + p \sin \varphi$$

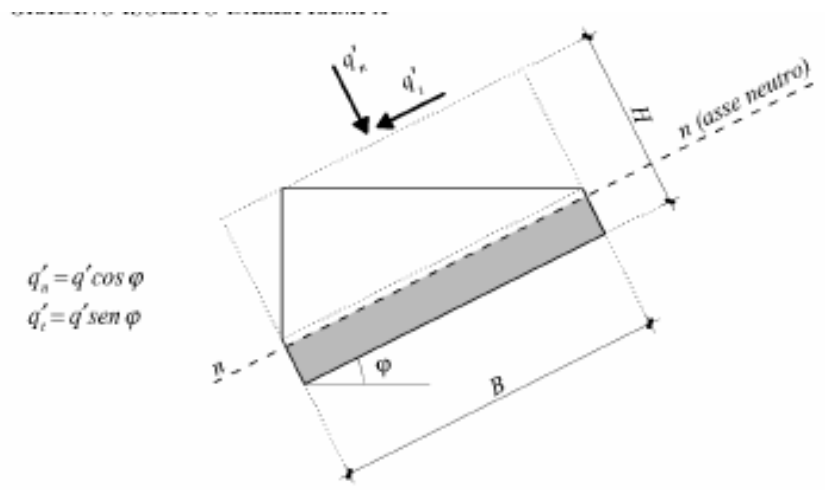
$$B = \frac{a}{\sin \varphi} = \frac{p}{\cos \varphi} = \sqrt{a^2 + p^2}$$

SEZIONE LONGITUDINALE RAMPA



$$q' = g' \cdot p$$

GRADINO ISOLATO DALLA RAMPA



$$q'_n = q' \cos \varphi$$

$$q'_t = q' \sin \varphi$$

GRADINO SOLIDARIZZATO ALLA RAMPA

fig. 53 - Rampa di gradini a sbalzo

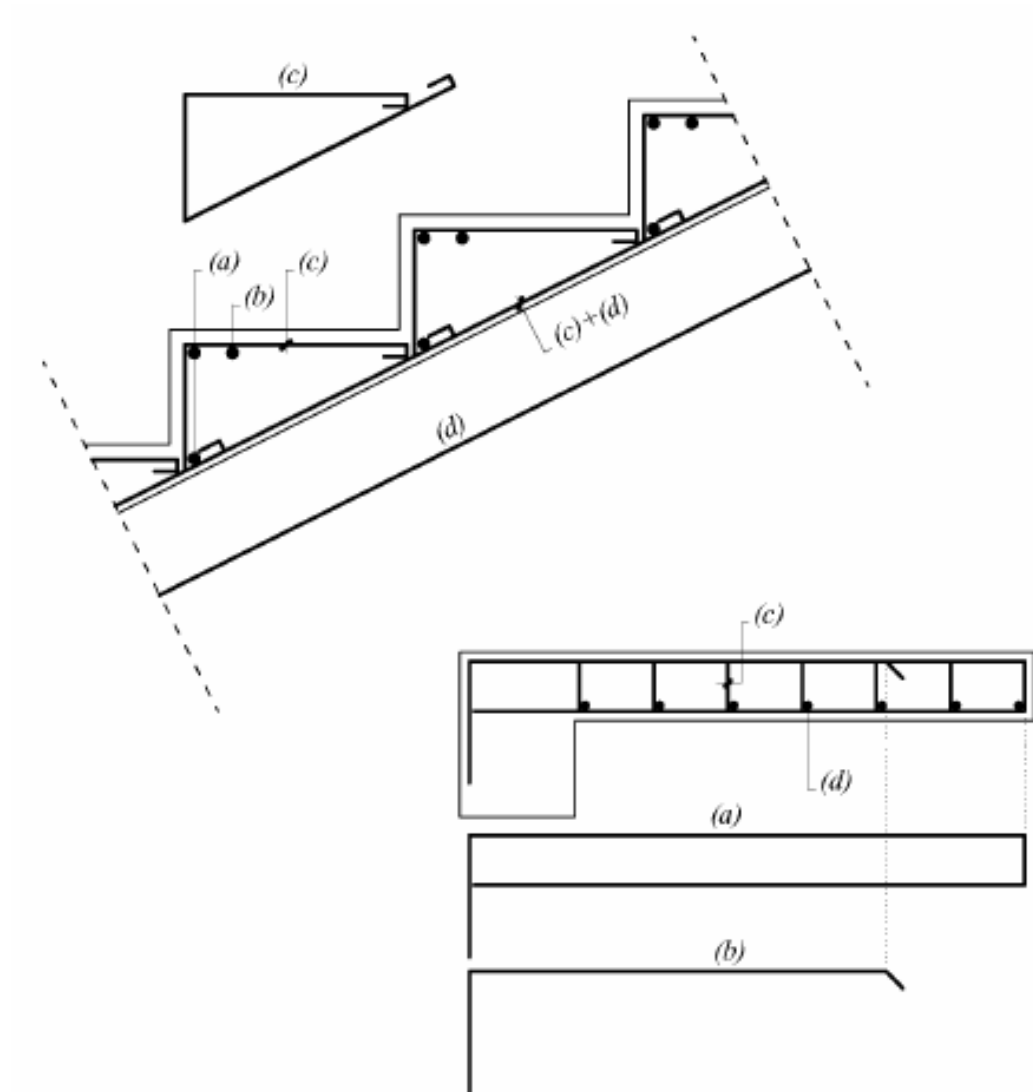


fig. 68 - Gradini a sbalzo: armatura tipo

Travi a ginocchio.

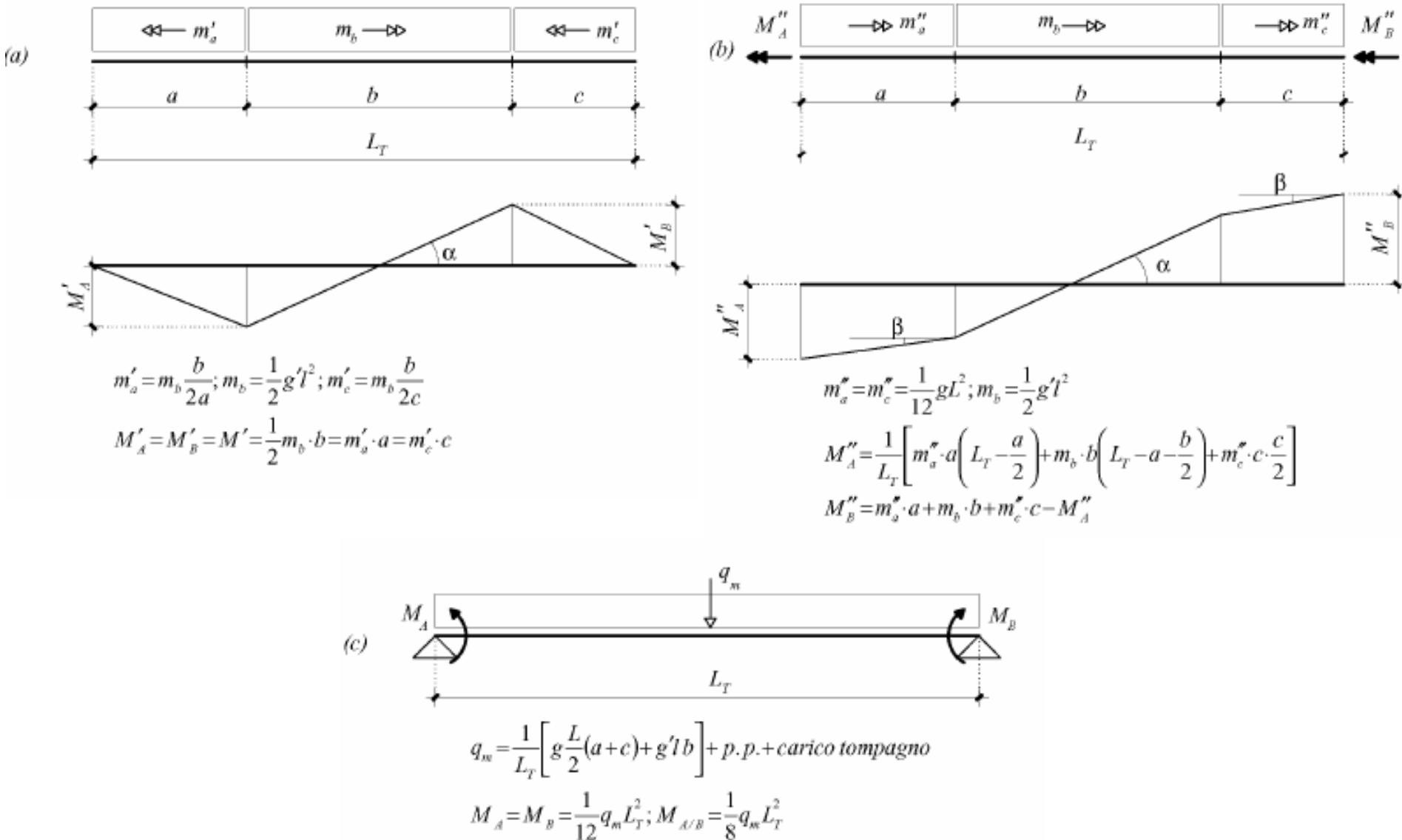


fig. 55 - Trave a doppio ginocchio: schemi statici

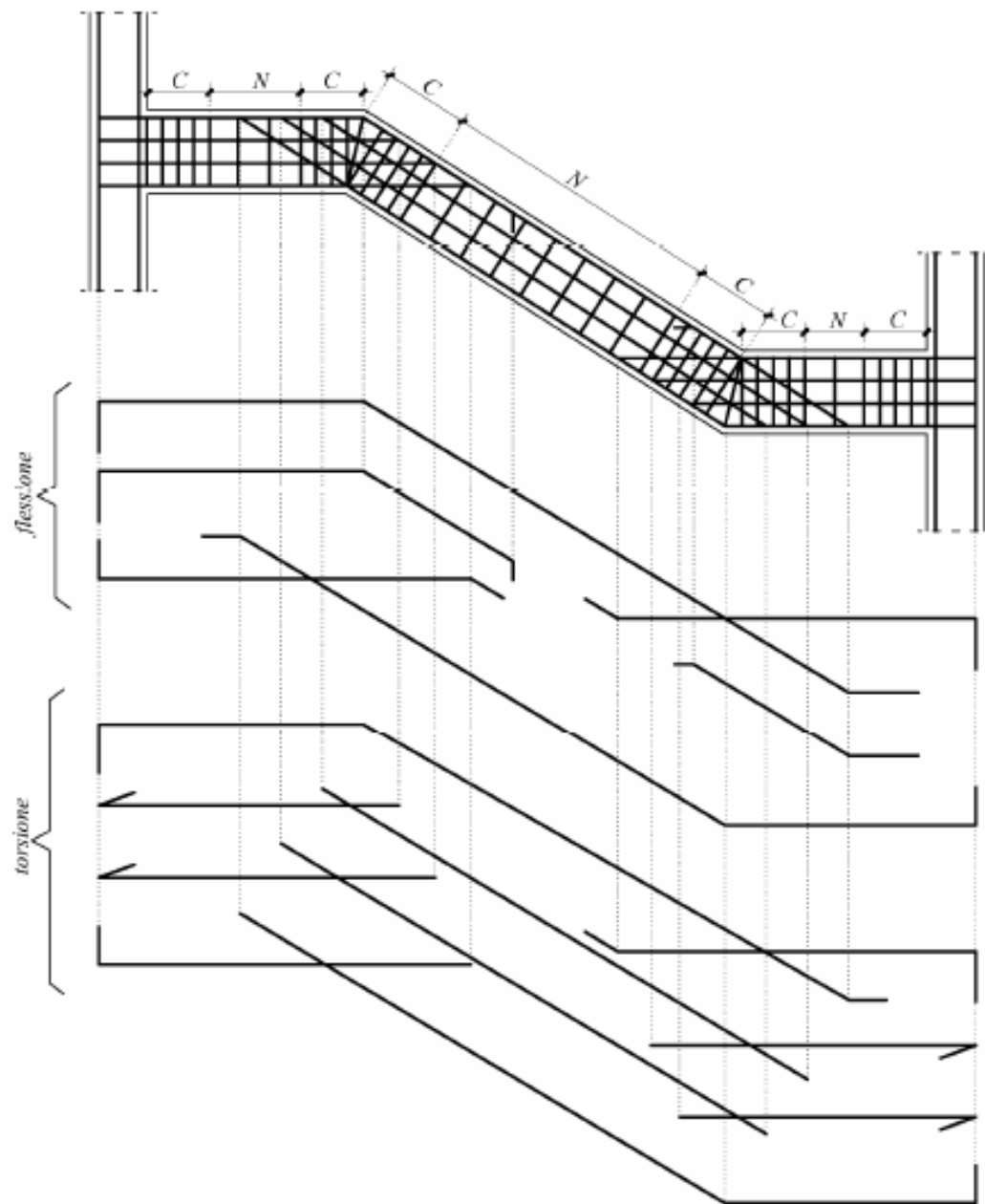


fig. 75 - Trave a due ginocchi: armatura tipo

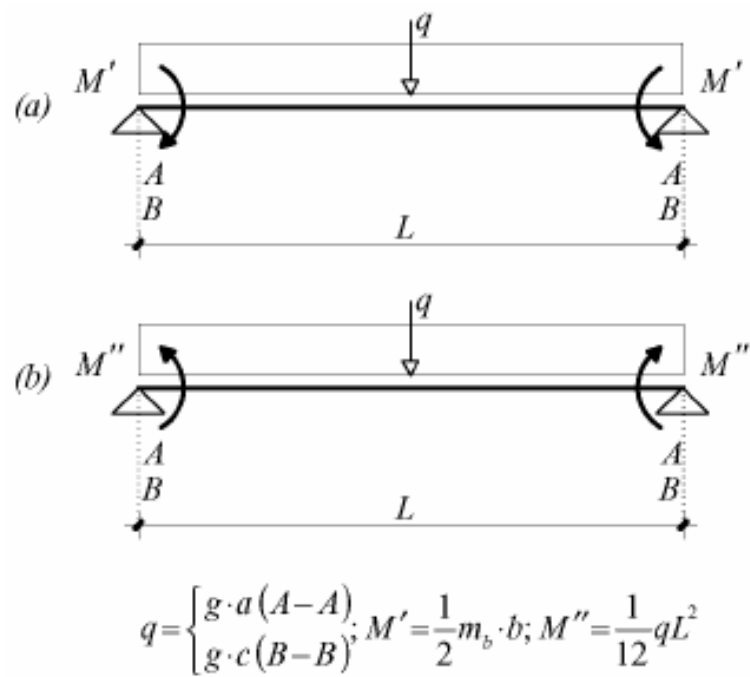


fig. 56 - Pianerottoli: schemi statici

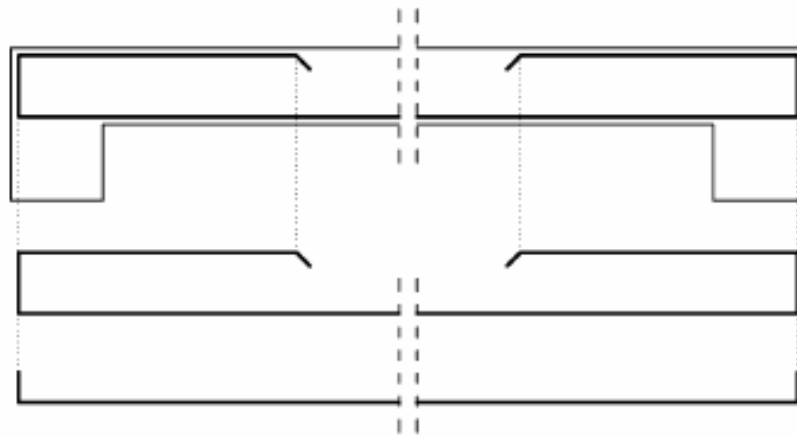
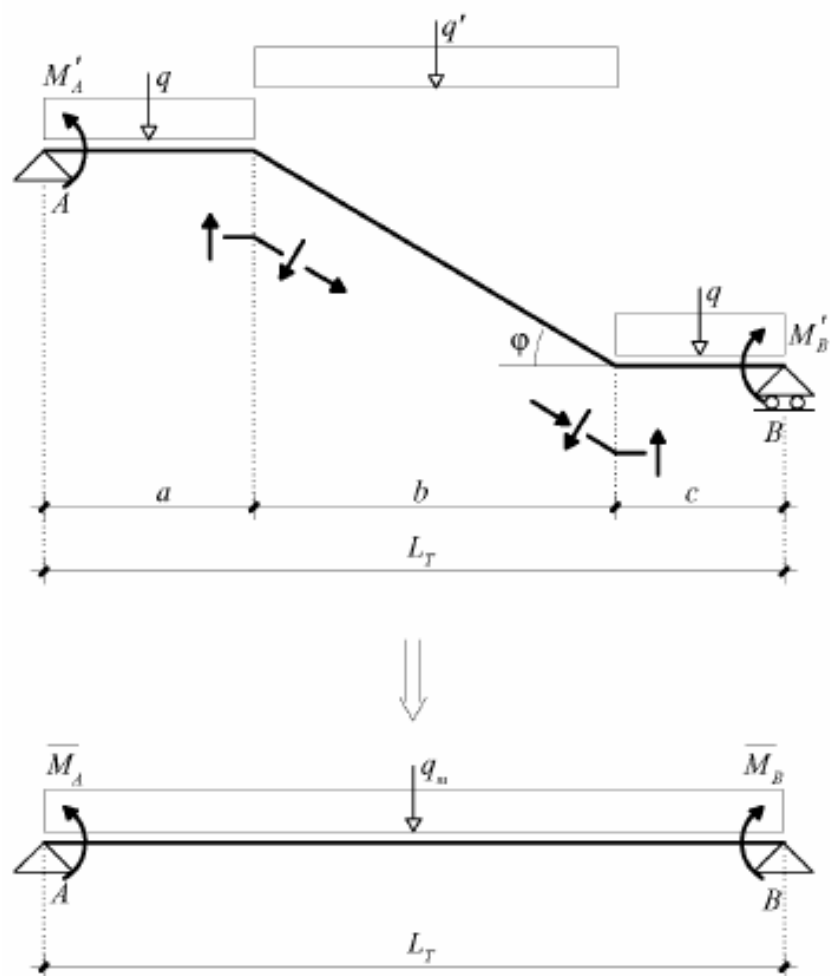
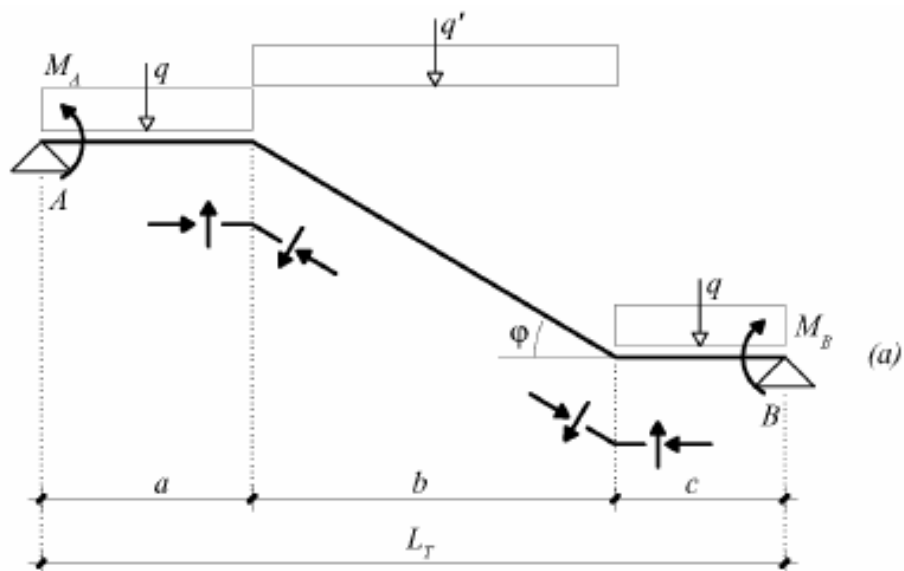


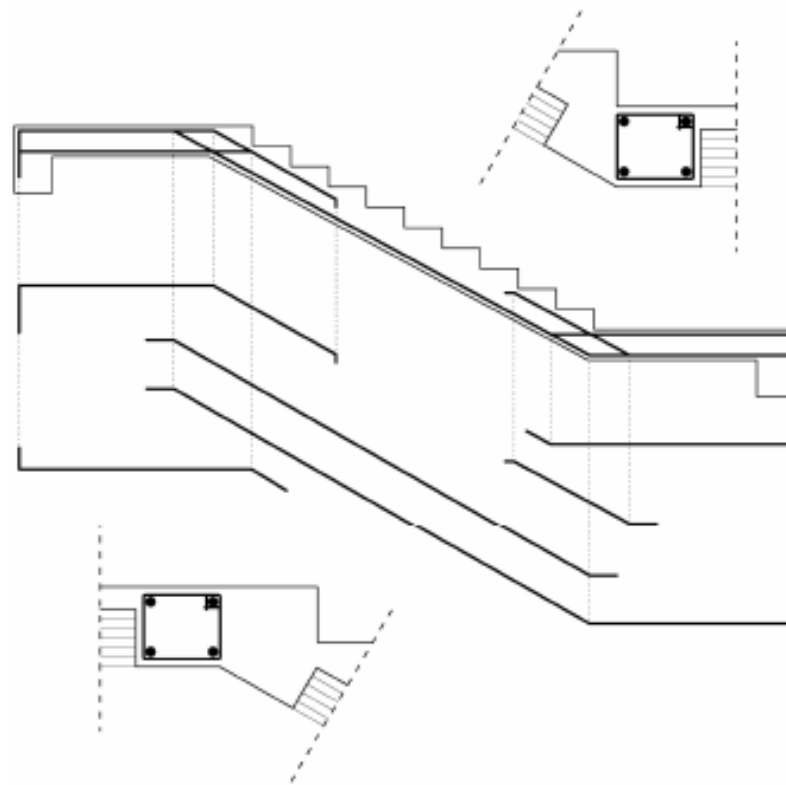
fig. 69 - Soletta pianerottolo: armatura tipo



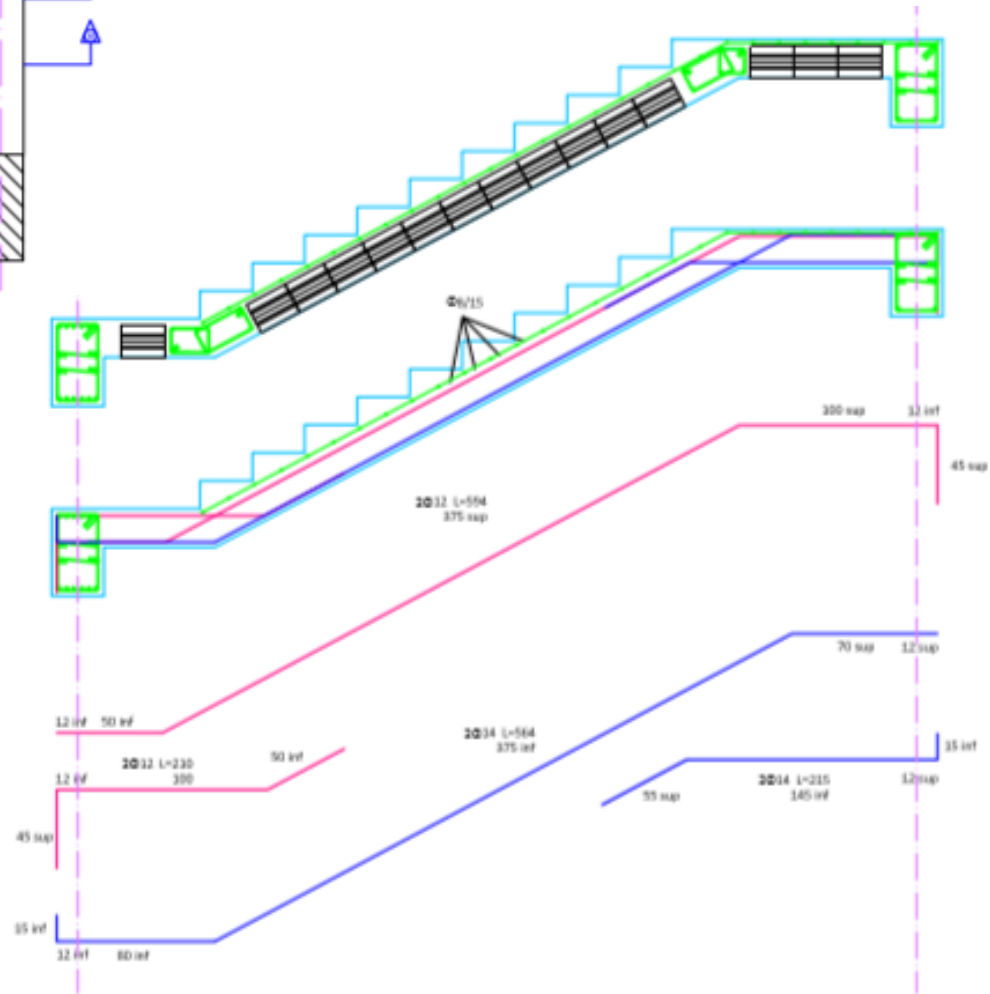
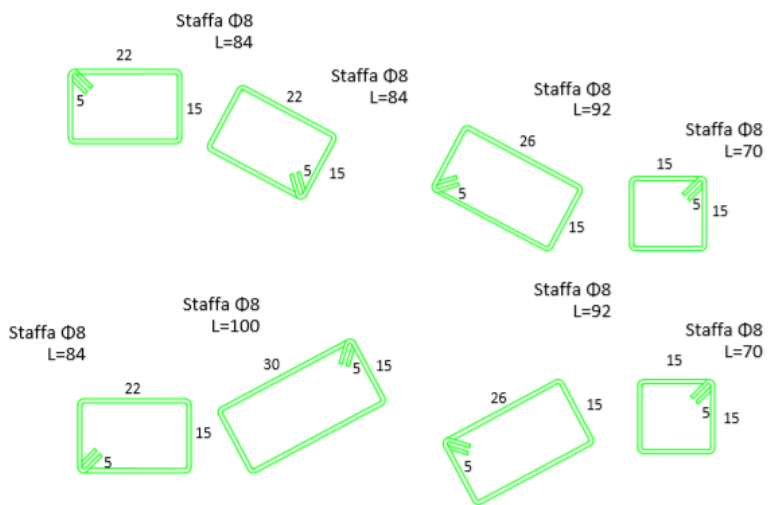
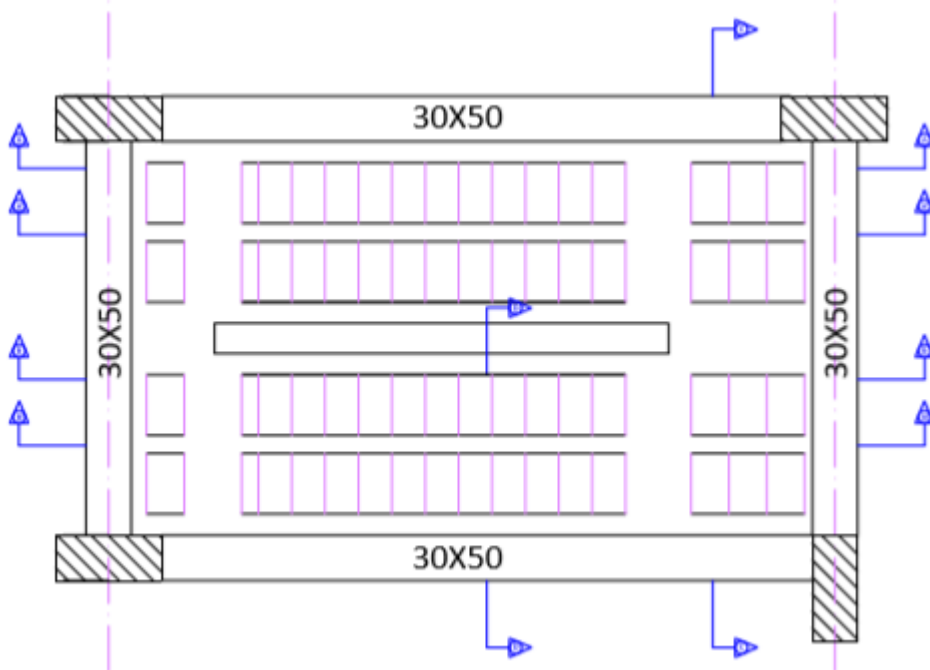
$$q = g \frac{L}{2}; \quad q' = g'l; \quad q_n = \frac{q(a+c) + q'b}{L_T}$$

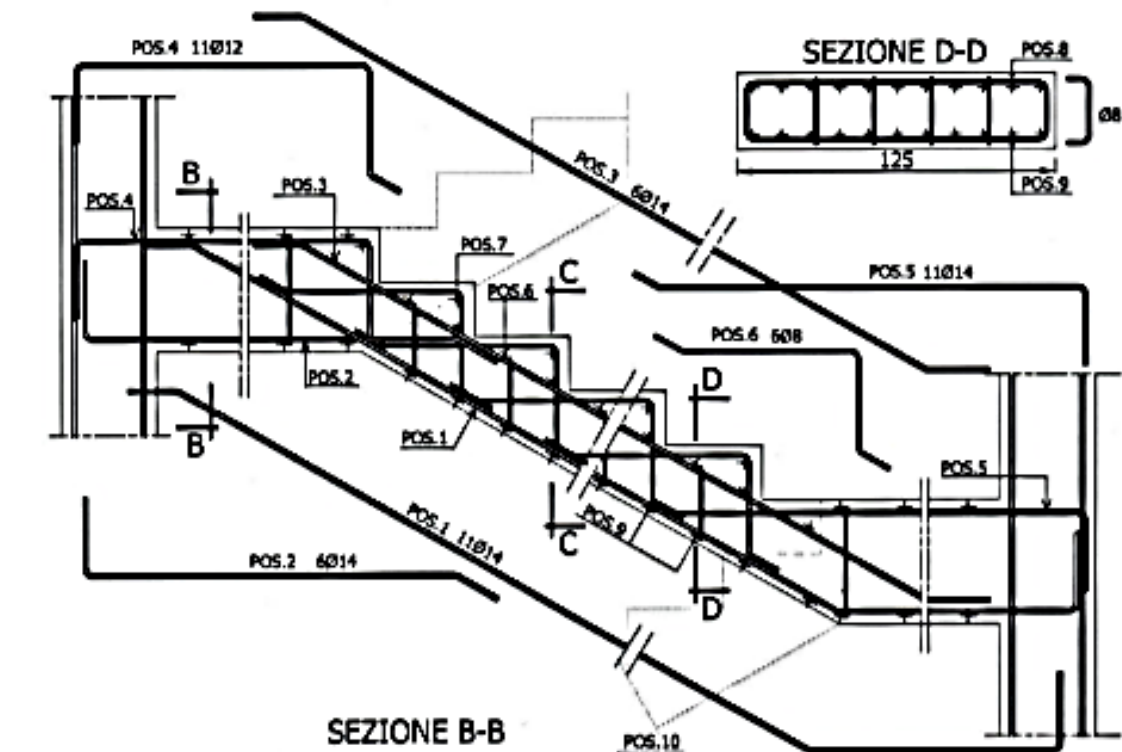
$$\frac{1}{40} q_m L_T^2 \text{ (min)} \quad \text{e} \quad \frac{1}{20} q_m L_T^2 \text{ (max).}$$

fig. 54 - Soletta a doppio ginocchio: schemi statici



*fig. 67 - Soletta latero-cementizia a due ginocchi:
armatura tipo*





SEZIONE D-D



SEZIONE C-C



SEZIONE B-B

