

Fondazioni su pali

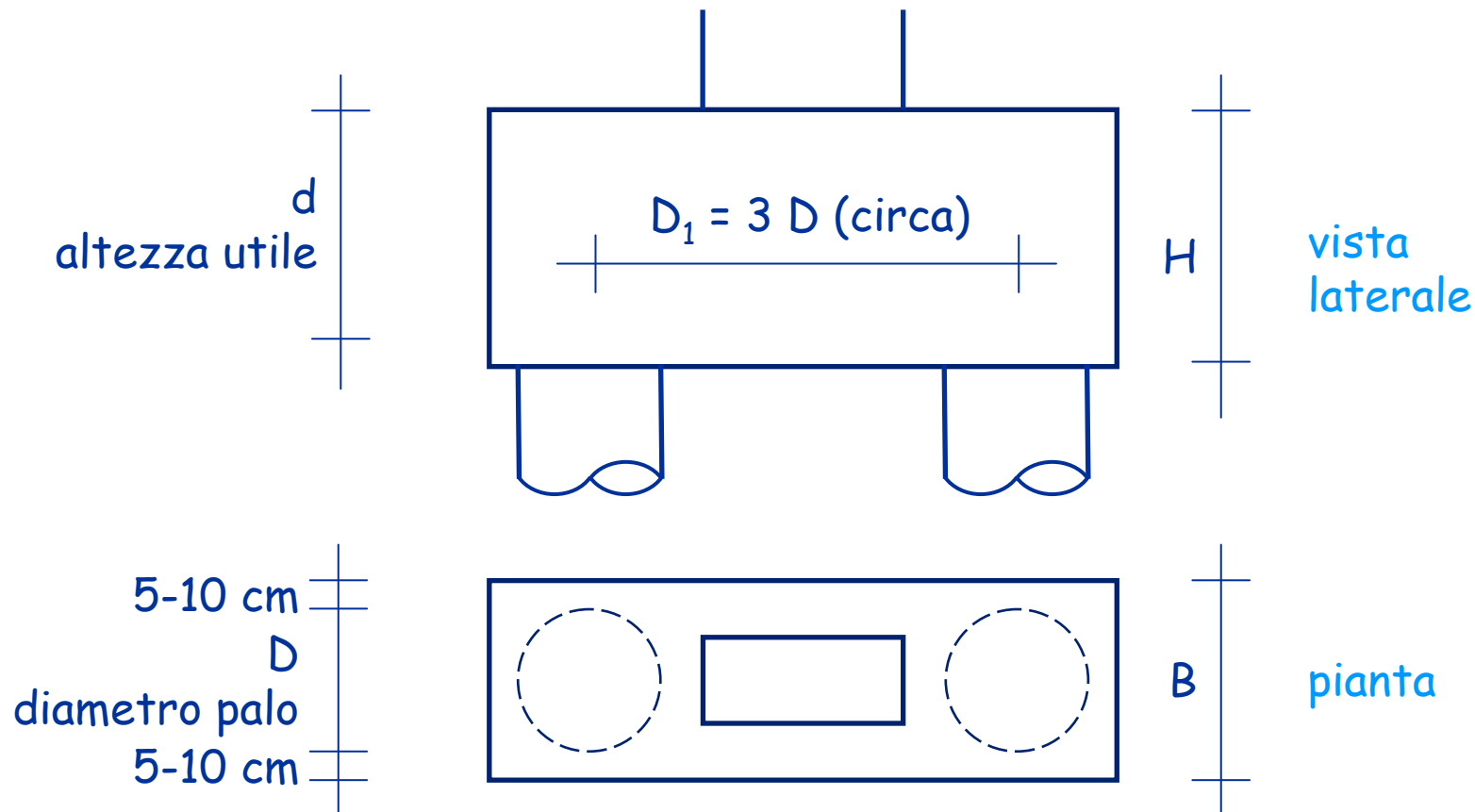
Armature e verifiche strutturali

5-6 giugno 2013

Aurelio Ghersi

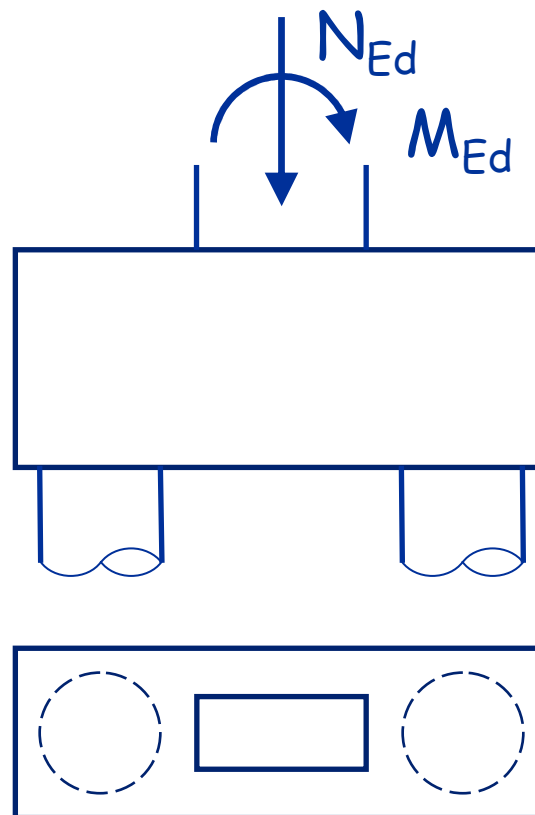
Plinto a due pali

- È l'elemento base, al quale possono ricondursi tutti gli altri casi, di plinti a più pali



Plinto a due pali

- Azioni sul plinto

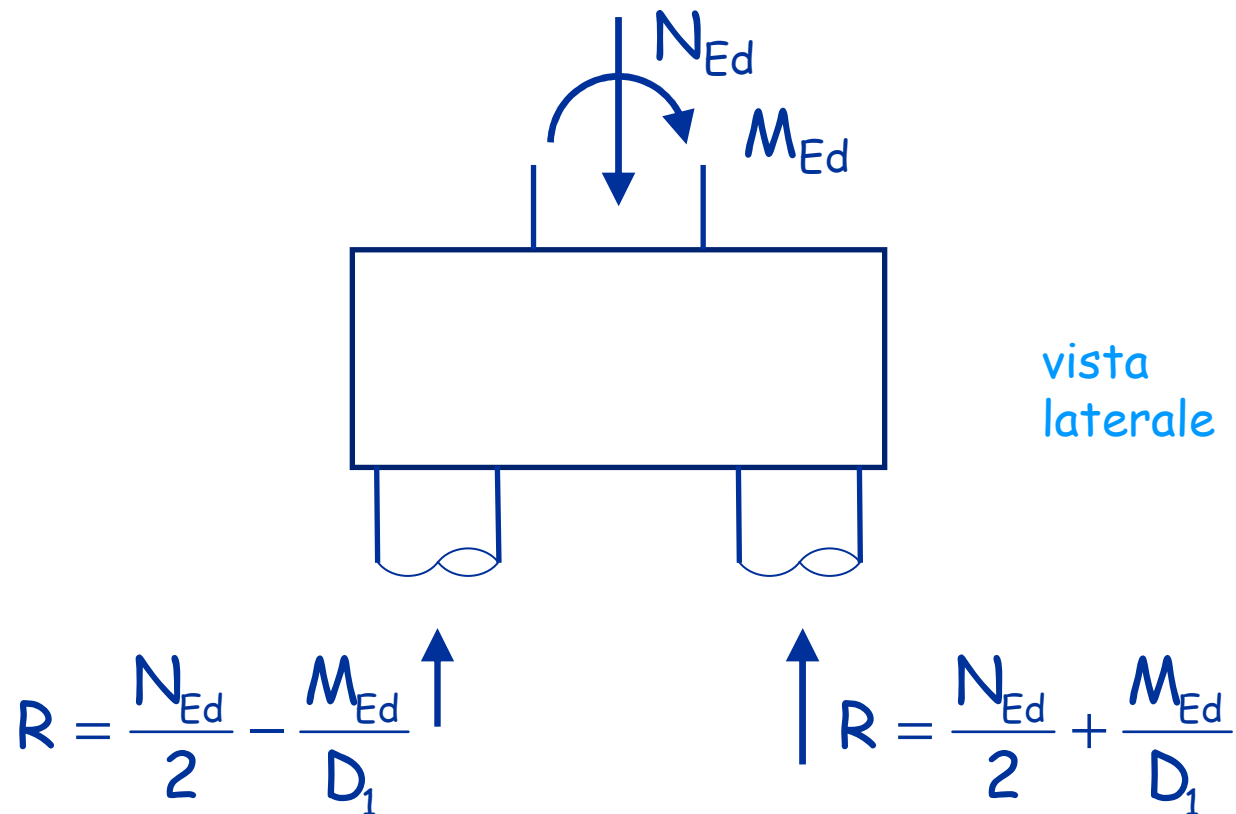


vista
laterale

pianta

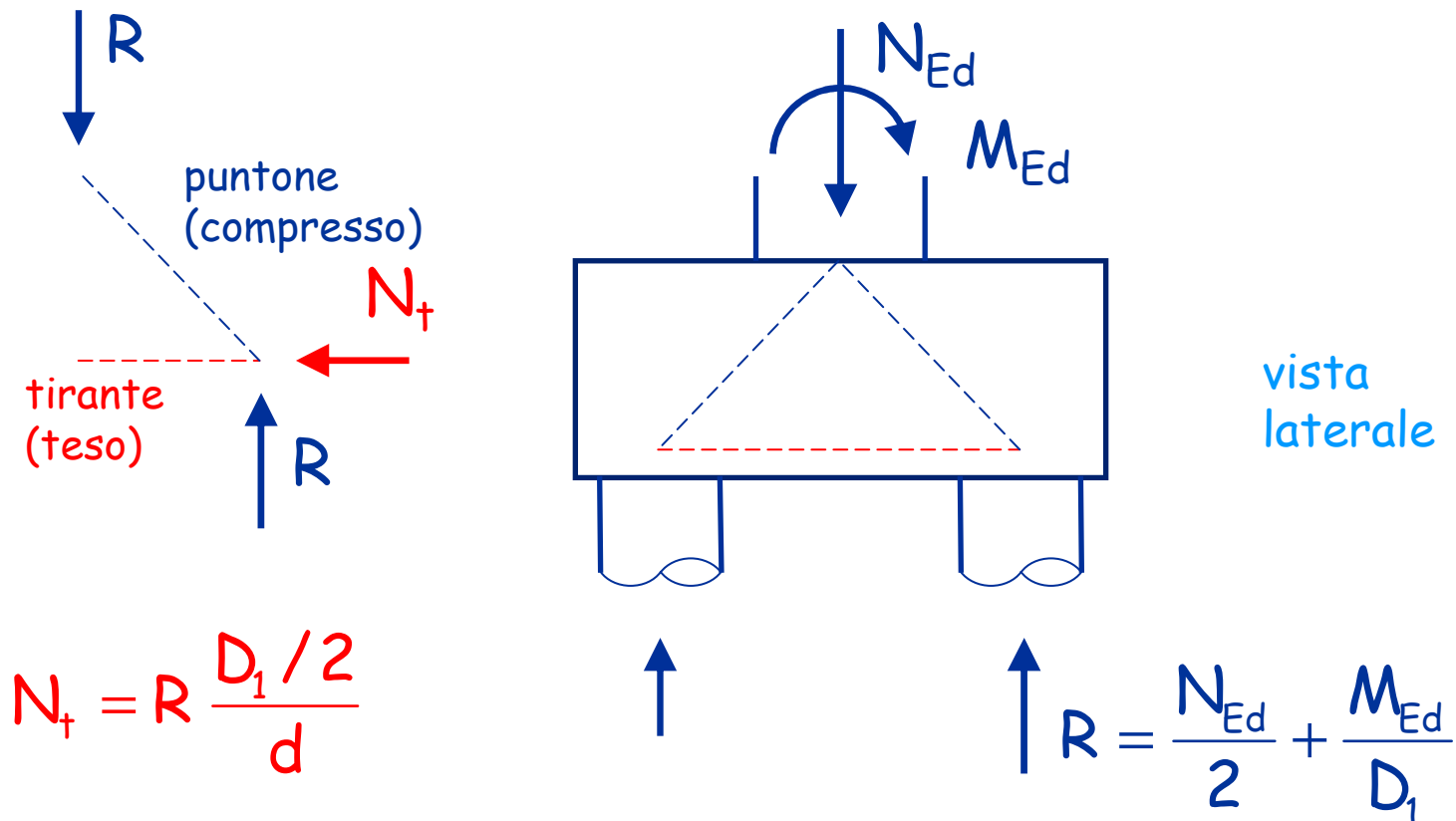
Plinto a due pali

- Reazioni dei pali



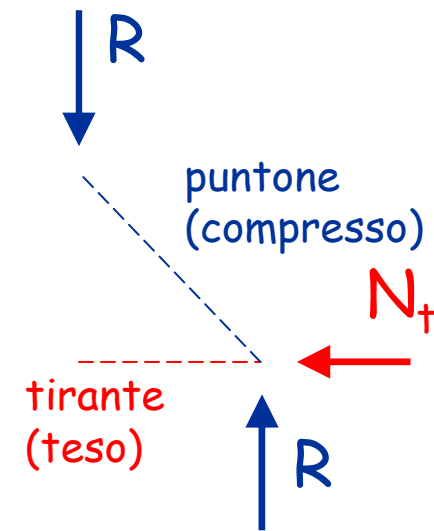
Plinto a due pali

- Modello di comportamento (tirante-puntone)

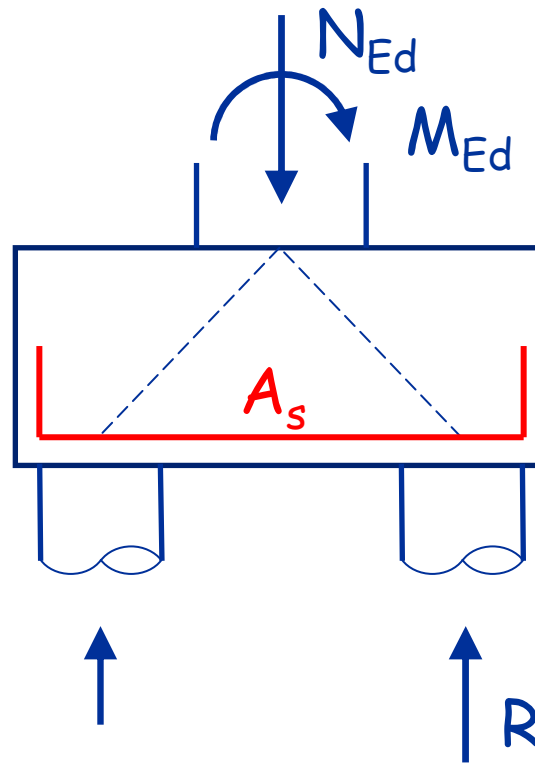


Plinto a due pali

- Modello di comportamento (tirante-puntone)



$$N_t = R \frac{D_1/2}{d}$$



Armatura
inferiore

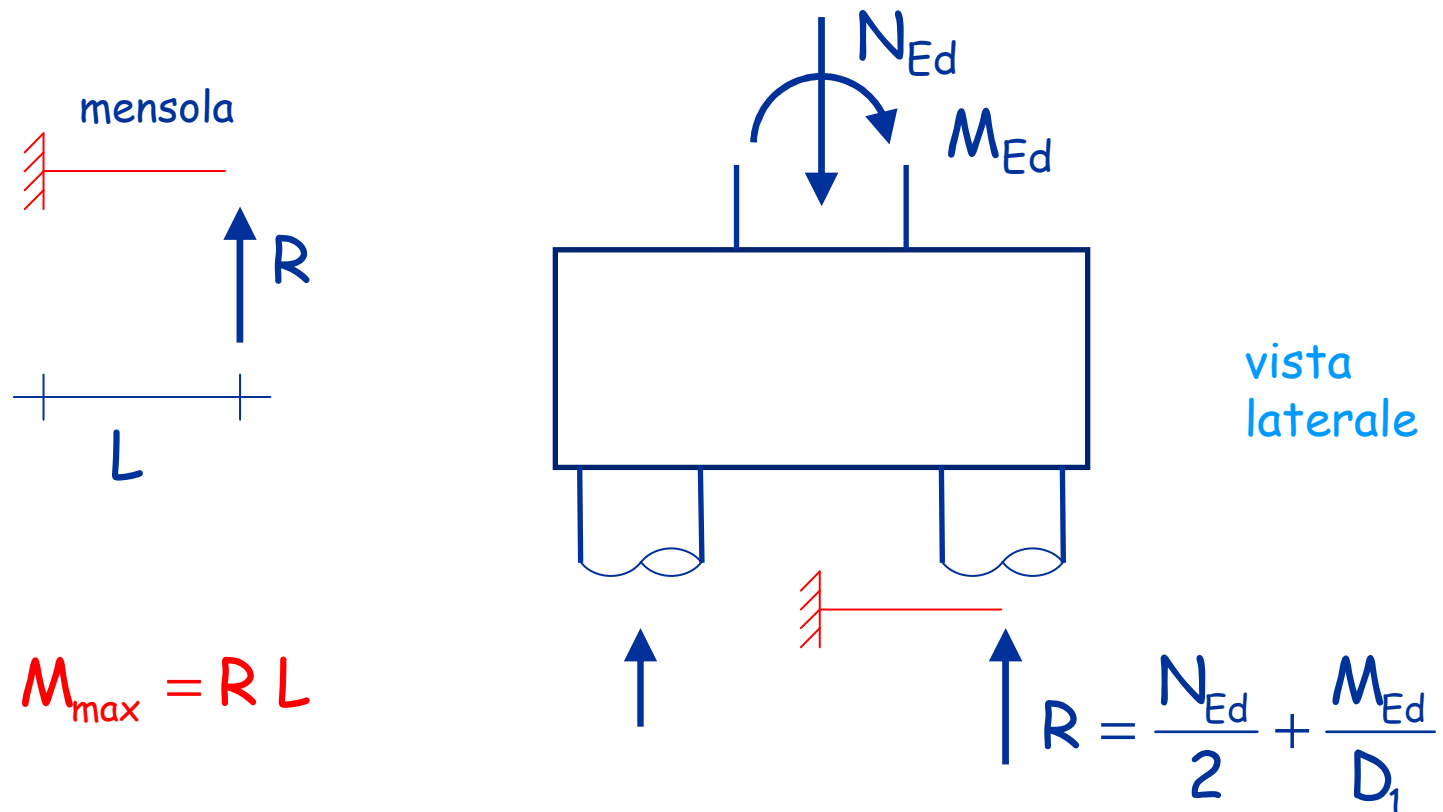
$$A_s = \frac{R D_1 / 2d}{f_{yd}}$$

vista
laterale

$$R = \frac{N_{Ed}}{2} + \frac{M_{Ed}}{D_1}$$

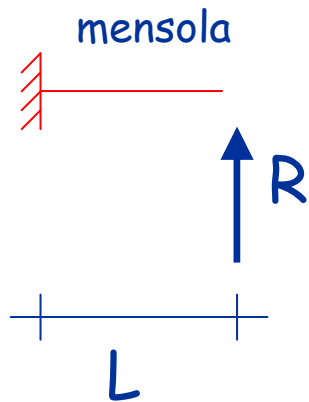
Plinto a due pali

- Modello alternativo (mensola)

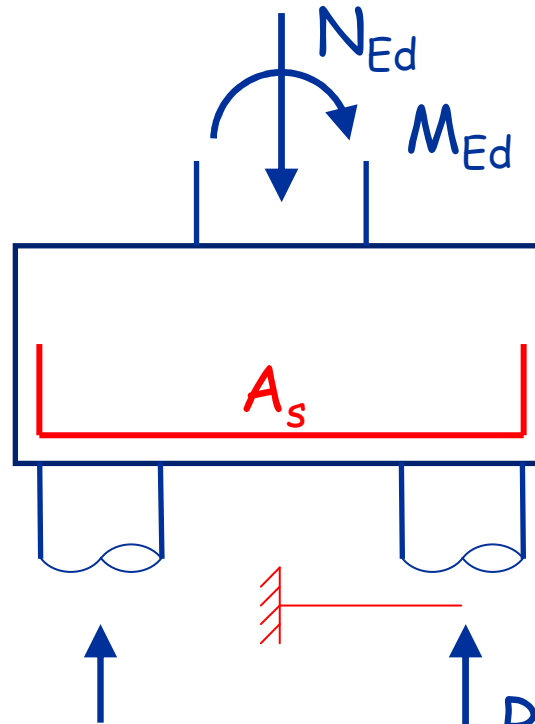


Plinto a due pali

- Modello alternativo (mensola)



$$M_{\max} = R L$$



Armatura
inferiore

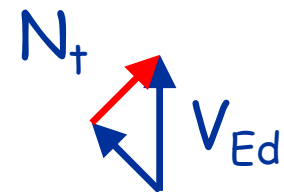
$$A_s = \frac{R L}{0.9 d f_{yd}}$$

vista
laterale

$$R = \frac{N_{Ed}}{2} + \frac{M_{Ed}}{D_1}$$

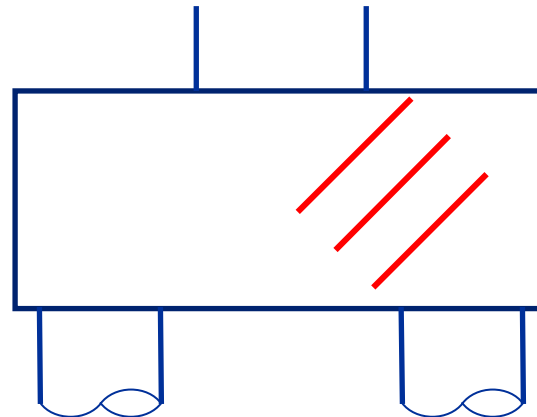
Plinto a due pali

- Confronto tra i due modelli:
 - l'armatura inferiore è sostanzialmente la stessa perché $L/0.9 \approx D_1/2$
 - il modello a mensola richiede anche armatura a taglio (in genere realizzata con sagomati), non prevista dal modello tirante-puntone



$$V_{Ed} = R$$

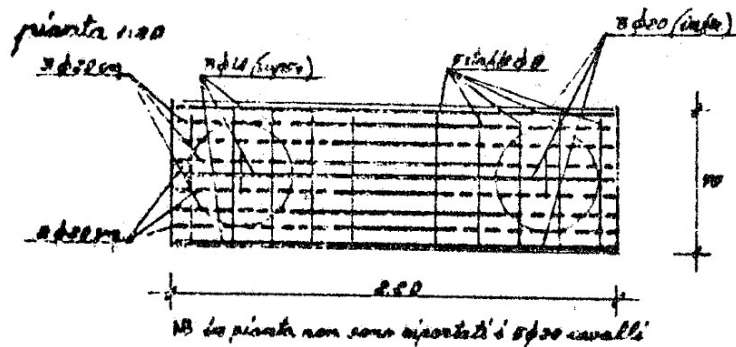
$$N_t = \frac{R}{\sqrt{2}}$$



$$A_{sag} = \frac{R}{\sqrt{2} f_{yd}}$$

vista
laterale

- **Esempio** (da Pagano, Teoria degli edifici. Edifici in cemento armato)



Technical drawing showing a stepped profile with dimensions and a cross-section.

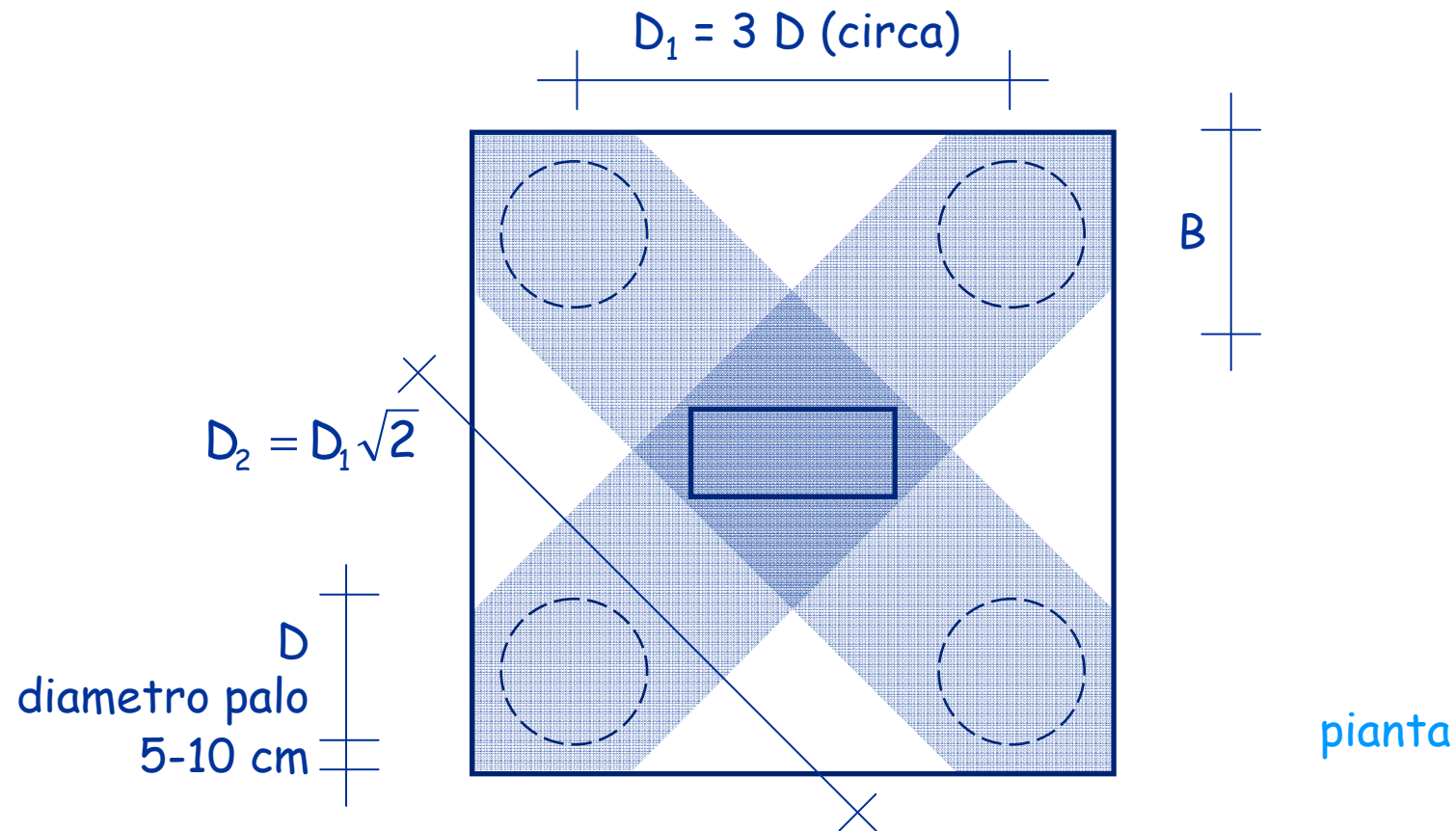
The profile consists of four horizontal segments and four inclined segments. The dimensions are as follows:

- Top horizontal segment: 2.10
- Second horizontal segment: 1.00
- Third horizontal segment: 1.00
- Bottom horizontal segment: 2.10
- Inclined segments (from top to bottom): 60, 70, 70, 60

The cross-section is a rectangle with dimensions 2.00 (height) and 0.60 (width). The text "0.20 slab ϕ 8" is written next to the cross-section.

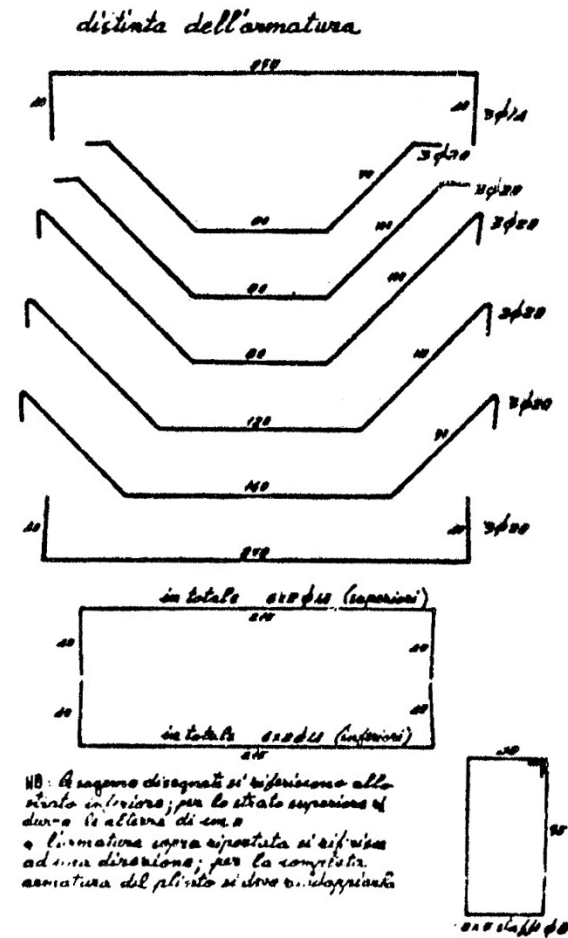
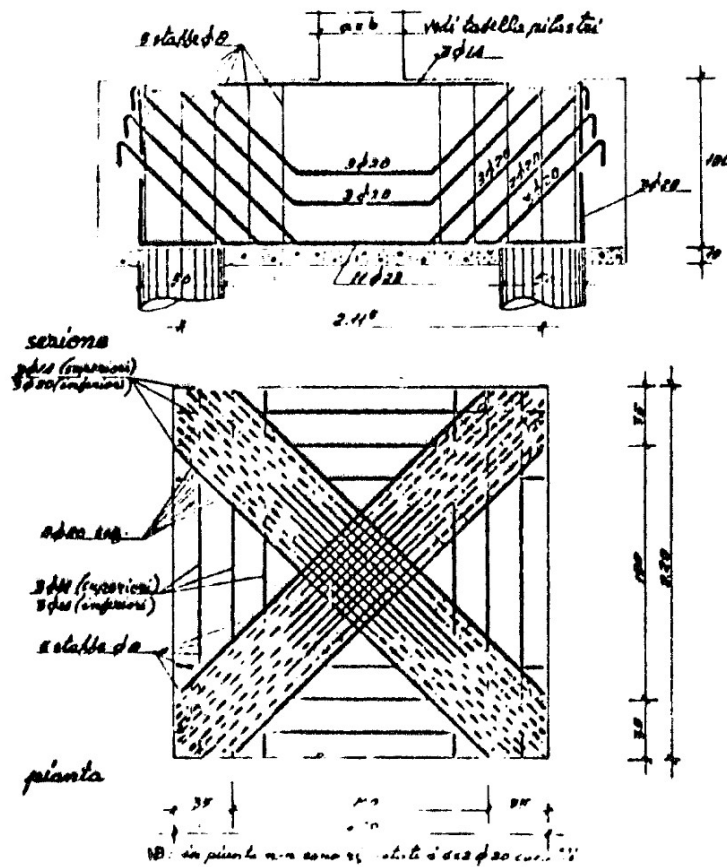
Plinto a quattro pali

- È sostanzialmente equivalente a due plinti a due pali



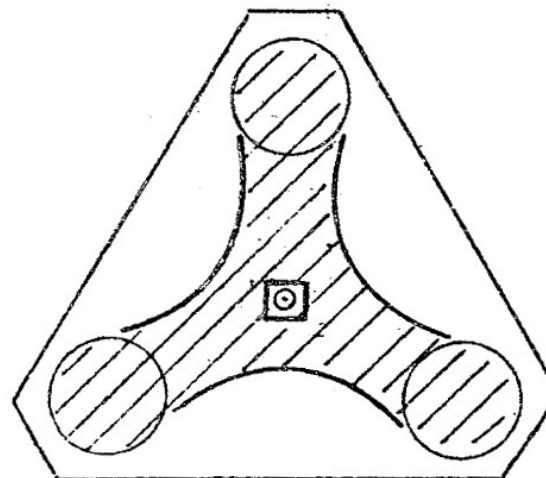
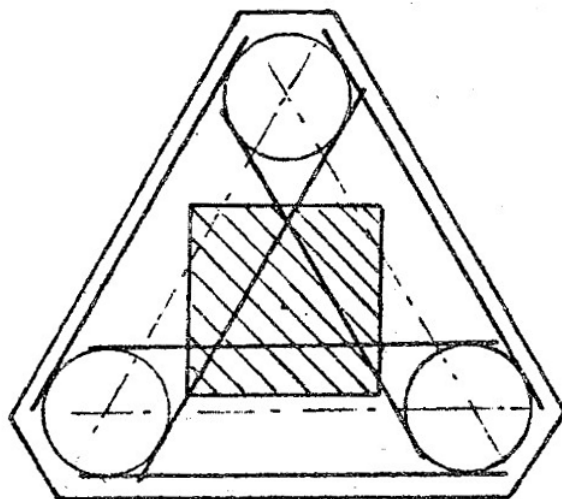
Plinto a quattro pali armatura

- Esempio (da Pagano, Teoria degli edifici. Edifici in cemento armato)



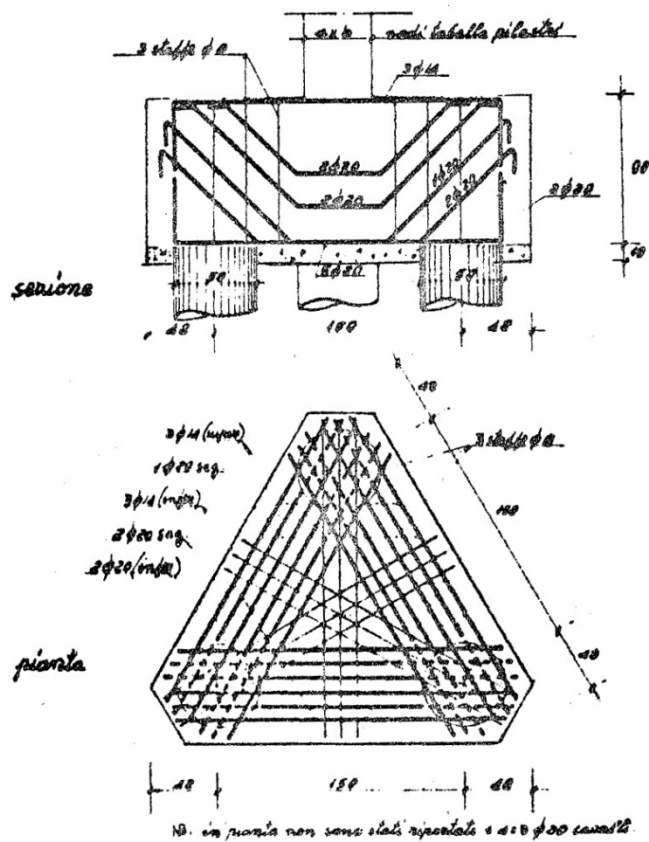
Plinto a tre pali

- L'armatura collega i tre pali, ma si individuano tre puntoni-tiranti ideali

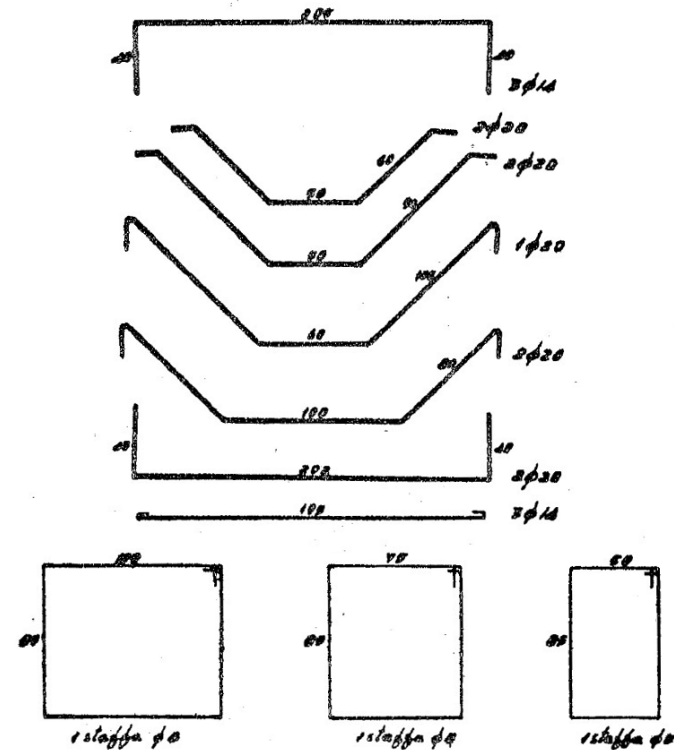


Plinto a tre pali armatura

- Esempio (da Pagano, Teoria degli edifici. Edifici in cemento armato)



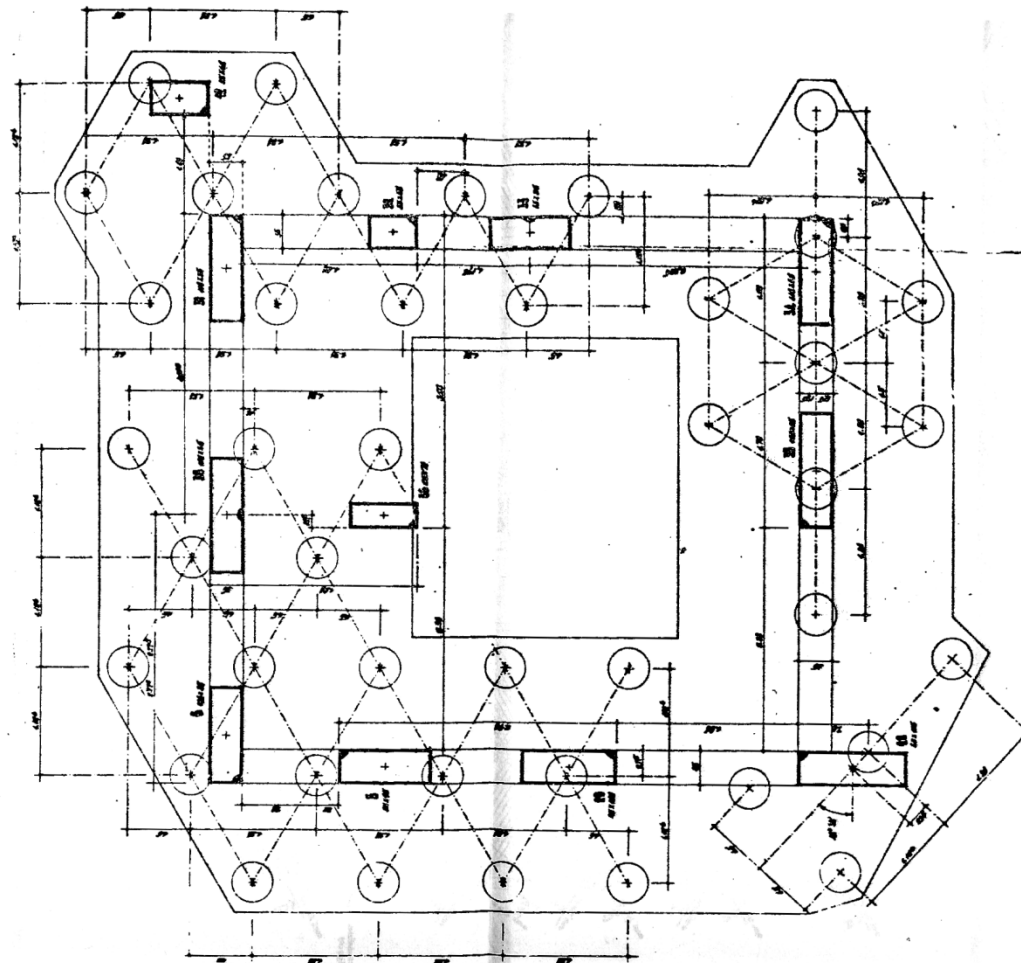
distinta dell'armatura 1:50



NB: l'armatura sopra riportata si riferisce ad una direzione;
per l'armatura completa del plinto si deve triplicarla.

Platee con molti pali

- **Esempio** (da Pagano, Teoria degli edifici. Edifici in cemento armato)



Platee con molti pali

- **Esempio** (da Pagano, Teoria degli edifici. Edifici in cemento armato)

