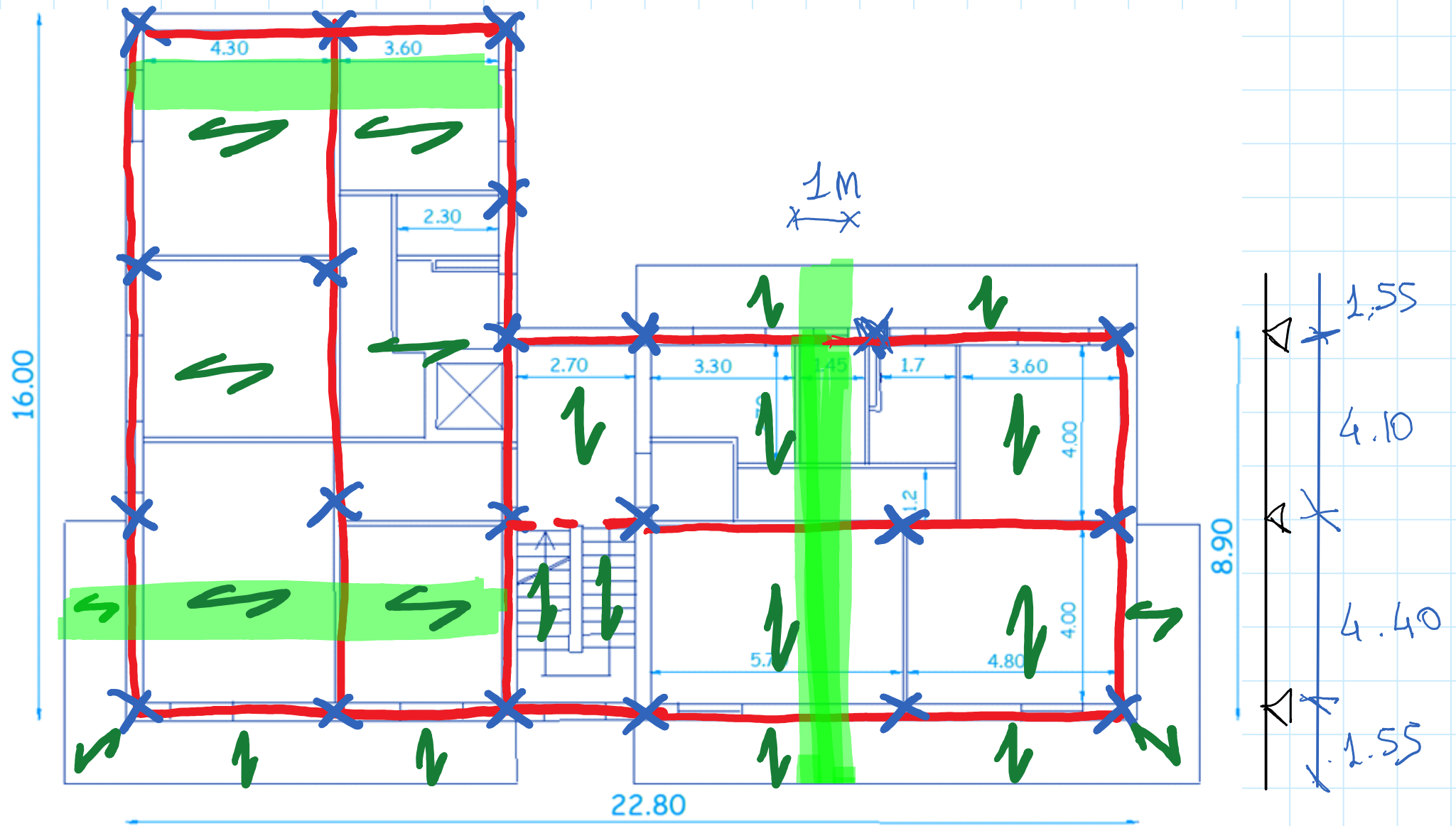


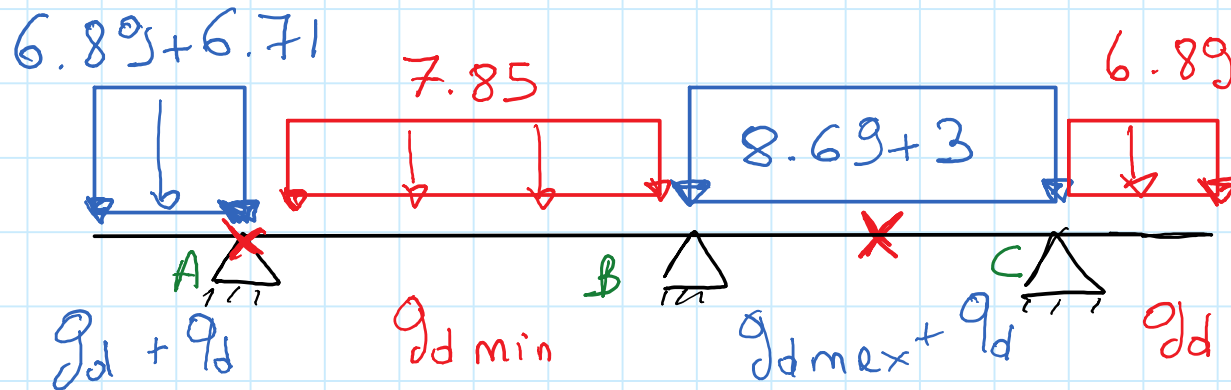
EDIFICIO IN ESAME



RIEPILOGO CARICHI UNITARI

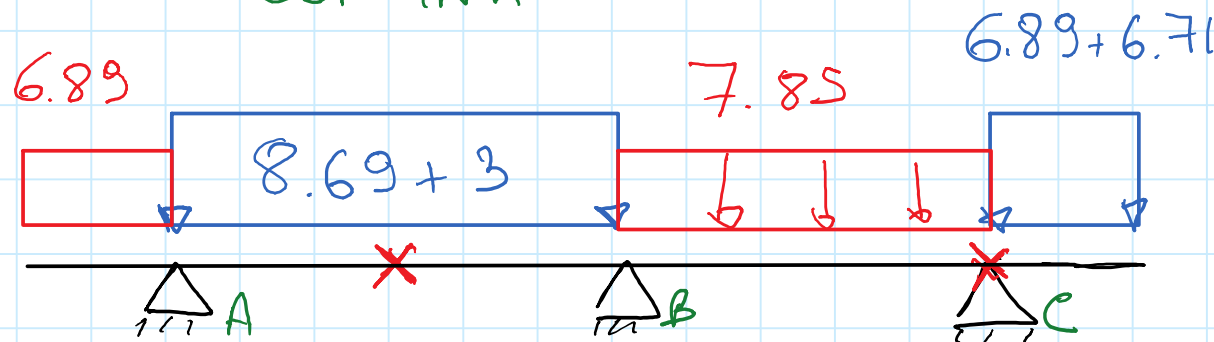
	$q_{d \max}$	$q_{d \min}$	q_d		} MOLTIPLICARE PER 1m
SOLAIO	8.69	7.85	3	KN/m ²	
BALCONE	6.89	6.89	6.71	KN/m ²	

COMBINAZIONE 1



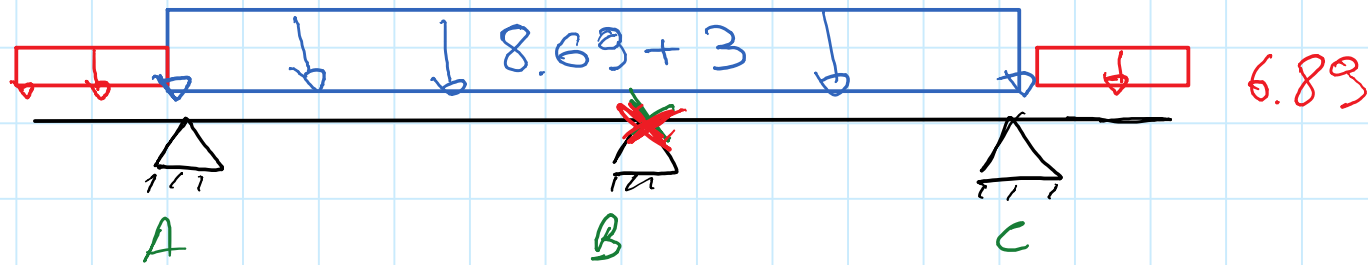
M_{\max} CAMPATA BC
APPOGGIO A

COMBINAZIONE 2



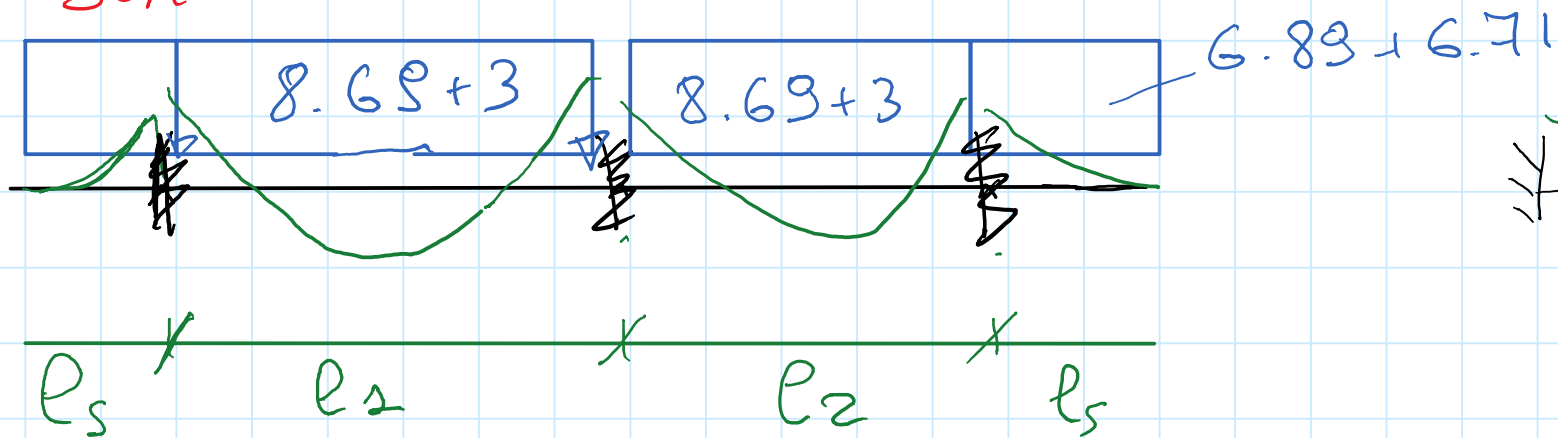
M_{\max} CAMP. AB
APPOGGIO C

COMBINAZIONE 3



M_{max} APPROCCIO
B

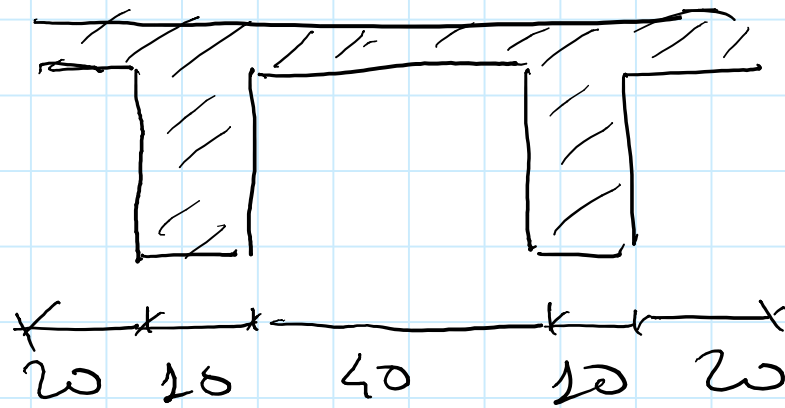
SCHEMI LIMITE



$$\frac{q l_i^2}{12}$$

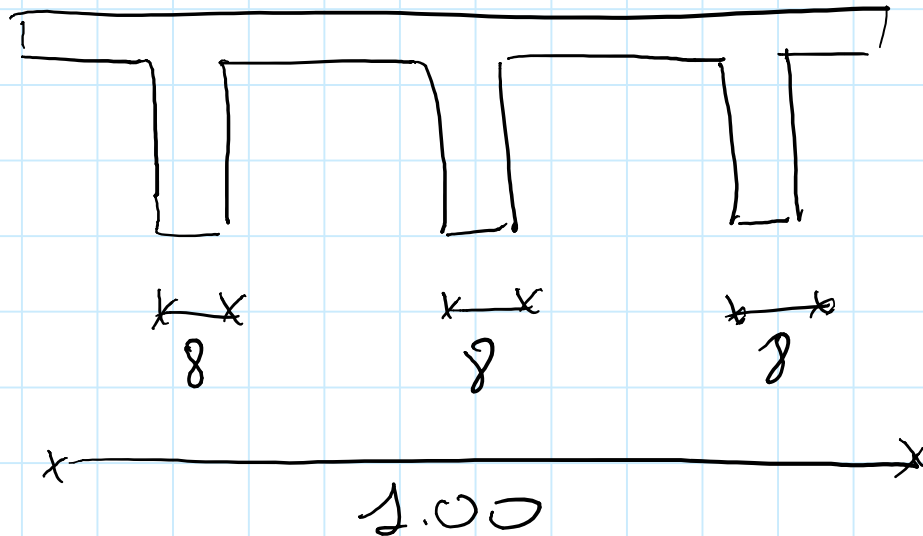
$$M = \frac{(q_{dmax} + q_d)}{2} \frac{l_i^2}{8}$$

SEZIONE TRASVERSALE : 2 TRAVETTI AL METRO



$$b_{ANIMA} = 2 \times 10 = 20$$

SEZIONE TRASVERSALE : 3 TRAVETTI AL METRO



$$b_{ANIMA} = 3 \times 8 = 24 \text{ cm}$$

PROGETTO ARMATURE : 3 TRAVETTI

1. VALUTO M_{max} IN CAMPATE E APPOGGI
2. CALCOLO ARMATURA TESA IN 1 m

$$A_s^* = \frac{M}{0,9 d f_{yd}}$$

$$d = h_{SOLAIO} - c$$

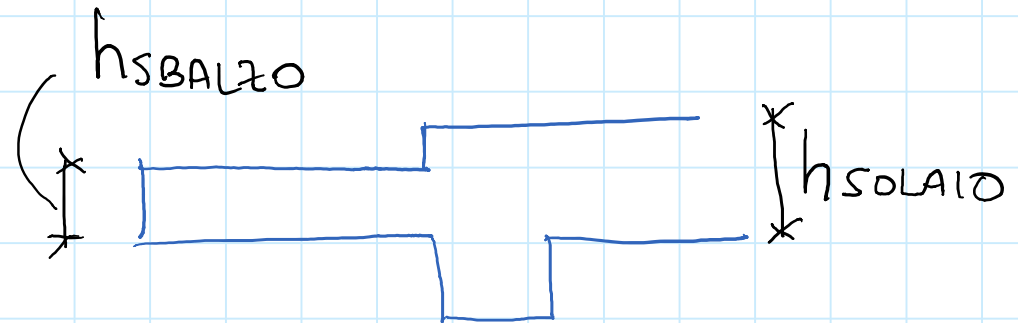
3. CALCOLO ARMATURA PER TRAVETTO

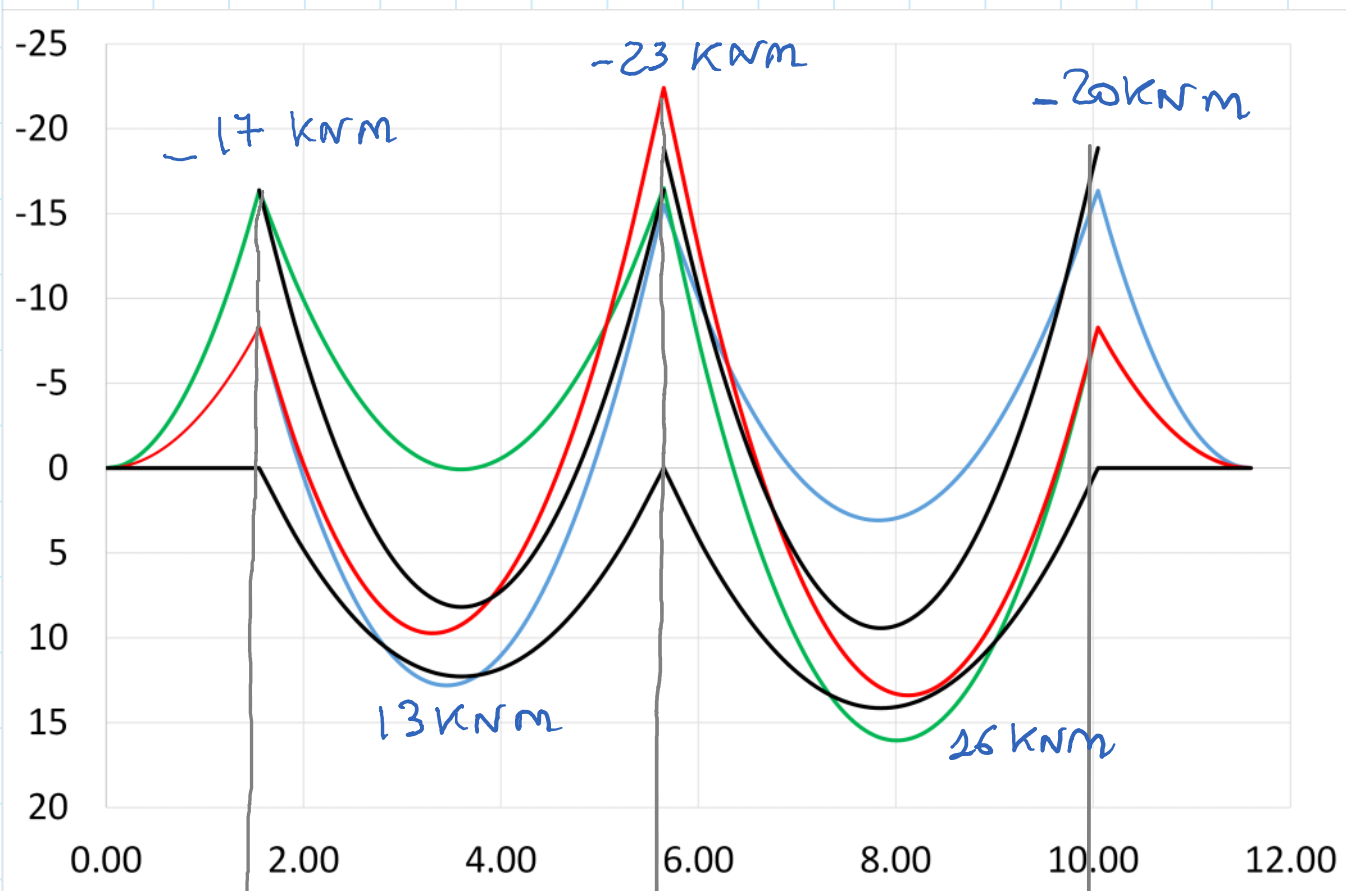
$$A_s = \frac{A_s^*}{N_{TR}}$$

NOTA BENE :

SE $h_{SBALZO} \neq h_{SOLAIO}$

USO $d_{SBALZO} \neq d_{SOLAIO}$





2 $\phi 10$

~~0.80~~

2 $\phi 10$

1.08

2 $\phi 10$

0.95

~~0.61~~

1 $\phi 10$

0.76

1.0 2 $\phi 10$

$$c = 3 \text{ cm}$$

$$d = 23 - 3 = 20 \text{ cm}$$

$$A_s^* = \frac{13 \text{ kNm} \times 10}{0.9 \times 0.20 \times 381.3}$$

$$= 1.84 \text{ cm}^2/\text{m}$$

PER TRAVETTO

$$A_s = \frac{A_s^*}{3} = 0.61 \text{ cm}^2$$

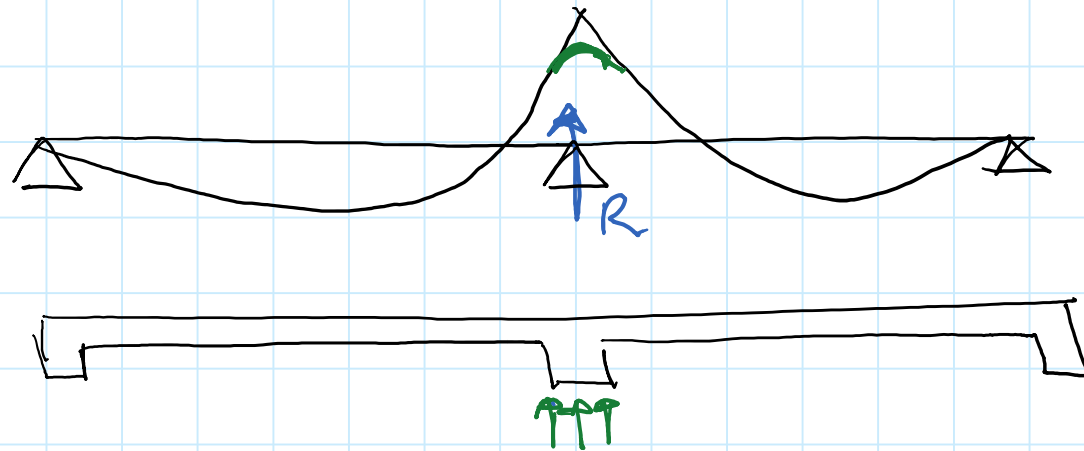
ARMATURA

PER TRAVETTO

$$A_{\phi 10} = 0.785 \text{ cm}^2$$

CONSIGLI

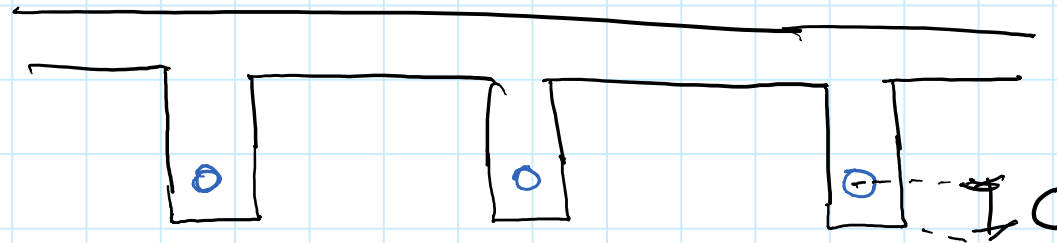
1. ABBONDARE IN CAMPATA
2. POSSIBILITA' DI RISPARMIARE NEGLI APPOGGI CENTRALI



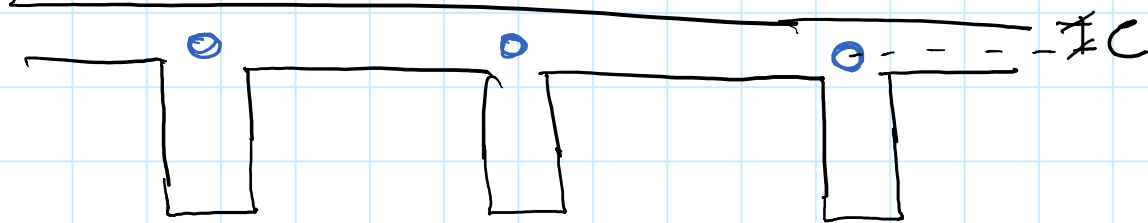
3. MANTENERE $A_s > A_{s, nec}$ NEGLI SBALZI

DISPOSIZIONE DELLE ARMATURE

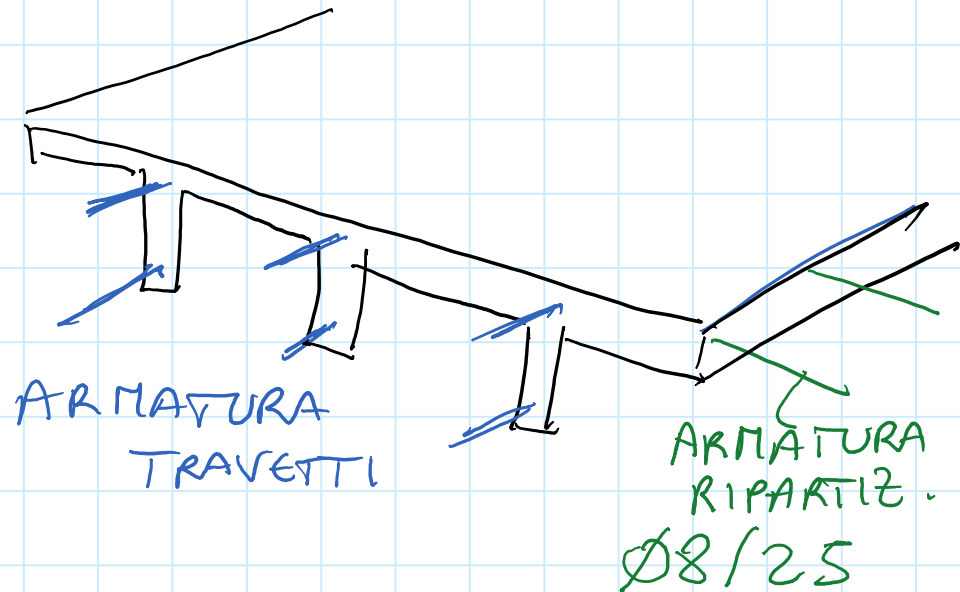
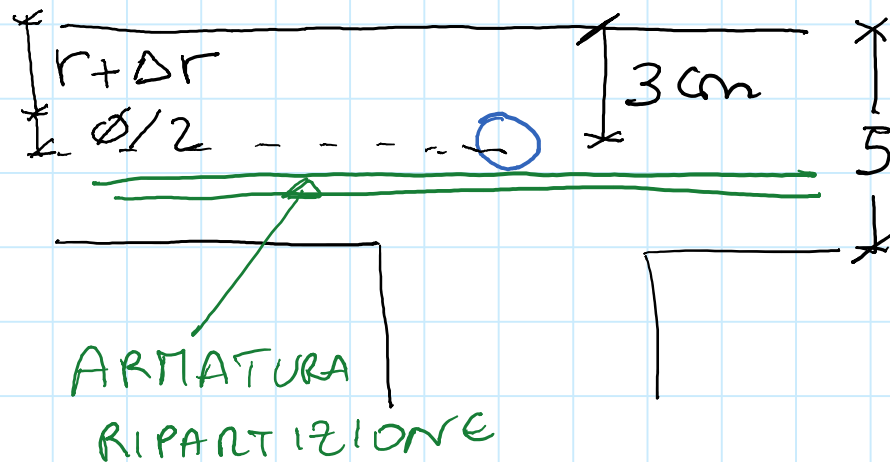
$M_{ed} > 0$



$M_{ed} < 0$

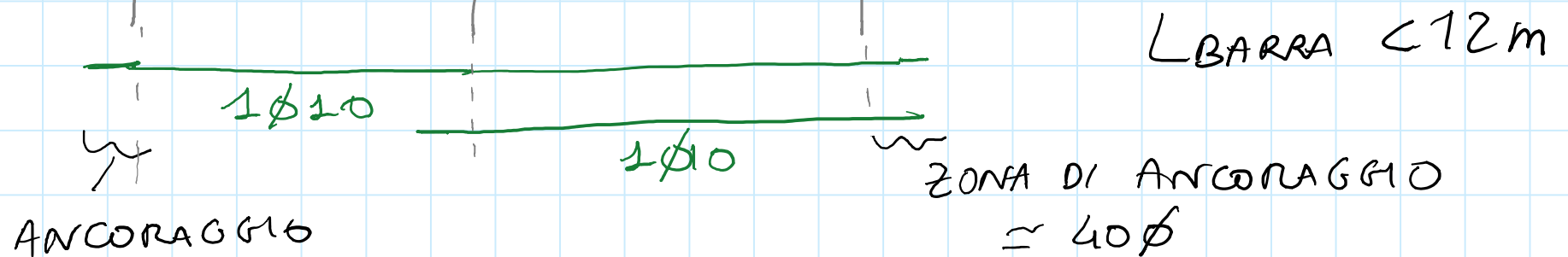
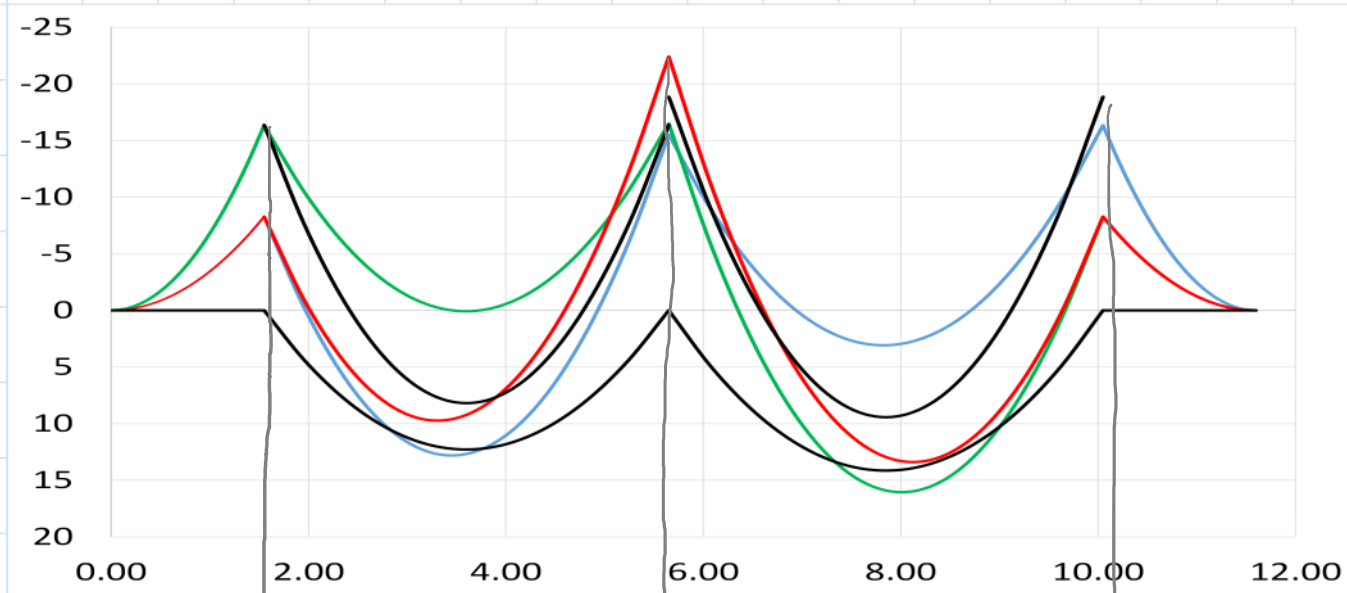


ARMATURA RIPARTIZIONE SOLETTA



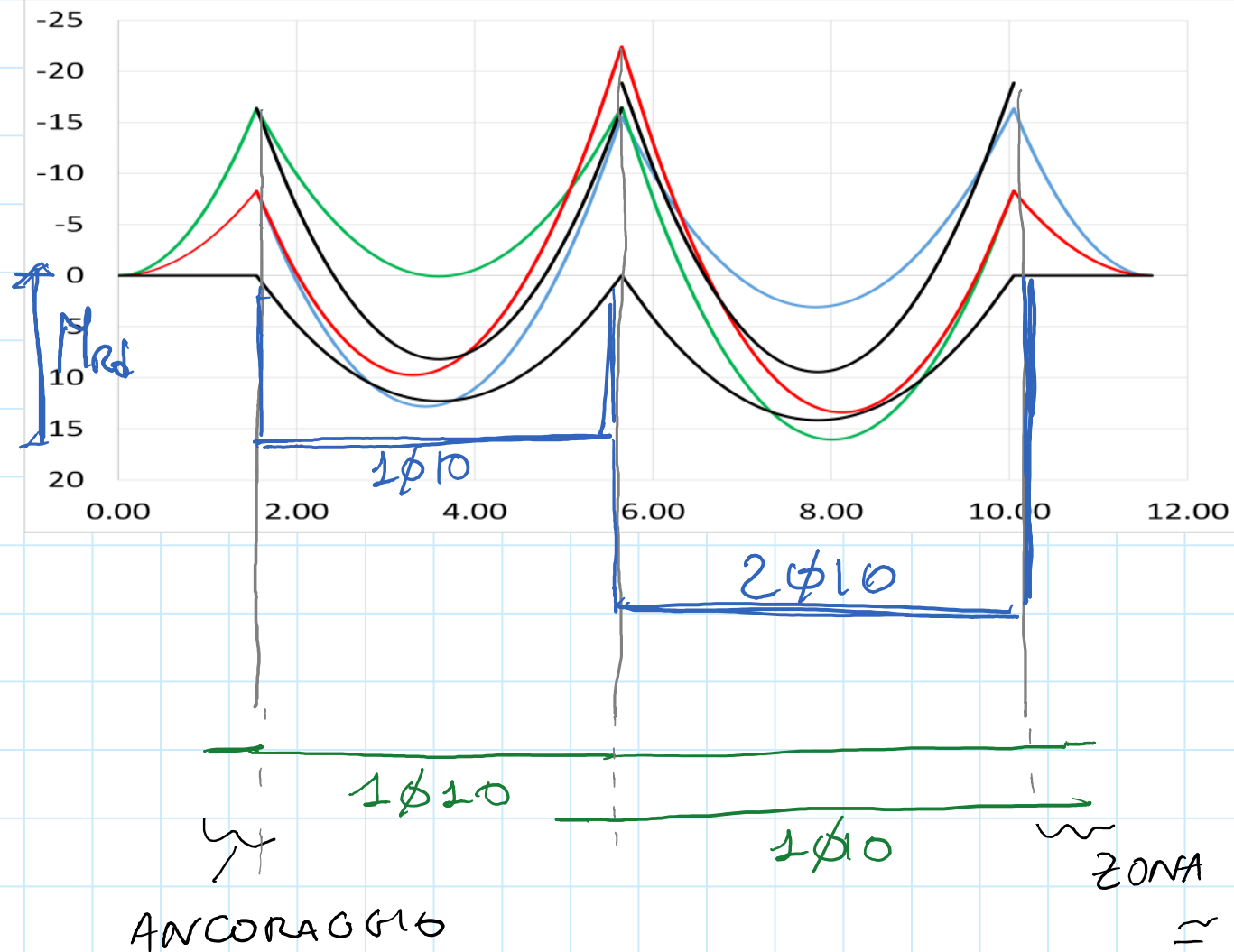
ARMATURA IN CAMPATA

DEVE ESSERE DISPOSTA DA APPOGGIO AD APPOGGIO



ARMATURA IN CAMPATA

DEVE ESSERE DISPOSTA DA APPOGGIO AD APPOGGIO



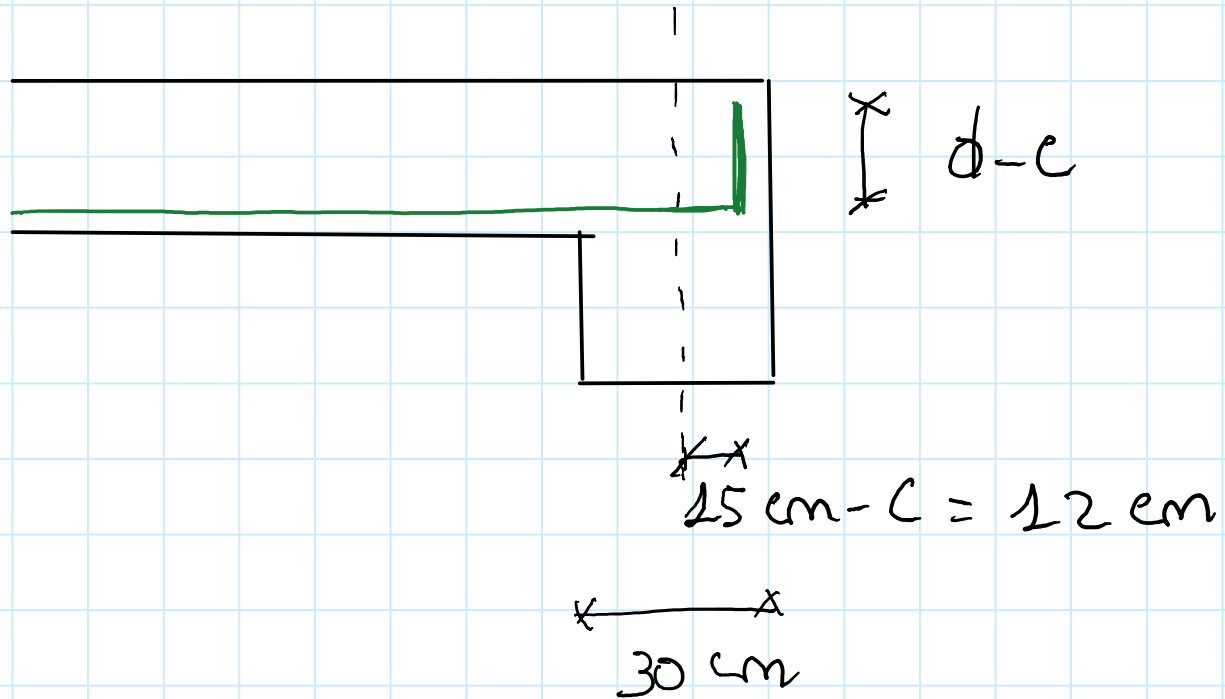
$$M_{Rd} = A_s \times N_{TRe} \times 0.9d P_{yd}$$

$$M_{Rd} 1\phi10 = 0.785 \times 3 \times 0.9 \times 0.20 \times \frac{391.3}{20} = 16.58 \text{ kNm}$$

$$L_{BARRA} < 12 \text{ m}$$

ZONA DI ANCORAGGIO
≈ 40φ

DETTAGLIO ANCORAGGIO IN ASSENZA D SBAZZO



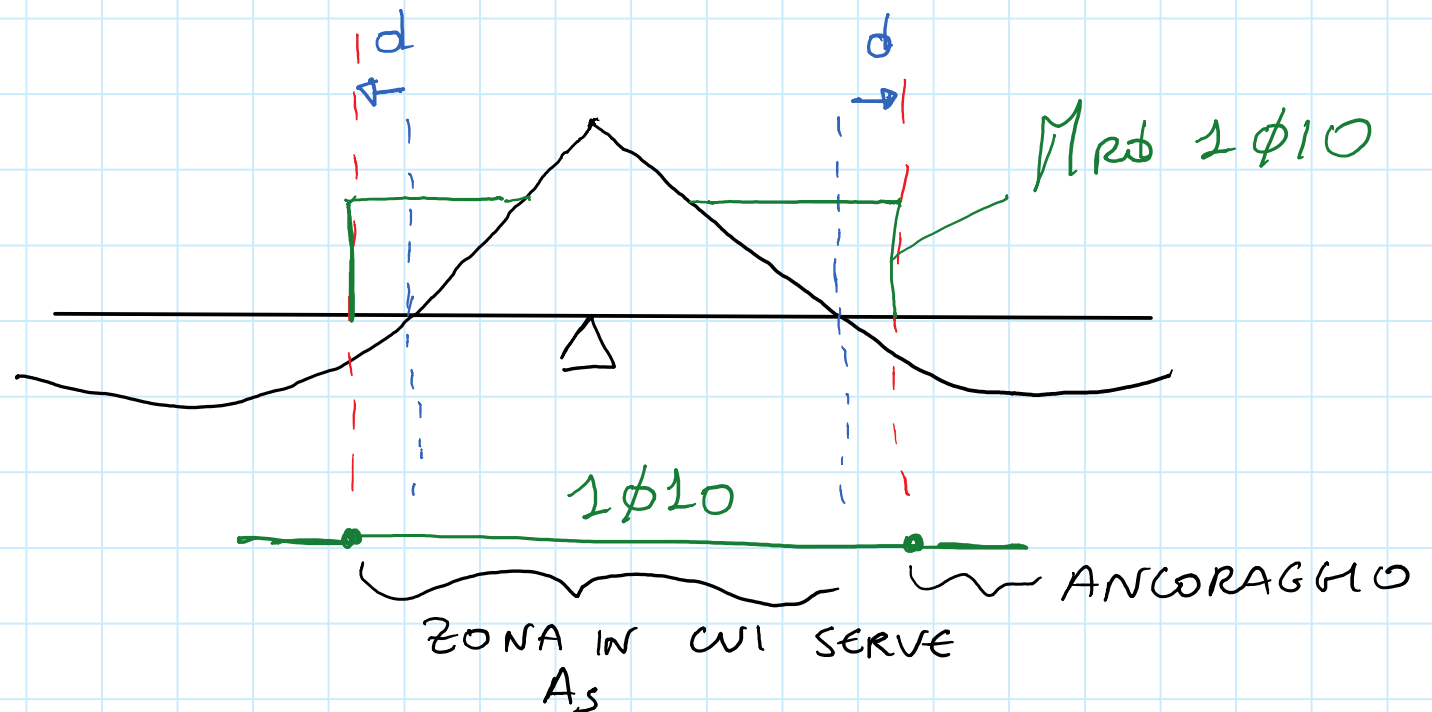
ARMATURA SUPERIORE

SEGUE IL DIAGRAMMA DEL MOMENTO

1. INTERSEZIONE DIAGRAMMA MOMENTO CON

$$M_{Ed} = 0$$

2. TRASLAZIONE δ



ARMATURA SUPERIORE

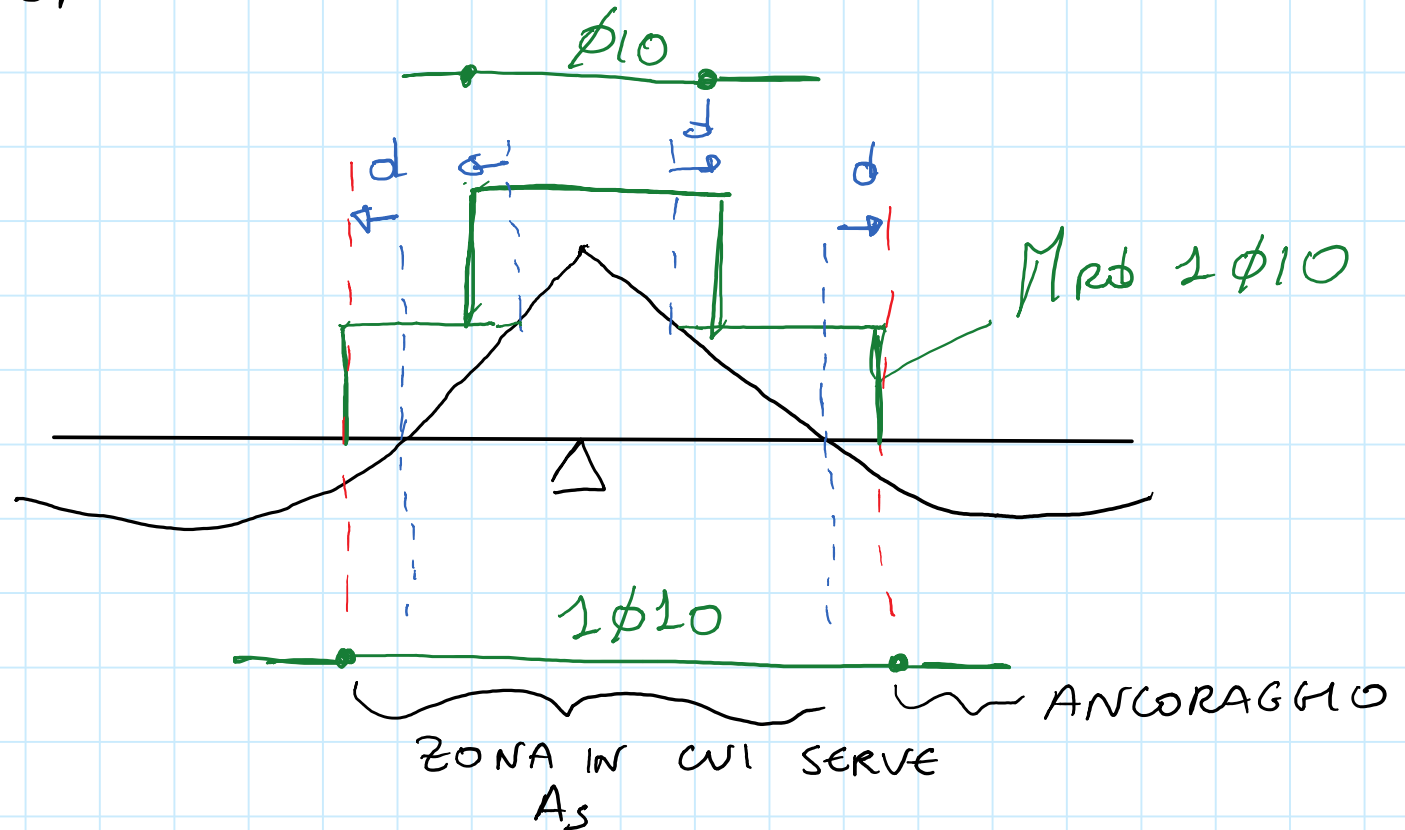
SEGUE IL DIAGRAMMA DEL MOMENTO

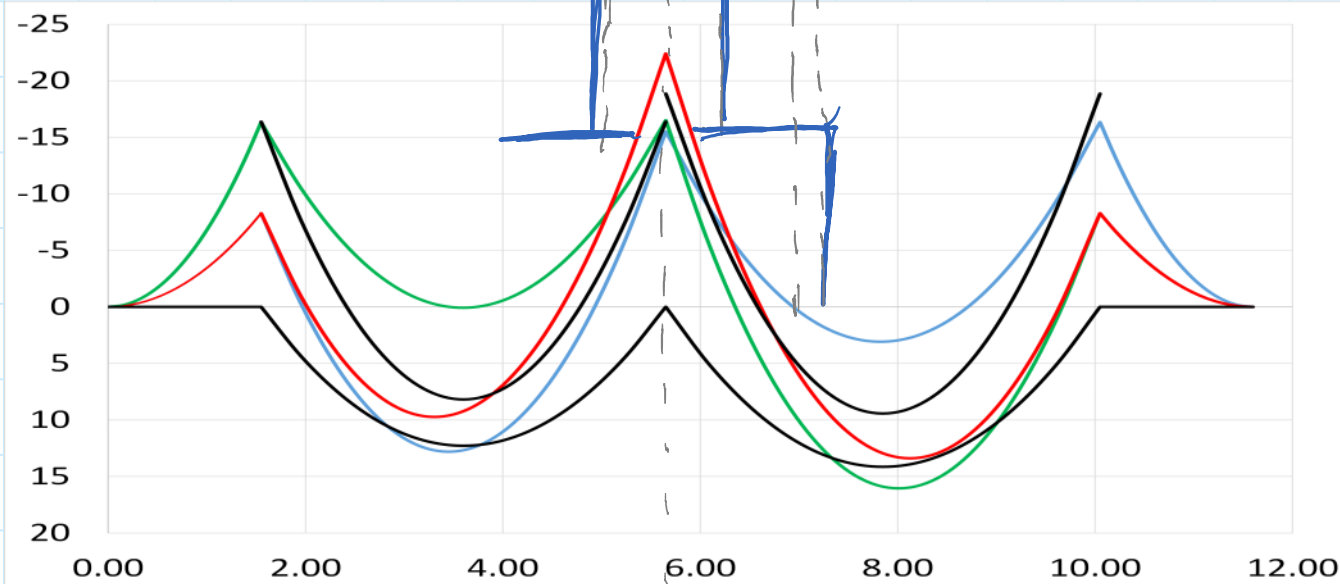
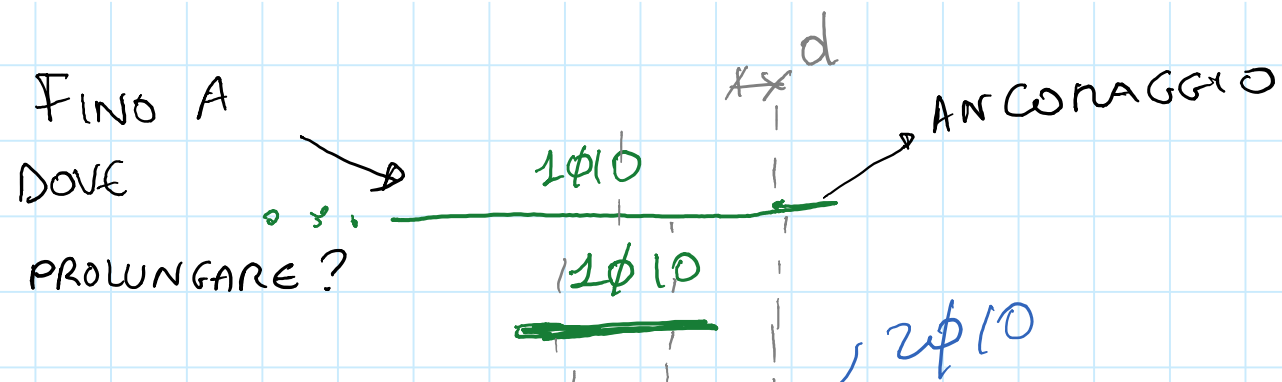
1. INTERSEZIONE DIAGRAMMA MOMENTO CON $M_{ed}=0$

2. TRASLAZIONE δ

3. INTERSEZIONE

$M_{rd} \ 1\phi 10$ con $M_{ed} + \text{TRASLAZ}$



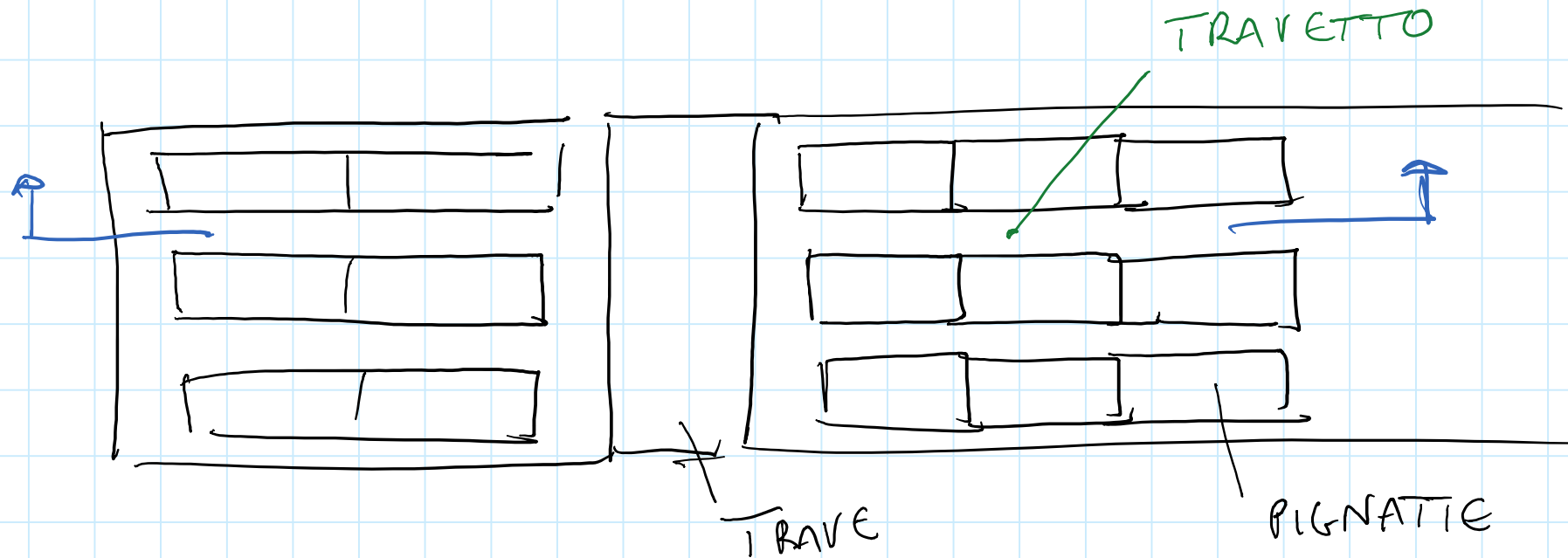
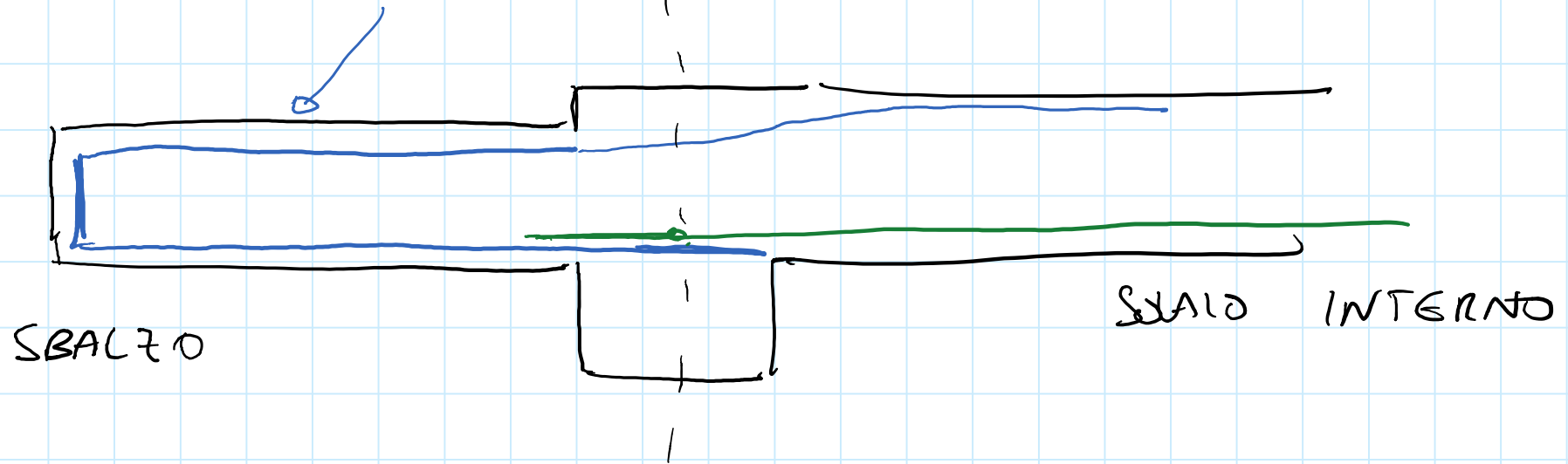


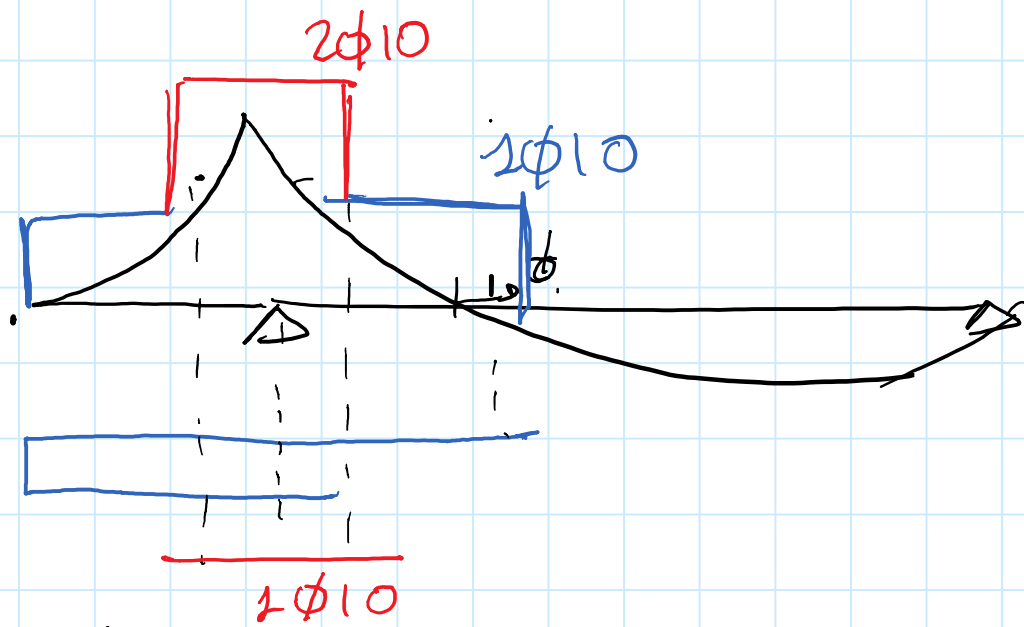
HO SEMPRE

$M_{EDCO} \Rightarrow$ DEVO MANTENERE A_s SUPERIORE
IN TUTTA LA CAMPATA

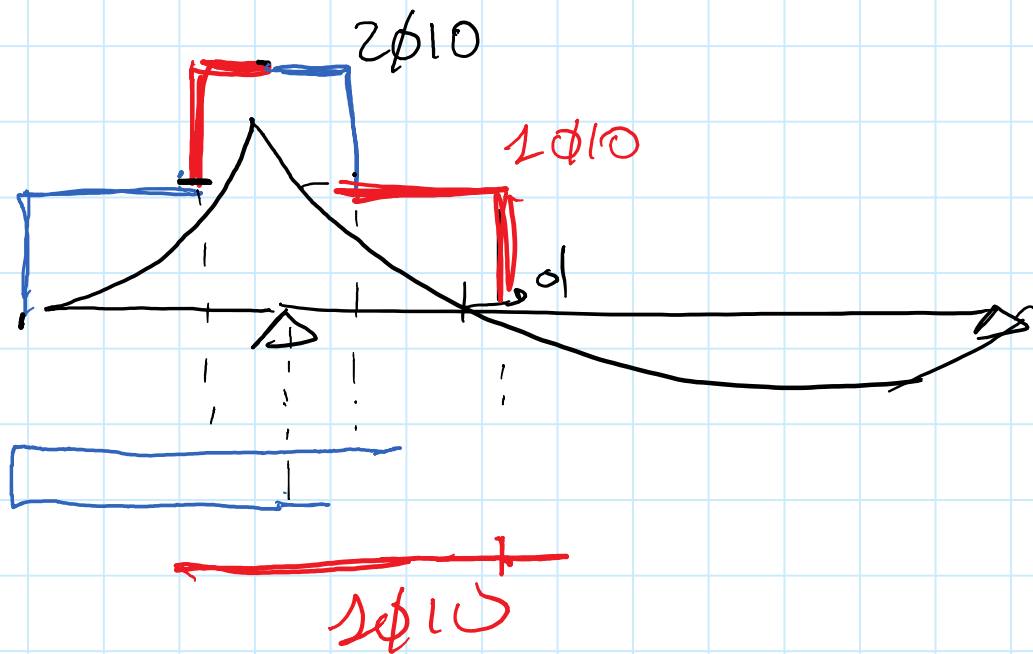
DISPOSIZIONE ARMATURA SBALZO

ARMATURA A MOLLA



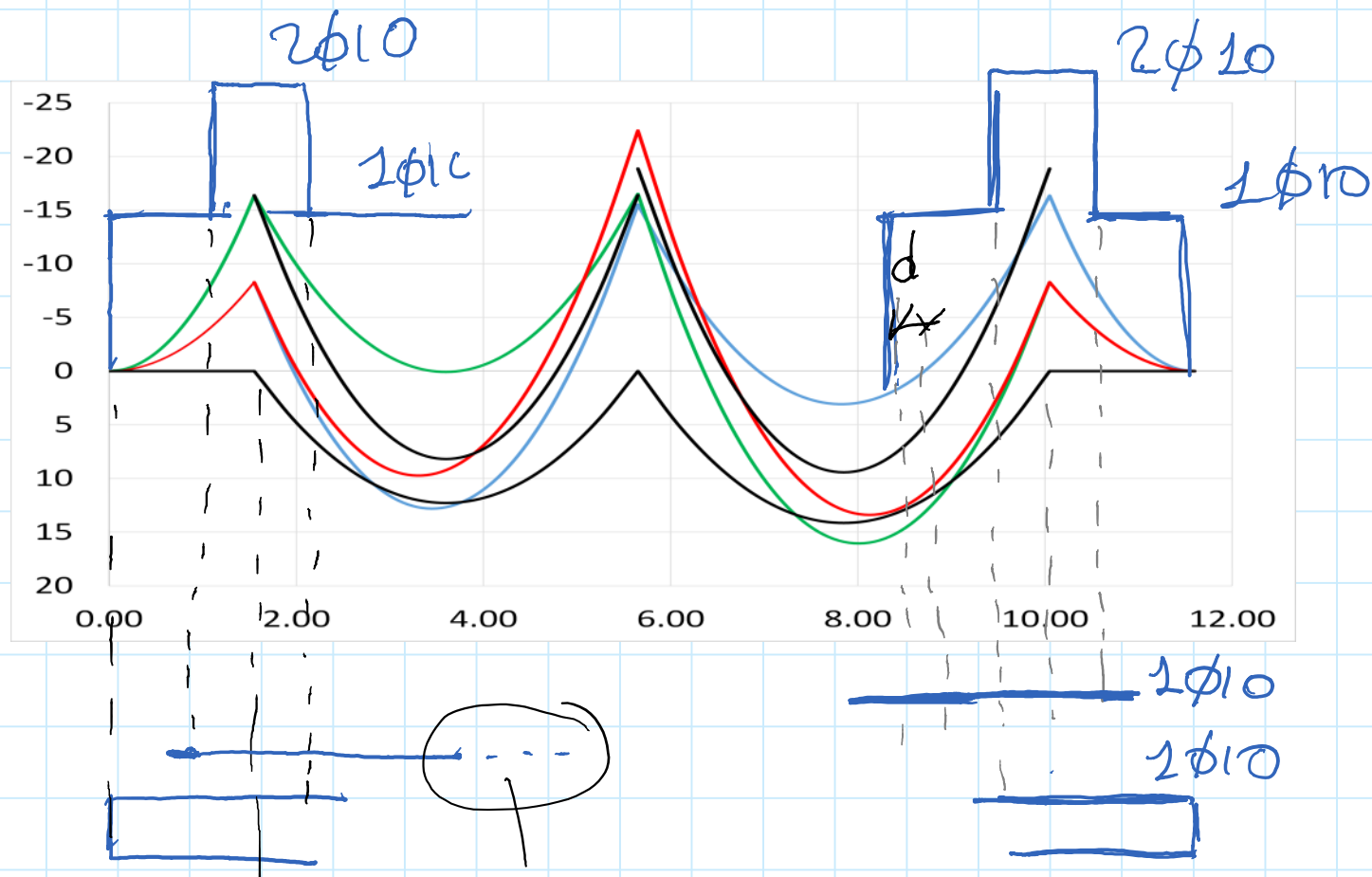


OPZIONE 1



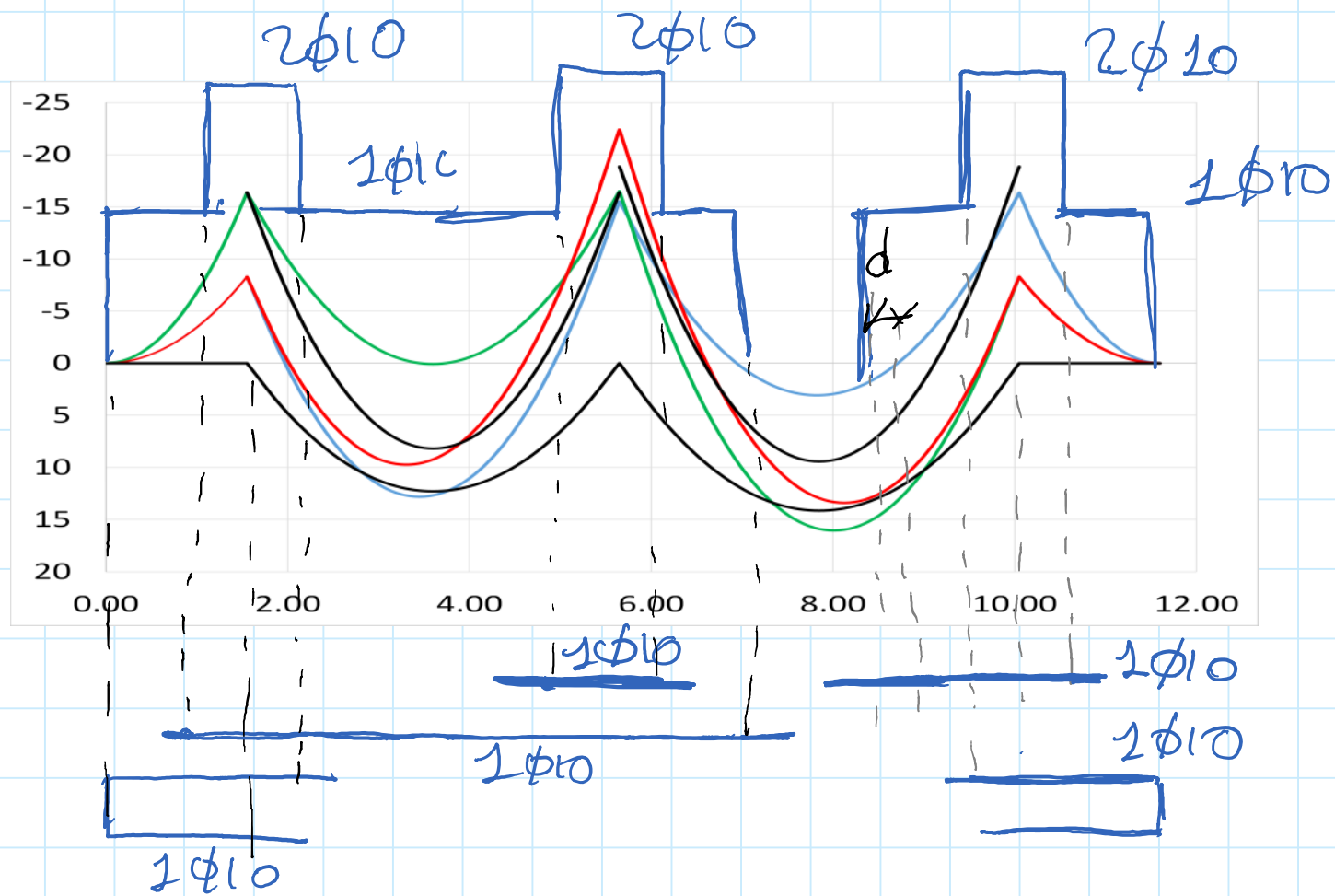
OPZIONE 2

NEL NOSTRO CASO

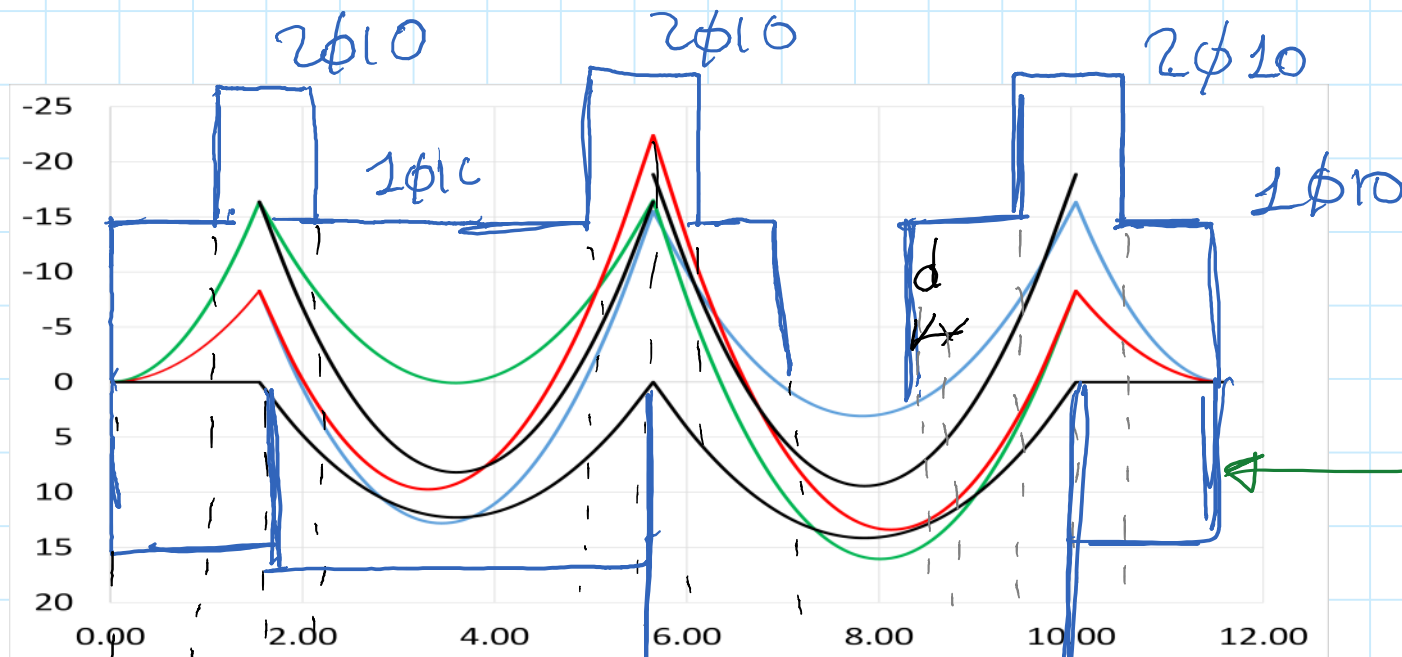


FINO A
DOVE PROVINGARE ?

NEL NOSTRO CASO



DISTINTA FINALE



MOMENTO
RESISTENTE
DATO DALLA PARTE
INFERIORE DEL
FERRO A RUOTA

ARMATURA
SUPERIORE

ARMATURA
INFERIORE