

Statična preiskava nosilnih elementov

STATIČNI IZRAČUN

Ravna streha AB plošča

ANALIZA OBTEŽB:	Stalna obtežba:	nasutje gramoza 10 cm	1,7	kN/m^2
		hidroizolacija	0,03	kN/m^2
		EPS 30 cm	0,075	kN/m^2
		MK plošče+podkonstr.	0,2	kN/m^2
		$q_g (\text{max})$	2,005	kN/m^2
		obtežba atike	3,00	kN/m

Lastna teža plošče upoštevana neposredno v izračunu.

Servisna obtežba: 0,4 kN/m^2

Spremenljiva obtežba:

veter: (SIST EN 1991-1-4)

Objekt se nahaja na nadm. viš. 272,51 m, cona 1

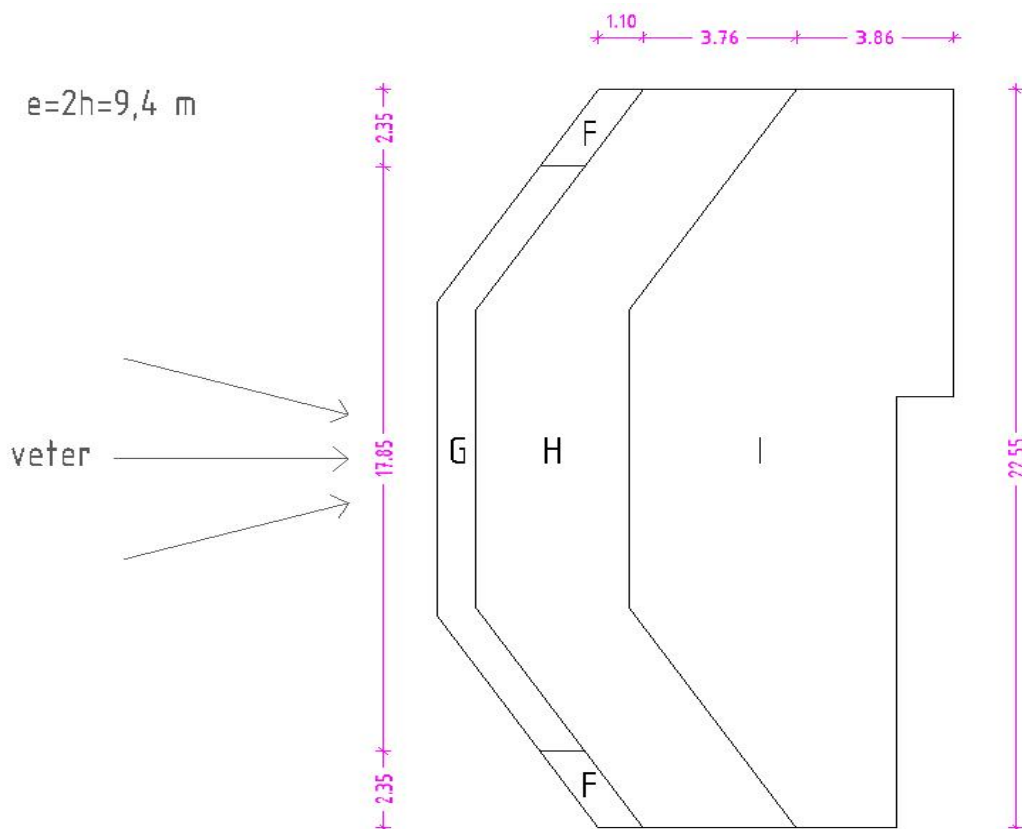
$V_{b0} = 20$ m/s
 $q_b = 0,25$ kN/m^2

OBTEŽBA NA ZGORNJE PLOSKVE STREHE

referenčna višina: $z=h=4,7$ m

faktor izpostavljenosti $c_e(z) = 2,35$

tlak pri največji hitrosti pri sunkih vetra $q_p(z) = 0,5875$ kN/m^2



Površine področij na strehi:

F:	2,57 m ²
G:	18,16 m ²
H:	84,79 m ²
I:	133,65 m ²

Tlaki na področjih na zunanji strani strehe

Koeficient zunanjega tlaka na strehi

F: $c_{pe,1}$	= -2
G: $c_{pe,10}$	= 0,9
H: $c_{pe,10}$	= 0,7
I: $c_{pe,10}$	= -0,2

največji tlaki

$w_{e,F}$	= -1,18 kN/m ²
$w_{e,G}$	= 0,529 kN/m ²
$w_{e,H}$	= 0,411 kN/m ²
$w_{e,I}$	= -0,12 kN/m ²

sneg: (SIST EN 1991-1-3)

Objekt se nahaja na nadm. viš. 272,51 cona A2

Obtežba strehe(naklon
2°):

$$\mu = 0,8$$

$$S_k = 1,47417599 \text{ kN/m}^2$$

$$S = 1,1793408 \text{ kN/m}^2$$

potres: (SIST EN 1998-1:2005)

Tip tal A

$$a_g = 0,25$$

g

$$S = 1$$

$$S a_g = 0,1$$

g

$$S a_g = 0,1 \text{ g} \leq 0,20 \text{ g}$$

$$q = 2,5$$

$$T_B = 0,1 \text{ s}$$

$$T_C = 0,4 \text{ s}$$

$$T_D = 2,0 \text{ s}$$

$$S_0(T) = 0,25$$

izračun mase objekta

$$\psi_2 = 0,3 \text{ (koristna obtežba)}$$

$$\psi_2 = 0 \text{ (sneg, veter)}$$

$$\phi = 1 \text{ streha}$$

$$G_{\text{strehe}} = 9,1 \text{ kN/m}^2$$

$$W_{\text{strehe}} = 60,45 \text{ kN}$$

izračun potresne sile

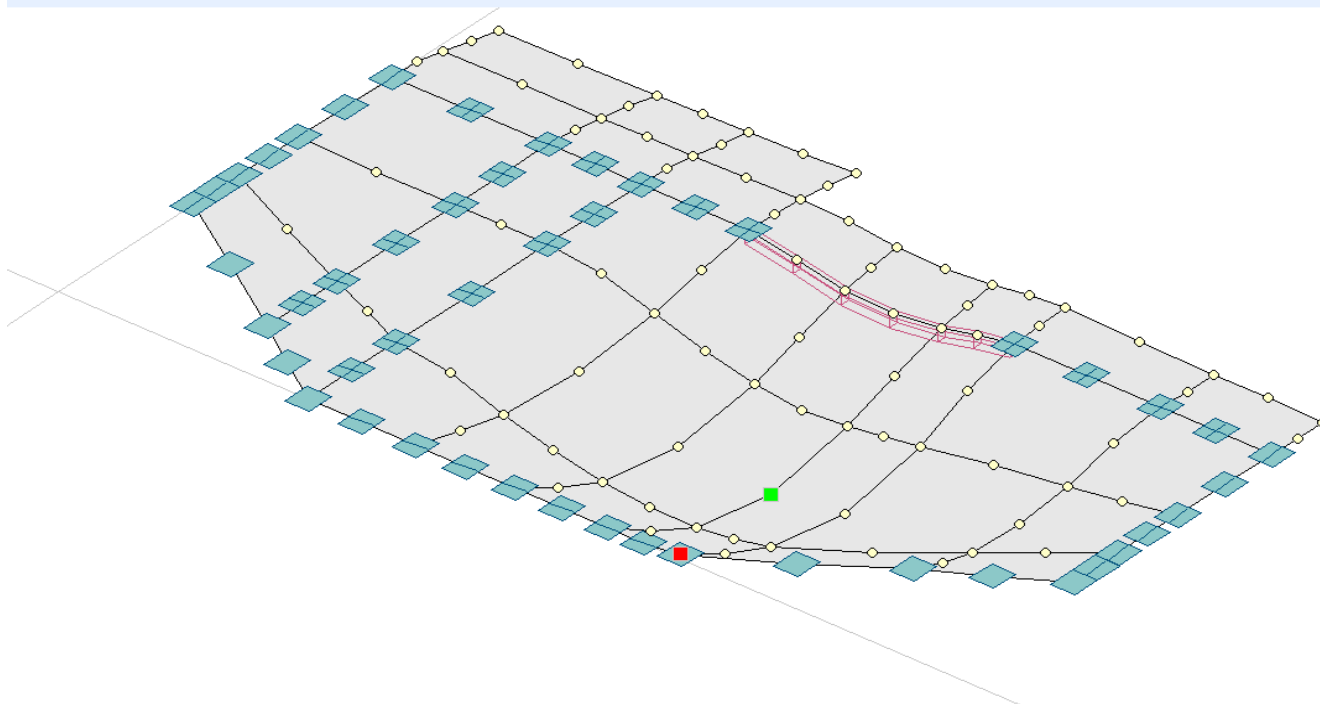
$$F_0 = 15,1125 \text{ kN}$$

Element: AB plošča POZ 101

Globalni pomik

OP 11 Pomiki (x 177)

■ Min= -0.0006 m
■ Max= 0.0104 m



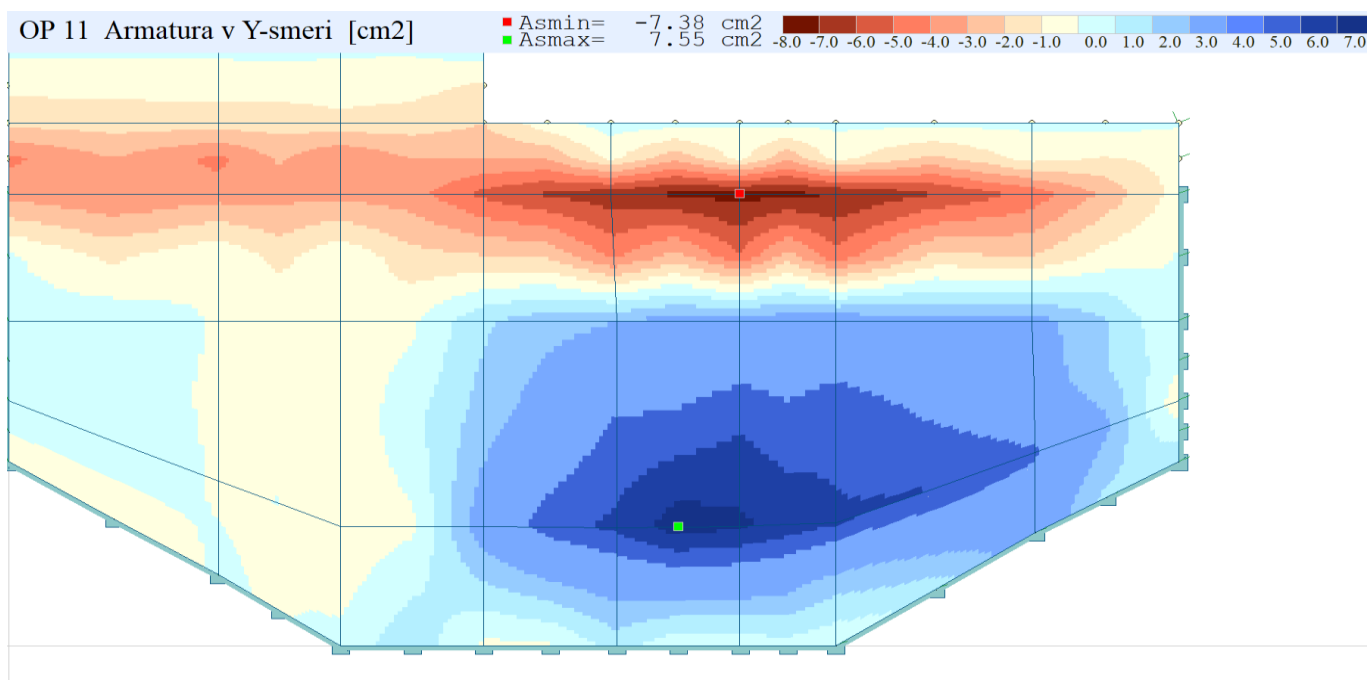
Pomik v neskončnem času z upoštevanje lezenja

$$l/250=900/250=$$

$$3,6 \text{ cm} > 3,25 \text{ cm}$$

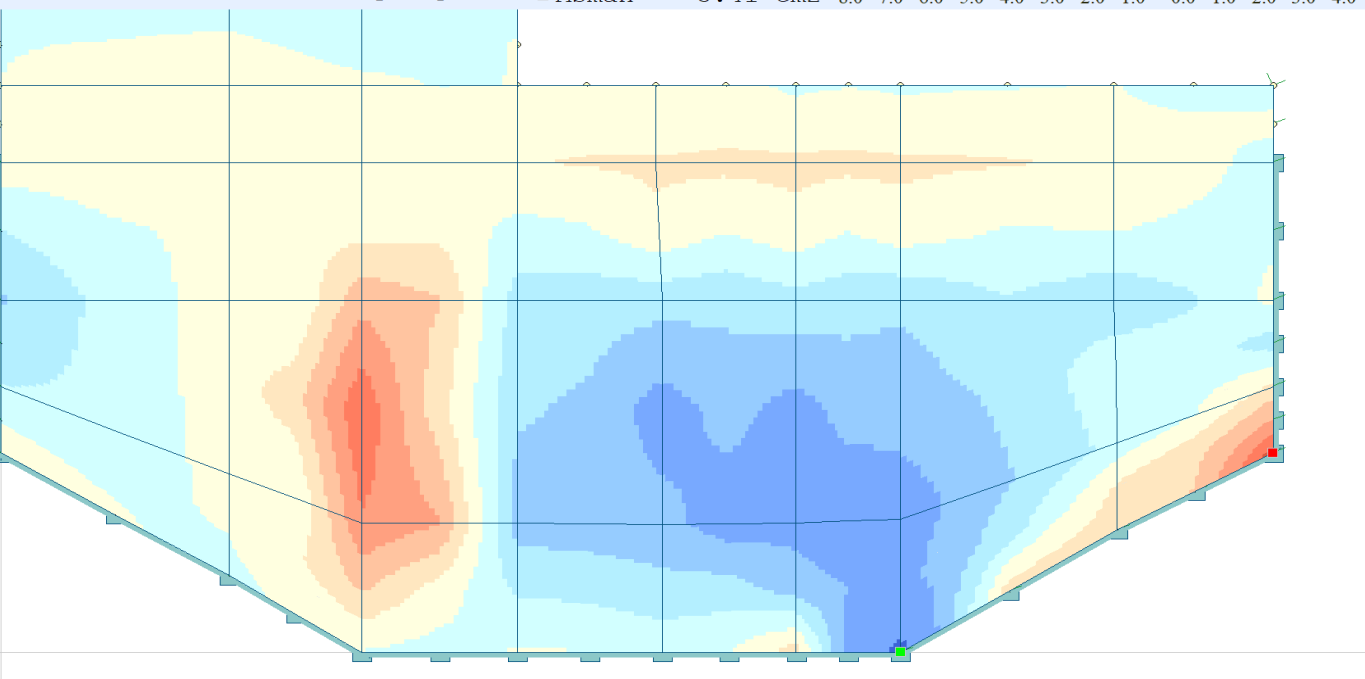
OP 11 Armatura v Y-smeri [cm2]

■ Asmin= -7.38 cm2
■ Asmax= 7.55 cm2

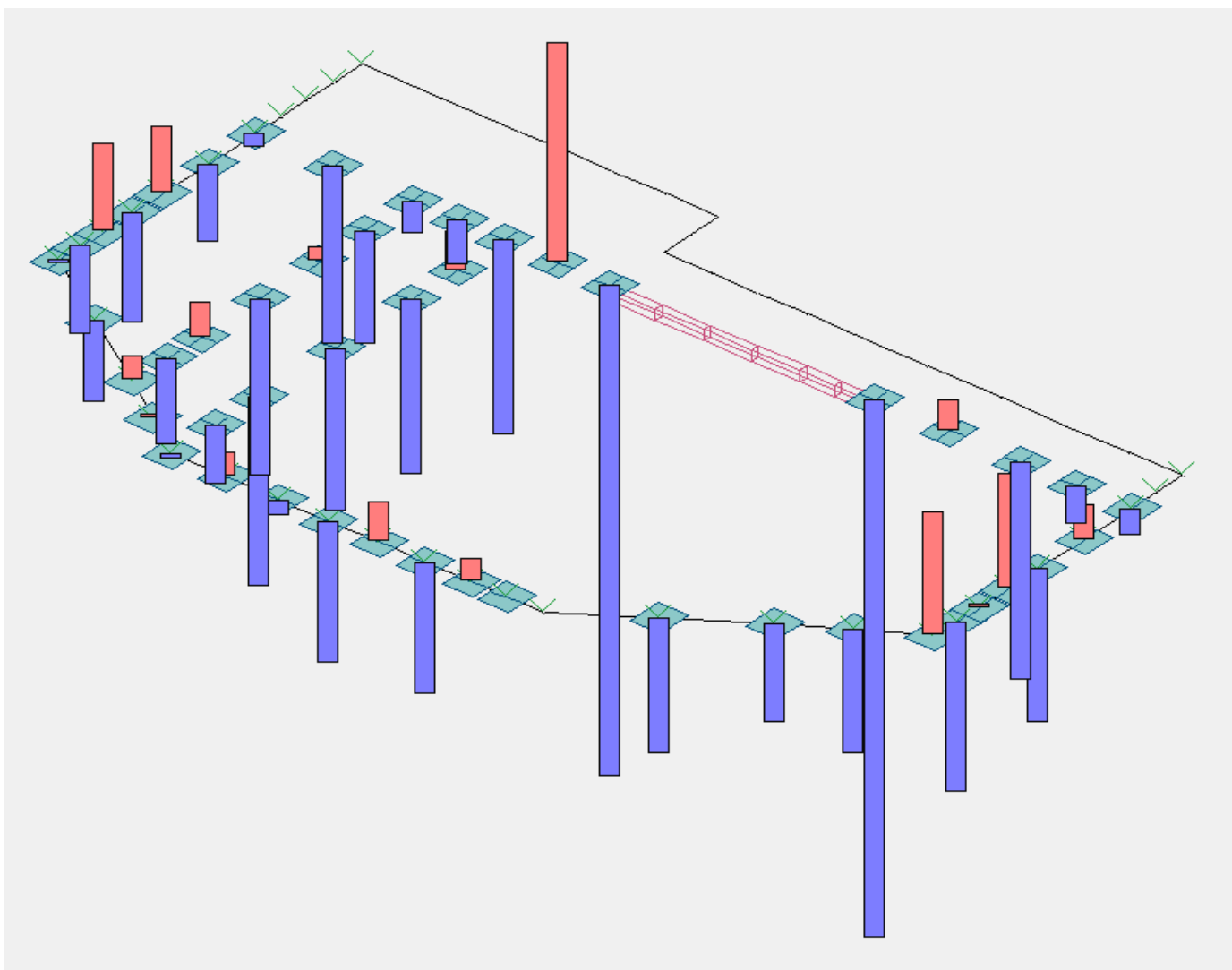


OP 11 Armatura v X-smeri [cm2]

■ Asmin= -5.42 cm2
■ Asmax= 5.41 cm2

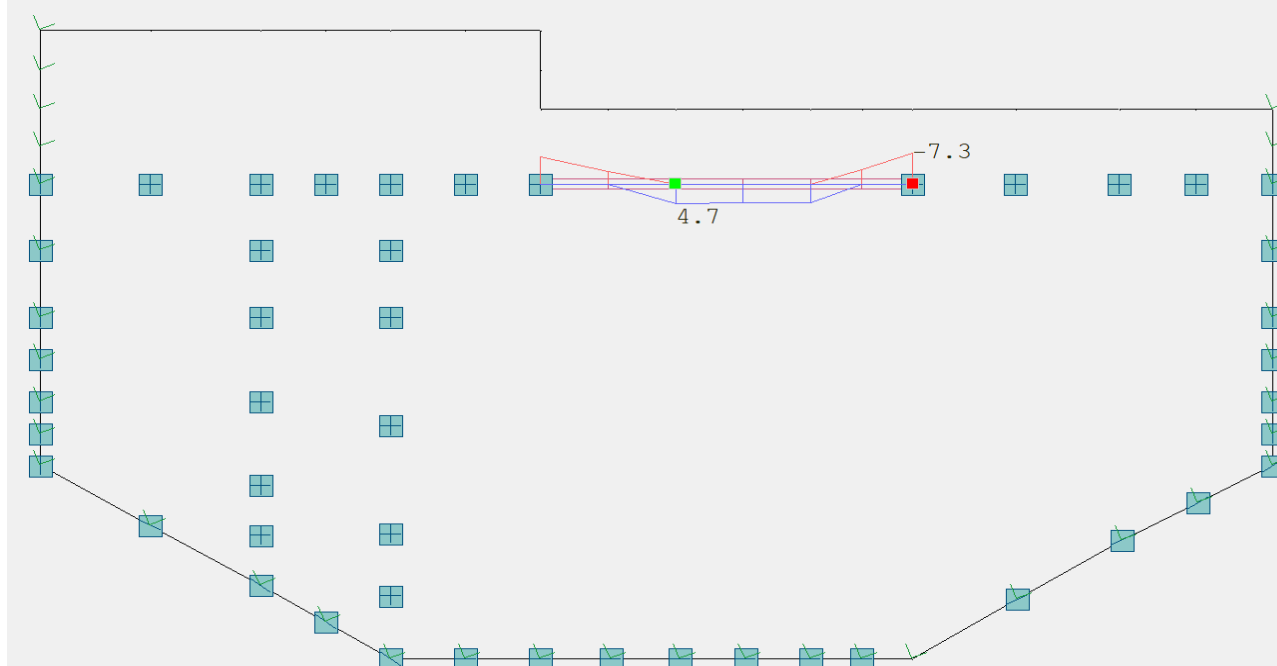


Reakcije



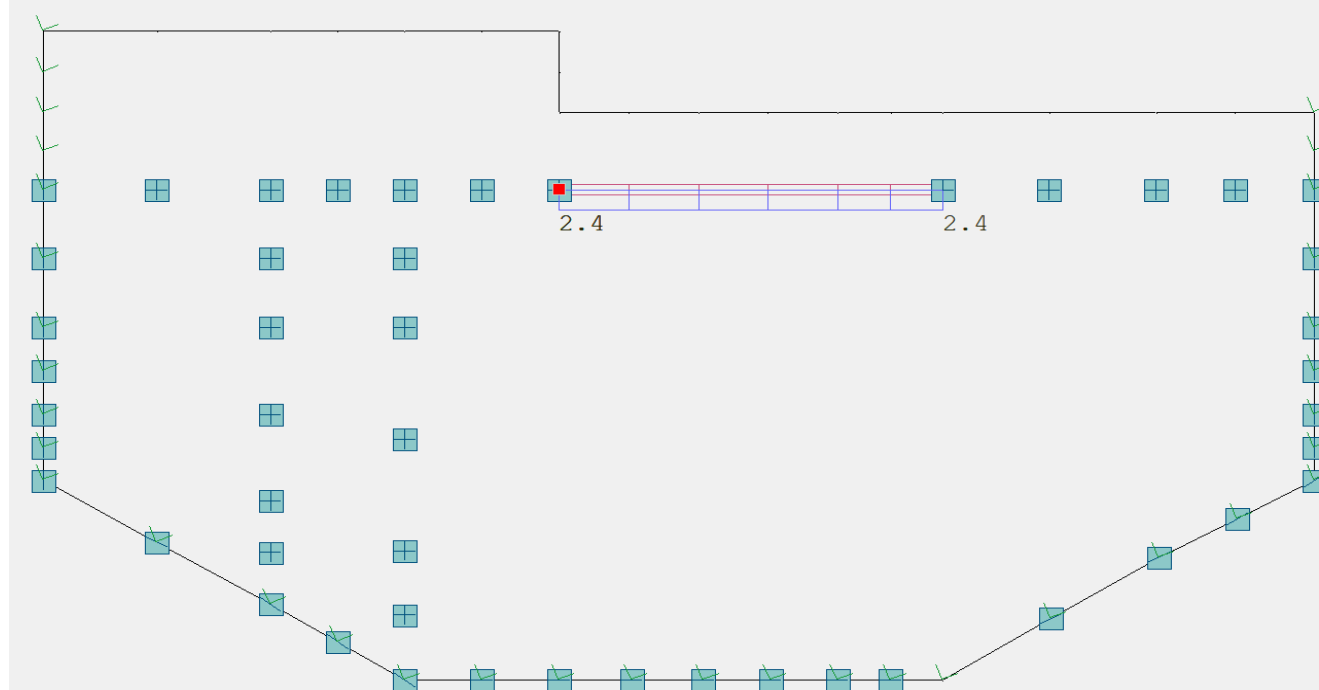
OP 11 Upogibna armatura nosilcev

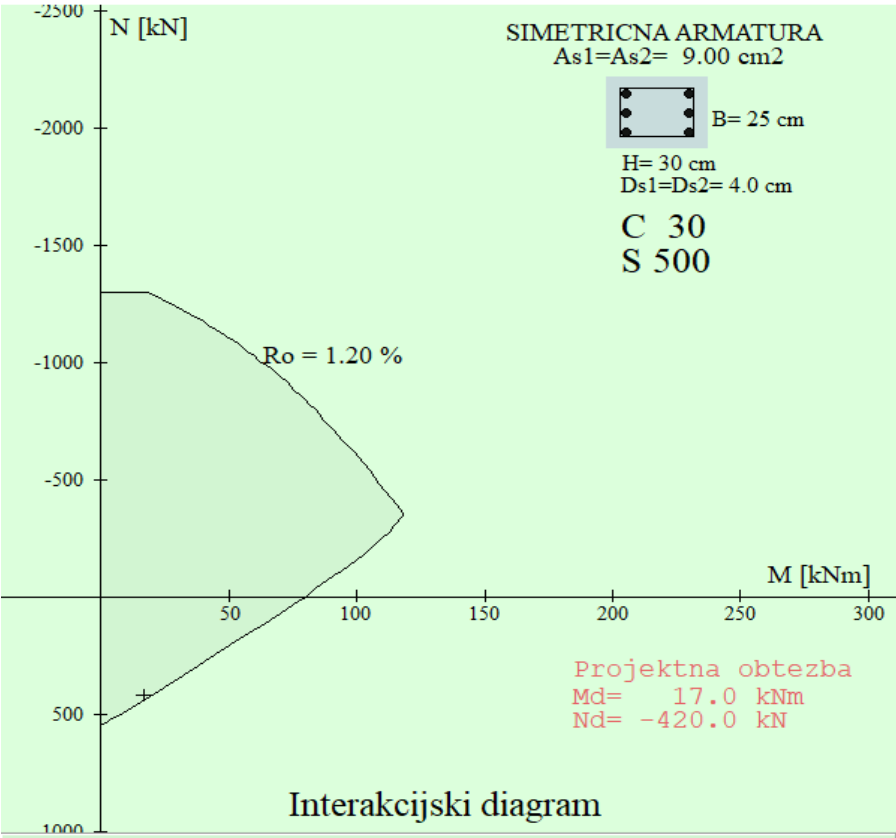
■ $A_{smin} = -7.31 \text{ cm}^2$
 ■ $A_{smax} = 4.74 \text{ cm}^2$



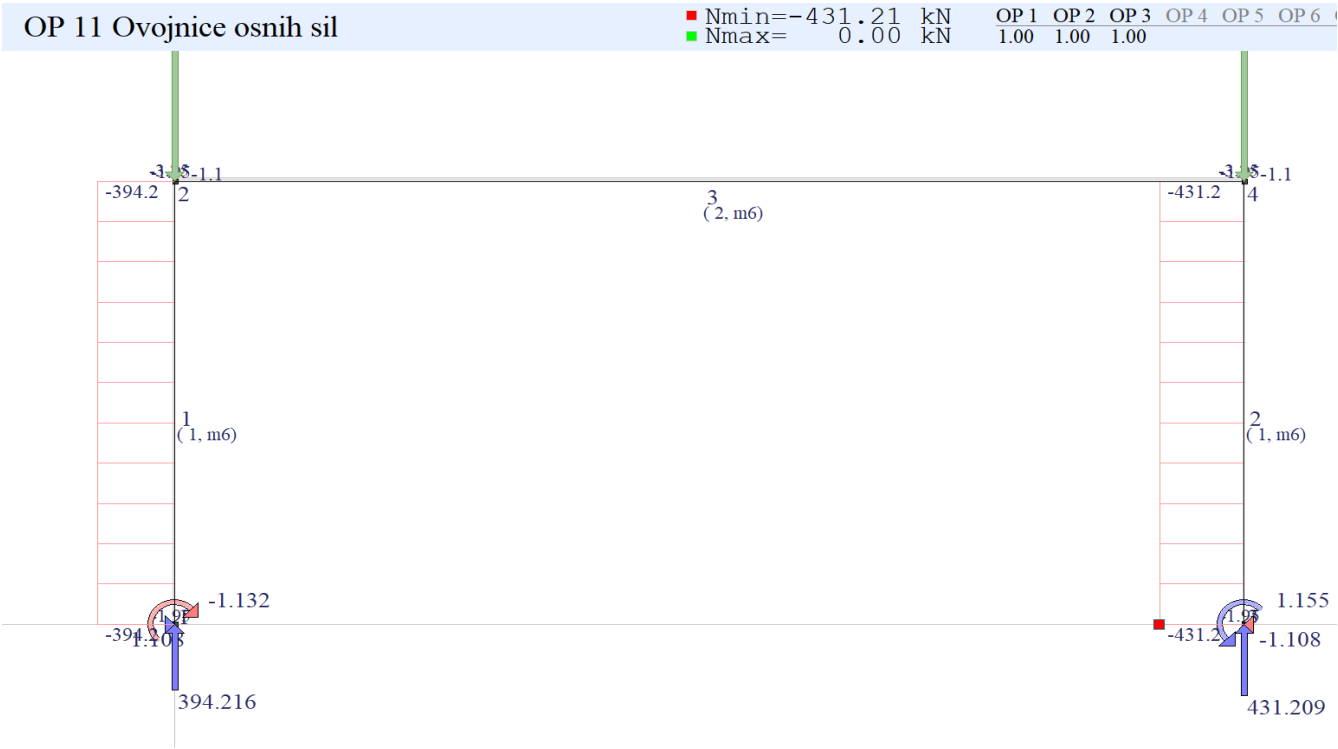
OP 11 Strizna stremena nosilcev

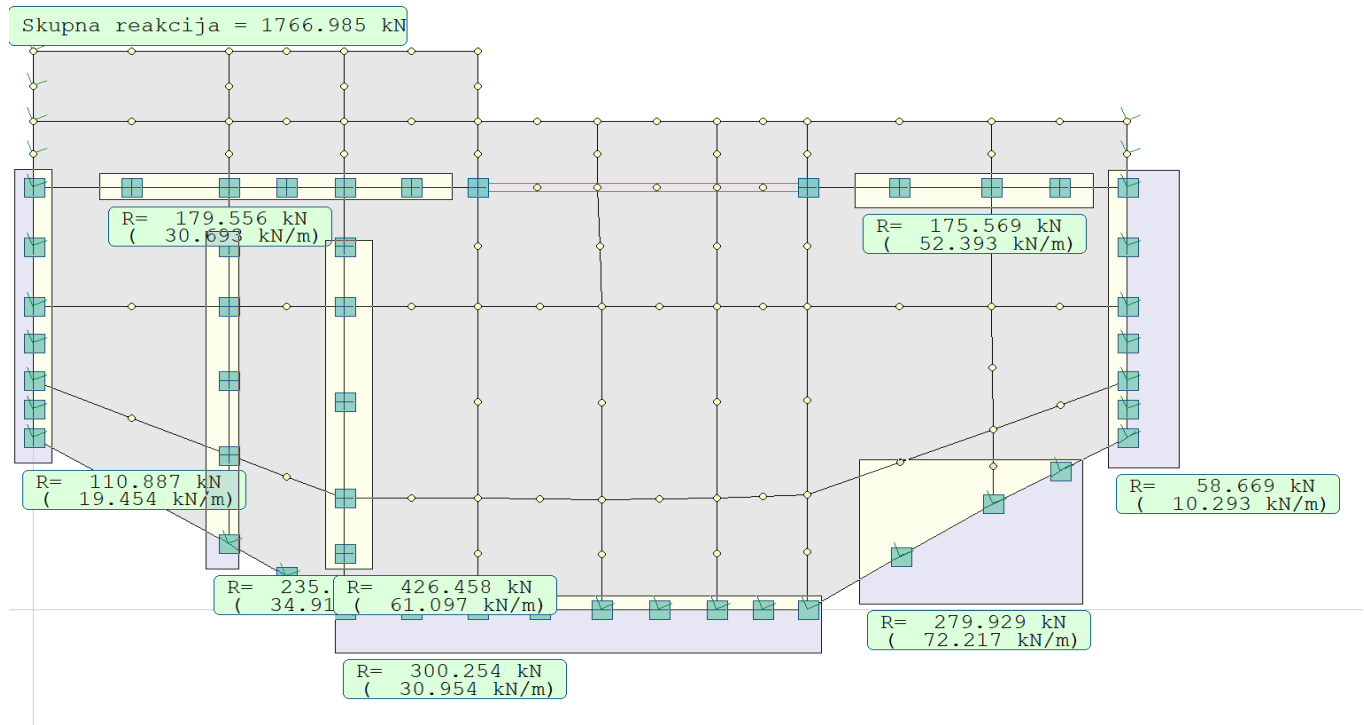
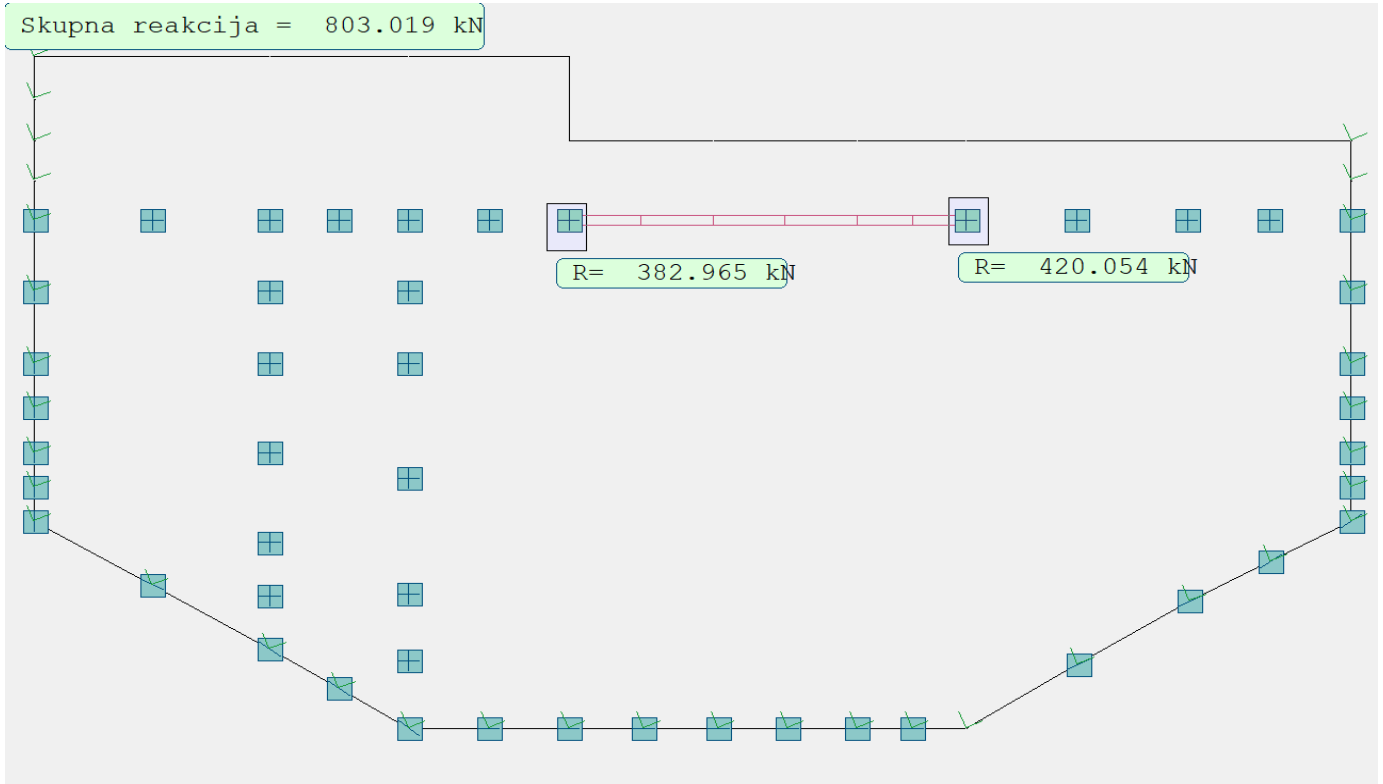
■ $A_{smin} = 2.36 \text{ cm}^2 / \text{m}$
 ■ $A_{smax} = 2.36 \text{ cm}^2 / \text{m}$

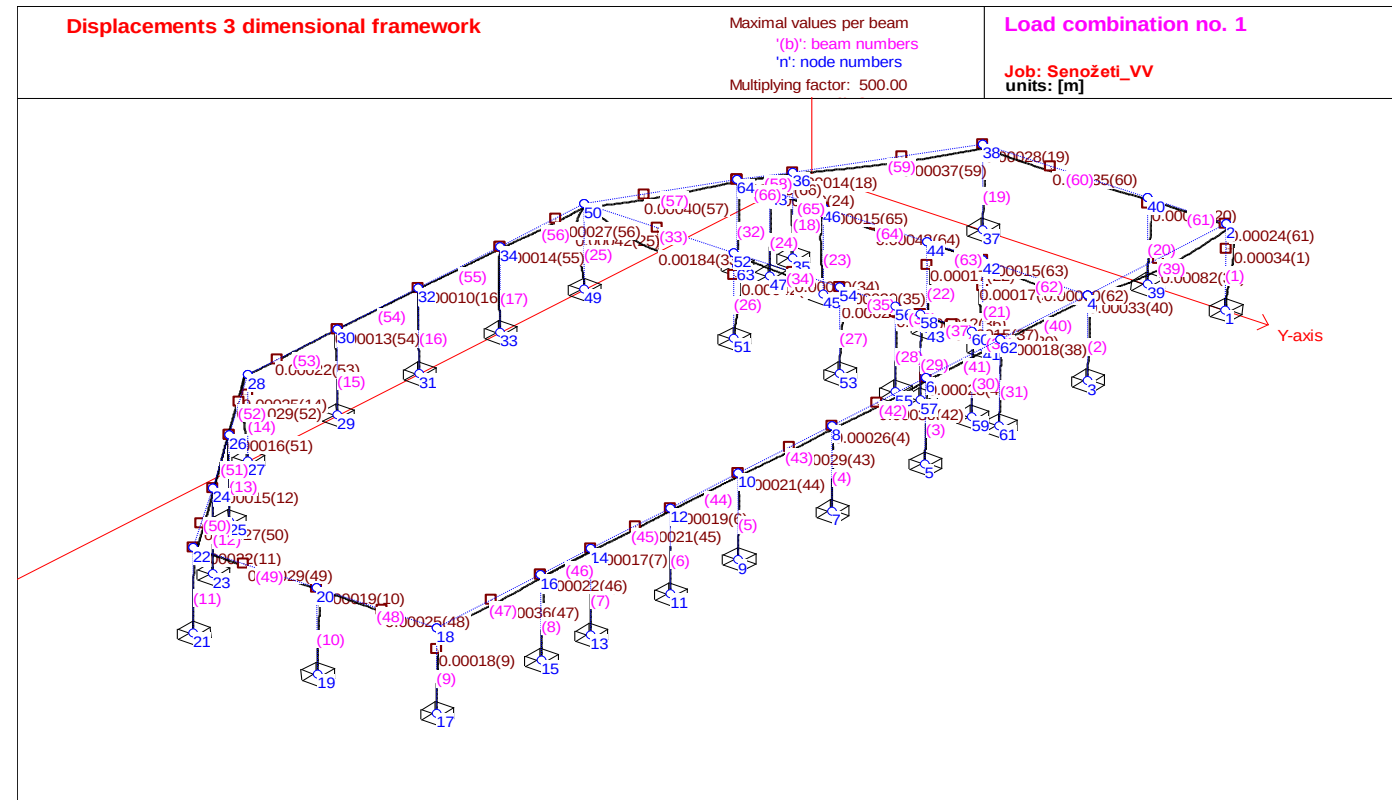




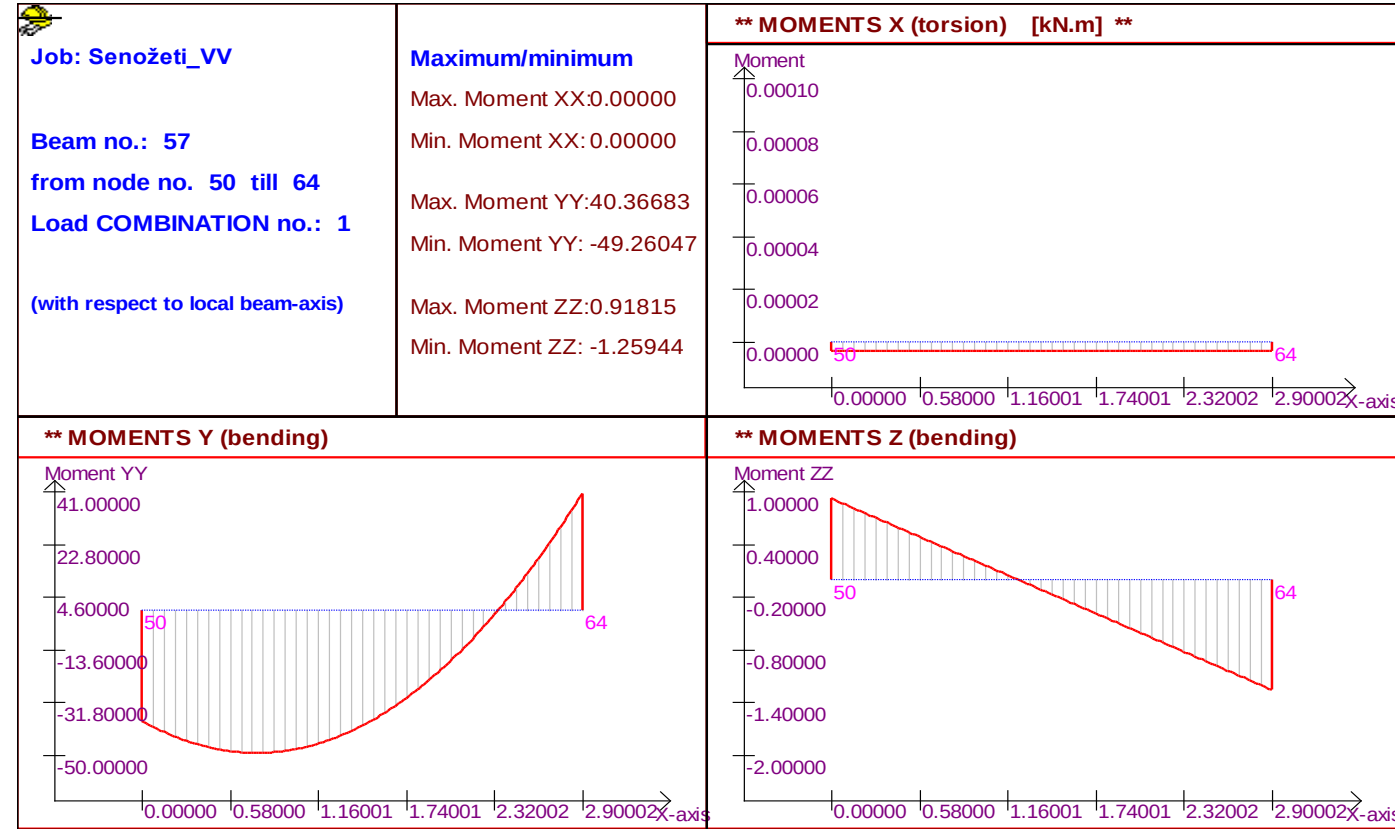
Reakcije na temelj

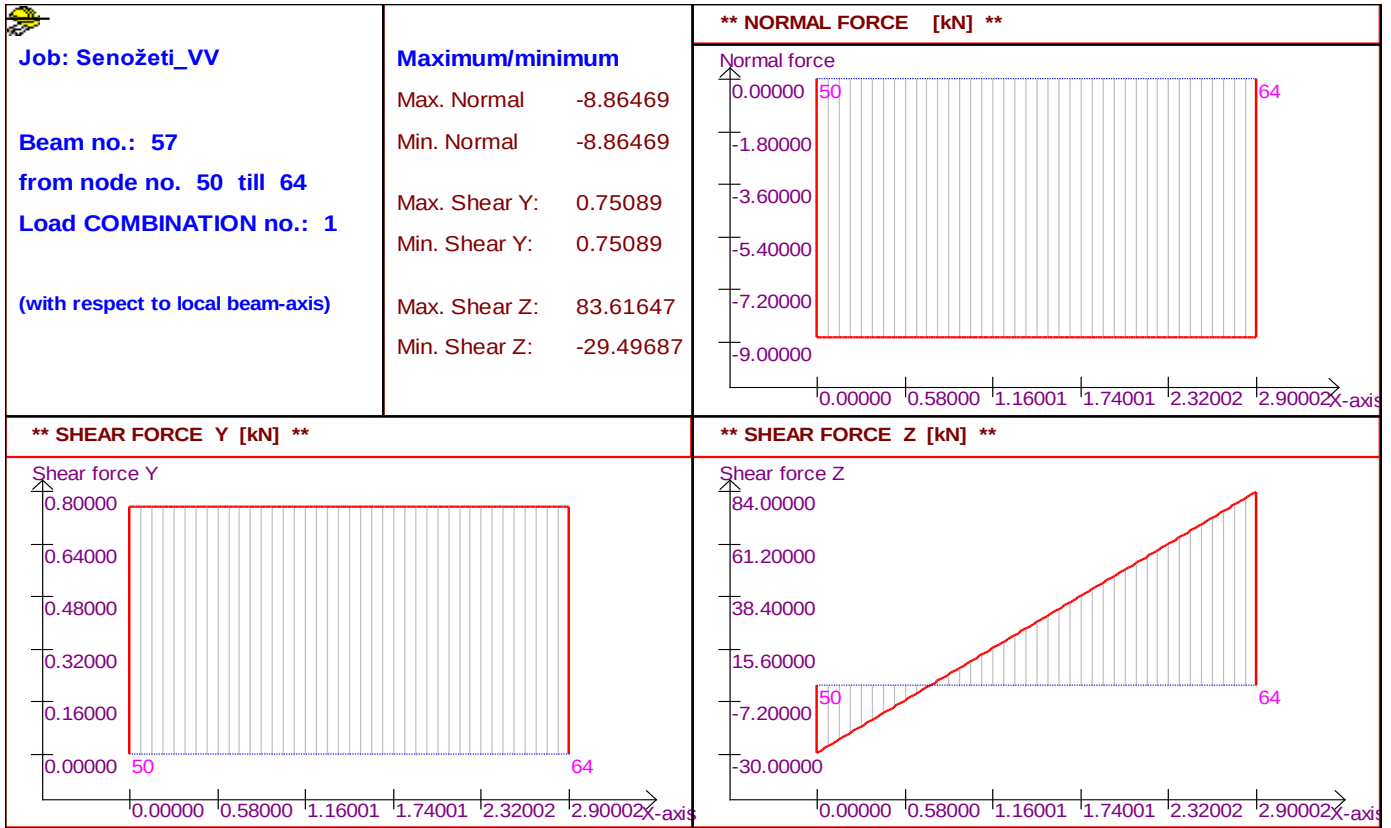




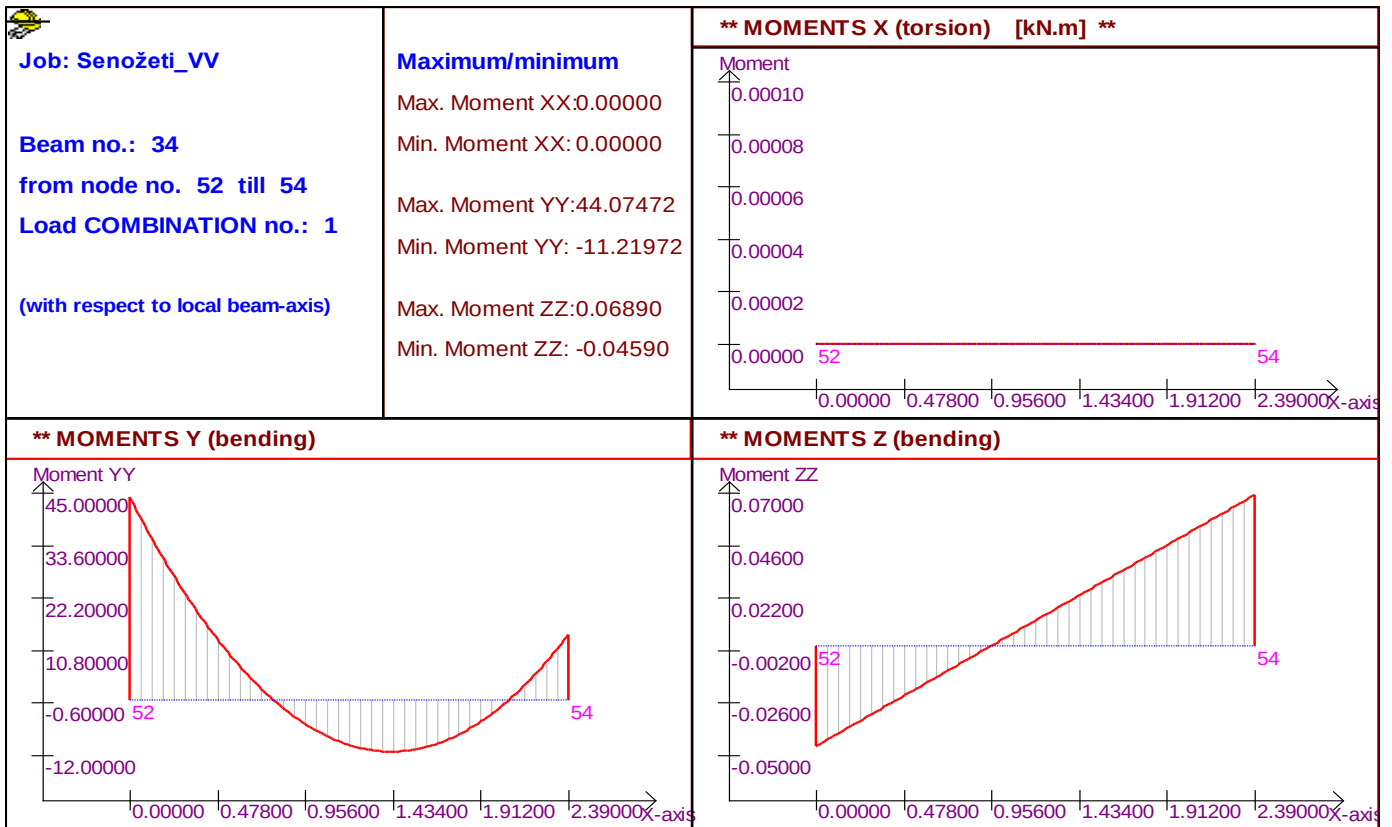


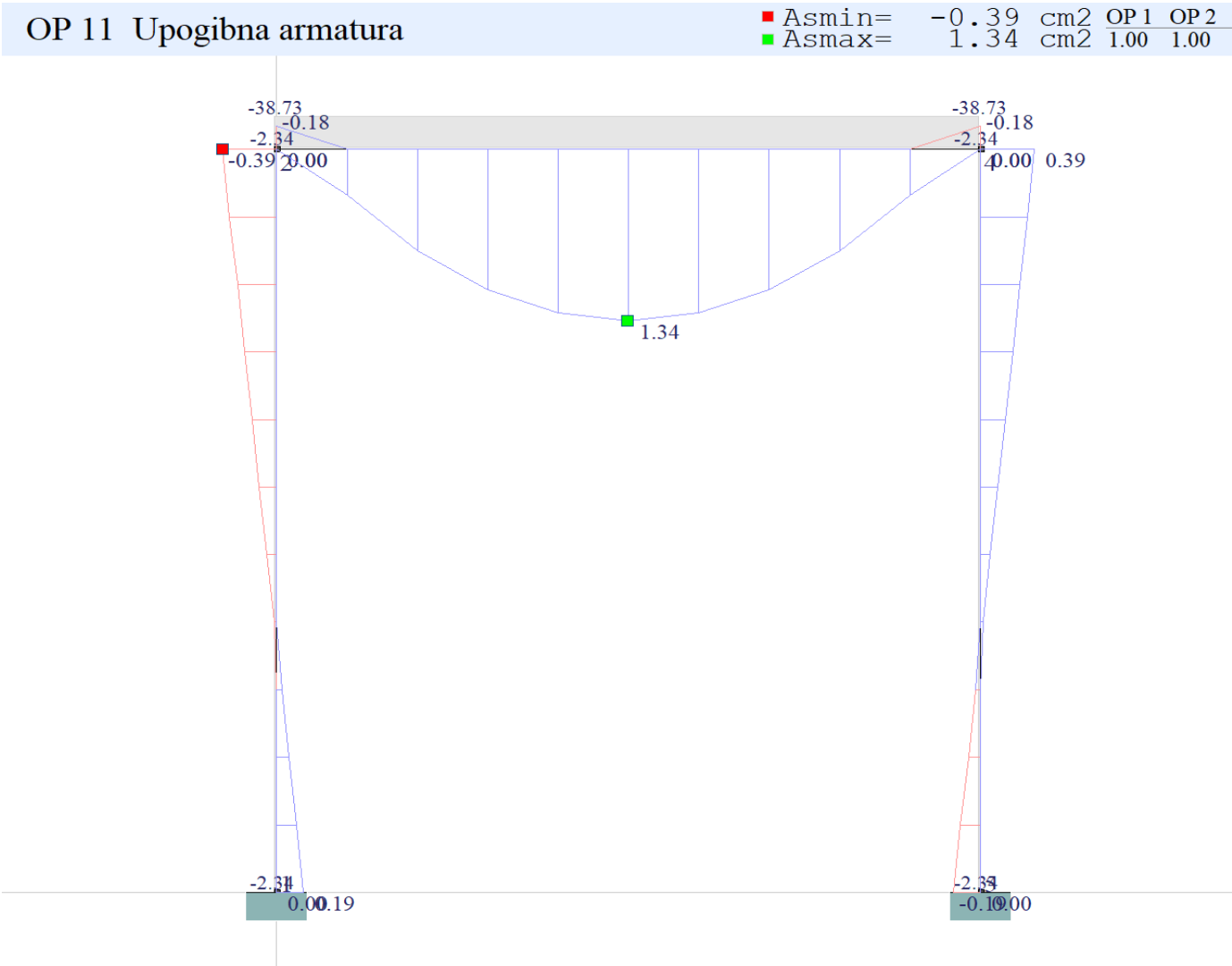
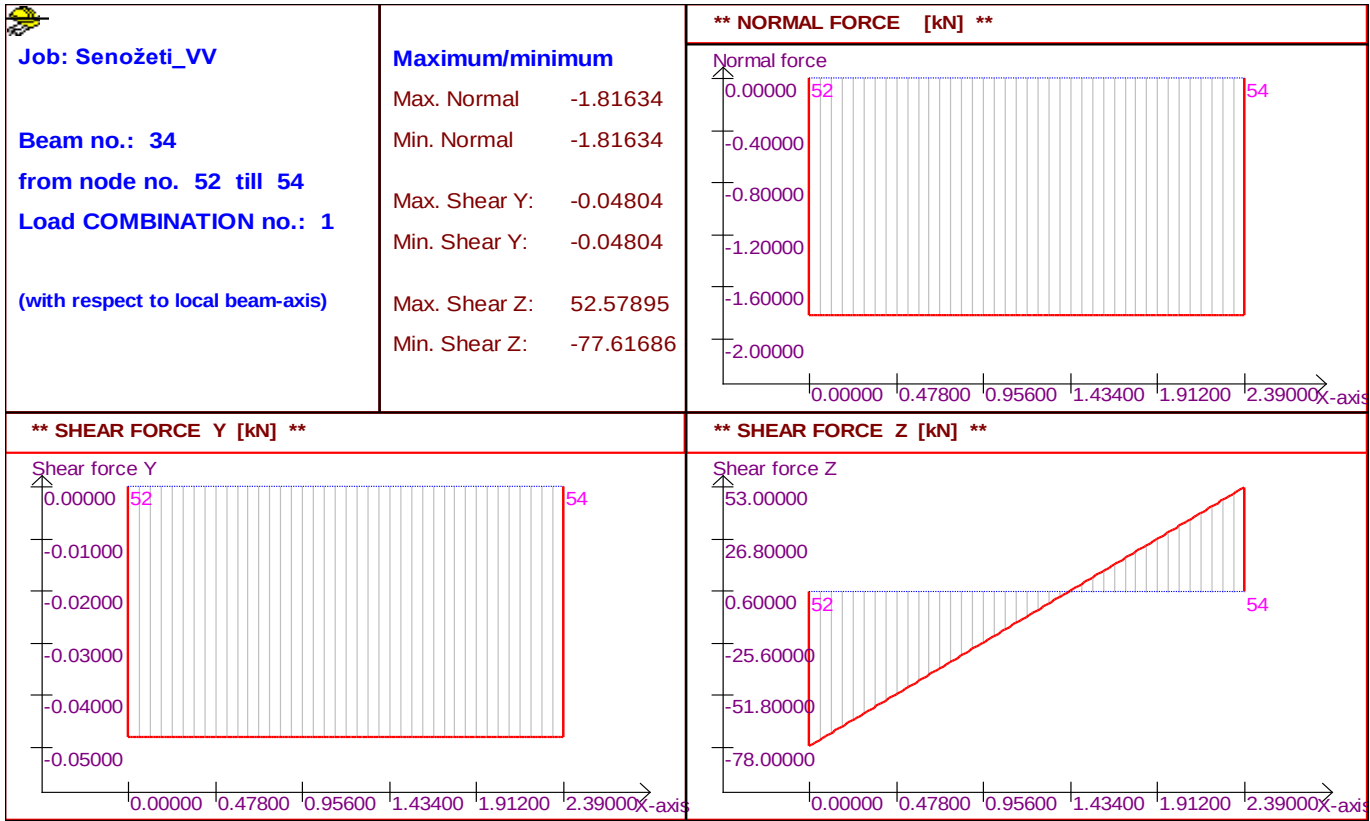
Preklada POZ 201

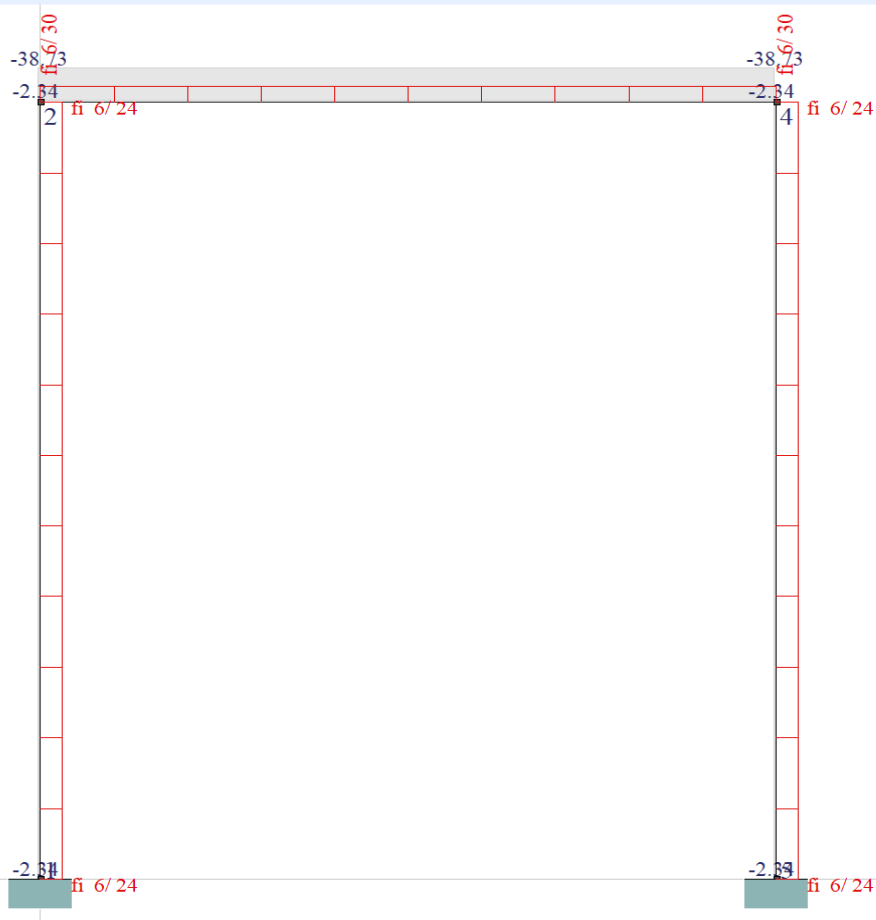




Preklada POZ 202

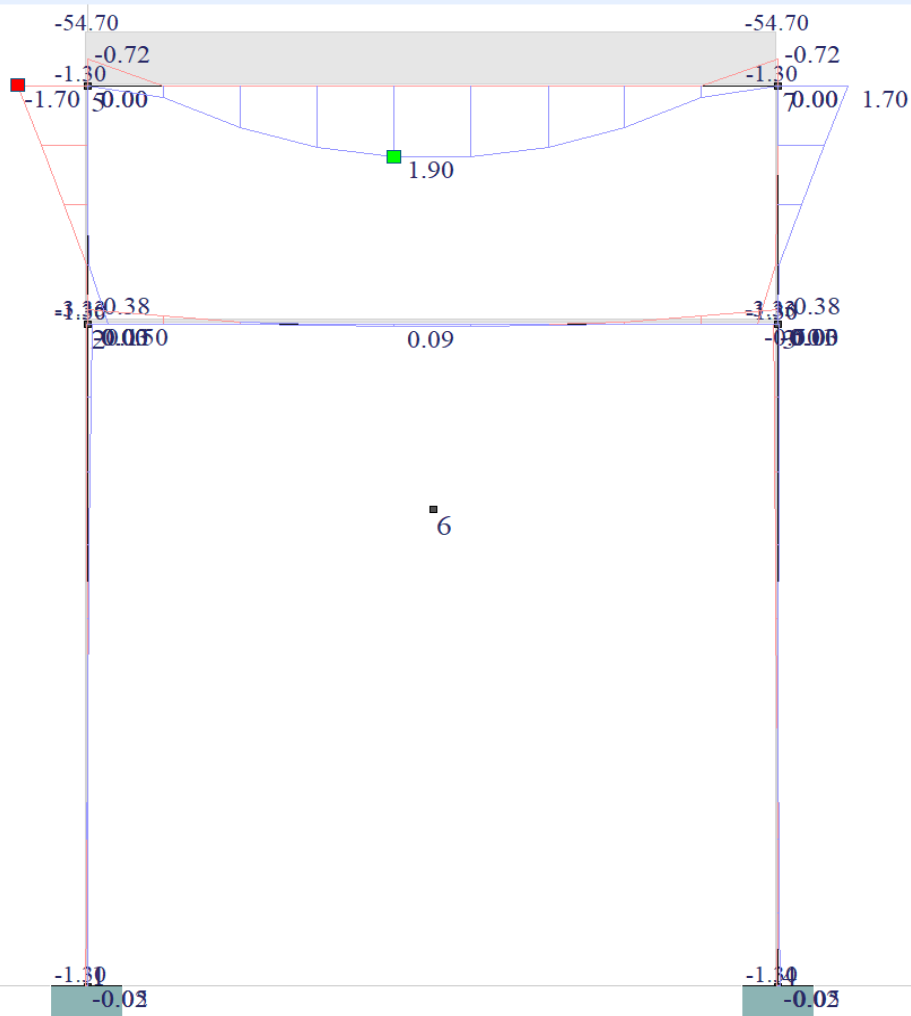




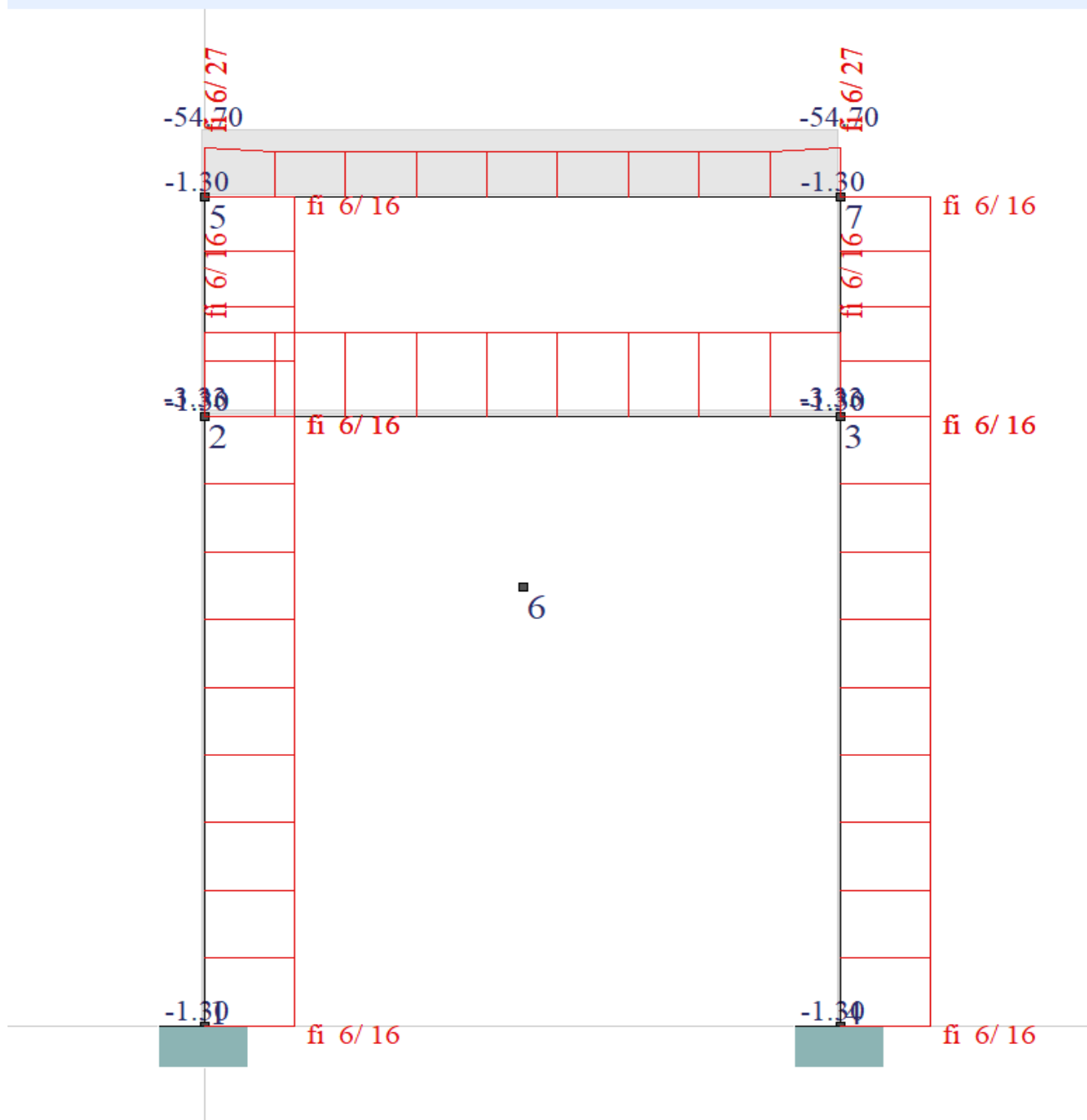


OP 11 Upogibna armatura

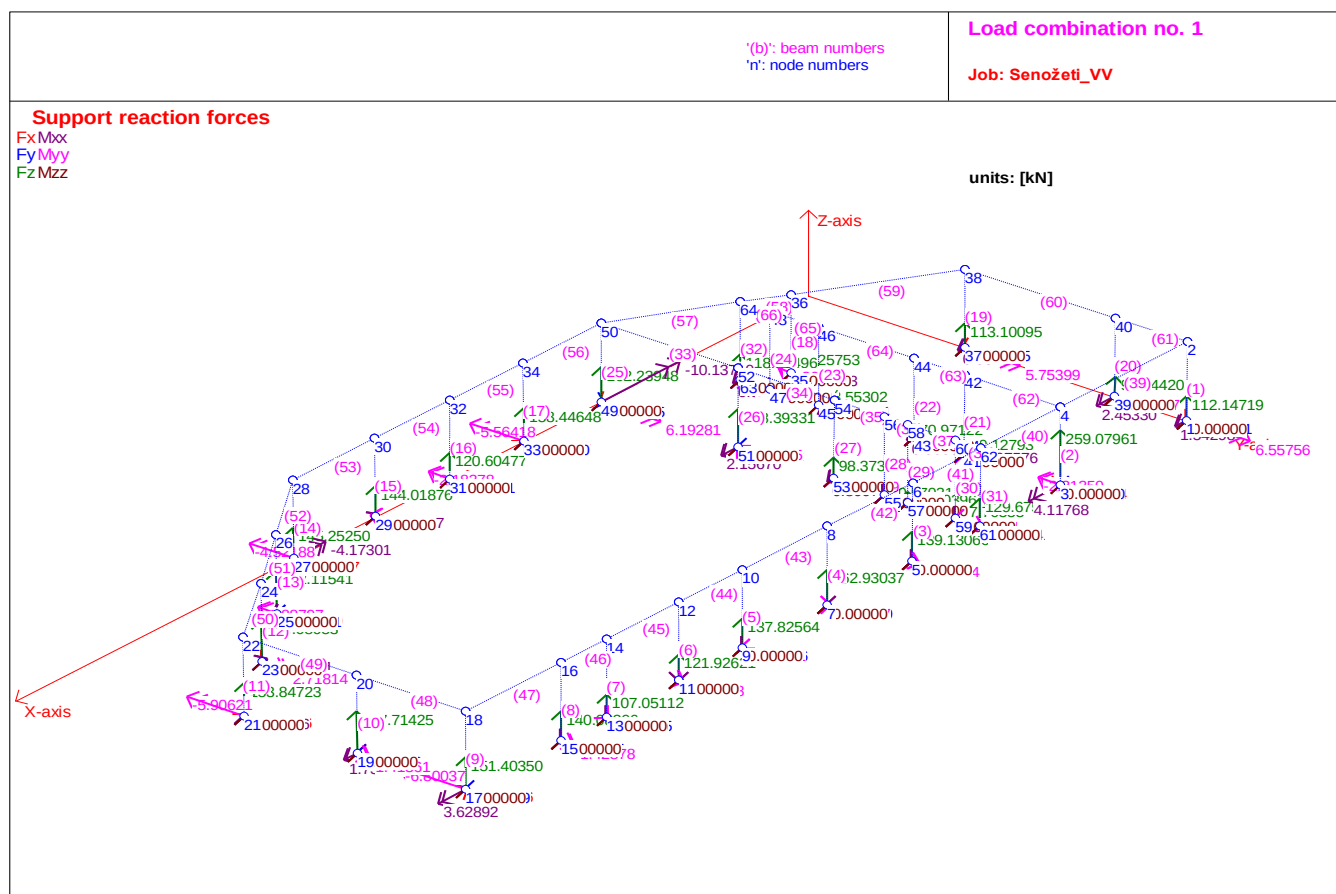
■ Asmin= -1.70 cm²
■ Asmax= 1.90 cm²



OP 11 Strizna armatura - Stremena



Reakcije na temeljno AB ploščo



Element: AB talna plošča

ANALIZA OBTEŽB:	Stalna obtežba:	finalni tlak	0,14	kN/m ²
		estrih	0,264	kN/m ²
		topl. izolacija EPS 8 cm	0,042	kN/m ²
		<u>q_g (max)</u>	<u>0,446</u>	<u>kN/m²</u>

Koristna obtežba: C4 5 kN/m²

OP 11 Armatura v Y-smeri [cm²]

Asmin= -11.65 cm²
Asmax= 0.55 cm²

-8.0 -7.0 -6.0 -5.0 -4.0 -3.0 -2.0 -1.0 0.0 1.0

