

# BETONSKE KONSTRUKCIJE

## Vežba br.10

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Konsultacije:

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***Semestar: V***

***ESPB: 6***

# *Analiza opterećenja. Ramovi*

- 1. Analiza opterećenja***
- 2. Ramovi***
- 3. Analiza opterećenja i statički proračun ramovske konstrukcije***

# Zadatak 4

$$d_{pl} = 16 \text{ cm}$$

Grede POS 2-6 40/60 cm

Stubovi 40x40cm

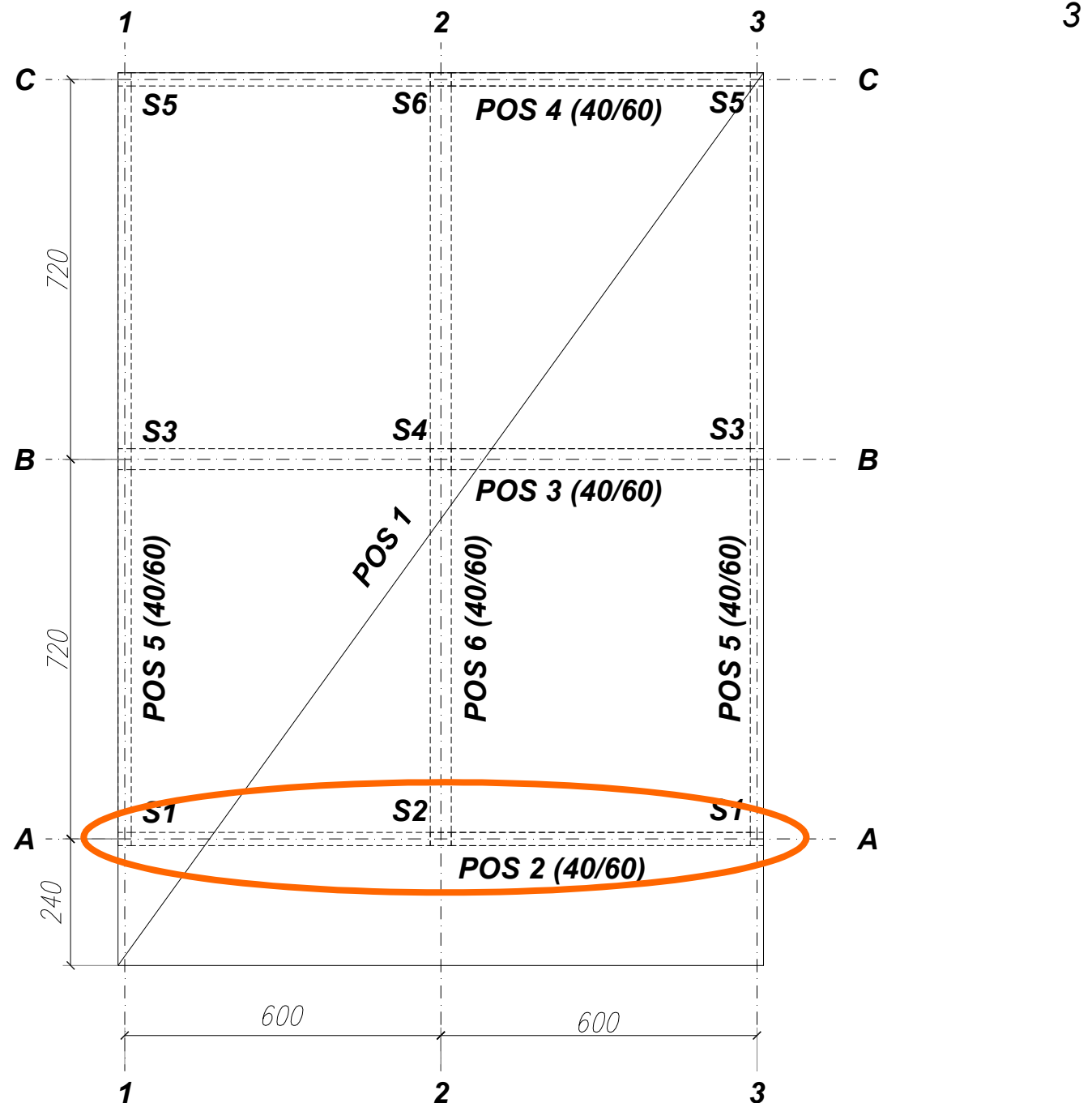
$$\Delta g = 2 \text{ kN/m}^2$$

$$p = 10 \text{ kN/m}^2$$

$$W = 135 \text{ kN}$$

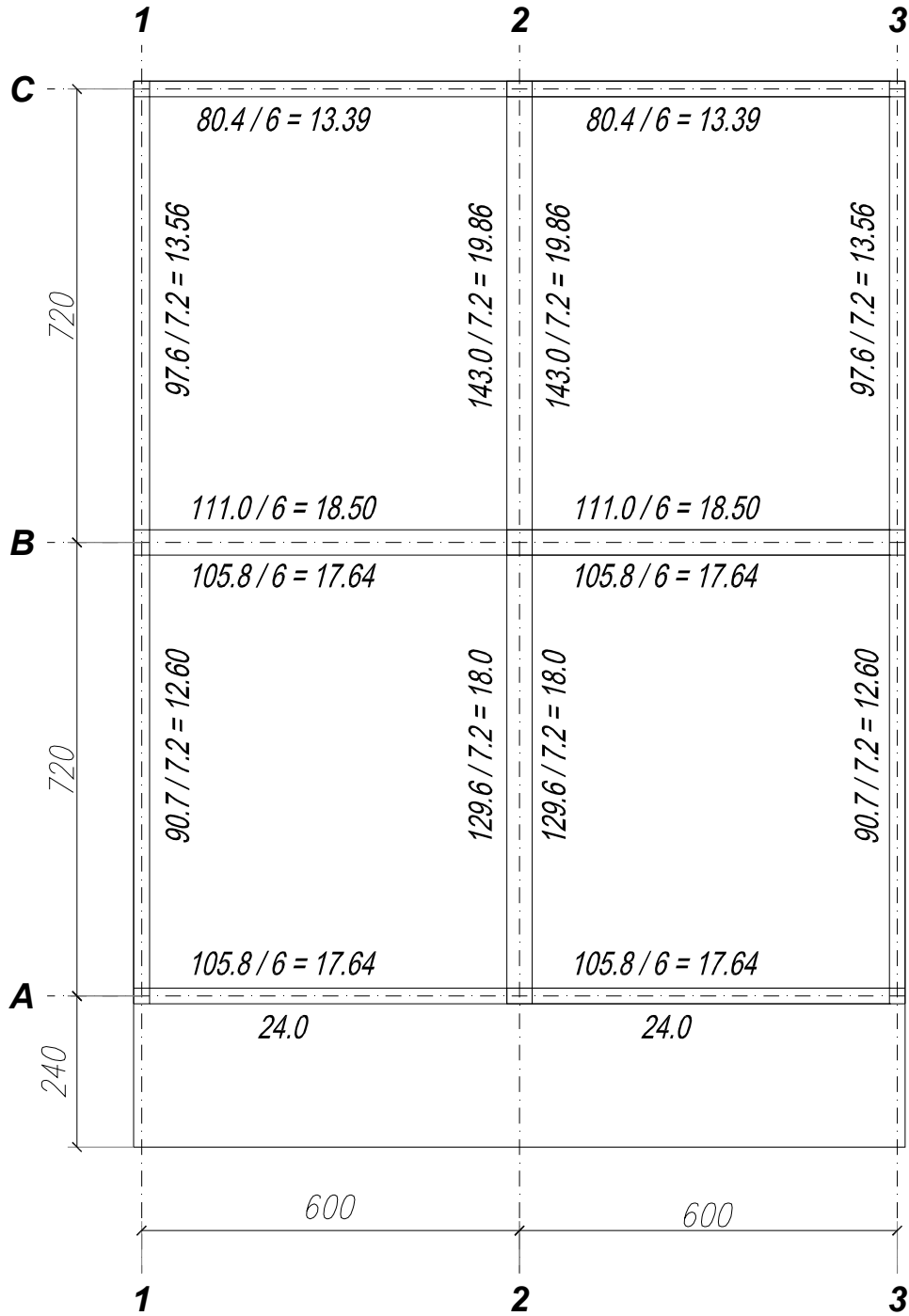
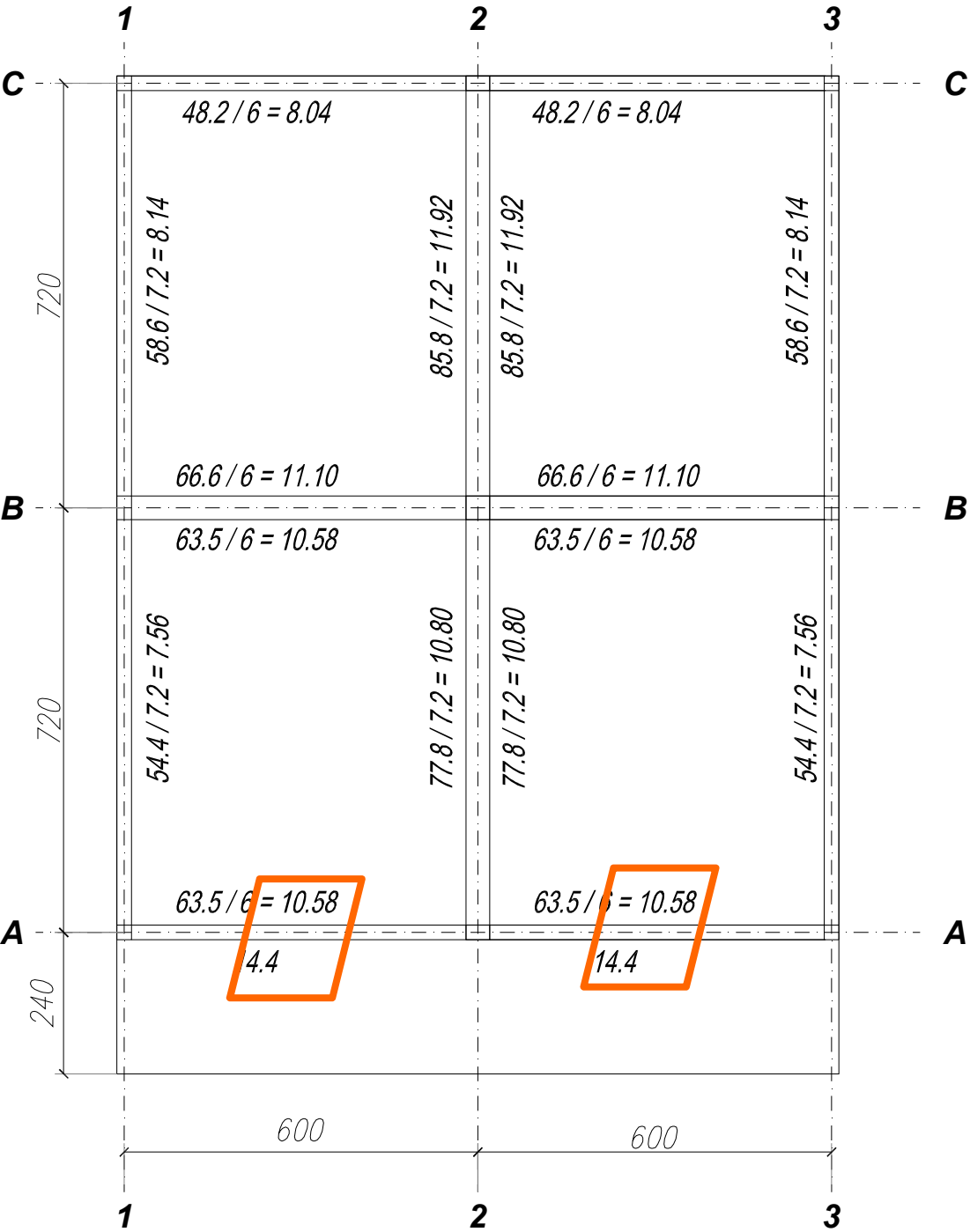
MB 30

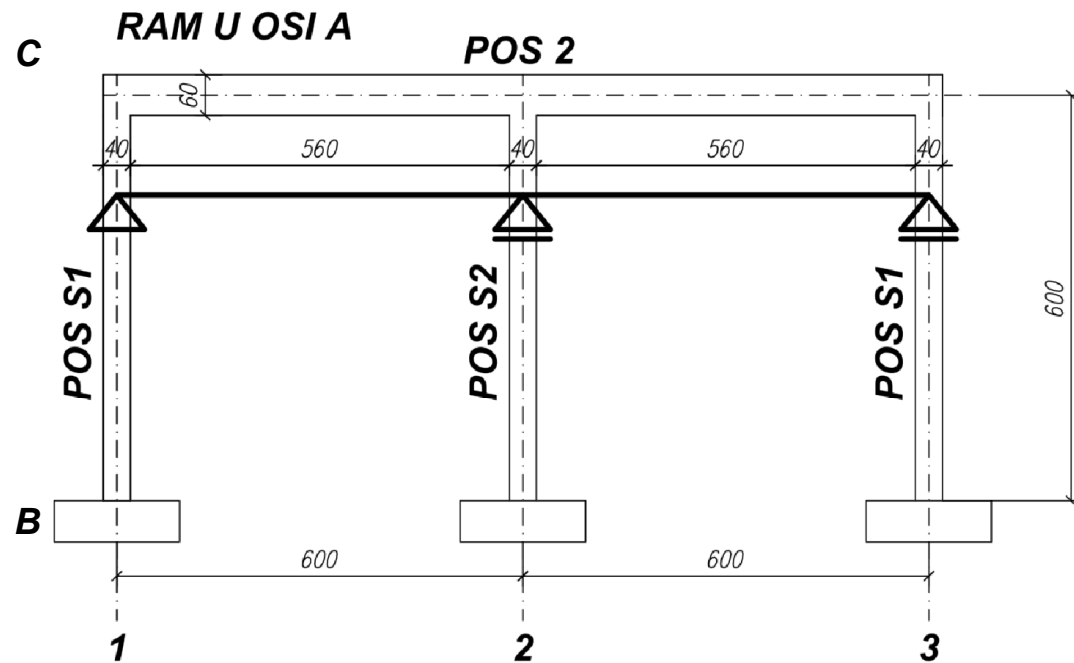
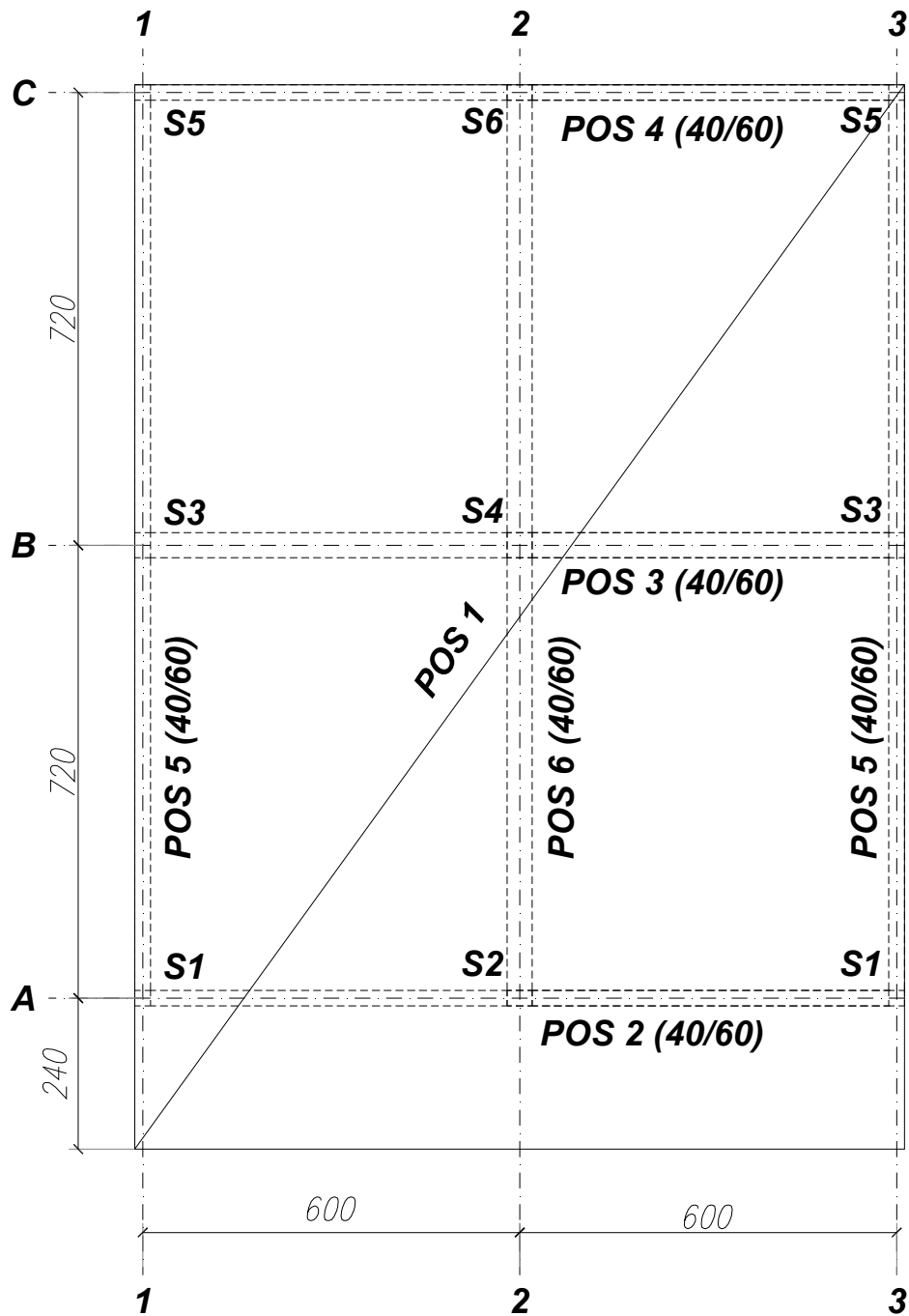
RA 400/500



**g**

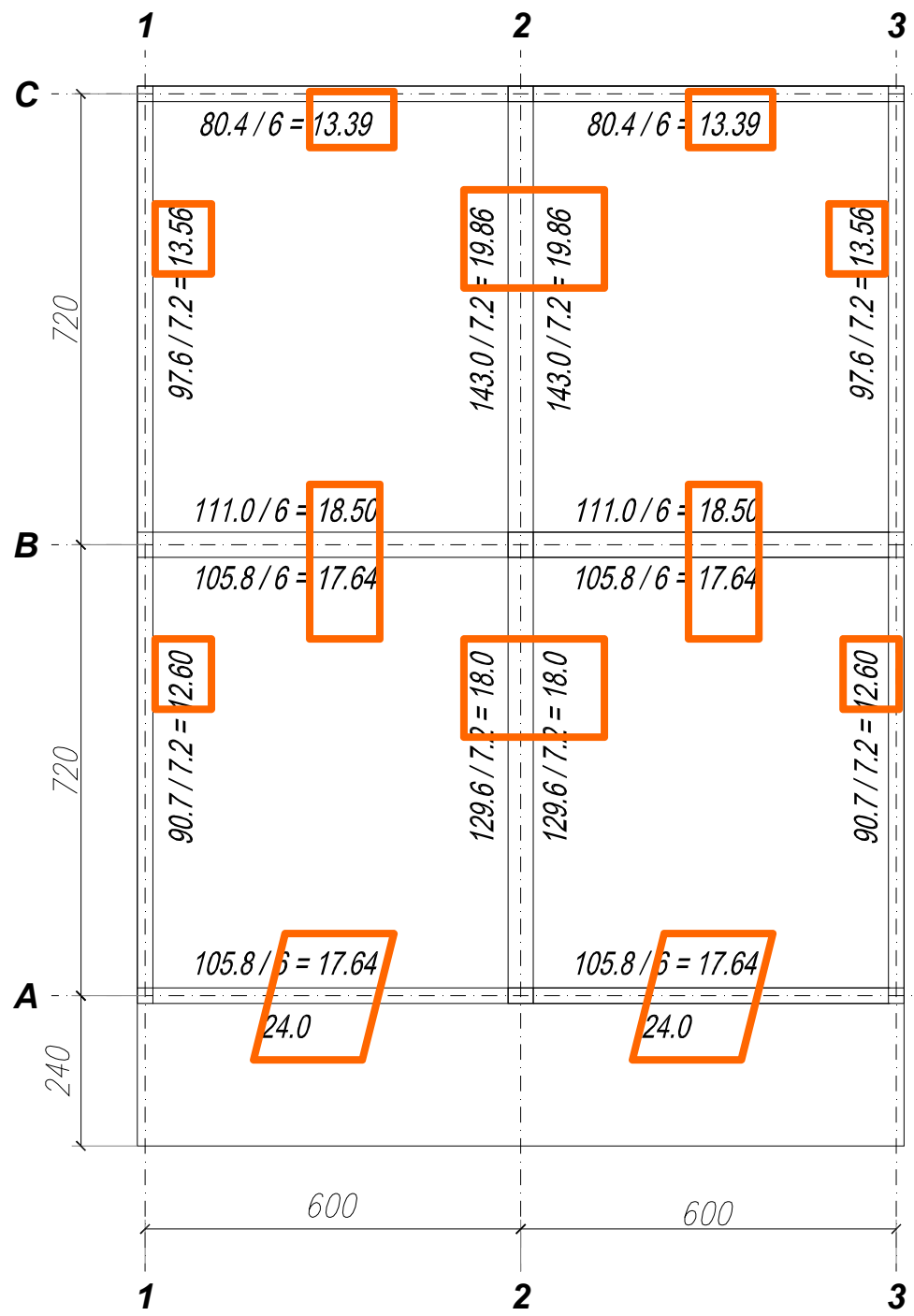
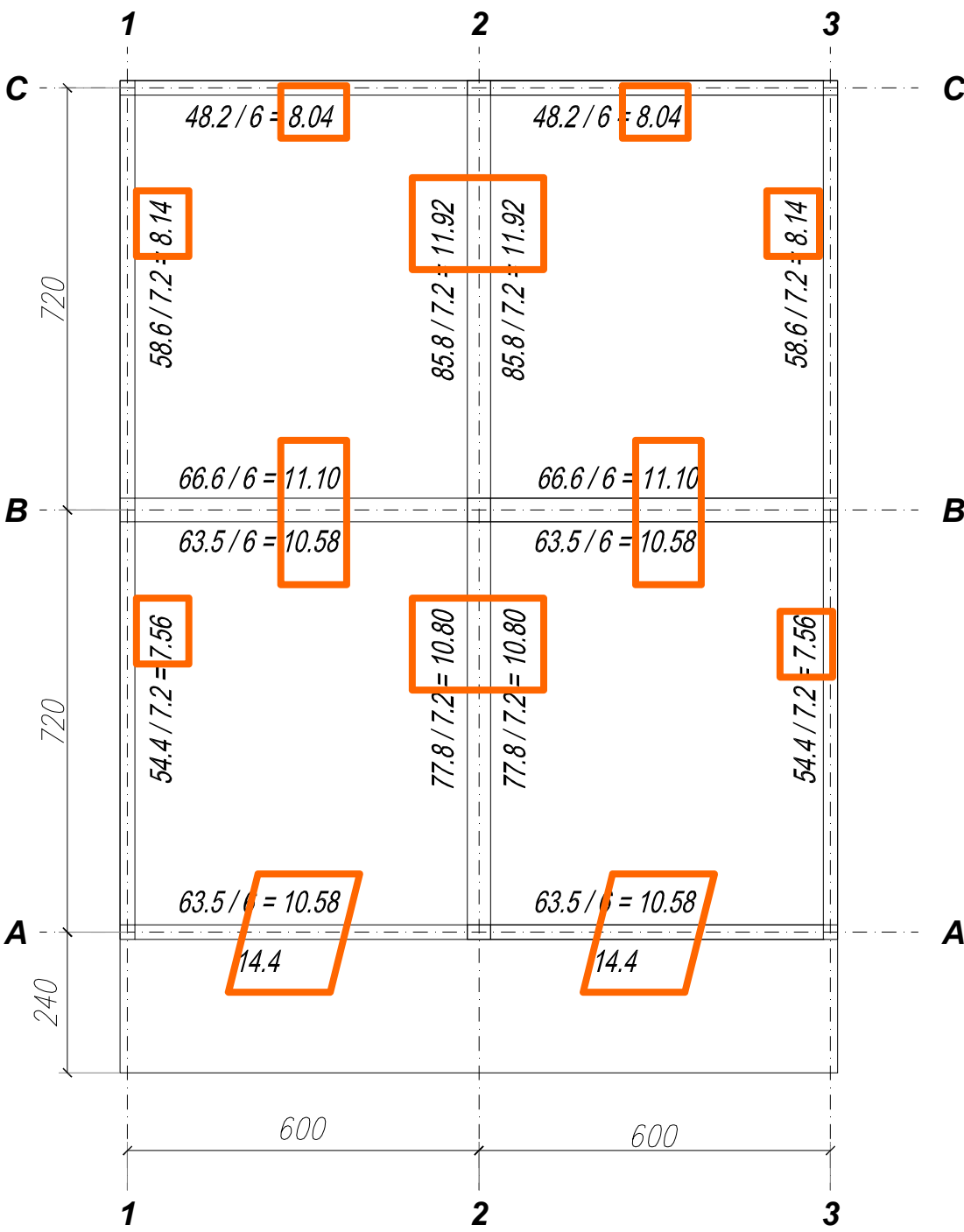
**p**





# g

# p



# STUB POS S5

## 2.1 ANALIZA OPTEREĆENJA POS S5

### Greda POS 4:

stalno opterećenje:

$$\text{sopstvena težina grede} \quad g_{gr} = 0.40 \times 60 \times 25.0 = 6.00 \text{ kN/m}$$

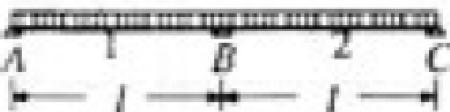
$$\text{stalno opterećenje sa POS 1c} \quad g_{1c} = \underline{\hspace{2cm}} = 8.04 \text{ kN/m}$$

$$\mathbf{g = 14.04 \text{ kN/m}}$$

povremeno opterećenje:

$$\text{povremeno opterećenje sa POS 1c} \quad p_{1c} = \underline{\hspace{2cm}} = 13.39 \text{ kN/m}$$

$$\mathbf{p = 13.39 \text{ kN/m}}$$

	$M_{11}$	$0.070 \quad pl^2$
	$M_{12}$	$-$
	$M_{B(min)}$	$-0.125 \quad pl^2$
Pri stalnom opterećenju staviti $G$ umesto $P$ , odnosno $g$ umesto $p$	$A = T_{1a}$	$0.375 \quad pl$
	$B_{(max)}$	$1.250 \quad pl$
	$T_{1b(min)}$	$-0.625 \quad pl$

$$A_{g,POS4} = 0.375 \times 14.04 \times 6.0 = 31.59 \text{ kN}$$

$$A_{p,POS4} = 0.375 \times 13.39 \times 6.0 = 30.13 \text{ kN}$$

# STUB POS S5

## Greda POS 5:

stalno opterećenje:

$$\text{sopstvena težina grede} \quad g_{gr} = 0.40 \times 60 \times 25.0 = 6.00 \text{ kN/m}$$

$$\text{stalno opterećenje sa POS 1b} \quad g_{1b} = 7.56 \text{ kN/m}$$

$$\text{stalno opterećenje sa POS 1c} \quad g_{1c} = 8.14 \text{ kN/m}$$

$$g_1 = 13.56 \text{ kN/m}$$

$$g_2 = 14.14 \text{ kN/m}$$

povremeno opterećenje:

$$\text{povremeno opterećenje sa POS 1b} \quad p_{1b} = 12.60 \text{ kN/m}$$

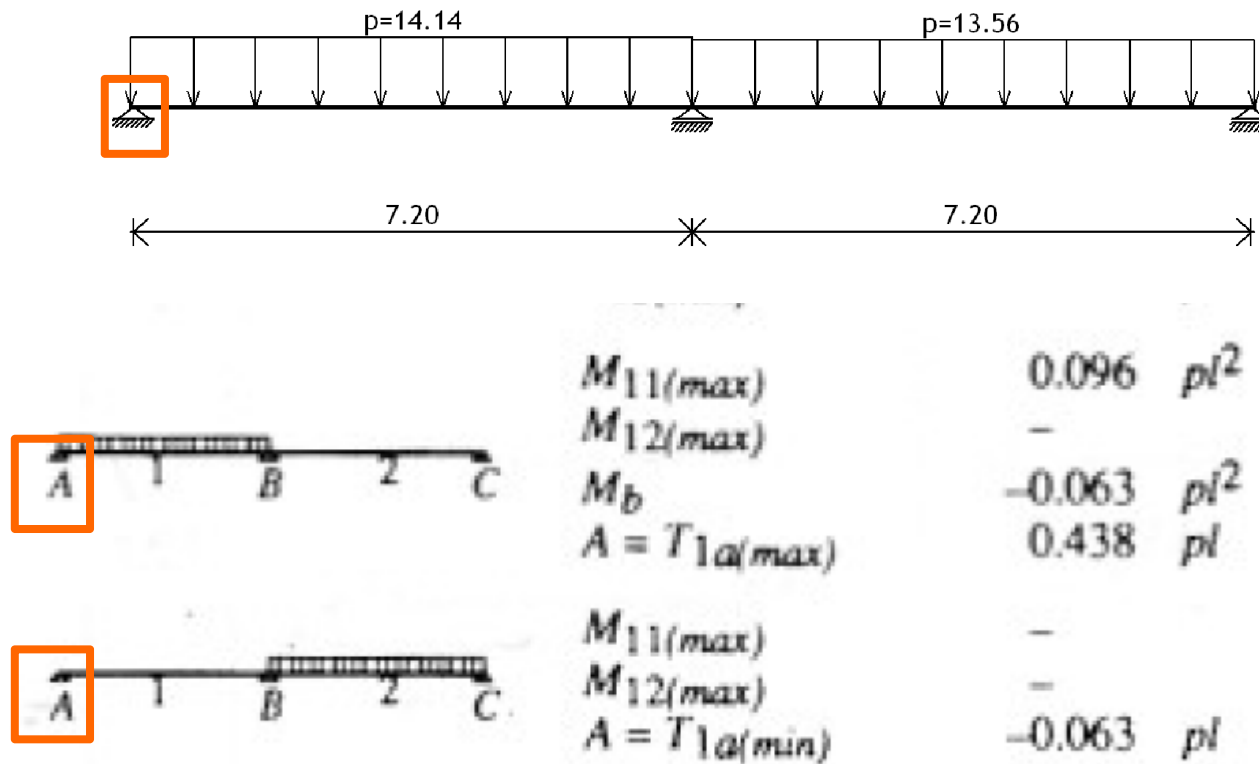
$$\text{povremeno opterećenje sa POS 1c} \quad p_{1c} = 13.56 \text{ kN/m}$$

$$p_1 = 12.60 \text{ kN/m}$$

$$p_2 = 13.56 \text{ kN/m}$$



# STUB POS S5



$$A_{g,POSS} = 0.438 \times 14.14 \times 7.2 - 0.063 \times 13.56 \times 7.2 = 38.44 \text{ kN}$$

$$A_{p,POSS} = 0.438 \times 13.56 \times 7.2 - 0.063 \times 12.60 \times 7.2 = 37.04 \text{ kN}$$

# STUB POS S5

## Stub POS S5:

stalno opterećenje:

$$\text{stalno opterećenje sa POS 4} \quad A_{g,POS4} = \quad = 31.59 \text{ kN}$$

$$\text{stalno opterećenje sa POS 4} \quad A_{g,POS4} = \quad = \underline{38.44 \text{ kN}}$$

$$\mathbf{G = 70.03 \text{ kN}}$$

povremeno opterećenje:

$$\text{povremeno opterećenje sa POS 4} \quad A_{p,POS4} = \quad = 30.13 \text{ kN}$$

$$\text{povremeno opterećenje sa POS 4} \quad A_{p,POS4} = \quad = \underline{37.04 \text{ kN}}$$

$$\mathbf{P = 67.17 \text{ kN}}$$