

Osnovni podaci o modelu, Ulazni podaci - Konstrukcija

Datoteka: 3_Osmine A.twp
Datum proračuna: 21.4.2016

Način proračuna: 3D model

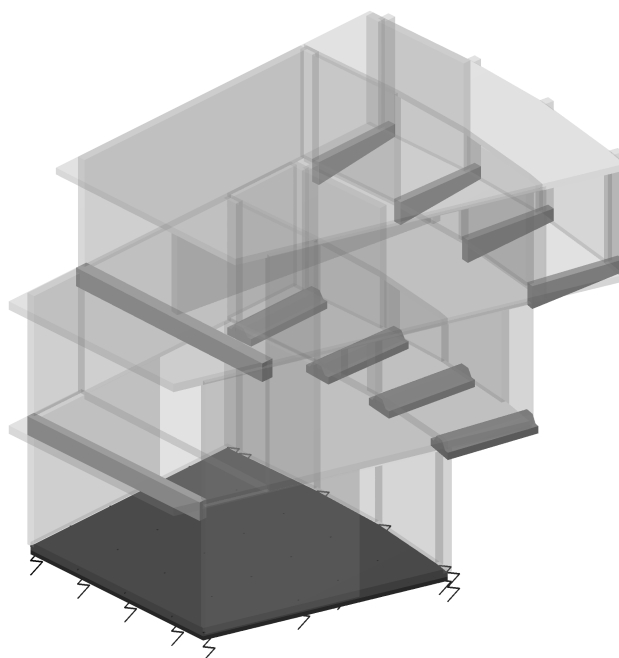
- ☒ Teorija I-og reda ☒ Modalna analiza ☐ Stabilnost
☐ Teorija II-og reda ☒ Seizmički proračun ☐ Faze građenja
☐ Nelinearni proračun

Veličina modela

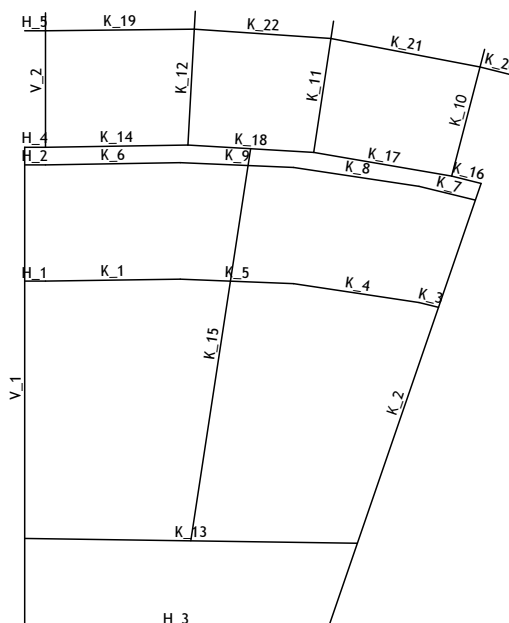
Broj čvorova: 3665
 Broj pločastih elemenata: 3179
 Broj grednih elemenata: 57
 Broj graničnih elemenata: 2838
 Broj osnovnih slučajeva opterećenja: 4
 Broj kombinacija opterećenja: 2

Jedinice mjera

Dužina: m [cm,mm]
 Sila: kN
 Temperatura: Celsius



Izometrija



Dispozicija okvira

Tabela materijala

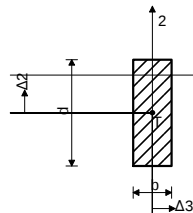
No	Naziv materijala	E[kN/m ²]	μ	γ [kN/m ³]	α [1/C]	Em[kN/m ²]	μ_m
1	Beton C25/30	3.150e+7	0.20	25.00	1.000e-5	3.150e+7	0.20

Setovi ploča

No	d[m]	e[m]	Materijal	Tip proračuna	Ortotropija	E2[kN/m ²]	G[kN/m ²]	α
<1>	0.200	0.100	1	Tanka ploča	Izotropna			
<2>	0.160	0.080	1	Tanka ploča	Izotropna			
<3>	0.200	0.100	1	Tanka ploča	Izotropna			

Setovi greda

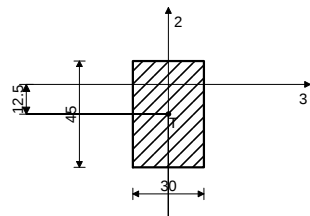
Set: 1 Presjek: Promjenjiv, Fiktivna ekscentričnost



Mat. 1 - Beton C25/30
Tip promjene Relativna linearna promjena.

No	dL	$\Delta 3$ [cm]	$\Delta 2$ [cm]	b [cm]	d [cm]
S	0	0.00	-19.50	20.00	55.00
E	1	0.00	-7.00	20.00	30.00

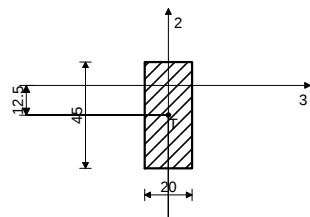
Set: 2 Presjek: b/d=30/45, Fiktivna ekscentričnost



[cm]

Mat.	A1	A2	A3	I1	I2	I3
1 - Beton C25/30	1.350e-1	1.125e-1	1.125e-1	2.377e-3	1.012e-3	2.278e-3

Set: 3 Presjek: b/d=20/45, Fiktivna ekscentričnost



[cm]

Mat.	A1	A2	A3	I1	I2	I3
1 - Beton C25/30	9.000e-2	7.500e-2	7.500e-2	8.651e-4	3.000e-4	1.519e-3

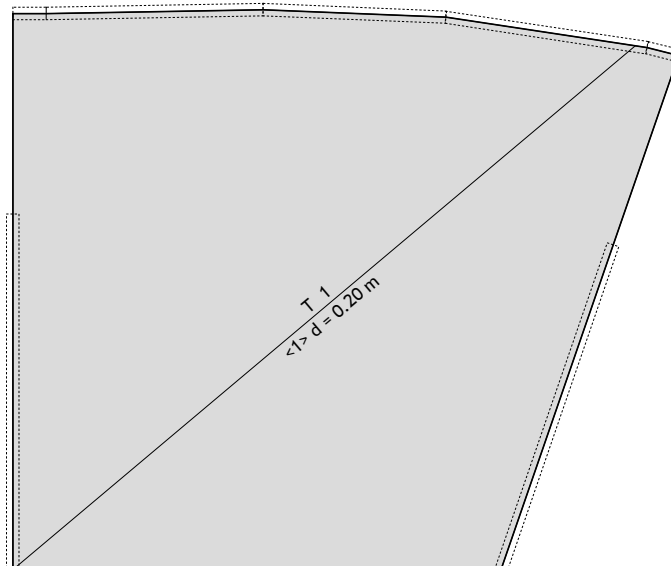
Setovi površinskih ležajeva

Set	K,R1	K,R2	K,R3
1	1.000e+5	1.000e+5	1.000e+5

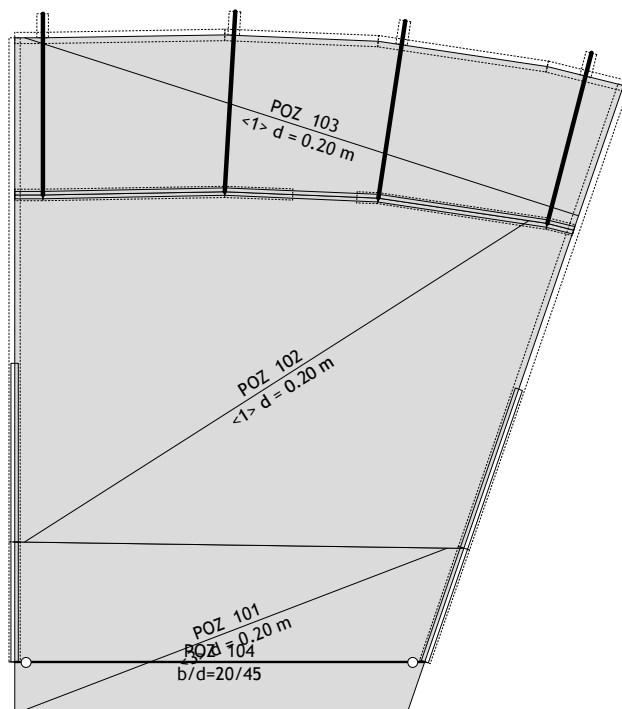
Setovi linijskih ležajeva

Set	K,R1	K,R2	K,R3	K,M1	Tlo [m]
1		1.000e+5			0.600

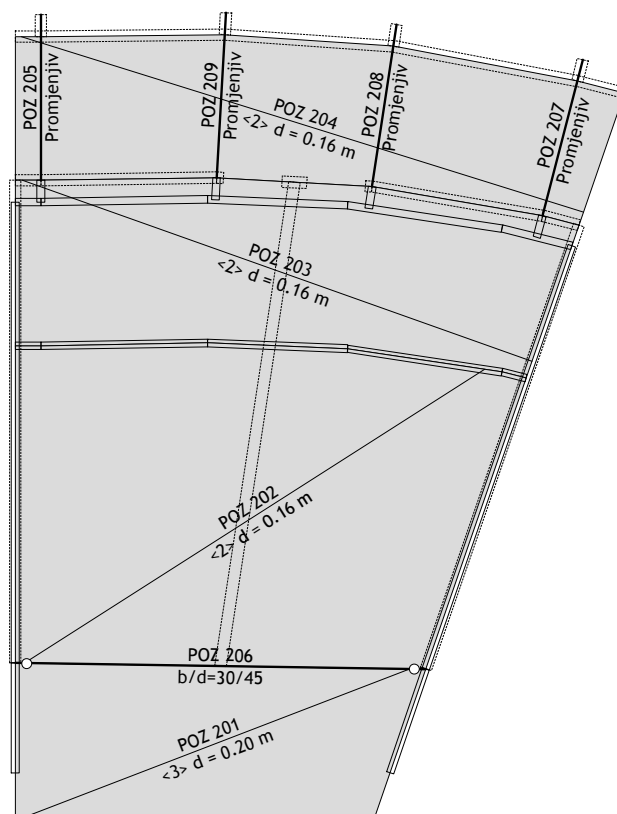
PLAN POZICIJA



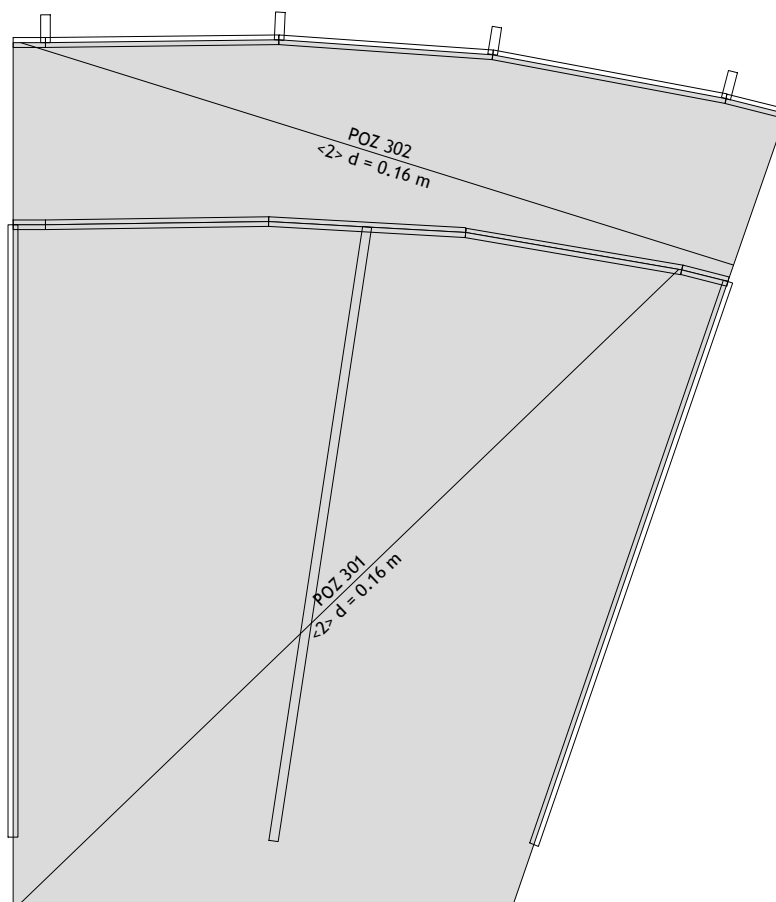
Nivo: TEMELJI [0.00 m]



Nivo: ETAŽA 100 [3.08 m]



Nivo: ETAŽA 200 [6.08 m]



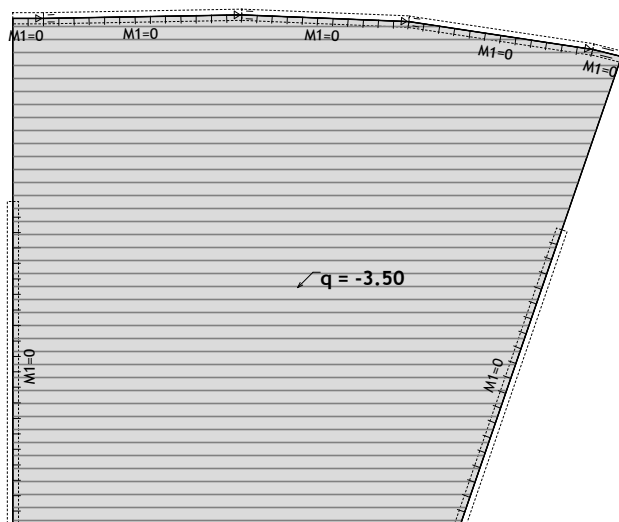
Nivo: ETAŽA 300 [8.76 m]

Ulazni podaci - Opterećenje

Lista slučajeva opterećenja

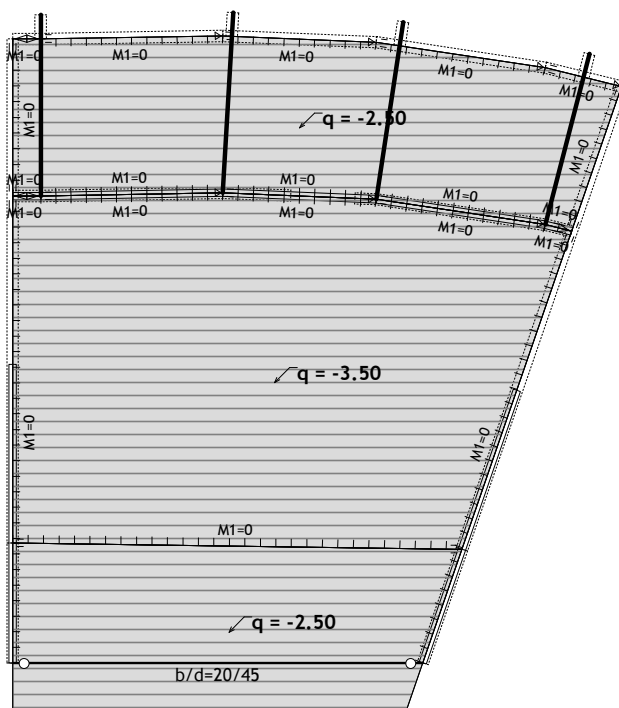
LC	Naziv
1	STALNO (g)
2	UPORABNO
3	POTRES X-SMJER

Opt. 1: STALNO (g)



Nivo: TEMELJI [0.00 m]

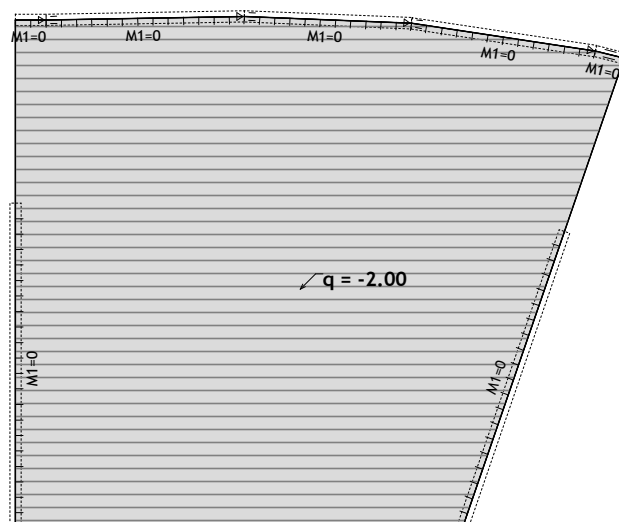
Opt. 1: STALNO (g)



Nivo: ETAŽA 100 [3.08 m]

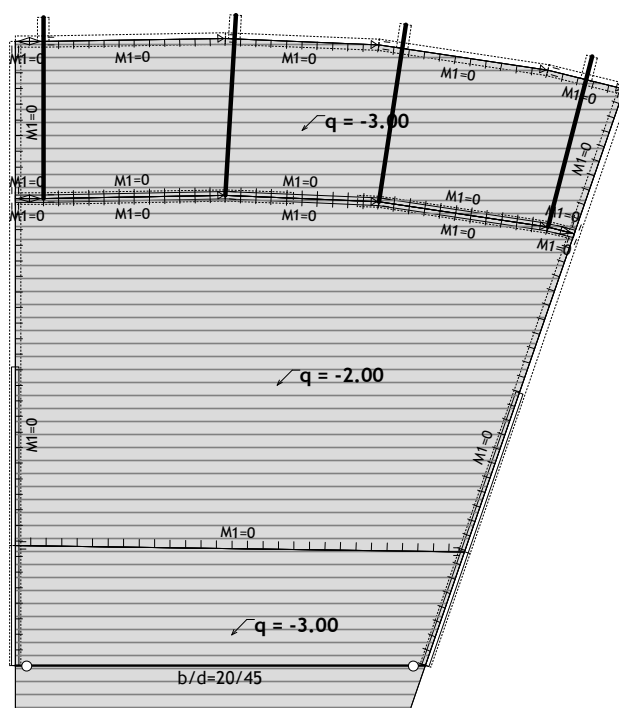
LC	Naziv
4	POTRES Y-SMJER
5	Komb.: 1.35xI+1.5xII
6	Komb.: I+II

Opt. 2: UPORABNO



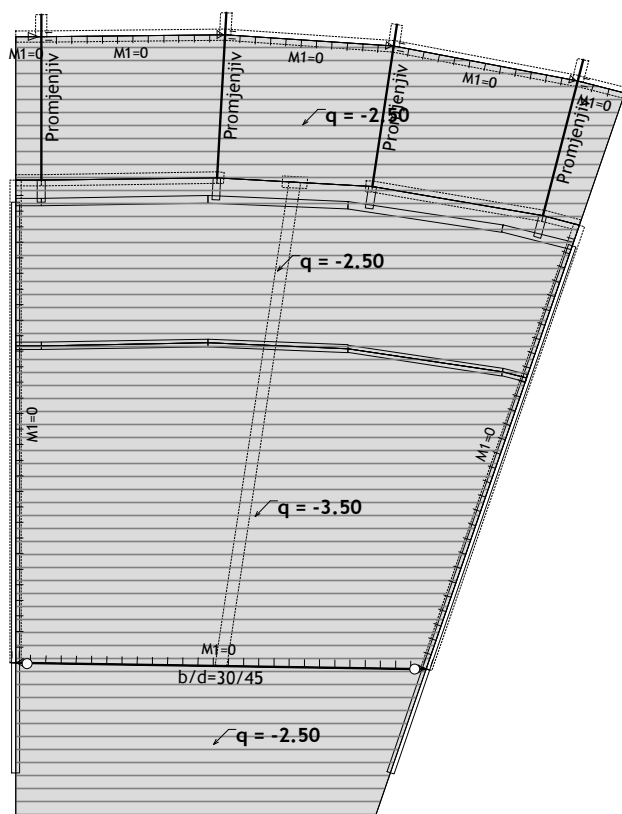
Nivo: TEMELJI [0.00 m]

Opt. 2: UPORABNO



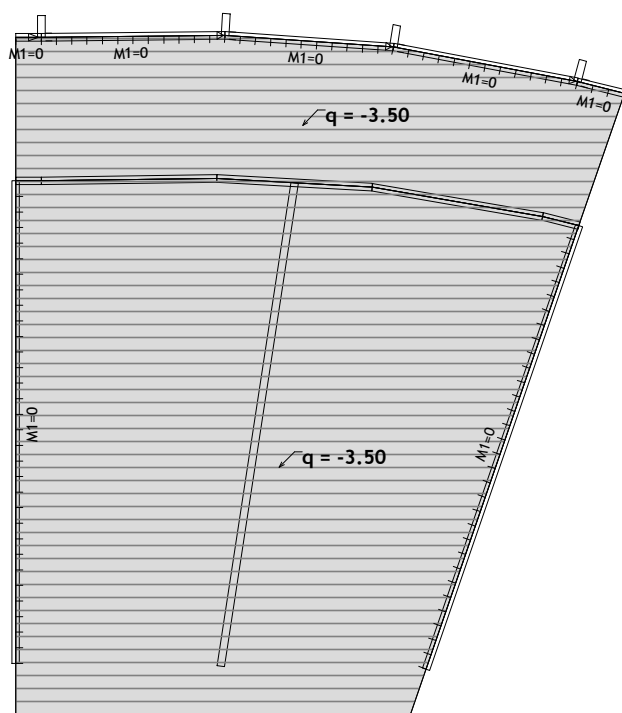
Nivo: ETAŽA 100 [3.08 m]

Opt. 1: STALNO (g)



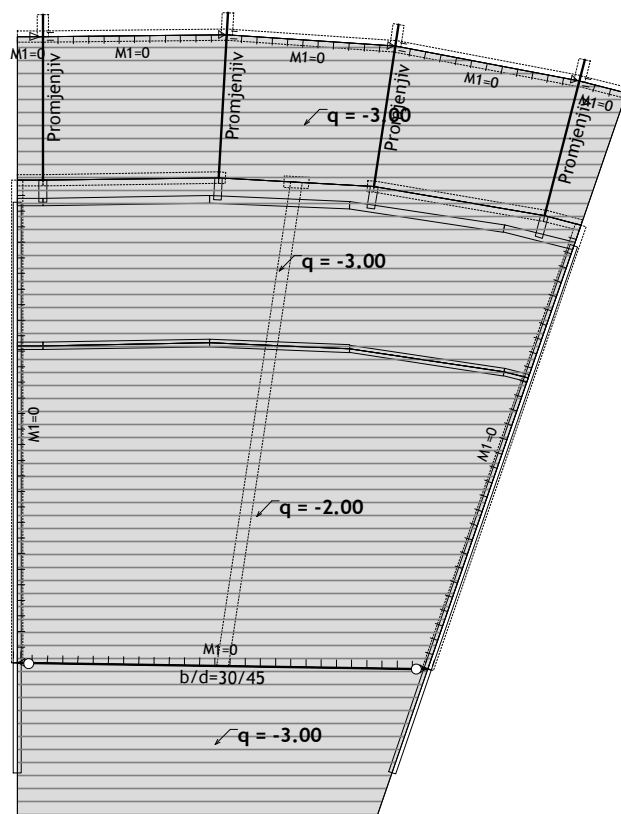
Nivo: ETAŽA 200 [6.08 m]

Opt. 1: STALNO (g)



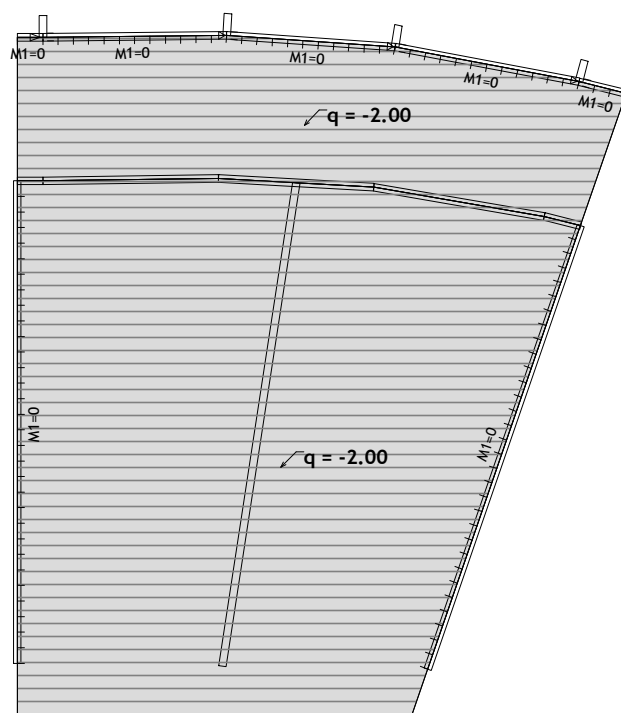
Nivo: ETAŽA 300 [8.76 m]

Opt. 2: UPORABNO



Nivo: ETAŽA 200 [6.08 m]

Opt. 2: UPORABNO



Nivo: ETAŽA 300 [8.76 m]

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Građevina: HOTEL OSMINE-REKONSTR., DOGRADNJA I NADOGRADNJA - zgrada A-3		Dbk., 24.4.2016.

Modalna analiza, Seizmički proračun

Faktori opterećenja za proračun masa

No	Naziv	Koeficijent
1	STALNO (g)	1.00
2	UPORABNO	0.30

Raspored masa po visini objekta

Nivo	Z [m]	X [m]	Y [m]	Masa [T]	T/m²
ETAŽA 300	8.76	3.51	5.93	76.27	1.20
ETAŽA 200	6.08	3.42	5.39	106.86	1.52
ETAŽA 100	3.08	3.21	4.14	82.97	1.58
TEMELJI	0.00	3.06	3.19	43.83	1.25
Ukupno:	5.08	3.33	4.88	309.93	

Položaj centara krutosti po visini objekta (približna metoda)

Nivo	Z [m]	X [m]	Y [m]
ETAŽA 300	8.76	3.11	7.66
ETAŽA 200	6.08	3.06	6.91
ETAŽA 100	3.08	2.90	5.74
TEMELJI	0.00	2.55	5.14

Ekscentricitet po visini objekta (približna metoda)

Nivo	Z [m]	eox [m]	eoy [m]
ETAŽA 300	8.76	0.39	1.72
ETAŽA 200	6.08	0.36	1.52
ETAŽA 100	3.08	0.31	1.61
TEMELJI	0.00	0.51	1.94

Periodi osciliranja konstrukcije

No	T [s]	f [Hz]	No	T [s]	f [Hz]	No	T [s]	f [Hz]
1	0.2953	3.3869	8	0.0498	20.0810	15	0.0319	31.3039
2	0.2728	3.6655	9	0.0480	20.8489	16	0.0301	33.2073
3	0.1723	5.8036	10	0.0464	21.5333	17	0.0296	33.8376
4	0.1048	9.5418	11	0.0404	24.7242	18	0.0286	34.9763
5	0.0833	12.0078	12	0.0400	25.0208	19	0.0277	36.1585
6	0.0679	14.7198	13	0.0343	29.1874	20	0.0267	37.4122
7	0.0508	19.6963	14	0.0338	29.6062			

Seizmički proračun: EC8 (HRN EN 1998-1:2011)

Razred tla: A
Razred važnosti: II ($\gamma=1.0$)
Odnos a_g/g : 0.34
Koeficijent prigušenja: 0.05

Faktori pravca potresa:

Slučaj opterećenja	Kut α [°]	k, α	k, $\alpha+90^\circ$	kz	Faktor P.
POTRES X-SMJER	0.000	1.000	0.300	0.300	2.000*
POTRES Y-SMJER	90.000	1.000	0.300	0.300	2.000*

Tip spektra

Slučaj opterećenja	S	Tb	Tc	Td
POTRES X-SMJER	1.000	0.100	0.400	3.000
POTRES Y-SMJER	1.000	0.100	0.400	3.000

POTRES X-SMJER

Konstrukcija regularna po visini, Sustav zidova sa nepovezanim zidovima, klasa duktilnosti DC'M':

$q_0=3.0$

Sustav zidova, dvojni sustav sa dominantnim zidovima i sustav sa jezgrom: $\alpha_0=1.00$, $k_w=0.67$.

Faktor ponašanja: $q=q_0 \cdot k_w=2.00$

Nivo	Z [m]	Ton 1			Ton 2			Ton 3		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	71.57	-98.52	9.82	289.80	192.00	-27.61	16.57	-0.54	-0.03
ETAŽA 200	6.08	70.99	-102.54	6.75	289.48	203.42	-19.39	18.68	-1.13	0.29
ETAŽA 100	3.08	30.37	-43.73	-8.17	124.97	86.32	24.09	-0.81	0.82	0.22
TEMELJI	0.00	1.75	-2.47	-2.39	7.77	5.30	6.43	0.60	-0.01	0.14
	$\Sigma=$	174.69	-247.26	6.01	712.02	487.04	-16.48	35.03	-0.86	0.62

Nivo	Z [m]	Ton 4			Ton 5			Ton 6		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-0.41	-0.89	72.44	2.96	10.53	43.46	0.24	-0.38	-2.36
ETAŽA 200	6.08	-0.23	0.92	97.87	3.98	28.96	53.68	0.31	3.11	-3.93
ETAŽA 100	3.08	0.18	2.45	105.19	2.74	27.20	-31.75	0.13	3.48	-0.43
TEMELJI	0.00	-0.04	0.20	13.31	0.78	5.70	4.42	0.07	0.82	-0.98
	$\Sigma=$	-0.50	2.69	288.81	10.45	72.39	69.80	0.75	7.04	-7.69

Nivo	Z [m]	Ton 7			Ton 8			Ton 9		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	1.15	2.74	1.43	-4.05	2.46	-0.69	-49.28	14.77	-3.19
ETAŽA 200	6.08	36.86	1.58	0.01	4.80	-4.76	0.79	36.04	-7.94	0.42
ETAŽA 100	3.08	49.11	0.05	3.85	8.12	-9.16	-3.39	68.18	-19.56	-6.12
TEMELJI	0.00	22.41	0.60	0.72	2.51	-3.14	-0.28	17.29	-4.40	-1.52
	$\Sigma=$	109.53	4.97	6.01	11.39	-14.60	-3.58	72.24	-17.12	-10.42

Nivo	Z [m]	Ton 10			Ton 11			Ton 12		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-22.54	-14.93	8.54	0.04	-0.47	-0.33	-4.32	-8.21	-5.42
ETAŽA 200	6.08	18.40	15.01	-6.64	-0.03	0.24	0.32	3.69	4.24	5.20
ETAŽA 100	3.08	33.80	33.51	19.14	-0.12	0.69	0.07	7.75	12.23	1.38
TEMELJI	0.00	9.92	10.88	3.17	-0.06	0.22	-0.04	3.42	4.07	-0.88
	$\Sigma=$	39.58	44.48	24.21	-0.17	0.68	0.02	10.54	12.32	0.28

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Građevina: HOTEL OSMINE-REKONSTR., DOGRADNJA I NADOGRADNJA - zgrada A-3		Dbk., 24.4.2016.

Nivo	Z [m]	Ton 13			Ton 14			Ton 15		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	0.24	-0.34	2.15	-0.17	0.07	0.11	-0.03	-0.05	0.48
ETAŽA 200	6.08	-0.14	-0.14	-0.59	0.11	-0.06	0.13	0.01	-0.06	-0.38
ETAŽA 100	3.08	0.02	1.19	-1.94	0.06	0.04	-0.24	0.04	0.19	-0.21
TEMELJI	0.00	0.07	0.60	-0.43	0.00	0.04	-0.01	0.01	0.10	-0.13
	Σ=	0.18	1.31	-0.80	0.01	0.09	-0.01	0.03	0.18	-0.25

Nivo	Z [m]	Ton 16			Ton 17			Ton 18		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-0.91	-2.60	-0.52	0.06	-0.07	-0.01	3.80	-1.12	0.13
ETAŽA 200	6.08	0.58	-2.55	2.01	-0.02	-0.09	0.04	-7.62	0.60	0.45
ETAŽA 100	3.08	0.82	8.06	-1.75	-0.05	0.25	-0.04	4.79	0.78	-0.67
TEMELJI	0.00	0.43	4.61	-1.55	0.02	0.15	-0.05	4.63	0.25	-0.35
	Σ=	0.92	7.52	-1.80	0.01	0.24	-0.06	5.60	0.51	-0.44

Nivo	Z [m]	Ton 19			Ton 20		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	11.08	-1.60	-0.83	0.00	-0.03	0.12
ETAŽA 200	6.08	-20.84	3.57	1.14	-0.01	0.06	-0.17
ETAŽA 100	3.08	11.01	-1.90	-0.36	0.00	-0.03	0.07
TEMELJI	0.00	13.38	-1.95	-0.18	0.01	-0.05	0.03
	Σ=	14.63	-1.88	-0.23	0.01	-0.05	0.04

POTRES Y-SMJER

Konstrukcija regularna po visini, Sustav zidova sa nepovezanim zidovima, klasa duktilnosti DC*M'.

qo=3.0

Sustav zidova, dvojni sustav sa dominantnim zidovima i sustav sa jezgrom: αo=1.00, kw=0.67.

Faktor ponašanja: q=qo-kw=2.00

Nivo	Z [m]	Ton 1			Ton 2			Ton 3		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-208.36	286.84	-28.60	91.20	60.42	-8.69	-5.30	0.17	0.01
ETAŽA 200	6.08	-206.69	298.55	-19.66	91.10	64.02	-6.10	-5.97	0.36	-0.09
ETAŽA 100	3.08	-88.43	127.31	23.80	39.33	27.16	7.58	0.26	-0.26	-0.07
TEMELJI	0.00	-5.11	7.18	6.97	2.44	1.67	2.02	-0.19	0.00	-0.05
	Σ=	-508.59	719.88	-17.49	224.07	153.27	-5.18	-11.21	0.27	-0.20

Nivo	Z [m]	Ton 4			Ton 5			Ton 6		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-0.42	-0.92	74.55	5.02	17.88	73.81	1.94	-3.10	-19.33
ETAŽA 200	6.08	-0.24	0.95	100.72	6.75	49.19	91.16	2.52	25.45	-32.16
ETAŽA 100	3.08	0.18	2.53	108.25	4.66	46.20	-53.93	1.05	28.54	-3.50
TEMELJI	0.00	-0.04	0.21	13.69	1.32	9.68	7.50	0.61	6.72	-8.03
	Σ=	-0.51	2.77	297.21	17.75	122.95	118.55	6.12	57.62	-63.02

Nivo	Z [m]	Ton 7			Ton 8			Ton 9		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-0.27	-0.63	-0.33	13.02	-7.91	2.23	32.29	-9.68	2.09
ETAŽA 200	6.08	-8.52	-0.37	-0.00	-15.44	15.33	-2.53	-23.62	5.20	-0.28
ETAŽA 100	3.08	-11.35	-0.01	-0.89	-26.13	29.46	10.92	-44.67	12.82	4.01
TEMELJI	0.00	-5.18	-0.14	-0.17	-8.09	10.09	0.90	-11.33	2.88	1.00
	Σ=	-25.32	-1.15	-1.39	-36.64	46.98	11.53	-47.33	11.22	6.83

Nivo	Z [m]	Ton 10			Ton 11			Ton 12		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-14.93	-9.89	5.65	0.91	-9.86	-6.99	-2.79	-5.30	-3.50
ETAŽA 200	6.08	12.19	9.94	-4.40	-0.63	4.97	6.69	2.38	2.74	3.35
ETAŽA 100	3.08	22.39	22.20	12.68	-2.56	14.42	1.51	5.00	7.89	0.89
TEMELJI	0.00	6.57	7.21	2.10	-1.35	4.69	-0.88	2.21	2.62	-0.57
	Σ=	26.22	29.46	16.03	-3.63	14.22	0.33	6.80	7.95	0.18

Nivo	Z [m]	Ton 13			Ton 14			Ton 15		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	0.72	-1.02	6.53	-0.40	0.16	0.26	-0.35	-0.54	5.36
ETAŽA 200	6.08	-0.43	-0.43	-1.78	0.27	-0.13	0.31	0.09	-0.70	-4.25
ETAŽA 100	3.08	0.06	3.60	-5.89	0.15	0.08	-0.56	0.41	2.17	-2.38
TEMELJI	0.00	0.20	1.81	-1.30	0.01	0.10	-0.02	0.16	1.10	-1.48
	Σ=	0.55	3.96	-2.44	0.02	0.21	-0.01	0.31	2.04	-2.75

Nivo	Z [m]	Ton 16			Ton 17			Ton 18		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-2.32	-6.60	-1.33	0.22	-0.23	-0.04	-0.88	0.26	-0.03
ETAŽA 200	6.08	1.48	-6.47	5.11	-0.07	-0.31	0.13	1.76	-0.14	-0.10
ETAŽA 100	3.08	2.08	20.45	-4.43	-0.17	0.84	-0.12	-1.11	-0.18	0.16
TEMELJI	0.00	1.10	11.72	-3.93	0.07	0.49	-0.18	-1.07	-0.06	0.08
	Σ=	2.35	19.10	-4.58	0.04	0.79	-0.22	-1.30	-0.12	0.10

Nivo	Z [m]	Ton 19			Ton 20		
		Px [kN]	Py [kN]	Pz [kN]	Px [kN]	Py [kN]	Pz [kN]
ETAŽA 300	8.76	-5.02	0.72	0.37	-0.07	0.63	-2.45
ETAŽA 200	6.08	9.44	-1.62	-0.52	0.16	-1.20	3.65
ETAŽA 100	3.08	-4.99	0.86	0.16	-0.04	0.70	-1.43
TEMELJI	0.00	-6.06	0.88	0.08	-0.19	0.99	-0.56
	Σ=	-6.63	0.85	0.10	-0.14	1.12	-0.80

Faktori participacije - Relativno učešće

Ton \ Naziv	1. POTRES X2	SPOTRES Y-3
1	0.073	0.617
2	0.605	0.060
3	0.025	0.003
4	0.062	0.065
5	0.038	0.109
6	0.000	0.026
7	0.080	0.004
8	0.004	0.044

CANOSA INŽENJERING d.o.o.	Investitor: HOTEL OSMINE d.o.o.	Strana: 8/20
Građevina: HOTEL OSMINE-REKONSTR., DOGRADNJA I NADOGRADNJA - zgrada A-3		Dbk., 24.4.2016.

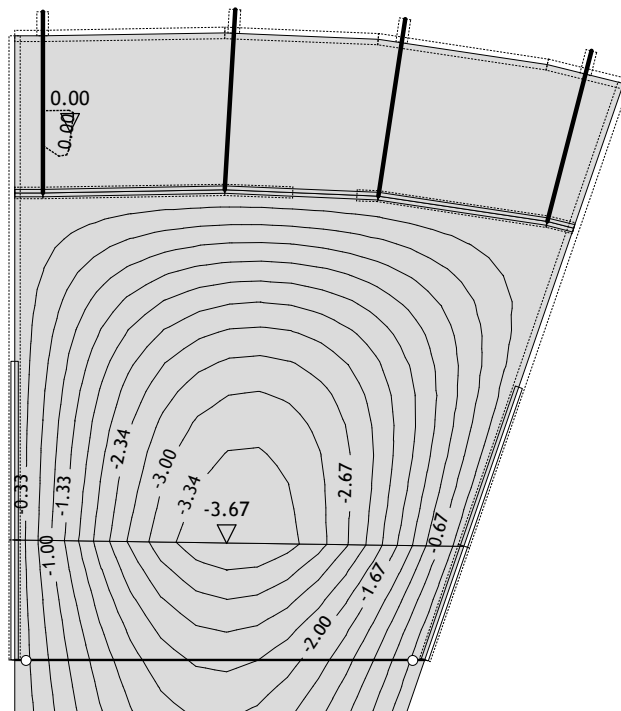
9	0.045	0.020
10	0.043	0.019
11	0.000	0.011
12	0.010	0.004
13	0.000	0.002
14	0.000	0.000
15	0.000	0.001
16	0.002	0.012
17	0.000	0.001
18	0.004	0.000
19	0.010	0.002
20	0.000	0.001

Faktori participacije - Sudjelujuće mase

Ton	UX (%)	UY (%)	UZ (%)	ΣUX (%)	ΣUY (%)	ΣUZ (%)
1	23.09	46.26	0.03	23.09	46.26	0.03
2	46.00	21.52	0.02	69.09	67.79	0.05
3	2.72	0.00	0.00	71.81	67.79	0.05
4	0.00	0.01	74.26	71.81	67.79	74.31
5	0.16	7.90	7.35	71.97	75.70	81.66
6	0.08	7.45	8.91	72.06	83.14	90.57
7	9.13	0.02	0.03	81.19	83.16	90.60
8	1.88	3.09	0.19	83.07	86.25	90.78
9	7.05	0.40	0.15	90.12	86.65	90.93
10	2.26	2.85	0.84	92.37	89.50	91.77
11	0.08	1.15	0.00	92.45	90.65	91.77
12	0.68	0.93	0.00	93.13	91.59	91.77
13	0.01	0.46	0.17	93.14	92.04	91.95
14	0.00	0.02	0.00	93.14	92.06	91.95
15	0.01	0.33	0.61	93.15	92.39	92.55
16	0.03	1.93	0.11	93.18	94.32	92.66
17	0.00	0.08	0.01	93.18	94.40	92.67
18	0.50	0.00	0.00	93.68	94.41	92.67
19	1.38	0.02	0.00	95.07	94.43	92.67
20	0.00	0.12	0.06	95.07	94.55	92.74

Statički proračun

Opt. 4: I+II

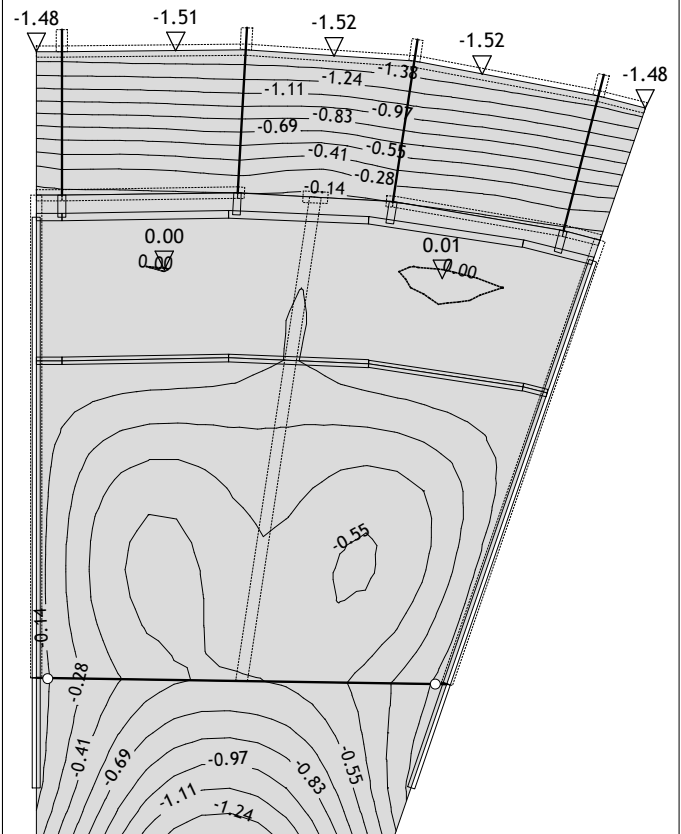


Nivo: ETAŽA 100 [3.08 m]

Utjecaji u ploči: max Zp= 0.00 / min Zp= -3.67 m / 1000

Opt. 4: I+II

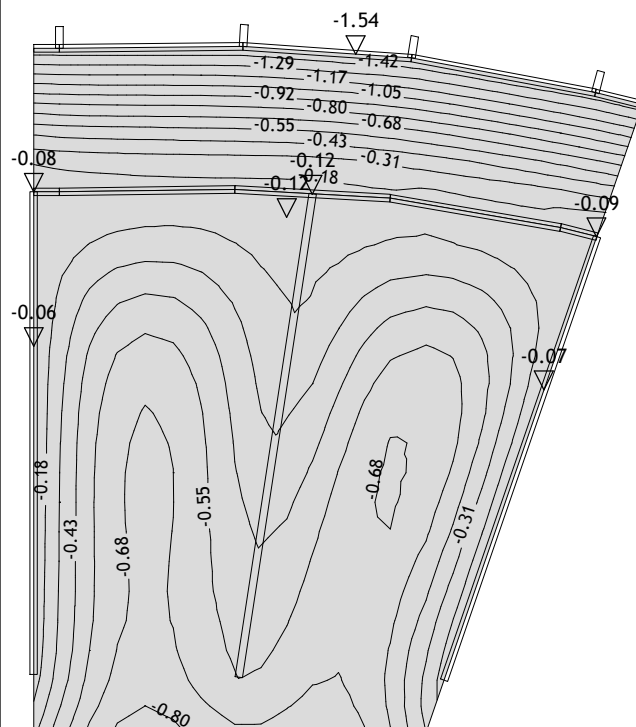
Opt. 4: I+II



Nivo: ETAŽA 200 [6.08 m]

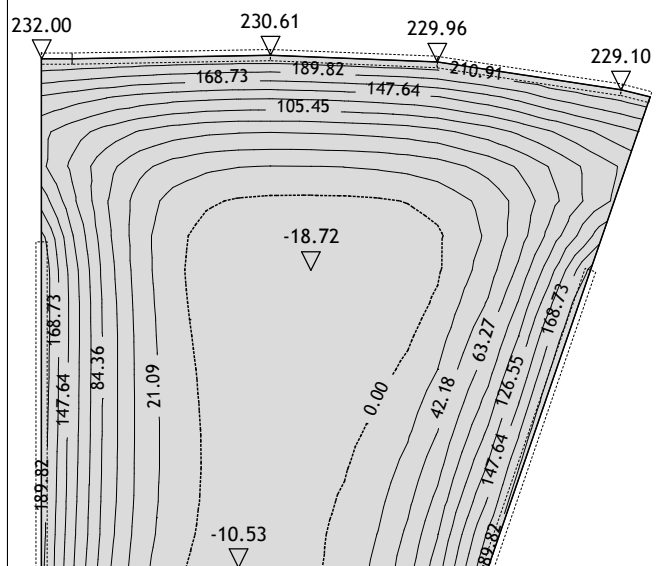
Utjecaji u ploči: max $Z_p = 0.01$ / min $Z_p = -1.52$ m / 1000

Opt. 6: I+II	
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Nivo: ETAŽA 300 [8.76 m]

Utjecaji u ploči: max $Z_p = -0.06$ / min $Z_p = -1.54$ m / 1000

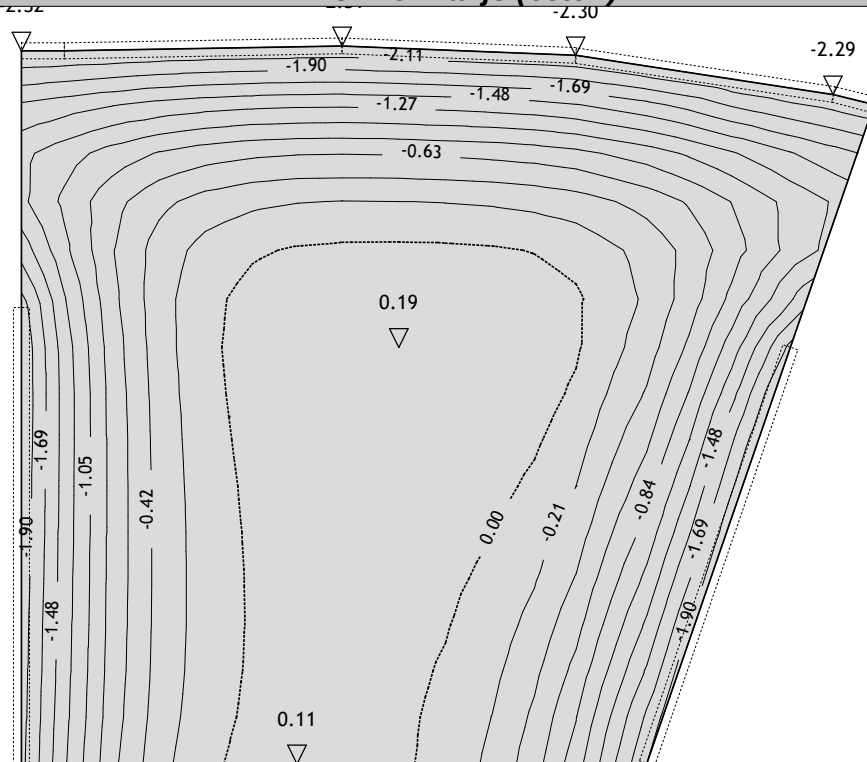


Nivo: TEMELJI [0.00 m]

Utjecaji u pov. ležaju: $\max \sigma_{tla} = 232.00$ / $\min \sigma_{tla} = -18.72$ kN/m²

Dimenzioniranje (beton)

Opt. 6: I+II



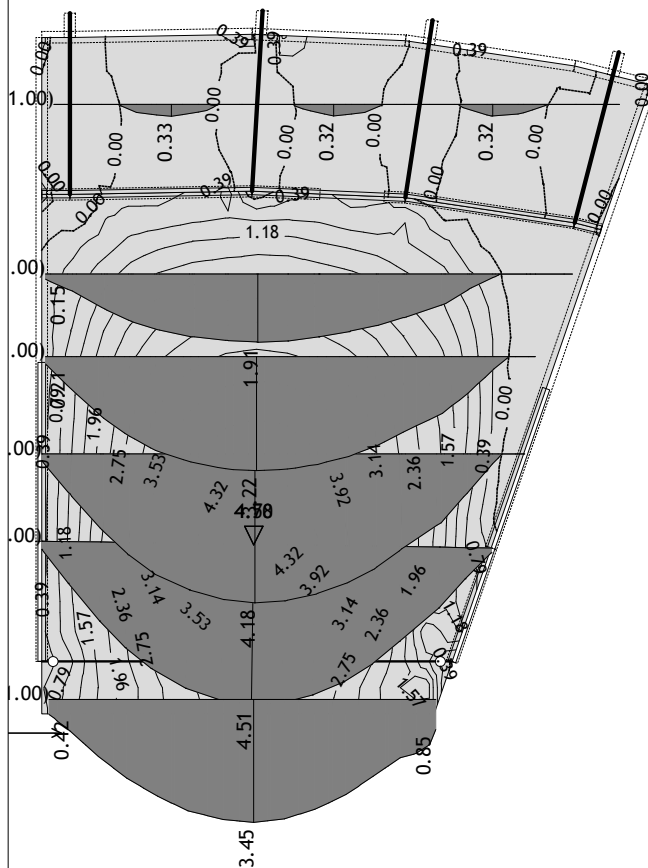
Nivo: TEMELJI [0.00 m]

Utjecaji u pov. ležaju: $\max s_{tla} = 0.19 / \min s_{tla} = -2.32 \text{ m} / 1000$

Mjerodavno opterećenje: $1.35x_I + 1.50x_{II}$

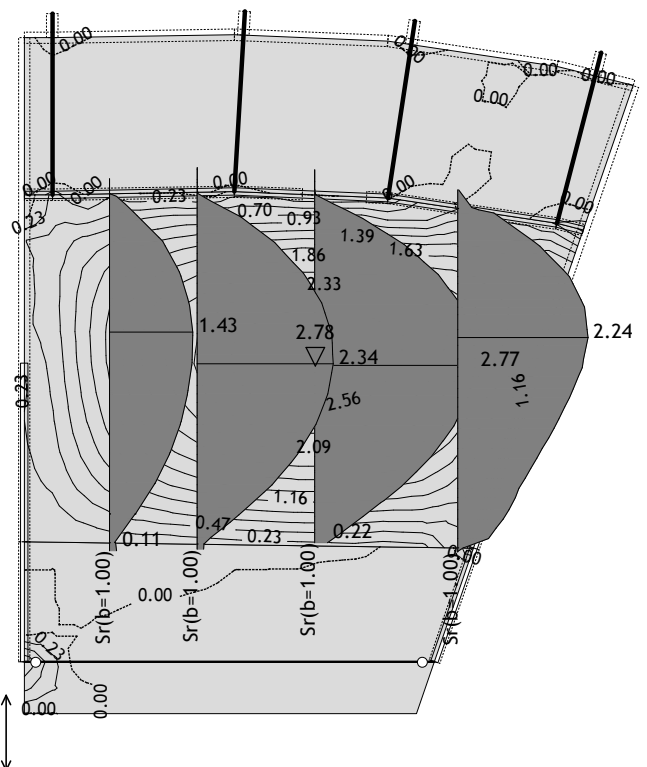
TPBK, C 25/30, B500B, $a=3.50$ cm

Mjerodavno opterećenje: $1.35x_I + 1.50x_{II}$
--

TPBK, C 25/30, B500B, $a=3.50$ cm

Nivo: ETAŽA 100 [3.08 m]

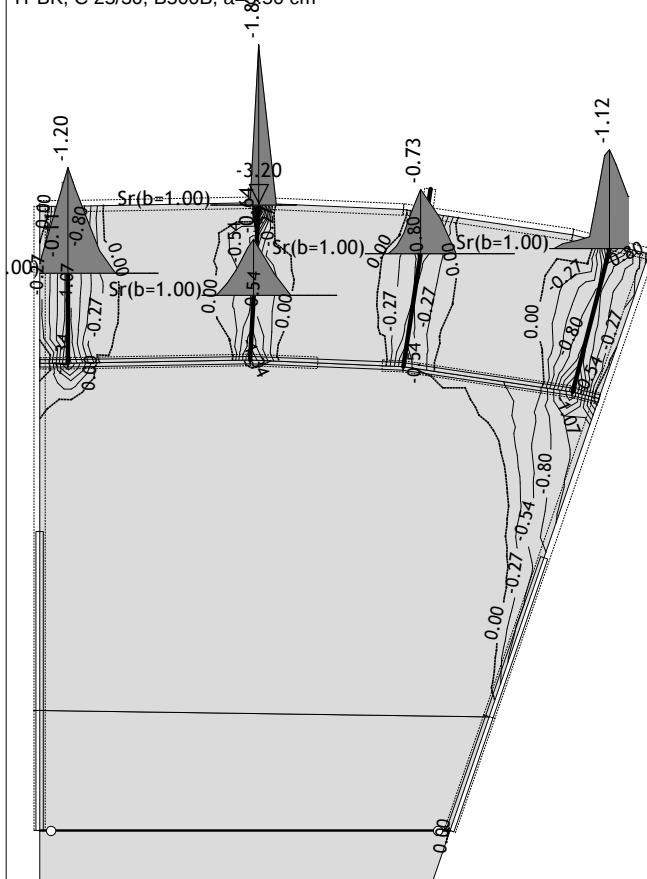
Aa - d.zona - Pravac 1 - max Aa1,d= 4.70 cm²/m



Nivo: ETAŽA 100 [3.08 m]

Aa - d.zona - Pravac 2 - max Aa_{2,d} = 2.78 cm²/m

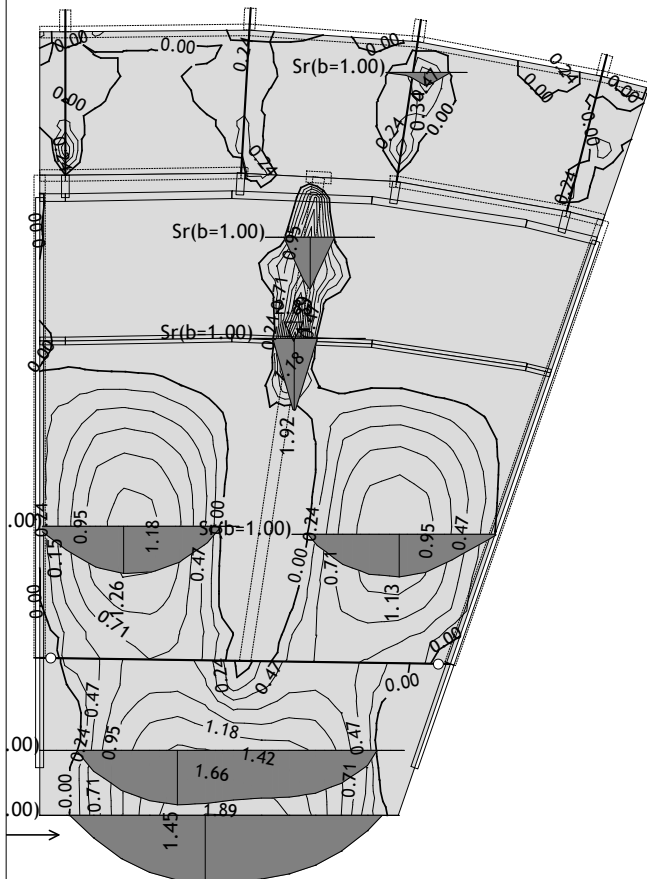
Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25/30, B500B, a=8.50 cm



Nivo: ETAŽA 100 [3.08 m]

Aa - g.zona - Pravac 1 - max Aa1,g= -3.20 cm²/m

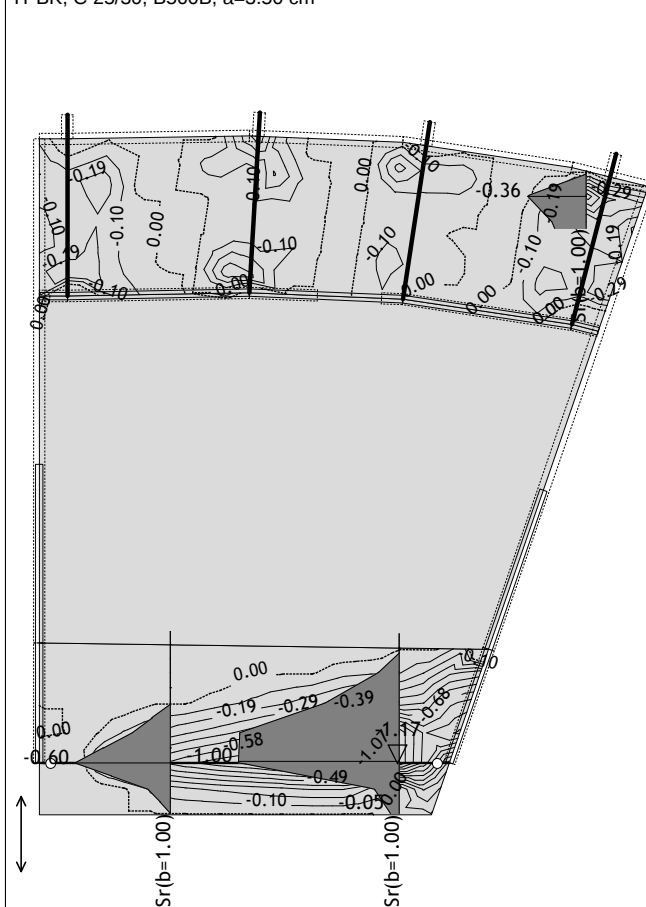
Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 200 [6.08 m]

Aa - d.zona - Pravac 1 - max Aa1,d= 2.83 cm²/m

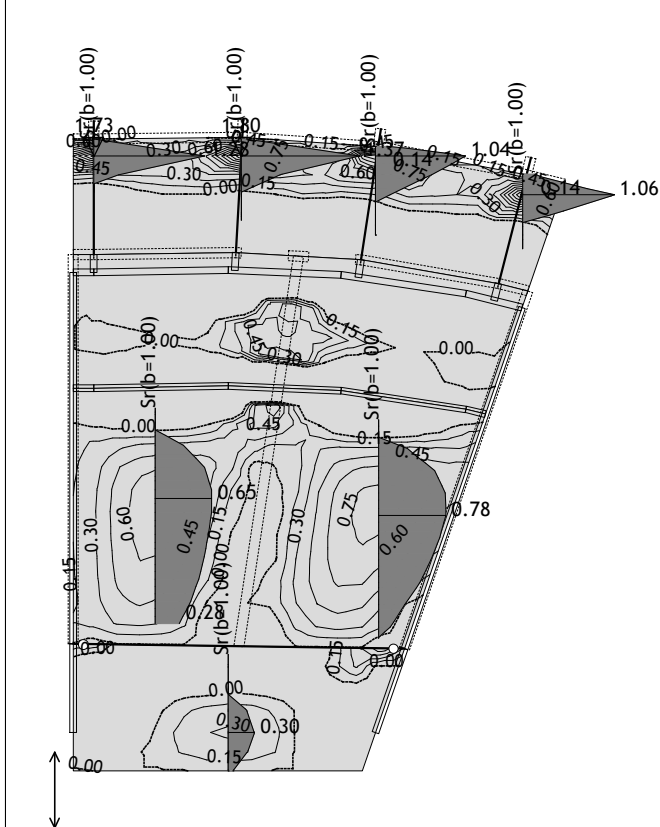
Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 100 [3.08 m]

Aa - g.zona - Pravac 2 - max Aa2,g= -1.17 cm²/m

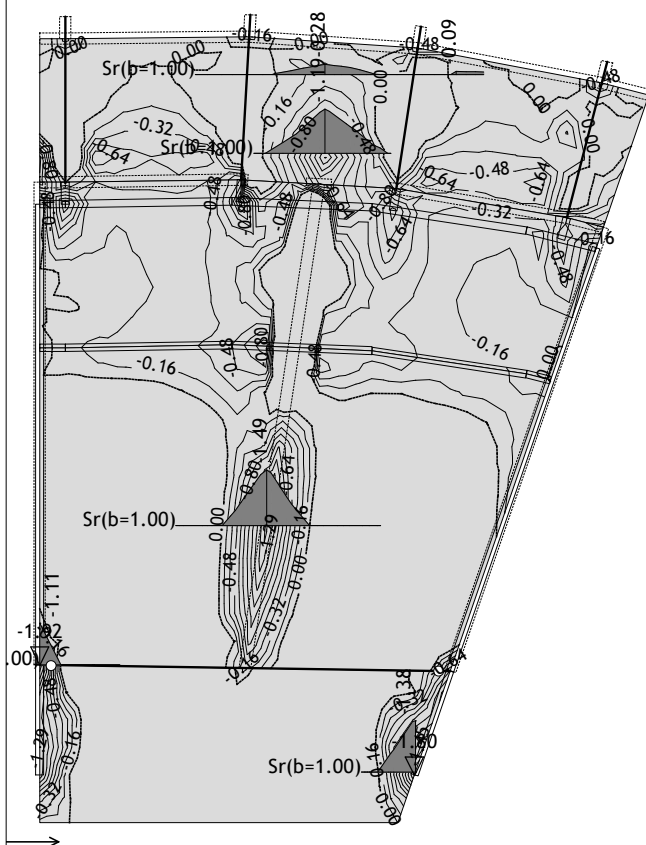
Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 200 [6.08 m]

Aa - d.zona - Pravac 2 - max Aa2,d= 1.80 cm²/m

Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25/30, B500B, a=3.50 cm

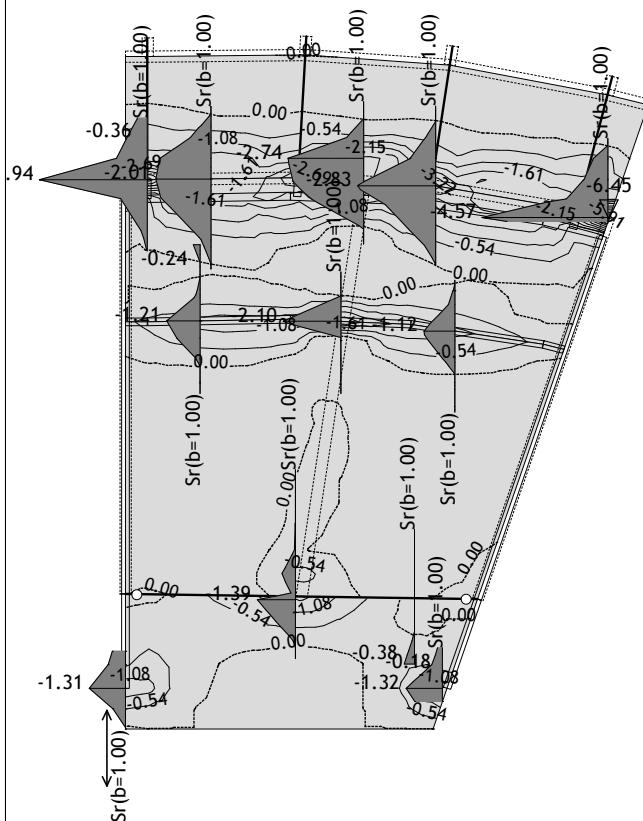


Nivo: ETAŽA 200 [6.08 m]

Aa - g.zona - Pravac 1 - max Aa1,g= -1.92 cm²/m

Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25/30, B500B, a=3.50 cm

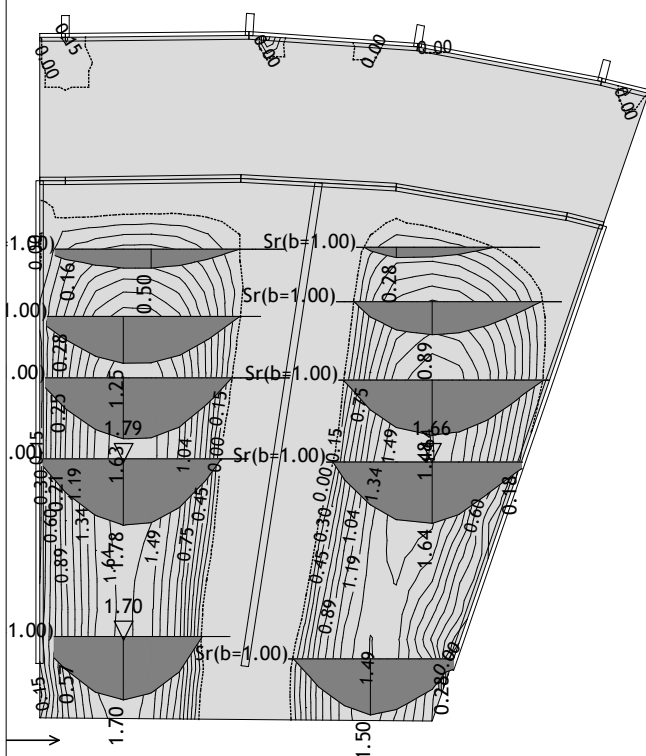
Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 200 [6.08 m]

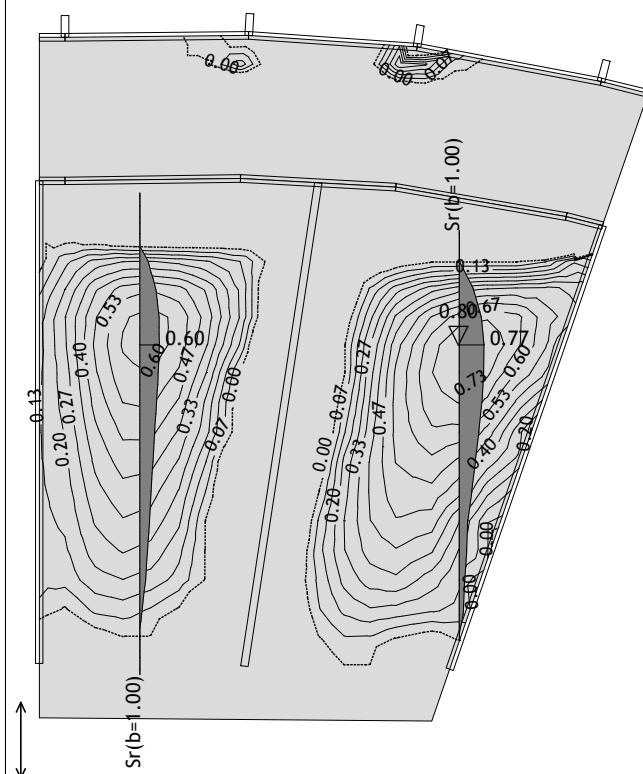
Aa - g.zona - Pravac 2 - max Aa2,g= -6.45 cm²/m

Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 300 [8.76 m]

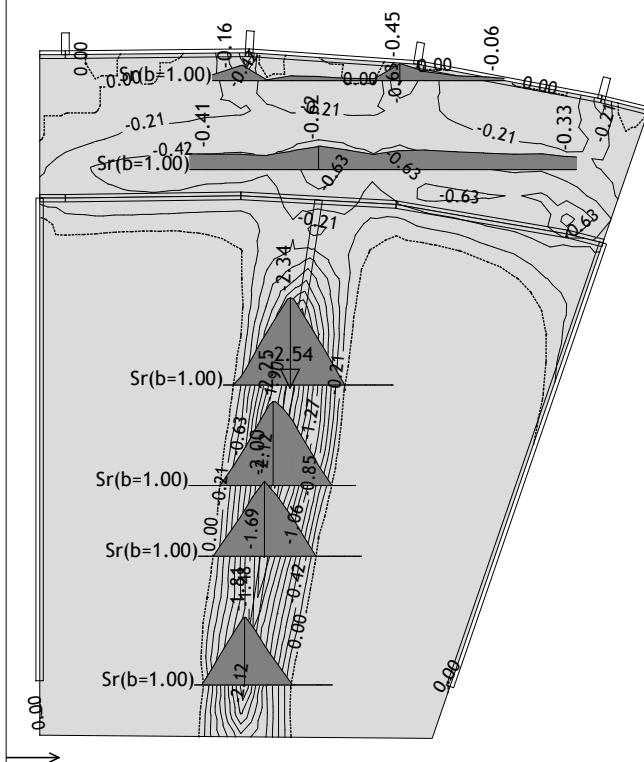
Aa - d.zona - Pravac 1 - max Aa1,d= 1.79 cm²/m



Nivo: ETAŽA 300 [8.76 m]

Aa - d.zona - Pravac 2 - max Aa2,d= 0.80 cm²/m

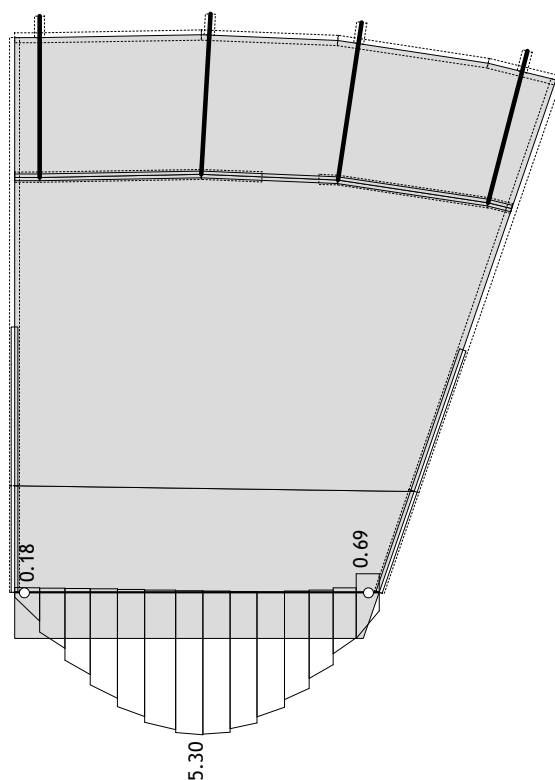
Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 300 [8.76 m]

Aa - g.zona - Pravac 1 - max Aa1,g= -2.54 cm²/m

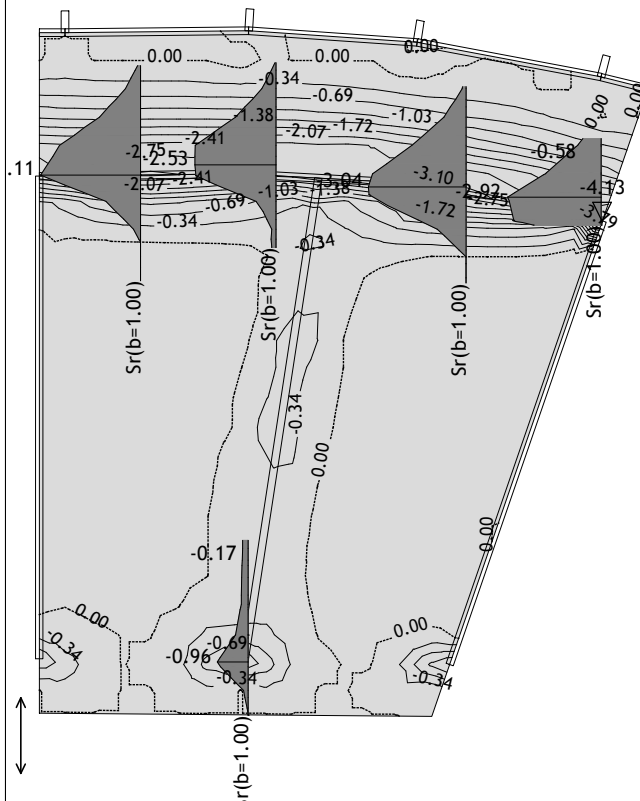
Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25, B500B



Nivo: ETAŽA 100 [3.08 m]

Armatura u gredama: max Aa2/Aa1= 5.30 cm²

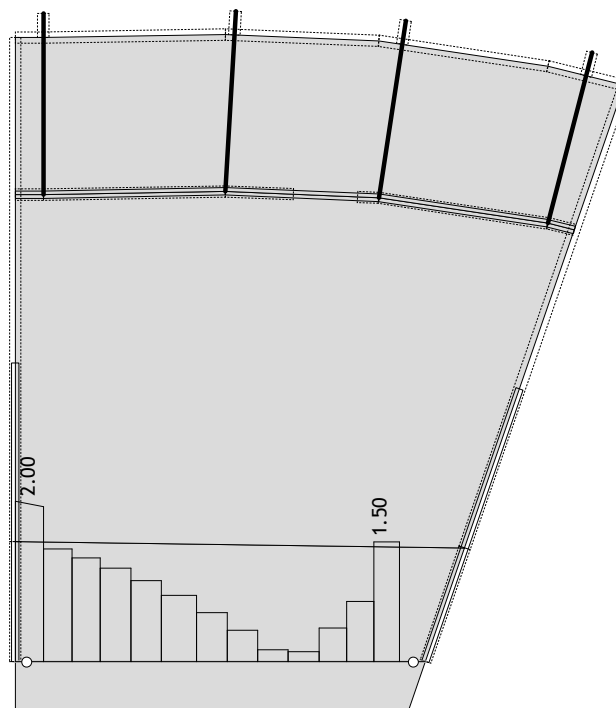
Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25/30, B500B, a=3.50 cm



Nivo: ETAŽA 300 [8.76 m]

Aa - g.zona - Pravac 2 - max Aa2,g= -4.13 cm²/m

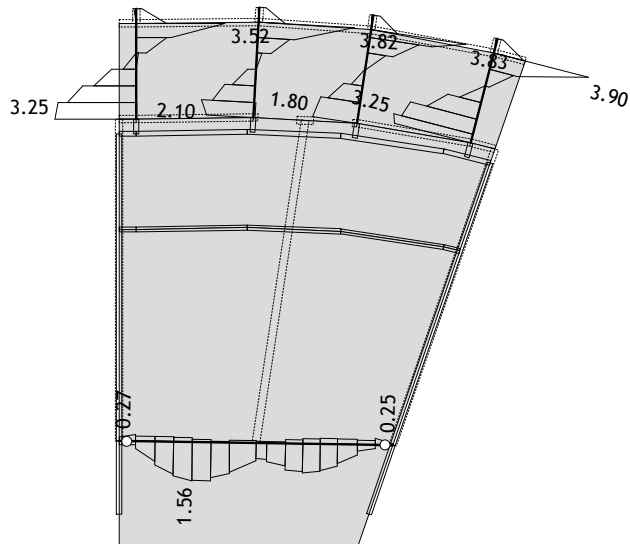
Mjerodavno opterećenje: 1.35xl+1.50xll
TPBK, C 25, B500B



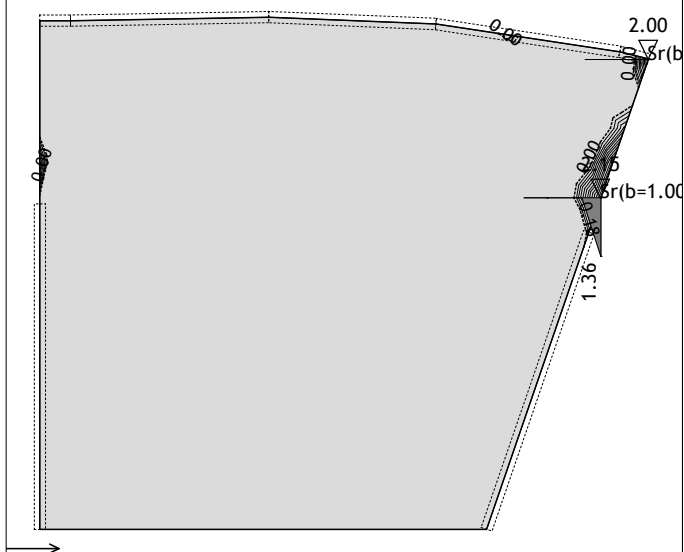
Nivo: ETAŽA 100 [3.08 m]

Armatura u gredama: max Asw= 2.00 cm²

Mjerodavno opterećenje: $1.35xI + 1.50xII$
TPBK, C 25, B500B

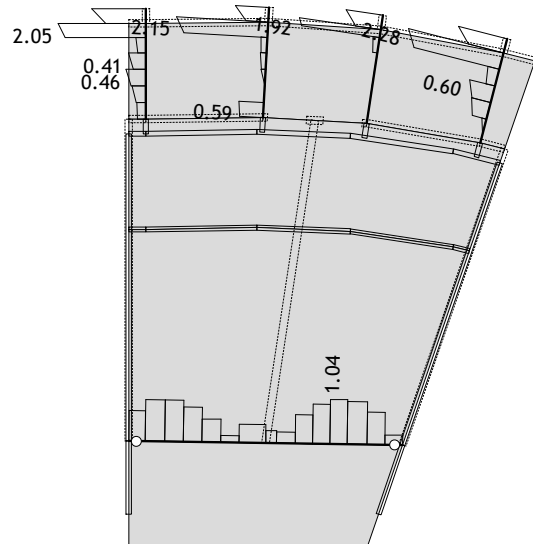


Nivo: ETAŽA 200 [6.08 m]
 Armatura u gredama: max $A_{a2}/A_{a1} = 3.90 \text{ cm}^2$
 Mjerodavno opterećenje: $1.35xI + 1.50xII$
 TPBK, C 25/30, B500B, $a = 4.50 \text{ cm}$

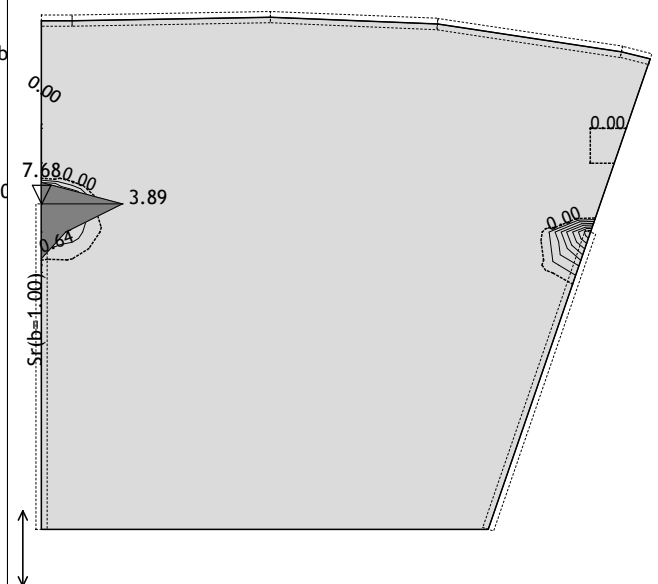


Nivo: TEMELJI [0.00 m]
Aa - d.zona - Pravac 1 - max Aa1,d= 2.15 cm²/m

Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25, B500B

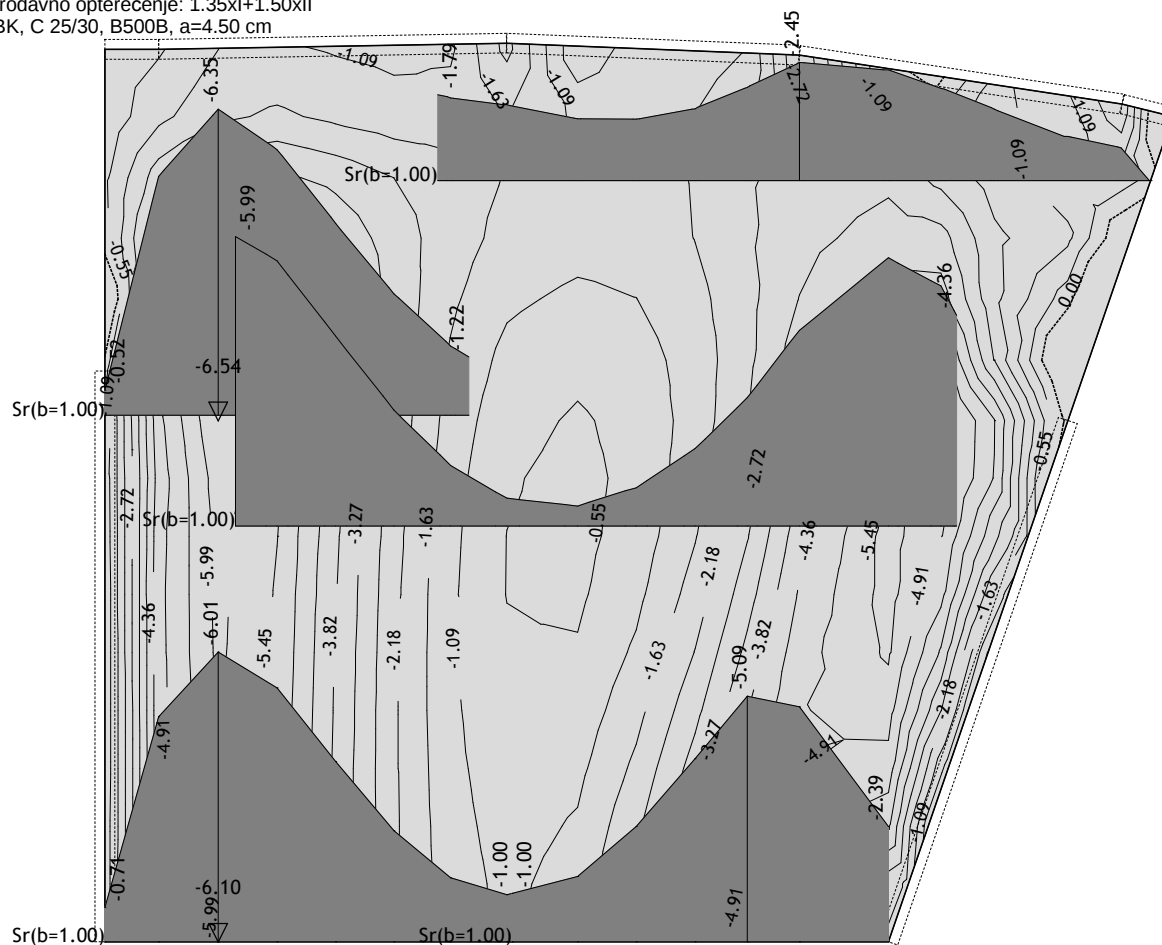


Nivo: ETAŽA 200 [6.08 m]
Armatura u gredama: max $A_{sw} = 2.28 \text{ cm}^2$
Mjerodavno opterećenje: $1.35xI + 1.50xII$
TPBK, C 25/30, B500B, $a = 4.50 \text{ cm}$



Nivo: TEMELJI [0.00 m]
Aa - d.zona - Pravac 2 - max Aa2,d= 7.68 cm²/m

Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25/30, B500B, a=4.50 cm



Nivo: TEMELJI [9.00 m]

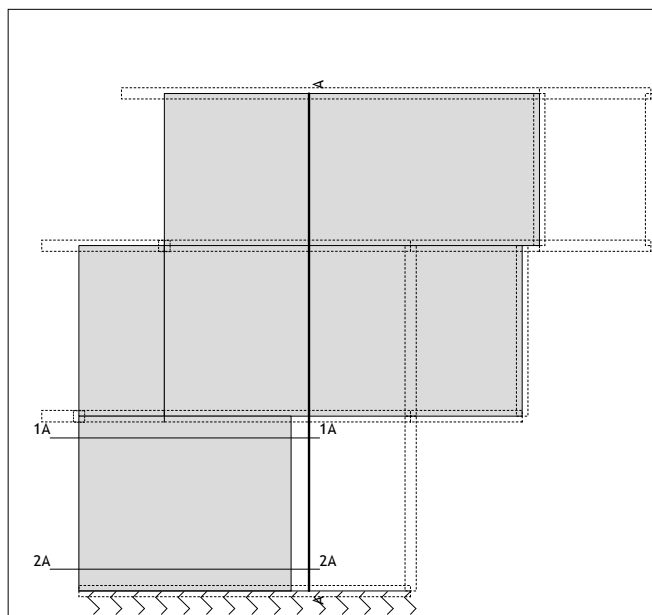
Aa - g.zona - Pravac 1 - max Aa1,g= -6.54 cm²/m

Mjerodavno opterećenje: 1.35xI+1.50xII
TPBK, C 25/30, B500B, a=4.50 cm



Nivo: TEMELJI [0.00 m]

Aa - g.zona - Pravac 2 - max Aa2,g= -12.31 cm²/m



Okvir: V_1
Dispozicija presjeka

Okvir: V_1

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

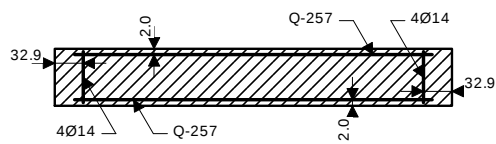
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=2.70m)

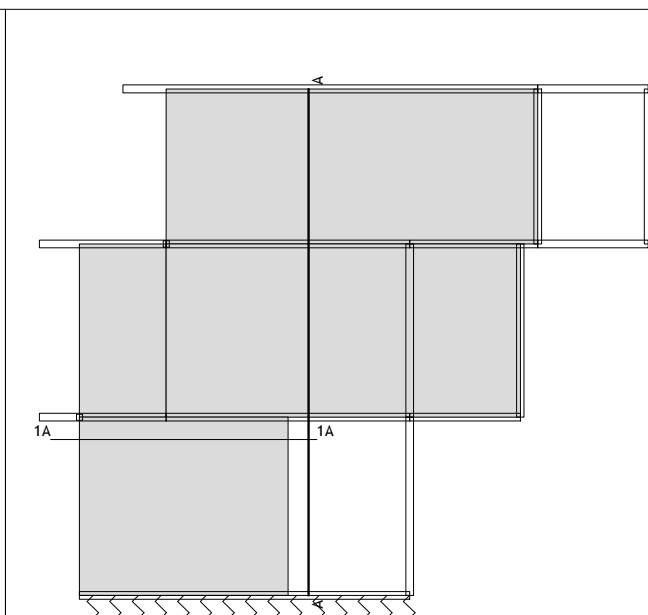
Mjerodavni presjek za savijanje



$$b/d = 20/373 \text{ cm} \quad A_b = 7460 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+IV

Mjerodavna kombinacija za posmik: I+IV



Okvir: K_2
Dispozicija presjeka

Msd = -1186.36 kNm

Nsd = 62.24 kN

Vsd = 483.95 kN

$\epsilon_b/\epsilon_a = -2.470/25.000 \text{ ‰}$

As1 = 0.78 cm² (min:11.19) (odab:4Ø14)

As2 = 0.78 cm² (min:11.19) (odab:4Ø14)

Aav = $\pm 2.57 \text{ cm}^2/\text{m}$ (min: ± 2.00)

Aah = $\pm 1.64 \text{ cm}^2/\text{m}$ (min: ± 2.00) (odab: $\pm Q-257$)

Presjek 2A - 2A (Z=0.38m)

Mjerodavni presjek za posmik

$$b/d = 20/373 \text{ cm} \quad A_b = 7460 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+III

Mjerodavna kombinacija za posmik: I+0.30xII-1.00xIV

Msd = -795.50 kNm

Nsd = 185.75 kN

Vsd = -487.03 kN

$\epsilon_b/\epsilon_a = -1.887/25.000 \text{ ‰}$

As1 = 0.00 cm² (min:11.19) (odab:4Ø14)

As2 = 0.00 cm² (min:11.19) (odab:4Ø14)

Aav = $\pm 2.39 \text{ cm}^2/\text{m}$ (min: ± 2.00)

Aah = $\pm 1.65 \text{ cm}^2/\text{m}$ (min: ± 2.00) (odab: $\pm Q-257$)

Okvir: K_2

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

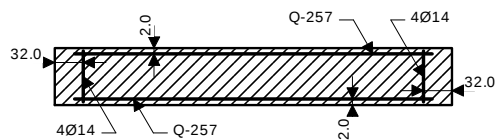
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=2.70m)

Mjerodavni presjek za savijanje i posmik



$$b/d = 20/360 \text{ cm} \quad A_b = 7200 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+IV

Mjerodavna kombinacija za posmik: I+0.30xII+III

Msd = -1129.93 kNm

Nsd = 411.53 kN

Vsd = 372.49 kN

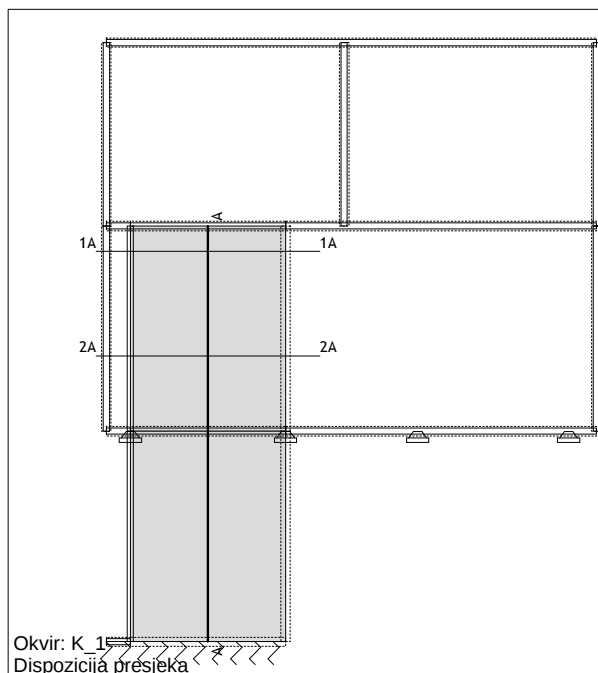
$\epsilon_b/\epsilon_a = -2.137/25.000 \text{ ‰}$

As1 = 5.12 cm² (min:10.80) (odab:4Ø14)

As2 = 5.12 cm² (min:10.80) (odab:4Ø14)

Aav = $\pm 2.57 \text{ cm}^2/\text{m}$ (min: ± 2.00)

Aah = $\pm 1.31 \text{ cm}^2/\text{m}$ (min: ± 2.00) (odab: $\pm Q-257$)

**Okvir: K_1**

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

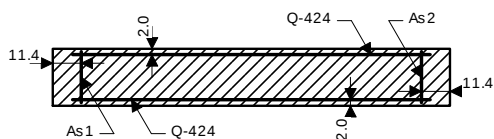
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=5.71m)

Mjerodavni presjek za savijanje



$$b/d = 20/227.035 \text{ cm} \quad A_b = 4540.7 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+III

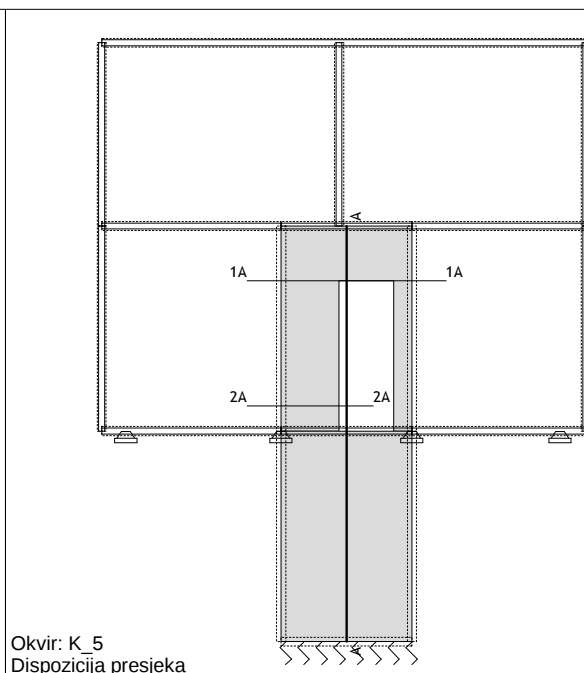
Mjerodavna kombinacija za posmik: I-1.00xIII

Msd = -53.79 kNm

Nsd = -33.38 kN

Vsd = -469.59 kN

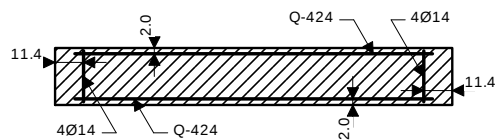
$$\epsilon_b/\epsilon_a = -0.674/25.000 \%$$



As1 =	0.00 cm ²	(min:6.81)	
As2 =	0.00 cm ²	(min:6.81)	
Aav =	±0.08 cm ² /m	(min:±2.00)	
Aah =	±2.62 cm ² /m	(min:±2.00)	(odab:±Q-424)

Presjek 2A - 2A (Z=4.18m)

Mjerodavni presjek za posmik



$$b/d = 20/227.035 \text{ cm} \quad A_b = 4540.7 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: 1.35xI+1.50xII

Mjerodavna kombinacija za posmik: I-1.00xIII

Msd = -59.14 kNm

Nsd = -318.36 kN

Vsd = -610.24 kN

As1 =	0.00 cm ²	(min:6.81)	(odab:4Ø14)
As2 =	0.00 cm ²	(min:6.81)	(odab:4Ø14)
Aav =	±0.00 cm ² /m	(min:±2.00)	
Aah =	±3.40 cm ² /m	(min:±2.00)	(odab:±Q-424)

Okvir: K_5

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

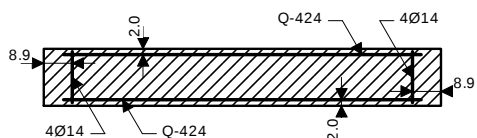
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=5.28m)

Mjerodavni presjek za posmik



$$b/d = 20/191.167 \text{ cm} \quad A_b = 3823.35 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+III

Mjerodavna kombinacija za posmik: I+0.30xII-1.00xIII

Msd = 225.98 kNm

Nsd = -158.67 kN

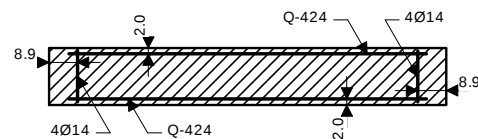
Vsd = -524.53 kN

$$\epsilon_b/\epsilon_a = -1.936/25.000 \%$$

As1 =	0.00 cm ²	(min:5.74)	(odab:4Ø14)
As2 =	0.00 cm ²	(min:5.74)	(odab:4Ø14)
Aav =	±0.61 cm ² /m	(min:±2.00)	
Aah =	±3.47 cm ² /m	(min:±2.00)	(odab:±Q-424)

Presjek 2A - 2A (Z=3.45m)

Mjerodavni presjek za savijanje



$$b/d = 20/84.5971 \text{ cm} \quad A_b = 1691.94 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+III

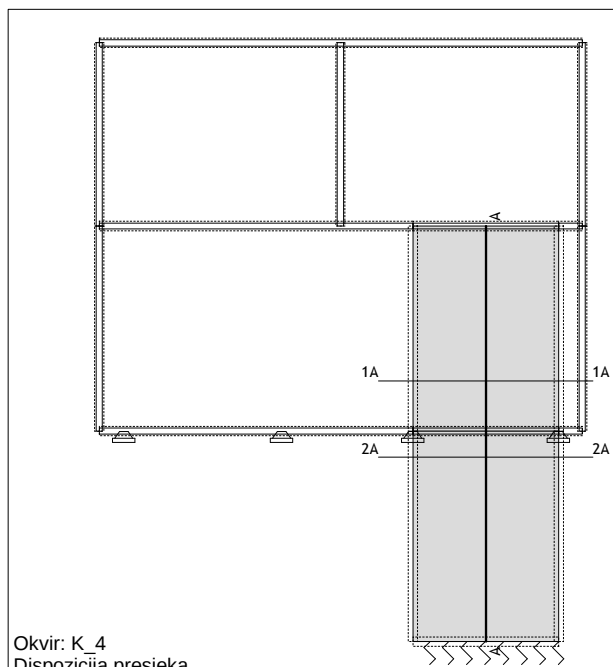
Mjerodavna kombinacija za posmik: I+0.30xII+III

Msd = -54.93 kNm

Nsd = 121.81 kN

Vsd = 188.79 kN

$\epsilon_b/\epsilon_a =$	-2.336/25.000 %		
As1 =	0.18 cm ²	(min:2.54)	(odab:4Ø14)
As2 =	0.18 cm ²	(min:2.54)	(odab:4Ø14)
Aav =	±4.24 cm ² /m	(min:±2.00)	
Aah =	±2.82 cm ² /m	(min:±2.00)	(odab:±Q-424)

Okvir: K_4
Dispozicija presjeka**Okvir: K_4**

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

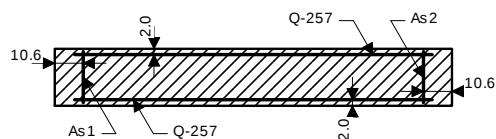
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=3.81m)

Mjerodavni presjek za posmik



$$b/d = 20/212.976 \text{ cm} \quad A_b = 4259.51 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+IV

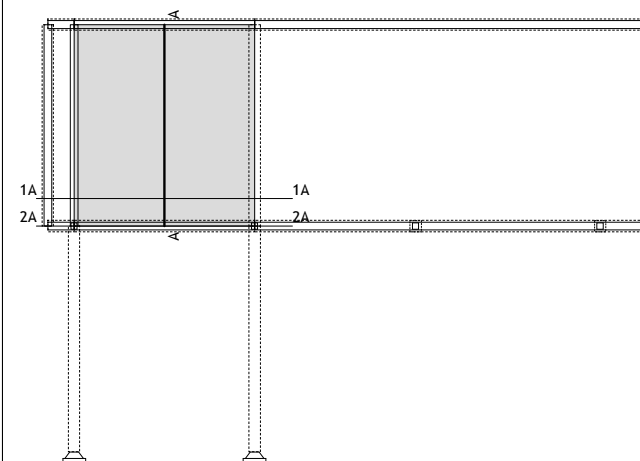
Mjerodavna kombinacija za posmik: I+0.30xII-1.00xIII

Msd = 52.21 kNm

Nsd = -45.27 kN

Vsd = -483.41 kN

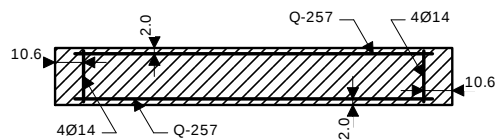
$$\epsilon_b/\epsilon_a = -0.712/25.000 \text{ ‰}$$

Okvir: K_14
Dispozicija presjeka

As1 =	0.00 cm ²	(min:6.39)	
As2 =	0.00 cm ²	(min:6.39)	
Aav =	±0.03 cm ² /m	(min:±2.00)	
Aah =	±2.87 cm ² /m	(min:±2.00)	(odab:±Q-257)

Presjek 2A - 2A (Z=2.69m)

Mjerodavni presjek za savijanje



$$b/d = 20/212.976 \text{ cm} \quad A_b = 4259.51 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+III

Mjerodavna kombinacija za posmik: I+0.30xII+IV

Msd = -119.87 kNm

Nsd = -22.60 kN

Vsd = 197.82 kN

$$\epsilon_b/\epsilon_a = -1.127/25.000 \text{ ‰}$$

As1 = 0.00 cm² (min:6.39) (odab:4Ø14)As2 = 0.00 cm² (min:6.39) (odab:4Ø14)Aav = ±0.56 cm²/m (min:±2.00)Aah = ±1.17 cm²/m (min:±2.00) (odab:±Q-257)**Okvir: K_14**

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

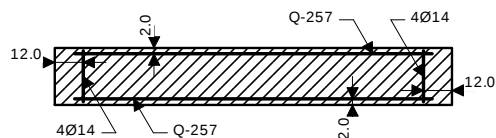
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=6.45m)

Mjerodavni presjek za posmik



$$b/d = 20/239.703 \text{ cm} \quad A_b = 4794.06 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+III

Mjerodavna kombinacija za posmik: I+0.30xII+III

Msd = 160.93 kNm

Nsd = 65.88 kN

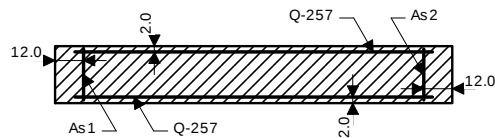
Vsd = 225.54 kN

$$\epsilon_b/\epsilon_a = -1.151/25.000 \text{ ‰}$$

As1 =	0.00 cm ²	(min:7.19)	(odab:4Ø14)
As2 =	0.00 cm ²	(min:7.19)	(odab:4Ø14)
Aav =	±1.10 cm ² /m	(min:±2.00)	
Aah =	±1.19 cm ² /m	(min:±2.00)	(odab:±Q-257)

Presjek 2A - 2A (Z=6.08m)

Mjerodavni presjek za savijanje



$$b/d = 20/239.703 \text{ cm} \quad A_b = 4794.06 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+III

Mjerodavna kombinacija za posmik: I+0.30xII+III

Msd = -181.38 kNm

Nsd = 80.23 kN

Vsd = 187.87 kN

$$\epsilon_b/\epsilon_a = -1.232/25.000 \text{ ‰}$$

As1 = 0.00 cm² (min:7.19)As2 = 0.00 cm² (min:7.19)Aav = ±1.27 cm²/m (min:±2.00)Aah = ±0.99 cm²/m (min:±2.00) (odab:±Q-257)

Okvir: K_18

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

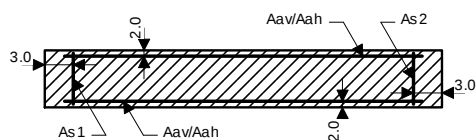
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=6.08m)

Mjerodavni presjek za posmik



$$b/d = 20/9.05458 \text{ cm} \quad A_b = 181.092 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+III

Mjerodavna kombinacija za posmik: I+0.30xII+III

Msd = 0.17 kNm

Nsd = 40.02 kN

Vsd = 11.02 kN

$$\epsilon_b/\epsilon_a = -1.226/25.000 \text{ ‰}$$

$$As1 = 0.45 \text{ cm}^2 \quad (\text{min: } 0.27)$$

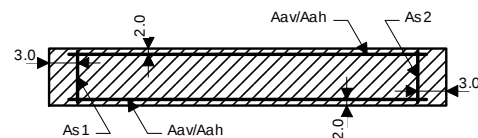
$$As2 = 0.45 \text{ cm}^2 \quad (\text{min: } 0.27)$$

$$Aav = \pm 2.00 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00)$$

$$Aah = \pm 1.54 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00)$$

Presjek 2A - 2A (Z=6.08m)

Mjerodavni presjek za savijanje



$$b/d = 20/34 \text{ cm} \quad A_b = 680 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+III

Mjerodavna kombinacija za posmik: I+0.30xII-1.00xIII

Msd = -6.55 kNm

Nsd = 43.49 kN

Vsd = -18.42 kN

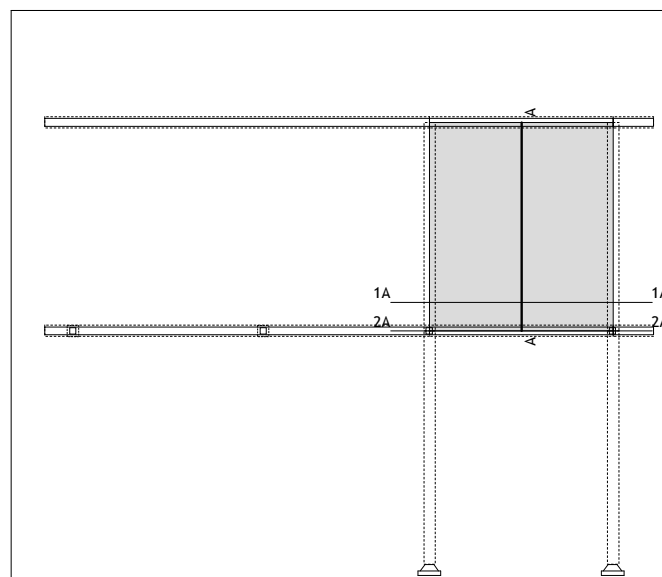
$$\epsilon_b/\epsilon_a = -1.604/25.000 \text{ ‰}$$

$$As1 = 0.42 \text{ cm}^2 \quad (\text{min: } 1.02)$$

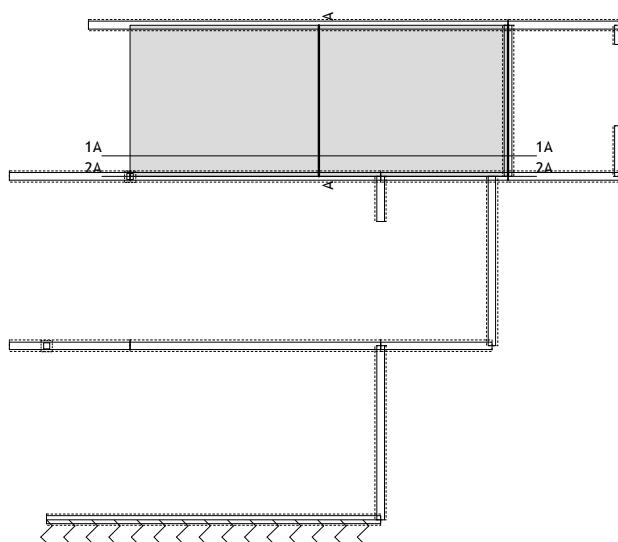
$$As2 = 0.42 \text{ cm}^2 \quad (\text{min: } 1.02)$$

$$Aav = \pm 2.00 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00)$$

$$Aah = \pm 0.69 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00)$$

**Okvir: K_17**

Dispozicija presjeka

**Okvir: K_15**

Dispozicija presjeka

Okvir: K_17

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

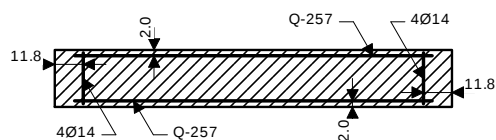
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=6.45m)

Mjerodavni presjek za posmik



$$b/d = 20/235.62 \text{ cm} \quad A_b = 4712.41 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+IV

Mjerodavna kombinacija za posmik: I+0.30xII-1.00xIII

Msd = 120.87 kNm

Nsd = 85.24 kN

Vsd = -200.61 kN

$$\epsilon_b/\epsilon_a = -0.992/25.000 \text{ ‰}$$

$$As1 = 0.00 \text{ cm}^2 \quad (\text{min: } 7.07) \quad (\text{odab: } 4Ø14)$$

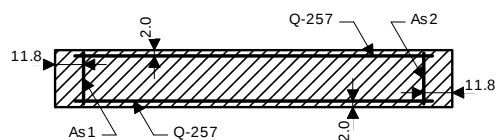
$$As2 = 0.00 \text{ cm}^2 \quad (\text{min: } 7.07) \quad (\text{odab: } 4Ø14)$$

$$Aav = \pm 1.04 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00)$$

$$Aah = \pm 1.08 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00) \quad (\text{odab: } \pm Q-257)$$

Presjek 2A - 2A (Z=6.08m)

Mjerodavni presjek za savijanje



$$b/d = 20/235.62 \text{ cm} \quad A_b = 4712.41 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+III

Mjerodavna kombinacija za posmik: I+0.30xII-1.00xIII

Msd = 158.25 kNm

Nsd = 72.13 kN

Vsd = -177.36 kN

$$\epsilon_b/\epsilon_a = -1.161/25.000 \text{ ‰}$$

$$As1 = 0.00 \text{ cm}^2 \quad (\text{min: } 7.07)$$

$$As2 = 0.00 \text{ cm}^2 \quad (\text{min: } 7.07)$$

$$Aav = \pm 1.15 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00)$$

$$Aah = \pm 0.95 \text{ cm}^2/\text{m} \quad (\text{min: } \pm 2.00) \quad (\text{odab: } \pm Q-257)$$

Okvir: K 15

TPBK

C 25/30 ($\gamma_C = 1.50$, $\gamma_S = 1.15$)

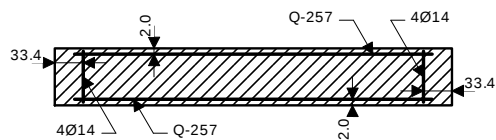
Kutna armatura B500B

Uzdužna armatura B500B

Dimenzioniranje grupe slučajeva opterećenja: 5-16

Presjek 1A - 1A (Z=6.45m)

Mjerodavni presjek za posmik



$$b/d = 20/668.021 \text{ cm} \quad A_b = 13360.4 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+IV

Mjerodavna kombinacija za posmik: 1.35xI+1.50xII

Msd = -1088.62 kNm

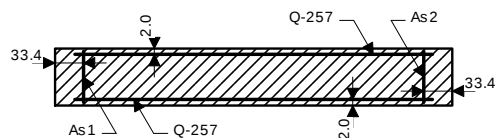
Nsd = -203.40 kN

Vsd = -580.97 kN

$$\epsilon_b/\epsilon_a = -1.083/25.000 \text{ ‰}$$

As1 = 0.00 cm² (min:20.04) (odab:4Ø14)As2 = 0.00 cm² (min:20.04) (odab:4Ø14)Aav = $\pm 0.25 \text{ cm}^2/\text{m}$ (min: ± 2.00)Aah = $\pm 1.10 \text{ cm}^2/\text{m}$ (min: ± 2.00) (odab: $\pm Q-257$)**Presjek 2A - 2A (Z=6.08m)**

Mjerodavni presjek za savijanje



$$b/d = 20/668.021 \text{ cm} \quad A_b = 13360.4 \text{ cm}^2$$

Mjerodavna kombinacija za savijanje: I+0.30xII+IV

Mjerodavna kombinacija za posmik: 1.35xI+1.50xII

Msd = -1422.90 kNm

Nsd = -299.51 kN

Vsd = -468.60 kN

$$\epsilon_b/\epsilon_a = -1.271/25.000 \text{ ‰}$$

As1 = 0.00 cm² (min:20.04)As2 = 0.00 cm² (min:20.04)Aav = $\pm 0.27 \text{ cm}^2/\text{m}$ (min: ± 2.00)Aah = $\pm 0.89 \text{ cm}^2/\text{m}$ (min: ± 2.00) (odab: $\pm Q-257$)