

	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023	Stran: 1/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	
Vsebina		

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 PROVOG inženirske storitve	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023	Stran: 2/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	

Osnovni podatki o modelu, Vhodni podatki - Konstrukcija

Projektant: Provog d.o.o.

Datoteka: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje - most.twp
Datum preračuna: 6.08.2026

Način preračuna: 3D model

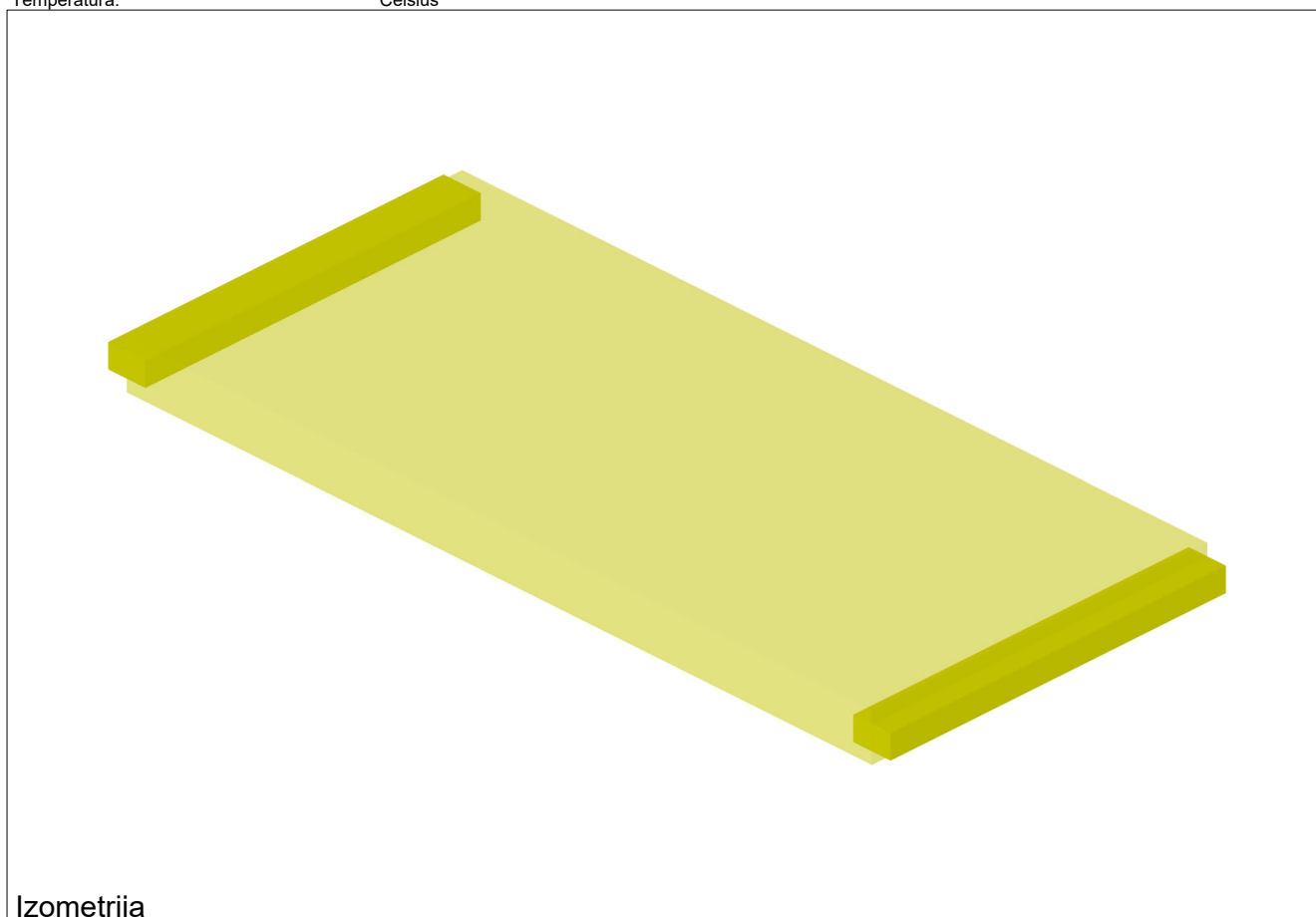
- ☒ Teorija I-ga reda
☒ Modalna analiza
☐ Stabilnost
- ☐ Teorija II-ga reda
☒ Seizmični preračun
☐ Faze gradnje
- ☐ Nelinearen preračun

Velikost modela

Število vozlišč:	1224
Število ploskovnih elementov:	1150
Število grednih elementov	46
Število robnih elementov	276
Število osnovnih obtežnih primerov:	12
Število kombinacij obtežb:	65

Enote mer

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



 PROVOG inženirske storitve	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023	Stran: 3/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	

Koordinate vozlišč			
No	X [m]	Y [m]	Z [m]
1	-0.0000	0.0000	0.0000
277	0.0000	4.5000	0.0000

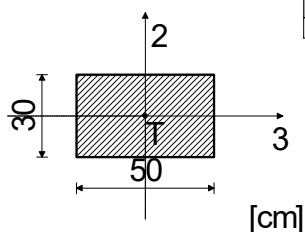
No	X [m]	Y [m]	Z [m]
948	10.000	0.0000	0.0000
1224	10.0000	4.5000	0.0000

Tabele materialov							
No	Naziv materiala	E[kN/m ²]	μ	γ[kN/m ³]	αt[1/C]	Em[kN/m ²]	μm
1	C 30/37	3.300e+7	0.20	25.00	1.000e-5	3.300e+7	0.20

Seti plošč								
No	d[m]	e[m]	Material	Tip preračuna	Ortotropija	E2[kN/m ²]	G[kN/m ²]	α
<1>	0.600	0.300	1	Tanka plošča	Izotropna			

Seti gred							
-----------	--	--	--	--	--	--	--

Set: 1 Prerez: b/d=50/30, Fiktivna ekscentričnost							
Mat.	A1	A2	A3	I1	I2	I3	
1 - C 30/37	1.500e-1	1.250e-1	1.250e-1	2.817e-3	3.125e-3	1.125e-3	



Seti linijskih podpor					
Set	K,R1	K,R2	K,R3	K,M1	Tla [m]
1	1.000e+10	1.000e+10	1.000e+10		

Konture plošč			
No	Konturna vozlišča	Sklop	Set
1	277-1224-948-1-277	Nivo: Plosca [0.00 m]	1

Konture gred Set 1. b/d=50/30																	
No	Vozlišče	Vozlišče J	Sprostitev vplivov												N	Ozn. pozicije	
			Vozlišče I						Vozlišče J								
			M1	M2	M3	P1	P2	P3	M1	M2	M3	P1	P2	P3			
1	1	277															
2	948	1224															

Konture linijskih podpor		
No	Konturna vozlišča	Set
1	1-277	1

No	Konturna vozlišča	Set
2	948-1224	1



PROVOG
inženirske storitve

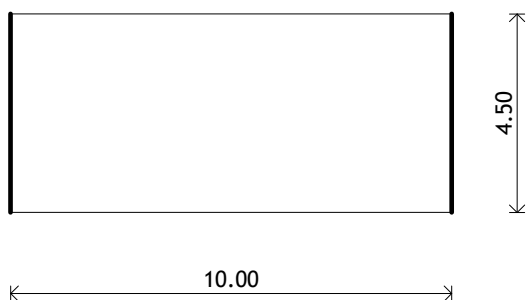
Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

Stran: 4/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:



Nivo: Plosca [0.00 m]



Okvir: H_1



STATIČNI IZRAČUN:

Vhodni podatki - Obtežba

Lista obtežnih primerov

LC	Naziv
1	LT+ST (g)
2	Prometna obtežba 1- LM1 TS-480 (g)
3	Prometna obtežba 1 - LM1 UDL
4	Prometna obtežba 2 - LM1 TS-480 (g)
5	Prometna obtežba 2 - LM1 UDL
6	Prometna obtežba - Pospeševanje
7	Prometna obtežba - Zaviranje
8	Temperatura - dT _m max
9	Temperatura - dT _n max
10	Krčenje
11	potres smer x
12	potres smer y
13	Komb.: 1.35xI+1.35xII+1.35xIII+0.6xVIII
14	Komb.: 1.35xI+1.35xII+1.35xIII+0.6xIX
15	Komb.: 1.35xI+1.35xII+1.35xIII+0.6xX
16	Komb.: 1.35xI+1.35xIV+1.35xV+0.6xVIII
17	Komb.: 1.35xI+1.35xIV+1.35xV+0.6xIX
18	Komb.: 1.35xI+1.35xIV+1.35xV+0.6xX
19	Komb.: 1.35xI+1.01xII+0.54xIII+1.35xVI+0.6xVIII
20	Komb.: 1.35xI+1.01xII+0.54xIII+1.35xVI+0.6xIX
21	Komb.: 1.35xI+1.01xII+0.54xIII+1.35xVI+0.6xX
22	Komb.: 1.35xI+1.01xII+0.54xIII+1.35xVII+0.6xVIII
23	Komb.: 1.35xI+1.01xII+0.54xIII+1.35xVII+0.6xIX
24	Komb.: 1.35xI+1.01xII+0.54xIII+1.35xVII+0.6xX
25	Komb.: 1.35xI+1.01xIV+0.54xV+1.35xVI+0.6xVIII
26	Komb.: 1.35xI+1.01xIV+0.54xV+1.35xVI+0.6xIX
27	Komb.: 1.35xI+1.01xIV+0.54xV+1.35xVI+0.6xX
28	Komb.: 1.35xI+1.01xIV+0.54xV+1.35xVII+0.6xVIII
29	Komb.: 1.35xI+1.01xIV+0.54xV+1.35xVII+0.6xIX
30	Komb.: 1.35xI+1.01xIV+0.54xV+1.35xVII+0.6xX
31	Komb.: 1.35xI+1.01xII+0.54xIII+1.5xVIII
32	Komb.: 1.35xI+1.01xII+0.54xIII+1.5xIX
33	Komb.: 1.35xI+1.01xII+0.54xIII+1.5xX
34	Komb.: 1.35xI+1.01xIV+0.54xV+1.5xVIII
35	Komb.: 1.35xI+1.01xIV+0.54xV+1.5xIX
36	Komb.: 1.35xI+1.01xIV+0.54xV+1.5xX
37	Komb.: I+0.5xVIII+XI
38	Komb.: I+0.5xVIII+XII
39	Komb.: I+0.5xIX+XI

Seznam obtežnih primerov ovojnic

LC	Naziv
78	[MSN] 1-40
79	[MSU (Karakt)] 41-64

LC	Naziv
40	Komb.: I+0.5xIX+XII
41	Komb.: I+II+III+0.6xVIII
42	Komb.: I+II+III+0.6xIX
43	Komb.: I+II+III+0.6xX
44	Komb.: I+IV+V+0.6xVIII
45	Komb.: I+IV+V+0.6xIX
46	Komb.: I+IV+V+0.6xX
47	Komb.: I+0.75xII+0.54xIII+VI+0.6xVIII
48	Komb.: I+0.75xII+0.54xIII+VI+0.6xIX
49	Komb.: I+0.75xII+0.54xIII+VI+0.6xX
50	Komb.: I+0.75xII+0.54xIII+VII+0.6xVIII
51	Komb.: I+0.75xII+0.54xIII+VII+0.6xIX
52	Komb.: I+0.75xII+0.54xIII+VII+0.6xX
53	Komb.: I+0.75xIV+0.54xV+VI+0.6xVIII
54	Komb.: I+0.75xIV+0.54xV+VI+0.6xIX
55	Komb.: I+0.75xIV+0.54xV+VI+0.6xX
56	Komb.: I+0.75xIV+0.54xV+VII+0.6xVIII
57	Komb.: I+0.75xIV+0.54xV+VII+0.6xIX
58	Komb.: I+0.75xIV+0.54xV+VII+0.6xX
59	Komb.: I+0.75xII+0.54xIII+VIII
60	Komb.: I+0.75xII+0.54xIII+IX
61	Komb.: I+0.75xII+0.54xIII+X
62	Komb.: I+0.75xIV+0.54xV+VIII
63	Komb.: I+0.75xIV+0.54xV+IX
64	Komb.: I+0.75xIV+0.54xV+X
65	Komb.: I+0.75xII+0.54xIII+0.5xVIII
66	Komb.: I+0.75xII+0.54xIII+0.5xIX
67	Komb.: I+0.75xII+0.54xIII+0.5xX
68	Komb.: I+0.75xIV+0.54xV+0.5xVIII
69	Komb.: I+0.75xIV+0.54xV+0.5xIX
70	Komb.: I+0.75xIV+0.54xV+0.5xX
71	Komb.: I+0.6xVIII
72	Komb.: I+0.6xIX
73	Komb.: I+0.6xX
74	Komb.: I
75	Komb.: I+0.5xVIII
76	Komb.: I+0.5xIX
77	Komb.: I+0.5xX

LC	Naziv
80	[MSU (Pogosta)] 65-73
81	[MSU (Kvazi)] 74-77



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavah 4.avgust 2023

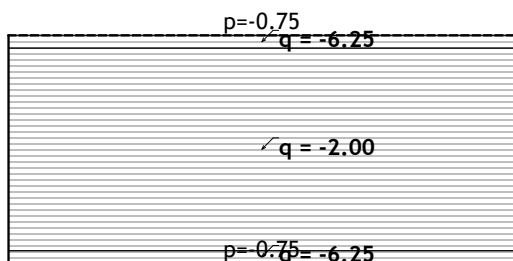
Stran: 6/34

Investitor: Občina Dobrna

Datum: avg 2026

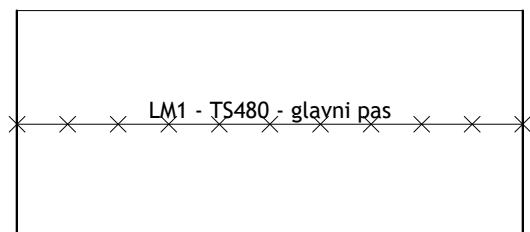
STATIČNI IZRAČUN:

Obt. 1: LT+ST (g)



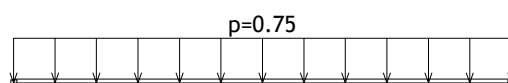
Nivo: Plosca [0.00 m]

Obt. 2: Prometna obtežba 1- LM1 TS-480 (g)



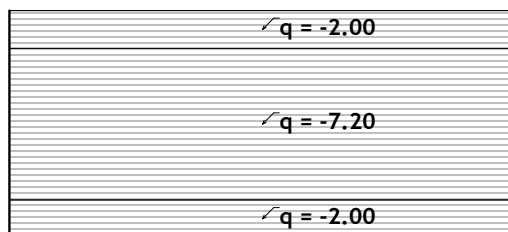
Nivo: Plosca [0.00 m]

Obt. 1: LT+ST (g)



Okvir: H 1

Obt. 3: Prometna obtežba 1 - LM1 UDL



Nivo: Plosca [0.00 m]



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

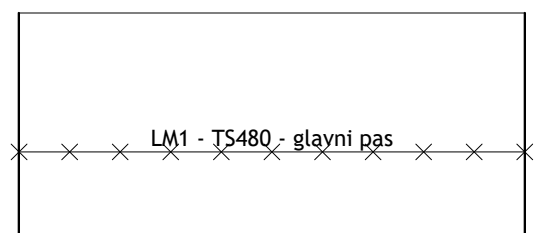
Stran: 7/34

Investitor: Občina Dobrna

Datum: avg 2026

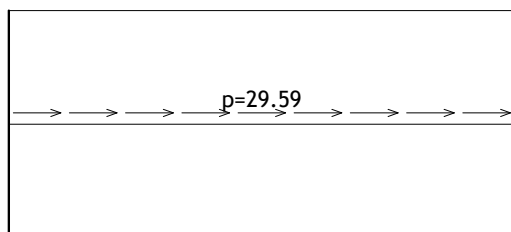
STATIČNI IZRAČUN:

Obt. 4: Prometna obtežba 2 - LM1 TS-480 (g)



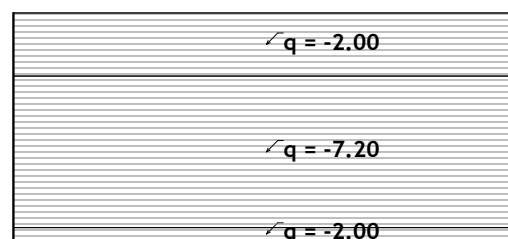
Nivo: Plosca [0.00 m]

Obt. 6: Prometna obtežba - Pospeševanje



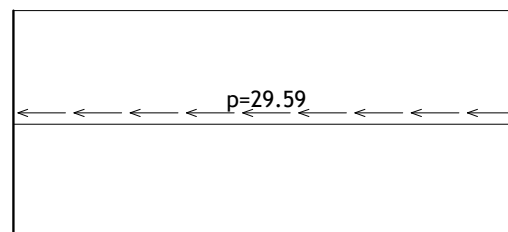
Nivo: Plosca [0.00 m]

Obt. 5: Prometna obtežba 2 - LM1 UDL



Nivo: Plosca [0.00 m]

Obt. 7: Prometna obtežba - Zaviranje



Nivo: Plosca [0.00 m]



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavah 4.avgust 2023

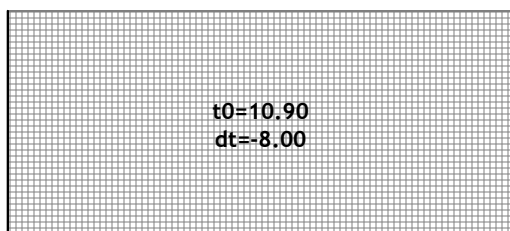
Stran: 8/34

Investitor: Občina Dobrna

Datum: avg 2026

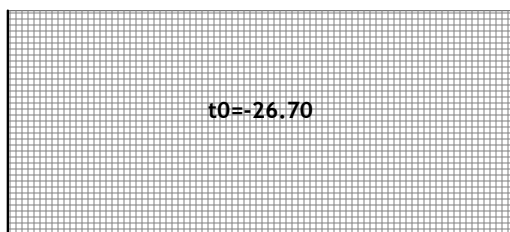
STATIČNI IZRAČUN:

Obt. 8: Temperatura - dTm_max



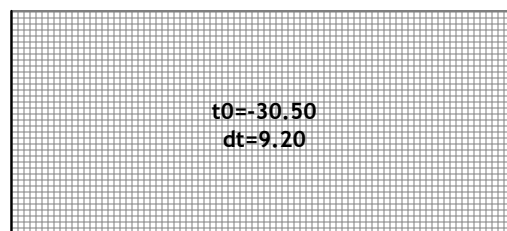
Nivo: Plosca [0.00 m]

Obt. 10: Krčenje



Nivo: Plosca [0.00 m]

Obt. 9: Temperatura - dTn_max



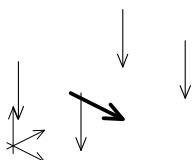
Nivo: Plosca [0.00 m]

	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023	Stran: 9/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	

Premična obtežba (LM1 - TS480 - glavni pas)

Obtežba 2: LM1 - TS480 - glavni pas

$\Delta L=1$ m



Koncentrirane sile					
No	Px[kN]	Py[kN]	Pz[kN]	X1[m]	Y1[m]
1	-0.00	-0.00	-120.00	0.00	1.00
2	-0.00	-0.00	-120.00	0.00	-1.00
3	-0.00	-0.00	-120.00	1.20	1.00
4	-0.00	-0.00	-120.00	1.20	-1.00

	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023	Stran: 10/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	

Modalna analiza

Faktorji obtežb za preračun mas		
No	Naziv	Koeficient
1	LT+ST (g)	1.00
2	Prometna obtežba 1- LM1 TS-480 (g)	0.00
3	Prometna obtežba 1 - LM1 UDL	0.20
4	Prometna obtežba 2 - LM1 TS-480 (g)	0.00
5	Prometna obtežba 2 - LM1 UDL	0.00
6	Prometna obtežba - Pospeševanje	0.00
7	Prometna obtežba - Zaviranje	0.00
8	Temperatura - dTm_max	0.00
9	Temperatura - dTn_max	0.00
10	Krčenje	0.00

Razporeditev mas po višini objekta					
Nivo	Z [m]	X [m]	Y [m]	Masa [T]	T/m²
Plosca	0.00	5.00	2.25	90.16	2.00
Skupno:	0.00	5.00	2.25	90.16	

Nihajne dobe konstrukcije			
No	T [s]	f [Hz]	m' [T]
1	0.1143	8.7516	41.2745
2	0.0354	28.2867	15.4449
3	0.0284	35.1635	38.5406



STATIČNI IZRAČUN:

Seizmični preračun

Seizmični preračun: EC8 (SIST EN 1998)

Kategorija tal: C
Kategorija pomena: II ($\gamma=1.0$)
Razmerje $a_g R/g$: 0.200
Procent viskoznega dušenja ζ : 5%

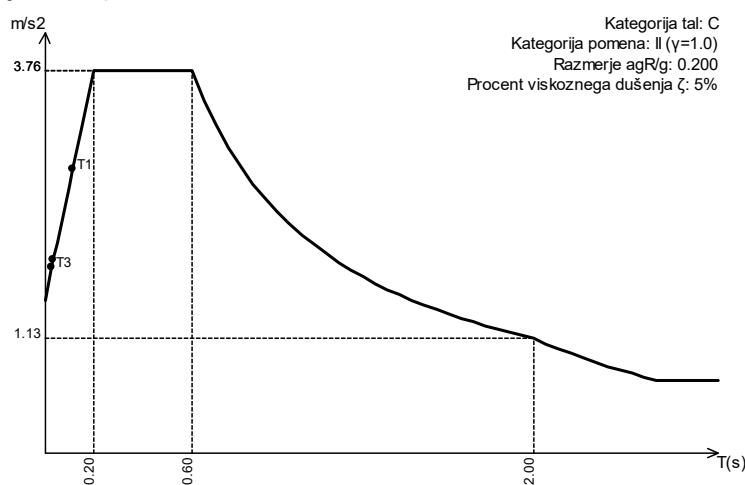
Faktorji smeri potresa:

Obtežni primer	Kot α [°]	k_α	$k_{\alpha+90^\circ}$	k_z	Faktor O.
potres smer x	0	1.000	0.300	0.000	1.500
potres smer y	90	1.000	0.300	0.000	1.500

Tip spektra

Obtežni primer	S	T_b	T_c	T_d	avg/ a_g
potres smer x	1.150	0.200	0.600	2.000	1.000
potres smer y	1.150	0.200	0.600	2.000	1.000

Projektni spekter



$S=1.15$, $T_b=0.20$, $T_c=0.60$, $T_d=2.00$

Razporeditev potresnih sil po višini objekta - potres smer x

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]
Plosca	0.00	0.00	0.00	-0.00	-0.00	-0.00	0.00	-0.00	0.00	0.00
$\Sigma=$		0.00	0.00	-0.00	-0.00	0.00	-0.00	-0.00	0.00	0.00

Razporeditev potresnih sil po višini objekta - potres smer y

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]
Plosca	0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00	-0.00	0.00	0.00
$\Sigma=$		0.00	0.00	-0.00	-0.00	0.00	-0.00	-0.00	0.00	0.00

Faktorji participacije - relativno sodelovanje

Ton \ Naziv	1. potres smer x	2. potres smer y
1	0.000	0.000
2	0.000	0.000
3	0.000	0.000

Faktorji participacije - angažiranje mase

Ton	U [$\alpha=0^\circ$]	U [$\alpha=90^\circ$]	U [Z]
Upošteva se samo masa nad koto temelja			
Kota temelja:	0.00 m		
Skupna masa nad temeljem:	0.00 T		
Skupna masa celega objekta:	90.16 T		

Ton	U [$\alpha=0^\circ$]	U [$\alpha=90^\circ$]	U [Z]
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
ΣU (%)	0.00	0.00	0.00

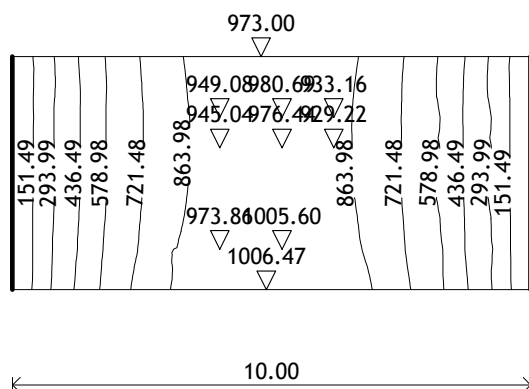
Prečne sile v osnovi [0.00 m]

Obtežni primer	Kot α [°]	VtB [kN]
potres smer x	0	0.00
potres smer y	90	0.00

STATIČNI IZRAČUN:

Statični preračun

Obt. 78: [MSN] 1-40

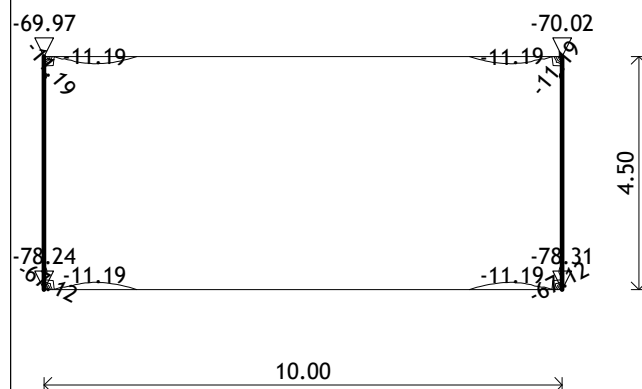


Nivo: Plosca [0.00 m]

Vplivi v plošči: max $M_x = 1006.47$ / min $M_x = 8....$

Obt. 78: [MSN] 1-40

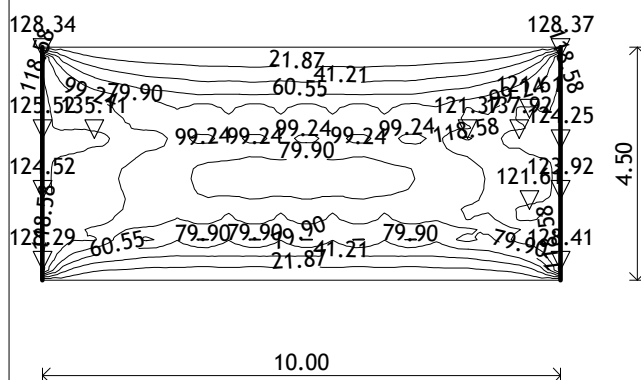
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

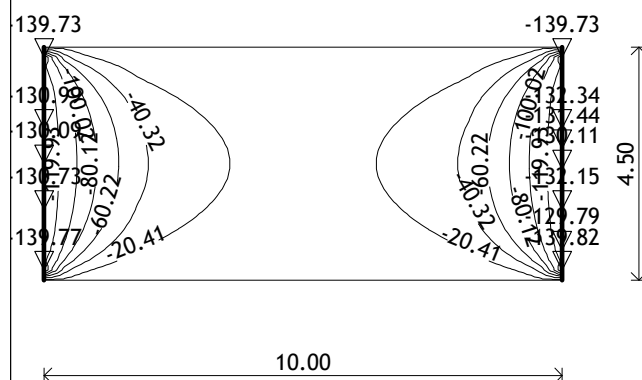
Vplivi v plošči: max $M_x = -0.00$ / min $M_x = -78.44$

Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v plošči: max $M_y = 137.92$ / min $M_y = 2.5...$



Nivo: Plosca [0.00 m]

Vplivi v plošči: max $M_y = -0.51$ / min $M_y = -139...$



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

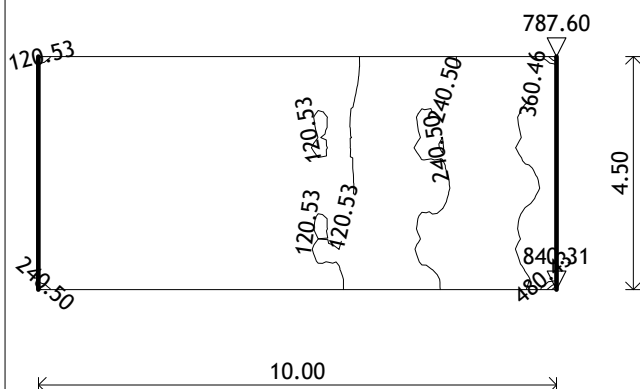
Stran: 13/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

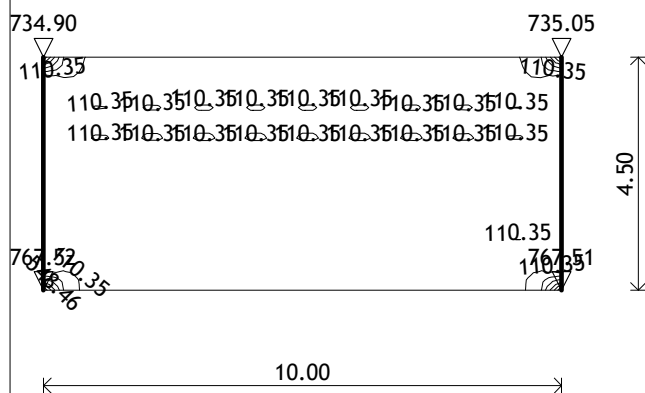
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Vz,x= 840.31 / min Vz,x= ...

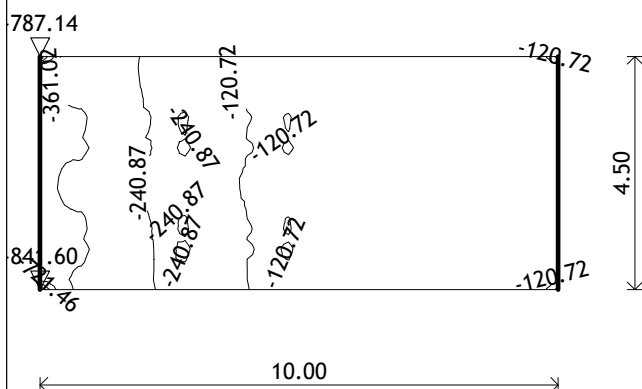
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Vz,y= 767.52 / min Vz,y= ...

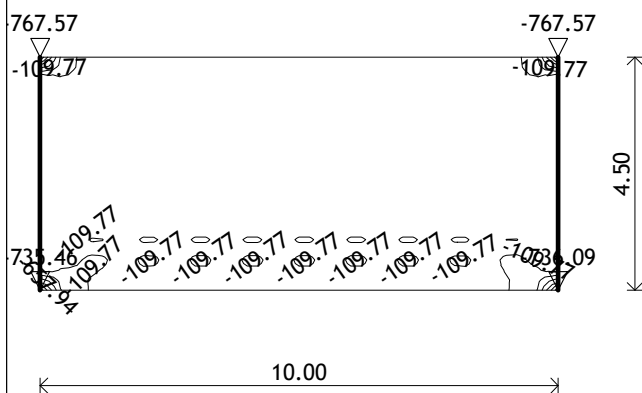
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Vz,x= -0.57 / min Vz,x= -8...

Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Vz,y= -0.15 / min Vz,y= -7...



STATIČNI IZRAČUN:

Notranje sile v ploščah - Ekstremne vrednosti - Obtežba: 78. [MSN] 1-40

Oznaka	LC	Mx [kNm/m]	My [kNm/m]	Mxy [kNm/m]	Vz.x [kN/m]	Vz.y [kN/m]
971	A-	-11.048	[-139.82]	-79.127	-75.263	-368.79
2	A-	-11.054	[-139.77]	-177.85	-438.68	-368.91
1223	A-	-9.029	[-139.73]	-160.59	-75.263	-354.29
254	A-	-9.026	[-139.73]	-80.813	-414.87	-354.29
1129	A+	311.42	[137.92]	22.481	357.97	12.226
196	A+	374.58	[135.11]	25.933	12.773	14.285
1188	A-	-4.000	[-132.34]	-38.965	-18.865	-1.927
1196	A-	-4.353	[-132.15]	-51.093	-20.501	-16.533
1088	A-	-4.353	[-132.15]	-21.427	-20.501	-38.893
1169	A-	-3.612	[-131.44]	-17.030	-17.163	-2.200
924	A+	79.607	4.672	[202.21]	583.98	466.51
3	A-	-11.296	-13.515	[-202.04]	-584.36	-466.05
947	A+	78.718	81.837	[195.02]	412.82	283.45
5	A-	-7.619	-90.278	[-194.78]	-407.44	-290.67
900	A+	164.50	11.588	[187.91]	397.91	213.26
6	A-	-13.745	-13.673	[-187.74]	-400.32	-224.57
1222	A-	-11.296	-12.418	[-184.86]	-144.10	-467.23
301	A+	75.622	4.672	[184.77]	144.10	458.61
923	A+	157.85	48.536	[181.03]	378.53	177.68
9	A-	-2.775	-49.734	[-180.82]	-377.51	-184.04
1	A-	-78.240	-13.108	-160.52	[-841.60]	-735.46
948	A+	37.080	4.959	160.66	[840.31]	767.51
1224	A+	40.787	4.959	86.445	[787.60]	735.05
277	A-	-69.972	-12.083	-86.358	[-787.14]	-767.57
3	A-	-11.296	-13.515	-202.04	[-584.36]	-466.05
924	A+	79.607	4.672	202.21	[583.98]	466.51
1222	A+	75.437	4.672	113.98	[541.22]	458.56
301	A-	-11.296	-12.428	-113.87	[-540.20]	-466.97
971	A+	9.250	128.41	178.07	[445.09]	353.86
993	A+	24.074	118.66	150.41	[439.56]	29.438
277	A-	-69.972	-12.083	-86.358	-787.14	[-767.57]
1224	A-	-70.019	-12.085	-145.48	-287.05	[-767.57]
1	A+	36.603	4.959	80.221	287.05	[767.52]
948	A+	37.080	4.959	160.66	840.31	[767.51]
948	A-	-78.308	-13.116	-80.372	-287.05	[-736.09]
1	A-	-78.240	-13.108	-160.52	-841.60	[-735.46]
1224	A+	40.787	4.959	86.445	787.60	[735.05]
277	A+	40.729	4.959	145.37	287.05	[734.90]
1222	A-	-11.296	-12.418	-184.86	-144.10	[-467.23]
301	A-	-11.296	-12.428	-113.87	-540.20	[-466.97]

**Deformacija plošč GLO - Ekstremne vrednosti -
Obtežba: 78. [MSN] 1-40**

Oznaka	LC	Zp [mm]	Zr [mrad]
348	A-	[-9.763]	0.000
324	A-	[-9.756]	0.000
372	A-	[-9.730]	0.000
300	A-	[-9.709]	0.000
371	A-	[-9.681]	0.000

Oznaka	LC	Zp [mm]	Zr [mrad]
371	A-	[-9.681]	0.000
347	A-	[-9.673]	0.000
347	A-	[-9.673]	0.000
396	A-	[-9.664]	0.000
395	A-	[-9.648]	0.000



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavah 4.avgust 2023

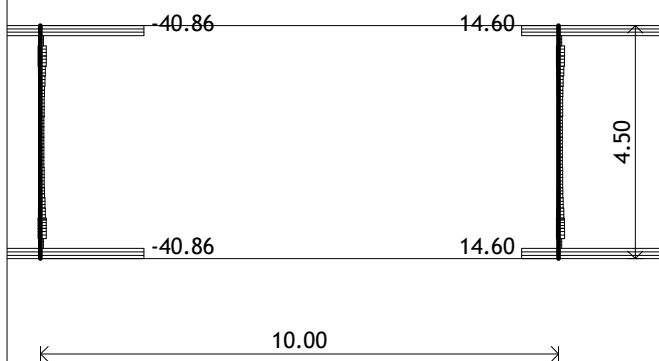
Stran: 15/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

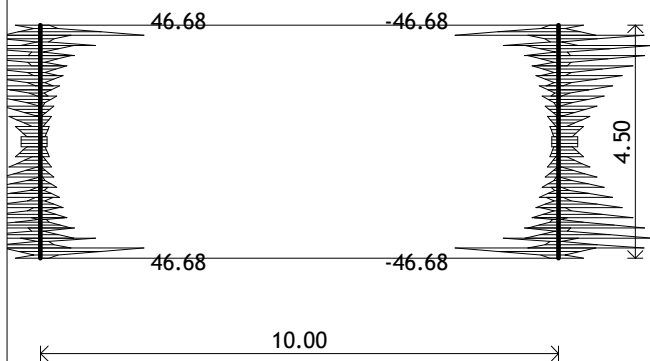
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v gredi: max N1= 14.60 / min N1= -40.8...

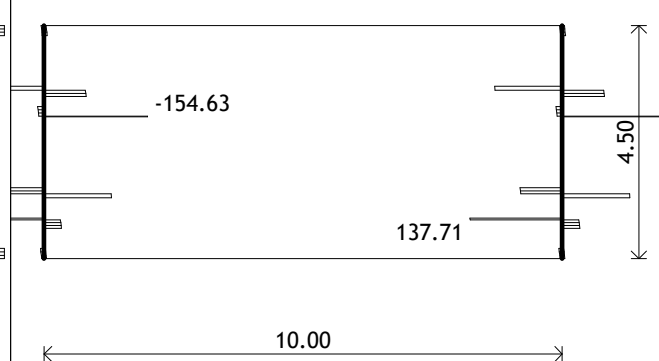
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v gredi: max M2= 46.68 / min M2= -46....

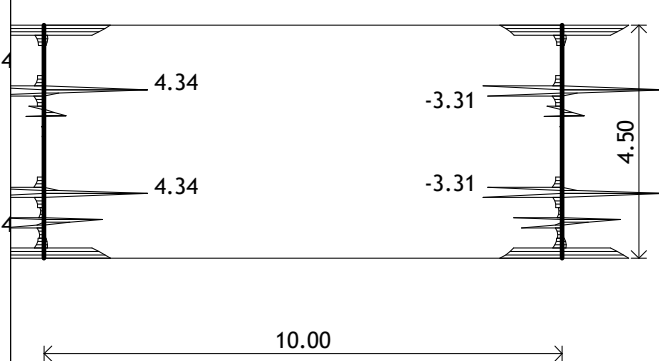
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v gredi: max V2= 137.71 / min V2= -15...

Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Vplivi v gredi: max M3= 4.34 / min M3= -3.31...

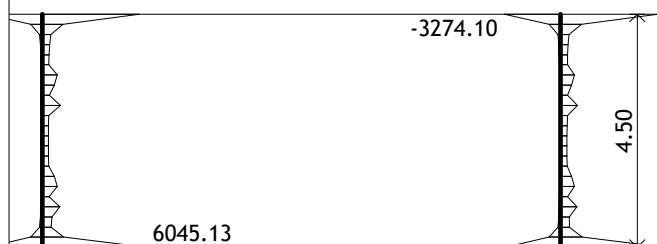


STATIČNI IZRAČUN:

Notranje sile v gredah - Ekstremne vrednosti - Obtežba: 78. [MSN] 1-40

Oznaka	LC	x [m]	N1 [kN]	V2 [kN]	M2 [kNm]	M3 [kNm]
(1 - 277)	A(N1+)	0.196	+14.602	-2.060	-16.681	-2.013
(948 - 1224)	A(N1+)	0.196	+14.602	-2.157	16.681	-2.014
(1 - 277)	A(N1-)	0.196	-40.857	4.876	46.677	1.979
(948 - 1224)	A(N1-)	0.196	-40.857	4.779	-46.677	1.978
(1 - 277)	A(N1+)	0.196	14.602	-2.060	-16.681	-2.013
(948 - 1224)	A(N1+)	0.196	14.602	-2.157	16.681	-2.014
(1 - 277)	A(V2-)	2.739	0.215	-154.63	0.172	-0.756
(948 - 1224)	A(V2-)	2.739	0.215	-154.63	-0.172	-0.758
(1 - 277)	A(V2+)	0.783	0.328	137.71	-1.564	-2.039
(948 - 1224)	A(V2+)	0.783	0.328	137.71	1.564	-2.040
(948 - 1224)	A(M2-)	0.196	-40.857	4.779	-46.677	1.978
(1 - 277)	A(M2+)	0.196	-40.857	4.876	46.677	1.979
(1 - 277)	A(M2-)	0.391	-2.374	-0.984	-42.378	-0.061
(948 - 1224)	A(M2+)	0.391	-2.374	-0.986	42.378	-0.063
(1 - 277)	A(M3+)	3.250	0.242	-61.806	1.933	4.342
(1 - 277)	A(M3+)	1.250	0.242	-100.19	1.933	4.342
(948 - 1224)	A(M3+)	3.250	0.242	-61.807	-1.933	4.340
(948 - 1224)	A(M3+)	1.250	0.242	-100.19	-1.933	4.340
(948 - 1224)	A(M3-)	1.174	-0.676	-100.98	9.727	-3.315
(1 - 277)	A(M3-)	1.174	-0.676	-100.98	-9.727	-3.313

Obt. 78: [MSN] 1-40

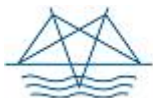


Nivo: Plosca [0.00 m]

Vplivi v lin. podpori: max σ_{tal} = 6045.13 / min ...

Vplivi v linijskih podporah - Ekstremne vrednosti - Obtežba: 78. [MSN] 1-40

Oznaka	LC	σ_{tal} [kN/m ²]	s,tal [mm]
(1-277)	A+	6045.1	0.000
(948-1224)	A+	6039.6	0.000
(948-1224)	A-	-3274.1	0.000
(1-277)	A-	-3269.2	0.000



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

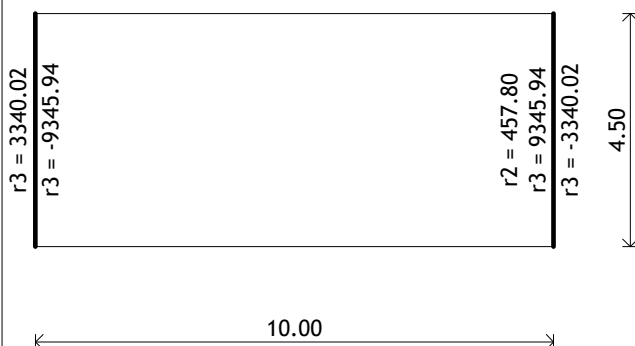
Stran: 17/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

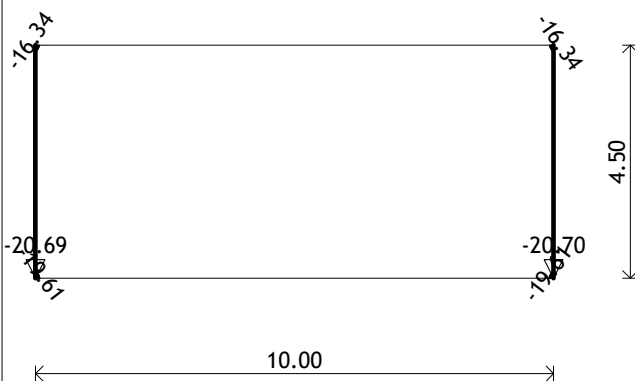
Obt. 78: [MSN] 1-40



Nivo: Plosca [0.00 m]

Reakcije podpor

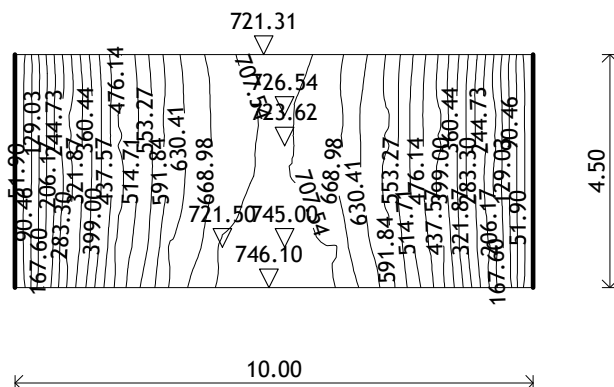
Obt. 79: [MSU (Karak)] 41-64



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Mx= 0.00 / min Mx= -20.7...

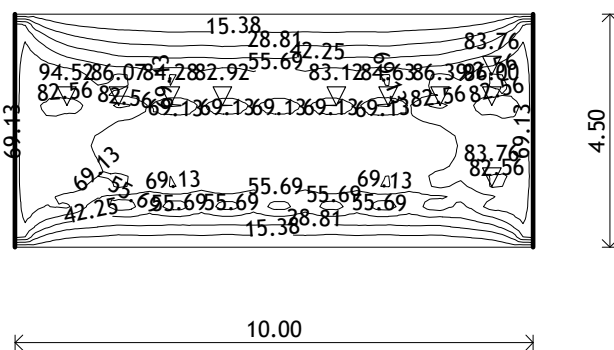
Obt. 79: [MSU (Karak)] 41-64



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Mx= 746.10 / min Mx= 13.00

Obt. 79: [MSU (Karak)] 41-64



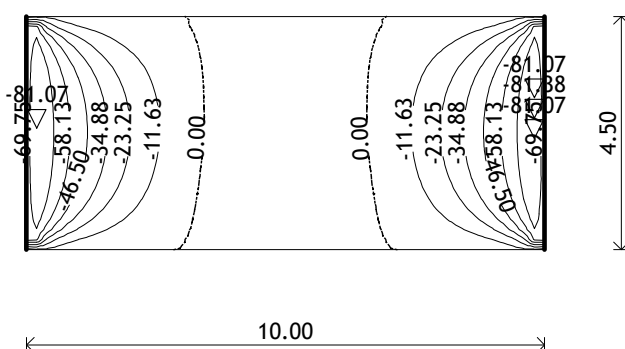
Nivo: Plosca [0.00 m]

Vplivi v plošči: max My= 96.00 / min My= 1.90



STATIČNI IZRAČUN:

Obt. 79: [MSU (Karak)] 41-64



Nivo: Plosca [0.00 m]

Vplivi v plošči: max My= 0.00 / min My= -81.3...

Notranje sile v ploščah - Ekstremne vrednosti -
Obtežba: 79. [MSU (Karak)] 41-64

Oznaka	LC	Mx [kNm/m]	My [kNm/m]
1129	A+	231.20	[95.997]
196	A+	278.09	[94.519]
971	A-	-7.590	[-92.975]
2	A-	-7.595	[-92.938]
1223	A-	-6.033	[-92.897]

Oznaka	LC	Mx [kNm/m]	My [kNm/m]
254	A-	-6.031	[-92.897]
1143	A+	165.78	[90.348]
1114	A+	256.47	[89.575]
176	A+	215.46	[89.208]
1188	A-	-0.643	[-88.000]

Deformacija plošč L.K.S. - Ekstremne
vrednosti - Obtežba: 79. [MSU (Karak)]
41-64

Oznaka	LC	u3 [mm]
348	A-	[-7.232]
324	A-	[-7.227]
372	A-	[-7.207]
300	A-	[-7.192]

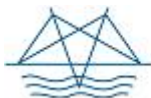
Oznaka	LC	u3 [mm]
371	A-	[-7.171]
347	A-	[-7.166]
396	A-	[-7.158]
395	A-	[-7.146]

Oznaka	LC	u3 [mm]
323	A-	[-7.130]
276	A-	[-7.126]

Deformacija plošč GLO - Ekstremne vrednosti -
Obtežba: 79. [MSU (Karak)] 41-64

Oznaka	LC	Zp [mm]	Zr [mrad]
348	A-	[-7.232]	0.000
324	A-	[-7.227]	0.000
372	A-	[-7.207]	0.000
300	A-	[-7.192]	0.000
371	A-	[-7.171]	0.000

Oznaka	LC	Zp [mm]	Zr [mrad]
371	A-	[-7.171]	0.000
347	A-	[-7.166]	0.000
347	A-	[-7.166]	0.000
396	A-	[-7.158]	0.000
395	A-	[-7.146]	0.000



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavih 4.avgust 2023

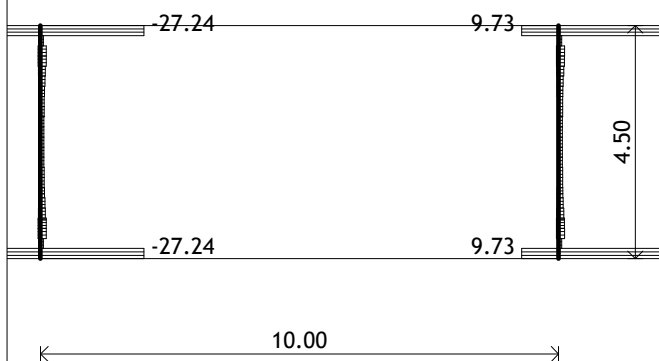
Stran: 19/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

Obt. 79: [MSU (Karak)] 41-64

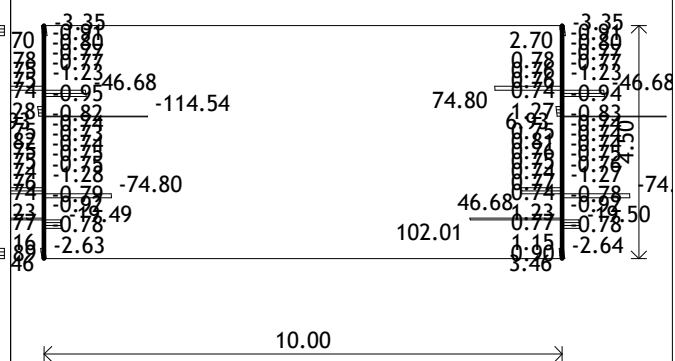


Nivo: Plosca [0.00 m]

Vplivi v gredi: max N1= 9.73 / min N1= -27.24 kN

Obt. 79: [MSU (Karak)] 41-64

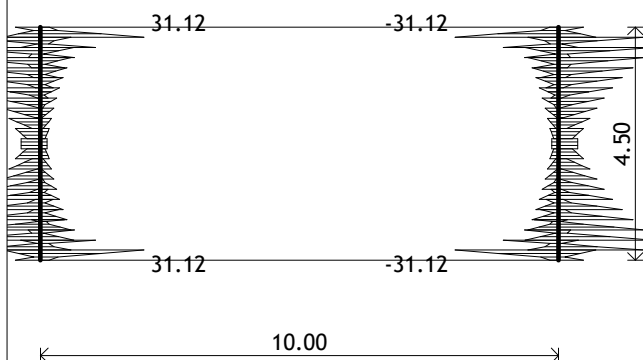
Obt. 79: [MSU (Karak)] 41-64



Nivo: Plosca [0.00 m]

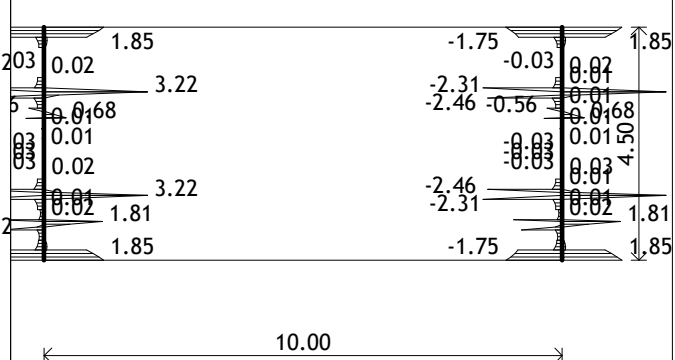
Vplivi v gredi: max V2= 102.01 / min V2= -11...

Obt. 79: [MSU (Karak)] 41-64



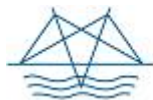
Nivo: Plosca [0.00 m]

Vplivi v gredi: max M2= 31.12 / min M2= -31....



Nivo: Plosca [0.00 m]

Vplivi v gredi: max M3= 3.22 / min M3= -2.46...

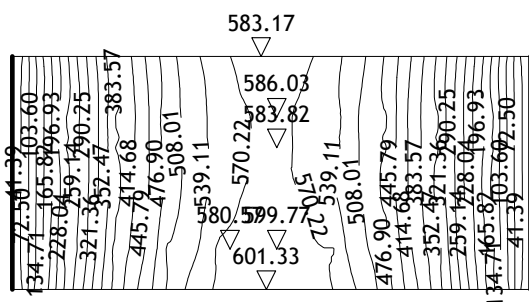


STATIČNI IZRAČUN:

Notranje sile v gredah - Ekstremne vrednosti - Obtežba: 79. [MSU (Karakt)] 41-64

Oznaka	LC	x [m]	N1 [kN]	V2 [kN]	M2 [kNm]	M3 [kNm]
(1 - 277)	A(N1-)	0.196	[-27.238]	3.341	31.118	1.306
(948 - 1224)	A(N1-)	0.196	[-27.238]	3.269	-31.118	1.305
(1 - 277)	A(N1+)	0.196	[9.734]	-1.284	-11.121	-1.355
(948 - 1224)	A(N1+)	0.196	[9.734]	-1.356	11.121	-1.356
(1 - 277)	A(V2-)	2.739	0.215	[-114.54]	0.172	-0.560
(948 - 1224)	A(V2-)	2.739	0.215	[-114.54]	-0.172	-0.561
(1 - 277)	A(V2+)	0.783	0.328	[102.01]	-1.564	-1.510
(948 - 1224)	A(V2+)	0.783	0.328	[102.01]	1.564	-1.511
(948 - 1224)	A(M2-)	0.196	-27.238	3.269	[-31.118]	1.305
(1 - 277)	A(M2+)	0.196	-27.238	3.341	[31.118]	1.306
(1 - 277)	A(M2-)	0.391	-1.583	-0.720	[-28.252]	-0.042
(948 - 1224)	A(M2+)	0.391	-1.583	-0.722	[28.252]	-0.044
(1 - 277)	A(M3+)	3.250	0.242	-45.784	1.933	[3.216]
(1 - 277)	A(M3+)	1.250	0.242	-74.216	1.933	[3.216]
(948 - 1224)	A(M3+)	3.250	0.242	-45.785	-1.933	[3.215]
(948 - 1224)	A(M3+)	1.250	0.242	-74.215	-1.933	[3.215]
(948 - 1224)	A(M3-)	1.174	-0.676	-74.799	9.727	[-2.456]
(1 - 277)	A(M3-)	1.174	-0.676	-74.800	-9.727	[-2.455]

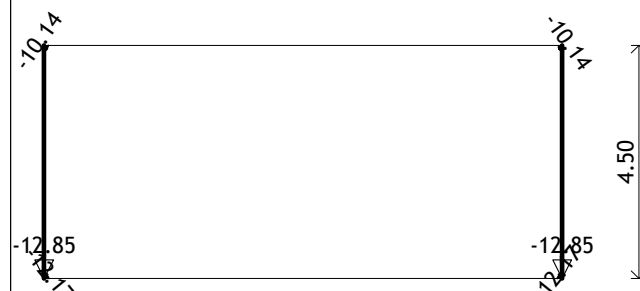
Obt. 80: [MSU (Pogosta)] 65-73



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Mx= 601.33 / min Mx= 10....

Obt. 80: [MSU (Pogosta)] 65-73



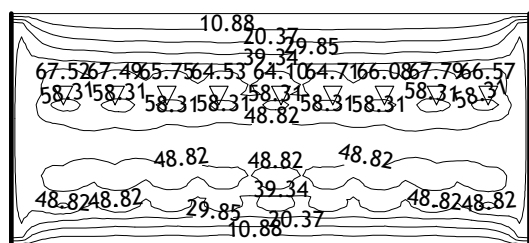
Nivo: Plosca [0.00 m]

Vplivi v plošči: max Mx= 0.00 / min Mx= -12.8...



STATIČNI IZRAČUN:

Obt. 80: [MSU (Pogosta)] 65-73

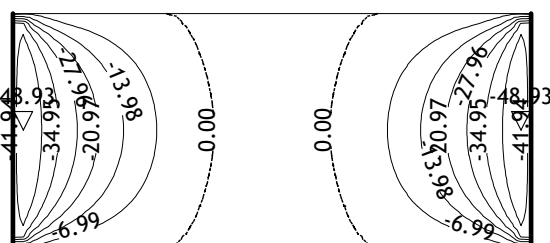


10.00

Nivo: Plosca [0.00 m]

Vplivi v plošči: max My= 67.79 / min My= 1.4...

Obt. 80: [MSU (Pogosta)] 65-73



10.00

Nivo: Plosca [0.00 m]

Vplivi v plošči: max My= 0.00 / min My= -48.9...

Notranje sile v ploščah - Ekstremne vrednosti -
Obtežba: 80. [MSU (Pogosta)] 65-73

Oznaka	LC	Mx [kNm/m]	My [kNm/m]
1044	A+	356.19	[67.788]
196	A+	223.52	[67.521]
310	A+	384.63	[67.491]
1129	A+	185.64	[66.572]
934	A+	479.43	[66.084]

Oznaka	LC	Mx [kNm/m]	My [kNm/m]
430	A+	498.40	[65.755]
334	A+	397.58	[65.599]
1024	A+	370.69	[65.551]
910	A+	486.14	[65.113]
454	A+	503.54	[64.937]

Deformacija plošč L.K.S. - Ekstremne
vrednosti - Obtežba: 80. [MSU
(Pogosta)] 65-73

Oznaka	LC	u3 [mm]
348	A-	[-5.424]
324	A-	[-5.420]
372	A-	[-5.406]
300	A-	[-5.394]

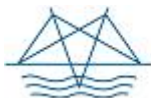
Oznaka	LC	u3 [mm]
371	A-	[-5.378]
347	A-	[-5.374]
396	A-	[-5.369]
395	A-	[-5.360]

Oznaka	LC	u3 [mm]
323	A-	[-5.348]
276	A-	[-5.345]

Deformacija plošč GLO - Ekstremne vrednosti -
Obtežba: 80. [MSU (Pogosta)] 65-73

Oznaka	LC	Zp [mm]	Zr [mrad]
348	A-	[-5.424]	0.000
324	A-	[-5.420]	0.000
372	A-	[-5.406]	0.000
300	A-	[-5.394]	0.000
371	A-	[-5.378]	0.000

Oznaka	LC	Zp [mm]	Zr [mrad]
371	A-	[-5.378]	0.000
347	A-	[-5.374]	0.000
347	A-	[-5.374]	0.000
396	A-	[-5.369]	0.000
395	A-	[-5.360]	0.000



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavih 4.avgust 2023

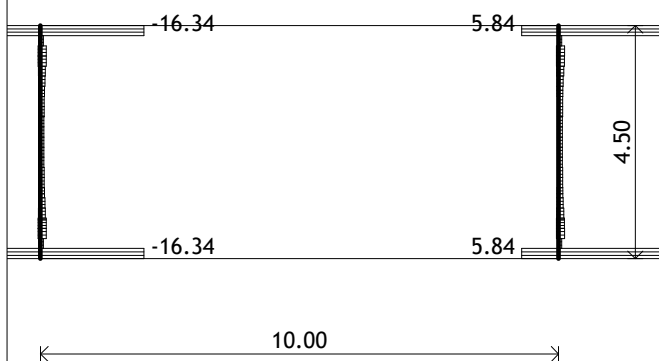
Stran: 22/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

Obt. 80: [MSU (Pogosta)] 65-73

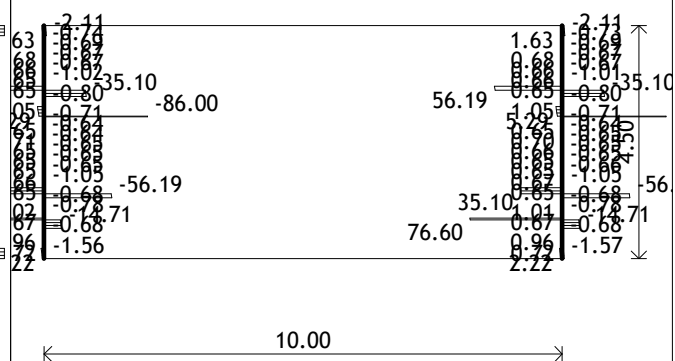


Nivo: Plosca [0.00 m]

Vplivi v gredi: max N1= 5.84 / min N1= -16.34 kN

Obt. 80: [MSU (Pogosta)] 65-73

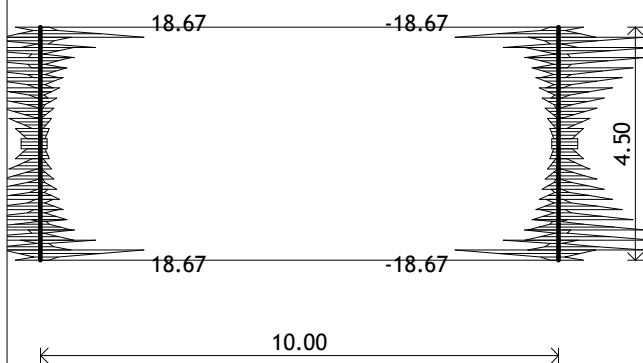
Obt. 80: [MSU (Pogosta)] 65-73



Nivo: Plosca [0.00 m]

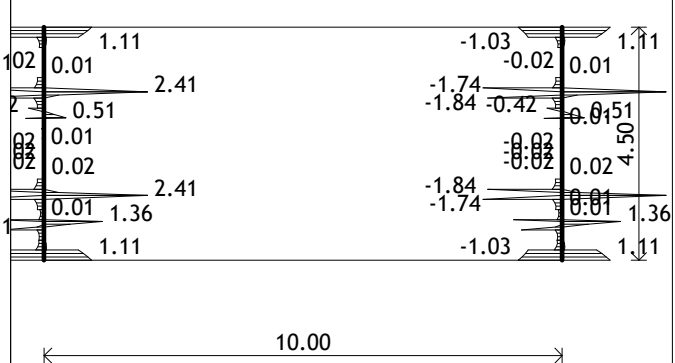
Vplivi v gredi: max V2= 76.60 / min V2= -86.0...

Obt. 80: [MSU (Pogosta)] 65-73



Nivo: Plosca [0.00 m]

Vplivi v gredi: max M2= 18.67 / min M2= -18....



Nivo: Plosca [0.00 m]

Vplivi v gredi: max M3= 2.41 / min M3= -1.84...

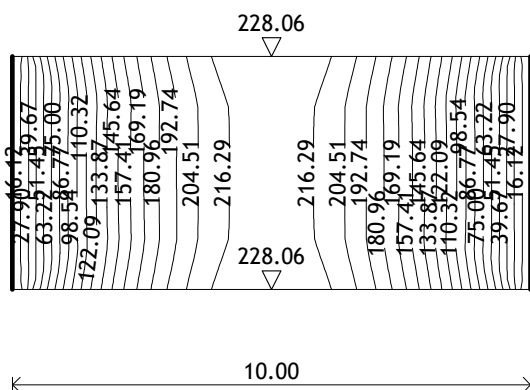


STATIČNI IZRAČUN:

Notranje sile v gredah - Ekstremne vrednosti - Obtežba: 80. [MSU (Pogosta)] 65-73

Oznaka	LC	x [m]	N1 [kN]	V2 [kN]	M2 [kNm]	M3 [kNm]
(1 - 277)	A(N1-)	0.196	[-16.343]	1.955	18.671	0.801
(948 - 1224)	A(N1-)	0.196	[-16.343]	1.955	-18.671	0.801
(1 - 277)	A(N1+)	0.196	[5.841]	-0.819	-6.673	-0.795
(948 - 1224)	A(N1+)	0.196	[5.841]	-0.819	6.673	-0.795
(1 - 277)	A(V2-)	2.739	0.179	[-86.000]	0.144	-0.423
(948 - 1224)	A(V2-)	2.739	0.179	[-86.000]	0.144	-0.423
(1 - 277)	A(V2+)	0.783	0.273	[76.601]	-1.303	-1.136
(948 - 1224)	A(V2+)	0.783	0.273	[76.601]	-1.303	-1.136
(948 - 1224)	A(M2-)	0.196	-16.343	1.955	[-18.671]	0.801
(1 - 277)	A(M2+)	0.196	-16.343	1.955	[18.671]	0.801
(1 - 277)	A(M2-)	0.391	-0.950	-0.415	[-16.951]	-0.026
(948 - 1224)	A(M2+)	0.391	-0.950	-0.415	[16.951]	-0.026
(1 - 277)	A(M3+)	3.250	0.201	-34.318	1.611	[2.413]
(1 - 277)	A(M3+)	1.250	0.201	-55.682	1.611	[2.413]
(948 - 1224)	A(M3+)	3.250	0.201	-34.319	-1.611	[2.413]
(948 - 1224)	A(M3+)	1.250	0.201	-55.681	-1.611	[2.413]
(948 - 1224)	A(M3-)	1.174	-0.563	-56.192	8.106	[-1.845]
(1 - 277)	A(M3-)	1.174	-0.563	-56.192	-8.106	[-1.845]

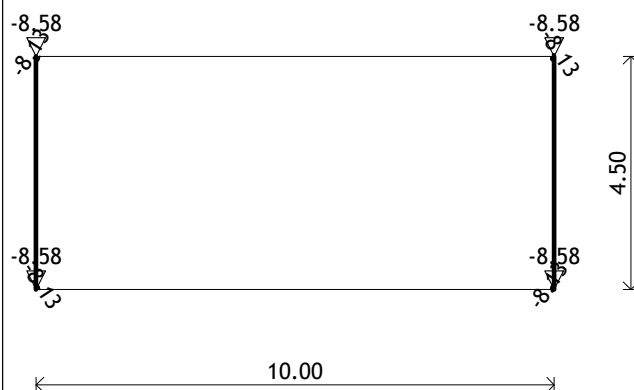
Obt. 81: [MSU (Kvazi)] 74-77



Nivo: Plosca [0.00 m]

Vplivi v plošči: max Mx= 228.06 / min Mx= 4.3...

Obt. 81: [MSU (Kvazi)] 74-77



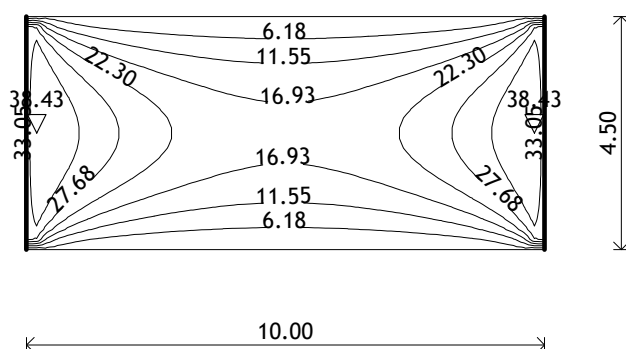
Nivo: Plosca [0.00 m]

Vplivi v plošči: max Mx= 0.00 / min Mx= -8.58...



STATIČNI IZRAČUN:

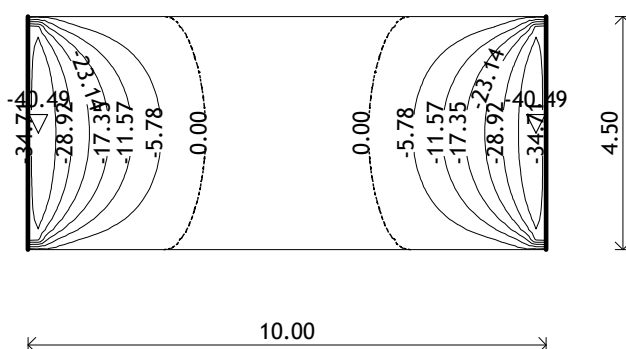
Obt. 81: [MSU (Kvazi)] 74-77



Nivo: Plosca [0.00 m]

Vplivi v plošči: max My= 38.43 / min My= 0.8...

Obt. 81: [MSU (Kvazi)] 74-77



Nivo: Plosca [0.00 m]

Vplivi v plošči: max My= 0.00 / min My= -40.4...

Notranje sile v ploščah - Ekstremne vrednosti -
Obtežba: 81. [MSU (Kvazi)] 74-77

Oznaka	LC	Mx [kNm/m]	My [kNm/m]
971	A-	-2.989	-46.347
2	A-	-2.989	-46.347
1223	A-	-2.989	-46.347
254	A-	-2.989	-46.347
79	A-	0.529	-42.998

Oznaka	LC	Mx [kNm/m]	My [kNm/m]
1146	A-	0.529	-42.998
1158	A-	0.529	-42.998
67	A-	0.529	-42.998
1133	A-	0.502	-42.987
1169	A-	0.502	-42.987

Deformacija plošč L.K.S. - Ekstremne
vrednosti - Obtežba: 81. [MSU (Kvazi)]
74-77

Oznaka	LC	u3 [mm]
624	A-	-4.877
601	A-	-4.877
647	A-	-4.877
578	A-	-4.877

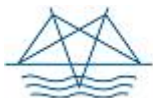
Oznaka	LC	u3 [mm]
670	A-	-4.876
555	A-	-4.876
693	A-	-4.875
532	A-	-4.875

Oznaka	LC	u3 [mm]
716	A-	-4.874
509	A-	-4.874

Deformacija plošč GLO - Ekstremne vrednosti -
Obtežba: 81. [MSU (Kvazi)] 74-77

Oznaka	LC	Zp [mm]	Zr [mrad]
624	A-	-4.877	0.000
601	A-	-4.877	0.000
647	A-	-4.877	0.000
578	A-	-4.877	0.000
670	A-	-4.876	0.000

Oznaka	LC	Zp [mm]	Zr [mrad]
555	A-	-4.876	0.000
693	A-	-4.875	0.000
532	A-	-4.875	0.000
716	A-	-4.874	0.000
509	A-	-4.874	0.000



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavah 4.avgust 2023

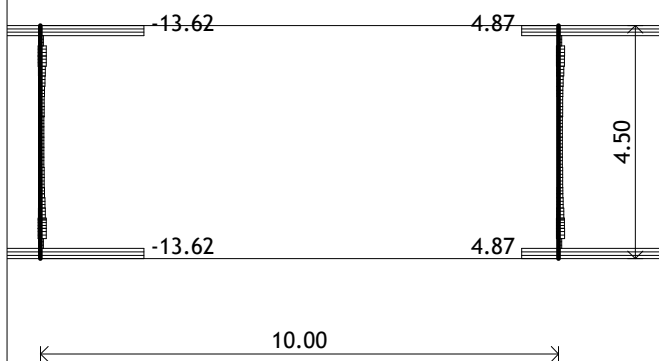
Stran: 25/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

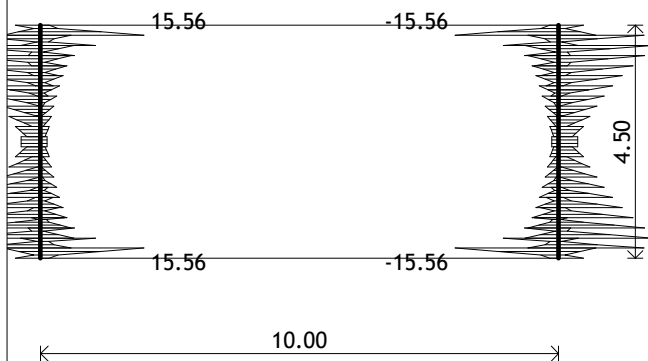
Obt. 81: [MSU (Kvazi)] 74-77



Nivo: Plosca [0.00 m]

Vplivi v gredi: max N1= 4.87 / min N1= -13.62 kN

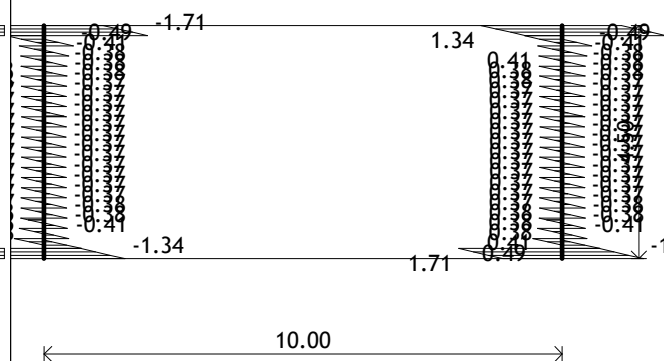
Obt. 81: [MSU (Kvazi)] 74-77



Nivo: Plosca [0.00 m]

Vplivi v gredi: max M2= 15.56 / min M2= -15.56 kNm

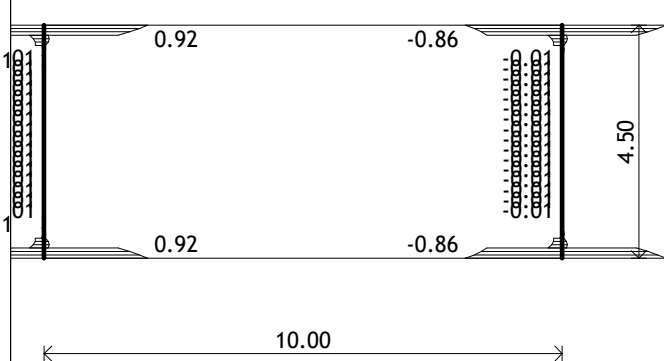
Obt. 81: [MSU (Kvazi)] 74-77



Nivo: Plosca [0.00 m]

Vplivi v gredi: max V2= 1.71 / min V2= -1.71 kN

Obt. 81: [MSU (Kvazi)] 74-77

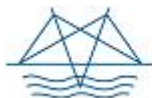


Nivo: Plosca [0.00 m]

Vplivi v gredi: max M3= 0.92 / min M3= -0.86 kNm

	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023	Stran: 26/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	

Notranje sile v gredah - Ekstremne vrednosti - Obtežba: 81. [MSU (Kvazi)] 74-77						
Oznaka	LC	x [m]	N1 [kN]	V2 [kN]	M2 [kNm]	M3 [kNm]
(1 - 277)	A(N1-)	0.196	 -13.619 	1.708	15.559	0.659
(948 - 1224)	A(N1-)	0.196	 -13.619 	1.708	-15.559	0.659
(1 - 277)	A(N1+)	0.196	 4.867 	-0.604	-5.560	-0.671
(948 - 1224)	A(N1+)	0.196	 4.867 	-0.604	5.560	-0.671
(948 - 1224)	A(V2-)	4.304	-13.619	 -1.708 	-15.559	0.659
(1 - 277)	A(V2-)	4.304	-13.619	 -1.708 	15.559	0.659
(1 - 277)	A(V2+)	0.196	-13.619	 1.708 	15.559	0.659
(948 - 1224)	A(V2+)	0.196	-13.619	 1.708 	-15.559	0.659
(948 - 1224)	A(M2-)	0.196	-13.619	1.708	 -15.559 	0.659
(1 - 277)	A(M2+)	0.196	-13.619	1.708	 15.559 	0.659
(1 - 277)	A(M2-)	0.391	-0.791	-0.407	 -14.126 	-0.023
(948 - 1224)	A(M2+)	0.391	-0.791	-0.407	 14.126 	-0.023
(1 - 277)	A(M3+)	0.000	-13.619	0.974	-3.748	 0.922
(948 - 1224)	A(M3+)	0.000	-13.619	0.974	3.748	 0.922
(1 - 277)	A(M3-)	0.000	4.867	-1.338	1.339	 -0.861
(948 - 1224)	A(M3-)	0.000	4.867	-1.338	-1.339	 -0.861

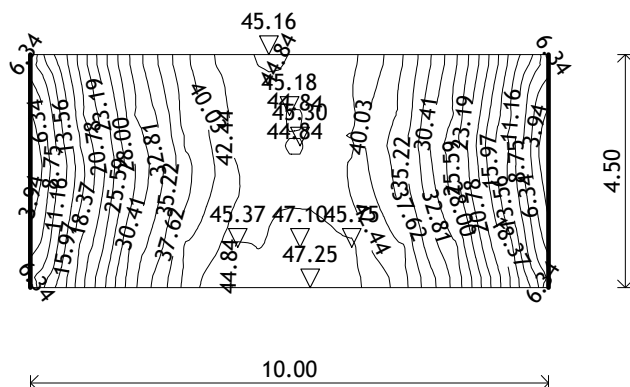


STATIČNI IZRAČUN:

Dimenzioniranje (beton)

Merodajna obtežba: 1-40

EC2 (EN 1992-1-1:2004), C30/37, S500N, a=...

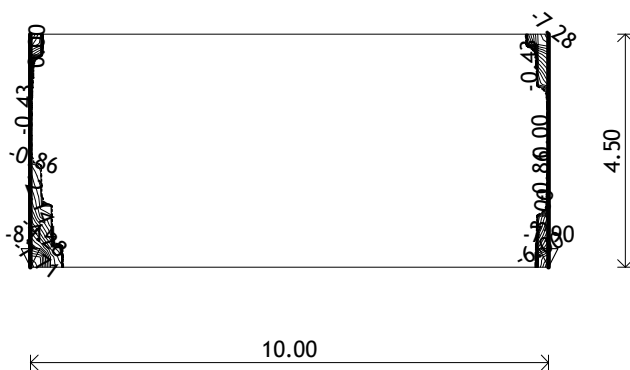


Nivo: Plosca [0.00 m]

Aa - sp.cona - Smer 1 - max Aa1,s= 47.25 c...

Merodajna obtežba: 1-40

EC2 (EN 1992-1-1:2004), C30/37, S500N, a=...

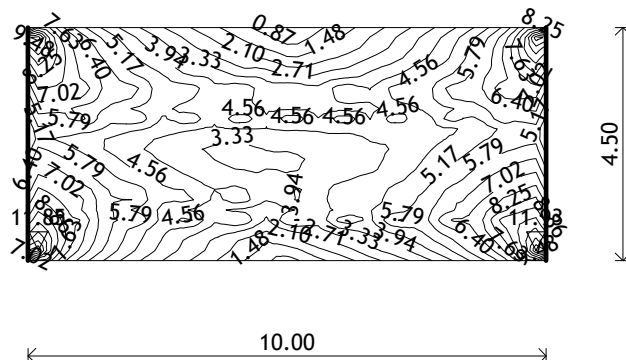


Nivo: Plosca [0.00 m]

Aa - zg.cona - Smer 1 - max Aa1,z= -8.14 cm²/m

Merodajna obtežba: 1-40

EC2 (EN 1992-1-1:2004), C30/37, S500N, a=...

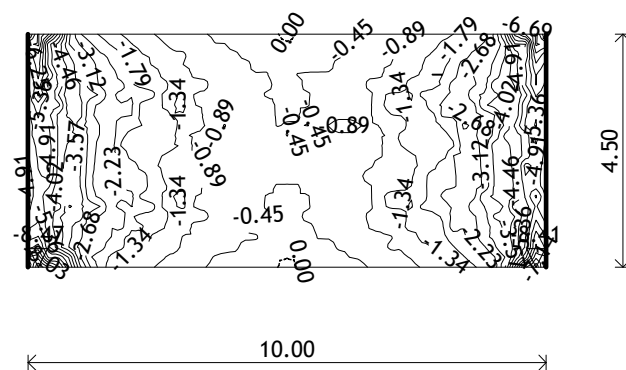


Nivo: Plosca [0.00 m]

Aa - sp.cona - Smer 2 - max Aa2,s= 11.93 c...

Merodajna obtežba: 1-40

EC2 (EN 1992-1-1:2004), C30/37, S500N, a=...



Nivo: Plosca [0.00 m]

Aa - zg.cona - Smer 2 - max Aa2,z= -8.47 cm²/m



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

Stran: 28/34

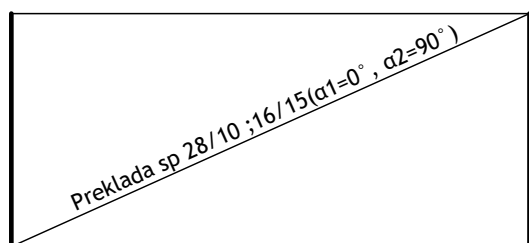
Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

Osvojena armatura

EC2 (EN 1992-1-1:2004), C30/37, S500N, $a=...$



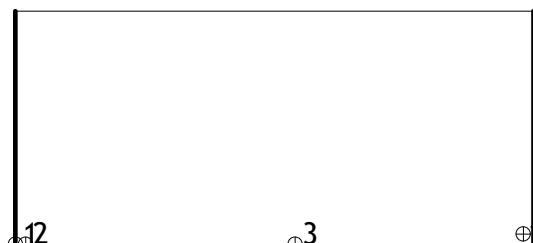
4.50

10.00

Nivo: Plosca [0.00 m]

Aa - sp.cona

EC2 (EN 1992-1-1:2004), C30/37, S500N, $a=...$



4.50

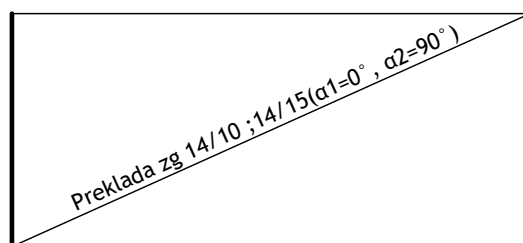
10.00

Nivo: Plosca [0.00 m]

Dispozicija plošč

Osvojena armatura

EC2 (EN 1992-1-1:2004), C30/37, S500N, $a=...$



4.50

10.00

Nivo: Plosca [0.00 m]

Aa - zg.cona

 PROVOG inženirske storitve	Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavih 4.avgust 2023	Stran: 29/34
	Investitor: Občina Dobrna	Datum: avg 2026
	STATIČNI IZRAČUN:	

Nivo: Plosca [0.00 m]

EC2 (EN 1992-1-1:2004)
d.pl=60.0 cm
C30/37 ($\gamma_C = 1.50$, $\gamma_S = 1.15$) [SP]
Zgornja cona: S500N (a=5.0 cm)
Spodnja cona: S500N (a=5.0 cm)
Dimenzioniranje skupine obtežnih primerov: 1-40 (MSN)

Točka 1

X=0.00 m; Y=0.00 m; Z=0.00 m

Spodnja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = 130.38 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=-30.14 M2=2.21 Mxy=-160.52 [kNm]

ε_b/ε_a = -1.199/25.000 ‰
As1 = 5.54 cm²/m

Osvojeno (spodnja cona) (1.12%):
Preklada sp 28/10 ; 16/15 Ø28/10 (61.58 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = 162.74 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=-30.14 M2=3.72 Mxy=-202.04 [kNm]

ε_b/ε_a = -1.370/25.000 ‰
As2 = 6.93 cm²/m

Osvojeno (spodnja cona) (0.24%):
Preklada sp 28/10 ; 16/15 Ø16/15 (13.40 cm²/m)

Zgornja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = -190.67 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=-30.14 M2=2.21 Mxy=-160.52 [kNm]

ε_b/ε_a = -1.512/25.000 ‰
Az1 = 8.14 cm²/m

Osvojeno (zgornja cona) (0.28%):
Preklada zg 14/10 ; 14/15 Ø14/10 (15.39 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = -158.31 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=-30.14 M2=2.21 Mxy=-160.52 [kNm]

ε_b/ε_a = -1.347/25.000 ‰
Az2 = 6.74 cm²/m

Osvojeno (zgornja cona) (0.19%):
Preklada zg 14/10 ; 14/15 Ø14/15 (10.26 cm²/m)

Točka 2

X=0.20 m; Y=0.00 m; Z=0.00 m

Spodnja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = 242.22 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=40.18 M2=3.72 Mxy=-202.04 [kNm]

ε_b/ε_a = -1.765/25.000 ‰
As1 = 10.38 cm²/m

Osvojeno (spodnja cona) (1.12%):
Preklada sp 28/10 ; 16/15 Ø28/10 (61.58 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = 205.76 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=40.18 M2=3.72 Mxy=-202.04 [kNm]

ε_b/ε_a = -1.587/25.000 ‰
As2 = 8.79 cm²/m

Osvojeno (spodnja cona) (0.24%):
Preklada sp 28/10 ; 16/15 Ø16/15 (13.40 cm²/m)

Zgornja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = -161.86 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=40.18 M2=3.72 Mxy=-202.04 [kNm]

ε_b/ε_a = -1.366/25.000 ‰
Az1 = 6.90 cm²/m

Osvojeno (zgornja cona) (0.28%):
Preklada zg 14/10 ; 14/15 Ø14/10 (15.39 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = -198.32 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=40.18 M2=3.72 Mxy=-202.04 [kNm]

ε_b/ε_a = -1.550/25.000 ‰
Az2 = 8.47 cm²/m

Osvojeno (zgornja cona) (0.19%):
Preklada zg 14/10 ; 14/15 Ø14/15 (10.26 cm²/m)

Točka 3

X=5.40 m; Y=0.00 m; Z=0.00 m

Spodnja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.35xIV+1.35xV+0.60xVIII
M_{Ed} = 1022.01 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=1001.06 M2=3.82 Mxy=20.95 [kNm]

ε_b/ε_a = -3.500/11.746 ‰
As1 = 47.25 cm²/m

Osvojeno (spodnja cona) (1.12%):
Preklada sp 28/10 ; 16/15 Ø28/10 (61.58 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.35xIV+1.35xV+0.60xVIII
M_{Ed} = 24.77 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=1001.06 M2=3.82 Mxy=20.95 [kNm]

ε_b/ε_a = -0.479/25.000 ‰
As2 = 1.04 cm²/m

Osvojeno (spodnja cona) (0.24%):
Preklada sp 28/10 ; 16/15 Ø16/15 (13.40 cm²/m)

Zgornja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.00xI
M_{Ed} = 0.00 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=224.81 M2=0.58 Mxy=2.12 [kNm]

Az1 = 0.00 cm²/m

Osvojeno (zgornja cona) (0.28%):
Preklada zg 14/10 ; 14/15 Ø14/10 (15.39 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.35xIV+1.35xV+0.60xVIII
M_{Ed} = 3.38 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=1001.06 M2=3.82 Mxy=20.95 [kNm]

ε_b/ε_a = -0.222/25.000 ‰
Az2 = 0.11 cm²/m

Osvojeno (zgornja cona) (0.19%):
Preklada zg 14/10 ; 14/15 Ø14/15 (10.26 cm²/m)

Točka 4

X=9.80 m; Y=0.20 m; Z=0.00 m

Spodnja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = 250.38 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=55.37 M2=82.66 Mxy=195.02 [kNm]

ε_b/ε_a = -1.805/25.000 ‰
As1 = 10.74 cm²/m

Osvojeno (spodnja cona) (1.12%):
Preklada sp 28/10 ; 16/15 Ø28/10 (61.58 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = 277.68 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=55.37 M2=82.66 Mxy=195.02 [kNm]

ε_b/ε_a = -1.939/25.000 ‰
As2 = 11.93 cm²/m

Osvojeno (spodnja cona) (0.24%):
Preklada sp 28/10 ; 16/15 Ø16/15 (13.40 cm²/m)

Zgornja cona
Smer 1: ($\alpha=0^\circ$)
Merodajna kombinacija:
1.35xI+1.01xIV+0.54xV+1.50xVIII
M_{Ed} = -139.65 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=55.37 M2=82.66 Mxy=195.02 [kNm]

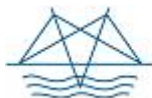
ε_b/ε_a = -1.249/25.000 ‰
Az1 = 5.94 cm²/m

Osvojeno (zgornja cona) (0.28%):
Preklada zg 14/10 ; 14/15 Ø14/10 (15.39 cm²/m)

Smer 2: ($\alpha=90^\circ$)
Merodajna kombinacija:
1.35xI+1.01xII+0.54xIII+1.50xIX
M_{Ed} = -174.67 kNm [Mxy]
N_{Ed} = 0.00 kN
[Mxy] M1=44.77 M2=-90.07 Mxy=-84.60 [kNm]

ε_b/ε_a = -1.431/25.000 ‰
Az2 = 7.45 cm²/m

Osvojeno (zgornja cona) (0.19%):
Preklada zg 14/10 ; 14/15 Ø14/15 (10.26 cm²/m)



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev
graben - Krištaje po poplavah 4.avgust 2023

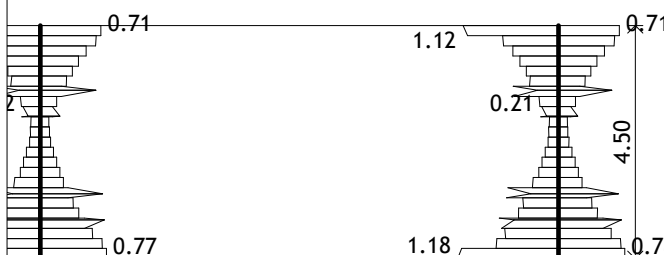
Stran: 30/34

Investitor: Občina Dobrna

Datum: avg 2026

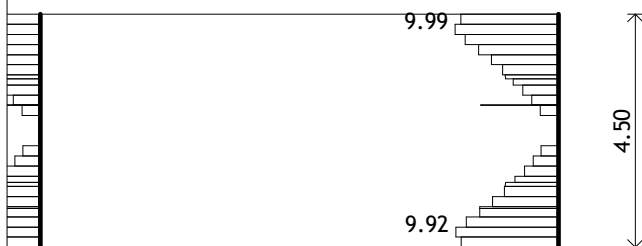
STATIČNI IZRAČUN:

Merodajna obtežba: 1-40
EC2 (EN 1992-1-1:2004), C30/37, S500N



10.00

Nivo: Plosca [0.00 m]
Armatura v gredah: max Aa2/Aa1= 1.22 / 0.7...
Merodajna obtežba: 1-40
EC2 (EN 1992-1-1:2004), C30/37, S500N



10.00

Nivo: Plosca [0.00 m]
Armatura v gredah: max Aa,st= 9.99 cm²

Merodajna obtežba: 1-40
EC2 (EN 1992-1-1:2004), C30/37, S500N



10.00

Nivo: Plosca [0.00 m]
Armatura v gredah: max Aa3/Aa4= 0.47 / 0.4...



PROVOG
inženirske storitve

Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

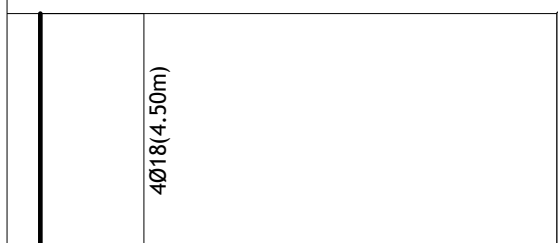
Stran: 31/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:

Osvojena armatura
EC2 (EN 1992-1-1:2004), C30/37, S500N



4.50

10.00

Nivo: Plosca [0.00 m]
Armatura v gredah (osvojena): Aa2/Aa1

Osvojena armatura
EC2 (EN 1992-1-1:2004), C30/37, S500N

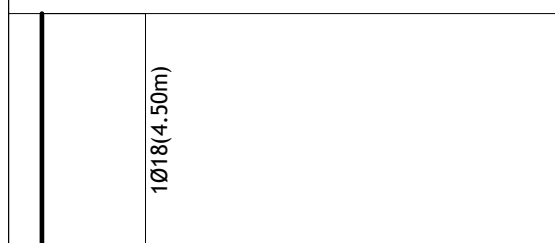


4.50

10.00

Nivo: Plosca [0.00 m]
Armatura v gredah (osvojena): Aa,st

Osvojena armatura
EC2 (EN 1992-1-1:2004), C30/37, S500N



4.50

10.00

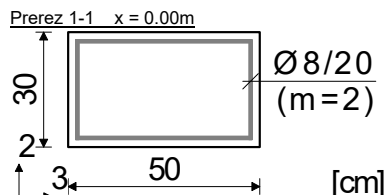
Nivo: Plosca [0.00 m]
Armatura v gredah (osvojena): Aa3/Aa4



STATIČNI IZRAČUN:

Greda 948-1224

EC2 (EN 1992-1-1:2004)
C30/37 ($\gamma_C = 1.50$, $\gamma_S = 1.15$) [SP]
S500N
Dimenzioniranje skupine obtežnih
primerov: 1-40 (MSN)



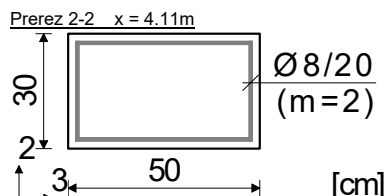
Merodajna kombinacija za upogib:
 $1.35xI + 1.01xII + 0.54xIII + 1.50xVIII$
 $N1_{Ed} = 14.60 \text{ kN}$
 $M2_{Ed} = 0.00 \text{ kNm}$
 $M3_{Ed} = -2.61 \text{ kNm}$

Merodajna kombinacija za torzijo:
 $1.35xI + 1.01xIV + 0.54xV + 1.50xVIII$
 $M1_{Ed} = 14.12 \text{ kNm}$

Merodajna kombinacija za strig:
 $1.35xI + 1.01xII + 0.54xIII + 1.50xIX$
 $V2_{Ed} = 3.08 \text{ kN}$
 $V3_{Ed} = -296.03 \text{ kN}$
 $M1_{Ed} = -7.16 \text{ kNm}$

$V2_{Rd,max} = 641.52 \text{ kN}$
 $V3_{Rd,max} = 641.52 \text{ kN}$
 $\epsilon_b/\epsilon_a = -0.252/25.000 \text{ ‰}$
 $Aa1 = 0.00 + 0.78' = 0.78 \text{ cm}^2$
 $Aa2 = 0.41 + 0.78' = 1.18 \text{ cm}^2$
 $Aa3 = 0.00 + 0.47' = 0.47 \text{ cm}^2$
 $Aa4 = 0.00 + 0.47' = 0.47 \text{ cm}^2$
 $Aa,st = 9.39 \text{ cm}^2/m \quad (m=2)$
[Osvojeno $Aa,st = \emptyset 8/20(m=2) = 2.51 \text{ cm}^2/m$]

*) - dodatna vzdolžna armatura za prevzem torzije.



Merodajna kombinacija za upogib:
 $1.35xI + 1.01xIV + 0.54xV + 1.50xVIII$
 $N1_{Ed} = 0.41 \text{ kN}$
 $M2_{Ed} = 0.00 \text{ kNm}$
 $M3_{Ed} = 0.07 \text{ kNm}$

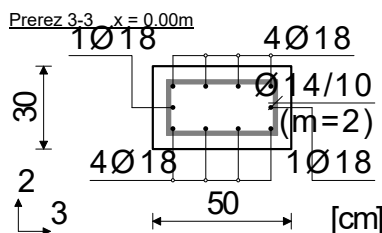
Merodajna kombinacija za torzijo:
 $1.35xI + 1.01xII + 0.54xIII + 1.50xVIII$
 $M1_{Ed} = -11.63 \text{ kNm}$

Merodajna kombinacija za strig:
 $1.35xI + 1.01xIV + 0.54xV + 1.50xIX$
 $V2_{Ed} = -0.17 \text{ kN}$
 $V3_{Ed} = 323.88 \text{ kN}$
 $M1_{Ed} = 5.80 \text{ kNm}$

$V2_{Rd,max} = 641.52 \text{ kN}$
 $V3_{Rd,max} = 641.52 \text{ kN}$
 $\epsilon_b/\epsilon_a = -0.076/25.000 \text{ ‰}$
 $Aa1 = 0.00 + 0.64' = 0.64 \text{ cm}^2$
 $Aa2 = 0.00 + 0.64' = 0.64 \text{ cm}^2$
 $Aa3 = 0.00 + 0.38' = 0.38 \text{ cm}^2$
 $Aa4 = 0.00 + 0.38' = 0.38 \text{ cm}^2$
 $Aa,st = 9.99 \text{ cm}^2/m \quad (m=2)$
[Osvojeno $Aa,st = \emptyset 8/20(m=2) = 2.51 \text{ cm}^2/m$]

Greda 1-277

EC2 (EN 1992-1-1:2004)
C30/37 ($\gamma_C = 1.50$, $\gamma_S = 1.15$) [SP]
S500N
Dimenzioniranje skupine obtežnih
primerov: 1-40 (MSN)



Merodajna kombinacija za upogib:
 $1.35xI + 1.01xII + 0.54xIII + 1.50xVIII$
 $N1_{Ed} = 14.60 \text{ kN}$
 $M2_{Ed} = 0.00 \text{ kNm}$
 $M3_{Ed} = -2.60 \text{ kNm}$

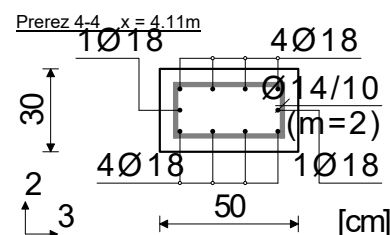
Merodajna kombinacija za torzijo:
 $1.35xI + 1.01xIV + 0.54xV + 1.50xVIII$
 $M1_{Ed} = -14.10 \text{ kNm}$

Merodajna kombinacija za strig:
 $1.35xI + 1.01xII + 0.54xIII + 1.50xIX$
 $V2_{Ed} = 3.08 \text{ kN}$
 $V3_{Ed} = 296.03 \text{ kN}$
 $M1_{Ed} = 7.15 \text{ kNm}$

$V2_{Rd,max} = 594.00 \text{ kN}$
 $V3_{Rd,max} = 641.52 \text{ kN}$
 $\epsilon_b/\epsilon_a = -0.316/25.000 \text{ ‰}$
 $Aa1 = 0.00 + 0.77' = 0.77 \text{ cm}^2$
 $Aa2 = 0.44 + 0.77' = 1.22 \text{ cm}^2$
 $Aa3 = 0.00 + 0.39' = 0.39 \text{ cm}^2$
 $Aa4 = 0.00 + 0.39' = 0.39 \text{ cm}^2$
 $Aa,st = 9.39 \text{ cm}^2/m \quad (m=2)$
[Osvojeno $Aa,st = \emptyset 14/10(m=2) = 15.39 \text{ cm}^2/m$]

Procent armiranja: 1.70%

*) - dodatna vzdolžna armatura za prevzem torzije.



Merodajna kombinacija za upogib:
 $1.35xI + 1.01xIV + 0.54xV + 1.50xVIII$
 $N1_{Ed} = 0.41 \text{ kN}$
 $M2_{Ed} = 0.00 \text{ kNm}$
 $M3_{Ed} = 0.07 \text{ kNm}$

Merodajna kombinacija za torzijo:
 $1.35xI + 1.01xII + 0.54xIII + 1.50xVIII$
 $M1_{Ed} = 11.63 \text{ kNm}$

Merodajna kombinacija za strig:
 $1.35xI + 1.01xIV + 0.54xV + 1.50xIX$
 $V2_{Ed} = -0.17 \text{ kN}$
 $V3_{Ed} = -323.88 \text{ kN}$
 $M1_{Ed} = -5.78 \text{ kNm}$

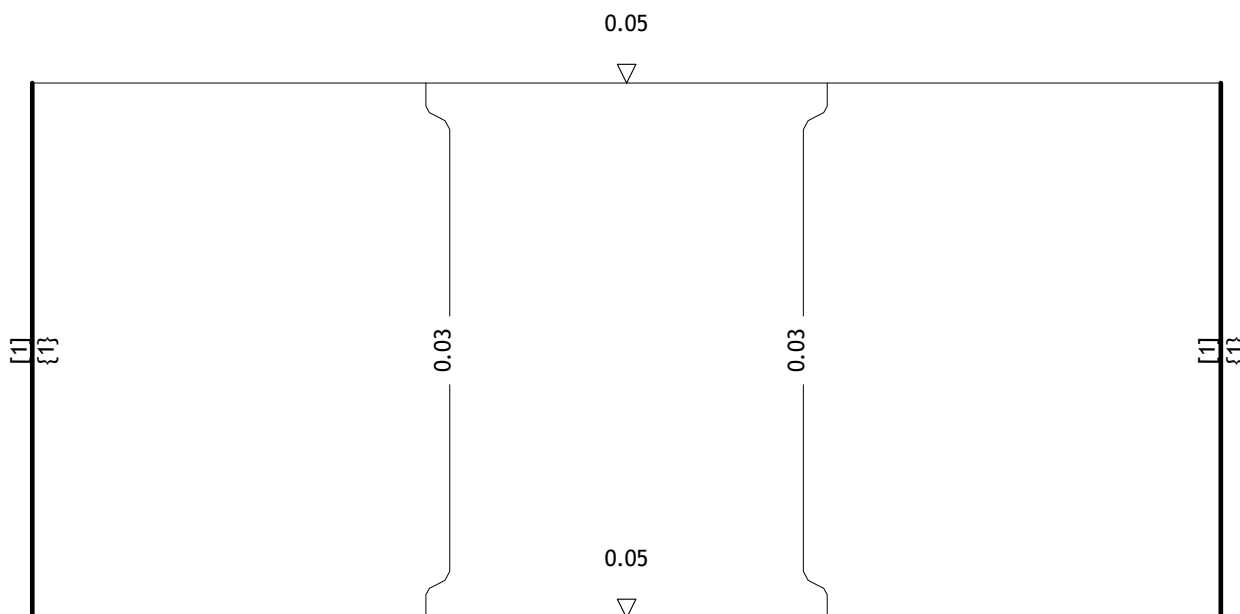
$V2_{Rd,max} = 594.00 \text{ kN}$
 $V3_{Rd,max} = 641.52 \text{ kN}$
 $\epsilon_b/\epsilon_a = -0.081/25.000 \text{ ‰}$
 $Aa1 = 0.00 + 0.64' = 0.64 \text{ cm}^2$
 $Aa2 = 0.00 + 0.64' = 0.64 \text{ cm}^2$
 $Aa3 = 0.00 + 0.32' = 0.32 \text{ cm}^2$
 $Aa4 = 0.00 + 0.32' = 0.32 \text{ cm}^2$
 $Aa,st = 9.99 \text{ cm}^2/m \quad (m=2)$
[Osvojeno $Aa,st = \emptyset 14/10(m=2) = 15.39 \text{ cm}^2/m$]

Procent armiranja: 1.70%



STATIČNI IZRAČUN:

Merodajna obtežba: 1,75-77
EC2 (EN 1992-1-1:2004), C30/37, S500N



Nivo: Plosca [0.00 m]
max ak1, t_∞ = 0.05 mm

Nivo: Plosca [0.00 m] - EC2 (EN 1992-1-1:2004)

C30/37 (d,pl=60.0 cm)
Zgornja cona: S500N (a=5.0 cm)
Spodnja cona: S500N (a=5.0 cm)
Model elastičnosti betona
Natezna trdnost pri upogibu
Modul elastičnosti armature
Koeficient lezenja betona
Dilatacija krčenja betona

E_b(t₀)= 33000 MPa
f_{bzs}= 2.90 MPa
E_a= 2.00e+5 MPa
φ_∞= 1.78
ε_s= 0.32 ‰

Točka 1

X=5.00 m; Y=0.00 m; Z=0.00 m

Zgornja cona
Ø14/10 α = 0°
Ø14/15 α = 90°
Spodnja cona
Ø28/10 α = 0°
Ø16/15 α = 90°

Smer 1: (α=0°)

T = 0 Prerez z razpoke

Merodajna kombinacija: 1.00xI+0.50xVIII
N1 = 0.00 kN/m
M = 228.06 kNm/m

Koef.vpliva oprijemljivosti arm.
Koeficient dilatacijskega stanja
Koeficient zaščitnega sloja
Koeficient

Efektivna površina betona

Efektivni proc.armiranja

Položaj nevtralne osi

Napetost natezne armature

Koef.dolgotrajnosti obtežbe

Ekvivalentni premer palice

Zaščitni sloj betona

Napetost v armaturi pri pojavi razpoke

k1= 0.80
k2= 0.50
k3= 3.40
k4= 0.42
A_{c,ef}= 1250.0 cm²
ρ_{ef}= 4.93 %
x_n= 13.57 cm
σ_s= 74.72 MPa
k_t= 0.60
Ø_{eq}= 28.00 mm
c= 36.00 mm
σ_{sr}= 76.45 MPa

Relativna povprečna dilatacija
Maksimalni razmak med razpokami
Širina razpoke

ε_m= 0.22 ‰
Sr,max= 21.90 cm
a_k(t₀)= 0.05 mm

T = ∞ Prerez z razpoke

Dolgotrajni vplivi

Merodajna kombinacija: 1.00xI+0.50xVIII

N1 = 0.00 kN/m

M = 228.06 kNm/m

Kratkotrajni vplivi

N1 = 0.00 kN/m

M = 0.00 kNm/m

Koef.vpliva oprijemljivosti arm.

Koeficient dilatacijskega stanja

Koeficient zaščitnega sloja

Koeficient

Efektivna površina betona

Efektivni proc.armiranja

Položaj nevtralne osi

Napetost natezne armature

Koef.dolgotrajnosti obtežbe

Ekvivalentni premer palice

Zaščitni sloj betona

Napetost v armaturi pri pojavi razpoke

Relativna povprečna dilatacija

Maksimalni razmak med razpokami

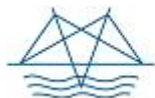
Širina razpoke

k1= 0.80
k2= 0.50
k3= 3.40
k4= 0.42
A_{c,ef}= 1250.0 cm²
ρ_{ef}= 4.93 %
x_n= 13.30 cm
σ_s= 74.59 MPa
k_t= 0.40
Ø_{eq}= 28.00 mm
c= 36.00 mm
σ_{sr}= 76.45 MPa
ε_m= 0.22 ‰
Sr,max= 21.90 cm
a_k(t_∞)= 0.05 mm

Smer 2: (α=90°)

T = 0 Prerez brez razpoke

T = ∞ Prerez brez razpoke



PROVOG
inženirske storitve

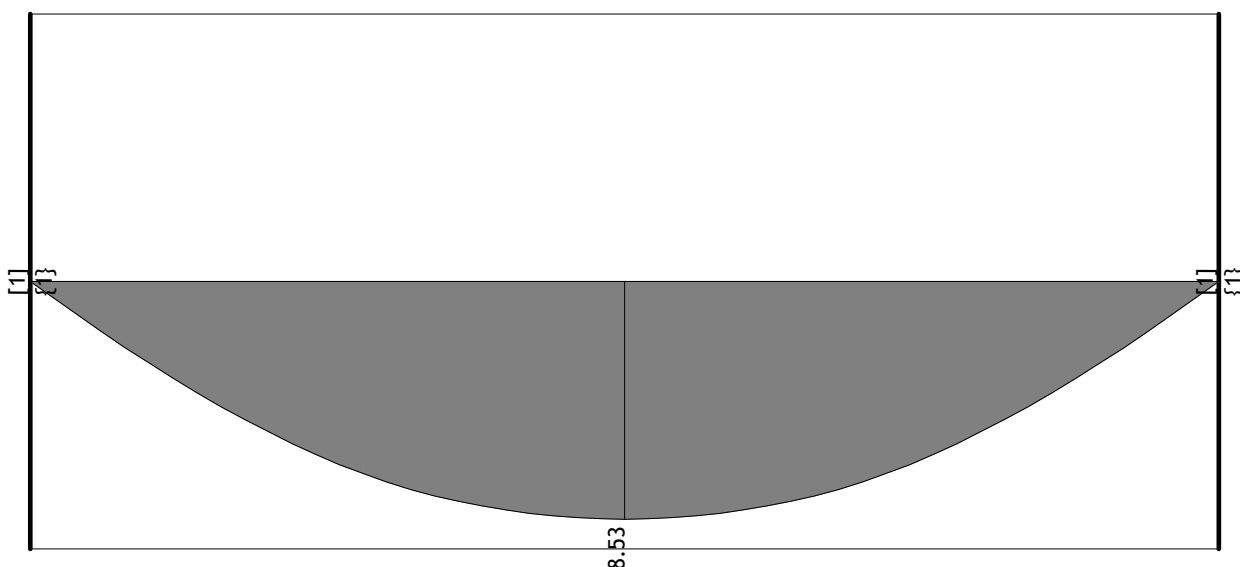
Projekt: Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023

Stran: 34/34

Investitor: Občina Dobrna

Datum: avg 2026

STATIČNI IZRAČUN:



Nivo: Plosca [0.00 m]
Diagram pomikov v plošči (T^∞)

Nivo: Plosca [0.00 m] - EC2 (EN 1992-1-1:2004)

C30/37 (d.pl=60.0 cm)
Zgornja cona: S500N (a=5.0 cm)
Spodnja cona: S500N (a=5.0 cm)
Model elastičnosti betona
Natezna trdnost pri upogibu
Modul elastičnosti armature
Koef.vpliva oprijemljivosti arm.

$E_b(t_0) = 33000$ MPa
 $f_{bzs} = 2.90$ MPa
 $E_a = 2.00e+5$ MPa
 $k_1 = 0.80$

Koeficient lezenja betona
Dilatacija krčenja betona
Kot = 0°

$\varphi^\infty = 1.78$
 $\epsilon_s = 0.32$ ‰

Prerez 1-1

X=2.80 m; Y=2.35 m; Z=0.00 m

Zgornja cona
Ø14/10 $\alpha = 0^\circ$
Ø14/15 $\alpha = 90^\circ$
Spodnja cona
Ø28/10 $\alpha = 0^\circ$
Ø16/15 $\alpha = 90^\circ$

T = 0
Merodajna kombinacija: 1.00xI+0.50xVIII
N1 = 0.00 kN/m
M = 176.05 kNm/m
Velikost začetnega upogiba

ug(0)= 0.76 mm

Dolgotrajni vplivi
Merodajna kombinacija: 1.00xI+0.50xVIII
N1 = 0.00 kN/m
M = 176.05 kNm/m

Velikost trajnega upogiba

ug(∞)= 6.90 mm

Prerez 2-2

X=5.00 m; Y=2.15 m; Z=0.00 m

Zgornja cona
Ø14/10 $\alpha = 0^\circ$
Ø14/15 $\alpha = 90^\circ$
Spodnja cona
Ø28/10 $\alpha = 0^\circ$
Ø16/15 $\alpha = 90^\circ$

T = 0
Merodajna kombinacija: 1.00xI+0.50xVIII
N1 = 0.00 kN/m
M = 219.62 kNm/m
Velikost začetnega upogiba

ug(0)= 0.51 mm

T = ∞
Dolgotrajni vplivi
Merodajna kombinacija: 1.00xI+0.50xVIII
N1 = 0.00 kN/m
M = 219.62 kNm/m

Velikost trajnega upogiba

ug(∞)= 8.53 mm

T = ∞

Gravity wall analysis

Input data

Task : Sanacija lokalne ceste LC464161 Dobrna - Hudičev graben - Krištaje po poplavah 4.avgust 2023 - most
Part : Opornik - most
Description : Priloga 2
Customer : občina Dobrna
Author : PROVOG d.o.o.
Date : 6. 08. 2026
Project ID : 26/22_D1
Project number : 26/22_D1

Settings

Slovenia - EN 1997

Materials and standards

Concrete structures : EN 1992-1-1 (EC2)
Coefficients EN 1992-1-1 : standard
Masonry (stone) wall : EN 1996-1-1 (EC6)

Wall analysis

Verification methodology : according to EN 1997
Active earth pressure calculation : Coulomb
Passive earth pressure calculation : Caquot-Kerisel
Earthquake analysis : Mononobe-Okabe
Shape of earth wedge : Calculate as skew
Allowable eccentricity : 0,333
Design approach : 2 - reduction of actions and resistances

Partial factors on actions (A)			
Permanent design situation			
		Unfavourable	Favourable
Permanent actions :	$Y_G =$	1,35 [-]	1,00 [-]
Variable actions :	$Y_Q =$	1,50 [-]	0,00 [-]
Water load :	$Y_w =$	1,35 [-]	

Partial factors for resistances (R)			
Permanent design situation			
Partial factor on overturning :	$Y_{Rv} =$	1,40 [-]	
Partial factor on sliding resistance :	$Y_{Rh} =$	1,10 [-]	
Partial factor on bearing capacity :	$Y_{Re} =$	1,40 [-]	

Partial factors for variable actions			
Permanent design situation			
Factor for combination value :	$\psi_0 =$	0,70 [-]	
Factor for frequent value :	$\psi_1 =$	0,50 [-]	
Factor for quasi-permanent value :	$\psi_2 =$	0,30 [-]	

Anchors

Verification methodology : Limit states (LSD)

Reduction coefficients			
Reduction. coeff of steel strength :	$\gamma_s =$	1,35 [-]	
Reduction coefficient of pull out resistance (soil) :	$\gamma_e =$	1,35 [-]	

Reduction coefficients

Reduction coefficient of pull out resistance (grouting) :

$Y_c =$	1,35	[-]
---------	------	-----

Material of structure

Unit weight $\gamma = 24,00 \text{ kN/m}^3$

Masonry : Category I

Mortar origin : Prescribed mortar

Masonry strength $f_b = 2,00 \text{ MPa}$

Mortar strength $f_m = 2,50$ MPa

Parameters

Compressive strength $f_k = 0,96 \text{ MPa}$

Shear strength $f_{yk0} = 0,10 \text{ MPa}$

Flexural tensile strength $f_{xk} = 0,05 \text{ MPa}$

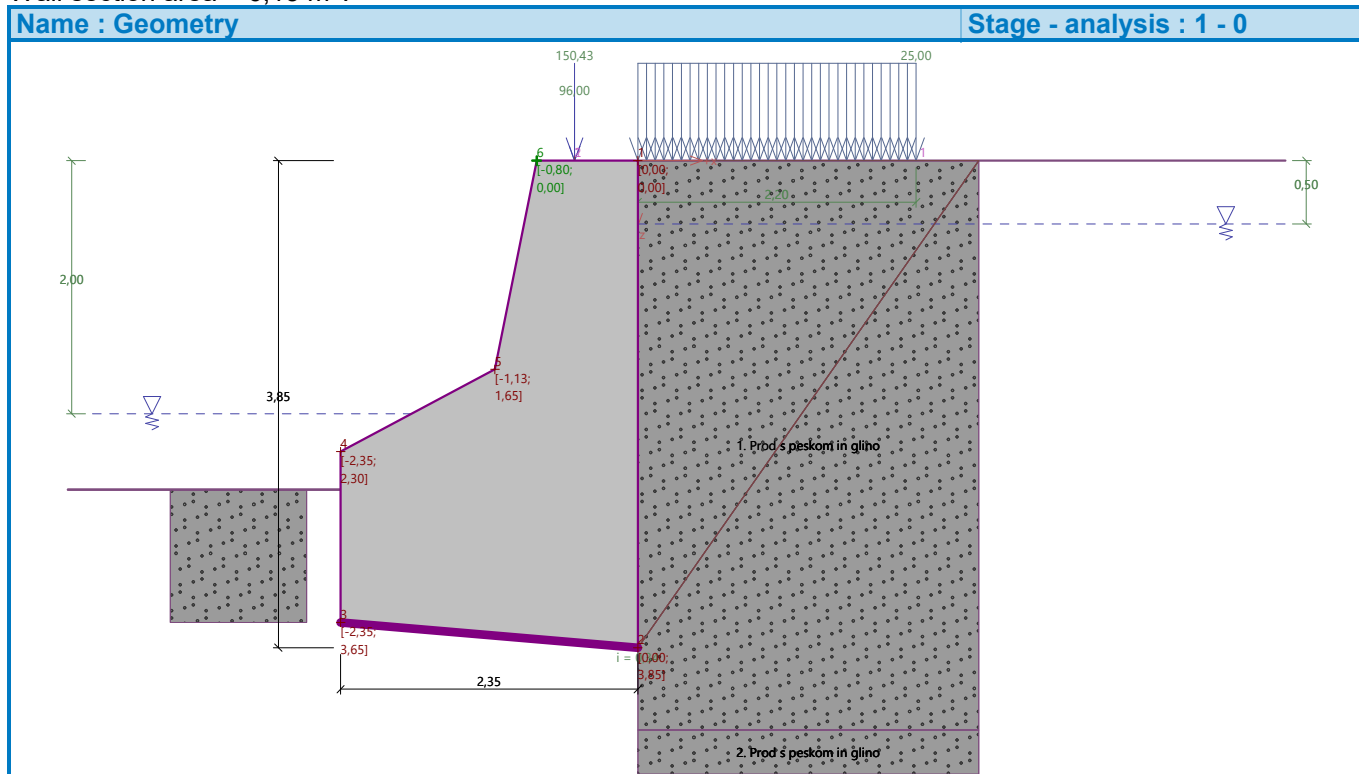
Partial factor	$\gamma_M = 2,20$
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Geometry of structure

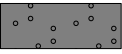
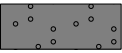
No.	Coordinate X [m]	Depth Z [m]
1	0,00	0,00
2	0,00	3,85
3	-2,35	3,65
4	-2,35	2,30
5	-1,13	1,65
6	-0,80	0,00

The origin $[0,0]$ is located at the most upper right point of the wall.

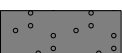
Wall section area = 6,13 m².



Basic soil parameters

No.	Name	Pattern	φ_{ef} [°]	c_{ef} [kPa]	γ [kN/m ³]	γ_{su} [kN/m ³]	δ [°]
1	Tamponsko nasutje		35,00	0,00	21,00	11,50	23,33
2	Prod s peskom in glino		28,00	2,00	22,00	12,50	18,66

Soil parameters to compute pressure at rest

No.	Name	Pattern	Type calculation	φ_{ef} [°]	ν [-]	OCR [-]	K_r [-]
1	Tamponsko nasutje		cohesionless	35,00	-	-	-
2	Prod s peskom in glino		cohesive	-	0,30	-	-

Soil parameters

Tamponsko nasutje

Unit weight : $\gamma = 21,00 \text{ kN/m}^3$
 Stress-state : effective
 Angle of internal friction : $\varphi_{ef} = 35,00^\circ$
 Cohesion of soil : $c_{ef} = 0,00 \text{ kPa}$
 Angle of friction struc.-soil : $\delta = 23,33^\circ$
 Soil : cohesionless
 Saturated unit weight : $\gamma_{sat} = 21,50 \text{ kN/m}^3$

Prod s peskom in glino

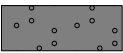
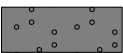
Unit weight : $\gamma = 22,00 \text{ kN/m}^3$
 Stress-state : effective
 Angle of internal friction : $\varphi_{ef} = 28,00^\circ$
 Cohesion of soil : $c_{ef} = 2,00 \text{ kPa}$
 Angle of friction struc.-soil : $\delta = 18,66^\circ$
 Soil : cohesive
 Poisson's ratio : $\nu = 0,30$
 Saturated unit weight : $\gamma_{sat} = 22,50 \text{ kN/m}^3$

Backfill

Assigned soil : Tamponsko nasutje

Slope = $55,00^\circ$

Geological profile and assigned soils

No.	Thickness of layer t [m]	Depth z [m]	Assigned soil	Pattern
1	4,50	0,00 .. 4,50	Prod s peskom in glino	
2	-	4,50 .. ∞	Prod s peskom in glino	

Foundation

Type of foundation : soil from geological profile

Terrain profile

Terrain behind the structure is flat.

Water influence

GWT behind the structure lies at a depth of 0,50 m
 GWT in front of the structure lies at a depth of 2,00 m
 Subgrade at the heel is permeable.
 Hydraulic gradient = 0,34

Input surface surcharges

No.	Surcharge		Action	Mag.1 [kN/m ²]	Mag.2 [kN/m ²]	Ord.x x [m]	Length l [m]	Depth z [m]
	new	change						
1	Yes		variable	25,00		0,00	2,20	on terrain

No.	Name
1	Prometna obtežba

Resistance on front face of the structure

Resistance on front face of the structure: 1/3 pass., 2/3 at rest
 Soil on front face of the structure - Prod s peskom in glino
 Angle of friction struc.-soil $\delta = 0,00^\circ$
 Soil thickness in front of structure $h = 1,05\text{ m}$

Terrain in front of structure is flat.

Applied forces acting on the structure

No.	Force		Name	Action	F _x [kN/m]	F _z [kN/m]	M [kNm/m]	x [m]	z [m]
	new	edit							
1	Yes		Obtežba - most stalna teža	permanent	0,00	150,43	0,00	-0,50	0,00
2	Yes		Obtežba - promet	variable	0,00	96,00	0,00	-0,50	0,00

Settings of the stage of construction

Design situation : permanent
 The wall is free to move. Active earth pressure is therefore assumed.
 Reduction of soil/soil friction angle : do not reduce

Verification No. 1

Forces acting on construction

Name	F _{hor} [kN/m]	App.Pt. z [m]	F _{vert} [kN/m]	App.Pt. x [m]	Coeff. overtur.	Coeff. sliding	Coeff. stress
Weight - wall	0,00	-1,60	106,86	1,49	1,000	1,000	1,350
FF resistance	-8,53	-0,40	0,00	0,00	1,000	1,000	1,350
Active pressure	27,26	-1,13	11,76	2,35	1,350	1,350	1,350
Water pressure	25,12	-1,53	0,00	2,35	1,350	1,350	1,350
Prometna obtežba	20,03	-1,82	8,64	2,35	1,500	1,500	1,500
Obtežba - most stalna teža	0,00	-3,65	150,43	1,85	1,000	1,000	1,350
Obtežba - promet	0,00	-3,65	96,00	1,85	0,000	0,000	1,500

Verification of complete wall

Check for overturning stability

Resisting moment $M_{res} = 361,18\text{ kNm/m}$
 Overturning moment $M_{ovr} = 144,87\text{ kNm/m}$

Wall for overturning is SATISFACTORY

Check for slip

Resisting horizontal force $H_{res} = 145,87\text{ kN/m}$
 Active horizontal force $H_{act} = 67,65\text{ kN/m}$

Wall for slip is **SATISFACTORY**

Overall check - **WALL is SATISFACTORY**

Maximum stress in footing bottom : 222,97 kPa

Bearing capacity of foundation soil

Design load acting at the center of footing bottom

No.	Moment [kNm/m]	Norm. force [kN/m]	Shear Force [kN/m]	Eccentricity [-]	Stress [kPa]
1	-161,51	525,86	44,35	0,000	222,97
2	-15,36	292,91	67,08	0,000	124,19

Service load acting at the center of footing bottom

No.	Moment [kNm/m]	Norm. force [kN/m]	Shear Force [kN/m]
1	-115,58	377,75	31,63
2	-50,78	282,10	39,74

Verification of foundation soil

Stress in the footing bottom : trapezoid

Eccentricity verification

Max. eccentricity of normal force $e = 0,000$

Maximum allowable eccentricity $e_{alw} = 0,333$

Eccentricity of the normal force is **SATISFACTORY**

Verification of bearing capacity

Bearing capacity of foundation soil $R = 350,00$ kPa

Partial factor on bearing capacity $\gamma_{Rv} = 1,40$

Max. stress at footing bottom $\sigma = 223,77$ kPa

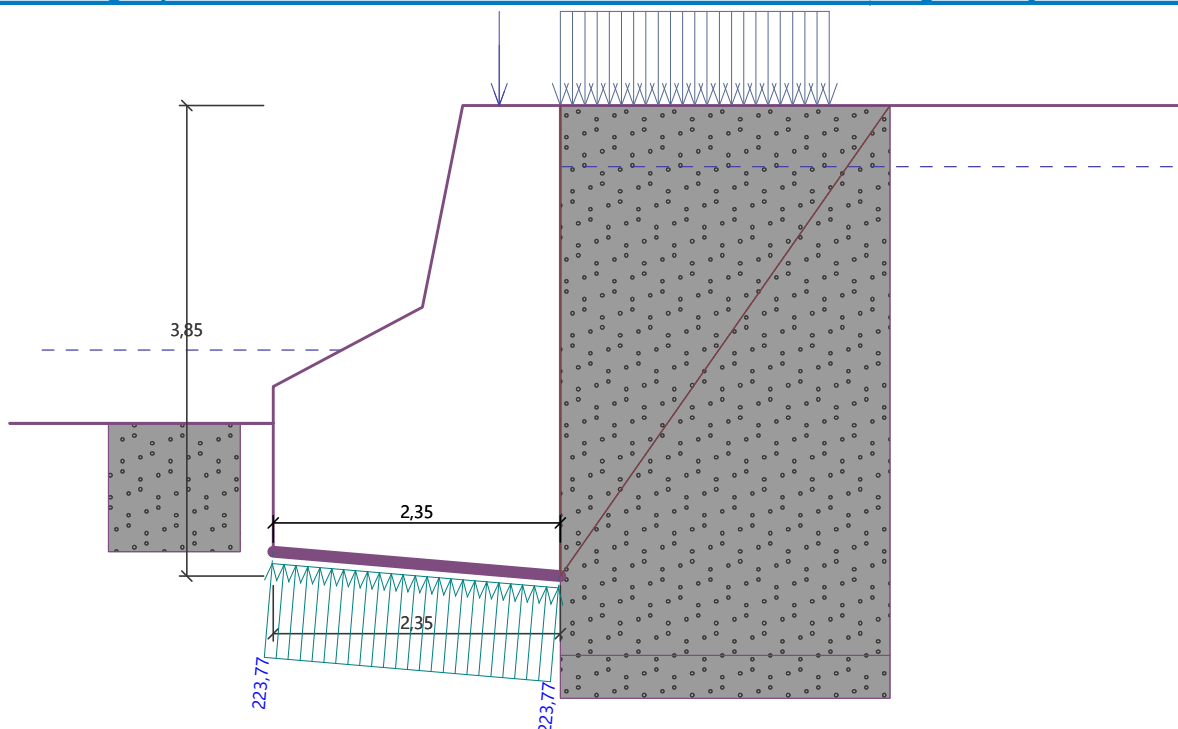
Bearing capacity of foundation soil $R_d = 250,00$ kPa

Bearing capacity of foundation soil is **SATISFACTORY**

Overall verification - bearing capacity of found. soil is **SATISFACTORY**

Name : Bearing cap.

Stage - analysis : 1 - -1



Dimensioning No. 1

Forces acting on construction

Name	F_{hor} [kN/m]	App.Pt. z [m]	F_{vert} [kN/m]	App.Pt. x [m]	Coeff. moment	Coeff. norm.force	Coeff. shear for.
Weight - wall	0,00	-0,78	38,18	0,64	1,000	1,000	1,000
Active pressure	5,50	-0,58	2,37	1,13	1,350	1,350	1,350
Water pressure	6,60	-0,38	0,00	1,13	1,350	1,350	1,350
Prometna obtežba	9,05	-0,81	3,90	1,13	1,500	1,500	1,500
Obtežba - most stalna teža	0,00	-1,65	150,43	0,63	1,000	1,000	1,000
Obtežba - promet	0,00	-1,65	96,00	0,63	0,000	0,000	0,000

Wall check at the construction joint 1,65 m from the wall crest

Cross-section depth $h = 1,13$ m

Ultimate shear force $V_{Rd} = 66,76$ kN/m $> 29,91$ kN/m $= V_{Ed}$

Allowable eccentricity of cross section $e_{lim} = 0,51$ m $> 0,00$ m $= e$

Ultimate compressive force $N_{Rd} = 490,45$ kN/m $> 197,67$ kN/m $= N_{Ed}$

Ultimate moment $M_{Rd} = 66,99$ kNm/m $> 0,84$ kNm/m $= M_{Ed}$

Cross-section bearing capacity is SATISFACTORY

Name : Dimensioning

Stage - analysis : 1 - 1

