

3.1 NASLOVNA STRAN - NAČRT GRADBENE KONSTRUKCIJE

INVESTITOR:

OŠ RADA ROBIČA LIMBUŠ, LIMBUŠKA CESTA 62, 2341 LIMBUŠ

OBJEKT:

UREDITEV DVORIŠČA Z NADSTREŠKOM

VRSTA PROJEKTNE DOKUMENTACIJE:

PZI

ZA GRADNJO:

ODSTRANITEV, REKONSTRUKCIJA, NOVOGRADNJA

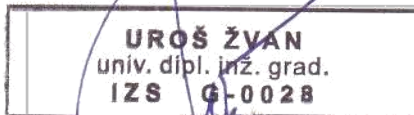
PROJEKTANT:

INŽENIRING BIRO ARMATURA, UROŠ ŽVAN S.P., ZRKOVSKA 75, 2000 MARIBOR
DIREKTOR: UROŠ ŽVAN, u.d.i.g.



ODGOVORNI PROJEKTANT:

UROŠ ŽVAN, u.d.i.g., IZS G-0028



ŠTEVILKA NAČRTA:

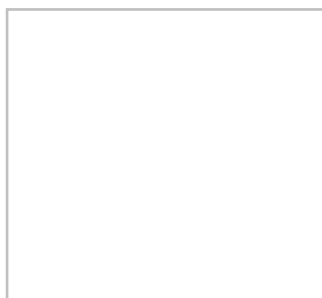
12/17-K

KRAJ IN DATUM IZDELAVE PROJEKTA:

MARIBOR, JUNIJ 2017

ODGOVORNI VODJA PROJEKTA:

MIHA MILIČ, U.D.I.A., ZAPS 1524 A



3.2 KAZALO VSEBINE NAČRTA GRADBENE KONSTRUKCIJE

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3.3 TEHNIČNO POROČILO IN KONTROLA MEHANSKE ODPORNOSTI NADSTREŠKA

1 PODATKI O INVESTITORJU IN OBJEKTU

Investitor OŠ Rada Robiča Limbuš ima namen preurediti dvorišče pred vhodom v šolo z novim jeklenim nadstreškom.

2 OPIS KONSTRUKCIJE

TEMELJI

Stopnišče in podesti na dvorišču pred osnovno šolo so plitvo temeljeni na pasovnih temeljih. Podesti in stopnišča so na spodnji strani v stiku z na novo utrjeno zemljino, ta mora biti dobro komprimirana v slojih debeline po 30cm, da se omogoči kvalitetna podlaga za naleganje betonskih površin.

Spodnji in zgornji rob pasovnih temeljev sta po celotnem dvorišču konstantna in sicer sp. rob -2,39m, zg. rob -2,09m. višinska kota (+-) 0,00m je povzeta po načrtu arhitekture in predstavlja najvišjo točko podesta pred vhodnimi vrati v OŠ.

Pasovni temelji so armirani s stremeni $\varnothing 8/15\text{cm}$ in vzdolžno armaturo $\varnothing 12$.

ZIDOVJE

Zidovje iz betonskih votlakov je armirano na mestih, kjer je samo ena stran zasuta in kjer nalega sp. rob stopnišča in podesta. Vertikalna armatura je $\varnothing 12/15$ horizontalna armatura pa $\varnothing 8/20$ na mestih naleganja votlakov (fuge). Na risbah je območje armiranega zidovja označeno s križno šrafuro. Na mestih kjer je zidovje armirano je potrebno iz temeljev pustiti priključno armaturo.

STOPNIŠČE IN PODESTI

Spodnja betonska ploskev stopnišč in podestov nalega na utrjeno zemljino, ob enem pa zg. in sp. rob stopnišča temelji na pasovnih temeljih. Armaturo stopnišč in podestov v vzdolžni smeri je $\varnothing 12/15\text{cm}$ v prečni pa $\varnothing 10/20\text{cm}$.

JEKLENI NADSTREŠEK

Profili nadstreška so I 200. Pri montaži stebrov, dokler ni izveden strešni del konstrukcije je potrebno izvesti začasno pridržanje stebrov. Na jeklen nadstrešek nalegajo leseni lepljeni nosilci, ki se prilagajajo rastru strešne zasteklitve. V tem projektu so podane min. dimenzije lesenih lepljenih nosilcev 14/10 cm e=80cm. V primeru drugačnega rastra je potrebno ponovno preveriti nosilnost lesenih nosilcev.

3 UPORABLJENI MATERIALI

Pri betonskih delih je potrebno upoštevati naslednje kvalitete materiala in njegove trdnosti.

- Temelji, stene.....C25/30 XC2 CI 0,2 Dmax =32mm S4 PV II,
- Stopnice in podesti.....C30/37 XD3/XF4 CI 0,2 Dmax =32mm S4 PVIII.

Pri vseh betonskih elementih je predviden zaščitni sloj 4,5cm.
Armatura palic B 500(B), armatura mrež B 500(A).

Vsi jekleni elementi so kvalitete S235, vsi vijaki in navojne palice so kvalitete 8.8.

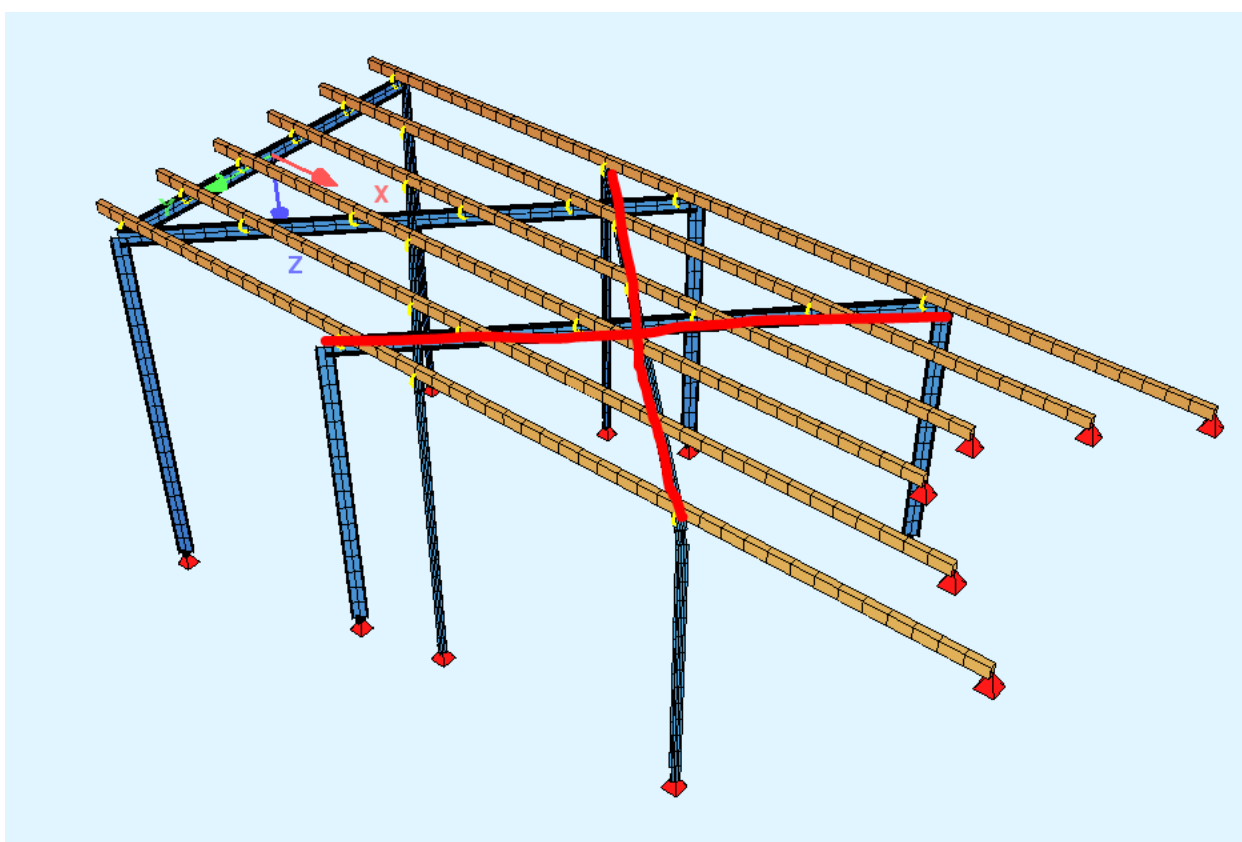
4 IZVEDBA DEL

Pred izvedbo del je potrebno pridobiti gradbeno dovoljenje. Izvedba del pa mora potekati v skladu s tem projektom PZI in projektom PGD ter v skladu s pridobljenim gradbenim dovoljenjem in soglasji.

Po potrebi se naj projektanta pozove k projektantskemu nadzoru.

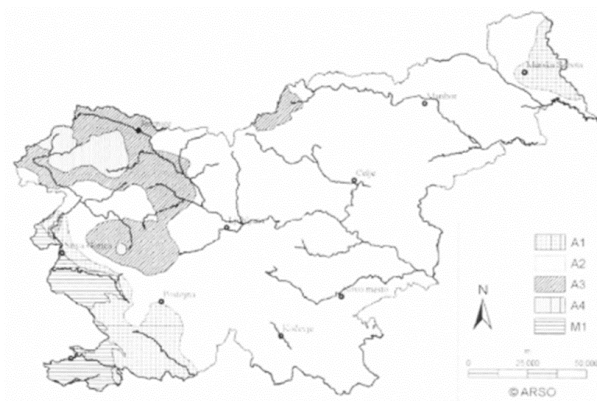
Če izvajalec del smatra, da je v projektu napaka ali pomanjkljivost mora nemudoma pozvati projektanta, da poda pojasnilo, ustrezno korekcijo ali dopolnilo.

5 KONTROLA MEHANSKE ODPORNOSTI NADSTREŠKA



OBTEŽBA SNEGA:

Nadmorska višina: m
 Cona



$$A1 \quad s_s = 0,651 \left[1 + \left(\frac{A}{728} \right)^2 \right]$$

$$A2 \quad s_s = 1,293 \left[1 + \left(\frac{A}{728} \right)^2 \right]$$

$$A3 \quad s_s = 1,935 \left[1 + \left(\frac{A}{728} \right)^2 \right]$$

$$A4 \quad s_s = 2,577 \left[1 + \left(\frac{A}{728} \right)^2 \right]$$

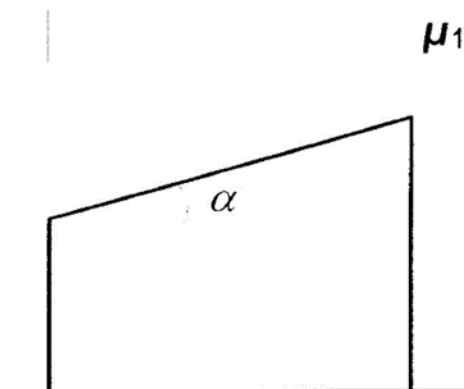
$$M1 \quad s_s = 0,289 \left[1 + \left(\frac{A}{452} \right)^2 \right]$$

V 1. alpski coni se upošteva najmanj 1,2 kN/m².

Informativna vrednost maksimalne debeline snežne odeje na tleh:

| Vrsta snega | cm |
|------------------------|-------|
| Nov sneg (suh sneg) | 147,8 |
| Uležan sneg (več dni) | 73,9 |
| Star sneg (več tednov) | 49,3 |
| Moker sneg | 36,9 |

ENOKAPNI



Slika 5.2: Oblikovni koeficient obtežbe snega pri enokapnici

Za trajna/začasna projektna sta-

$$S = \mu_i C_e C_t S_k$$

| | | |
|-------|--------------|-----------------|
| $S =$ | <u>1,182</u> | kN/m^2 |
|-------|--------------|-----------------|

Ovire proti zdrsni snega s strehe

DA

| | | |
|--------------|-------|-----------------------------|
| α (°) | 0 | naklon strehe |
| C_e | 1 | koeficient izpostavljenosti |
| C_t | 1 | toplotni koeficient |
| μ_1 | 0,800 | oblikovni koeficient |

OBTEŽBA VETRA:

Dimenzije objekta:

višina: m naklon terena:
 širina: m
 dolžina: m

Projektna hitrost vetra:

$v_{0,b}$ m/s = km/h

faktor smeri:

c_{dir} faktor letnega časa:
 c_{seson}

Osnovna hitrost vetra:

v_b m/s

Kategorija terena: Z_0 Z_{min} k_r

Faktor hrapavosti terena:

$c_r(z)$

Faktor hribovitosti terena:

$c_0(z)$

Srednja hitrost vetra:

$v_m(z)$ m/s

Vpliv turbulence (koeficient intenzitete turbulence):

$I_v(z)$ k_1

Količnik izpostavljenosti:

$c_e(z)$

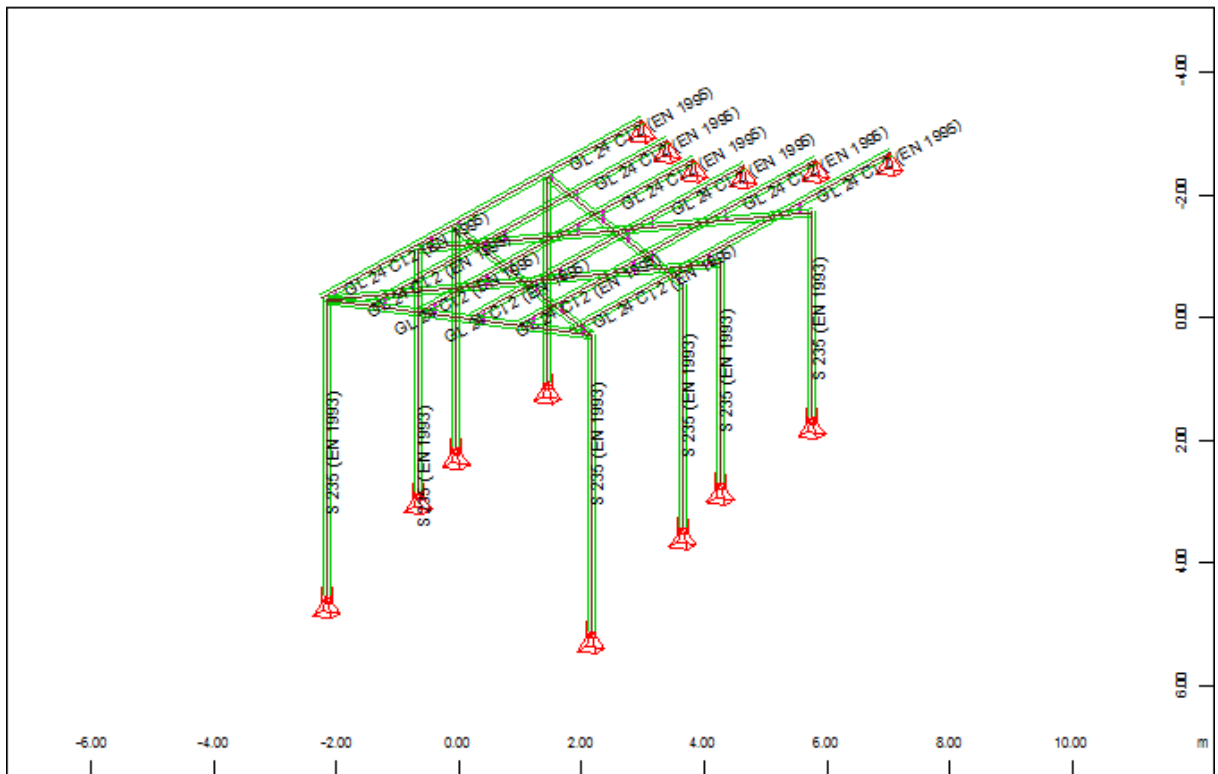
Statična obtežba pri sunkih vetra:

q_b N/m²
 q_p N/m² = kN/m²

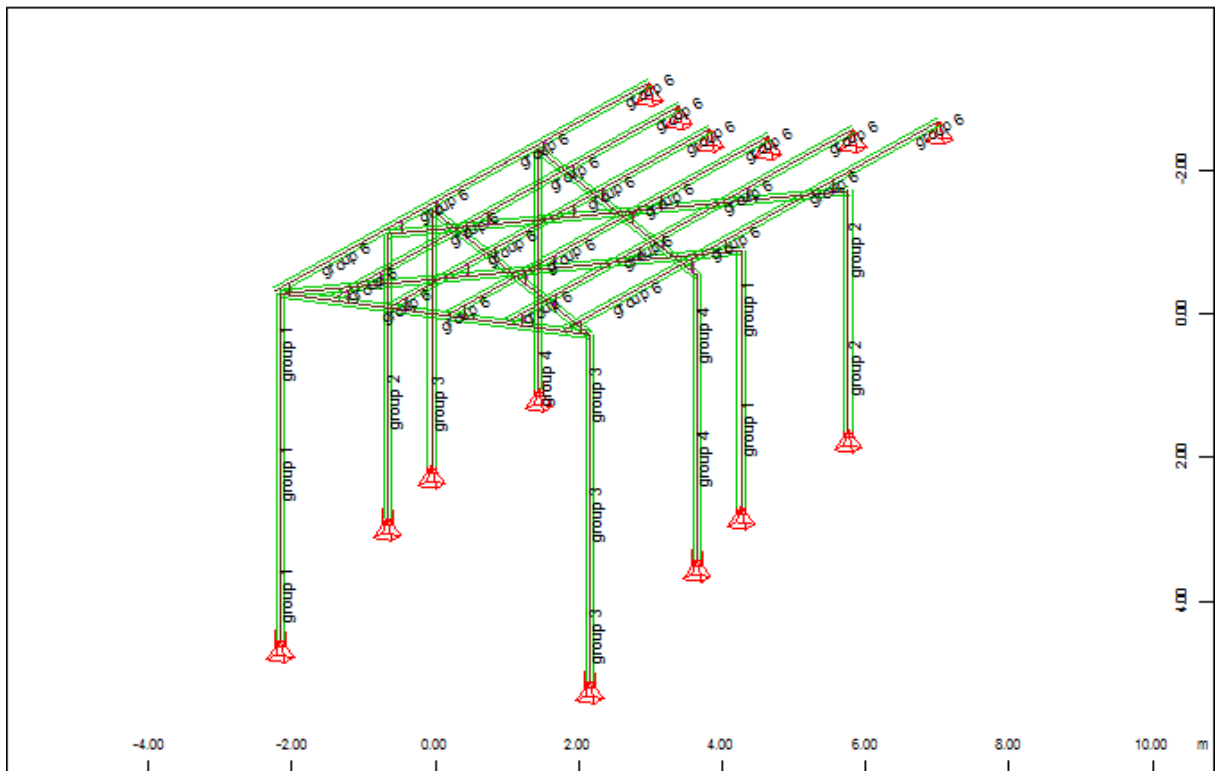
| | | Koeficient neto tlaka $c_{p,net}$ | | | |
|----------------|---------------------|-----------------------------------|------------|------------|------------|
| | | Razdelitev na področja | | | |
| | | | | | |
| Nagib α | Zapolnjenost ϕ | Koeficient celotne sile c_s | Področje A | Področje B | Področje C |
| θ° | Maksimum vsi ϕ | +0,2 | +0,5 | +1,8 | +1,1 |
| | Minimum $\phi = 0$ | -0,5 | -0,6 | -1,3 | -1,4 |
| | Minimum $\phi = 1$ | -1,3 | -1,5 | -1,8 | -2,2 |

$$w_i = q_p(z_i) \cdot c_{pi}$$

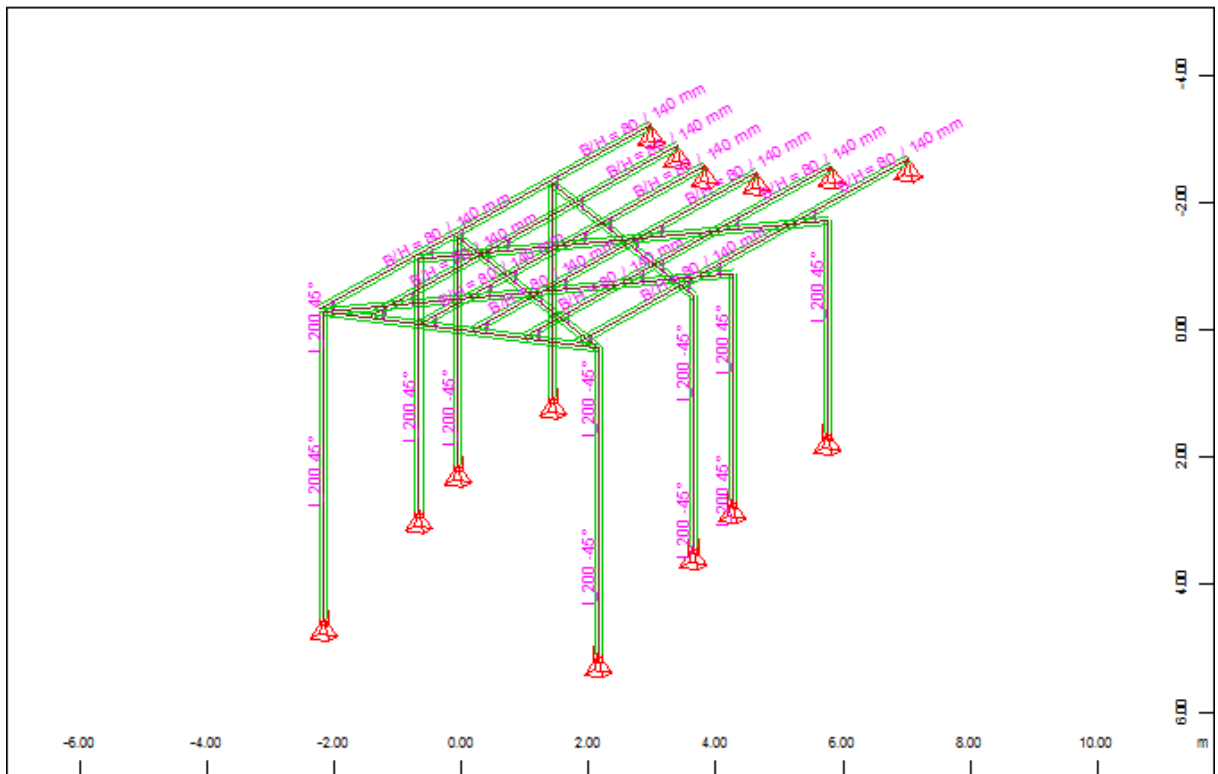
KONSTRUKCIJA



M 1 : 110
 X = 0.502
 Y = 0.905
 Z = 0.962



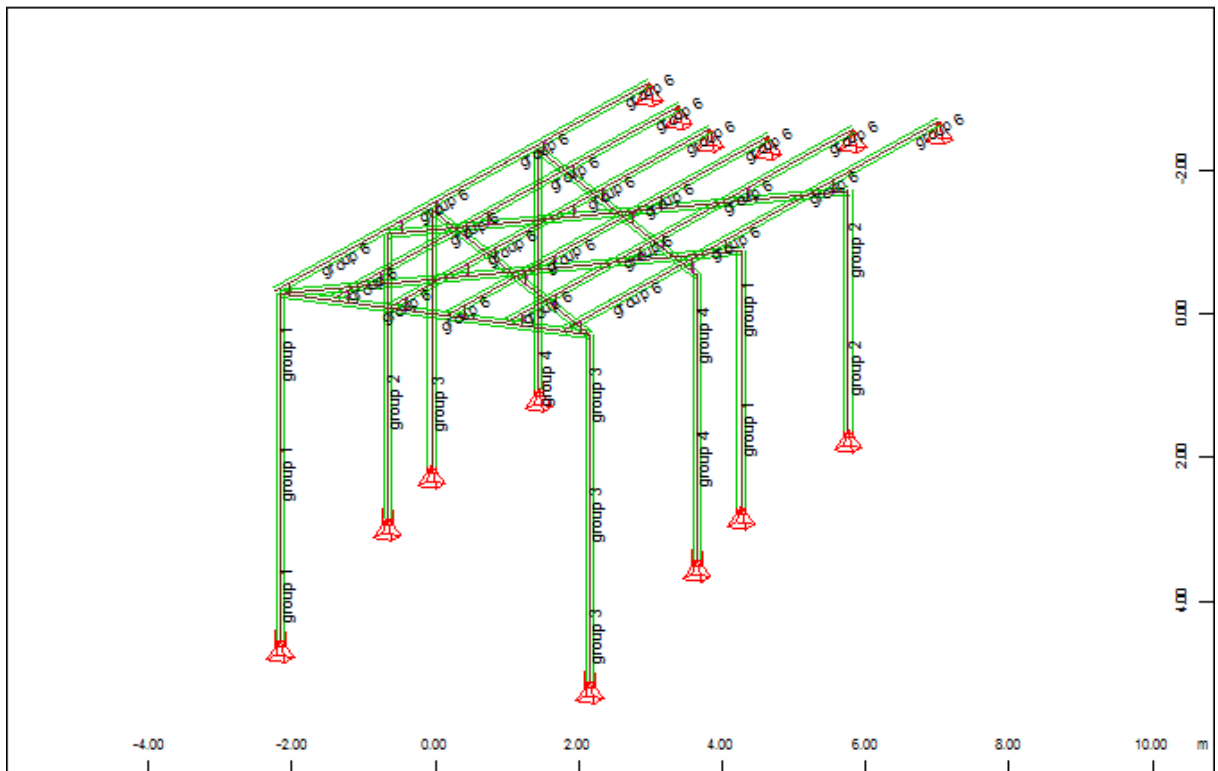
M 1 : 94
 X = 0.502
 Y = 0.906
 Z = 0.962



Sectional Designations, Beam Elements

M 1 : 108

X = 0.502
 Y = 0.905
 Z = 0.962



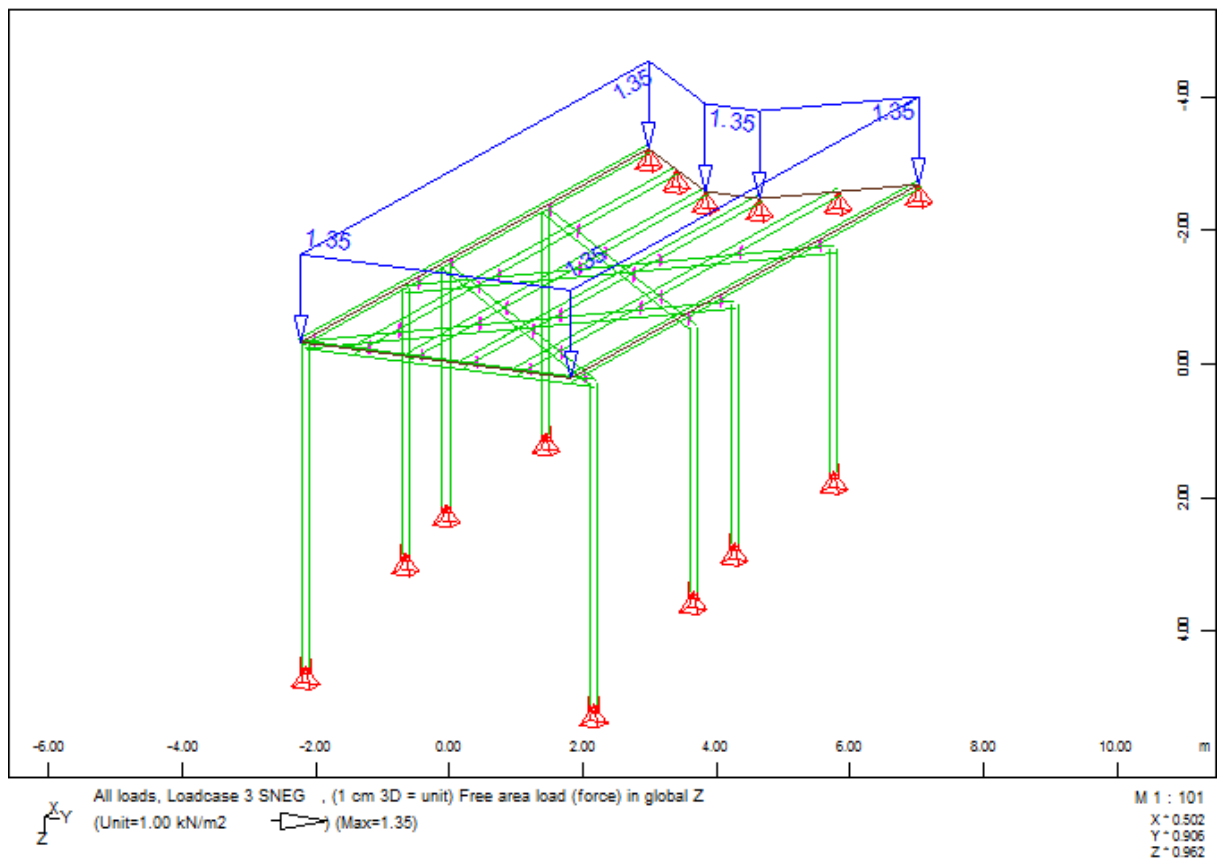
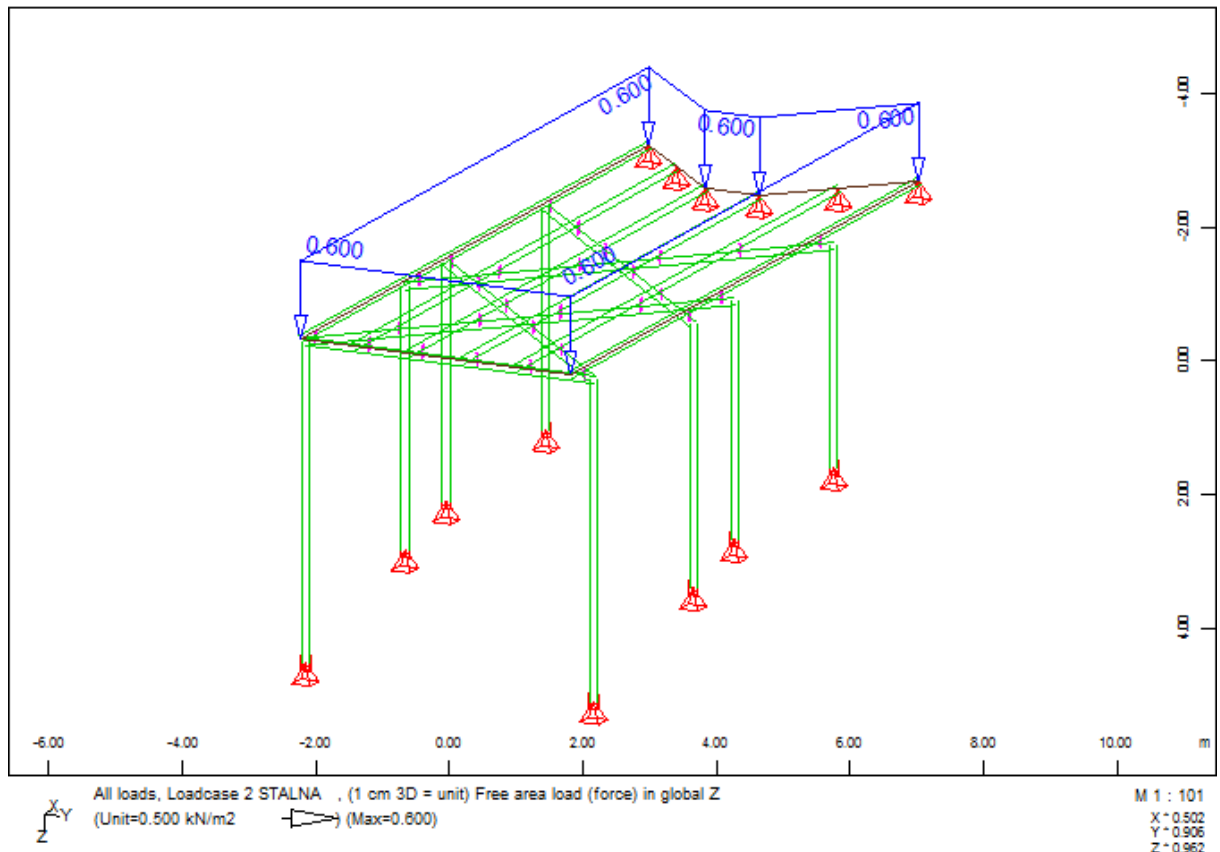
Designation of groups, Beam Elements, Kinematic Constraints

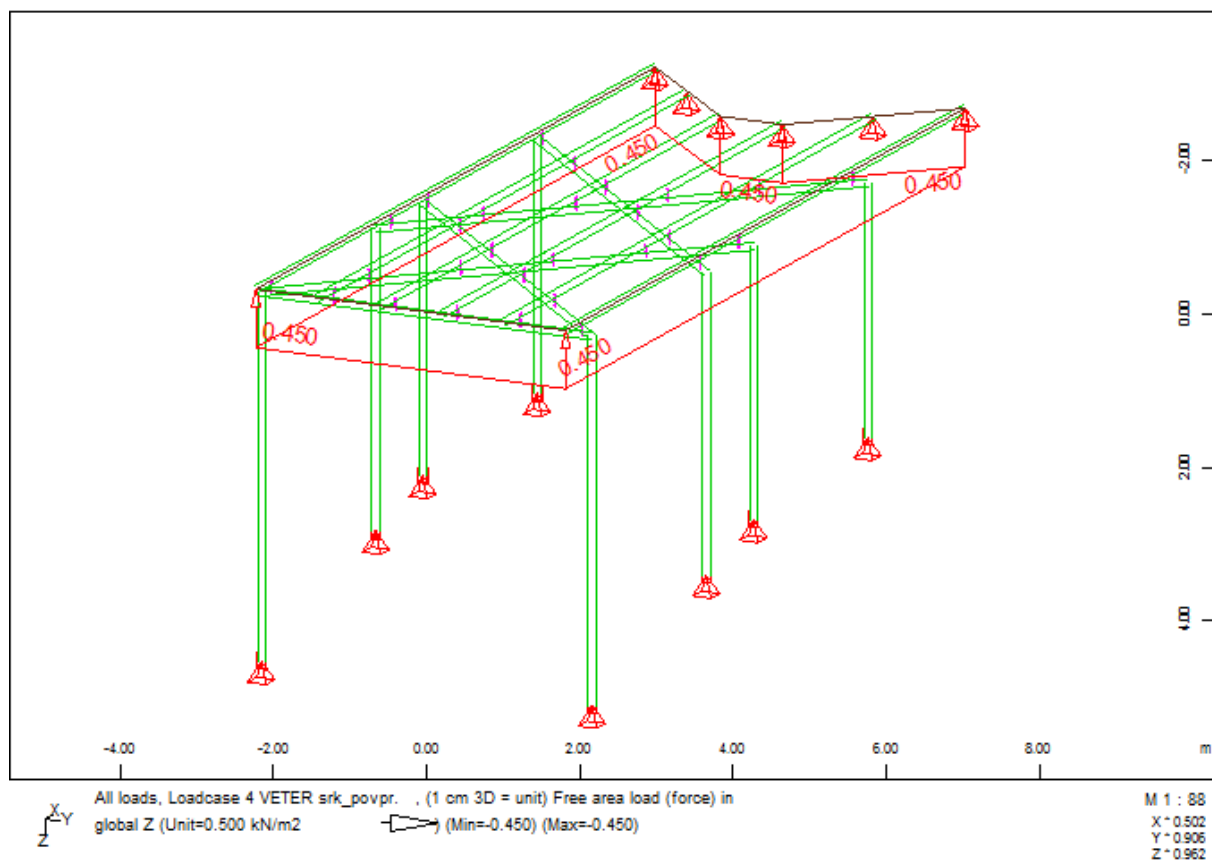
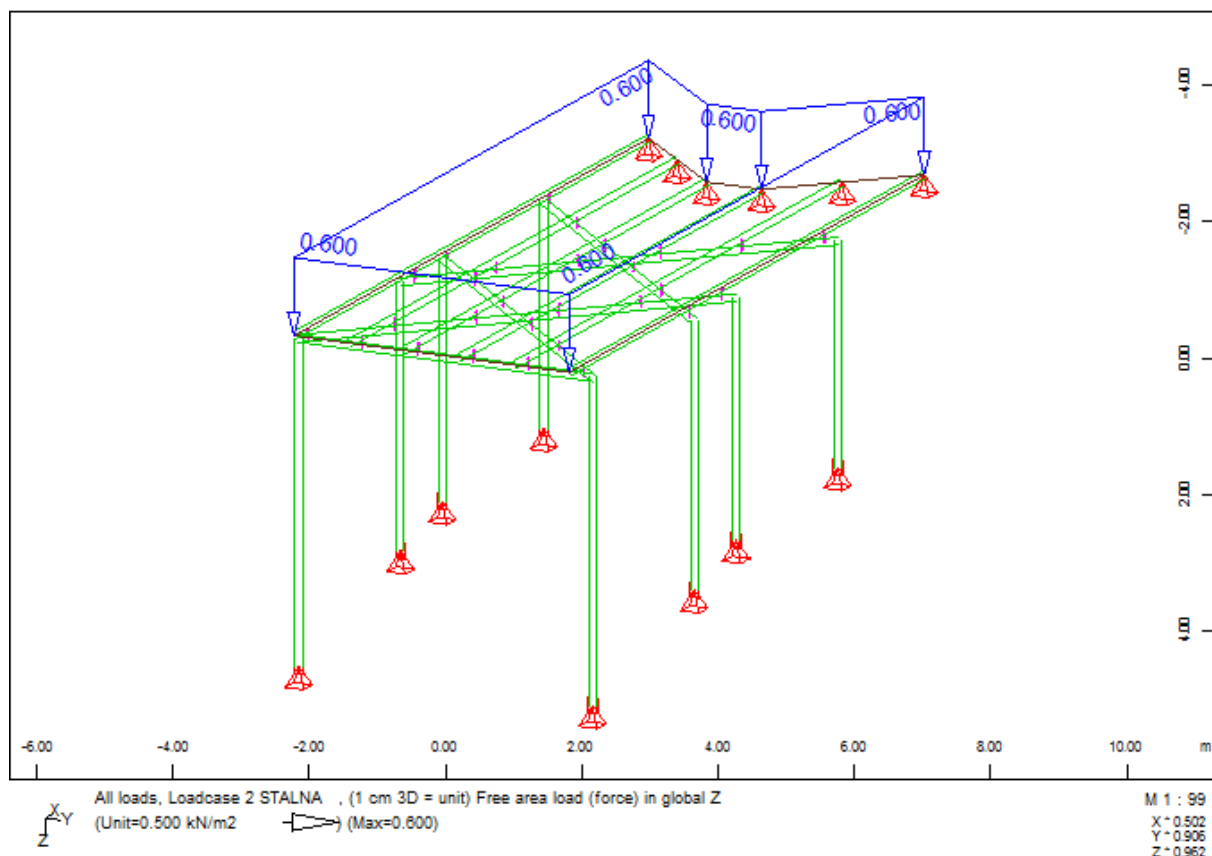
M 1 : 94

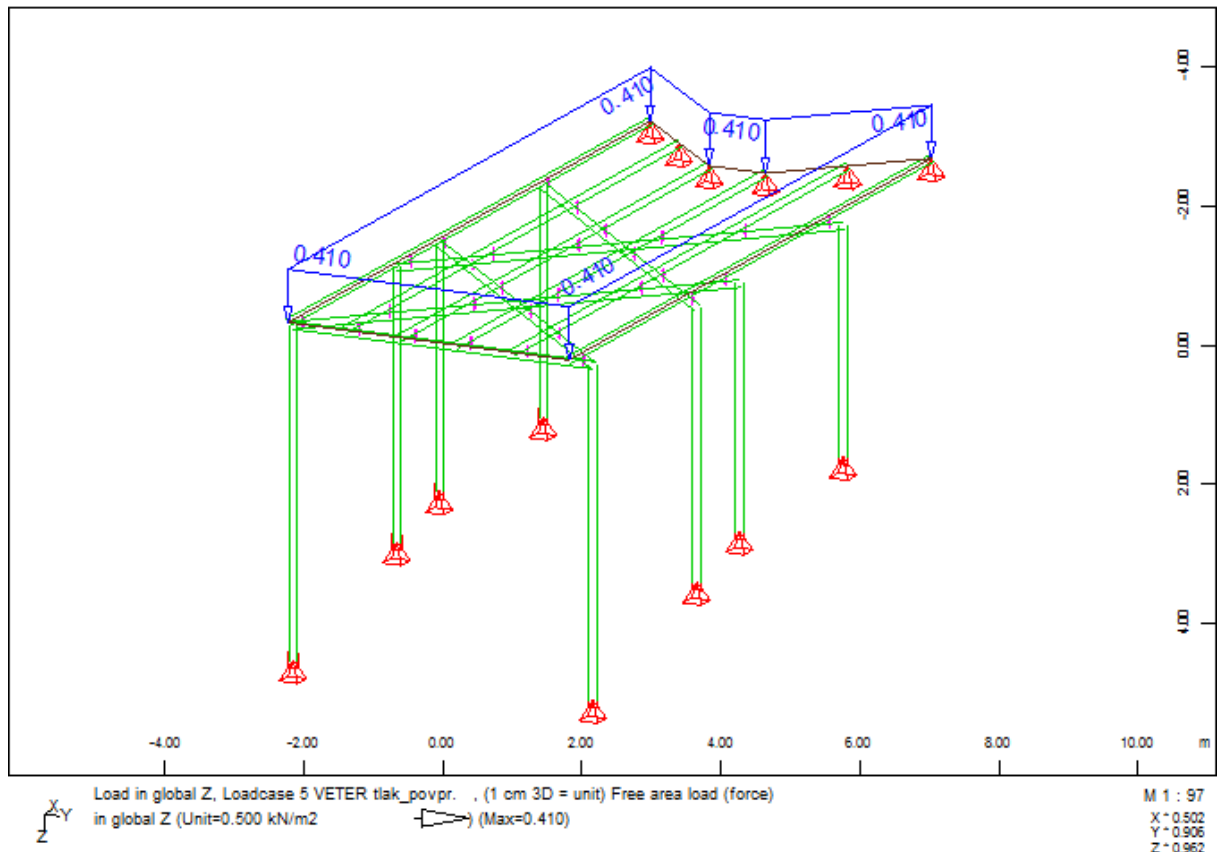
X = 0.502
 Y = 0.906
 Z = 0.962



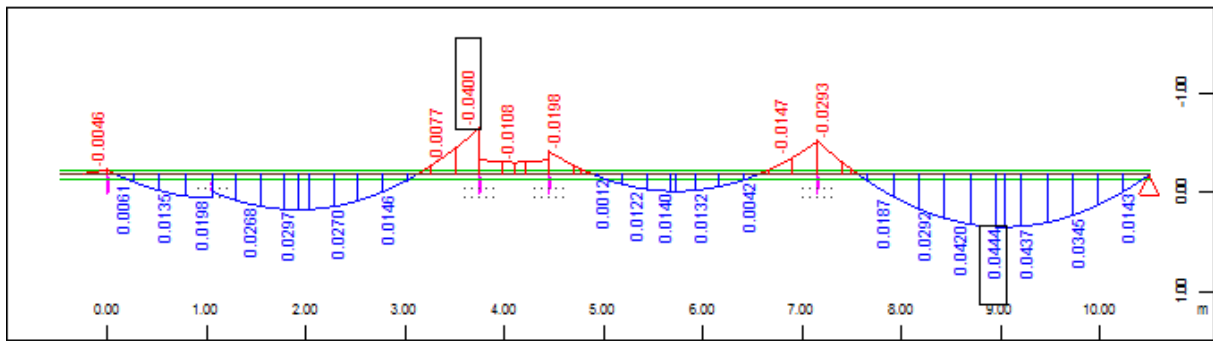
OBTEŽBA





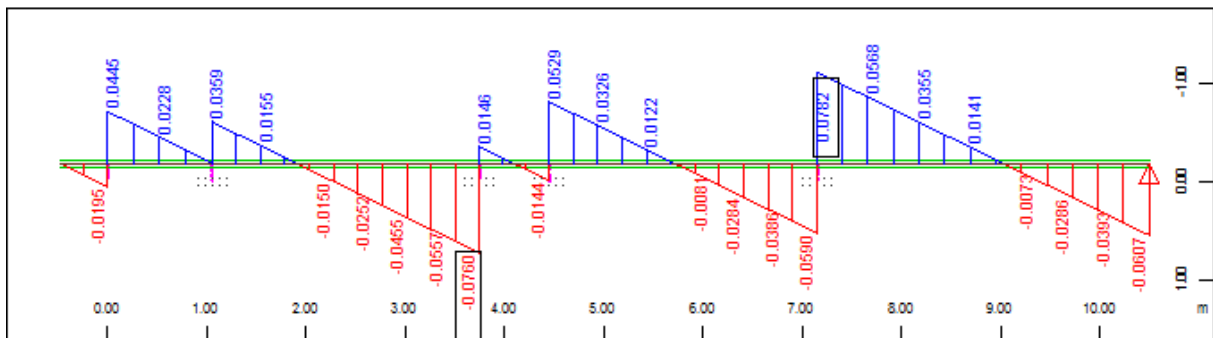


NSK-LESENI DEL



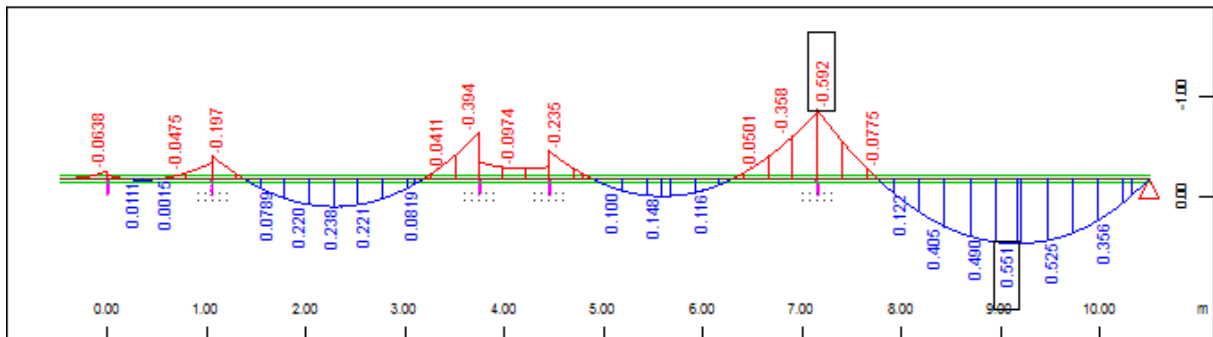
Sector of system Group 6
 Beam Elements , Bending moment My, Loadcase 1 lastna teza , 1 cm 3D = 0.0574 kNm
 (Min=-0.0400) (Max=0.0444)

M 1 : 68



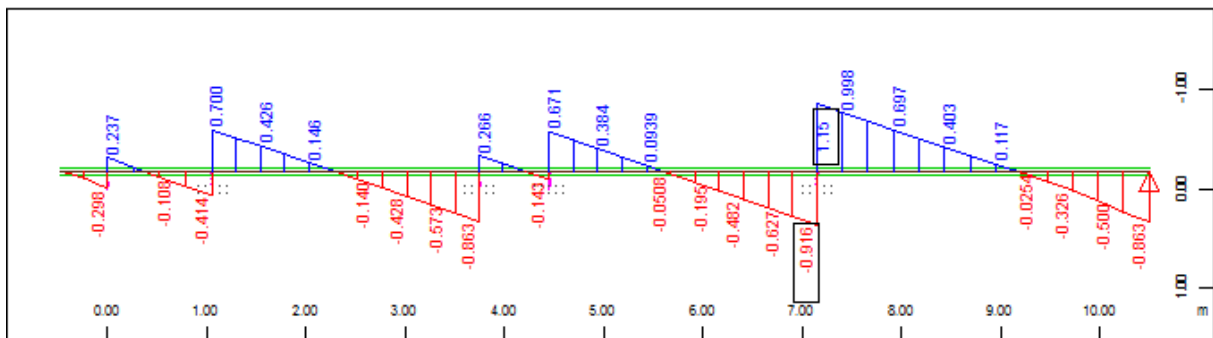
Sector of system Group 6
 Beam Elements , Shear force Vz, Loadcase 1 lastna teza , 1 cm 3D = 0.0574 kN
 (Min=-0.0760) (Max=0.0782)

M 1 : 68



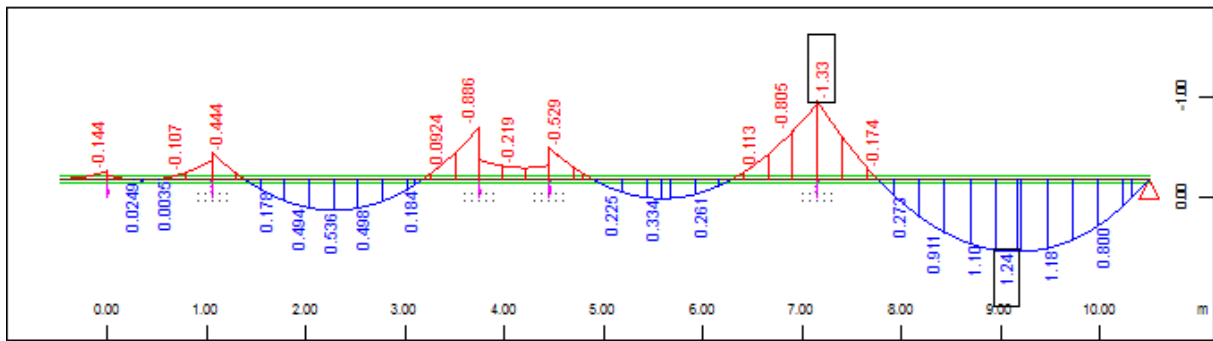
Sector of system Group 6
 Beam Elements , Bending moment My, Loadcase 2 STALNA , 1 cm 3D = 0.574 kNm (Min=-0.592)
 (Max=0.551)

M 1 : 68



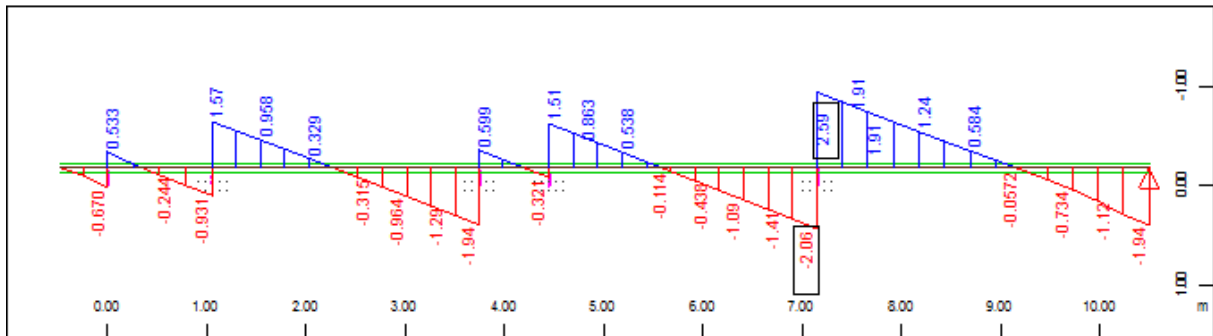
Sector of system Group 6
 Beam Elements , Shear force Vz, Loadcase 2 STALNA , 1 cm 3D = 1.15 kN (Min=-0.916)
 (Max=1.15)

M 1 : 68



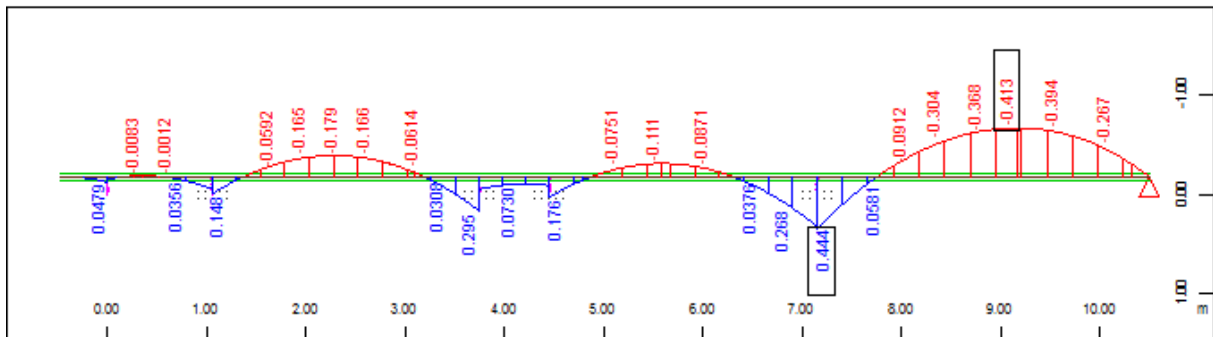
Sector of system Group 6
 Beam Elements , Bending moment My, Loadcase 3 SNEG , 1 cm 3D = 1.15 kNm (Min=-1.33)
 (Max=1.24)

M 1 : 68



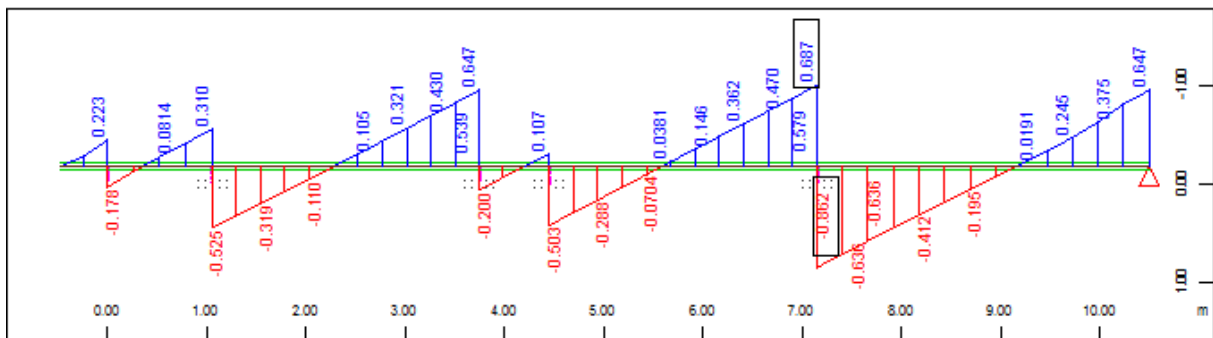
Sector of system Group 6
 Beam Elements , Shear force Vz, Loadcase 3 SNEG , 1 cm 3D = 2.30 kN (Min=-2.06) (Max=2.59)

M 1 : 68



Sector of system Group 6
 Beam Elements , Bending moment My, Loadcase 4 VETER srk_povpr. , 1 cm 3D = 0.574 kNm
 (Min=-0.413) (Max=0.444)

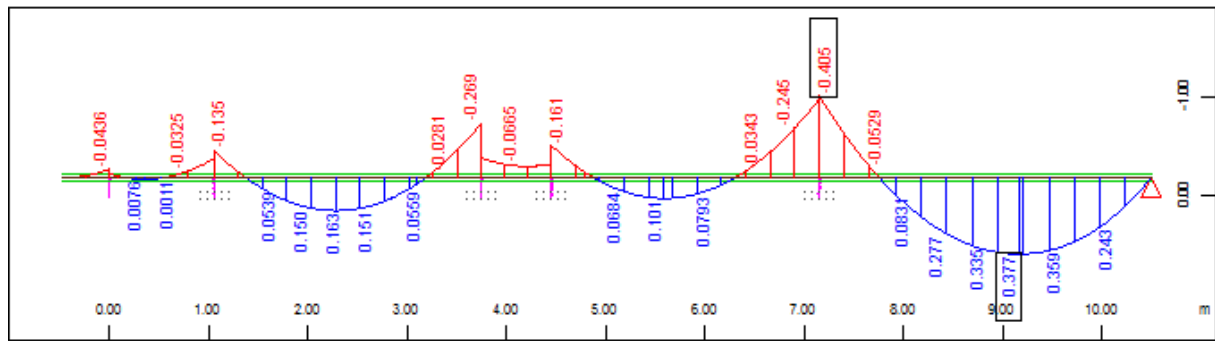
M 1 : 68



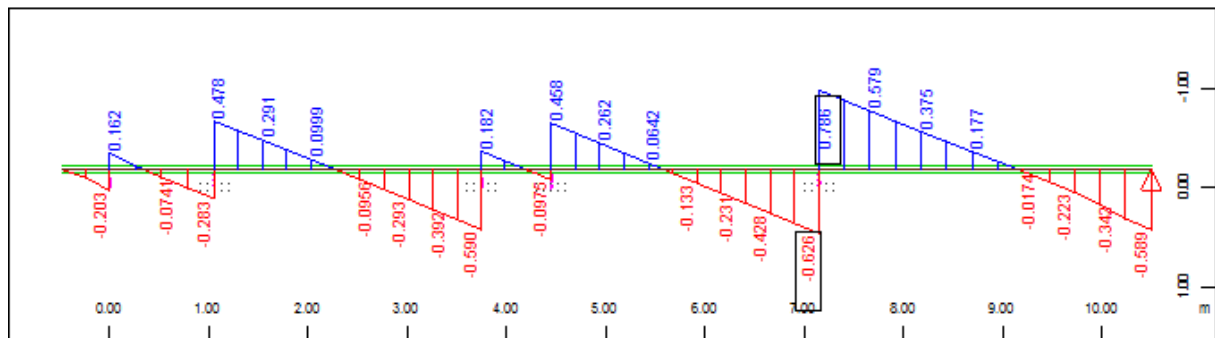
Sector of system Group 6
 Beam Elements , Shear force Vz, Loadcase 4 VETER srk_povpr. , 1 cm 3D = 0.574 kN
 (Min=-0.862) (Max=0.687)

M 1 : 68

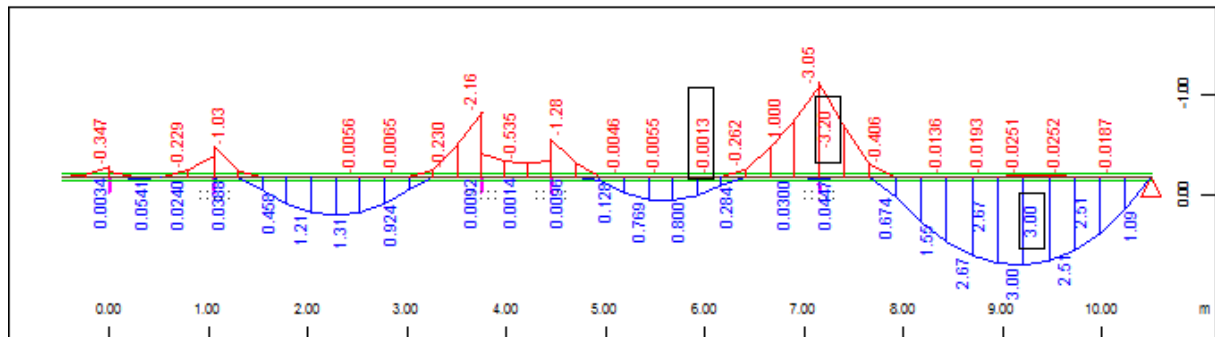
UROŠ ŽVAN s.p., ZRKOVSKA 75, 2000 MARIBOR



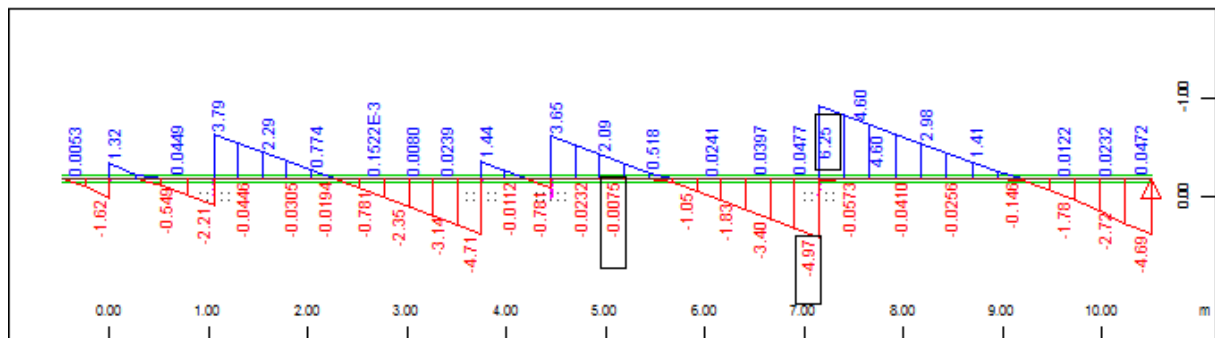
Sector of system Group 6
 Beam Elements , Bending moment My, Loadcase 5 VETER tlak_povpr. , 1 cm 3D = 0.333 kNm
 (Min=-0.405) (Max=0.377) M 1 : 68



Sector of system Group 6
 Beam Elements , Shear force Vz, Loadcase 5 VETER tlak_povpr. , 1 cm 3D = 0.684 kN
 (Min=-0.626) (Max=0.785) M 1 : 68

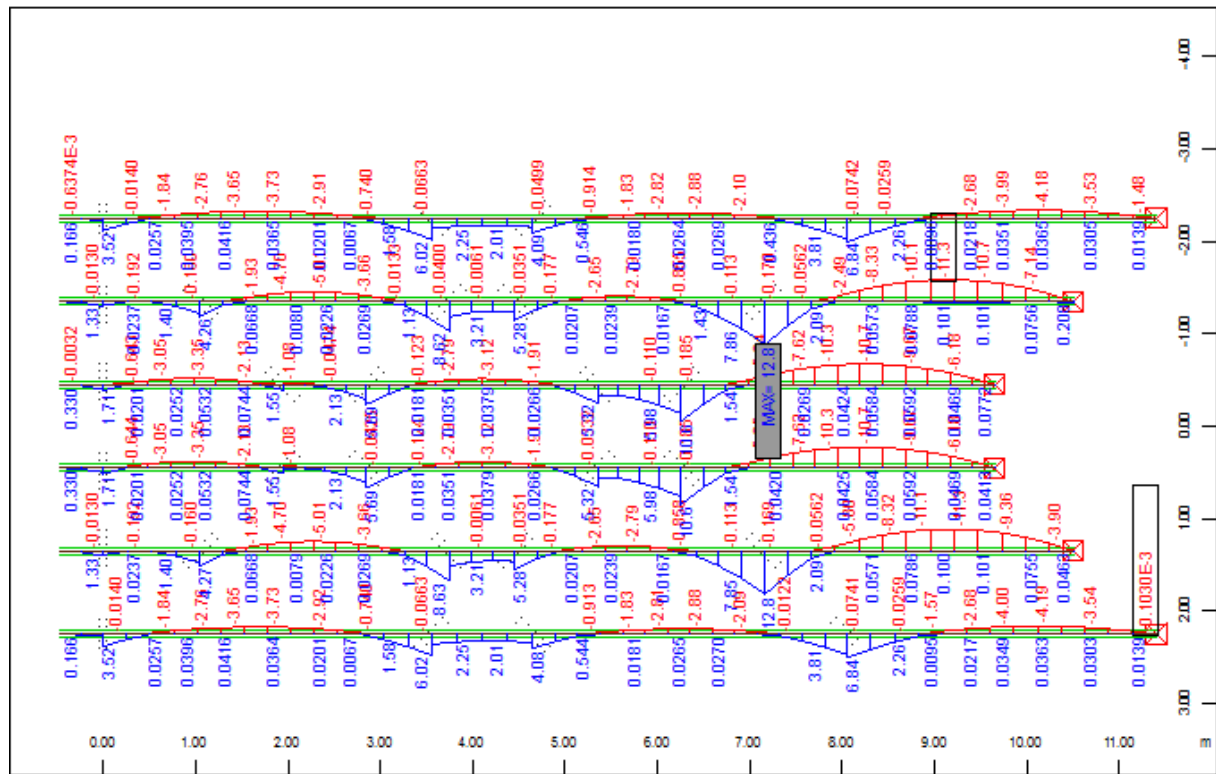


Sector of system Group 6
 Beam Elements , Bending moment My, Loadcase 3329 MAX-MY BEAM , 1 cm 3D = 2.30 kNm
 (Min=-0.0028) (Max=3.00) M 1 : 68

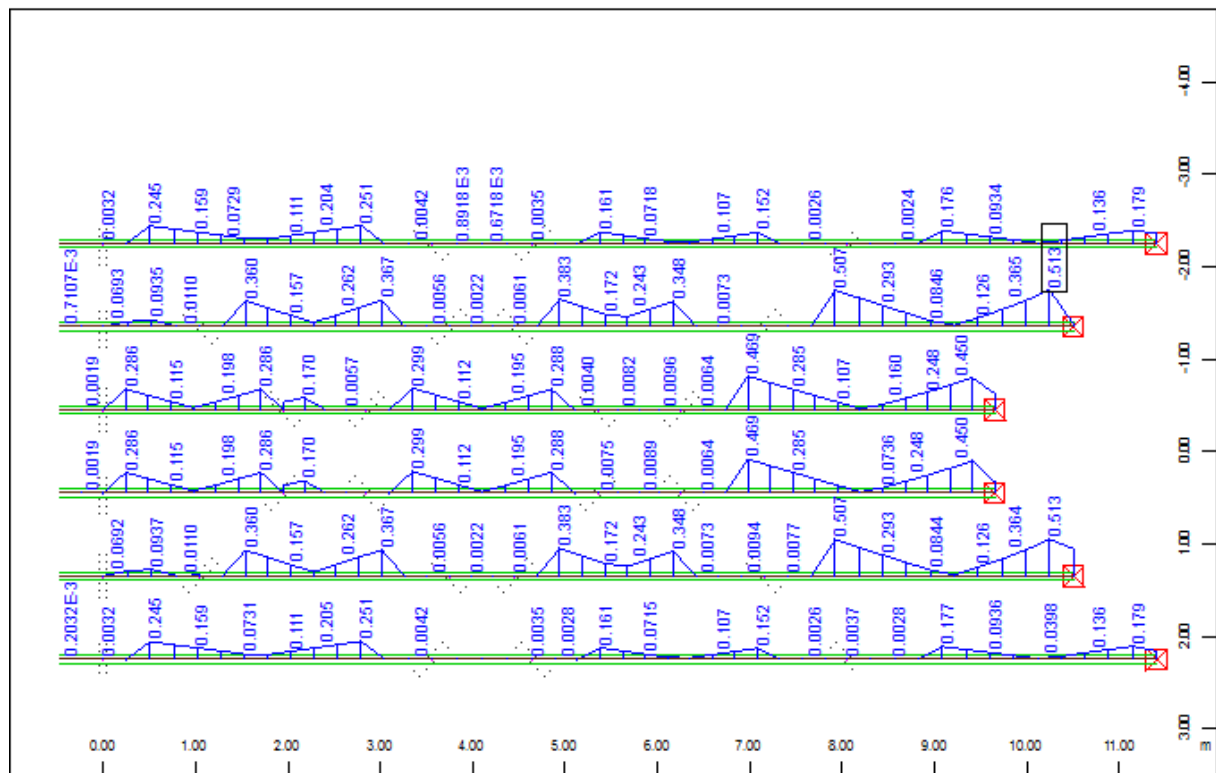


Sector of system Group 6
 Beam Elements , Shear force Vz, Loadcase 3325 MAX-VZ BEAM , 1 cm 3D = 5.74 kN
 (Min=-0.0077) (Max=6.25) M 1 : 68

NAPETOSTI-LESENI DEL

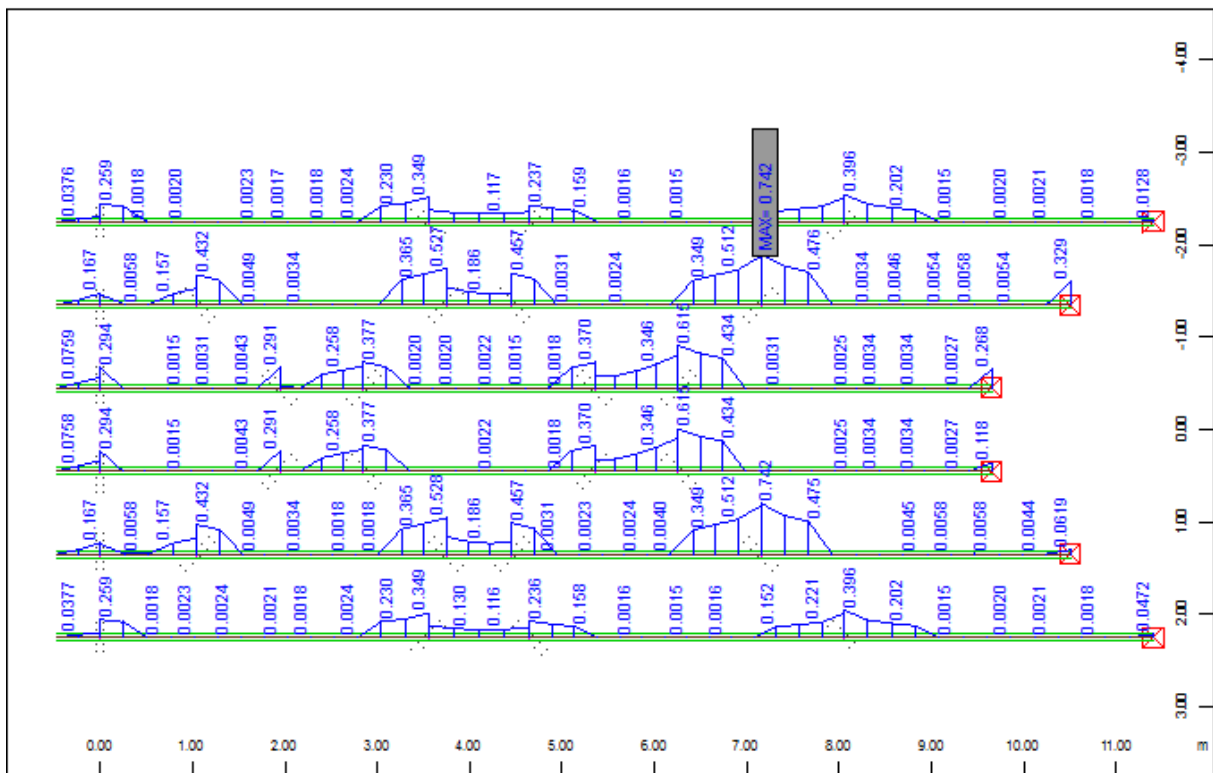
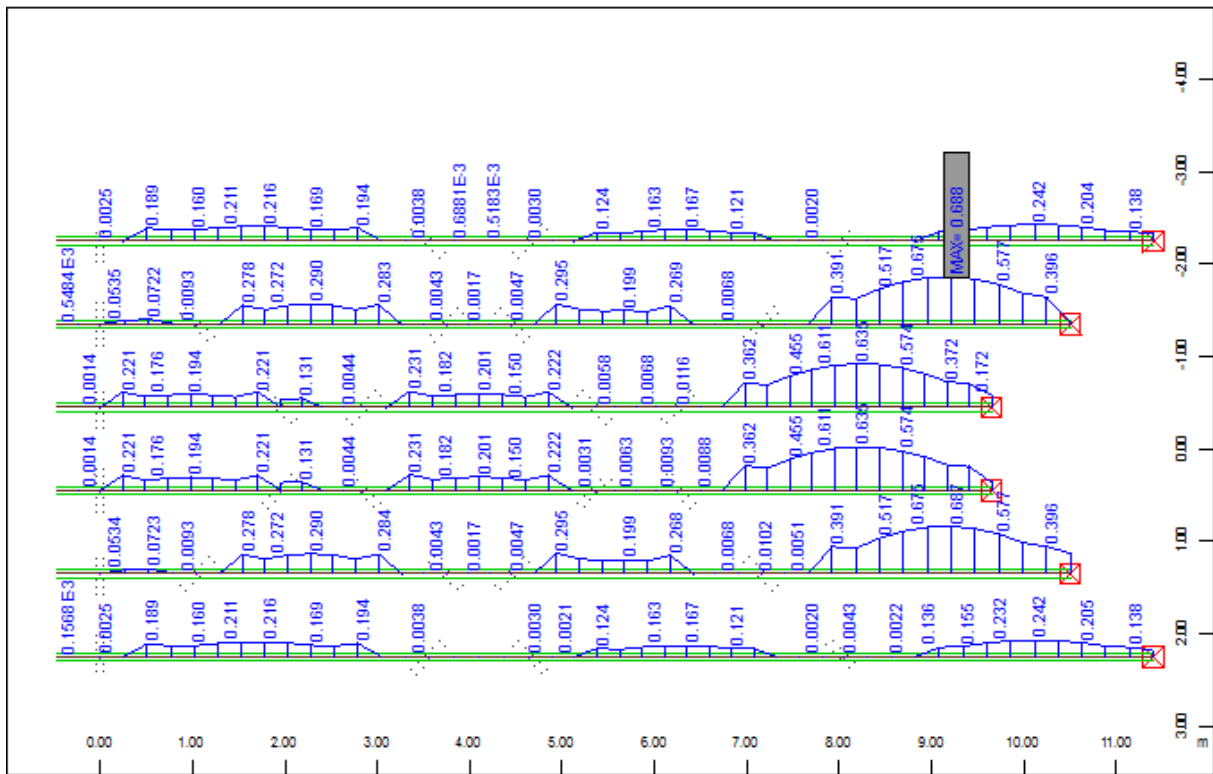


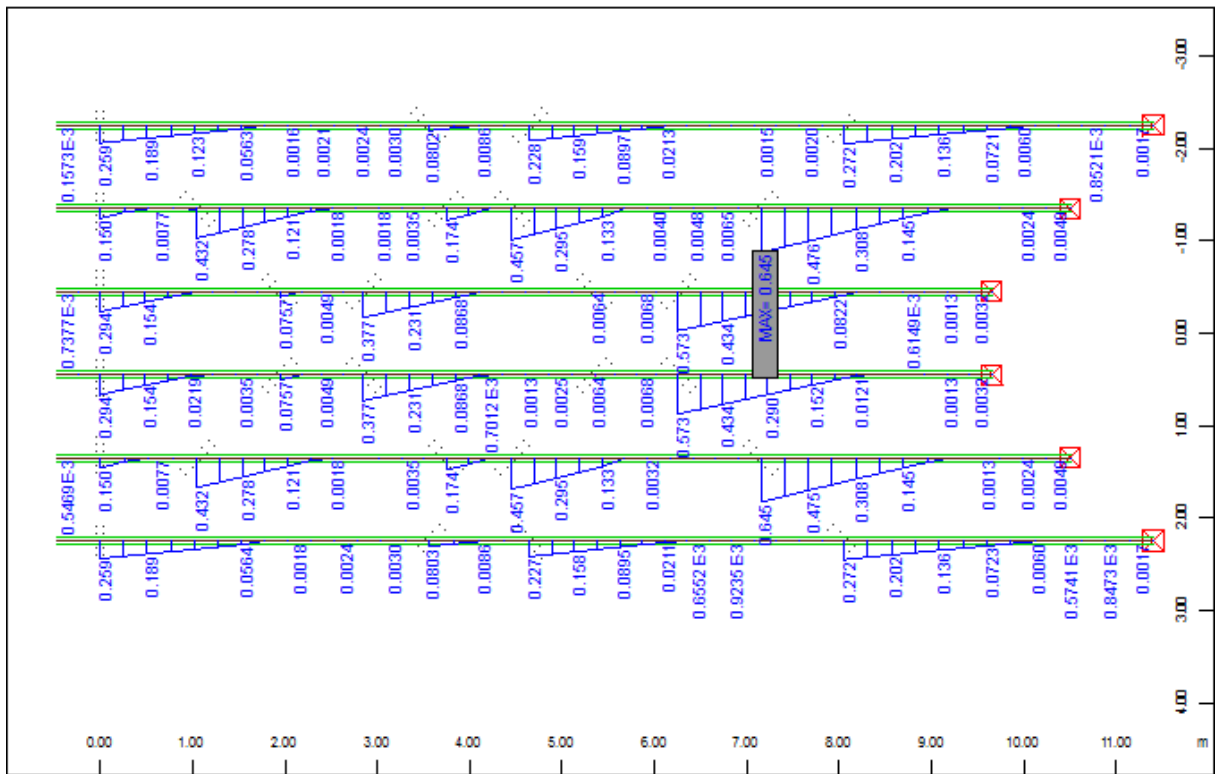
Sector of system Group 6
 Beam Elements , Maximum compression stress, Design Case 3329 MAX-MY BEAM, Material 2 GL 24
 Cl.2 (EN 1995) , 1 cm 3D = 34.8 MPa (Min=-11.3) (Max=0.185)



Sector of system Group 6
 Beam Elements , Shear stress, Design Case 3329 MAX-MY BEAM, Material 2 GL 24 Cl.2 (EN 1995)
 , 1 cm 3D = 0.941 MPa (Max=0.513)

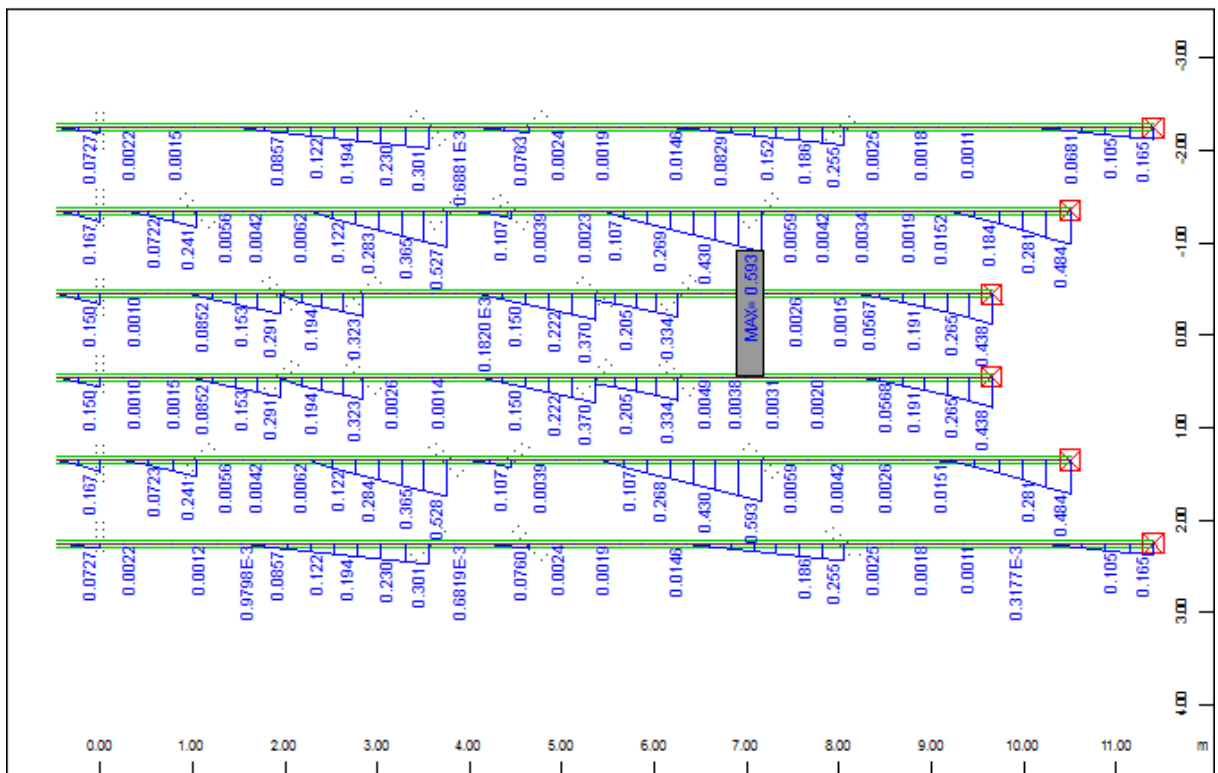
ODPORNOST PREREZA-LESENI DEL





Sector of system Group 6
Beam Elements , Utilisation level tau Shear stress, Design Case 3325 MAX-VZ BEAM , 1 cm
3D = 0.980 (Max=0.645)

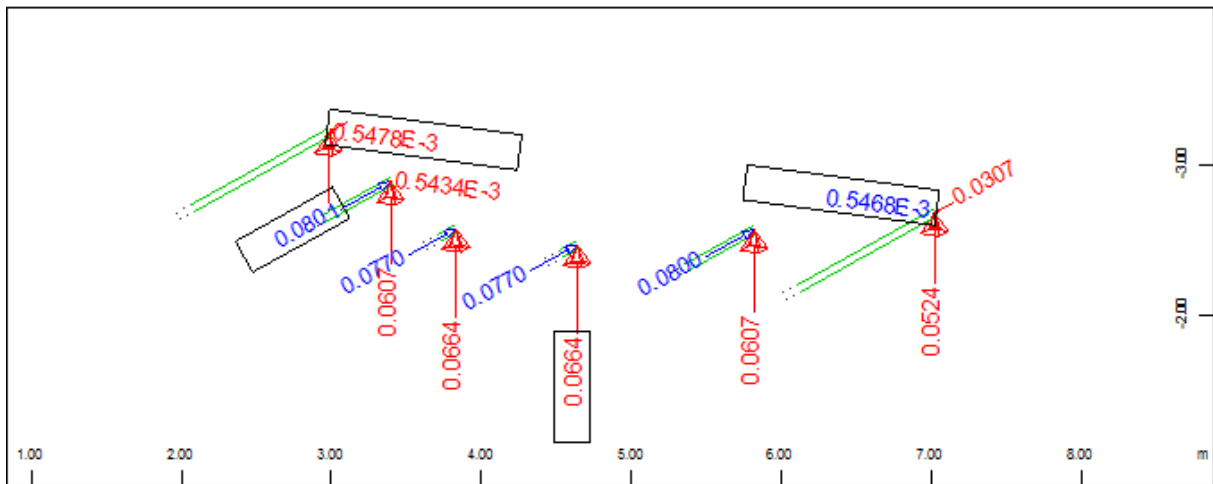
M 1 : 73



Sector of system Group 6
Beam Elements , Utilisation level tau Shear stress, Design Case 3326 MIN-VZ BEAM , 1 cm
3D = 0.980 (Max=0.593)

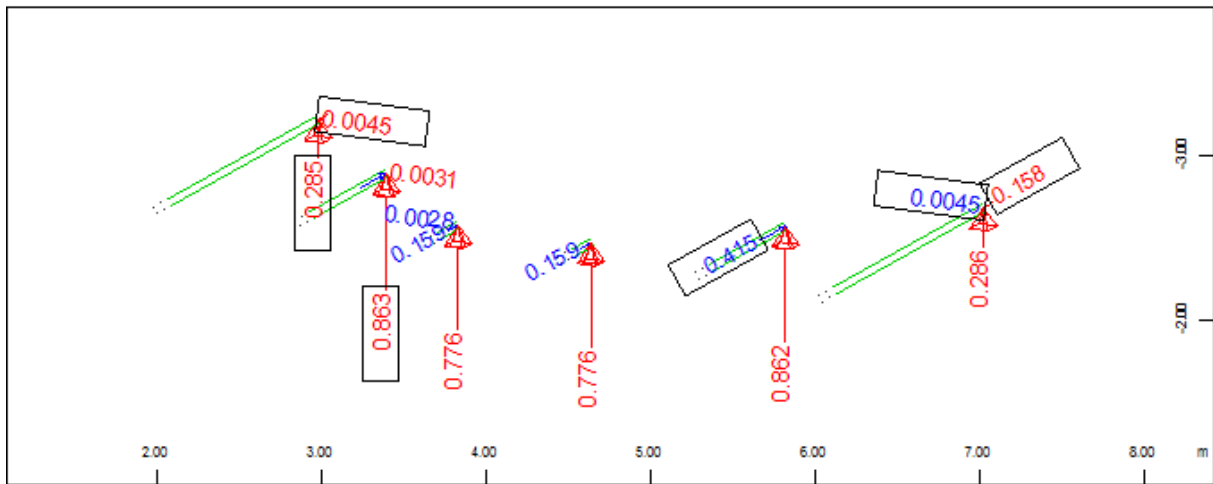
M 1 : 73

REAKCIJE-LESENI DEL



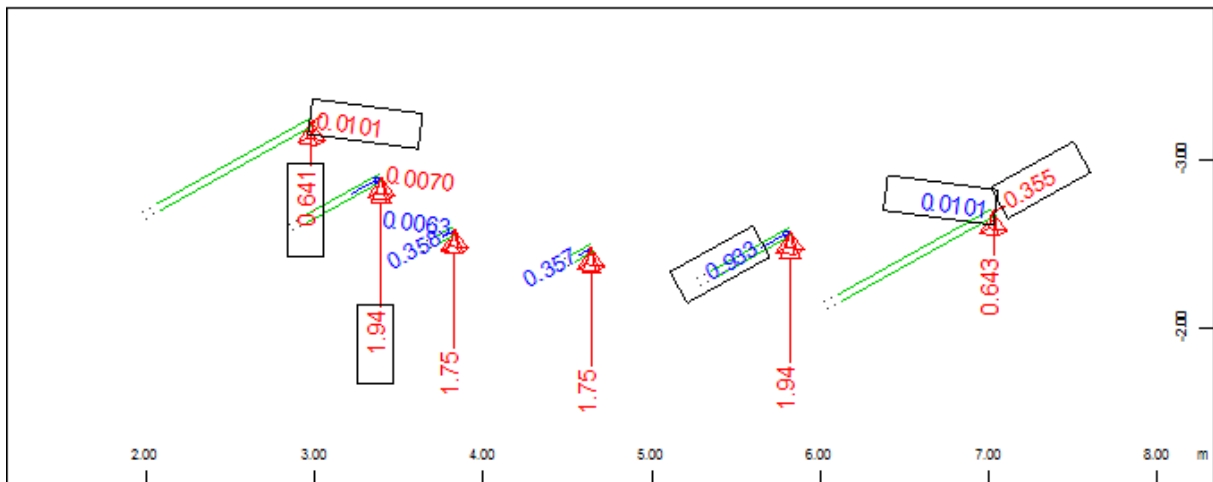
Sector of system Beam Elements
Nodes , Support force components in global directions, Loadcase 1 lastna teža , 1 cm 3D =
0.0484 kN (Min=-0.0664) (Max=0.0801) (total: 0.253/-3.0814e-06/-0.359)

M 1 : 45
X = 0.502
Y = 0.906
Z = 0.962



Sector of system Beam Elements
Nodes , Support force components in global directions, Loadcase 2 STALNA , 1 cm 3D =
0.484 kN (Min=-0.863) (Max=0.415) (total: 0.831/-1.6022e-05/-3.85)

M 1 : 41
X = 0.502
Y = 0.906
Z = 0.962

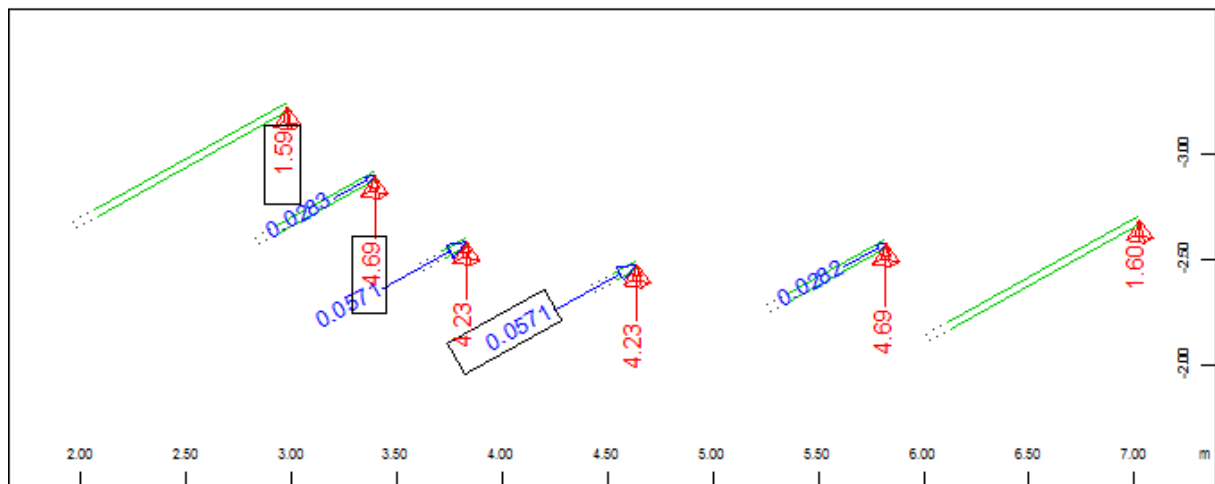


Sector of system Beam Elements
Nodes , Support force components in global directions, Loadcase 3 SNEG , 1 cm 3D = 0.969
kN (Min=-1.94) (Max=0.933) (total: 1.87/-3.6048e-05/-8.66)

M 1 : 40
X = 0.502
Y = 0.906
Z = 0.962

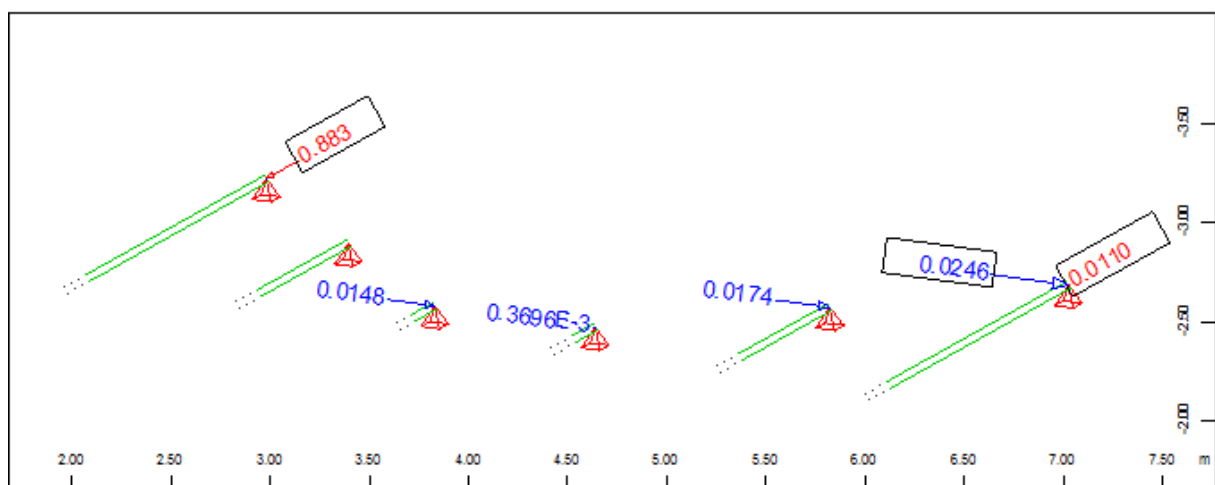


M 1 : 40
X = 0.502
Y = 0.906
Z = 0.962



Sector of system Beam Elements
 Nodes , Support force in global X, Loadcase 3355 MAX-PZ NODE , 1 cm 3D = 0.0203 kN
 (Min=-0.0110) (Max=0.0571) (total: 0.149)

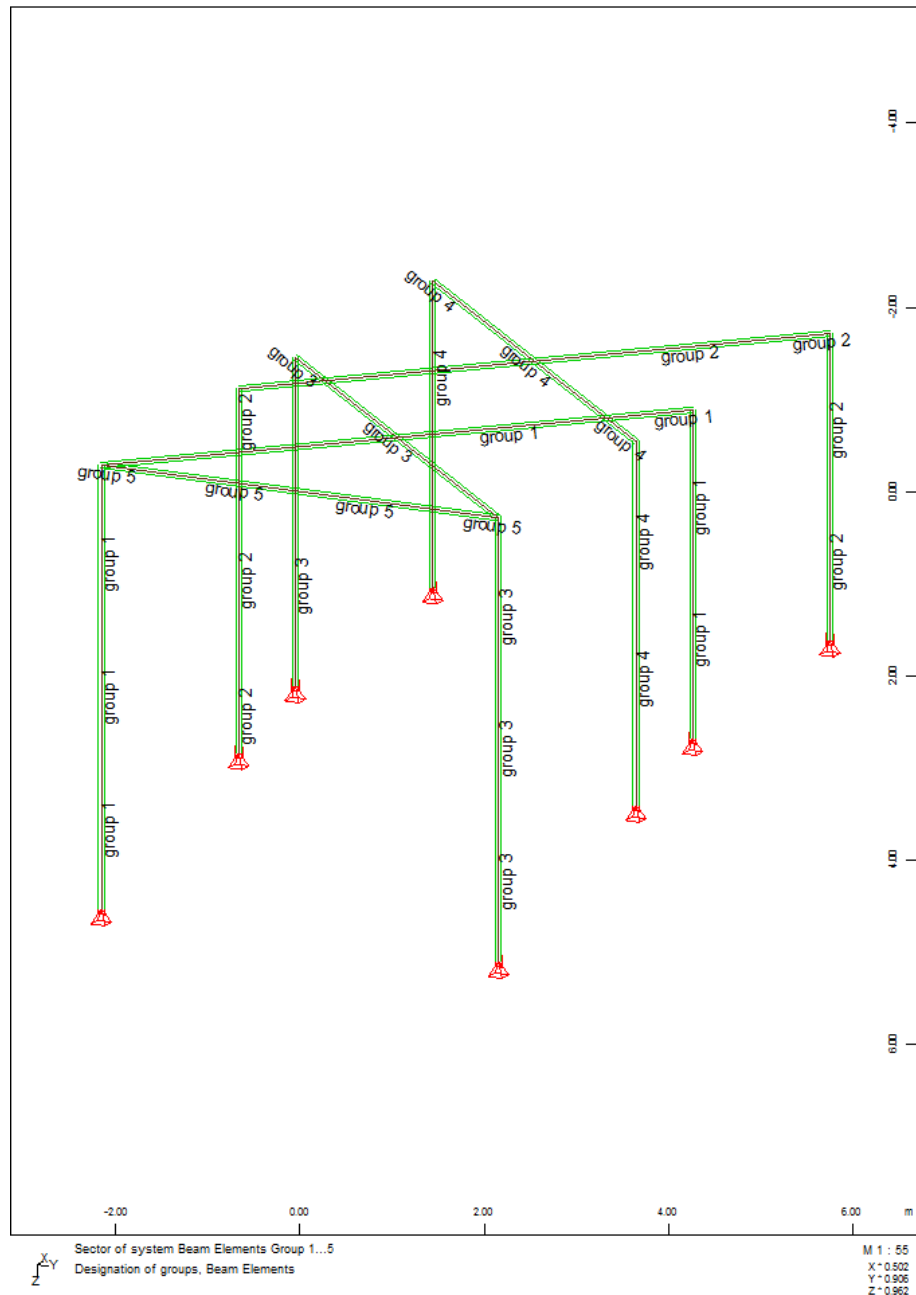
M 1 : 32
 X = 0.502
 Y = 0.906
 Z = 0.962



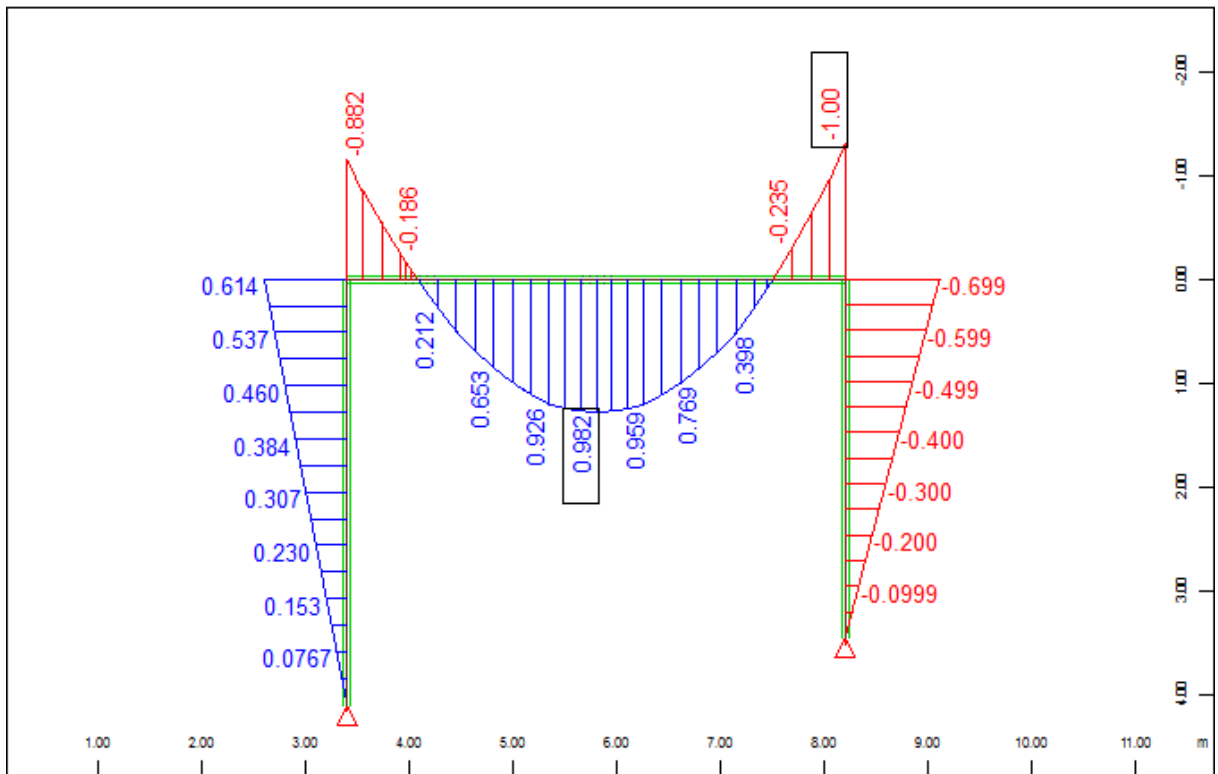
Sector of system Beam Elements
 Nodes , Support force in global X, Loadcase 3354 MIN-PY NODE , 1 cm 3D = 0.812 kN
 (Min=-0.883) (Max=2.32) (total: 2.46)

M 1 : 34
 X = 0.502
 Y = 0.906
 Z = 0.962

NSK-JEKLENI DEL

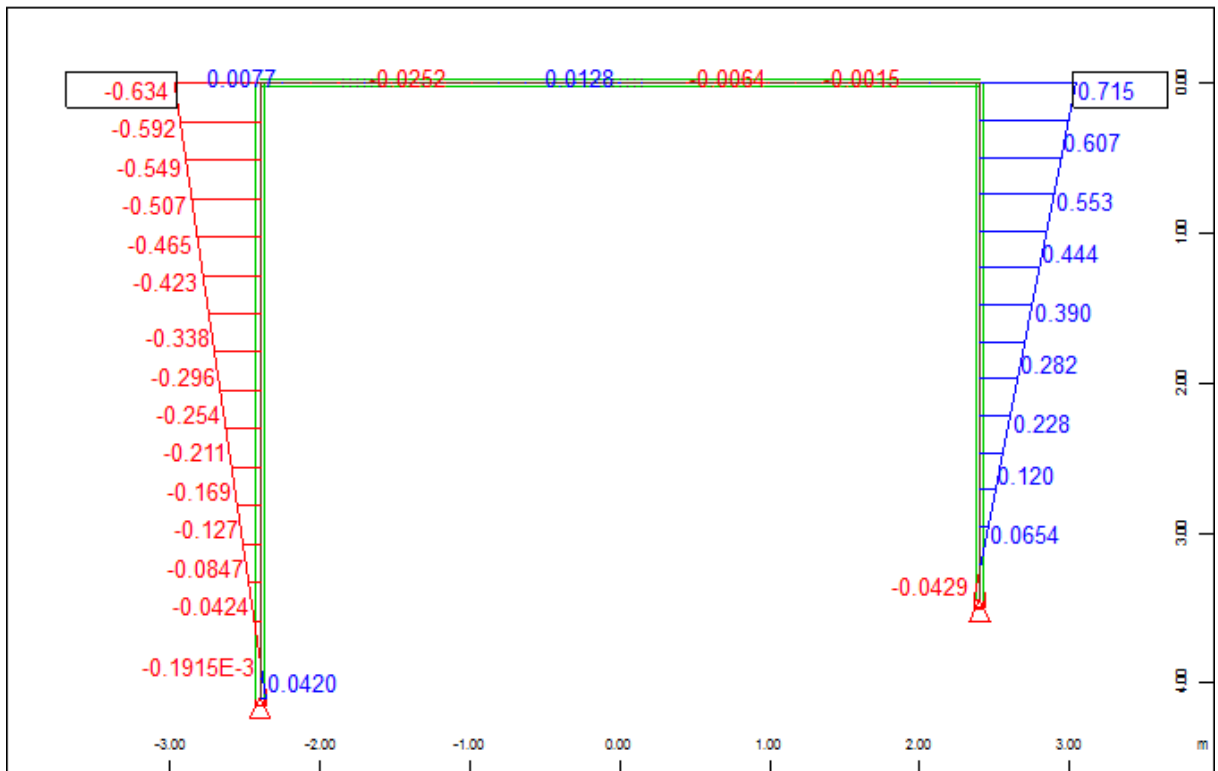


Okvir grupe 1 in 3 dobi enaki del obtežbe
 Okvir grupe 2 in 4 dobita enaki del obtežbe
 Prikazan je okvir grube 2, pri odpornosti na bočno zvrnitev pa še okvir 1 - samo rezultati za grupo 1 in 2.



Sector of system Group 2
 Beam Elements , Bending moment My, Loadcase 1 lastna teza , 1 cm 3D = 0.500 kNm
 (Min=-1.00) (Max=0.982)

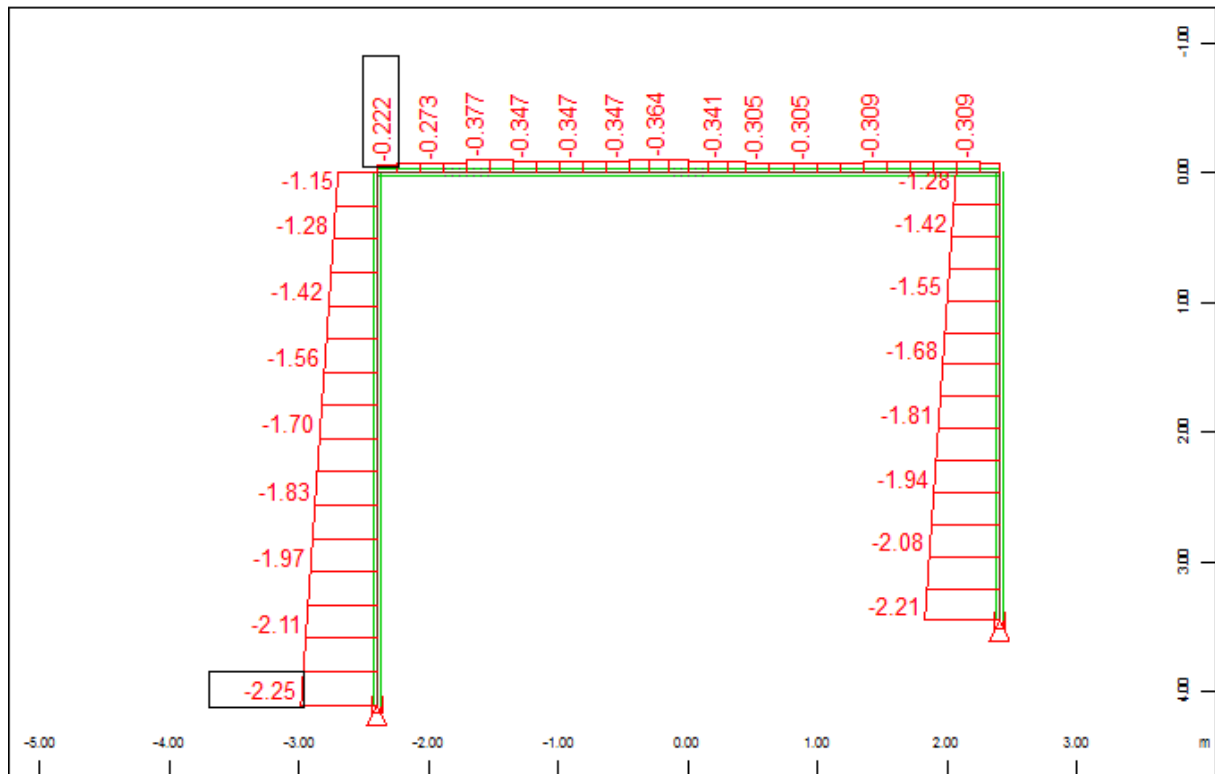
M 1 : 65



Sector of system Group 2
 Beam Elements , Bending moment Mz, Loadcase 1 lastna teza , 1 cm 3D = 0.500 kNm
 (Min=-0.634) (Max=0.715)

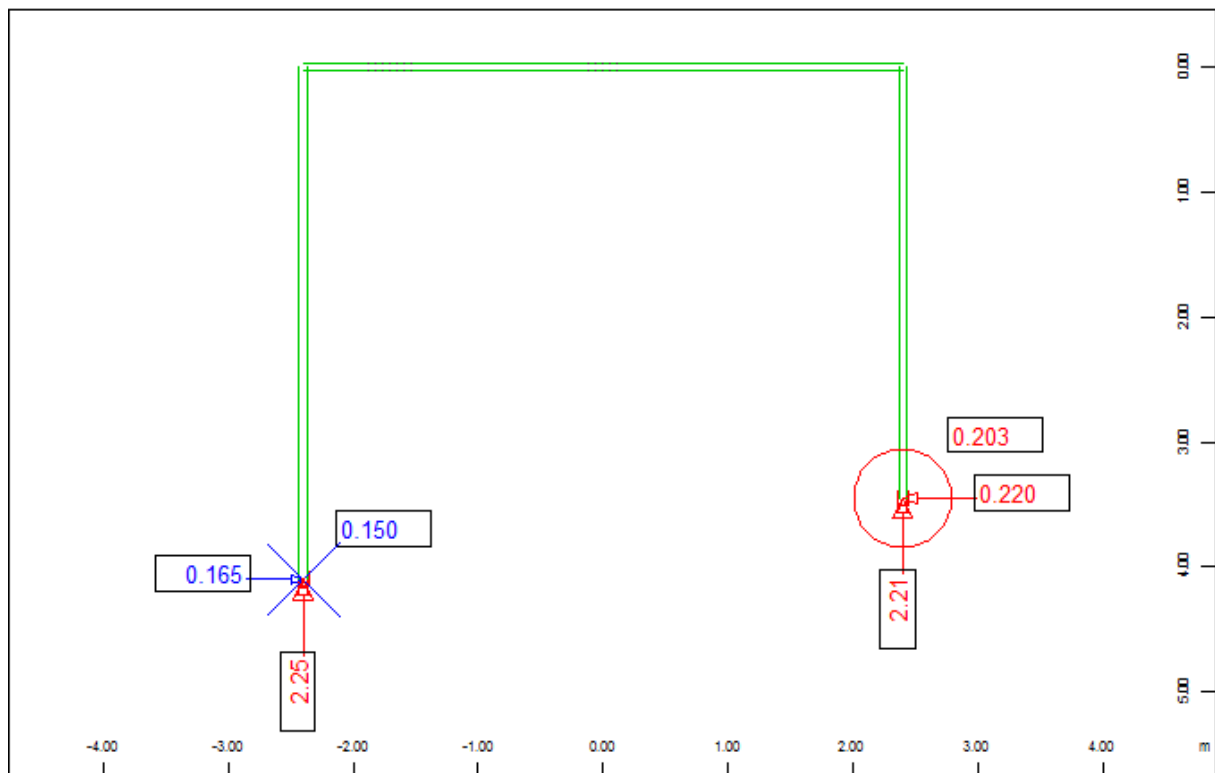
M 1 : 45





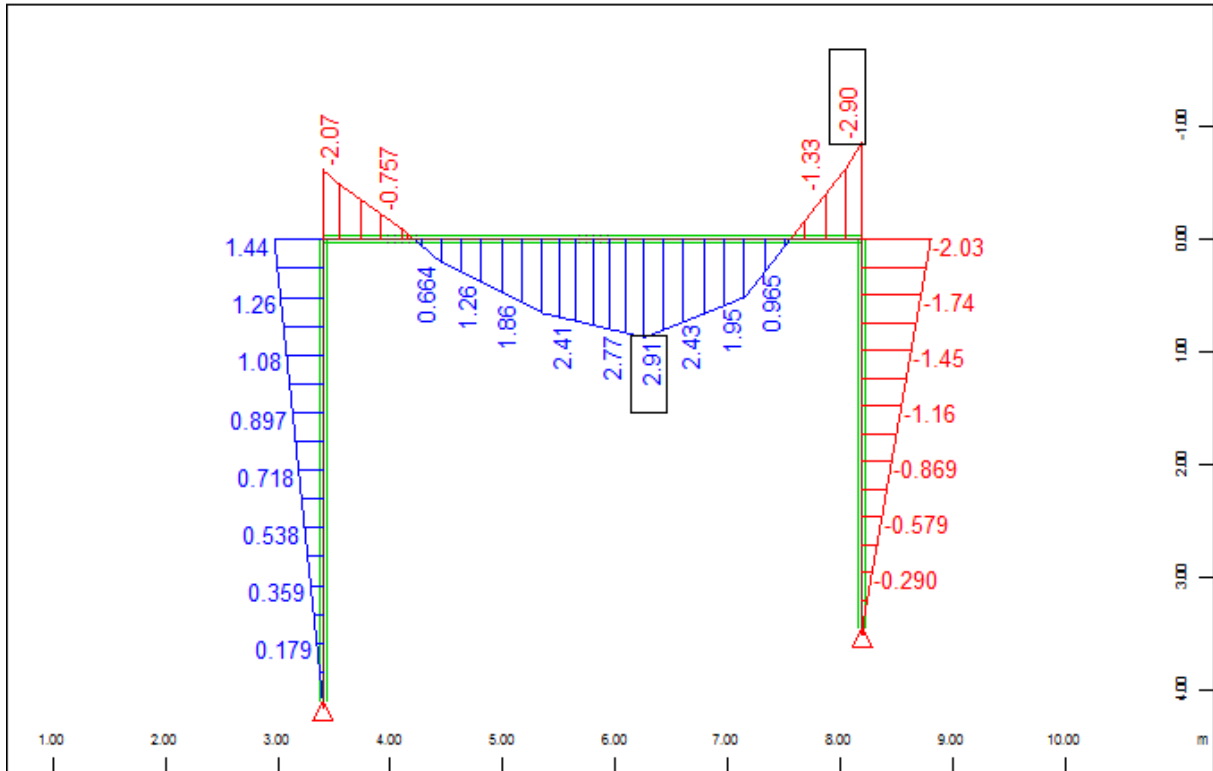
Sector of system Group 2
Beam Elements , Normal force Nx, Loadcase 1 lastna teza , 1 cm 3D = 2.00 kN (Min=-2.25)
(Max=-0.222)

M 1 : 52



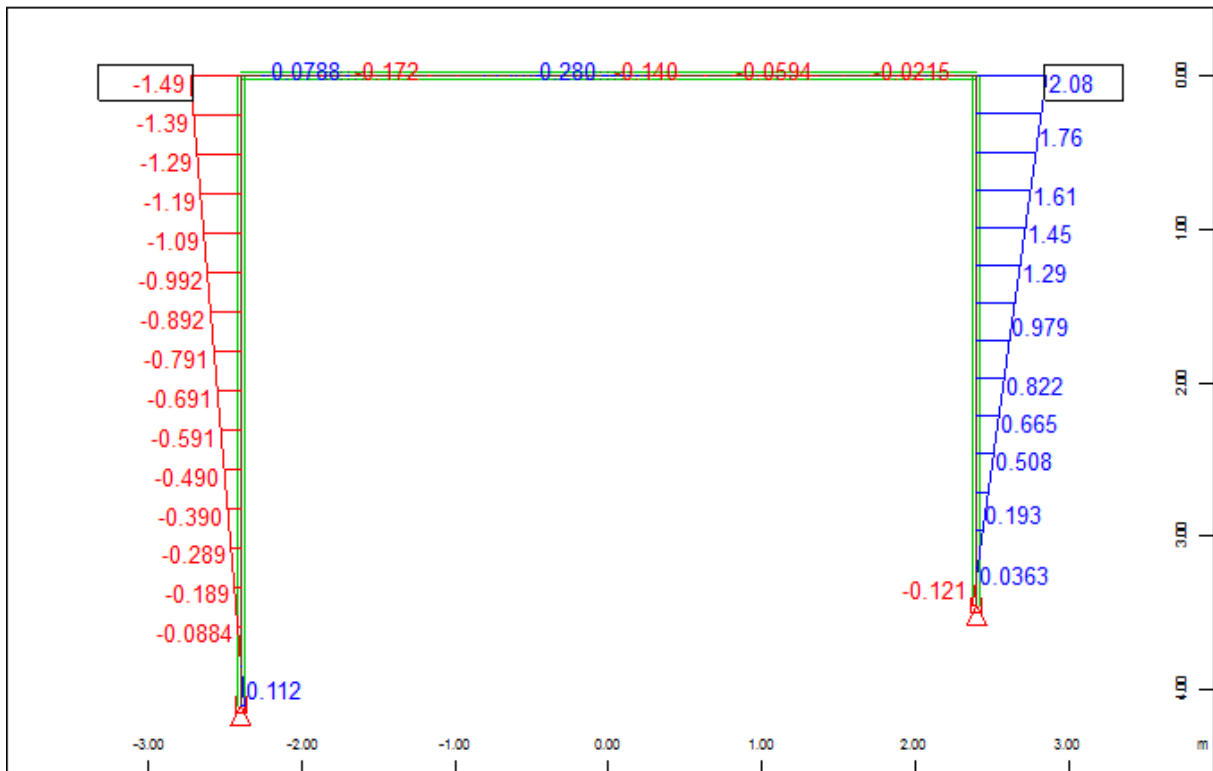
Sector of system Group 2
Nodes , Support force in global X, Loadcase 1 lastna teza , 1 cm 3D = 0.100 kN
(Min=-0.203) (Max=0.150) (total: -0.0529)

M 1 : 54



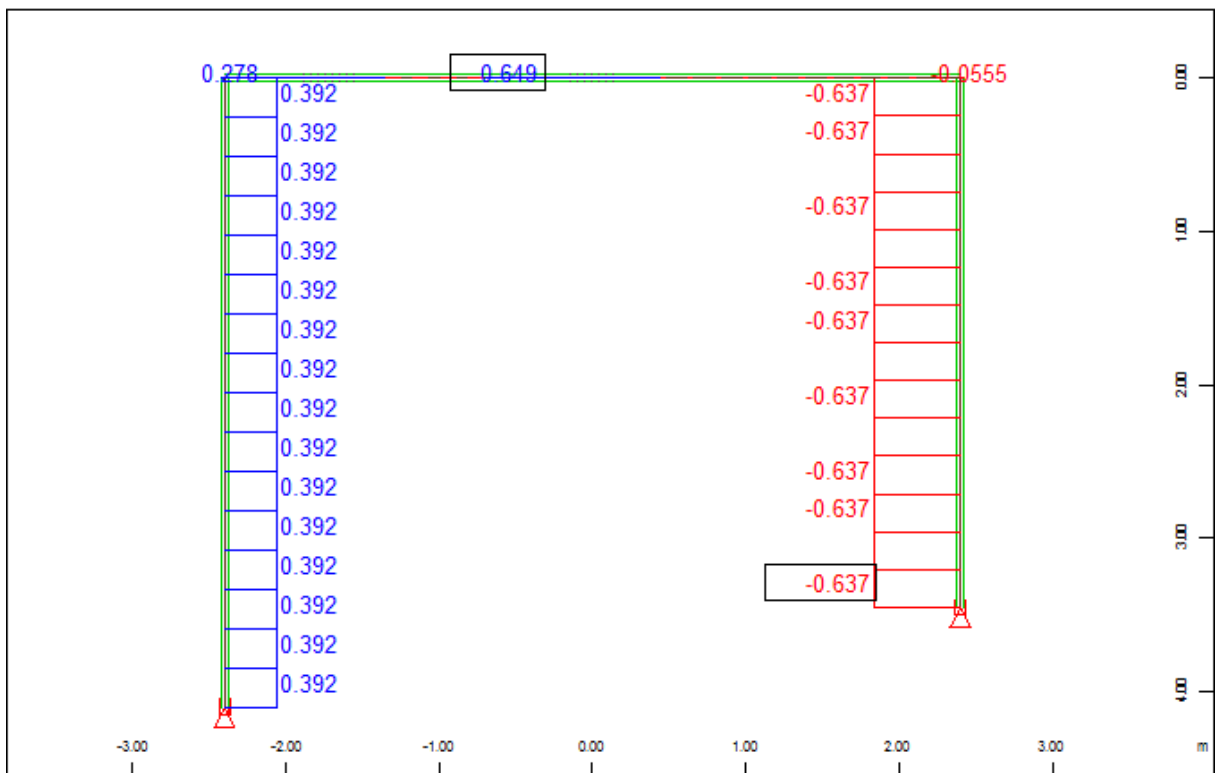
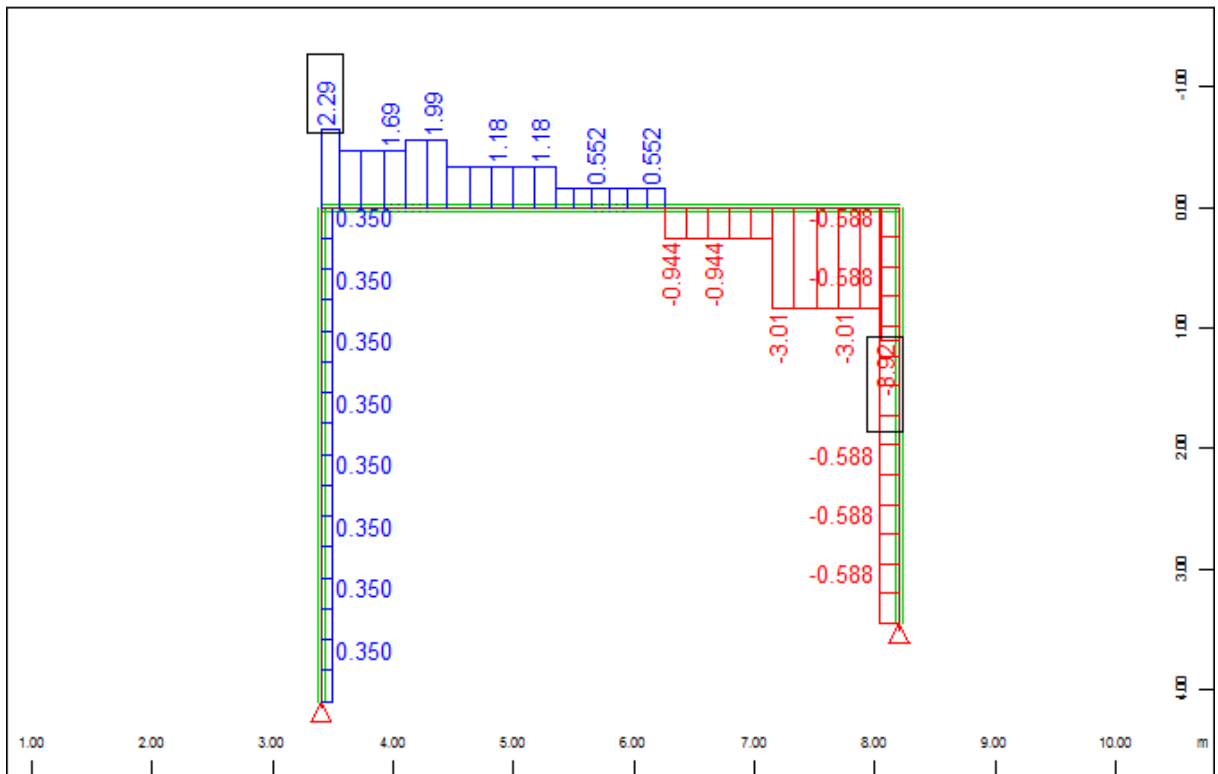
Sector of system Group 2
 Beam Elements , Bending moment My, Loadcase 2 STALNA , 1 cm 3D = 2.00 kNm (Min=-2.90)
 (Max=2.91)

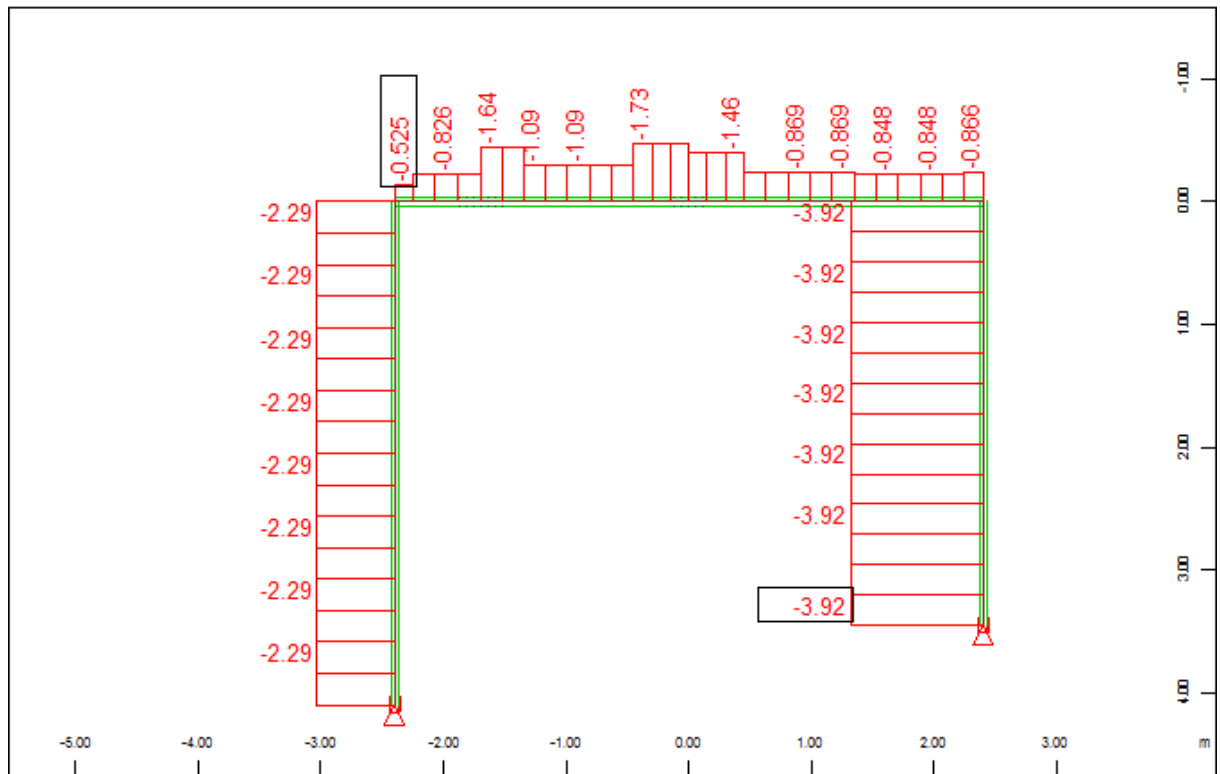
M 1 : 60



Sector of system Group 2
 Beam Elements , Bending moment Mz, Loadcase 2 STALNA , 1 cm 3D = 2.00 kNm (Min=-1.49)
 (Max=2.08)

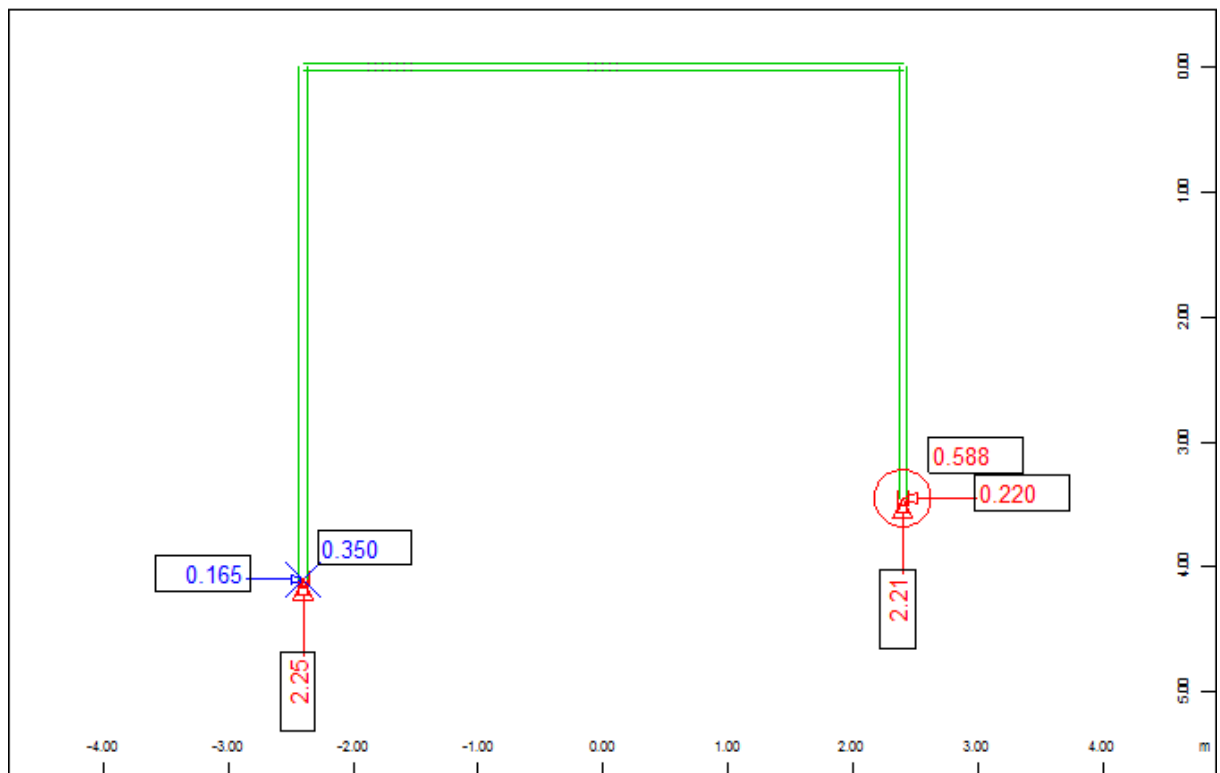
M 1 : 44





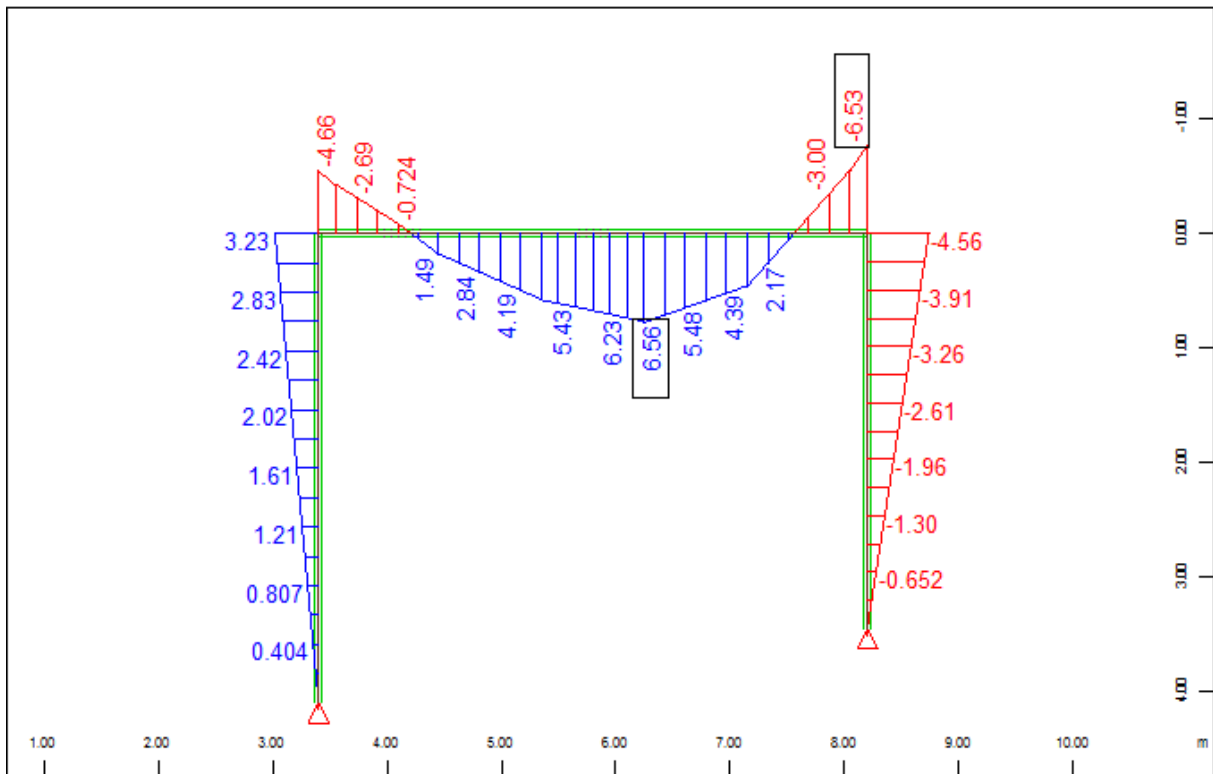
Sector of system Group 2
 Beam Elements , Normal force Nx, Loadcase 2 STALNA , 1 cm 3D = 2.00 kN (Min=-3.92)
 (Max=-0.525)

M 1 : 55



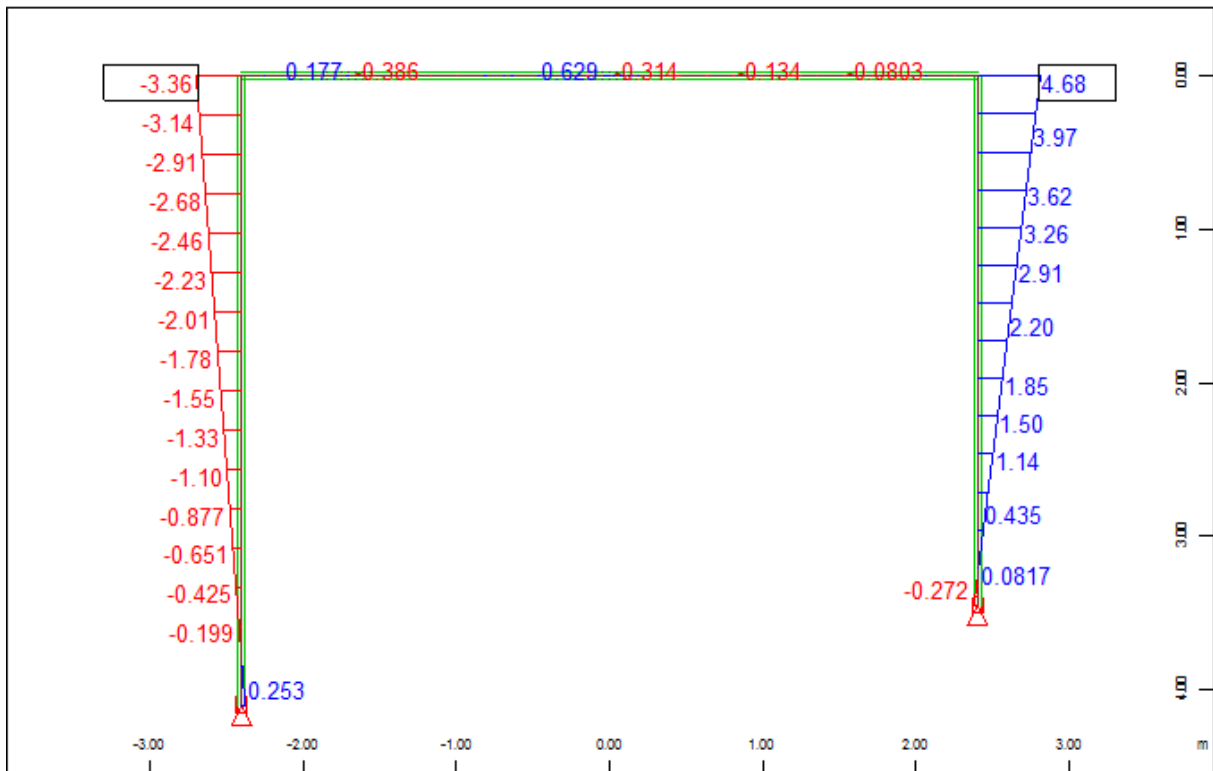
Sector of system Group 2
 Nodes , Support force in global X, Loadcase 2 STALNA , 1 cm 3D = 0.500 kN
 (Min=-0.588) (Max=0.350) (total: -0.238)

M 1 : 54



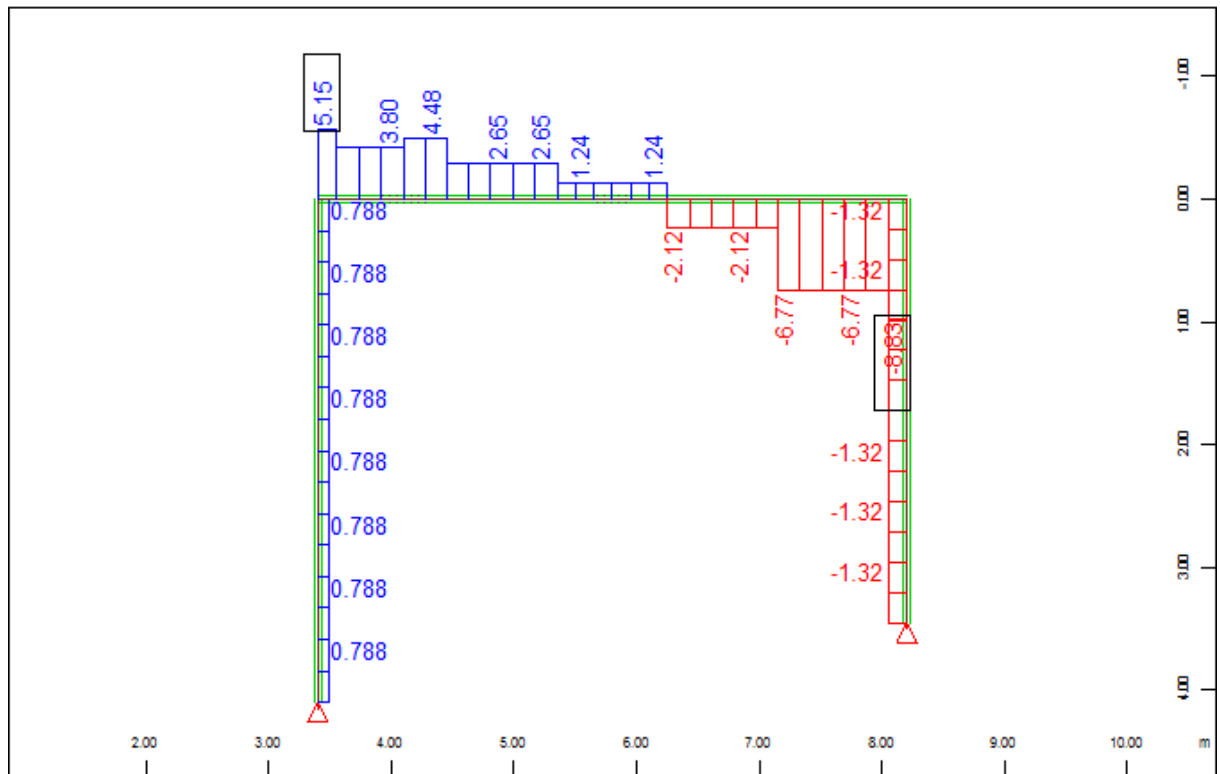
Sector of system Group 2
 Beam Elements , Bending moment M_y , Loadcase 3 SNEG , 1 cm 3D = 5.00 kNm (Min=-6.53)
 (Max=6.56)

M 1 : 59



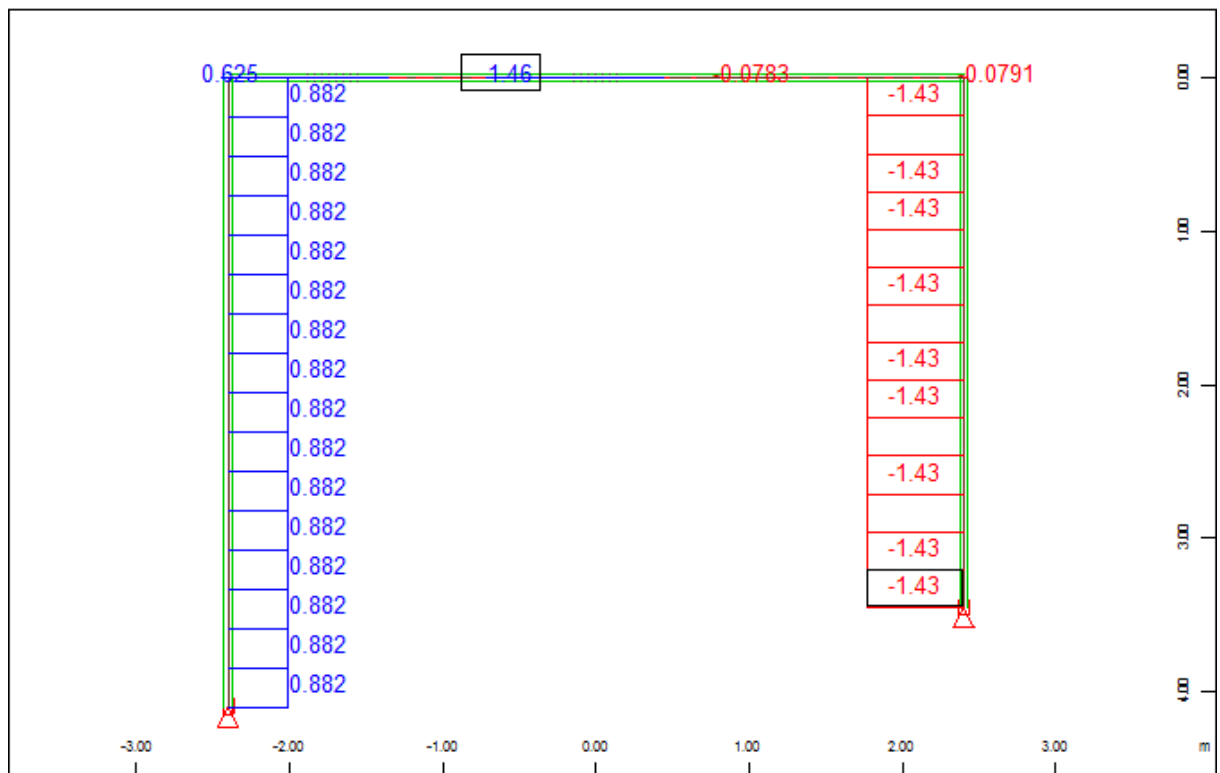
Sector of system Group 2
 Beam Elements , Bending moment M_z , Loadcase 3 SNEG , 1 cm 3D = 5.00 kNm (Min=-3.36)
 (Max=4.68)

M 1 : 44



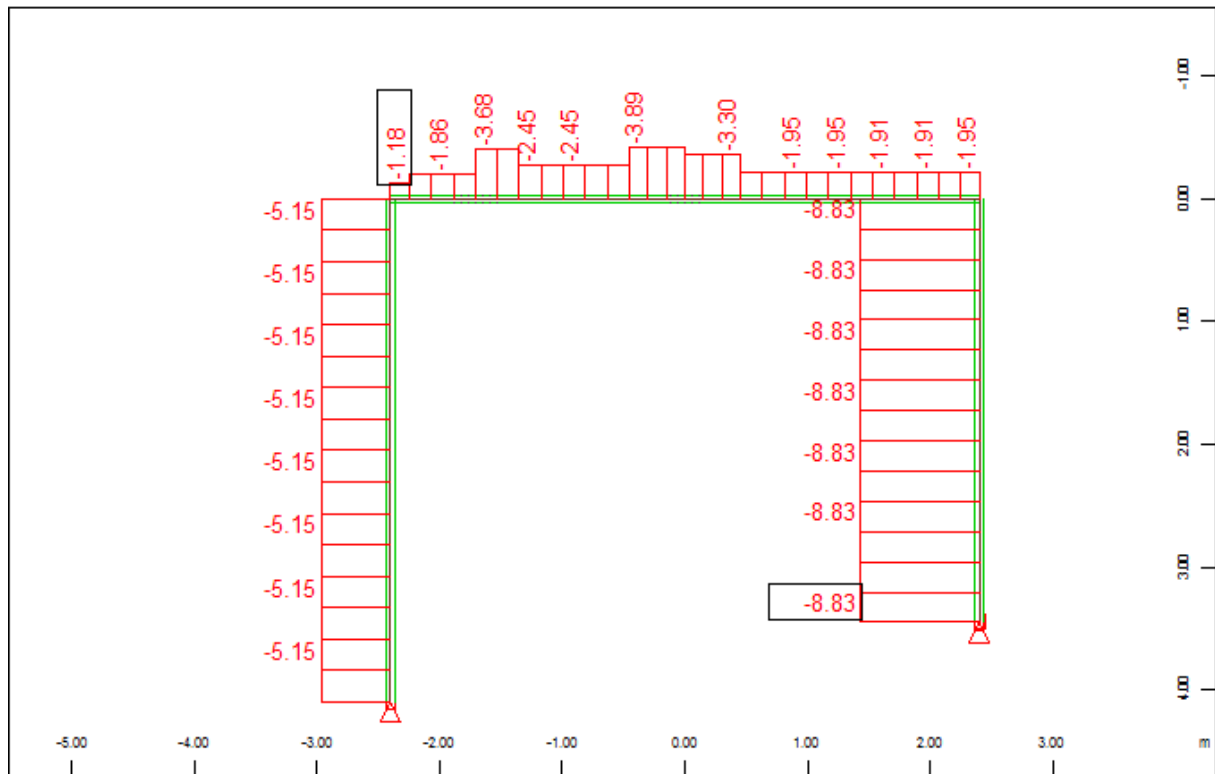
Sector of system Group 2
 Beam Elements , Shear force Vz, Loadcase 3 SNEG , 1 cm 3D = 5.00 kN (Min=-8.83) (Max=5.15)

M 1 : 55



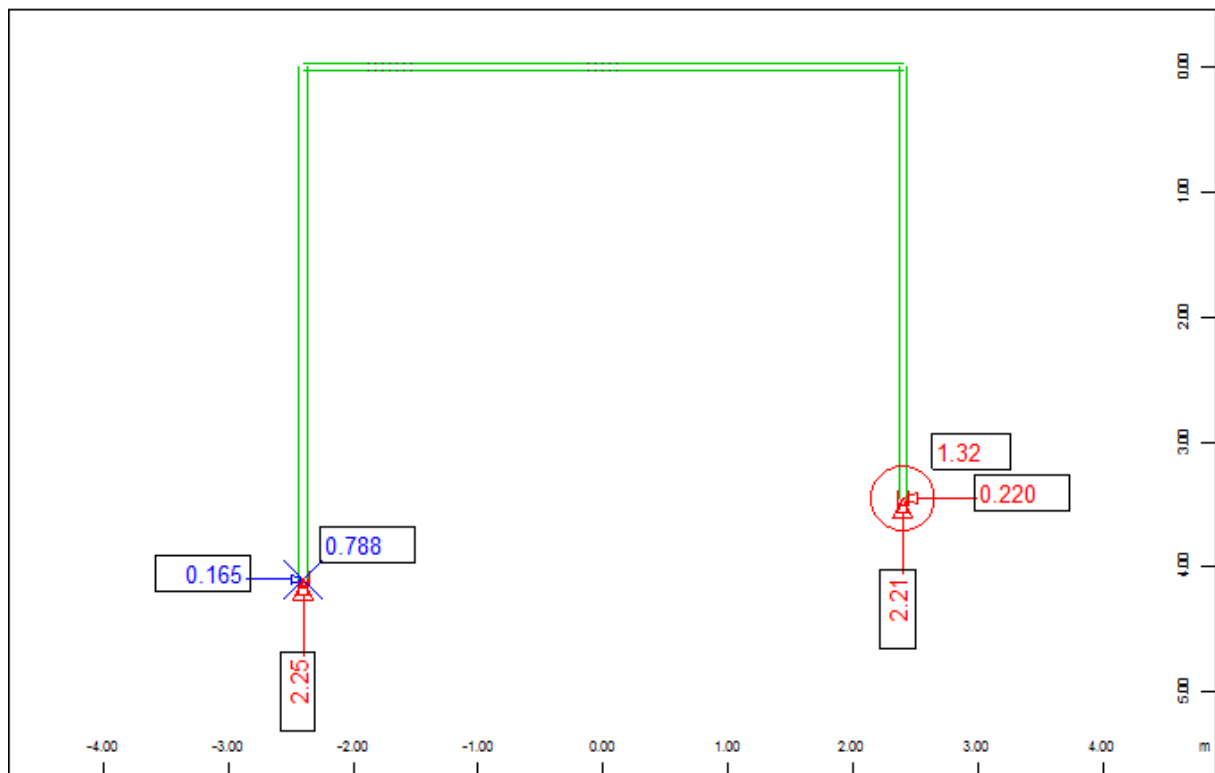
Sector of system Group 2
 Beam Elements , Shear force Vy, Loadcase 3 SNEG , 1 cm 3D = 1.00 kN (Min=-1.43) (Max=1.46)

M 1 : 44



Sector of system Group 2
 Beam Elements , Normal force Nx, Loadcase 3 SNEG , 1 cm 3D = 5.00 kN (Min=-8.83)
 (Max=-1.18)

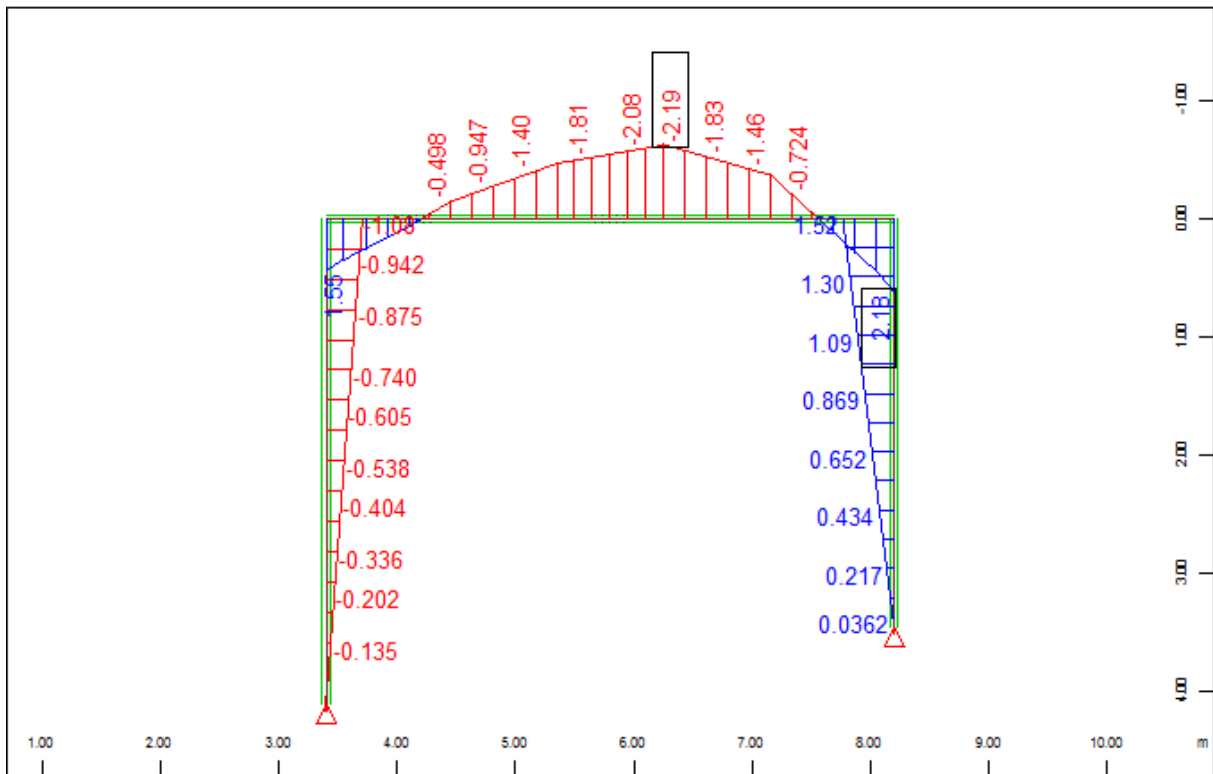
M 1 : 55



Sector of system Group 2
 Nodes , Support force in global X, Loadcase 3 SNEG , 1 cm 3D = 1.00 kN
 (Max=0.788) (total: -0.535)

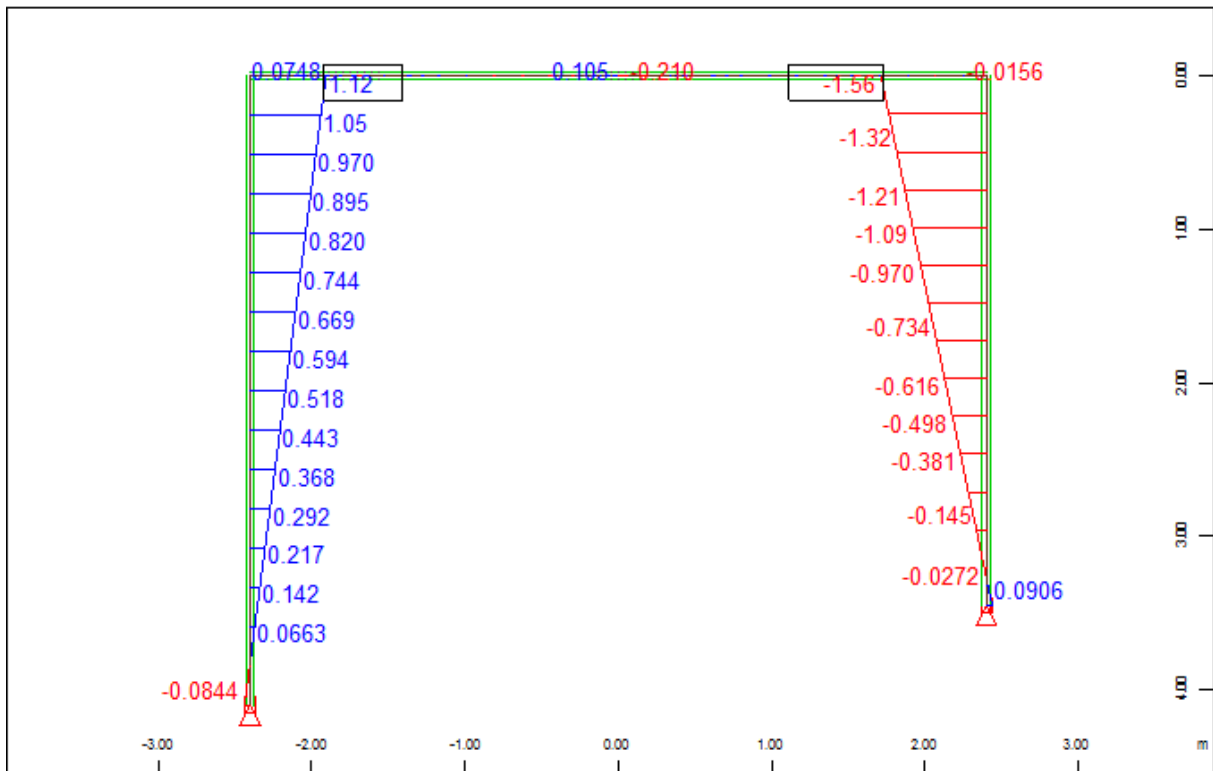
(Min=-1.32)

M 1 : 54



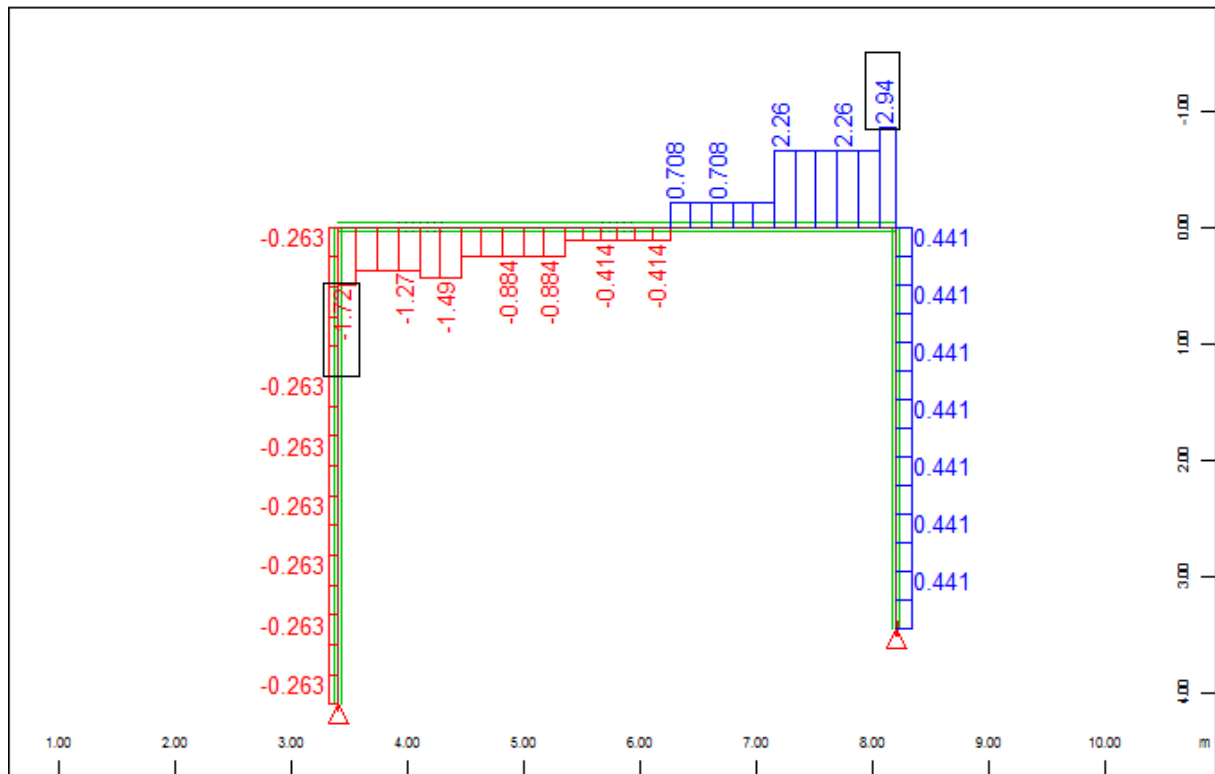
Sector of system Group 2
Beam Elements , Bending moment M_y , Loadcase 4 VETER srk_povpr. , 1 cm 3D = 2.00 kNm
(Min=-2.19) (Max=2.18)

M 1 : 57

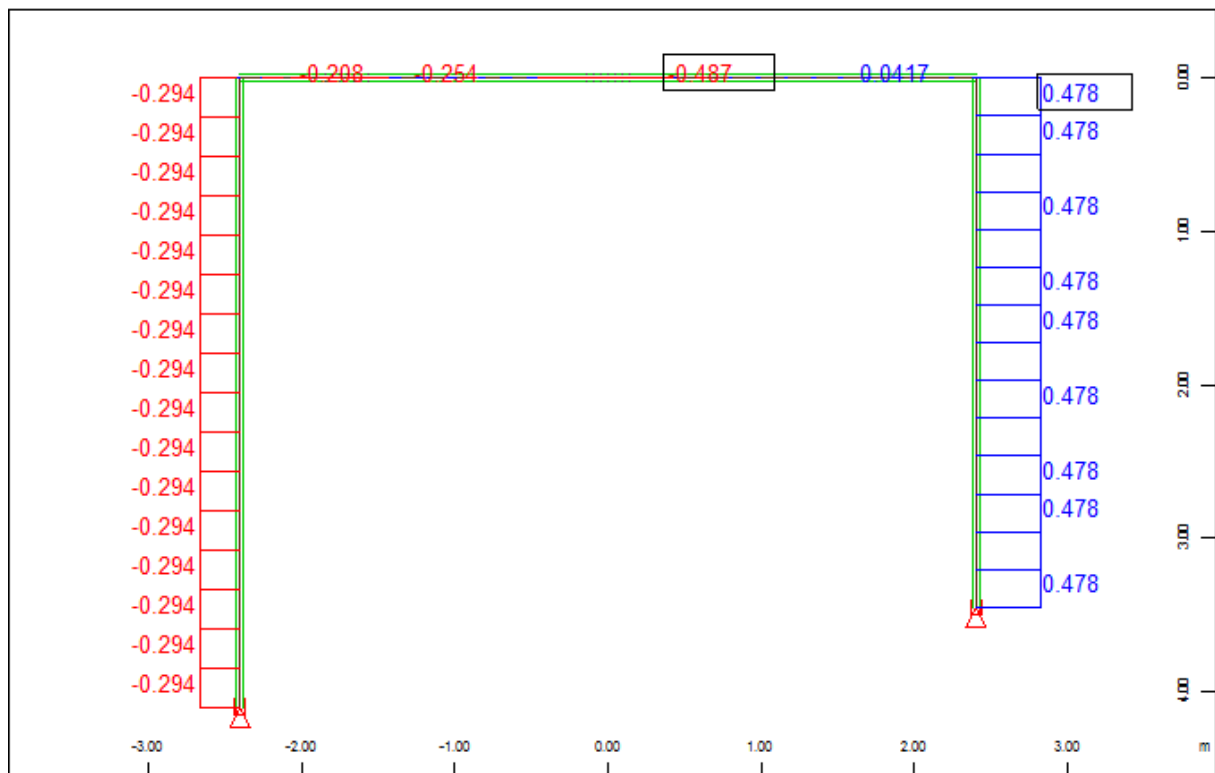


Sector of system Group 2
Beam Elements , Bending moment M_z , Loadcase 4 VETER srk_povpr. , 1 cm 3D = 1.00 kNm
(Min=-1.56) (Max=1.12)

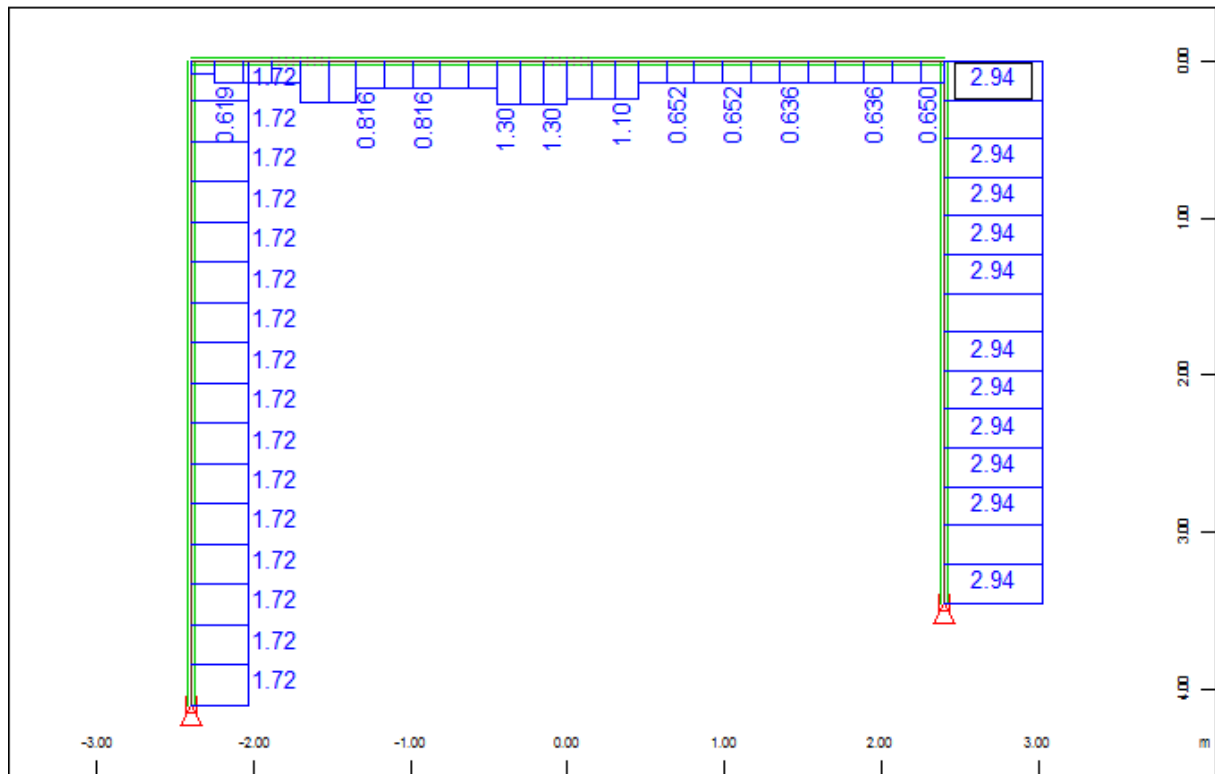
M 1 : 44



Sector of system Group 2
Beam Elements , Shear force Vz, Loadcase 4 VETER srk_povpr. , 1 cm 3D = 2.00 kN
(Min=-1.72) (Max=2.94) M 1 : 58

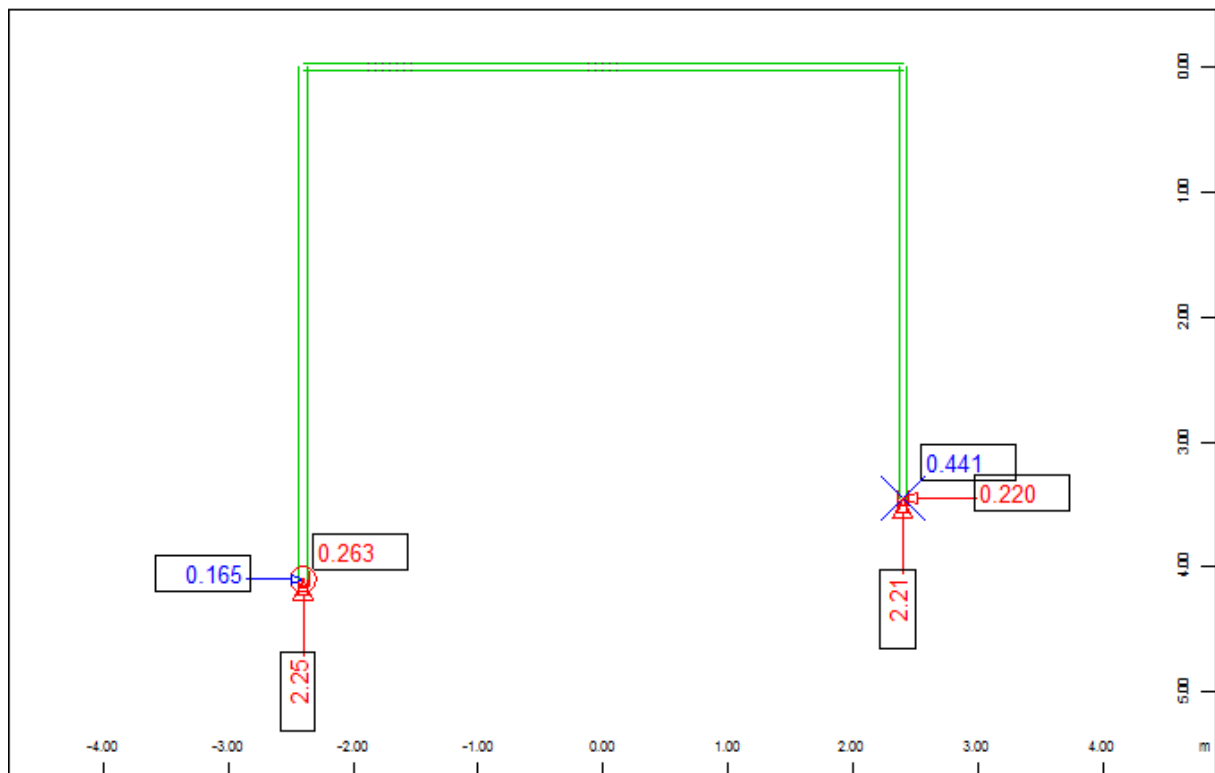


Sector of system Group 2
Beam Elements , Shear force Vy, Loadcase 4 VETER srk_povpr. , 1 cm 3D = 0.500 kN
(Min=-0.487) (Max=0.478) M 1 : 44



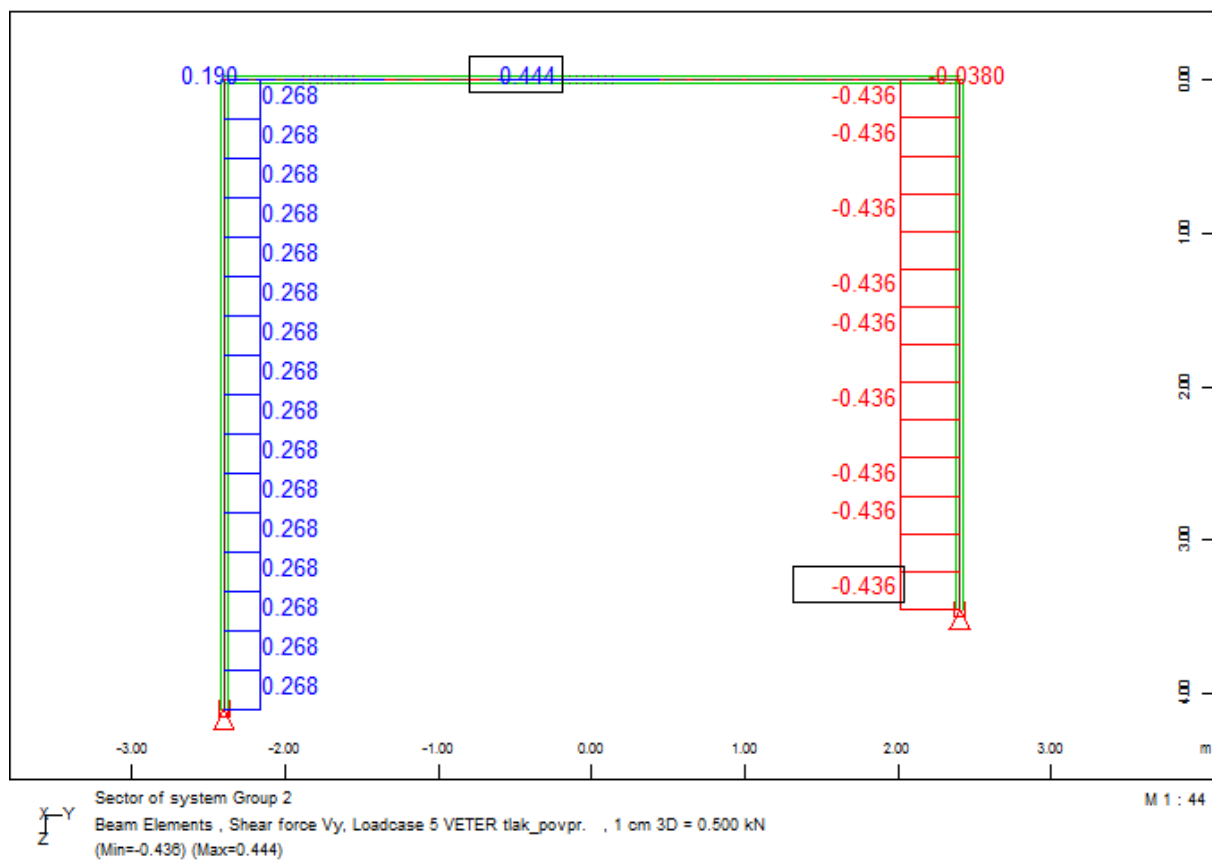
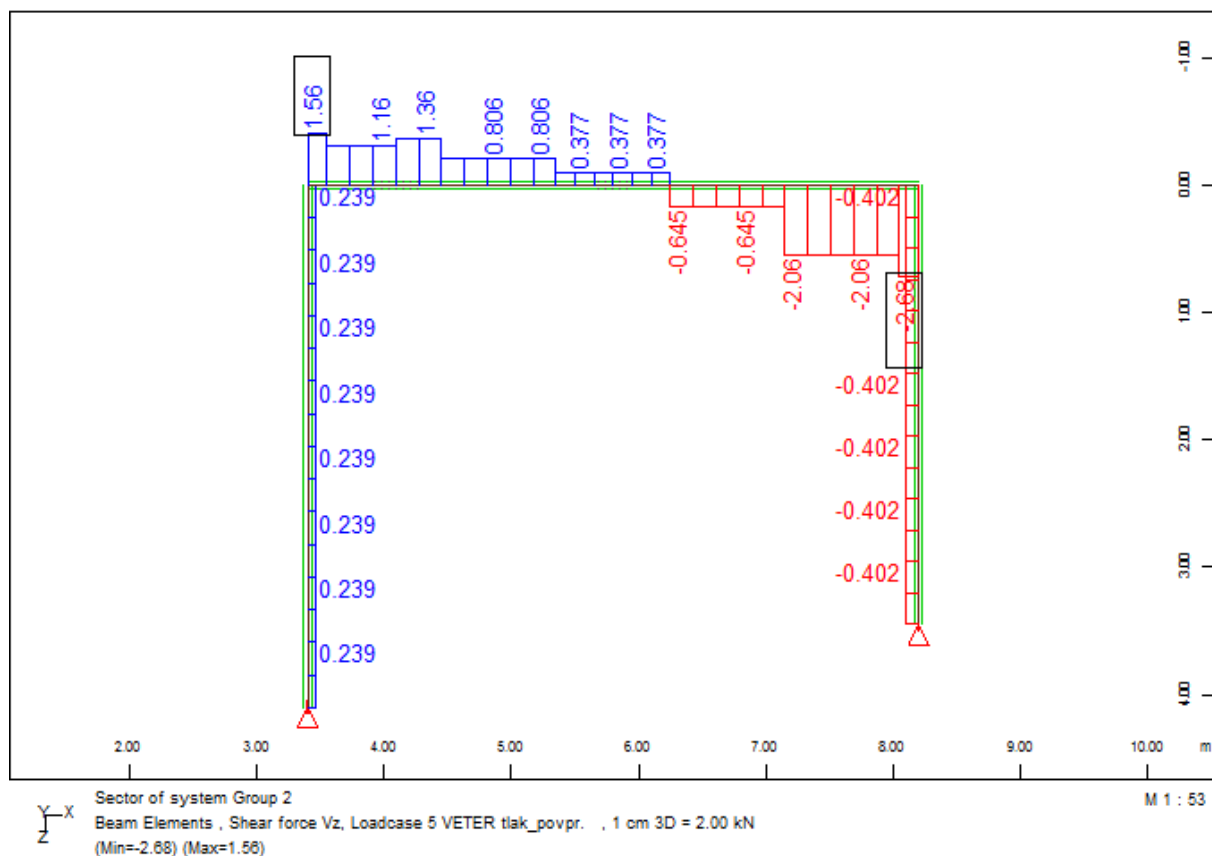
Sector of system Group 2
Beam Elements , Normal force Nx, Loadcase 4 VETER srk_povpr. , 1 cm 3D = 2.00 kN
(Max=2.94)

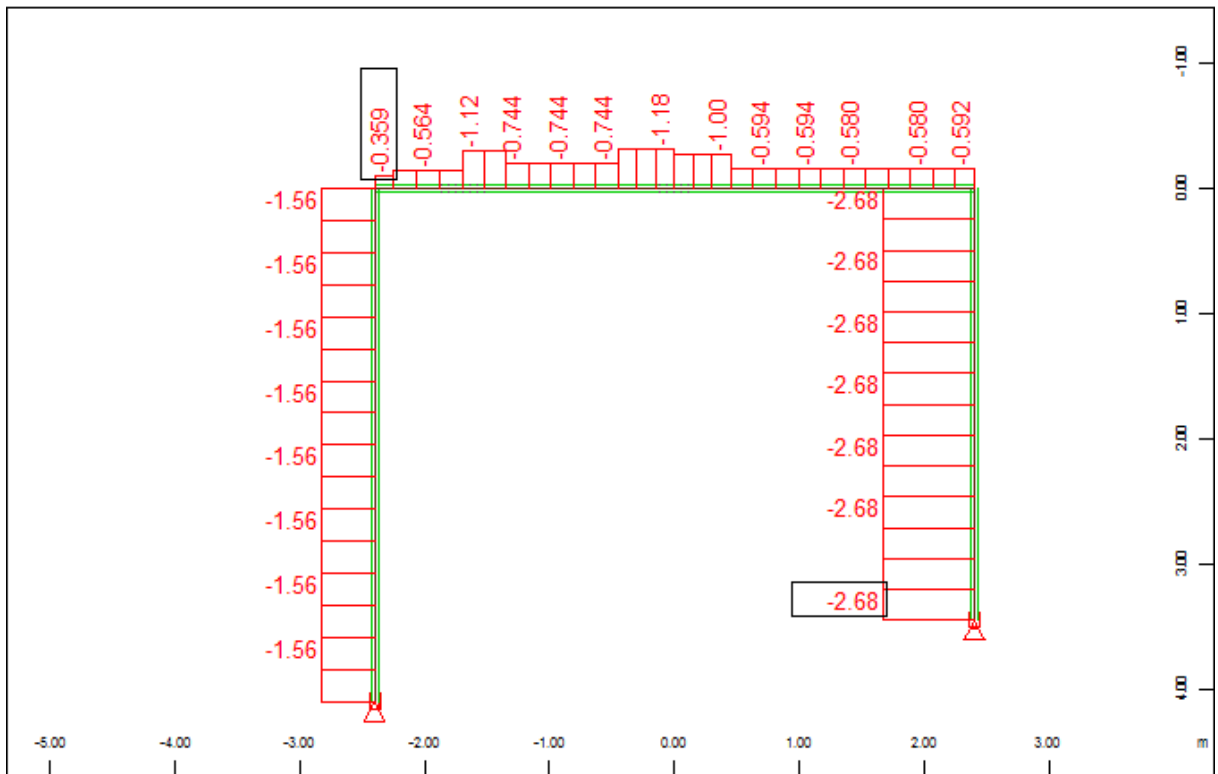
M 1 : 43



Sector of system Group 2
Nodes , Support force in global X, Loadcase 4 VETER srk_povpr. , 1 cm 3D = 0.500 kN
(Min=-0.283) (Max=0.441) (total: 0.178)

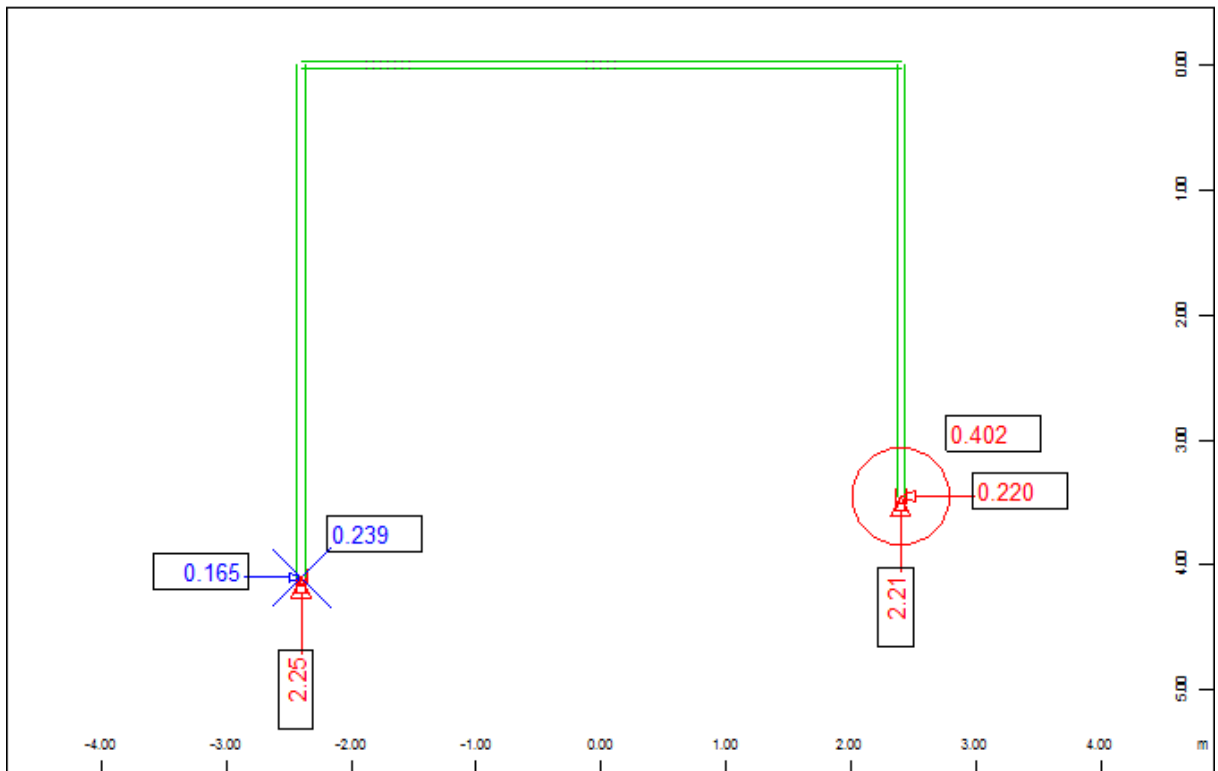
M 1 : 54





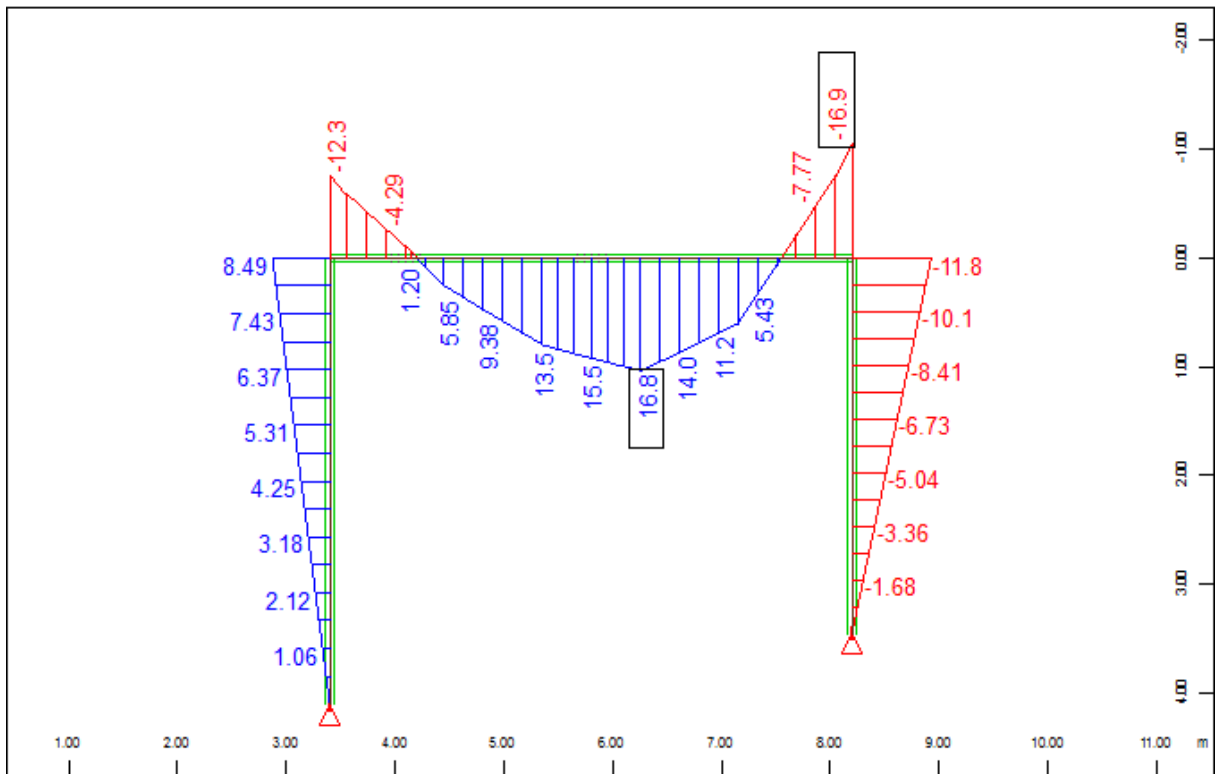
Sector of system Group 2
 Beam Elements , Normal force Nx, Loadcase 5 VETER tlak_povpr. , 1 cm 3D = 2.00 kN
 (Min=-2.68) (Max=-0.359)

M 1 : 54



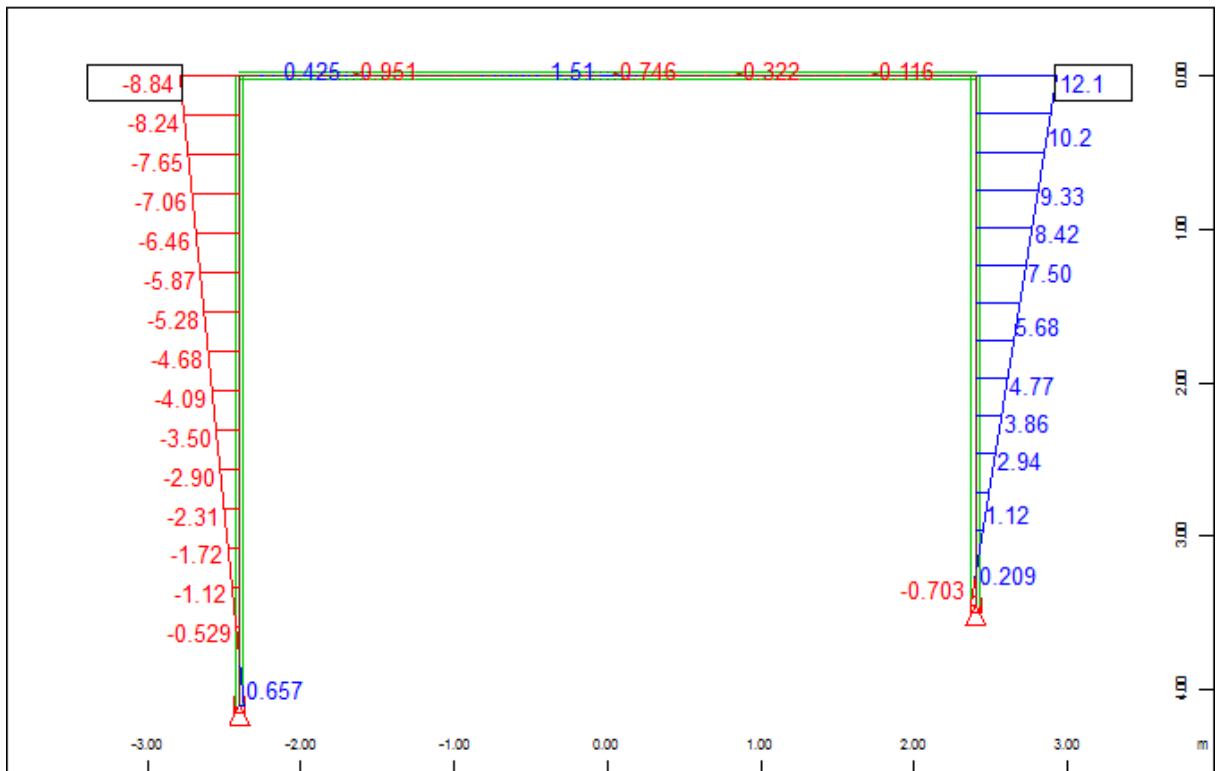
Sector of system Group 2
 Nodes , Support force in global X, Loadcase 5 VETER tlak_povpr. , 1 cm 3D = 0.200 kN
 (Min=-0.402) (Max=0.239) (total: -0.162)

M 1 : 54



Sector of system Group 2
 Beam Elements , Bending moment My, Loadcase 1001 $1.35*(1+2)+1.5*(3)+1.5*0.6*(5)$, 1 cm 3D
 = 10.0 kNm (Min=-16.9) (Max=16.8)

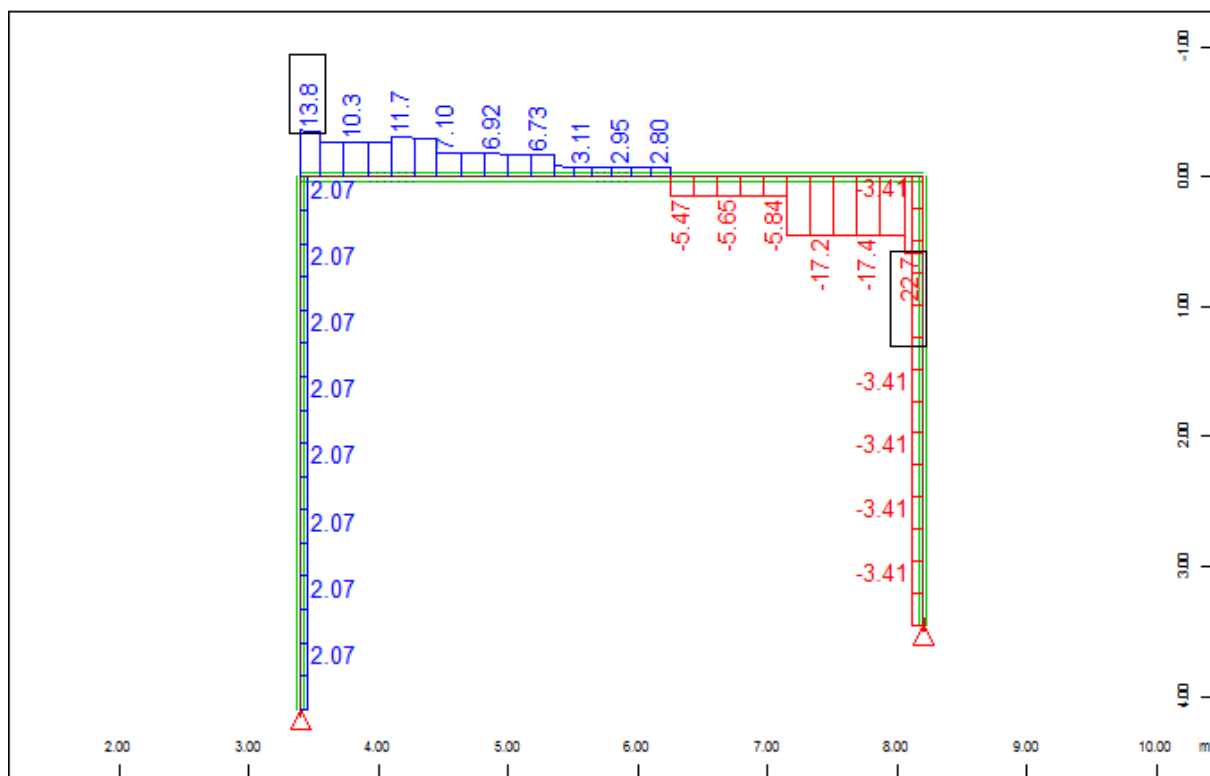
M 1 : 62



Sector of system Group 2
 Beam Elements , Bending moment Mz, Loadcase 1001 $1.35*(1+2)+1.5*(3)+1.5*0.6*(5)$, 1 cm 3D
 = 10.0 kNm (Min=-8.84) (Max=12.1)

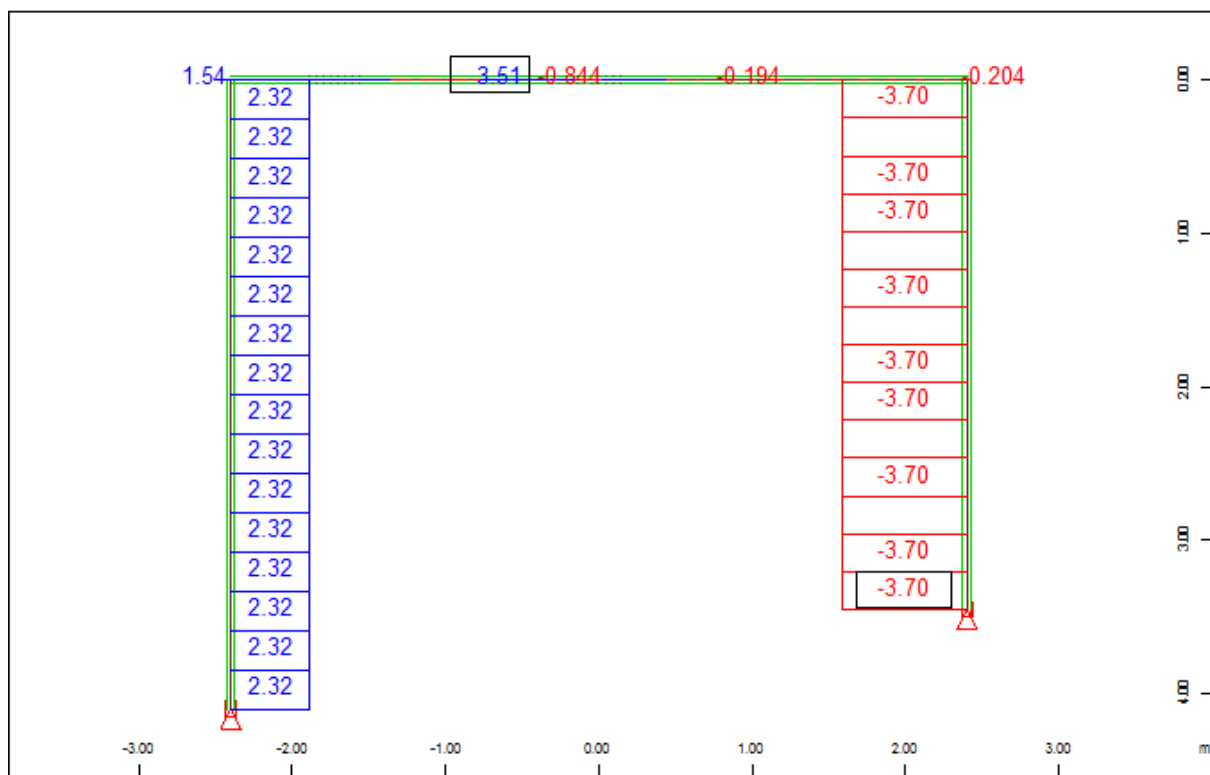
M 1 : 44

UROŠ ŽVAN s.p., ZRKOVSKA 75, 2000 MARIBOR



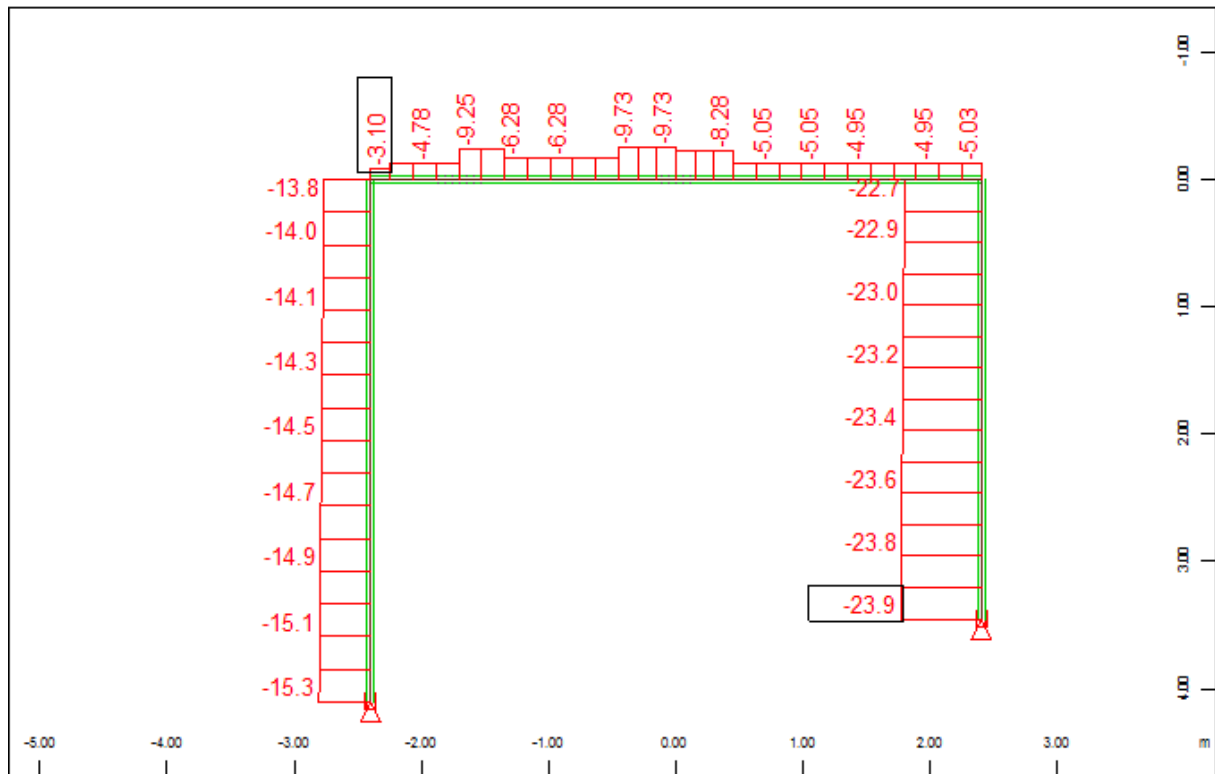
Sector of system Group 2
Beam Elements , Shear force Vz, Loadcase 1001 1.35*(1+2)+1.5*(3)+1.5*0.6*(5) , 1 cm 3D =
20.0 kN (Min=-22.7) (Max=13.8)

M 1 : 52



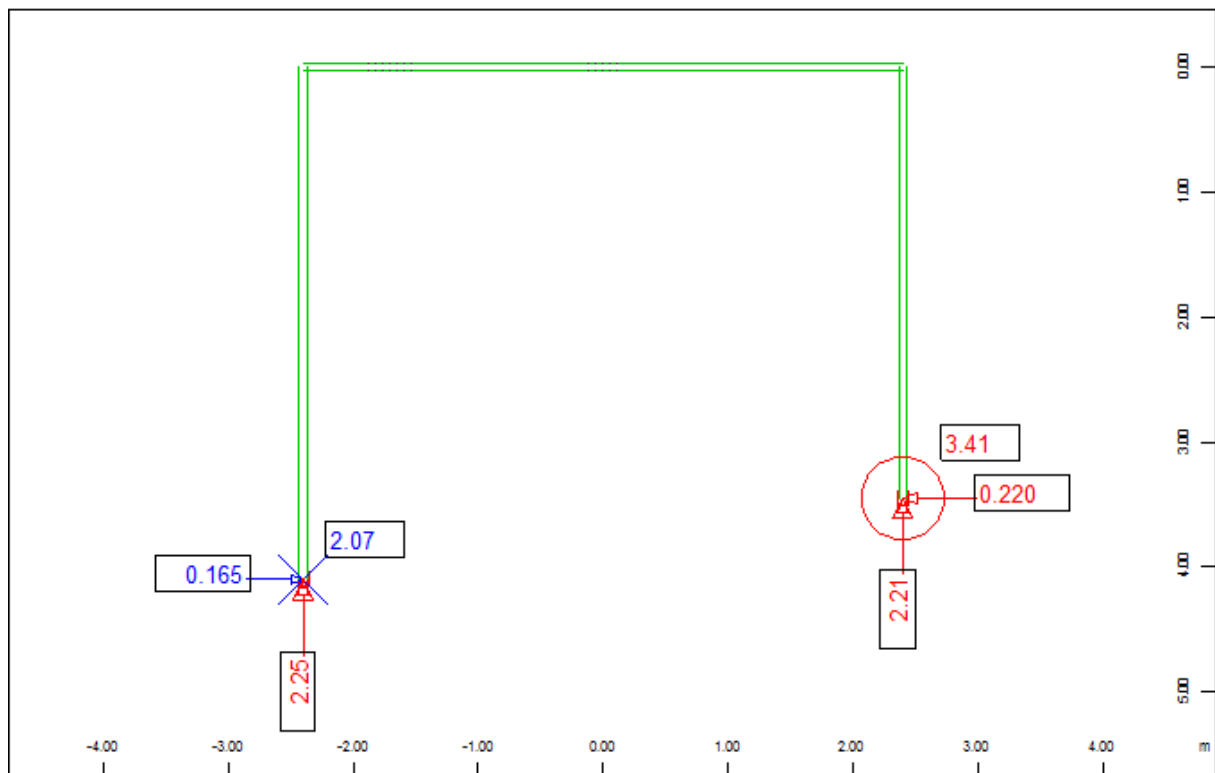
Sector of system Group 2
Beam Elements , Shear force Vy, Loadcase 1001 1.35*(1+2)+1.5*(3)+1.5*0.6*(5) , 1 cm 3D =
2.00 kN (Min=-3.70) (Max=3.51)

M 1 : 44



Sector of system Group 2
 Beam Elements , Normal force Nx, Loadcase 1001 1.35*(1+2)+1.5*(3)*1.5*0.8*(5) , 1 cm 3D =
 20.0 kN (Min=-23.9) (Max=-3.10)

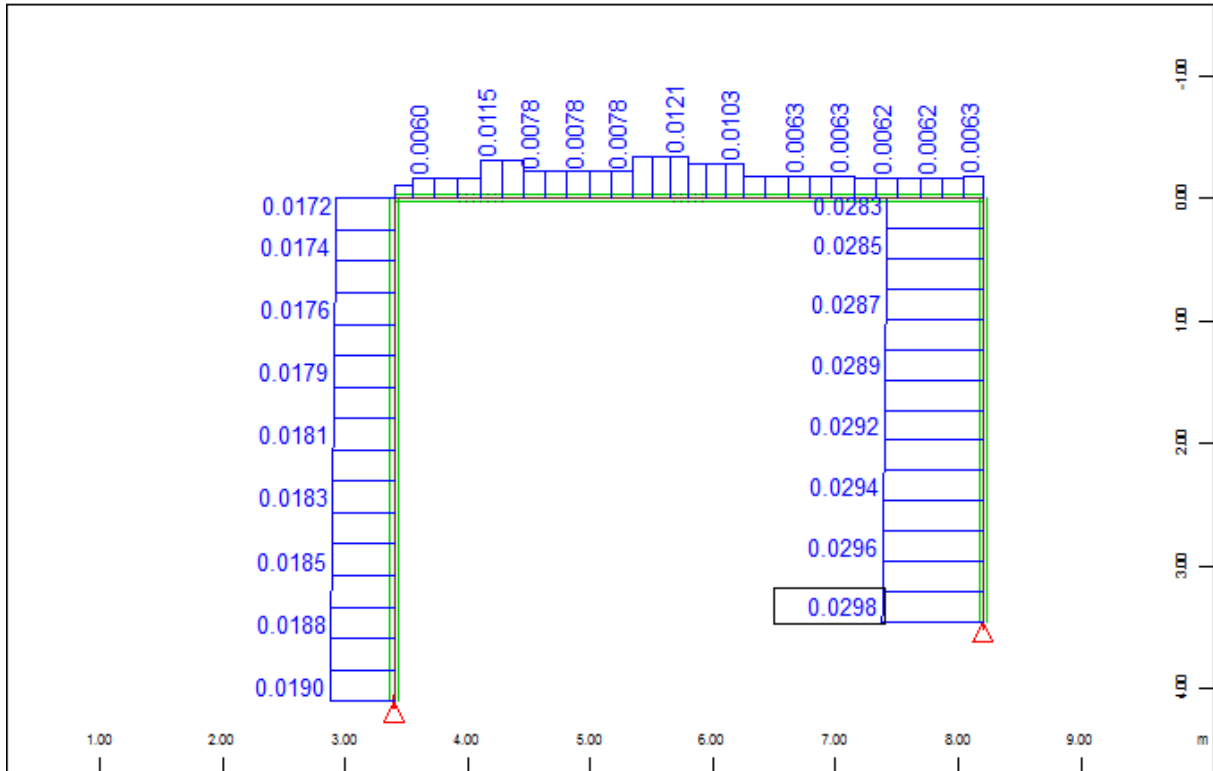
M 1 : 53



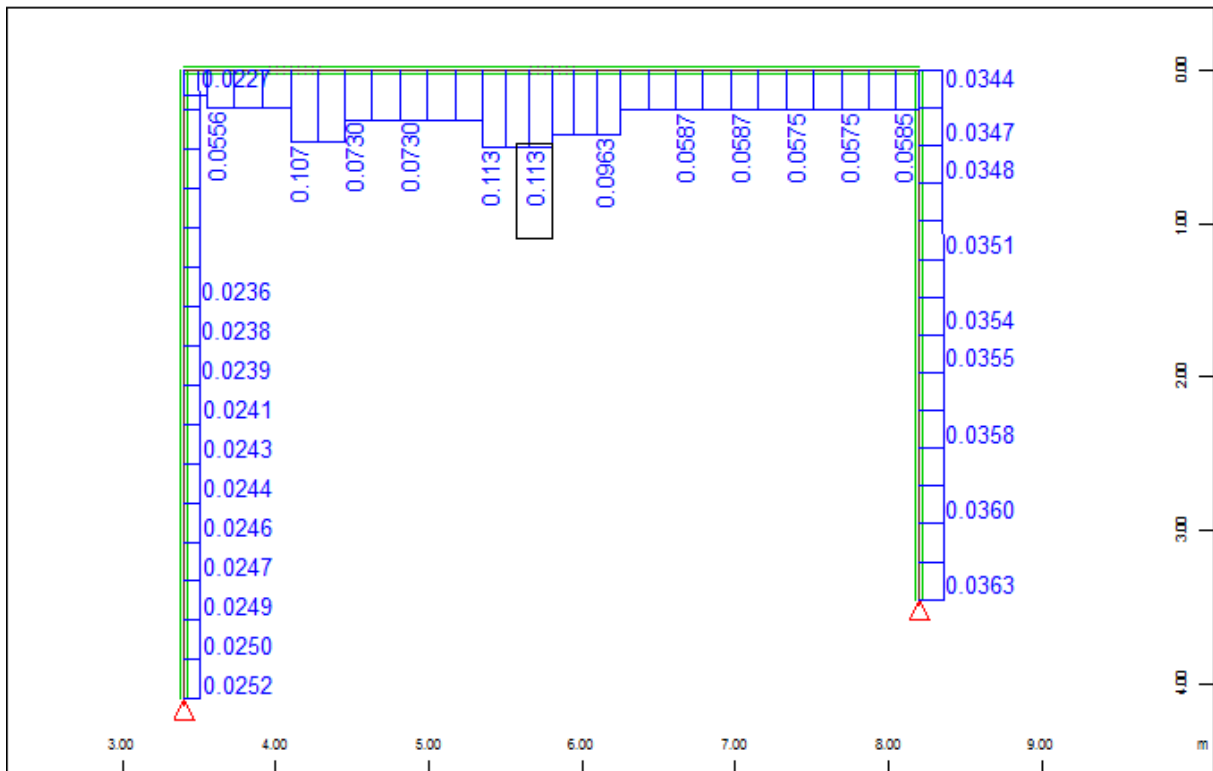
Sector of system Group 2
 Nodes , Support force in global X, Loadcase 1001 1.35*(1+2)+1.5*(3)*1.5*0.8*(5) , 1 cm 3D
 = 2.00 kN \leftarrow (Min=-3.41) (Max=2.07) (total: -1.34)

M 1 : 54

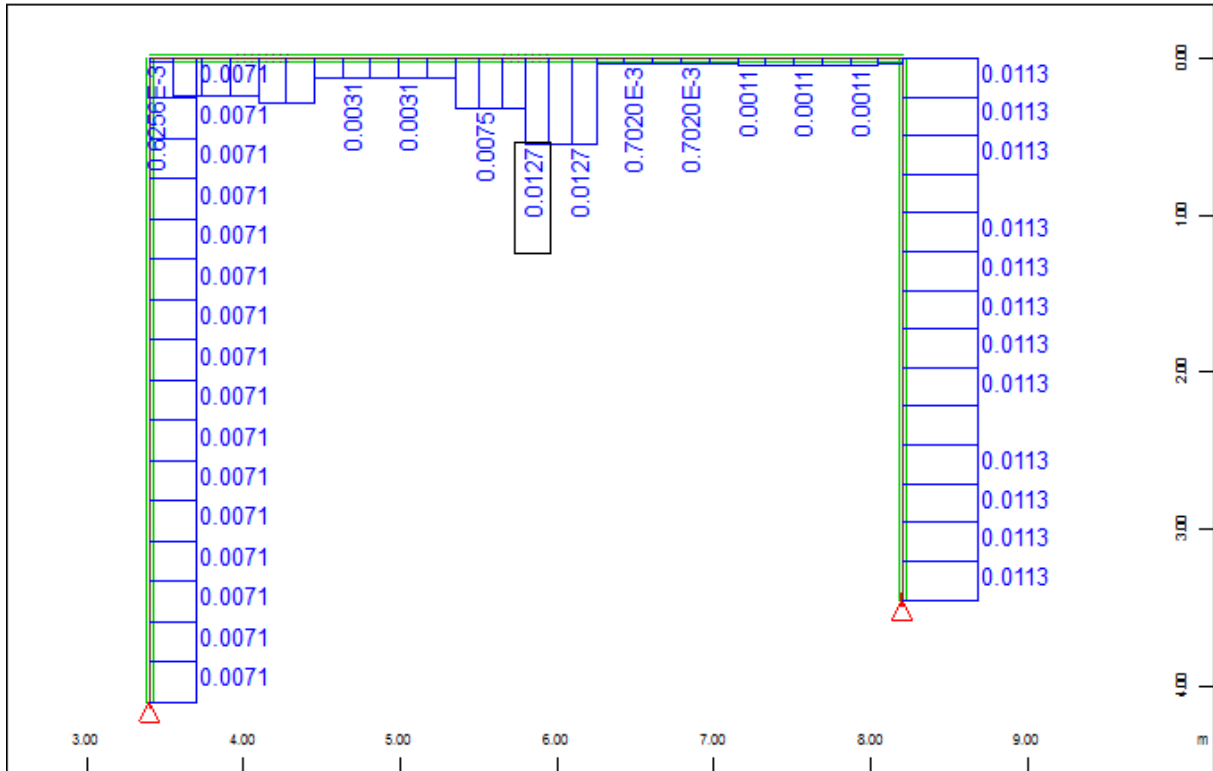
ODPORNOST PREREZA-JEKLENI DEL



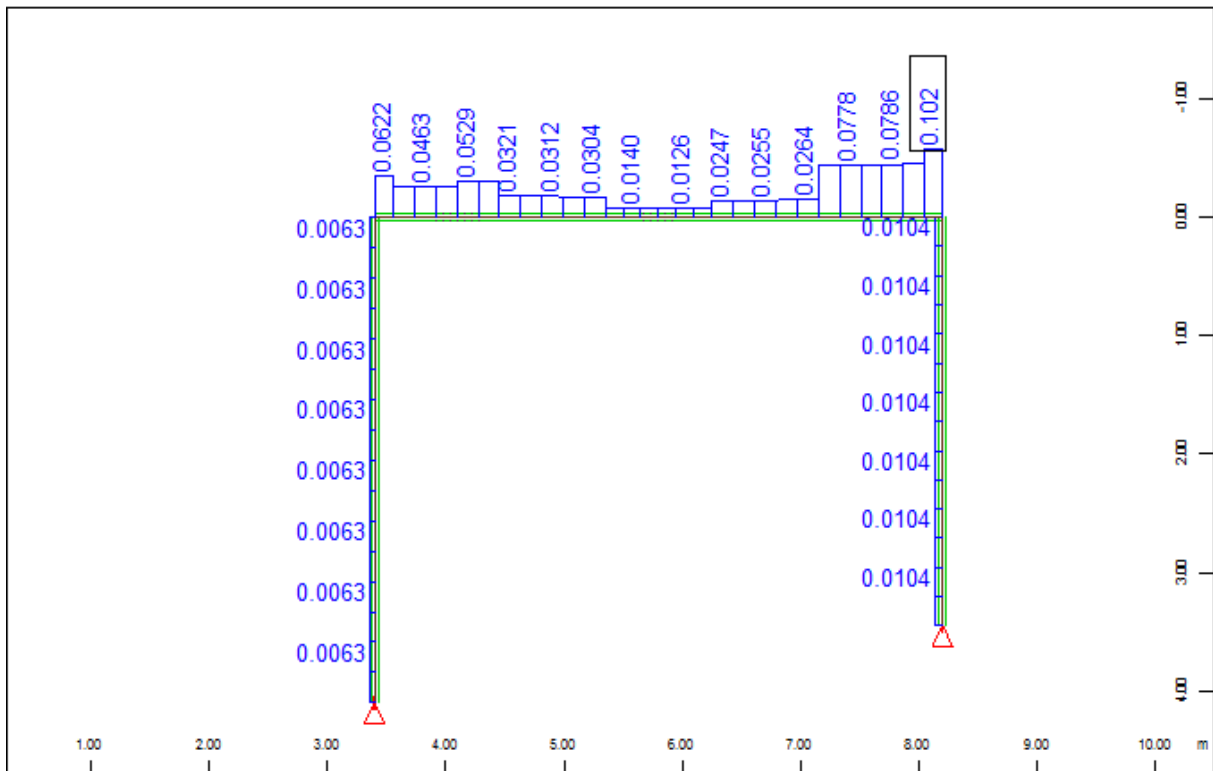
Sector of system Group 2
 Beam Elements , Utilisation level N Normal force (EN 1993-1-1, 6.2.3, Eq. 6.5 or 6.9),
 Design Case 2129 $1.35*(G)+1.5*(S)+1.5*0.6*(W)$, 1 cm 3D = 0.0200 (Max=0.0298)
 M 1 : 55



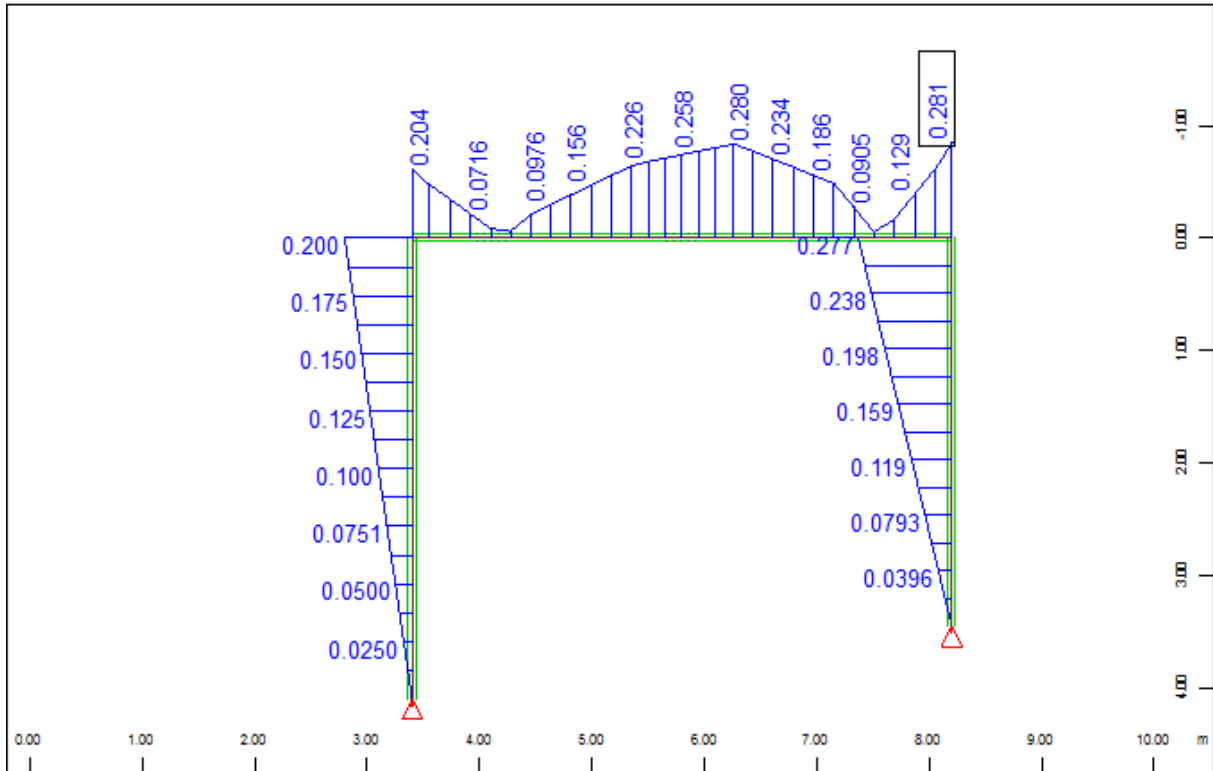
Sector of system Group 2
 Beam Elements , Utilisation level Decisive - Buckling Resistance, Design Case 2129
 $1.35*(G)+1.5*(S)+1.5*0.6*(W)$, 1 cm 3D = 0.100 (Max=0.113)
 M 1 : 44



Sector of system Group 2
 Beam Elements , Utilisation level Vy Shear force (EN 1993-1-1, 6.2.6, Eq. 6.17), Design
 Case 2129 1.35*(G)+1.5*(S)+1.5*0.8*(W) , 1 cm 3D = 0.0100 (Max=0.0127)
 M 1 : 43

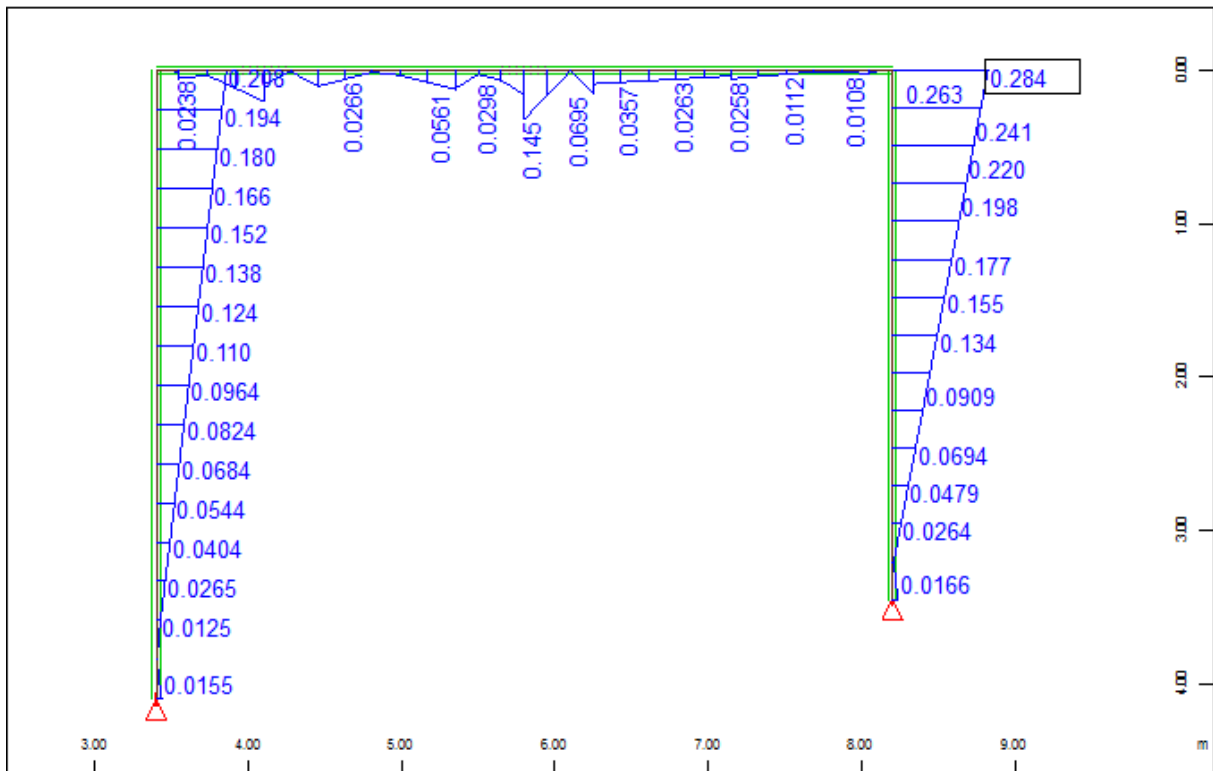


Sector of system Group 2
 Beam Elements , Utilisation level Vz Shear force (EN 1993-1-1, 6.2.6, Eq. 6.17), Design
 Case 2129 1.35*(G)+1.5*(S)+1.5*0.8*(W) , 1 cm 3D = 0.100 (Max=0.102)
 M 1 : 57



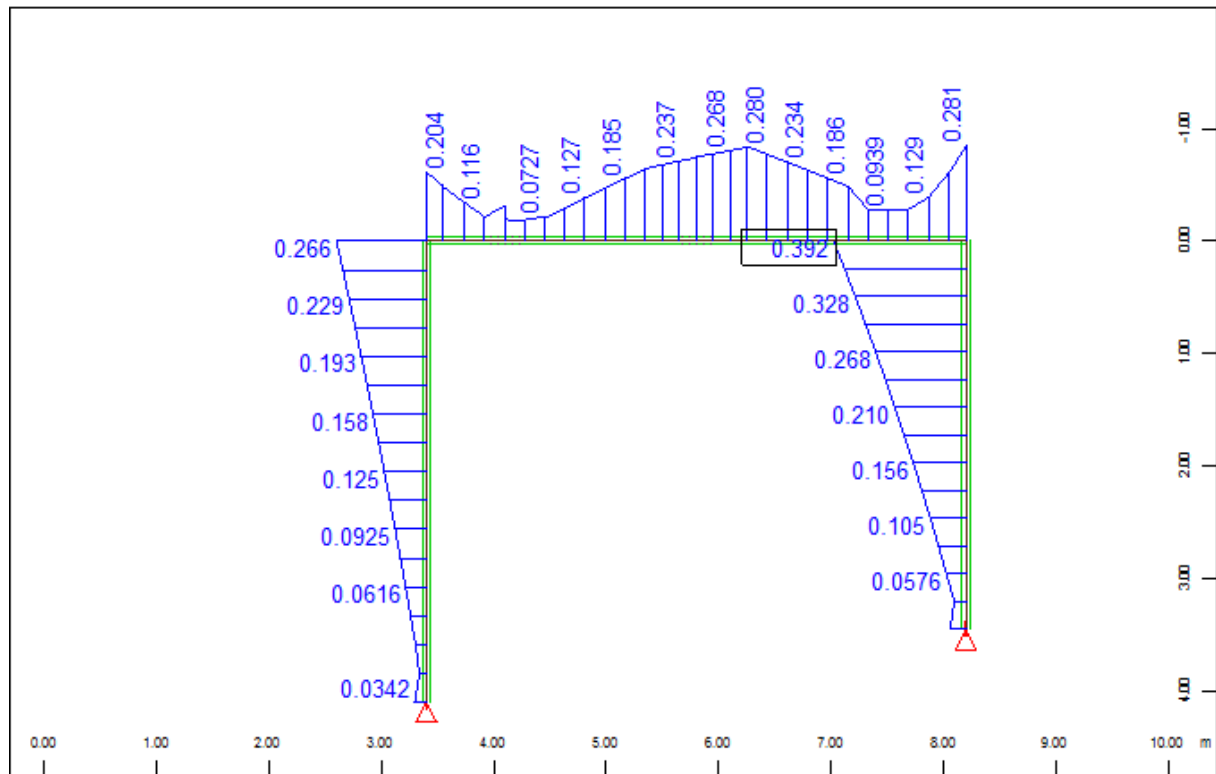
Sector of system Group 2
Beam Elements , Utilisation level My Bending (EN 1993-1-1, 6.2.5, Eq. 6.12), Design Case
2129 1.35*(G)+1.5*(S)+1.5*0.6*(W) , 1 cm 3D = 0.200 (Max=0.281)

M 1 : 60



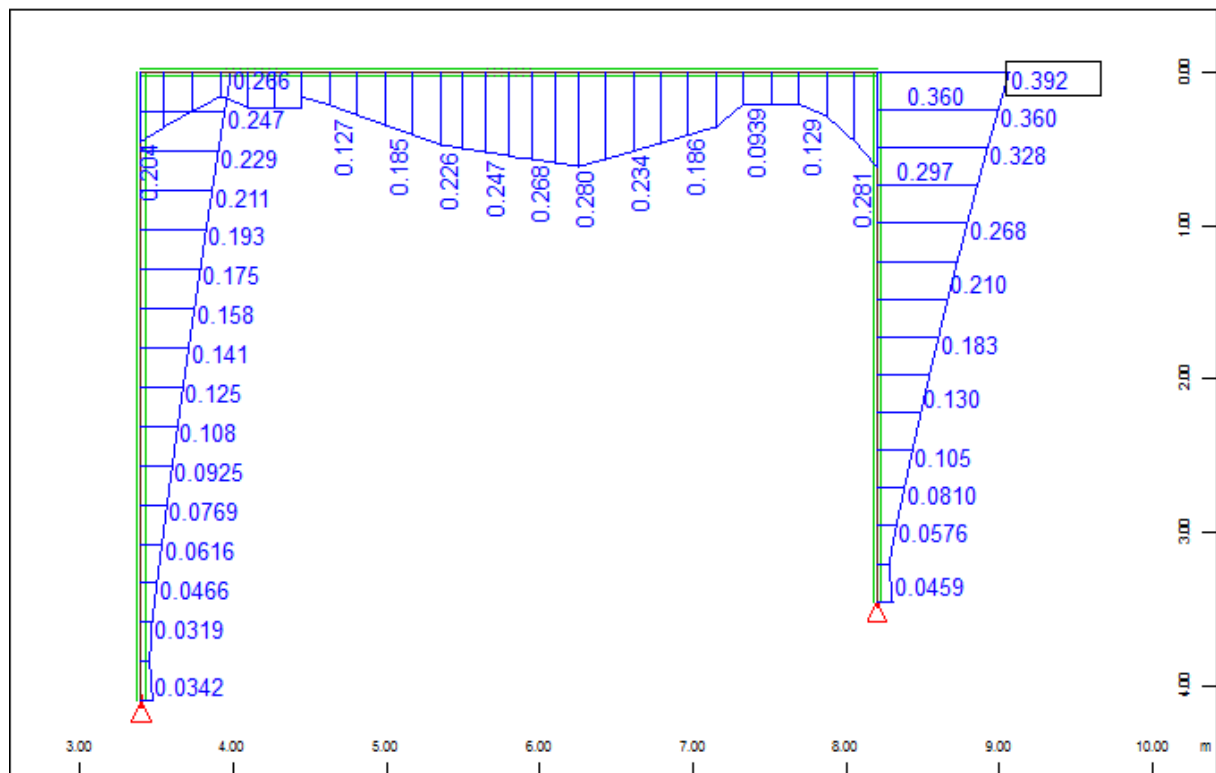
Sector of system Group 2
Beam Elements , Utilisation level Mz Bending (EN 1993-1-1, 6.2.5, Eq. 6.12), Design Case
2129 1.35*(G)+1.5*(S)+1.5*0.6*(W) , 1 cm 3D = 0.200 (Max=0.284)

M 1 : 44



Sector of system Group 2
Beam Elements , Utilisation level Decisive - Resistance of Cross Section, Design Case 2129
 $1.35*(G)+1.5*(S)+1.5*0.6*(W)$, 1 cm 3D = 0.200 (Max=0.392)

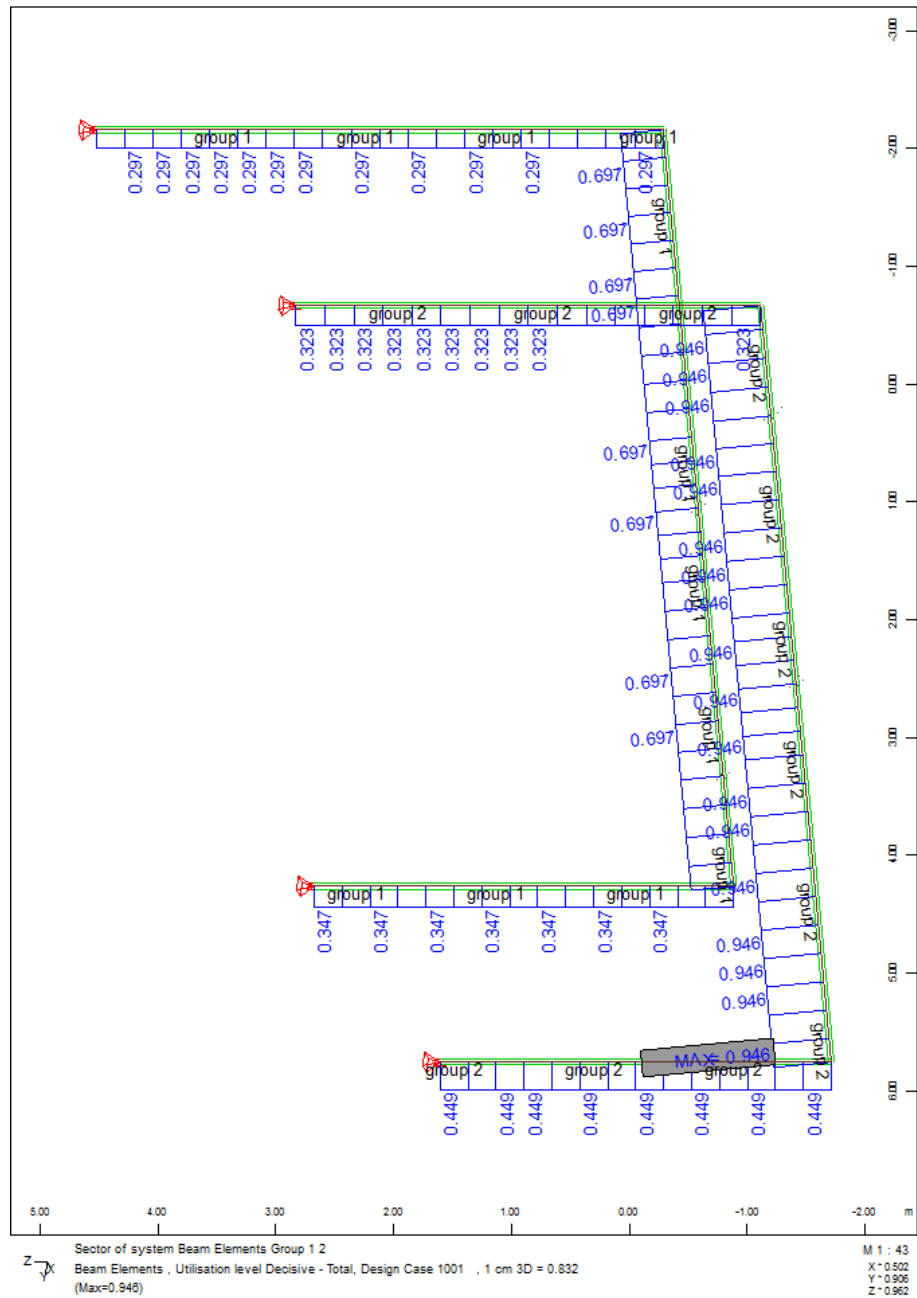
M 1 : 60



Sector of system Group 2
Beam Elements , Utilisation level Decisive - Total, Design Case 2129
 $1.35*(G)+1.5*(S)+1.5*0.6*(W)$, 1 cm 3D = 0.200 (Max=0.392)

M 1 : 44

ODPORNOST NA BOČNO ZVRNITEV-JEKLENI DEL



v Mariboru, junij 2017

sestavil:
Mitja Mulec, m.i.g.

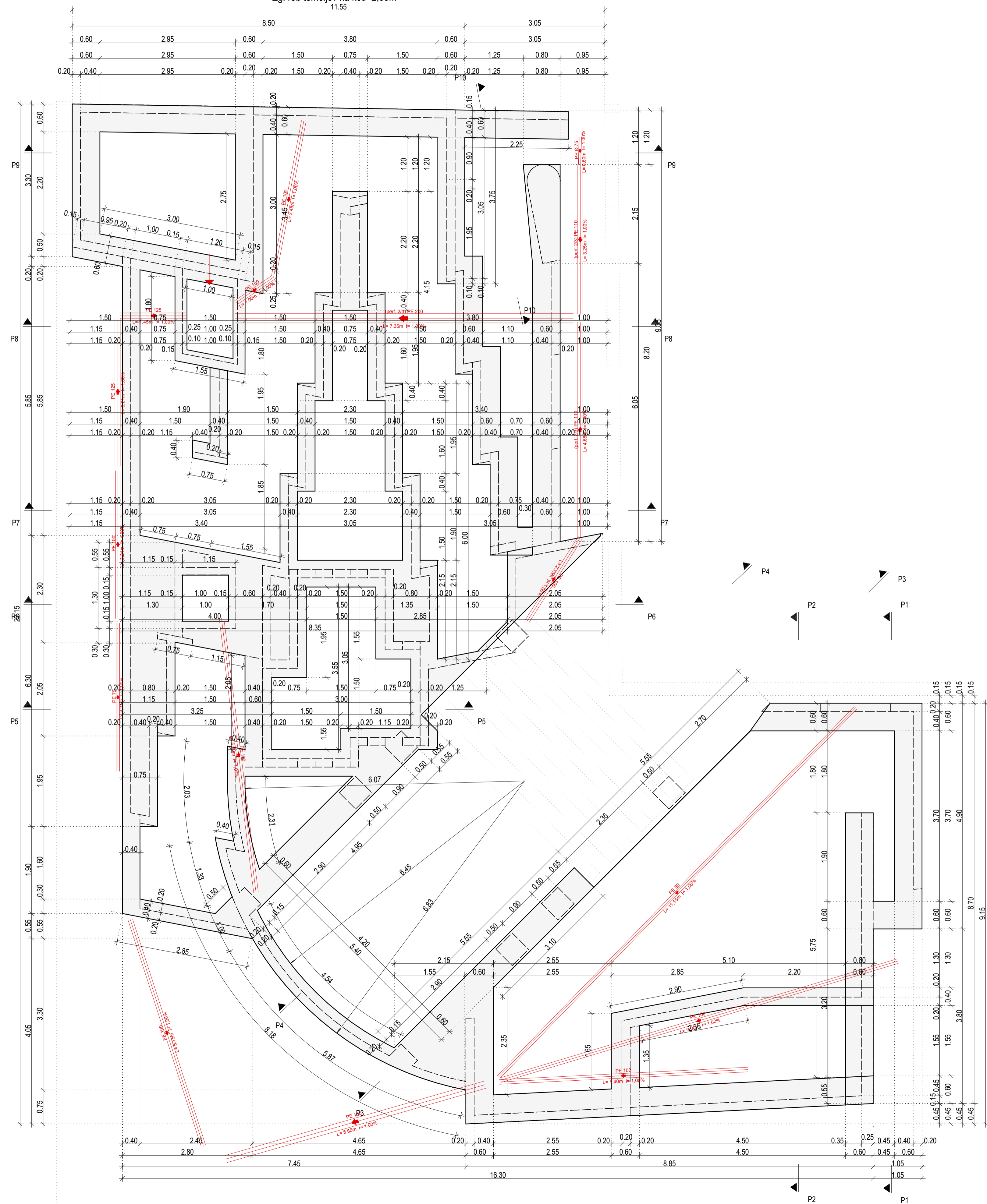
3.4 RISBE

| | |
|--|----------|
| OPAŽNA RISBA – TEMELJEV IN ZIDOVJA..... | list A-1 |
| OPAŽNA RISBA – STOPNIC IN PODESTOV, PREREZI..... | list A-2 |
| ARMATURNNA RISBA – TEMELJEV IN ZIDOVJA..... | list A-3 |
| KOSOVNICA ARMATURE K LISTU A-3 | |
| ARMATURNNA RISBA – PODESTOV IN STOPNIŠČ..... | list A-4 |
| KOSOVNICA ARMATURE K LISTU A-4 | |
| JEKLENI NADSTREŠEK | list A-5 |

TLORIS TEMELJEV

M=1:50

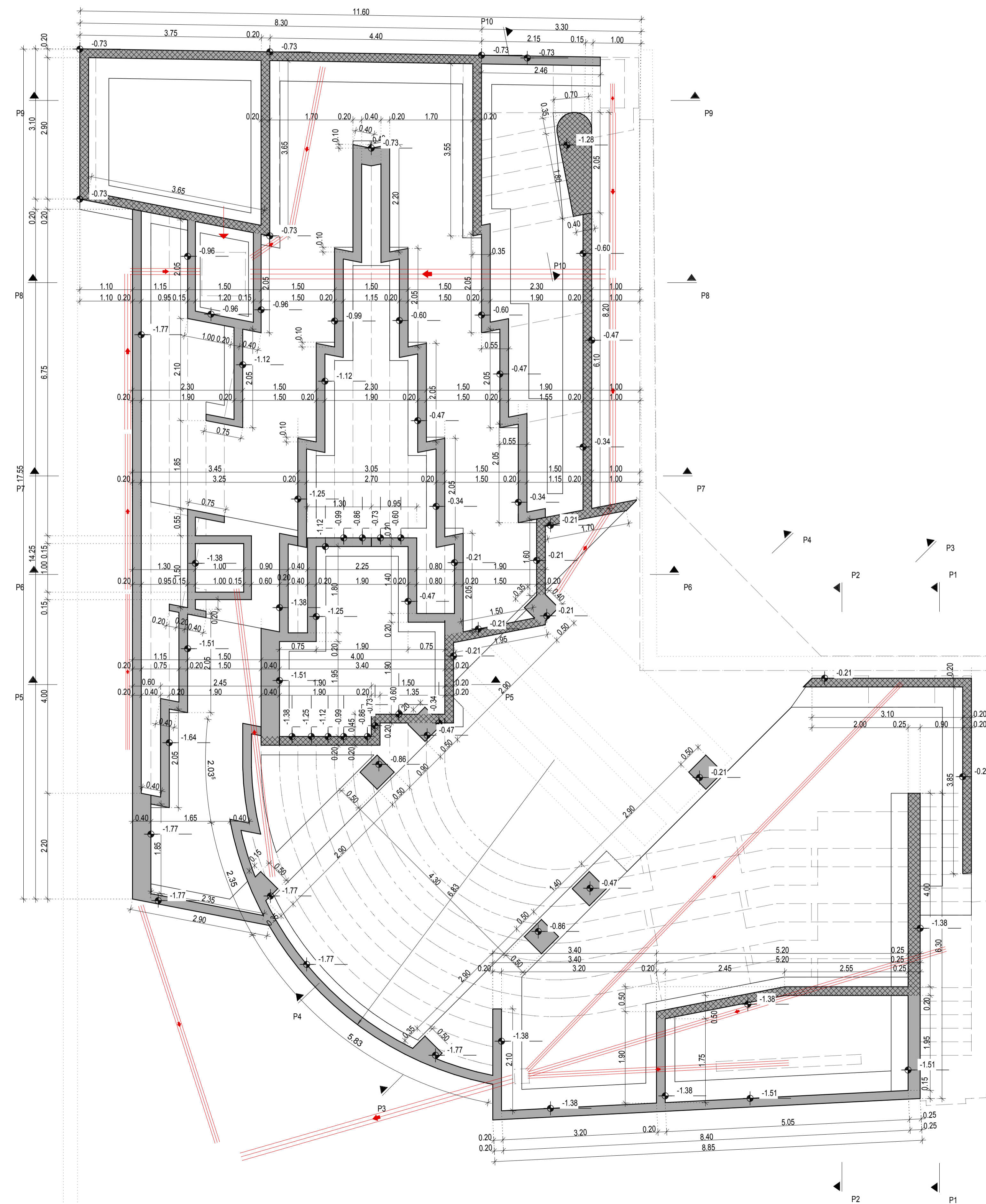
Sp. rob temeljev na koti -2.39m
Zg. rob temeljev na koti -2.09m



TLORIS STEN

M=1:50

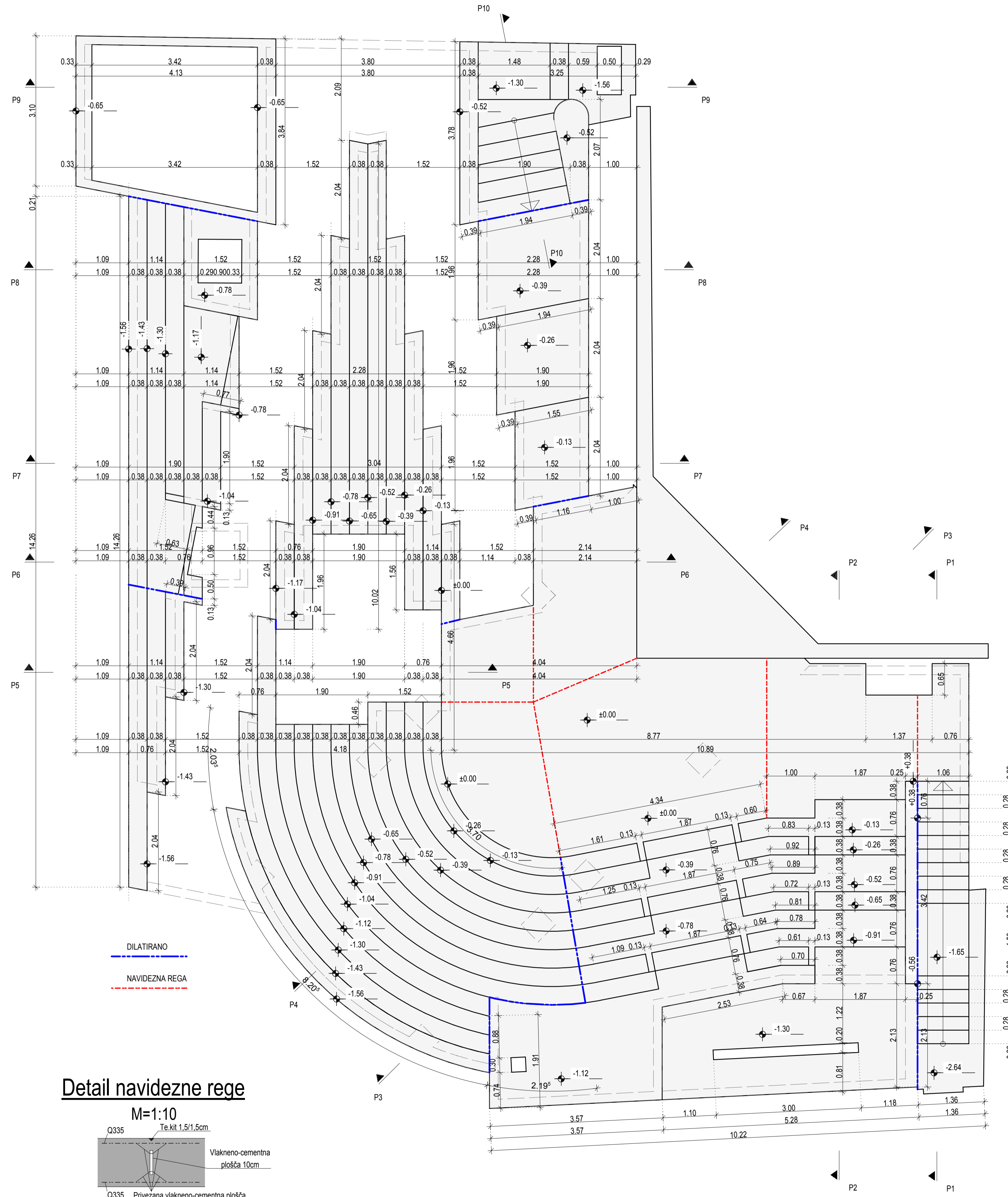
Sp. rob sten na koti -2.09m



| | | | |
|---|---|------------------------------|-------------------------|
| Beton: | Stupnice in podesetl. C30/37 XC3/XF4 (Cl 0,2 Dmax $\leq 20\text{mm}$ S4 PV III | Armatura: | Zaščitni sloji: |
| Temeljni stene: | C25/30 XC2 (Cl 0,2 Dmax $\leq 20\text{mm}$ S4 PV II | Palice B 500/B | Crom-4,5cm |
| | | Reže B 500/A | |
| sprememba: | | | |
| | | | |
| | | | |
| ARMATURA | | | |
| PROJEKTIRANJE IN TEHNIŠKO SVETOVANJE INŽENIRING BRIGAD ARMATURA, BRIGAD ZVANJA L.J. ŽEMERJAKA E. TEL. 040/5000000 | | | |
| št. projekta: | 1707002 | investitor: | OŠ Rada Robića Limbuš |
| objekt: | Ureditev dvoriča z nadstreškom | | |
| vrsta projekta: | PZI | odgovorni vodja projekta: | M. MILČ UDA ZAPS A-1524 |
| odgovorni projektant: | U. Žvan, UDOG | odgovorni projektant: | I.Š. G-0028 |
| sodelavec: | M. MILČEC MIG | | |
| kontrola: | | | |
| načrt, št. načrta: | GR. KONSTRUKCIJA | | 12/17-K |
| risba, merilo: | OPAZNA RISBA | TLORIS TEMELJEV, TLORIS STEN | M=1:50 |
| št. risbe: | 12/17-K - 01 | | |
| datum, št. lista: | JUNJ 2017 | | 01 |

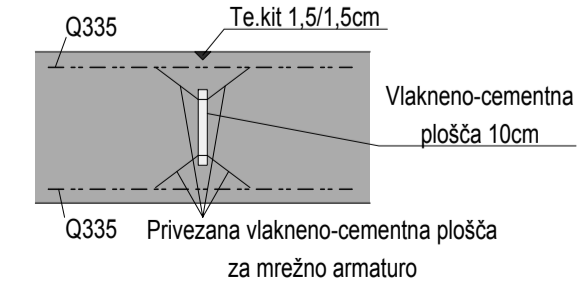
TLORIS PODESTOV IN STOPNIC

M=1:50



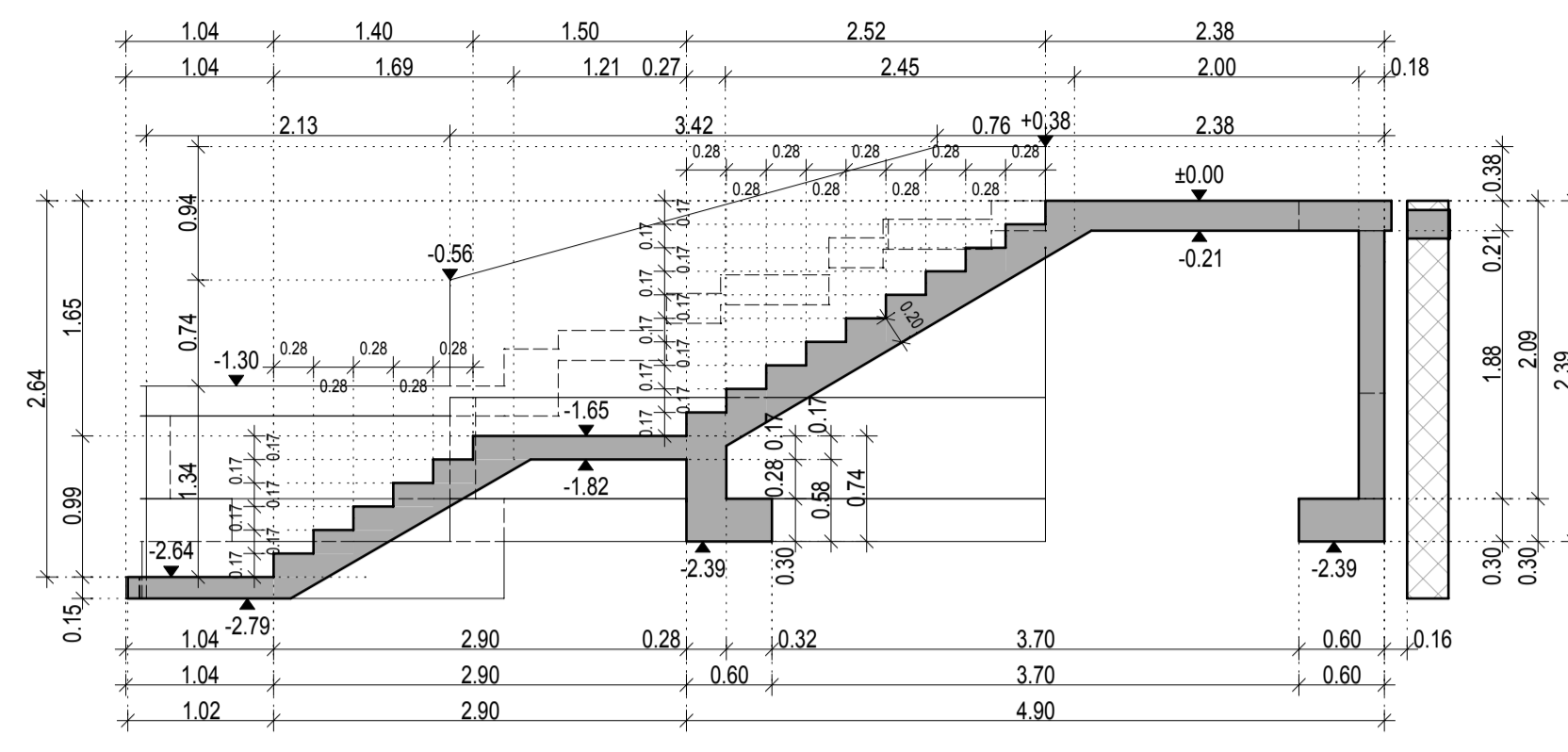
Detail navidezne rege

M=1:10



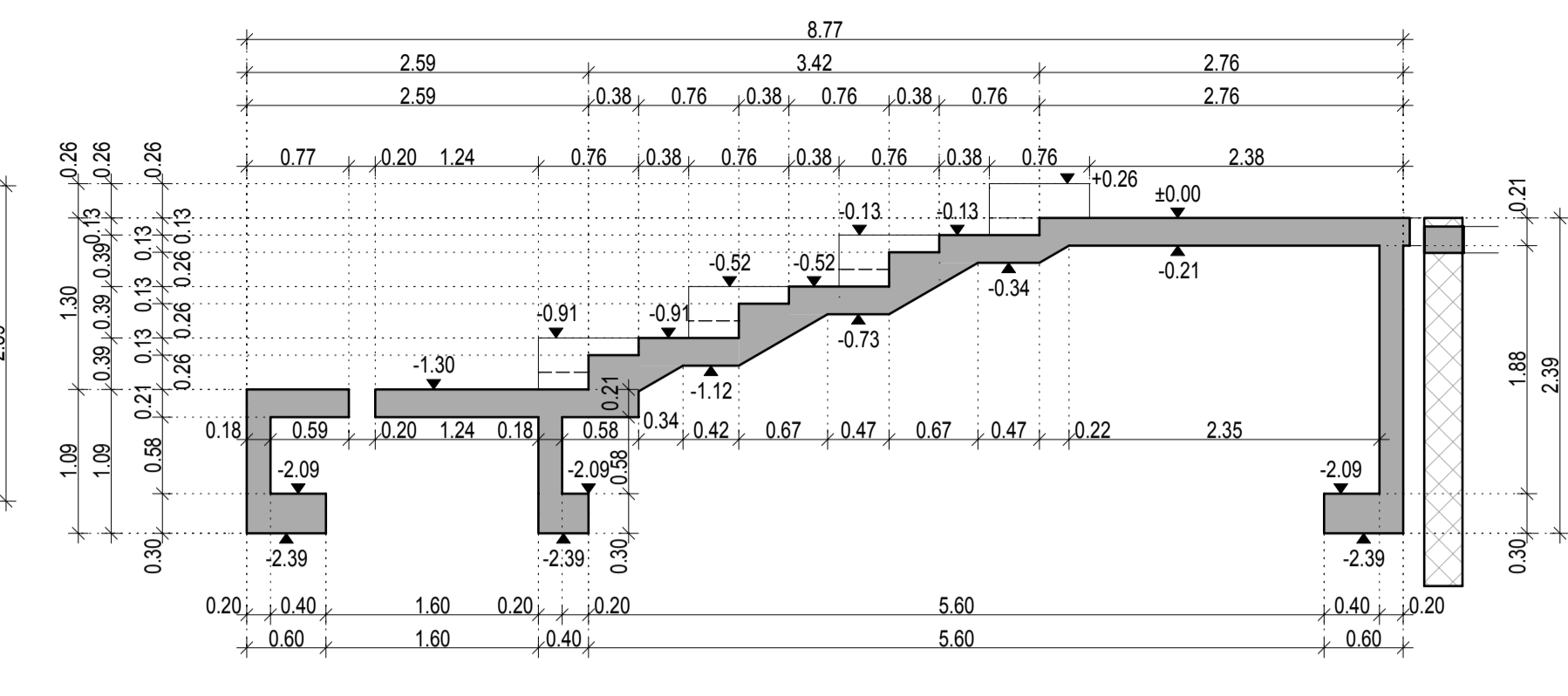
PREREZ 1-1

M=1:50



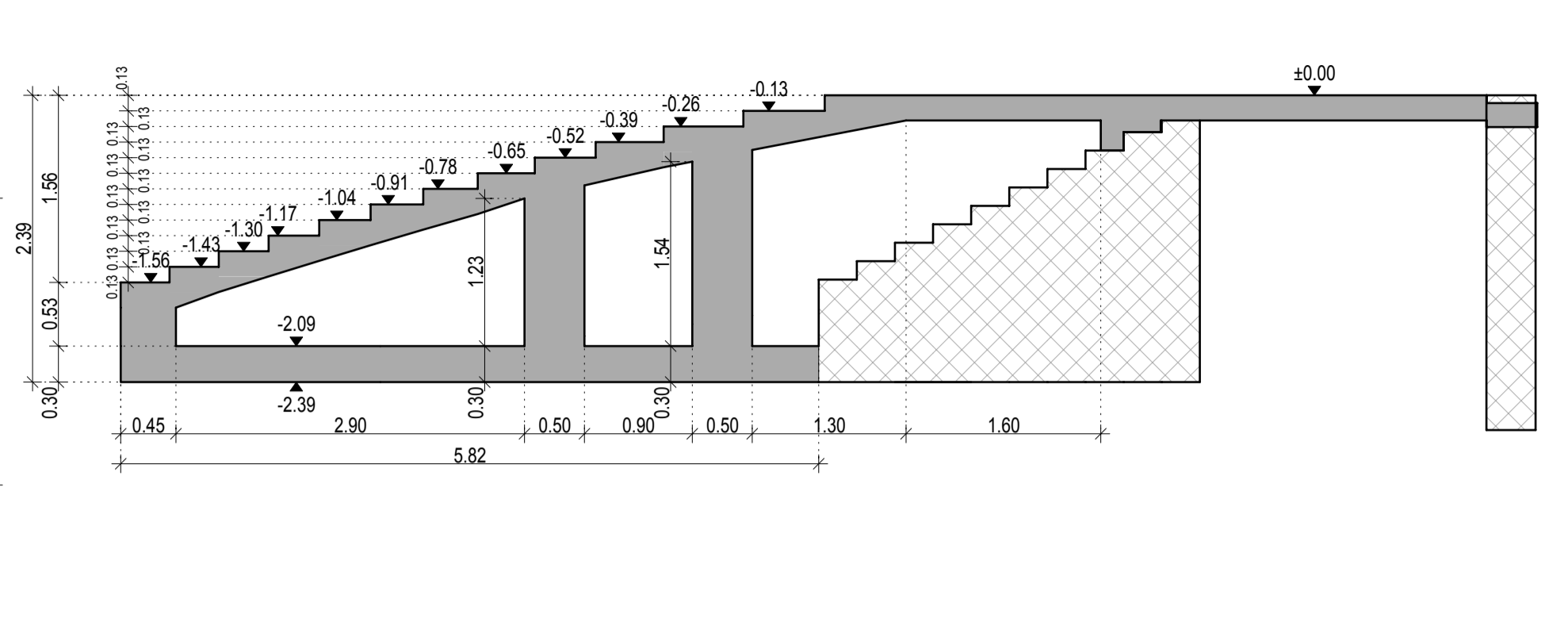
PREREZ 2-2

M=1:50



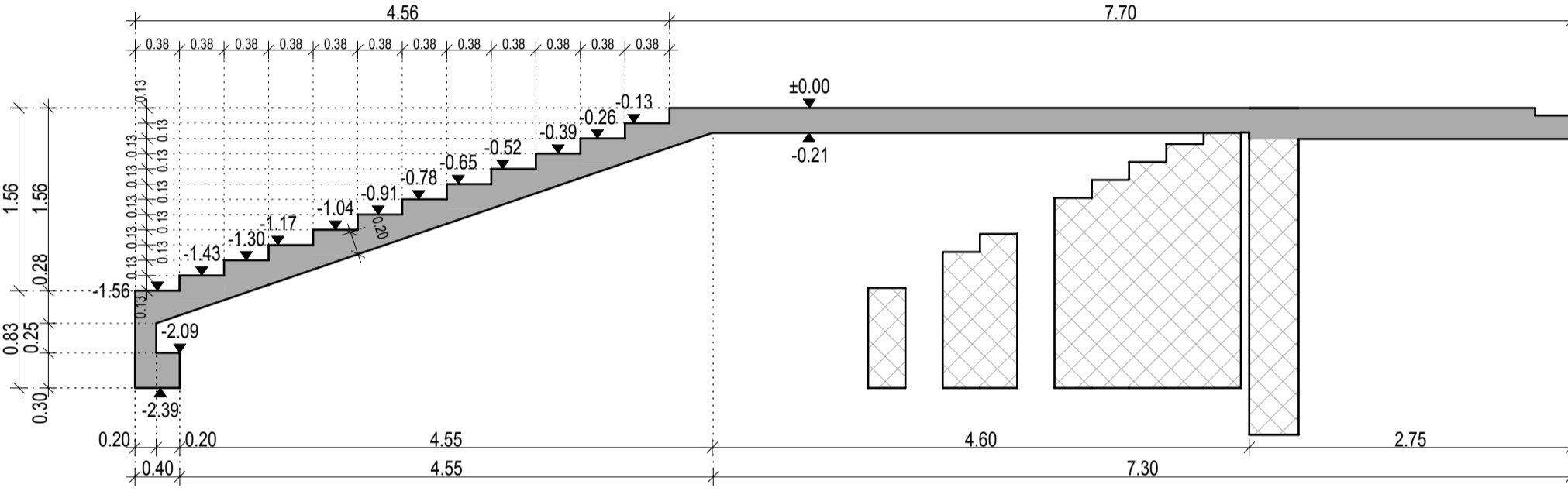
PREREZ 3-3

M=1:50



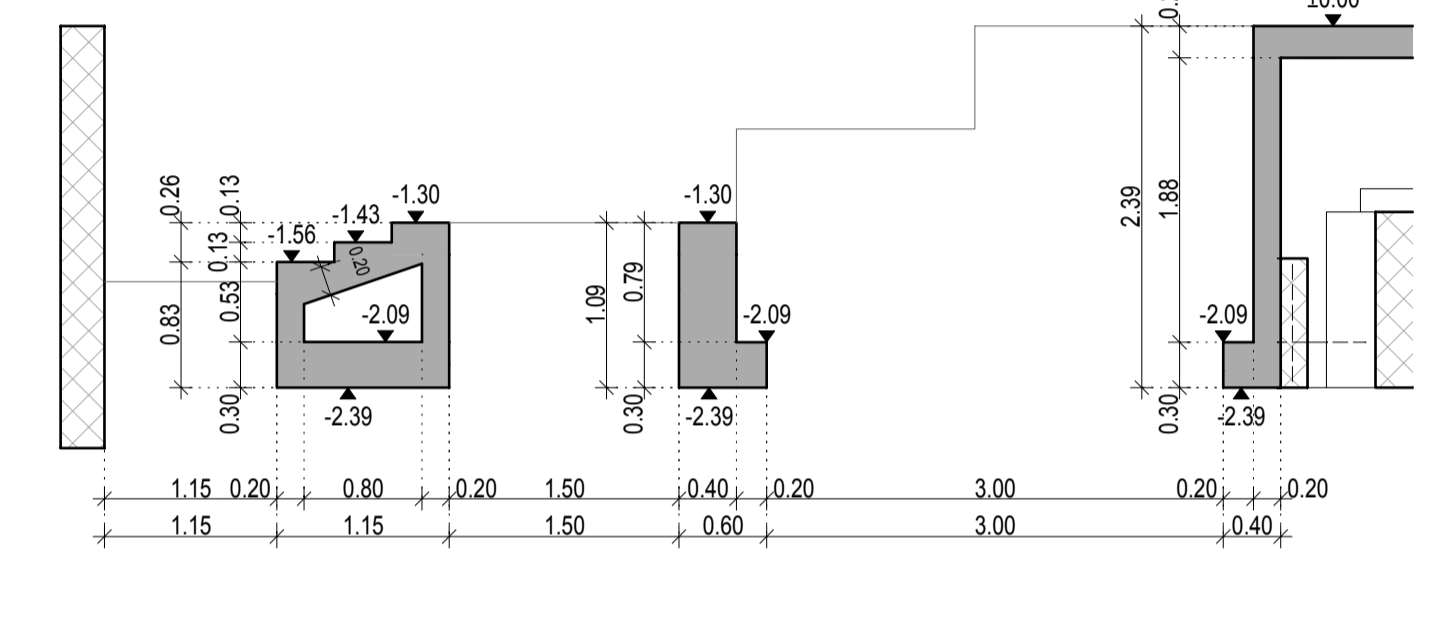
PREREZ 4-4

M=1:50



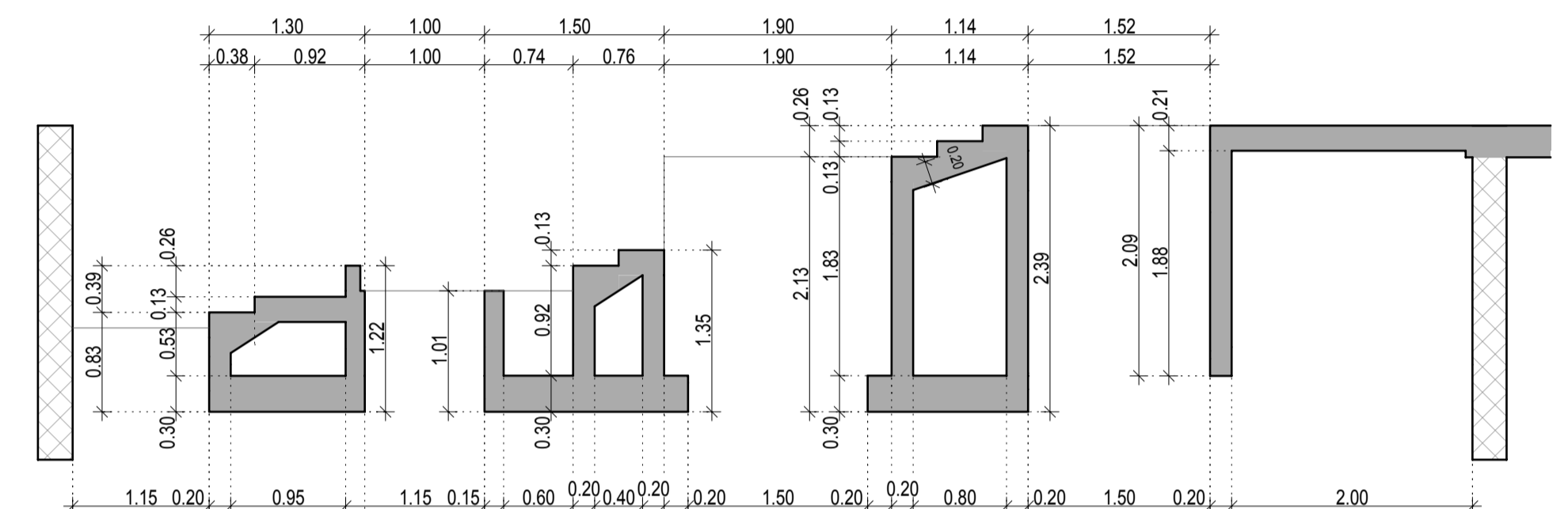
PREREZ 5-5

M=1:50



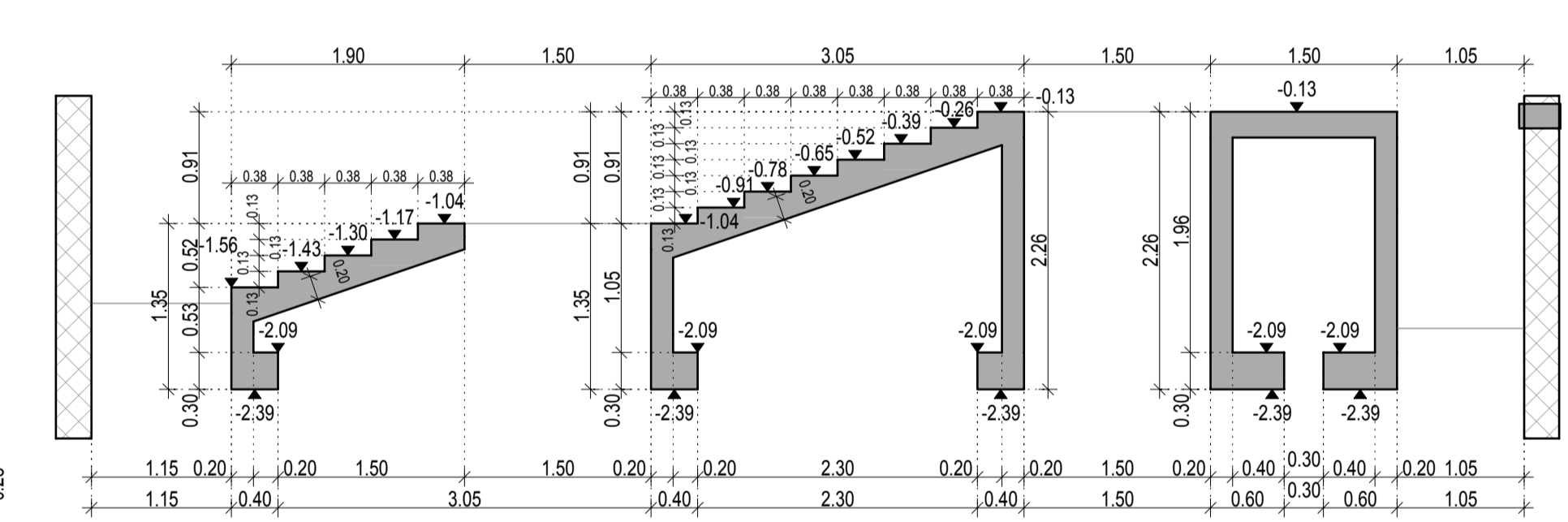
PREREZ 6-6

M=1:50



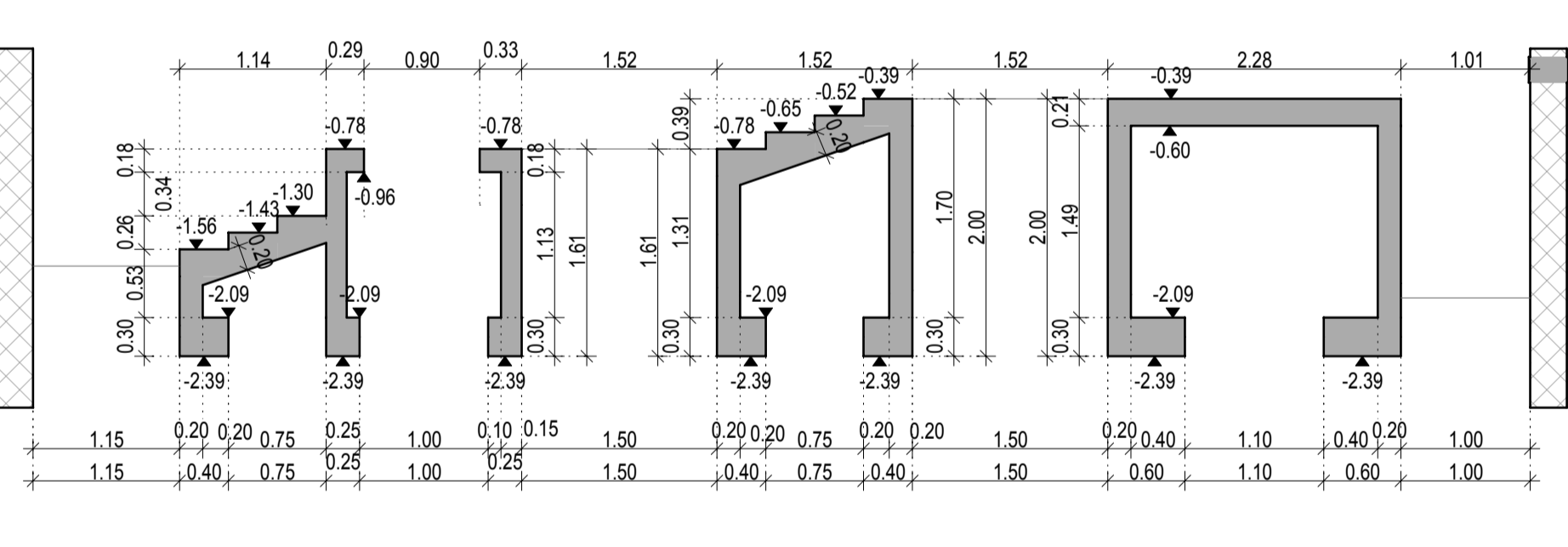
PREREZ 7-7

M=1:50



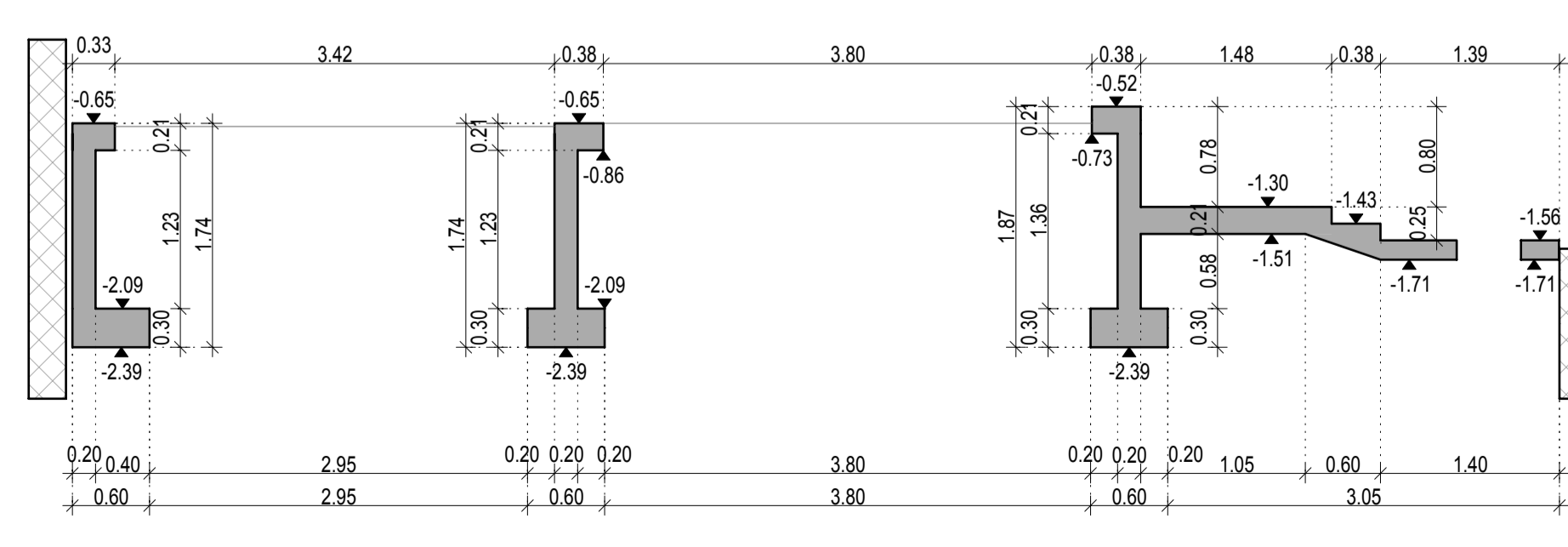
PREREZ 8-8

M=1:50



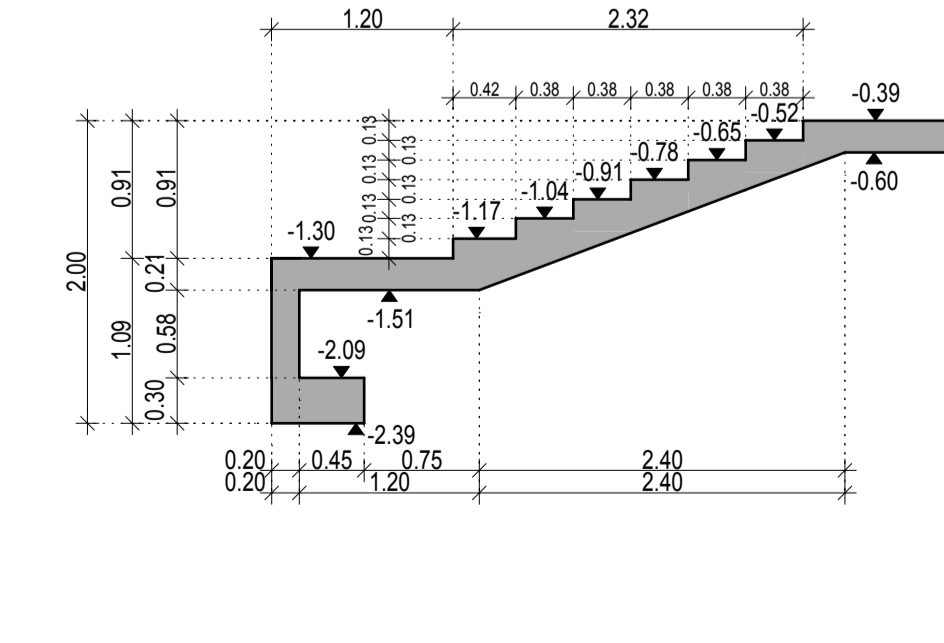
PREREZ 9-9

M=1:50



PREREZ 10-10

M=1:50



Beton: Stopnice in podessti: C30/37 X03/XE4 (l 0,2 Dmax $\leq 32\text{mm}$ S4 PV III
Temejni stene: C25/30 XC2 (l 0,2 Dmax $\leq 32\text{mm}$ S4 PV II

Armatura: Zaščitni sloji: Crom-4,5cm
Mreže B 500/A1

sprememba:

ARMATURA

PROJEKTIRANJE IN TEHNIKO SVETLOVANJE NAČRTOVANJE BRIGADIR ARHIT. UROŠ ŽVAN L.J., ZMURSKA C. 15, MARIBOR
SI-1001 - SI, E-PROSTA: info@prosta.si, TEL: +386 (0) 41 42 42 42, FAX: +386 (0) 41 42 42 42

št. projekta: 1707002 investitor: OŠ Rada Robiča Limbuš

objekt: Ureditev dvorišča z nadstreškom

vrsta projekta: PZI odgovorni vodja projekta: M. MILČ UDA ZAPS A-524

odgovorni projektant: U. ŽVAN, UDIŠ odgovorni projektant: M. MILEČ MIŠ IZS G-0028

sodelavec: M. MILEČ MIŠ kontrola: GR. KONSTRUKCIJA 12/17-K

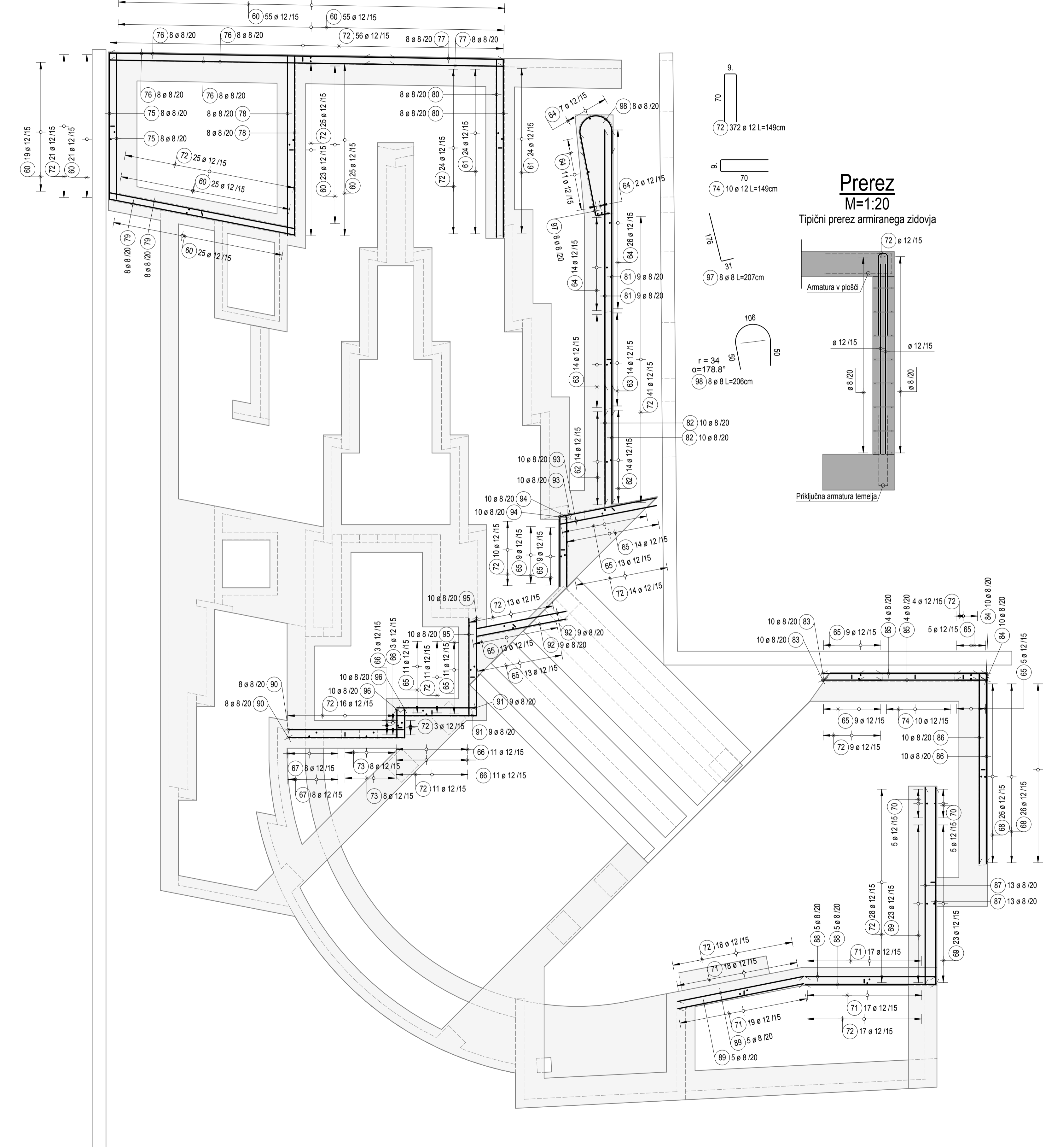
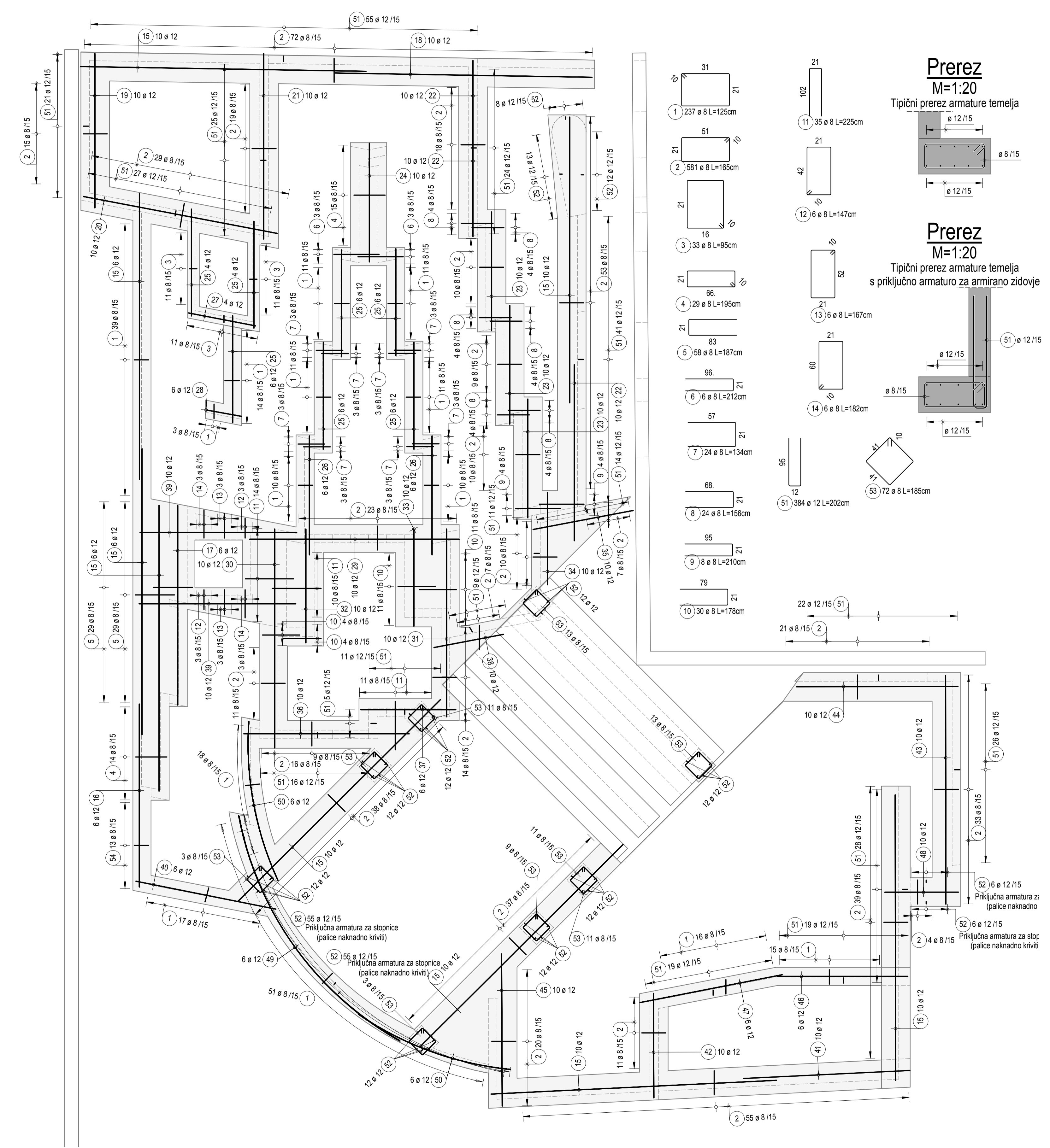
načrt, št. načrta: OPAŽNA RISBA TLORIS PODESTOV IN STOPNIC M=1:50

risba, merilo: 12/17-K - 02 risba, merilo: TLORIS PODESTOV IN STOPNIC M=1:50

št. risbe: 12/17-K - 02 datum, št. lista: JUNIJ 2017 02

TLORIS TEMELJEV
M=1:50

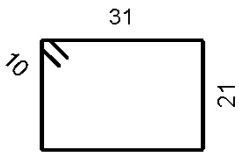
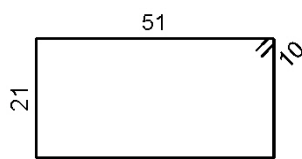
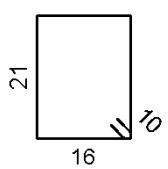
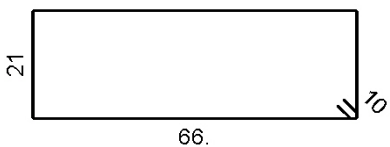
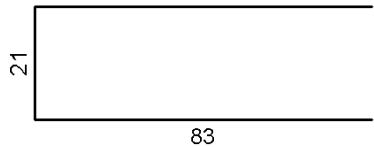
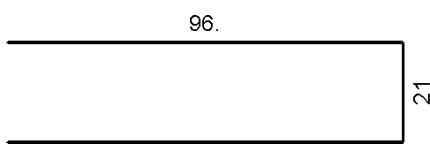
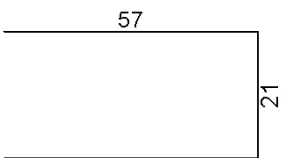
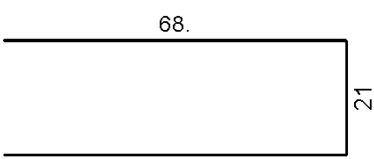
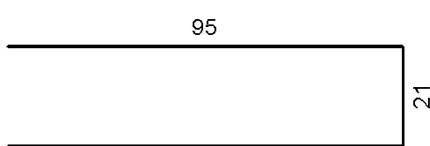
TLORIS ZIDOVJA
M=1:50



| | | | | | |
|---------------------------|---|---------------------------------|-----------------------|-----------------|------------|
| Beton: | Stropnice in podesfci: C30/37 X03/X4 (Cl 0,2 Dmax $\leq 23\text{mm}$ S4 PV III | Armatura: | Pačice B 500(B) | Zaščitni sloji: | Crom-4,5cm |
| Temelji, stene: | C25/30 XC2 (Cl 0,2 Dmax $\leq 23\text{mm}$ S4 PV II | Mežje B 500(A) | | | |
| sprememba: | | | | | |
| | | | | | |
| št. projekta: | 1707002 | investitor: | 05 Rada Robiča Limbuš | | |
| objekt: | Ureditev dvoriča z nadstreškom | | | | |
| vrsta projekta: | PZI | | | | |
| odgovorni vodja projekta: | M. MILČ UDA | ZAPS A-524 | | | |
| odgovorni projektant: | U. Žvan, UDIŠ | IZS G-0028 | | | |
| sodelavec: | M. MILEČ MIŠ | | | | |
| kontrola: | | | | | |
| načrt, št. načrta: | GR. KONSTRUKCIJA | 12/17-K | | | |
| risba, merilo: | ARMATURNIA RISBA | TLORIS TEMELJEV, TLORIS ZIDOVJA | M=1:50, 20 | | |
| št. risbe: | 12/17-K - 03 | | | | |
| datum, št. lista: | JUNIJ 2017 | 03 | | | |

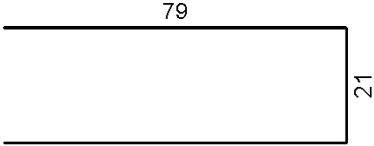
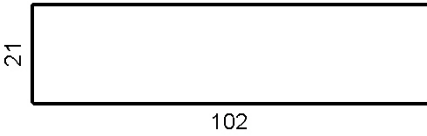
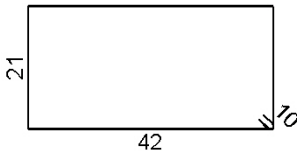
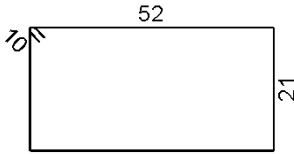
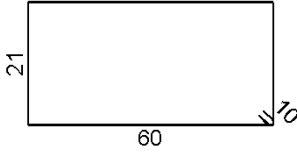
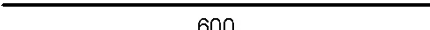
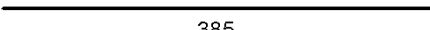
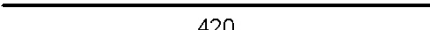
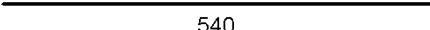
PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|----------------------------|---------|--------|---|-------------|----------------------|-----------|
| TEMELJI LIST ŠT. 03 | | | | | | |
| 1 | 237 | 8 |  | 1.25 | 296,25 | 117,02 |
| 2 | 581 | 8 |  | 1.65 | 958,65 | 378,67 |
| 3 | 33 | 8 |  | 0.95 | 31,35 | 12,38 |
| 4 | 29 | 8 |  | 1.95 | 56,55 | 22,34 |
| 5 | 58 | 8 |  | 1.87 | 108,46 | 42,84 |
| 6 | 6 | 8 |  | 2.12 | 12,72 | 5,02 |
| 7 | 24 | 8 |  | 1.34 | 32,16 | 12,70 |
| 8 | 24 | 8 |  | 1.56 | 37,44 | 14,79 |
| 9 | 8 | 8 |  | 2.10 | 16,80 | 6,64 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|---|-------------|----------------------|-----------|
| 10 | 30 | 8 |  | 1.78 | 53,40 | 21,09 |
| 11 | 35 | 8 |  | 2.25 | 78,75 | 31,11 |
| 12 | 6 | 8 |  | 1.47 | 8,82 | 3,48 |
| 13 | 6 | 8 |  | 1.67 | 10,02 | 3,96 |
| 14 | 6 | 8 |  | 1.82 | 10,92 | 4,31 |
| 15 | 78 | 12 |  | 6.00 | 468,00 | 415,58 |
| 16 | 6 | 12 |  | 3.85 | 23,10 | 20,51 |
| 17 | 6 | 12 |  | 4.20 | 25,20 | 22,38 |
| 18 | 10 | 12 |  | 5.40 | 54,00 | 47,95 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 19 | 10 | 12 | 325 | 3.25 | 32,50 | 28,86 |
| 20 | 10 | 12 | 415 | 4.15 | 41,50 | 36,85 |
| 21 | 10 | 12 | 390 | 3.90 | 39,00 | 34,63 |
| 22 | 20 | 12 | 370 | 3.70 | 74,00 | 65,71 |
| 23 | 30 | 12 | 250 | 2.50 | 75,00 | 66,60 |
| 24 | 10 | 12 | 250 | 2.50 | 25,00 | 22,20 |
| 25 | 38 | 12 | 225 | 2.25 | 85,50 | 75,92 |
| 26 | 12 | 12 | 250 | 2.50 | 30,00 | 26,64 |
| 27 | 4 | 12 | 145 | 1.45 | 5,80 | 5,15 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 28 | 6 | 12 | 76 | 0.76 | 4,56 | 4,05 |
| 29 | 10 | 12 | 440 | 4.40 | 44,00 | 39,07 |
| 30 | 10 | 12 | 460 | 4.60 | 46,00 | 40,85 |
| 31 | 10 | 12 | 395 | 3.95 | 39,50 | 35,08 |
| 32 | 10 | 12 | 240 | 2.40 | 24,00 | 21,31 |
| 33 | 10 | 12 | 205 | 2.05 | 20,50 | 18,20 |
| 34 | 10 | 12 | 195 | 1.95 | 19,50 | 17,32 |
| 35 | 10 | 12 | 215 | 2.15 | 21,50 | 19,09 |
| 36 | 10 | 12 | 348 | 3.48 | 34,80 | 30,90 |




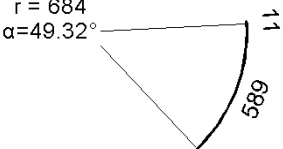
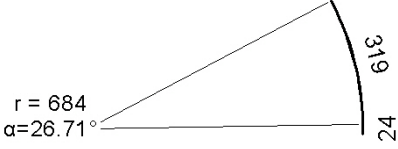
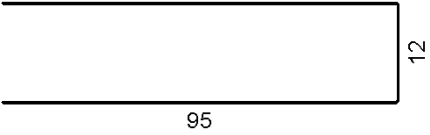
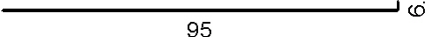
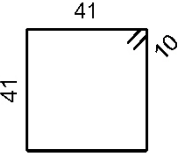
PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 37 | 6 | 12 | 200 | 2.00 | 12,00 | 10,66 |
| 38 | 10 | 12 | 150 | 1.50 | 15,00 | 13,32 |
| 39 | 20 | 12 | 330 | 3.30 | 66,00 | 58,61 |
| 40 | 6 | 12 | 300 | 3.00 | 18,00 | 15,98 |
| 41 | 10 | 12 | 350 | 3.50 | 35,00 | 31,08 |
| 42 | 10 | 12 | 220 | 2.20 | 22,00 | 19,54 |
| 43 | 10 | 12 | 480 | 4.80 | 48,00 | 42,62 |
| 44 | 10 | 12 | 340 | 3.40 | 34,00 | 30,19 |
| 45 | 10 | 12 | 320 | 3.20 | 32,00 | 28,42 |

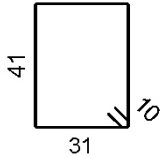
PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|--|-------------|----------------------|-----------|
| 46 | 6 | 12 |  275 | 2.75 | 16,50 | 14,65 |
| 47 | 6 | 12 |  305 | 3.05 | 18,30 | 16,25 |
| 48 | 10 | 12 |  155 | 1.55 | 15,50 | 13,76 |
| 49 | 6 | 12 |  $r = 684$ $\alpha = 49.32^\circ$ 11 589 | 6.00 | 36,00 | 31,97 |
| 50 | 12 | 12 |  $r = 684$ $\alpha = 26.71^\circ$ 24 618 | 3.43 | 41,16 | 36,55 |
| 51 | 384 | 12 |  12 95 | 2.02 | 775,68 | 688,80 |
| 52 | 251 | 12 |  95 6 | 1.01 | 253,51 | 225,12 |
| 53 | 72 | 8 |  41 41 10 | 1.85 | 133,20 | 52,61 |










PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE TEMELJEV

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|--------------------------------|---------|--------|---|-------------|----------------------|-----------------|
| 54 | 13 | 8 |  | 1.65 | 21,45 | 8,47 |
| Sum TEMELJI LIST ŠT. 03 | | | | | | 3.109,83 |
| sum | | | | | | 3.109,83 |
| kpl | | | | | | 1 |
| Teža skupaj: | | | | | | 3.109,83 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE ZIDOVJA

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|----------------------------|---------|--------|---|-------------|----------------------|-----------|
| ZIDOVJE LIST ŠT. 03 | | | | | | |
| 60 | 248 | 12 |  135 | 1.35 | 334,80 | 297,30 |
| 61 | 48 | 12 |  150 | 1.50 | 72,00 | 63,94 |
| 62 | 28 | 12 |  186 | 1.86 | 52,08 | 46,25 |
| 63 | 28 | 12 |  173 | 1.73 | 48,44 | 43,01 |
| 64 | 60 | 12 |  160 | 1.60 | 96,00 | 85,25 |
| 65 | 121 | 12 |  199 | 1.99 | 240,79 | 213,82 |
| 66 | 28 | 12 |  147 | 1.47 | 41,16 | 36,55 |
| 67 | 16 | 12 |  56 | 0.56 | 8,96 | 7,96 |
| 68 | 52 | 12 |  180 | 1.80 | 93,60 | 83,12 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE ZIDOVJA

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 69 | 46 | 12 | -a- | -X- | 74,16 | 65,85 |
| 70 | 10 | 12 | 208 | 2.08 | 20,80 | 18,47 |
| 71 | 71 | 12 | 69. | 0.69 | 48,99 | 43,50 |
| 72 | 372 | 12 | 70 90 | 1.49 | 554,28 | 492,20 |
| 73 | 16 | 12 | 102 | 1.02 | 16,32 | 14,49 |
| 74 | 10 | 12 | 70 90 | 1.49 | 14,90 | 13,23 |
| 75 | 16 | 8 | 306 | 3.06 | 48,96 | 19,34 |
| 76 | 16 | 8 | 600 | 6.00 | 96,00 | 37,92 |
| 77 | 16 | 8 | 292 | 2.92 | 46,72 | 18,45 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE ZIDOVJA

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 78 | 16 | 8 | 377 | 3.77 | 60,32 | 23,83 |
| 79 | 16 | 8 | 396 | 3.96 | 63,36 | 25,03 |
| 80 | 16 | 8 | 374 | 3.74 | 59,84 | 23,64 |
| 81 | 18 | 8 | 600 | 6.00 | 108,00 | 42,66 |
| 82 | 20 | 8 | 250 | 2.50 | 50,00 | 19,75 |
| 83 | 20 | 8 | 124 | 1.24 | 24,80 | 9,80 |
| 84 | 20 | 8 | 65 | 0.65 | 13,00 | 5,14 |
| 85 | 8 | 8 | 251 | 2.51 | 20,08 | 7,93 |
| 86 | 20 | 8 | 399 | 3.99 | 79,80 | 31,52 |

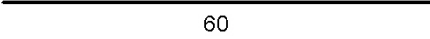
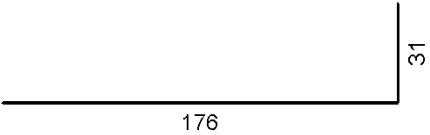
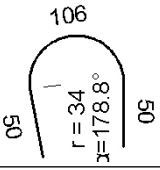
PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE ZIDOVJA

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 87 | 26 | 8 | 414 | 4.14 | 107,64 | 42,52 |
| 88 | 10 | 8 | 275 | 2.75 | 27,50 | 10,86 |
| 89 | 10 | 8 | 270 | 2.70 | 27,00 | 10,67 |
| 90 | 16 | 8 | 242 | 2.42 | 38,72 | 15,29 |
| 91 | 18 | 8 | 166 | 1.66 | 29,88 | 11,80 |
| 92 | 18 | 8 | 190 | 1.90 | 34,20 | 13,51 |
| 93 | 20 | 8 | 206 | 2.06 | 41,20 | 16,27 |
| 94 | 20 | 8 | 147 | 1.47 | 29,40 | 11,61 |
| 95 | 20 | 8 | 204 | 2.04 | 40,80 | 16,12 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE ZIDOVJA

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|--------------------------------|---------|--------|---|-------------|----------------------|-----------------|
| 96 | 20 | 8 |  | 0.60 | 12,00 | 4,74 |
| 97 | 8 | 8 |  | 2.07 | 16,56 | 6,54 |
| 98 | 8 | 8 |  | 2.06 | 16,48 | 6,51 |
| Sum ZIDOVJE LIST ŠT. 03 | | | | | | 1.956,39 |
| sum | | | | | | 1.956,39 |
| kpl | | | | | | 1 |
| Teža skupaj: | | | | | | 1.956,39 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

IZVLEČEK ARMATURE ZIDOVJA

Bar shapes placed in polygon

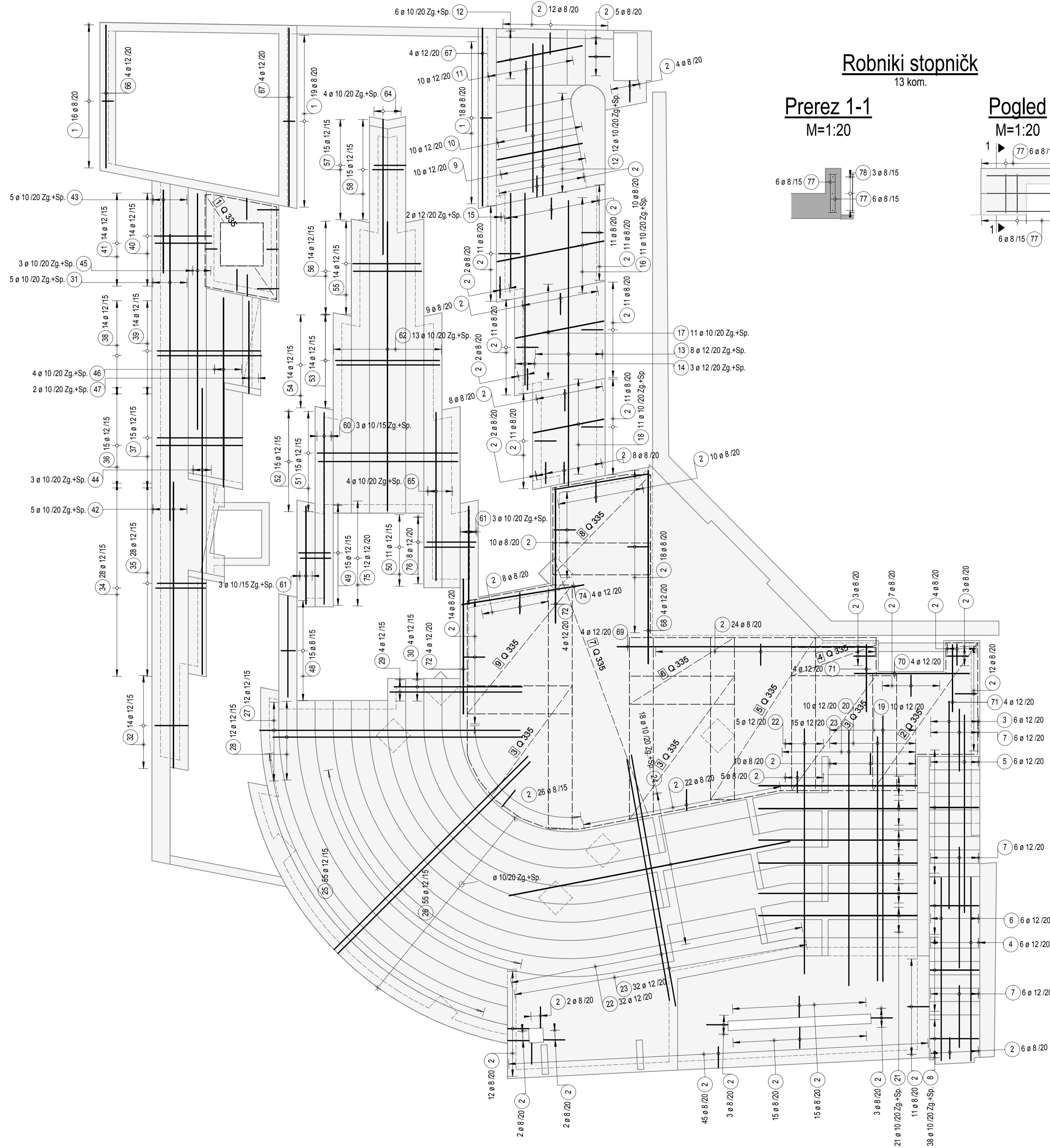
| Mark | Pcs | Segment | | | | | | | | | | Length [cm] |
|----------------|-----|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|
| | | a [cm] | b [cm] | c [cm] | d [cm] | e [cm] | f [cm] | g [cm] | h [cm] | i [cm] | j [cm] | |
| Mark 69 | | | | | | | | | | | | |
| 69.01 | 2 | 116 | | | | | | | | | | 116 |
| 69.02 | 2 | 120 | | | | | | | | | | 120 |
| 69.03 | 2 | 124 | | | | | | | | | | 124 |
| 69.04 | 2 | 128 | | | | | | | | | | 128 |
| 69.05 | 2 | 133 | | | | | | | | | | 133 |
| 69.06 | 2 | 137 | | | | | | | | | | 137 |
| 69.07 | 2 | 141 | | | | | | | | | | 141 |
| 69.08 | 2 | 145 | | | | | | | | | | 145 |
| 69.09 | 2 | 149 | | | | | | | | | | 149 |
| 69.10 | 2 | 153 | | | | | | | | | | 153 |
| 69.11 | 2 | 157 | | | | | | | | | | 157 |
| 69.12 | 2 | 161 | | | | | | | | | | 161 |
| 69.13 | 2 | 165 | | | | | | | | | | 165 |
| 69.14 | 2 | 169 | | | | | | | | | | 169 |
| 69.15 | 2 | 174 | | | | | | | | | | 174 |
| 69.16 | 2 | 178 | | | | | | | | | | 178 |
| 69.17 | 2 | 182 | | | | | | | | | | 182 |
| 69.18 | 2 | 186 | | | | | | | | | | 186 |
| 69.19 | 2 | 190 | | | | | | | | | | 190 |
| 69.20 | 2 | 194 | | | | | | | | | | 194 |
| 69.21 | 2 | 198 | | | | | | | | | | 198 |
| 69.22 | 2 | 202 | | | | | | | | | | 202 |
| 69.23 | 2 | 206 | | | | | | | | | | 206 |

Mark 69: 46 Ø 12 Total length: 74,16 m

TLORIS PODESTOV IN STOPNIC

M=1:50

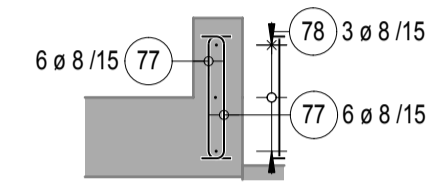
Armatura spodaj in zgoraj



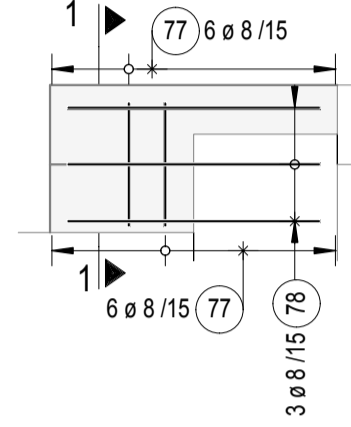
Robniki stopničk

13 kom.

Prerez 1-1 M=1:20



Pogled M=1:20



Beton:
Stopnice in podeseti: C30/37 XD3/XF4 C1 0,2 D_{max} = 32mm S4 PVIII
Temejni, stene: C25/30 XC2 C1 0,2 D_{max} = 32mm S4 PV II

Armatura:
Palice B 500(B)
Mreže B 500(A)

Zaščitni sloji:
C_{nom} = 4,5cm.

sprememba:

ARMATURA

PROJEKTIRANJE IN TEHNIČNO SVETOVANJE INŽENIRING BIRU ARMATURA, UROŠ ŽVAN s.p., ZRKOVSKA C. 35, HARBOR
ID. ŠT.: 2377 - IZS, E-POŠTA: info@armatura-izs.si, TEL./FAX: +386 (0)2 47 02 420, M-TEL: +386 (0)2 425 341

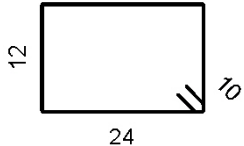

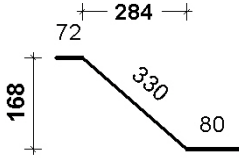
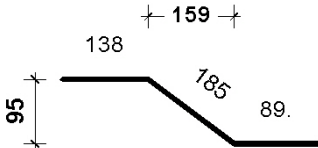
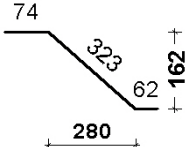
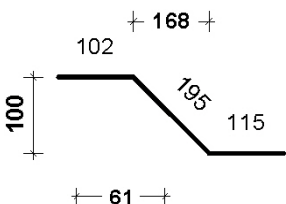
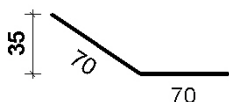
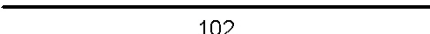
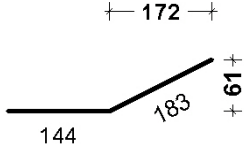
Št. projekta: 1701002
investitor: OŠ Rada Robiča Limbuš

objekt: Ureditev dvorišča z nadstreškom

| | | |
|---------------------------|--|-------------|
| vrsta projekta: | PZI | |
| odgovorni vodja projekta: | M. MILIČ UDIA | ZAPS A-1524 |
| odgovorni projektant: | U. ŽVAN, UDIG | IZS G-0028 |
| sodelavec: | M. MULEC MIG | |
| kontrola: | | |
| načrt, št. načrta: | GR. KONSTRUKCIJA | 12/17-K |
| risba, merilo: | ARMATURNI RISBA PODESTOV IN STOPNIC, ROBNIKI STOPNIČK | M=1:50,20 |
| št. risbe: | 12/17-K - 04 | |
| dafum, št. lista: | JUNJI 2017 | 04 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
PODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | lolžina pozicije [m] | Teža [kg] |
|--|---------|--------|---|-------------|----------------------|-----------|
| STOPNICE IN PODESTI LIST ŠT. 04 | | | | | | |
| 1 | 61 | 8 |  | 0.93 | 56,73 | 22,41 |
| 2 | 455 | 8 |  | 1.02 | 464,10 | 183,32 |
| 3 | 6 | 12 |  | 4.82 | 28,92 | 25,68 |
| 4 | 6 | 12 |  | 4.12 | 24,72 | 21,95 |
| 5 | 6 | 12 |  | 4.58 | 27,48 | 24,40 |
| 6 | 6 | 12 |  | 4.12 | 24,72 | 21,95 |
| 7 | 24 | 12 |  | 1.40 | 33,60 | 29,84 |
| 8 | 76 | 10 |  | 1.02 | 77,52 | 47,83 |
| 9 | 10 | 12 |  | 3.27 | 32,70 | 29,04 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
 BODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 10 | 10 | 12 | | 3.28 | 32,80 | 29,13 |
| 11 | 10 | 12 | | 1.55 | 15,50 | 13,76 |
| 12 | 36 | 10 | | 1.82 | 65,52 | 40,43 |
| 13 | 8 | 12 | | 6.00 | 48,00 | 42,62 |
| 14 | 3 | 12 | | 4.03 | 12,09 | 10,74 |
| 15 | 2 | 12 | | 2.00 | 4,00 | 3,55 |
| 16 | 22 | 10 | | 2.28 | 50,16 | 30,95 |
| 17 | 22 | 10 | | 1.90 | 41,80 | 25,79 |
| 18 | 22 | 10 | | 1.51 | 33,22 | 20,50 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
BODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 19 | 10 | 12 | | 6.00 | 60,00 | 53,28 |
| 20 | 10 | 12 | | 5.45 | 54,50 | 48,40 |
| 21 | 46 | 10 | | 3.33 | 153,18 | 94,51 |
| 22 | 37 | 12 | | 5.37 | 198,69 | 176,44 |
| 23 | 47 | 12 | | 5.57 | 261,79 | 232,47 |
| 24 | 36 | 10 | | 6.00 | 216,00 | 133,27 |
| 25 | 55 | 12 | | 6.00 | 330,00 | 293,04 |
| 26 | 55 | 12 | | 6.00 | 330,00 | 293,04 |
| 27 | 12 | 12 | | 5.70 | 68,40 | 60,74 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
BORESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 28 | 12 | 12 | | 5.50 | 66,00 | 58,61 |
| 29 | 4 | 12 | | 3.35 | 13,40 | 11,90 |
| 30 | 4 | 12 | | 3.22 | 12,88 | 11,44 |
| 31 | 110 | 10 | | 6.00 | 660,00 | 407,22 |
| 32 | 14 | 12 | | 0.93 | 13,02 | 11,56 |
| 33 | 14 | 12 | | 0.85 | 11,90 | 10,57 |
| 34 | 28 | 12 | | 1.43 | 40,04 | 35,56 |
| 35 | 28 | 12 | | 1.16 | 32,48 | 28,84 |
| 36 | 15 | 12 | | 2.23 | 33,45 | 29,70 |

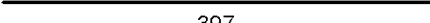
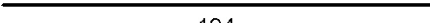
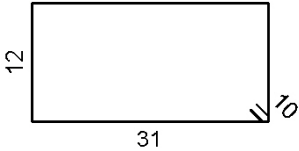
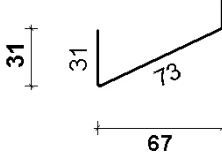
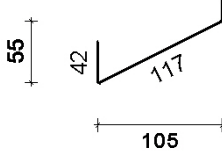
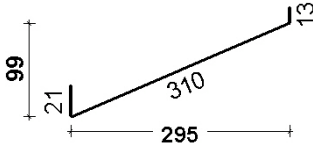
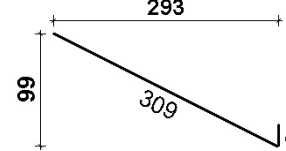
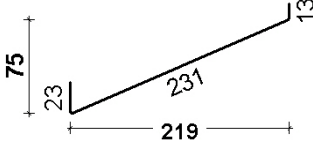
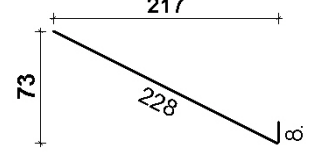
PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
 BODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|-------------------|-------------|----------------------|-----------|
| 37 | 15 | 12 | | 1.96 | 29,40 | 26,11 |
| 38 | 14 | 12 | | 2.60 | 36,40 | 32,32 |
| 39 | 14 | 12 | | 2.38 | 33,32 | 29,59 |
| 40 | 14 | 12 | | 1.58 | 22,12 | 19,64 |
| 41 | 14 | 12 | | 1.38 | 19,32 | 17,16 |
| 42 | 10 | 10 | | 6.00 | 60,00 | 37,02 |
| 43 | 10 | 10 | | 1.74 | 17,40 | 10,74 |
| 44 | 6 | 10 | | 6.00 | 36,00 | 22,21 |
| 45 | 6 | 10 | | 4.90 | 29,40 | 18,14 |

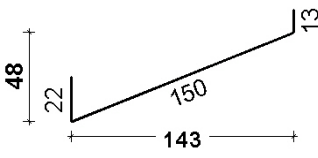
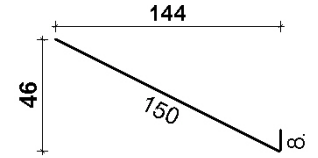
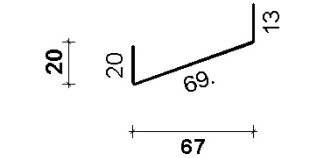
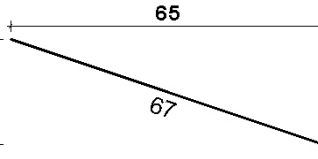
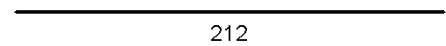
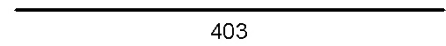
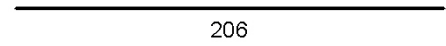
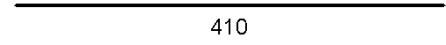
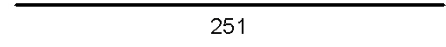
PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
BODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|---|-------------|----------------------|-----------|
| 46 | 8 | 10 |  | 3.97 | 31,76 | 19,60 |
| 47 | 4 | 10 |  | 1.94 | 7,76 | 4,79 |
| 48 | 15 | 8 |  | 1.06 | 15,90 | 6,28 |
| 49 | 15 | 12 |  | 1.17 | 17,55 | 15,58 |
| 50 | 11 | 12 |  | 1.73 | 19,03 | 16,90 |
| 51 | 15 | 12 |  | 3.43 | 51,45 | 45,69 |
| 52 | 15 | 12 |  | 3.17 | 47,55 | 42,22 |
| 53 | 14 | 12 |  | 2.66 | 37,24 | 33,07 |
| 54 | 14 | 12 |  | 2.37 | 33,18 | 29,46 |










PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
BODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|---|-------------|----------------------|-----------|
| 55 | 14 | 12 |  | 1.85 | 25,90 | 23,00 |
| 56 | 14 | 12 |  | 1.58 | 22,12 | 19,64 |
| 57 | 15 | 12 |  | 1.02 | 15,30 | 13,59 |
| 58 | 15 | 12 |  | 0.76 | 11,40 | 10,12 |
| 59 | 6 | 10 |  | 2.12 | 12,72 | 7,85 |
| 60 | 6 | 10 |  | 4.03 | 24,18 | 14,92 |
| 61 | 12 | 10 |  | 2.06 | 24,72 | 15,25 |
| 62 | 26 | 10 |  | 4.10 | 106,60 | 65,77 |
| 63 | 18 | 10 |  | 2.51 | 45,18 | 27,88 |



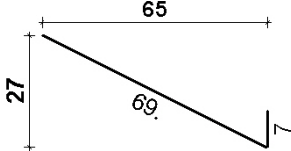
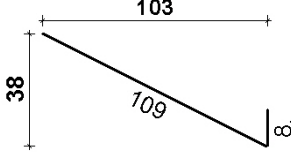
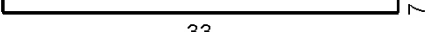

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
 BODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|------|---------|--------|---|-------------|----------------------|-----------|
| 64 | 8 | 10 |  284 | 2.84 | 22,72 | 14,02 |
| 65 | 8 | 10 |  353 | 3.53 | 28,24 | 17,42 |
| 66 | 4 | 12 |  300 | 3.00 | 12,00 | 10,66 |
| 67 | 8 | 12 |  374 | 3.74 | 29,92 | 26,57 |
| 68 | 4 | 12 |  406 | 4.06 | 16,24 | 14,42 |
| 69 | 4 | 12 |  536 | 5.36 | 21,44 | 19,04 |
| 70 | 4 | 12 |  242 | 2.42 | 9,68 | 8,60 |
| 71 | 8 | 12 |  141 | 1.41 | 11,28 | 10,02 |
| 72 | 8 | 12 |  284 | 2.84 | 22,72 | 20,18 |

PALIČNA ARMATURA - OBLIKA KRIVLJENJA

**IZVLEČEK ARMATURE STOPNIC IN
 PODESTOV**

| Poz. | n [kos] | Ø [mm] | Oblika krivljenja | Dolžina [m] | Iolžina pozicije [m] | Teža [kg] |
|--|---------|--------|---|-------------|----------------------|-----------------|
| 73 | 2 | 12 |  | 1.99 | 3,98 | 3,53 |
| 74 | 4 | 12 |  | 2.60 | 10,40 | 9,24 |
| 75 | 12 | 12 |  | 0.76 | 9,12 | 8,10 |
| 76 | 8 | 12 |  | 1.17 | 9,36 | 8,31 |
| 77 | 156 | 8 |  | 0.46 | 71,76 | 28,35 |
| 78 | 39 | 8 |  | 0.67 | 26,13 | 10,32 |
| Sum STOPNICE IN PODESTI LIST ŠT. 04 | | | | | | 3.447,76 |
| sum | | | | | | 3.447,76 |
| kpl | | | | | | 1 |
| Teža skupaj: | | | | | | 3.447,76 |

IZVLEČEK MREŽ



UROŠ ŽVAN S.P., ZRKOVSKA 75, MARIBOR

| Poz. | n | Mreža | Dim. | l [m] | b [m] | Teža [kg] |
|--|---|-------|------|-------|-------|-----------|
| STOPNICE IN PODESTI LIST ŠT. 04 | | | | | | |
| 1 | 2 | Q 335 | 220 | 1,500 | 2,200 | 35,15 |
| 2 | 2 | Q 335 | 220 | 3,100 | 2,200 | 72,64 |
| 3 | 6 | Q 335 | 220 | 3,000 | 2,200 | 210,90 |
| 4 | 2 | Q 335 | 220 | 0,800 | 2,200 | 18,75 |
| 5 | 2 | Q 335 | 220 | 3,400 | 2,200 | 79,67 |
| 6 | 2 | Q 335 | 220 | 1,400 | 2,200 | 32,81 |
| 7 | 2 | Q 335 | 220 | 6,000 | 2,200 | 140,60 |
| 8 | 2 | Q 335 | 205 | 2,100 | 2,050 | 45,85 |

IZVLEČEK MREŽ



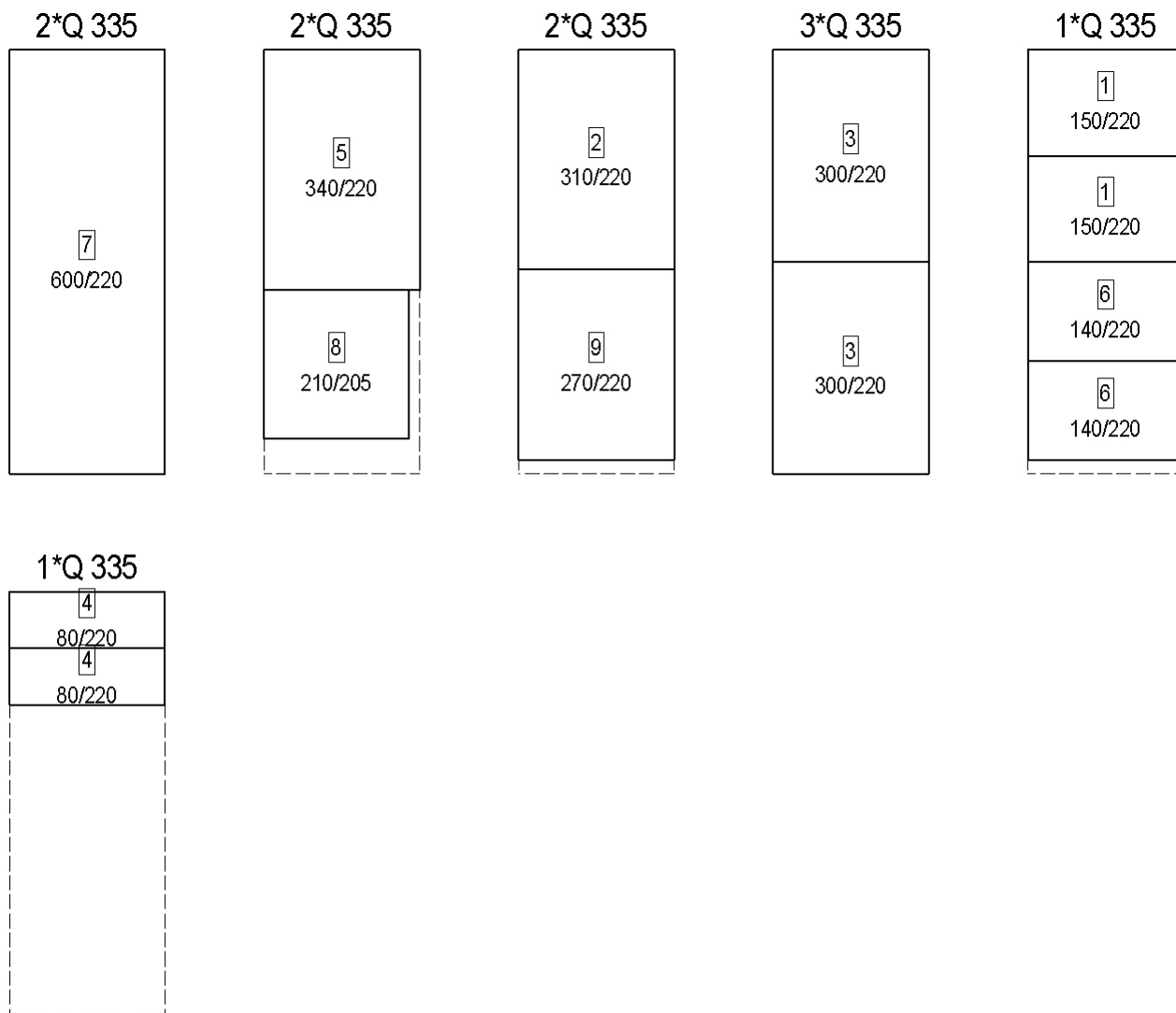
UROŠ ŽVAN S.P., ZRKOVSKA 75, MARIBOR

| Poz. | n | Mreža | Dim. | l [m] | b [m] | Teža [kg] |
|--|---|-------|------|-------|-------|---------------|
| 9 | 2 | Q 335 | 220 | 2,700 | 2,200 | 63,27 |
| Sum STOPNICE IN PODESTI LIST ŠT. 04 | | | | | | 699,64 |
| sum. | | | | | | 699,64 |
| kpl | | | | | | 1 |
| Teža skupaj | | | | | | 699,64 |

RAZREZ MREŽ



UROŠ ŽVAN S.P., ZRKOVSKA 75, MARIBOR



| Štev. | Opis | Bruto teža | Neto teža |
|-------|-------|------------|-----------|
| 11 | Q 335 | 773.30 | 699.64 |
| 11 | Vsota | 773.30 | 699.64 |

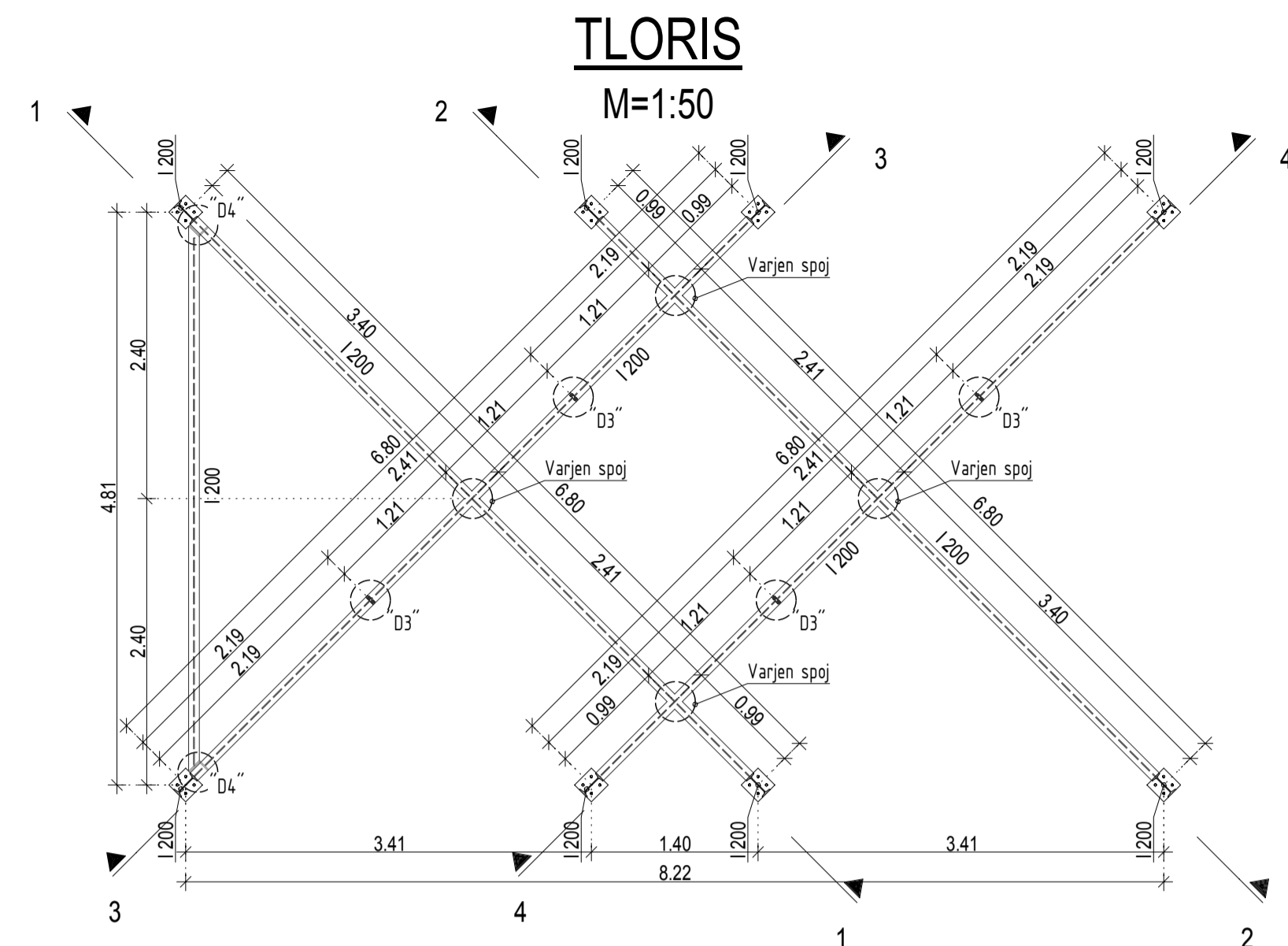
RAZREZ MREŽ



UROŠ ŽVAN S.P., ZRKOVSKA 75, MARIBOR

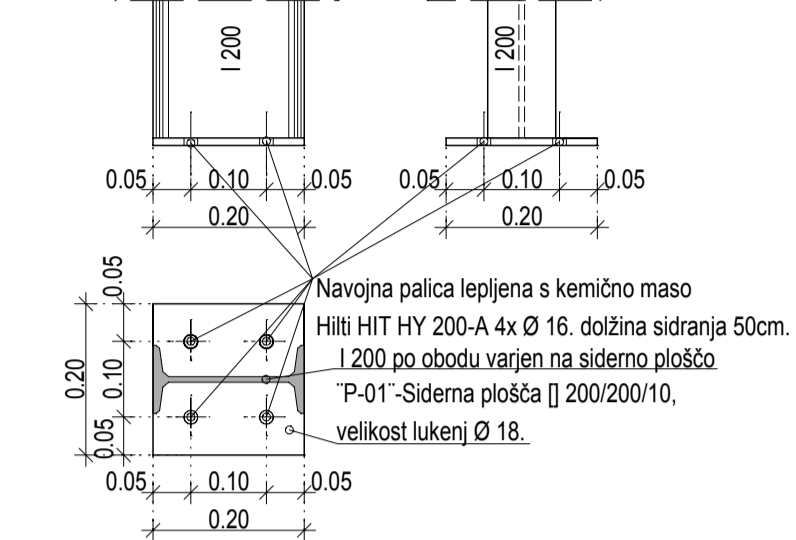
| Štev. | Opis | Bruto teža | Neto teža |
|-------|-------|------------|-----------|
| 11 | Q 335 | 773.30 | 699.64 |
| 11 | Vsota | 773.30 | 699.64 |

| | | | FIKSNA DOLŽINA [kg] | | | | | KRIVLJENA DOLŽINA [kg] | | | | | | PALICE [kg] | MREŽE [kg] |
|---------------------------------|--|---|---------------------|---------------|---------------|-------|--------|------------------------|-------|---------------|-------|--------|---------------|----------------|---------------|
| | | | 6-8 mm | 10 mm | 12 mm | 14 mm | >14 mm | 6-8 mm | 10 mm | 12 mm | 14 mm | >14 mm | | | |
| STOPNICE IN PODESTI LIST ŠT. 04 | | 1 | 10,3 | 1076,1 | 179,2 | | | 240,4 | | 1941,8 | | | 78 | 3447,8 | 699,6 |
| ZIDOVJE LIST ŠT. 03 | | 1 | 418,4 | | 1019,5 | | | 13,1 | | 505,4 | | | 39 | 1956,4 | |
| TEMELJI LIST ŠT. 03 | | 1 | | | 1390 | | | 737,4 | | 982,4 | | | 54 | 3109,8 | |
| Total | | | 428,7 | 1076,1 | 2588,6 | | | 990,8 | | 3429,7 | | | 171 | 8513,9 | 699,6 |
| TEŽA SKUPAJ [kg] | | | | | | | | | | | | | 9213,5 | | |



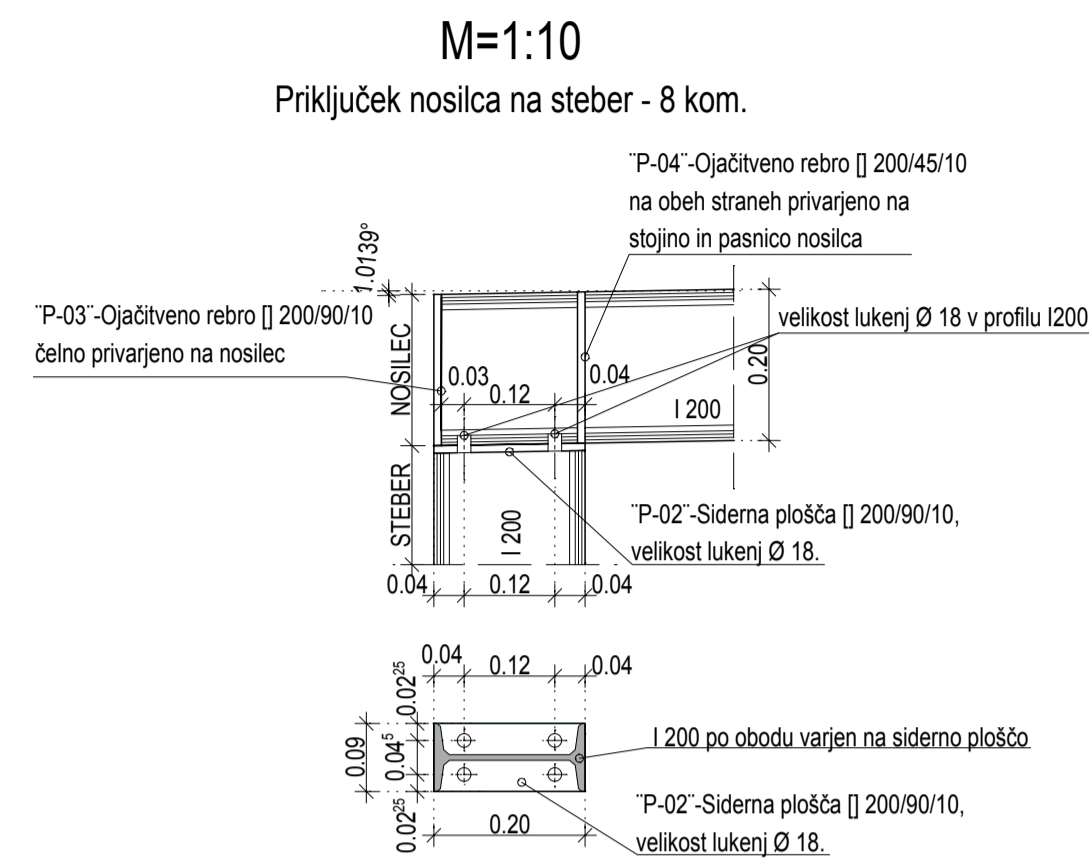
DETAIL D1

M=1:10
Priključek jeklenega sebra na AB podsavek - 8 kom.



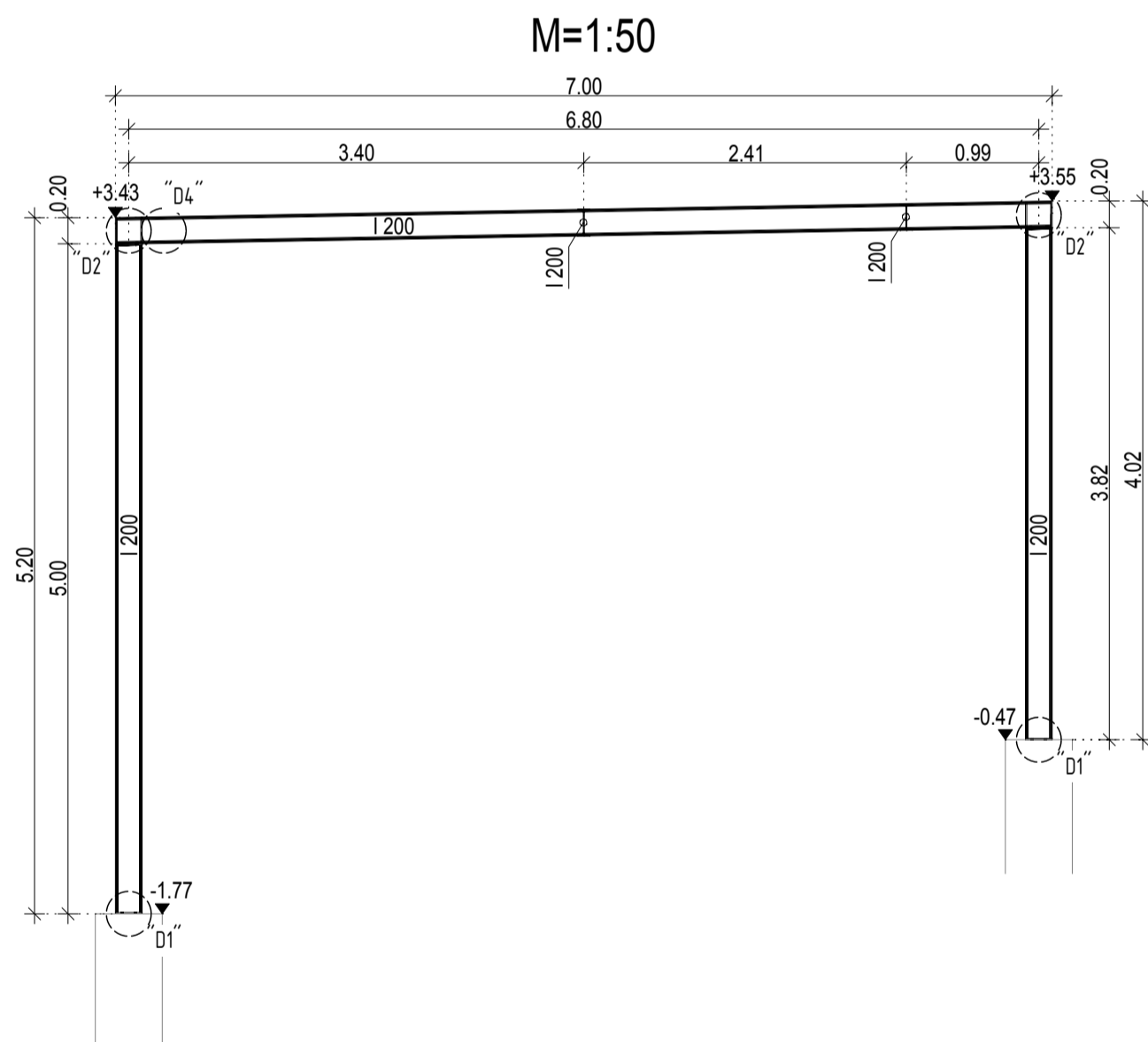
DETAIL D2

M=1:10
Priključek nosilca na stebel - 8 kom.



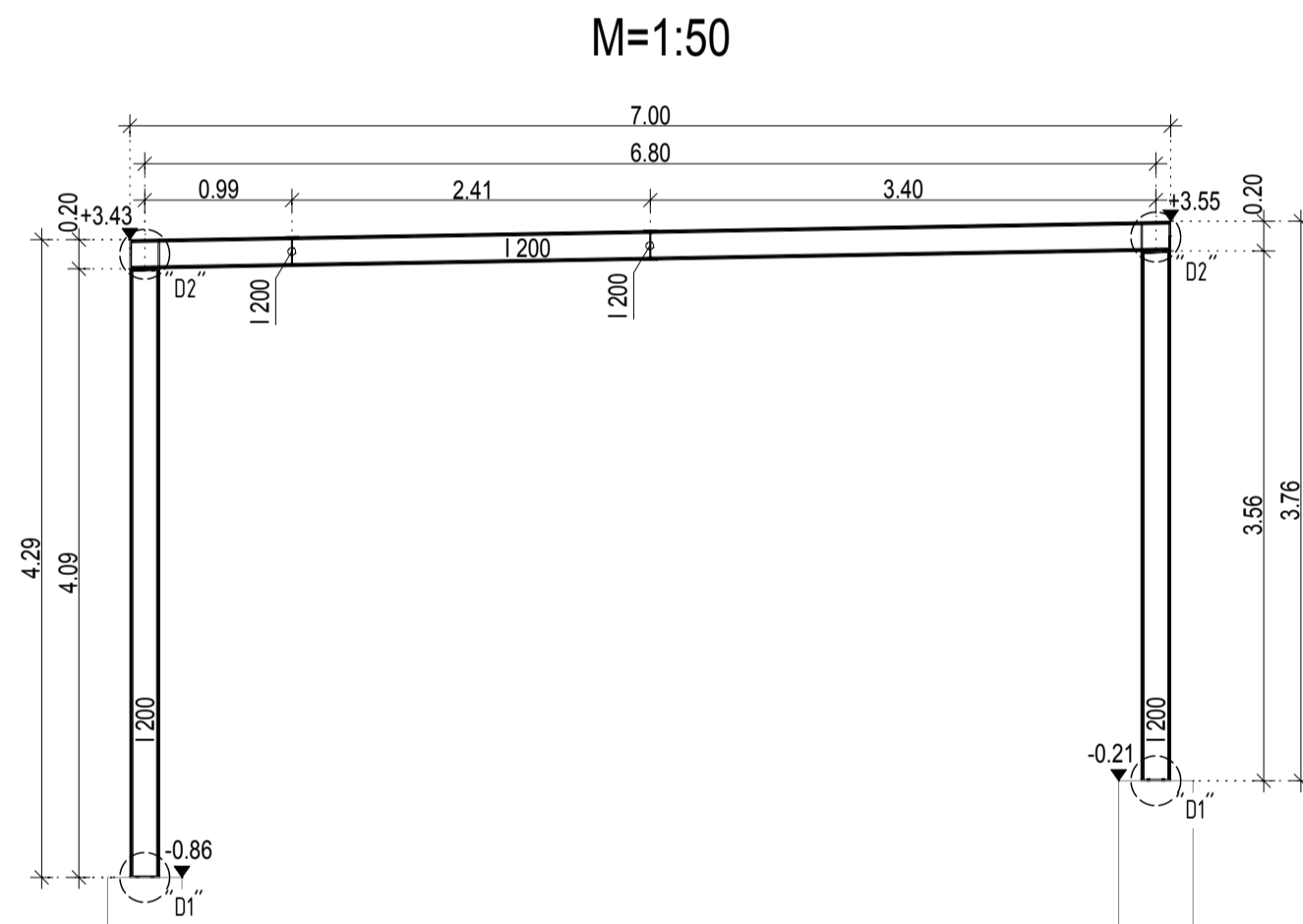
PREREZ 1-1

M=1:50



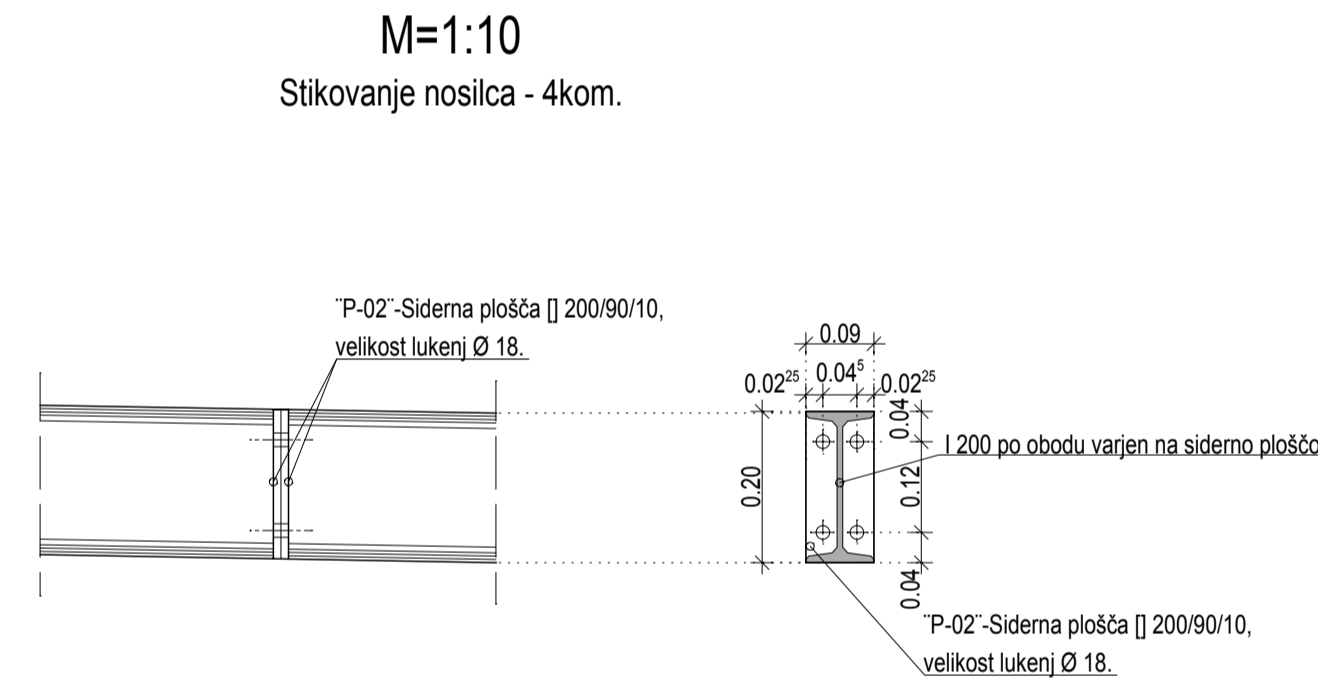
PREREZ 2-2

M=1:50



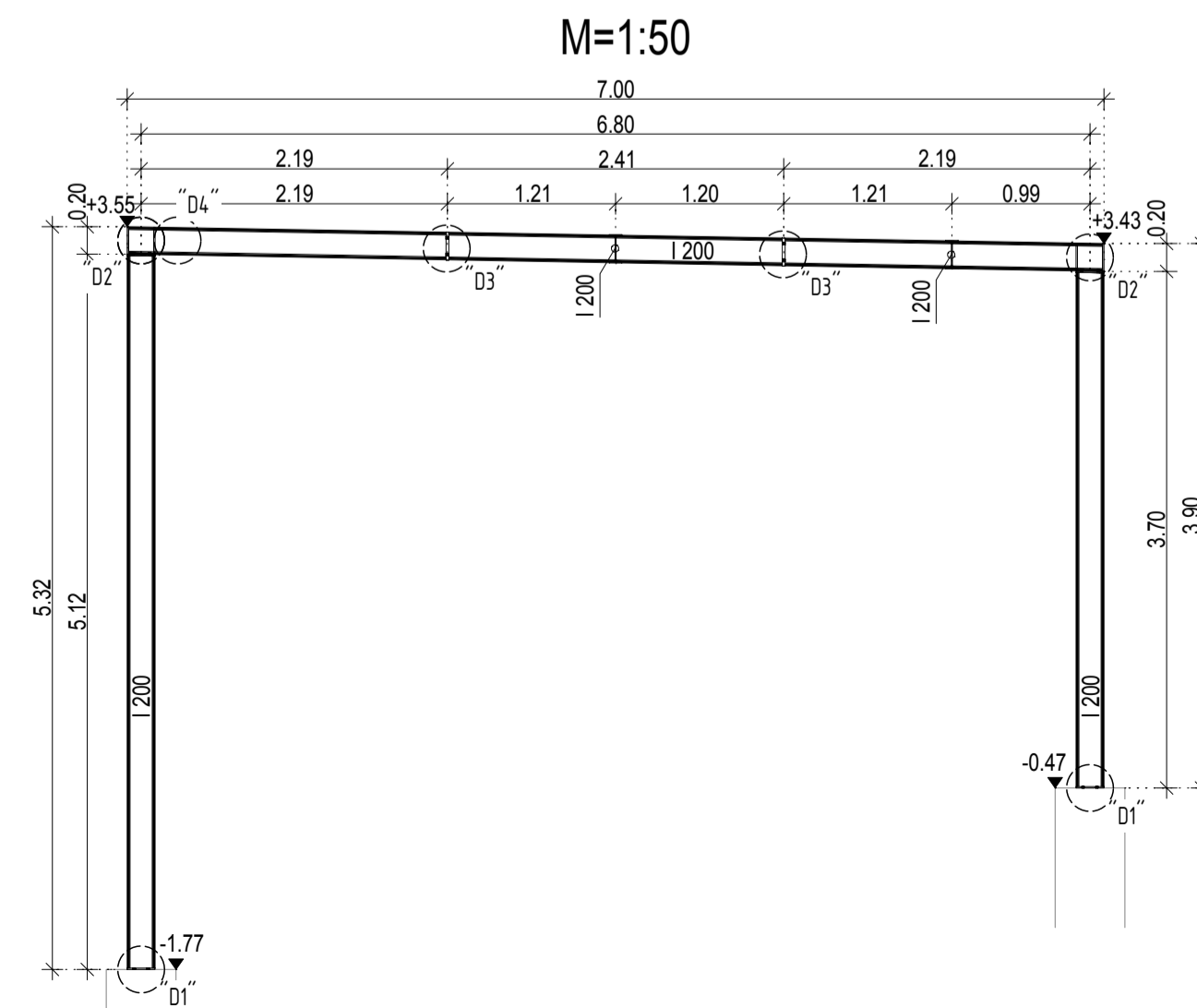
DETAIL D3

M=1:10
Stikovanje nosilca - 4kom.



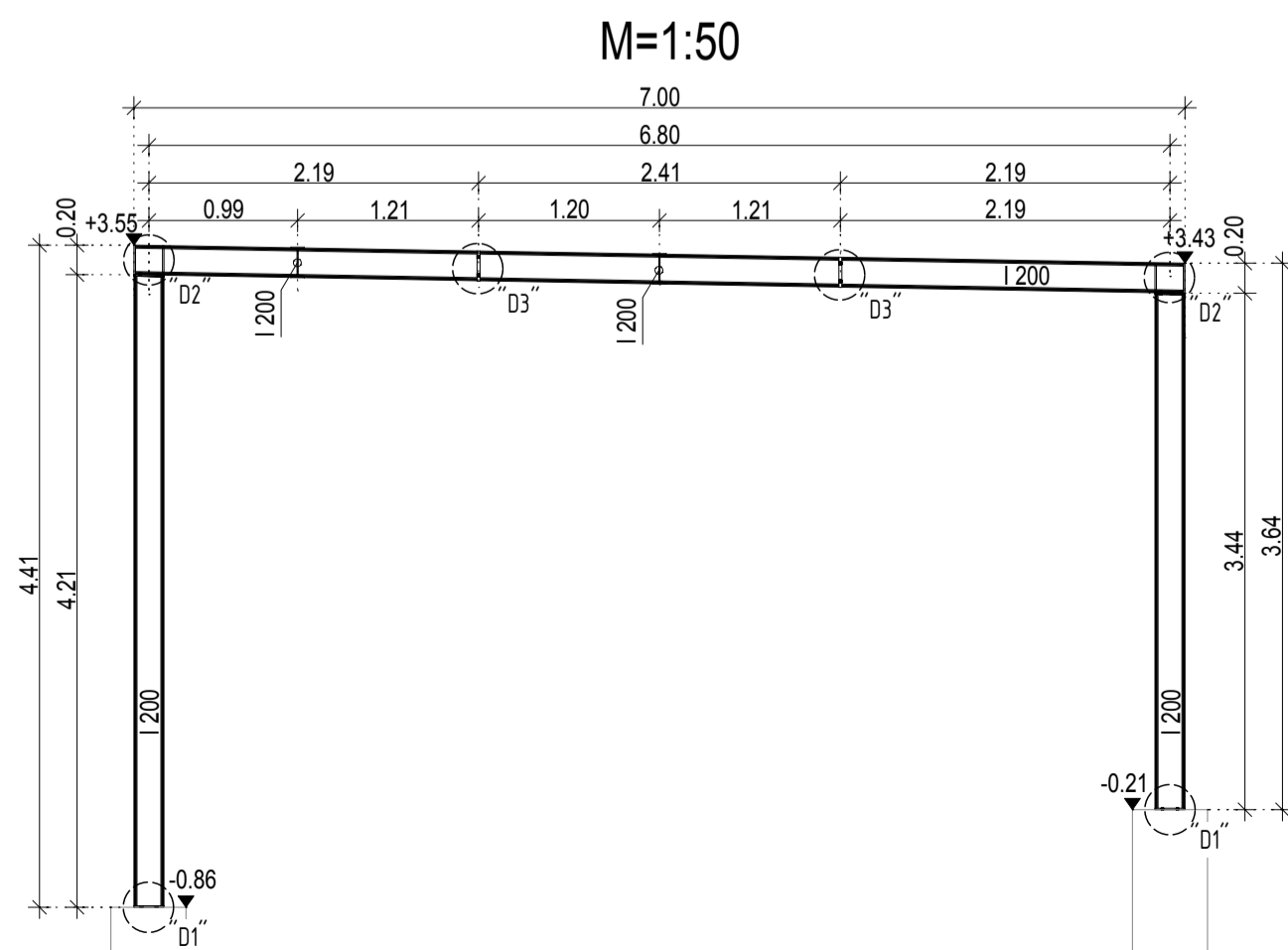
PREREZ 3-3

M=1:50



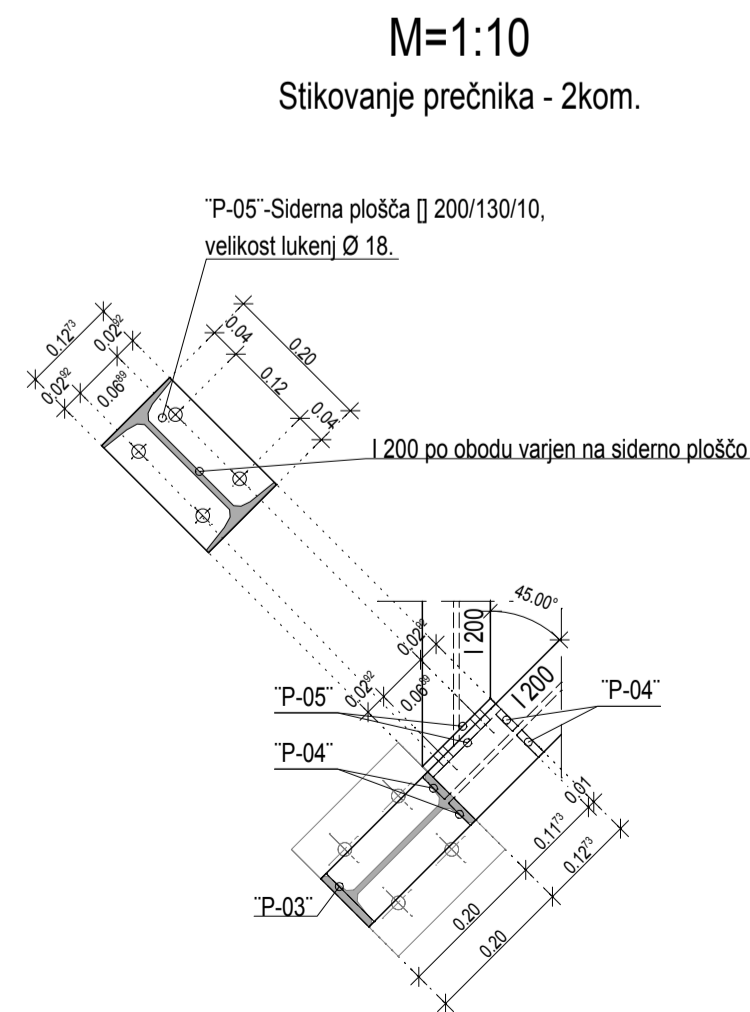
PREREZ 4-4

M=1:50



DETAIL D4

M=1:10
Stikovanje prečnika - 2kom.



REKAPITULACIJA JEKLA

| Poz. | em | kg/em | skupaj kg |
|-----------------------|--------|---------|---------------|
| P-01 - [] 200/200/10 | 8 kom | 3,14 kg | 25,0kg |
| P-02 - [] 200/90/10 | 16 kom | 1,40 kg | 22,5kg |
| P-03 - [] 200/90/10 | 8 kom | 1,50kg | 12,0kg |
| P-04 - [] 200/45/10 | 20 kom | 0,75 kg | 15,0kg |
| P-05 - [] 200/130/10 | 4 kom | 2,00 kg | 8,2kg |
| I 200 | 70m | 26,3 kg | 1850kg |
| Teža skupaj: | | | 1950kg |

Vsi vijaki in navojne palice Ø 16 kvalitete 8.8

Jeklo: S235
Vijaki: Kvaliteta 8.8

sprememba: _____

INŽENIRING BIRO
ARMATURA

PROJEKTIRANJE IN TEHNIČNO SVETOVANJE INŽENIRING BIRO ARMATURA, URŠI ŽVAN P., ŽRKOVSKA C. 15, MARIBOR
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Št. projekta: 1701002
investitor: OŠ Rada Robiča Limbuš

objekt: Ureditev dvorišča z nadstreškom

vrsta projekta: PZI
odgovorni vodja projekta: M. MILIČ UDIA ZAPS A-1524
odgovorni projektant: U. ŽVAN, UDIG IZS G-0028
sodelavec: M. MULEC MIG

kontrola:
načrt, št. načrta: GR. KONSTRUKCIJA 12/17-K
risba, merilo: JEKLENI NADSTREŠEK M=1:50,10

št. risbe: 12/17-K - 05
dafum, št. lista: JUNIJ 2017 05