

Idejni projekt lokalne ceste

Matas, Antea

Undergraduate thesis / Završni rad

2021

Degree Grantor / Ustanova koja je dodijelila akademski / stručni stupanj:

University of Split, Faculty of Civil Engineering, Architecture and Geodesy / Sveučilište u Splitu, Fakultet građevinarstva, arhitekture i geodezije

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:123:690910>

Rights / Prava: [In copyright](#)/[Zaštićeno autorskim pravom.](#)

Download date / Datum preuzimanja: **2025-04-01**



Repository / Repozitorij:

[FCEAG Repository - Repository of the Faculty of Civil Engineering, Architecture and Geodesy, University of Split](#)



**SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE**

ZAVRŠNI RAD

ANTEA MATAS

Split, 2021.

**SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I
GEODEZIJE**

IDEJNI PROJEKT LOKALNE CESTE

Završni rad

Split, 2021.

SVEUČILIŠTE U SPLITU

FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE

Split, Matice hrvatske 15

STUDIJ: **PREDDIPLOMSKI STUDIJ GRAĐEVINARSTVA**

KANDIDAT: **Antea Matas**

MATIČNI BROJ (JMBAG) : **83223366**

KATEDRA: **Katedra za prometnice**

PREDMET: **Ceste**

ZADATAK ZA ZAVRŠNI RAD

Tema: **Idejni projekt lokalne ceste**

Opis zadatka: Uz pomoć programa za projektiranje cesta AutoCAD Civil 3D potrebno je izraditi idejni projekt ceste na geodetskoj podlozi koja je korištena za izradu programa u okviru kolegija Ceste. Trasa se treba položiti od točke A do točke B koristeći podatke iz programskog zadatka.

Zadatak treba sadržavati:

1. Kopiju programskog zadatka
2. Tehnički opis s prikazom korištenja programa Civil 3D
3. Građevinsku situaciju u mjerilu 1:1000
4. Uzdužni presjek u mjerilu 1:1000/100
5. Karakteristične poprečne presjeke u mjerilu 1:200
6. Obradu na računalu
7. Računalne ispise koordinatnih točaka osi
8. Proračun količina zemljanih radova
9. Proračun količine radova po presjecima

U Splitu, rujan 2021.

Voditelj Završnog rada:

Prof. dr. sc. Dražen Cvitanić

Idejni projekt lokalne ceste

Sažetak:

Idejni projekt lokalne ceste izrađen je između točaka A i B postavljenih na geodetskoj podlozi prema programskom zadatku kolegija Ceste. Pri izradi projekta služimo se računalnim programom AutoCAD Civil 3D. Odabrana projektna brzina za ovu kategoriju ceste je 40 km/h. Cesta je projektirana na brdovitom terenu i za prosječni godišnji dnevni promet od 950 vozila/dan. Idejni projekt izrađen je prema Pravilniku o osnovnim uvjetima za projektiranje cesta.

Ključne riječi:

Idejni projekt, lokalna cesta, projektna brzina, os ceste, niveleta, poprečni presjek

Conceptual project of local road

Abstract:

The conceptual project of the local road was made between points A and B placed on a geodetic basis according to the task of the course Roads. Conceptual project is made using the computer program AutoCAD Civil 3D. The selected design speed is 40 km/h. The road is designed on hilly terrain and for an average annual daily traffic of 950 vehicles/day.

The conceptual design was made according to the Ordinance on the basic conditions for road design.

Keywords:

Conceptual project, local road, design speed, the road axis, profile, cross-section

SADRŽAJ

| | |
|---|------------|
| 1. Programski zadatak | 1. |
| 2. Tehnički opis | 2. |
| 2.1 Općenito..... | 2. |
| 2.2 Horizontalni elementi..... | 2. |
| 2.3 Vertikalni elementi..... | 2. |
| 2.4 Poprečni presjek..... | 2. |
| 2.5 Kolnička konstrukcija..... | 2. |
| 2.6 Odvodnja ceste | 3. |
| 2.7 Oprema ceste | 3. |
| 3. Grafički prilozi..... | 4. |
| 3.1 Situacija M 1:1000..... | 4. |
| 3.2 Uzdužni presjek M 1:1000/100 | 6. |
| 3.3 Normalni poprečni presjek M 1:50 | 8. |
| 3.4 Karakteristični poprečni presjeci M 1:50..... | 10. |
| 4. Tablica ukupnog volumena zemljanih radova | 26. |
| 5. Obrada na računalu | 30. |
| 6. Izlazni podaci iz programa | 32. |
| 6.1 Koordinatni račun glavnih točaka osi..... | 32. |
| 6.2 Koordinatni račun detaljnih točaka osi | 52. |
| 6.3 Račun kota kolnika | 54. |
| 6.4 Vertikalni tok trase | 64. |
| 7. Literatura..... | 66. |

1. PROGRAMSKI ZADATAK

Katedra za prometnice

Studij: Preddiplomski

Nastavni predmet: CESTE

Student/ica: *Antea Natas*

ZADATAK

Treba izraditi idejni projekt dionice cešte između točaka A i B naznačenih na priloženoj geodetskoj podlozi u mjerilu 1:1000.

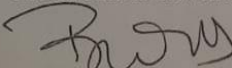
Zadano je:

- PGDP - prosječni godišnji dnevni promet: **950 voz/dan**
- vrsta terena: **brdoviti.**

Idejni projekt treba sadržavati:

1. Tehnički opis
2. Proračun horizontalne geometrije
3. Proračun proširenja kolnika u krivini
4. Proračun vertikalne geometrije i kota nivelete
5. Proračun vitoperenja kolnika
6. Građevinska situacija MJ. 1:1000
7. Uzdužni presjek MJ. 1:1000/100
8. Normalni poprečni presjek MJ. 1:50
9. Karakteristični poprečni presjeci MJ. 1:100
10. Predmjer radova
11. Aproximativni troškovnik

Predmetna nastavnica:


izv.prof.dr.sc. Deana Breški, dipl.ing.grad.

2. TEHNIČKI OPIS

2.1 Općenito

Na priloženoj geodetskoj podlozi u mjerilu 1:1000 izrađen je idejni projekt ceste na dionici od točke A, koja se nalazi na 258 metara nadmorske visine, do točke B koja se nalazi na 241 metra nadmorske visine. Cesta je projektirana na prosječni godišnji dnevni promet od 950 vozila na dan i pripada

cestama 5. kategorije na brdovitom terenu. Predviđena projektna brzina za ovu kategoriju ceste je $V_p = 40$ km/h.

2.2 Horizontalni elementi

Za određenu kategoriju ceste prema pravilniku, minimalni radijus krivine je 45 m, a prijelaznice 30 m.

Duljina trase iznosi 366 m, a sastoji se od dva pravca i tri krivine. Prva krivina ima radijus $R = 60$ m i duljinu prijelaznice $L = 40$ m. Druga krivina je radijusa $R = 45$ m i duljine prijelaznice $L = 30$ m. Trećoj je radijus $R = 70$ m, a duljina prijelaznice $L = 30$ m. Svaka krivina je konstruirana pomoću dvije prijelazne krivine oblika klotoide i jednog kružnog luka.

2.3 Vertikalni elementi

Maksimalni dozvoljeni nagib nivelete je 12%, a minimalni radijus krivine 300 m.

U programu se tok sastoji od dva pravca i jedne krivine. Nagib prvog pravca je 4.55%, a drugog 3.71%. Tangenta krivine je dužine 69.82 m, a radijus krivine 8393.66 m.

2.4 Poprečni presjek

Cesta 5. kategorije ima dva kolnička traka svaki širine 3 m, betonski rubni trak širine 0.2 m, bankine širine 1.0 m i nagiba 4%. Cesta se dijelom nalazi u zasjeku, dijelom u nasipu, a dijelom u usjeku. Na usjecima se izvode rigoli za odvodnju vode i drenaža koja je postavljena u glinenu posteljicu. Nagibi usjeka su 2:1, a nasipa 1:1,5.

2.5 Kolnička konstrukcija

Projektom je predviđena kolnička konstrukcija sa sljedećim slojevima:

- Habajući sloj AC 11 surf (BIT50/70) AG4 M4 u debljini 4 cm
- Nosivi sloj AC 22 base (BIT50/70) AG6 M2 u debljini 6 cm
- Mehanički zbijeni nosivi sloj debljine 25 cm

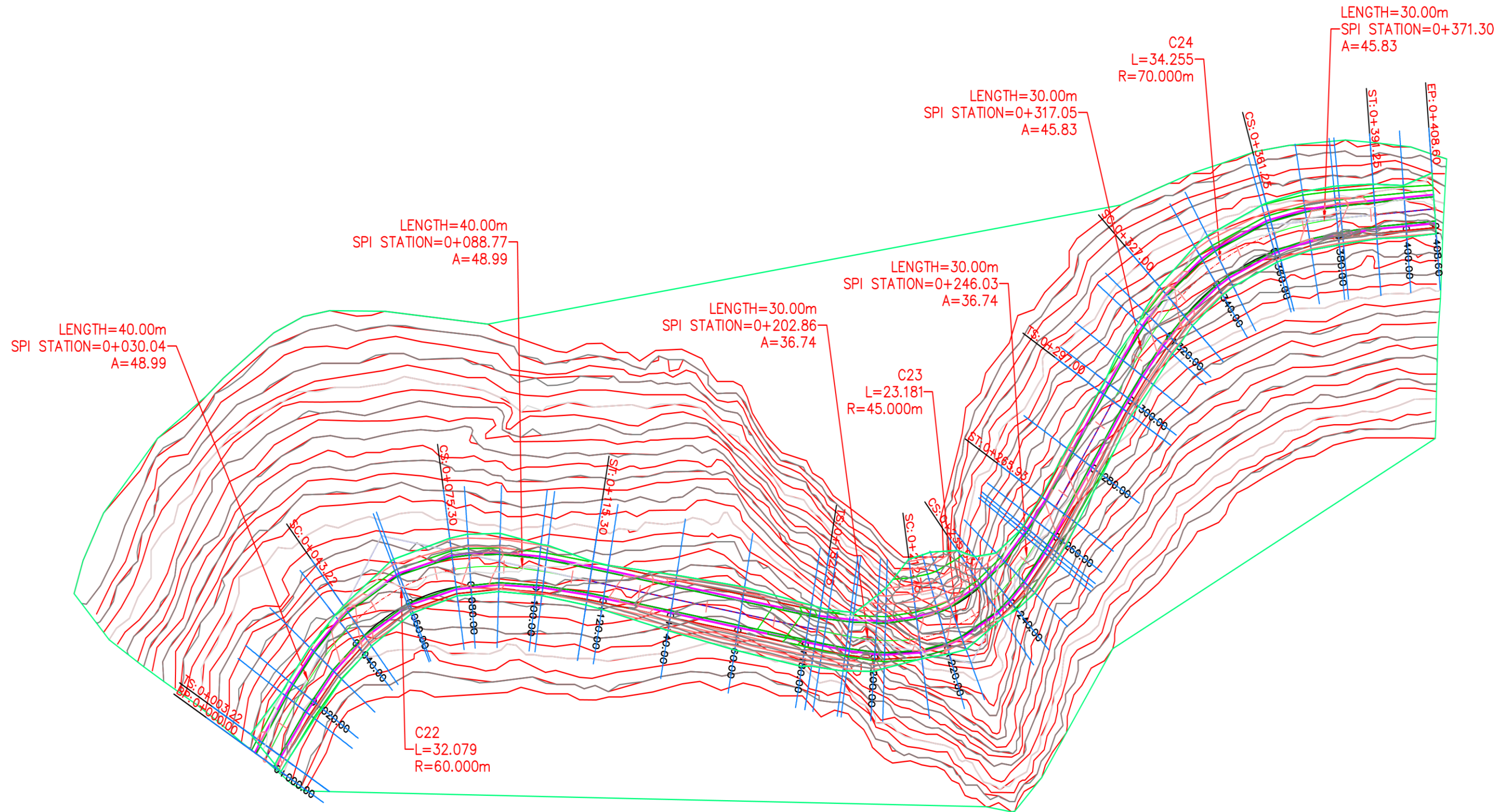
2.6 Odvodnja

Odvodnja kolnika predviđa se otvorenim sustavom odvodnje prihvaćanjem vode u zasjeku i usjeku u betonske rigole te kontroliranim ispuštanjem vode u teren direktno.

2.7 Oprema ceste

Idejnim rješenjem je predviđena horizontalna signalizacija koja se sastoji od jedne pune razdjelne crte širine 10 cm koja se postavlja u osi prometnice i punih rubnih crta širine 10 cm koje se postavljaju na svaki od rubnih trakova. Na nasip se postavlja jednostrana zaštitna čelična ograda.

3. GRAFIČKI PRILOZI
3.1 Situacija M 1:1000



| | | |
|---|------------------------------|--|
|  SVEUČILIŠTE U SPLITU, FAKULTET GRAĐEVINARSTVA ARHITEKTURE I GEODEZIJE 2100 SPLIT, MATICE HRVATSKE 15 | ZAVRŠNI RAD - CESTE | |
| | IDEJNI PROJEKT LOKALNE CESTE | |
| | IZRADILA: ANTEA MATAS | MENTOR: Prof.dr.sc. Dražen Cvitanić |
| | SADRŽAJ: SITUACIJA | MJERILO: 1 : 1000 |
| DATUM: 01.09.2021. | PRILOG: 1 | |

3.2 Uzdužni presjek M 1:1000/100

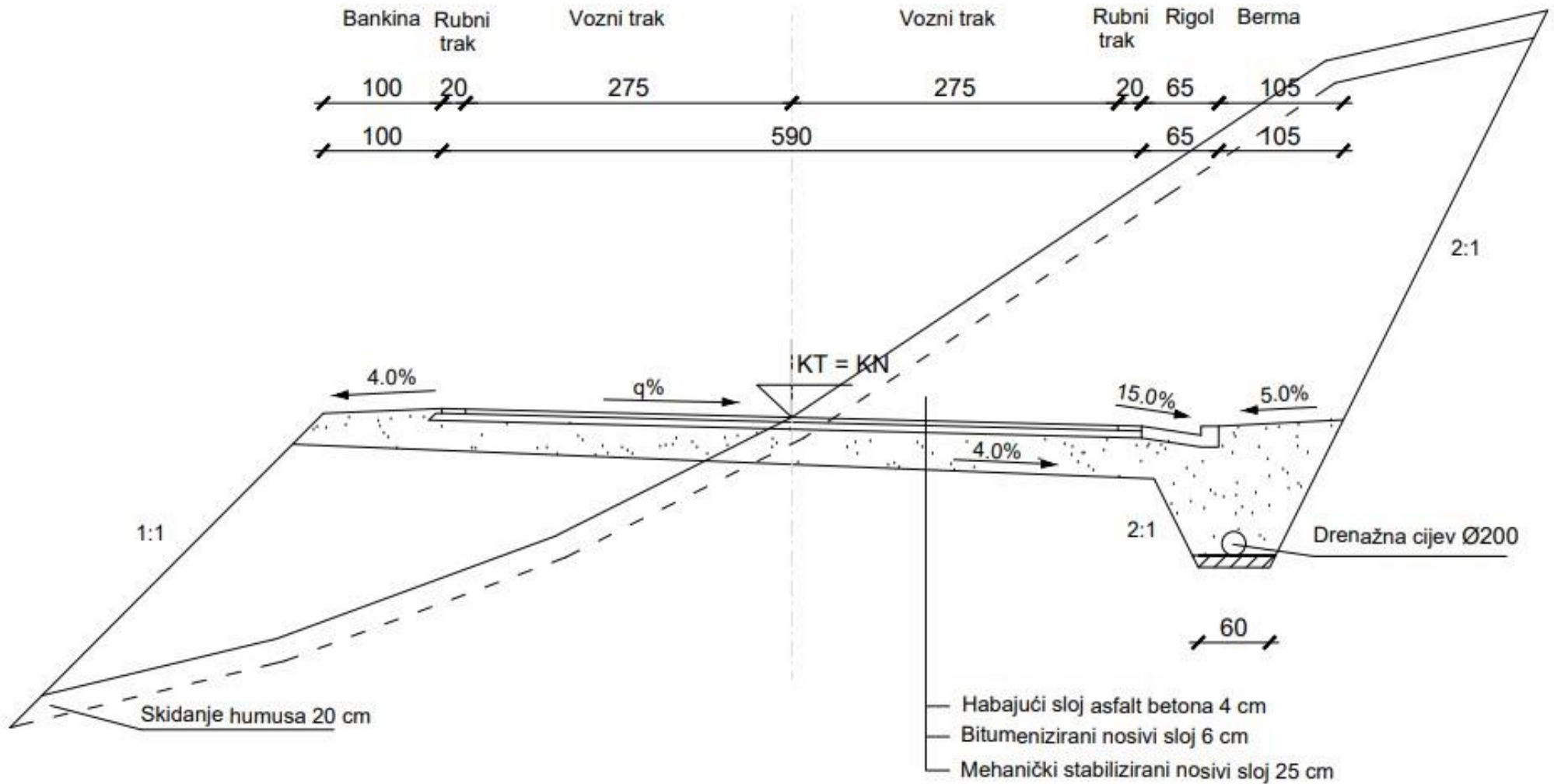
os 1 (1) PROFILE



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|--|---------------------------|--------|---------------------------|-----------------------|---------------------------|-----------------------|-------------------|--------|--------|-------------------|--------|----------------------------|----------------------------|-----------------------|----------------------------|-----------------------|----------------------|-------------------|----------|-------------------|----------------------------|---------------------------|-----------------------|---------------------------|-----------------------|----------------------|--------|----------|--------|--------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|
| Stacionaža | 0+000.00 0+010.00 0+020.00 0+030.00 0+040.00 0+050.00 0+060.00 0+070.00 0+080.00 0+090.00 0+100.00 0+110.00 0+120.00 0+130.00 0+140.00 0+150.00 0+160.00 0+170.00 0+180.00 0+190.00 0+200.00 0+210.00 0+220.00 0+230.00 0+240.00 0+250.00 0+260.00 0+270.00 0+280.00 0+290.00 0+300.00 0+310.00 0+320.00 0+330.00 0+340.00 0+350.00 0+360.00 0+370.00 0+380.00 0+390.00 0+400.00 0+410.00 0+420.00 0+430.00 0+440.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kote nivelete | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kote terena | | 258.00 | 258.55 | 258.56 | 258.23 | 258.00 | 256.40 | 254.84 | 254.45 | 253.49 | 253.12 | 253.29 | 253.72 | 254.32 | 255.04 | 256.31 | 257.21 | 257.21 | 256.41 | 254.74 | 252.94 | 251.71 | 247.04 | 243.84 | 242.71 | 248.50 | 250.22 | 249.46 | 249.00 | 248.77 | 247.93 | 246.52 | 246.72 | 245.89 | 244.30 | 243.80 | 243.29 | 242.58 | 242.52 | 242.49 | 241.98 | 241.83 | | |
| Horizontalni elementi | | L = 3.22 N31° 31' 53"E | | L: 40.00 | | R: 60.00 L: 32.08 | | L: 40.00 | | | | | L = 67.45 S79° 38' 17"E | | | L: 30.00 | | R: 45.00 L: 23.18 | | L: 30.00 | | L = 31.07 N32° 38' 58"E | | | L: 30.00 | | R: 70.00 L: 34.26 | | L: 30.00 | | | L = 17.35 | | | | | | | | | | | | |
| Vitoperenje | | 2.50% 0+003.25 | -2.50% | L: 5.80% sta: 0+043.22 | -5.80% D: 0+075.30 | L: 5.80% sta: 0+075.30 | -5.80% D: 0+115.30 | 2.50% 0+115.30 | -2.50% | 0.00% | 2.50% 0+182.75 | -2.50% | 0.00% | L: -7.00% sta: 0+212.75 | -7.00% D: 0+235.99 | L: -7.00% sta: 0+235.99 | -7.00% D: 0+276.93 | 0.00% | 2.50% 0+276.93 | -2.50% | 2.50% 0+297.00 | -2.50% | L: 5.80% sta: 0+327.00 | -5.80% D: 0+361.25 | L: 5.80% sta: 0+361.25 | -5.80% D: 0+391.25 | 2.50% 0+391.25 | -2.50% | | | | | | | | | | | | | | | | |

3.3 Normalni poprečni presjek M 1:50

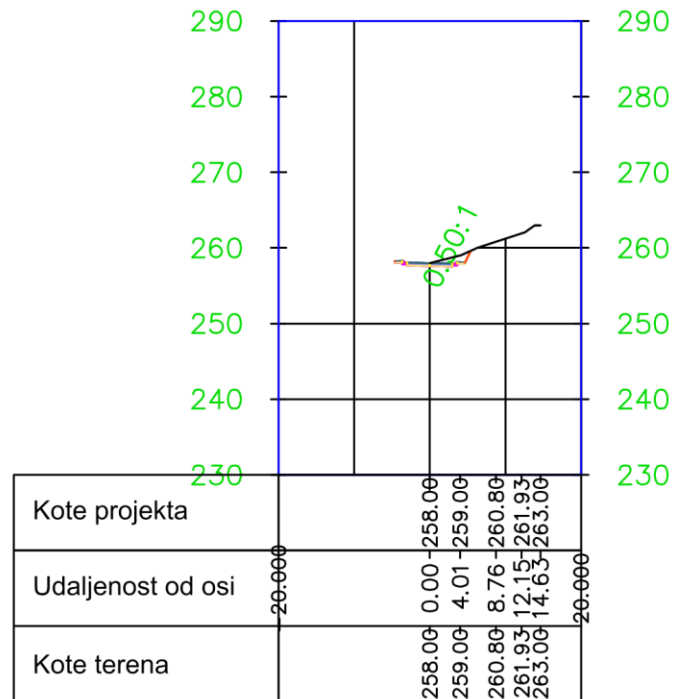
NORMALNI POPREČNI PRESJEK M 1:50



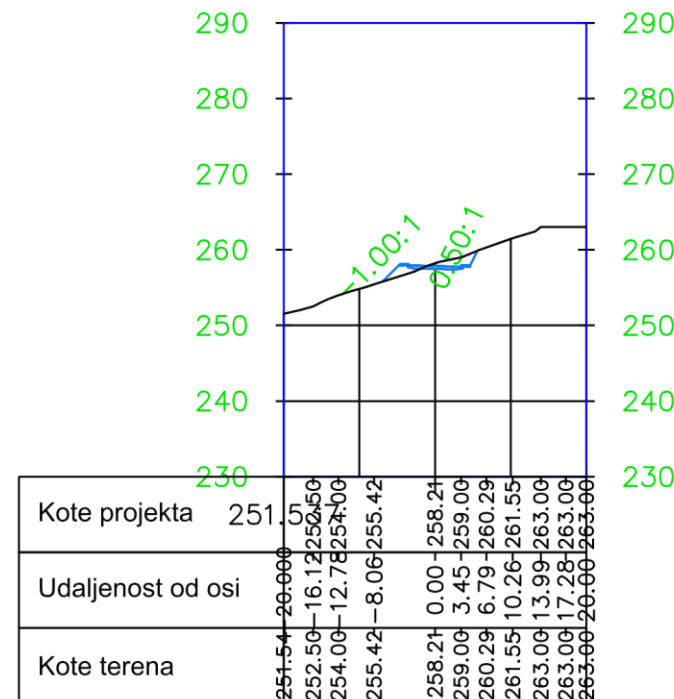
3.4 Karakteristični poprečni presjeci M 1:200

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

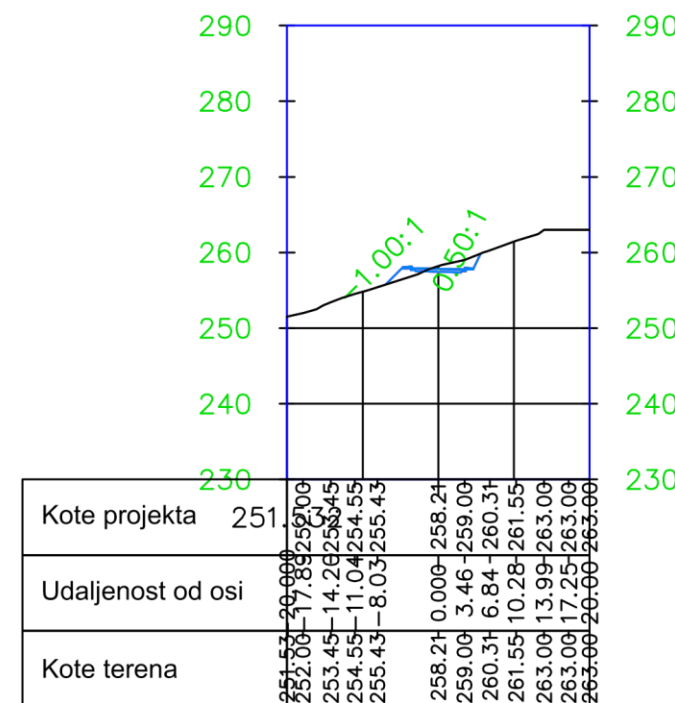
0+000.00



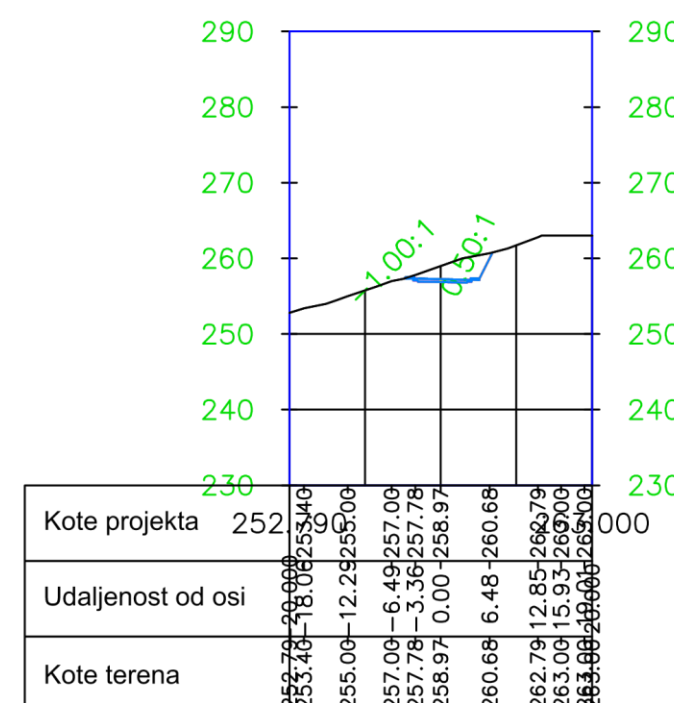
0+003.25



0+003.22



0+016.55



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE

ZAVRŠNI RAD - CESTE

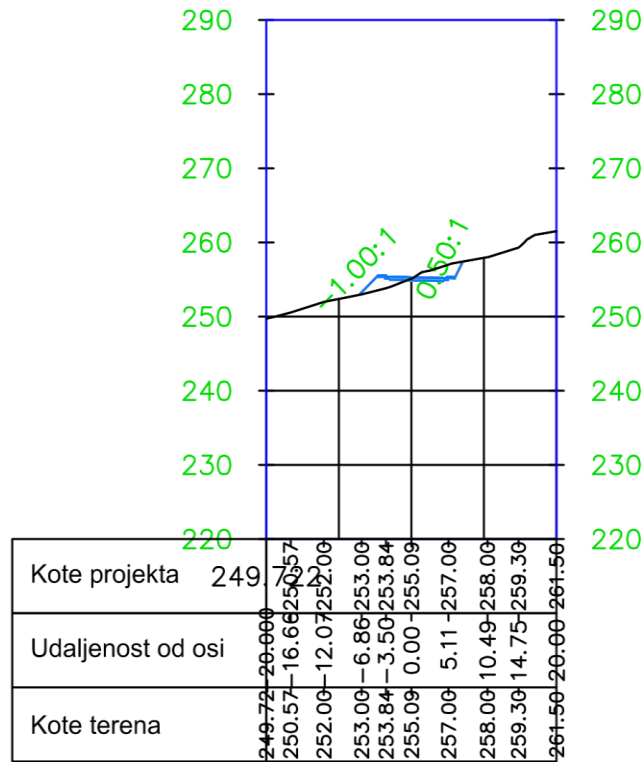
IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ANTEA MATAS MENTOR: Prof.dr.sc. Dražen Cvitanić

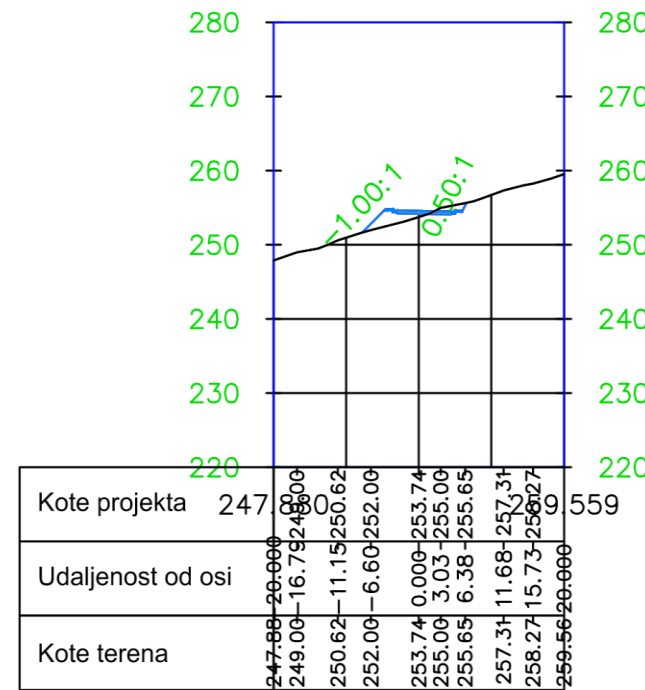
SADRŽAJ: KARAK.POPREČNI PRESJECI MJERILO: M 1 : 100
DATUM: 01.09.2021. PRILOG: 3

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

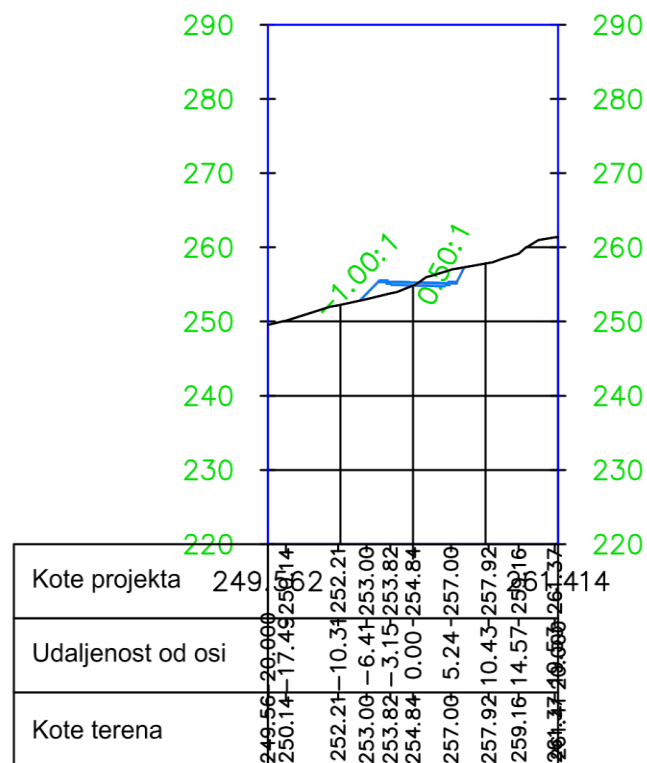
0+059.26



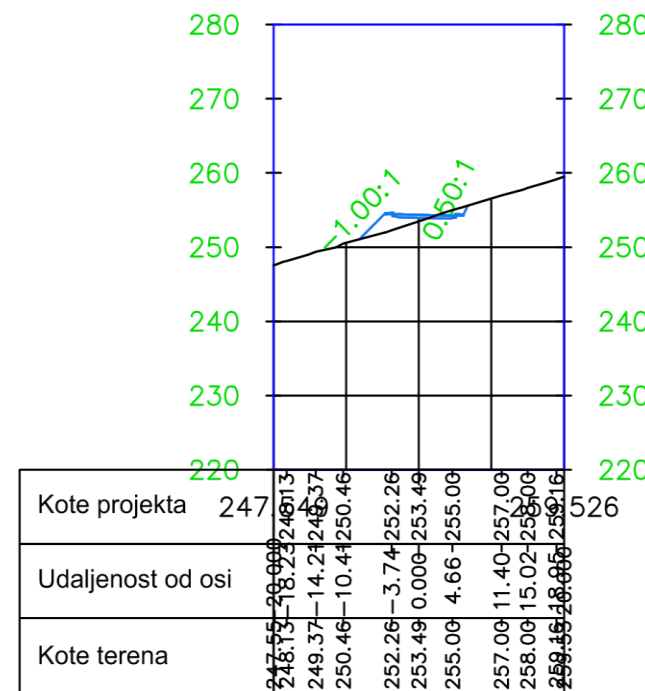
0+075.30



0+060.00



0+080.00



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE

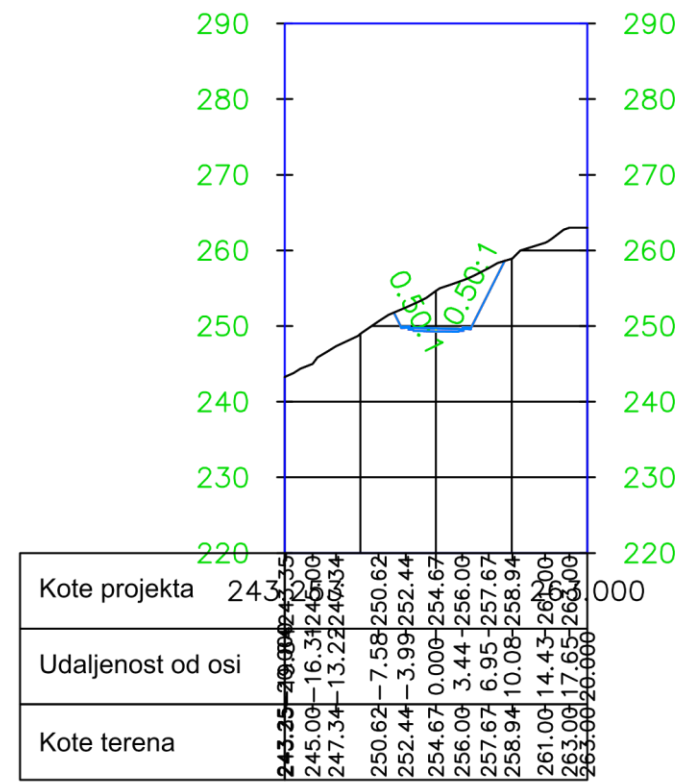
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

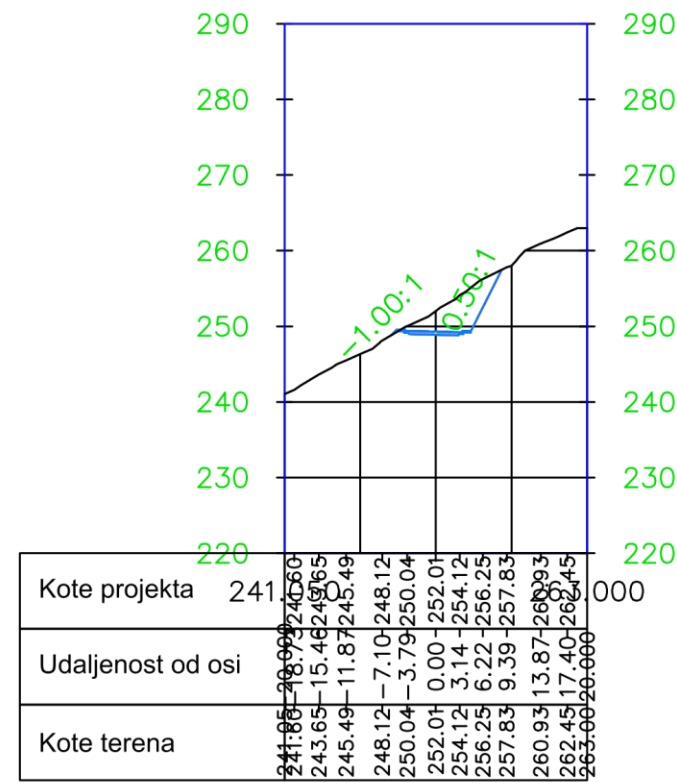
| | | | |
|-----------|-------------------------|----------|------------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitančić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 100 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

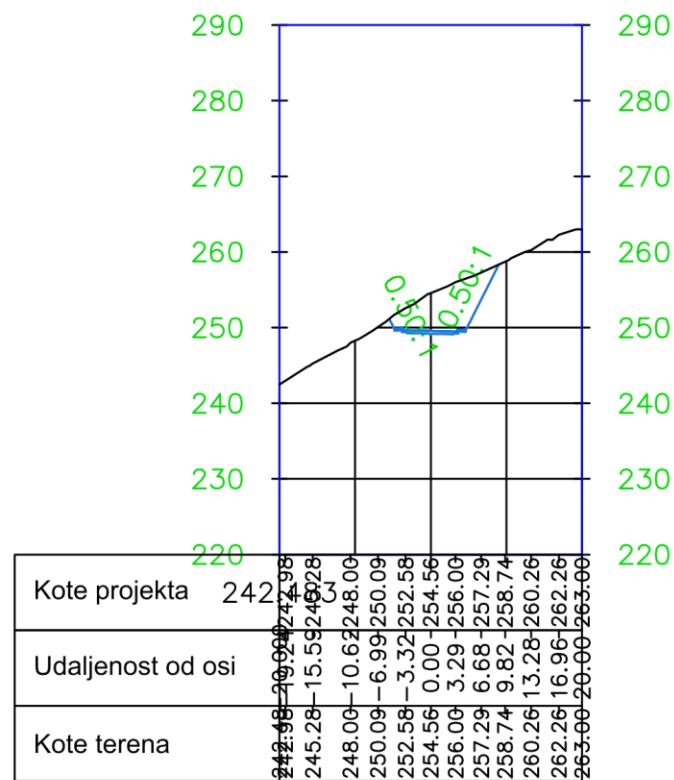
0+182.75



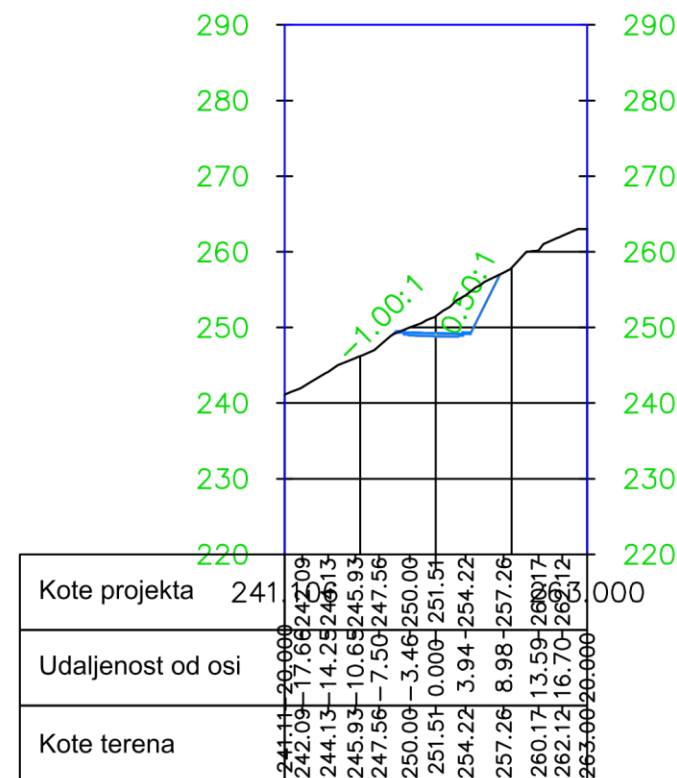
0+191.75



0+185.10



0+192.75



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

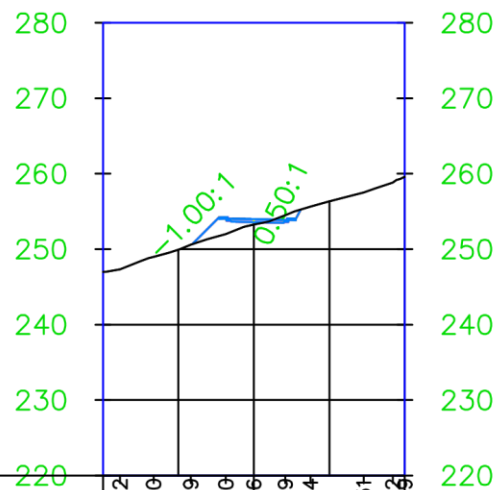
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 100 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

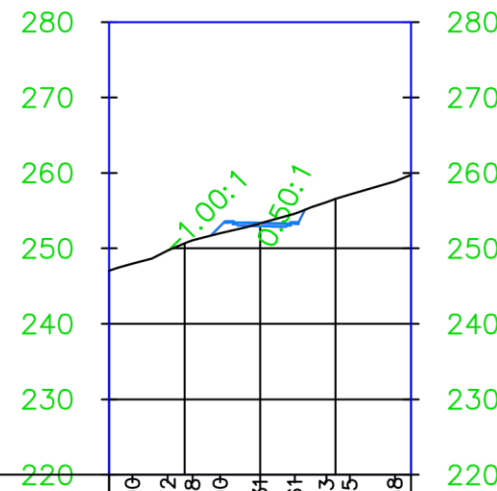
KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

0+088.63



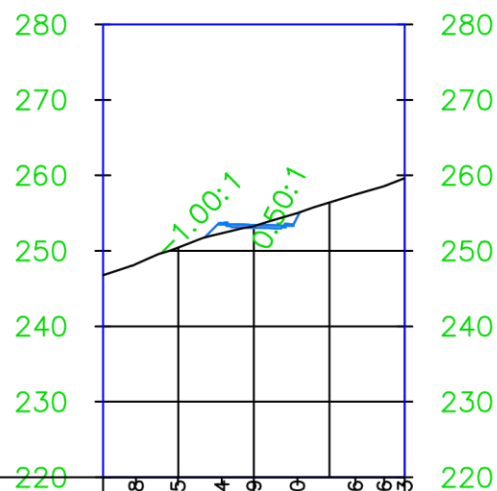
| | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 247.00 | 247.32 | 249.00 | 250.59 | 252.00 | 253.26 | 254.49 | 255.64 | 257.51 | 258.83 |
| Udaljenost od osi | 0.00 | 1.74 | 13.36 | 8.37 | 3.72 | 0.00 | 4.15 | 7.49 | 14.55 | 18.41 |
| Kote terena | 247.00 | 247.32 | 249.00 | 250.59 | 252.00 | 253.26 | 254.49 | 255.64 | 257.51 | 258.83 |

0+101.96



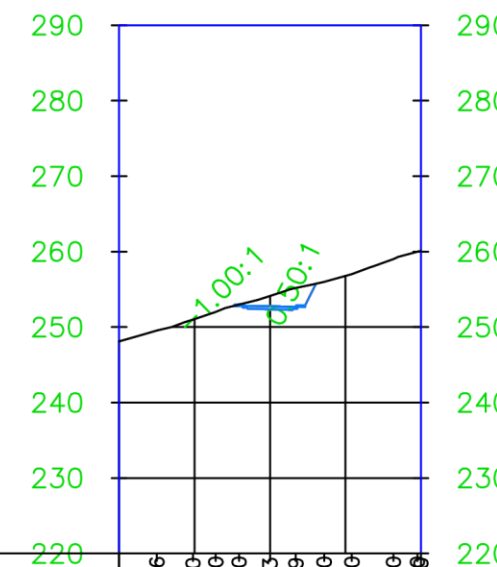
| | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 247.00 | 248.00 | 249.72 | 251.08 | 252.00 | 253.31 | 254.61 | 256.13 | 257.15 | 258.88 |
| Udaljenost od osi | 0.00 | 16.92 | 12.24 | 8.96 | 5.29 | 0.00 | 4.58 | 8.80 | 11.88 | 17.87 |
| Kote terena | 247.00 | 248.00 | 249.72 | 251.08 | 252.00 | 253.31 | 254.61 | 256.13 | 257.15 | 258.88 |

0+100.00



| | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 246.77 | 248.28 | 250.45 | 252.34 | 253.29 | 255.00 | 257.46 | 258.56 | 259.63 |
| Udaljenost od osi | 0.00 | 15.63 | 10.05 | 4.26 | 0.00 | 5.78 | 13.45 | 17.26 | 20.00 |
| Kote terena | 246.77 | 248.28 | 250.45 | 252.34 | 253.29 | 255.00 | 257.46 | 258.56 | 259.63 |

0+115.30



| | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 248.10 | 249.56 | 251.00 | 252.00 | 253.00 | 254.13 | 255.19 | 256.00 | 257.00 | 259.00 |
| Udaljenost od osi | 0.00 | 14.98 | 10.28 | 7.18 | 4.09 | 0.00 | 3.43 | 7.18 | 10.86 | 16.37 |
| Kote terena | 248.10 | 249.56 | 251.00 | 252.00 | 253.00 | 254.13 | 255.19 | 256.00 | 257.00 | 259.00 |



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE

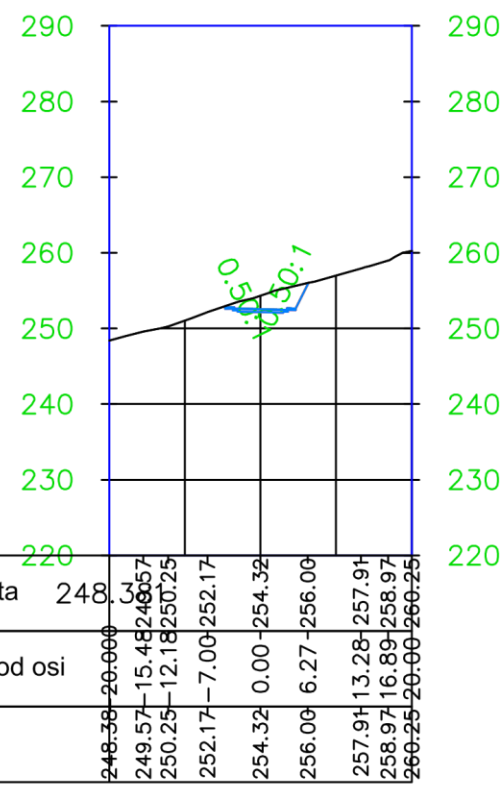
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

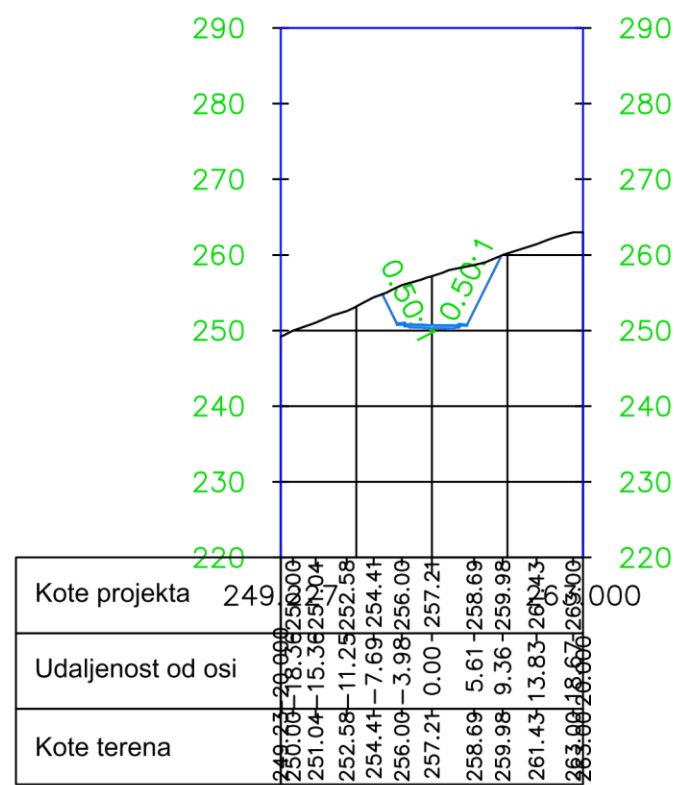
| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

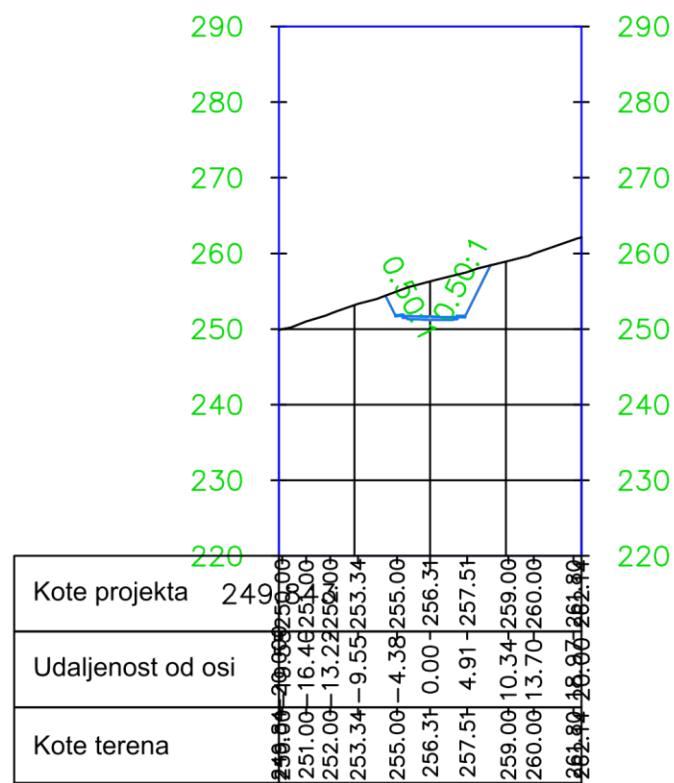
0+120.00



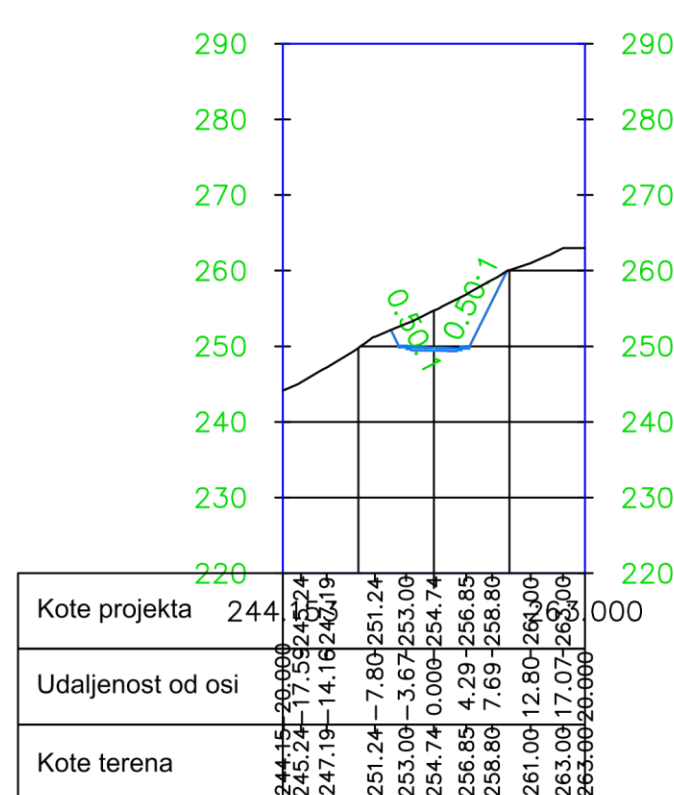
0+160.00



0+140.00



0+180.00



SVEUČILIŠTE U
SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

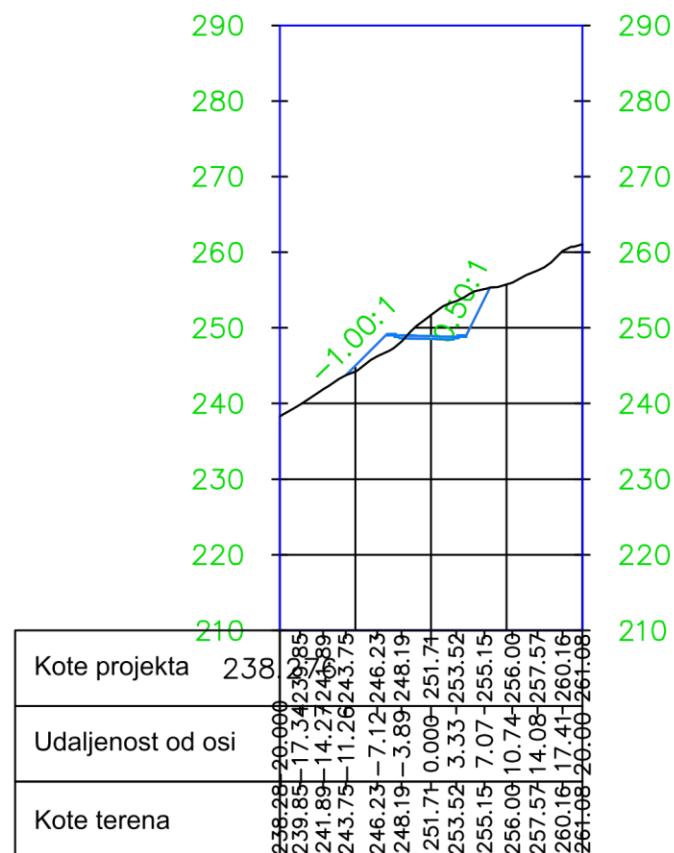
IZRADILA: ANTEA MATAS MENTOR: Prof.dr.sc. Dražen Cvitanić

SADRŽAJ: KARAK.POPREČNI PRESJECI MJERILO: M 1 : 200

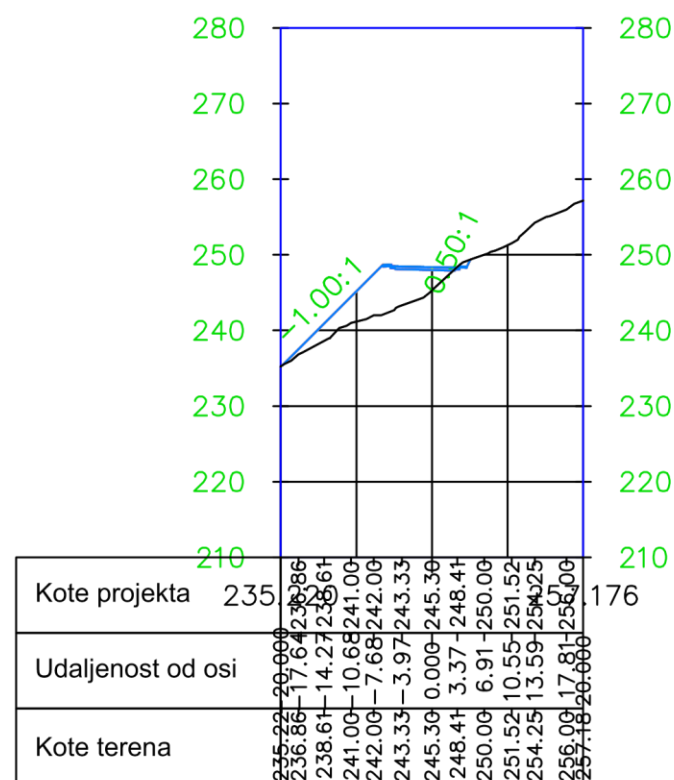
DATUM: 01.09.2021. PRILOG: 3

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

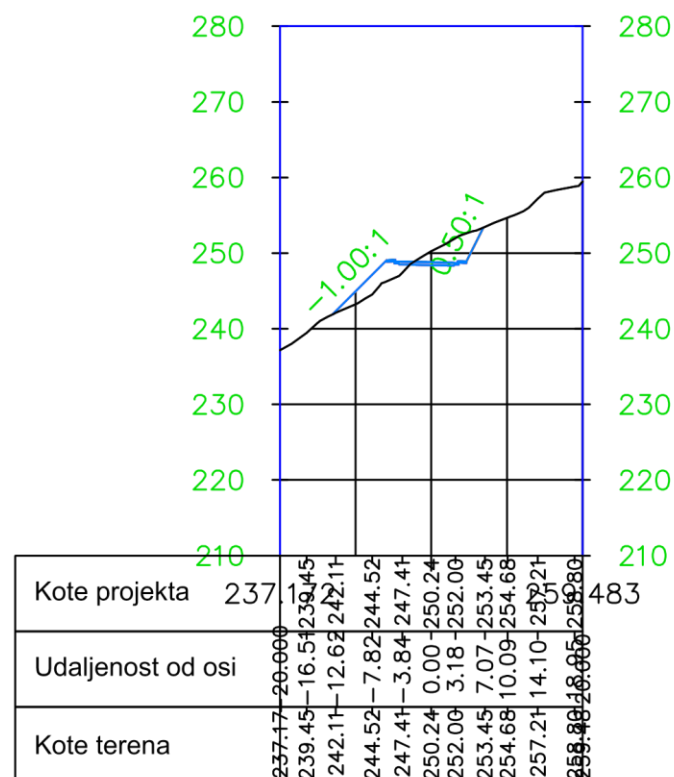
0+200.00



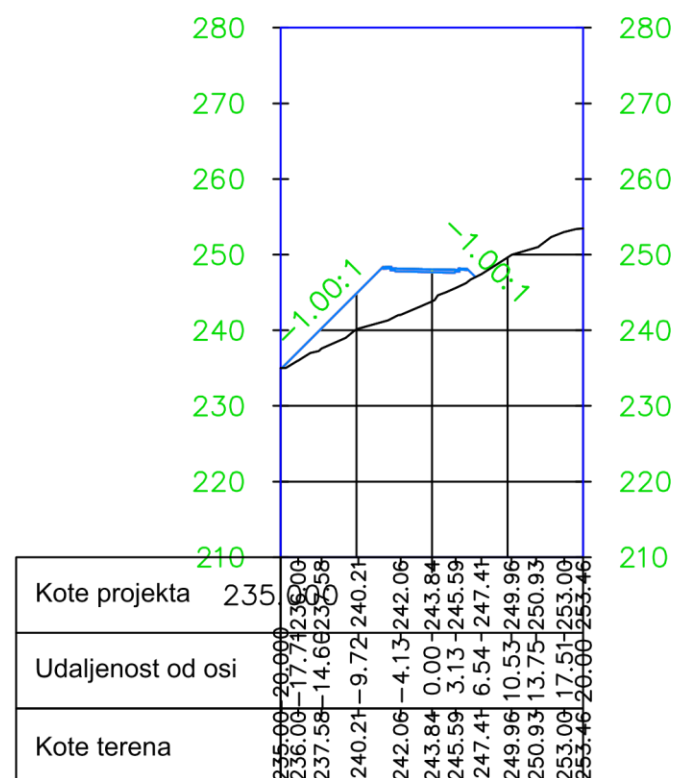
0+212.75



0+202.75



0+220.00



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

ZAVRŠNI RAD - CESTE

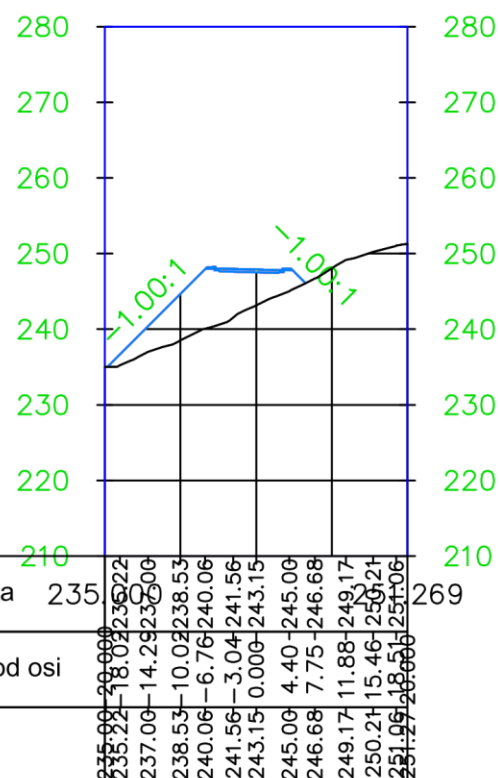
IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ANTEA MATAS MENTOR: Prof.dr.sc. Dražen Cvitanić

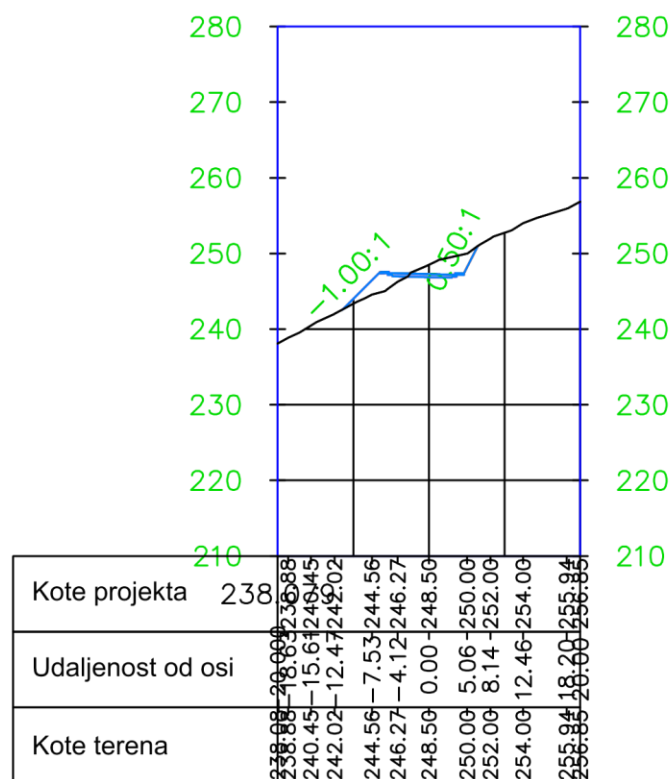
SADRŽAJ: KARAK.POPREČNI PRESJECI MJERILO: M 1 : 200
DATUM: 01.09.2021. PRILOG: 3

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

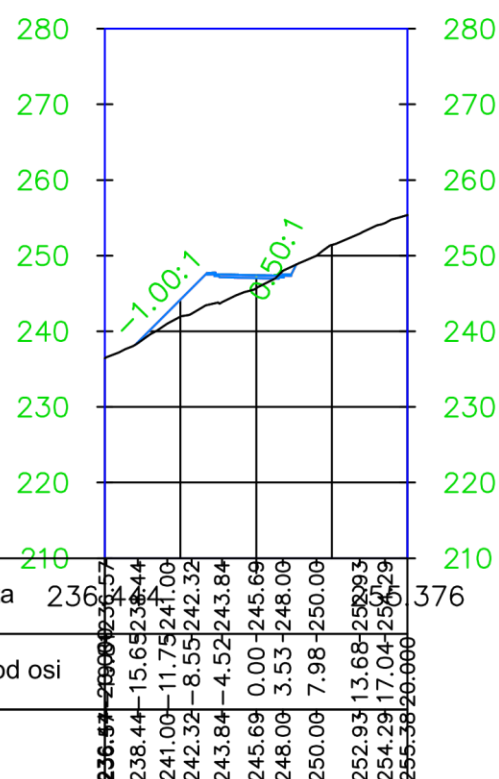
0+224.34



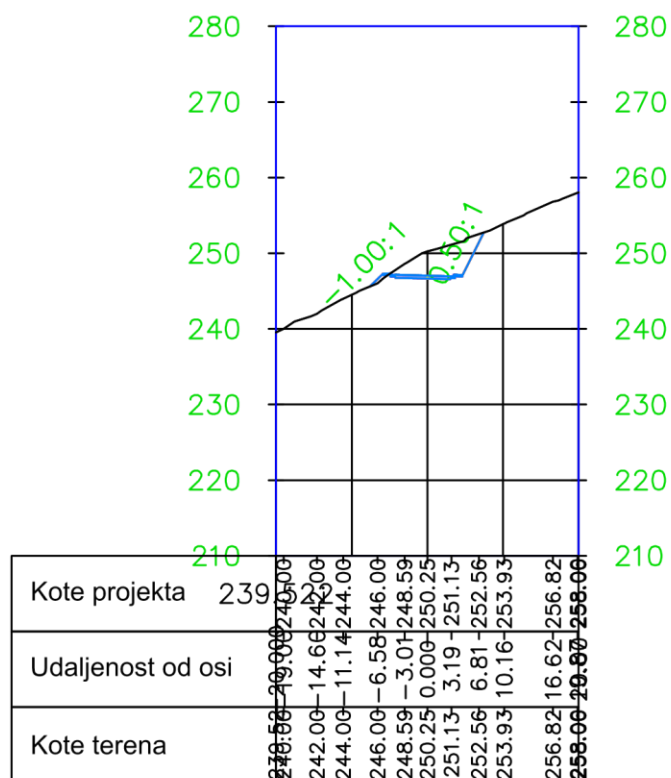
0+240.00



0+235.93



0+245.93



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

ZAVRŠNI RAD - CESTE

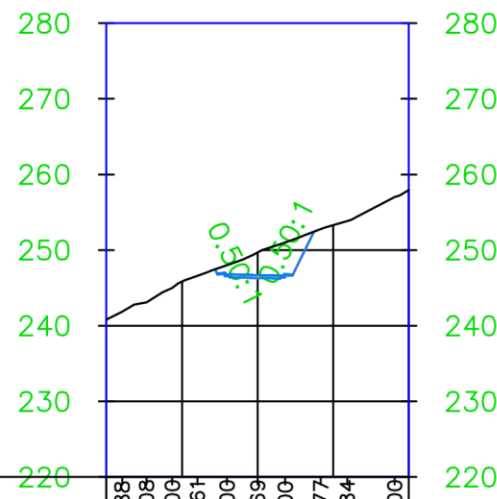
IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ANTEA MATAS MENTOR: Prof.dr.sc. Dražen Cvitanić

SADRŽAJ: KARAK.POPREČNI PRESJECI MJERILO: M 1 : 100
DATUM: 01.09.2021. PRILOG: 3

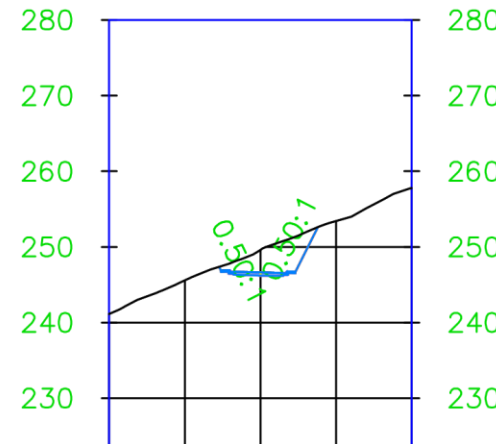
KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

0+254.92



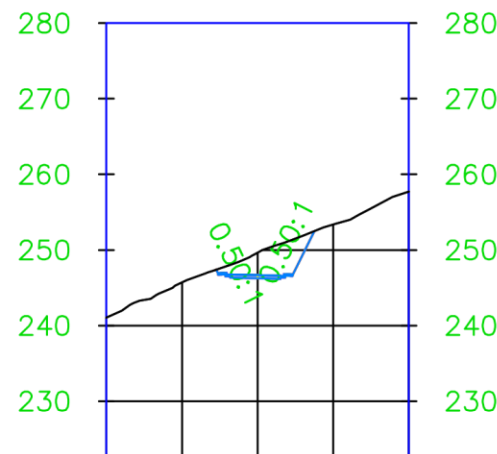
| | | | | | | | | | | | | | | | | |
|-------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 240 | 240.88 | 241.88 | 242.88 | 243.88 | 244.88 | 245.88 | 246.88 | 247.88 | 248.88 | 249.88 | 250.88 | 251.88 | 252.88 | 253.88 | 254.92 |
| Udaljenost od osi | | -20.00 | -17.92 | -15.84 | -13.76 | -11.68 | -9.60 | -7.52 | -5.44 | -3.36 | -1.28 | 0.80 | 2.88 | 4.96 | 7.04 | 9.12 |
| Kote terena | | 240.88 | 241.88 | 242.88 | 243.88 | 244.88 | 245.88 | 246.61 | 248.00 | 249.69 | 251.00 | 252.77 | 253.84 | 255.00 | 257.00 | 259.00 |

0+256.93



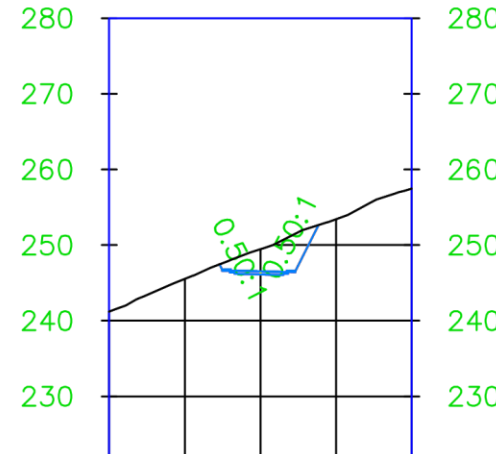
| | | | | | | | | | | | | | | | | |
|-------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 241 | 241.14 | 241.28 | 241.42 | 241.56 | 241.70 | 241.84 | 241.98 | 242.12 | 242.26 | 242.40 | 242.54 | 242.68 | 242.82 | 242.96 | 243.10 |
| Udaljenost od osi | | -20.00 | -18.36 | -16.72 | -15.08 | -13.44 | -11.80 | -10.16 | -8.52 | -6.88 | -5.24 | -3.60 | -1.96 | -0.32 | 1.32 | 2.96 |
| Kote terena | | 241.14 | 243.00 | 245.23 | 247.00 | 248.17 | 249.61 | 250.79 | 252.00 | 254.00 | 256.30 | 257.79 | 259.00 | 260.00 | 261.00 | 262.00 |

0+255.93



| | | | | | | | | | | | | | | | | |
|-------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 241 | 241.03 | 241.99 | 242.95 | 243.91 | 244.87 | 245.83 | 246.79 | 247.75 | 248.71 | 249.67 | 250.63 | 251.59 | 252.55 | 253.51 | 254.47 |
| Udaljenost od osi | | -20.00 | -17.99 | -15.98 | -13.97 | -11.96 | -9.95 | -7.94 | -5.93 | -3.92 | -1.91 | 0.10 | 2.11 | 4.12 | 6.13 | 8.14 |
| Kote terena | | 241.03 | 243.53 | 246.03 | 248.53 | 251.03 | 253.53 | 256.03 | 258.53 | 261.03 | 263.53 | 266.03 | 268.53 | 271.03 | 273.53 | 276.03 |

0+260.00



| | | | | | | | | | | | | | | | | |
|-------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 241 | 241.51 | 242.00 | 242.49 | 242.98 | 243.47 | 243.96 | 244.45 | 244.94 | 245.43 | 245.92 | 246.41 | 246.90 | 247.39 | 247.88 | 248.37 |
| Udaljenost od osi | | -20.00 | -15.48 | -10.96 | -6.44 | -1.92 | 2.60 | 8.08 | 13.56 | 19.04 | 24.52 | 30.00 | 35.48 | 40.96 | 46.44 | 51.92 |
| Kote terena | | 241.51 | 243.20 | 245.00 | 246.80 | 248.60 | 250.40 | 252.20 | 254.00 | 255.80 | 257.60 | 259.40 | 261.20 | 263.00 | 264.80 | 266.60 |



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

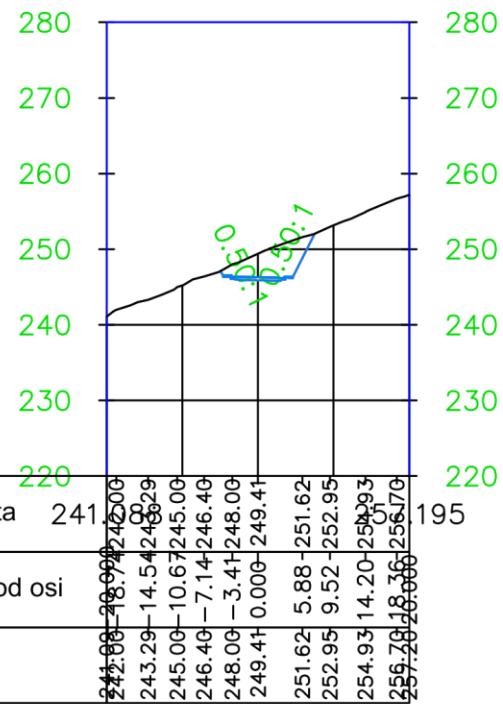
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

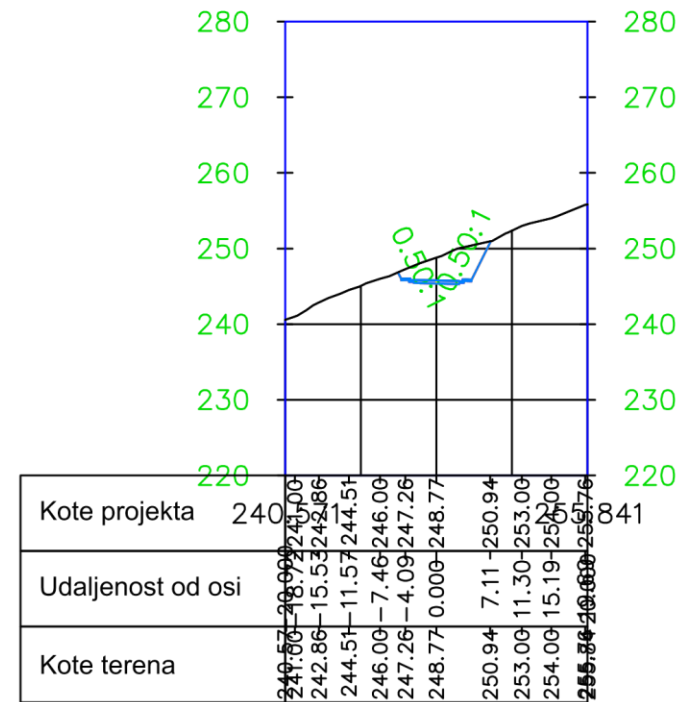
| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

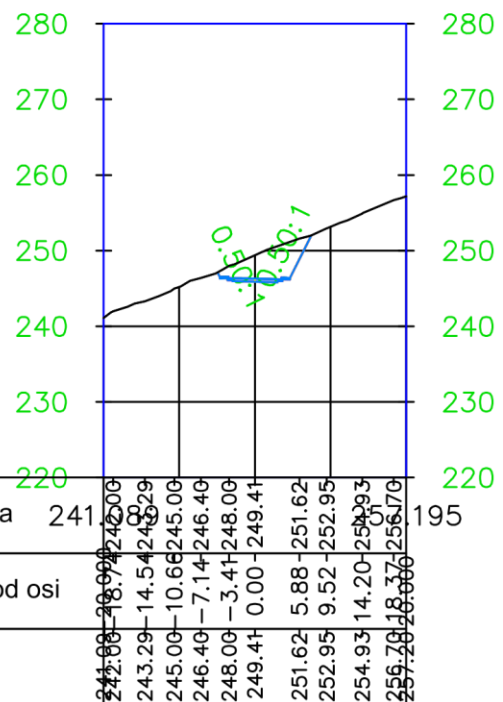
0+265.93



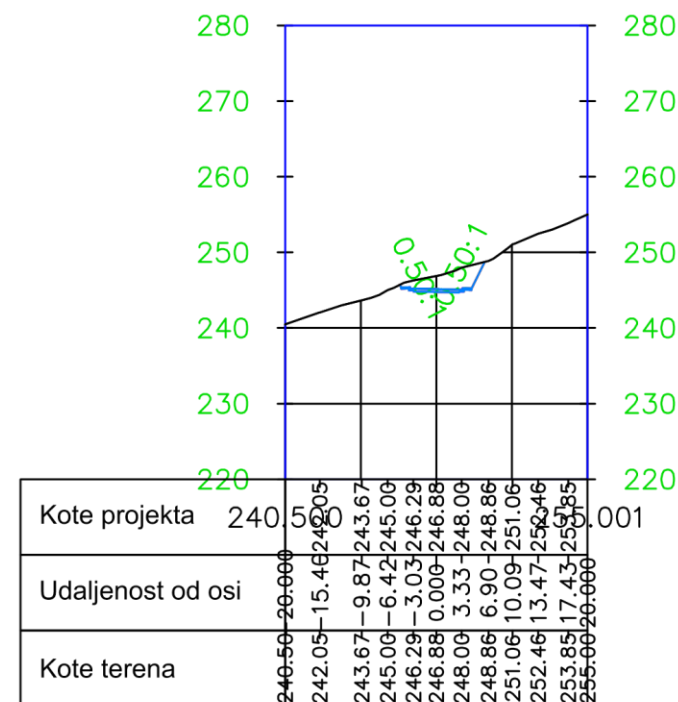
0+280.00



0+265.93



0+297.00



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

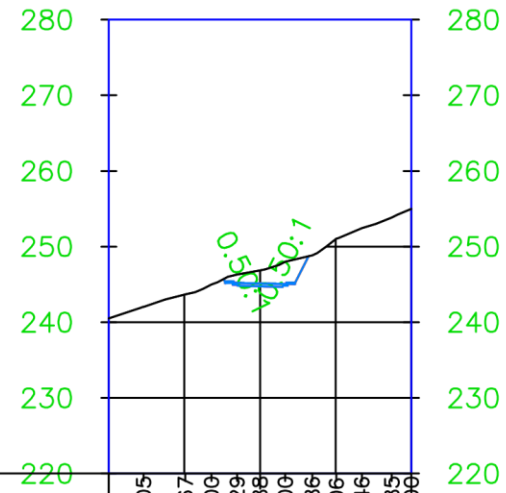
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

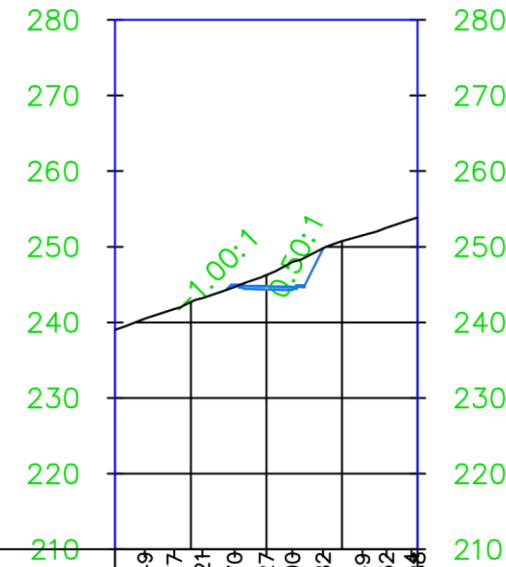
KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

0+297.00



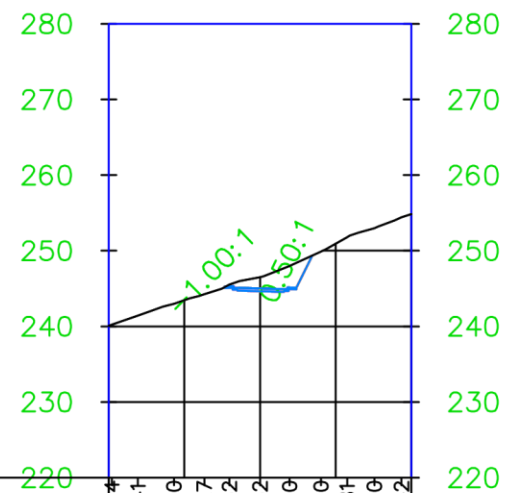
| | | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 240.50 | 240.50 | 243.67 | 245.00 | 246.29 | 246.88 | 248.00 | 248.86 | 251.06 | 252.46 | 253.85 | 255.00 |
| Udaljenost od osi | -20.00 | -15.46 | -9.87 | -6.42 | -3.04 | 0.00 | 3.33 | 6.90 | 10.09 | 13.47 | 17.43 | 20.00 |
| Kote terena | 240.50 | 242.05 | 243.67 | 245.00 | 246.29 | 246.88 | 248.00 | 248.86 | 251.06 | 252.46 | 253.85 | 255.00 |

0+307.00



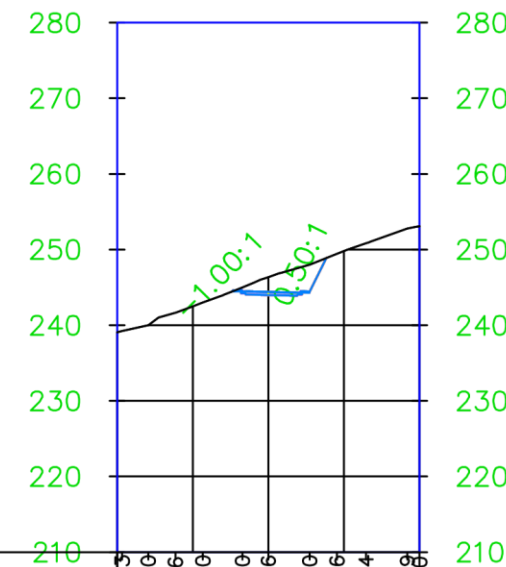
| | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 239.00 | 240.49 | 241.77 | 243.21 | 244.70 | 246.27 | 248.00 | 249.82 | 251.49 | 252.52 | 253.66 |
| Udaljenost od osi | -20.00 | -16.07 | -12.18 | -8.48 | -4.20 | 0.00 | 3.45 | 7.49 | 12.71 | 15.88 | 20.00 |
| Kote terena | 239.00 | 240.49 | 241.77 | 243.21 | 244.70 | 246.27 | 248.00 | 249.82 | 251.49 | 252.52 | 253.66 |

0+300.00



| | | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 240.00 | 241.41 | 243.00 | 244.27 | 245.52 | 246.52 | 248.00 | 249.90 | 251.81 | 253.00 | 254.42 | 255.85 |
| Udaljenost od osi | -20.00 | -16.14 | -11.39 | -7.37 | -4.05 | 0.00 | 3.92 | 8.07 | 11.51 | 15.11 | 18.66 | 22.59 |
| Kote terena | 240.00 | 241.41 | 243.00 | 244.27 | 245.52 | 246.52 | 248.00 | 249.90 | 251.81 | 253.00 | 254.42 | 255.85 |

0+317.00



| | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 239.00 | 240.00 | 241.66 | 243.00 | 245.00 | 246.36 | 248.00 | 249.46 | 250.84 | 252.78 | 253.78 |
| Udaljenost od osi | -20.00 | -15.89 | -12.29 | -8.66 | -3.43 | 0.00 | 5.46 | 9.08 | 12.92 | 18.38 | 20.00 |
| Kote terena | 239.00 | 240.00 | 241.66 | 243.00 | 245.00 | 246.36 | 248.00 | 249.46 | 250.84 | 252.78 | 253.78 |



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

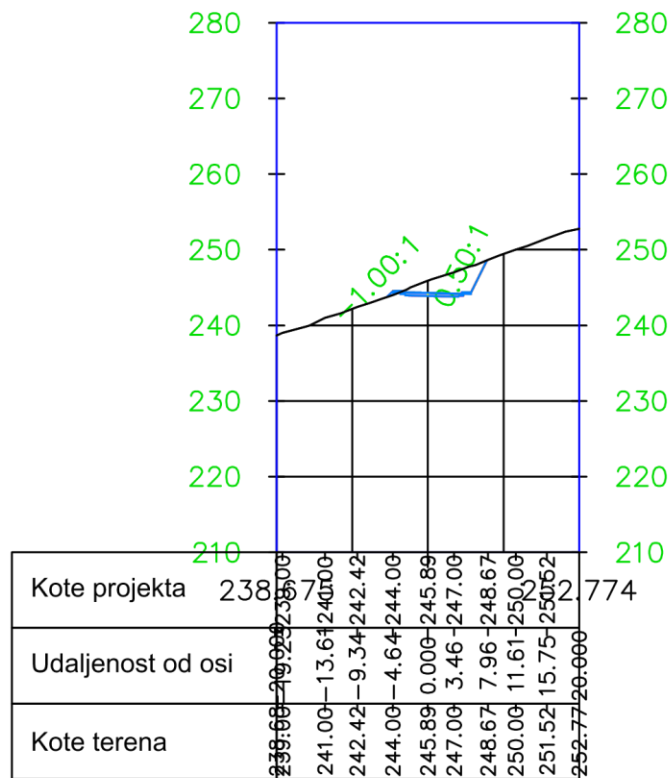
IZRADILA: ANTEA MATAS MENTOR: Prof.dr.sc. Dražen Cvitanić

SADRŽAJ: KARAK.POPREČNI PRESJECI MJERILO: M 1 : 200

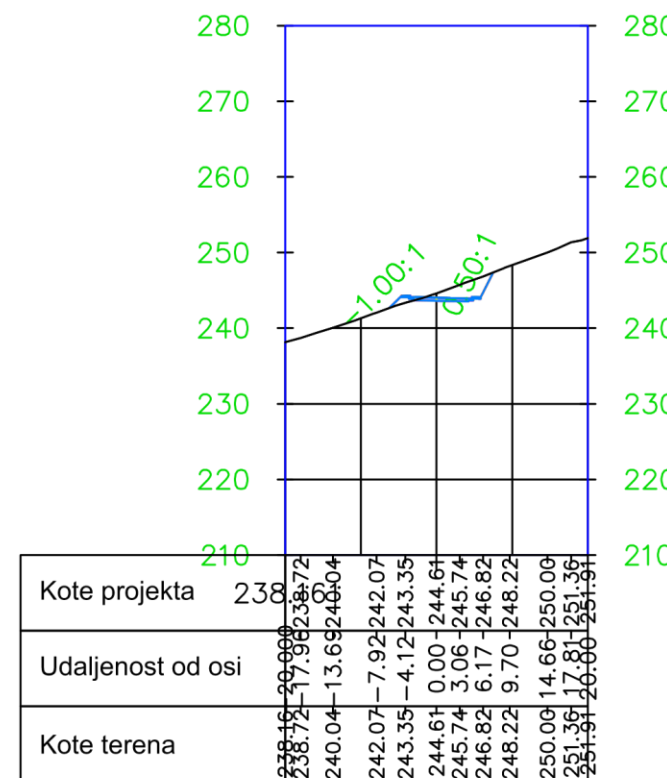
DATUM: 01.09.2021. PRILOG: 3

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

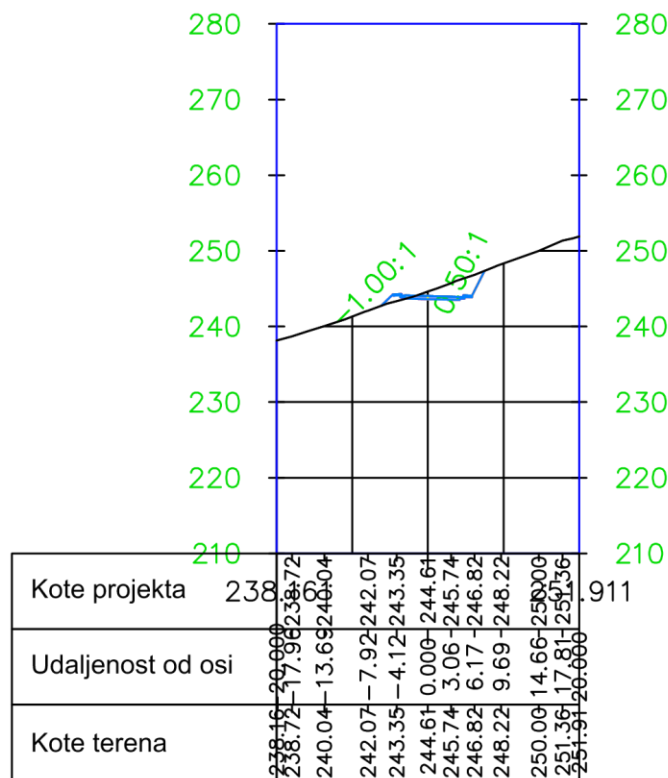
0+320.00



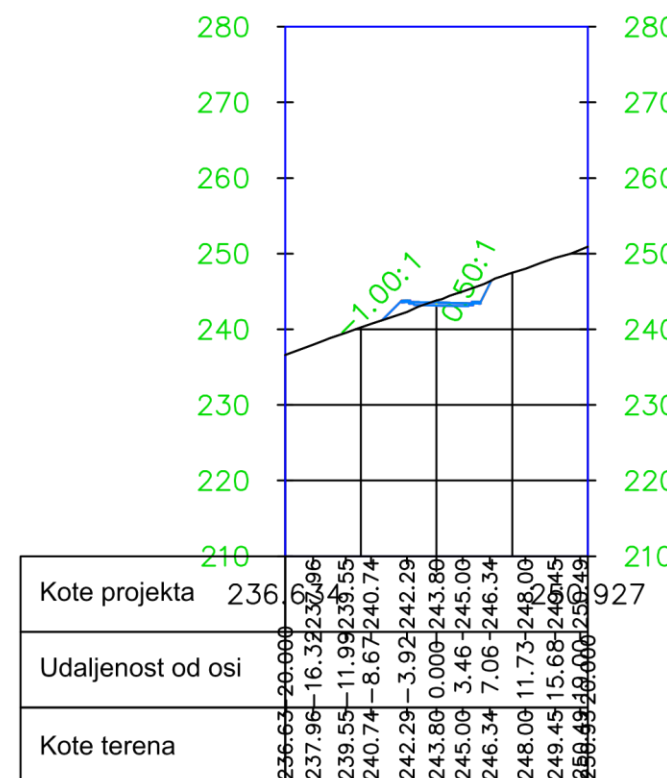
0+327.00



0+327.00



0+340.00



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

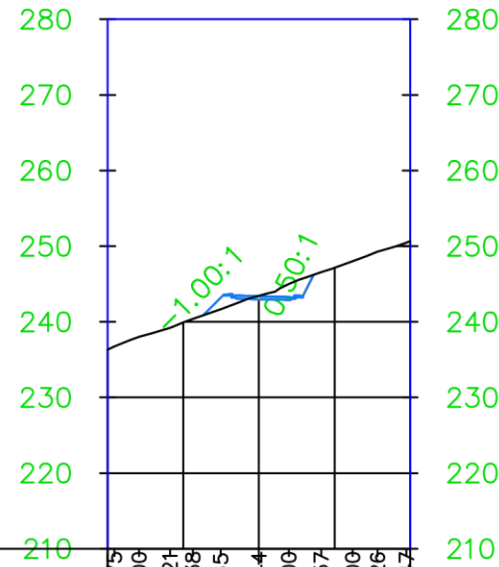
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

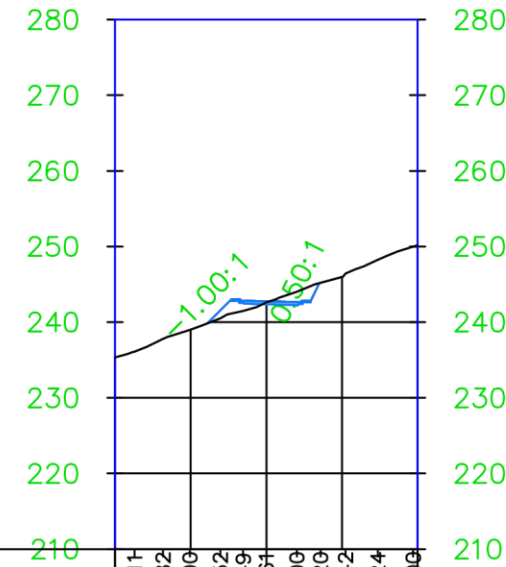
KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

0+344.13



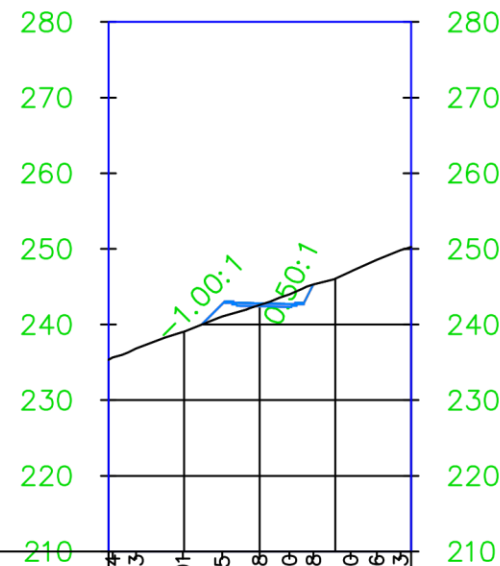
| | |
|-------------------|---|
| Kote projekta | 236 |
| Udaljenost od osi | 0.00 19.00 23.75 15.85 23.00 11.76 23.21 8.74 24.38 5.06 241.65 0.00 243.44 3.95 245.00 8.24 246.57 12.38 248.00 15.69 249.26 18.66 250.47 |
| Kote terena | 236.75 236.75 238.00 238.00 239.21 239.21 240.38 240.38 241.65 241.65 243.44 243.44 245.00 245.00 246.57 246.57 248.00 248.00 249.26 249.26 250.47 250.47 |

0+361.25



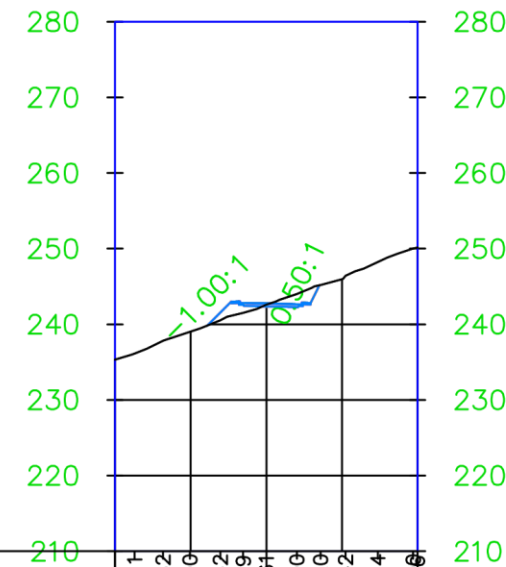
| | |
|-------------------|---|
| Kote projekta | 235 |
| Udaljenost od osi | 0.00 19.00 23.75 17.44 23.11 13.65 23.82 10.14 23.90 6.08 240.52 3.05 241.49 0.00 242.61 4.03 244.09 7.18 245.29 10.48 246.42 14.75 248.24 |
| Kote terena | 235.32 235.32 236.11 236.11 237.82 237.82 239.09 239.09 240.52 240.52 241.49 241.49 242.61 242.61 244.09 244.09 245.29 245.29 246.42 246.42 248.24 248.24 |

0+360.00



| | |
|-------------------|--|
| Kote projekta | 235 |
| Udaljenost od osi | 0.00 19.00 23.75 16.34 23.83 10.18 239.01 4.97 241.05 0.00 242.58 3.93 244.09 7.11 245.28 12.02 247.00 15.47 248.56 18.66 249.83 |
| Kote terena | 235.77 235.77 236.83 236.83 239.01 239.01 241.05 241.05 242.58 242.58 244.09 244.09 245.28 245.28 247.00 247.00 248.56 248.56 249.83 249.83 |

0+361.25



| | |
|-------------------|---|
| Kote projekta | 235 |
| Udaljenost od osi | 0.00 19.00 23.75 17.44 23.11 13.65 23.82 10.14 23.90 6.08 240.52 3.05 241.49 0.00 242.61 4.03 244.09 7.18 245.29 10.48 246.42 14.75 248.24 |
| Kote terena | 235.32 235.32 236.11 236.11 237.82 237.82 239.09 239.09 240.52 240.52 241.49 241.49 242.61 242.61 244.09 244.09 245.29 245.29 246.42 246.42 248.24 248.24 |



SVEUČILIŠTE U
SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

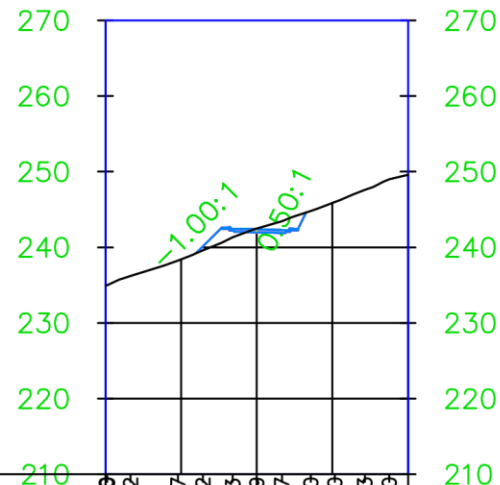
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

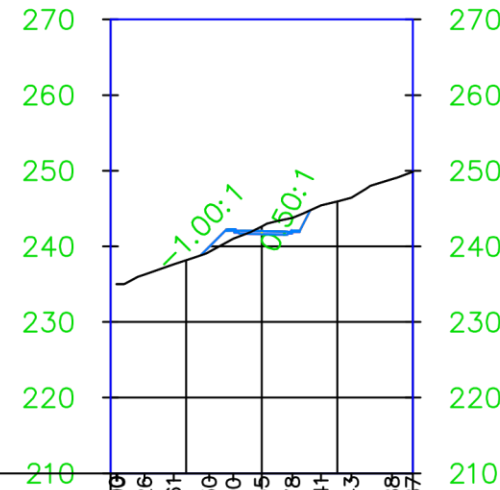
KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

0+371.25



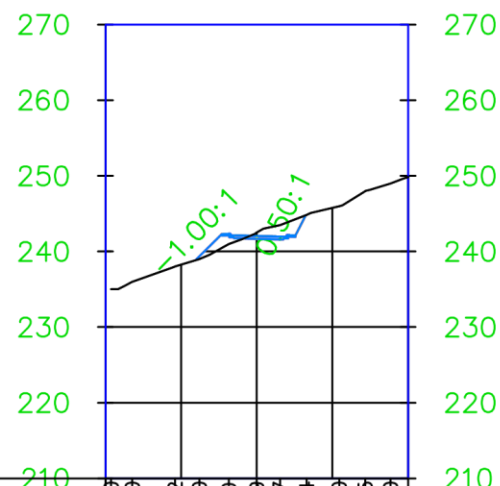
| | | | | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| Kote projekta | 235.00 | 236.22 | 238.27 | 239.62 | 241.33 | 242.49 | 243.47 | 244.80 | 246.00 | 247.63 | 249.00 | 249.59 | 250.00 | 591 |
| Udaljenost od osi | 0.00 | 16.78 | 10.41 | 7.12 | 3.17 | 0.00 | 3.32 | 7.15 | 10.33 | 14.29 | 17.51 | 20.00 | | |
| Kote terena | 235.00 | 236.22 | 238.27 | 239.62 | 241.33 | 242.49 | 243.47 | 244.80 | 246.00 | 247.63 | 249.00 | 249.59 | 250.00 | |

0+381.25



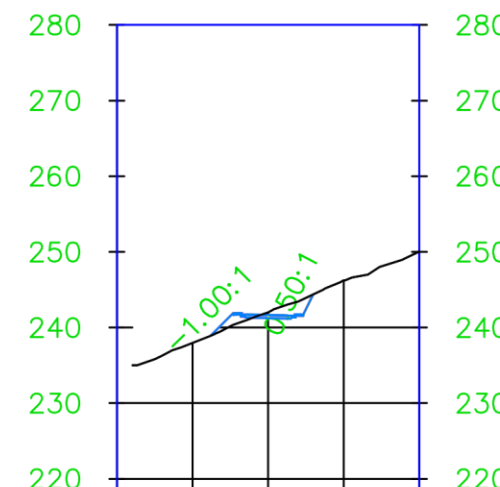
| | | | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Kote projekta | 235.00 | 236.26 | 237.61 | 239.30 | 241.00 | 242.65 | 243.78 | 245.41 | 246.43 | 248.88 | 249.87 | 250.00 | 249.87 |
| Udaljenost od osi | 0.00 | 15.49 | 11.65 | 6.94 | 3.77 | 0.00 | 4.05 | 7.82 | 11.85 | 17.22 | 20.00 | 20.00 | |
| Kote terena | 235.00 | 236.26 | 237.61 | 239.30 | 241.00 | 242.65 | 243.78 | 245.41 | 246.43 | 248.88 | 249.87 | 250.00 | 249.87 |

0+380.00



| | | | | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| Kote projekta | 235.00 | 236.00 | 238.02 | 239.00 | 241.00 | 242.49 | 243.47 | 244.84 | 246.00 | 247.95 | 249.00 | 249.87 | 250.00 | 847 |
| Udaljenost od osi | 0.00 | 16.47 | 10.86 | 7.59 | 3.70 | 0.00 | 3.09 | 6.59 | 10.90 | 14.33 | 17.68 | 20.00 | | |
| Kote terena | 235.00 | 236.00 | 238.02 | 239.00 | 241.00 | 242.49 | 243.47 | 244.84 | 246.00 | 247.95 | 249.00 | 249.87 | 250.00 | |

0+391.25



| | | | | | | | | | | | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| Kote projekta | 235.00 | 235.84 | 237.39 | 238.86 | 240.34 | 242.00 | 243.46 | 245.00 | 246.62 | 248.00 | 248.99 | 250.00 | 250.00 | 031 |
| Udaljenost od osi | 0.00 | 15.04 | 11.49 | 7.71 | 4.65 | 0.00 | 3.97 | 7.26 | 11.10 | 14.75 | 17.81 | 20.00 | | |
| Kote terena | 235.00 | 235.84 | 237.39 | 238.86 | 240.34 | 242.00 | 243.46 | 245.00 | 246.62 | 248.00 | 248.99 | 250.00 | 250.00 | |



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

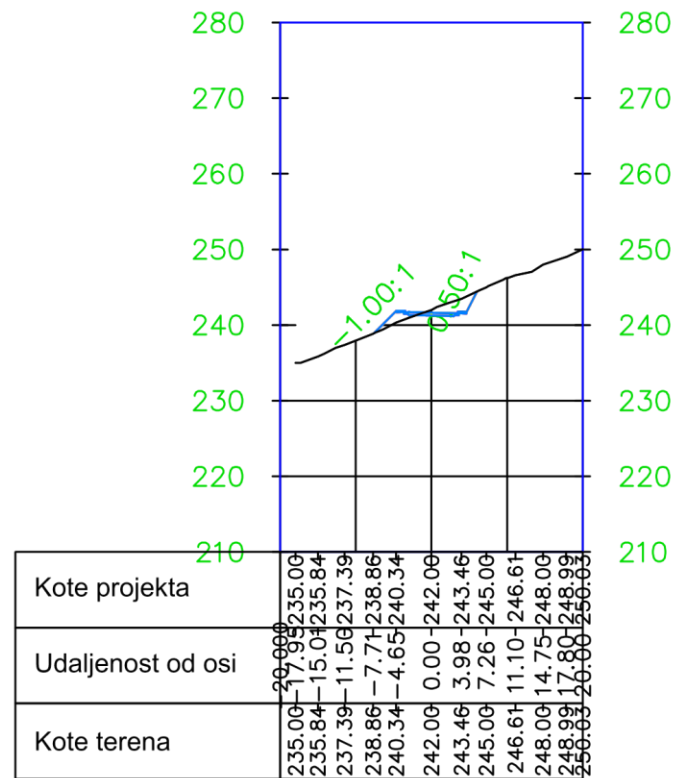
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

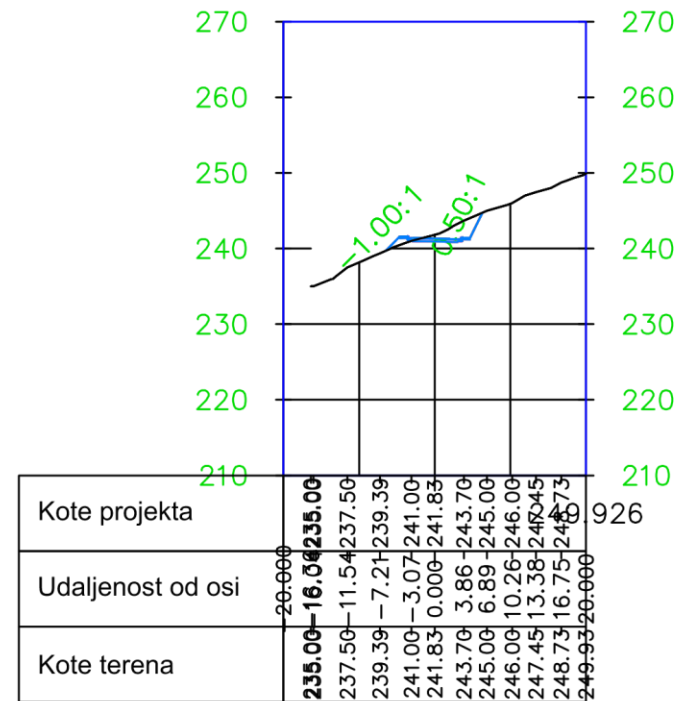
| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

KARAKTERISTIČNI POPREČNI PRESJECI M 1:100

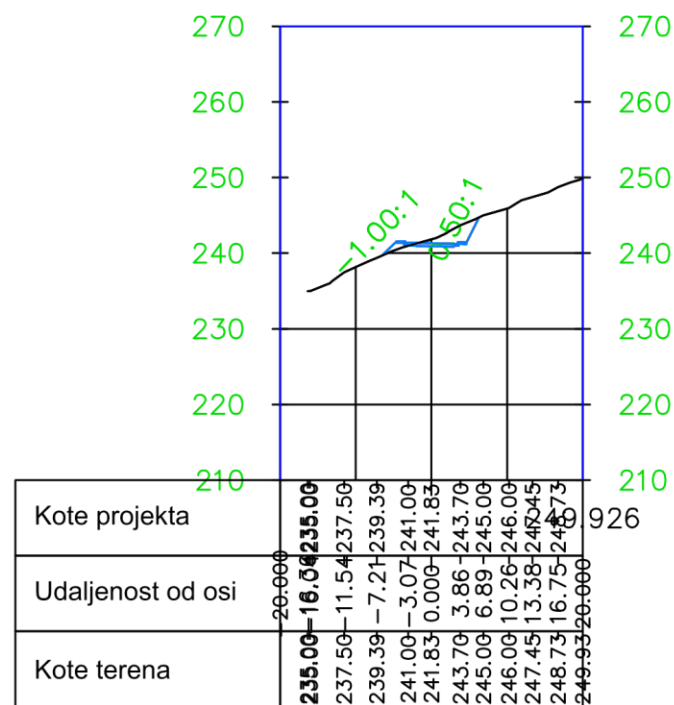
0+391.25



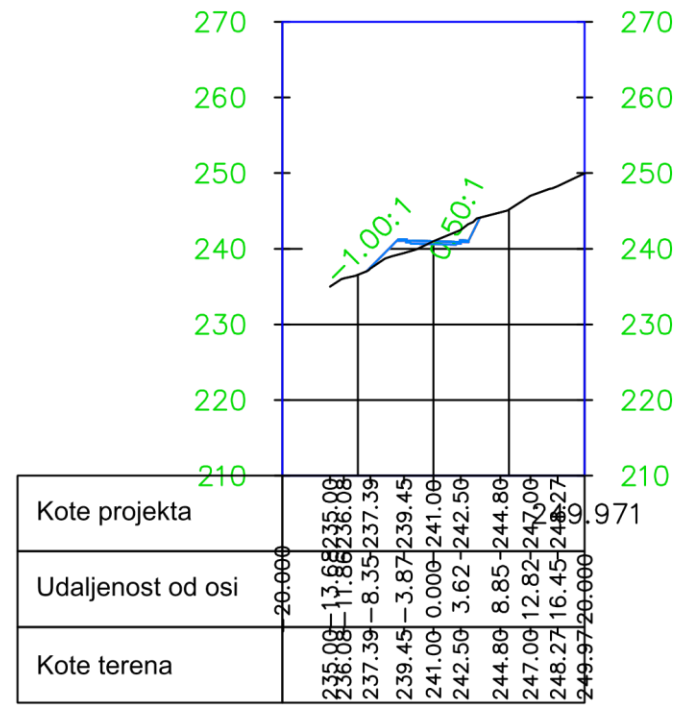
0+400.00



0+400.00



0+408.60



SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTVA
ARHITEKTURE I GEODEZIJE
2100 SPLIT, MATICE HRVATSKE
15

ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

| | | | |
|-----------|-------------------------|----------|-----------------------------|
| IZRADILA: | ANTEA MATAS | MENTOR: | Prof.dr.sc. Dražen Cvitanić |
| SADRŽAJ: | KARAK.POPREČNI PRESJECI | MJERILO: | M 1 : 200 |
| DATUM: | 01.09.2021. | PRILOG: | 3 |

4. TABLICA UKUPNOG VOLUMENA ZEMLJANIH RADOVA

Tablica 1. Ukupni volumen zemljanih radova

| Station | Cut Area (Sq.m.) | Cut Volume (Cu.m.) | Reusable Volume (Cu.m.) | Fill Area (Sq.m.) | Fill Volume (Cu.m.) | Cum. Cut Vol. (Cu.m.) | Cum. Reusable Vol. (Cu.m.) | Cum. Fill Vol. (Cu.m.) | Cum. Net Vol. (Cu.m.) |
|-----------|------------------|--------------------|-------------------------|-------------------|---------------------|-----------------------|----------------------------|------------------------|-----------------------|
| 0+000.000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0+003.216 | 7.47 | 12.02 | 12.02 | 3.88 | 6.24 | 12.02 | 12.02 | 6.24 | 5.78 |
| 0+003.250 | 7.51 | 0.25 | 0.25 | 3.86 | 0.13 | 12.27 | 12.27 | 6.37 | 5.90 |
| 0+016.550 | 22.94 | 201.25 | 201.25 | 0.00 | 26.01 | 213.53 | 213.53 | 32.39 | 181.14 |
| 0+020.000 | 23.02 | 78.18 | 78.18 | 0.00 | 0.02 | 291.71 | 291.71 | 32.40 | 259.30 |
| 0+029.883 | 24.11 | 227.86 | 227.86 | 0.01 | 0.08 | 519.56 | 519.56 | 32.48 | 487.08 |
| 0+040.000 | 27.96 | 254.40 | 254.40 | 0.04 | 0.26 | 773.96 | 773.96 | 32.74 | 741.22 |
| 0+043.216 | 23.98 | 79.82 | 79.82 | 0.14 | 0.30 | 853.78 | 853.78 | 33.05 | 820.74 |
| 0+059.256 | 9.65 | 255.69 | 255.69 | 6.35 | 55.73 | 1109.48 | 1109.48 | 88.78 | 1020.70 |
| 0+060.000 | 9.04 | 6.95 | 6.95 | 7.27 | 5.07 | 1116.43 | 1116.43 | 93.85 | 1022.59 |
| 0+075.296 | 4.19 | 94.27 | 94.27 | 9.77 | 138.81 | 1210.70 | 1210.70 | 232.66 | 978.04 |
| 0+080.000 | 3.87 | 17.66 | 17.66 | 11.42 | 52.89 | 1228.36 | 1228.36 | 285.55 | 942.81 |
| 0+088.629 | 3.00 | 27.98 | 27.98 | 10.01 | 97.28 | 1256.34 | 1256.34 | 382.83 | 873.51 |
| 0+100.000 | 5.88 | 48.91 | 48.91 | 3.44 | 79.25 | 1305.25 | 1305.25 | 462.08 | 843.17 |
| 0+101.962 | 6.08 | 11.74 | 11.74 | 3.45 | 6.76 | 1316.98 | 1316.98 | 468.84 | 848.14 |
| 0+115.296 | 17.59 | 156.88 | 156.88 | 0.01 | 23.36 | 1473.86 | 1473.86 | 492.20 | 981.66 |
| 0+115.300 | 17.60 | 0.08 | 0.08 | 0.01 | 0.00 | 1473.94 | 1473.94 | 492.20 | 981.74 |
| 0+120.000 | 22.03 | 93.13 | 93.13 | 0.00 | 0.03 | 1567.07 | 1567.07 | 492.23 | 1074.83 |
| 0+140.000 | 57.44 | 794.69 | 794.69 | 0.00 | 0.00 | 2361.76 | 2361.76 | 492.23 | 1869.52 |
| 0+160.000 | 84.31 | 1417.47 | 1417.47 | 0.00 | 0.00 | 3779.22 | 3779.22 | 492.23 | 3286.99 |
| 0+180.000 | 67.77 | 1520.79 | 1520.79 | 0.00 | 0.00 | 5300.02 | 5300.02 | 492.23 | 4807.78 |
| 0+182.746 | 63.03 | 179.61 | 179.61 | 0.00 | 0.00 | 5479.63 | 5479.63 | 492.23 | 4987.39 |
| 0+182.750 | 63.03 | 0.23 | 0.23 | 0.00 | 0.00 | 5479.85 | 5479.85 | 492.23 | 4987.62 |
| 0+185.096 | 62.58 | 147.33 | 147.33 | 0.00 | 0.00 | 5627.18 | 5627.18 | 492.23 | 5134.94 |
| 0+191.746 | 41.45 | 349.21 | 349.21 | 0.13 | 0.43 | 5976.38 | 5976.38 | 492.66 | 5483.72 |

| | | | | | | | | | |
|-----------|-------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0+192.746 | 37.83 | 39.64 | 39.64 | 0.06 | 0.10 | 6016.03 | 6016.03 | 492.76 | 5523.27 |
| 0+200.000 | 35.66 | 273.76 | 273.76 | 9.37 | 31.81 | 6289.79 | 6289.79 | 524.56 | 5765.22 |
| 0+202.746 | 20.90 | 80.51 | 80.51 | 16.80 | 32.32 | 6370.30 | 6370.30 | 556.88 | 5813.42 |
| 0+212.746 | 1.10 | 115.63 | 115.63 | 70.38 | 377.93 | 6485.92 | 6485.92 | 934.81 | 5551.11 |
| 0+220.000 | 0.00 | 4.37 | 4.37 | 93.74 | 506.33 | 6490.30 | 6490.30 | 1441.15 | 5049.15 |
| 0+224.337 | 0.00 | 0.00 | 0.00 | 114.08 | 387.10 | 6490.30 | 6490.30 | 1828.24 | 4662.05 |
| 0+235.928 | 1.87 | 11.80 | 11.80 | 37.35 | 754.80 | 6502.10 | 6502.10 | 2583.04 | 3919.06 |
| 0+240.000 | 16.02 | 38.26 | 38.26 | 10.67 | 84.66 | 6540.36 | 6540.36 | 2667.70 | 3872.65 |
| 0+245.928 | 36.72 | 161.34 | 161.34 | 0.92 | 30.33 | 6701.70 | 6701.70 | 2698.03 | 4003.67 |
| 0+254.916 | 37.31 | 339.10 | 339.10 | 0.00 | 3.82 | 7040.79 | 7040.79 | 2701.85 | 4338.94 |
| 0+255.928 | 37.06 | 37.61 | 37.61 | 0.00 | 0.00 | 7078.40 | 7078.40 | 2701.85 | 4376.55 |
| 0+256.928 | 37.28 | 37.17 | 37.17 | 0.00 | 0.00 | 7115.57 | 7115.57 | 2701.85 | 4413.72 |
| 0+260.000 | 38.94 | 117.09 | 117.09 | 0.00 | 0.00 | 7232.67 | 7232.67 | 2701.85 | 4530.82 |
| 0+265.928 | 38.23 | 228.72 | 228.72 | 0.00 | 0.00 | 7461.39 | 7461.39 | 2701.85 | 4759.54 |
| 0+265.930 | 38.23 | 0.09 | 0.09 | 0.00 | 0.00 | 7461.48 | 7461.48 | 2701.85 | 4759.63 |
| 0+280.000 | 37.08 | 529.79 | 529.79 | 0.00 | 0.00 | 7991.26 | 7991.26 | 2701.85 | 5289.41 |
| 0+296.999 | 22.72 | 508.26 | 508.26 | 0.00 | 0.00 | 8499.52 | 8499.52 | 2701.85 | 5797.68 |
| 0+297.000 | 22.72 | 0.01 | 0.01 | 0.00 | 0.00 | 8499.54 | 8499.54 | 2701.85 | 5797.69 |
| 0+300.000 | 22.17 | 67.34 | 67.34 | 0.00 | 0.00 | 8566.88 | 8566.88 | 2701.85 | 5865.02 |
| 0+306.999 | 24.10 | 160.78 | 160.78 | 0.28 | 0.99 | 8727.65 | 8727.65 | 2702.85 | 6024.81 |
| 0+316.999 | 27.36 | 252.67 | 252.67 | 0.00 | 1.49 | 8980.32 | 8980.32 | 2704.33 | 6275.99 |
| 0+320.000 | 24.65 | 75.98 | 75.98 | 0.35 | 0.57 | 9056.30 | 9056.30 | 2704.90 | 6351.40 |
| 0+326.999 | 15.36 | 134.67 | 134.67 | 1.71 | 7.61 | 9190.97 | 9190.97 | 2712.51 | 6478.46 |
| 0+326.999 | 15.36 | 0.00 | 0.00 | 1.71 | 0.00 | 9190.97 | 9190.97 | 2712.51 | 6478.46 |
| 0+340.000 | 11.85 | 167.99 | 167.99 | 4.43 | 42.55 | 9358.96 | 9358.96 | 2755.07 | 6603.89 |
| 0+344.127 | 10.71 | 44.04 | 44.04 | 5.10 | 20.98 | 9403.00 | 9403.00 | 2776.04 | 6626.96 |
| 0+360.000 | 8.44 | 143.32 | 143.32 | 6.15 | 95.01 | 9546.32 | 9546.32 | 2871.06 | 6675.26 |

| | | | | | | | | | |
|-----------|-------|--------|--------|------|-------|----------|----------|---------|---------|
| 0+361.254 | 8.67 | 10.12 | 10.12 | 6.48 | 8.42 | 9556.44 | 9556.44 | 2879.47 | 6676.96 |
| 0+361.254 | 8.67 | 0.00 | 0.00 | 6.48 | 0.00 | 9556.44 | 9556.44 | 2879.47 | 6676.96 |
| 0+371.254 | 8.46 | 81.90 | 81.90 | 6.14 | 66.54 | 9638.34 | 9638.34 | 2946.01 | 6692.32 |
| 0+380.000 | 10.88 | 82.55 | 82.55 | 5.63 | 53.35 | 9720.89 | 9720.89 | 2999.36 | 6721.52 |
| 0+381.254 | 11.41 | 13.98 | 13.98 | 4.98 | 6.66 | 9734.86 | 9734.86 | 3006.02 | 6728.84 |
| 0+391.250 | 9.72 | 104.92 | 104.92 | 4.11 | 46.01 | 9839.79 | 9839.79 | 3052.03 | 6787.75 |
| 0+391.254 | 9.73 | 0.04 | 0.04 | 4.11 | 0.02 | 9839.83 | 9839.83 | 3052.05 | 6787.78 |
| 0+400.000 | 12.45 | 96.97 | 96.97 | 1.83 | 25.95 | 9936.80 | 9936.80 | 3078.00 | 6858.80 |
| 0+408.602 | 8.09 | 88.36 | 88.36 | 6.98 | 37.89 | 10025.16 | 10025.16 | 3115.90 | 6909.27 |

5. OBRADA NA RAČUNALU

5. OBRADA NA RAČUNALU

Za izradu idejnog projekta lokalne ceste korišten je AutoCAD Civil 3D koji znatno olakšava i ubrzava izradu programskog zadatka.

Kao geodetsku podlogu upotrijebljena je već postojeća podloga koju je potrebno skenirati i dodatno prilagoditi mjerilu. Zatim se pomoću podloge iscrtavaju slojnice koristeći se naredbom `polyline` i definira se nadmorska visina pojedine slojnice. Postupkom triangulacije se na tim linijama dobije trodimenzionalni model terena.

Dalje definiramo koordinate točaka tangenti te ih iscrtavamo na terenu. Na sjecištima tangenti definiramo kružne lukove i prijelazne krivine te na taj način definiramo horizontalni tok ceste.

Sljedeći korak je izrada dijagrama vitoperenja pomoću naredbe `edit superelevation`. Zbog američkih standarda vitoperenja koji se razlikuju od europskih potrebno je provesti dodatne korekcije na području prijelaznica.

Slijedi izrada vertikalnog toka trase koja obuhvaća izradu terena i ucrtavanje tangenti nivelete. Niveleta treba postaviti tako da se zadovolje geometrijski i sigurnosni elementi te odvodnja.

Dalje je potrebno definirati poprečni presjek ceste kojim su definirani: poprečni nagib i širina kolnika te pokosi usjeka i nasipa.

Pomoću definiranog poprečnog presjeka, vertikalnog i horizontalnog toka trase izrađuje se koridor.

On omogućuje uvid u poprečne presjeke u svim karakterističnim i zadanim točkama osi ceste.

Koristeći naredbu `report manager` izrađujemo računalne ispise glavnih točaka osi ceste, detaljne točke osi ceste, kote kolnika te vertikalnog toka trase.

6. IZLAZNI PODACI IZ PROGRAMA

6.1 Koordinatni račun glavnih točaka

Tablica 2. Koordinatni račun glavnih točaka

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+00.000 | -214.349 | -945.646 |
| End: | 0+03.216 | -211.608 | -943.964 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 3.216 | Course: | N 31° 31' 53.3062" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| TS: | 0+03.216 | -211.608 | -943.964 |
| SPI: | | -188.744 | -929.936 |
| SC: | 0+43.216 | -180.196 | -919.518 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 40.000 | L Tan: | 26.824 |
| Radius: | 60.000 | S Tan: | 13.476 |
| Theta: | 19° 05' 54.9354" | P: | 1.107 |
| X: | 39.558 | K: | 19.926 |
| Y: | 4.409 | A: | 48.990 |
| Chord: | 39.803 | Course: | N 37° 53' 30.0023" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| SC: | 0+43.216 | -180.196 | -919.518 |
| RP: | | -226.580 | -881.458 |
| CS: | 0+75.296 | -167.276 | -890.572 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 30° 38' 00.2030" | Type: | RIGHT |
| Radius: | 60.000 | | |
| Length: | 32.079 | Tangent: | 16.433 |
| Mid-Ord: | 2.131 | External: | 2.210 |
| Chord: | 31.698 | Course: | N 65° 56' 48.3431" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| CS: | 0+75.296 | -167.276 | -890.572 |
| SPI: | | -165.229 | -877.252 |
| ST: | 1+15.296 | -170.054 | -850.866 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 40.000 | L Tan: | 26.824 |
| Radius: | 60.000 | S Tan: | 13.476 |
| Theta: | 19° 05' 54.9354" | P: | 1.107 |
| X: | 39.558 | K: | 19.926 |
| Y: | 4.409 | A: | 48.990 |
| Chord: | 39.803 | Course: | S 85° 59' 53.3161" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 1+15.296 | -170.054 | -850.866 |
| End: | 1+82.746 | -182.186 | -784.515 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 67.451 | Course: | S 79° 38' 16.6200" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| TS: | 1+82.746 | -182.186 | -784.515 |
| SPI: | | -185.805 | -764.726 |
| SC: | 2+12.746 | -184.270 | -754.736 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 30.000 | L Tan: | 20.118 |
| Radius: | 45.000 | S Tan: | 10.107 |
| Theta: | 19° 05' 54.9354" | P: | 0.830 |
| X: | 29.668 | K: | 14.945 |
| Y: | 3.307 | A: | 36.742 |
| Chord: | 29.852 | Course: | S 85° 59' 53.3161" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| SC: | 2+12.746 | -184.270 | -754.736 |
| RP: | | -139.792 | -761.571 |
| CS: | 2+35.928 | -175.130 | -733.711 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 29° 30' 55.1688" | Type: | LEFT |
| Radius: | 45.000 | | |
| Length: | 23.181 | Tangent: | 11.854 |
| Mid-Ord: | 1.484 | External: | 1.535 |
| Chord: | 22.926 | Course: | N 66° 30' 20.8602" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| CS: | 2+35.928 | -175.130 | -733.711 |
| SPI: | | -168.873 | -725.774 |
| ST: | 2+65.928 | -151.934 | -714.920 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 30.000 | L Tan: | 20.118 |
| Radius: | 45.000 | S Tan: | 10.107 |
| Theta: | 19° 05' 54.9354" | P: | 0.830 |
| X: | 29.668 | K: | 14.945 |
| Y: | 3.307 | A: | 36.742 |
| Chord: | 29.852 | Course: | N 39° 00' 35.0365" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+65.928 | -151.934 | -714.920 |
| End: | 2+96.999 | -125.772 | -698.157 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 31.072 | Course: | N 32° 38' 58.3404" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| TS: | 2+96.999 | -125.772 | -698.157 |
| SPI: | | -108.892 | -687.341 |
| SC: | 3+26.999 | -101.781 | -680.248 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|--------|
| Length: | 30.000 | L Tan: | 20.048 |

| | | | |
|---------|------------------|---------|----------------------|
| Radius: | 70.000 | S Tan: | 10.044 |
| Theta: | 12° 16' 39.6013" | P: | 0.535 |
| X: | 29.863 | K: | 14.977 |
| Y: | 2.136 | A: | 45.826 |
| Chord: | 29.939 | Course: | N 36° 44' 25.8073" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| SC: | 3+26.999 | -101.781 | -680.248 |
| RP: | | -151.215 | -630.688 |
| CS: | 3+61.254 | -84.286 | -651.194 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 28° 02' 17.2556" | Type: | RIGHT |
| Radius: | 70.000 | | |
| Length: | 34.255 | Tangent: | 17.478 |
| Mid-Ord: | 2.085 | External: | 2.149 |
| Chord: | 33.914 | Course: | N 58° 56' 46.5696" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| CS: | 3+61.254 | -84.286 | -651.194 |
| SPI: | | -81.344 | -641.591 |
| ST: | 3+91.254 | -79.681 | -621.612 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|--------|
| Length: | 30.000 | L Tan: | 20.048 |
| Radius: | 70.000 | S Tan: | 10.044 |
| Theta: | 12° 16' 39.6013" | P: | 0.535 |

X: 29.863 K: 14.977
 Y: 2.136 A: 45.826
 Chord: 29.939 Course: N 81° 09' 07.3318" E

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+91.254 | -79.681 | -621.612 |
| End: | 4+08.602 | -78.243 | -604.324 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 17.348 | Course: | N 85° 14' 34.7987" E |

Alignment: os 1 (1)-Left-3.000

Description:

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+00.000 | -212.780 | -948.203 |
| End: | 0+03.216 | -210.039 | -946.521 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 3.216 | Course: | N 31° 31' 53.3062" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| TS: | 0+03.216 | -210.039 | -946.521 |
| SPI: | | -186.745 | -932.229 |
| SC: | 0+44.216 | -177.877 | -921.421 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 41.000 | L Tan: | 27.486 |
| Radius: | 63.000 | S Tan: | 13.806 |
| Theta: | 18° 38' 37.9131" | P: | 1.108 |
| X: | 40.568 | K: | 20.428 |
| Y: | 4.414 | A: | 50.823 |
| Chord: | 40.797 | Course: | N 37° 58' 09.9710" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| SC: | 0+44.216 | -177.877 | -921.421 |
| RP: | | -226.580 | -881.458 |
| CS: | 0+77.899 | -164.311 | -891.028 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 30° 38' 00.2030" | Type: | RIGHT |
| Radius: | 63.000 | | |
| Length: | 33.683 | Tangent: | 17.255 |
| Mid-Ord: | 2.238 | External: | 2.320 |
| Chord: | 33.283 | Course: | N 65° 56' 48.3431" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| CS: | 0+77.899 | -164.311 | -891.028 |
| SPI: | | -162.188 | -877.209 |
| ST: | 1+18.899 | -167.103 | -850.327 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|-------|
|-----------|-------|-----------|-------|

| | | | |
|---------|------------------|---------|----------------------|
| Length: | 41.000 | L Tan: | 27.486 |
| Radius: | 63.000 | S Tan: | 13.806 |
| Theta: | 18° 38' 37.9131" | P: | 1.108 |
| X: | 40.568 | K: | 20.428 |
| Y: | 4.414 | A: | 50.823 |
| Chord: | 40.797 | Course: | S 86° 04' 33.2848" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 1+18.899 | -167.103 | -850.327 |
| End: | 1+86.350 | -179.235 | -783.976 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 67.451 | Course: | S 79° 38' 16.6200" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 1+86.350 | -179.235 | -783.976 |
| End: | 1+96.243 | -180.277 | -774.138 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.893 | Course: | S 83° 57' 10.2754" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 1+96.243 | -180.277 | -774.138 |
| End: | 2+05.817 | -180.561 | -764.568 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|-------|
|-----------|-------|-----------|-------|

Length: 9.574

Course: S 88° 18' 01.1213" E

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+05.817 | -180.561 | -764.568 |
| End: | 2+14.977 | -179.456 | -755.476 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.160 | Course: | N 83° 04' 11.4099" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| PC: | 2+14.977 | -179.456 | -755.476 |
| RP: | | -139.792 | -761.571 |
| PT: | 2+35.649 | -171.306 | -736.726 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 29° 30' 55.1688" | Type: | LEFT |
| Radius: | 40.130 | | |
| Length: | 20.673 | Tangent: | 10.571 |
| Mid-Ord: | 1.324 | External: | 1.369 |
| Chord: | 20.445 | Course: | N 66° 30' 20.8602" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+35.649 | -171.306 | -736.726 |
| End: | 2+44.809 | -165.411 | -729.715 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|-------|
|-----------|-------|-----------|-------|

Length: 9.160 Course: N 49° 56' 30.3105" E

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+44.809 | -165.411 | -729.715 |
| End: | 2+54.383 | -158.220 | -723.395 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.574 | Course: | N 41° 18' 42.8417" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+54.383 | -158.220 | -723.395 |
| End: | 2+64.275 | -150.315 | -717.446 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.893 | Course: | N 36° 57' 51.9958" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+64.275 | -150.315 | -717.446 |
| End: | 2+95.347 | -124.154 | -700.683 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 31.072 | Course: | N 32° 38' 58.3404" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| TS: | 2+95.347 | -124.154 | -700.683 |

SPI: -107.002 -689.693
 SC: 3+25.990 -99.662 -682.372

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 30.643 | L Tan: | 20.476 |
| Radius: | 73.000 | S Tan: | 10.257 |
| Theta: | 12° 01' 31.3904" | P: | 0.535 |
| X: | 30.508 | K: | 15.299 |
| Y: | 2.137 | A: | 47.296 |
| Chord: | 30.580 | Course: | N 36° 47' 00.4600" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| SC: | 3+25.990 | -99.662 | -682.372 |
| RP: | | -151.215 | -630.688 |
| CS: | 3+61.713 | -81.418 | -652.073 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 28° 02' 17.2556" | Type: | RIGHT |
| Radius: | 73.000 | | |
| Length: | 35.723 | Tangent: | 18.227 |
| Mid-Ord: | 2.174 | External: | 2.241 |
| Chord: | 35.368 | Course: | N 58° 56' 46.5696" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| CS: | 3+61.713 | -81.418 | -652.073 |
| SPI: | | -78.381 | -642.161 |
| ST: | 3+92.356 | -76.691 | -621.860 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 30.643 | L Tan: | 20.476 |
| Radius: | 73.000 | S Tan: | 10.257 |
| Theta: | 12° 01' 31.3904" | P: | 0.535 |
| X: | 30.508 | K: | 15.299 |
| Y: | 2.137 | A: | 47.296 |
| Chord: | 30.580 | Course: | N 81° 06' 32.6791" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+92.356 | -76.691 | -621.860 |
| End: | 4+09.703 | -75.253 | -604.572 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 17.348 | Course: | N 85° 14' 34.7987" E |

Alignment: os 1 (1)-Right-3.000

Description:

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+00.000 | -215.918 | -943.089 |
| End: | 0+03.216 | -213.176 | -941.407 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 3.216 | Course: | N 31° 31' 53.3062" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+03.216 | -213.176 | -941.407 |
| End: | 0+16.434 | -202.252 | -933.966 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 13.218 | Course: | N 34° 15' 30.5398" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+16.434 | -202.252 | -933.966 |
| End: | 0+29.355 | -192.145 | -925.916 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 12.921 | Course: | N 38° 32' 17.5171" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+29.355 | -192.145 | -925.916 |
| End: | 0+41.905 | -183.598 | -916.727 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 12.549 | Course: | N 47° 04' 16.4467" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| PC: | 0+41.905 | -183.598 | -916.727 |
| RP: | | -226.580 | -881.458 |
| PT: | 0+71.631 | -171.625 | -889.904 |

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 30° 38' 00.2030" | Type: | RIGHT |
| Radius: | 55.600 | | |
| Length: | 29.727 | Tangent: | 15.228 |
| Mid-Ord: | 1.975 | External: | 2.048 |
| Chord: | 29.374 | Course: | N 65° 56' 48.3431" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+71.631 | -171.625 | -889.904 |
| End: | 0+84.181 | -170.493 | -877.406 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 12.549 | Course: | N 84° 49' 20.2395" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+84.181 | -170.493 | -877.406 |
| End: | 0+97.102 | -171.249 | -864.507 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 12.921 | Course: | S 86° 38' 40.8309" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 0+97.102 | -171.249 | -864.507 |
| End: | 1+10.320 | -173.005 | -851.406 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 13.218 | Course: | S 82° 21' 53.8535" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 1+10.320 | -173.005 | -851.406 |
| End: | 1+77.771 | -185.137 | -785.055 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 67.451 | Course: | S 79° 38' 16.6200" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| TS: | 1+77.771 | -185.137 | -785.055 |
| SPI: | | -188.847 | -764.769 |
| SC: | 2+08.771 | -187.235 | -754.280 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 31.000 | L Tan: | 20.781 |
| Radius: | 48.000 | S Tan: | 10.437 |
| Theta: | 18° 30' 06.3437" | P: | 0.831 |
| X: | 30.678 | K: | 15.446 |
| Y: | 3.312 | A: | 38.575 |
| Chord: | 30.846 | Course: | S 86° 06' 03.6007" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| SC: | 2+08.771 | -187.235 | -754.280 |
| RP: | | -139.792 | -761.571 |

CS: 2+33.497 -177.486 -731.853

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 29° 30' 55.1688" | Type: | LEFT |
| Radius: | 48.000 | | |
| Length: | 24.727 | Tangent: | 12.644 |
| Mid-Ord: | 1.583 | External: | 1.637 |
| Chord: | 24.454 | Course: | N 66° 30' 20.8602" E |

Spiral Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| CS: | 2+33.497 | -177.486 | -731.853 |
| SPI: | | -170.916 | -723.520 |
| ST: | 2+64.497 | -153.552 | -712.394 |

Spiral Curve Data: clothoid

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Length: | 31.000 | L Tan: | 20.781 |
| Radius: | 48.000 | S Tan: | 10.437 |
| Theta: | 18° 30' 06.3437" | P: | 0.831 |
| X: | 30.678 | K: | 15.446 |
| Y: | 3.312 | A: | 38.575 |
| Chord: | 30.846 | Course: | N 39° 06' 45.3212" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+64.497 | -153.552 | -712.394 |
| End: | 2+95.569 | -127.391 | -695.631 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|-------|
|-----------|-------|-----------|-------|

Length: 31.072

Course: N 32° 38' 58.3404" E

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 2+95.569 | -127.391 | -695.631 |
| End: | 3+05.499 | -119.297 | -689.877 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.930 | Course: | N 35° 24' 39.4012" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+05.499 | -119.297 | -689.877 |
| End: | 3+15.246 | -111.635 | -683.853 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.747 | Course: | N 38° 10' 37.1783" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+15.246 | -111.635 | -683.853 |
| End: | 3+24.771 | -104.747 | -677.274 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.525 | Course: | N 43° 40' 49.8985" E |

Curve Point Data

| Description | Station | Northing | Easting |
|-------------|----------|----------|----------|
| PC: | 3+24.771 | -104.747 | -677.274 |

RP: -151.215 -630.688
 PT: 3+56.971 -88.302 -649.964

Circular Curve Data

| Parameter | Value | Parameter | Value |
|-----------|------------------|-----------|----------------------|
| Delta: | 28° 02' 17.2556" | Type: | RIGHT |
| Radius: | 65.800 | | |
| Length: | 32.200 | Tangent: | 16.429 |
| Mid-Ord: | 1.960 | External: | 2.020 |
| Chord: | 31.879 | Course: | N 58° 56' 46.5696" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+56.971 | -88.302 | -649.964 |
| End: | 3+66.496 | -85.710 | -640.798 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.525 | Course: | N 74° 12' 43.2406" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+66.496 | -85.710 | -640.798 |
| End: | 3+76.243 | -83.970 | -631.208 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.747 | Course: | N 79° 42' 55.9608" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+76.243 | -83.970 | -631.208 |

End: 3+86.173 -82.671 -621.363

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|-------|-----------|----------------------|
| Length: | 9.930 | Course: | N 82° 28' 53.7379" E |

Tangent Data

| Description | PT Station | Northing | Easting |
|-------------|------------|----------|----------|
| Start: | 3+86.173 | -82.671 | -621.363 |
| End: | 4+03.521 | -81.232 | -604.075 |

Tangent Data

| Parameter | Value | Parameter | Value |
|-----------|--------|-----------|----------------------|
| Length: | 17.348 | Course: | N 85° 14' 34.7987" E |

6.2 Koordinatni račun detaljnih točaka osi

Tablica 3. Koordinatni račun detaljnih točaka osi

| Station | Northing | Easting | Tangential Direction |
|----------------|-----------------|----------------|-----------------------------|
| 0+000.00 | -214.3490m | -945.6457m | N31° 31' 53"E |
| 0+020.00 | -197.4785m | -934.9096m | N34° 53' 38"E |
| 0+040.00 | -182.3003m | -921.9501m | N47° 40' 56"E |
| 0+060.00 | -171.4911m | -905.2323m | N66° 39' 26"E |
| 0+080.00 | -166.7376m | -885.8995m | N85° 29' 30"E |
| 0+100.00 | -167.5481m | -865.9534m | S82° 25' 50"E |
| 0+120.00 | -170.9004m | -846.2384m | S79° 38' 17"E |
| 0+140.00 | -174.4977m | -826.5646m | S79° 38' 17"E |
| 0+160.00 | -178.0951m | -806.8908m | S79° 38' 17"E |
| 0+180.00 | -181.6924m | -787.2170m | S79° 38' 17"E |
| 0+200.00 | -184.6628m | -767.4498m | S85° 57' 18"E |
| 0+220.00 | -182.5962m | -747.6862m | N72° 01' 40"E |
| 0+240.00 | -172.4740m | -730.6256m | N46° 54' 54"E |
| 0+260.00 | -156.9111m | -718.1399m | N33° 23' 43"E |
| 0+280.00 | -140.0853m | -707.3283m | N32° 38' 58"E |
| 0+300.00 | -123.2467m | -696.5365m | N32° 46' 21"E |
| 0+320.00 | -106.9570m | -684.9558m | N39° 51' 59"E |
| 0+340.00 | -93.4790m | -670.2672m | N55° 34' 06"E |
| 0+360.00 | -84.6643m | -652.3902m | N71° 56' 19"E |
| 0+380.00 | -80.7271m | -632.8169m | N83° 30' 54"E |
| 0+400.00 | -78.9559m | -612.8962m | N85° 14' 35"E |

6.3 Račun kota kolnika

Tablica 4. Račun kota kolnika

CHAINAGE 0+000.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -949.6021 | -211.9215 | 258.2330 | -4.642m | Hinge_Cut |
| 2 | -949.6012 | -211.9220 | 258.0330 | -4.641m | EPS_Sub |
| 3 | -948.7497 | -212.4445 | 258.2730 | -3.642m | Back_Curb |
| 4 | -948.6219 | -212.5229 | 258.2730 | -3.492m | Top_Curb |
| 5 | -948.5863 | -212.5447 | 258.0480 | -3.450m | Flowline_Gutter |
| 6 | -948.2028 | -212.7801 | 258.0750 | -3.000m | ETW |
| 7 | -948.2028 | -212.7801 | 257.6750 | -3.000m | ETW_SubBase |
| 8 | -943.0887 | -215.9179 | 257.5250 | 3.000m | ETW_SubBase |
| 9 | -943.0887 | -215.9179 | 257.9250 | 3.000m | Flange |
| 10 | -942.7051 | -216.1532 | 257.8980 | 3.450m | Flowline_Gutter |
| 11 | -942.6696 | -216.1750 | 258.1230 | 3.492m | Top_Curb |
| 12 | -942.5417 | -216.2535 | 258.1230 | 3.642m | Back_Curb |
| 13 | -941.6902 | -216.7759 | 257.8830 | 4.641m | EPS_Sub |
| 14 | -941.6894 | -216.7764 | 258.0830 | 4.642m | EPS |
| 15 | -941.0360 | -217.1773 | 259.6160 | 5.408m | Daylight |

CHAINAGE 0+020.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -938.7945 | -194.7690 | 257.2290 | -4.736m | Daylight |
| 2 | -938.7167 | -194.8233 | 257.3239 | -4.642m | Hinge |
| 3 | -938.7159 | -194.8238 | 257.1239 | -4.641m | EPS_Sub |
| 4 | -937.8965 | -195.3953 | 257.3639 | -3.642m | Back_Curb |
| 5 | -937.7734 | -195.4811 | 257.3639 | -3.492m | Top_Curb |
| 6 | -937.7392 | -195.5050 | 257.1389 | -3.450m | Flowline_Gutter |
| 7 | -937.3701 | -195.7624 | 257.1659 | -3.000m | ETW |
| 8 | -937.3701 | -195.7624 | 256.7659 | -3.000m | ETW_SubBase |
| 9 | -931.8588 | -199.6063 | 256.9979 | 3.720m | Flange |
| 10 | -931.8588 | -199.6063 | 256.5979 | 3.720m | ETW_SubBase |
| 11 | -931.4897 | -199.8637 | 256.9709 | 4.170m | Flowline_Gutter |
| 12 | -931.4555 | -199.8876 | 257.1959 | 4.211m | Top_Curb |
| 13 | -931.3324 | -199.9734 | 257.1959 | 4.361m | Back_Curb |
| 14 | -930.5131 | -200.5449 | 256.9559 | 5.360m | EPS_Sub |
| 15 | -930.5122 | -200.5455 | 257.1559 | 5.361m | Hinge_Cut |
| 16 | -928.9929 | -201.6051 | 260.8605 | 7.214m | Daylight |

CHAINAGE 0+040.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|------------|
| 1 | -925.3089 | -178.6113 | 256.0678 | -4.989m | Daylight |
| 2 | -925.0753 | -178.8679 | 256.4148 | -4.642m | Hinge |
| 3 | -925.0746 | -178.8686 | 256.2148 | -4.641m | EPS_Sub |
| 4 | -924.4020 | -179.6073 | 256.4548 | -3.642m | Back_Curb |

| | | | | | |
|----|-----------|-----------|----------|---------|-----------------|
| 5 | -924.3011 | -179.7182 | 256.4548 | -3.492m | Top_Curb |
| 6 | -924.2730 | -179.7491 | 256.2298 | -3.450m | Flowline_Gutter |
| 7 | -923.9700 | -180.0818 | 256.2568 | -3.000m | ETW |
| 8 | -923.9700 | -180.0818 | 255.8568 | -3.000m | ETW_SubBase |
| 9 | -918.9154 | -185.6334 | 256.0691 | 4.508m | Flange |
| 10 | -918.9154 | -185.6334 | 255.6691 | 4.508m | ETW_SubBase |
| 11 | -918.6124 | -185.9661 | 256.0421 | 4.958m | Flowline_Gutter |
| 12 | -918.5843 | -185.9969 | 256.2671 | 4.999m | Top_Curb |
| 13 | -918.4833 | -186.1078 | 256.2671 | 5.149m | Back_Curb |
| 14 | -917.8108 | -186.8465 | 256.0271 | 6.148m | EPS_Sub |
| 15 | -917.8101 | -186.8473 | 256.2271 | 6.149m | Hinge_Cut |
| 16 | -916.5834 | -188.1946 | 259.8713 | 7.971m | Daylight |

CHAINAGE 0+060.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -908.1386 | -164.7564 | 252.8123 | -7.335m | Daylight |
| 2 | -907.0714 | -167.2293 | 255.5057 | -4.642m | Hinge |
| 3 | -907.0710 | -167.2303 | 255.3057 | -4.641m | EPS_Sub |
| 4 | -906.6752 | -168.1475 | 255.5457 | -3.642m | Back_Curb |
| 5 | -906.6158 | -168.2852 | 255.5457 | -3.492m | Top_Curb |
| 6 | -906.5993 | -168.3235 | 255.3207 | -3.450m | Flowline_Gutter |
| 7 | -906.4210 | -168.7367 | 255.3477 | -3.000m | ETW |
| 8 | -906.4210 | -168.7367 | 254.9477 | -3.000m | ETW_SubBase |
| 9 | -903.4889 | -175.5310 | 255.1627 | 4.400m | Flange |
| 10 | -903.4889 | -175.5310 | 254.7627 | 4.400m | ETW_SubBase |
| 11 | -903.3106 | -175.9442 | 255.1357 | 4.850m | Flowline_Gutter |
| 12 | -903.2940 | -175.9825 | 255.3607 | 4.892m | Top_Curb |
| 13 | -903.2346 | -176.1202 | 255.3607 | 5.042m | Back_Curb |
| 14 | -902.8388 | -177.0374 | 255.1207 | 6.041m | EPS_Sub |
| 15 | -902.8384 | -177.0383 | 255.3207 | 6.042m | Hinge_Cut |
| 16 | -902.4415 | -177.9580 | 257.3240 | 7.043m | Daylight |

CHAINAGE 0+080.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -886.5436 | -158.5688 | 251.0435 | -8.194m | Daylight |
| 2 | -886.2643 | -162.1110 | 254.5966 | -4.641m | Hinge |
| 3 | -886.2642 | -162.1120 | 254.3966 | -4.640m | EPS_Sub |
| 4 | -886.1857 | -163.1079 | 254.6366 | -3.641m | Back_Curb |
| 5 | -886.1739 | -163.2574 | 254.6366 | -3.491m | Top_Curb |
| 6 | -886.1706 | -163.2990 | 254.4116 | -3.449m | Flowline_Gutter |
| 7 | -886.1353 | -163.7476 | 254.4386 | -2.999m | ETW |
| 8 | -886.1353 | -163.7476 | 254.0386 | -2.999m | ETW_SubBase |
| 9 | -885.5453 | -171.2304 | 254.2510 | 4.507m | Flange |
| 10 | -885.5453 | -171.2304 | 253.8510 | 4.507m | ETW_SubBase |
| 11 | -885.5099 | -171.6790 | 254.2240 | 4.957m | Flowline_Gutter |
| 12 | -885.5066 | -171.7206 | 254.4490 | 4.998m | Top_Curb |
| 13 | -885.4948 | -171.8701 | 254.4490 | 5.148m | Back_Curb |
| 14 | -885.4163 | -172.8660 | 254.2090 | 6.147m | EPS_Sub |

| | | | | | |
|----|-----------|-----------|----------|--------|-----------|
| 15 | -885.4162 | -172.8670 | 254.4090 | 6.148m | Hinge_Cut |
| 16 | -885.3685 | -173.4717 | 255.6221 | 6.755m | Daylight |

CHAINAGE 0+100.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -865.0911 | -161.0594 | 251.7836 | -6.546m | Daylight |
| 2 | -865.3419 | -162.9467 | 253.6875 | -4.642m | Hinge |
| 3 | -865.3420 | -162.9477 | 253.4875 | -4.641m | EPS_Sub |
| 4 | -865.4736 | -163.9380 | 253.7275 | -3.642m | Back_Curb |
| 5 | -865.4934 | -164.0867 | 253.7275 | -3.492m | Top_Curb |
| 6 | -865.4989 | -164.1281 | 253.5025 | -3.450m | Flowline_Gutter |
| 7 | -865.5582 | -164.5741 | 253.5295 | -3.000m | ETW |
| 8 | -865.5582 | -164.5741 | 253.1295 | -3.000m | ETW_SubBase |
| 9 | -866.4302 | -171.1363 | 253.3641 | 3.620m | Flange |
| 10 | -866.4302 | -171.1363 | 252.9641 | 3.620m | ETW_SubBase |
| 11 | -866.4895 | -171.5824 | 253.3371 | 4.070m | Flowline_Gutter |
| 12 | -866.4950 | -171.6237 | 253.5621 | 4.111m | Top_Curb |
| 13 | -866.5147 | -171.7724 | 253.5621 | 4.261m | Back_Curb |
| 14 | -866.6463 | -172.7627 | 253.3221 | 5.260m | EPS_Sub |
| 15 | -866.6464 | -172.7637 | 253.5221 | 5.261m | Hinge_Cut |
| 16 | -866.7505 | -173.5466 | 255.1016 | 6.051m | Daylight |

CHAINAGE 0+120.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -845.3902 | -166.2616 | 252.9264 | -4.716m | Daylight |
| 2 | -845.4035 | -166.3344 | 252.7785 | -4.642m | EPS |
| 3 | -845.4037 | -166.3354 | 252.5785 | -4.641m | EPS_Sub |
| 4 | -845.5834 | -167.3181 | 252.8185 | -3.642m | Back_Curb |
| 5 | -845.6104 | -167.4656 | 252.8185 | -3.492m | Top_Curb |
| 6 | -845.6179 | -167.5066 | 252.5935 | -3.450m | Flowline_Gutter |
| 7 | -845.6988 | -167.9493 | 252.6205 | -3.000m | ETW |
| 8 | -845.6988 | -167.9493 | 252.2205 | -3.000m | ETW_SubBase |
| 9 | -846.7780 | -173.8514 | 252.0705 | 3.000m | ETW_SubBase |
| 10 | -846.7780 | -173.8514 | 252.4705 | 3.000m | ETW |
| 11 | -846.8590 | -174.2941 | 252.4435 | 3.450m | Flowline_Gutter |
| 12 | -846.8665 | -174.3351 | 252.6685 | 3.492m | Top_Curb |
| 13 | -846.8935 | -174.4827 | 252.6685 | 3.642m | Back_Curb |
| 14 | -847.0731 | -175.4654 | 252.4285 | 4.641m | EPS_Sub |
| 15 | -847.0733 | -175.4664 | 252.6285 | 4.642m | Hinge_Cut |
| 16 | -847.3779 | -177.1321 | 256.0151 | 6.335m | Daylight |

CHAINAGE 0+140.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -825.5011 | -168.6813 | 254.4117 | -5.913m | Daylight |
| 2 | -825.7297 | -169.9317 | 251.8694 | -4.642m | EPS |
| 3 | -825.7299 | -169.9327 | 251.6694 | -4.641m | EPS_Sub |
| 4 | -825.9096 | -170.9154 | 251.9094 | -3.642m | Back_Curb |
| 5 | -825.9366 | -171.0630 | 251.9094 | -3.492m | Top_Curb |
| 6 | -825.9441 | -171.1040 | 251.6844 | -3.450m | Flowline_Gutter |

| | | | | | |
|----|-----------|-----------|----------|---------|-----------------|
| 7 | -826.0250 | -171.5466 | 251.7114 | -3.000m | ETW |
| 8 | -826.0250 | -171.5466 | 251.3114 | -3.000m | ETW_SubBase |
| 9 | -827.1042 | -177.4488 | 251.1614 | 3.000m | ETW_SubBase |
| 10 | -827.1042 | -177.4488 | 251.5614 | 3.000m | ETW |
| 11 | -827.1852 | -177.8915 | 251.5344 | 3.450m | Flowline_Gutter |
| 12 | -827.1927 | -177.9325 | 251.7594 | 3.492m | Top_Curb |
| 13 | -827.2196 | -178.0800 | 251.7594 | 3.642m | Back_Curb |
| 14 | -827.3993 | -179.0627 | 251.5194 | 4.641m | EPS_Sub |
| 15 | -827.3995 | -179.0637 | 251.7194 | 4.642m | Hinge_Cut |
| 16 | -828.0035 | -182.3669 | 258.4353 | 8.000m | Daylight |

CHAINAGE 0+160.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|--------------|-----------|-----------|----------|---------------|-------------------|
| 1 | -805.7091 | -171.6322 | 254.8169 | -6.570m | Daylight |
| 2 | -806.0559 | -173.5291 | 250.9603 | -4.642m | EPS |
| 3 | -806.0561 | -173.5301 | 250.7603 | -4.641m | EPS_Sub |
| 4 | -806.2358 | -174.5128 | 251.0003 | -3.642m | Back_Curb |
| 5 | -806.2628 | -174.6603 | 251.0003 | -3.492m | Top_Curb |
| 6 | -806.2703 | -174.7013 | 250.7753 | -3.450m | Flowline_Gutter |
| 7 | -806.3512 | -175.1440 | 250.8023 | -3.000m | ETW |
| 8 | -806.3512 | -175.1440 | 250.4023 | -3.000m | ETW_SubBase |
| 9 | -807.4304 | -181.0461 | 250.2523 | 3.000m | ETW_SubBase |
| 10 | -807.4304 | -181.0461 | 250.6523 | 3.000m | ETW |
| 11 | -807.5113 | -181.4888 | 250.6253 | 3.450m | Flowline_Gutter |
| 12 | -807.5188 | -181.5298 | 250.8503 | 3.492m | Top_Curb |
| 13 | -807.5458 | -181.6774 | 250.8503 | 3.642m | Back_Curb |
| 14 | -807.7255 | -182.6601 | 250.6103 | 4.641m | EPS_Sub |
| 15 | -807.7257 | -182.6611 | 250.8103 | 4.642m | Hinge_Cut |
| 16 | -808.5444 | -187.1388 | 259.9142 | 9.194m | Daylight |

CHAINAGE 0+180.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|--------------|-----------|-----------|----------|---------------|-------------------|
| 1 | -786.1926 | -176.0900 | 252.1585 | -5.695m | Daylight |
| 2 | -786.3821 | -177.1264 | 250.0512 | -4.642m | EPS |
| 3 | -786.3823 | -177.1274 | 249.8512 | -4.641m | EPS_Sub |
| 4 | -786.5620 | -178.1101 | 250.0912 | -3.642m | Back_Curb |
| 5 | -786.5889 | -178.2577 | 250.0912 | -3.492m | Top_Curb |
| 6 | -786.5964 | -178.2987 | 249.8662 | -3.450m | Flowline_Gutter |
| 7 | -786.6774 | -178.7414 | 249.8932 | -3.000m | ETW |
| 8 | -786.6774 | -178.7414 | 249.4932 | -3.000m | ETW_SubBase |
| 9 | -787.7566 | -184.6435 | 249.3432 | 3.000m | ETW_SubBase |
| 10 | -787.7566 | -184.6435 | 249.7432 | 3.000m | ETW |
| 11 | -787.8375 | -185.0862 | 249.7162 | 3.450m | Flowline_Gutter |
| 12 | -787.8450 | -185.1272 | 249.9412 | 3.492m | Top_Curb |
| 13 | -787.8720 | -185.2747 | 249.9412 | 3.642m | Back_Curb |
| 14 | -788.0517 | -186.2574 | 249.7012 | 4.641m | EPS_Sub |
| 15 | -788.0519 | -186.2584 | 249.9012 | 4.642m | Hinge_Cut |
| 16 | -788.9551 | -191.1980 | 259.9441 | 9.663m | Daylight |

CHAINAGE 0+200.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|----------|-----------------|
| 1 | -766.6541 | -173.4100 | 243.7344 | -11.281m | Daylight |
| 2 | -767.0386 | -178.8471 | 249.1851 | -5.830m | Hinge |
| 3 | -767.0386 | -178.8481 | 248.9851 | -5.829m | EPS_Sub |
| 4 | -767.1091 | -179.8446 | 249.2251 | -4.830m | Back_Curb |
| 5 | -767.1197 | -179.9943 | 249.2251 | -4.680m | Top_Curb |
| 6 | -767.1226 | -180.0358 | 249.0001 | -4.639m | Flowline_Gutter |
| 7 | -767.1544 | -180.4847 | 249.0271 | -4.189m | ETW |
| 8 | -767.1544 | -180.4847 | 248.6271 | -4.189m | ETW_SubBase |
| 9 | -767.6615 | -187.6554 | 248.8474 | 3.000m | Flange |
| 10 | -767.6615 | -187.6554 | 248.4474 | 3.000m | ETW_SubBase |
| 11 | -767.6932 | -188.1043 | 248.8204 | 3.450m | Flowline_Gutter |
| 12 | -767.6961 | -188.1459 | 249.0454 | 3.492m | Top_Curb |
| 13 | -767.7067 | -188.2956 | 249.0454 | 3.642m | Back_Curb |
| 14 | -767.7772 | -189.2921 | 248.8054 | 4.641m | EPS_Sub |
| 15 | -767.7773 | -189.2931 | 249.0054 | 4.642m | Hinge_Cut |
| 16 | -767.9999 | -192.4410 | 255.3169 | 7.798m | Daylight |

CHAINAGE 0+220.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|----------|-----------------|
| 1 | -753.8154 | -163.7012 | 235.0000 | -19.864m | Daylight |
| 2 | -749.6954 | -176.4022 | 248.3525 | -6.512m | Hinge |
| 3 | -749.6951 | -176.4032 | 248.1525 | -6.511m | EPS_Sub |
| 4 | -749.3869 | -177.3534 | 248.3925 | -5.512m | Back_Curb |
| 5 | -749.3406 | -177.4961 | 248.3925 | -5.362m | Top_Curb |
| 6 | -749.3277 | -177.5358 | 248.1675 | -5.320m | Flowline_Gutter |
| 7 | -749.1889 | -177.9638 | 247.7945 | -4.870m | ETW_SubBase |
| 8 | -749.1889 | -177.9638 | 248.1945 | -4.870m | Flange |
| 9 | -746.7606 | -185.4498 | 247.9978 | 3.000m | Flange |
| 10 | -746.7606 | -185.4498 | 247.5978 | 3.000m | ETW_SubBase |
| 11 | -746.6217 | -185.8779 | 247.9708 | 3.450m | Flowline_Gutter |
| 12 | -746.6088 | -185.9175 | 248.1958 | 3.492m | Top_Curb |
| 13 | -746.5626 | -186.0602 | 248.1958 | 3.642m | Back_Curb |
| 14 | -746.2543 | -187.0105 | 247.9558 | 4.641m | EPS_Sub |
| 15 | -746.2540 | -187.0114 | 248.1558 | 4.642m | EPS |
| 16 | -745.9055 | -188.0857 | 247.0263 | 5.771m | Daylight |

CHAINAGE 0+240.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|----------|-----------------|
| 1 | -738.4540 | -164.1040 | 242.5578 | -11.460m | Daylight |
| 2 | -735.0441 | -167.7498 | 247.5496 | -6.468m | Hinge |
| 3 | -735.0434 | -167.7505 | 247.3496 | -6.467m | EPS_Sub |
| 4 | -734.3610 | -168.4802 | 247.5896 | -5.468m | Back_Curb |
| 5 | -734.2585 | -168.5897 | 247.5896 | -5.318m | Top_Curb |
| 6 | -734.2301 | -168.6202 | 247.3646 | -5.277m | Flowline_Gutter |
| 7 | -733.9227 | -168.9488 | 247.3916 | -4.827m | ETW |
| 8 | -733.9227 | -168.9488 | 246.9916 | -4.827m | ETW_SubBase |

| | | | | | |
|----|-----------|-----------|----------|--------|-----------------|
| 9 | -728.5767 | -174.6646 | 247.1960 | 2.999m | Flange |
| 10 | -728.5767 | -174.6646 | 246.7960 | 2.999m | ETW_SubBase |
| 11 | -728.2694 | -174.9933 | 247.1690 | 3.449m | Flowline_Gutter |
| 12 | -728.2409 | -175.0237 | 247.3940 | 3.491m | Top_Curb |
| 13 | -728.1384 | -175.1333 | 247.3940 | 3.641m | Back_Curb |
| 14 | -727.4560 | -175.8629 | 247.1540 | 4.640m | EPS_Sub |
| 15 | -727.4553 | -175.8636 | 247.3540 | 4.641m | Hinge_Cut |
| 16 | -726.2260 | -177.1780 | 250.9533 | 6.441m | Daylight |

CHAINAGE 0+260.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -722.6534 | -153.9355 | 247.4508 | -5.406m | Daylight |
| 2 | -722.3646 | -154.1259 | 246.7589 | -5.060m | EPS |
| 3 | -722.3637 | -154.1264 | 246.5589 | -5.059m | EPS_Sub |
| 4 | -721.5297 | -154.6763 | 246.7989 | -4.060m | Back_Curb |
| 5 | -721.4044 | -154.7589 | 246.7989 | -3.910m | Top_Curb |
| 6 | -721.3696 | -154.7818 | 246.5739 | -3.868m | Flowline_Gutter |
| 7 | -720.9939 | -155.0295 | 246.6009 | -3.418m | ETW |
| 8 | -720.9939 | -155.0295 | 246.2009 | -3.418m | ETW_SubBase |
| 9 | -715.6352 | -158.5623 | 246.0404 | 3.000m | ETW_SubBase |
| 10 | -715.6352 | -158.5623 | 246.4404 | 3.000m | ETW |
| 11 | -715.2595 | -158.8100 | 246.4134 | 3.450m | Flowline_Gutter |
| 12 | -715.2247 | -158.8329 | 246.6384 | 3.492m | Top_Curb |
| 13 | -715.0994 | -158.9155 | 246.6384 | 3.642m | Back_Curb |
| 14 | -714.2654 | -159.4654 | 246.3984 | 4.641m | EPS_Sub |
| 15 | -714.2645 | -159.4659 | 246.5984 | 4.642m | Hinge_Cut |
| 16 | -711.7433 | -161.1280 | 252.6380 | 7.662m | Daylight |

CHAINAGE 0+280.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -711.5898 | -137.3547 | 246.8452 | -5.061m | Daylight |
| 2 | -711.2365 | -137.5811 | 246.0061 | -4.642m | EPS |
| 3 | -711.2357 | -137.5816 | 245.8061 | -4.641m | EPS_Sub |
| 4 | -710.3945 | -138.1206 | 246.0461 | -3.642m | Back_Curb |
| 5 | -710.2682 | -138.2015 | 246.0461 | -3.492m | Top_Curb |
| 6 | -710.2331 | -138.2240 | 245.8211 | -3.450m | Flowline_Gutter |
| 7 | -709.8542 | -138.4668 | 245.8481 | -3.000m | ETW |
| 8 | -709.8542 | -138.4668 | 245.4481 | -3.000m | ETW_SubBase |
| 9 | -704.8023 | -141.7038 | 245.2981 | 3.000m | ETW_SubBase |
| 10 | -704.8023 | -141.7038 | 245.6981 | 3.000m | ETW |
| 11 | -704.4234 | -141.9466 | 245.6711 | 3.450m | Flowline_Gutter |
| 12 | -704.3883 | -141.9691 | 245.8961 | 3.492m | Top_Curb |
| 13 | -704.2620 | -142.0500 | 245.8961 | 3.642m | Back_Curb |
| 14 | -703.4209 | -142.5889 | 245.6561 | 4.641m | EPS_Sub |
| 15 | -703.4200 | -142.5895 | 245.8561 | 4.642m | Hinge_Cut |
| 16 | -701.2717 | -143.9660 | 250.9590 | 7.193m | Daylight |

CHAINAGE 0+300.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|---|---|---|--------|------------|
|-------|---|---|---|--------|------------|

| | | | | | |
|----|-----------|-----------|----------|---------|-----------------|
| 1 | -700.5098 | -120.6888 | 245.1789 | -4.726m | Daylight |
| 2 | -700.4385 | -120.7347 | 245.2638 | -4.641m | Hinge |
| 3 | -700.4376 | -120.7353 | 245.0638 | -4.640m | EPS_Sub |
| 4 | -699.5976 | -121.2760 | 245.3038 | -3.641m | Back_Curb |
| 5 | -699.4715 | -121.3572 | 245.3038 | -3.491m | Top_Curb |
| 6 | -699.4364 | -121.3798 | 245.0788 | -3.449m | Flowline_Gutter |
| 7 | -699.0581 | -121.6234 | 245.1058 | -2.999m | ETW |
| 8 | -699.0581 | -121.6234 | 244.7058 | -2.999m | ETW_SubBase |
| 9 | -693.8944 | -124.9476 | 244.9522 | 3.142m | Flange |
| 10 | -693.8944 | -124.9476 | 244.5522 | 3.142m | ETW_SubBase |
| 11 | -693.5160 | -125.1912 | 244.9252 | 3.592m | Flowline_Gutter |
| 12 | -693.4810 | -125.2138 | 245.1502 | 3.634m | Top_Curb |
| 13 | -693.3548 | -125.2950 | 245.1502 | 3.784m | Back_Curb |
| 14 | -692.5148 | -125.8358 | 244.9102 | 4.783m | EPS_Sub |
| 15 | -692.5140 | -125.8363 | 245.1102 | 4.784m | Hinge_Cut |
| 16 | -690.7228 | -126.9894 | 249.3708 | 6.914m | Daylight |

CHAINAGE 0+320.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|-----------|----------|---------|-----------------|
| 1 | -689.1191 | -103.4801 | 243.7392 | -5.424m | Daylight |
| 2 | -688.5186 | -103.9815 | 244.5215 | -4.642m | Hinge |
| 3 | -688.5178 | -103.9822 | 244.3215 | -4.641m | EPS_Sub |
| 4 | -687.7510 | -104.6225 | 244.5615 | -3.642m | Back_Curb |
| 5 | -687.6359 | -104.7187 | 244.5615 | -3.492m | Top_Curb |
| 6 | -687.6039 | -104.7454 | 244.3365 | -3.450m | Flowline_Gutter |
| 7 | -687.2585 | -105.0339 | 244.3635 | -3.000m | ETW |
| 8 | -687.2585 | -105.0339 | 243.9635 | -3.000m | ETW_SubBase |
| 9 | -681.8568 | -109.5451 | 244.1875 | 4.038m | Flange |
| 10 | -681.8568 | -109.5451 | 243.7875 | 4.038m | ETW_SubBase |
| 11 | -681.5114 | -109.8335 | 244.1605 | 4.488m | Flowline_Gutter |
| 12 | -681.4794 | -109.8602 | 244.3855 | 4.529m | Top_Curb |
| 13 | -681.3642 | -109.9564 | 244.3855 | 4.679m | Back_Curb |
| 14 | -680.5975 | -110.5968 | 244.1455 | 5.678m | EPS_Sub |
| 15 | -680.5967 | -110.5974 | 244.3455 | 5.679m | Hinge_Cut |
| 16 | -678.9616 | -111.9629 | 248.6062 | 7.810m | Daylight |

CHAINAGE 0+340.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|----------|----------|---------|-----------------|
| 1 | -674.3572 | -87.5128 | 241.1875 | -7.233m | Daylight |
| 2 | -672.8917 | -89.6505 | 243.7792 | -4.642m | Hinge |
| 3 | -672.8912 | -89.6513 | 243.5792 | -4.641m | EPS_Sub |
| 4 | -672.3263 | -90.4753 | 243.8192 | -3.642m | Back_Curb |
| 5 | -672.2415 | -90.5990 | 243.8192 | -3.492m | Top_Curb |
| 6 | -672.2179 | -90.6334 | 243.5942 | -3.450m | Flowline_Gutter |
| 7 | -671.9635 | -91.0045 | 243.6212 | -3.000m | ETW |
| 8 | -671.9635 | -91.0045 | 243.2212 | -3.000m | ETW_SubBase |
| 9 | -667.8925 | -96.9431 | 243.4412 | 4.200m | Flange |
| 10 | -667.8925 | -96.9431 | 243.0412 | 4.200m | ETW_SubBase |

| | | | | | |
|----|-----------|----------|----------|--------|-----------------|
| 11 | -667.6380 | -97.3143 | 243.4142 | 4.650m | Flowline_Gutter |
| 12 | -667.6144 | -97.3487 | 243.6392 | 4.692m | Top_Curb |
| 13 | -667.5296 | -97.4724 | 243.6392 | 4.842m | Back_Curb |
| 14 | -666.9648 | -98.2964 | 243.3992 | 5.841m | EPS_Sub |
| 15 | -666.9642 | -98.2972 | 243.5992 | 5.842m | Hinge_Cut |
| 16 | -666.1552 | -99.4773 | 246.4608 | 7.272m | Daylight |

CHAINAGE 0+360.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|----------|----------|---------|-----------------|
| 1 | -654.7709 | -77.3639 | 239.9997 | -7.679m | Daylight |
| 2 | -653.8293 | -80.2513 | 243.0369 | -4.642m | Hinge |
| 3 | -653.8290 | -80.2523 | 242.8369 | -4.641m | EPS_Sub |
| 4 | -653.5192 | -81.2021 | 243.0769 | -3.642m | Back_Curb |
| 5 | -653.4727 | -81.3447 | 243.0769 | -3.492m | Top_Curb |
| 6 | -653.4598 | -81.3843 | 242.8519 | -3.450m | Flowline_Gutter |
| 7 | -653.3203 | -81.8122 | 242.8789 | -3.000m | ETW |
| 8 | -653.3203 | -81.8122 | 242.4789 | -3.000m | ETW_SubBase |
| 9 | -651.0880 | -88.6574 | 242.6989 | 4.200m | Flange |
| 10 | -651.0880 | -88.6574 | 242.2989 | 4.200m | ETW_SubBase |
| 11 | -650.9485 | -89.0852 | 242.6719 | 4.650m | Flowline_Gutter |
| 12 | -650.9356 | -89.1248 | 242.8969 | 4.692m | Top_Curb |
| 13 | -650.8891 | -89.2675 | 242.8969 | 4.842m | Back_Curb |
| 14 | -650.5794 | -90.2172 | 242.6569 | 5.841m | EPS_Sub |
| 15 | -650.5790 | -90.2182 | 242.8569 | 5.842m | Hinge_Cut |
| 16 | -650.2063 | -91.3611 | 245.2612 | 7.044m | Daylight |

CHAINAGE 0+380.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|----------|----------|---------|-----------------|
| 1 | -633.7304 | -72.6900 | 238.8474 | -8.089m | Daylight |
| 2 | -633.3411 | -76.1151 | 242.2946 | -4.642m | Hinge |
| 3 | -633.3410 | -76.1161 | 242.0946 | -4.641m | EPS_Sub |
| 4 | -633.2282 | -77.1087 | 242.3346 | -3.642m | Back_Curb |
| 5 | -633.2112 | -77.2577 | 242.3346 | -3.492m | Top_Curb |
| 6 | -633.2065 | -77.2991 | 242.1096 | -3.450m | Flowline_Gutter |
| 7 | -633.1557 | -77.7463 | 242.1366 | -3.000m | ETW |
| 8 | -633.1557 | -77.7463 | 241.7366 | -3.000m | ETW_SubBase |
| 9 | -632.4232 | -84.1907 | 241.9744 | 3.486m | Flange |
| 10 | -632.4232 | -84.1907 | 241.5744 | 3.486m | ETW_SubBase |
| 11 | -632.3723 | -84.6378 | 241.9474 | 3.936m | Flowline_Gutter |
| 12 | -632.3676 | -84.6792 | 242.1724 | 3.978m | Top_Curb |
| 13 | -632.3507 | -84.8283 | 242.1724 | 4.128m | Back_Curb |
| 14 | -632.2379 | -85.8209 | 241.9324 | 5.127m | EPS_Sub |
| 15 | -632.2377 | -85.8219 | 242.1324 | 5.128m | Hinge_Cut |
| 16 | -632.0878 | -87.1412 | 244.7880 | 6.455m | Daylight |

CHAINAGE 0+400.00

| POINT | X | Y | Z | OFFSET | STRING CUT |
|-------|-----------|----------|----------|---------|------------|
| 1 | -613.4342 | -72.4901 | 239.7058 | -6.488m | Daylight |
| 2 | -613.2811 | -74.3302 | 241.5523 | -4.642m | Hinge |

| | | | | | |
|----|-----------|----------|----------|---------|-----------------|
| 3 | -613.2810 | -74.3312 | 241.3523 | -4.641m | EPS_Sub |
| 4 | -613.1982 | -75.3267 | 241.5923 | -3.642m | Back_Curb |
| 5 | -613.1857 | -75.4762 | 241.5923 | -3.492m | Top_Curb |
| 6 | -613.1823 | -75.5178 | 241.3673 | -3.450m | Flowline_Gutter |
| 7 | -613.1449 | -75.9662 | 241.3943 | -3.000m | ETW |
| 8 | -613.1449 | -75.9662 | 240.9943 | -3.000m | ETW_SubBase |
| 9 | -612.6474 | -81.9455 | 241.2443 | 3.000m | Flange |
| 10 | -612.6474 | -81.9455 | 240.8443 | 3.000m | ETW_SubBase |
| 11 | -612.6100 | -82.3940 | 241.2173 | 3.450m | Flowline_Gutter |
| 12 | -612.6066 | -82.4355 | 241.4423 | 3.492m | Top_Curb |
| 13 | -612.5941 | -82.5850 | 241.4423 | 3.642m | Back_Curb |
| 14 | -612.5113 | -83.5806 | 241.2023 | 4.641m | EPS_Sub |
| 15 | -612.5112 | -83.5816 | 241.4023 | 4.642m | Hinge_Cut |
| 16 | -612.3729 | -85.2432 | 244.7370 | 6.309m | Daylight |

6.4 Vertikalni tok trase

Tablica 5. Vertikalni tok trase

| PVI | Station | Grade Out | Curve Length |
|--|----------|-----------|--------------|
| 0.00 | 0+000.00 | -4.55% | |
| 1.00 | 0+220.00 | -3.71% | 69.820m |
| Vertical Curve Information:(sag curve) <hr/> PVC Station: 0+185.10 Elevation: 249.587m PVI Station: 0+220.00 Elevation: 248.000m PVT Station: 0+254.92 Elevation: 246.704m Low Point: 0+254.92 Elevation: 246.704m Grade in: -4.55% Grade out: -3.71% Change: 0.83% K: Curve Length: 69.820m Headlight Distance: | | | |
| 2.00 | 0+408.60 | | |

7. Literatura

1. Prof. dr. sc. Željko Korlaet, "Uvod u projektiranje i građenje cesta", Građevinski Fakultet Sveučilišta u Zagrebu, Zagreb, 1995.
2. Ministarstvo pomorstva, prometa i veza, "Pravilnik o osnovnim uvjetima kojima javne ceste izvan naselja i njihovi elementi moraju udovoljavati sa stajališta sigurnosti prometa", Narodne novine, Zagreb, 30. studenoga 2001.