Idejni projekt lokalne ceste

Janjiš, Alenka

SVEUČILIŠTE U SPLITU

FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE

ZAVRŠNI RAD

ALENKA JANJIŠ

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

STUDIJ: **PREDDIPLOMSKI SVEUČILIŠNI STUDIJ GRAĐEVINARSTVA**

KANDIDAT: Alenka Janjiš

MATIČNI BROJ (JMBAG): 0083223296

KATEDRA: **Katedra za prometnice**

PREDMET: Ceste

ZADATAK ZA ZAVRŠNI RAD

Tema: Idejni projekt lokalne ceste

Opis zadatka: Tema završnog rada je izrada projekta lokalne ceste. Zadatak se rješava polaganjem ceste na zadanoj geodetskoj podlozi od točke A prema točki B. Proračun elemenata ceste radi se na temelju danih podataka programskog zadatka iz kolegija Ceste. U programu koji se koristi pri projektiranju cesta AutoCad Civil 3D crtaju se svi nacrti kao i izračunavaju ostali potrebni podatci.

Zadatak treba sadržavati:

1. Kopiju programskog zadatka
2. Tehnički opis s priakzom 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. Obrada na računalu
7. Računaone ispise koordinatnih točaka osi
8. Proračun količina zemlojanih radova
9. Proračun količine radova po presjecima

U Splitu , srpanj 2021.

Voditelj završnog rada:

Prof. dr. sc. Dražen Cvitanić

Idejni projekt lokalne ceste

Sažetak: Idejni projekt ceste izvodi se na zadanoj geodetskoj podlozi u mjerilu 1 : 1000 koja prikazuje teren na kojoj se cesta projektira. Cesta se formira od točke A koja se nalazi na 296 metara nadmorske visine prema točki B koja se nalazi 317 metara nadmorske visine. Vrsta terena na kojem se polaže trasa je brdoviti. Cesta se projektira za prosječni godišnji dnevni promet koji iznosi 950 vozila/dan (PGDP). Predviđena projektna brzina je 40 km/h. Trasa kontinuirane ceste ima dužinu 455.00 m. Idejno rješenje izrađeno je prema Pravilniku i osnovnim uvjetima za projektiranje ceste s elementima koji zadovoljavaju važeće propise, kao i sigurnosne i estetske kriterije.

Ključne riječi: lokalna cesta, teren, krivina, kolnik, stacionaža, uzdužni presjek, poprečni presjek

Conceptual project of local road

Summary: The preliminary design of the road is performed on a given geodetic base at a scale of 1: 1000, which shows the terrain on which the road is designed. The road is formed from point A located at 296 meters above sea level towards point B, which is located at 317 meters above sea level. The type of terrain on which the route is laid is hilly. The road is designed for an average annual daily traffic of 950 vehicles / day (PGDP). Estimated design speed is 40km / h. The route of the continuous road has a length of 455.00 m. The conceptual design was made according to the Ordinance and the basic conditions for the design of roads with elements that meet the applicable regulations, as well as safety and aesthetic criteria.

Keywords: local road, terrain, curve, pavement, stationing, longitudinal section, cross section

SADRŽAJ

PROGRAMSKI ZADATAK

SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE
I GEODEZIJE

Split, ak.god. 2020/2021.

Katedra za prometnice

Studij: Preddiplomski

Nastavni predmet: CESTE

Student/ica: Alenka Janjiš

ZADATAK

Treba izraditi idejni projekt dionice ceste 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. Aproksimativni troškovnik

Predmetna nastavnica:

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

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 296 metara nadmorske visine, do točke B koja se nalazi na 317 metara nadmorske visine. Idejni projekt je cesta 5. kategorije s prosječnim godišnjim dnevnim prometom od 950 vozila na dan. Teren na kojem se izvodi cesta je brdovit. Projektom je predviđena prosječna brzina od 40 km/h. Dužina ceste koja se izvodi je 455 metara.

2.2 Horizontalni elementi

Za odabranu projektnu brzinu od 40 km/h prema Pravilniku minimalni radijus horizontalne krivine iznosi 45 metara a minimalna prijelaznica 30 metara. U ovom projektu trasa sadržava tri pravca i dvije krivine. Prva krivina je radijusa 60 metara s prijelaznicom od 40 metara, zatim imamo međupravac duljine 19.22 metara pa drugu krivinu radijusa 45 metara sa prijelaznicom od 30 metara.

2.3 Vertikalni elementi

Prema pravilniku, a ovisno o kategoriji terena maksimalni dozvoljeni nagib nivelete iznosi 12% dok je minimalni radijus vertikalne krivine 300 metara. Nagib orvog pravca je S_1= 3.75% a drugog je S_2= 6.04%. Tangenta je dužine 112 metara, a radijus vertikalen krivine je R= 4900 metara.

2.4 Poprečni presjek

Cesta sadrži dva kolnička traka širine 2.75 metara sa dodatnim rubnim trakovima sa svake strane širine 0.2 metara što daje ukupnu širinu od 2.95 metara. Poprečni nagib iznosi 2.5% no u nekim stacionašama varira i do 7%. Uz cestu je izgrađena bankina širine 1 metar, nagiba 4% koja se pruža u smjeru nasipa te berma poprečnog nagiba 5%. Trasa je dijelom u usjeku, a dijelom u nasipu pri čemu se izvode nagibi pokoso u omjeru 1:1 i 2:1. Na usjecima se izvode rigoli za odvodnju vode širine 0.65 m i drenaža koja je postavljena u glinenu posteljicu, a u nasipu se izvode potporni zidovi zbog konfiguracije terena.

2.5 Kolnička konstrukcija

Projektom je predviđena kolnička konstrukcija u navedenim slojevima:

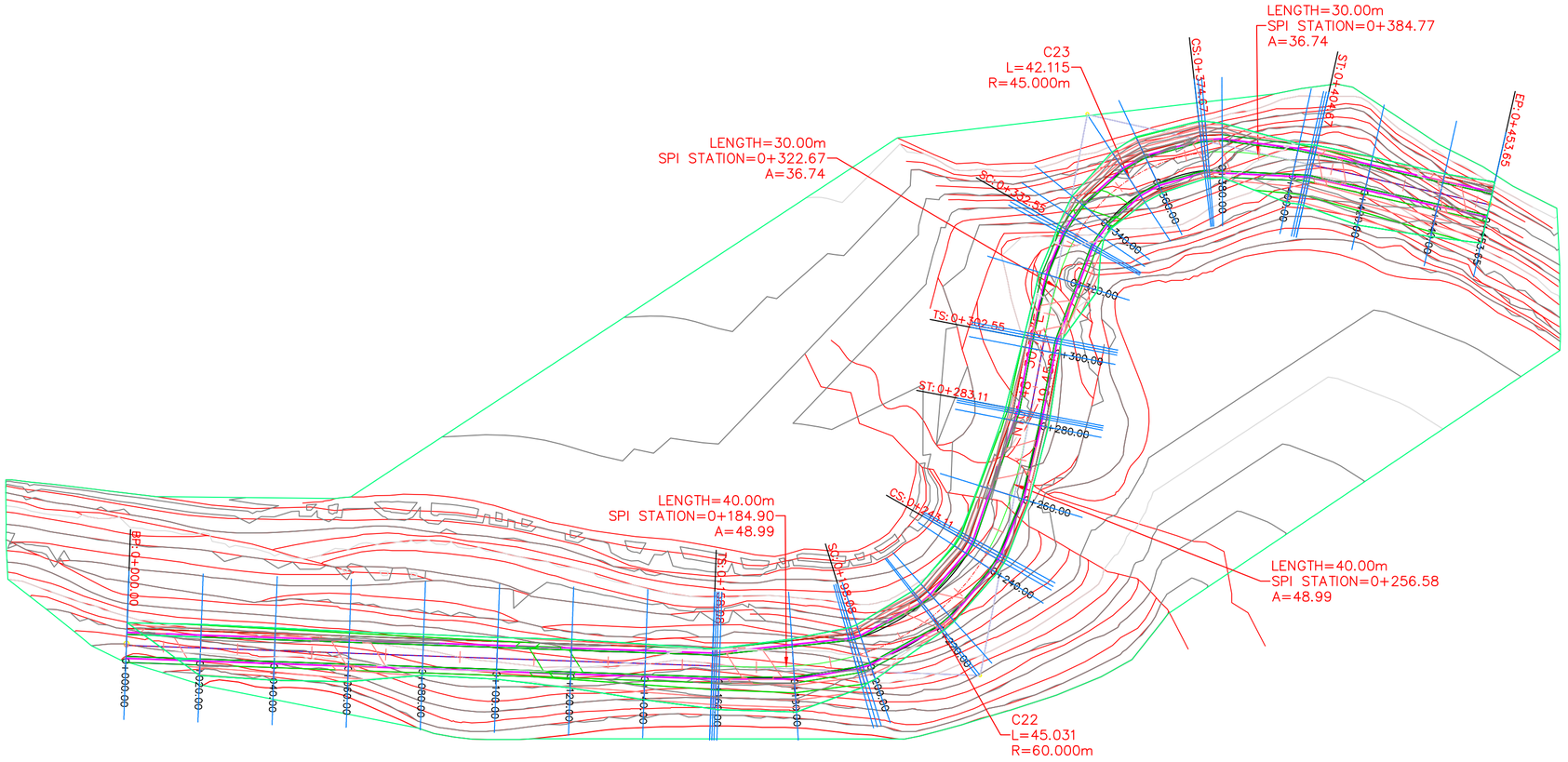
- habajući asfaltni sloj AB11- 4 cm
- bitumenizirani nosivi sloj- 6 cm
- mehanički nosivi zbijeni sloj- 25 cm

2.6 Odvodnja

Odvodnja kolnika predviđa se otvorenim sustavom odvodnje prihvaćanjem kolničkih i pribrežnih voda u zasjeku i usjeku u betonske rigole te kontroliranim ispuštanjem u teren direktno ili betonski cijevnim propustima kroz trup kolnika.

3. GRAFIČKI PRILOZI

3.1 Situacija M 1:1000



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MATICE HRVATSKE 15

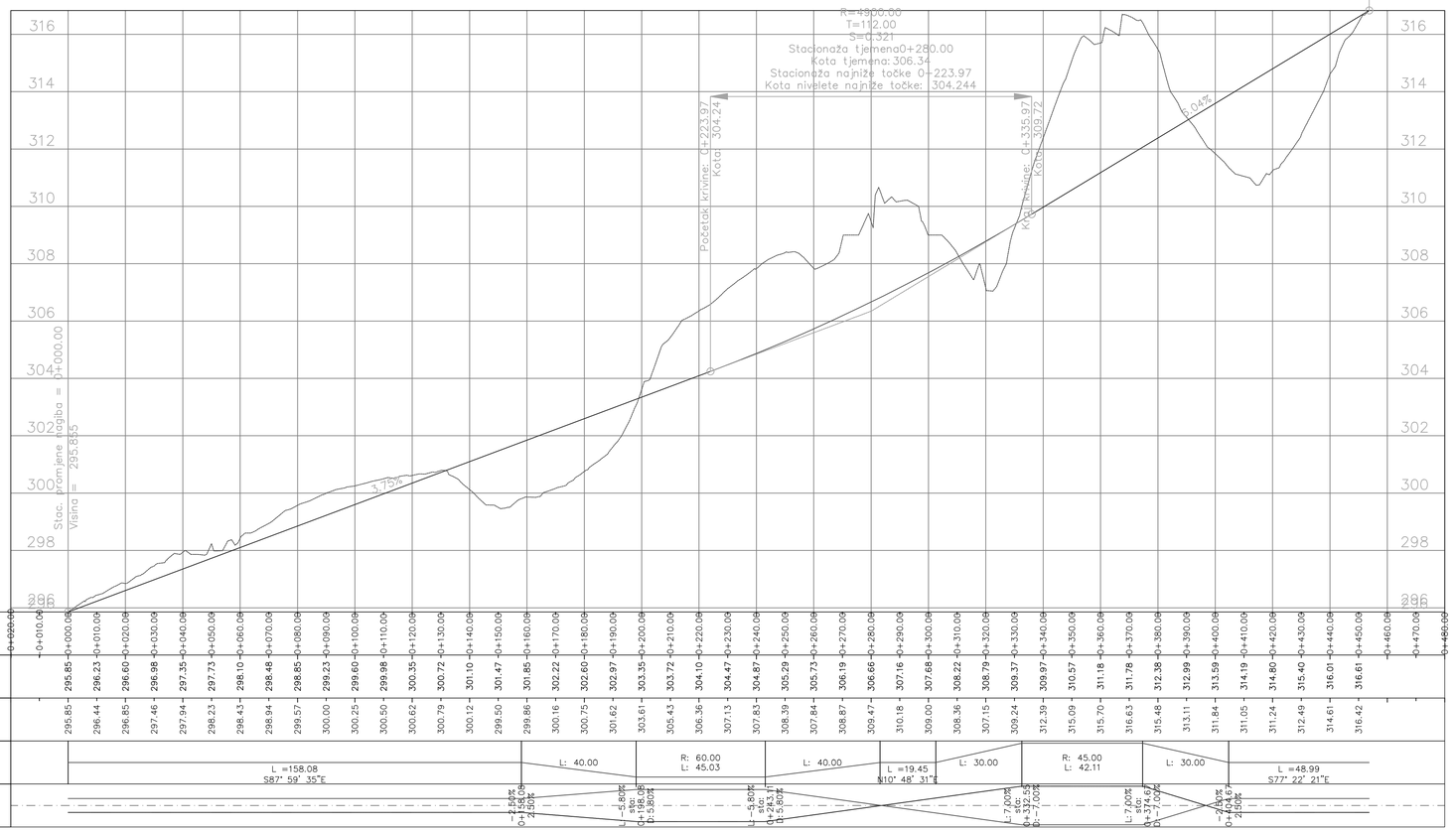
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić	
SADRŽAJ: SITUACIJA		MJERILO: M 1 : 1000
DATUM: 15.07.2021.		PRILOG: 1

3.2 Uzdužni presjek M 1:1000/100

os 2 PROFILE



Stacionaža	Kote nivelete	Kote terena
0+020.00		
0+010.00		
0+000.00	295.85	295.85
0+010.00	296.23	296.44
0+020.00	296.60	296.85
0+030.00	296.98	297.46
0+040.00	297.35	297.94
0+050.00	297.73	298.23
0+060.00	298.10	298.43
0+070.00	298.48	298.94
0+080.00	298.85	299.57
0+090.00	299.23	300.00
0+100.00	299.60	300.25
0+110.00	299.98	300.50
0+120.00	300.35	300.62
0+130.00	300.72	300.79
0+140.00	301.10	300.12
0+150.00	301.47	299.50
0+160.00	301.85	299.86
0+170.00	302.22	300.16
0+180.00	302.60	300.75
0+190.00	302.97	301.62
0+200.00	303.35	303.61
0+210.00	303.72	305.43
0+220.00	304.10	306.36
0+230.00	304.47	307.13
0+240.00	304.87	307.83
0+250.00	305.29	308.39
0+260.00	305.73	307.84
0+270.00	306.19	308.87
0+280.00	306.66	309.47
0+290.00	307.16	310.18
0+300.00	307.68	309.00
0+310.00	308.22	308.36
0+320.00	308.79	307.15
0+330.00	309.37	309.24
0+340.00	309.97	312.39
0+350.00	310.57	315.09
0+360.00	311.18	315.70
0+370.00	311.78	316.63
0+380.00	312.38	315.48
0+390.00	312.99	313.11
0+400.00	313.59	311.84
0+410.00	314.19	311.05
0+420.00	314.80	311.24
0+430.00	315.40	312.49
0+440.00	316.01	314.61
0+450.00	316.61	316.42
0+460.00		
0+470.00		
0+480.00		

Horizontalni elementi

Horizontalni elementi
L =158.08 S87° 59' 35"E
L: 40.00
R: 60.00 L: 45.03
L: 40.00
L =19.45 N10° 48' 31"E
L: 30.00
R: 45.00 L: 42.11
L: 30.00
L =48.99 S77° 22' 21"E

Vitoperenje
−2.50% 0+158.08 2.50%
L: −5.80% sta: 0+198.08 D: 5.80%
L: −5.80% sta: 0+243.11 D: 5.80%
L: 7.00% sta: 0+332.55 D: −7.00%
L: 7.00% sta: 0+374.67 D: −7.00%
−2.50% 0+404.67 2.50%

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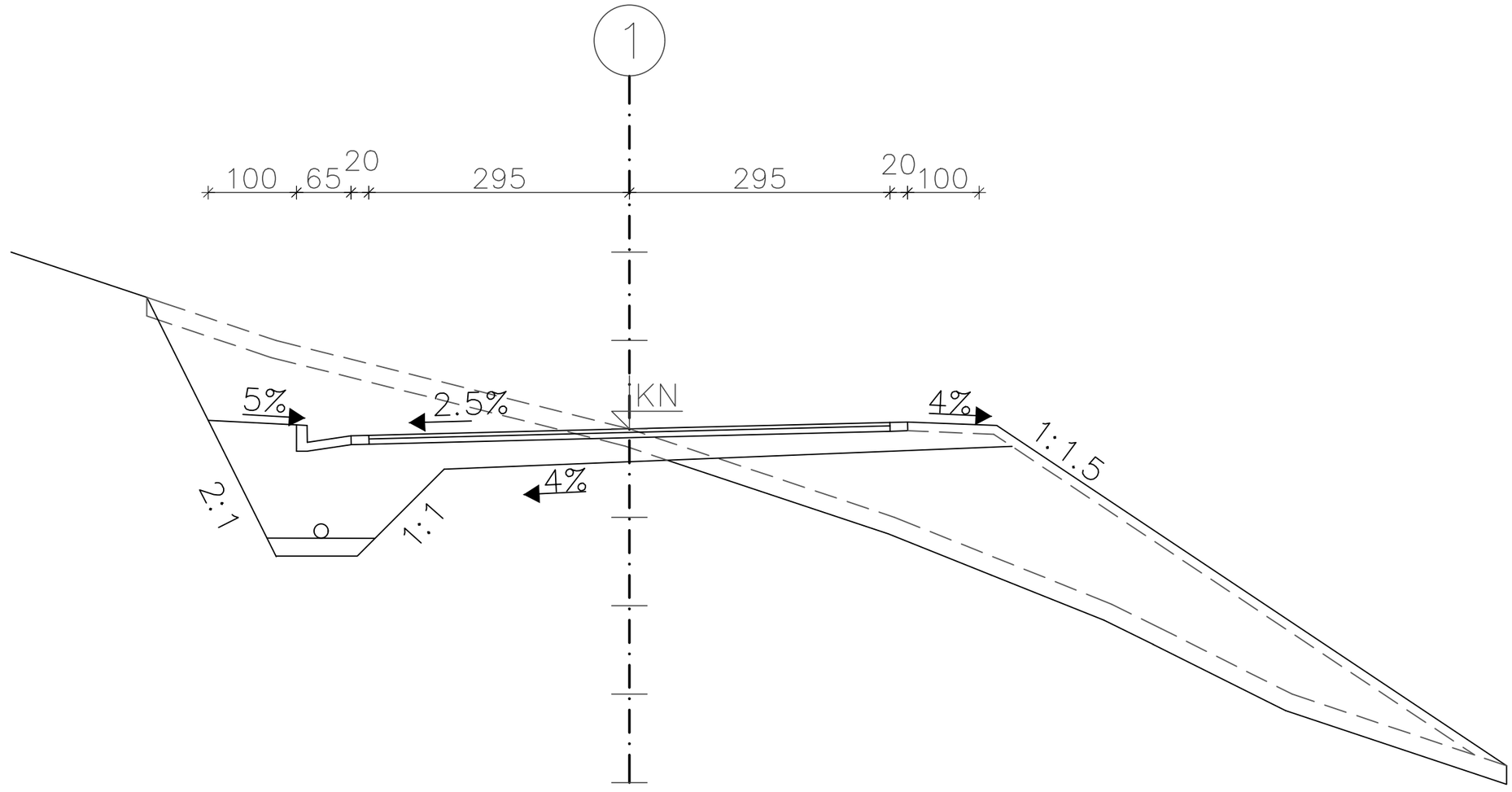
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **UZDUŽNI PRESJEK**	MJERILO:M 1 : 1000/100
DATUM: 15.07.2021.	PRILOG: **2**

3.3 Normalni poprečni presjek M 1:50

POPREČNI PRESJEK
M 1:100



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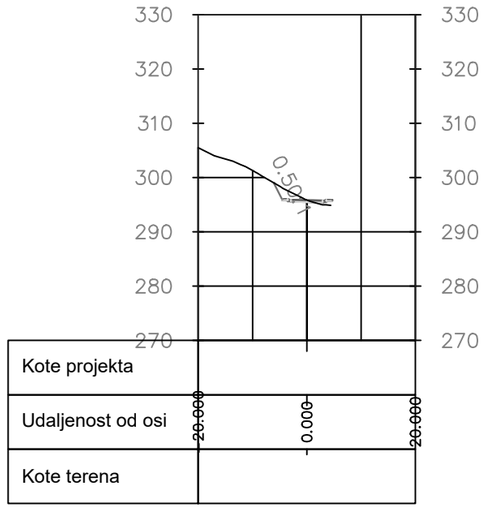
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

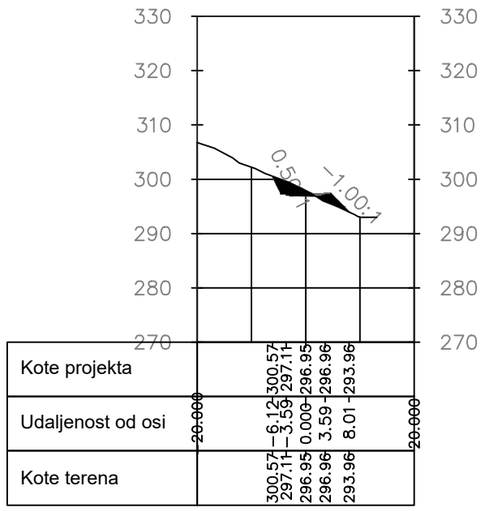
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: GENERALNI PLAN POZICIJA	MJERILO: M 1 : 100
DATUM: 15.07.2021	PRILOG: 3

3.4 Karakteristični poprečni presjeci M 1:200

0+000.00



0+040.00



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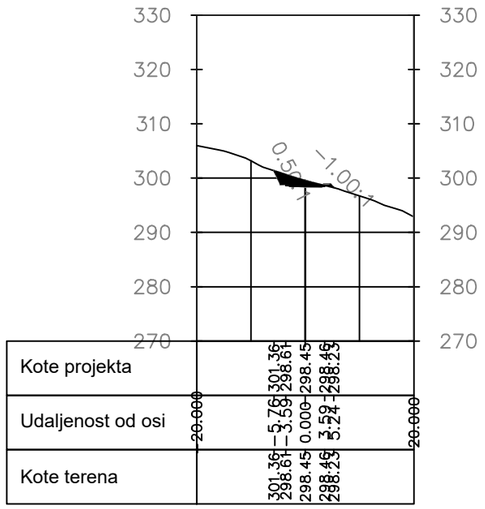

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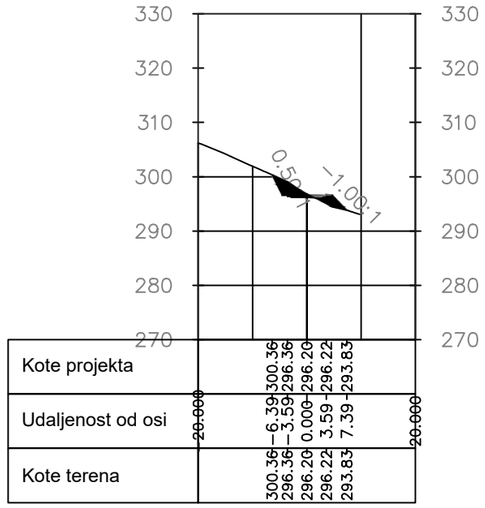

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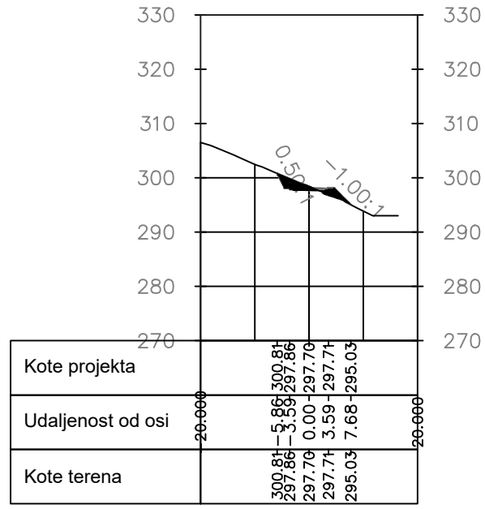

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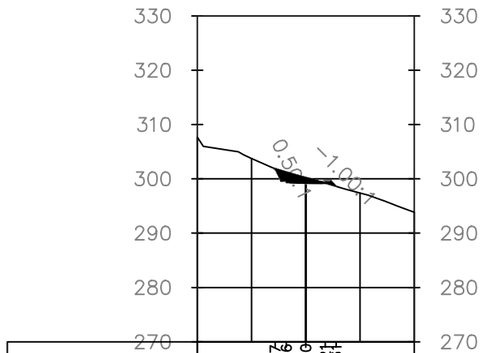
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

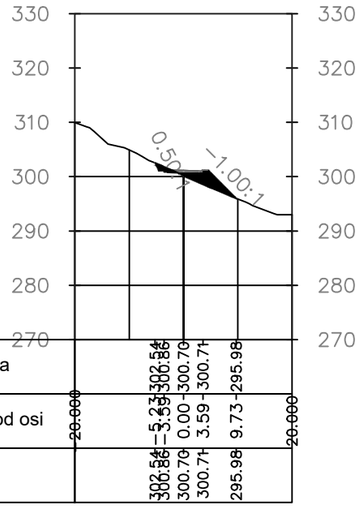
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: **4**

0+100.00



Kote projekta			301.87	299.36	299.20	299.21	298.61		
Udaljenost od osi	20.000		5.64	3.59	0.00	3.59	5.61		20.000
Kote terena			301.87	299.36	299.20	299.21	298.61		

0+140.00



Kote projekta			302.54	300.86	300.70	300.71	295.98		
Udaljenost od osi	20.000		5.23	3.59	0.00	3.59	9.73		20.000
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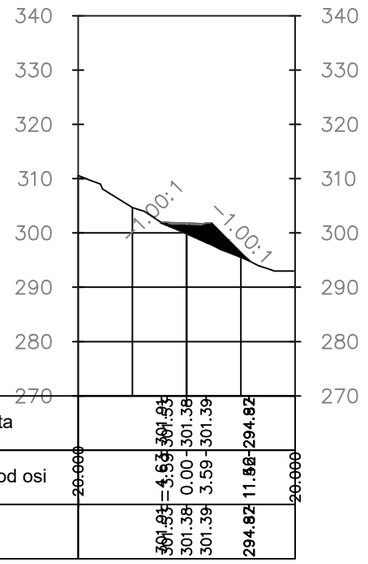
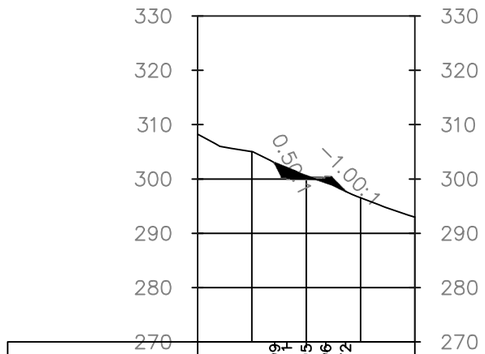
0+158.08



Kote projekta			301.93	301.38	301.39	294.82			
Udaljenost od osi	20.000		4.67	3.59	0.00	3.59	11.52		20.000
Kote terena			301.93	301.38	301.39	294.82			

0+120.00



Kote projekta			302.99	300.17	299.95	299.96	297.72		
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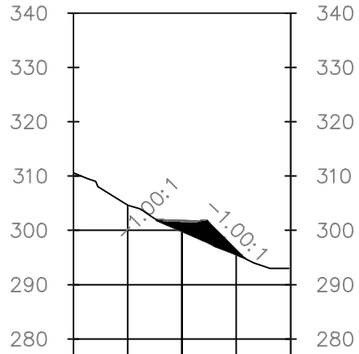
0+158.08



Kote projekta			301.93	301.38	301.39	294.87			
Udaljenost od osi	20.000		4.67	3.59	0.00	3.59	11.52		20.000
Kote terena			301.93	301.38	301.39	294.87			

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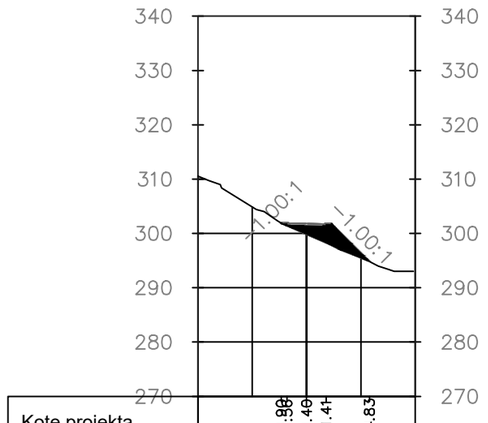
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

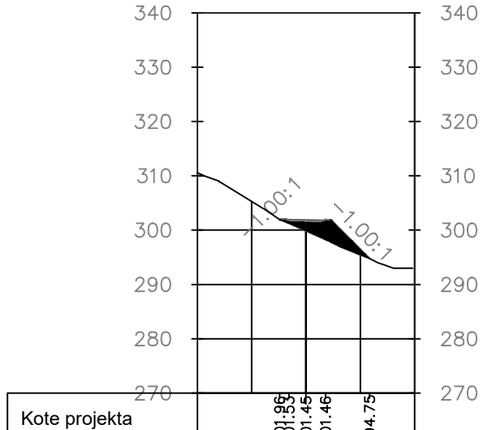
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: **4**

0+158.65



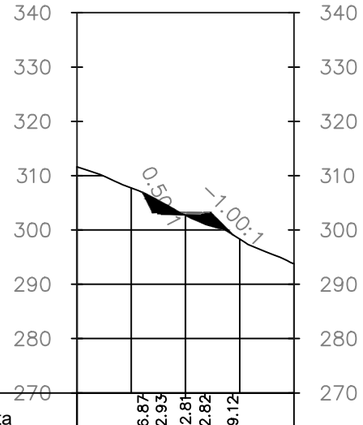
Kote projekta		301.90	301.90	301.40	301.41	294.83	
Udaljenost od osi	20.000	-4.68	-3.64	0.00	3.59	11.58	20.000
Kote terena		301.90	301.90	301.40	301.41	294.83	

0+160.00



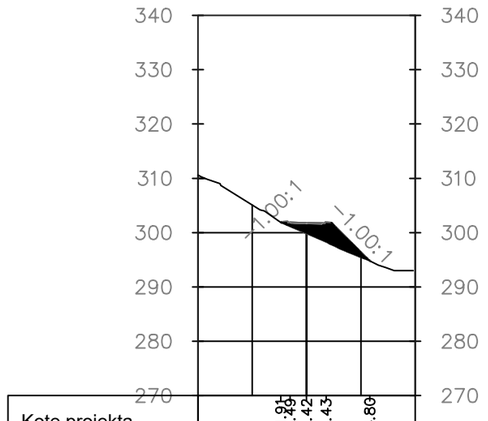
Kote projekta		301.95	301.95	301.45	301.46	294.75	
Udaljenost od osi	20.000	-4.82	-3.77	0.000	3.59	11.71	20.000
Kote terena		301.95	301.95	301.45	301.46	294.75	

0+196.45



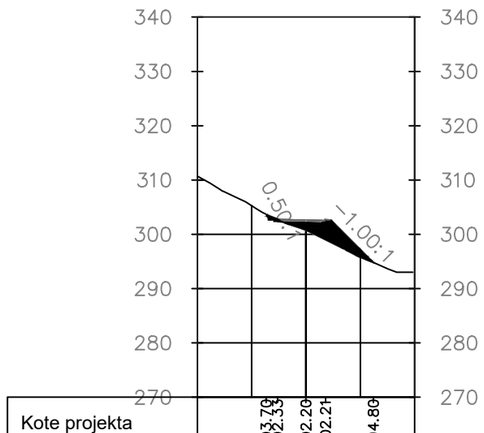
Kote projekta		306.87	306.87	302.81	302.82	299.12	
Udaljenost od osi	20.000	-7.84	-4.47	0.00	3.59	8.70	20.000
Kote terena		306.87	302.93	302.81	302.82	299.12	

0+159.22



Kote projekta		301.91	301.91	301.42	301.43	294.80	
Udaljenost od osi	20.000	-4.75	-3.03	0.00	3.59	11.64	20.000
Kote terena		301.91	301.49	301.42	301.43	294.80	

0+180.00



Kote projekta		303.79	303.79	302.20	302.21	294.80	
Udaljenost od osi	20.000	-7.33	-5.25	0.00	3.59	12.41	20.000
Kote terena		303.79	302.33	302.20	302.21	294.80	

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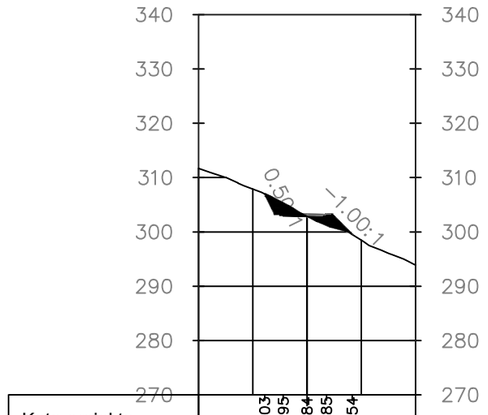
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

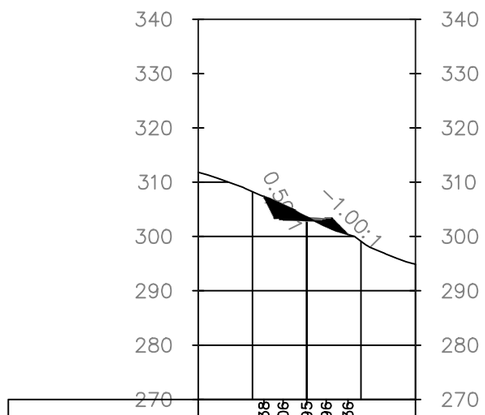
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: **4**

0+197.26



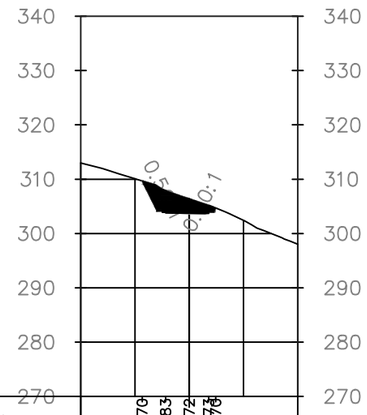
Kote projekta		307.03	302.95	302.84	302.85	299.54			
Udaljenost od osi	20.000	−7.82	−4.38	0.000	3.59	8.32			20.000
Kote terena		307.03	302.95	302.84	302.85	299.54			

0+200.00



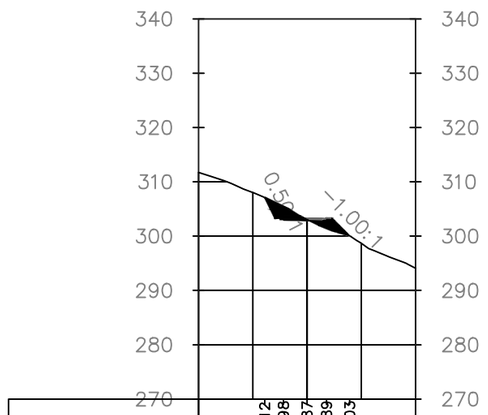
Kote projekta		307.38	303.06	302.95	302.96	300.36			
Udaljenost od osi	20.000	−7.91	−4.35	0.00	3.59	7.60			20.000
Kote terena		307.38	303.06	302.95	302.96	300.36			

0+220.59



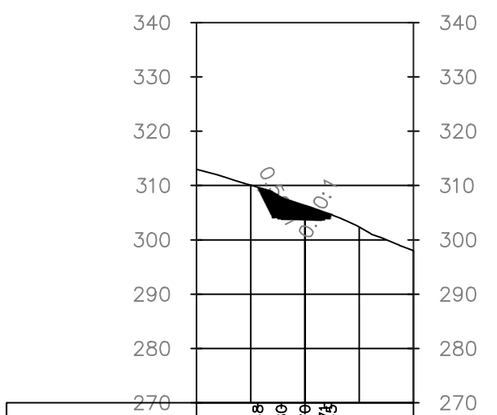
Kote projekta		309.70	303.83	303.72	303.73	304.78			
Udaljenost od osi	20.000	−8.68	−4.35	0.000	3.59	4.87			20.000
Kote terena		309.70	303.83	303.72	303.73	304.78			

0+198.08



Kote projekta		307.12	302.98	302.87	302.89	300.03			
Udaljenost od osi	20.000	−7.81	−4.35	0.00	3.59	7.86			20.000
Kote terena		307.12	302.98	302.87	302.89	300.03			

0+220.00



Kote projekta		309.68	303.80	303.70	303.71	304.85			
Udaljenost od osi	20.000	−8.68	−4.35	0.000	3.59	4.88			20.000
Kote terena		309.68	303.80	303.70	303.71	304.85			

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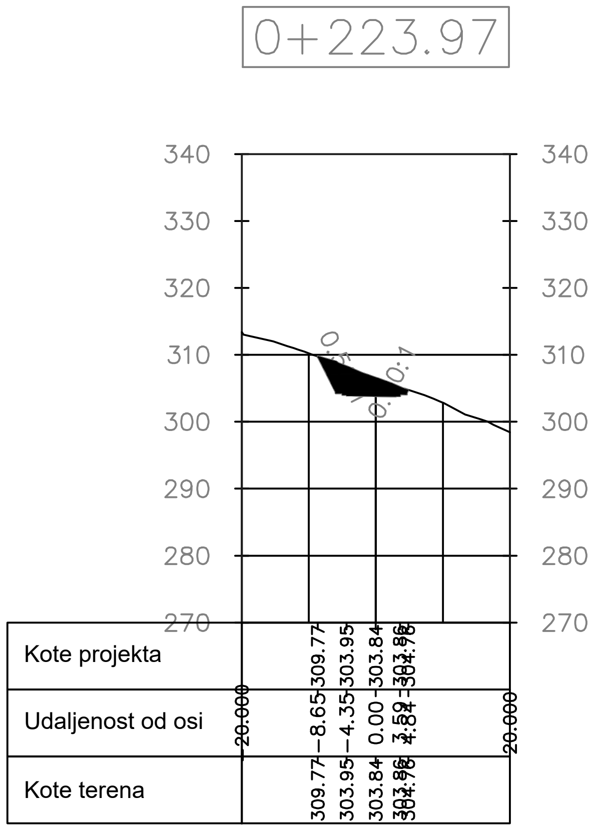
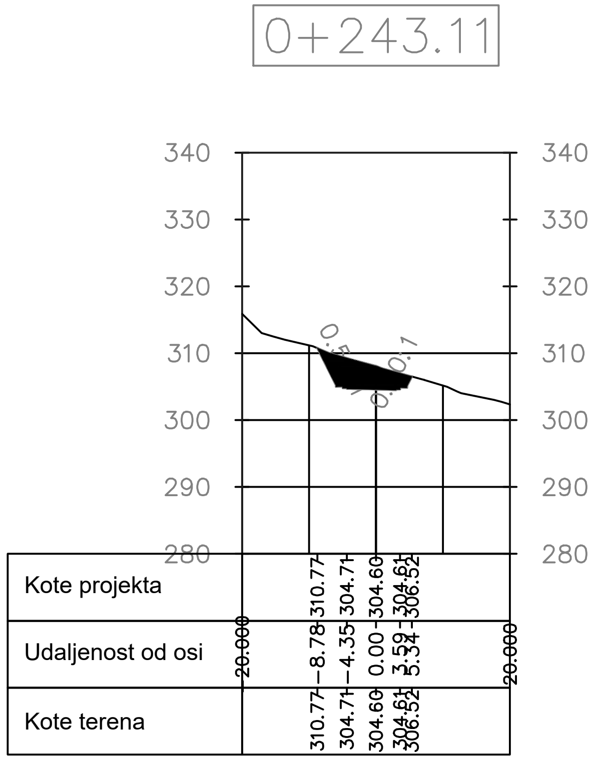
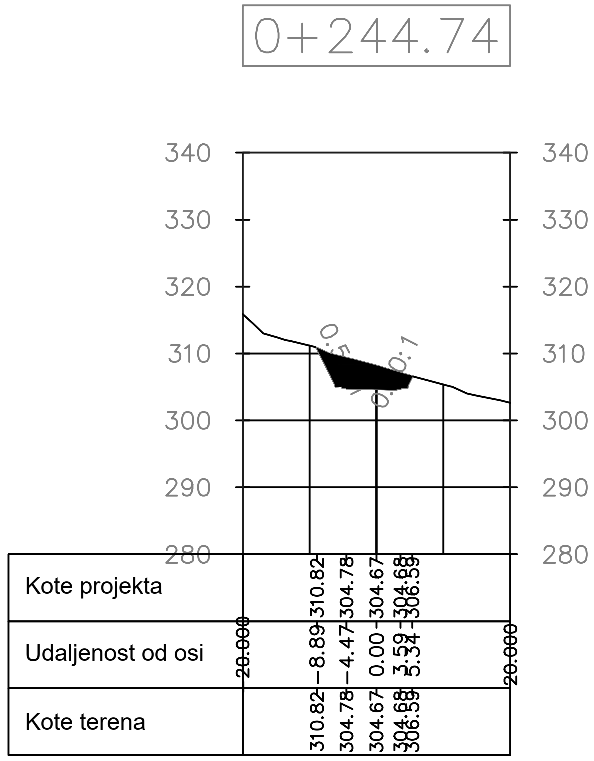
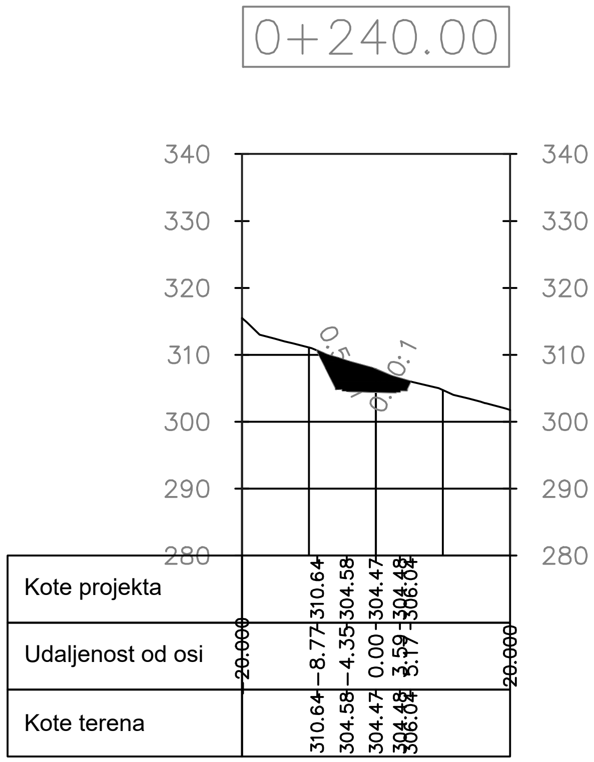
IDEJNI PROJEKT LOKALNE CESTE

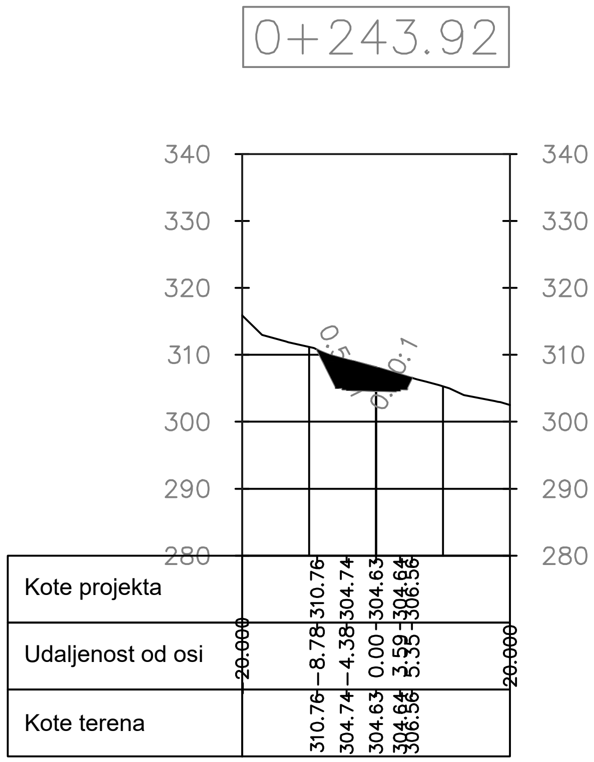
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: **4**











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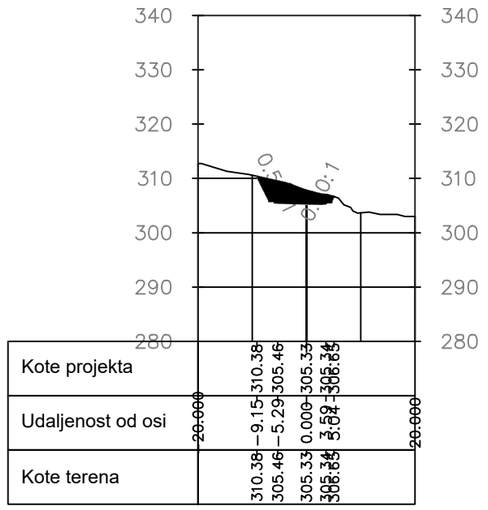
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: KARAKT. POPREČNI PRESJECI	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: 4



0+260.00

Kote projekta		310.38	305.46	305.33	305.34	306.65	
Udaljenost od osi	20.000	−9.15	−5.29	0.000	3.59	5.04	20.000
Kote terena		310.38	305.46	305.33	305.34	306.65	

0+281.96

Kote projekta		311.28	306.44	306.36	306.37	308.50	
Udaljenost od osi	20.000	−6.85	−3.03	0.00	3.59	5.45	20.000
Kote terena		311.28	306.44	306.36	306.37	308.50	

0+283.11

Kote projekta		311.31	306.58	306.42	306.43	308.52	
Udaljenost od osi	20.000	−6.75	−3.59	0.000	3.59	5.43	20.000
Kote terena		311.31	306.58	306.42	306.43	308.52	

0+280.00

Kote projekta		310.97	306.35	306.26	306.28	308.47	
Udaljenost od osi	20.000	−7.02	−3.31	0.00	3.59	5.48	20.000
Kote terena		310.97	306.35	306.26	306.28	308.47	

0+282.53

Kote projekta		311.35	306.55	306.39	306.40	308.51	
Udaljenost od osi	20.000	−6.81	−3.61	0.00	3.59	5.44	20.000
Kote terena		311.35	306.55	306.39	306.40	308.51	

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ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ALENKA JANJIŠ

MENTOR: Prof.dr.sc. Dražen Cvitanić

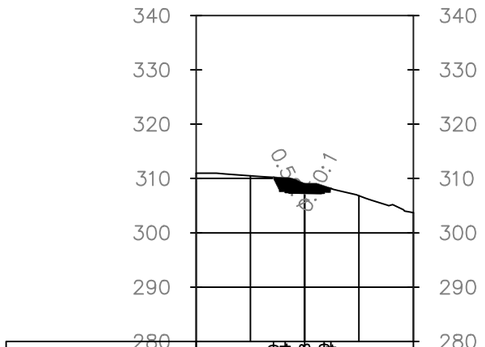
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**

MJERILO: M 1 : 200

DATUM: 15.07.2021.

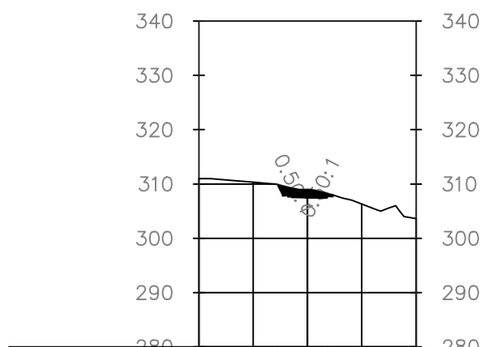
PRILOG: **4**

0+300.00



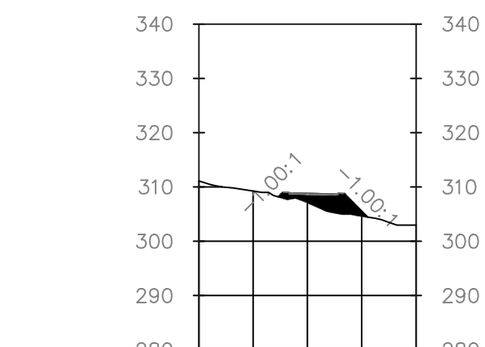
Kote projekta			310.20	307.44	307.28	308.14			
Udaljenost od osi	20.000		−5.76	−3.59	0.00	4.87			20.000
Kote terena			310.20	307.44	307.28	308.14			

0+303.25



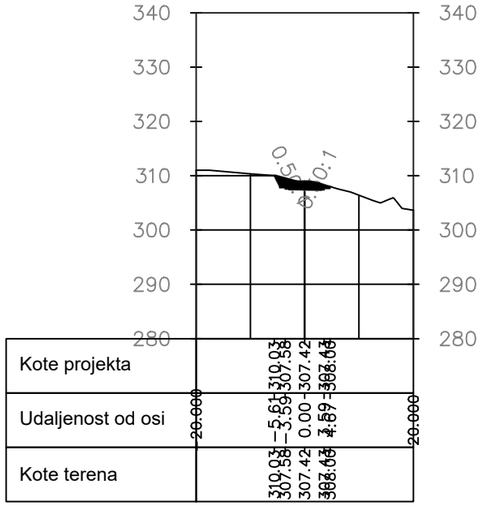
Kote projekta			309.82	307.82	307.46	307.97			
Udaljenost od osi	20.000		−5.54	−3.59	0.00	4.66			20.000
Kote terena			309.82	307.82	307.46	307.97			

0+320.00



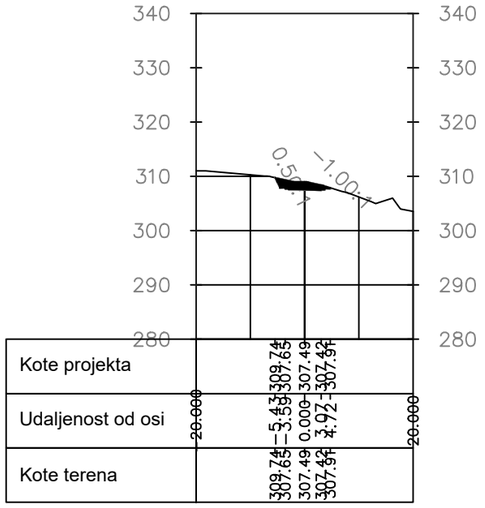
Kote projekta			308.54	308.54	308.39	308.26	304.45		
Udaljenost od osi	20.000		−5.35	−3.59	0.000	5.16	11.10		20.000
Kote terena			308.54	308.54	308.39	308.26	304.45		

0+302.55



Kote projekta			310.03	307.58	307.42	308.08			
Udaljenost od osi	20.000		−5.61	−3.59	0.00	4.89			20.000
Kote terena			310.03	307.58	307.42	308.08			

0+303.94



Kote projekta			309.74	309.74	307.49	307.42			
Udaljenost od osi	20.000		−5.43	−3.59	0.000	3.97			20.000
Kote terena			309.74	309.74	307.49	307.42			

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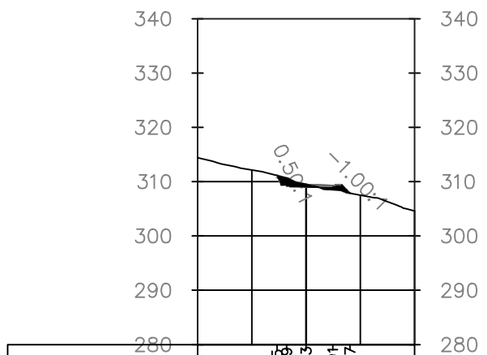
IDEJNI PROJEKT LOKALNE CESTE

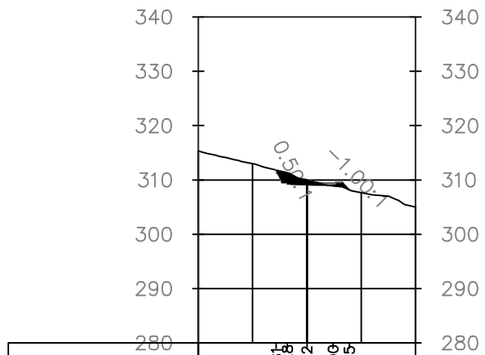
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: **4**

0+331.13



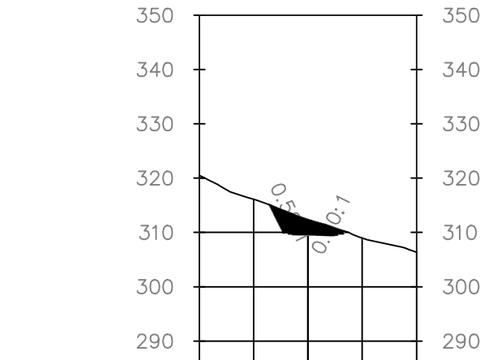
Kote projekta			311.15	309.19	309.03	308.91	307.87		
Udaljenost od osi	20.000		5.37	3.59	0.00	4.90	8.08		20.000
Kote terena			311.15	309.19	309.03	308.91	307.87		

0+332.55



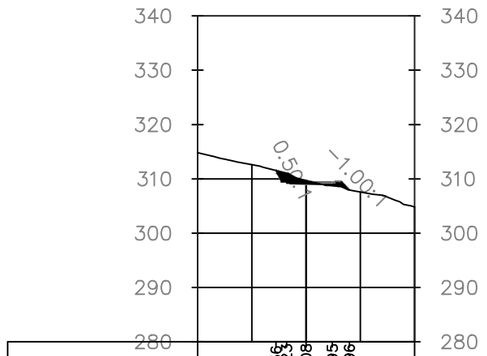
Kote projekta			311.81	309.28	309.12	309.09	308.15		
Udaljenost od osi	20.000		5.65	3.59	0.00	4.82	7.80		20.000
Kote terena			311.81	309.28	309.12	309.09	308.15		

0+340.00



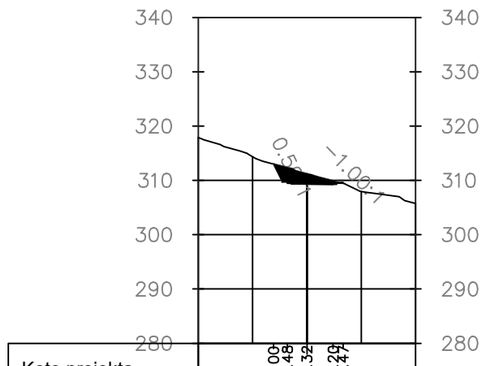
Kote projekta			315.10	309.73	309.57	309.45	310.25		
Udaljenost od osi	20.000		7.07	3.59	0.00	4.82	6.62		20.000
Kote terena			315.10	309.73	309.57	309.45	310.25		

0+331.84



Kote projekta			311.56	309.25	309.08	308.95	307.96		
Udaljenost od osi	20.000		5.55	3.59	0.00	4.84	7.97		20.000
Kote terena			311.56	309.25	309.08	308.95	307.96		

0+335.97



Kote projekta			313.00	309.48	309.32	309.20	309.47		
Udaljenost od osi	20.000		6.15	3.59	0.00	4.82	6.89		20.000
Kote terena			313.00	309.48	309.32	309.20	309.47		

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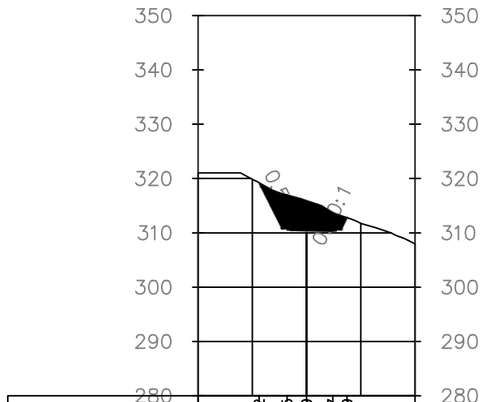
ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: **4**



0+353.61

Kote projekta		319.22	310.55	310.39	310.27	312.79	
Udaljenost od osi	20.000	−8.72	−3.59	0.00	4.82	7.47	20.000
Kote terena		319.22	310.55	310.39	310.27	312.79	

0+360.00

Kote projekta		320.44	310.93	310.78	310.65	313.37	
Udaljenost od osi	20.000	−9.14	−3.59	0.00	4.82	7.57	20.000
Kote terena		320.44	310.93	310.78	310.65	313.37	

0+374.67

Kote projekta		320.21	311.82	311.66	311.54	313.13	
Udaljenost od osi	20.000	−8.58	−3.59	0.000	4.82	7.01	20.000
Kote terena		320.21	311.82	311.66	311.54	313.13	

0+375.38

Kote projekta		320.07	311.86	311.70	311.58	313.16	
Udaljenost od osi	20.000	−8.49	−3.59	0.00	4.84	7.02	20.000
Kote terena		320.07	311.86	311.70	311.58	313.16	

0+376.09

Kote projekta		319.89	311.91	311.75	311.62	313.11	
Udaljenost od osi	20.000	−8.38	−3.59	0.00	4.90	7.04	20.000
Kote terena		319.89	311.91	311.75	311.62	313.11	

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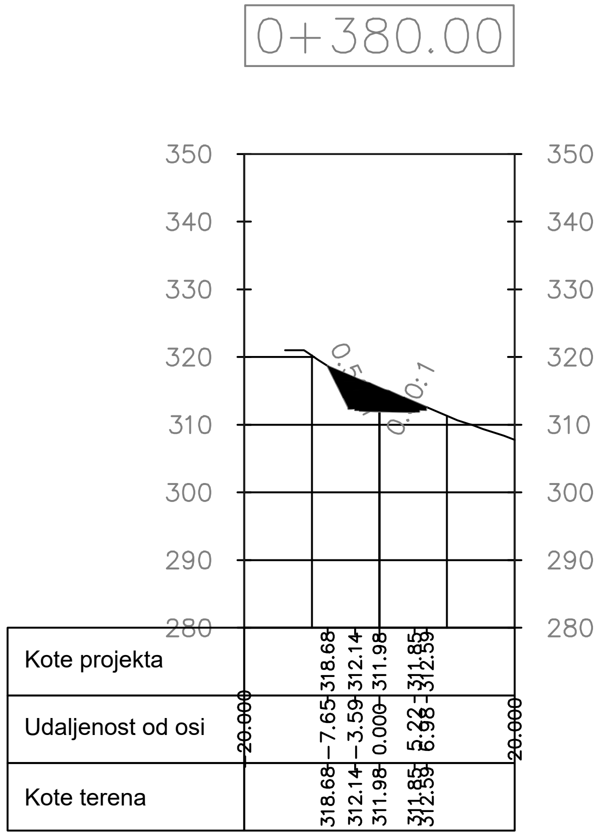
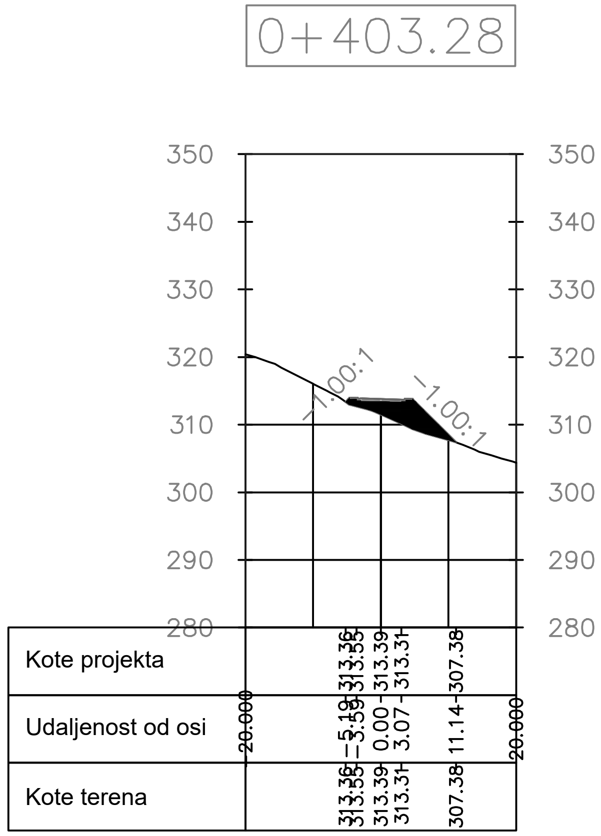
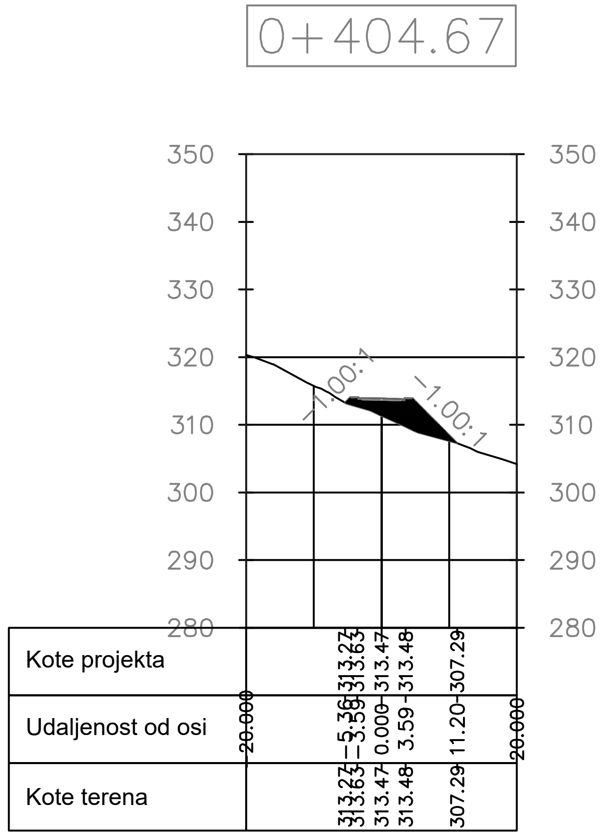
ZAVRŠNI RAD - CESTE

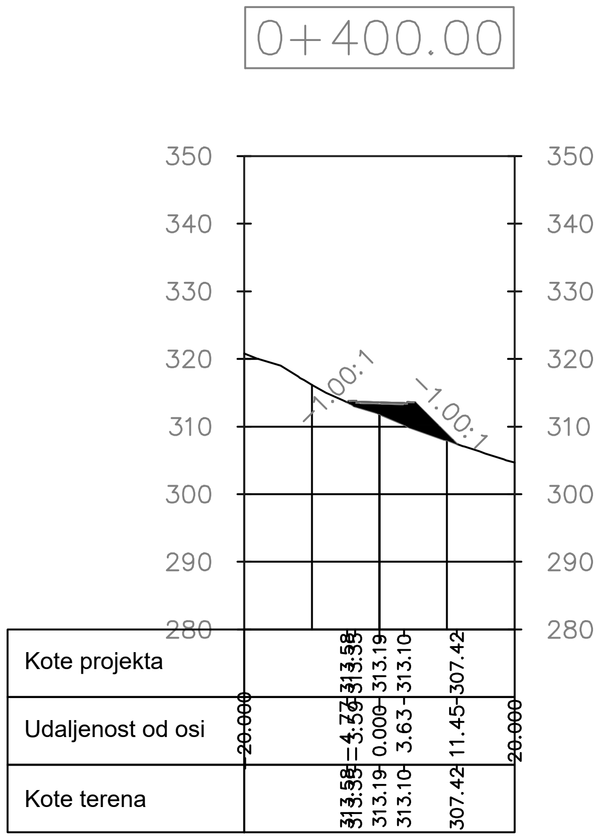
IDEJNI PROJEKT LOKALNE CESTE

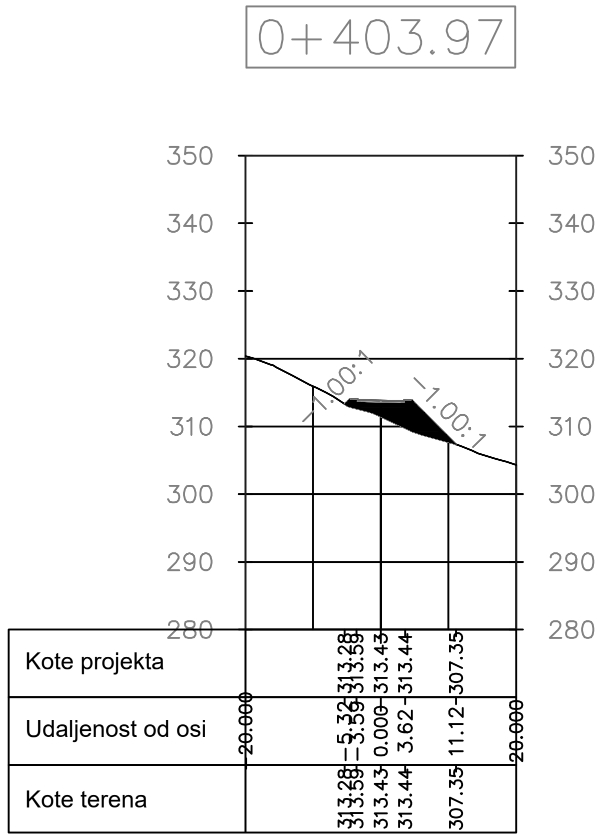
IZRADILA: ALENKA JANJIŠ
MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: **KARAKT. POPREČNI PRESJECI**
MJERILO: M 1 : 200
DATUM: 15.07.2021.
PRILOG: **4**











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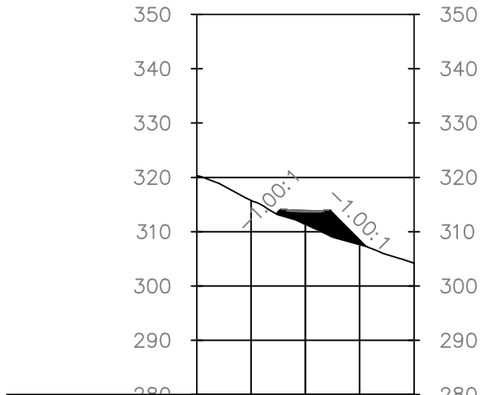
IDEJNI PROJEKT LOKALNE CESTE

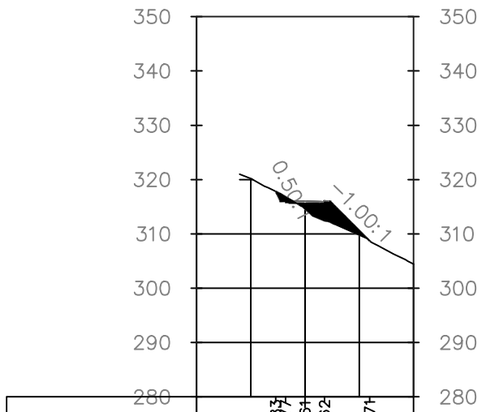
IZRADILA: ALENKA JANJIŠ	MENTOR: Prof.dr.sc. Dražen Cvitanić
SADRŽAJ: KARAKT. POPREČNI PRESJECI	MJERILO: M 1 : 200
DATUM: 15.07.2021.	PRILOG: 4

0+404.67



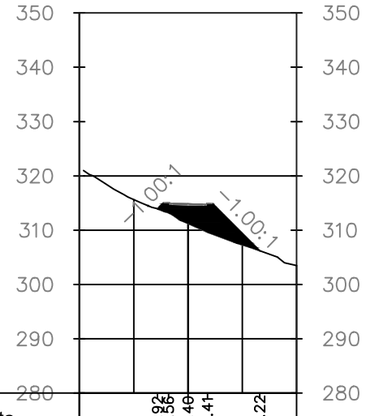
Kote projekta		313.27	313.63	313.47	313.48	307.29	
Udaljenost od osi	20.000	−5.36	−3.59	0.000	3.59	11.20	20.000
Kote terena		313.27	313.63	313.47	313.48	307.29	

0+440.00



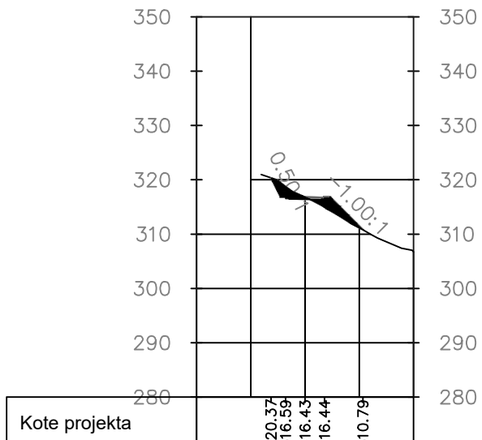
Kote projekta		317.97	317.97	315.61	315.62	308.71	
Udaljenost od osi	20.000	−5.49	−3.59	0.000	3.59	11.91	20.000
Kote terena		317.97	317.97	315.61	315.62	308.71	

0+420.00



Kote projekta		313.92	314.36	314.40	314.41	306.22	
Udaljenost od osi	20.000	−5.64	−3.59	0.00	3.59	13.20	20.000
Kote terena		313.92	314.36	314.40	314.41	306.22	

0+453.65



Kote projekta		320.37	316.59	316.43	316.44	310.79	
Udaljenost od osi	20.000	−6.27	−3.59	0.00	3.59	10.66	20.000
Kote terena		320.37	316.59	316.43	316.44	310.79	

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ZAVRŠNI RAD - CESTE

IDEJNI PROJEKT LOKALNE CESTE

IZRADILA: ALENKA JANJIŠ

MENTOR: Prof.dr.sc. Dražen Cvitanić

SADRŽAJ: **KARAKT. POPREČNI PRESJECI**

MJERILO: M 1 : 200

DATUM: 15.07.2021.

PRILOG: **4**

4. TABLICA UKUPNOG VOLUMENA ZEMLJANIH RADOVA

Stacionaža	Površina usjeka	Volumen usjeka	Površina nasipa	Volumen nasipa	Kumulativni volumen usjeka	Kumulativni volumen nasipa	Kumulativni volumen
0+000.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0+020.000	11.69	116.93	5.81	58.06	116.93	58.06	58.87
0+040.000	11.86	235.52	5.75	115.54	352.44	173.59	178.85
0+060.000	8.81	206.73	4.56	103.08	559.17	276.67	282.50
0+080.000	11.17	199.85	0.34	48.95	759.02	325.63	433.39
0+100.000	10.10	212.75	0.74	10.80	971.76	336.42	635.34
0+120.000	8.61	187.09	3.38	41.29	1158.85	377.71	781.14
0+140.000	2.64	112.45	15.57	189.54	1271.30	567.25	704.05
0+158.075	0.01	23.98	29.41	406.56	1295.28	973.81	321.47
0+158.080	0.01	0.00	29.42	0.13	1295.28	973.94	321.33
0+158.649	0.00	0.00	29.57	16.78	1295.28	990.72	304.56
0+159.220	0.00	0.00	29.77	16.94	1295.29	1007.66	287.62
0+160.000	0.01	0.00	30.24	23.41	1295.29	1031.07	264.22
0+180.000	1.36	13.27	31.73	633.64	1308.57	1664.72	-356.15
0+196.446	10.87	94.40	9.90	362.00	1402.97	2026.71	-623.75
0+197.258	11.87	9.23	8.97	7.66	1412.20	2034.37	-622.18
0+198.075	12.95	10.15	8.15	7.00	1422.34	2041.37	-619.03

0+200.000	15.89	25.80	6.03	14.66	1448.15	2056.03	-607.88
0+220.000	36.25	494.57	0.00	64.94	1942.72	2120.97	-178.26
0+220.591	36.42	21.47	0.00	0.00	1964.18	2120.97	-156.79
0+223.970	37.19	118.89	0.00	0.00	2083.08	2120.97	-37.90
0+240.000	42.46	612.34	0.00	0.00	2695.42	2120.97	574.44
0+243.106	44.40	130.03	0.00	0.00	2825.45	2120.97	704.47
0+243.924	44.70	36.42	0.00	0.00	2861.87	2120.97	740.90
0+244.736	45.06	36.43	0.00	0.00	2898.30	2120.97	777.33
0+260.000	37.78	612.68	0.00	0.00	3510.98	2120.97	1390.01
0+280.000	36.65	736.39	0.00	0.00	4247.37	2120.97	2126.39
0+281.962	37.48	72.72	0.00	0.00	4320.09	2120.97	2199.11
0+282.533	37.58	21.43	0.00	0.00	4341.52	2120.97	2220.54
0+283.106	37.59	21.55	0.00	0.00	4363.07	2120.97	2242.10
0+300.000	18.94	477.51	0.00	0.00	4840.58	2120.97	2719.61
0+302.553	14.55	42.74	0.00	0.00	4883.32	2120.97	2762.35
0+303.247	13.40	9.71	0.00	0.00	4893.03	2120.97	2772.06
0+303.938	12.51	8.94	0.00	0.00	4901.98	2120.97	2781.00
0+320.000	0.00	101.06	29.08	226.71	5003.04	2347.68	2655.35
0+331.130	5.80	33.69	2.75	164.09	5036.72	2511.77	2524.95

0+331.839	7.69	4.78	1.87	1.64	5041.51	2513.41	2528.10
0+332.553	9.56	6.15	1.19	1.09	5047.66	2514.50	2533.16
0+335.967	20.06	52.26	0.01	1.78	5099.92	2516.28	2583.64
0+340.000	32.76	109.14	0.00	0.02	5209.07	2516.30	2692.76
0+353.610	68.93	705.52	0.00	0.00	5914.58	2516.30	3398.28
0+360.000	67.79	444.44	0.00	0.00	6359.02	2516.30	3842.72
0+374.667	57.80	939.78	0.00	0.00	7298.81	2516.30	4782.50
0+375.380	56.15	40.65	0.00	0.00	7339.45	2516.30	4823.15
0+376.090	54.35	39.19	0.00	0.00	7378.64	2516.30	4862.34
0+380.000	41.61	191.59	0.00	0.00	7570.24	2516.30	5053.93
0+400.000	0.00	421.55	28.90	275.35	7991.79	2791.66	5200.14
0+403.282	0.00	0.00	34.44	103.94	7991.79	2895.59	5096.20
0+403.972	0.00	0.00	35.75	24.24	7991.79	2919.83	5071.96
0+404.667	0.00	0.00	37.07	25.29	7991.79	2945.12	5046.67
0+404.670	0.00	0.00	37.07	0.11	7991.79	2945.23	5046.56
0+420.000	0.00	0.00	53.96	697.78	7991.79	3643.01	4348.78
0+440.000	2.77	27.72	25.75	797.13	8019.51	4440.14	3579.38
0+453.654	9.11	81.15	11.79	256.31	8100.67	4696.45	3404.22

5. OBRADA NA RAČUNALU

Izrada projekta lokalne ceste vrši se u programu Autocad Civil 3D, koji značajno ubrzava i pojednostavnjuje izradu s obzirom na ručnu izradu. Danas se koristi za projektiranje različitih objekata međuostalom i prometnica.

Zadatak se rješava tako da se dana geodetska podloga skenira i korištenjem poligonalnih linija iscrtava dana podloga u programu. Svaku slojnicu potrebno je definirati na svojoj visini kako bi se kasnije mogao prikazati 3D model terena. Nakon toga ucrtavamo položaj tangenti i uz pomoć njih definiramo kružne lukove i prijelazne krivine iz čega kao rezultat dobijamo horizontalni tok trase sa stacionažama na svakih 20 metara, te u nekim karakterističnim točkama (početak prijelazne krivine, početak kružne krivine, kraj prijelazne krivine, kraj kružne krivine).

Nakon toga krećemo sa izradom uzdužnog presjeka ceste koji se temelji na definiranju nivelete. Položaj nivelete mora zadovoljavati dane sigurnosne i geomtrijeske zahtjeve kao i pravilnu odvodnju dužinom ceste. Između tangenti se ubacuje kružna krivina prethodno izračunatog radijusa.

Sljedeći korak je definiranje poprečnog profila ceste. Tu se definiraju vrijednosti poprečnog nagiba, širine prometnih i rubnih trakova, rigol, kao i pokosi usjeka i nasipa.

Nakon definiranih vertikalnih i horizontalnih elemenata ceste možemo izraditi koridor. Koridor omogućuje prikazivanje karakterističnih poprečnih presjeka u svakoj iscrtanoj stacionaži. Time je definirana dionica lokalne ceste zadana projektom.

Na kraju samog zadatka uz pomoć navedenog programa moguće je izvući podatke o količini zemljanih radova, koordinate točaka osi kao i kordinate pojedinačnog poprečnog presjeka.

6. IZLAZNI PODATCI IZ PROGRAMA

6.1 Koordinatni račun glavnih točaka

1.1.1 Alignment: os_2

1.1.2 Description:

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+00.000	-51.016	1401.012
End:	1+58.075	-56.552	1558.991

Tangent Data

Parameter	Value	Parameter	Value
Length:	158.075	Course:	S 87° 59' 34.7057" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	1+58.075	-56.552	1558.991
SPI:		-57.492	1585.798
SC:	1+98.075	-53.531	1598.679

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 85° 38' 48.5982" E

Curve Point Data

Description	Station	Northing	Easting
SC:	1+98.075	-53.531	1598.679
RP:		3.819	1581.045
CS:	2+43.106	-26.097	1633.055

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	43° 00' 04.6985"	Type:	LEFT
Radius:	60.000		
Length:	45.031	Tangent:	23.635
Mid-Ord:	4.175	External:	4.487
Chord:	43.981	Course:	N 51° 24' 28.0096" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	2+43.106	-26.097	1633.055
SPI:		-14.415	1639.774
ST:	2+83.106	11.932	1644.804

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 17° 10' 07.4210" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+83.106	11.932	1644.804
End:	3+02.553	31.034	1648.451

Tangent Data

Parameter	Value	Parameter	Value
Length:	19.446	Course:	N 10° 48' 30.7249" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	3+02.553	31.034	1648.451
SPI:		50.794	1652.223
SC:	3+32.553	59.556	1657.263

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 17° 10' 07.4210" E

Curve Point Data

Description	Station	Northing	Easting
SC:	3+32.553	59.556	1657.263
RP:		37.119	1696.270
CS:	3+74.667	81.832	1691.199

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	53° 37' 18.8517"	Type:	RIGHT
Radius:	45.000		
Length:	42.115	Tangent:	22.742
Mid-Ord:	4.838	External:	5.420
Chord:	40.594	Course:	N 56° 43' 05.0862" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	3+74.667	81.832	1691.199
SPI:		82.971	1701.241
ST:	4+04.667	78.573	1720.872

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 83° 43' 57.2486" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	4+04.667	78.573	1720.872
End:	4+53.654	67.864	1768.674

Tangent Data

Parameter	Value	Parameter	Value
Length:	48.987	Course:	S 77° 22' 20.5525" E

1.1.3 Alignment: os 2-Left-2.950

1.1.4 Description:

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+00.000	-48.068	1401.116
End:	1+58.075	-53.604	1559.094

Tangent Data

Parameter	Value	Parameter	Value
Length:	158.075	Course:	S 87° 59' 34.7057" E

Curve Point Data

Description	Station	Northing	Easting
PC:	1+58.075	-53.604	1559.094
RP:		-45.609	1559.374
PT:	1+59.223	-53.562	1560.240

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	08° 13' 05.0754"	Type:	LEFT
Radius:	8.000		
Length:	1.147	Tangent:	0.575
Mid-Ord:	0.021	External:	0.021
Chord:	1.146	Course:	N 87° 53' 52.7566" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	1+59.223	-53.562	1560.240
End:	1+95.108	-49.680	1595.915

Tangent Data

Parameter	Value	Parameter	Value
Length:	35.885	Course:	N 83° 47' 20.2189" E

Curve Point Data

Description	Station	Northing	Easting
PC:	1+95.108	-49.680	1595.915
RP:		-41.727	1595.049
PCC:	1+96.628	-49.373	1597.400

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	10° 52' 49.8600"	Type:	LEFT
Radius:	8.000		
Length:	1.519	Tangent:	0.762
Mid-Ord:	0.036	External:	0.036
Chord:	1.517	Course:	N 78° 20' 55.2889" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+96.628	-49.373	1597.400
RP:		3.819	1581.045

PCC:	2+38.394	-23.928	1629.284

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	43° 00' 04.6985"	Type:	LEFT
Radius:	55.650		
Length:	41.766	Tangent:	21.922
Mid-Ord:	3.872	External:	4.162
Chord:	40.793	Course:	N 51° 24' 28.0096" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	2+38.394	-23.928	1629.284
RP:		-19.939	1622.349
PT:	2+39.913	-22.547	1629.912

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	10° 52' 49.8600"	Type:	LEFT
Radius:	8.000		
Length:	1.519	Tangent:	0.762
Mid-Ord:	0.036	External:	0.036
Chord:	1.517	Course:	N 24° 28' 00.7303" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+39.913	-22.547	1629.912
End:	2+75.798	11.378	1641.611

Tangent Data

Parameter	Value	Parameter	Value
Length:	35.885	Course:	N 19° 01' 35.8003" E

Curve Point Data

Description	Station	Northing	Easting
PC:	2+75.798	11.378	1641.611
RP:		13.986	1634.048
PT:	2+76.946	12.486	1641.906

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	08° 13' 05.0754"	Type:	LEFT
Radius:	8.000		
Length:	1.147	Tangent:	0.575
Mid-Ord:	0.021	External:	0.021
Chord:	1.146	Course:	N 14° 55' 03.2626" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+76.946	12.486	1641.906
End:	2+96.392	31.587	1645.553

Tangent Data

Parameter	Value	Parameter	Value
Length:	19.446	Course:	N 10° 48' 30.7249" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	2+96.392	31.587	1645.553
SPI:		51.835	1649.419
SC:	3+27.375	61.026	1654.705

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.983	L Tan:	20.770
Radius:	47.950	S Tan:	10.432
Theta:	18° 30' 39.9504"	P:	0.831
X:	30.661	K:	15.438
Y:	3.312	A:	38.544
Chord:	30.829	Course:	N 17° 16' 11.7299" E

Curve Point Data

Description	Station	Northing	Easting
SC:	3+27.375	61.026	1654.705
RP:		37.119	1696.270
CS:	3+72.251	84.763	1690.866

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	53° 37' 18.8517"	Type:	RIGHT
Radius:	47.950		
Length:	44.875	Tangent:	24.233
Mid-Ord:	5.155	External:	5.776
Chord:	43.256	Course:	N 56° 43' 05.0862" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	3+72.251	84.763	1690.866
SPI:		85.958	1701.402
ST:	4+03.234	81.452	1721.517

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.983	L Tan:	20.770
Radius:	47.950	S Tan:	10.432
Theta:	18° 30' 39.9504"	P:	0.831
X:	30.661	K:	15.438
Y:	3.312	A:	38.544
Chord:	30.829	Course:	S 83° 50' 01.5575" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	4+03.234	81.452	1721.517

End:	4+52.221	70.743	1769.319

Tangent Data

Parameter	Value	Parameter	Value
Length:	48.987	Course:	S 77° 22' 20.5525" E

1.1.5 Alignment: os 2-Right-2.950

1.1.6 Description:

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+00.000	-53.964	1400.909
End:	1+58.075	-59.501	1558.887

Tangent Data

Parameter	Value	Parameter	Value
Length:	158.075	Course:	S 87° 59' 34.7057" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	1+58.075	-59.501	1558.887
SPI:		-60.457	1586.190
SC:	1+99.059	-56.351	1599.546

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	40.983	L Tan:	27.475
Radius:	62.950	S Tan:	13.800
Theta:	18° 39' 03.9183"	P:	1.108
X:	40.551	K:	20.419
Y:	4.413	A:	50.793
Chord:	40.780	Course:	N 85° 34' 13.1838" E

Curve Point Data

Description	Station	Northing	Easting
SC:	1+99.059	-56.351	1599.546
RP:		3.819	1581.045
CS:	2+46.304	-27.568	1635.612

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	43° 00' 04.6985"	Type:	LEFT
Radius:	62.950		
Length:	47.245	Tangent:	24.797
Mid-Ord:	4.380	External:	4.708
Chord:	46.144	Course:	N 51° 24' 28.0096" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	2+46.304	-27.568	1635.612
SPI:		-15.456	1642.578
ST:	2+87.287	11.379	1647.702

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	40.983	L Tan:	27.475
Radius:	62.950	S Tan:	13.800
Theta:	18° 39' 03.9183"	P:	1.108
X:	40.551	K:	20.419
Y:	4.413	A:	50.793

Chord:	40.780	Course:	N 17° 14' 42.8354" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+87.287	11.379	1647.702
End:	3+06.733	30.480	1651.348

Tangent Data

Parameter	Value	Parameter	Value
Length:	19.446	Course:	N 10° 48' 30.7249" E

Curve Point Data

Description	Station	Northing	Easting
PC:	3+06.733	30.480	1651.348
RP:		28.980	1659.206
PT:	3+08.123	31.816	1651.726

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	09° 57' 19.8703"	Type:	RIGHT
Radius:	8.000		
Length:	1.390	Tangent:	0.697
Mid-Ord:	0.030	External:	0.030
Chord:	1.388	Course:	N 15° 47' 10.6601" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	3+08.123	31.816	1651.726
End:	3+33.986	56.000	1660.895

Tangent Data

Parameter	Value	Parameter	Value
Length:	25.863	Course:	N 20° 45' 50.5952" E

Curve Point Data

Description	Station	Northing	Easting
PC:	3+33.986	56.000	1660.895
RP:		53.164	1668.375
PCC:	3+35.263	57.152	1661.441

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	09° 08' 35.0651"	Type:	RIGHT
Radius:	8.000		
Length:	1.277	Tangent:	0.640
Mid-Ord:	0.025	External:	0.026
Chord:	1.275	Course:	N 25° 20' 08.1278" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	3+35.263	57.152	1661.441
RP:		37.119	1696.270
PCC:	3+72.867	77.043	1691.742

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	53° 37' 18.8517"	Type:	RIGHT
Radius:	40.180		
Length:	37.604	Tangent:	20.306
Mid-Ord:	4.319	External:	4.840
Chord:	36.246	Course:	N 56° 43' 05.0862" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	3+72.867	77.043	1691.742
RP:		69.094	1692.644
PT:	3+74.143	77.085	1693.016

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	09° 08' 35.0651"	Type:	RIGHT
Radius:	8.000		
Length:	1.277	Tangent:	0.640
Mid-Ord:	0.025	External:	0.026
Chord:	1.275	Course:	N 88° 06' 02.0447" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	3+74.143	77.085	1693.016
End:	4+00.006	75.879	1718.852

Tangent Data

Parameter	Value	Parameter	Value
Length:	25.863	Course:	S 87° 19' 40.4228" E

Curve Point Data

Description	Station	Northing	Easting
PC:	4+00.006	75.879	1718.852
RP:		67.888	1718.479
PT:	4+01.396	75.694	1720.228

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	09° 57' 19.8703"	Type:	RIGHT
Radius:	8.000		
Length:	1.390	Tangent:	0.697
Mid-Ord:	0.030	External:	0.030
Chord:	1.388	Course:	S 82° 21' 00.4876" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	4+01.396	75.694	1720.228
End:	4+50.383	64.985	1768.029

Tangent Data

Parameter	Value	Parameter	Value
Length:	48.987	Course:	S 77° 22' 20.5525" E

6.2 Kordinatni račun detaljnih točaka osi

Alignment
Name: os 2
Description:
Station Range: Start: 0+000.00, End: 45+365.00
Station Increment: 20.00

Station	Northing	Easting	Tangential Direction
0+000.00	-51.0162m	1,401.0122m	S87° 59' 35"E
0+020.00	-51.7167m	1,420.9999m	S87° 59' 35"E
0+040.00	-52.4171m	1,440.9876m	S87° 59' 35"E
0+060.00	-53.1176m	1,460.9754m	S87° 59' 35"E
0+080.00	-53.8180m	1,480.9631m	S87° 59' 35"E
0+100.00	-54.5184m	1,500.9508m	S87° 59' 35"E
0+120.00	-55.2189m	1,520.9386m	S87° 59' 35"E
0+140.00	-55.9193m	1,540.9263m	S87° 59' 35"E
0+160.00	-56.6193m	1,560.9141m	S88° 02' 14"E
0+180.00	-56.5885m	1,580.9054m	N86° 16' 09"E
0+200.00	-52.9361m	1,600.5088m	N71° 04' 14"E
0+220.00	-43.4436m	1,618.0074m	N51° 58' 19"E
0+240.00	-28.7481m	1,631.4370m	N32° 52' 24"E
0+260.00	-10.5753m	1,639.6355m	N17° 10' 53"E
0+280.00	8.8817m	1,644.2194m	N10° 55' 25"E
0+300.00	28.5265m	1,647.9720m	N10° 48' 31"E
0+320.00	48.0270m	1,652.3619m	N17° 16' 06"E
0+340.00	65.6753m	1,661.4920m	N39° 23' 22"E
0+360.00	77.8541m	1,677.1488m	N64° 51' 16"E
0+380.00	82.1368m	1,696.5204m	N89° 42' 56"E
0+400.00	79.5812m	1,716.3155m	S77° 50' 05"E
0+420.00	75.2211m	1,735.8345m	S77° 22' 21"E
0+440.00	70.8489m	1,755.3507m	S77° 22' 21"E

6.3 Račun kota kolnika

Corridor Name: koridor0
Description:
Base Alignment Name: os 2
Station Range: Start: 0+000.00, End: 0+453.65

CHAINAGE 0+000.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,401.2255	-44.9294	299.0211	-6.091m	Daylight
2	1,401.1730	-46.4274	296.0233	-4.592m	Ditch_Out
3	1,401.1730	-46.4284	295.8233	-4.591m	EPS_Sub
4	1,401.1380	-47.4267	296.0633	-3.592m	Back_Curb
5	1,401.1327	-47.5767	296.0633	-3.442m	Top_Curb
6	1,401.1313	-47.6183	295.8383	-3.400m	Flowline_Gutter
7	1,401.1155	-48.0680	295.5283	-2.950m	ETW_SubBase
8	1,401.1155	-48.0680	295.9283	-2.950m	Flange
9	1,400.9089	-53.9644	295.7808	2.950m	Flange
10	1,400.9089	-53.9644	295.3808	2.950m	ETW_SubBase
11	1,400.8931	-54.4142	295.6908	3.400m	Flowline_Gutter
12	1,400.8917	-54.4558	295.9158	3.442m	Top_Curb
13	1,400.8864	-54.6057	295.9158	3.592m	Back_Curb
14	1,400.8514	-55.6041	295.6758	4.591m	EPS_Sub
15	1,400.8514	-55.6051	295.8758	4.592m	EPS

CHAINAGE 0+020.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,421.2235	-45.3355	300.3594	-6.385m	Daylight
2	1,421.1607	-47.1278	296.7725	-4.592m	Ditch_Out
3	1,421.1607	-47.1288	296.5725	-4.591m	EPS_Sub
4	1,421.1257	-48.1272	296.8125	-3.592m	Back_Curb
5	1,421.1205	-48.2771	296.8125	-3.442m	Top_Curb
6	1,421.1190	-48.3188	296.5875	-3.400m	Flowline_Gutter
7	1,421.1032	-48.7685	296.2775	-2.950m	ETW_SubBase
8	1,421.1032	-48.7685	296.6775	-2.950m	Flange
9	1,420.8966	-54.6649	296.5300	2.950m	Flange
10	1,420.8966	-54.6649	296.1300	2.950m	ETW_SubBase
11	1,420.8808	-55.1146	296.4400	3.400m	Flowline_Gutter
12	1,420.8794	-55.1563	296.6650	3.442m	Top_Curb
13	1,420.8741	-55.3062	296.6650	3.592m	Back_Curb
14	1,420.8391	-56.3046	296.4250	4.591m	EPS_Sub

15	1,420.8391	-56.3056	296.6250	4.592m	Hinge
16	1,420.7411	-59.1010	293.8279	7.389m	Daylight

CHAINAGE 0+040.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,441.2019	-46.3037	300.5726	-6.117m	Daylight
2	1,441.1485	-47.8282	297.5217	-4.592m	Ditch_Out
3	1,441.1484	-47.8292	297.3217	-4.591m	EPS_Sub
4	1,441.1134	-48.8276	297.5617	-3.592m	Back_Curb
5	1,441.1082	-48.9775	297.5617	-3.442m	Top_Curb
6	1,441.1067	-49.0192	297.3367	-3.400m	Flowline_Gutter
7	1,441.0910	-49.4689	297.0267	-2.950m	ETW_SubBase
8	1,441.0910	-49.4689	297.4267	-2.950m	Flange
9	1,440.8843	-55.3653	297.2792	2.950m	Flange
10	1,440.8843	-55.3653	296.8792	2.950m	ETW_SubBase
11	1,440.8686	-55.8150	297.1892	3.400m	Flowline_Gutter
12	1,440.8671	-55.8567	297.4142	3.442m	Top_Curb
13	1,440.8619	-56.0066	297.4142	3.592m	Back_Curb
14	1,440.8269	-57.0050	297.1742	4.591m	EPS_Sub
15	1,440.8268	-57.0060	297.3742	4.592m	Hinge
16	1,440.7072	-60.4200	293.9581	8.008m	Daylight

CHAINAGE 0+060.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,461.1806	-47.2614	300.8071	-5.860m	Daylight
2	1,461.1362	-48.5287	298.2709	-4.592m	Ditch_Out
3	1,461.1362	-48.5297	298.0709	-4.591m	EPS_Sub
4	1,461.1012	-49.5281	298.3109	-3.592m	Back_Curb
5	1,461.0959	-49.6780	298.3109	-3.442m	Top_Curb
6	1,461.0945	-49.7196	298.0859	-3.400m	Flowline_Gutter
7	1,461.0787	-50.1694	297.7759	-2.950m	ETW_SubBase
8	1,461.0787	-50.1694	298.1759	-2.950m	Flange
9	1,460.8721	-56.0658	298.0284	2.950m	Flange
10	1,460.8721	-56.0658	297.6284	2.950m	ETW_SubBase
11	1,460.8563	-56.5155	297.9384	3.400m	Flowline_Gutter
12	1,460.8548	-56.5572	298.1634	3.442m	Top_Curb
13	1,460.8496	-56.7071	298.1634	3.592m	Back_Curb
14	1,460.8146	-57.7054	297.9234	4.591m	EPS_Sub
15	1,460.8146	-57.7064	298.1234	4.592m	Hinge

16	1,460.7064	-60.7945	295.0334	7.682m	Daylight

CHAINAGE 0+080.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,481.1649	-48.0599	301.3599	-5.762m	Daylight
2	1,481.1239	-49.2291	299.0201	-4.592m	Ditch_Out
3	1,481.1239	-49.2301	298.8201	-4.591m	EPS_Sub
4	1,481.0889	-50.2285	299.0601	-3.592m	Back_Curb
5	1,481.0836	-50.3784	299.0601	-3.442m	Top_Curb
6	1,481.0822	-50.4201	298.8351	-3.400m	Flowline_Gutter
7	1,481.0664	-50.8698	298.5251	-2.950m	ETW_SubBase
8	1,481.0664	-50.8698	298.9251	-2.950m	Flange
9	1,480.8598	-56.7662	298.7776	2.950m	Flange
10	1,480.8598	-56.7662	298.3776	2.950m	ETW_SubBase
11	1,480.8440	-57.2159	298.6876	3.400m	Flowline_Gutter
12	1,480.8426	-57.2576	298.9126	3.442m	Top_Curb
13	1,480.8373	-57.4075	298.9126	3.592m	Back_Curb
14	1,480.8023	-58.4059	298.6726	4.591m	EPS_Sub
15	1,480.8023	-58.4069	298.8726	4.592m	Hinge
16	1,480.7797	-59.0532	298.2259	5.238m	Daylight

CHAINAGE 0+100.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,501.1484	-48.8816	301.8665	-5.640m	Daylight
2	1,501.1117	-49.9296	299.7692	-4.592m	Ditch_Out
3	1,501.1116	-49.9306	299.5692	-4.591m	EPS_Sub
4	1,501.0766	-50.9289	299.8092	-3.592m	Back_Curb
5	1,501.0714	-51.0789	299.8092	-3.442m	Top_Curb
6	1,501.0699	-51.1205	299.5842	-3.400m	Flowline_Gutter
7	1,501.0542	-51.5703	299.2742	-2.950m	ETW_SubBase
8	1,501.0542	-51.5703	299.6742	-2.950m	Flange
9	1,500.8475	-57.4666	299.5267	2.950m	Flange
10	1,500.8475	-57.4666	299.1267	2.950m	ETW_SubBase
11	1,500.8318	-57.9164	299.4367	3.400m	Flowline_Gutter
12	1,500.8303	-57.9580	299.6617	3.442m	Top_Curb
13	1,500.8251	-58.1079	299.6617	3.592m	Back_Curb
14	1,500.7901	-59.1063	299.4217	4.591m	EPS_Sub
15	1,500.7900	-59.1073	299.6217	4.592m	Hinge
16	1,500.7545	-60.1210	298.6074	5.606m	Daylight

CHAINAGE 0+120.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,521.1426	-49.3969	302.9861	-5.826m	Daylight
2	1,521.0994	-50.6300	300.5184	-4.592m	Ditch_Out
3	1,521.0993	-50.6310	300.3184	-4.591m	EPS_Sub
4	1,521.0644	-51.6294	300.5584	-3.592m	Back_Curb
5	1,521.0591	-51.7793	300.5584	-3.442m	Top_Curb
6	1,521.0576	-51.8210	300.3334	-3.400m	Flowline_Gutter
7	1,521.0419	-52.2707	300.0234	-2.950m	ETW_SubBase
8	1,521.0419	-52.2707	300.4234	-2.950m	Flange
9	1,520.8353	-58.1671	300.2759	2.950m	Flange
10	1,520.8353	-58.1671	299.8759	2.950m	ETW_SubBase
11	1,520.8195	-58.6168	300.1859	3.400m	Flowline_Gutter
12	1,520.8180	-58.6585	300.4109	3.442m	Top_Curb
13	1,520.8128	-58.8084	300.4109	3.592m	Back_Curb
14	1,520.7778	-59.8068	300.1709	4.591m	EPS_Sub
15	1,520.7778	-59.8078	300.3709	4.592m	Hinge
16	1,520.6850	-62.4552	297.7218	7.241m	Daylight

CHAINAGE 0+140.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,541.1093	-50.6967	302.5358	-5.226m	Daylight
2	1,541.0871	-51.3304	301.2676	-4.592m	Ditch_Out
3	1,541.0871	-51.3314	301.0676	-4.591m	EPS_Sub
4	1,541.0521	-52.3298	301.3076	-3.592m	Back_Curb
5	1,541.0468	-52.4797	301.3076	-3.442m	Top_Curb
6	1,541.0454	-52.5214	301.0826	-3.400m	Flowline_Gutter
7	1,541.0296	-52.9711	300.7726	-2.950m	ETW_SubBase
8	1,541.0296	-52.9711	301.1726	-2.950m	Flange
9	1,540.8230	-58.8675	301.0251	2.950m	Flange
10	1,540.8230	-58.8675	300.6251	2.950m	ETW_SubBase
11	1,540.8072	-59.3172	300.9351	3.400m	Flowline_Gutter
12	1,540.8058	-59.3589	301.1601	3.442m	Top_Curb
13	1,540.8005	-59.5088	301.1601	3.592m	Back_Curb
14	1,540.7655	-60.5072	300.9201	4.591m	EPS_Sub
15	1,540.7655	-60.5082	301.1201	4.592m	Hinge
16	1,540.5854	-65.6473	295.9779	9.734m	Daylight

CHAINAGE 0+160.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,561.0802	-51.7723	301.9577	-4.850m	Daylight
2	1,561.0780	-51.8363	302.0216	-4.786m	Hinge
3	1,561.0779	-51.8373	301.8216	-4.785m	EPS_Sub
4	1,561.0437	-52.8357	302.0616	-3.786m	Back_Curb
5	1,561.0386	-52.9856	302.0616	-3.636m	Top_Curb
6	1,561.0372	-53.0273	301.8366	-3.594m	Flowline_Gutter
7	1,561.0217	-53.4770	301.5266	-3.144m	ETW_SubBase
8	1,561.0217	-53.4770	301.9266	-3.144m	Flange
9	1,560.8130	-59.5665	301.7743	2.949m	Flange
10	1,560.8130	-59.5665	301.3743	2.949m	ETW_SubBase
11	1,560.7976	-60.0162	301.6843	3.399m	Flowline_Gutter
12	1,560.7962	-60.0579	301.9093	3.441m	Top_Curb
13	1,560.7911	-60.2078	301.9093	3.591m	Back_Curb
14	1,560.7569	-61.2062	301.6693	4.590m	EPS_Sub
15	1,560.7568	-61.2072	301.8693	4.591m	EPS
16	1,560.5128	-68.3272	294.7452	11.715m	Daylight

CHAINAGE 0+180.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,580.4285	-49.2752	303.6989	-7.329m	Daylight
2	1,580.4570	-49.7120	302.8235	-6.891m	Ditch_Out
3	1,580.4571	-49.7130	302.6235	-6.890m	EPS_Sub
4	1,580.5221	-50.7099	302.8635	-5.891m	Back_Curb
5	1,580.5319	-50.8596	302.8635	-5.741m	Top_Curb
6	1,580.5346	-50.9012	302.6385	-5.699m	Flowline_Gutter
7	1,580.5638	-51.3502	302.3285	-5.249m	ETW_SubBase
8	1,580.5638	-51.3502	302.7285	-5.249m	Flange
9	1,581.0974	-59.5327	302.5235	2.950m	Flange
10	1,581.0974	-59.5327	302.1235	2.950m	ETW_SubBase
11	1,581.1267	-59.9817	302.4335	3.400m	Flowline_Gutter
12	1,581.1294	-60.0234	302.6585	3.442m	Top_Curb
13	1,581.1391	-60.1730	302.6585	3.592m	Back_Curb
14	1,581.2041	-61.1699	302.4185	4.591m	EPS_Sub
15	1,581.2042	-61.1709	302.6185	4.592m	Hinge
16	1,581.7126	-68.9681	294.8047	12.406m	Daylight

CHAINAGE 0+200.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,597.9433	-45.4552	307.3839	-7.909m	Daylight
2	1,598.5651	-47.2685	303.5501	-5.992m	Ditch_Out
3	1,598.5654	-47.2694	303.3501	-5.991m	EPS_Sub
4	1,598.8895	-48.2144	303.5901	-4.992m	Back_Curb
5	1,598.9382	-48.3563	303.5901	-4.842m	Top_Curb
6	1,598.9517	-48.3957	303.3651	-4.800m	Flowline_Gutter
7	1,599.0977	-48.8214	303.0551	-4.350m	ETW_SubBase
8	1,599.0977	-48.8214	303.4551	-4.350m	Flange
9	1,601.4658	-55.7266	303.2726	2.950m	Flange
10	1,601.4658	-55.7266	302.8726	2.950m	ETW_SubBase
11	1,601.6118	-56.1523	303.1826	3.400m	Flowline_Gutter
12	1,601.6253	-56.1917	303.4076	3.442m	Top_Curb
13	1,601.6740	-56.3336	303.4076	3.592m	Back_Curb
14	1,601.9981	-57.2786	303.1676	4.591m	EPS_Sub
15	1,601.9984	-57.2795	303.3676	4.592m	Hinge
16	1,602.9733	-60.1223	300.3623	7.597m	Daylight

CHAINAGE 0+220.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,612.6590	-36.6048	309.6796	-8.682m	Daylight
2	1,614.3163	-38.7239	304.2993	-5.992m	EPS
3	1,614.3169	-38.7247	304.0993	-5.991m	EPS_Sub
4	1,614.9323	-39.5116	304.3393	-4.992m	Back_Curb
5	1,615.0247	-39.6297	304.3393	-4.842m	Top_Curb
6	1,615.0504	-39.6626	304.1143	-4.800m	Flowline_Gutter
7	1,615.3276	-40.0171	304.2043	-4.350m	ETW
8	1,615.3276	-40.0171	303.8043	-4.350m	ETW_SubBase
9	1,619.8248	-45.7673	303.6218	2.950m	ETW_SubBase
10	1,619.8248	-45.7673	304.0218	2.950m	ETW
11	1,620.1020	-46.1218	303.9318	3.400m	Flowline_Gutter
12	1,620.1277	-46.1547	304.1568	3.442m	Top_Curb
13	1,620.2201	-46.2728	304.1568	3.592m	Back_Curb
14	1,620.8355	-47.0597	303.9168	4.591m	EPS_Sub
15	1,620.8361	-47.0605	304.1168	4.592m	Hinge_Cut
16	1,620.9999	-47.2699	304.6486	4.858m	Daylight

CHAINAGE 0+240.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,624.0677	-23.9856	310.6399	-8.774m	Daylight
2	1,626.4047	-25.4959	305.0748	-5.992m	EPS
3	1,626.4055	-25.4964	304.8748	-5.991m	EPS_Sub
4	1,627.2446	-26.0387	305.1148	-4.992m	Back_Curb
5	1,627.3706	-26.1201	305.1148	-4.842m	Top_Curb
6	1,627.4056	-26.1427	304.8898	-4.800m	Flowline_Gutter
7	1,627.7835	-26.3870	304.9798	-4.350m	ETW
8	1,627.7835	-26.3870	304.5798	-4.350m	ETW_SubBase
9	1,633.9146	-30.3493	304.3973	2.950m	ETW_SubBase
10	1,633.9146	-30.3493	304.7973	2.950m	ETW
11	1,634.2925	-30.5936	304.7073	3.400m	Flowline_Gutter
12	1,634.3276	-30.6162	304.9323	3.442m	Top_Curb
13	1,634.4535	-30.6976	304.9323	3.592m	Back_Curb
14	1,635.2926	-31.2399	304.6923	4.591m	EPS_Sub
15	1,635.2934	-31.2404	304.8923	4.592m	Hinge_Cut
16	1,635.7756	-31.5520	306.0406	5.166m	Daylight

CHAINAGE 0+260.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,630.8976	-7.8736	310.3791	-9.146m	Daylight
2	1,633.0114	-8.5272	305.9540	-6.934m	EPS
3	1,633.0123	-8.5274	305.7540	-6.933m	EPS_Sub
4	1,633.9667	-8.8226	305.9940	-5.934m	Back_Curb
5	1,634.1100	-8.8669	305.9940	-5.784m	Top_Curb
6	1,634.1499	-8.8792	305.7690	-5.742m	Flowline_Gutter
7	1,634.5798	-9.0121	305.8590	-5.292m	ETW
8	1,634.5798	-9.0121	305.4590	-5.292m	ETW_SubBase
9	1,642.4540	-11.4468	305.2530	2.950m	ETW_SubBase
10	1,642.4540	-11.4468	305.6530	2.950m	ETW
11	1,642.8839	-11.5797	305.5630	3.400m	Flowline_Gutter
12	1,642.9238	-11.5921	305.7880	3.442m	Top_Curb
13	1,643.0671	-11.6364	305.7880	3.592m	Back_Curb
14	1,644.0215	-11.9315	305.5480	4.591m	EPS_Sub
15	1,644.0225	-11.9318	305.7480	4.592m	Hinge_Cut
16	1,644.4544	-12.0653	306.6521	5.044m	Daylight

CHAINAGE 0+280.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,637.3274	10.2118	310.9720	-7.019m	Daylight
2	1,639.3549	9.8205	306.8421	-4.954m	EPS
3	1,639.3559	9.8203	306.6421	-4.953m	EPS_Sub
4	1,640.3368	9.6310	306.8821	-3.954m	Back_Curb
5	1,640.4841	9.6026	306.8821	-3.804m	Top_Curb
6	1,640.5250	9.5947	306.6571	-3.763m	Flowline_Gutter
7	1,640.9669	9.5094	306.7471	-3.313m	ETW
8	1,640.9669	9.5094	306.3471	-3.313m	ETW_SubBase
9	1,647.1141	8.3230	306.1906	2.948m	ETW_SubBase
10	1,647.1141	8.3230	306.5906	2.948m	ETW
11	1,647.5559	8.2377	306.5006	3.398m	Flowline_Gutter
12	1,647.5969	8.2298	306.7256	3.440m	Top_Curb
13	1,647.7442	8.2014	306.7256	3.590m	Back_Curb
14	1,648.7251	8.0121	306.4856	4.589m	EPS_Sub
15	1,648.7260	8.0119	306.6856	4.590m	Hinge_Cut
16	1,649.6011	7.8430	308.4681	5.481m	Daylight

CHAINAGE 0+300.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,642.3110	29.6072	310.1957	-5.763m	Daylight
2	1,643.4618	29.3875	307.8525	-4.592m	EPS
3	1,643.4628	29.3873	307.6525	-4.591m	EPS_Sub
4	1,644.4441	29.2000	307.8925	-3.592m	Back_Curb
5	1,644.5914	29.1719	307.8925	-3.442m	Top_Curb
6	1,644.6324	29.1641	307.6675	-3.400m	Flowline_Gutter
7	1,645.0744	29.0797	307.7575	-2.950m	ETW
8	1,645.0744	29.0797	307.3575	-2.950m	ETW_SubBase
9	1,650.8697	27.9733	307.2100	2.950m	ETW_SubBase
10	1,650.8697	27.9733	307.6100	2.950m	ETW
11	1,651.3117	27.8889	307.5200	3.400m	Flowline_Gutter
12	1,651.3527	27.8810	307.7450	3.442m	Top_Curb
13	1,651.5000	27.8529	307.7450	3.592m	Back_Curb
14	1,652.4813	27.6656	307.5050	4.591m	EPS_Sub
15	1,652.4823	27.6654	307.7050	4.592m	Hinge_Cut
16	1,652.6941	27.6249	308.1363	4.807m	Daylight

CHAINAGE 0+320.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,647.2533	49.6151	308.1960	-5.350m	Daylight
2	1,647.9771	49.3901	308.9540	-4.592m	Hinge
3	1,647.9781	49.3898	308.7540	-4.591m	EPS_Sub
4	1,648.9321	49.0932	308.9940	-3.592m	Back_Curb
5	1,649.0753	49.0487	308.9940	-3.442m	Top_Curb
6	1,649.1151	49.0363	308.7690	-3.400m	Flowline_Gutter
7	1,649.5448	48.9027	308.4590	-2.950m	ETW_SubBase
8	1,649.5448	48.9027	308.8590	-2.950m	Flange
9	1,657.2913	46.4947	308.6562	5.162m	Flange
10	1,657.2913	46.4947	308.2562	5.162m	ETW_SubBase
11	1,657.7210	46.3611	308.5662	5.612m	Flowline_Gutter
12	1,657.7608	46.3487	308.7912	5.654m	Top_Curb
13	1,657.9040	46.3042	308.7912	5.804m	Back_Curb
14	1,658.8580	46.0076	308.5512	6.803m	EPS_Sub
15	1,658.8590	46.0073	308.7512	6.804m	EPS
16	1,662.9644	44.7311	304.4520	11.103m	Daylight

CHAINAGE 0+340.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,656.0266	70.1630	315.0959	-7.072m	Daylight
2	1,657.9433	68.5892	310.1358	-4.592m	EPS
3	1,657.9441	68.5885	309.9358	-4.591m	EPS_Sub
4	1,658.7162	67.9546	310.1758	-3.592m	Back_Curb
5	1,658.8321	67.8594	310.1758	-3.442m	Top_Curb
6	1,658.8643	67.8329	309.9508	-3.400m	Flowline_Gutter
7	1,659.2121	67.5474	310.0408	-2.950m	ETW
8	1,659.2121	67.5474	309.6408	-2.950m	ETW_SubBase
9	1,665.2171	62.6166	309.4466	4.820m	ETW_SubBase
10	1,665.2171	62.6166	309.8466	4.820m	ETW
11	1,665.5649	62.3310	309.7566	5.270m	Flowline_Gutter
12	1,665.5971	62.3046	309.9816	5.312m	Top_Curb
13	1,665.7131	62.2094	309.9816	5.462m	Back_Curb
14	1,666.4852	61.5754	309.7416	6.461m	EPS_Sub
15	1,666.4859	61.5748	309.9416	6.462m	Hinge_Cut
16	1,666.6065	61.4757	310.2537	6.618m	Daylight

CHAINAGE 0+360.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,673.2647	86.1286	320.4419	-9.141m	Daylight
2	1,675.1977	82.0107	311.3438	-4.592m	EPS
3	1,675.1981	82.0098	311.1438	-4.591m	EPS_Sub
4	1,675.6226	81.1055	311.3838	-3.592m	Back_Curb
5	1,675.6863	80.9697	311.3838	-3.442m	Top_Curb
6	1,675.7041	80.9319	311.1588	-3.400m	Flowline_Gutter
7	1,675.8953	80.5246	311.2488	-2.950m	ETW
8	1,675.8953	80.5246	310.8488	-2.950m	ETW_SubBase
9	1,679.1969	73.4909	310.6545	4.820m	ETW_SubBase
10	1,679.1969	73.4909	311.0545	4.820m	ETW
11	1,679.3881	73.0836	310.9645	5.270m	Flowline_Gutter
12	1,679.4058	73.0458	311.1895	5.312m	Top_Curb
13	1,679.4696	72.9100	311.1895	5.462m	Back_Curb
14	1,679.8941	72.0057	310.9495	6.461m	EPS_Sub
15	1,679.8945	72.0048	311.1495	6.462m	Hinge_Cut
16	1,680.3659	71.0006	313.3683	7.571m	Daylight

CHAINAGE 0+380.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,696.4824	89.7911	318.6775	-7.654m	Daylight
2	1,696.4976	86.7283	312.5518	-4.592m	EPS
3	1,696.4976	86.7273	312.3518	-4.591m	EPS_Sub
4	1,696.5025	85.7283	312.5918	-3.592m	Back_Curb
5	1,696.5033	85.5783	312.5918	-3.442m	Top_Curb
6	1,696.5035	85.5366	312.3668	-3.400m	Flowline_Gutter
7	1,696.5057	85.0866	312.4568	-2.950m	ETW
8	1,696.5057	85.0866	312.0568	-2.950m	ETW_SubBase
9	1,696.5463	76.9203	311.8526	5.217m	ETW_SubBase
10	1,696.5463	76.9203	312.2526	5.217m	ETW
11	1,696.5485	76.4703	312.1626	5.667m	Flowline_Gutter
12	1,696.5487	76.4286	312.3876	5.708m	Top_Curb
13	1,696.5494	76.2786	312.3876	5.858m	Back_Curb
14	1,696.5544	75.2796	312.1476	6.857m	EPS_Sub
15	1,696.5544	75.2786	312.3476	6.858m	Hinge_Cut
16	1,696.5550	75.1599	312.5852	6.977m	Daylight

CHAINAGE 0+400.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,717.3212	84.2461	313.5790	-4.772m	Daylight
2	1,717.2831	84.0695	313.7597	-4.591m	Hinge
3	1,717.2829	84.0685	313.5597	-4.590m	EPS_Sub
4	1,717.0724	83.0919	313.7997	-3.591m	Back_Curb
5	1,717.0408	82.9453	313.7997	-3.441m	Top_Curb
6	1,717.0320	82.9045	313.5747	-3.400m	Flowline_Gutter
7	1,716.9371	82.4646	313.2647	-2.950m	ETW_SubBase
8	1,716.9371	82.4646	313.6647	-2.950m	Flange
9	1,715.5507	76.0334	313.5003	3.629m	Flange
10	1,715.5507	76.0334	313.1003	3.629m	ETW_SubBase
11	1,715.4559	75.5935	313.4103	4.079m	Flowline_Gutter
12	1,715.4471	75.5527	313.6353	4.121m	Top_Curb
13	1,715.4155	75.4061	313.6353	4.271m	Back_Curb
14	1,715.2050	74.4295	313.3953	5.270m	EPS_Sub
15	1,715.2048	74.4285	313.5953	5.271m	EPS
16	1,713.9029	68.3897	307.4177	11.449m	Daylight

CHAINAGE 0+420.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,737.0667	80.7212	313.9230	-5.636m	Daylight
2	1,736.8383	79.7018	314.9677	-4.592m	Hinge
3	1,736.8381	79.7008	314.7677	-4.591m	EPS_Sub
4	1,736.6197	78.7260	315.0077	-3.592m	Back_Curb
5	1,736.5869	78.5796	315.0077	-3.442m	Top_Curb
6	1,736.5778	78.5389	314.7827	-3.400m	Flowline_Gutter
7	1,736.4794	78.0998	314.4727	-2.950m	ETW_SubBase
8	1,736.4794	78.0998	314.8727	-2.950m	Flange
9	1,735.1896	72.3425	314.7252	2.950m	Flange
10	1,735.1896	72.3425	314.3252	2.950m	ETW_SubBase
11	1,735.0912	71.9034	314.6352	3.400m	Flowline_Gutter
12	1,735.0821	71.8627	314.8602	3.442m	Top_Curb
13	1,735.0493	71.7163	314.8602	3.592m	Back_Curb
14	1,734.8309	70.7415	314.6202	4.591m	EPS_Sub
15	1,734.8307	70.7405	314.8202	4.592m	EPS
16	1,732.9495	62.3438	306.2153	13.197m	Daylight

CHAINAGE 0+440.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	1,756.5359	76.1390	317.8348	-5.421m	Daylight
2	1,756.3545	75.3295	316.1757	-4.592m	Ditch_Out
3	1,756.3543	75.3285	315.9757	-4.591m	EPS_Sub
4	1,756.1359	74.3537	316.2157	-3.592m	Back_Curb
5	1,756.1031	74.2073	316.2157	-3.442m	Top_Curb
6	1,756.0940	74.1666	315.9907	-3.400m	Flowline_Gutter
7	1,755.9956	73.7275	315.6807	-2.950m	ETW_SubBase
8	1,755.9956	73.7275	316.0807	-2.950m	Flange
9	1,754.7058	67.9702	315.9332	2.950m	Flange
10	1,754.7058	67.9702	315.5332	2.950m	ETW_SubBase
11	1,754.6074	67.5311	315.8432	3.400m	Flowline_Gutter
12	1,754.5983	67.4904	316.0682	3.442m	Top_Curb
13	1,754.5655	67.3441	316.0682	3.592m	Back_Curb
14	1,754.3471	66.3692	315.8282	4.591m	EPS_Sub
15	1,754.3469	66.3682	316.0282	4.592m	Hinge
16	1,752.7466	59.2250	308.7079	11.912m	Daylight

6.4 Vertikalni tok trase

Vertical Alignment: niveleta
Description:
Station Range: Start: 0+000.00, End: 45+365.00

PVI	Station	Grade Out	Curve Length
0.00	0+000.00	3.75%	
1.00	0+280.00	6.04%	111.997m
	Vertical Curve Information:(sag curve) PVC Station: 0+223.97 Elevation: 304.244m PVI Station: 0+280.00 Elevation: 306.343m PVT Station: 0+335.97 Elevation: 309.723m Low Point: 0+223.97 Elevation: 304.244m Grade in: 3.75% Grade out: 6.04% Change: 2.29% K: Curve Length: 111.997m Headlight Distance:		
2.00	0+453.65		

7. LITERATURA

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