Idejni projekt dionice ceste

Šerić, Josipa

SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE

ZAVRŠNI RAD

Josipa Šerić

Split, 2020

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IDEJNI PROJEKT DIONICE CESTE

Završni rad

Split, 2020

SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE

Split, Matice hrvatske 15

STUDIJ: **PREDDIPLOMSKI STRUČNI STUDIJ GRAĐEVINARSTVA**

KANDIDAT: **JOSIPA ŠERIĆ**

BROJ INDEKSA: **1765**

KATEDRA: **Katedra za prometnice**

PREDMET: **CESTE**

ZADATAK ZA ZAVRŠNI RAD

Tema: Idejni projekt dionice ceste

Opis zadatka: U programu CIVIL 3D 2020 Metric potrebno je izraditi idejni projekt dionice ceste između točaka A i B naznačenih na geodetskoj podlozi koja je korištena za izradu programskog zadatka iz kolgija Ceste.

Idejni projekt treba sadržavati:

1. Kopiju programskog zadatka
2. Tehnički opis
3. Građevinsku situaciju M 1:1000
4. Uzdužni presjek M 1:1000/100
5. Normalni poprečni presjek M 1:50
6. Karakteristične poprečne presjeke M 1:200
7. Računalne ispise koordinatnih točaka osi
8. Proračun količina zemljanih radova
9. Proračun količina radova po presjecima

U Splitu, travanj 2020

Voditelj Završnog rada:
Izv.prof.dr.sc. Deana Breški

IDEJNI PROJEKT DIONICE CESTE

Sažetak:

Uz pomoć geodetske podloge korištene za izradu programskog zadatka iz kolegija Ceste u programu CIVIL 3D 2020 Metric izrađen je teren na kojem je projektirana dionica ceste između točaka A i B naznačenih na podlozi. Cesta je projektirana za prosječni godišnji dnevni promet (PGDP) od 950 vozila/dan te za vrstu terena brdoviti. Projektna brzina za ovu kategoriju ceste je v_p=40 km/h.

Ključne riječi:

Idejni projekt, teren, dionica ceste, projektna brzina, os ceste, uzdužni presjek, poprečni presjek, niveleta, kolnik, prijelaznica , krivina

CONCEPTUAL PROJECT OF A LOCAL ROAD

Abstract:

With the help of a geodetic basis used in the creation of a task from the course " Roads", a terrain is constructed using software Civil 3D 2020 Metric. On that terrain a local road section is designed between points A and B indicated on the basis. The road is designed for an annual average daily traffic (AADT) of 950 vehicles per day, for the hilly type of terrain. The project speed for this category of road is v_p = 40 km / h.

Keywords:

conceptual project, terrain, road section, project speed, road axis, longitudinal section, cross section, profile, pavement, transition, curve

SADRŽAJ

1. Kopija programskog zadatka

SVEUČILIŠTE U SPLITU
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I GEODEZIJE

Split, ak.god. 2017/2018.

Katedra za prometnice

Studij: Stručni

Nastavni predmet: CESTE

Student: Josipa Šerić

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: **brdovit.**

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 asistentica:

mag.ing.aedif. Daniela Dumanić

2. Tehnički opis

2.1. OPĆENITO

Na geodetskoj podlozi u mjerilu 1:1000 izrađen je idejni projekt ceste na dionici od točke A koja se nalazi na 230 metara nadmorske visine do točke B koja se nalazi na 215 metara nadmorske visine. Trasa ceste se nalazi na brdovitom terenu te njena duljina iznosi 356,94 m. Proteže se u smjeru zapad istok. Na prostorno vođenje prometnice utječu topografske karakteristike terena.

Temeljem «Pravilnika o osnovnim uvjetima kojima javne ceste izvan naselja i njihovi elementi moraju udovoljavati sa stajališta sigurnosti prometa», definirani su projektni elementi trase i elementi poprečnog profila. U tablici 1.2, koja je sastavni dio Pravilnika, dani su elemeti za definiciju kategorije prometnice.

Tabl. 1.2

Kategorija ceste	Društ. gospod. značenje (1.1.1.)	Vrsta prometa (1.1.2.)	Veličina prometa (1.1.3.)	Zadaća povezivanja (1.1.4.)	Srednja duljina putovanja (km)
AC	Državna	Prom. mot. vozila	>14000	Međudržavno i državno	>100
1. kat.	Državna	Prom. mot. vozila	>12000	Međudržavno i državno-regionalno	50-100
2. kat.	Državna	Prom. mot. v. mješoviti prom.	7000-12000	Državno i županijsko	20-50
3. kat.	Državna; županijska	Mješoviti promet	3000-7000	Međuopćinsko	5-50
4. kat.	Županijska; lokalna	Mješoviti promet	1000-3000	Općinsko	5-20
5. kat.	Lokalna	Mješoviti promet	<1000	Općinsko-lokalno	<5

Predmetna cesta je lokalnog značaja s PGDP-om od 950 voz/dan što je svrstava u 5. kategoriju.

Prema tablici 1.3.1 iz Pravilnika, ceste 5. kategorije projektiraju se za projektne brzine 40-60 km/h ovisno o terenskim ograničenjima.

Tabl. 1.3.1. Projektne brzine i najveći nagibi nivelete

PROMETNO -TEHNIČKO RAZVRSTAVANJE		PROJEKTNA BRZINA V_p (km/h) / NAGIB s_{max} (%)							
KAT.	Razina usluge	120 a.	100 b.	90 c.	80 d.	70 e.	60 f.	50 g.	40 h.
AC	C/D	≥120/4°	100/5*	90/5.5**	80/6***				
1. kat.	D		100/5.5°	90/5.5*	80/6**	70/7***			
2. kat.	D		100/5.5°	90/5.5*	80/6*	70/7**	60/8***		
3. kat.	E				80/7°	70/7*	60/8**	50/9***	
4. kat.	E					70/8°	60/9*	50/10**	40/11***
5. kat.	E						60/10°	50/11*	40/12** 40(30)/12***

OZNAKE:

°	BEZ OGRANIČENJA	BO
*	UMJERENA OGRANIČENJA	UO
**	ZNATNA OGRANIČENJA	ZO
***	VELIKA OGRANIČENJA	VO

Za predmetnu prometnicu, obzirom da se radi o brdovitom terenu sa znatnim ograničenjima, prema navedenoj tablici, projektna brzina je 40 km/h i max. uzdužni nagib je 12%.

Iz odabrane projektne brzine proizlaze i projektni elementi horizontalne i vertikalne geometrije trase:

- minimalni radijus horizontalne krivine R= 45 m
- minimalna duljina klotoidne prelazne krivine L= 30 m
- maksimalni uzdužni nagib i= 12 %
- minimalni polumjer konkavnog zaobljenja nivelete (za 0%) R=249 m

2.2. HORIZONTALNI ELEMENTI

Trasa se sastoji od tri pravca i dvije krivine. Prva krivina ima radijus R= 65 m i duljinu prijelaznice L= 40 m. Druga krivina ima radijus R= 45 m i duljinu prijelaznice L= 30 m. Svaka krivina je konstruirana pomoću dvije prijelazne krivine oblika klotoide i jednog kružnog luka. Proširenje kružnog luka za promet teretnih vozila s priključkom u prvoj krivini iznosi 0,65 m, a u drugoj 0,93 m.

2.3. VERTIKALNI ELEMENTI

Maksimalni nagib nivelete je 12%, a minimalni radijus krivine 249 m.
U programu se tok sastoji od dva pravca i jedne krivine.
Nagib prvog pravca iznosi 3,76%, a drugog 4,55 %.
Tangenta krivine je dužine 110,76 m, a radijus krivine 14000 m.

2.4. POPREČNI PRESJEK

Cesta ima dva prometna traka čija širina iznosi 2,75 m, širina rubnog traka iznosi 0,20 m. U usjecima se izvode i rigoli za odvodnju vode širine 0,65 m i drenaža koja je postavljena u glinenu posteljicu. U nasipu se izvodi bankina širine 1,0 m i nagiba 4%, a u usjeku berma širine 0,5 m, nagiba 4%. Cesta se većim dijelom nalazi u zasjeku, a dijelom u usjeku i nasipu. Poprečni nagib u pravcima iznosi 2,5%, nagib u prvoj krivini iznosi 5,5% dok u drugoj krivini iznosi 7%. Nagibi usjeka su 2:1, a nasipa 1:1,5.

2.5. KOLNIČKA KONSTRUKCIJA

Projektom je predviđena sljedeća kolnička konstrukcija:

- Habajući asfaltni sloj AC11 surf (BIT 50/70) AG4 M4 - debljine 4 cm
- Bitumenizirani nosivi sloj AC22 base (BIT 50/70) AG6 M2 - debljine 6 cm
- Na dnu mehanički nosivi zbijeni sloj debljine 30 cm

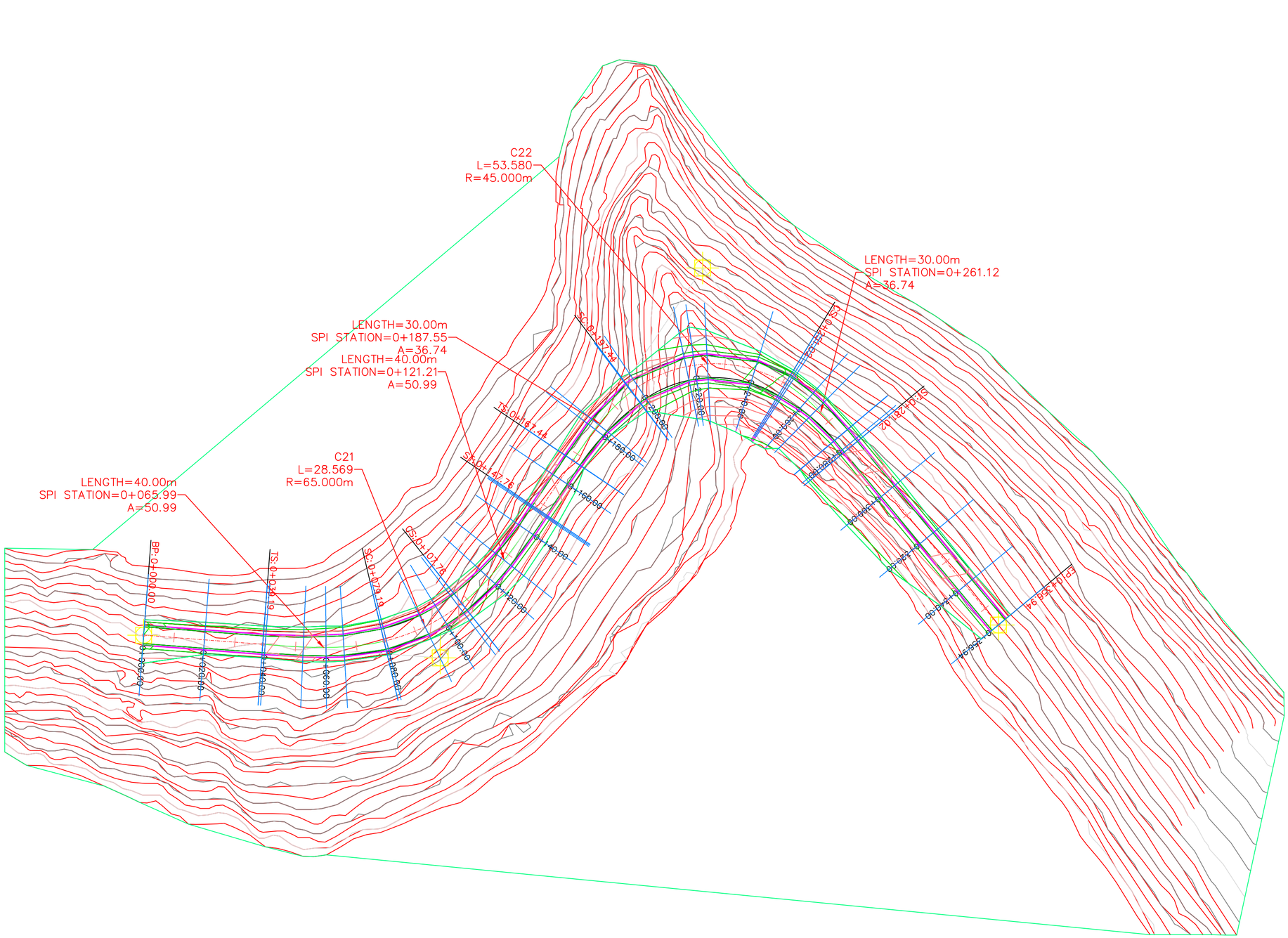
2.6. ODVODNJA

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

2.7. OPREMA CESTE

Idejnim projektom predviđena je 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 bankinama nasipa visine h > 3,00 m je predviđeno postavljanje jednostrane zaštitne ograde.

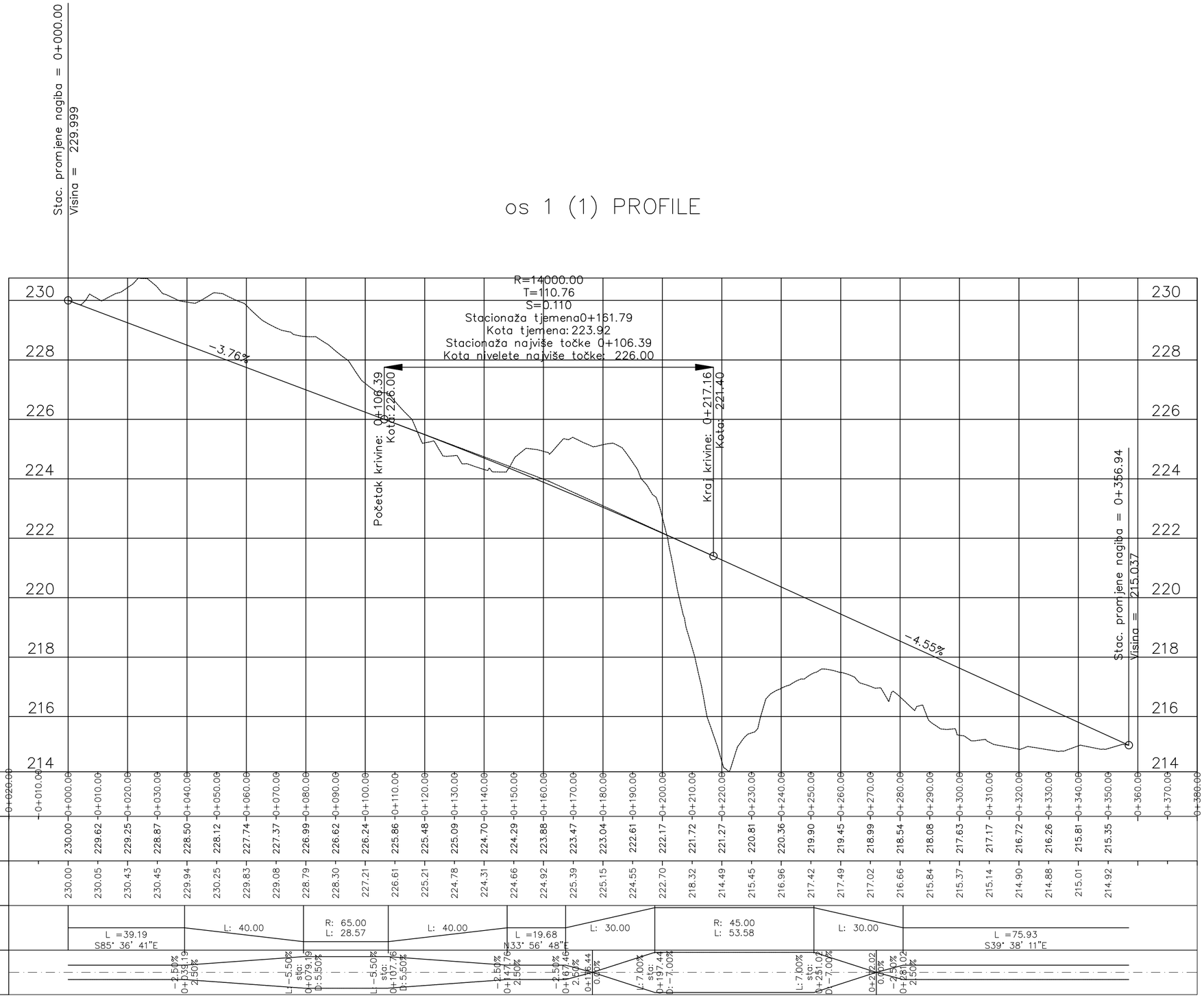
3. Građevinska situacija M 1:1000



SVEUČILIŠTE U SPLITU FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE 21000 SPLIT, MATICE HRVATSKE 15	ZAVRŠNI RAD
	TEMA: IDEJNI PROJEKT DIONICE CESTE
	STUDENT: Josipa Šerić
	SADRŽAJ: Situacija
	MJERILO: 1:1000
	DATUM: travanj 2020

4. Uzdužni presjek M 1:1000/100

os 1 (1) PROFILE



Stacionaža	0+020.00	0+010.00	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
Kote nivelete			230.00	229.62	229.25	228.87	228.50	228.12	227.74	227.37	226.99	226.62	226.24	225.86	225.48	225.09	224.70	224.29	223.88	223.47	223.04	222.61	222.17	221.72	221.27	220.81	220.36	219.90	219.45	218.99	218.54	218.08	217.63	217.17	216.72	216.26	215.81	215.35	
Kote terena			230.00	230.05	230.43	230.45	229.94	230.25	229.83	229.08	228.79	228.30	227.21	226.61	225.21	224.78	224.31	224.66	224.92	225.39	225.15	224.55	222.70	218.32	214.49	215.45	216.96	217.42	217.49	217.02	216.66	215.84	215.37	215.14	214.90	214.88	215.01	214.92	
Horizontalni elementi			L =39.19 S85° 36' 41"E				L: 40.00				R: 65.00 L: 28.57			L: 40.00				L =19.68 Z33° 56' 48"I			L: 30.00			R: 45.00 L: 53.58				L: 30.00										L =75.93 S39° 38' 11"E		
Vitoperenje					−2.50% 0+039.19 2.50%			−5.50% sta: 0+079.19 D: 5.50%					−5.50% sta: 0+107.76 D: 5.50%					−2.50% 0+147.76 2.50%		−2.50% 0+167.46 2.50% 0+176.44 0.00%		L: 7.00% sta: 0+197.44 D: −7.00%						L: 7.00% sta: 0+251.02 D: −7.00%		0+287.02 0.00% −2.50% 0+298.02 2.50%										

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ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENT: Josipa Šerić

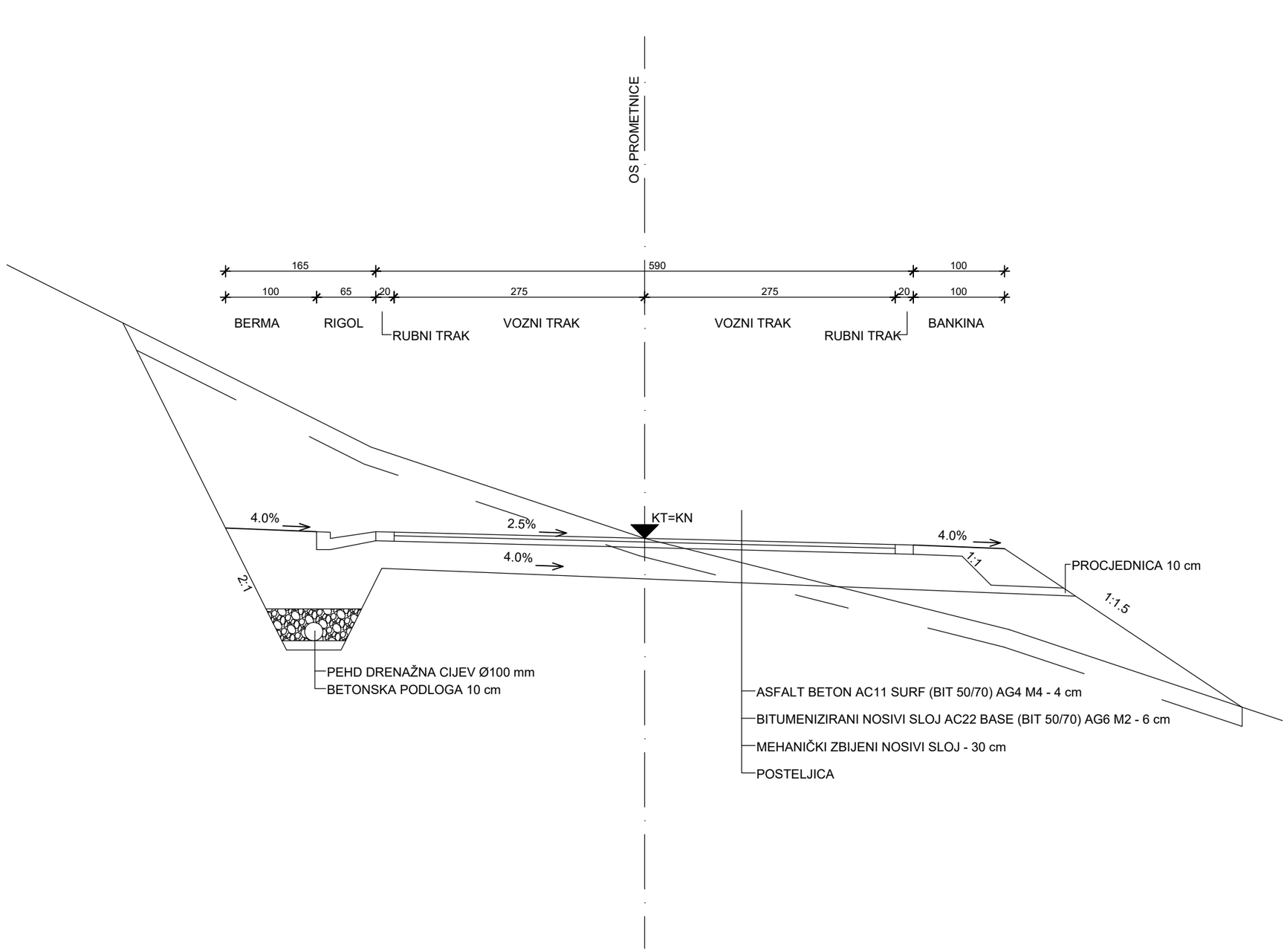
SADRŽAJ: Uzdužni presjek

MJERILO: 1:1000

DATUM: travanj 2020

5. Normalni poprečni presjek M 1:50

Normalni poprečni presjek M 1:50



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21000 SPLIT, MATICE HRVATSKE 15

ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENT: Josipa Šerić

SADRŽAJ: Normalni poprečni presjek

MJERILO: 1:50

DATUM: travanj 2020

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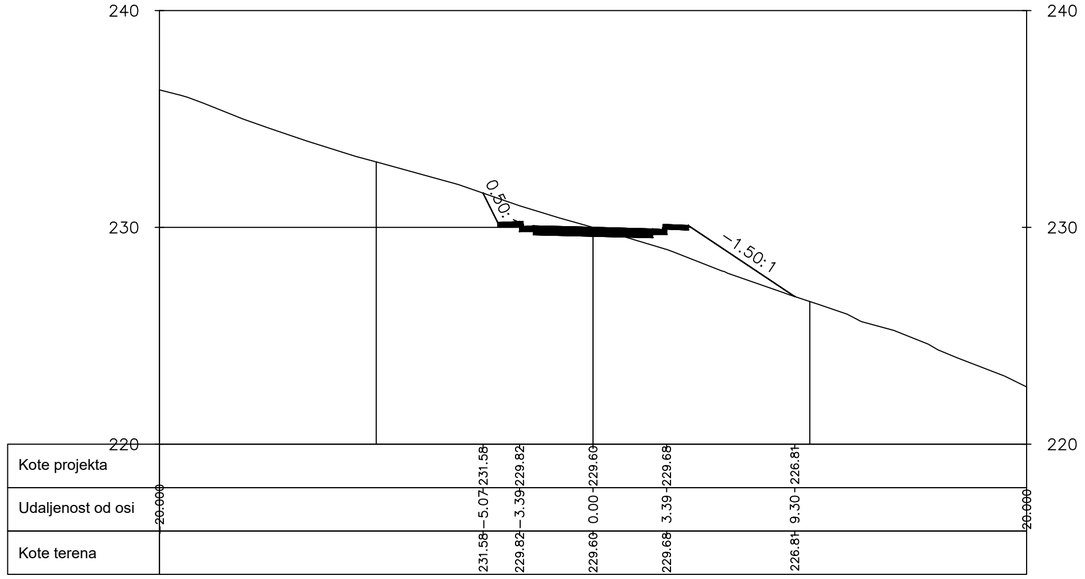
PRODUCED BY AN AUTODESK STUDENT VERSION

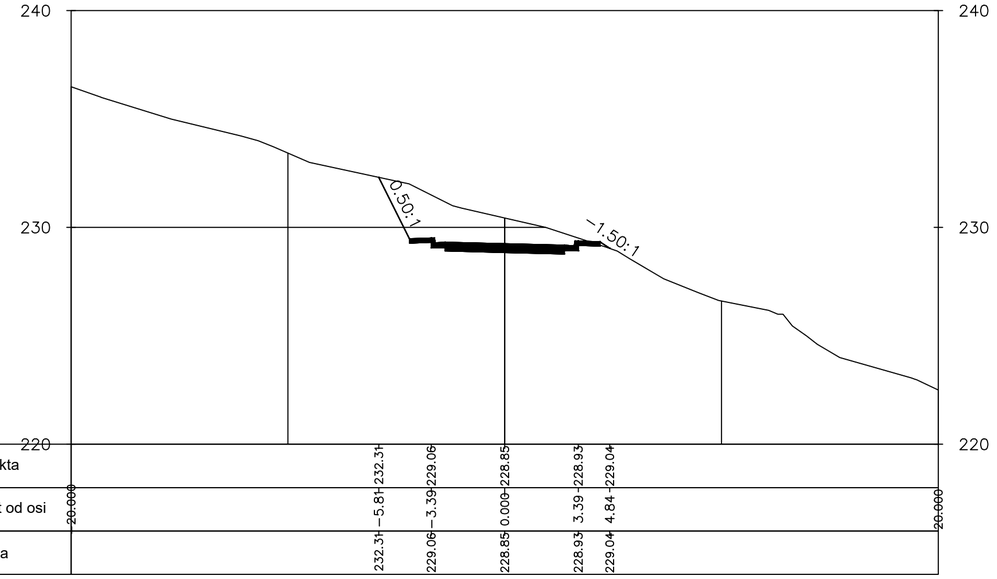
6. Karakteristični poprečni presjeci M 1:200

0+000.00



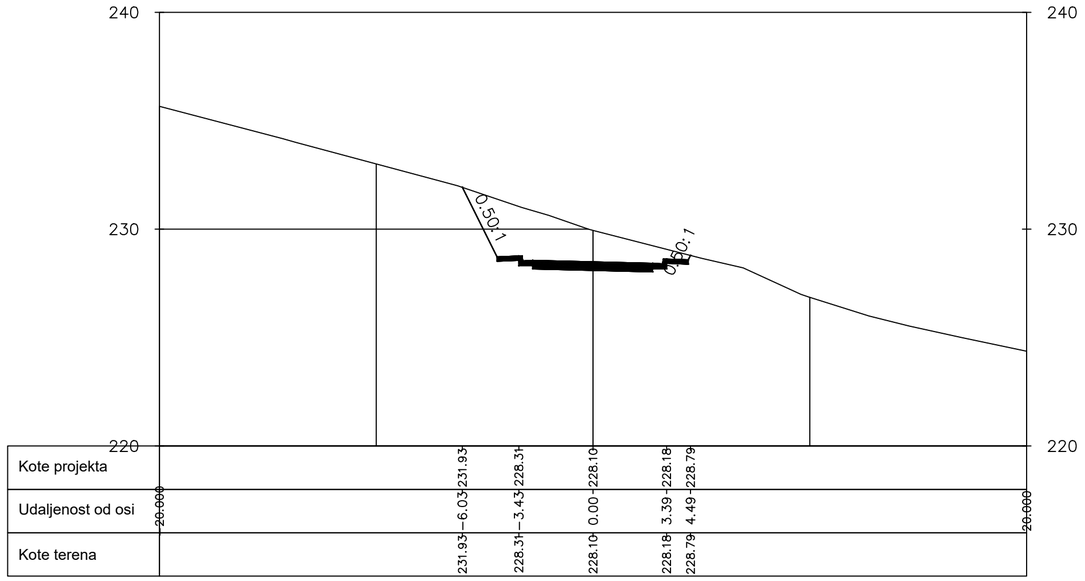
Kote projekta		231.58	229.82	229.60	229.68	226.81
Udaljenost od osi	20.000	-5.07	-3.39	0.00	3.39	9.30
Kote terena		231.58	229.82	229.60	229.68	226.81

0+020.00



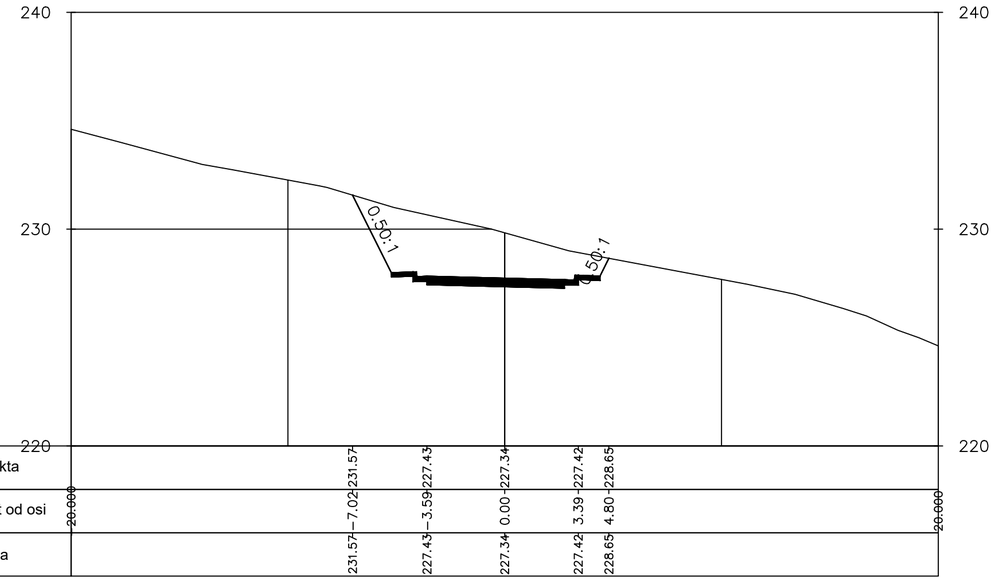
Kote projekta		232.31	229.06	228.85	228.93	229.04
Udaljenost od osi	20.000	-5.81	-3.39	0.000	3.39	4.84
Kote terena		232.31	229.06	228.85	228.93	229.04

0+040.00



Kote projekta		231.93	228.31	228.10	228.18	228.79
Udaljenost od osi	20.000	-6.03	-3.43	0.00	3.39	4.49
Kote terena		231.93	228.31	228.10	228.18	228.79

0+060.00



Kote projekta		231.57	227.43	227.34	227.42	228.65
Udaljenost od osi	20.000	-7.02	-3.59	0.00	3.39	4.80
Kote terena		231.57	227.43	227.34	227.42	228.65

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21000 SPLIT, MATICE HRVATSKE 15

ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENT: Josipa Šerić

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

DATUM: travanj 2020

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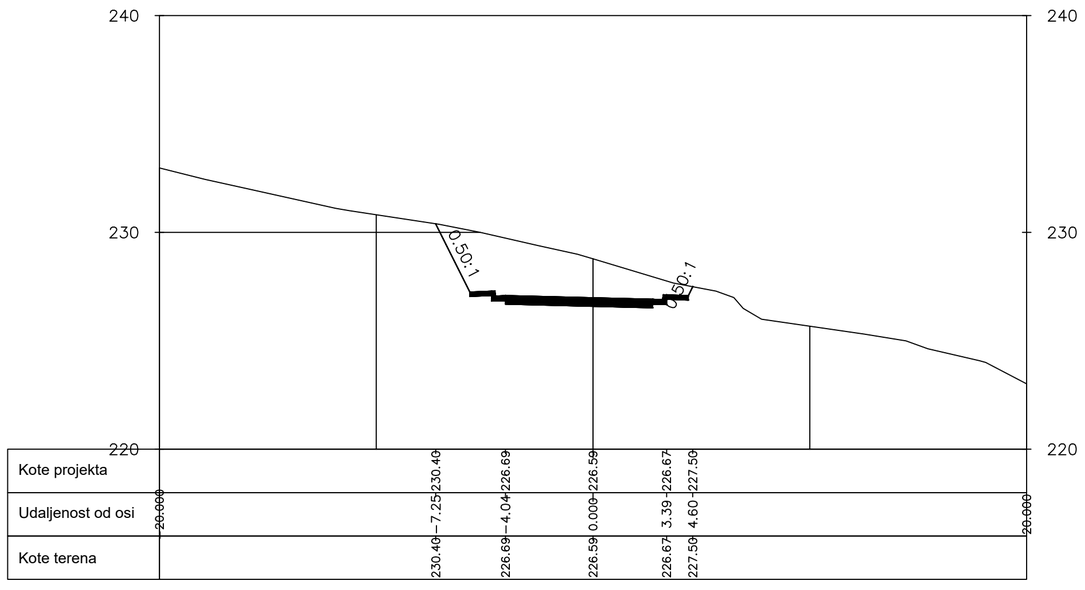
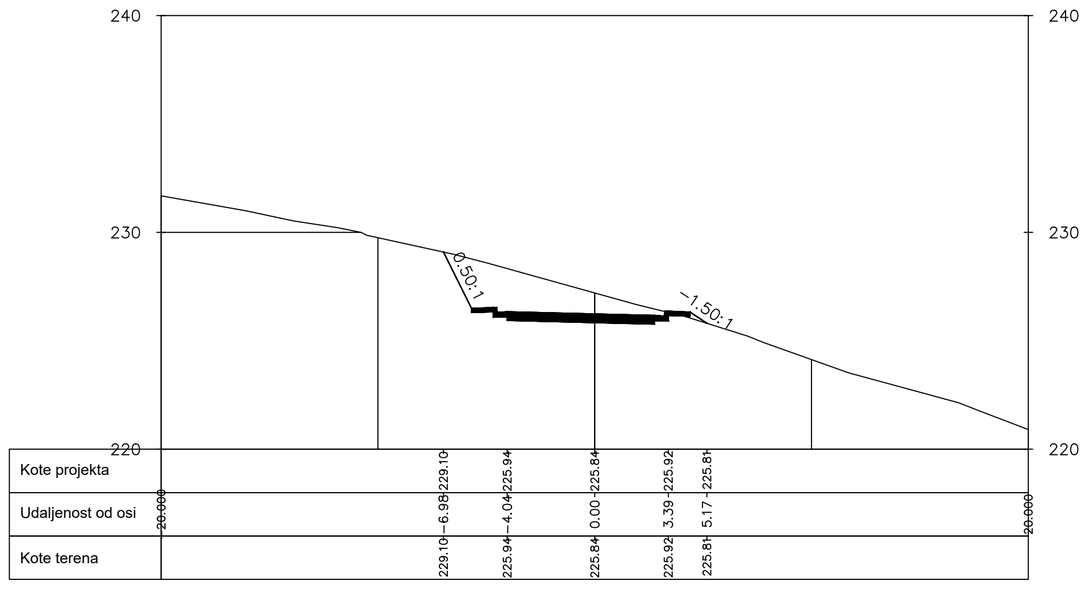
0+080.00



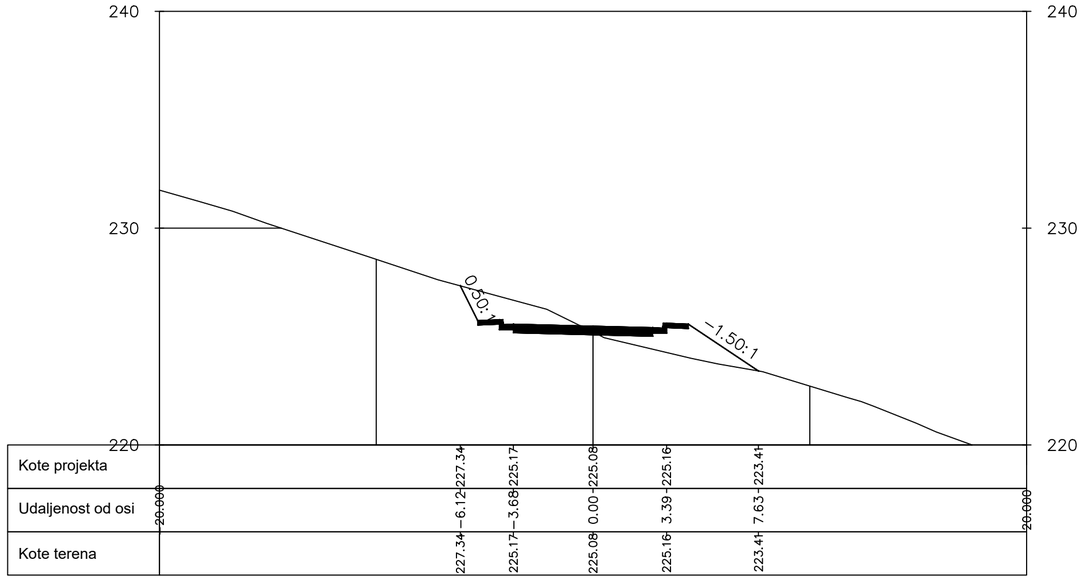
Kote projekta		230.40	226.69	226.59	226.67	227.50
Udaljenost od osi	20.000	7.25	4.04	0.000	3.39	4.60
Kote terena		230.40	226.69	226.59	226.67	227.50

0+100.00



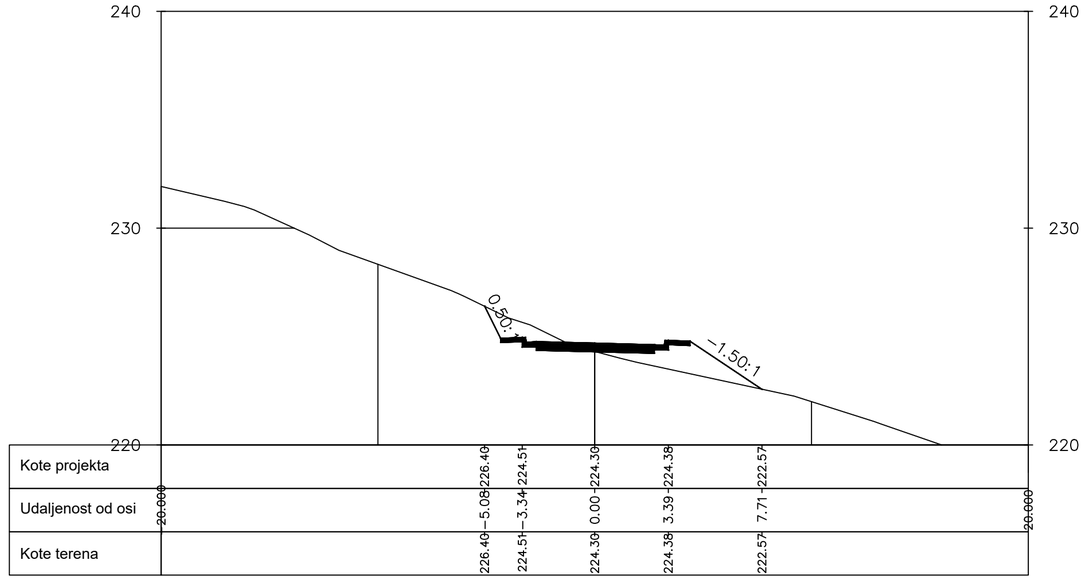
Kote projekta		229.10	225.94	225.84	225.92	225.81
Udaljenost od osi	20.000	6.98	4.04	0.00	3.39	5.17
Kote terena		229.10	225.94	225.84	225.92	225.81

0+120.00



Kote projekta		227.34	225.17	225.08	225.16	223.41
Udaljenost od osi	20.000	6.12	3.68	0.00	3.39	7.63
Kote terena		227.34	225.17	225.08	225.16	223.41

0+140.00



Kote projekta		226.40	224.51	224.30	224.38	222.57
Udaljenost od osi	20.000	5.08	3.34	0.00	3.39	7.71
Kote terena		226.40	224.51	224.30	224.38	222.57

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ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

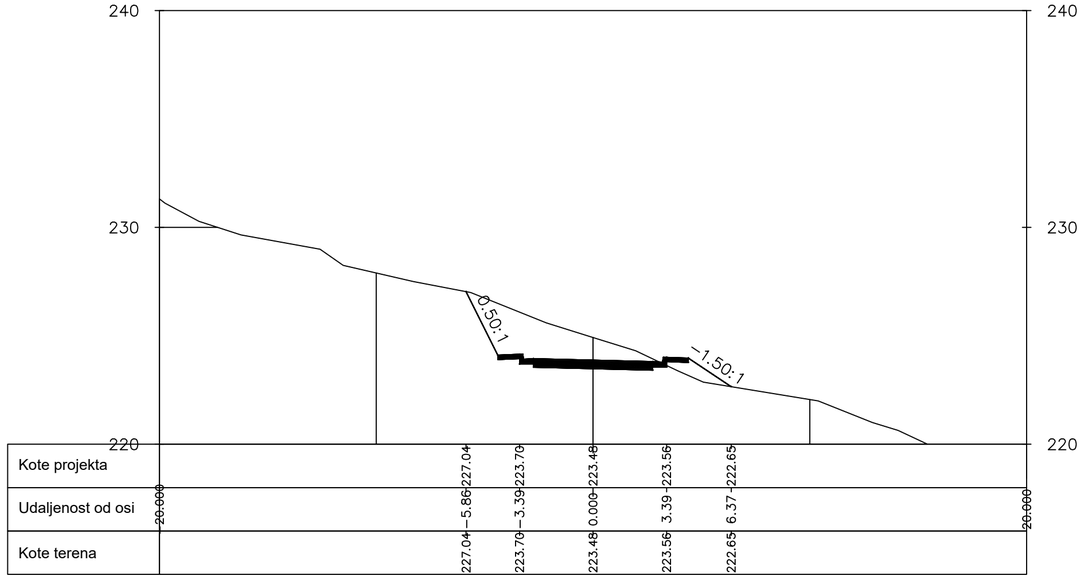
STUDENT: Josipa Šerić

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

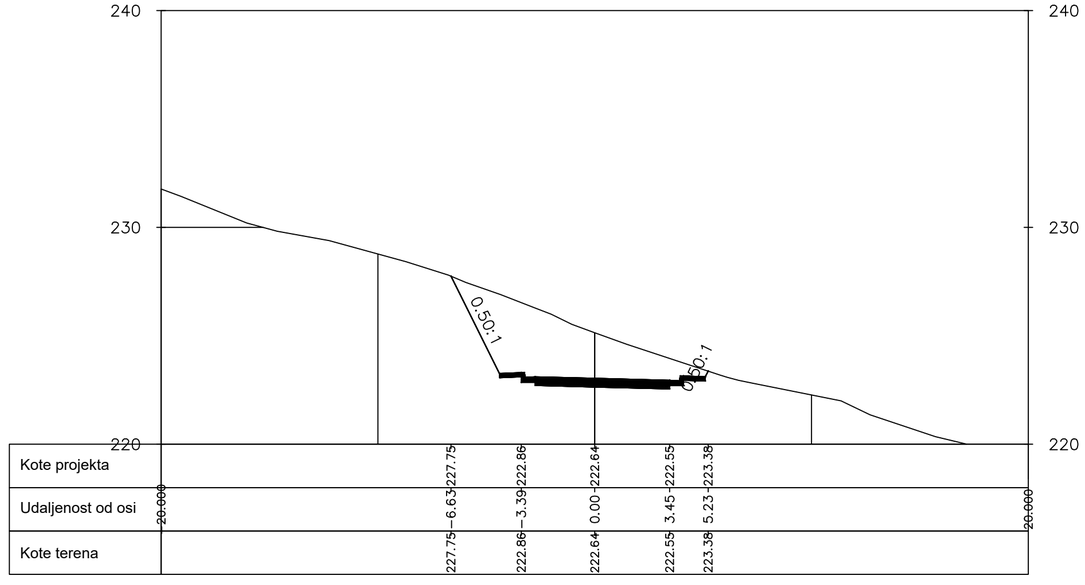
DATUM: travanj 2020

0+160.00



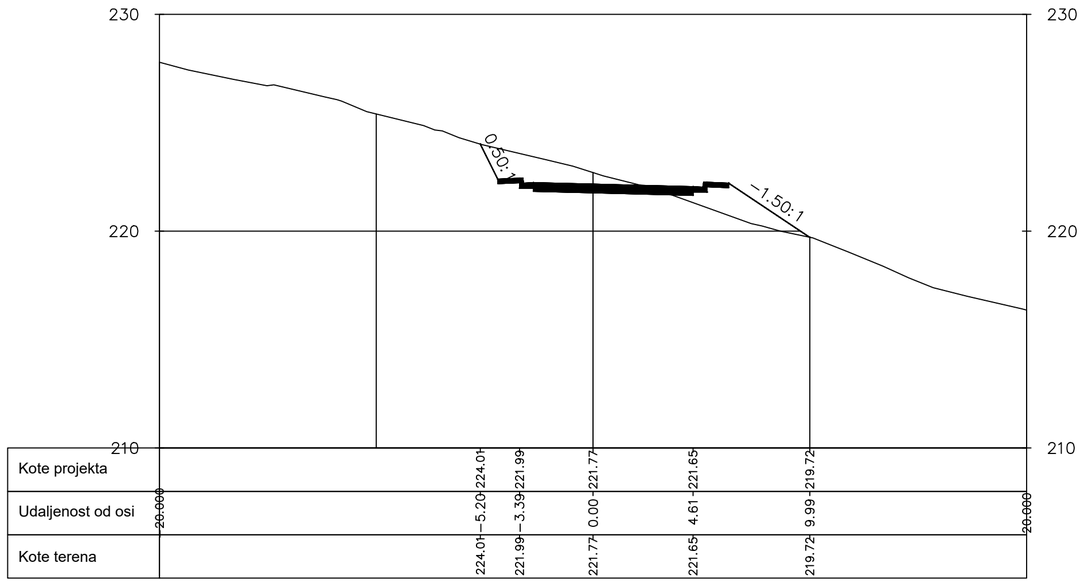
Kote projekta		227.04	223.70	223.46	223.56	222.65
Udaljenost od osi	20.000	5.86	3.39	0.000	3.39	6.37
Kote terena		227.04	223.70	223.46	223.56	222.65

0+180.00



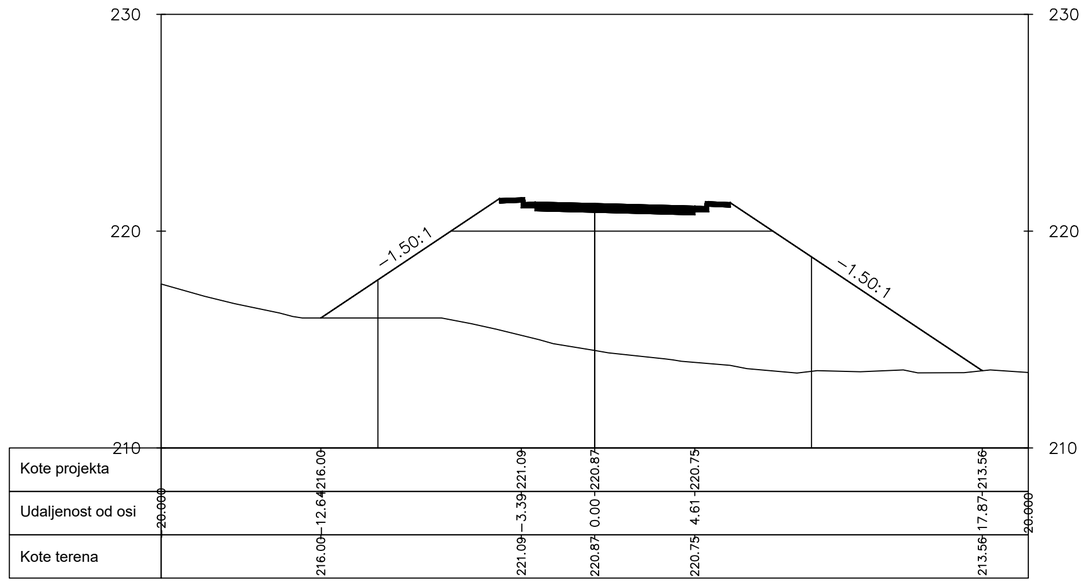
Kote projekta		227.75	222.86	222.64	222.55	223.38
Udaljenost od osi	20.000	6.63	3.39	0.00	3.45	5.23
Kote terena		227.75	222.86	222.64	222.55	223.38

0+200.00



Kote projekta		224.01	221.99	221.77	221.65	219.72
Udaljenost od osi	20.000	5.20	3.39	0.00	4.61	9.99
Kote terena		224.01	221.99	221.77	221.65	219.72

0+220.00



Kote projekta		216.00	221.09	220.87	220.75	213.56
Udaljenost od osi	20.000	12.64	3.39	0.00	4.61	17.87
Kote terena		216.00	221.09	220.87	220.75	213.56

SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA,
ARHITEKTURE I GEODEZIJE
21000 SPLIT, MATICE HRVATSKE 15

ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

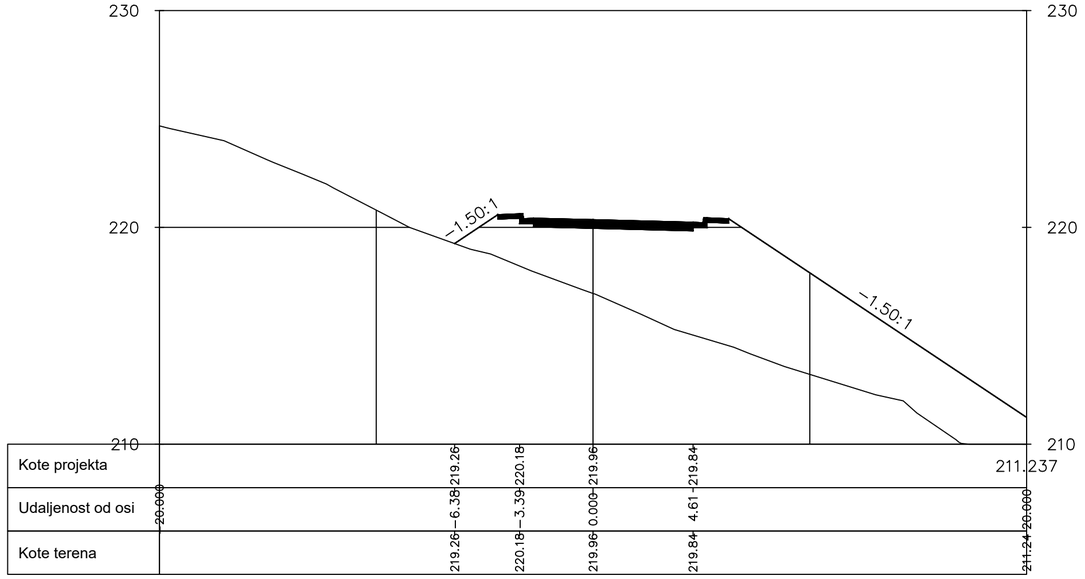
STUDENT: Josipa Šerić

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

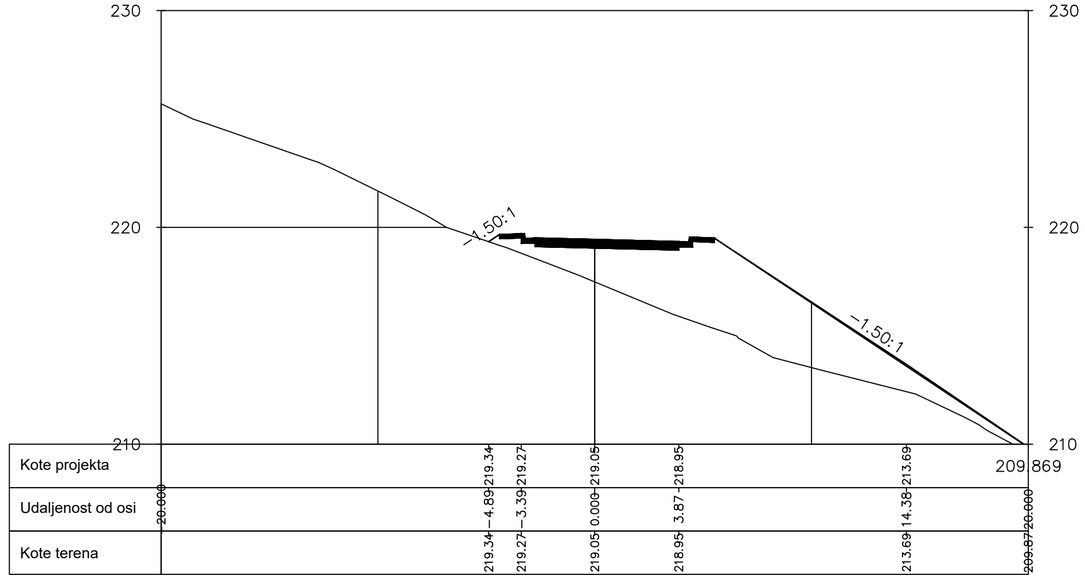
DATUM: travanj 2020

0+240.00



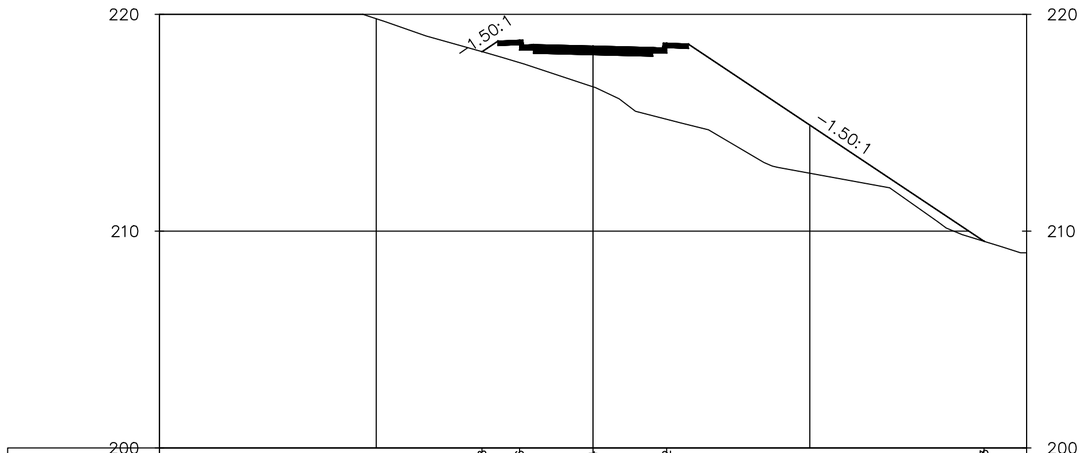
Kote projekta			219.26		220.18		219.96		219.84		
Udaljenost od osi	20.000		6.39		3.39		0.000		4.61		20.000
Kote terena			219.26		220.18		219.96		219.84		211.24

0+260.00



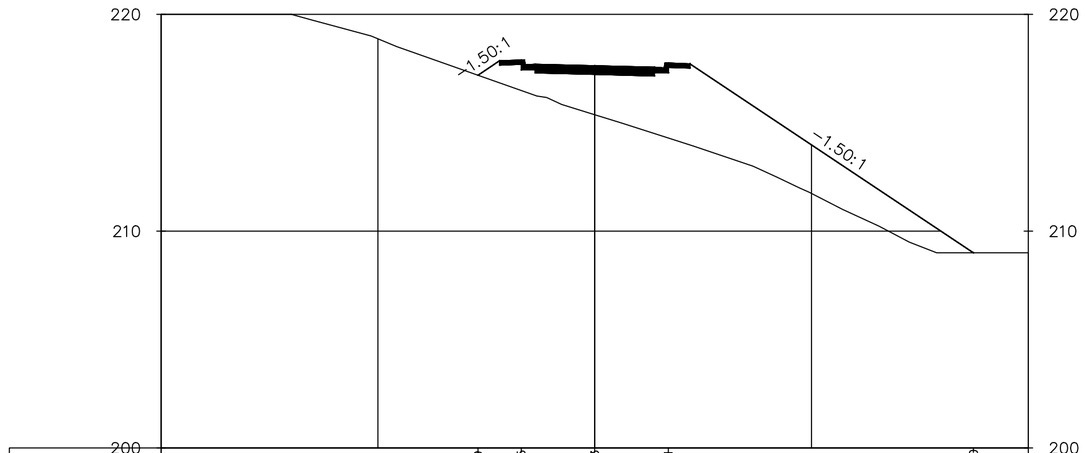
Kote projekta			219.34		219.27		219.05		218.95		
Udaljenost od osi	20.000		4.89		3.39		0.000		3.87		20.000
Kote terena			219.34		219.27		219.05		218.95		209.87

0+280.00



Kote projekta			218.28		218.36		218.14		218.22		
Udaljenost od osi	20.000		5.12		3.39		0.00		3.39		18.03
Kote terena			218.28		218.36		218.14		218.22		209.53

0+300.00



Kote projekta			217.19		217.45		217.23		217.31		
Udaljenost od osi	20.000		5.39		3.39		0.00		3.39		17.47
Kote terena			217.19		217.45		217.23		217.31		209.09

SVEUČILIŠTE U SPLITU
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ARHITEKTURE I GEODEZIJE
21000 SPLIT, MATICE HRVATSKE 15

ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

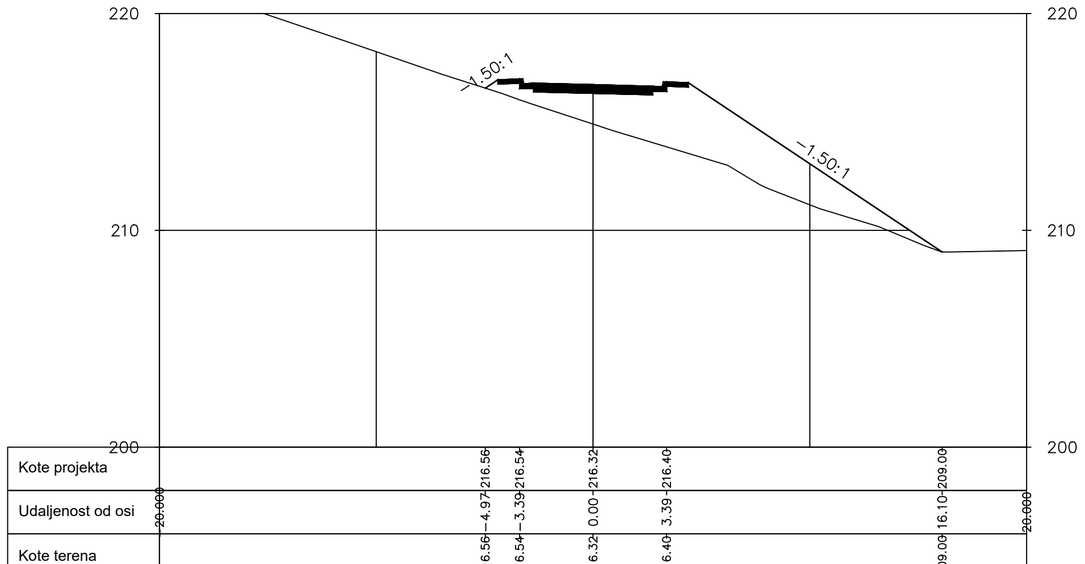
STUDENT: Josipa Šerić

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

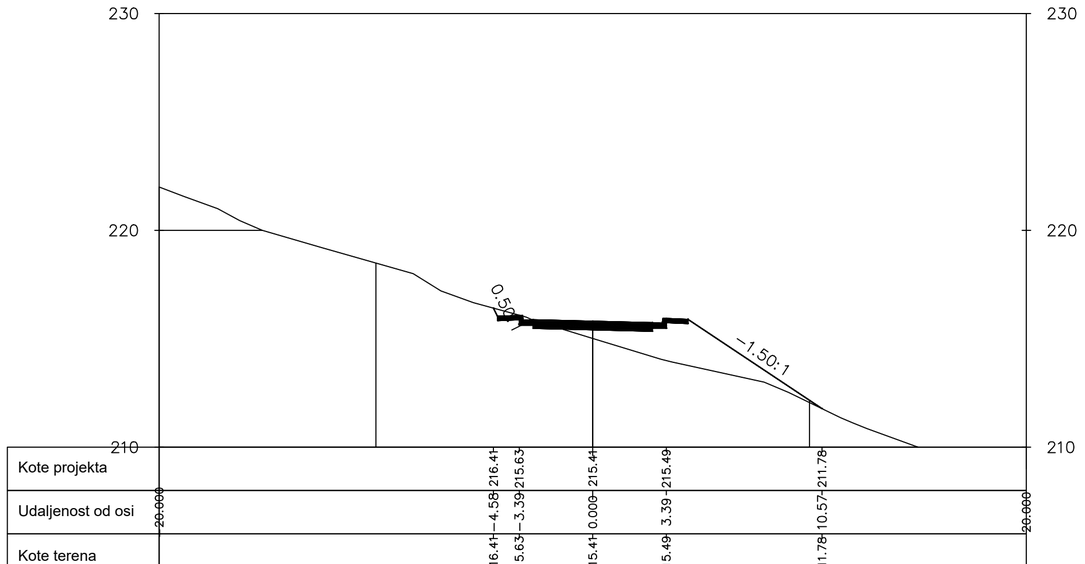
DATUM: travanj 2020

0+320.00



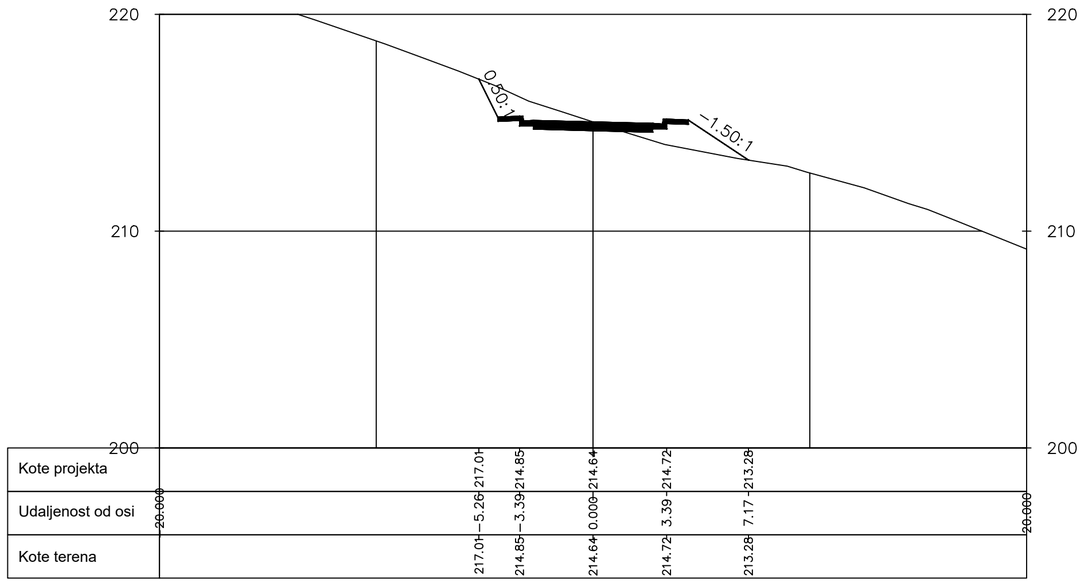
Kote projekta		216.56	216.54	216.32	216.40		209.09	
Udaljenost od osi	20.000	-4.97	-3.39	0.00	3.39		16.10	20.000
Kote terena		216.56	216.54	216.32	216.40		209.09	

0+340.00



Kote projekta		216.41	215.63	215.41	215.49		211.78	
Udaljenost od osi	20.000	-4.58	-3.39	0.000	3.39		10.57	20.000
Kote terena		216.41	215.63	215.41	215.49		211.78	

0+356.94



Kote projekta		217.01	214.85	214.64	214.72		213.28	
Udaljenost od osi	20.000	-5.26	-3.39	0.000	3.39		7.17	20.000
Kote terena		217.01	214.85	214.64	214.72		213.28	

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21000 SPLIT, MATICE HRVATSKE 15

ZAVRŠNI RAD

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENT: Josipa Šerić

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

DATUM: travanj 2020

7. Obrada na računalu

Za izradu projektnog zadatka korišten je softver za projektiranje cesta Autodesk Autocad Civil 3D. Postupak projektiranja trasa na računalu vrlo je sličan sa postupkom pri ručnoj izradi, ali je mnogo brži i jednostavniji.

Prvi korak pri izradi idejnog projekta ceste na računalu je umetanjeg skeniranog terena u AutoCAD te njegovo skaliranje u pravo mjerilo na kojem će se postaviti dionica ceste. Zatim smo iscrtavali slojnice terena pomoću polilinija i svakoj slojnici zadali njezinu nadmorsku visinu. Od konstruiranih slojnica radi se 3D model terena na način da se svakoj slojnici pridruži niz točaka koje kasnije formiraju prostorni prikaz terena.

Sljedeće je ubacivanje tangenti, postavljanje prijelaznih krivina te kružnih lukova kako bi mogli dobiti horizontalne elemente ceste.

Nakon toga slijedi izračun dijagrama vitoperenja kao i izrada uzdužnog presjeka ceste. Prilikom izrade niveletu postavljamo tako da se riješe geometrijski i sigurnosni elementi i odvodnja te između tangenti nivelete interpoliramo odgovarajuću vertikalnu kružnu krivinu.

Sljedeći korak je definiranje poprečnih profila trase. Poprečnim presjekom definirani su:

- Poprečni nagib
- Širina kolnika
- Pokosi nasipa
- Pokosi usjeka

Zatim definiramo 3D model terena (koridor) pomoću definirane osi trase, nivelete i poprečnog presjeka. Time smo dobili poprečne presjeke u svim zadanim i karakterističnim točkama osi ceste.

Za zadnji korak radimo ispis točaka osi naše ceste i računamo ukupnu količinu radova na temelju naših presjeka.

8. Računalni ispis točaka osi

8.1. Koordinatni račun glavnih točaka osi

Alignment Station and Curve Report

Client: Client Company

Project Name: C:\Users\User\AppData\Local\Temp\ZRjš_1_18315_ba6d8ec5.sv$

Project Description:

Report Date: 9/4/2020 6:03:19 PM

Prepared by: Preparer

Alignment: os_1_(1)

Description:

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+00.000	-65537.596	233619.586
End:	0+39.189	-65540.595	233658.660

Tangent Data

Parameter	Value	Parameter	Value
Length:	39.189	Course:	S 85° 36' 40.8089" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	0+39.189	-65540.595	233658.660
SPI:		-65542.646	233685.382
SC:	0+79.189	-65539.564	233698.479

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	40.000	L Tan:	26.800
Radius:	65.000	S Tan:	13.455
Theta:	17° 37' 46.0942"	P:	1.022
X:	39.623	K:	19.937
Y:	4.075	A:	50.990
Chord:	39.832	Course:	N 88° 31' 00.8209" E

Curve Point Data

Description	Station	Northing	Easting

SC:	0+79.189	-65539.564	233698.479
RP:		-65476.292	233683.591
CS:	1+07.758	-65527.216	233723.987

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	25° 10' 58.7807"	Type:	LEFT
Radius:	65.000		
Length:	28.569	Tangent:	14.519
Mid-Ord:	1.563	External:	1.602
Chord:	28.340	Course:	N 64° 10' 03.7065" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	1+07.758	-65527.216	233723.987
SPI:		-65518.854	233734.528
ST:	1+47.758	-65496.622	233749.493

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	40.000	L Tan:	26.800
Radius:	65.000	S Tan:	13.455
Theta:	17° 37' 46.0942"	P:	1.022
X:	39.623	K:	19.937
Y:	4.075	A:	50.990
Chord:	39.832	Course:	N 39° 49' 06.5921" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	1+47.758	-65496.622	233749.493
End:	1+67.436	-65480.298	233760.482

Tangent Data

Parameter	Value	Parameter	Value
Length:	19.678	Course:	N 33° 56' 48.2219" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	1+67.436	-65480.298	233760.482
SPI:		-65463.609	233771.716
SC:	1+97.436	-65457.533	233779.793

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 40° 18' 24.9180" E

Curve Point Data

Description	Station	Northing	Easting
SC:	1+97.436	-65457.533	233779.793
RP:		-65493.493	233806.846
CS:	2+51.016	-65455.028	233830.201

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	68° 13' 11.2118"	Type:	RIGHT
Radius:	45.000		
Length:	53.580	Tangent:	30.479
Mid-Ord:	7.742	External:	9.350
Chord:	50.470	Course:	N 87° 09' 18.7632" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	2+51.016	-65455.028	233830.201
SPI:		-65460.273	233838.840
ST:	2+81.016	-65475.766	233851.673

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 45° 59' 47.3915" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+81.016	-65475.766	233851.673
End:	3+56.943	-65534.239	233900.109

Tangent Data

Parameter	Value	Parameter	Value
Length:	75.928	Course:	S 39° 38' 10.6954" E

Alignment: os 1 (1)-Left-2.750

Description:

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+00.000	-65534.854	233619.797
End:	0+39.189	-65537.853	233658.871

Tangent Data

Parameter	Value	Parameter	Value
Length:	39.189	Course:	S 85° 36' 40.8089" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+39.189	-65537.853	233658.871
End:	0+52.425	-65538.287	233672.099

Tangent Data

Parameter	Value	Parameter	Value
Length:	13.236	Course:	S 88° 07' 23.5276" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+52.425	-65538.287	233672.099
End:	0+65.409	-65537.818	233685.075

Tangent Data

Parameter	Value	Parameter	Value
Length:	12.984	Course:	N 87° 55' 53.5821" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+65.409	-65537.818	233685.075
End:	0+78.077	-65535.632	233697.553

Tangent Data

Parameter	Value	Parameter	Value
Length:	12.669	Course:	N 80° 03' 42.4033" E

Curve Point Data

Description	Station	Northing	Easting
PC:	0+78.077	-65535.632	233697.553
RP:		-65476.292	233683.591
PCC:	1+04.871	-65524.050	233721.476

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	25° 10' 58.7807"	Type:	LEFT
Radius:	60.960		
Length:	26.794	Tangent:	13.617
Mid-Ord:	1.466	External:	1.502
Chord:	26.578	Course:	N 64° 10' 03.7065" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+04.871	-65524.050	233721.476
RP:		-65517.783	233716.504
PCC:	1+04.891	-65524.038	233721.492

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	00° 08' 44.9197"	Type:	LEFT
Radius:	8.000		
Length:	0.020	Tangent:	0.010
Mid-Ord:	0.000	External:	0.000
Chord:	0.020	Course:	N 51° 30' 11.8564" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+04.891	-65524.038	233721.492
RP:		-65435.412	233650.820
PCC:	1+43.025	-65495.741	233746.786

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	19° 16' 29.7751"	Type:	LEFT
Radius:	113.354		
Length:	38.133	Tangent:	19.249

Mid-Ord:	1.600	External:	1.623
Chord:	37.954	Course:	N 41° 47' 34.5089" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+43.025	-65495.741	233746.786
RP:		-65509.046	233767.951
PT:	1+43.806	-65495.086	233747.212

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	01° 47' 28.6005"	Type:	RIGHT
Radius:	25.000		
Length:	0.782	Tangent:	0.391
Mid-Ord:	0.003	External:	0.003
Chord:	0.782	Course:	N 33° 03' 03.9217" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	1+43.806	-65495.086	233747.212
End:	1+63.484	-65478.762	233758.201

Tangent Data

Parameter	Value	Parameter	Value
Length:	19.678	Course:	N 33° 56' 48.2219" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	1+63.484	-65478.762	233758.201
SPI:		-65461.689	233769.693
SC:	1+94.401	-65455.335	233778.139

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.917	L Tan:	20.725
Radius:	47.750	S Tan:	10.410
Theta:	18° 32' 55.0813"	P:	0.831
X:	30.594	K:	15.404
Y:	3.311	A:	38.422
Chord:	30.763	Course:	N 40° 24' 05.2595" E

Curve Point Data

Description	Station	Northing	Easting
SC:	1+94.401	-65455.335	233778.139
RP:		-65493.493	233806.846
CS:	2+51.255	-65452.677	233831.628

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	68° 13' 11.2118"	Type:	RIGHT
Radius:	47.750		
Length:	56.854	Tangent:	32.341
Mid-Ord:	8.215	External:	9.922
Chord:	53.555	Course:	N 87° 09' 18.7632" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	2+51.255	-65452.677	233831.628
SPI:		-65458.163	233840.663
ST:	2+82.171	-65474.012	233853.791

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.917	L Tan:	20.725
Radius:	47.750	S Tan:	10.410
Theta:	18° 32' 55.0813"	P:	0.831
X:	30.594	K:	15.404
Y:	3.311	A:	38.422
Chord:	30.763	Course:	S 46° 05' 27.7330" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+82.171	-65474.012	233853.791
End:	3+58.099	-65532.485	233902.226

Tangent Data

Parameter	Value	Parameter	Value
Length:	75.928	Course:	S 39° 38' 10.6954" E

Alignment: os 1 (1)-Right-2.750

Description:

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+00.000	-65540.338	233619.376
End:	0+39.189	-65543.337	233658.450

Tangent Data

Parameter	Value	Parameter	Value
Length:	39.189	Course:	S 85° 36' 40.8089" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	0+39.189	-65543.337	233658.450
SPI:		-65545.421	233685.596
SC:	0+80.035	-65542.241	233699.109

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	40.846	L Tan:	27.362
Radius:	67.750	S Tan:	13.734
Theta:	17° 16' 18.0370"	P:	1.023
X:	40.477	K:	20.361
Y:	4.078	A:	52.605
Chord:	40.674	Course:	N 88° 27' 21.3797" E

Curve Point Data

Description	Station	Northing	Easting
SC:	0+80.035	-65542.241	233699.109
RP:		-65476.292	233683.591
CS:	1+09.813	-65529.370	233725.696

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	25° 10' 58.7807"	Type:	LEFT
Radius:	67.750		
Length:	29.778	Tangent:	15.133
Mid-Ord:	1.629	External:	1.670
Chord:	29.539	Course:	N 64° 10' 03.7065" E

Spiral Point Data

Description	Station	Northing	Easting

CS:	1+09.813	-65529.370	233725.696
SPI:		-65520.743	233736.571
ST:	1+50.659	-65498.157	233751.775

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	40.846	L Tan:	27.362
Radius:	67.750	S Tan:	13.734
Theta:	17° 16' 18.0370"	P:	1.023
X:	40.477	K:	20.361
Y:	4.078	A:	52.605
Chord:	40.674	Course:	N 39° 52' 46.0333" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	1+50.659	-65498.157	233751.775
End:	1+70.337	-65481.833	233762.763

Tangent Data

Parameter	Value	Parameter	Value
Length:	19.678	Course:	N 33° 56' 48.2219" E

Curve Point Data

Description	Station	Northing	Easting
PC:	1+70.337	-65481.833	233762.763
RP:		-65486.301	233769.400
PCC:	1+70.362	-65481.813	233762.777

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	00° 10' 40.8857"	Type:	RIGHT
Radius:	8.000		
Length:	0.025	Tangent:	0.012
Mid-Ord:	0.000	External:	0.000
Chord:	0.025	Course:	N 34° 02' 08.6649" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+70.362	-65481.813	233762.777
RP:		-65529.219	233832.730
PCC:	1+98.879	-65461.325	233782.419

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	19° 20' 08.3115"	Type:	RIGHT
Radius:	84.503		
Length:	28.517	Tangent:	14.396
Mid-Ord:	1.200	External:	1.217
Chord:	28.382	Course:	N 43° 47' 33.2634" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+98.879	-65461.325	233782.419
RP:		-65441.239	233767.535
PCC:	1+99.060	-65461.217	233782.564

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	00° 24' 54.2618"	Type:	LEFT
Radius:	25.000		
Length:	0.181	Tangent:	0.091
Mid-Ord:	0.000	External:	0.000
Chord:	0.181	Course:	N 53° 15' 10.2882" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	1+99.060	-65461.217	233782.564
RP:		-65493.493	233806.846
PCC:	2+47.151	-65458.968	233827.808

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	68° 13' 11.2118"	Type:	RIGHT
Radius:	40.390		
Length:	48.091	Tangent:	27.356
Mid-Ord:	6.949	External:	8.392
Chord:	45.300	Course:	N 87° 09' 18.7632" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	2+47.151	-65458.968	233827.808
RP:		-65437.599	233840.783
PCC:	2+48.423	-65459.600	233828.912

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	02° 54' 52.7469"	Type:	LEFT
Radius:	25.000		
Length:	1.272	Tangent:	0.636
Mid-Ord:	0.008	External:	0.008
Chord:	1.272	Course:	S 60° 11' 32.0043" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	2+48.423	-65459.600	233828.912
RP:		-65513.424	233799.870
PCC:	2+70.937	-65473.658	233846.335

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	21° 05' 31.4460"	Type:	RIGHT
Radius:	61.159		
Length:	22.514	Tangent:	11.386
Mid-Ord:	1.033	External:	1.051
Chord:	22.387	Course:	S 51° 06' 12.6547" E

Curve Point Data

Description	Station	Northing	Easting
PCC:	2+70.937	-65473.658	233846.335
RP:		-65478.859	233840.257
CS:	2+70.991	-65473.699	233846.371

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	00° 23' 29.4757"	Type:	RIGHT
Radius:	8.000		
Length:	0.055	Tangent:	0.027
Mid-Ord:	0.000	External:	0.000
Chord:	0.055	Course:	S 40° 21' 42.1938" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	2+70.991	-65473.699	233846.371
SPI:		-65474.963	233847.437
ST:	2+75.966	-65477.520	233849.556

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	4.974	L Tan:	3.316
Radius:	267.254	S Tan:	1.658
Theta:	00° 31' 59.6268"	P:	0.004
X:	4.974	K:	2.487
Y:	0.015	A:	36.462
Chord:	4.974	Course:	S 39° 48' 45.6661" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+75.966	-65477.520	233849.556
End:	3+51.894	-65535.993	233897.991

Tangent Data

Parameter	Value	Parameter	Value
Length:	75.928	Course:	S 39° 38' 10.6954" E

8.2. Koordinatni račun detaljnih točaka osi

Alignment Name: os 1 (1)
Description:
Station Range: Start: 0+000.00, End: 0+356.94
Station Increment: 20.00

Station	Northing	Easting	Tangential Direction
0+000.00	-65,537.5964m	233,619.5862m	S85° 36' 41"E
0+020.00	-65,539.1268m	233,639.5275m	S85° 36' 41"E
0+040.00	-65,540.6572m	233,659.4689m	S85° 37' 07"E
0+060.00	-65,541.6108m	233,679.4401m	N89° 37' 00"E
0+080.00	-65,539.3736m	233,699.2671m	N76° 02' 39"E
0+100.00	-65,531.6632m	233,717.6357m	N58° 24' 53"E
0+120.00	-65,518.8335m	233,732.8911m	N42° 26' 12"E
0+140.00	-65,503.0405m	233,745.1363m	N34° 36' 36"E
0+160.00	-65,486.4662m	233,756.3295m	N33° 56' 48"E
0+180.00	-65,470.0153m	233,767.6986m	N37° 17' 48"E
0+200.00	-65,456.0504m	233,781.8845m	N56° 18' 36"E
0+220.00	-65,448.9556m	233,800.4080m	N81° 46' 29"E
0+240.00	-65,450.5144m	233,820.1825m	S72° 45' 37"E
0+260.00	-65,460.3547m	233,837.4223m	S49° 00' 31"E
0+280.00	-65,474.9842m	233,851.0254m	S39° 39' 29"E
0+300.00	-65,490.3863m	233,863.7838m	S39° 38' 11"E
0+320.00	-65,505.7885m	233,876.5420m	S39° 38' 11"E
0+340.00	-65,521.1907m	233,889.3002m	S39° 38' 11"E
0+356.94	-65,534.2363m	233,900.1065m	S39° 38' 11"E

8.3. Račun kota kolnika

Corridor Name: koridor0123
Description:
Base Alignment Name: os 1 (1)
Station Range: Start: 0+000.00, End: 0+356.94

CHAINAGE 0+000.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,619.9741	-65,532.5420	231.5811	-5.069m	Daylight
2	233,619.9222	-65,533.2176	230.2260	-4.392m	Ditch_Out
3	233,619.9222	-65,533.2186	230.0260	-4.391m	EPS_Sub
4	233,619.8457	-65,534.2146	230.2660	-3.392m	Back_Curb
5	233,619.8342	-65,534.3642	230.2660	-3.242m	Top_Curb
6	233,619.8311	-65,534.4058	230.0410	-3.200m	Flowline_Gutter
7	233,619.7966	-65,534.8545	229.6680	-2.750m	ETW_SubBase
8	233,619.7966	-65,534.8545	230.0680	-2.750m	Flange
9	233,619.3757	-65,540.3383	229.9305	2.750m	Flange
10	233,619.3757	-65,540.3383	229.5305	2.750m	ETW_SubBase
11	233,619.3413	-65,540.7870	229.9035	3.200m	Flowline_Gutter
12	233,619.3381	-65,540.8286	230.1285	3.242m	Top_Curb
13	233,619.3266	-65,540.9782	230.1285	3.392m	Back_Curb
14	233,619.2502	-65,541.9742	229.8885	4.391m	EPS_Sub
15	233,619.2501	-65,541.9752	230.0885	4.392m	Hinge
16	233,618.8743	-65,546.8716	226.8146	9.302m	Daylight

CHAINAGE 0+020.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,639.9720	-65,533.3353	232.3081	-5.809m	Daylight
2	233,639.8636	-65,534.7480	229.4744	-4.392m	Ditch_Out
3	233,639.8635	-65,534.7490	229.2744	-4.391m	EPS_Sub
4	233,639.7871	-65,535.7451	229.5144	-3.392m	Back_Curb
5	233,639.7756	-65,535.8946	229.5144	-3.242m	Top_Curb
6	233,639.7724	-65,535.9362	229.2894	-3.200m	Flowline_Gutter
7	233,639.7380	-65,536.3849	228.9164	-2.750m	ETW_SubBase
8	233,639.7380	-65,536.3849	229.3164	-2.750m	Flange
9	233,639.3171	-65,541.8688	229.1789	2.750m	Flange
10	233,639.3171	-65,541.8688	228.7789	2.750m	ETW_SubBase
11	233,639.2827	-65,542.3175	229.1519	3.200m	Flowline_Gutter

12	233,639.2795	-65,542.3590	229.3769	3.242m	Top_Curb
13	233,639.2680	-65,542.5086	229.3769	3.392m	Back_Curb
14	233,639.1916	-65,543.5047	229.1369	4.391m	EPS_Sub
15	233,639.1915	-65,543.5057	229.3369	4.392m	Hinge
16	233,639.1569	-65,543.9557	229.0359	4.843m	Daylight

CHAINAGE 0+040.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,659.9295	-65,534.6453	231.9283	-6.030m	Daylight
2	233,659.8071	-65,536.2429	228.7237	-4.427m	EPS
3	233,659.8070	-65,536.2439	228.5237	-4.426m	EPS_Sub
4	233,659.7307	-65,537.2400	228.7637	-3.427m	Back_Curb
5	233,659.7193	-65,537.3896	228.7637	-3.277m	Top_Curb
6	233,659.7161	-65,537.4312	228.5387	-3.236m	Flowline_Gutter
7	233,659.6817	-65,537.8798	228.5657	-2.786m	ETW
8	233,659.6817	-65,537.8798	228.1657	-2.786m	ETW_SubBase
9	233,659.2588	-65,543.3990	228.0273	2.750m	ETW_SubBase
10	233,659.2588	-65,543.3990	228.4273	2.750m	ETW
11	233,659.2245	-65,543.8477	228.4003	3.200m	Flowline_Gutter
12	233,659.2213	-65,543.8892	228.6253	3.241m	Top_Curb
13	233,659.2098	-65,544.0388	228.6253	3.391m	Back_Curb
14	233,659.1335	-65,545.0349	228.3853	4.390m	EPS_Sub
15	233,659.1334	-65,545.0359	228.5853	4.391m	Hinge_Cut
16	233,659.1256	-65,545.1384	228.7909	4.494m	Daylight

CHAINAGE 0+060.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,679.3931	-65,534.5914	231.5710	-7.020m	Daylight
2	233,679.4051	-65,536.3808	227.9921	-5.230m	EPS
3	233,679.4051	-65,536.3818	227.7921	-5.229m	EPS_Sub
4	233,679.4117	-65,537.3808	228.0321	-4.230m	Back_Curb
5	233,679.4128	-65,537.5308	228.0321	-4.080m	Top_Curb
6	233,679.4130	-65,537.5725	227.8071	-4.038m	Flowline_Gutter
7	233,679.4160	-65,538.0225	227.8341	-3.588m	ETW
8	233,679.4160	-65,538.0225	227.4341	-3.588m	ETW_SubBase
9	233,679.4585	-65,544.3609	227.2757	2.750m	ETW_SubBase
10	233,679.4585	-65,544.3609	227.6757	2.750m	ETW
11	233,679.4615	-65,544.8109	227.6487	3.200m	Flowline_Gutter
12	233,679.4618	-65,544.8526	227.8737	3.242m	Top_Curb

13	233,679.4628	-65,545.0026	227.8737	3.392m	Back_Curb
14	233,679.4694	-65,546.0016	227.6337	4.391m	EPS_Sub
15	233,679.4694	-65,546.0026	227.8337	4.392m	Hinge_Cut
16	233,679.4722	-65,546.4131	228.6547	4.802m	Daylight

CHAINAGE 0+080.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,697.5177	-65,532.3337	230.3964	-7.254m	Daylight
2	233,697.8969	-65,533.8596	227.2518	-5.682m	EPS
3	233,697.8971	-65,533.8605	227.0518	-5.681m	EPS_Sub
4	233,698.1380	-65,534.8301	227.2918	-4.682m	Back_Curb
5	233,698.1742	-65,534.9756	227.2918	-4.532m	Top_Curb
6	233,698.1843	-65,535.0161	227.0668	-4.490m	Flowline_Gutter
7	233,698.2928	-65,535.4528	227.0938	-4.040m	ETW
8	233,698.2928	-65,535.4528	226.6938	-4.040m	ETW_SubBase
9	233,699.9304	-65,542.0424	226.5241	2.750m	ETW_SubBase
10	233,699.9304	-65,542.0424	226.9241	2.750m	ETW
11	233,700.0389	-65,542.4791	226.8971	3.200m	Flowline_Gutter
12	233,700.0489	-65,542.5196	227.1221	3.242m	Top_Curb
13	233,700.0851	-65,542.6651	227.1221	3.392m	Back_Curb
14	233,700.3261	-65,543.6347	226.8821	4.391m	EPS_Sub
15	233,700.3263	-65,543.6356	227.0821	4.392m	Hinge_Cut
16	233,700.3765	-65,543.8377	227.4985	4.600m	Daylight

CHAINAGE 0+100.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,713.9790	-65,525.7159	229.1000	-6.982m	Daylight
2	233,714.6598	-65,526.8232	226.5002	-5.682m	Ditch_Out
3	233,714.6604	-65,526.8241	226.3002	-5.681m	EPS_Sub
4	233,715.1836	-65,527.6751	226.5402	-4.682m	Back_Curb
5	233,715.2622	-65,527.8029	226.5402	-4.532m	Top_Curb
6	233,715.2840	-65,527.8384	226.3152	-4.490m	Flowline_Gutter
7	233,715.5197	-65,528.2217	225.9422	-4.040m	ETW_SubBase
8	233,715.5197	-65,528.2217	226.3422	-4.040m	Flange
9	233,719.0761	-65,534.0059	226.1725	2.750m	Flange
10	233,719.0761	-65,534.0059	225.7725	2.750m	ETW_SubBase
11	233,719.3118	-65,534.3892	226.1455	3.200m	Flowline_Gutter
12	233,719.3336	-65,534.4247	226.3705	3.242m	Top_Curb
13	233,719.4122	-65,534.5525	226.3705	3.392m	Back_Curb

14	233,719.9354	-65,535.4035	226.1305	4.391m	EPS_Sub
15	233,719.9359	-65,535.4044	226.3305	4.392m	Hinge
16	233,720.3451	-65,536.0698	225.8097	5.173m	Daylight

CHAINAGE 0+120.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,728.3730	-65,514.7026	227.3401	-6.122m	Daylight
2	233,728.9660	-65,515.2449	225.7329	-5.318m	Ditch_Out
3	233,728.9668	-65,515.2456	225.5329	-5.317m	EPS_Sub
4	233,729.7041	-65,515.9197	225.7729	-4.318m	Back_Curb
5	233,729.8148	-65,516.0209	225.7729	-4.168m	Top_Curb
6	233,729.8455	-65,516.0490	225.5479	-4.127m	Flowline_Gutter
7	233,730.1776	-65,516.3527	225.1749	-3.677m	ETW_SubBase
8	233,730.1776	-65,516.3527	225.5749	-3.677m	Flange
9	233,734.9202	-65,520.6888	225.4142	2.749m	Flange
10	233,734.9202	-65,520.6888	225.0142	2.749m	ETW_SubBase
11	233,735.2523	-65,520.9924	225.3872	3.199m	Flowline_Gutter
12	233,735.2831	-65,521.0206	225.6122	3.241m	Top_Curb
13	233,735.3938	-65,521.1218	225.6122	3.391m	Back_Curb
14	233,736.1311	-65,521.7959	225.3722	4.390m	EPS_Sub
15	233,736.1318	-65,521.7965	225.5722	4.391m	Hinge
16	233,738.5230	-65,523.9827	223.4123	7.631m	Daylight

CHAINAGE 0+140.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,740.9513	-65,500.1524	226.4021	-5.085m	Daylight
2	233,741.5598	-65,500.5724	224.9232	-4.345m	Ditch_Out
3	233,741.5607	-65,500.5729	224.7232	-4.344m	EPS_Sub
4	233,742.3829	-65,501.1404	224.9632	-3.345m	Back_Curb
5	233,742.5063	-65,501.2255	224.9632	-3.195m	Top_Curb
6	233,742.5407	-65,501.2492	224.7382	-3.154m	Flowline_Gutter
7	233,742.9110	-65,501.5048	224.3652	-2.704m	ETW_SubBase
8	233,742.9110	-65,501.5048	224.7652	-2.704m	Flange
9	233,747.3996	-65,504.6025	224.6288	2.750m	Flange
10	233,747.3996	-65,504.6025	224.2288	2.750m	ETW_SubBase
11	233,747.7700	-65,504.8580	224.6018	3.200m	Flowline_Gutter
12	233,747.8043	-65,504.8817	224.8268	3.242m	Top_Curb
13	233,747.9278	-65,504.9669	224.8268	3.392m	Back_Curb
14	233,748.7500	-65,505.5343	224.5868	4.391m	EPS_Sub

15	233,748.7508	-65,505.5349	224.7868	4.392m	Hinge
16	233,751.4857	-65,507.4223	222.5715	7.715m	Daylight

CHAINAGE 0+160.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,751.4705	-65,483.1953	227.0416	-5.857m	Daylight
2	233,752.6863	-65,484.0137	224.1103	-4.392m	Ditch_Out
3	233,752.6871	-65,484.0143	223.9103	-4.391m	EPS_Sub
4	233,753.5159	-65,484.5722	224.1503	-3.392m	Back_Curb
5	233,753.6403	-65,484.6559	224.1503	-3.242m	Top_Curb
6	233,753.6749	-65,484.6792	223.9253	-3.200m	Flowline_Gutter
7	233,754.0482	-65,484.9305	223.5523	-2.750m	ETW_SubBase
8	233,754.0482	-65,484.9305	223.9523	-2.750m	Flange
9	233,758.6108	-65,488.0018	223.8148	2.750m	Flange
10	233,758.6108	-65,488.0018	223.4148	2.750m	ETW_SubBase
11	233,758.9841	-65,488.2531	223.7878	3.200m	Flowline_Gutter
12	233,759.0187	-65,488.2764	224.0128	3.242m	Top_Curb
13	233,759.1431	-65,488.3601	224.0128	3.392m	Back_Curb
14	233,759.9718	-65,488.9180	223.7728	4.391m	EPS_Sub
15	233,759.9727	-65,488.9186	223.9728	4.392m	Hinge
16	233,761.6138	-65,490.0233	222.6539	6.370m	Daylight

CHAINAGE 0+180.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,762.4213	-65,465.9955	227.7522	-6.634m	Daylight
2	233,764.2050	-65,467.3542	223.2676	-4.392m	EPS
3	233,764.2058	-65,467.3548	223.0676	-4.391m	EPS_Sub
4	233,765.0006	-65,467.9602	223.3076	-3.392m	Back_Curb
5	233,765.1199	-65,468.0511	223.3076	-3.242m	Top_Curb
6	233,765.1531	-65,468.0763	223.0826	-3.200m	Flowline_Gutter
7	233,765.5110	-65,468.3490	223.1096	-2.750m	ETW
8	233,765.5110	-65,468.3490	222.7096	-2.750m	ETW_SubBase
9	233,770.4469	-65,472.1086	222.5545	3.455m	ETW_SubBase
10	233,770.4469	-65,472.1086	222.9545	3.455m	ETW
11	233,770.8049	-65,472.3813	222.9275	3.905m	Flowline_Gutter
12	233,770.8380	-65,472.4066	223.1525	3.946m	Top_Curb
13	233,770.9574	-65,472.4975	223.1525	4.096m	Back_Curb
14	233,771.7521	-65,473.1028	222.9125	5.095m	EPS_Sub
15	233,771.7529	-65,473.1034	223.1125	5.096m	Hinge_Cut

16	233,771.8573	-65,473.1830	223.3750	5.228m	Daylight

CHAINAGE 0+200.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,778.9994	-65,451.7229	224.0149	-5.201m	Daylight
2	233,779.4484	-65,452.3963	222.3963	-4.392m	Ditch_Out
3	233,779.4489	-65,452.3971	222.1963	-4.391m	EPS_Sub
4	233,780.0031	-65,453.2284	222.4363	-3.392m	Back_Curb
5	233,780.0863	-65,453.3532	222.4363	-3.242m	Top_Curb
6	233,780.1094	-65,453.3879	222.2113	-3.200m	Flowline_Gutter
7	233,780.3590	-65,453.7623	221.8383	-2.750m	ETW_SubBase
8	233,780.3590	-65,453.7623	222.2383	-2.750m	Flange
9	233,784.4416	-65,459.8862	222.0543	4.610m	Flange
10	233,784.4416	-65,459.8862	221.6543	4.610m	ETW_SubBase
11	233,784.6912	-65,460.2606	222.0273	5.060m	Flowline_Gutter
12	233,784.7144	-65,460.2953	222.2523	5.102m	Top_Curb
13	233,784.7976	-65,460.4201	222.2523	5.252m	Back_Curb
14	233,785.3517	-65,461.2513	222.0123	6.251m	EPS_Sub
15	233,785.3523	-65,461.2522	222.2123	6.252m	Hinge
16	233,787.4286	-65,464.3667	219.7168	9.995m	Daylight

CHAINAGE 0+220.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,798.6002	-65,436.4491	216.0000	-12.637m	Daylight
2	233,799.7797	-65,444.6091	221.4966	-4.392m	Hinge
3	233,799.7799	-65,444.6101	221.2966	-4.391m	EPS_Sub
4	233,799.9228	-65,445.5988	221.5366	-3.392m	Back_Curb
5	233,799.9443	-65,445.7473	221.5366	-3.242m	Top_Curb
6	233,799.9502	-65,445.7886	221.3116	-3.200m	Flowline_Gutter
7	233,800.0146	-65,446.2339	220.9386	-2.750m	ETW_SubBase
8	233,800.0146	-65,446.2339	221.3386	-2.750m	Flange
9	233,801.0675	-65,453.5182	221.1546	4.610m	Flange
10	233,801.0675	-65,453.5182	220.7546	4.610m	ETW_SubBase
11	233,801.1319	-65,453.9636	221.1276	5.060m	Flowline_Gutter
12	233,801.1379	-65,454.0049	221.3526	5.102m	Top_Curb
13	233,801.1594	-65,454.1533	221.3526	5.252m	Back_Curb
14	233,801.3023	-65,455.1420	221.1126	6.251m	EPS_Sub
15	233,801.3024	-65,455.1430	221.3126	6.252m	EPS
16	233,802.9652	-65,466.6462	213.5641	17.874m	Daylight

CHAINAGE 0+240.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,822.0741	-65,444.4187	219.2591	-6.383m	Daylight
2	233,821.4840	-65,446.3200	220.5863	-4.392m	Hinge
3	233,821.4837	-65,446.3210	220.3863	-4.391m	EPS_Sub
4	233,821.1877	-65,447.2751	220.6263	-3.392m	Back_Curb
5	233,821.1432	-65,447.4184	220.6263	-3.242m	Top_Curb
6	233,821.1309	-65,447.4582	220.4013	-3.200m	Flowline_Gutter
7	233,820.9975	-65,447.8880	220.0283	-2.750m	ETW_SubBase
8	233,820.9975	-65,447.8880	220.4283	-2.750m	Flange
9	233,818.8162	-65,454.9173	220.2443	4.610m	Flange
10	233,818.8162	-65,454.9173	219.8443	4.610m	ETW_SubBase
11	233,818.6829	-65,455.3471	220.2173	5.060m	Flowline_Gutter
12	233,818.6705	-65,455.3869	220.4423	5.102m	Top_Curb
13	233,818.6260	-65,455.5302	220.4423	5.252m	Back_Curb
14	233,818.3300	-65,456.4843	220.2023	6.251m	EPS_Sub
15	233,818.3297	-65,456.4853	220.4023	6.252m	EPS
16	233,813.8582	-65,470.8951	210.3439	21.339m	Daylight

CHAINAGE 0+260.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,840.6306	-65,456.6630	219.3430	-4.891m	Daylight
2	233,840.3029	-65,457.0401	219.6761	-4.391m	Hinge
3	233,840.3022	-65,457.0408	219.4761	-4.390m	EPS_Sub
4	233,839.6469	-65,457.7949	219.7161	-3.391m	Back_Curb
5	233,839.5485	-65,457.9081	219.7161	-3.241m	Top_Curb
6	233,839.5212	-65,457.9396	219.4911	-3.200m	Flowline_Gutter
7	233,839.2260	-65,458.2793	219.1181	-2.750m	ETW_SubBase
8	233,839.2260	-65,458.2793	219.5181	-2.750m	Flange
9	233,834.8815	-65,463.2785	219.3525	3.874m	Flange
10	233,834.8815	-65,463.2785	218.9525	3.874m	ETW_SubBase
11	233,834.5863	-65,463.6182	219.3255	4.324m	Flowline_Gutter
12	233,834.5590	-65,463.6496	219.5505	4.365m	Top_Curb
13	233,834.4606	-65,463.7629	219.5505	4.515m	Back_Curb
14	233,833.8053	-65,464.5169	219.3105	5.514m	EPS_Sub
15	233,833.8046	-65,464.5177	219.5105	5.515m	EPS
16	233,823.4632	-65,476.4177	209.0000	21.281m	Daylight

CHAINAGE 0+280.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,854.9699	-65,471.7142	218.2775	-5.124m	Daylight
2	233,854.4061	-65,472.1817	218.7658	-4.391m	Hinge
3	233,854.4053	-65,472.1823	218.5658	-4.390m	EPS_Sub
4	233,853.6362	-65,472.8199	218.8058	-3.391m	Back_Curb
5	233,853.5207	-65,472.9156	218.8058	-3.241m	Top_Curb
6	233,853.4886	-65,472.9422	218.5808	-3.200m	Flowline_Gutter
7	233,853.1422	-65,473.2294	218.2078	-2.750m	ETW_SubBase
8	233,853.1422	-65,473.2294	218.6078	-2.750m	Flange
9	233,848.9083	-65,476.7393	218.4703	2.750m	Flange
10	233,848.9083	-65,476.7393	218.0703	2.750m	ETW_SubBase
11	233,848.5618	-65,477.0264	218.4433	3.200m	Flowline_Gutter
12	233,848.5297	-65,477.0531	218.6683	3.242m	Top_Curb
13	233,848.4143	-65,477.1488	218.6683	3.392m	Back_Curb
14	233,847.6452	-65,477.7864	218.4283	4.391m	EPS_Sub
15	233,847.6444	-65,477.7870	218.6283	4.392m	EPS
16	233,837.1434	-65,486.4922	209.5350	18.032m	Daylight

CHAINAGE 0+300.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,867.9322	-65,486.9500	217.1921	-5.387m	Daylight
2	233,867.1658	-65,487.5848	217.8556	-4.392m	Hinge
3	233,867.1651	-65,487.5854	217.6556	-4.391m	EPS_Sub
4	233,866.3957	-65,488.2227	217.8956	-3.392m	Back_Curb
5	233,866.2802	-65,488.3184	217.8956	-3.242m	Top_Curb
6	233,866.2481	-65,488.3450	217.6706	-3.200m	Flowline_Gutter
7	233,865.9016	-65,488.6320	217.2976	-2.750m	ETW_SubBase
8	233,865.9016	-65,488.6320	217.6976	-2.750m	Flange
9	233,861.6660	-65,492.1405	217.5601	2.750m	Flange
10	233,861.6660	-65,492.1405	217.1601	2.750m	ETW_SubBase
11	233,861.3194	-65,492.4276	217.5331	3.200m	Flowline_Gutter
12	233,861.2873	-65,492.4542	217.7581	3.242m	Top_Curb
13	233,861.1718	-65,492.5499	217.7581	3.392m	Back_Curb
14	233,860.4024	-65,493.1872	217.5181	4.391m	EPS_Sub
15	233,860.4017	-65,493.1878	217.7181	4.392m	EPS
16	233,850.3309	-65,501.5298	209.0000	17.469m	Daylight

CHAINAGE 0+320.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,880.3723	-65,502.6156	216.5573	-4.974m	Daylight
2	233,879.9241	-65,502.9870	216.9453	-4.392m	Hinge
3	233,879.9233	-65,502.9876	216.7453	-4.391m	EPS_Sub
4	233,879.1540	-65,503.6249	216.9853	-3.392m	Back_Curb
5	233,879.0385	-65,503.7206	216.9853	-3.242m	Top_Curb
6	233,879.0063	-65,503.7472	216.7603	-3.200m	Flowline_Gutter
7	233,878.6598	-65,504.0342	216.3873	-2.750m	ETW_SubBase
8	233,878.6598	-65,504.0342	216.7873	-2.750m	Flange
9	233,874.4242	-65,507.5427	216.6498	2.750m	Flange
10	233,874.4242	-65,507.5427	216.2498	2.750m	ETW_SubBase
11	233,874.0776	-65,507.8298	216.6228	3.200m	Flowline_Gutter
12	233,874.0455	-65,507.8564	216.8478	3.242m	Top_Curb
13	233,873.9300	-65,507.9521	216.8478	3.392m	Back_Curb
14	233,873.1607	-65,508.5894	216.6078	4.391m	EPS_Sub
15	233,873.1599	-65,508.5900	216.8078	4.392m	EPS
16	233,864.1406	-65,516.0610	209.0000	16.103m	Daylight

CHAINAGE 0+340.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	233,892.8265	-65,518.2697	216.4096	-4.579m	Daylight
2	233,892.6823	-65,518.3891	216.0351	-4.392m	Ditch_Out
3	233,892.6816	-65,518.3898	215.8351	-4.391m	EPS_Sub
4	233,891.9122	-65,519.0270	216.0751	-3.392m	Back_Curb
5	233,891.7967	-65,519.1227	216.0751	-3.242m	Top_Curb
6	233,891.7646	-65,519.1493	215.8501	-3.200m	Flowline_Gutter
7	233,891.4180	-65,519.4364	215.4771	-2.750m	ETW_SubBase
8	233,891.4180	-65,519.4364	215.8771	-2.750m	Flange
9	233,887.1824	-65,522.9449	215.7396	2.750m	Flange
10	233,887.1824	-65,522.9449	215.3396	2.750m	ETW_SubBase
11	233,886.8359	-65,523.2320	215.7126	3.200m	Flowline_Gutter
12	233,886.8038	-65,523.2586	215.9376	3.242m	Top_Curb
13	233,886.6883	-65,523.3543	215.9376	3.392m	Back_Curb
14	233,885.9189	-65,523.9915	215.6976	4.391m	EPS_Sub
15	233,885.9181	-65,523.9922	215.8976	4.392m	Hinge
16	233,881.1569	-65,527.9361	211.7758	10.574m	Daylight

8.4. Vertikalni tok trase

Vertical Alignment: Layout (3)
Description:
Station Range: Start: 0+000.00, End: 0+356.94

PVI	Station	Grade Out	Curve Length
0.00	0+000.00	-3.76%	
1.00	0+161.79	-4.55%	110.764m

Vertical Curve Information:(crest curve)

PVC Station:	0+106.39	Elevation:	226.001m
PVI Station:	0+161.79	Elevation:	223.919m
PVT Station:	0+217.16	Elevation:	221.399m
High Point:	0+106.39	Elevation:	226.001m
Grade in:	-3.76%	Grade out:	-4.55%
Change:	0.79%	K:	
Curve Length:	110.764m		
Passing Distance:		Stopping Distance:	

9. Proračun količina zemljanih radova za troškovnik

Cut/Fill Report

Generated: 2020-09-04 18:27:09
By user: User
Drawing: C:\Users\User\Desktop\C:\Users\User\Desktop\ZR jš.dwg

Volume Summary

Name	Type	Cut Factor	Fill Factor	2d Area (sq.m)	Cut (Cu. M.)	Fill (Cu. M.)	Net (Cu. M.)
Surface3	full	1.000	1.000	5718.33	3296.97	7724.82	4427.85<Fill>

Totals

	2d Area (sq.m)	Cut (Cu. M.)	Fill (Cu. M.)	Net (Cu. M.)
Total	5718.33	3296.97	7724.82	4427.85<Fill>

* Value adjusted by cut or fill factor other than 1.0

10. Proračun količine radova po presjecima

Volume Report

Project: C:\Users\User\AppData\Local\Temp\ZR jš_1_18315_ba6d8ec5.sv$
Alignment: os 1 (1)
Sample Line Group: SL Collection - 6
Start Sta: 0+000.000
End Sta: 0+356.943

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	4.58	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00
0+020.000	15.04	196.21	196.21	0.03	55.33	196.21	196.21	55.33	140.87
0+039.189	17.78	314.97	314.97	0.00	0.32	511.17	511.17	55.65	455.52
0+039.190	17.79	0.02	0.02	0.00	0.00	511.19	511.19	55.65	455.54
0+040.000	18.22	14.58	14.58	0.00	0.00	525.78	525.78	55.65	470.13
0+052.522	26.15	277.85	277.85	0.00	0.00	803.62	803.62	55.65	747.97
0+060.000	26.38	196.41	196.41	0.00	0.00	1000.04	1000.04	55.65	944.38
0+065.855	23.43	145.83	145.83	0.00	0.00	1145.87	1145.87	55.65	1090.22
0+079.189	24.05	316.58	316.58	0.00	0.00	1462.45	1462.45	55.65	1406.80
0+079.190	24.05	0.03	0.03	0.00	0.00	1462.48	1462.48	55.65	1406.83
0+080.000	24.25	19.56	19.56	0.00	0.00	1482.04	1482.04	55.65	1426.39
0+093.473	21.14	305.75	305.75	0.00	0.00	1787.79	1787.79	55.65	1732.14
0+100.000	16.07	121.42	121.42	0.12	0.39	1909.21	1909.21	56.04	1853.17
0+106.394	14.65	98.20	98.20	0.59	2.26	2007.41	2007.41	58.30	1949.11
0+107.758	14.48	19.86	19.86	0.59	0.80	2027.27	2027.27	59.10	1968.17
0+107.760	14.48	0.03	0.03	0.59	0.00	2027.30	2027.30	59.10	1968.20

0+107.769	14.47	0.13	0.13	0.59	0.00	2027.43	2027.43	59.11	1968.32
0+107.780	14.47	0.16	0.16	0.59	0.00	2027.58	2027.58	59.11	1968.47
0+120.000	6.29	126.81	126.81	5.13	34.98	2154.40	2154.40	94.09	2060.31
0+127.697	3.71	38.48	38.48	6.43	44.48	2192.88	2192.88	138.57	2054.31
0+140.000	3.40	43.75	43.75	5.04	70.56	2236.64	2236.64	209.13	2027.51
0+146.976	4.07	26.06	26.06	3.36	29.33	2262.69	2262.69	238.45	2024.24
0+147.367	4.40	1.66	1.66	3.30	1.30	2264.35	2264.35	239.76	2024.59
0+147.758	4.74	1.79	1.79	3.24	1.28	2266.13	2266.13	241.03	2025.10
0+147.760	4.74	0.00	0.00	3.24	0.00	2266.14	2266.14	241.04	2025.10
0+160.000	13.63	112.43	112.43	1.31	27.85	2378.58	2378.58	268.89	2109.68
0+167.436	18.73	120.29	120.29	0.00	4.87	2498.87	2498.87	273.77	2225.10
0+167.437	18.73	0.02	0.02	0.00	0.00	2498.89	2498.89	273.77	2225.12
0+167.448	18.74	0.21	0.21	0.00	0.00	2499.10	2499.10	273.77	2225.33
0+167.461	18.75	0.24	0.24	0.00	0.00	2499.34	2499.34	273.77	2225.57
0+180.000	26.41	283.13	283.13	0.00	0.00	2782.47	2782.47	273.77	2508.70
0+181.939	27.42	52.19	52.19	0.00	0.00	2834.66	2834.66	273.77	2560.89
0+197.234	15.54	328.54	328.54	1.21	9.25	3163.20	3163.20	283.02	2880.17
0+197.335	15.37	1.56	1.56	1.29	0.13	3164.75	3164.75	283.15	2881.61
0+197.436	15.21	1.54	1.54	1.38	0.13	3166.30	3166.30	283.28	2883.01
0+200.000	8.32	30.17	30.17	4.68	7.77	3196.46	3196.46	291.05	2905.41
0+217.158	0.00	71.42	71.42	117.15	1045.20	3267.88	3267.88	1336.25	1931.63
0+220.000	0.00	0.00	0.00	137.63	362.04	3267.88	3267.88	1698.29	1569.59
0+224.226	0.00	0.00	0.00	140.92	588.54	3267.88	3267.88	2286.83	981.05
0+240.000	0.00	0.00	0.00	91.02	1829.37	3267.88	3267.88	4116.20	-848.31
0+251.016	0.00	0.00	0.00	65.61	862.66	3267.88	3267.88	4978.86	-1710.97
0+251.723	0.00	0.00	0.00	64.69	46.07	3267.88	3267.88	5024.93	-1757.05

0+252.427	0.00	0.00	0.00	63.46	45.10	3267.88	3267.88	5070.03	-1802.14
0+260.000	0.00	0.00	0.00	48.39	423.53	3267.88	3267.88	5493.55	-2225.67
0+264.445	0.00	0.00	0.00	41.43	199.63	3267.88	3267.88	5693.18	-2425.30
0+275.960	0.00	0.00	0.00	36.07	446.25	3267.88	3267.88	6139.43	-2871.55
0+275.988	0.00	0.00	0.00	36.09	0.99	3267.88	3267.88	6140.42	-2872.54
0+276.016	0.00	0.00	0.00	36.11	1.00	3267.88	3267.88	6141.42	-2873.54
0+280.000	0.00	0.00	0.00	39.47	150.57	3267.88	3267.88	6292.00	-3024.11
0+281.014	0.00	0.00	0.00	39.01	39.78	3267.88	3267.88	6331.77	-3063.89
0+281.016	0.00	0.00	0.00	39.00	0.07	3267.88	3267.88	6331.85	-3063.96
0+300.000	0.00	0.00	0.00	44.82	795.64	3267.88	3267.88	7127.49	-3859.61
0+320.000	0.00	0.00	0.00	33.08	778.95	3267.88	3267.88	7906.44	-4638.56
0+340.000	0.88	8.78	8.78	10.57	436.48	3276.66	3276.66	8342.92	-5066.25
0+356.943	5.22	51.69	51.69	3.62	120.23	3328.35	3328.35	8463.15	-5134.79

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