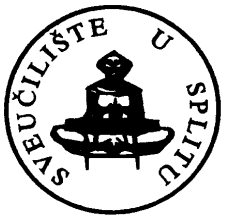
Idejni projekt dionice ceste

Ivanac, Antonio



SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE

ZAVRŠNI RAD

Antonio Ivanac

Split, 2020.

SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE I GEODEZIJE

IDEJNI PROJEKT DIONICE CESTE

Završni rad

Split, 2020.

SVEUČILIŠTE U SPLITU,
FAKULTET GRAĐEVINARSTA, ARHITEKTURE I GEODEZIJE

Split, Matice hrvatske 15

STUDIJ: **PREDDIPLOMSKI SVEUČULIŠNI STUDIJ GRAĐEVINARSTVA**

KANDIDAT: **Antonio Ivanac**

BROJ INDEKSA: **4603**

KATEDRA: **Katedra za prometnice i geodeziju**

PREDMET: **CESTE**

ZADATAK ZA ZAVRŠNI RAD

Tema: IDEJNI PROJEKT DIONICE CESTE

Opis zadatka: U programu CIVIL 3D 2018 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 kolegija Ceste.

Idejni projekt treba sadržavati:

1. Kopiju programskog zadatka
2. Tehnički opis
3. Građevinsku situaciju 1:1000
4. Uzdužni presjek 1:1000/100
5. Noramlni poprečni presjek 1:50
6. Karakteristične poprečne presjeke 1:200
7. Računalne ispise točaka osi
8. Račun kota kolnika
9. Vertikalni tok trase
10. Proračun količina zemljanih radova
11. Proračun količina radova po presjecima

U Splitu, rujan 2020.

Voditelj završnog rada: **Dr. sc. Dražen Cvitanić**

IDEJNI PROJEKT DIONICE CESTE

Sažetak:

Uz pomoć geodetske podloge korištene za izradu programskog zadatka iz kolegija Ceste u programu CIVIL 3D 2018 Metric izređen 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=40km/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 2018 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 = 40km / h.

Keywords:

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

Sadržaj:

1. PROGRAMSKI ZADATAK

SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA, ARHITEKTURE
I GEODEZIJE

Split, ak.god. 2019/2020.

Katedra za prometnice

Studij: Preddiplomski

Nastavni predmet: CESTE

Student/ica: ANTONIO IVANAC

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

- Izrađen je idejni projekt ceste na dionici koja se proteže od točke A(229) do točke B(215) duljine trase 423.63m. Cesta pripada 5.kategoriji čiji PGDP iznosi 950 voz/dan na brdovitom terenu projektne brzine 30km/h. Za projektnu određen je minimalni radijus horizontalne krivine R_{min} u iznosu od 30 m i minimalna duljina prijelaznice L_{min} u iznosu od 30m.

- Idejni se projekt sastoji od dva međupravca duljina p_1=183,14 m, p_2=12,78 m, dvije horizontalne krivine radijusa R_1=30 m, R_2=70 m s duljinama D_1=98.04 m i D_2=85.51m te pripadajućim prijelaznicama L čiji su iznosi L_1=30 m, L_2=30 m. U vertikalnom smislu trasa je ograničena max i min uzdužnim nagibom u iznosu od S_{max} = 12% te S_{min} =0,5%.

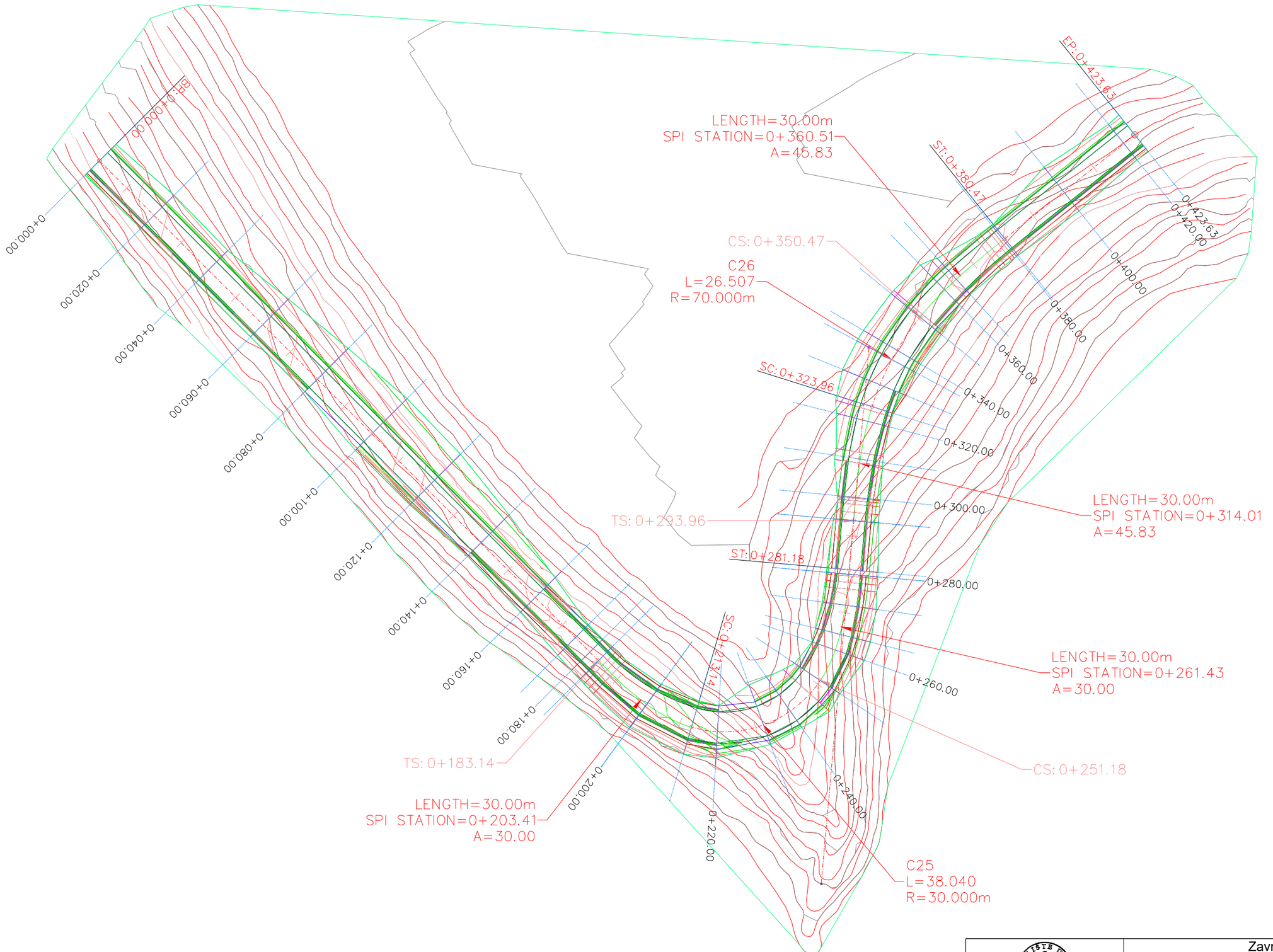
- U ovom su projektu primijenjeni nagibi s_1=-4.23%, s_2=-2.28% nivelete pada i radijus vertikalne krivine R=5 000 m.
- Cesta ima dva prometna traka čija širina iznosi 3,00 m, čiji poprečni nagib u pravcima iznosi 2.5%, nagib u prvoj krivini iznosi 6.5% dok u drugoj krivini iznosi 3.4%. Poprečni presjek sastoji se od pripadajućeg rubnog traka koji je betonski i čija širina iznosi 0.20 m, a visina 0.10 m. Uz cestu je također izrađena bankina širine 1 m čiji je poprečni nagib 4% u smjeru nasipa, berma širine 0.5 m nagiba 4%. Veći dio trase je u zasjeku, manji dio u nasipu i usjeku, također se po potrebi za nasipe predviđaju potporni zidovi,a za usjeke uporni zidovi.

- Projektom je predviđena sljedeća kolnička konstrukcija:
    1. AC 11 surf (BIT 50/70) AG 4 M4 debljine 4 cm
    2. AC 22 base (BIT 50/70) AG 6 M2 debljine 6 cm
    3. MEHANIČKI STABILIZIRANI NOSIVI SLOJ debljine 30 cm.

- 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 betonskim cijevnim propustima kroz trup ceste.

3. GRAĐEVINSKA SITUACIJA

MJ 1:1000



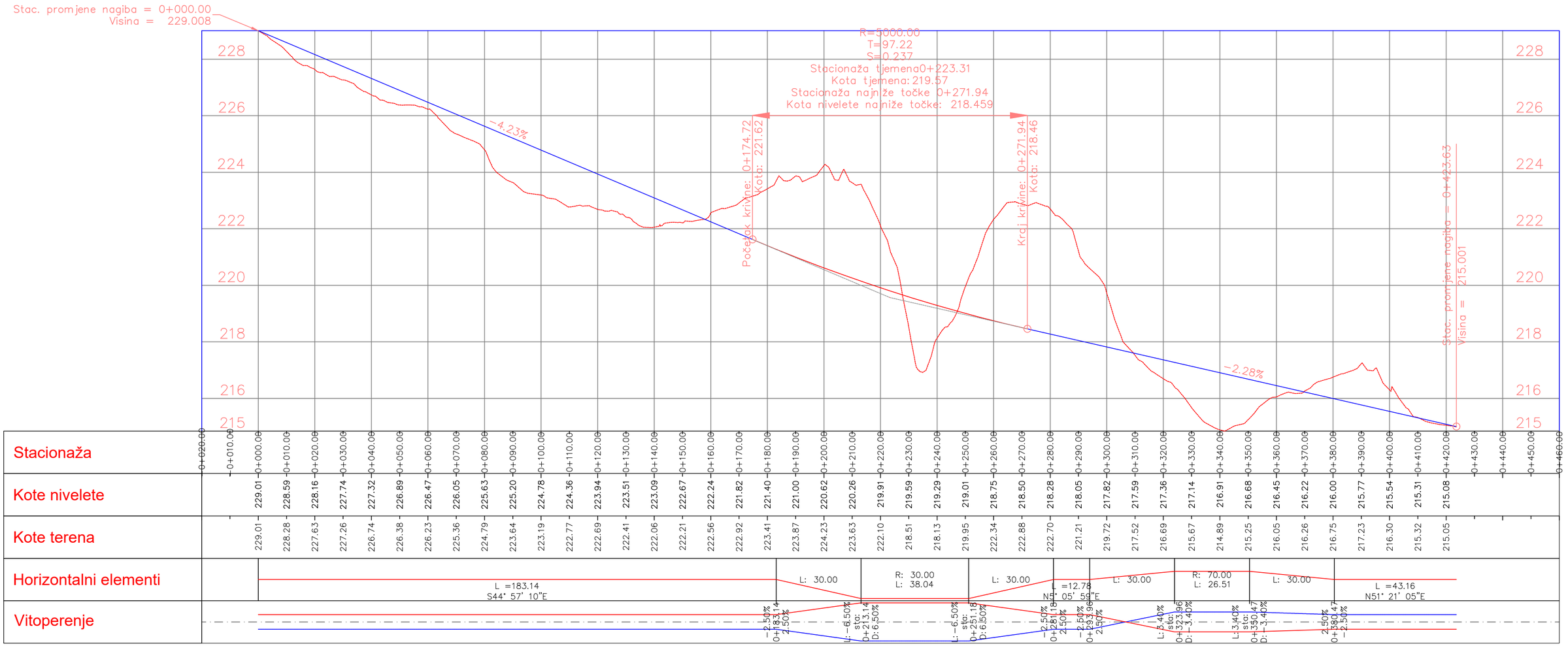
SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

	Završni rad
TEMA	IDEJNI PROJEKT DIONICE CESTE
STUDENT!	Antonio Ivanac
SADRŽAJ	Situacija
MJERILO	1:1000
BROJ PRILOGA	1
DATUM	rujan 2020.

4. UZDUŽNI PRESJEK

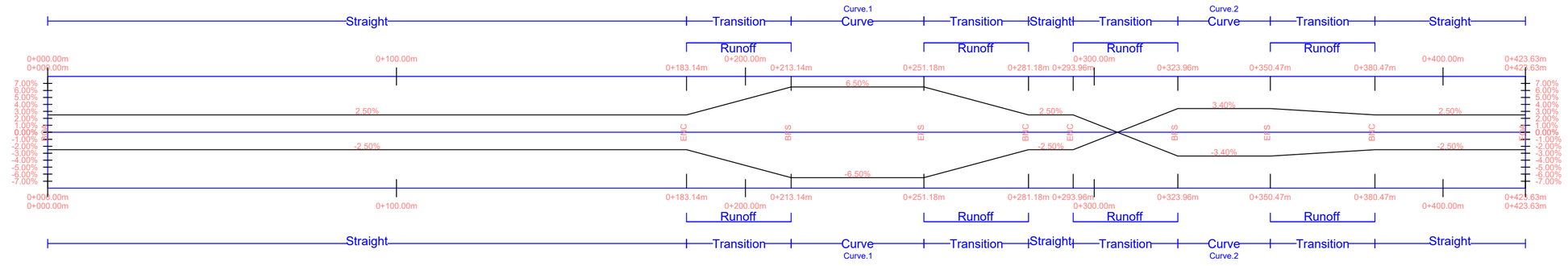
MJ 1:1000/100

OS CESTE PROFILE



Stacionaža	0+000.00 0+010.00 0+020.00 0+030.00 0+040.00 0+050.00 0+060.00 0+070.00 0+080.00 0+090.00 0+100.00 0+110.00 0+120.00 0+130.00 0+140.00 0+150.00 0+160.00 0+170.00 0+180.00 0+190.00 0+200.00 0+210.00 0+220.00 0+230.00 0+240.00 0+250.00 0+260.00 0+270.00 0+280.00 0+290.00 0+300.00 0+310.00 0+320.00 0+330.00 0+340.00 0+350.00 0+360.00 0+370.00 0+380.00 0+390.00 0+400.00 0+410.00 0+420.00 0+430.00 0+440.00 0+450.00 0+460.00
Kote nivelete	229.01 228.59 228.16 227.74 227.32 226.89 226.47 226.05 225.63 225.20 224.78 224.36 223.94 223.51 223.09 222.67 222.24 221.82 221.40 221.00 220.62 220.26 219.91 219.59 219.29 219.01 218.75 218.50 218.28 218.05 217.82 217.59 217.36 217.14 216.91 216.68 216.45 216.22 216.00 215.77 215.54 215.31 215.08
Kote terena	229.01 228.28 227.63 227.26 226.74 226.38 226.23 225.36 224.79 223.64 223.19 222.77 222.69 222.41 222.06 222.21 222.56 222.92 223.41 223.87 224.23 223.63 222.10 218.51 218.13 219.95 222.34 222.88 222.70 221.21 219.72 217.52 216.69 215.67 214.89 215.25 216.05 216.26 216.75 217.23 216.30 215.32 215.05
Horizontalni elementi	L =183.14 S44° 57' 10"E; L: 30.00; R: 30.00 L: 38.04; L: 30.00; L =12.78 N5° 05' 59"E; L: 30.00; R: 70.00 L: 26.51; L: 30.00; L =43.16 N51° 21' 05"E
Vitoperenje	-2.50% 0+183.14 2.50%; L: -6.50% sta: 0+213.14 D: 6.50%; L: -6.50% sta: 0+251.18 D: 6.50%; -2.50% 0+281.18 2.50%; -2.50% 0+293.96 2.50%; L: 3.40% sta: 0+323.96 D: -3.40%; L: 3.40% sta: 0+350.47 D: -3.40%; 2.50% 0+380.47 -2.50%

Superelevation

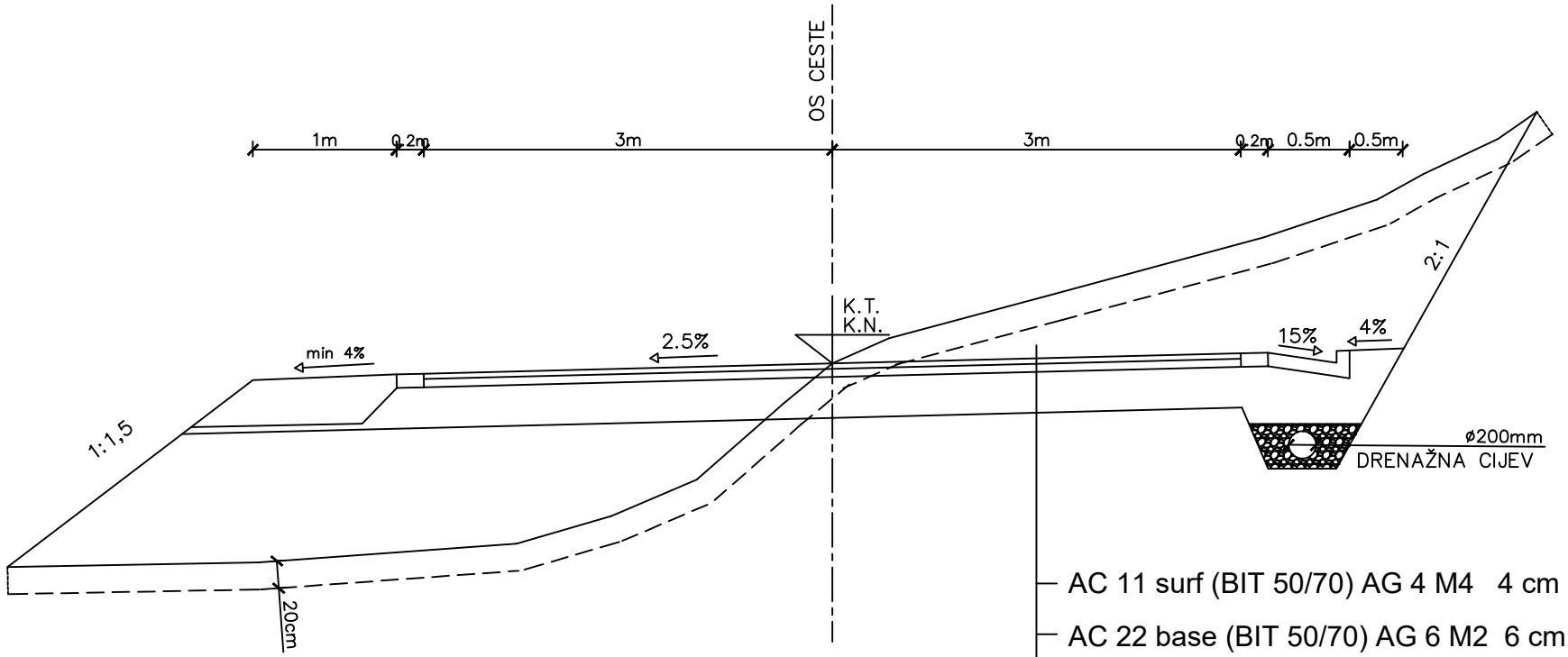


SVEUČILIŠTE U SPLITU GRAĐEVINSKO - ARHITEKTONSKI FAKULTET 21000 SPLIT, MATICE HRVATSKE 15	Završni rad
TEMA	IDEJNI PROJEKT DIONICE CESTE
STUDENTI	Antonio Ivanac
SADRŽAJ	Uzdužni presjek
MJERILO	1:1000/100
BROJ PRILOGA	2
DATUM	rujan 2020.

5. NORMALNI POPREČNI PRESJEK

MJ 1:50

NORMALNI POPREČNI PRESJEK MJ 1:50



AC 11 surf (BIT 50/70) AG 4 M4 4 cm

AC 22 base (BIT 50/70) AG 6 M2 6 cm

MEHANIČKI STABILIZIRANI NOSIVI SLOJ 30cm

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

SADRŽAJ: Normalni poprečni presjek

MJERILO: 1:50

BROJ PRILOGA: 3

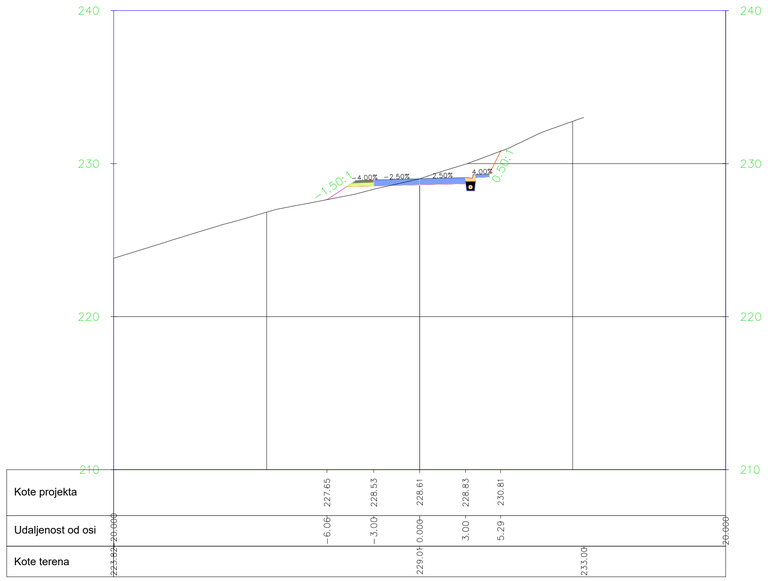
DATUM: rujan 2020.

6. KARAKTERISTIČNI POPREČNI PRESJECI

MJ 1:200

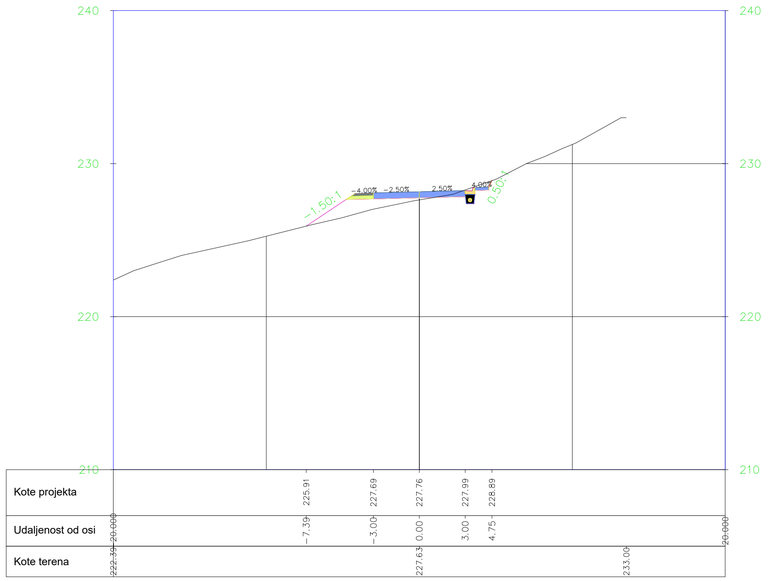
.

0+000.00



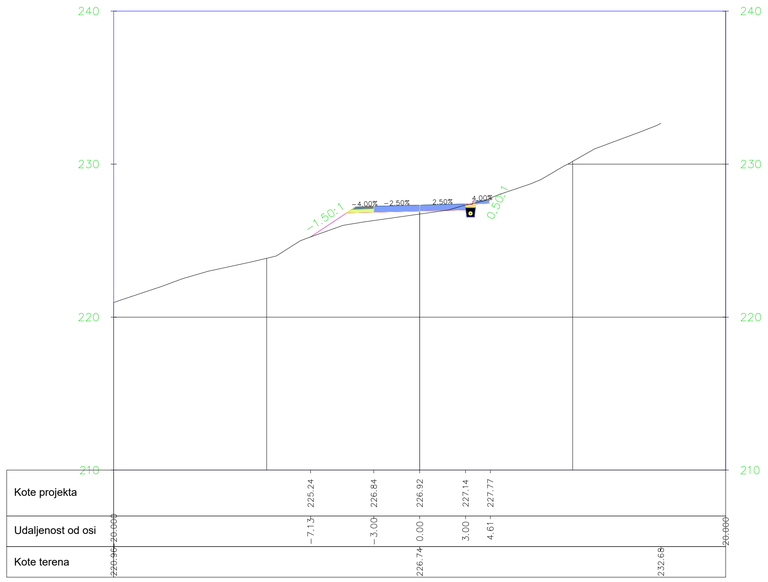
Kote projekta			227.65	228.53	228.61	228.83	230.81
Udaljenost od osi			-6.06	-3.00	0.000	3.00	5.29
Kote terena	223.82	20.000			229.01		233.00

0+020.00



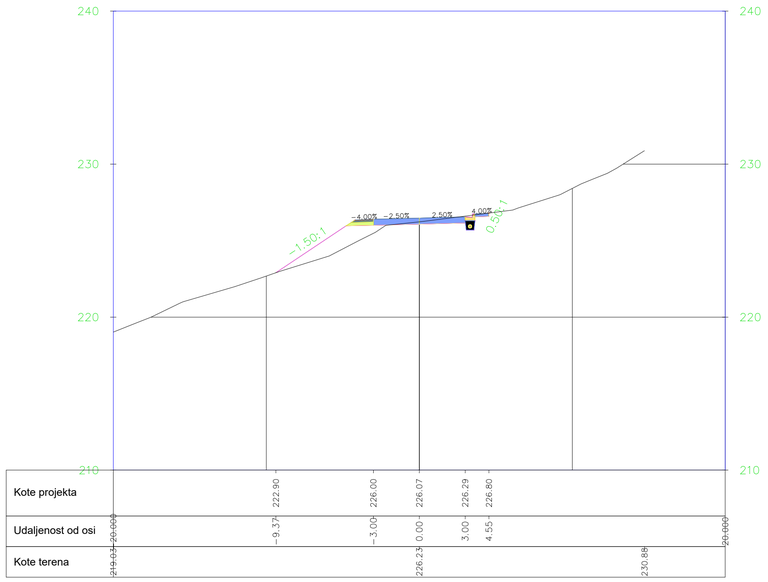
Kote projekta			225.91	227.69	227.76	227.99	228.89
Udaljenost od osi			-7.39	-3.00	0.00	3.00	4.75
Kote terena	222.39	20.000			227.63		233.00

0+040.00



Kote projekta			225.24	226.84	226.92	227.14	227.77
Udaljenost od osi			-7.13	-3.00	0.00	3.00	4.61
Kote terena	220.95	20.000			226.74		232.68

0+060.00



Kote projekta			222.90	226.00	226.07	226.29	226.80
Udaljenost od osi			-9.37	-3.00	0.00	3.00	4.55
Kote terena	219.03	20.000			226.23		230.88

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

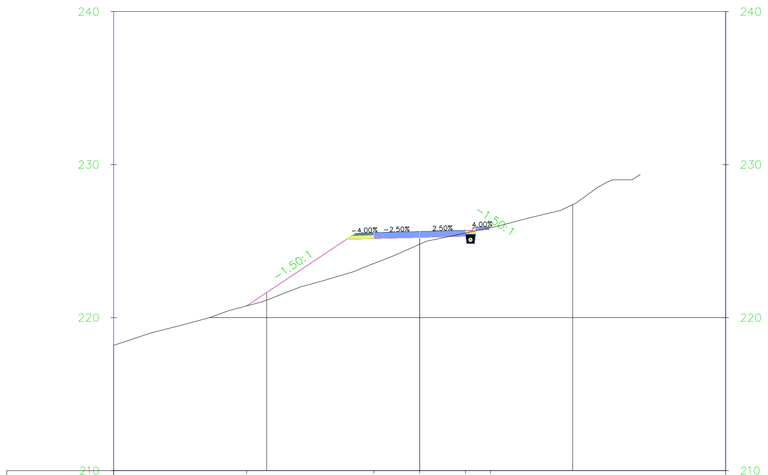
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

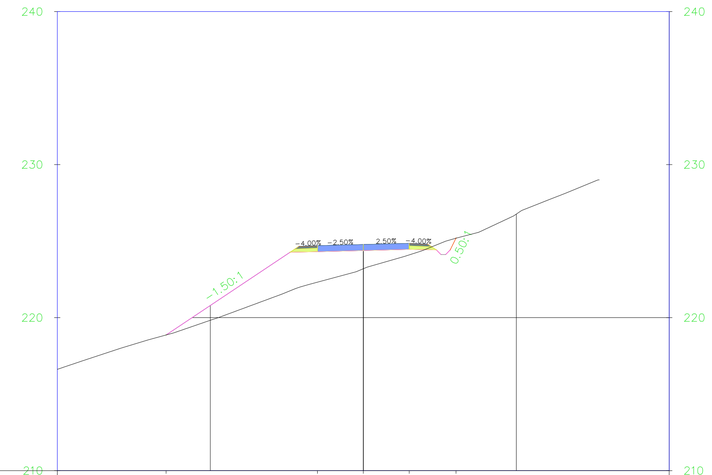
DATUM: rujan 2020.

0+080.00



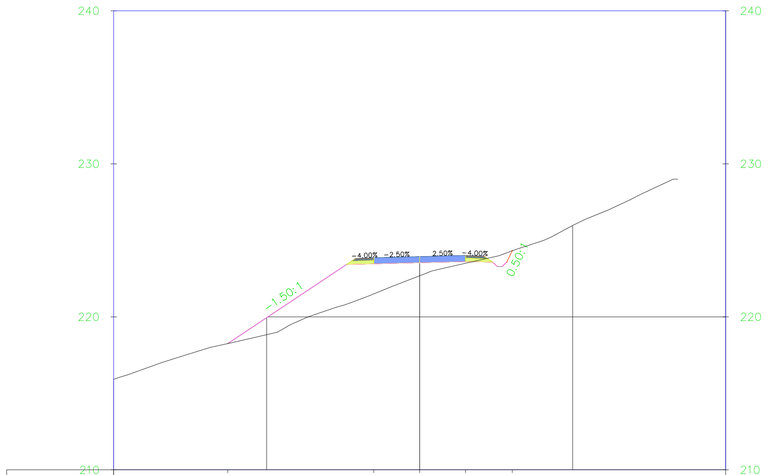
Kote projekta		220.77	225.15	225.23	225.45	225.88	
Udaljenost od osi	20.000	11.39	3.00	0.00	3.00	4.63	20.000
Kote terena	218.15			224.79			229.35

0+100.00



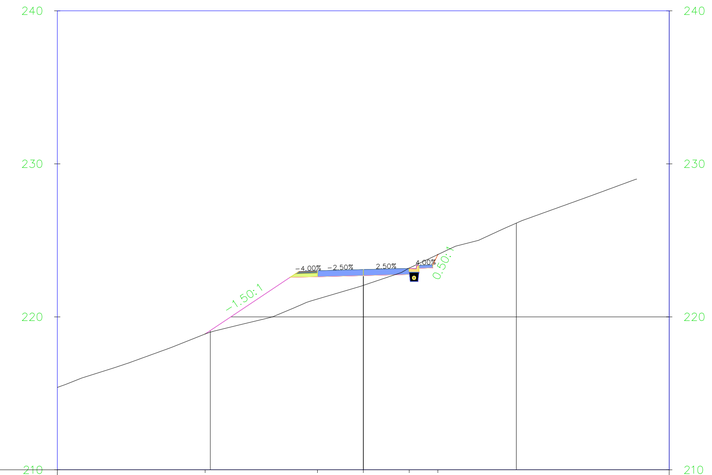
Kote projekta		218.86	224.31	224.38	224.46	225.19	
Udaljenost od osi	20.000	12.89	3.00	0.00	3.00	6.07	20.000
Kote terena	216.62			223.19			229.09

0+120.00



Kote projekta		218.25	223.46	223.54	223.61	224.32	
Udaljenost od osi	20.000	12.54	3.00	0.00	3.00	6.05	20.000
Kote terena	215.91			222.69			229.00

0+140.00



Kote projekta		218.88	222.61	222.69	222.91	224.07	
Udaljenost od osi	20.000	10.33	3.00	0.00	3.00	4.88	20.000
Kote terena	215.38			222.06			229.00

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

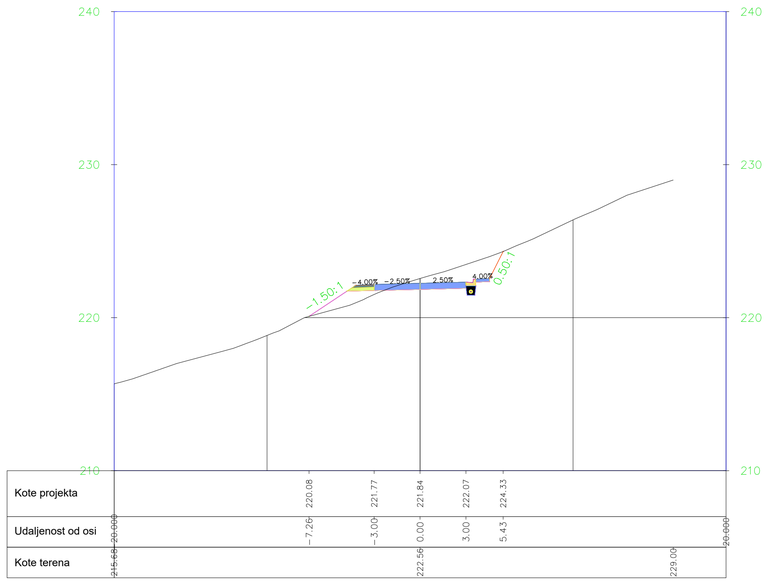
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

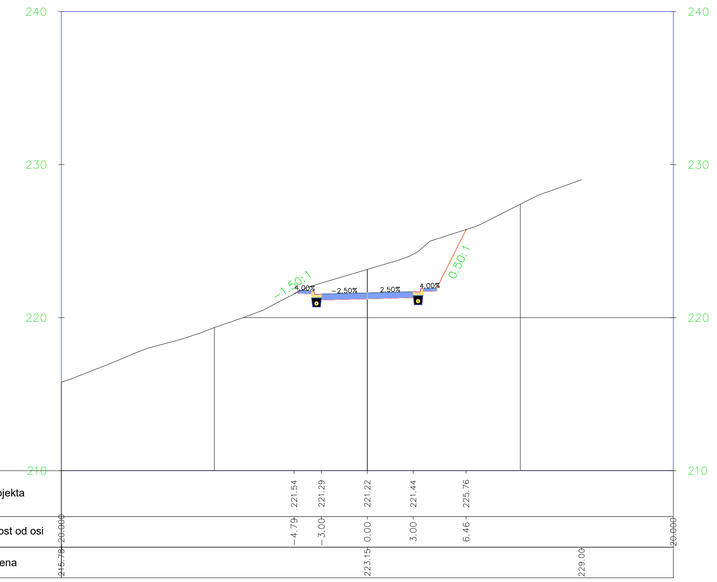
DATUM: rujan 2020.

0+160.00



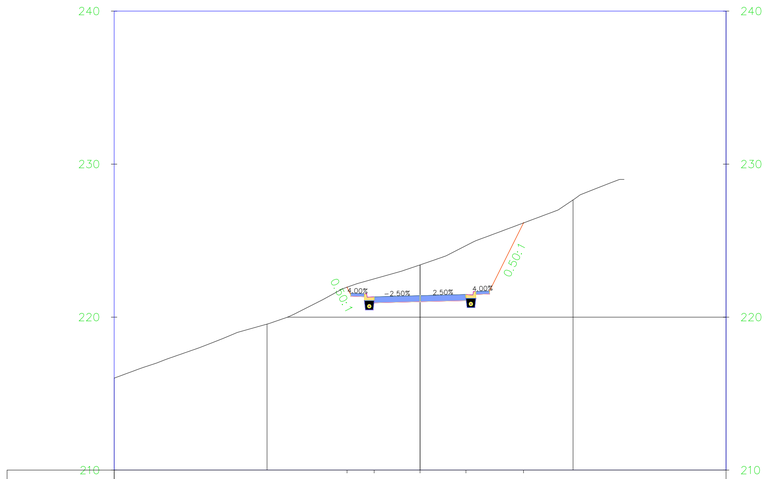
Kote projekta		220.08	221.77	221.84	222.07	224.33	
Udaljenost od osi	20.000	-7.26	-3.00	0.00	3.00	5.43	20.000
Kote terena	215.60			222.56			229.00

0+174.72



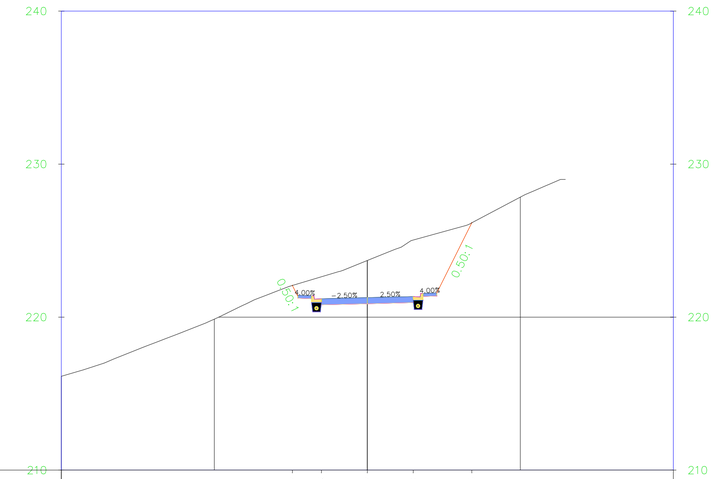
Kote projekta		221.54	221.29	221.22	221.44	225.76	
Udaljenost od osi	20.000	-4.79	-3.00	0.00	3.00	6.46	20.000
Kote terena	215.79			223.15			229.00

0+180.00



Kote projekta		221.95	221.07	221.00	221.22	226.16	
Udaljenost od osi	20.000	-4.77	-3.00	0.00	3.00	6.76	20.000
Kote terena	216.01			223.41			229.00

0+183.14



Kote projekta		222.07	220.95	220.87	221.10	226.16	
Udaljenost od osi	20.000	-4.90	-3.00	0.00	3.00	6.83	20.000
Kote terena	216.13			223.79			229.00

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

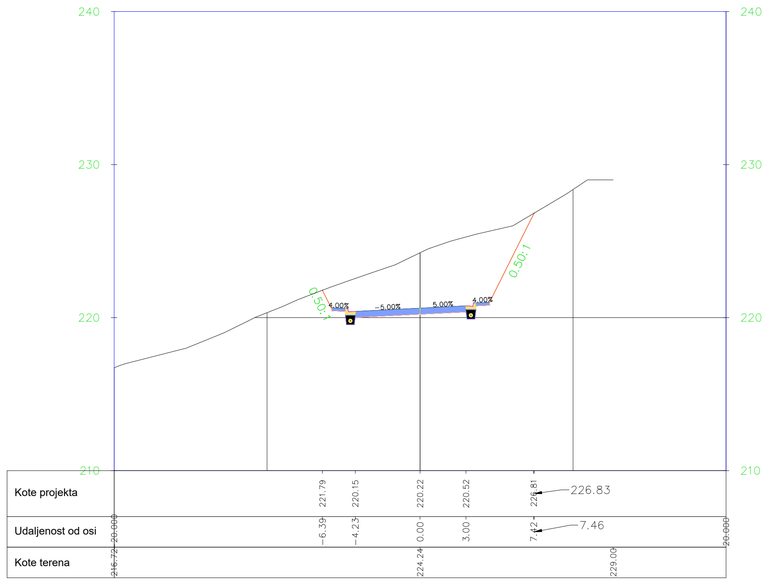
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

DATUM: rujan 2020.

0+200.00

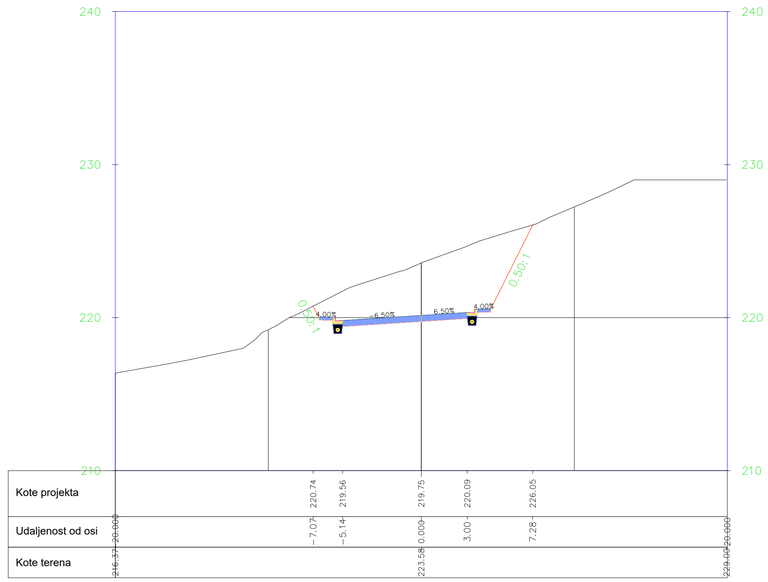


Kote projekta			221.79	220.15	220.22	220.52	226.81
Udaljenost od osi	20.000		-6.39	-4.23	0.00	3.00	7.42
Kote terena	216.72	20.000			224.24		229.09

226.83

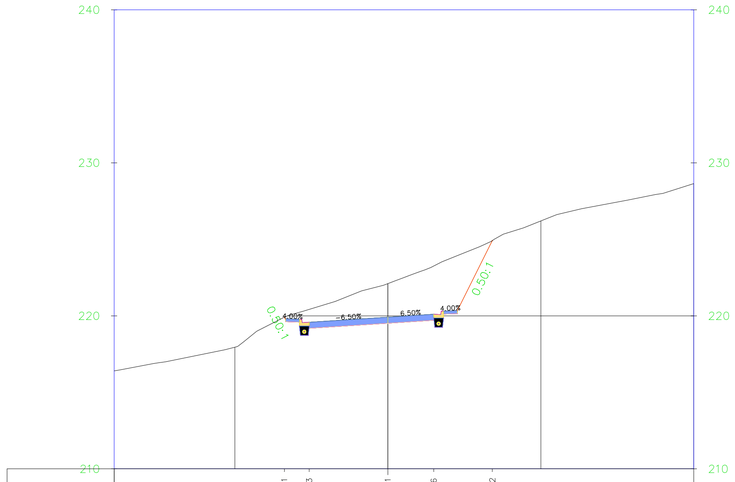
7.46

0+213.14



Kote projekta			220.74	219.56	219.75	220.09	226.05
Udaljenost od osi	20.000		-7.07	-5.14	0.00	3.00	7.28
Kote terena	216.37	20.000			223.58		229.09

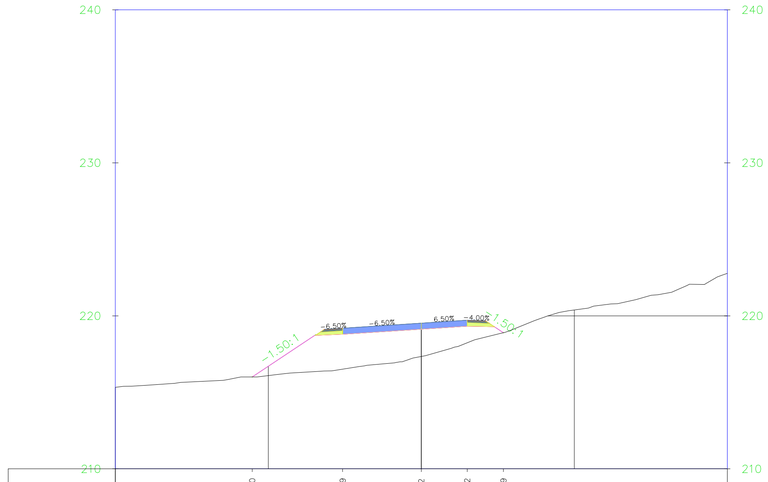
0+220.00



Kote projekta			219.91	219.33	219.51	219.86	224.92
Udaljenost od osi	17.822		-6.77	-5.14	0.000	3.00	6.83
Kote terena	216.40	20.000			222.11		228.64

20.060

0+232.16



Kote projekta			216.00	218.79	219.12	219.32	218.89
Udaljenost od osi	20.000		-11.05	-5.14	0.00	3.00	5.37
Kote terena	215.33	20.000			217.34		222.78

20.060

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

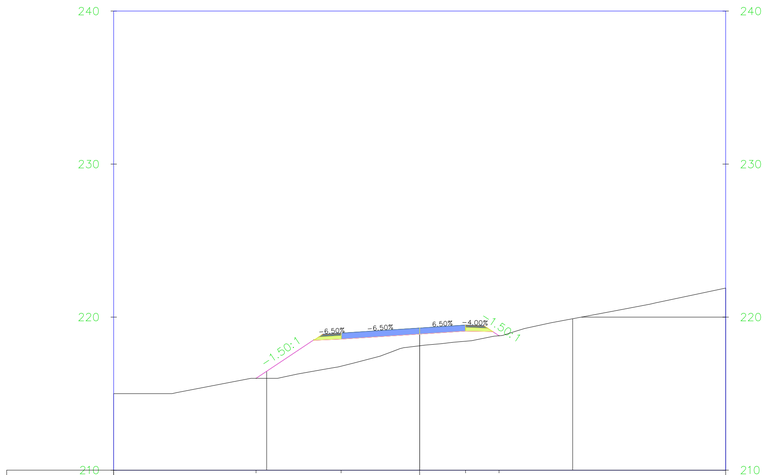
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

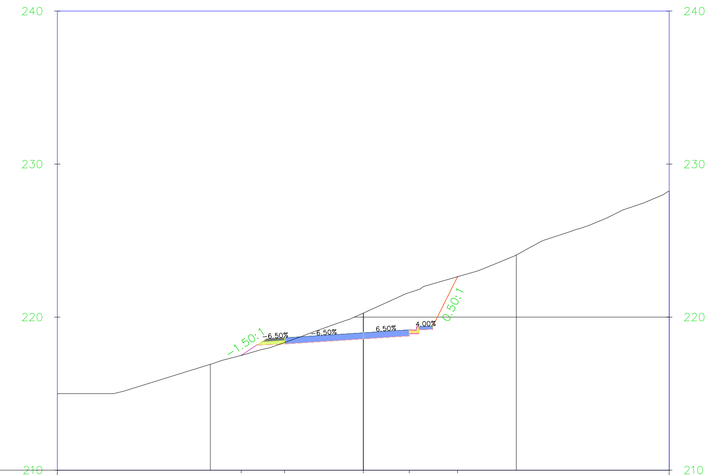
DATUM: rujan 2020.

0+240.00



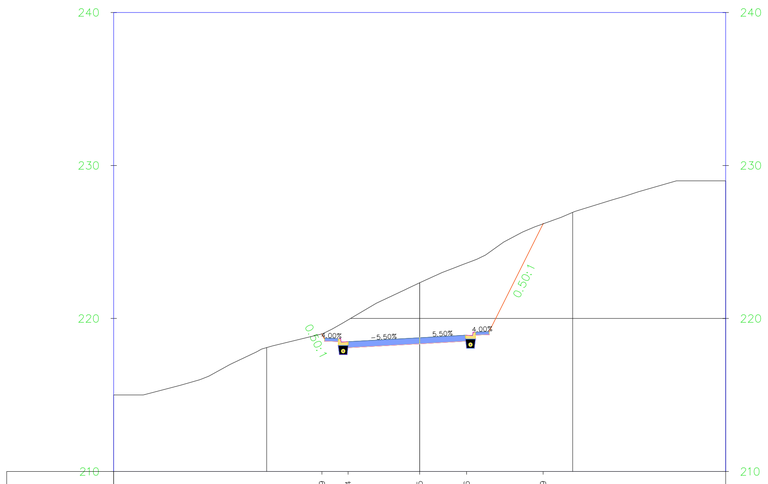
Kote projekta		216.00	218.56	218.89	219.08	218.78
Udaljenost od osi	26.000	-10.78	-5.14	0.000	3.00	5.19
Kote terena	215.60			218.13		

0+251.18



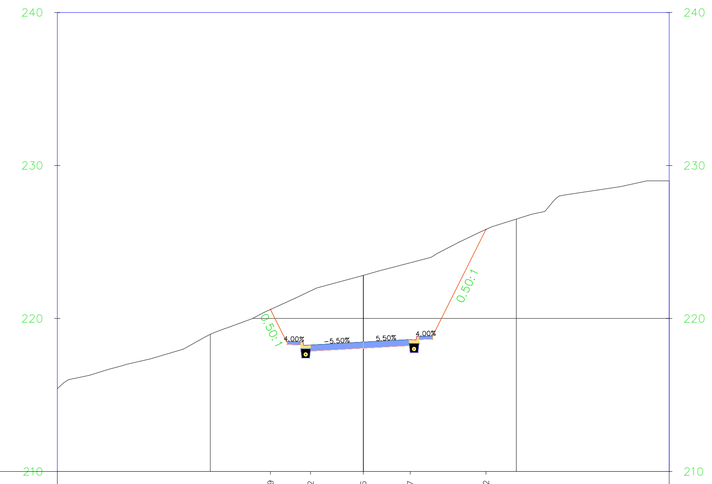
Kote projekta		217.50	218.24	218.58	218.92	222.65
Udaljenost od osi	20.000	-7.98	-5.14	0.00	3.00	6.16
Kote terena	215.00			220.26		

0+260.00



Kote projekta		218.99	218.24	218.35	218.06	226.19
Udaljenost od osi	20.000	-6.39	-4.68	0.00	3.07	8.06
Kote terena	215.60			222.34		

0+271.94



Kote projekta		220.59	218.02	218.06	217.77	225.82
Udaljenost od osi	20.000	-6.05	-3.44	0.00	3.07	8.02
Kote terena	215.41			222.82		

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

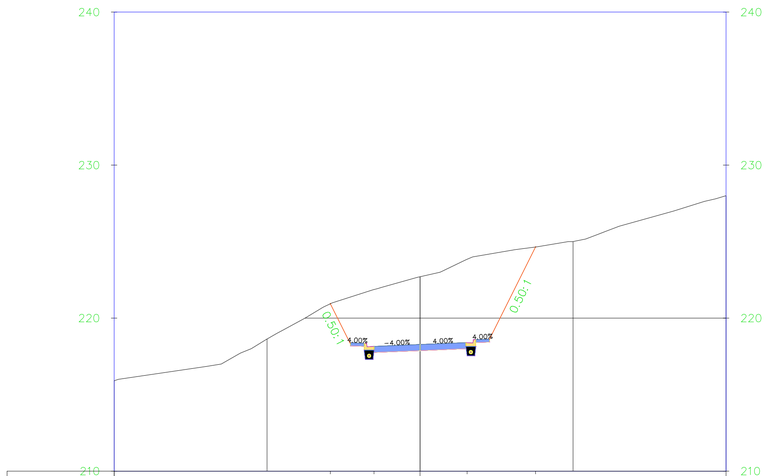
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

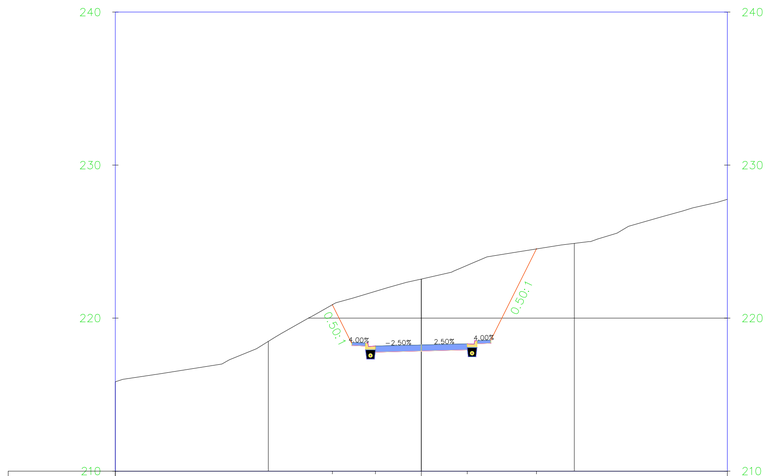
DATUM: rujan 2020.

0+280.00



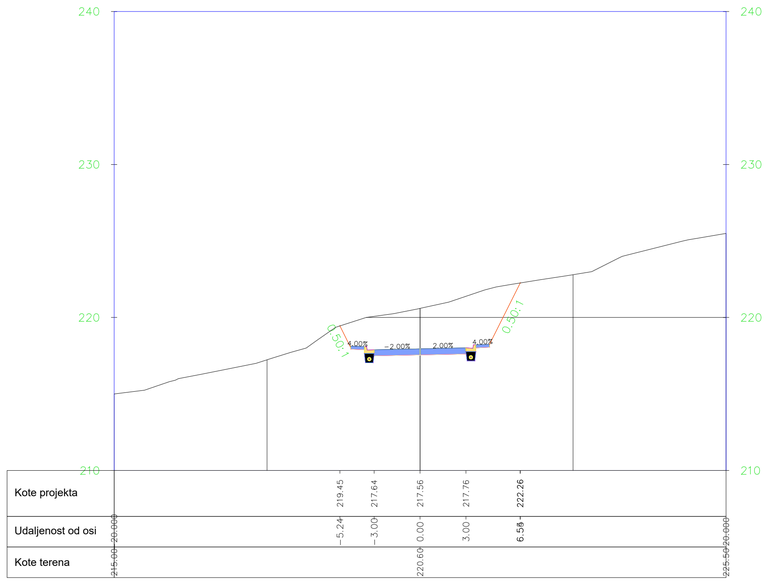
Kote projekta			220.94	217.90	217.88	217.54	224.65
Udaljenost od osi			-5.86	-3.01	0.000	3.07	7.55
Kote terena	215.91	20.000			222.79		228.60	20.000

0+281.18



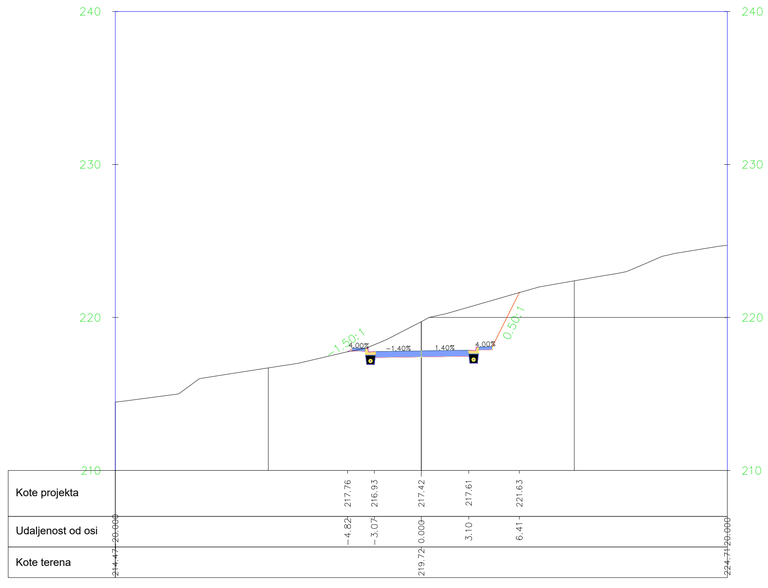
Kote projekta			220.88	217.92	217.85	218.07	224.52
Udaljenost od osi			-5.81	-3.00	0.000	3.00	7.52
Kote terena	215.84	20.000			222.55		227.77	20.000

0+293.96



Kote projekta			219.45	217.64	217.56	217.76	222.26
Udaljenost od osi			-5.24	-3.00	0.00	3.00	6.58
Kote terena	215.66	20.000			220.69		225.59	20.000

0+300.00



Kote projekta			217.76	216.93	217.42	217.61	221.63
Udaljenost od osi			-4.82	-3.07	0.000	3.10	6.41
Kote terena	214.47	20.000			219.72		224.71	20.000

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

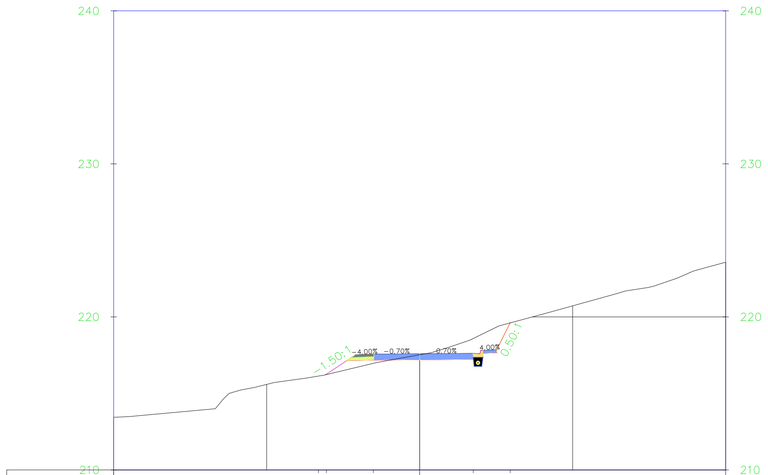
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

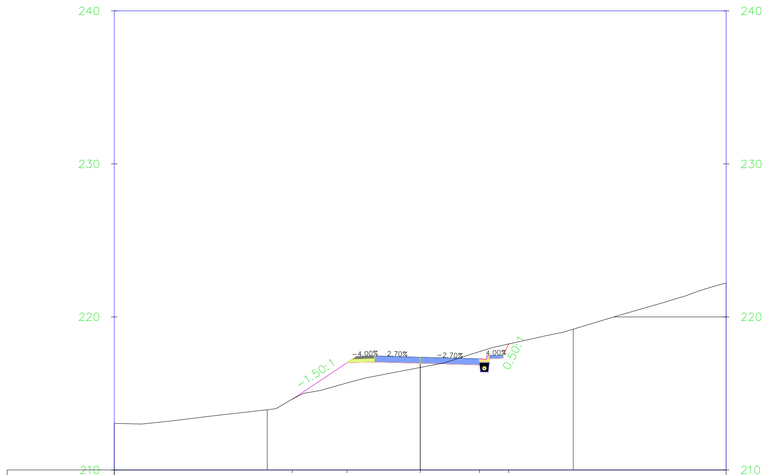
DATUM: rujan 2020.

0+310.00



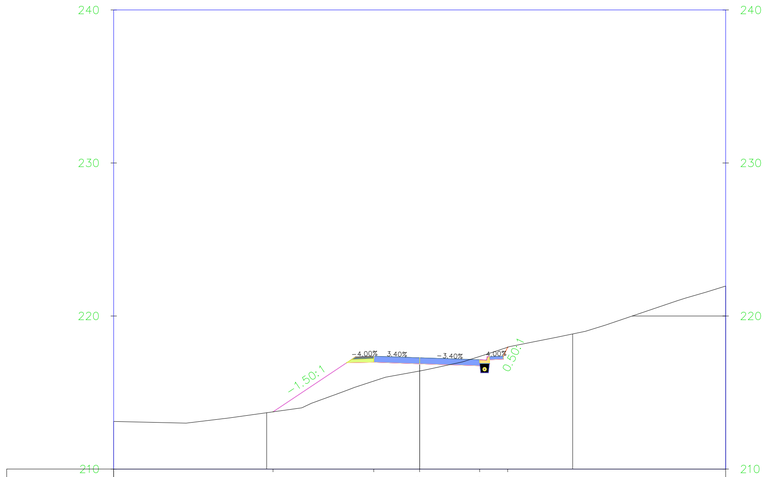
Kote projekta			216.16	216.25	216.88	217.19	217.38	219.61	
Udaljenost od osi			-6.62	-6.10	-3.04	0.000	3.50	5.91	
Kote terena	213.44	20.000				217.52			223.57	20.000

0+320.00



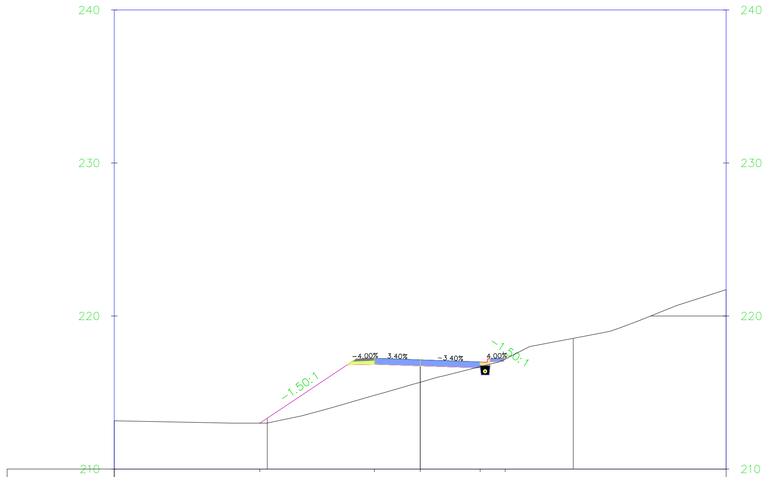
Kote projekta			214.62	217.01	216.96	217.01	218.23	
Udaljenost od osi			-8.36	-4.78	0.00	3.87	5.78	
Kote terena	213.04	20.000			216.69			222.21	20.000

0+323.96



Kote projekta			213.74	216.97	216.87	216.89	217.96	
Udaljenost od osi			-9.59	-3.00	0.00	3.92	5.76	
Kote terena	213.11	20.000			216.41			221.96	20.000

0+330.00



Kote projekta			213.00	216.84	216.74	216.75	217.18	
Udaljenost od osi			-10.48	-3.00	0.00	3.92	5.55	
Kote terena	213.15	20.000			215.67			221.73	20.000

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GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

DATUM: rujan 2020.

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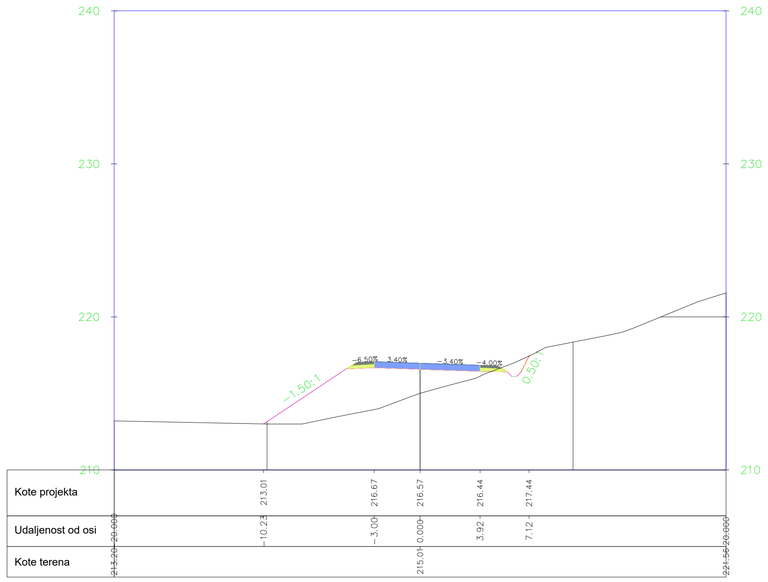
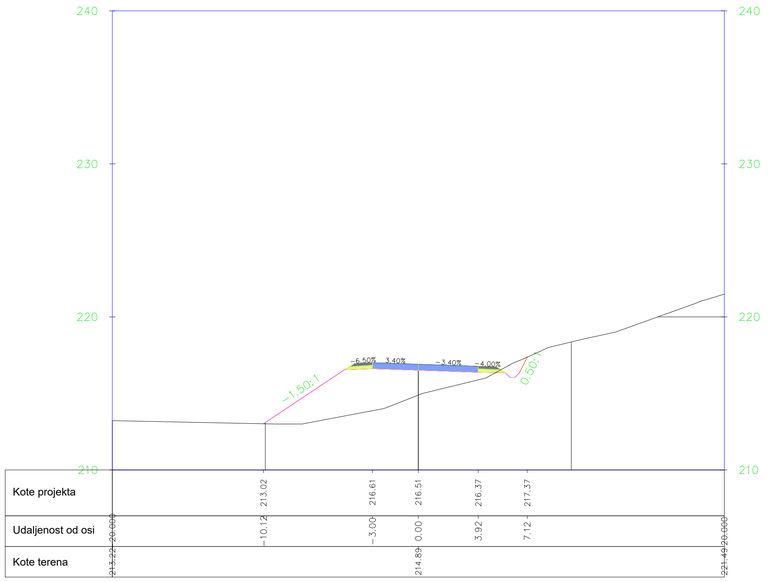


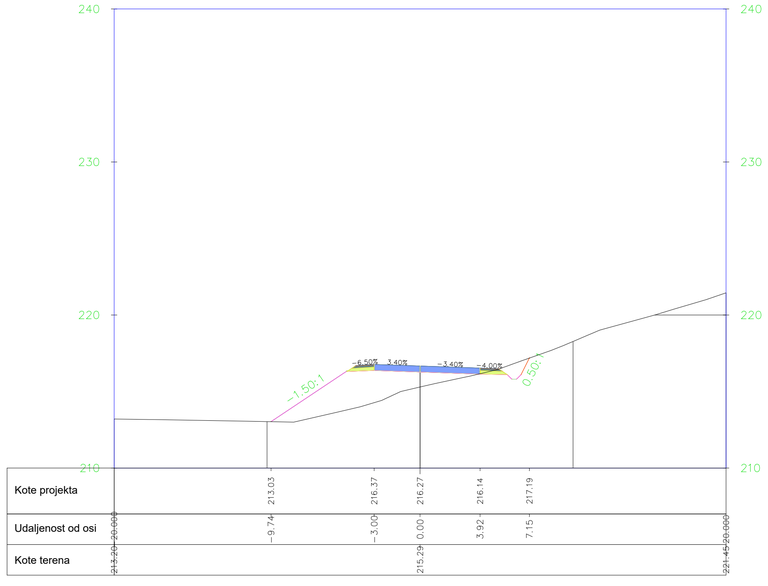
Kote projekta		213.01	216.67	216.57	216.44	217.44
Udaljenost od osi		-10.23	-3.00	0.000	3.92	7.12
Kote terena	213.20 20.000			215.01		221.56 20.000

0+340.00



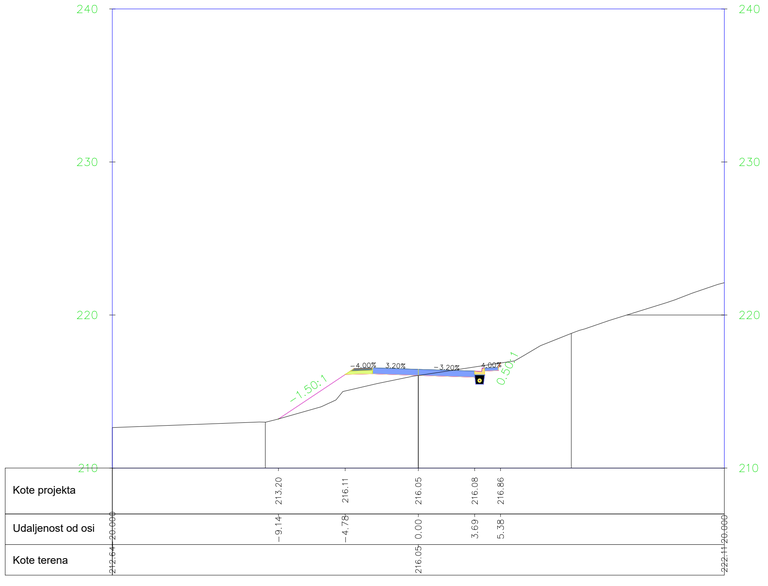
Kote projekta		213.02	216.61	216.51	216.37	217.37
Udaljenost od osi		-10.12	-3.00	0.00	3.92	7.12
Kote terena	214.22 20.000			214.89		221.49 20.000

0+350.47



Kote projekta		213.03	216.37	216.27	216.14	217.19
Udaljenost od osi		-9.74	-3.00	0.00	3.92	7.15
Kote terena	213.20 20.000			215.29		221.45 20.000

0+360.00



Kote projekta		213.20	216.11	216.05	216.08	216.86
Udaljenost od osi		-9.14	-4.78	0.00	3.69	5.38
Kote terena	212.64 20.000			216.05		222.11 20.000

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

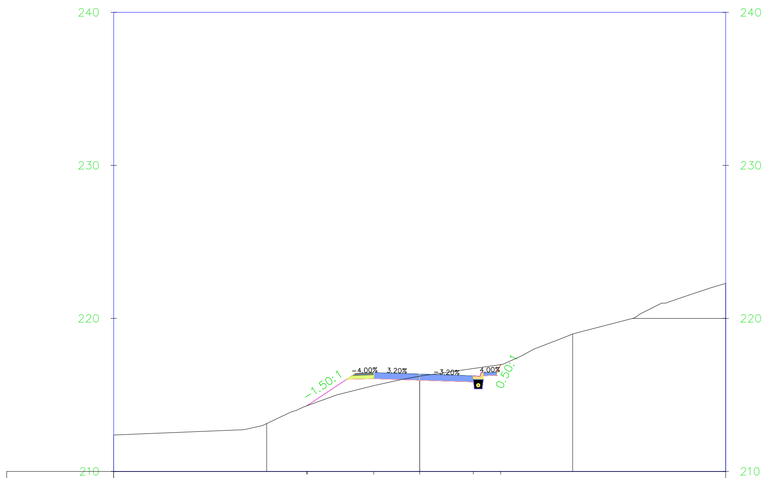
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

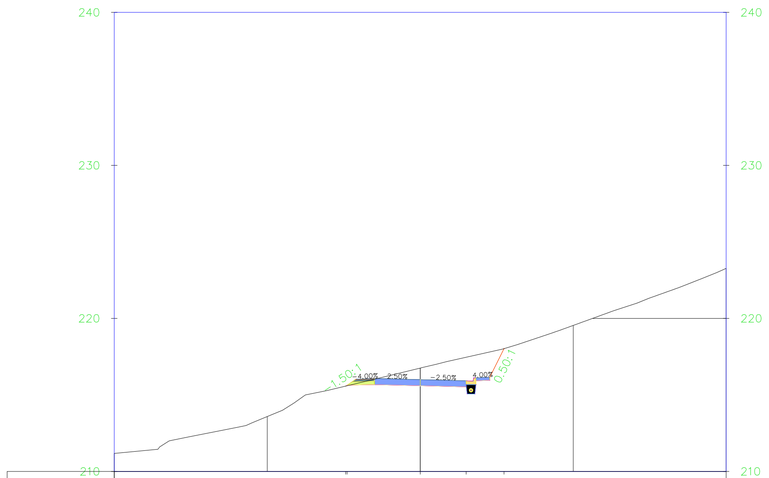
DATUM: rujan 2020.

0+364.09



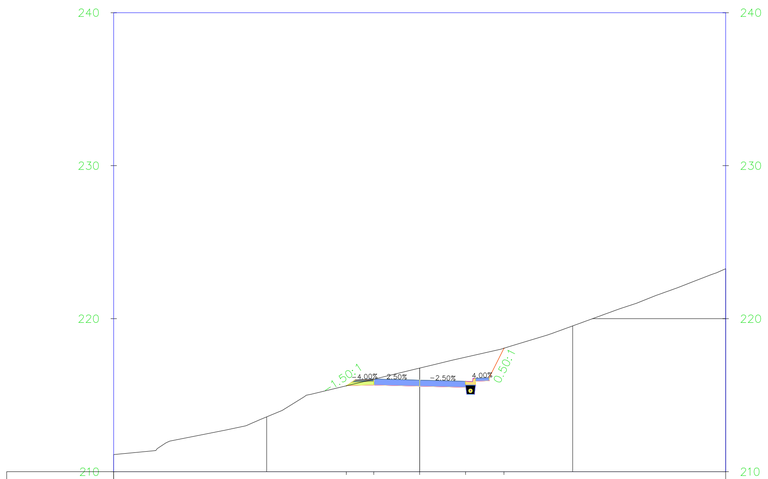
Kote projekta			214.20	216.05	215.96	215.99	216.98
Udaljenost od osi	-20.000	-20.000	-7.39	-3.00	0.00	3.51	5.30
Kote terena	212.39				216.22		222.29	220.000

0+380.00



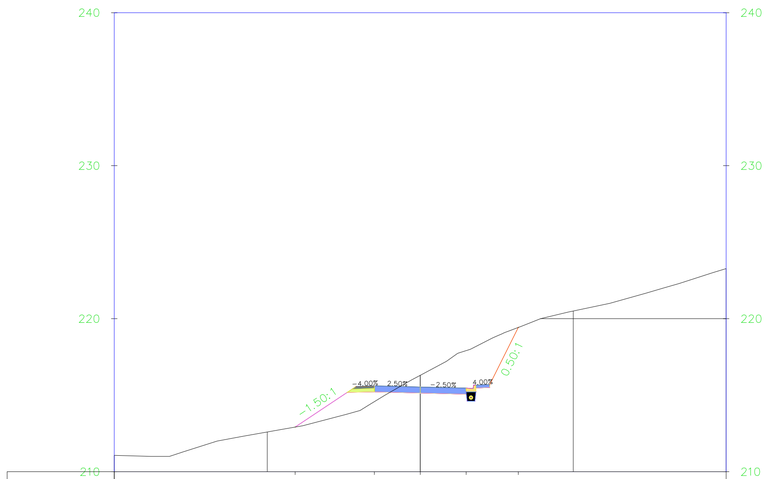
Kote projekta			215.58	216.63	215.60	215.67	218.02
Udaljenost od osi	-20.000	-20.000	-4.87	-4.78	0.00	3.00	5.48
Kote terena	211.17				216.75		223.27	220.000

0+380.47



Kote projekta			215.61	215.66	215.58	215.66	218.07
Udaljenost od osi	-20.000	-20.000	-4.80	-3.00	0.00	3.00	5.50
Kote terena	211.12				216.77		223.25	220.000

0+400.00



Kote projekta			212.92	215.21	215.14	215.21	219.43
Udaljenost od osi	-20.000	-20.000	-8.18	-3.00	0.00	3.00	6.41
Kote terena	211.07				216.30		223.28	220.000

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

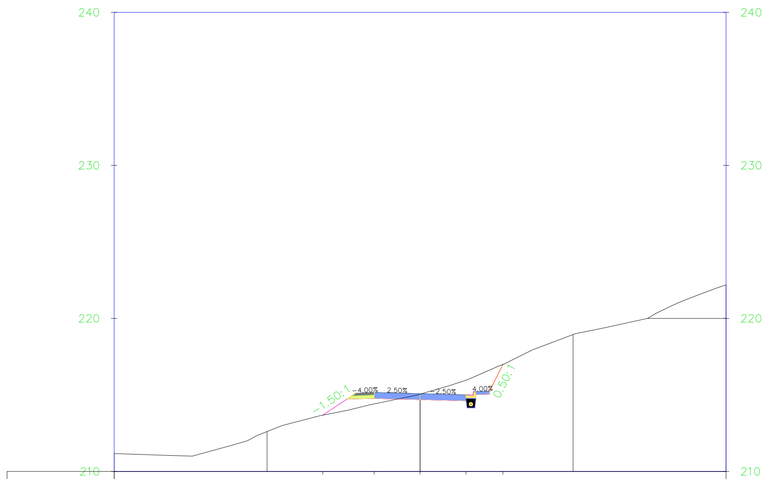
SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

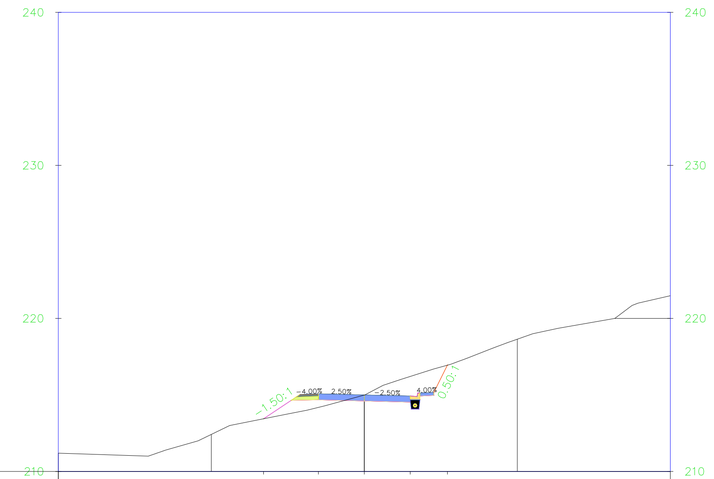
DATUM: rujan 2020.

0+420.00



Kote projekta		213.67	214.76	214.68	214.76	216.99	
Udaljenost od osi	20.000	−6.36	−3.00	0.00	3.00	5.41	20.000
Kote terena	211.17			215.05			222.19

0+423.63



Kote projekta		213.44	214.68	214.60	214.67	216.94	
Udaljenost od osi	20.000	−6.59	−3.00	0.00	3.00	5.43	20.000
Kote terena	211.20			214.99			221.48

SVEUČILIŠTE U SPLITU
GRAĐEVINSKO - ARHITEKTONSKI FAKULTET
21000 SPLIT, MATICE HRVATSKE 15

Završni rad

TEMA: IDEJNI PROJEKT DIONICE CESTE

STUDENTI: Antonio Ivanac

SADRŽAJ: Karakteristični poprečni presjeci

MJERILO: 1:200

BROJ PRILOGA: 4

DATUM: rujan 2020.

7. OBRADA NA RAČUNALU

- Prilikom izrade predmetnog zadatka korišteno je računalo uz odgovarajući softver Autodesk AutoCAD Civil 3D. Postupak projektiranja trase na računalu sličan je ručnoj izradi rješenja ali mnogo brže. Radu na računalu prethodi definiranje problema, uočavanje nedostataka te određivanje načina na koje bi se idejno rješenje kvalitetno izradilo.

- Prvi korak pri izradi idejnog rješenja na računalu je digitaliziranje terena na temelju zadanih slojnica. Unošenjem slojnica u obliku 3D polilinija sa zadanim nadmorskim visinama pomoću kojih definiramo površinu odnosno trodimenzionalni model terena postojećeg stanja na području obuhvaćenim predmetnim zadatkom.

- Nakon toga se unose kordinate točaka tangenti (po dvije za svaku tangentu) koje ih definiraju na terenu. Sjecišta tangenti definiramo ubacivanjem odgovarajućih kruţnih lukova I prijelaznih krivina čime se dobija horizontalni tok ceste.

- Sljedeći korak je izrada uzdužnog presjeka ceste. Linija terena se automatski generira iz zadane horizontalne osi ceste. Potrebno je definirati niveletu. Niveleta se postavlja tako da se u konačnici riješe geometrijski i sigurnosni elementi i odvodnja. Između tangenti se umeće kružna krivina radijusa prema potrebi.

- Potrebno je definirati i poprečni profil prometnice. Poprečnim presjekom definirani su: poprečni nagib i širina kolnika te pokosi usjeka i nasipa.
  Iz definirane osi trase, nivelete i poprečnog presjeka definiramo koridor. Ovime smo dobili poprečne presjeke u svim karakterističnim i zadanim točkama osi ceste a time i točke spajanja pokosa usjeka i nasipa sa terenom.

- Ovime smo definirali čitavu dionicu ceste u prostoru. Kao izlazni podaci dobiju se računalni ispisi koordinatnih točaka osi, točaka svakog poprečnog presjeka te količina zemljanih radova po presjeku.

8. RAČUNALNI ISPIS TOČAKA OSI

RAČUNALNI ISPIS GLAVNIH TOČAKA OSI

Alignment Station and Curve Report

Project Name: ZAVRŠNI RAD

Report Date: 2019

Alingment: OS CESTE

Description;

Description	PT Station	Northing	Easting
Start:	0+00.000	9097.995	14202.101
End:	1+83.141	8968.388	14331.495

Tangent Data

Parameter	Value	Parameter	Value
Length:	183.141	Course:	S 44° 57' 09.7893" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	1+83.141	8968.388	14331.495
SPI:		8954.044	14345.815
SC:	2+13.141	8951.152	14355.642

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.000	L Tan:	20.268
Radius:	30.000	S Tan:	10.244
Theta:	28° 38' 52.4031"	P:	1.239
X:	29.259	K:	14.876
Y:	4.911	A:	30.000
Chord:	29.668	Course:	S 54° 28' 54.0570" E

Curve Point Data

Description	Station	Northing	Easting
SC:	2+13.141	8951.152	14355.642
RP:		8979.931	14364.112
CS:	2+51.182	8963.265	14389.057

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	72° 39' 06.3444"	Type:	LEFT
Radius:	30.000		
Length:	38.040	Tangent:	22.058
Mid-Ord:	5.830	External:	7.237
Chord:	35.543	Course:	N 70° 04' 24.6354" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	2+51.182	8963.265	14389.057
SPI:		8971.783	14394.748
ST:	2+81.182	8991.971	14396.550

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.000	L Tan:	20.268
Radius:	30.000	S Tan:	10.244
Theta:	28° 38' 52.4031"	P:	1.239
X:	29.259	K:	14.876
Y:	4.911	A:	30.000
Chord:	29.668	Course:	N 14° 37' 43.3278" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+81.182	8991.971	14396.550
End:	2+93.960	9004.699	14397.686

Tangent Data

Parameter	Value	Parameter	Value
Length:	12.778	Course:	N 05° 05' 59.0600" E

Spiral Point Data

Description	Station	Northing	Easting
TS:	2+93.960	9004.699	14397.686
SPI:		9024.667	14399.468
SC:	3+23.960	9034.253	14402.468

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.000	L Tan:	20.048
Radius:	70.000	S Tan:	10.044
Theta:	12° 16' 39.6013"	P:	0.535
X:	29.863	K:	14.977
Y:	2.136	A:	45.826
Chord:	29.939	Course:	N 09° 11' 26.5269" E

Curve Point Data

Description	Station	Northing	Easting
SC:	3+23.960	9034.253	14402.468
RP:		9013.346	14469.273
CS:	3+50.467	9057.469	14414.929

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	21° 41' 47.0167"	Type:	RIGHT
Radius:	70.000		
Length:	26.507	Tangent:	13.414
Mid-Ord:	1.251	External:	1.274
Chord:	26.349	Course:	N 28° 13' 32.1697" E

Spiral Point Data

Description	Station	Northing	Easting
CS:	3+50.467	9057.469	14414.929
SPI:		9065.266	14421.260
ST:	3+80.467	9077.787	14436.918

Spiral Curve Data: clothoid

Parameter	Value	Parameter	Value
Length:	30.000	L Tan:	20.048
Radius:	70.000	S Tan:	10.044
Theta:	12° 16' 39.6013"	P:	0.535
X:	29.863	K:	14.977
Y:	2.136	A:	45.826
Chord:	29.939	Course:	N 47° 15' 37.8125" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	3+80.467	9077.787	14436.918
End:	4+23.626	9104.742	14470.625

Tangent Data

Parameter	Value	Parameter	Value
Length:	43.159	Course:	N 51° 21' 05.2794" E

RAČUNALNI ISPIS DETALJNIH TOČAKA OSI

Alignment Incremental Chainage Report

Alignment Name: OS CESTE
Description:
Chainage Range: Start: 0+000.00, End: 0+423.63
Chainage Increment: 20.00

Chainage	Northing	Easting	Straight Direction
0+000.00	9,097.9949m	14,202.1012m	S44° 57' 10"E
0+020.00	9,083.8411m	14,216.2316m	S44° 57' 10"E
0+040.00	9,069.6873m	14,230.3621m	S44° 57' 10"E
0+060.00	9,055.5335m	14,244.4925m	S44° 57' 10"E
0+080.00	9,041.3797m	14,258.6230m	S44° 57' 10"E
0+100.00	9,027.2259m	14,272.7535m	S44° 57' 10"E
0+120.00	9,013.0721m	14,286.8839m	S44° 57' 10"E
0+140.00	8,998.9183m	14,301.0144m	S44° 57' 10"E
0+160.00	8,984.7645m	14,315.1448m	S44° 57' 10"E
0+180.00	8,970.6107m	14,329.2753m	S44° 57' 10"E
0+200.00	8,957.1124m	14,344.0029m	S53° 59' 58"E
0+220.00	8,949.9808m	14,362.3852m	S86° 41' 58"E
0+240.00	8,955.3255m	14,381.2754m	N55° 06' 12"E
0+260.00	8,971.1597m	14,392.9336m	N19° 22' 53"E
0+280.00	8,990.7942m	14,396.4446m	N5° 08' 39"E
0+300.00	9,010.7134m	14,398.2401m	N5° 35' 51"E
0+320.00	9,030.4439m	14,401.3877m	N14° 21' 01"E
0+340.00	9,048.8811m	14,408.9627m	N30° 30' 24"E
0+360.00	9,064.4867m	14,421.3739m	N45° 38' 13"E
0+380.00	9,077.4959m	14,436.5532m	N51° 20' 55"E
0+400.00	9,089.9867m	14,452.1730m	N51° 21' 05"E
0+420.00	9,102.4775m	14,467.7928m	N51° 21' 05"E
0+423.63	9,104.7421m	14,470.6246m	N51° 21' 05"E

9. RAČUN KOTA KOLNIKA

Corridor Section Points Report

Corridor Name: Koridor
Base Alignment Name: OS CESTE
Chainage Range: Start: 0+000.00, End: 0+423.63

CHAINAGE 0+000.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,206.3884	9,102.2751	227.6464	-6.058m	Daylight
2	14,205.4849	9,101.3731	228.4974	-4.781m	Daylight_Sub
3	14,205.4849	9,101.3731	228.4974	-4.781m	Hinge
4	14,205.2429	9,101.1315	228.7255	-4.439m	EPS_Base
5	14,205.1299	9,101.0187	228.8319	-4.280m	EPS_Pave2
6	14,205.1017	9,100.9905	228.8585	-4.240m	EPS_Pave1
7	14,205.0735	9,100.9623	228.8851	-4.200m	EPS
8	14,204.2242	9,100.1145	228.5331	-3.000m	ETW_SubBase
9	14,204.2242	9,100.1145	228.9331	-3.000m	ETW
10	14,199.9781	9,095.8754	228.6831	3.000m	ETW_SubBase
11	14,199.9781	9,095.8754	228.8311	3.000m	Drain_Top_Inside
12	14,199.9781	9,095.8754	229.0831	3.000m	ETW
13	14,199.9283	9,095.8257	228.2311	3.070m	Drain_Bottom_Inside
14	14,199.7514	9,095.6490	228.4661	3.320m	Drain_Center
15	14,199.7514	9,095.6490	228.3911	3.320m	Flow_Line
16	14,199.7514	9,095.6490	228.2311	3.320m	Drain_Bottom
17	14,199.6596	9,095.5574	229.0561	3.450m	Flowline_Gutter
18	14,199.6301	9,095.5280	229.2811	3.492m	Top_Curb
19	14,199.5745	9,095.4724	228.2311	3.570m	Drain_Bottom_Outside
20	14,199.5247	9,095.4227	228.8311	3.641m	Drain_Top_Outside
21	14,199.5240	9,095.4220	229.2811	3.642m	Back_Curb
22	14,198.8878	9,094.7868	229.1171	4.541m	EPS_Sub
23	14,198.8870	9,094.7861	229.3171	4.542m	Ditch_Out
24	14,198.3591	9,094.2590	230.8092	5.288m	Daylight

CHAINAGE 0+020.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,221.4596	9,089.0605	225.9147	-7.387m	Daylight
2	14,219.6154	9,087.2193	227.6519	-4.781m	Daylight_Sub
3	14,219.6154	9,087.2193	227.6519	-4.781m	Hinge
4	14,219.3733	9,086.9777	227.8800	-4.439m	EPS_Base
5	14,219.2604	9,086.8649	227.9864	-4.280m	EPS_Pave2

6	14,219.2322	9,086.8367	228.0130	-4.240m	EPS_Pave1
7	14,219.2039	9,086.8085	228.0396	-4.200m	EPS
8	14,218.3547	9,085.9607	227.6876	-3.000m	ETW_SubBase
9	14,218.3547	9,085.9607	228.0876	-3.000m	ETW
10	14,214.1086	9,081.7216	227.8376	3.000m	ETW_SubBase
11	14,214.1086	9,081.7216	227.9856	3.000m	Drain_Top_Inside
12	14,214.1086	9,081.7216	228.2376	3.000m	ETW
13	14,214.0588	9,081.6719	227.3856	3.070m	Drain_Bottom_Inside
14	14,213.8818	9,081.4952	227.6206	3.320m	Drain_Center
15	14,213.8818	9,081.4952	227.5456	3.320m	Flow_Line
16	14,213.8818	9,081.4952	227.3856	3.320m	Drain_Bottom
17	14,213.7901	9,081.4036	228.2106	3.450m	Flowline_Gutter
18	14,213.7606	9,081.3742	228.4356	3.492m	Top_Curb
19	14,213.7049	9,081.3186	227.3856	3.570m	Drain_Bottom_Outside
20	14,213.6551	9,081.2689	227.9856	3.641m	Drain_Top_Outside
21	14,213.6544	9,081.2682	228.4356	3.642m	Back_Curb
22	14,213.0182	9,080.6330	228.2716	4.541m	EPS_Sub
23	14,213.0175	9,080.6323	228.4716	4.542m	Ditch_Out
24	14,212.8696	9,080.4847	228.8895	4.751m	Daylight

CHAINAGE 0+040.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,235.4068	9,074.7237	225.2418	-7.128m	Daylight
2	14,233.7459	9,073.0655	226.8064	-4.781m	Daylight_Sub
3	14,233.7459	9,073.0655	226.8064	-4.781m	Hinge
4	14,233.5038	9,072.8239	227.0345	-4.439m	EPS_Base
5	14,233.3908	9,072.7111	227.1409	-4.280m	EPS_Pave2
6	14,233.3626	9,072.6829	227.1675	-4.240m	EPS_Pave1
7	14,233.3344	9,072.6547	227.1940	-4.200m	EPS
8	14,232.4852	9,071.8069	226.8420	-3.000m	ETW_SubBase
9	14,232.4852	9,071.8069	227.2420	-3.000m	ETW
10	14,228.2390	9,067.5678	226.9920	3.000m	ETW_SubBase
11	14,228.2390	9,067.5678	227.1400	3.000m	Drain_Top_Inside
12	14,228.2390	9,067.5678	227.3920	3.000m	ETW
13	14,228.1892	9,067.5181	226.5400	3.070m	Drain_Bottom_Inside
14	14,228.0123	9,067.3414	226.7750	3.320m	Drain_Center
15	14,228.0123	9,067.3414	226.7000	3.320m	Flow_Line
16	14,228.0123	9,067.3414	226.5400	3.320m	Drain_Bottom
17	14,227.9206	9,067.2498	227.3650	3.450m	Flowline_Gutter
18	14,227.8910	9,067.2204	227.5900	3.492m	Top_Curb
19	14,227.8354	9,067.1648	226.5400	3.570m	Drain_Bottom_Outside

20	14,227.7856	9,067.1151	227.1400	3.641m	Drain_Top_Outside
21	14,227.7849	9,067.1144	227.5900	3.642m	Back_Curb
22	14,227.1487	9,066.4792	227.4260	4.541m	EPS_Sub
23	14,227.1480	9,066.4785	227.6260	4.542m	Ditch_Out
24	14,227.0961	9,066.4268	227.7726	4.615m	Daylight

CHAINAGE 0+060.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,251.1244	9,062.1544	222.9011	-9.371m	Daylight
2	14,247.8763	9,058.9117	225.9609	-4.781m	Daylight_Sub
3	14,247.8763	9,058.9117	225.9609	-4.781m	Hinge
4	14,247.6342	9,058.6700	226.1890	-4.439m	EPS_Base
5	14,247.5213	9,058.5573	226.2954	-4.280m	EPS_Pave2
6	14,247.4931	9,058.5291	226.3219	-4.240m	EPS_Pave1
7	14,247.4648	9,058.5009	226.3485	-4.200m	EPS
8	14,246.6156	9,057.6531	225.9965	-3.000m	ETW_SubBase
9	14,246.6156	9,057.6531	226.3965	-3.000m	ETW
10	14,242.3695	9,053.4140	226.1465	3.000m	ETW_SubBase
11	14,242.3695	9,053.4140	226.2945	3.000m	Drain_Top_Inside
12	14,242.3695	9,053.4140	226.5465	3.000m	ETW
13	14,242.3197	9,053.3643	225.6945	3.070m	Drain_Bottom_Inside
14	14,242.1428	9,053.1876	225.9295	3.320m	Drain_Center
15	14,242.1428	9,053.1876	225.8545	3.320m	Flow_Line
16	14,242.1428	9,053.1876	225.6945	3.320m	Drain_Bottom
17	14,242.0510	9,053.0960	226.5195	3.450m	Flowline_Gutter
18	14,242.0215	9,053.0666	226.7445	3.492m	Top_Curb
19	14,241.9658	9,053.0110	225.6945	3.570m	Drain_Bottom_Outside
20	14,241.9161	9,052.9613	226.2945	3.641m	Drain_Top_Outside
21	14,241.9153	9,052.9606	226.7445	3.642m	Back_Curb
22	14,241.2791	9,052.3254	226.5805	4.541m	EPS_Sub
23	14,241.2784	9,052.3247	226.7805	4.542m	Ditch_Out
24	14,241.2709	9,052.3172	226.8018	4.552m	Daylight

CHAINAGE 0+080.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,266.6230	9,049.3666	220.7668	-11.304m	Daylight
2	14,262.0068	9,044.7579	225.1154	-4.781m	Daylight_Sub
3	14,262.0068	9,044.7579	225.1154	-4.781m	Hinge
4	14,261.7647	9,044.5162	225.3435	-4.439m	EPS_Base
5	14,261.6518	9,044.4035	225.4499	-4.280m	EPS_Pave2
6	14,261.6235	9,044.3753	225.4764	-4.240m	EPS_Pave1
7	14,261.5953	9,044.3471	225.5030	-4.200m	EPS

8	14,260.7461	9,043.4993	225.1510	-3.000m	ETW_SubBase
9	14,260.7461	9,043.4993	225.5510	-3.000m	ETW
10	14,256.4999	9,039.2602	225.3010	3.000m	ETW_SubBase
11	14,256.4999	9,039.2602	225.7010	3.000m	Flange
12	14,256.4999	9,039.2602	225.4490	3.000m	Drain_Top_Inside
13	14,256.4501	9,039.2105	224.8490	3.070m	Drain_Bottom_Inside
14	14,256.2732	9,039.0338	224.8490	3.320m	Drain_Bottom
15	14,256.2732	9,039.0338	225.0090	3.320m	Flow_Line
16	14,256.2732	9,039.0338	225.0840	3.320m	Drain_Center
17	14,256.1815	9,038.9422	225.6740	3.450m	Flowline_Gutter
18	14,256.1520	9,038.9128	225.8990	3.492m	Top_Curb
19	14,256.0963	9,038.8572	224.8490	3.570m	Drain_Bottom_Outside
20	14,256.0465	9,038.8075	225.4490	3.641m	Drain_Top_Outside
21	14,256.0458	9,038.8068	225.8990	3.642m	Back_Curb
22	14,255.4096	9,038.1716	225.7350	4.541m	EPS_Sub
23	14,255.4089	9,038.1709	225.9350	4.542m	Hinge
24	14,255.3481	9,038.1102	225.8778	4.628m	Daylight

CHAINAGE 0+100.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,281.8765	9,036.3339	218.8634	-12.891m	Daylight
2	14,276.1372	9,030.6041	224.2699	-4.781m	Daylight_Sub
3	14,276.1372	9,030.6041	224.2699	-4.781m	Hinge
4	14,275.8952	9,030.3624	224.4980	-4.439m	EPS_Base
5	14,275.7822	9,030.2497	224.6043	-4.280m	EPS_Pave2
6	14,275.7540	9,030.2215	224.6309	-4.240m	EPS_Pave1
7	14,275.7258	9,030.1933	224.6575	-4.200m	EPS
8	14,274.8765	9,029.3455	224.3055	-3.000m	ETW_SubBase
9	14,274.8765	9,029.3455	224.7055	-3.000m	ETW
10	14,270.6304	9,025.1064	224.4555	3.000m	ETW_SubBase
11	14,270.6304	9,025.1064	224.8555	3.000m	ETW
12	14,269.7812	9,024.2585	224.8075	4.200m	EPS
13	14,269.7529	9,024.2304	224.7809	4.240m	EPS_Pave1
14	14,269.7247	9,024.2022	224.7543	4.280m	EPS_Pave2
15	14,269.6118	9,024.0894	224.6480	4.439m	EPS_Base
16	14,269.3697	9,023.8477	224.4199	4.781m	Daylight_Sub
17	14,269.1574	9,023.6358	224.1199	5.081m	Ditch_In
18	14,268.9451	9,023.4238	224.1199	5.381m	Ditch_Out
19	14,268.7328	9,023.2119	224.4199	5.681m	Hinge_Cut
20	14,268.4602	9,022.9398	225.1901	6.067m	Daylight

CHAINAGE 0+120.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,295.7601	9,021.9336	218.2504	-12.542m	Daylight
2	14,290.2677	9,016.4503	223.4244	-4.781m	Daylight_Sub
3	14,290.2677	9,016.4503	223.4244	-4.781m	Hinge
4	14,290.0256	9,016.2086	223.6525	-4.439m	EPS_Base
5	14,289.9127	9,016.0959	223.7588	-4.280m	EPS_Pave2
6	14,289.8845	9,016.0677	223.7854	-4.240m	EPS_Pave1
7	14,289.8562	9,016.0395	223.8120	-4.200m	EPS
8	14,289.0070	9,015.1917	223.4600	-3.000m	ETW_SubBase
9	14,289.0070	9,015.1917	223.8600	-3.000m	ETW
10	14,284.7609	9,010.9526	223.6100	3.000m	ETW_SubBase
11	14,284.7609	9,010.9526	224.0100	3.000m	ETW
12	14,283.9116	9,010.1047	223.9620	4.200m	EPS
13	14,283.8834	9,010.0766	223.9354	4.240m	EPS_Pave1
14	14,283.8552	9,010.0484	223.9088	4.280m	EPS_Pave2
15	14,283.7422	9,009.9356	223.8025	4.439m	EPS_Base
16	14,283.5001	9,009.6939	223.5744	4.781m	Daylight_Sub
17	14,283.2878	9,009.4820	223.2744	5.081m	Ditch_In
18	14,283.0755	9,009.2700	223.2744	5.381m	Ditch_Out
19	14,282.8632	9,009.0581	223.5744	5.681m	Hinge_Cut
20	14,282.6007	9,008.7960	224.3162	6.052m	Daylight

CHAINAGE 0+140.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,308.3276	9,006.2195	218.8772	-10.334m	Daylight
2	14,304.3982	9,002.2965	222.5789	-4.781m	Daylight_Sub
3	14,304.3982	9,002.2965	222.5789	-4.781m	Hinge
4	14,304.1561	9,002.0548	222.8070	-4.439m	EPS_Base
5	14,304.0431	9,001.9421	222.9133	-4.280m	EPS_Pave2
6	14,304.0149	9,001.9139	222.9399	-4.240m	EPS_Pave1
7	14,303.9867	9,001.8857	222.9665	-4.200m	EPS
8	14,303.1375	9,001.0379	222.6145	-3.000m	ETW_SubBase
9	14,303.1375	9,001.0379	223.0145	-3.000m	ETW
10	14,298.8913	8,996.7988	222.7645	3.000m	ETW_SubBase
11	14,298.8913	8,996.7988	222.9125	3.000m	Drain_Top_Inside
12	14,298.8913	8,996.7988	223.1645	3.000m	ETW
13	14,298.8415	8,996.7491	222.3125	3.070m	Drain_Bottom_Inside
14	14,298.6646	8,996.5724	222.5475	3.320m	Drain_Center
15	14,298.6646	8,996.5724	222.4725	3.320m	Flow_Line
16	14,298.6646	8,996.5724	222.3125	3.320m	Drain_Bottom
17	14,298.5729	8,996.4808	223.1375	3.450m	Flowline_Gutter

18	14,298.5433	8,996.4514	223.3625	3.492m	Top_Curb
19	14,298.4877	8,996.3958	222.3125	3.570m	Drain_Bottom_Outside
20	14,298.4379	8,996.3461	222.9125	3.641m	Drain_Top_Outside
21	14,298.4372	8,996.3454	223.3625	3.642m	Back_Curb
22	14,297.8010	8,995.7102	223.1985	4.541m	EPS_Sub
23	14,297.8003	8,995.7095	223.3985	4.542m	Ditch_Out
24	14,297.5614	8,995.4710	224.0737	4.879m	Daylight

CHAINAGE 0+160.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,320.2794	8,989.8906	220.0841	-7.255m	Daylight
2	14,318.5286	8,988.1427	221.7334	-4.781m	Daylight_Sub
3	14,318.5286	8,988.1427	221.7334	-4.781m	Hinge
4	14,318.2865	8,987.9010	221.9615	-4.439m	EPS_Base
5	14,318.1736	8,987.7883	222.0678	-4.280m	EPS_Pave2
6	14,318.1454	8,987.7601	222.0944	-4.240m	EPS_Pave1
7	14,318.1171	8,987.7319	222.1210	-4.200m	EPS
8	14,317.2679	8,986.8841	221.7690	-3.000m	ETW_SubBase
9	14,317.2679	8,986.8841	222.1690	-3.000m	ETW
10	14,313.0218	8,982.6450	221.9190	3.000m	ETW_SubBase
11	14,313.0218	8,982.6450	222.0670	3.000m	Drain_Top_Inside
12	14,313.0218	8,982.6450	222.3190	3.000m	ETW
13	14,312.9720	8,982.5953	221.4670	3.070m	Drain_Bottom_Inside
14	14,312.7951	8,982.4186	221.7020	3.320m	Drain_Center
15	14,312.7951	8,982.4186	221.6270	3.320m	Flow_Line
16	14,312.7951	8,982.4186	221.4670	3.320m	Drain_Bottom
17	14,312.7033	8,982.3270	222.2920	3.450m	Flowline_Gutter
18	14,312.6738	8,982.2976	222.5170	3.492m	Top_Curb
19	14,312.6181	8,982.2420	221.4670	3.570m	Drain_Bottom_Outside
20	14,312.5684	8,982.1923	222.0670	3.641m	Drain_Top_Outside
21	14,312.5677	8,982.1916	222.5170	3.642m	Back_Curb
22	14,311.9314	8,981.5564	222.3530	4.541m	EPS_Sub
23	14,311.9307	8,981.5557	222.5530	4.542m	Ditch_Out
24	14,311.3037	8,980.9297	224.3250	5.428m	Daylight

CHAINAGE 0+180.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,332.6540	8,973.9838	221.9534	-4.774m	Daylight
2	14,332.4894	8,973.8195	221.5603	-4.542m	EPS
3	14,332.4894	8,973.8195	221.4883	-4.542m	Ditch_In
4	14,332.4887	8,973.8188	221.3603	-4.541m	EPS_Sub
5	14,331.8525	8,973.1837	221.5243	-3.642m	Back_Curb

6	14,331.8518	8,973.1830	221.0743	-3.641m	Drain_Top_Outside
7	14,331.8020	8,973.1333	220.4743	-3.570m	Drain_Bottom_Outside
8	14,331.7463	8,973.0777	221.5243	-3.492m	Top_Curb
9	14,331.7168	8,973.0482	221.2993	-3.450m	Flowline_Gutter
10	14,331.6251	8,972.9566	220.6343	-3.320m	Flow_Line
11	14,331.6251	8,972.9566	220.7093	-3.320m	Drain_Center
12	14,331.6251	8,972.9566	220.4743	-3.320m	Drain_Bottom
13	14,331.4482	8,972.7800	220.4743	-3.070m	Drain_Bottom_Inside
14	14,331.3984	8,972.7303	221.3263	-3.000m	Flange
15	14,331.3984	8,972.7303	220.9263	-3.000m	ETW_SubBase
16	14,331.3984	8,972.7303	221.0743	-3.000m	Drain_Top_Inside
17	14,327.1522	8,968.4912	221.4763	3.000m	ETW
18	14,327.1522	8,968.4912	221.0763	3.000m	ETW_SubBase
19	14,327.1522	8,968.4912	221.2243	3.000m	Drain_Top_Inside
20	14,327.1024	8,968.4415	220.6243	3.070m	Drain_Bottom_Inside
21	14,326.9255	8,968.2648	220.7843	3.320m	Flow_Line
22	14,326.9255	8,968.2648	220.8593	3.320m	Drain_Center
23	14,326.9255	8,968.2648	220.6243	3.320m	Drain_Bottom
24	14,326.8338	8,968.1732	221.4493	3.450m	Flowline_Gutter
25	14,326.8043	8,968.1438	221.6743	3.492m	Top_Curb
26	14,326.7486	8,968.0882	220.6243	3.570m	Drain_Bottom_Outside
27	14,326.6988	8,968.0385	221.2243	3.641m	Drain_Top_Outside
28	14,326.6981	8,968.0378	221.6743	3.642m	Back_Curb
29	14,326.0619	8,967.4026	221.5103	4.541m	EPS_Sub
30	14,326.0612	8,967.4019	221.7103	4.542m	Hinge_Cut
31	14,324.4883	8,965.8316	226.1554	6.764m	Daylight

CHAINAGE 0+200.00

CHAINAGE 0+220.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,362.7747	8,956.7347	219.9077	-6.765m	Daylight
2	14,362.7699	8,956.6515	219.8130	-6.682m	EPS
3	14,362.7699	8,956.6515	219.7410	-6.682m	Ditch_In
4	14,362.7698	8,956.6505	219.6130	-6.681m	EPS_Sub
5	14,362.7181	8,955.7530	219.7770	-5.782m	Back_Curb
6	14,362.7180	8,955.7520	219.3270	-5.781m	Drain_Top_Outside
7	14,362.7140	8,955.6817	218.7270	-5.710m	Drain_Bottom_Outside
8	14,362.7095	8,955.6032	219.7770	-5.632m	Top_Curb
9	14,362.7071	8,955.5616	219.5520	-5.590m	Flowline_Gutter
10	14,362.6996	8,955.4321	218.8870	-5.460m	Flow_Line
11	14,362.6996	8,955.4321	218.9620	-5.460m	Drain_Center

12	14,362.6996	8,955.4321	218.7270	-5.460m	Drain_Bottom
13	14,362.6852	8,955.1825	218.7270	-5.210m	Drain_Bottom_Inside
14	14,362.6811	8,955.1123	219.5790	-5.140m	Flange
15	14,362.6811	8,955.1123	219.1790	-5.140m	ETW_SubBase
16	14,362.6811	8,955.1123	219.3270	-5.140m	Drain_Top_Inside
17	14,362.2125	8,946.9858	220.1081	3.000m	ETW
18	14,362.2125	8,946.9858	219.7081	3.000m	ETW_SubBase
19	14,362.2125	8,946.9858	219.8561	3.000m	Drain_Top_Inside
20	14,362.2085	8,946.9156	219.2561	3.070m	Drain_Bottom_Inside
21	14,362.1941	8,946.6660	219.4161	3.320m	Flow_Line
22	14,362.1941	8,946.6660	219.4911	3.320m	Drain_Center
23	14,362.1941	8,946.6660	219.2561	3.320m	Drain_Bottom
24	14,362.1866	8,946.5366	220.0811	3.450m	Flowline_Gutter
25	14,362.1842	8,946.4949	220.3061	3.492m	Top_Curb
26	14,362.1797	8,946.4164	219.2561	3.570m	Drain_Bottom_Outside
27	14,362.1756	8,946.3462	219.8561	3.641m	Drain_Top_Outside
28	14,362.1756	8,946.3452	220.3061	3.642m	Back_Curb
29	14,362.1238	8,945.4477	220.1421	4.541m	EPS_Sub
30	14,362.1237	8,945.4467	220.3421	4.542m	Hinge_Cut
31	14,361.9921	8,943.1634	224.9161	6.829m	Daylight

CHAINAGE 0+240.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,375.1536	8,964.1020	216.0000	-10.701m	Daylight
2	14,377.3105	8,961.0098	218.4834	-6.930m	Daylight_Sub
3	14,377.3156	8,961.0024	218.5194	-6.921m	Hinge
4	14,377.5056	8,960.7300	218.7108	-6.589m	EPS_Base
5	14,377.6007	8,960.5937	218.8217	-6.423m	EPS_Pave2
6	14,377.6245	8,960.5596	218.8494	-6.382m	EPS_Pave1
7	14,377.6482	8,960.5255	218.8771	-6.340m	EPS
8	14,378.3348	8,959.5413	218.9551	-5.140m	ETW
9	14,378.3348	8,959.5413	218.5551	-5.140m	ETW_SubBase
10	14,382.9917	8,952.8650	219.4842	3.000m	ETW
11	14,382.9917	8,952.8650	219.0842	3.000m	ETW_SubBase
12	14,383.6782	8,951.8808	219.4362	4.200m	EPS
13	14,383.7010	8,951.8480	219.4096	4.240m	EPS_Pave1
14	14,383.7238	8,951.8153	219.3830	4.280m	EPS_Pave2
15	14,383.8151	8,951.6844	219.2766	4.439m	EPS_Base
16	14,384.0108	8,951.4039	219.0485	4.781m	Hinge
17	14,384.0108	8,951.4039	219.0485	4.781m	Daylight_Sub
18	14,384.2420	8,951.0724	218.7791	5.186m	Daylight

CHAINAGE 0+260.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,386.9049	8,973.2806	218.9880	-6.391m	Daylight
2	14,387.0643	8,973.2245	218.7219	-6.222m	EPS
3	14,387.0643	8,973.2245	218.6499	-6.222m	Ditch_In
4	14,387.0653	8,973.2241	218.5219	-6.221m	EPS_Sub
5	14,387.9133	8,972.9258	218.6859	-5.322m	Back_Curb
6	14,387.9143	8,972.9255	218.2359	-5.321m	Drain_Top_Outside
7	14,387.9806	8,972.9021	217.6359	-5.250m	Drain_Bottom_Outside
8	14,388.0548	8,972.8760	218.6859	-5.172m	Top_Curb
9	14,388.0942	8,972.8622	218.4609	-5.130m	Flowline_Gutter
10	14,388.2165	8,972.8192	217.7959	-5.000m	Flow_Line
11	14,388.2165	8,972.8192	217.8709	-5.000m	Drain_Center
12	14,388.2165	8,972.8192	217.6359	-5.000m	Drain_Bottom
13	14,388.4523	8,972.7362	217.6359	-4.750m	Drain_Bottom_Inside
14	14,388.5187	8,972.7129	218.4879	-4.680m	Flange
15	14,388.5187	8,972.7129	218.0879	-4.680m	ETW_SubBase
16	14,388.5187	8,972.7129	218.2359	-4.680m	Drain_Top_Inside
17	14,395.7634	8,970.1643	218.9103	3.000m	ETW
18	14,395.7634	8,970.1643	218.5103	3.000m	ETW_SubBase
19	14,395.7634	8,970.1643	218.6583	3.000m	Drain_Top_Inside
20	14,395.8297	8,970.1409	218.0583	3.070m	Drain_Bottom_Inside
21	14,396.0656	8,970.0579	218.2183	3.320m	Flow_Line
22	14,396.0656	8,970.0579	218.2933	3.320m	Drain_Center
23	14,396.0656	8,970.0579	218.0583	3.320m	Drain_Bottom
24	14,396.1879	8,970.0149	218.8833	3.450m	Flowline_Gutter
25	14,396.2272	8,970.0011	219.1083	3.491m	Top_Curb
26	14,396.3014	8,969.9750	218.0583	3.570m	Drain_Bottom_Outside
27	14,396.3678	8,969.9516	218.6583	3.640m	Drain_Top_Outside
28	14,396.3687	8,969.9513	219.1083	3.641m	Back_Curb
29	14,397.2168	8,969.6530	218.9443	4.540m	EPS_Sub
30	14,397.2177	8,969.6526	219.1443	4.541m	Hinge_Cut
31	14,400.5407	8,968.4836	226.1896	8.064m	Daylight

CHAINAGE 0+280.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,390.6041	8,991.3199	220.9380	-5.864m	Daylight
2	14,391.9095	8,991.2024	218.3886	-4.553m	EPS
3	14,391.9095	8,991.2024	218.3166	-4.553m	Ditch_In
4	14,391.9105	8,991.2023	218.1886	-4.552m	EPS_Sub

5	14,392.8059	8,991.1217	218.3526	-3.653m	Back_Curb
6	14,392.8069	8,991.1216	217.9026	-3.652m	Drain_Top_Outside
7	14,392.8770	8,991.1153	217.3026	-3.582m	Drain_Bottom_Outside
8	14,392.9553	8,991.1083	218.3526	-3.503m	Top_Curb
9	14,392.9968	8,991.1045	218.1276	-3.462m	Flowline_Gutter
10	14,393.1260	8,991.0929	217.4626	-3.332m	Flow_Line
11	14,393.1260	8,991.0929	217.5376	-3.332m	Drain_Center
12	14,393.1260	8,991.0929	217.3026	-3.332m	Drain_Bottom
13	14,393.3749	8,991.0705	217.3026	-3.082m	Drain_Bottom_Inside
14	14,393.4450	8,991.0642	218.1546	-3.012m	Flange
15	14,393.4450	8,991.0642	217.7546	-3.012m	ETW_SubBase
16	14,393.4450	8,991.0642	217.9026	-3.012m	Drain_Top_Inside
17	14,399.4316	8,990.5252	218.3951	2.999m	ETW
18	14,399.4316	8,990.5252	217.9951	2.999m	ETW_SubBase
19	14,399.4316	8,990.5252	218.1431	2.999m	Drain_Top_Inside
20	14,399.5017	8,990.5189	217.5431	3.069m	Drain_Bottom_Inside
21	14,399.7507	8,990.4965	217.7031	3.319m	Flow_Line
22	14,399.7507	8,990.4965	217.7781	3.319m	Drain_Center
23	14,399.7507	8,990.4965	217.5431	3.319m	Drain_Bottom
24	14,399.8798	8,990.4849	218.3681	3.449m	Flowline_Gutter
25	14,399.9214	8,990.4812	218.5931	3.491m	Top_Curb
26	14,399.9997	8,990.4741	217.5431	3.569m	Drain_Bottom_Outside
27	14,400.0698	8,990.4678	218.1431	3.640m	Drain_Top_Outside
28	14,400.0708	8,990.4677	218.5931	3.641m	Back_Curb
29	14,400.9661	8,990.3871	218.4291	4.540m	EPS_Sub
30	14,400.9671	8,990.3870	218.6291	4.541m	Hinge_Cut
31	14,403.9649	8,990.1171	224.6487	7.551m	Daylight

CHAINAGE 0+300.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,393.4473	9,011.1831	217.7564	-4.816m	Daylight
2	14,393.7201	9,011.1563	218.0111	-4.542m	EPS
3	14,393.7201	9,011.1563	217.9391	-4.542m	Hinge
4	14,393.7211	9,011.1562	217.8111	-4.541m	EPS_Sub
5	14,394.6158	9,011.0686	217.9751	-3.642m	Back_Curb
6	14,394.6168	9,011.0685	217.5251	-3.641m	Drain_Top_Outside
7	14,394.6868	9,011.0616	216.9251	-3.570m	Drain_Bottom_Outside
8	14,394.7651	9,011.0539	217.9751	-3.492m	Top_Curb
9	14,394.8066	9,011.0499	217.7501	-3.450m	Flowline_Gutter
10	14,394.9356	9,011.0372	217.1601	-3.320m	Drain_Center
11	14,394.9356	9,011.0372	216.9251	-3.320m	Drain_Bottom

12	14,394.9356	9,011.0372	217.0851	-3.320m	Flow_Line
13	14,395.1844	9,011.0128	216.9251	-3.070m	Drain_Bottom_Inside
14	14,395.2544	9,011.0060	217.7771	-3.000m	Flange
15	14,395.2544	9,011.0060	217.3771	-3.000m	ETW_SubBase
16	14,395.2544	9,011.0060	217.5251	-3.000m	Drain_Top_Inside
17	14,401.3254	9,010.4110	217.4625	3.100m	ETW_SubBase
18	14,401.3254	9,010.4110	217.8625	3.100m	ETW
19	14,401.3254	9,010.4110	217.6105	3.100m	Drain_Top_Inside
20	14,401.3954	9,010.4041	217.0105	3.170m	Drain_Bottom_Inside
21	14,401.6442	9,010.3797	217.1705	3.420m	Flow_Line
22	14,401.6442	9,010.3797	217.0105	3.420m	Drain_Bottom
23	14,401.6442	9,010.3797	217.2455	3.420m	Drain_Center
24	14,401.7732	9,010.3671	217.8355	3.550m	Flowline_Gutter
25	14,401.8147	9,010.3630	218.0605	3.592m	Top_Curb
26	14,401.8930	9,010.3553	217.0105	3.670m	Drain_Bottom_Outside
27	14,401.9630	9,010.3485	217.6105	3.741m	Drain_Top_Outside
28	14,401.9640	9,010.3484	218.0605	3.742m	Back_Curb
29	14,402.8587	9,010.2607	217.8965	4.641m	EPS_Sub
30	14,402.8597	9,010.2606	218.0965	4.642m	Hinge_Cut
31	14,404.6184	9,010.0882	221.6308	6.409m	Daylight

CHAINAGE 0+320.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,393.2867	9,032.5164	214.6212	-8.362m	Daylight
2	14,396.7559	9,031.6289	217.0085	-4.781m	Daylight_Sub
3	14,396.7559	9,031.6289	217.0085	-4.781m	Hinge
4	14,397.0873	9,031.5441	217.2365	-4.439m	EPS_Base
5	14,397.2419	9,031.5046	217.3429	-4.279m	EPS_Pave2
6	14,397.2805	9,031.4947	217.3695	-4.240m	EPS_Pave1
7	14,397.3192	9,031.4848	217.3961	-4.200m	EPS
8	14,398.4817	9,031.1874	217.0441	-3.000m	ETW_SubBase
9	14,398.4817	9,031.1874	217.4441	-3.000m	ETW
10	14,405.1405	9,029.4838	216.8585	3.874m	ETW_SubBase
11	14,405.1405	9,029.4838	217.0065	3.874m	Drain_Top_Inside
12	14,405.1405	9,029.4838	217.2585	3.874m	ETW
13	14,405.2087	9,029.4664	216.4065	3.944m	Drain_Bottom_Inside
14	14,405.4509	9,029.4044	216.6415	4.194m	Drain_Center
15	14,405.4509	9,029.4044	216.5665	4.194m	Flow_Line
16	14,405.4509	9,029.4044	216.4065	4.194m	Drain_Bottom
17	14,405.5765	9,029.3723	217.2315	4.324m	Flowline_Gutter
18	14,405.6169	9,029.3620	217.4565	4.365m	Top_Curb

19	14,405.6931	9,029.3425	216.4065	4.444m	Drain_Bottom_Outside
20	14,405.7612	9,029.3250	217.0065	4.514m	Drain_Top_Outside
21	14,405.7622	9,029.3248	217.4565	4.515m	Back_Curb
22	14,406.6332	9,029.1020	217.2925	5.414m	EPS_Sub
23	14,406.6341	9,029.1017	217.4925	5.415m	Ditch_Out
24	14,406.9919	9,029.0102	218.2310	5.785m	Daylight

CHAINAGE 0+340.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,400.2468	9,054.0165	213.0169	-10.116m	Daylight
2	14,404.8355	9,051.3129	216.5375	-4.790m	Daylight_Sub
3	14,404.8432	9,051.3084	216.5735	-4.781m	Hinge
4	14,405.1293	9,051.1398	216.7649	-4.449m	EPS_Base
5	14,405.2725	9,051.0554	216.8757	-4.283m	EPS_Pave2
6	14,405.3083	9,051.0343	216.9034	-4.242m	EPS_Pave1
7	14,405.3441	9,051.0132	216.9311	-4.200m	EPS
8	14,406.3780	9,050.4040	216.6091	-3.000m	ETW_SubBase
9	14,406.3780	9,050.4040	217.0091	-3.000m	ETW
10	14,412.3401	9,046.8912	216.3739	3.920m	ETW_SubBase
11	14,412.3401	9,046.8912	216.7739	3.920m	ETW
12	14,413.3740	9,046.2820	216.7259	5.120m	EPS
13	14,413.4084	9,046.2618	216.6993	5.160m	EPS_Pave1
14	14,413.4427	9,046.2415	216.6727	5.200m	EPS_Pave2
15	14,413.5802	9,046.1605	216.5663	5.359m	EPS_Base
16	14,413.8749	9,045.9869	216.3382	5.701m	Daylight_Sub
17	14,414.1334	9,045.8346	216.0382	6.001m	Ditch_In
18	14,414.3919	9,045.6823	216.0382	6.301m	Ditch_Out
19	14,414.6504	9,045.5300	216.3382	6.601m	Hinge_Cut
20	14,415.0959	9,045.2675	217.3725	7.119m	Daylight

CHAINAGE 0+360.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,414.9824	9,071.0219	213.2048	-9.141m	Daylight
2	14,418.0310	9,067.9048	216.1115	-4.781m	Daylight_Sub
3	14,418.0310	9,067.9048	216.1115	-4.781m	Hinge
4	14,418.2701	9,067.6603	216.3396	-4.439m	EPS_Base
5	14,418.3817	9,067.5462	216.4460	-4.279m	EPS_Pave2
6	14,418.4096	9,067.5176	216.4726	-4.240m	EPS_Pave1
7	14,418.4375	9,067.4891	216.4992	-4.200m	EPS
8	14,419.2765	9,066.6312	216.1472	-3.000m	ETW_SubBase
9	14,419.2765	9,066.6312	216.5472	-3.000m	ETW

10	14,423.9532	9,061.8493	215.9331	3.689m	ETW_SubBase
11	14,423.9532	9,061.8493	216.0811	3.689m	Drain_Top_Inside
12	14,423.9532	9,061.8493	216.3331	3.689m	ETW
13	14,424.0024	9,061.7991	215.4811	3.759m	Drain_Bottom_Inside
14	14,424.1772	9,061.6203	215.7161	4.009m	Drain_Center
15	14,424.1772	9,061.6203	215.6411	4.009m	Flow_Line
16	14,424.1772	9,061.6203	215.4811	4.009m	Drain_Bottom
17	14,424.2679	9,061.5276	216.3061	4.139m	Flowline_Gutter
18	14,424.2970	9,061.4978	216.5311	4.181m	Top_Curb
19	14,424.3520	9,061.4416	215.4811	4.259m	Drain_Bottom_Outside
20	14,424.4012	9,061.3913	216.0811	4.330m	Drain_Top_Outside
21	14,424.4019	9,061.3906	216.5311	4.331m	Back_Curb
22	14,425.0305	9,060.7479	216.3671	5.230m	EPS_Sub
23	14,425.0312	9,060.7471	216.5671	5.231m	Ditch_Out
24	14,425.1344	9,060.6416	216.8624	5.378m	Daylight

CHAINAGE 0+380.00

POINT	**X**	**Y**	**Z**	**OFFSET**	**STRING CUT**
1	14,433.5114	9,081.2991	215.5755	-4.870m	Daylight
2	14,433.5668	9,081.2299	215.6345	-4.781m	Daylight_Sub
3	14,433.5668	9,081.2299	215.6345	-4.781m	Hinge
4	14,433.7805	9,080.9628	215.8626	-4.439m	EPS_Base
5	14,433.8801	9,080.8382	215.9690	-4.280m	EPS_Pave2
6	14,433.9050	9,080.8070	215.9956	-4.240m	EPS_Pave1
7	14,433.9300	9,080.7758	216.0222	-4.200m	EPS
8	14,434.6795	9,079.8387	215.6702	-3.000m	ETW_SubBase
9	14,434.6795	9,079.8387	216.0702	-3.000m	ETW
10	14,438.4274	9,075.1524	215.5202	3.001m	ETW_SubBase
11	14,438.4274	9,075.1524	215.6682	3.001m	Drain_Top_Inside
12	14,438.4274	9,075.1524	215.9202	3.001m	ETW
13	14,438.4713	9,075.0974	215.0682	3.071m	Drain_Bottom_Inside
14	14,438.6275	9,074.9022	215.3032	3.321m	Drain_Center
15	14,438.6275	9,074.9022	215.2282	3.321m	Flow_Line
16	14,438.6275	9,074.9022	215.0682	3.321m	Drain_Bottom
17	14,438.7085	9,074.8010	215.8932	3.451m	Flowline_Gutter
18	14,438.7345	9,074.7684	216.1182	3.492m	Top_Curb
19	14,438.7836	9,074.7070	215.0682	3.571m	Drain_Bottom_Outside
20	14,438.8276	9,074.6520	215.6682	3.641m	Drain_Top_Outside
21	14,438.8282	9,074.6512	216.1182	3.642m	Back_Curb
22	14,439.3897	9,073.9492	215.9542	4.541m	EPS_Sub
23	14,439.3903	9,073.9484	216.1542	4.542m	Ditch_Out

24	14,439.9738	9,073.2188	218.0225	5.477m	Daylight

CHAINAGE 0+400.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,447.0666	9,096.3722	212.9154	-8.176m	Daylight
2	14,449.1868	9,093.7210	215.1786	-4.781m	Daylight_Sub
3	14,449.1868	9,093.7210	215.1786	-4.781m	Hinge
4	14,449.4004	9,093.4538	215.4066	-4.439m	EPS_Base
5	14,449.5001	9,093.3292	215.5130	-4.280m	EPS_Pave2
6	14,449.5250	9,093.2980	215.5396	-4.240m	EPS_Pave1
7	14,449.5499	9,093.2669	215.5662	-4.200m	EPS
8	14,450.2994	9,092.3297	215.2142	-3.000m	ETW_SubBase
9	14,450.2994	9,092.3297	215.6142	-3.000m	ETW
10	14,454.0466	9,087.6437	215.0642	3.000m	ETW_SubBase
11	14,454.0466	9,087.6437	215.2122	3.000m	Drain_Top_Inside
12	14,454.0466	9,087.6437	215.4642	3.000m	ETW
13	14,454.0906	9,087.5888	214.6122	3.070m	Drain_Bottom_Inside
14	14,454.2467	9,087.3935	214.8472	3.320m	Drain_Center
15	14,454.2467	9,087.3935	214.7722	3.320m	Flow_Line
16	14,454.2467	9,087.3935	214.6122	3.320m	Drain_Bottom
17	14,454.3277	9,087.2923	215.4372	3.450m	Flowline_Gutter
18	14,454.3537	9,087.2597	215.6622	3.492m	Top_Curb
19	14,454.4028	9,087.1983	214.6122	3.570m	Drain_Bottom_Outside
20	14,454.4468	9,087.1433	215.2122	3.641m	Drain_Top_Outside
21	14,454.4474	9,087.1426	215.6622	3.642m	Back_Curb
22	14,455.0088	9,086.4404	215.4982	4.541m	EPS_Sub
23	14,455.0095	9,086.4397	215.6982	4.542m	Ditch_Out
24	14,456.1743	9,084.9831	219.4283	6.407m	Daylight

CHAINAGE 0+420.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	14,463.8232	9,107.4416	213.6728	-6.356m	Daylight
2	14,464.8066	9,106.2118	214.7226	-4.781m	Daylight_Sub
3	14,464.8066	9,106.2118	214.7226	-4.781m	Hinge
4	14,465.0203	9,105.9446	214.9506	-4.439m	EPS_Base
5	14,465.1199	9,105.8200	215.0570	-4.280m	EPS_Pave2
6	14,465.1448	9,105.7888	215.0836	-4.240m	EPS_Pave1
7	14,465.1698	9,105.7577	215.1102	-4.200m	EPS
8	14,465.9192	9,104.8205	214.7582	-3.000m	ETW_SubBase
9	14,465.9192	9,104.8205	215.1582	-3.000m	ETW
10	14,469.6665	9,100.1346	214.6082	3.000m	ETW_SubBase
11	14,469.6665	9,100.1346	214.7562	3.000m	Drain_Top_Inside

12	14,469.6665	9,100.1346	215.0082	3.000m	ETW
13	14,469.7104	9,100.0796	214.1562	3.070m	Drain_Bottom_Inside
14	14,469.8665	9,099.8844	214.3912	3.320m	Drain_Center
15	14,469.8665	9,099.8844	214.3162	3.320m	Flow_Line
16	14,469.8665	9,099.8844	214.1562	3.320m	Drain_Bottom
17	14,469.9475	9,099.7831	214.9812	3.450m	Flowline_Gutter
18	14,469.9735	9,099.7505	215.2062	3.492m	Top_Curb
19	14,470.0227	9,099.6891	214.1562	3.570m	Drain_Bottom_Outside
20	14,470.0666	9,099.6342	214.7562	3.641m	Drain_Top_Outside
21	14,470.0672	9,099.6334	215.2062	3.642m	Back_Curb
22	14,470.6287	9,098.9313	215.0422	4.541m	EPS_Sub
23	14,470.6293	9,098.9305	215.2422	4.542m	Ditch_Out
24	14,471.1735	9,098.2499	216.9850	5.413m	Daylight

10. VERTIKALNI TOK TRASE

Profile VIP Chainage Curve Report

Vertical Alignment: NIVELETA
Description:
Chainage Range: Start: 0+000.00, End: 0+423.63

VIP	Chainage	Gradient Out	Curve Length
0.00	0+000.00	-4.23%	
1.00	0+223.31	-2.28%	97.221m
	Vertical Curve Information:(sag curve)		
	PVC Chainage: 0+174.72 Level: 221.622m VIP Station: 0+223.31 Level: 219.568m PVT Chainage: 0+271.94 Level: 218.459m Low Point: 0+271.94 Level: 218.459m Gradient In: -4.23% Gradient Out: -2.28% Change: 1.95% K: Curve Length: 97.221m Headlight Distance:		
2.00	0+423.63		

VIP Chainage Increment Report

Vertical Alignment: NIVELETA
Description:
Chainage Range: Start: 0+000.00, End: 0+423.63
Chainage Increment: 20.00

Chainage	Level	Gradient Per cent (%)	Location
0+000.00	229.008m		VIP
0+020.00	228.163m	-4.23%	
0+040.00	227.317m	-4.23%	
0+060.00	226.472m	-4.23%	
0+080.00	225.626m	-4.23%	
0+100.00	224.781m	-4.23%	
0+120.00	223.935m	-4.23%	
0+140.00	223.090m	-4.23%	
0+160.00	222.244m	-4.23%	
0+174.72	221.622m	-4.23%	PVC
0+180.00	221.401m	-4.17%	
0+200.00	220.617m	-3.92%	
0+220.00	219.913m	-3.52%	
0+223.31	219.804m	-3.29%	Sag
0+240.00	219.289m	-3.09%	
0+260.00	218.745m	-2.72%	
0+271.94	218.459m	-2.40%	PVT
0+280.00	218.275m	-2.28%	
0+300.00	217.819m	-2.28%	
0+320.00	217.363m	-2.28%	
0+340.00	216.907m	-2.28%	
0+360.00	216.451m	-2.28%	
0+380.00	215.995m	-2.28%	
0+400.00	215.539m	-2.28%	
0+420.00	215.083m	-2.28%	
0+423.63	215.001m	-2.28%	VIP

11. PRORAČUN KOLIČINA ZEMLJANIH RADOVA

CUT/FILL REPORT

GENERATED: 2020-06-13 16:28:30

VOLUME SUMMARY

NAME	TYPE	CUT FACTOR	FILL FACTOR	2D AREA (SQ.M)	CUT (CU. M.)	FILL (CU. M.)	NET (CU. M.)
SURFACE	FULL	1.000	1.000	5948.07	5318.59	2997.11	2321.48<CUT>

TOTALS

	2D AREA (SQ.M)	CUT (CU. M.)	FILL (CU. M.)	NET (CU. M.)
TOTAL	5948.07	5318.59	2997.11	2321.48<CUT>

*** VALUE ADJUSTED BY CUT OR FILL FACTOR OTHER THAN 1.0**

12. PRORAČUN KOLIČINA ZEMLJANIH RADOVA PO PRESJECIMA

Volume Report
Alignment: OS CESTE
Sample Line Group: Presjeci
Start Chain: 0+000.000
End Chain: 0+423.626

Chainage	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	5.47	0.00	0.00	1.23	0.00	0.00	0.00	0.00	0.00
0+020.000	1.17	66.44	66.44	4.30	55.33	66.44	66.44	55.33	11.10
0+040.000	0.75	19.20	19.20	3.30	76.00	85.63	85.63	131.33	-45.70
0+060.000	1.58	23.26	23.26	5.48	87.83	108.90	108.90	219.17	-110.27
0+080.000	0.51	20.82	20.82	14.19	196.73	129.72	129.72	415.89	-286.17
0+100.000	0.89	13.94	13.94	21.91	361.01	143.65	143.65	776.90	-633.25
0+120.000	0.87	17.53	17.53	20.67	425.81	161.18	161.18	1202.71	-1041.54
0+140.000	1.25	21.13	21.13	13.17	338.33	182.31	182.31	1541.04	-1358.73
0+160.000	7.36	86.11	86.11	2.67	158.31	268.42	268.42	1699.35	-1430.93
0+174.715	20.53	205.23	205.23	0.00	19.65	473.65	473.65	1719.00	-1245.36
0+180.000	26.29	123.72	123.72	0.00	0.01	597.37	597.37	1719.02	-1121.65
0+183.140	30.04	88.43	88.43	0.00	0.00	685.80	685.80	1719.02	-1033.22
0+184.777	31.82	50.62	50.62	0.00	0.00	736.42	736.42	1719.02	-982.59
0+186.420	32.57	52.91	52.91	0.00	0.00	789.33	789.33	1719.02	-929.68
0+188.148	33.50	57.07	57.07	0.00	0.00	846.40	846.40	1719.02	-872.61
0+200.000	44.53	468.78	468.78	0.00	0.00	1315.18	1315.18	1719.02	-403.84
0+200.084	44.69	3.75	3.75	0.00	0.00	1318.93	1318.93	1719.02	-400.09
0+213.141	45.09	597.44	597.44	0.00	0.00	1916.37	1916.37	1719.02	197.35
0+220.000	33.74	279.35	279.35	0.00	0.00	2195.72	2195.72	1719.02	476.70
0+232.162	0.00	215.26	215.26	25.65	139.39	2410.98	2410.98	1858.41	552.58
0+240.000	0.00	0.00	0.00	16.92	147.47	2410.98	2410.98	2005.88	405.11
0+246.812	6.91	26.53	26.53	4.23	61.76	2437.52	2437.52	2067.64	369.88
0+251.182	18.22	59.05	59.05	1.03	9.26	2496.56	2496.56	2076.90	419.66
0+260.000	46.81	299.08	299.08	0.00	3.71	2795.64	2795.64	2080.61	715.03
0+264.239	55.44	222.77	222.77	0.00	0.00	3018.41	3018.41	2080.61	937.80
0+271.936	54.35	429.18	429.18	0.00	0.00	3447.59	3447.59	2080.61	1366.98
0+276.175	55.11	233.85	233.85	0.00	0.00	3681.44	3681.44	2080.61	1600.82
0+277.903	54.97	95.09	95.09	0.00	0.00	3776.52	3776.52	2080.61	1695.91
0+279.546	54.70	90.13	90.13	0.00	0.00	3866.65	3866.65	2080.61	1786.04

0+280.000	54.13	24.68	24.68	0.00	0.00	3891.33	3891.33	2080.61	1810.72
0+280.000	54.13	0.00	0.00	0.00	0.00	3891.33	3891.33	2080.61	1810.72
0+281.180	52.41	62.86	62.86	0.00	0.00	3954.19	3954.19	2080.61	1873.58
0+293.960	31.87	538.57	538.57	0.00	0.00	4492.76	4492.76	2080.61	2412.15
0+293.960	31.88	0.01	0.01	0.00	0.00	4492.77	4492.77	2080.61	2412.16
0+296.073	28.34	63.64	63.64	0.00	0.00	4556.41	4556.41	2080.61	2475.80
0+298.193	24.98	56.51	56.51	0.00	0.00	4612.92	4612.92	2080.61	2532.31
0+299.145	23.10	22.88	22.88	0.00	0.00	4635.80	4635.80	2080.61	2555.19
0+299.742	22.04	13.49	13.49	0.01	0.00	4649.29	4649.29	2080.61	2568.67
0+300.000	21.58	5.62	5.62	0.02	0.00	4654.91	4654.91	2080.62	2574.29
0+310.000	5.91	135.89	135.89	1.56	8.08	4790.80	4790.80	2088.70	2702.10
0+311.696	5.10	9.33	9.33	2.62	3.55	4800.13	4800.13	2092.25	2707.88
0+320.000	2.54	30.49	30.49	6.16	37.95	4830.63	4830.63	2130.21	2700.42
0+323.959	1.65	7.81	7.81	10.58	34.99	4838.44	4838.44	2165.20	2673.25
0+330.000	0.37	5.70	5.70	18.48	92.87	4844.15	4844.15	2258.06	2586.08
0+337.213	1.16	5.06	5.06	24.44	162.82	4849.21	4849.21	2420.88	2428.33
0+340.000	1.06	2.82	2.82	25.01	72.20	4852.03	4852.03	2493.08	2358.95
0+350.467	1.57	12.58	12.58	17.35	232.76	4864.61	4864.61	2725.84	2138.77
0+352.101	1.67	2.44	2.44	15.01	27.90	4867.05	4867.05	2753.74	2113.31
0+360.000	2.08	14.04	14.04	5.88	86.68	4881.09	4881.09	2840.42	2040.67
0+362.731	2.94	6.65	6.65	3.16	12.88	4887.73	4887.73	2853.29	2034.44
0+364.088	3.36	4.28	4.28	2.59	3.90	4892.01	4892.01	2857.20	2034.81
0+374.684	8.53	62.23	62.23	0.13	14.76	4954.24	4954.24	2871.96	2082.28
0+376.233	9.07	13.64	13.64	0.08	0.17	4967.87	4967.87	2872.12	2095.75
0+378.353	9.98	20.19	20.19	0.01	0.10	4988.06	4988.06	2872.22	2115.84
0+379.275	10.40	9.39	9.39	0.02	0.02	4997.45	4997.45	2872.24	2125.21
0+380.000	10.89	7.72	7.72	0.00	0.01	5005.17	5005.17	2872.25	2132.92
0+380.467	11.23	5.16	5.16	0.00	0.00	5010.34	5010.34	2872.25	2138.08
0+400.000	14.61	252.31	252.31	4.75	46.35	5262.64	5262.64	2918.61	2344.04
0+420.000	5.64	202.44	202.44	1.79	65.36	5465.09	5465.09	2983.96	2481.13
0+423.626	6.87	22.67	22.67	2.39	7.58	5487.76	5487.76	2991.55	2496.21

13. LITERATURA

1) Prof. dr. sc. Željko Korlaet, "Uvod u projektiranje i građenje cesta" ,Građevinski Fakultet Sveučilišta u Zagrebu, Zagreb, 1995.

2) Ministarstvo pomorstva, prometa i veza, "Pravilnik o osnovnim uvjetima kojima javne ceste izvan naselja i njihovi elementi moraju udovoljavati sa stajališta sigurnosti prometa", Narodne novine, Zagreb, 30. studenoga 2001