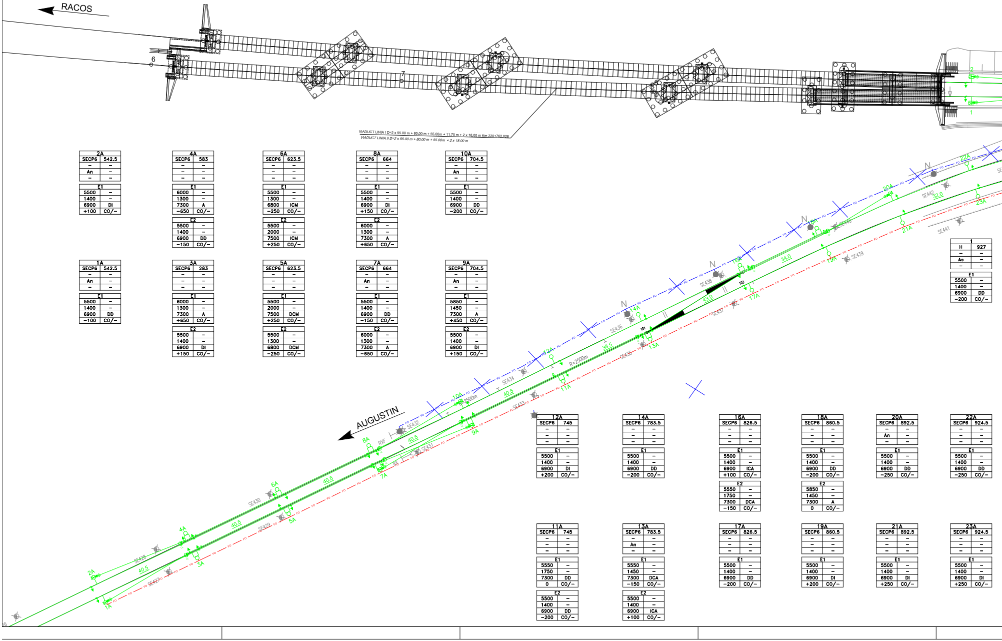
2	
H	927
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–


RACOS
6
7
VIADUCT LINIA I D=2 x 55.00 m + 80.00 m + 55.00m + 11.70 m + 2 x 18.00 m Km 220+762.028
VIADUCT LINIA II D=2 x 55.00 m + 80.00 m + 55.00m + 2 x 18.00 m
AUGUSTIN
R=2500m
1A
2A
3A
4A
5A
6A
7A
8A
9A
10A
11A
12A
13A
14A
16A
17A
19A
20A
21A
22A
23A
SE428
SE429
SE430
SE431
SE432
SE433
SE434
SE435
SE436
SE437
SE438
SE439
SE440
SE441
SE442
40.5
38.5
43.0
34.0
32.0
101
103
N
RXF
FO

2A	
SECP6	542.5
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DI
+100	CO/–

4A	
SECP6	583
–	–
–	–
–	–
E1	
6000	–
1300	–
7300	A
–650	CO/–
E2	
5500	–
1400	–
6900	DD
–150	CO/–

6A	
SECP6	623.5
–	–
–	–
–	–
E1	
5500	–
1300	–
6800	ICM
–250	CO/–
E2	
5500	–
2000	–
7500	ICM
+250	CO/–

8A	
SECP6	664
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–
E2	
6000	–
1300	–
7300	A
+650	CO/–

10A	
SECP6	704.5
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

1A	
SECP6	542.5
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–100	CO/–

3A	
SECP6	283
–	–
–	–
–	–
E1	
6000	–
1300	–
7300	A
+650	CO/–
E2	
5500	–
1400	–
6900	DI
+150	CO/–

5A	
SECP6	623.5
–	–
–	–
–	–
E1	
5500	–
2000	–
7500	DCM
+250	CO/–
E2	
5500	–
1300	–
6800	DCM
–250	CO/–

7A	
SECP6	664
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–150	CO/–
E2	
6000	–
1300	–
7300	A
–650	CO/–

9A	
SECP6	704.5
–	–
An	–
–	–
E1	
5850	–
1450	–
7300	A
+450	CO/–
E2	
5500	–
1400	–
6900	DI
+150	CO/–

1	
H	927
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

12A	
SECP6	745
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–

14A	
SECP6	783.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

16A	
SECP6	826.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	ICA
+100	CO/–
E2	
5550	–
1750	–
7300	DCA
–150	CO/–

18A	
SECP6	860.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–
E2	
5850	–
1450	–
7300	A
0	CO/–

20A	
SECP6	892.5
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–250	CO/–

22A	
SECP6	924.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–250	CO/–

11A	
SECP6	745
–	–
–	–
–	–
E1	
5550	–
1750	–
7300	DD
0	CO/–
E2	
5500	–
1400	–
6900	DD
–200	CO/–

13A	
SECP6	783.5
–	–
An	–
–	–
E1	
5550	–
1450	–
7300	DCA
–150	CO/–
E2	
5500	–
1400	–
6900	ICA
+100	CO/–

17A	
SECP6	826.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

19A	
SECP6	860.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–

21A	
SECP6	892.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

23A	
SECP6	924.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

4	
H	968
–	–
–	–
–	–
E1	
6000	–
1300	–
7300	A
–650	CO/–
E2	
5500	–
1400	–
6900	DD
–150	CO/–

6	
H	008.5
–	–
–	–
–	–
E1	
5500	–
1300	–
6800	ICM
–250	CO/–
E2	
5500	–
2000	–
7500	ICM
+250	CO/–

8	
H	049
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–
E2	
6000	–
1300	–
7300	A
+650	CO/–

12	
H	085
–	–
As	–
–	–
E1	
5850	–
1450	–
7300	DD
0	CO/–
E2	
5500	–
1400	–
6900	DD
–200	CO/–

17	
MU	107
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	ICA
+100	CS/–
E2	
5550	–
1750	–
7300	DCA
–150	CS/–

18	
H	114.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	ICA
+100	CO/–
E2	
5550	–
1750	–
7300	DCA
–150	CO/–

22	
H	155
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

24	
H	186.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–

28	
H	227
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

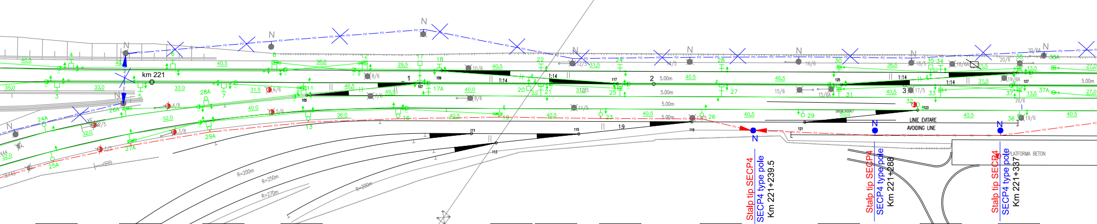
30	
H	273.5
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–

35	
MU	310
–	–
–	–
–	–
E1	
5550	–
1400	–
6950	DD
0	CS/–

34	
H	314
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

38	
H	345.5
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	ICA
+100	CO/–
E2	
5550	–
1750	–
7300	DCA
–150	CO/–

38A	
H	359
–	–
As	–
–	–


TRAVERSARE I
KM 230+
km 221
N
1:14
1:9
5.00m
R=200m
R=250m
R=270m
LINIE EVITARE
AVOIDING LINE
PLATFORMA BETON
Stalp tip SECP4
SECP4 type pole
Km 221+239.5
Stalp tip SECP4
SECP4 type pole
Km 221+288
Stalp tip SECP4
SECP4 type pole
Km 221+337

3	
H	962
–	–
–	–
–	–
E1	
6000	–
1300	–
7300	A
+650	CO/–
E2	
5500	–
1400	–
6900	DI
+150	CO/–

5	
H	995.5
–	–
–	–
–	–
E1	
5500	–
2000	–
7500	DCM
+250	CO/–
E2	
5500	–
1300	–
6800	DCM
–250	CO/–

7	
H	028.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–150	CO/–
E2	
6000	–
1300	–
7300	A
–650	CO/–

11	
H	060.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–
E1	
5500	–
1400	–
6900	DCA
0	CO/–
E2	
5550	–
1750	–
7300	DCA
–200	CO/–

20	
MU	150
–	–
–	–
–	–
E1	
5550	–
1400	–
6950	DD
0	CS/–

21	
H	155
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
0	CO/–
E2	
5850	–
1450	–
7300	A
–200	CO/–
E3	
5500	–
1400	–
6900	DI
+200	CO/–

25	
H	186.5
–	–
As	–
–	–
E1	
5550	–
1750	–
7300	DCA
–150	CO/–
E2	
5500	–
1400	–
6900	ICA
+100	CO/–
E3	
5500	–
1400	–
6900	DD
–200	CO/–

27	
H	227
–	–
–	–
–	–
E1	
5550	–
1750	–
6900	DCA
0	CO/–
E2	
5500	–
1400	–
6900	DCA
–200	CO/–
E3	
5500	–
1400	–
6900	DI
+200	CO/–

31	
H	273.5
–	–
As	–
–	–
E1	
5550	–
1750	–
7300	DCA
–150	CO/–
E2	
5500	–
1400	–
6900	ICA
+100	CO/–
E3	
5500	–
1400	–
6900	DD
–200	CO/–

33	
H	314
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–
E2	
5500	–
1400	–
6900	DI
+200	CO/–

37	
H	345.5
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DI
0	CO/–
E2	
5850	–
1450	–
7300	A
–200	CO/–
E3	
5500	–
1400	–
6900	DD
–200	CO/–

24A	
SECP6	956.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–250	CO/–

26A	
SECP6	988.5
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DD
–300	CO/–

28A	
H	020.5
–	–
–	–
–	–
E1	
5850	–
1450	–
7300	A
+300	CO/–
E2	
5500	–
1400	–
6900	DI
+100	CO/–

17A	
SECP6	110
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–250	CO/–

37A	
SECP6	359
–	–
As	–
–	–

25A	
SECP6	956.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

27A	
SECP6	988.5
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

29A	
H	020.5
–	–
–	–
–	–
E1	
5850	–
1450	–
7300	A
+450	CO/–
E2	
5500	–
1400	–
6900	DI
+250	CO/–

13	
SECP6	062
–	–
–	–
–	–
E1	
5500	–
2000	–
7500	DI
+350	CO/–
E2	
5500	–
1300	–
6800	DI
+150	CO/–

16	
SECP6	098
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–
E2	
5850	–
1450	–
7300	A
+50	CO/–

19	
SECP6	138.5
–	–
As	–
–	–
E1	
5500	–
1400	–
6900	DI
0	CO/–

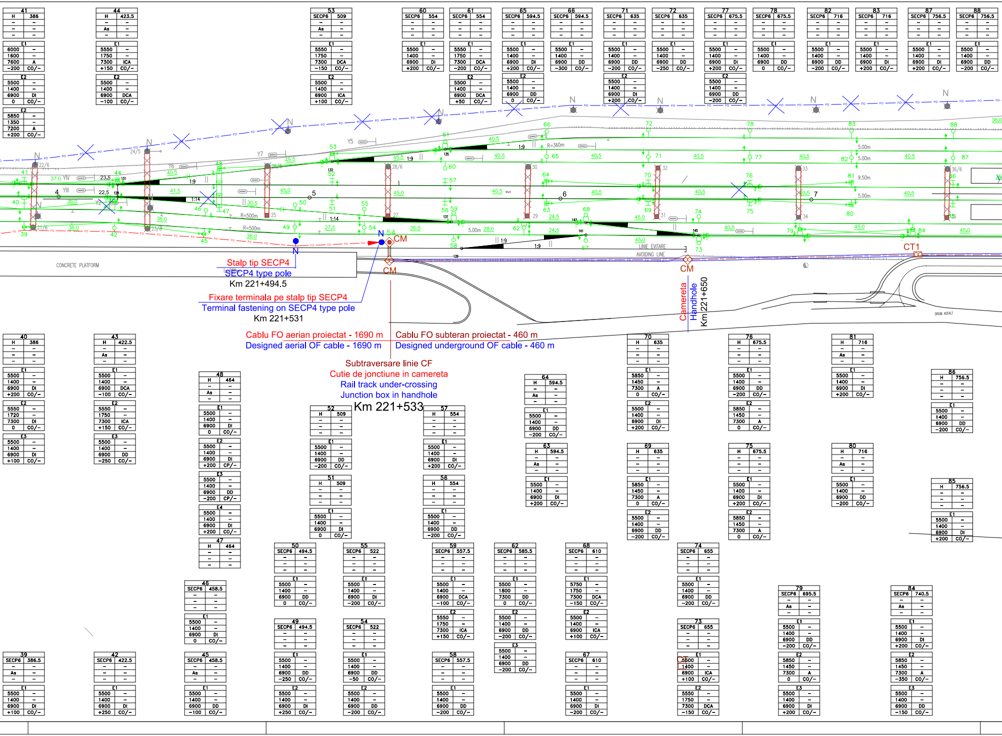
23	
SECP6	179
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
+200	CO/–

26	
SECP6	219.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–

29	
SECP6	260
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

32	
SECP6	305.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
+200	CO/–

36	
SECP6	346
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–


Stalp tip SECP4
SECP4 type pole
Km 221+494.5

Fixare terminala pe stalp tip SECP4
Terminal fastening on SECP4 type pole
Km 221+531

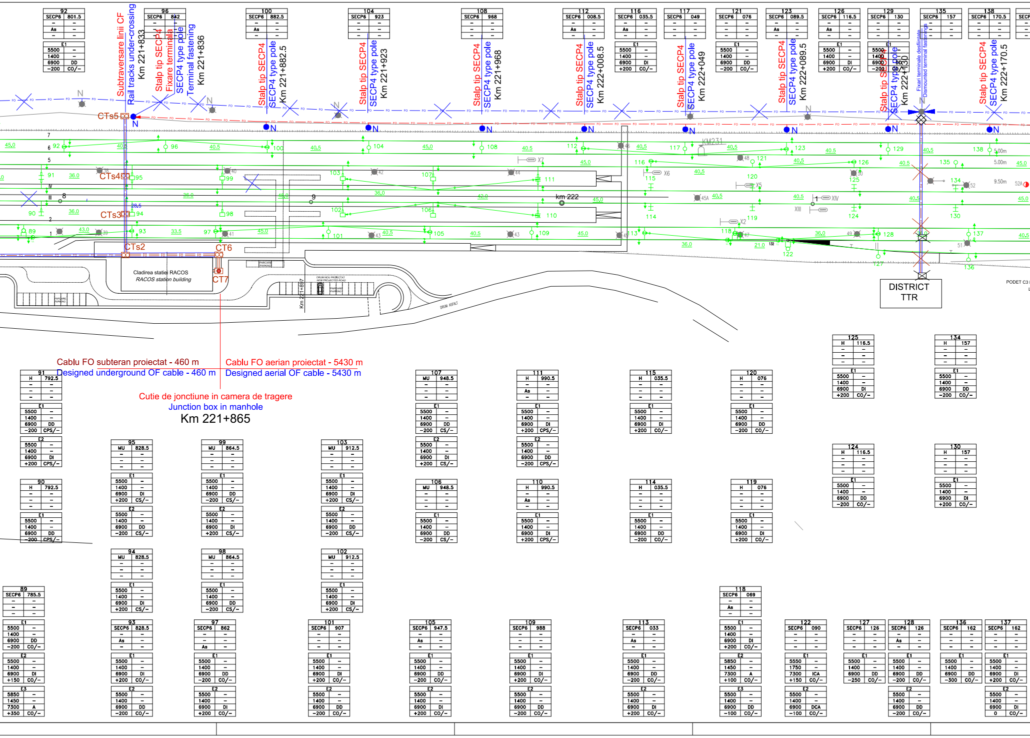
Cablu FO aerian proiectat - 1690 m
Designed aerial OF cable - 1690 m

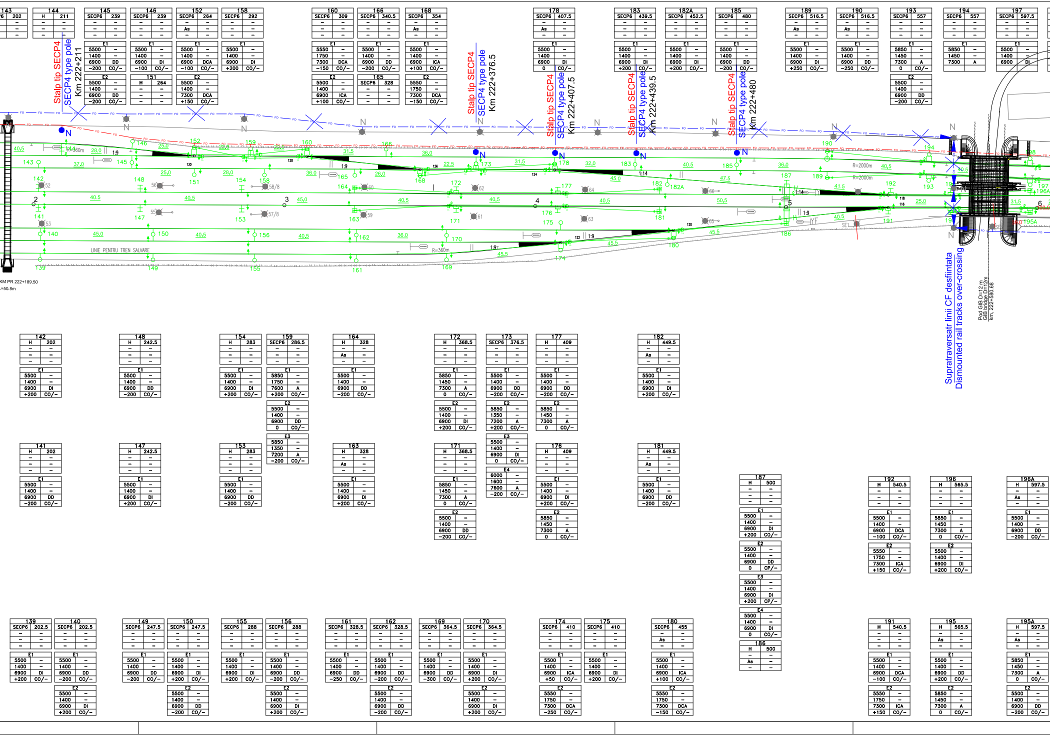
Cablu FO subteran proiectat - 460 m
Designed underground OF cable - 460 m

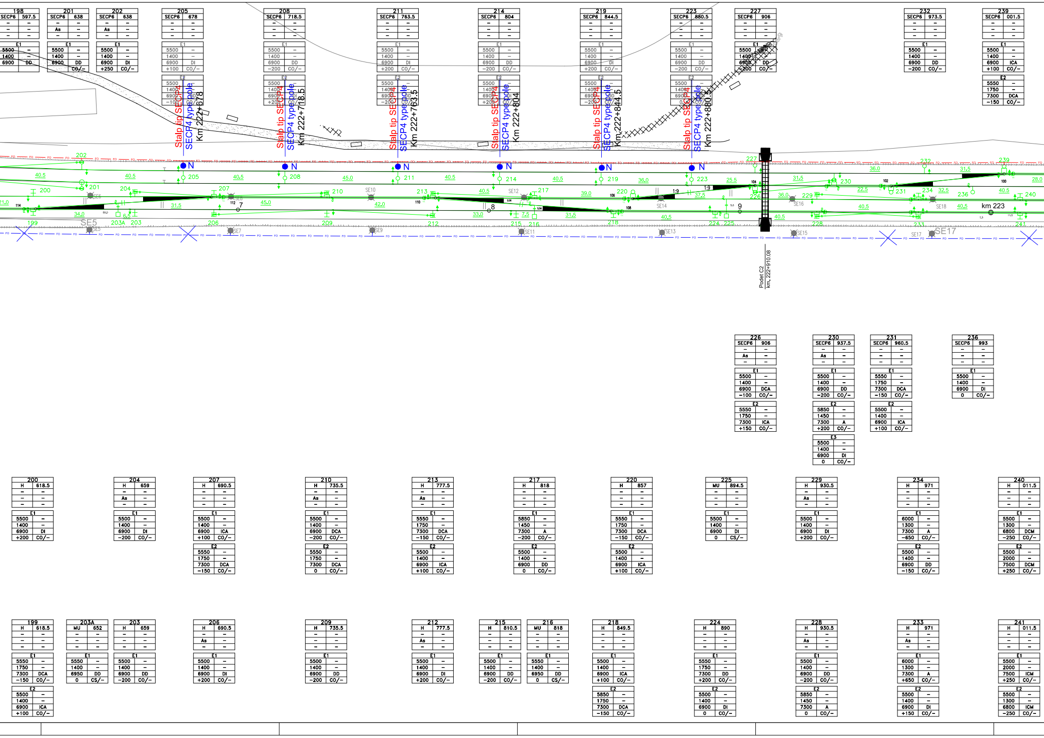
Subtraversare linie CF
Cutie de jonctiune in camereta
Rail track under-crossing
Junction box in handhole
Km 221+533

Camereta
Handhole
Km 221+650

CONCRETE PLATFORM
CM
CT1
N
LINIE EVITARE
AVOIDING LINE
DRUM ASFALT
R=500m
R=360m
1:9
1:14


Subtraversare linii CF
Rail tracks under-crossing
Km 221+833
Stalp tip SECP4
Fixare terminala
SECP4 type pole
Terminal fastening
Km 221+836
Stalp tip SECP4
SECP4 type pole
Km 221+882.5
Km 221+923
Km 221+968
Km 222+008.5
Km 222+049
Km 222+089.5
Km 222+130
Fixari terminale desfiintate
Dismounted terminal fastenings
Km 222+170.5
CTs5
CTs4
CTs3
CTs2
CT6
CT7
km 222
KM231
Cladirea statiei RACOS
RACOS station building
Km 221+897
DRUM ASFALT
DISTRICT
TTR
PODET C3
Cablu FO subteran proiectat - 460 m
Designed underground OF cable - 460 m
Cablu FO aerian proiectat - 5430 m
Designed aerial OF cable - 5430 m
Cutie de jonctiune in camera de tragere
Junction box in manhole
Km 221+865


Stalp tip SECP4
SECP4 type pole
Km 222+211
Stalp tip SECP4
SECP4 type pole
Km 222+376.5
Stalp tip SECP4
SECP4 type pole
Km 222+407.5
Stalp tip SECP4
SECP4 type pole
Km 222+439.5
Stalp tip SECP4
SECP4 type pole
Km 222+480
LINIE PENTRU TREN SALVARE
KM PR 222+189.50
L=50.8m
R=360m
R=2000m
1:9
1:14
Supratraversatr linii CF desfiintata
Dismounted rail tracks over-crossing
Pod GIB D=12 m
GIB bridge D=12m
km. 222+580.68


Stalp tip SECP4
SECP4 type pole
Km 222+678
Km 222+718.5
Km 222+763.5
Km 222+804
Km 222+844.5
Km 222+880.5
N
SE5
SE6
SE7
SE9
SE10
SE11
SE12
SE13
SE14
SE15
SE16
SE17
SE18
km 223
Podet C2
km. 222+910.08
198
199
200
201
202
203
203A
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
223
224
225
226
227
228
229
230
231
232
233
234
236
239
240
241
E1
E2
E3
SECP6
H
MU
As
FO

243	
SECP6	033
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DI
0	CO/–
E2	
5850	–
1450	–
7300	A
+200	CO/–

247	
SECP6	065
–	–
An	–
–	–
E1	
6000	–
1300	–
7300	A
–650	CO/–
E2	
5500	–
1400	–
6900	DD
–150	CO/–

251	
SECP6	105.5
–	–
–	–
–	–
E1	
5500	–
1300	–
6800	DCM
–250	CO/–
E2	
5500	–
2000	–
7500	DCM
+250	CO/–

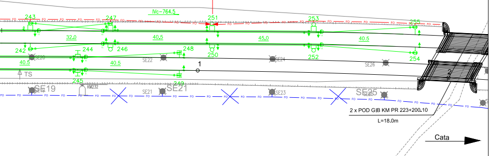
253	
SECP6	146
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+50	CO/–
E2	
6000	–
1300	–
7300	A
+550	CO/–

255	
SECP6	182
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–250	CO/–

Fixare mediana pe stalp H251

Median fastening on H251 pole

Km 223+105.5



243
247
IVc–764.5
251
253
255
32.0
40.5
45.0
40.5
242
244
246
248
250
252
254
SE20
SE22
SE24
SE26
40.5
40.5
1
2
TS
245
249
SE19
KM232
SE21
SE21
SE23
SE25
FO
2 x POD GIB KM PR 223+200.10
L=18.0m
Cata

242	
SECP6	033
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

246	
SECP6	065
–	–
–	–
–	–
E1	
6000	–
1300	–
7300	A
+650	CO/–
E2	
5500	–
1400	–
6900	DI
+150	CO/–

250	
SECP6	105.5
–	–
–	–
–	–
E1	
5500	–
2000	–
7500	ICM
+250	CO/–
E2	
5500	–
1300	–
6800	ICM
–250	CO/–

252	
SECP6	146
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–50	CO/–
E2	
6000	–
1300	–
7300	A
–550	CO/–

254	
SECP6	182
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

244	
H	052
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–
E2	
6000	–
1300	–
7300	A
+650	CO/–

248	
H	092.5
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
–200	CO/–

245	
H	052
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
–150	CO/–
E2	
6000	–
1300	–
7300	A
–650	CO/–

249	
H	092.5
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DI
+200	CO/–

LEGENDA TELECOMUNICATII
TELECOMMUNICATIONS LEGEND:

— FO — FO —	Cablu FO aerian proiectat Designed aerial OF cable
— FO — FO —	Cablu FO existent OF existing cable
— FO — FO —	Cablu FO subteran proiectat Designed underground OF cable
✕ FO — FO ✕	Demontare cablu FO aerian instalat in faza 1 Dismounted aerial OF cable installed in the 1st phase
●	Stalp de beton existent care se pastreaza Existing concrete pole which preserved
N ●	Stalp de beton proiectat pentru cablul FO Designed concrete pole for the OF cable
●	Stalp de beton existent - demontat Dismounted existing concrete pole
CT □	Camera de tragere existenta (Faza 1)/ Existing manhole (1st Phase)
CT □	Camera de tragere proiectata Designed manhole
CM ◇	Camereta de beton existenta(Faza 1) / Existing concrete handhole(1st Phase)
CM ◇	Camereta de beton proiectata / Designed concrete handhole
═ FO ═ FO ═	Canalizatie telefonica cu tevi PVC Telephone conduit with PVC pipes

DESCRIEREA LUCRĂRILOR

Faza 2

Lucrările la cablul cu fibre optice din faza 2 se execută după terminarea execuţiei noilor linii c.f. şi plantarea noilor stâlpi metalici ai linie de tracţiune, după cum urmează:

A. Capătul X al staţiei

Instalarea unui cablu cu fibre optice nou de-a lungul noului dispozitiv de linii c.f. din capătul X al staţiei. Cablul cu fibre optice proiectat se va instala atât subteran, cât şi aerian după cum urmează:

a) între semnalul de intrare X şi capătul peroanelor cablul se va instala aerian pe stâlpii metalici de pe partea dreaptă a căii. Menţionăm că instalarea cablului proiectat se va face începând de la stâlpul SE399 de pe intervalul Augustin - Racoş, unde se va realiza şi joncţionarea cablului proiectat de cel existent. Pe porţiunea unde stâlpii LC sunt între linii se vor planta stâlpi de beton suplimentari. Se va face deasemenea o supratraversare cu vârfare cu role a unei linii industriale la km 221+239.

b) de la capătul peroanelor până la clădirea staţiei cablul se va poza subteran în canalizaţia telefonică proiectată, joncţionarea dintre cablul de tip aerian şi cel de tip subteran făcându-se în camereta de la km 221+533.

c) Introducerea cablului cu fibre optice în sala de echipamente Tc din noua clădire a staţiei se va realiza prin canalizaţia telefonică proiectată.

d) După preluarea comunicaţiilor pe cablul cu fibre optice proiectat, se va demonta cablul instalat în faza 1.

B. Capătul Y al staţiei

Instalarea unui cablu cu fibre optice nou de-a lungul noului dispozitiv de linii c.f. între noua clădire a staţiei şi capătul Y al staţiei. Cablul cu fibre optice proiectat se va instala atât subteran, cât şi aerian după cum urmează:

a) introducerea cablului cu fibre optice în sala de echipamente Tc din noua clădire a staţiei se va realiza prin canalizaţia telefonică proiectată.

b) în faţa clădirii staţiei cablul va subtraversa liniile c.f. la km 221+833

c) de la camera de tragere a subtraversării cablul cu fibre optice se va instala aerian de-a lungul căii ferate pe stâlpii de beton ai liniei de contact şi pe stâlpii proiectaţi de pe partea dreaptă a căii ferate.

d) După preluarea comunicaţiilor pe cablul cu fibre optice proiectat, se va demonta cablul instalat în faza 1.

DESCRIPTION OF WORKS

2nd Phase (Drawing Code **EA5101C11L8TC05710010** 02/02)
The works at the fiber optic cable in the 2nd phase will be performed after the finishing of construction of the new rail tracks and the planting of the new metallic poles of the traction line as follows:

A. X end of station

Installation of a new fiber optic cable along the new railway tracks in the X end of station. The designed fiber optic cable will be installed both underground and aerial as follows:

a) between the X entrance signal and the platform's end the cable will be installed aerial on the metallic poles on the right side of tracks. To mention that the installation of the designed cable will be made from the SE399 pole of Augustin - Racoş section, where it will be performed the junction between the designed and existing cables. On the interval where there the contact line poles are between the tracks, it will be planted additional concrete poles. Also it will be made an over-crossing of one industrial track on top rods with rollers at km 221+239.

b) from the platform's end up to the station building the cable will be installed underground in the designed telephone conduit.

c) The introduction of the fiber optic cable in the telecommunication equipment room of the new station building will be made through the designed telephone conduit and the junction between the aerial type cable and the underground type cable being made in the handhole at km 221+533.

d) After taking over the communications on the designed fibre optic cable it will be dismounted the cable installed in the 1st phase.

B. Y end of station

Installation of a new fiber optic cable along the new railway tracks between the new station building and the Y end of station. The designed fiber optic cable will be installed both underground and aerial as follows:

a) The introduction of the fiber optic cable in the telecommunication equipment room of the new station building will be made through the designed telephone conduit.

b) in front of the station building the cable will under-cross the rail tracks at km 221+833.

c) from the manhole of the under-crossing the fiber optic cable will be installed aerial along the tracks on the concrete poles of the traction line and on the designed poles from the right side of the railway tracks.

d) After taking over the communications on the designed fibre optic cable it will be dismounted the cable installed in the 1st phase.

Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANŢAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT

C.N.C.F. "C.F.R." - S.A.

CONSULTANT / CONSULTANT

			Data Date	Semnătură Signature
Aprobat Approved	Şef proiect Project manager	R. Liuzza	01.2012	
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli	01.2012	
Verificat Checked	Expert Verificator Checking Expert	Pino Amodio	01.2012	

SUBCONTRACTANT / SUBCONTRACTOR

Aprobat Approved	Responsabil Subcontractant Subcontractor Responsible	A. Stanciu - Dinulescu	01.2012	
Întocmit Elaborated	Proiectant Designer	Gabriela Trifan	01.2012	Trifan

Reabilitarea liniei de cale ferata Braşov - Simeria, parte componentă a coridorului IV Pan European,
pentru circulaţia trenurilor cu viteza maximă de 160 km/h,
Tronsonul : Braşov - Sighişoara
Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor,
for the trains circulation with maximum speed of 160 km/h,
Section : Braşov - Sighişoara

Proiect/Project
2004/RO/16/P/PA/003

Faza / Phase:
P.Th. / T.D.

Denumire desen / Drawing Title :

Mutarea si protejarea cablului FO existent - Faza 2
Plan de situatie - statia RACOS station - Layout Plan
Removal and protection of existing OF cable - 2nd Phase

Codificare / Codification System	Scara / Scale 1:500	LOT / LOT	Nr. / No 02 / 02

EA51 01 C 11 L8 TC 05 7 1 001 2