388	
H	069
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

390	
H	118.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/–

392	
H	168
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

394	
H	213
–	–
–	–
–	–

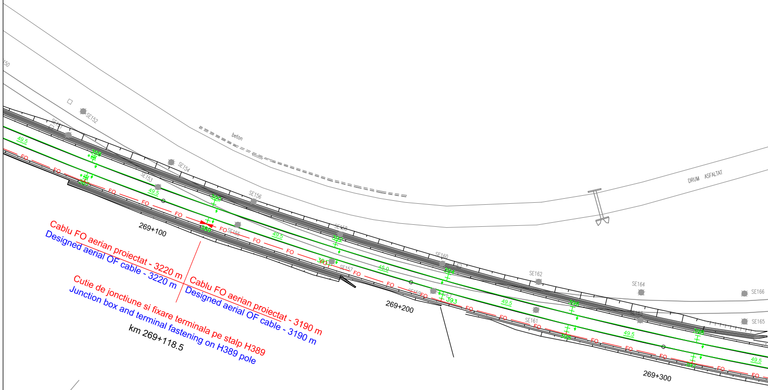
E1	
5500	–
1400	–
6900	DI
+250	CO/–

396	
H	262.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

398	
H	312
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/–


SE152
beton
SE154
SE153
SE156
SE155
SE158
SE157
SE160
SE159
SE162
SE161
SE164
SE166
SE165
DRUM ASFALTAT
49.5
45.0
FO
388
387
390
389
392
391
394
393
269+100
269+200
269+300
Cablu FO aerian proiectat - 3220 m
Designed aerial OF cable - 3220 m
Cablu FO aerian proiectat - 3190 m
Designed aerial OF cable - 3190 m
Cutie de jonctiune si fixare terminala pe stalp H389
Junction box and terminal fastening on H389 pole
km 269+118.5

387	
H	069
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DD
–150	CO/–

389	
H	118.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–250	CO/–

391	
H	168
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–150	CO/–

393	
H	213
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–250	CO/–

395	
H	262.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–150	CO/–

397	
H	312
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–250	CO/–

400	
H	361.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

402	
H	411
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DI
–250	CO/–

404	
H	456
–	–
–	–
–	–

E1	
6000	–
1300	–
7300	A
–50	CO/–

E2	
5500	–
1400	–
6900	DI
+150	CO/–

406	
H	505.5
–	–
–	–
–	–

E1	
5500	–
2000	–
7500	DI
+150	CO/–

E2	
5500	–
1300	–
6800	DI
+350	CO/–

408	
H	555
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

E2	
6000	–
1300	–
7300	A
+350	CO/–

410	
H	600
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/–

412	
H	649.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

414	
H	699
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/–

401	
H	411
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DD
–250	CO/–

403	
H	456
–	–
–	–
–	–

E1	
6000	–
1300	–
7300	A
+50	CO/–

E2	
5500	–
1400	–
6900	DD
–150	CO/–

405	
H	505.5
–	–
–	–
–	–

E1	
5500	–
2000	–
7500	DD
–150	CO/–

E2	
5500	–
1300	–
6800	DD
–350	CO/–

407	
H	555
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–150	CO/–

E2	
6000	–
1300	–
7300	A
–350	CO/–

409	
H	600
–	–
An	–
–	–

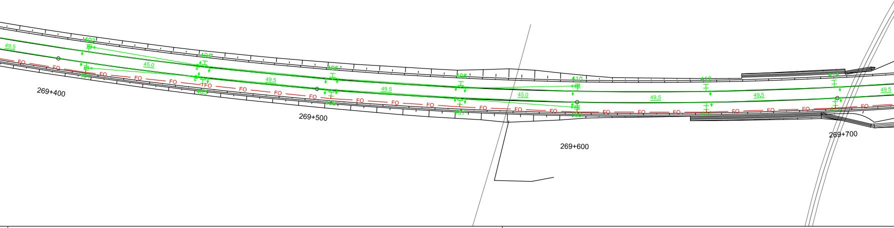
E1	
5500	–
1400	–
6900	DD
–250	CO/–

411	
H	649.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–150	CO/–

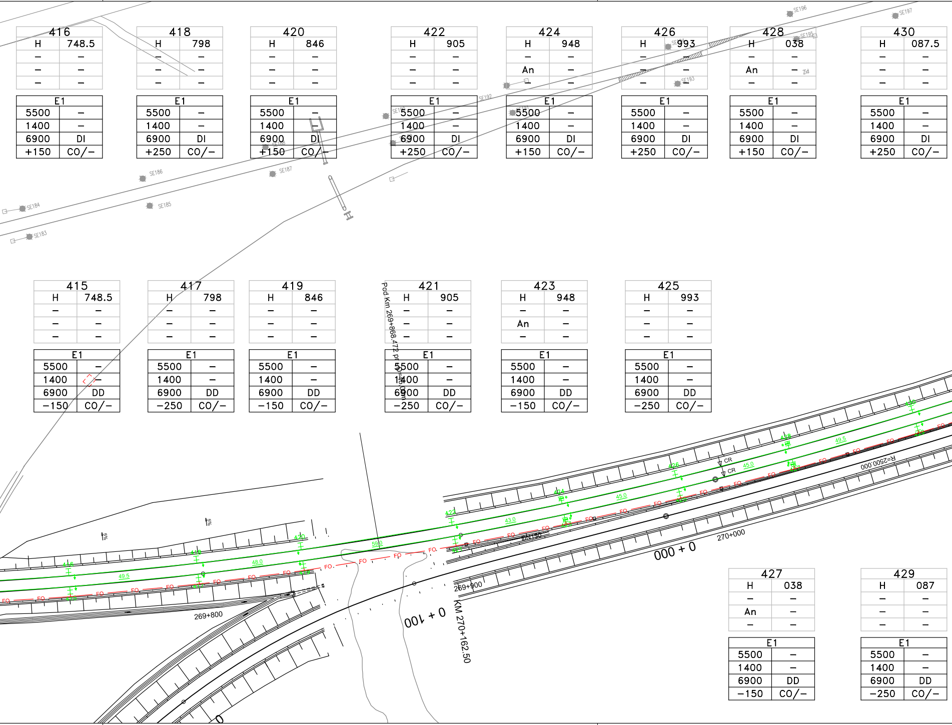
413	
H	699
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–250	CO/–


DRUM ASFALTAT
SE167
SE168
SE169
SE170
SE176
SE177
SE178
SE179
SE180
SE181
SE182
269+400
269+500
269+600
269+700
49.5
45.0
FO

399	
H	361.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
–150	CO/–


SE183
SE184
SE185
SE186
SE187
SE192
SE193
SE195
SE196
SE197
Zid
Pod Km 269+868.472
269+800
269+900
270+000
0 + 100
000 + 0
KM 270+162.50
R=2500.000
CR
CR
FO
49.5
48.0
43.0
45.0
50.0
5%

416	
H	748.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–

418	
H	798
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

420	
H	846
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–

422	
H	905
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

424	
H	948
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–

426	
H	993
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

428	
H	038
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DI
+150	CO/–

430	
H	087.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DI
+250	CO/–

415	
H	748.5
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
−150	CO/–

417	
H	798
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
−250	CO/–

419	
H	846
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
−150	CO/–

421	
H	905
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
−250	CO/–

423	
H	948
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
−150	CO/–

425	
H	993
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
−250	CO/–

427	
H	038
–	–
An	–
–	–
E1	
5500	–
1400	–
6900	DD
−150	CO/–

429	
H	087
–	–
–	–
–	–
E1	
5500	–
1400	–
6900	DD
−250	CO/–

432	
H	132.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−50	CO/–

434	
H	173
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/–

436	
H	209
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−150	CO/–

438	
H	246.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/–

440	
H	293
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

442	
H	338
–	–
–	–
–	–

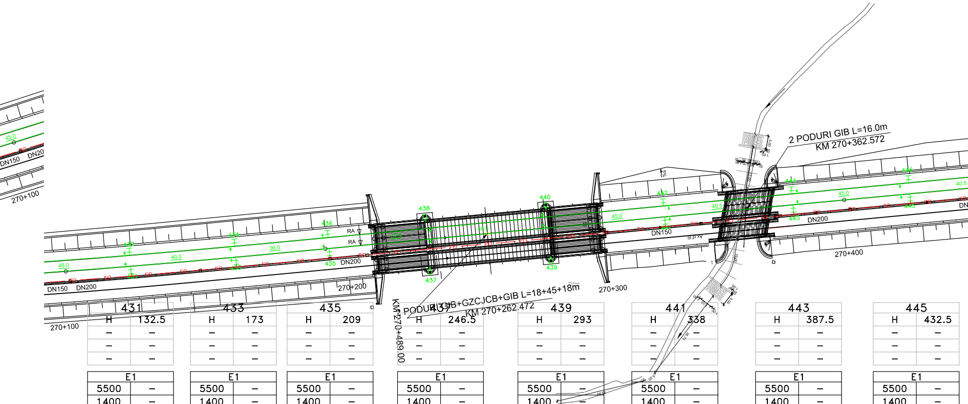
E1	
5500	–
1400	–
6900	DI
+200	CO/–

444	
H	387.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
−200	CO/–

446	
H	432.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/–


2 PODURI GIB L=16.0m
KM 270+362.572
1 PODURI GIB+GZCJCB+GIB L=18+45+18m
KM 270+262.472
KM 270+489.00
270+100
270+100
270+200
270+300
270+400
DN150
DN200
DN150
DN200
DN150
DN200
430
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
45.0
40.5
36.0
45.0
49.5
45.0
40.5
RA
RA
5%

431	
H	132.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+50	CO/–

433	
H	173
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−250	CO/–

435	
H	209
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/–

437	
H	246.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

439	
H	293
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/–

441	
H	338
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

443	
H	387.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/–

445	
H	432.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

448	
H	473
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/−

450	
H	518
–	–
–	–
–	–

E1	
5850	–
1450	–
7300	A
0	CO/−

E2	
5500	–
1400	–
6900	DI
+200	CO/−

452	
H	563
–	–
–	–
–	–

454	
H	606.5
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/−

456	
H	651.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−250	CO/−

458	
H	701
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
0	CO/−

460	
H	750.5
–	–
–	–
–	–

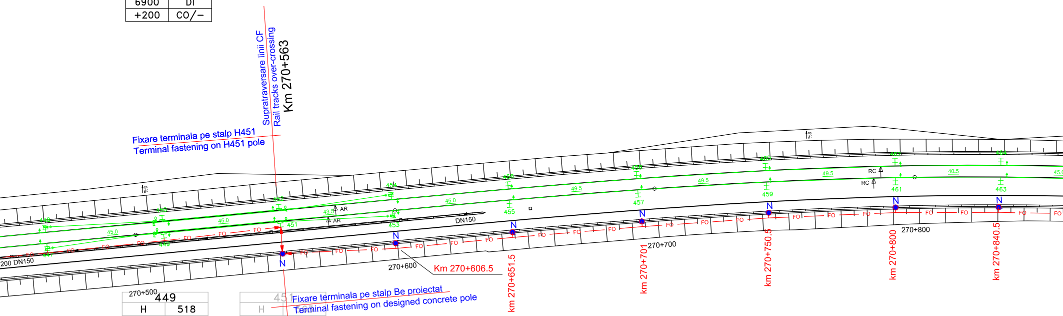
E1	
5500	–
1400	–
6900	DD
−250	CO/−

462	
H	800
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−150	CO/−

464	
H	840.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−250	CO/−


Supratraversare linii CF
Rail tracks over-crossing
Km 270+563
Fixare terminala pe stalp H451
Terminal fastening on H451 pole
Fixare terminala pe stalp Be proiectat
Terminal fastening on designed concrete pole
Km 270+606.5
km 270+651.5
km 270+701
km 270+750.5
km 270+800
km 270+840.5
270+500
270+600
270+700
270+800
DN150
200 DN150
AR
RC
N
FO
45.0
49.5
40.5

447	
H	473
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/−

449	
H	518
–	–
–	–
–	–

E1	
5850	–
1450	–
7300	A
0	CO/−

E2	
5500	–
1400	–
6900	DD
−200	CO/−

451	
H	–
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/−

E2	
5850	–
1450	–
7300	A
0	CO/−

453	
H	606.5
–	–
An	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/−

455	
H	651.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/−

457	
H	701
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
0	CO/−

459	
H	750.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/−

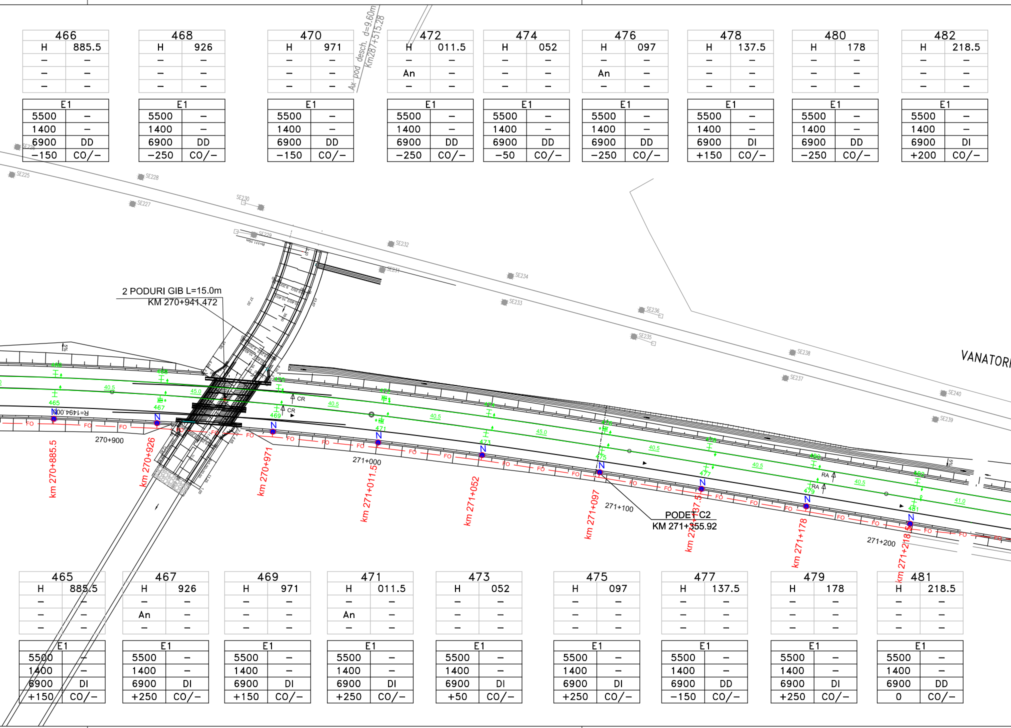
461	
H	800
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+150	CO/−

463	
H	840.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+250	CO/−

466	H	885.5	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	–150	CO/–
468	H	926	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	–250	CO/–
470	H	971	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	–150	CO/–
472	H	011.5	–	–	An	–	–	–	E1	5500	–	1400	–	6900	DD	–250	CO/–
474	H	052	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	–50	CO/–
476	H	097	–	–	An	–	–	–	E1	5500	–	1400	–	6900	DD	–250	CO/–
478	H	137.5	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+150	CO/–
480	H	178	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	–250	CO/–
482	H	218.5	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+200	CO/–


Ax pod desch. d=9.60m
Km287+515.28
2 PODURI GIB L=15.0m
KM 270+941.472
VANATORI
PODET C2
KM 271+355.92
km 270+885.5
km 270+926
km 270+971
km 271+011.5
km 271+052
km 271+097
km 271+137.5
km 271+178
km 271+218.5
270+900
271+000
271+100
271+200
R=1494.00m
SE225
SE226
SE227
SE228
SE229
SE230
SE231
SE232
SE233
SE234
SE235
SE236
SE237
SE238
SE239
SE240
FO
CR
RA
N
40.5
45.0
41.0
465
467
469
471
473
475
477
479
481

465	H	885.5	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+150	CO/–
467	H	926	–	–	An	–	–	–	E1	5500	–	1400	–	6900	DI	+250	CO/–
469	H	971	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+150	CO/–
471	H	011.5	–	–	An	–	–	–	E1	5500	–	1400	–	6900	DI	+250	CO/–
473	H	052	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+50	CO/–
475	H	097	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+250	CO/–
477	H	137.5	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	–150	CO/–
479	H	178	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DI	+250	CO/–
481	H	218.5	–	–	–	–	–	–	E1	5500	–	1400	–	6900	DD	0	CO/–

483	
H	259.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

484	
H	300
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
+200	CO/–

485	
H	340.5
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

486	
H	385.5
–	–
–	–
–	–

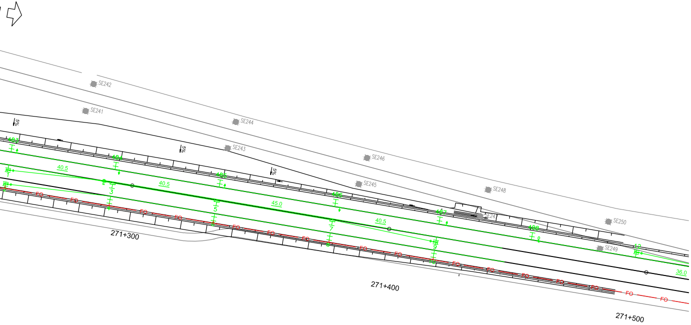
E1	
5500	–
1400	–
6900	DI
+200	CO/–

487	
H	426
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DD
−200	CO/–

488	
H	462
–	–
–	–
–	–

E1	
5500	–
1400	–
6900	DI
0	CO/–


SE242
SE241
SE244
SE243
SE246
SE245
SE248
SE247
SE250
SE249
5%
40.5
40.5
45.0
40.5
36.0
FO
271+300
271+400
271+500

DESCRIEREA LUCRARILOR

Lucrarile de protejare a cablului cu fibre optice existent se vor realiza in 2 faze.

Faza 2

Lucrările la cablul cu fibre optice in faza 2 vor fi executate după terminarea construcţiei firului 2 proiectat şi plantarea noilor stâlpi metalici ai liniei de contact.

Instalarea noului cablu cu fibre optice se va face pe partea dreaptă a căii ferate, atât aerian pe stâlpii liniei de contact, cât şi subteran.

Cablul proiectat va avea 5 secţiuni, după cum urmează:

1) între capătul Y al staţiei Archita (secţiunea începe de la noua clădirea a staţiei Archita) şi stâlpul H197 cablul aerian va avea fixări mediane pe stîlpii H23, H81 şi H139; pe stâlpul H197 cablul se joncţionează de secţiunea următoare
2) urmează o secţiune aeriană scurtă între stâlpii H197 şi stâlpul proiectat la km 265+384 (intrarea în tunelul Mureni); în camereta de la km 265+384 cablul aerian se va joncţiona de cablul special din tunel
3) în interiorul tunelului cablul special se va instala în canalul de beton pentru cabluri; în camereta de la km 266+250 (capăt Y tunel Mureni) cablul subteran se va joncţiona cu cablul aerian al secţiunii următoare
4) între camereta de la km 266+250 şi stâlpul H 389 cablul cu fibre optice se va instala aerian pe stâlpii metalici; cablul aerian va avea o fixare mediană pe stîlpul H327, iar pe stâlpul H 389 cablul se joncţionează de secţiunea următoare
5) între stâlpul H389 şi semnalul de intrare X staţia Vânători, cablul aerian va avea o supratraversare a liniilor c.f. între stâlpii H453 - SN.

După preluarea comunicaţiilor pe noul cablu, cablurile instalate în fazele precedente se vor demonta.

LEGENDA TELECOMUNICATII
TELECOMMUNICATIONS LEGEND:

— FO — FO —	Cablu FO aerian proiectat Designed aerial OF cable
— FO — FO —	Cablu FO special pentru tunel proiectat Designed special OF cable for tunnels
N ●	Stalp de beton proiectat Designed concrete pole
●	Stalp de beton existent - demontat Dismounted existing concrete pole
CM ◇	Camereta de beton proiectata / Designed concrete handhole

DESCRITION OF THE DESIGNED WORKS

The protection of the existing fiber optic cable will be performed in 2 phases.

2nd Phase

The works at the fiber optic cable in the 2nd phase will be performed after the finishing of construction of the designed track 2 and the planting of the new metallic poles of the traction line.

The installation of the new fiber optic cable will be made on the right side of the rail tracks both aerial in the traction line poles and underground.

The designed cable will have 5 sections as follows:

1) between the Y end of station Archita (the section starts from the new station building Archita) and the H197 pole the aerial cable will have median fastenings on the H23, H81 and H139 poles; on the H197 pole the cable will be jointed to the next section
2) it continue with a short aerial section between the H197 pole and the designed pole at km 265+384 (entrance in the Mureni tunnel); in the handhole at km 265+384 the aerial cable will jointed with the special cable from tunnel
3) inside the tunnel the special cable will be installed in the concrete channel for cables; in the handhole at km 266+250 (Y end of Mureni tunnel) the special cable will be jointed with the aerial cable of the next section
4) between the designed pole at km 266+250 and the H389 the fiber optic cable will be installed aerial on the metallic poles; the aerial cable will have one median fastening on the H327 pole and on the H 389 pole the cable will be jointed to the next section
5) between the H389 pole and the X entrance signal station Vânători, the aerial cable will have one over-crossing of the rail tracks between the H453 and SN poles.
5) între stâlpul H389 şi semnalul de intrare X staţia Vânători, cablul aerian va avea o supratraversare a liniilor c.f. între stâlpii H453 - SN.

After taking over of the communications on the new fibre optic cable, the cables installed in the previous phases will be dismounted.

D					
C					
B					
A					
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.

ITALFERR
GRUPPO FERROVIE DELLO STATO
Joint Venture leader

Scott Wilson

OBERMEYER
PLANEN + BERATEN GmbH

TECNIC
Consulting Engineers

CONSULTANT / CONSULTANT

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

SUBCONTRACTANT / SUBCONTRACTOR

AREX COMPANY

Aprobat Approved	Responsabil Subcontractant Subcontractor Responsible	A.Stanciu - Dinulescu	02.2012	
Întocmit Elaborated	Proiectant Designer	Gabriela Trifan	02.2012	

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

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 - interval ARCHITA-VANATORI Section - Layout Plan
Removal and protection of existing OF cable - 2nd Phase

Codificare / Codification System	Scara / Scale 1:1000	LOT / LOT	Nr. / No 06/ 06

E A 5 1 | 0 1 | C | 1 6 | L 7 | T C | 0 8 | 9 | 1 | 0 0 1 | 1