NOTA: Acest desen nu constituie o obligatie de aplicare de către contractor.
El reprezintă doar un exemplu de circuit de cale utilizat la CFR si nu trebuie aplicat ca atare.

NOTE: It is not compulsory for the contractor to apply this drawing. It is only an example of track circuit in use at CFR and shall not be applied as such.

Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR
D					
C					
B					
A					

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANȚAT 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	12.12.2011	
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli	12.12.2011	
Verificat Checked	Expert Cheie Key Expert	P. Amodio	12.12.2011	

SUBCONTRACTANT / SUBCONTRACTOR

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Stanciu - Dinulescu	12.12.2011	
Întocmit Elaborated	Proiectant Designer	Ing. Juganaru Adriana	12.12.2011	

Reabilitarea liniei de cale ferata Brasov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația 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:
D.E. / D.D.

Denumire desen / Drawing Title :

Statia / Station RACOS
Fise de montaj rama aparataj receptie 1
Wiring diagrams for receiving equipment frame 1

Codificare / Codification System	Scara / Scale Fără / No scale	LOT / LOT	Nr. / No 01 / 10
EA51 01 E 11 BX SE 01 1 2 013 1			

420x297=0.125mp

RAMA APARATAJ RECEPTIE 1(FI1)

	1	2	3	4	5	6	7	8	9
9									
8	7-CI	④ 7 BDE							
7	37-39-Sil	③ 37-39 BDE	III CI	② III BDE	5 CI	④ 5 BDE	6 CI	③ 6 BDE	
6	(25-29)d Sil	② (25-29)d BDE	31 Sil	② 31 BDE	33-35 Sil	② 33-35 BDE	025 CI	③ 025 BDE	
5	23 Sil	① 23 BDE	(25-29)a Sil	② (25-29)a BDE	(25-29)b Sil	② (25-29)b BDE	(25-29)c Sil	② (25-29)c BDE	
4	7-21 Sil	③ 7-21 BDE	13-17 Sil	③ 13-17 BDE	19 Sil	② 19 BDE	015 CI	① 015 BDE	
	FI1–FATA					FI1–SPATE			
3	31 (25-29)d Si FC B	32 31 Si FC B	33 33-35 Si FC B	34 025 C FC B		34A	33A	32A	31A
2	21 23 Si FC B	22 (25-29)a Si FC B	23 (25-29)b Si FC B	24 (25-29)c Si FC B		24A	23A	22A	21A 7 C FC B
1	11 7-21 Si FC B	12 13-17 Si FC B	13 19 Si FC B	14 015 C FC B		14A 6 C FC B	13A 5 C FC B	12A III C FC B	11A 37-39 Si FC B

01	011 IP-2 7-21/13-17	012 IP-2 19/015	013 IP-2 23/(25-29)a	014 IP-2 (25-29)b/(25-29)c	015 IP-2 (25-29)d/31	016 IP-2 33-35/025	016A	015A	014A	013A IP-2 7	012A IP-2 5/6	011A IP-2 37-39/III

001	002	003	004	005	006	007	008	009	0010	0011	0012
12x100Ω / 0,3A											

0012A	0011A	0010A	009A	008A	007A	006A	005A	004A	003A	002A	001A
5x100Ω / 0,3A											

Statia: RACOS

EA51 01 E 11 BX SE 011 2 013 1 2/10

420x297=0.125mp

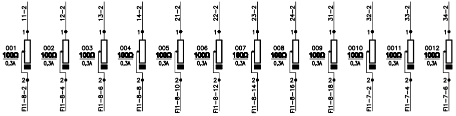
FI1–FATA

31	(25–29)d Si	32	31 Si	33	33–35 Si	34	025 C
1	FI1–8–17	1	FI1–7–1	1	FI1–7–3	1	FI1–7–5
2	009–1	2	0010–1	2	0011–1	2	0012–1
3	015–1 61–11	3	015–5 63–11	3	016–1 65–11	3	016–5 67–11
4	015–2 61–71	4	015–6 63–71	4	016–2 65–71	4	016–6 67–71

21	23 Si	22	(25–29)a Si	23	(25–29)b Si	24	(25–29)c Si
1	FI1–8–9	1	FI1–8–11	1	FI1–8–13	1	FI1–8–15
2	005–1	2	006–1	2	007–1	2	008–1
3	013–1 51–11	3	013–5 53–11	3	014–1 55–11	3	014–5 57–11
4	013–2 51–71	4	013–6 53–71	4	014–2 55–71	4	014–6 57–71

11	7–21 Si	12	13–17 Si	13	19 Si	14	015 C
1	FI1–8–1	1	FI1–8–3	1	FI1–8–5	1	FI1–8–7
2	001–1	2	002–1	2	003–1	2	004–1
3	011–1 41–11	3	011–5 43–11	3	012–1 45–11	3	012–5 47–11
4	011–2 41–71	4	011–6 43–71	4	012–2 45–71	4	012–6 47–71

011	7–21/13–17	012	19/015	013	23/(25–29)a	014	(25–29)b/(25–29)c	015	(25–29)d/31	016	33–35/025
1	11–3	1	13–3	1	21–3	1	23–3	1	31–3	1	33–3
2	11–4	2	13–4	2	21–4	2	23–4	2	31–4	2	33–4
3	FI1–6–1	3	FI1–6–5	3	FI1–6–9	3	FI1–6–13	3	FI1–6–17	3	FI1–6–21
4	8 FI1–6–33	4	8 011–8	4	8 012–8	4	8 013–8	4	8 014–8	4	8 015–8
5	12–3	5	14–3	5	22–3	5	24–3	5	32–3	5	34–3
6	12–4	6	14–4	6	22–4	6	24–4	6	32–4	6	34–4
7	FI1–6–3	7	FI1–6–7	7	FI1–6–11	7	FI1–6–15	7	FI1–6–19	7	FI1–6–23
8	4 012–4	8	4 013–4	8	4 014–4	8	4 015–4	8	4 016–4	8	4 FI1–6–33


11–2
12–2
13–2
14–2
21–2
22–2
23–2
24–2
31–2
32–2
33–2
34–2
1
001 100Ω 0,3A
002 100Ω 0,3A
003 100Ω 0,3A
004 100Ω 0,3A
005 100Ω 0,3A
006 100Ω 0,3A
007 100Ω 0,3A
008 100Ω 0,3A
009 100Ω 0,3A
0010 100Ω 0,3A
0011 100Ω 0,3A
0012 100Ω 0,3A
2
FI1–8–2
FI1–8–4
FI1–8–6
FI1–8–8
FI1–8–10
FI1–8–12
FI1–8–14
FI1–8–16
FI1–8–18
FI1–7–2
FI1–7–4
FI1–7–6

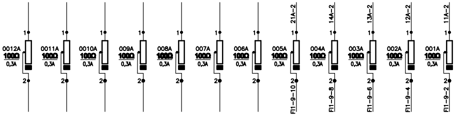
FI1–SPATE

34A		33A		32A		31A	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	

24A		23A		22A		21A	7 C
1		1		1		1	FI1–9–9
2		2		2		2	005A–1
3		3		3		3	013A–1 81–11
4		4		4		4	013A–2 81–71

14A	6 C	13A	5 C	12A	III–C	11A	37–39 Si
1	FI1–9–7	1	FI1–9–5	1	FI1–9–3	1	FI1–9–1
2	004A–1	2	003A–1	2	002A–1	2	001A–1
3	012A–5 77–11	3	012A–1 75–11	3	011A–5 73–11	3	011A–1 71–11
4	012A–6 77–71	4	012A–2 75–71	4	011A–6 73–71	4	011A–2 71–71

016A		015A		014A		013A	7	012A	5/6	011A	37–39/III
1		1		1		1	21A–3	1	13A–3	1	11A–3
2		2		2		2	21A–4	2	13A–4	2	11A–4
3		3		3		3	FI1–6–4	3	FI1–6–29	3	FI1–6–25
4		4		4		4	8 012A–8	4	8 011A–8	4	8 FI1–6–35
5		5		5		5		5	14A–3	5	12A–3
6		6		6		6		6	14A–4	6	12A–4
7		7		7		7		7	FI1–6–2	7	FI1–6–27
8		8		8		8	4 FI1–6–35	8	4 013A–4	8	4 012A–4


21A–2
14A–2
13A–2
12A–2
11A–2
1
0012A 100Ω 0,3A
0011A 100Ω 0,3A
0010A 100Ω 0,3A
009A 100Ω 0,3A
008A 100Ω 0,3A
007A 100Ω 0,3A
006A 100Ω 0,3A
005A 100Ω 0,3A
004A 100Ω 0,3A
003A 100Ω 0,3A
002A 100Ω 0,3A
001A 100Ω 0,3A
2
FI1–9–10
FI1–9–8
FI1–9–6
FI1–9–4
FI1–9–2

RANDUL 4,5

59		58		57		56		55		54		53		52		51	
			(25–29)c BDE		(25–29)c Sil		(25–29)b BDE		(25–29)b Sil		(25–29)a BDE		(25–29)a Sil		23 BDE		23 Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-4-30	11	24-3	11	FI1-4-26	11	23-3	11	FI1-4-22	11	22-3	11	FI1-4-18	11	21-3
				13	OS			13	OS			13	OS			13	OS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S2			52	+24S2			52	+24S2			52	+24S1		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OS			72	OS			72	OS			72	OS		
		71	FI1-4-32	71	24-4	71	FI1-4-28	71	23-4	71	FI1-4-24	71	22-4	71	FI1-4-20	71	21-4

49		48		47		46		45		44		43		42		41	
			015 BDE		015 CI		19 BDE		19 Sil		13–17 BDE		13–17 Sil		7–21 BDE		7–21 Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-4-14	11	14-3	11	FI1-4-10	11	13-3	11	FI1- 4-6	11	12-3	11	FI1-4-2	11	11-3
				13	OS			13	OS			13	OS			13	OS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S1			52	+24S2			52	+24S3			52	+24S3		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OS			72	OS			72	OS			72	OS		
		71	FI1-4-16	71	14-4	71	FI1-4-12	71	13-4	71	FI1-4-8	71	12-4	71	FI1-4-4	71	11-4

RANDUL 6,7

79		78		77		76		75		
			6 BDE		6 CI		5 BDE		5 CI	
		12	0x220			12	0x220			12
		11	FI1-4-25	11	14A-3	11	FI1-4-21	11	13A-3	11
				13	OS			13	OS	
		32	7-33			32	5-33			32
		31	7-33			31	5-53			31
				33	8-32			33	6-32	
		52	+24S3			52	+24S4			52
		51	Ax220			51	Ax220			51
				53	8-31			53	6-31	
		72	OS			72	OS			72
		71	FI1-4-27	71	14A-4	71	FI1-4-23	71	13A-4	71

69		68		67		66		65		
			025 BDE		025 CI		33–35 BDE		33–35 Sil	
		12	0x220			12	0x220			12
		11	FI1-4-9	11	34-3	11	FI1-4-5	11	33-3	11
				13	OS			13	OS	
		32	7-33			32	5-33			32
		31	7-53			31	5-53			31
				33	8-32			33	6-32	
		52	+24S3			52	+24S2			52
		51	Ax220			51	Ax220			51
				53	8-31			53	6-31	
		72	OS			72	OS			72
		71	FI1-4-11	71	34-4	71	FI1-4-7	71	33-4	71

74	73		72		71	
III BDE		III CI		37–39 BDE		37–39 Sil
0x220			12	**0x220**		
FI1–4–17	11	12A–3	11	FI1–4–13	11	11A–3
	13	**OS**			13	**OS**
3–33			32	1–33		
3–53			31	1–53		
	33	4–32			33	2–32
+24S2			52	**+24S3**		
Ax220			51	**Ax220**		
	53	4–31			53	2–31
OS			72	**OS**		
FI1–4–19	71	12A–4	71	FI1–4–15	71	11A–4

64	63		62		61	
31 BDE		31 Sil		(25–29)d BDE		(25–29)d Sil
0x220			12	**0x220**		
FI1–4–1	11	32–3	11	FI1–4–34	11	31–3
	13	**OS**			13	**OS**
3–33			32	1–33		
3–53			31	1–53		
	33	4–32			33	2–32
+24S2			52	**+24S2**		
Ax220			51	**Ax220**		
	53	4–31			53	2–31
OS			72	**OS**		
FI1–4–3	71	32–4	71	FI1–4–36	71	31–4

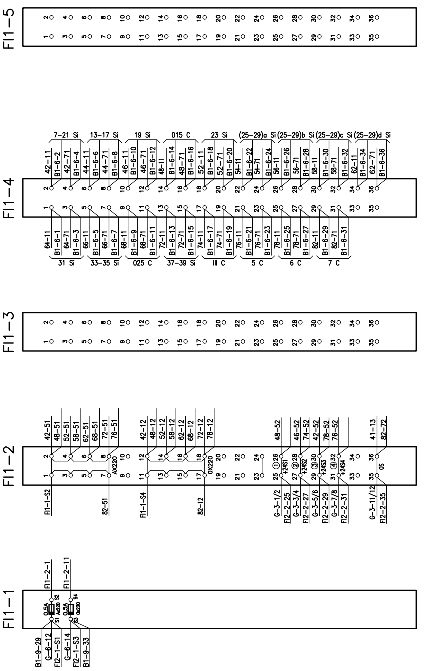
RANDUL 8.9

99		98		97		96		95		94		93		92		91	

89		88		87		86		85		84		83		82		81	
															7 BDE		7 CI
														12	**0x220**		
														11	FI1–4–29	11	21A–3
																13	**OS**
														32	1–33		
														31	1–53		
																33	2–32
														52	**+24S4**		
														51	**Ax220**		
																53	2–31
														72	**OS**		
														71	FI1–4–31	71	21A–4

Statia: RACOS

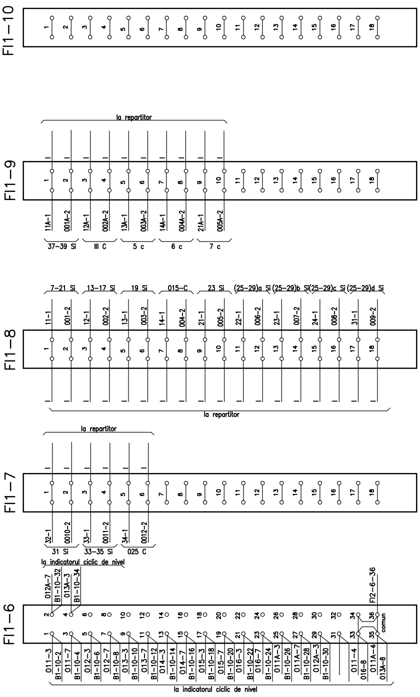
Stati


FI1-5
FI1-4
7-21 Si
13-17 Si
19 Si
015 C
23 Si
(25-29)a Si
(25-29)b Si
(25-29)c Si
(25-29)d Si
31 Si
33-35 Si
025 C
37-39 Si
III C
5 C
6 C
7 C
FI1-3
FI1-2
AX220
0X220
+24S1
+24S2
+24S3
+24S4
0S
FI1-1-S2
82-51
FI1-1-S4
82-12
FI1-1
FI1-2-1
FI1-2-11
B1-9-29
G-6-12
FI2-1-S1
G-6-14
FI2-1-S3
B1-9-33

a: RACOS

EA51 01 E 11 BX SE 011 2 013 1 8/10

420x297=0.125mp


FI1-10
la repartitor
FI1-9
11A-1
001A-2
12A-1
002A-2
13A-1
003A-2
14A-1
004A-2
21A-1
005A-2
37-39 Si
III C
5 c
6 c
7 c
7-21 Si
13-17 Si
19 Si
015-C
23 Si
(25-29)a Si
(25-29)b Si
(25-29)c Si
(25-29)d Si
FI1-8
la repartitor
la repartitor
FI1-7
32-1
0010-2
33-1
0011-2
34-1
0012-2
31 Si
33-35 Si
025 C
la indicatorul ciclic de nivel
012A-7
B1-10-32
013A-3
B1-10-34
FI2-6-36
FI1-6
comun
la indicatorul ciclic de nivel

Statia: RACOS

EA51 01 E 11 BX SE 011 2 013 1 9/10

420x297=0.125mp

BUCLE TENSIUNI

+24S1		+24S2		+24S3		+24S4		Ax220		0x220		0S	
FI1-2-26		FI1-2-28		FI1-2-30		FI1-2-32		FI1-2-2		FI1-2-12		FI1-2-36	
48-52		46-52		42-52		76-52		42-51		42-12		41-13	
52-52		54-52		44-52		82-52		44-51		44-12		42-72	
		56-52		68-52				46-51		46-12		43-13	
		58-52		72-52				48-51		48-12		44-72	
		62-52		78-52				FI1-2-2		FI1-2-12		45-13	
		64-52						FI1-2-4		FI1-2-14		46-72	
		66-52						52-51		52-12		47-13	
		74-52						54-51		54-12		48-72	
								56-51		56-12		58-72	
								58-51		58-12		57-13	
								FI1-2-4		FI1-2-14		56-72	
								FI1-2-6		FI1-2-16		55-13	
								62-51		62-12		54-72	
								64-51		64-12		53-13	
								66-51		66-12		52-72	
								68-51		68-12		51-13	
								FI1-2-6		FI1-2-16		61-13	
								FI1-2-8		FI1-2-18		62-72	
								72-51		72-12		63-13	
								74-51		74-12		64-72	
								76-51		76-12		65-13	
								78-51		78-12		66-72	
								FI1-2-8		FI1-2-18		67-13	
								FI1-2-7		FI1-2-17		68-72	
								82-51		82-12		78-72	
												77-13	
												76-72	
												75-13	
												74-72	
												73-13	
												72-72	
												71-13	
												81-13	
												82-72	
		FI1-2-28		FI1-2-30								FI1-2-36	

Statia: RACOS