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 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	12.2011	
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli	12.2011	
Verificat Checked	Expert Cheie Key Expert	P. Amodio	12.2011	

SUBCONTRACTANT / SUBCONTRACTOR

AREX COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Stanciu - Dinulescu	12.2011	
Întocmit Elaborated	Proiectant Designer	Angelescu Sergiu	12.2011	

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 - Sighişoara
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 CATA
Fise de montaj rama de aparataj receptie 2
Wiring diagrams for receiving equipment frame 2

Codificare / Codification System	Scara / Scale Fără / No scale	LOT / LOT	Nr. / No 01 / 10

E A 5 1 | 0 1 | E | 1 3 | B X | S E | 0 1 | 3 | 2 | 0 1 5 | 1

RAMA APARATAJ

	1	2	3	4	
8	16 Sil	③ 16 BD			
7	(10-14)a Sil	④ (10-14)a BD	(10-14)b Sil	④ (10-14)b BD	(1
6	2-8 Sil	③ 2-8 BD	4-6 Sil	④ 4-6 BD	
5	YF-1AD CI	④ YF-1AD BD	024 CI	② 024 BD	
3-4	2x0,5 Alimentare voltmetru ciclic	35 INDICATOR CICLI (VOLTMETRU			
	F12—FATA				
2	21 2-8 FC-B	22 4-6 FC-B	23	24	
1	11 YF-1AD FC-B	12 024 FC-B	13 Y-1AD FC-B	14 034 FC-B	

01	011 IP-2 YF-1AD/024	012 IP-2 Y-1AD/034	013 IP-2 2-8/4-6	014		

001	002	003	004	005	006	007	008	009	010	011	012
6x100 Ω/0,3A											

RECEPTIE 2 (FI2)

5	6	7	8	9
10-14)c Sil	④ (10-14)c BD	12 Sil	② 12 BD	
Y-1AD CI	② Y-1AD BD	034 CI	④ 034 BD	
C DE NIVEL CICLIC)			38	39

FI2-SPATE

24A		23A	22A		21A 16 FC-B
14A 12 FC-B		13A (10-14)c FC-B	12A (10-14)b FC-B		11A (10-14)a FC-B
		014A	013A IP-2 16/	012A IP-2 (10-14)c/12	011A IP-2 (10-14)a/(10-14)b

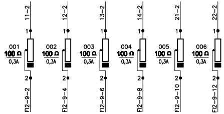
012A	011A	010A	009A	008A	007A	006A	005A	004A	003A	002A	001A
5x100 Ω / 0,3A											

FI2-FATA

21	2-8-FC	22	4-6-FC	23		24	
1	FI2-9-9	1	FI2-9-11	1		1	
2	005-1	2	006-1	2		2	
3	013-1 61-11	3	013-5 63-11	3		3	
4	013-2 61-71	4	013-6 63-71	4		4	

11	YF-1AD-FC	12	024-FC	13	Y-1AD-FC	14	034-FC
1	FI2-9-1	1	FI2-9-3	1	FI2-9-5	1	FI2-9-7
2	001-1	2	002-1	2	003-1	2	004-1
3	011-1 51-11	3	011-5 53-11	3	012-1 55-11	3	012-5 57-11
4	011-2 51-71	4	011-6 53-71	4	012-2 55-71	4	012-6 57-71

011	YF-1AD/024-IP	012	Y-1AD/034-IP	013	2-8/4-6-IP	014	
1	11-3	1	13-3	1	21-3	1	
2	11-4	2	13-4	2	21-4	2	
3	FI2-6-1	3	FI2-6-5	3	FI2-6-9	3	
4	8 FI2-6-33	4	8 011-8	4	8 012-8	4	
5	12-3	5	14-3	5	22-3	5	
6	12-4	6	14-4	6	22-4	6	
7	FI2-6-3	7	FI2-6-7	7	FI2-6-11	7	
8	4 012-4	8	4 013-4	8	4 011A-4	8	


11-2
12-2
13-2
14-2
21-2
22-2
1
001
100 Ω
0,3A
002
100 Ω
0,3A
003
100 Ω
0,3A
004
100 Ω
0,3A
005
100 Ω
0,3A
006
100 Ω
0,3A
2
FI2-9-2
FI2-9-4
FI2-9-6
FI2-9-8
FI2-9-10
FI2-9-12

Statia: CATA

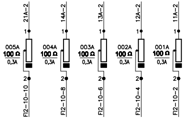
Statia: CATA

FI2–SPATE

24A		23A		22A		21A	16–FC
1		1		1		1	FI2–10–9
2		2		2		2	005A–1
3		3		3		3	013A–1 81–11
4		4		4		4	013A–2 81–71

14A	12–FC	13A	(10–14)c–FC	12A	(10–14)b–FC	11A	(10–14)a–FC
1	FI2–10–7	1	FI2–10–5	1	FI2–10–3	1	FI2–10–1
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

014A		013A	16/ –IP	012A	(10–14)c/12–IP	011A	(10–14)a/(10–14)b–IP
1		1	21A–3	1	13A–3	1	11A–3
2		2	21A–4	2	13A–4	2	11A–4
3		3	FI2–6–25	3	FI2–6–21	3	FI2–6–17
4		4	012A–8 FI2–6–35	4	8 011A–8	4	8 013–8
5		5		5	14A–3	5	12A–3
6		6		6	14A–4	6	12A–4
7		7		7	FI2–6–23	7	FI2–6–19
8		8		8	4 013A–4	8	4 012A–4


21A–2
14A–2
13A–2
12A–2
11A–2
1
005A
100 Ω
0,3A
004A
100 Ω
0,3A
003A
100 Ω
0,3A
002A
100 Ω
0,3A
001A
100 Ω
0,3A
2
FI2–10–10
FI2–10–8
FI2–10–6
FI2–10–4
FI2–10–2

FI2

RANDUL 3

39		38		35												31	
				INDICATOR CICLIC DE NIVEL												2x0,5 A	
				CUPLA T1			CUPLA T2			CUPLA T3			CUPLA T4				
1		1		CANAL		ADRESA	CANAL		ADRESA	CANAL		ADRESA	CANAL		ADRESA	S1	FI2–1–S1
2		2		0–0	C3		2–0	C3		4–0	C3	FI2–7–31	6–0	C3		S2	35–TG–C1
3		3		0–1	B3	FI2–6–1	2–1	B3	FI2–7–1	4–1	B3	FI2–7–33	6–1	B3		S3	FI2–1–S3
4		4		0–2	A4	FI2–6–3	2–2	A4	FI2–7–3	4–2	A4	FI2–7–35	6–2	A4		S4	35–TG–B3
12		12		0–3	C6	FI2–6–5	2–3	C6	FI2–7–5	4–3	C6	FI2–7–36	6–3	C6			
11		11		0–4	B5	FI2–6–7	2–4	B5	FI2–7–7	4–4	B5	FI2–7–34	6–4	B5			
13		13		0–5	A5	FI2–6–9	2–5	A5	FI2–7–9	4–5	A5	FI2–7–32	6–5	A5			
22		22		0–6	A6	FI2–6–11	2–6	A6	FI2–7–11	4–6	A6	FI2–7–30	6–6	A6			
21		21		0–7	B6		2–7	B6	FI2–7–13	4–7	B6		6–7	B6			
23		23		1–0	C7		3–0	C7	FI2–7–15	5–0	C7		7–0	C7			
32		32		1–1	B7	FI2–6–17	3–1	B7	FI2–7–17	5–1	B7		7–1	B7			
31		31		1–2	A8	FI2–6–19	3–2	A8	FI2–7–19	5–2	A8		7–2	A8			
33		33		1–3	A10	FI2–6–21	3–3	A10	FI2–7–21	5–3	A10		7–3	A10			
42		42		1–4	C9	FI2–6–23	3–4	C9	FI2–7–23	5–4	C9		7–4	C9			
41		41		1–5	B9	FI2–6–25	3–5	B9	FI2–7–25	5–5	B9		7–5	B9			
43		43		1–6	C10		3–6	C10	FI2–7–27	5–6	C10		7–6	C10			
52		52		1–7	B10		3–7	B10	FI2–7–29	5–7	B10		7–7	B10			
51		51		A1–B1–C1 A2–B2–C2 MASA CUPLA			A1–B1–C1 A2–B2–C2 MASA CUPLA			A1–B1–C1 A2–B2–C2 MASA CUPLA			A1–B1–C1 A2–B2–C2 MASA CUPLA				
53		53															
62		62															
61		61															
63		63															
72		72															
71		71															
73		73															
82		82															
81		81															
83		83															

35

CUPLA TG		
ROL		ADRESA
Ax220	C1	31–S2
0x220	B3	31–S4
Protectie	A1	

FI2

RANDUL 5,6

69		68		67		66		65		64		63		62		61	
											4-6 BD		4-6 Sil		2-8 BD		2-8 Sil
										12	0x220			12	0x220		
										11	FI2-4-22	11	22-3	11	FI2-4-18	11	21-3
												13	OVS			13	OVS
										32	3-33			32	1-33		
										31	3-53			31	1-53		
												33	4-32			33	2-32
										52	+24S4			52	+24S3		
										51	Ax220			51	Ax220		
												53	4-31			53	2-31
										72	OVS			72	OVS		
										71	FI2-4-24	71	22-4	71	FI2-4-20	71	21-4

59		58		57		56		55		54		53		52		51	
			034 BD		034 Cl		Y-1AD BD		Y-1AD Cl		024 BD		024 Cl		YF-1AD BD		YF-1AD Cl
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI2-4-14	11	14-3	11	FI2-4-10	11	13-3	11	FI2- 4-6	11	12-3	11	FI2-4-2	11	11-3
				13	OVS			13	OVS			13	OVS			13	OVS
		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	+24S4			52	+24S2			52	+24S2			52	+24S4		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI2-4-16	71	14-4	71	FI2-4-12	71	13-4	71	FI2-4-8	71	12-4	71	FI2-4-4	71	11-4

FI2

RANDUL 7,8

89		88		87		86		85		84		83		82		81	
															16 BD		16 Sil
														12	0x220		
														11	FI2-5-18	11	21A-3
																13	OVS
														32	1-33		
														31	1-53		
																33	2-32
														52	+24S3		
														51	Ax220		
																53	2-31
														72	OVS		
														71	FI2-5-20	71	21A-4

79		78		77		76		75		74		73		72		71	
			12 BD		12 Sil		(10-14)c BD		(10-14)c Sil		(10-14)b BD		(10-14)b Sil		(10-14)a BD		(10-14)a Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI2-5-14	11	14A-3	11	FI2 -5-10	11	13A-3	11	FI2 -5-6	11	12A-3	11	FI2-5-2	11	11A-3
				13	OVS			13	OVS			13	OVS			13	OVS
		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	+24S4			52	+24S4			52	+24S4		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI2-5-16	71	14A-4	71	FI2 -5-12	71	13A-4	71	FI2 -5-8	71	12A-4	71	FI2-5-4	71	11A-4

RAMA FI2

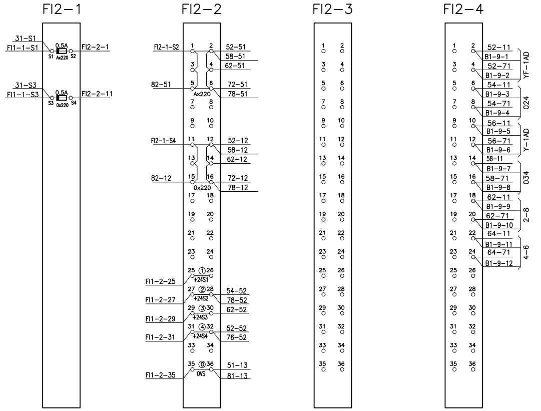
BUCLE TENSIUNI

OVS		+24S2	+24S3	+24S4	Ax220	0x220
FI2 -2-36		FI2 -2-28	FI2 -2-30	FI2 -2-32	FI2 -2-2	FI2 -2-12
51-13		54-52	62-52	52-52	52-51	52-12
52-72		56-52	82-52	58-52	54-51	54-12
53-13		78-52		64-52	56-51	56-12
54-72				72-52	58-51	58-12
55-13				74-52	FI2 -2-2	FI2 -2-12
56-72				76-52	FI2 -2-4	FI2 -2-14
57-13					62-51	62-12
58-72					64-51	64-12
					FI2 -2-6	FI2 -2-16
64-72					72-51	72-12
63-13					74-51	74-12
62-72					76-51	76-12
61-13					78-51	78-12
71-13					FI2 -2-6	FI2 -2-16
72-72					FI2 -2-5	FI2 -2-15
73-13					82-51	82-12
74-72						
75-13						
76-72						
77-13						
78-72						
82-72						
81-13						
FI2 -2-36		FI2 -2-28		FI2 -2-32		

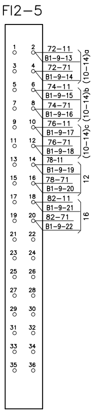
Statia: CATA

EA51 01 E 13 BX SE 013 2 015 1 8/10

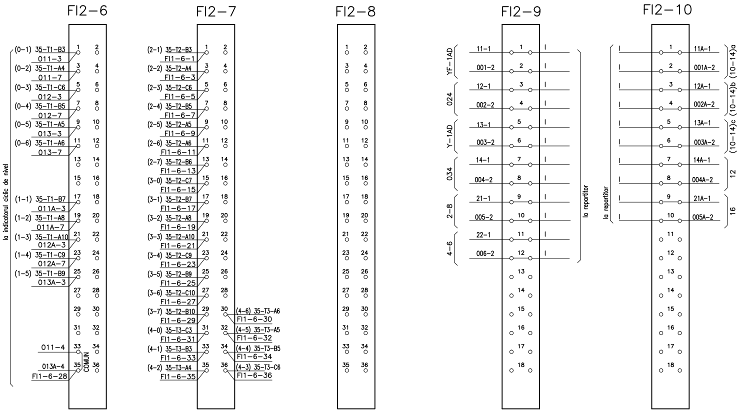
Statia: CATA


FI2-1
31-S1
FI1-1-S1
0,5A
S1
Ax220
S2
FI2-2-1
31-S3
FI1-1-S3
0,5A
S3
0x220
S4
FI2-2-11
FI2-2
FI2-1-S2
52-51
58-51
62-51
82-51
72-51
78-51
Ax220
FI2-1-S4
52-12
58-12
62-12
82-12
72-12
78-12
0x220
FI1-2-25
① +24S1
FI1-2-27
② +24S2
54-52
78-52
FI1-2-29
③ +24S3
62-52
FI1-2-31
④ +24S4
52-52
76-52
FI1-2-35
⓪ OVS
51-13
81-13
FI2-3
FI2-4
52-11
B1-9-1
52-71
B1-9-2
YF-1AD
54-11
B1-9-3
54-71
B1-9-4
024
56-11
B1-9-5
56-71
B1-9-6
Y-1AD
58-11
B1-9-7
58-71
B1-9-8
034
62-11
B1-9-9
62-71
B1-9-10
2-8
64-11
B1-9-11
64-71
B1-9-12
4-6

EA51 01 E 13 BX SE 013 2 015 1 9/10


FI2−5
72−11
B1−9−13
72−71
B1−9−14
(10−14)a
74−11
B1−9−15
74−71
B1−9−16
(10−14)b
76−11
B1−9−17
76−71
B1−9−18
(10−14)c
78−11
B1−9−19
78−71
B1−9−20
12
82−11
B1−9−21
82−71
B1−9−22
16

Statia: CATA


FI2−6
(0−1) 35−T1−B3
011−3
(0−2) 35−T1−A4
011−7
(0−3) 35−T1−C6
012−3
(0−4) 35−T1−B5
012−7
(0−5) 35−T1−A5
013−3
(0−6) 35−T1−A6
013−7
la indicatorul ciclic de nivel
(1−1) 35−T1−B7
011A−3
(1−2) 35−T1−A8
011A−7
(1−3) 35−T1−A10
012A−3
(1−4) 35−T1−C9
012A−7
(1−5) 35−T1−B9
013A−3
011−4
013A−4
FI1−6−28
COMUN
FI2−7
(2−1) 35−T2−B3
FI1−6−1
(2−2) 35−T2−A4
FI1−6−3
(2−3) 35−T2−C6
FI1−6−5
(2−4) 35−T2−B5
FI1−6−7
(2−5) 35−T2−A5
FI1−6−9
(2−6) 35−T2−A6
FI1−6−11
(2−7) 35−T2−B6
FI1−6−13
(3−0) 35−T2−C7
FI1−6−15
(3−1) 35−T2−B7
FI1−6−17
(3−2) 35−T2−A8
FI1−6−19
(3−3) 35−T2−A10
FI1−6−21
(3−4) 35−T2−C9
FI1−6−23
(3−5) 35−T2−B9
FI1−6−25
(3−6) 35−T2−C10
FI1−6−27
(3−7) 35−T2−B10
FI1−6−29
(4−0) 35−T3−C3
FI1−6−31
(4−1) 35−T3−B3
FI1−6−33
(4−2) 35−T3−A4
FI1−6−35
(4−6) 35−T3−A6
FI1−6−30
(4−5) 35−T3−A5
FI1−6−32
(4−4) 35−T3−B5
FI1−6−34
(4−3) 35−T3−C6
FI1−6−36
FI2−8
FI2−9
YF−1AD
11−1
001−2
024
12−1
002−2
Y−1AD
13−1
003−2
034
14−1
004−2
2−8
21−1
005−2
4−6
22−1
006−2
la repartitor
FI2−10
la repartitor
11A−1
001A−2
(10−14)a
12A−1
002A−2
(10−14)b
13A−1
003A−2
(10−14)c
14A−1
004A−2
12
21A−1
005A−2
16

EA51 01 E 13 BX SE 013 2 015 1 10/10