NOTA: Acest desen nu constituie o obligatie de aplicare de cãtre contractor.
El reprezintã 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.

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	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 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:
D.E. / D.D.

Denumire desen / Drawing Title :

Statia / Station BOD
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 05 BX SE 00 5 2 013 1

RAMA APARATA

	1	2	3	4
9				
8	5L CI	② 5L BD	6L CI	④ 6L BD
7	1L CI	② 1L BD	IIL CI	④ IIL BD
6	17a Sil	③ 17a BD	17b Sil	③ 17b BD
5	1-9 Sil	② 1-9 BD	3-7 Sil	① 3-7 BD
4	X-1AD CI	③ X-1AD BD	023 CI	① 023 BD
	FI1 — FATA			
3	31 17a FC-B	32 17b FC-B	33 19a FC-B	34 19b FC-B
2	21 1-9 FC-B	22 3-7 FC-B	23 (11-15)a FC-B	24 (11-15)b FC-B
1	11 X-1AD FC-B	12 023 FC-B	13 XF-1AD FC-B	14 033 FC-B

01	011 IP-2 X-1AD/023	012 IP-2 XF-1AD/033	013 IP-2 1-9/3-7	014 IP-2 (11-15)a/(11-15)b	015 IP-2 17a/17b	016 IP-2 19a/19b

001	002	003	004	005	006	007	008	009	0010	0011	0012
12x100 Ω/ 0,3A											

Statia: BOD

AJ RECEPTIE 1 (FI1)

5	6	7	8	9
025 CI	① 025 BD	035 CI	② 035 BD	
IIIL CI	③ IIIL BD	4L CI	④ 4L BD	
19a Sil	① 19a BD	19b Sil	① 19b BD	
(11-15)a Sil	③ (11-15)a BD	(11-15)b Sil	③ (11-15)b BD	
XF-1AD CI	① XF-1AD BD	033 CI	③ 033 BD	

FI1-SPATE

34A	**33A**	**32A**	**31A**
24A 035 FC-B	**23A** 025 FC-B	**22A** 6L FC-B	**21A** 5L FC-B
14A 4L FC-B	**13A** IIIL FC-B	**12A** IIL FC-B	**11A** 1L FC-B

016A IP-2	015A IP-2	014A IP-2 025/035	013A IP-2 5L/6L	012A IP-2 IIIL/4L	011A IP-2 1L/IIL

0012A	0011A	0010A	009A	008A	007A	006A	005A	004A	003A	002A	001A
8x100Ω/ 0,3A											

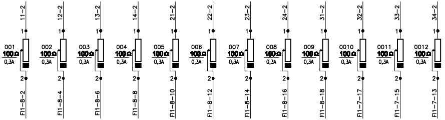
FI1-FATA

31	17a	32	17b	33	19a	34	19b
1	FI1-8-17	1	FI1-7-18	1	FI1-7-16	1	FI1-7-14
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	1-9	22	3-7	23	(11-15)a	24	(11-15)b
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	X-1AD	12	023	13	XF-1AD	14	033
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	X-1AD/023	012	XF-1AD/033	013	1-9/3-7	014	(11-15)a/(11-15)b	015	17a/17b	016	19a/19b
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 FI1-6-30	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 011A-4


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
2
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
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
FI1-7-17
FI1-7-15
FI1-7-13

016A
1
2
3
4
5
6
7
8

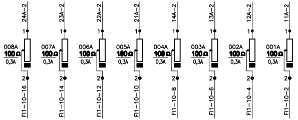
FI1-SPATE

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

24A	035	23A	025	22A	6L	21A	5L
1	FI1-10-15	1	FI1-10-13	1	FI1-10-11	1	FI1-10-9
2	008A-1	2	007A-1	2	006A-1	2	005A-1
3	014A-5 87-11	3	014A-1 85-11	3	013A-5 83-11	3	013A-1 81-11
4	014A-6 87-71	4	014A-2 85-71	4	013A-6 83-71	4	013A-2 81-71

14A	4L	13A	IIIL	12A	IIL	11A	1L
1	FI1-10-7	1	FI1-10-5	1	FI1-10-3	1	FI1-10-1
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

015A		014A	025/035	013A	5L/6L	012A	IIIL/4L	011A	1L/IIL
1		1	23A-3	1	21A-3	1	13A-3	1	11A-3
2		2	23A-4	2	21A-4	2	13A-4	2	11A-4
3		3	FI1-6-36	3	FI1-6-33	3	FI1-6-29	3	FI1-6-25
4		4	8 013A-8	4	8 012A-8	4	8 011A-8	4	8 016-8
5		5	24A-3	5	22A-3	5	14A-3	5	12A-3
6		6	24A-4	6	22A-4	6	14A-4	6	12A-4
7		7	FI1-6-34	7	FI1-6-35	7	FI1-6-31	7	FI1-6-27
8		8	4 FI1-6-32	8	4 014A-4	8	4 013A-4	8	4 012A-4


24A-2
23A-2
22A-2
21A-2
14A-2
13A-2
12A-2
11A-2
1
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
FI1-10-16
FI1-10-14
FI1-10-12
FI1-10-10
FI1-10-8
FI1-10-6
FI1-10-4
FI1-10-2

RANDUL 4,5

59		58		57		56		55		54		53		52		51	
			(11-15)b BD		(11-15)b Sil		(11-15)a BD		(11-15)a Sil		3-7 BD		3-7 Sil		1-9 BD		1-9 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	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	+24S3			52	+24S3			52	+24S1			52	+24S2		
		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	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	
			033 BD		033 CI		XF-1AD BD		XF-1AD CI		023 BD		023 CI		X-1AD BD		X-1AD CI
		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	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	+24S3			52	+24S1			52	+24S1			52	+24S3		
		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	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		74		73		72		71	
			4L BD		4L CI		IIIL BD		IIIL CI		IIL BD		IIL CI		1L BD		1L CI
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-5-14	11	14A-3	11	FI1 -5-10	11	13A-3	11	FI1 -5-6	11	12A-3	11	FI1-5-2	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	+24S4			52	+24S3			52	+24S4			52	+24S2		
		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	FI1-5-16	71	14A-4	71	FI1-5-12	71	13A-4	71	FI1-5-8	71	12A-4	71	FI1-5-4	71	11A-4

69		68		67		66		65		64		63		62		61	
			19b BD		19b Sil		19a BD		19a Sil		17b BD		17b Sil		17a BD		17a Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-4-27	11	34-3	11	FI1-4-31	11	33-3	11	FI1-4-35	11	32-3	11	FI1-4-34	11	31-3
				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	+24S1			52	+24S1			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	OVS			72	OVS			72	OVS			72	OVS		
		71	FI1-4-25	71	34-4	71	FI1-4-29	71	33-4	71	FI1-4-33	71	32-4	71	FI1-4-36	71	31-4

RANDUL 8,9

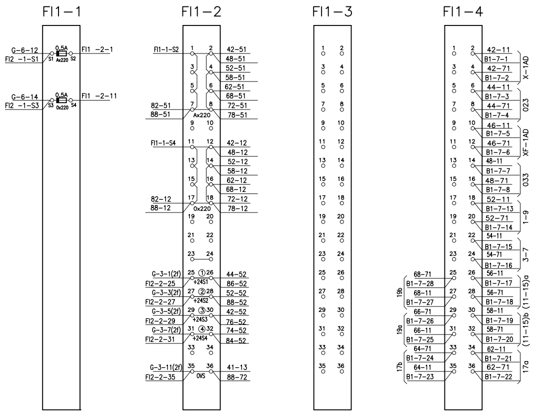
99		98		97		96		95		94		93		92		91	

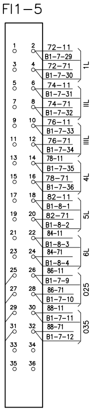
89		88		87		86		85		84		83		82		81	
			035 BD		035 CI		025 BD		025 CI		6L BD		6L CI		5L BD		5L CI
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-5-30	11	24A-3	11	FI1-5-26	11	23A-3	11	FI1-5-22	11	22A-3	11	FI1-5-18	11	21A-3
				13	OVS			13	OVS			13	OVS			13	OVS
		32	7-33			32	5-33			32	3-33			32	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	+24S1			52	+24S4			52	+24S2		
		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	FI1-5-32	71	24A-4	71	FI1-5-28	71	23A-4	71	FI1-5-24	71	22A-4	71	FI1-5-20	71	21A-4

RAMA FI1

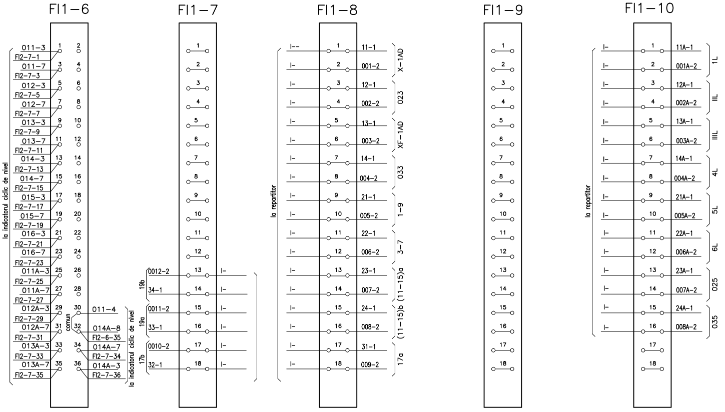
BUCLE TENSIUNI

OVS		+24S1	+24S2	+24S3	+24S4	Ax220	0x220
FI1-2-36		FI1-2-26	FI1-2-28	FI1-2-30	FI1-2-32	FI1-2-2	FI1-2-12
41-13	83-13	44-52	52-52	42-52	74-52	42-51	42-12
42-72	84-72	46-52	72-52	48-52	78-52	44-51	44-12
43-13	85-13	54-52	82-52	56-52	84-52	46-51	46-12
44-72	86-72	66-52	88-52	58-52		48-51	48-12
45-13	87-13	68-52		62-52		FI1-2-2	FI1-2-12
46-72	88-72	86-52		64-52		FI1-2-4	FI1-2-14
47-13				76-52		52-51	52-12
48-72						54-51	54-12
58-72						56-51	56-12
57-13						58-51	58-12
56-72						FI1-2-4	FI1-2-14
55-13						FI1-2-6	FI1-2-16
54-72						62-51	62-12
53-13						64-51	64-12
52-72						66-51	66-12
51-13						68-51	68-12
61-13						FI1-2-6	FI1-2-16
62-72						FI1-2-8	FI1-2-18
63-13						72-51	72-12
64-72						74-51	74-12
65-13						76-51	76-12
66-72						78-51	78-12
67-13						FI1-2-6	FI1-2-18
68-72						FI1-2-7	FI1-2-17
78-72						82-51	82-12
77-13						84-51	84-12
76-72						86-51	86-12
75-13						88-51	88-12
74-72						FI1-2-7	FI1-2-17
73-13							
72-72							
71-13							
81-13							
82-72							
	FI1-2-36	FI1-2-26	FI1-2-28	FI1-2-30	FI1-2-32		


FI1−1
G-6-12
FI2 -1-S1
0,5A
S1
Ax220
S2
FI1 -2-1
G-6-14
FI2 -1-S3
0,5A
S3
0x220
S4
FI1 -2-11
FI1−2
FI1-1-S2
42-51
48-51
52-51
58-51
62-51
68-51
82-51
88-51
72-51
78-51
Ax220
FI1-1-S4
42-12
48-12
52-12
58-12
62-12
68-12
82-12
88-12
72-12
78-12
0x220
G-3-1(2f)
FI2-2-25
①
+24S1
44-52
86-52
G-3-3(2f)
FI2-2-27
②
+24S2
52-52
88-52
G-3-5(2f)
FI2-2-29
③
+24S3
42-52
76-52
G-3-7(2f)
FI2-2-31
④
+24S4
74-52
84-52
G-3-11(2f)
FI2-2-35
0VS
41-13
88-72
FI1−3
FI1−4
42-11
B1-7-1
42-71
B1-7-2
X-1AD
44-11
B1-7-3
44-71
B1-7-4
023
46-11
B1-7-5
46-71
B1-7-6
XF-1AD
48-11
B1-7-7
48-71
B1-7-8
033
52-11
B1-7-13
52-71
B1-7-14
1-9
54-11
B1-7-15
54-71
B1-7-16
3-7
56-11
B1-7-17
56-71
B1-7-18
(11-15)a
58-11
B1-7-19
58-71
B1-7-20
(11-15)b
62-11
B1-7-21
62-71
B1-7-22
17a
68-71
B1-7-28
68-11
B1-7-27
19b
66-71
B1-7-26
66-11
B1-7-25
19a
64-71
B1-7-24
64-11
B1-7-23
17b


FI1−5
72−11
B1−7−29
72−71
B1−7−30
1L
74−11
B1−7−31
74−71
B1−7−32
IIL
76−11
B1−7−33
76−71
B1−7−34
IIIL
78−11
B1−7−35
78−71
B1−7−36
4L
82−11
B1−8−1
82−71
B1−8−2
5L
84−11
B1−8−3
84−71
B1−8−4
6L
86−11
B1−7−9
86−71
B1−7−10
025
88−11
B1−7−11
88−71
B1−7−12
035

Statia: BOD


FI1−6
la indicatorul ciclic de nivel
011−3
FI2−7−1
011−7
FI2−7−3
012−3
FI2−7−5
012−7
FI2−7−7
013−3
FI2−7−9
013−7
FI2−7−11
014−3
FI2−7−13
014−7
FI2−7−15
015−3
FI2−7−17
015−7
FI2−7−19
016−3
FI2−7−21
016−7
FI2−7−23
011A−3
FI2−7−25
011A−7
FI2−7−27
012A−3
FI2−7−29
012A−7
FI2−7−31
013A−3
FI2−7−33
013A−7
FI2−7−35
comun
011−4
014A−8
FI2−6−35
014A−7
FI2−7−34
014A−3
FI2−7−36
la indicatorul ciclic de nivel
FI1−7
19b
0012−2
34−1
19a
0011−2
33−1
17b
0010−2
32−1
I−
FI1−8
la repartitor
I−−
11−1
001−2
X−1AD
12−1
002−2
023
13−1
003−2
XF−1AD
14−1
004−2
033
21−1
005−2
1−9
22−1
006−2
3−7
23−1
007−2
(11−15)a
24−1
008−2
(11−15)b
31−1
009−2
17a
FI1−9
FI1−10
la repartitor
I−
11A−1
001A−2
1L
12A−1
002A−2
IIL
13A−1
003A−2
IIIL
14A−1
004A−2
4L
21A−1
005A−2
5L
22A−1
006A−2
6L
23A−1
007A−2
025
24A−1
008A−2
035

EA51 01 E 05 BX SE 005 2 013 1 10/10