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.

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 FINANȚAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

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

CLIENT / CLIENT

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	12.12.2011	
Aprobat Approved	Coordonator Secțiune 1 Section 1 Coordinator	C. Gamboli	12.12.2011	
Verificat Checked	Expert Cheie Key Expert	P. Amodio	12.12.2011	

SUBCONTRACTANT / SUBCONTRACTOR

AREX

Aprobat Approved	Responsabil Subcontractant Subcontractor Responsible	A. Stanciu - Dinulescu	12.12.2011	
Întocmit Elaborated	Proiectant Designer	ing. Juganaru Adriana	12.12.2011	

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 VANATORI
Fisele de montaj rama alimentare in secvente a circuitelor de cale
Wiring diagrams for track circuits sequence-supply frame

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

E A 5 1 | 0 1 | E | 1 7 | B X | S E | 0 1 | 7 | 2 | 0 1 2 | 0

420x297=0.125mp

RAMA G

	1	2	3	4	5	6	7	8	9
8		NF1L-400 ASA4 A1	NF1L-400 ASA4 A3	NF1L-400 ASA4 A5	NF1L-400 ASA4 A7	NF1L-400 ASA4 A2	NF1L-400 ASA4 A4	NF1L-400 ASA4 A6	NF1L-400 ASA4 A8
7		NF1-2000 ASA5 VS1-3	NF1-2000 VS1-4	NF1-2000 ASA5 VS2-4	NF1-2000 VS2-1	NF1-2000 ASA5 VS3-1	NF1-2000 VS3-2	NF1-2000 ASA5 VS4-2	NF1-2000 VS4-3
6	2x0,5A	PIC-1 VS1B-CI	VS1B-BD	PIC-1 VS2B-CI	VS2B-BD	PIC-1 VS3B-CI	VS3B-BD	PIC-1 VS4B-CI	VS4B-BD
5	4x0,5A	PIC-1 VS1A-CI	VS1A-BD	PIC-1 VS2A-CI	VS2A-BD	PIC-1 VS3A-CI	VS3A-BD	PIC-1 VS4A-CI	VS4A-BD

	1	2	3	4	5	6	7
4				GENERATOR IMPULSURI DE SINCRONIZARE Y2-4 TIS-2			
3	1µF/400Vca+47Ω RC-31X		1µF/400Vca+47Ω RC-32X		1µF/400Vca+47Ω RC-41Y		1µF/400Vca+47Ω RC-42Y
		CONTACTOR STATIC FARA PROTECTIE CS-3X				CONTACTOR STATIC FARA PROTECTIE CS-4Y	
2	1µF/400Vca+47Ω RC-11X		1µF/400Vca+47Ω RC-12X		1µF/400Vca+47Ω RC-21Y		1µF/400Vca+47Ω RC-22Y
		CONTACTOR STATIC FARA PROTECTIE CS-1X		EMITATOR CENTRAL		CONTACTOR STATIC FARA PROTECTIE CS-2Y	
1				GENERATOR IMPULSURI DE SINCRONIZARE X1-3 TIS-2			

	1	2	3	4	5	6	7	8	9
0	4x0,5A Sincronizare BLA-X (S1,S3)	2x5A 2x0,5A ALIMENTARE EMITATOR CENTRAL	4x0,5A Sincronizare BLA-Y (S2,S4)	2x5A Alim.Rame(FI)	4x0,5A Comanda secvente (S1,S2)	4x0,5A Comanda secvente (S3,S4)	4x0,5A Sincronizare STATIE+BLA	4x5A SECV. X	4x5A SECV. Y

Statia: VANATORI **EA51 01 E 17 BX SE 017 2 012 0** **2/10**

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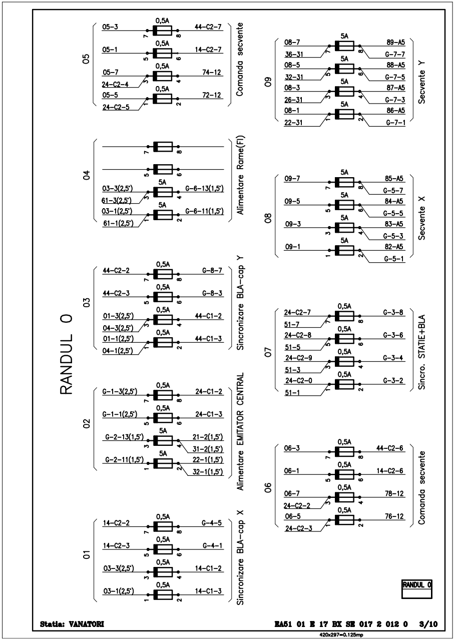
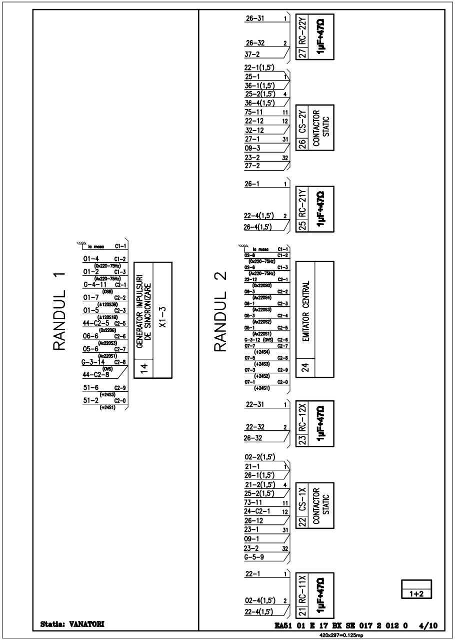

RANDUL 0
05
Comanda secvente
05-3
44-C2-7
05-1
14-C2-7
05-7
24-C2-4
74-12
05-5
24-C2-5
72-12
0,5A
04
Alimentare Rame(FI)
03-3(2,5')
61-3(2,5')
G-6-13(1,5')
03-1(2,5')
61-1(2,5')
G-6-11(1,5')
5A
03
Sincronizare BLA-cap Y
44-C2-2
G-8-7
44-C2-3
G-8-3
01-3(2,5')
04-3(2,5')
44-C1-2
01-1(2,5')
04-1(2,5')
44-C1-3
02
Alimentare EMITATOR CENTRAL
G-1-3(2,5')
24-C1-2
G-1-1(2,5')
24-C1-3
G-2-13(1,5')
21-2(1,5')
31-2(1,5')
G-2-11(1,5')
22-1(1,5')
32-1(1,5')
01
Sincronizare BLA-cap X
14-C2-2
G-4-5
14-C2-3
G-4-1
03-3(2,5')
14-C1-2
03-1(2,5')
14-C1-3
09
Secvente Y
08-7
36-31
89-A5
G-7-7
08-5
32-31
88-A5
G-7-5
08-3
26-31
87-A5
G-7-3
08-1
22-31
86-A5
G-7-1
08
Secvente X
09-7
85-A5
G-5-7
09-5
84-A5
G-5-5
09-3
83-A5
G-5-3
09-1
82-A5
G-5-1
07
Sincro. STATIE+BLA
24-C2-7
51-7
G-3-8
24-C2-8
51-5
G-3-6
24-C2-9
51-3
G-3-4
24-C2-0
51-1
G-3-2
06
Comanda secvente
06-3
44-C2-6
06-1
14-C2-6
06-7
24-C2-2
78-12
06-5
24-C2-3
76-12
1 2 3 4 5 6 7 8
RANDUL 0

Statia: VANATORI

EA51 01 E 17 BX SE 017 2 012 0 3/10

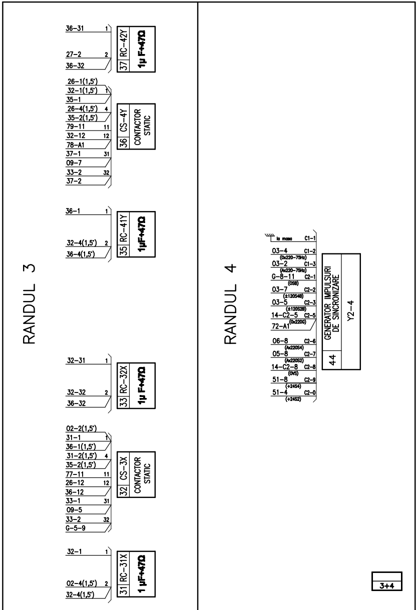
420x297=0.125mp


RANDUL 1
la masa C1-1
01-4 C1-2
(0x220-75Hz)
01-2 C1-3
(Ax220-75Hz)
G-4-11 C2-1
(OSB)
01-7 C2-2
(±120S3B)
01-5 C2-3
(±120S1B)
44-C2-5 C2-5
(0x220G)
06-6 C2-6
(Ax220S3)
05-6 C2-7
(Ax220S1)
G-3-14 C2-8
(OVS)
44-C2-8
51-6 C2-9
(+24S3)
51-2 C2-0
(+24S1)
14
GENERATOR IMPULSURI DE SINCRONIZARE
X1-3
RANDUL 2
26-31
26-32
37-2
27
RC-22Y
1µF+47Ω
22-1(1,5')
25-1
36-1(1,5')
25-2(1,5')
36-4(1,5')
75-11
22-12
32-12
27-1
09-3
23-2
27-2
26
CS-2Y
CONTACTOR STATIC
26-1
22-4(1,5')
26-4(1,5')
25
RC-21Y
1µF+47Ω
la masa C1-1
02-8 C1-2
(0x220-75Hz)
02-6 C1-3
(Ax220-75Hz)
22-12 C2-1
(0x220SG)
06-3 C2-2
(Ax220S4)
06-1 C2-3
(Ax220S3)
05-3 C2-4
(Ax220S2)
05-1 C2-5
(Ax220S1)
G-3-12 (OVS) C2-6
07-7 C2-7
(+24S4)
07-5 C2-8
(+24S3)
07-3 C2-9
(+24S2)
07-1 C2-0
(+24S1)
24
EMITATOR CENTRAL
22-31
22-32
26-32
23
RC-12X
1µF+47Ω
02-2(1,5')
21-1
26-1(1,5')
21-2(1,5')
25-2(1,5')
73-11
24-C2-1
26-12
23-1
09-1
23-2
G-5-9
22
CS-1X
CONTACTOR STATIC
22-1
02-4(1,5')
22-4(1,5')
21
RC-11X
1µF+47Ω
1 2 4 11 12 31 32
1+2

Statia: VANATORI

EA51 01 E 17 BX SE 017 2 012 0 4/10

420x297=0.125mp


RANDUL 3
36-31
1
27-2
2
36-32
37
RC-42Y
1μ F+47Ω
26-1(1,5')
32-1(1,5')
1
35-1
26-4(1,5')
4
35-2(1,5')
79-11
11
32-12
12
78-A1
37-1
31
09-7
33-2
32
37-2
36
CS-4Y
CONTACTOR STATIC
36-1
1
32-4(1,5')
2
36-4(1,5')
35
RC-41Y
1μF+47Ω
32-31
1
32-32
2
36-32
33
RC-32X
1μ F+47Ω
02-2(1,5')
31-1
1
36-1(1,5')
31-2(1,5')
4
35-2(1,5')
77-11
11
26-12
12
36-12
33-1
31
09-5
33-2
32
G-5-9
32
CS-3X
CONTACTOR STATIC
32-1
1
02-4(1,5')
2
32-4(1,5')
31
RC-31X
1 μF+47Ω
RANDUL 4
la masa
C1-1
03-4
C1-2
(0x220-75Hz)
03-2
C1-3
(Ax220-75Hz)
G-8-11
C2-1
(OSB)
03-7
C2-2
(±120S4B)
03-5
C2-3
(±120S2B)
14-C2-5
C2-5
72-A1
(0x220G)
06-8
C2-6
(Ax220S4)
05-8
C2-7
(Ax220S2)
14-C2-8
C2-8
(OVS)
51-8
C2-9
(+24S4)
51-4
C2-0
(+24S2)
44
GENERATOR IMPULSURI DE SINCRONIZARE
Y2-4
3+4

RANDUL 6

	69		68		67		66		65		64		63		62		61
	VS4B-BD		VS4B-CI		VS3B-BD		VS3B-CI		VS2B-BD		VS2B-CI		VS1B-BD		VS1B-CI		2x0,5A
12	**0x220**			12	**0x220**			12	**0x220**			12	**0x220**			1	04-1(2,5') G-1-1(2,5')
11	79-1	11	58-11 78-A12	11	77-1	11	56-11 76-A12	11	75-1	11	54-11 74-A12	11	73-1	11	52-11 72-A12	2	53-51 63-51
		13	**OVS**			13	**OVS**			13	**OVS**			13	**OVS**	3	04-3(2,5') G-1-3(2,5')
32	8-33			32	6-33			32	4-33			32	2-33			4	53-12 63-12
31	8-53			31	6-53			31	4-53			31	2-53				
		33	9-32			33	7-32			33	5-32			33	3-32		
52	**+24S3**			52	**+24S2**			52	**+24S1**			52	**+24S4**				
51	**Ax220**			51	**Ax220**			51	**Ax220**			51	**Ax220**				
		53	9-31			53	7-31			53	5-31			53	3-31		
72	**OVS**			72	**OVS**			72	**OVS**			72	**OVS**				
71	79-4	71	58-71 78-A11	71	77-4	71	56-71 76-A11	71	75-4	71	54-71 74-A11	71	73-4	71	52-71 72-A11		

RANDUL 5

	59		58		57		56		55		54		53		52		51
	VS4A-BD		VS4A-CI		VS3A-BD		VS3A-CI		VS2A-BD		VS2A-CI		VS1A-BD		VS1A-CI		4x0,5A
12	**0x220**			12	**0x220**			12	**0x220**			12	**0x220**			1	07-1
11	78-1	11	68-11	11	76-1	11	66-11	11	74-1	11	64-11	11	72-1	11	62-11	2	14-C2-0
		13	**OVS**			13	**OVS**			13	**OVS**			13	**OVS**	3	07-3
32	8-33			32	6-33			32	4-33			32	2-33			4	44-C2-0
31	8-53			31	6-53			31	4-53			31	2-53			5	07-5
		33	9-32			33	7-32			33	5-32			33	3-32	6	14-C2-9
52	**+24S2**			52	**+24S1**			52	**+24S4**			52	**+24S3**			7	07-7
51	**Ax220**			51	**Ax220**			51	**Ax220**			51	**Ax220**			8	44-C2-9
		53	9-31			53	7-31			53	5-31			53	3-31		
72	**OVS**			72	**OVS**			72	**OVS**			72	**OVS**				
71	78-4	71	68-71	71	76-4	71	66-71	71	74-4	71	64-71	71	72-4	71	62-71		

5+6

RANDUL 7

	9		8		7		6		5		4		3		2		1
Nr. crt.	VS4-3	Nr. crt.	VS4-2	Nr. crt.	VS3-2	Nr. crt.	VS3-1	Nr. crt.	VS2-1	Nr. crt.	VS2-4	Nr. crt.	VS1-4	Nr. crt.	VS1-3	Nr. crt.	
1	69-11	1	59-11	1	67-11	1	57-11	1	65-11	1	55-11	1	63-11	1	53-11		
2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3		
3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2		
4	69-71	4	59-71	4	67-71	4	57-71	4	65-71	4	55-71	4	63-71	4	53-71		
12	8-11	12	A3 06-4	12	6-11	12	A3 06-2	12	4-11	12	A3 05-4	12	2-11	12	A3 05-2		
11	36-11	11	9-12	11	32-11	11	7-12	11	26-11	11	5-12	11	22-11	11	3-12		
13		13		13		13		13		13		13		13			
22		22		22		22		22		22		22		22			
21		21		21		21		21		21		21		21			
23		23		23		23		23		23		23		23			
32		32		32		32		32		32		32		32			
31		31		31		31		31		31		31		31			
33		33		33		33		33		33		33		33			
42		42		42		42		42		42		42		42			
41		41		41		41		41		41		41		41			
43		43		43		43		43		43		43		43			
52		52		52		52		52		52		52		52			
51		51		51		51		51		51		51		51			
53		53		53		53		53		53		53		53			
62		62		62		62		62		62		62		62			
61		61		61				61		61		61		61			
63		63		63		63		63		63		63		63			
72		72		72		72		72		72		72		72			
71		71		71		71		71		71		71		71			
73		73		73		73		73		73		73		73			
82		82		82		82		82		82		82		82			
81		81		81		81		81		81		81		81			
83		83		83		83		83		83		83		83			
		A1	6-A1 36-12			A1	4-A1 8-A1			A1	2-A1 6-A1			A1	4-A1 44-C2-5		
		A3	12			A3	12			A3	12			A3	12		
		A11	68-71			A11	66-71			A11	64-71			A11	62-71		
		A12	68-11			A12	66-11			A12	64-11			A12	62-11		

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Statia: VANATORI **EA51 01 E 17 BX SE 017 2 012 0 7/10**

420x297=0.125mp

RANDUL 8

	9		8		7		6		5		4		3		2		1
Nr. crt.	A8	Nr. crt.	A6	Nr. crt.	A4	Nr. crt.	A2	Nr. crt.	A7	Nr. crt.	A5	Nr. crt.	A3	Nr. crt.	A1	Nr. crt.	
1	A13	1	A13	1	A13	1	A13	1	A13	1	A13	1	A13	1	A13		
2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3		
3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2		
4	A12	4	A12	4	A12	4	A12	4	A12	4	A12	4	A12	4	A12		
12		12		12		12		12		12		12		12			
11		11		11		11		11		11		11		11			
13		13		13		13		13		13		13		13			
22		22		22		22		22		22		22		22			
21		21		21		21		21		21		21		21			
23		23		23		23		23		23		23		23			
32	G-10-5	32	9-31	32	8-31	32	7-31	32	G-10-3	32	5-31	32	4-31	32	3-31		
31	8-32	31	7-32	31	6-32	31	2-31	31	4-32	31	3-32	31	2-32	31	6-31 G-10-1		
33		33		33		33		33		33		33		33			
42		42		42		42		42		42		42		42			
41		41		41		41		41		41		41		41			
43		43		43		43		43		43		43		43			
52		52		52		52		52		52		52		52			
51		51		51		51		51		51		51		51			
53		53		53		53		53		53		53		53			
62		62		62		62		62		62		62		62			
61		61		61		61		61		61		61		61			
63		63		63		63		63		63		63		63			
72		72		72		72		72		72		72		72			
71		71		71		71		71		71		71		71			
73		73		73		73		73		73		73		73			
82		82		82		82		82		82		82		82			
81		81		81		81		81		81		81		81			
83		83		83		83		83		83		83		83			
A1	8-A1 G-7-9	A1	7-A1 9-A1	A1	6-A1 8-A1	A1	5-A1 7-A1	A1	4-A1 6-A1	A1	3-A1 5-A1	A1	2-A1 4-A1	A1	3-A1		
A5	09-8	A5	09-6	A5	09-4	A5	09-2	A5	08-8	A5	08-6	A5	08-4	A5	08-2		
(+) A12	4	(+) A12	4	(+) A12	4	(+) A12	4	(+) A12	4	(+) A12	4	(+) A12	4	(+) A12	4		
(-) A13	1	(-) A13	1	(-) A13	1	(-) A13	1	(-) A13	1	(-) A13	1	(-) A13	1	(-) A13	1		
A6	A10	A6	A10	A6	A10	A6	A10	A6	A10	A6	A10	A6	A10	A6	A10		
A9	A11	A9	A11	A9	A11	A9	A11	A9	A11	A9	A11	A9	A11	A9	A11		

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Statia: VANATORI **EA51 01 E 17 BX SE 017 2 012 0 8/10**

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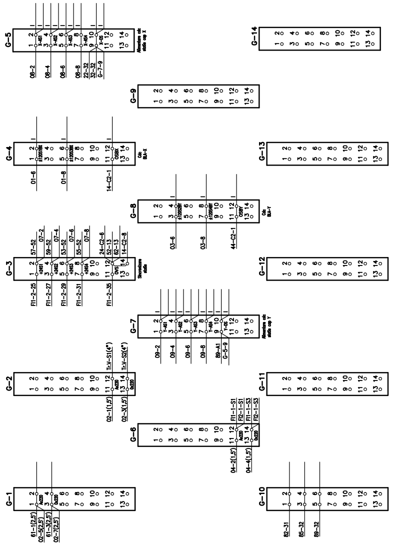
G-5
X-AS1
X-AS2
X-AS3
X-AS4
X-OS
Alimentare cdc statie cap X
08-2
08-4
08-6
08-8
22-32
32-32
G-7-9
G-14
G-9
G-4
±120S1BX
±120S3BX
OSBX
Cdc BLA-X
01-6
01-8
14-C2-1
G-13
G-8
±120S2BY
±120S4BY
OSBY
Cdc BLA-Y
03-6
03-8
44-C2-1
G-3
57-52
07-2
59-52
07-4
53-52
07-6
55-52
07-8
24-C2-6
52-13
62-13
14-C2-8
+24S1
+24S2
+24S3
+24S4
OVS
Sincronizare statie
FI1-2-25
FI1-2-27
FI1-2-29
FI1-2-31
FI1-2-35
G-12
G-7
Y-AS1
Y-AS2
Y-AS3
Y-AS4
Y-OS
Alimentare cdc statie cap Y
09-2
09-4
09-6
09-8
89-A1
G-5-9
G-2
Tr.V-S1(4")
Tr.V-S2(4")
Ax220
0x220
02-1(1,5')
02-3(1,5')
G-11
G-6
FI1-1-S1
FI2-1-S1
FI1-1-S3
FI2-1-S3
Ax220
0x220
04-2(1,5')
04-4(1,5')
G-1
Ax220
0x220
61-1(2,5')
02-5(2,5')
61-3(2,5')
02-7(2,5')
G-10
82-31
85-32
89-32

BUCLE TENSIUNI

+24S1	+24S2	+24S3	+24S4	Ax220	0x220	0VS	0S	0S	0x220SG
G-3-2	G-3-4	G-3-6	G-3-8	61-2	61-4	G-3-12	G-5-9	G-7-9	24-C2-1
57-52	59-52	53-52	55-52	53-51	53-12	52-13	22-32	89-A1	22-12
65-52	67-52	69-52	63-52	55-51	55-12	53-72	23-2	88-A1	26-12
				57-51	57-12	54-13	26-32	87-A1	32-12
				59-51	59-12	55-72	27-2	86-A1	36-12
				69-51	69-12	56-13	37-2	85-A1	78-A1
				67-51	67-12	57-72	36-32	84-A1	76-A1
				65-51	65-12	58-13	33-2	83-A1	74-A1
				63-51	63-12	59-72	32-32	82-A1	72-A1
						69-72			44-C2-5
						68-13			14-C2-5
						67-72			
						66-13			
						65-72			
						64-13			
						63-72			
						62-13			
				61-2	61-4	G-3-12	G-5-9		