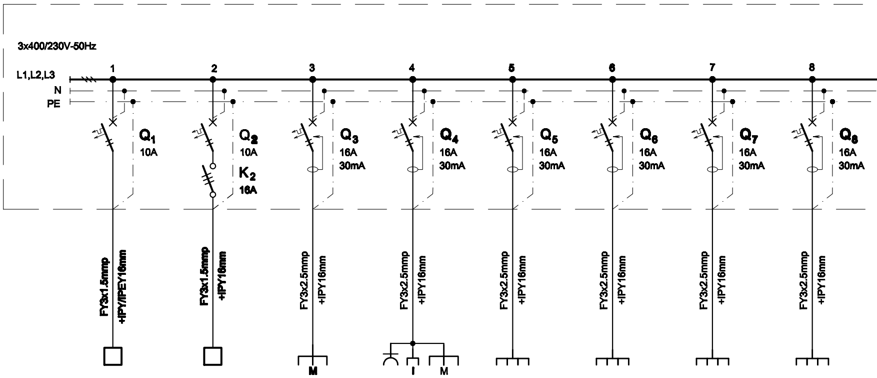
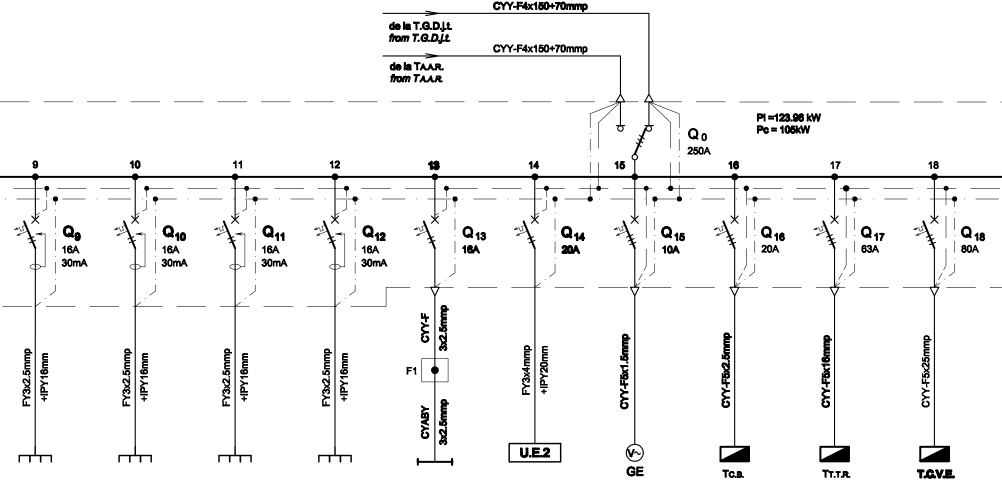
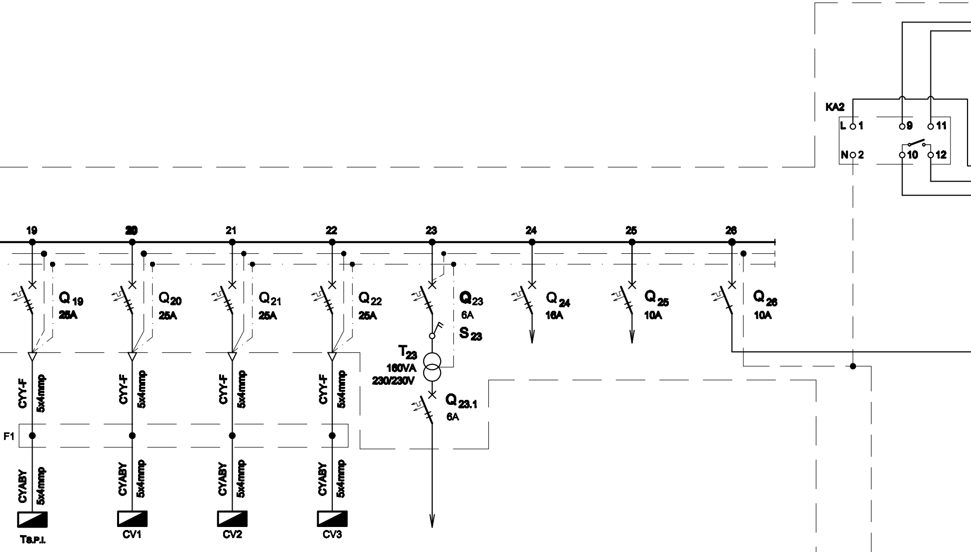
TABLOU ELECTRIC T.C.V. - SCHEMA MONOFILARA
T.C.V. ELECTRIC BOARD - SINGLE-WIRE DIAGRAM


3x400/230V-50Hz
L1,L2,L3
N
PE
1
2
3
4
5
6
7
8
Q1
10A
Q2
10A
K2
16A
Q3
16A
30mA
Q4
16A
30mA
Q5
16A
30mA
Q6
16A
30mA
Q7
16A
30mA
Q8
16A
30mA
FY3x1.5mmp
+IPY/IPEY16mm
FY3x1.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
M
I
M

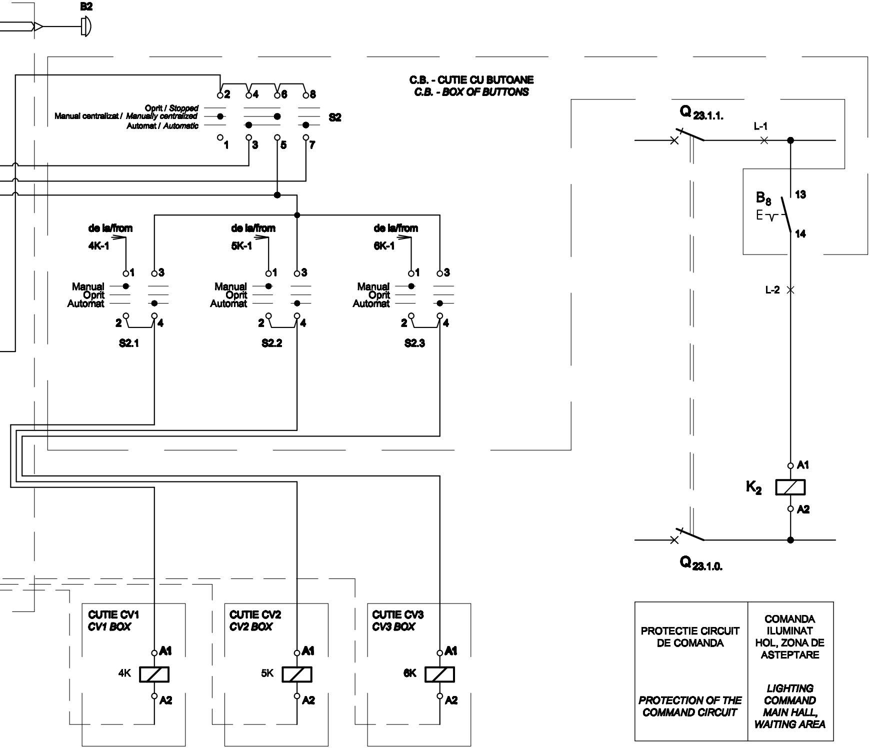
Nr. circuit ***Circuit number***	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Pi [kW]	**0.6**	0.6	**2**	**2**	**2**	**2**	**2**	**2**
Destinatia ***Destination***	**GRUP ELECTROGEN, IDM, SEF STATIE** *GENERATOR, MOVEMENT OFFICE, STATION CHIEF,* 6LL / *Lamps*	HOL, ZONA DE ASTEPTARE *HALL, WAITING AREA* 6LL / *Lamps*	**IDM, SEF STATIE, CASE BILETE, HOL** ***MOVEMENT OFFICE, STATION CHIEF, TICKET OFFICE, MAIN HALL*** 4LP / *Sockets outlet*	SEF STATIE, HOL, ZONA DE ASTEPTARE *STATION CHIEF, MAIN HALL, WAITING AREA* 3LP / *Sockets outlet*	REPARTITOR *DISTRIBUTING FRAME ROOM* 4LP / *Sockets outlet*	REPARTITOR, IDM *DISTRIBUTING FRAME ROOM, MOVEMENT OFFICE* 4LP / *Sockets outlet*	**IDM** ***DISTRIBUTING FRAME ROOM*** 3LP / *Sockets outlet*	INTERVENTIE SALVATORI TUNEL *TUNNEL RESCUERS* 4LP / *Sockets outlet*


CYY-F4x150+70mmp
de la T.G.D.j.t.
from T.G.D.j.t.
CYY-F4x150+70mmp
de la TA.A.R.
from TA.A.R.
Q 0
250A
Pi =123.96 kW
Pc = 105kW
9
10
11
12
13
14
15
16
17
18
Q9
16A
30mA
Q10
16A
30mA
Q11
16A
30mA
Q12
16A
30mA
Q13
16A
Q14
20A
Q15
10A
Q16
20A
Q17
63A
Q18
80A
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
FY3x2.5mmp
+IPY16mm
CYY-F
3x2.5mmp
F1
CYABY
3x2.5mmp
FY3x4mmp
+IPY20mm
U.E.2
CYY-F5x1.5mmp
GE
CYY-F5x2.5mmp
TC.B.
CYY-F5x16mmp
TT.T.R.
CYY-F5x25mmp
T.C.V.E.

9	10	11	12	13	14	15	16	17	18
2	2	2	2	2.05	1.95	1.5	5	31.9	46.2
SEF STATIE *STATION CHIEF* 5LP / *Sockets outlet*	CASE BILETE, HOL, ZONA ASTEPTARE *TICKET OFFICE, MAIN HALL, WAITING AREA* 4LP / *Sockets outlet*	INTERVENTIE SALVATORI TUNEL *TUNNEL RESCUERS* 3LP / *Sockets outlet*	INTERVENTIE SALVATORI TUNEL *TUNNEL RESCUERS* 3LP / *Sockets outlet*	**ILUMINAT TUNEL PIETONAL** ***PEDESTRIAN TUNNEL LIGHTING*** **40LL / Lamps**	**UNITATE EXTERIOARA DE CLIMATIZARE SISTEM MONOSPLIT** ***OUTDOOR UNIT AIR CONDITIONING SYSTEM MONOSPLIT*** 1Buc. / *Piece*	VENTILATOR GRUP ELECTROGEN *FAN GENERATOR* 1Buc. / *Piece*	CASE BILETE TABLOU ELECTRIC - T C.B. ***TICKET OFFICE ELECTRIC BOARD - T C.B.***	**TABLOU ELECTRIC - T T.T.R.** ***ELECTRIC BOARD - T T.T.R.***	TABLOU ELECTRIC - T.C.V.E. *ELECTRIC BOARD - T.C.V.E.*


KA2
L 1
N 2
9
10
11
12
19
20
21
22
23
24
25
26
Q19
25A
Q20
25A
Q21
25A
Q22
25A
Q23
6A
S23
T23
160VA
230/230V
Q23.1
6A
Q24
16A
Q25
10A
Q26
10A
CYY-F
5x4mmp
F1
CYABY
5x4mmp
Ts.P.I.
CV1
CV2
CV3

19	20	21	22	23	24	25	26
4.6	2.6	2.6	1.2	0.16	2	1	-
STATIE POMPARE INCENDIU TABLOU ELECTRIC - Ts.P.I. *FIRE PUMPING STATION ELECTRIC BOARD - T s.P.I.*	CUTIE ETANSA PENTRU COPERTINA - CV1 *SEALED BOX FOR CANOPY - CV1*	CUTIE ETANSA PENTRU COPERTINA - CV2 *SEALED BOX FOR CANOPY - CV2*	CUTIE ETANSA PENTRU COPERTINA - CV3 *SEALED BOX FOR CANOPY - CV3*	CIRCUIT COMANDA ILUMINAT INTERIOR *COMMAND CIRCUIT INDOOR LIGHTING*	REZERVA MONOFAZATA *SINGLE-PHASE RESERVE*	REZERVA MONOFAZATA *SINGLE-PHASE RESERVE*	**CIRCUIT COMANDA ILUMINAT EXTERIOR** *COMMAND CIRCUIT OUTDOOR LIGHTING*


B2
C.B. - CUTIE CU BUTOANE
C.B. - BOX OF BUTTONS
2
4
6
8
Oprit / Stopped
Manual centralizat / Manually centralized
Automat / Automatic
S2
1
3
5
7
de la/from
4K-1
de la/from
5K-1
de la/from
6K-1
1
3
Manual
Oprit
Automat
2
4
S2.1
S2.2
S2.3
Q 23.1.1.
L-1
B8
13
14
L-2
A1
K2
A2
Q 23.1.0.
CUTIE CV1
CV1 BOX
CUTIE CV2
CV2 BOX
CUTIE CV3
CV3 BOX
A1
4K
5K
6K
A2

PROTECTIE CIRCUIT DE COMANDA *PROTECTION OF THE COMMAND CIRCUIT*	COMANDA ILUMINAT HOL, ZONA DE ASTEPTARE *LIGHTING COMMAND MAIN HALL, WAITING AREA*

Nr. *No.*	Simbol *Symbol*
0	1
1	Q0
2	Q1,Q2
3	Q3,...,Q12
4	Q14
5	Q15
6	Q16
7	Q19,Q20, Q21,Q22
8	Q17
9	Q18
10	Q24
11	Q25
12	Q26

TABLOU ELECTRIC T.C.V. - SPECIFICATIE DE APARATAJ / *T.C.V. ELECTRIC BOARD - EQUIPMENT SPECIFICATION*

Denumirea aparatului *Equipment denomination*	Caracteristici tehnice *Technical data*	Buc. *Pcs.*	Observatii *Remarks*
2	3	4	5
Inversor de sursa tripolar *Three-poles source change-over switch*	In=250A Un=400V Uimp=8kV f=50Hz Icm=2,2kA	1	
Intrerupator automat bipolar, curba B *Two-poles circuit breaker, curve B*	In=10A Un=230V Icu=6kA f=50Hz	2	
Intrerupator automat bipolar cu protectie la curent diferential rezidual, curba C *Two-poles circuit breaker with protection at residual differential current device, curve C*	In=16A Un=230V Icu=6kA f=50Hz IΔn=0,03A Tip A Nivel de imunitate 250A la forma de unda 8/20 μS *Level of immunity 250A to wave form 8/20 μS*	10	
Intrerupator automat bipolar, curba C *Two-poles circuit breaker, curve C*	In=20A Un=230V Icu=6kA f=50Hz	1	
Intrerupator automat tripolar, curba C ***Three-poles circuit breaker, curve C***	**In=10A** **Un=400V** **Icu=6kA** **f=50Hz**	1	
Intrerupator automat tripolar, curba C *Three-poles circuit breaker, curve C*	In=20A Un=400V Icu=6kA f=50Hz	1	
Intrerupator automat tripolar, curba C *Three-poles circuit breaker, curve C*	In=25A Un=400V Icu=6kA f=50Hz	4	
Intrerupator automat tripolar, curba C *Three-poles circuit breaker, curve C*	In=63A Un=400V Icu=6kA f=50Hz	1	
Intrerupator automat tripolar, curba C *Three-poles circuit breaker, curve C*	In=80A Un=400V Icu=6kA f=50Hz	1	
Intrerupator automat bipolar, curba C *Two-poles circuit breaker, curve C*	In=16A Un=230V Icu=6kA f=50Hz	1	
Intrerupator automat bipolar, curba C *Two-poles circuit breaker, curve C*	In=10A Un=230V Icu=6kA f=50Hz	1	
Intrerupator automat monopolar, curba D / *Single-pole circuit breaker, curve D*	In=10A Un=230V f=50Hz Icu=6kA	1	

0	1	2	3	4	5
13	KA2	Intrerupator crepuscular *Twilight switch*	Un=230V In=10A E=2...60lx f=50Hz Tf=-25°C...+55°C	1	
14	B2	Celula fotoelectrica *Photoelectric cell*	Tf=-40°C...+70°C IP66	1	
15	Q23,Q23.1	Intrerupatoare automate bipolare, curba D / *Two-poles circuit breaker, curve D*	In=6A Un=230V f=50Hz Icu=10kA	2	
16	T23	Transformator monofazat uscat de comanda / *Single-phase dry-type command transformer*	Sn=160VA U1n=230V U2n=230V f=50Hz	1	
17	B8	Buton de comanda luminos cu retinere / *Light command button with retainer*	Ui=500V In=6A f=50Hz IP67	1	Butonul se va monta in C.B. (cutia cu butoane) *Button will be installed in C.B.(box of buttons)*
18	L	Clema de racordare *Connection clamp*	Un=660V In=16A f=50Hz	2	
19	S23	Comutator cu came cu doua pozitii si un etaj / *Cam switch with two positions and one floor*	Un=500V In=16A f=50Hz	1	
20	S2.1,S2.2,S2.3	Comutator cu came *Cam switch*	Un=230V In=10A f=50Hz	3	Comutatoarele cu came se vor monta in C.B. (cutia cu butoane) *Cam switchs will be installed in C.B.(box of buttons)*
21	S2	Comutator cu came *Cam switch*	Un=230V In=10A f=50Hz	1	Comutatorul cu came se va monta in C.B. (cutia cu butoane) *Cam switch will be installed in C.B.(box of buttons)*
22	K2	Contactor electromagnetic tripolar de curent alternativ / *Three-poles electromagnetic a.c. contactor*	In=16A Un=400A Uc=230V f=50Hz	1	
23	Q13	Intrerupator automat bipolar, curba B *Two-poles circuit breaker, curve B*	In=16A Un=230V Icu=6kA f=50Hz	1	
24	-	Cutie / *Box*	IP54, Clasa I / *Class I*	1	

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

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 Secțiune 1 Section 1 Coordinator	C. Gambelli	12.2011	
Verificat Checked	Expert Verificator Checking Expert	G. Fioravanti	12.2011	

SUBCONTRACTANT / SUBCONTRACTOR

AREX COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A.Stanciu - Dinulescu	12.2011	
Întocmit Elaborated	Proiectant Designer	D. Matei	12.2011	

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

Denumire desen / Drawing Title :

Tablou electric T.C.V. - Stația Racoş;
Racos station - T.C.V. electric board

Codificare / Codification System	Scara / Scale	LOT / LOT	Nr. / No 01 / 01

E A 5 1   0 1   E   1 1   B X   I E   0 0   3   1   0 4 5   1

A3(297x1995)