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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



CONSULTANT / CONSULTANT

		Șef proiect Project manager	R. Liuzza	Data Date	Semnătură Signature
Aprobat Approved	Proiectant Designer				
Aprobat Approved	Coordonator Coordinator	Section 1 Section 1	C. Gambelli		<i>C. Gambelli</i>
Verificat Checked	Tunel Expert Tunnel Expert		C. Gambelli		<i>C. Gambelli</i>
Intocmit Elaborated	Proiectant Designer		P. Amodio		<i>P. Amodio</i>

SUBCONSULTANT / SUBCONSULTANT

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	Intocmit Elaborated	Proiectant Designer	Proiect/Project
				Reabilitarea liniei de cale ferata Brașov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h. Section 1 Brașov - Sighisoara
				Project/Project 2004/RO/16/P/PA/003
				Rehabilitation of the railway line Brașov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h. Section 1 Brașov - Sighisoara
				Faza / Phase: P.Th. / T.D.

Denumire desen / Drawing Title : TUNNEL/TUNELUL HOMOROD

NATURAL TUNNEL/TUNELUL NATURAL
Safety Tunnel Power Supply system /Sistem de alimentare de siguranță a tunelului
Single-line typological diagrams low-voltage electrical panels of bypass QdB
Diagrame single-line tipologică cadrul electrice Joasa tensiune de bypass QdB

Codificare / Codification System

Scara / Scale

LOT

Nr. / No

E A 5 1

0 1

C

1 2

L X

T S

2 0

6

6

0 0 4

0

CHARACTERISTICS PANEL/CARACTERISTICI CADRU

SYSTEM/SYSTEM



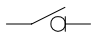




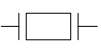

















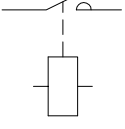
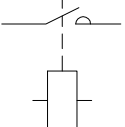
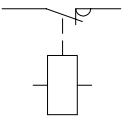
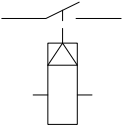



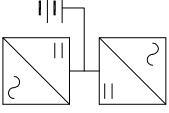
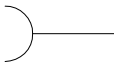
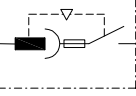

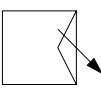

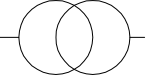

VOLTAGE/TENSIUNE [V]	400	FREQUENCY/FRECVENTA [Hz]	50
RETED CURRENT PANEL/CURRENT NOMINAL CADRU [A]			
SHORT CIRCUIT CURRENT ON PANEL [kA]			16
DISTRIBUTION SYSTEM/SISTEMUL DE DISTRIBUTIE			TNS
SIZE BARS/DIMENSIUNEA BARS			
In [A]			
Scc [kA]			
CARPENTRY/TAMPLARIE			METALLIC
INSULATION CLASS/CLASA DE IZOLARE			IP

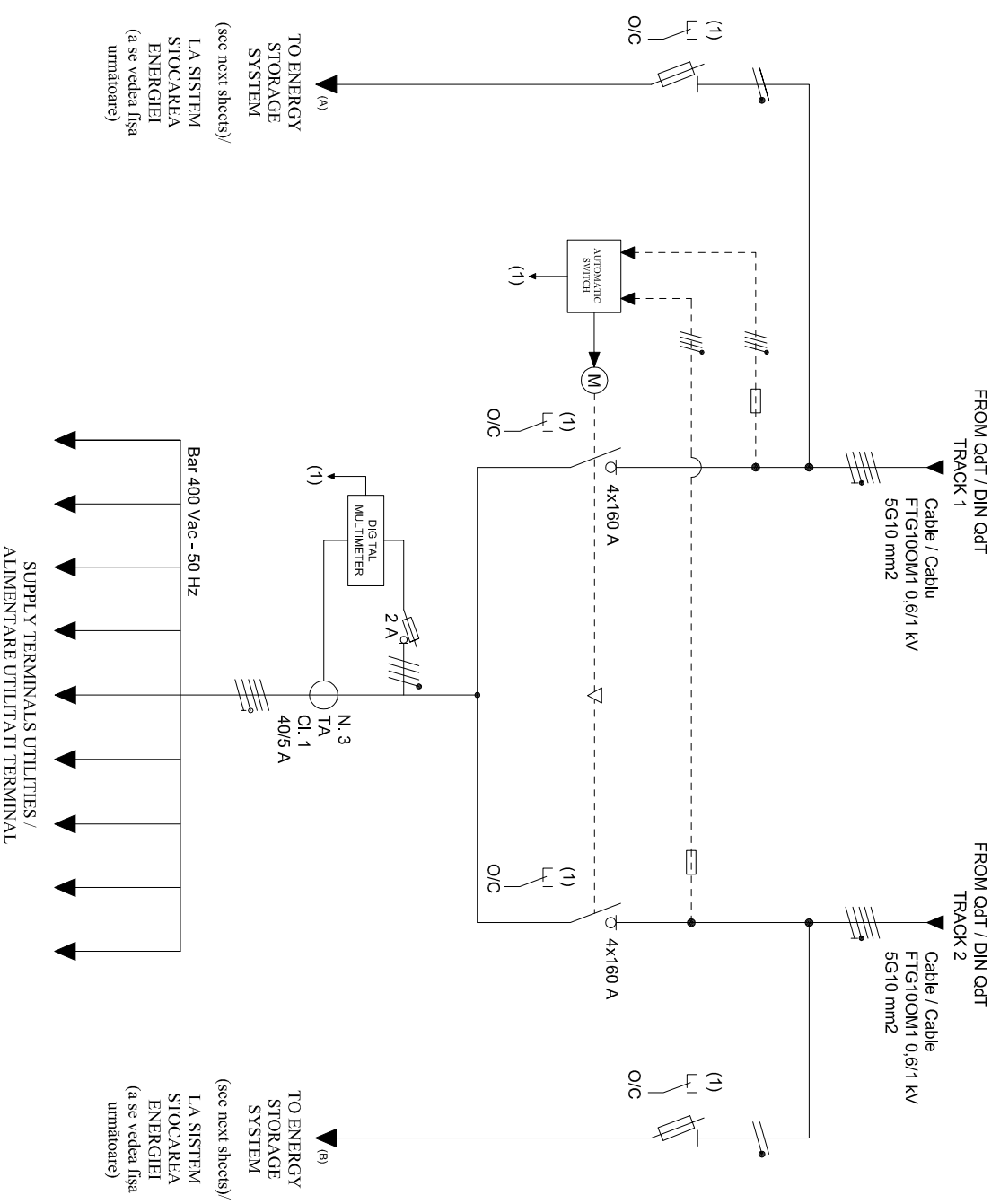
REFERENCE STANDARDS/STANDARDDELE DE REFERINTA

BREAKERS SWITCHES/CIRCUITUL CONCASOARE	<input checked="" type="checkbox"/>	EN 60947-2
MODULAR SWITCHES/CIRCUITUL MODULAR	<input checked="" type="checkbox"/>	EN 60947-2
	<input type="checkbox"/>	EN 60898
CARPENTRY/TAMPLARIE	<input checked="" type="checkbox"/>	EN 60439-1

BY-PASS PANEL
CADRU DE BY-PASS

SYMBOLS LEGEND CHEIA SIMBOLURI

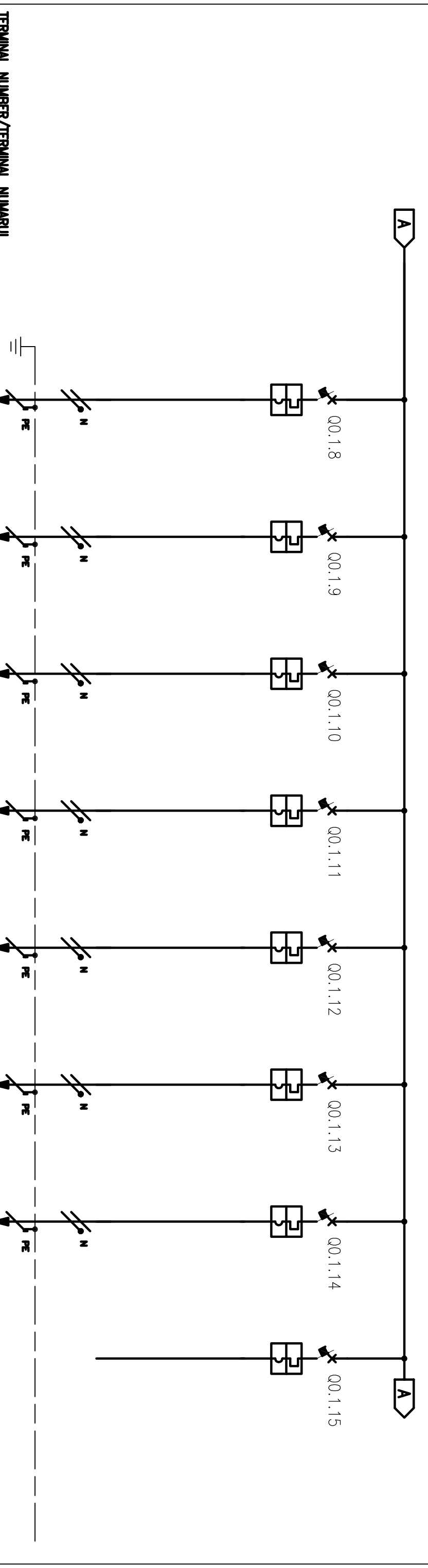
	CIRCUIT BREAKER INTERRUPTOR		SWITCH SWITCH		SWITCH OPERATION SWITCH OPERATIUNEA		THERMAL PROTECTION PROTECTIE TERMICA		MAGNETIC PROTECTION PROTECTIE MAGNETICA		DIFFERENTIAL PROTECTION PROTECTIE DIFERENTIALA		MOTOR MOTOR		FUSE ELEMENT FUZE ELEMENT		TOROID TOROID		MANUAL DRIVE MANUAL
	MOTORIZED CONTROL DE REGULI MOTORIZATE		FREE TRIP CALATORIE GRATUIA		ROTARY HANDLE INTERLOCKING MANER ROTATIV CENTRALIZARE		INTERLOCK INTERBLOCARE		REMOVABLE EQUIPMENT AMOVIBIL ECHIPAMENTE		LOCK KEY (LOCKED WITH APPLIANCE IN PLACE OF REST) LOCK (BLOCAT CU APARATULUI IN POZITIA DE ODHINA)		LOCK KEY (FREE WITH APPLIANCE IN PLACE OF REST) LOCK (GRATUIT CU APARATULUI IN POZITIA DE ODHINA)		AUX CONTACT (N=NUMBER OF INSTALLED CONTACTS, THE HATCH INDICATES WHICH EQUIPMENT PART ACT ON THE CONTACT) DATE DE CONTACT AUX (N=NUMARUL DE DATE INSTALATE, ACT HATCH CU PRIVIRE LA ECHIPAMENTUL INDICA FAPTUL CA DATE)		COIL A MINIMUM VOLTAGE COIL UN VOLTAJ MINIM		COIL A LAUNCH OF CORRENT COIL UN CAUSAREA DE CURENT
	CHANGEOVER SWITCH FOR INSTRUMENT (VOLTMETRIC/AMPEROMETRIC) SWITCH PENTRU INSTRUMENT (VOLTMETRIC/AMPEROMETRIC)		AMPEROMETER AMPEROMETRU		VOLTMETER VOLTMETRU		FREQUENCYMETER FRECVENTIA		INSTRUMENT INTEGRATOR (CONTACTOR) INSTRUMENT INTEGRATOR (CONTACTOR)		CONTRACTOR WITH NO CONTACT CONTACTOR CU DATE DE NO		CONTRACTOR WITH POSSIBILITY OF MANUAL CONTACT WITH NO CONTACT CONTACTOR CU POSIBILITATEA DE DATE MANUAL CU DE CONTACT NO		CONTRACTOR NORMALLY CLOSED CONTACT CONTACTOR CU DATE IN MOD NORMAL INCHIS		CONTACTOR (RELAY 'STEP / STEP') CONTACTOR (RELEU PAS CU PAS)		CLOCK CEASUL
	TWILIGHT CREPUSCULAR		ASTRONOMIC CLOCK CEASUL ASTRONOMIC		UPS UPS		SOCKET (GENERAL SYMBOL) SOCKET (GENERAL SIMBOLURI)		PLUG AND SWITCH FUSE BLOCK SOCKET CU INTERBLOCATA EA SIGURANTI		SOFT STARTER STARTER		INVERTER INVERTOR		STAR STARTER STAR STARTER		TRASFORMER TRASFORMER		SPD VAL



(1) REPORTING OR CONTROL FROM / TO THE SUPERVISION SYSTEM / DE RAPORTARE SAU PENTRU A CONTROLA SAU SISTEMUL DE SUPRAVEGHERE

(2) CONTROL FROM MAE MODULE (CONTROL OF REDUNDANCY FROM PLC) / MODULUL DE CONTROL DIN PARTEA MAE (REDUNDANȚA DE CONTROL DIN PLC)

(3) COMMAND PANEL FOR INTERNAL THERMOSTAT / CADRU DE CONTROL INTERN PENTRU TERMOSTAT



TERMINAL NUMBER/TERMINAL NUMARUL	DISTRIBUTION	DESCRIPTION OF THE CIRCUIT DESCRIBIREA A CIRCUITULUI	TYPE APPARATUS/TIP APARATURA	N. POLE	IN [A]	IR [A]	ISD [A]	II [A]	IG [A]	TYPE/TIP	CLASS/CLASA	TDN [ms]	COIL [V]	N. POLE	IN [A]	IRTH [A]	IN [A]	MODEL	POSE/INSTALAREA	SECTION PHASE-N-PE/PEN [mm ²]	IB [A]	IZ [A]	UN [V]	PN [kW]	ICC min [kA]	ICC max [kA]	ENGLT/LUNGIMEA [m]	IV TOTAL [%]					
L0.1.8	TNPE	ANTICOND RESISTANCE CONDENS REZISTENTA	AL8 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,5	1	2,4	1,3						
L0.1.9	RNPE	OTHER SERVICE BY-PASS	AL9 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,2	1	2,4	1,4						
L0.1.10	TNPE	CENTRAL FIRE BY PASS CENTRALE DE BYPASS	AL10 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,07	1	2,4	1,3						
L0.1.11	TNPE	CENTRAL FIRE BY PASS CENTRALE DE BYPASS	AL11 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,07	1	2,4	1,3						
L0.1.12	RNPE	MAE+PMAE+ PULS. LUM.	AL12 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,05	1	2,4	1,3						
L0.1.13	TNPE	LIGHTING BY-PASS	AL13 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,34	1	2,4	1,5						
L0.1.14	RNPE	POWER ENERGY STORAGE SYSTEM	AL14 C60 N	2P	6	6	60			C									EPR	1x2,5 1x2,5 1x2,5	2,2	33	230	0,49	1	2,4	1,6						
L0.1.15	RSTNPE	RESERVE/REZERVA	C60 N	4P	10	10	100			C																							
SWITCH/SWITCH	ICU [kA]																																

NOTE

