

D					
C					
B					
A					
Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR



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					
Aprobat Approved	Coordonator Section 1 Coordinator	C. Gambelli			
Verificat Checked	Tunel Expert Tunnel Expert	C. Gambelli			
Intocmit Elaborated	Proiectant Designer	P. Amodio			

SUBCONSULTANT / SUBCONSULTANT

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible		
Intocmit Elaborated	Proiectant Designer		
Reabilitarea liniei de cale ferata Brașov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteză maximă de 160 km/h. Section 1 Brasov - Sighisoara		<b>Project/Project</b>	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 Brasov - Sighisoara		Faza / Phase: P.Th. / T.D.	

Denumire desen / Drawing Title : TUNNEL/TUNELUL ORMENIS

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 0 L X T S 1 0 1 6 0 0 2 0

CHARACTERISTICS PANEL/CARACTERISTICI CADRU

SYSTEM/SYSTEM


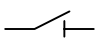
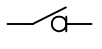






















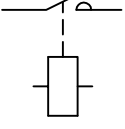
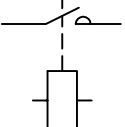
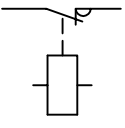
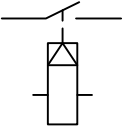



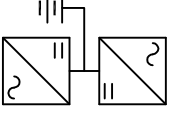
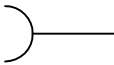
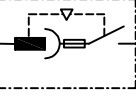



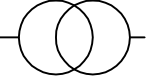
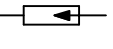
VOLTAGE/TENSIUNE [V] 400 | FREQUENCY/FRECVENTA [Hz] 50  
 RETED CURRENT PANEL/CURRENT NOMINAL CADRU [A] \_\_\_\_\_  
 SHORT CIRCUIT CURRENT ON PANEL [kA] \_\_\_\_\_ 16  
 DISTRIBUTION SYSTEM/SISTEMUL DE DISTRIBUTIE \_\_\_\_\_ TNS  
 SIZE BARS/DIMENSIUNEA BARS \_\_\_\_\_  
 $I_n$  [A] \_\_\_\_\_  $S_{cc}$  [kA] \_\_\_\_\_  
 CARPENTRY/TAMPLARIE \_\_\_\_\_ METALLIC  
 INSULATION CLASS/CLASA DE IZOLARE \_\_\_\_\_ IP \_\_\_\_\_

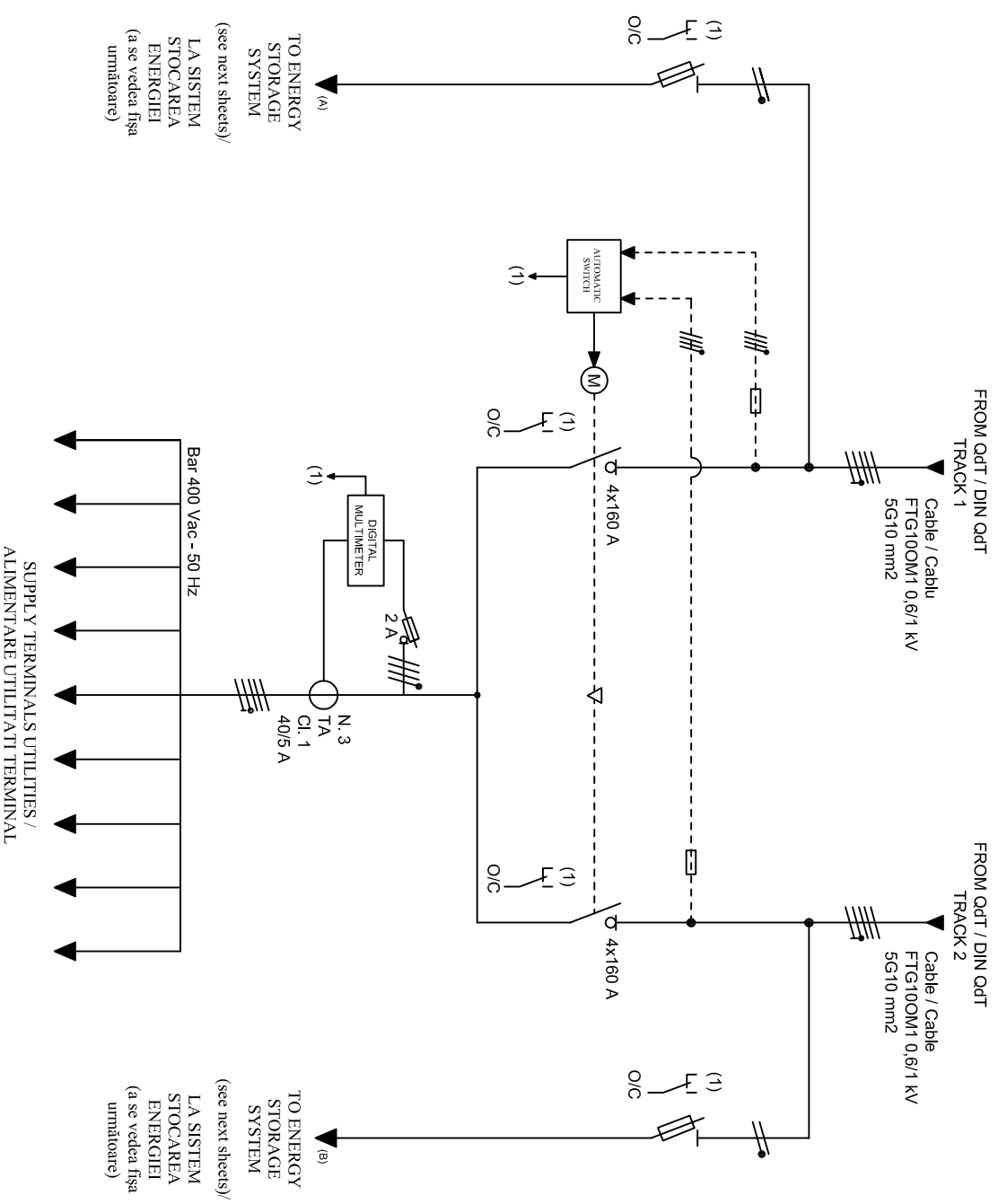
REFERENCE STANDARDS/STANDARDDELE DE REFERINTA

BREAKERS SWITCHES/CIRCUITUL CONCASOARE  — EN 60947-2  
 MODULAR SWITCHES/CIRCUITUL MODULAR  — EN 60947-2  
 — EN 60898  
 CARPENTRY/TAMPLARIE  — EN 60439-1

BY-PASS PANEL  
 CADRU DE BY-PASS

# SYMBOLS LEGEND CHEIA SIMBOLURI

	CIRCUIT BREAKER INTERRUPTOR		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 REGULĂ 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 ODHNA)		LOCK KEY (FREE WITH APPLIANCE IN PLACE OF REST) LOCK (GRATUIT CU APARATULUI IN POZITIA DE ODHNA)		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 FRECVENTA		INSTRUMENT INTEGRATOR (CONTACTOR) INSTRUMENT INTEGRATOR (CONTACTOR)		CONTACTOR WITH NO CONTACT CONTACTOR CU DATE DE NO CONTACT		CONTACTOR WITH POSSIBILITY OF MANUAL CONTACT WITH NO CONTACT CONTACTOR CU POSIBILITATEA DE DATE MANUAL CU DE CONTACT NO		CONTACTOR 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







