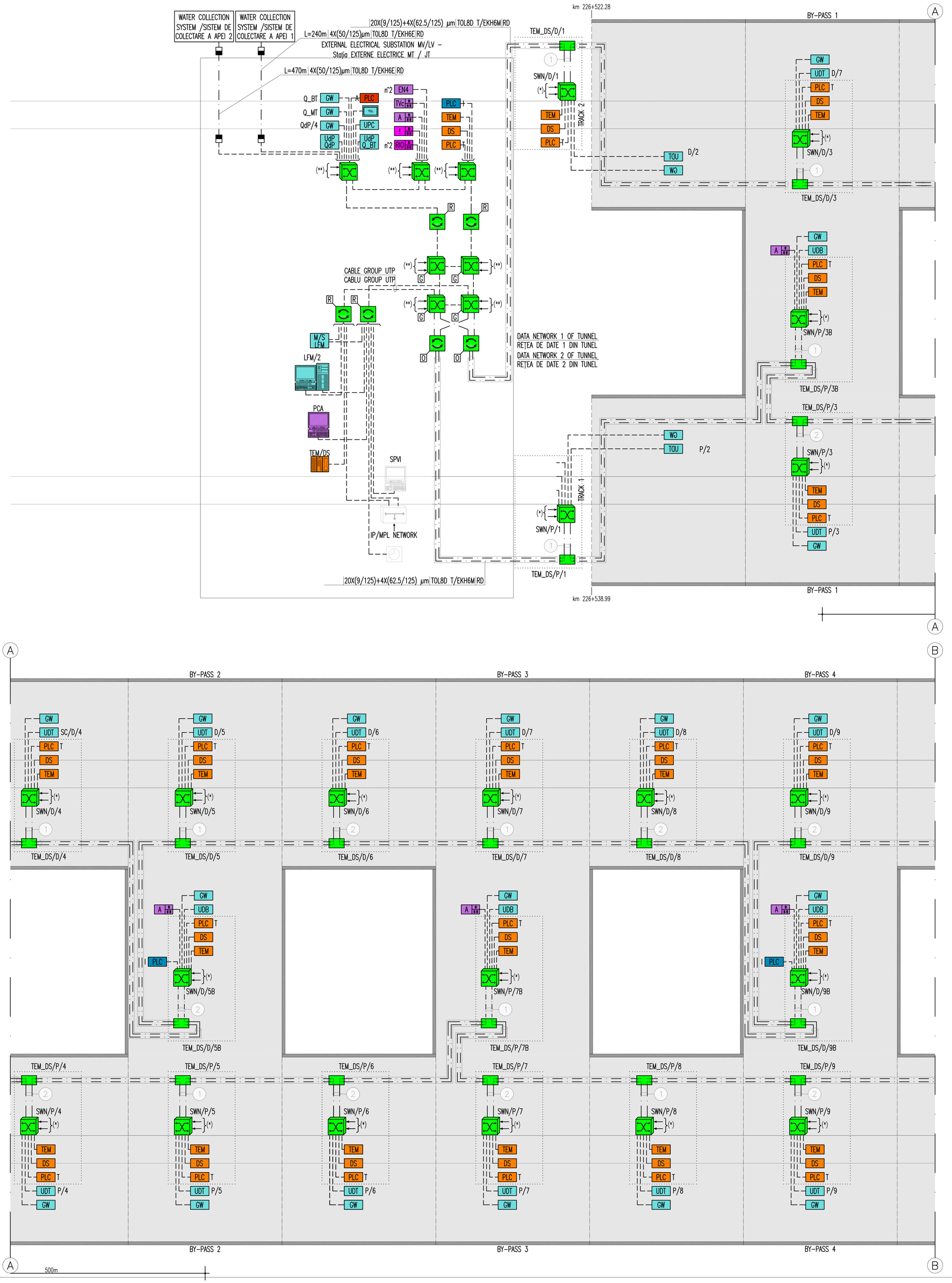



## DESIGNATION EQUPIMENTS LEGEND/ LEGENDA DESEMNAREA EQUIPAMENTE

| | |
|---|---|
| SW | PRINCIPAL SWITCH/SWITCH PRINCIPALELE |
| SWN | SWITCH NODE/SWITCH NOD |
| SWB | SWITCH OF CROSSOROADS/SWITCH LA INTERSECTIE |
| TEM_DS | COLUMNS TEM_DS/COLOANE TEM_DS |

## POSITION EQUPIMENTS LEGEND/ LEGENDA POZITIA EQUIPAMENTE

| | |
|---|---|
| ..../PE | SAFE AREA/ZONA SIGURA |
| ..../..../D | TRACK 2/PISTA 2 |
| ..../..../P | TRACK 1/PISTA 1 |
| ...../1 | PROGRESSIVE NUMBERING/PROGRESSIVE NUMEROTAREA |

## NETWORK LEGEND/LEGENDA OBIECTIVE

| | |
|---|---|
| — · · — | LOW VOLTAGE NETWORK/REȚEA DE JOASA TENSIUNE (BT) 400÷230 V |
| — — — | ETHERNET NETWORK ON CABLE CAT6 UTP/ETHERNET PE CABLU CAT 6 UTP |
| — · — | ETHERNET NETWORK ON FIBER OPTIC/ETHERNET PE FIBRA OPTICA |

## SYMBOLS LEGEND/LEGENDA SIMBOLURI

| | |
|---|---|
| X | DATA NETWORK N°/ REȚEA DE DETALII |
| SCI | ACTIVE EQUIPMENT/ACTIVE UTILAJE<br>SWITCH NODE /SWITCH NOD<br>[G] GENERAL SWITCH TUNNEL NETWORK/SWITCH GENERALE TETEA DE TUNELUL<br>[R] SWITCH TO CROSSROADS/SWITCH LA CROSSROADS |
| | PASSIVE SYSTEM PATCH/PASIV SISTEM PATCH<br>[R] CABLE UTP CAT.6/CABLE UTP cat.6<br>[O] FIBER OPTIC CABLE (MULTIMODE AND–OR SINGLEMODE)/CABLU DE FIBRA OPTICA (MULTIMODE SI / SAU SINGLEMODE) |
| | JUNCTION AND EXTENSIONS BOX FIBER OPTIC NETWORK DATA/BOX PENTRU JONCȚIUNE ȘI RAMURĂ FIBRA DATE OPTICĂ |
| TEM | SPEAKER PHONE/DIFUZOR |
| DS | SOUND DIFFUSION/SUNETUL |
| A LH | ACCESS CONTROL AND INTRUSION DETECTION CENTRAL/CENTRAL DE CONTROLUL ACCES SI DE DETECTIE A INTRUZIUNILOR |
| EN4 | ENCODER FOR VIDEO INPUTS N°4+N°1 SERIAL INPUT WITH ETHERNET EXIT/ ENCODER PENTRU INTRĂRILE VIDEO N°4+N°1 INTRARE SERIALĂ CU ETHERNET IEȘIRE |
| I LH | CENTRAL LOCAL TECHNICAL FIRE DETECTION–BYPASS–NICHE/CENTRAL TEHNIC LOCAL DE DETECTARE A INCENDIILOR–BYPASS–DE NISA |
| RO FW | CENTRAL FIRE DETECTION FOR OPTICAL SENSOR CABLE/CENTRAL DE DETECTARE A INCENDIULUI PENTRU CABLU SENZOR OPTIC |
| RIPC | RELAY "INDIRECT PROTECTION AND CONTROL (INCP)/RELEU "PROTEJEZE INDIRECT ȘI CONTROL (INCP) |
| UDT | UNIT PLC IN QDT/UNITATEA PLC IN QDT |
| UDB | UNIT PLC IN QDB/UNITATEA PLC IN QDB |
| UPC | UNIT PLC IN Q_MT/UNITATEA PLC IN QDB |
| UPP | PROTECTIONS Q_MT/PROTECȚIE Q_MT |
| UdP Q_BT | UNIT PLC IN Q_BT/UNITATEA PLC IN Q_BT |
| UdP QdP | UNIT PLC IN QdP/UNITATEA PLC IN QdP |
| M/S LFM | UNIT MASTER–SLAVE LFM/UNITATEA MASTER–SLAVE LFM |
| GW | GATEWAY ETHERNET TCP/IP–SERIAL RS485 |
| | PANEL VIEWER/PANOULUI DE AFIȘARE |
| PLC | PROGRAMMABLE LOGIC CONTROLLERS (PLC)/CONTROLERE LOGICE PROGRAMABILE<br>T – EMERGENCY TELEPHONE+SPEAKER PHONE/TELEFON DE URGENTA+DIFUZOR<br>I – RADIOPROPAGATION GSM SYSTEM/SISTEM PROPAGARE RADIO GSM<br>A – FIRE PROTECTION/FOC |
| | CLIENT |
| | SERVER |
| | CONSOLE DESK (PHONE EMERGENCY)/BIROU CONSOLĂ (EMERGENCY PHONE) |
| | ROUTER IP / MPL |
| | CENTRAL TIME SYNCHRONIZATION FROM GPS SIGNAL/CENTRAL SINCRONIZARE TIMPUL DE SEMNAL GPS |
| | SIGNAL CONVERTER: OPTICAL–ELECTRICAL FIBER ON MULTIMODE<br>SEMNAL CONVERTOR: ELECTRICE–OPTICE DE FIBRA MULTIMOD |

## ELECTRIC CABLES INDICATORS/ INDICATORI DE CABLURI ELECTRICE

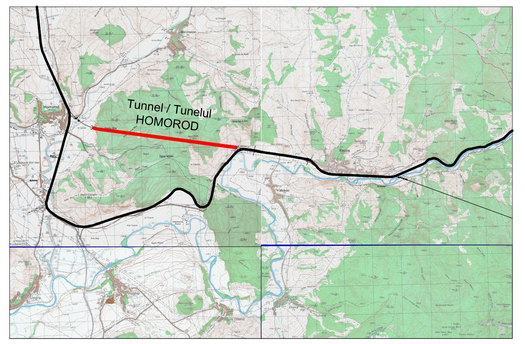
A – SYSTEM

| | |
|---|---|
| MV | MEDIUM VOLTAGE,MEDIE TENSIUNE |
| BT(x) | LOW VOLTAGE/JOASA TENSIUNE (1) = 1000 V, (2) = 690 V, (3) 400/230 V; |
| PE | PROTECTIVE CONDUCTOR/CONDUCTORULUI DE PROTECȚIE |
| IE | OUTDOOR LIGHTING/ILUMINAT EXTERIOR; |
| RD | DATA NETWORK/REȚEA PENTRU DATE; |
| CA | ANTINTRUSION–ACCESS CONTROL/ANTIEFRACTIE–ACCESUL CONTROLUL; |
| RI | FIRE DETECTION/DE DETECTARE A INCENDIILOR; TV TVCC; |
| RA | RADIO GSM. |

A | B | C | D

B – CABLE TYPE/CABLU TIP
C – TRAINING CABLE/FORMAREA CABLE
D – OTHERS INFORMATIONS/INFORMAȚII SUPLIMENTARE

## GENERAL PLAN / PLANUL GENERAL




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

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 | Șef proiect Project manager | R. Liuzza | | |
| Aprobat Approved | Coordonator Secțiune 1 Section 1 Coordinator | C. Gambelli | | |
| Verificat Checked | Tunnel Expert Tunnel Expert | C. Gambelli | | |
| Întocmit Elaborated | Proiectant Designer | P. Amodio | | |

**SUBCONSULTANT / SUBCONSULTANT**

| | | | | |
|---|---|---|---|---|
| Aprobat Approved | Responsabil Subconsultant Subconsultant Responsible | | | |
| Întocmit Elaborated | Proiectant Designer | | | |

Reabilitarea liniei de cale ferata Brașov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h. Secțiune 1 Brasov - Sighisoara

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

*Proiect/Project* 2004/RO/16/P/PA/003

Faza / Phase: P.Th. / T.D.

Denumire desen / Drawing Title : **TUNNEL/TUNELUL HOMOROD**

NATURAL TUNNEL/TUNELUL NATURAL

**Radiocommunication systems/Sisteme radio**

**Diagrams radiocommunication systems: emergency data network /Diagrame Sistem radio: rețea de date de urgență**

Codificare / Codification System

Scara / Scale -

LOT

Nr. / No. 1/2

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