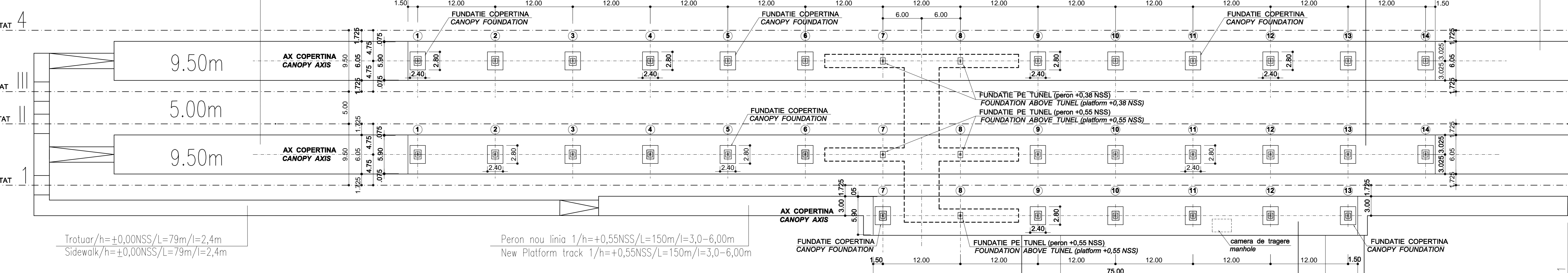


Capot X copertina linie I-II  
Canopy X limit tracks I-II  
Capot X limit tracks III-4  
Canopy X limit tracks III-4

Peron nou linia I-II/h=+0,55NSS/L=250m/l=6,05m  
New Platform tracks I-II/h=+0,55NSS/L=250m/l=6,05m



**NOTA - RECOMANDARI TEHNOLOGICE:**  
1. Toate cotele de trasare longitudinale, transversale si verticale ale copertinelor au ca elemente de referinta: axele liniilor C.F., axa tunelului pietonal si cota +0.00=NSS proiectata a fiecarei linii.  
2. a. axele longitudinale ale fundatiilor stalpilor copertinelor sunt la jumatarea distantei dintre axele de cale ferata ale liniilor I - II, respectiv III - 4 proiectate.  
b. transversal, trasarea axelor pentru fundatiile stalpilor copertinelor se va face avand ca reper axa tunelului pietonal; trasarea se va face 6 m stanga, 6 m dreapta fata de aceasta axa.  
c. cota de fundare, este data fata de +0.00=NSS proiectat al fiecarei linii in parte, respectiv: pentru copertina la linia I cota de referinta este +0.00=NSS linia I, pentru copertina la linie I-II cota de referinta este +0.00=NSS linia II, pentru copertina la linie III-4 cota de referinta este +0.00=NSS linia III.  
2. Trebuie avut in vedere ca stii copertinele (cu fundatiile aferente), cat si perisanele nou proiectate, umaresc profilul longitudinal al liniilor proiectate.  
3. Acest plan se va citi corelat cu: planul de situatie (amplasament), planurile de supstructura c.f. ale statiilor si planurile de structura ale tunelului si ale perisanelor.  
4. Este importanta corelarea cotelor verticale intre stalpii care se pozitioneaza pe grinzile tunelului (din axele 7 si 8) si stalpii si fundatiile adiacente ale copertinei; astfel incat sa se asigure continuitatea la nivelul superior al grinzilor transversale si panilor, cat si realizarea gabariturii pe intreaga lungime a copertinei.  
5. Nu se vor prinde de elementele structurale ale copertinei alte echipamente sau dispozitive in afara celor prevazute in proiect (pentru orice modificare se va cere avizul proiectantului).  
6. Pentru pozitionare si detalii stalpi linie de contact, vezi: PLAN DE SITUATIE MONTARI LC, aferent statiilor.  
7. Stalpii liniei de contact strapung copertina in zona invelitori de polcarbonat (se va face decuparea si etansarea polcarbonatului dupa sectiunea stalpului LC).

**MATERIALE**  
Beton de egalizare : C4/5 - T2/T3 - I 32,5 R/0 - 31  
Beton simplu : C8/10 - T2/T3 - I 32,5 R/0 - 31  
Beton armat : C18/22,5 - C16/20- T3/T4 - I 32,5 R/0 - 16  
Otel beton : PC 52 , OB 37  
Laminata : S235J2G3 (OL 37.3n), S275J2G3 (OL44.3n)  
Buloane de ancorare M30-grupa 6.6

**NOTE - TECHNOLOGICAL RECOMMENDATIONS**  
1. All longitudinal, transversal and vertical levels of the canopy have as a reference: the railway axis, the axis of the pedestrian tunnel and the RUL designed at +0.00 level of the rail (for each one).  
2. a. the longitudinal axis of the canopy poles is at the half distance between the railway axis of designed lines I - II, respectively III - 4.  
b. the axis of the passengers tunnel shall be used as a guide mark when lining the transversal axis of the canopy poles; the lining shall be made from 6 m left and 6 m to right given the above-mentioned axis.  
c. the foundation level refers to +0.00=RUL designed for each one, respectively: for canopy to line I, the reference level is +0.00=RUL line I, for canopy to lines I-II, the reference level is +0.00=RUL line II, for canopy to lines III-4, the reference level is +0.00=RUL line III.  
2. It is important that both the three canopies (with corresponding foundations) as well as new platforms, follow the longitudinal profile of the new designed lines.  
3. This plan shall be read in correlation with: site layout plan; the drawings for railway station superstructure, and the structural drawings of the tunnel, and of the platforms.  
4. It is important to ensure the compliance of the vertical levels between the canopy poles resting on the tunnel beams (axis 7 and 8) and the adjacent poles (and corresponding foundations) of the canopy. So, it will be assured the continued level of transversal beams and purlins, and of the clearance for the entire canopy.  
5. No other equipment or device, apart those foreseen in the project, shall be attached to the structural elements of the canopy.  
6. For positioning and details of contact line poles, see: LAYOUT MOUNTING PLAN LC afferent to the station.  
7. The contact line poles pierce through the canopy in the central area of the polycarbonate covering (the polycarbonate will be cut off and sealed around the LC pole section).

**MATERIALS**  
Leveling concrete : C4/5 - T2/T3 - I 32,5 R / 0 - 31  
Plain concrete : C8/10 - T2/T3 - I 32,5 R / 0 - 31  
Reinforced concrete : C18/22,5 , C16/20- T3/T4 - I 32,5 R / 0 - 16  
Steel concrete : PC 52 , OB 37  
Laminated : S235J2G3 (OL 37.3n), S275J2G3 (OL44.3n)  
Anchoring bolts M30 , resistance group 6.6

**OBSERVATIE**  
Pozitionarea copertinelor in amplasamentul statiilor se va face conform PLAN DE SITUATIE PROPUS statiilor CATA, avand ca reper kilometrajul firului I proiectat.

**OBSERVATION**  
The canopies will be positioned in the station location according to PROPOSED LAYOUT PLAN station CATA, having the kilometer positions of designed track I as reference

**CONDITII GEOTEHNICE**  
Conform : Foraje geotehnice FTE 43, FC 1, FC 2 - statia CATA (date tema : ASTALROM / ITALFER)  
Forajele geotehnice au urmatoarea stratificatie :  
- in forajele FTE 43 si FC 2 la suprafata s-a intalnit un strat de pamant vegetal (0.20 - 0.30 m), iar la forajul FC 1 s-a intalnit un strat de umplutura (0.50 m)  
- urmeaza un complex coeziv format din argila, argila grasa si argila prafoasa, catenii si negricioasa, plastic vartoasa pana la adancimi cuprinse intre 4.40 - 4.60 m  
- in continuare, a fost intalnit un orizont necoeziv format din pietris cu nisip, pietris cu nisip argilos si pietris cu nisip prafos, catenii si cenusii, cu indesare medie ... indesate, pana la adancimea de 6.15 - 6.80 m  
- pana la baza forajelor (15.00 m), a fost interceptat un complex coeziv cenusii alcatuit din argila grasa si argila marnoasa, argila grasa marnoasa, argila prafoasa marnoasa, praf nisipos argilos marnos, tari  
Adancime nivel apa subterana : FTE 43 - 3.20 m ; FC 1 - 1.30 m ; FC 2 - 1.20 m  
Pentru orizontul coeziv - argile grase (ag), negricioase - situat deasupra nivelului apei subterane, pamanturile interceptate se caracterizeaza astfel :  
cu plasticitate foarte mare  
cu starea de consistenta plastic vartoasa  
cu gradul de umiditate foarte umed ... practic saturat  
cu compresibilitate medie  
Pentru orizontul coeziv - argile (a), argile grase (ag), argile prafoase (ap), catenii si cenusii - situat sub nivelul apei subterane, pamanturile interceptate se caracterizeaza astfel :  
cu plasticitate foarte mare  
cu starea de consistenta plastic vartoasa  
cu gradul de umiditate foarte saturat  
cu compresibilitate mare  
Pentru orizontul coeziv marnos - argila marnoasa (am), argila grasa marnoasa (agm), argila prafoasa marnoasa (apm) si praf argilos marnos (pam), cenusii - situat sub nivelul apei subterane, pamanturile interceptate se caracterizeaza astfel :  
cu plasticitate mare ... foarte mare  
cu starea de consistenta tare  
cu gradul de umiditate practic saturat  
Pentru traseul c.f. proiectat, pe intreaga zona a statiilor se executa lucrari de umplutura generala cu grosimi variabile (+1 + 4m).  
Se va realiza fundarea directa a COPERTINELOR pe umplutura generala (platforma de pamant al liniilor c.f. - vezi lucrari de infrastructura c.f.), prin intermediul unei perne din balast compactat de 30 cm grosime (cu grad de compactare D > 98% si asigurarea unei p<sub>con</sub> = 1,5daN/cm<sup>2</sup>).  
Este absolut necesara confirmarea caracteristicilor terenului de fundare si a gradului de compactare de catre proiectantul geotehnician, dupa executarea sapaturilor / umpluturilor (dupa caz).  
La executarea sapaturilor / umpluturilor, se va realiza un foraj suplimentar, de verificare, in amplasamentul copertinei pentru a se verifica daca informatiile provenite din forajele pentru proiectare sunt corecte. In cazul in care exista eventuale diferente, lucrarile proiectate se vor adapta conform rezultatului acestor studii geotehnice de verificare.

**GEOTECHNICAL CONDITIONS**  
According to: Geo-technical drills FTE 43, FC 1, FC 2 - CATA station (subject data: ASTALROM / ITALFER)  
The geo-technical drills have the following ground stratification:  
- a vegetal soil layer was found at the surface (0.20 - 0.30 m) in the drills FTE 43 and FC 2 and a filling layer (0.50 m) was detected in the drill FC 1  
- a cohesive complex made of hard brownish and blackish clay, fat clay and silty clay up to depths between 4.40 - 4.60 m  
- a non-cohesive horizon made of brownish and grey gravel with sand, gravel with clayey sand and gravel with silty sand, medium compacted up to 6.15 - 6.80 m depth  
- a grey cohesive complex was found up to the base of drills (15.00 m), being made of hard fat clay and loamy clay, loamy fat clay, loamy silty clay, loamy clayey silt, loamy clayey sandy silt  
Depth of underground water level: FTE 43 - 3.20 m ; FC 1 - 1.30 m ; FC 2 - 1.20 m  
For the cohesive horizon - blackish fat clays (ag) - placed above the underground water level, the soils are characterized as follows:  
very high plasticity  
hard consistency  
very humid ... saturated  
medium compressibility  
For the cohesive horizon - brownish and grey claye (a), fat clays (ag), silty clays (ap) - placed under the underground water level, the soils are characterized as follows:  
very high plasticity  
heavy-bodied ... hard consistency  
saturated humidity degree  
high compressibility  
For the cohesive loamy horizon - grey loamy clay (am), loamy fat clay (agm), loamy silty clay (apm) and loamy clayey silt (apm) - placed under the underground water level, the soils are characterized as follows:  
high ... very high plasticity  
very hard consistency  
saturated humidity degree  
For the designed railway route in the entire station area, general filling works will be carried out with variable thickness (+1 + 4m).  
The CANOPIES will be directly founded on the general filling (earth sub-grade of railway lines - see railway infrastructure works), on a 30cm thick compacted ballast cushion (compaction degree D > 98% with p<sub>con</sub> = 1,5daN/cm<sup>2</sup>).  
It is absolutely necessary that the geo-technician designer confirms the characteristics of the foundation ground and compaction degree, after carrying out the excavations / fillings (depending on the case).  
During the excavation / filling works, one supplementary checking borehole will be made in the canopies location to see if the information from the borehole for the design stages are correct. In case there are any differences, the designed works shall be adapted based on the results of these checking geo-technical studies.

**CARACTERISTICI**  
• **Categoria de importanta:** Conform H.G. 766-oct 1997 - constructie de importanta normala (C).  
• **Clasa de importanta:** Conform Normativului P100 (proiectarea antisismica), clasa de importanta este III  
Conform OMT 290/2000: clasa de risc 1A  
Conform Normativul P100-1/2006 : perioada de control (col) Tc=0,7s si ag=0,16g  
• **Clasa de risc:**  
• **Conditii seismice:**

**CHARACTERISTICS**  
• **Importance category:** According to H.G. 766-oct 1997 : normal importance construction (C)  
• **Importance class:** According to Norm P100 (anti-seismic design) : importance class III  
• **Risk class:** According to OMT 290/2000 : risk class 1A  
According to Norm P100-1/2006: control period (corner) Tc=0,7s and ag=0,16g  
• **Seismic conditions:**

Capot X copertina linia I  
Canopy X limit track I  
Km237+489,788

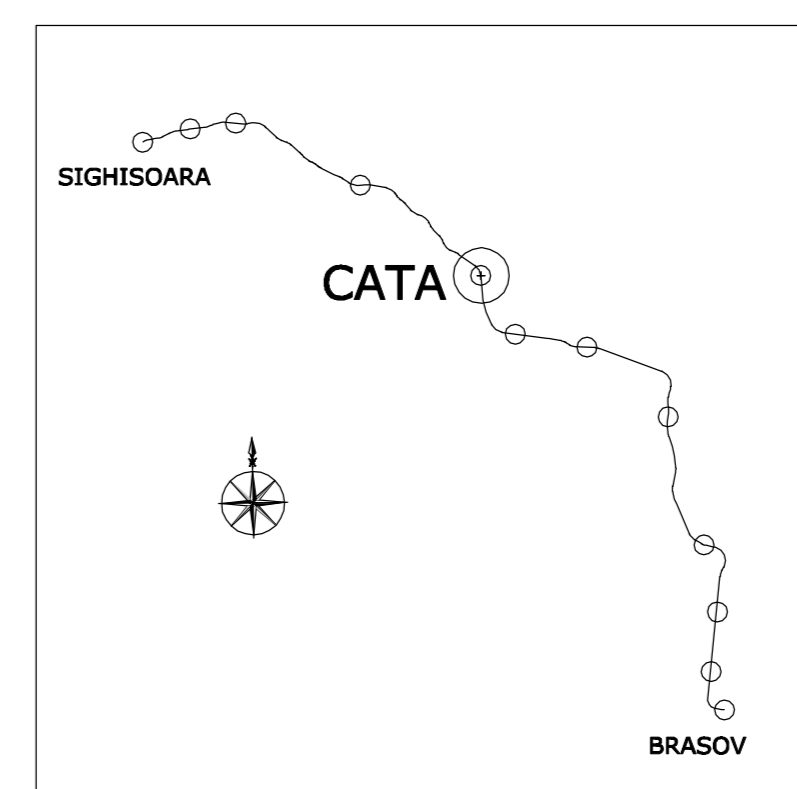
Capot Y copertina linia I-II  
Canopy Y limit tracks I-II  
Km237+497,288

Capot Y copertina linia III-4  
Canopy Y limit tracks III-4  
Km237+564,788

Capot X copertina linie III-4  
Canopy X limit tracks III-4  
Km237+576,788

# PLAN FUNDATII COPERTINE CANOPY FOUNDATION PLAN

scara 1:250 scale 1:250



|   |  |  |  |  |  |
|---|--|--|--|--|--|
| D |  |  |  |  |  |
| C |  |  |  |  |  |
| B |  |  |  |  |  |
| A |  |  |  |  |  |

| Indice | Data | Modificari | Proiectant         | Aprobat  | Aprobat CFR       |
|--------|------|------------|--------------------|----------|-------------------|
| Indice | Data | Modificari | Modificari/Revizii | Designer | Approved/Constant |
|        |      |            |                    |          |                   |

GUVERNUL ROMANIEI ROMANIAN GOVERNMENT

PROIECT FINANAT DE UNIUNEA EUROPEANA EUROPEAN UNION FINANCED PROJECT

CFR

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

| CLIENT / CLIENT                 | Data | Semnatura |
|---------------------------------|------|-----------|
| Scot Wilson                     |      |           |
| OBERMEYER PLANEN + BERATEN GmbH |      |           |
| TECNIC CONSULTING ENGINEERS     |      |           |

| CONSULTANT / CONSULTANT         | Data | Semnatura |
|---------------------------------|------|-----------|
| Scot Wilson                     |      |           |
| OBERMEYER PLANEN + BERATEN GmbH |      |           |
| TECNIC CONSULTING ENGINEERS     |      |           |

SUBCONTRACTANT / SUBCONTRACTOR

| Responsabil Subcontractant | Subcontractant | Data    | Semnatura |
|----------------------------|----------------|---------|-----------|
| A. Stancu - Dabulnicu      |                | 12.2011 |           |
| ing / eng. Tudor ALMALEH   |                | 12.2011 |           |

Resabilitarea liniei de cale ferata Brasov - Simeria, parte componenta a coridorului IV Pan European, pentru circulatia trenurilor cu viteza maxima de 160 km/h.  
Tronsoanel: Brasov - Sighisoara  
Rehabilitation of the railway line Brasov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h.  
Section: Brasov - Sighisoara

Proiect/Project 2004/RO16/PP/PA003  
Faza / Phase: P.Th. / T.D.

Denumire desen / Drawing Title:

COPERTINE STATIONII CATA - PLAN FUNDATII COPERTINE CANOPY CATA STATION - FOUNDATION PLAN

| Codificare / Codification System | Scara / Scale | LOT / LOT | Nr. / No |
|----------------------------------|---------------|-----------|----------|
|                                  | 1:250         |           | 01 / 01  |
| E                                | A             | S         | 1        |
| 0                                | 1             | C         | 1        |
| 1                                | 3             | P         | 2        |
| C                                | C             | 0         | 0        |
| 0                                | 0             | 7         | 3        |
| 0                                | 0             | 3         | 1        |

3 A2 584 x 1280 = 0.75 m<sup>2</sup>