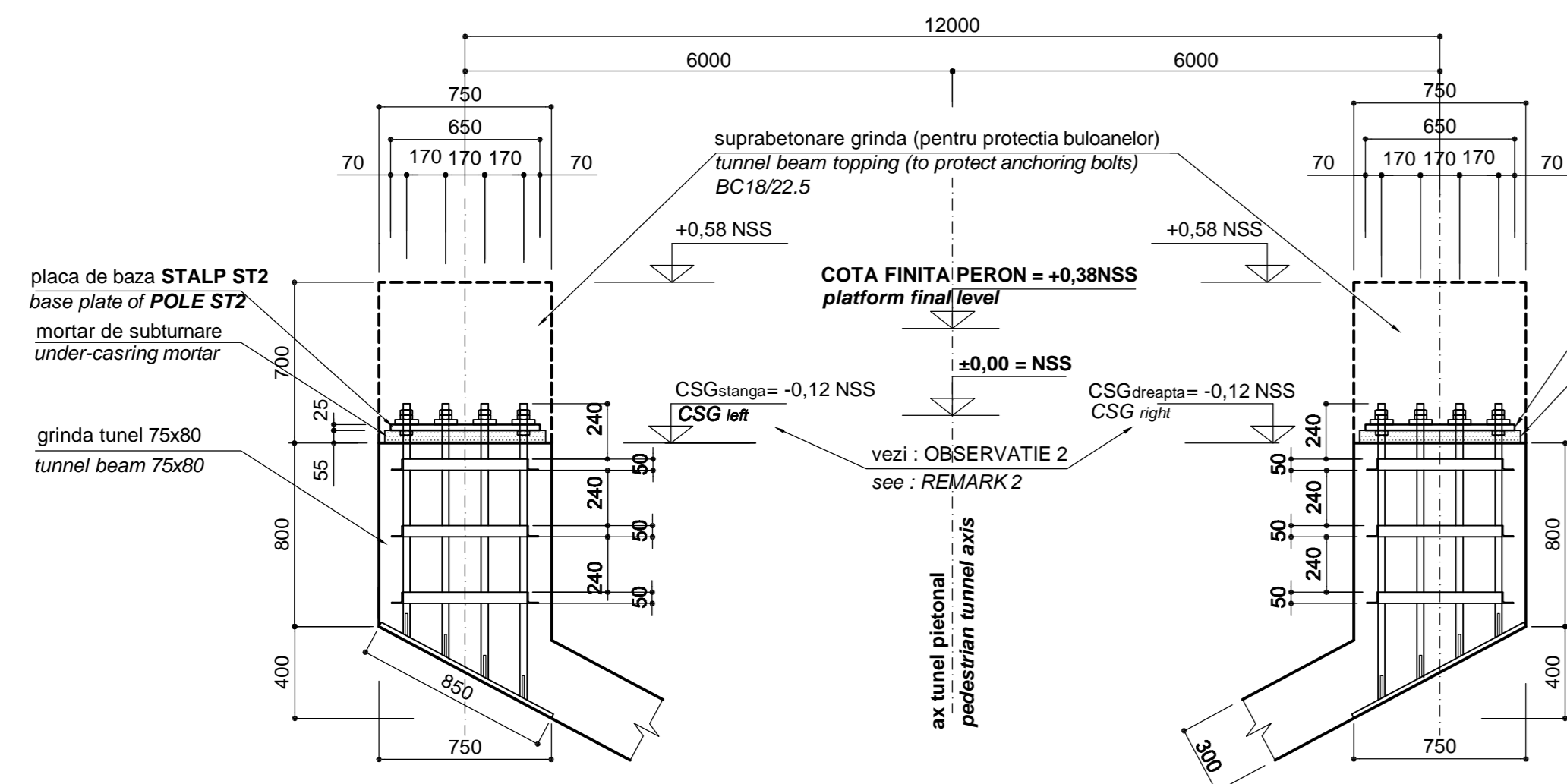


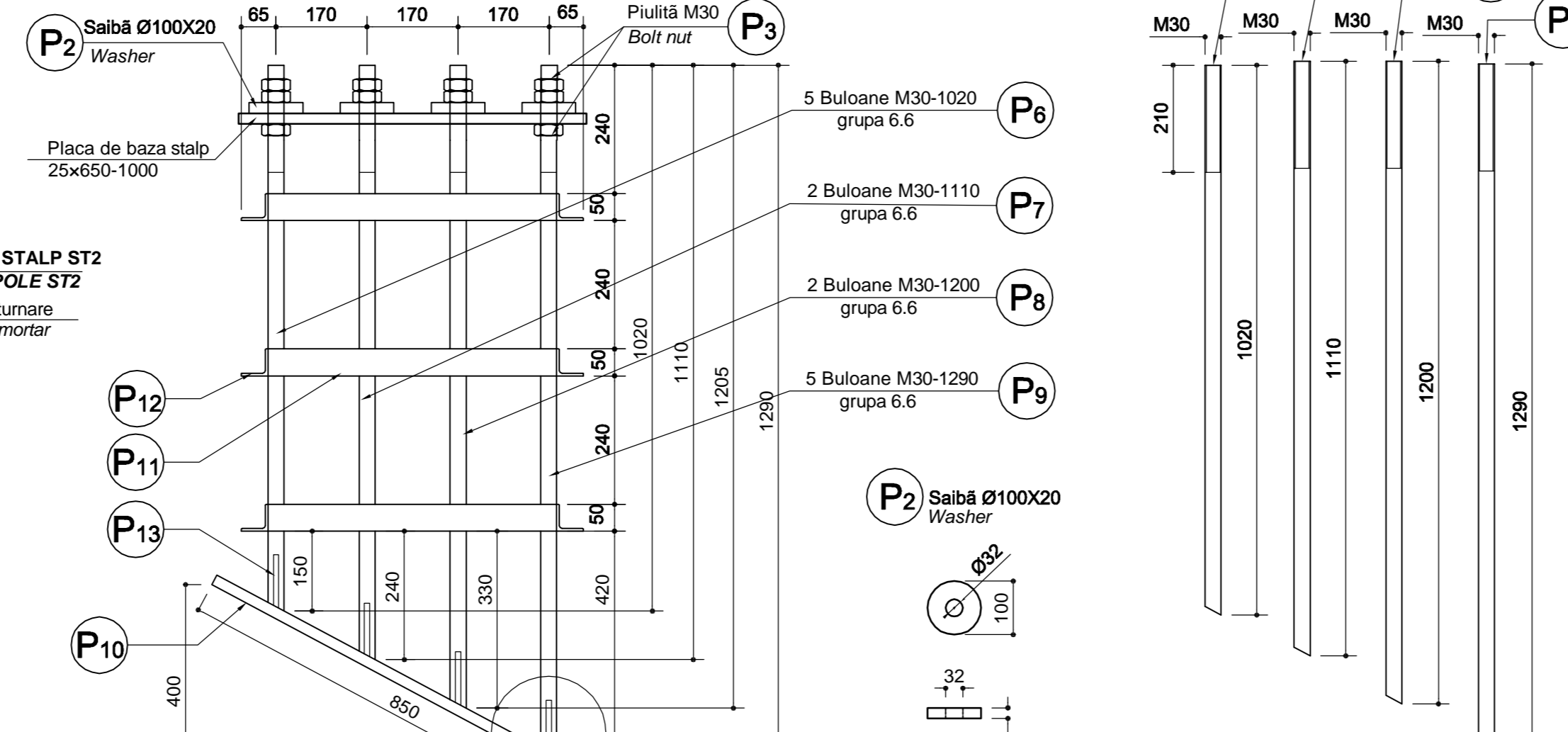
**SECTIUNE - FUNDATIE PE TUNEL (NIVEL PERON +0,38NSS)**  
**SECTION - FOUNDATION ABOVE TUNNEL (PLATFORM LEVEL +0,38 NSS)**

scara 1:25  
 scale 1:25



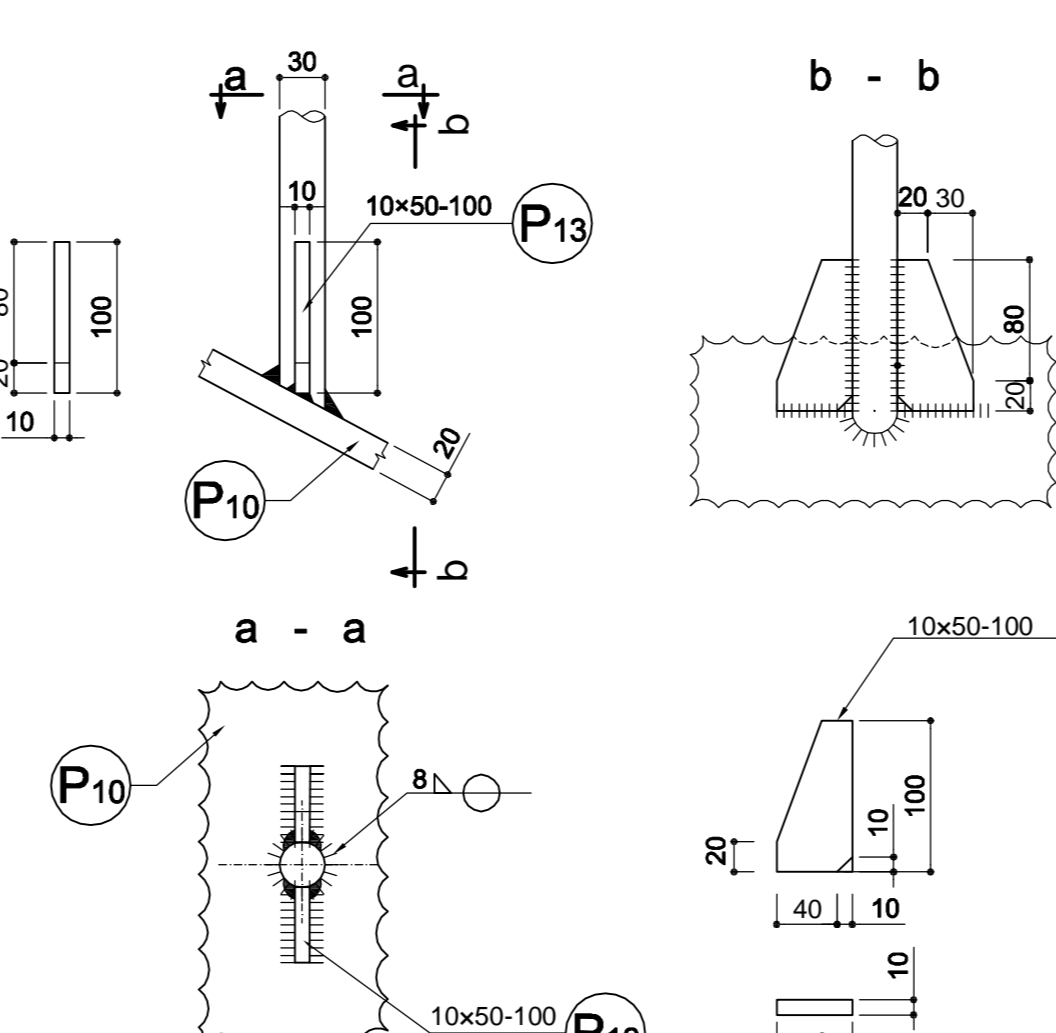
**CARCASA BULOANE DE ANCORAJ ANCHORING BOLTS CASE**

scara 1:10  
 scale 1:10



**DETALIUL " C " DETAIL " C "**

scara 1:5  
 scale 1:5



**ATENȚIE:**  
 Pozitiile P6,P7,P8,P9,P10 se vor debita si asambla (in cadrul carcasei), dupa verificarea sectiunilor grinzii tunelului (75x80), aferente fiecarei statii.

**ATTENTION:**  
 The positions P6,P7,P8,P9,P10 will be cut and assembled (within the case), after checking the sections of tunnel beam (75x80), afferent to each station.

**NOTA - RECOMANDARI TEHNOLOGICE GENERALE:**

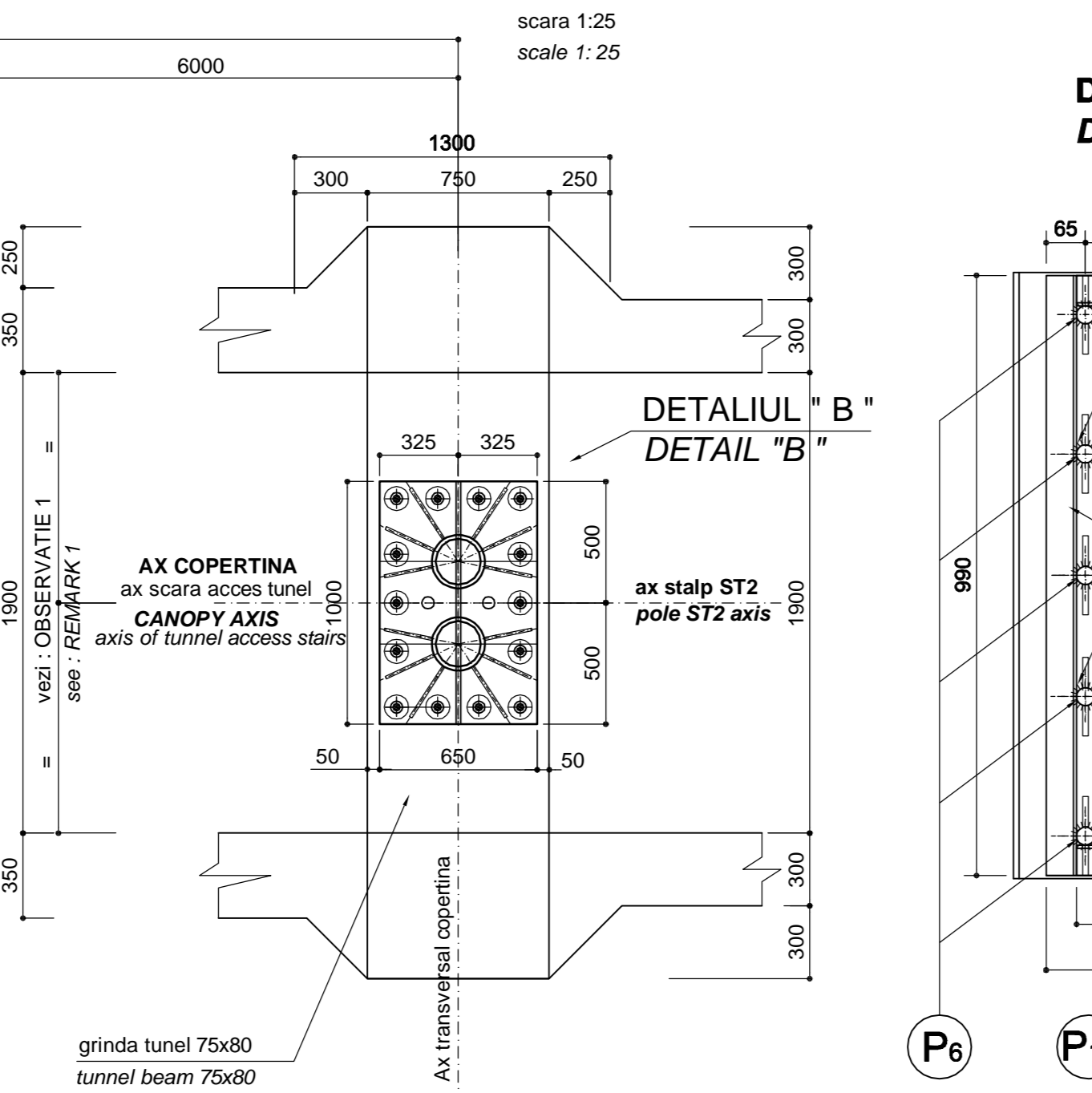
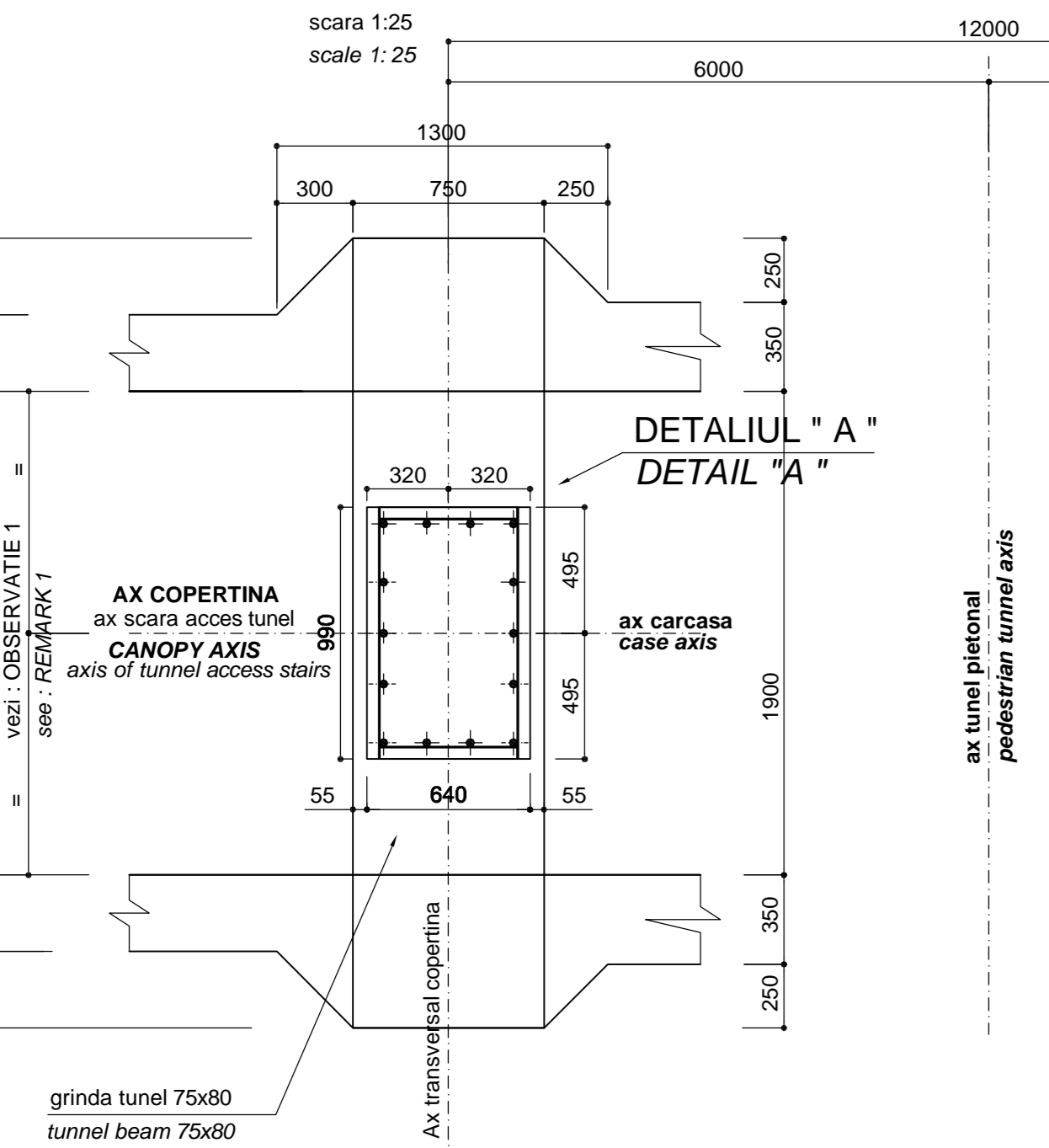
- Toate celele de trasare longitudinale, transversale si verticale ale copertinelor au ca elemente de referinta : axele liniilor C.F., axa tunelului pietonal si cota ±0.00=NSS proiectata a fiecarei linii:
  - axele longitudinale ale fundatiilor stalpilor copertinelor = AX COPERTINA se pozitioneaza conform plan dispozitie generale / plan fundatii, al fiecarei statii in parte;
  - transversala, 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;
- Trebuie avut in vedere ca alti copertinele (cu fundatii aferente), cit si peronele nou proiectate , urmaresc profilul longitudinal al liniilor proiectate;
- Accesti plan se va citi corelat cu: planurile copertinei (dispozitie generala si fundatii), planurile de suprapunere c.f. ale statiei si planurile de structura ale tunelului si ale peroneilor;
- Este importanta corelarea celor verticale intre stalpii care se pozitioneaza pe grinzile tunelului , si stalpii si fundatiile adiacente ale copertinei, astfel incat sa se asigure continuitatea la nivelul superior al grinzii transversale si panilor, cat si realizarea gabaritului pe intreaga lungime a copertinei in conditiile precizate la punctul 2
- Realizarea verticalitatii stalpului pe cele doua directii se va face folosind cale 4 plute de reglaj pozitionate la coltur sub placa de baza a stalpului.
- Pentru alinierea stalpilor, gaurile din placile de baza ale stalpilor permit tranziatii in plan orizontal de ±10mm fata de axa buloanelor de ancorare.
- Dupa pozitionarea corecta a tuturor stalpilor (inclusiv cu grinzile transversale montate) se vor realiza urmatoarele:
  - se face verificarea cotelor de gabarit ale copertinei,
  - se string plutele,
  - se sudaza sabotele P2 cu sudura a=4mm,
  - se blocheaza plutele cu contraputele,
  - se toarna mortarul de subumare (de tip EUROGRUT-04 cu Rc=50N/mm²) respectand toate indicatiile din fișa tehnica a producătorului. Grosimea mortarlui de subumare (pentru stalpi pe tunel) este de 5,5cm. Ea poate varia între 3 - 9 cm permitand eventuale corectii pe verticale.

**NOTE - GENERAL TECHNOLOGICAL RECOMMENDATIONS:**

- 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 ± 0.00 level of the rail (for each one).
  - the longitudinal axis of the canopy poles =CANOPY AXIS, will be positioned according to the general assembly plan / foundation plan, of each station apart;
  - 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;
- It is important that both the canopies (with corresponding foundations) as well as new platforms, follow the longitudinal profile of the new designed lines.
- This plan shall be read in correlation with: the canopy drawings (general assembly plan and foundation), the drawings for railway station superstructure, and the structural drawings of the tunnel, and of the platforms.
- It is important to ensure the compliance of the vertical levels between the canopy poles resting on the tunnel beams, and the adjacent poles (and corresponding foundations) of the canopy. So, it will be ensured the continued level of transversal beams and purlins, and of the clearance for the entire canopy in conditions mentioning at point 2.
- To place the pole in the vertical position on the two directions (both longitudinal and transversal), the 4 adjusting screw nuts shall be positioned at the corners, under the base plate.
- To place the poles on the same line, the holes in the base plates of the poles allow displacements in the horizontal plan of ±10mm from the axis of the anchoring bolts.
  - After placing all the poles in the correct position (including the cross beams mounted on the poles), the following steps shall be carried out:
    - verify all the dimensions of the canopy clearance,
    - tightening the bolt nuts,
    - welding the washer P2 with a=4mm,
    - blocking the bolt nuts using counter nuts,
    - casting the mortar (EUROGRUT-04 type with Rc=50N/mm²) under the base plate, complying with all the indications in the technical sheet of the product. The under-casting mortar ( for poles above tunnel) shall be 5,5 cm thick. The thickness can vary between 3-9 cm enabling possible vertical corrections.

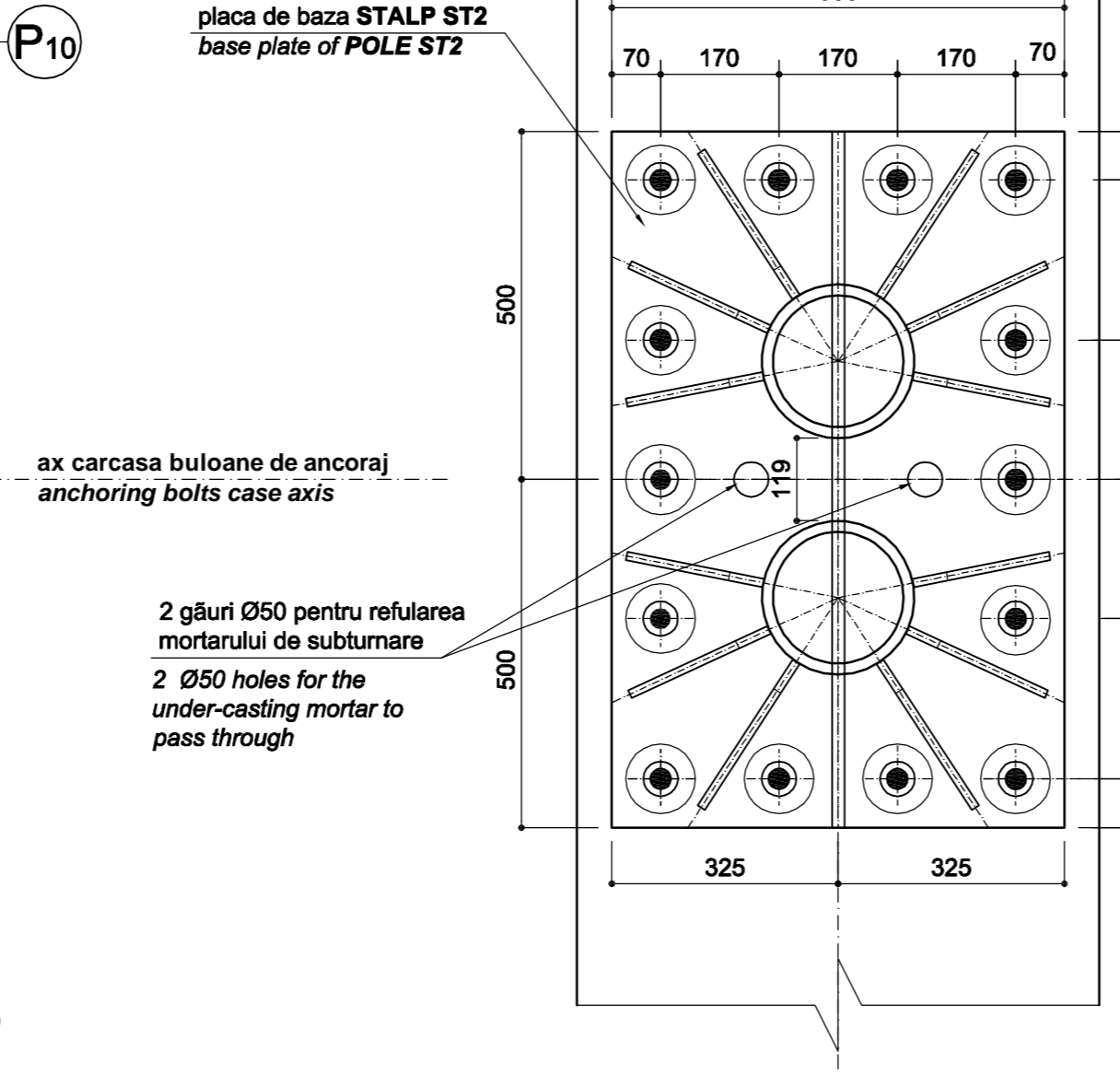
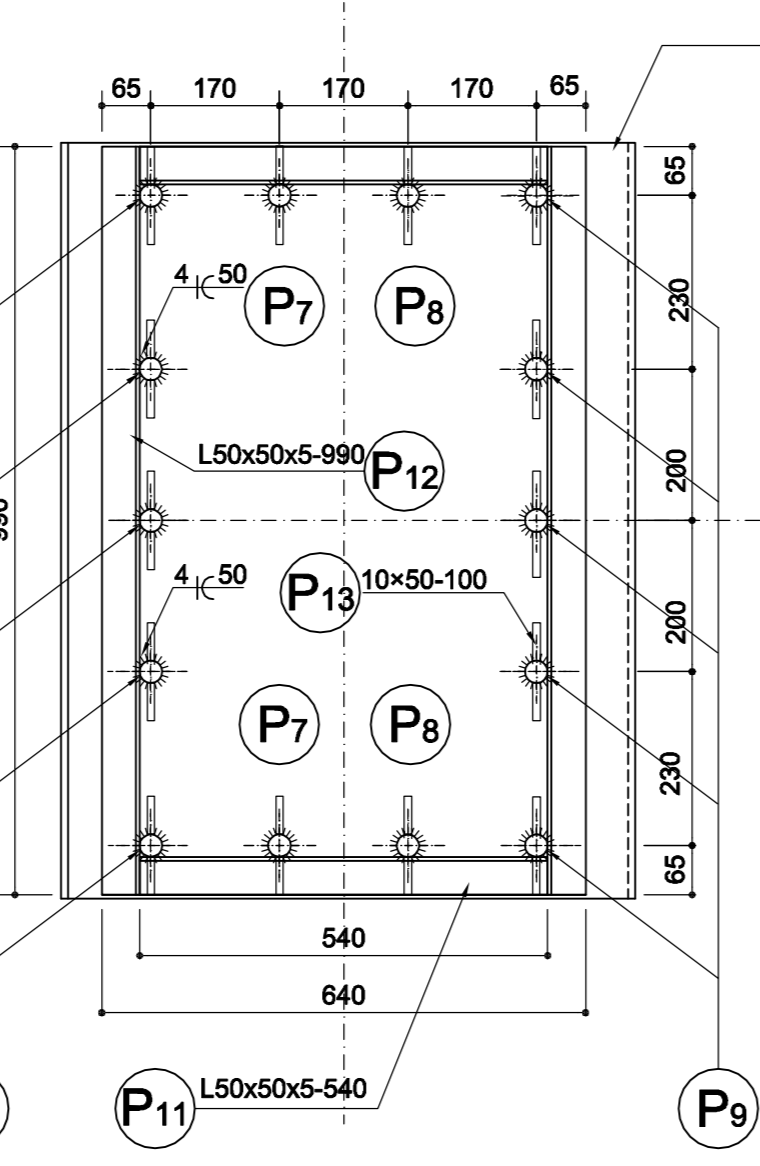
**PLAN FUNDATIE PE TUNEL - pozitionare carcasa buloane FOUNDATION ABOVE TUNNEL - positioning the anchoring bolts case**

**PLAN FUNDATIE PE TUNEL - pozitionare stalp ST2 cu placa de baza FOUNDATION ABOVE TUNNEL - positioning the pole ST2 with base plate**



**DETALIUL " A " DETAIL " A "**

scara 1:10  
 scale 1:10



**EXTRAS LAMINATE - CARCASA BULOANE DE ANCORAJ PE TUNEL LAMINATED ELEMENTS TABLE - ANCHORING BOLTS CASE FOR POLE ABOVE TUNNEL**

Poz. Position	Denumirea Denomination	Dimensiuni Dimensions (mm)	Lungime length (m/mm)	Bucati Pieces	Greutate kg Weight /ml /m /ps.	TOTAL
P2	Sabla Washer	20x100-	-	14	1.11	15.54
P3	Puiuta Bolt nut	M 30-	-	32	0.198	6.34
P6	Bulon fundatie Anchoring bolt	M 30-	1020	5	5.55	28.35
P7	Bulon fundatie Anchoring bolt	M 30-	1110	2	5.55	11.22
P8	Bulon fundatie Anchoring bolt	M 30-	1200	2	5.55	13.32
P9	Bulon fundatie Anchoring bolt	M 30-	1290	5	5.55	35.80
P10	Placa de ancorare Anchoring plate	20x850-	1000	1	133.45	133.45
P11	Carcasa buloane Case element	L50x50x5-	540	6	3.77	22.64
P12	Carcasa buloane Case element	L50x50x5-	990	6	3.77	22.64
P13	Gusiu Connection plate	10x50-	100	28	3.93	11.00
TOTAL LAMINATE TOTAL LAMINATED ELEMENTS						290.80
ELECTROZI + GRUND 3% ELECTRODES + WELDING 3%						9.10
TOTAL Kg-tbuuc.						300.00

**LEGENDA**  
 N.S.S. = cota nivel superior sina proiectat  
 C.S.F. = cota superioara fundatie  
 C.S.G. = cota superioara grinda tunel  
 C.F. = cota de fundare  
 C.S.S. = cota superioara stalp

**LEGEND**  
 R.U.L. = designed rail upper level = N.S.S.  
 C.S.F. = foundation upper level  
 C.S.G. = tunnel beam upper level  
 C.F. = foundation level  
 C.S.S. = pole upper level

**MATERIALE**  
 Beton armat : C18/22.5, C16/20- T3/T4 - 132.5 R/0 - 16  
 Laminat : S235J2G3 (OL 37.3n)  
 Buloane de ancorare M30-grupa 6.6

**SUDURI**  
 Acolo unde nu exista alte precizari, sudurile se vor realiza cu grosimea cordonului de sudura a = 0,7 t min (unde t min = cea mai mica grosime a pieselor care se sudaza)

**MATERIALS**  
 Reinforced concrete : C18/22.5, C16/20- T3/T4 - 132.5 R / 0 - 16  
 Laminated : S235J2G3 (OL 37.3n)  
 Anchoring bolts M30 , resistance group 6.6

**WELDING**  
 If there are no other specifications, the welding will have the welding seam a = 0,7 t min (where t min = the smallest thickness of pieces to be welded)

**CENTRALIZATOR CONFECTII METALICE / STATIE CARCASA BULOANE DE ANCORAJ (NIVEL PERON=+0,38NSS) SUMMARY TABLE FOR METALLIC ELEMENTS / STATION ANCHORING BOLTS CASE (PLATFORM=+0,38NSS)**

statia station	greutate / kg (buuc. weight : kg /pcs.	nr. bucati / statie no. pieces / station	TOTAL Kg. TOTAL Kg.
BOD	300,00	2	600,00
FELDIORARA	300,00	3	900,00
APATA	300,00	1	300,00
RACOS	300,00	2	600,00
CATA	300,00	2	600,00
ARCHITA	300,00	2	600,00
VANATORI	300,00	2	600,00
ALBESTI	300,00	3	900,00

Indice Index	Data Date	Modificari Modifier/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR



GUVERNUL ROMANIEI ROMANIAN GOVERNMENT  
 PROIECT FINANȚAT DE UNIUNEA EUROPEANA EUROPEAN UNION FINANCED PROJECT  
 C.N.C.F. "C.F.R." - S.A.

**CLIENT / CLIENT**  
 ITALFERA  
 SCOP WILSON  
 OBERMEYER PLANEN + BERATEN GmbH  
 TECNIC Consulting Engineers

**CONSULTANT / CONSULTANT**

Approbat Approved	Responsabil Subcontractant Subcontractant Responsible	Data Date	Semnatura Signature
	R. LUZZA	12.2011	
	C. GAMBELLI	12.2011	
	Giuseppe Fioravanti	12.2011	

**SUBCONTRACTANT / SUBCONTRACTOR**

Approbat Approved	Responsabil Subcontractant Subcontractant Responsible	Data Date	Semnatura Signature
	A. STANCIU - DINULESCU	12.2011	
	ing. / eng. Tudor ALMALEH	12.2011	

Reabilitarea 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  
 Project/Project 2004/R0/16/PPA/003  
 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  
 Denumire desen / Drawing Title :

**COPERTINE : FUNDATIE PE TUNEL (NIVEL PERON +0,38 NSS) - DETALII DE EXECUTIE CANOPY : FOUNDATION ABOVE TUNNEL (PLATFORM LEVEL +0,38 NSS) - DETAILS**

Modificari / Codification System	Scara / Scale 1:25, 1:10, 1:5	LOT / LOT	Nr. / No 01 / 01
E A 5 1 0 1 E 0 0 B Z C C 0 0 0 3 0 1 1 1			

4/A4 (420x1336)=0.56 mp