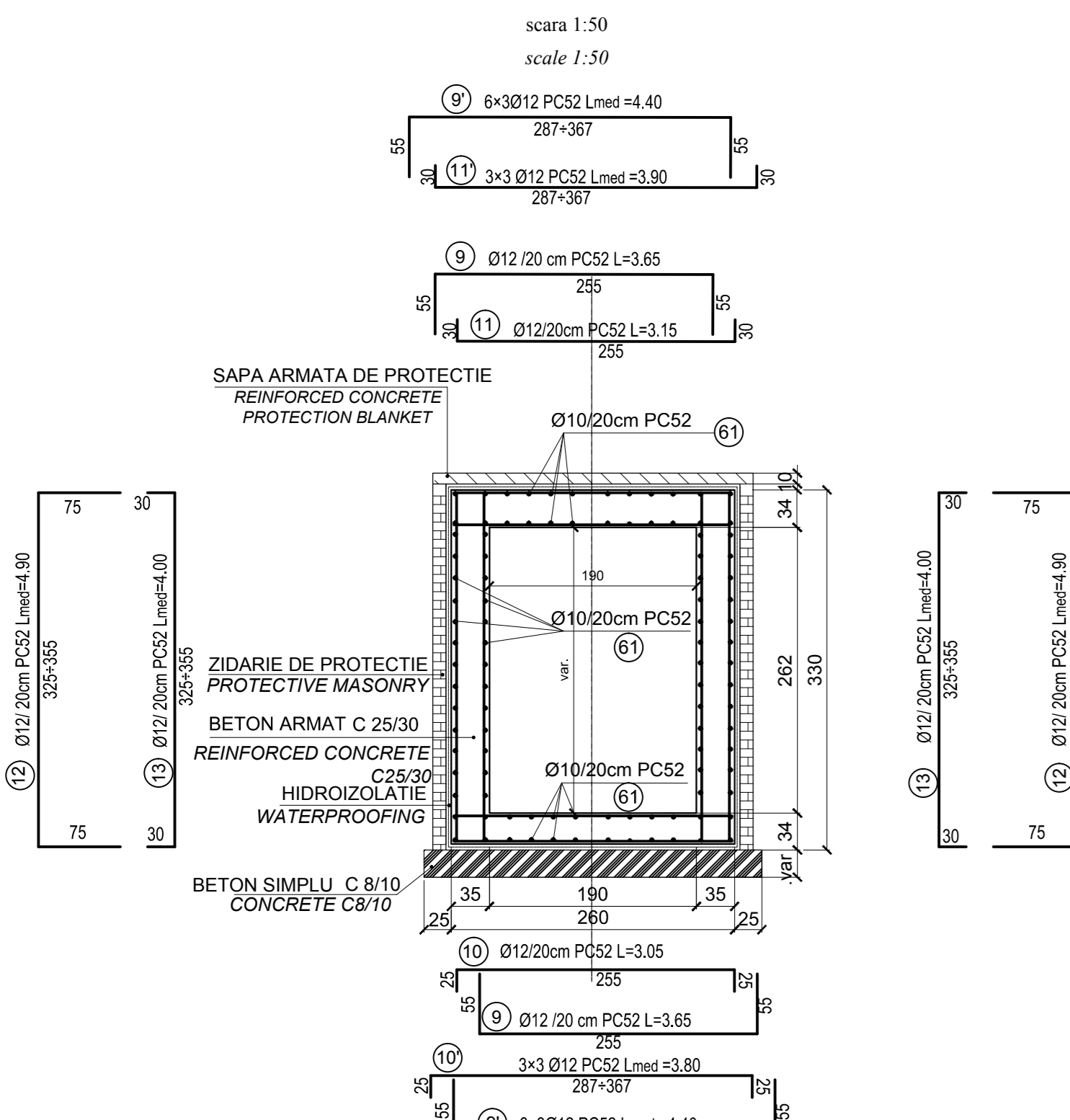
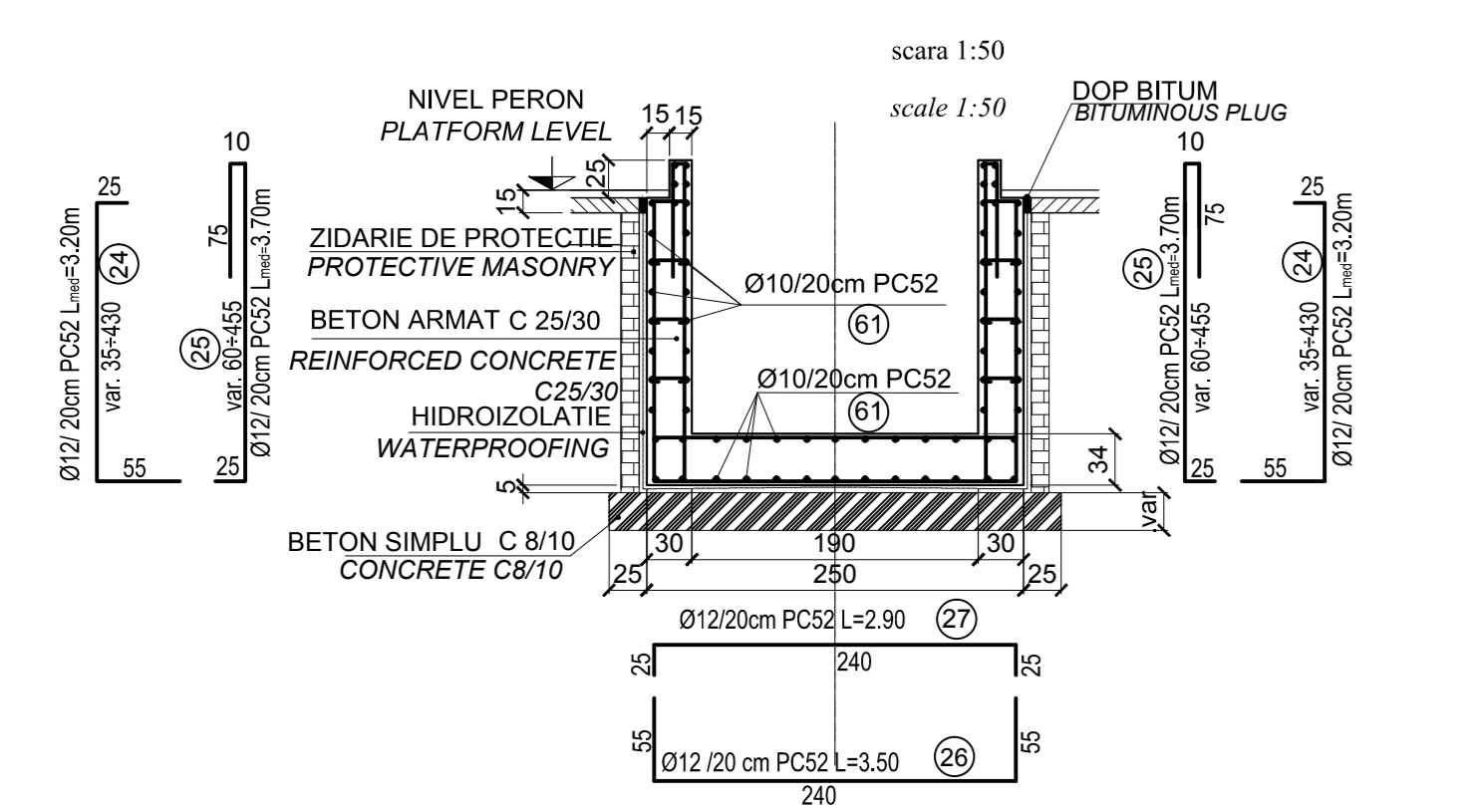


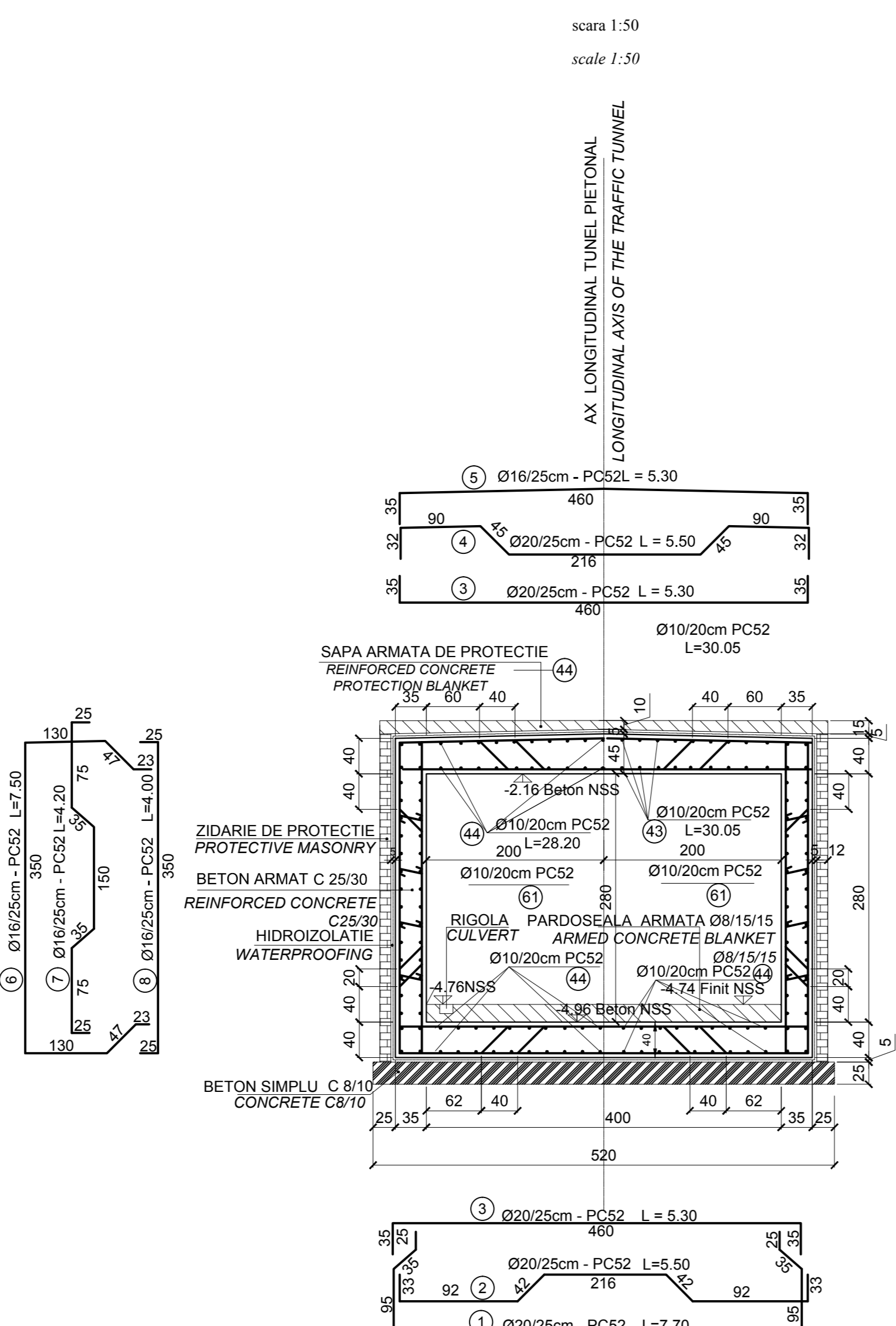
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SECTION : F-F



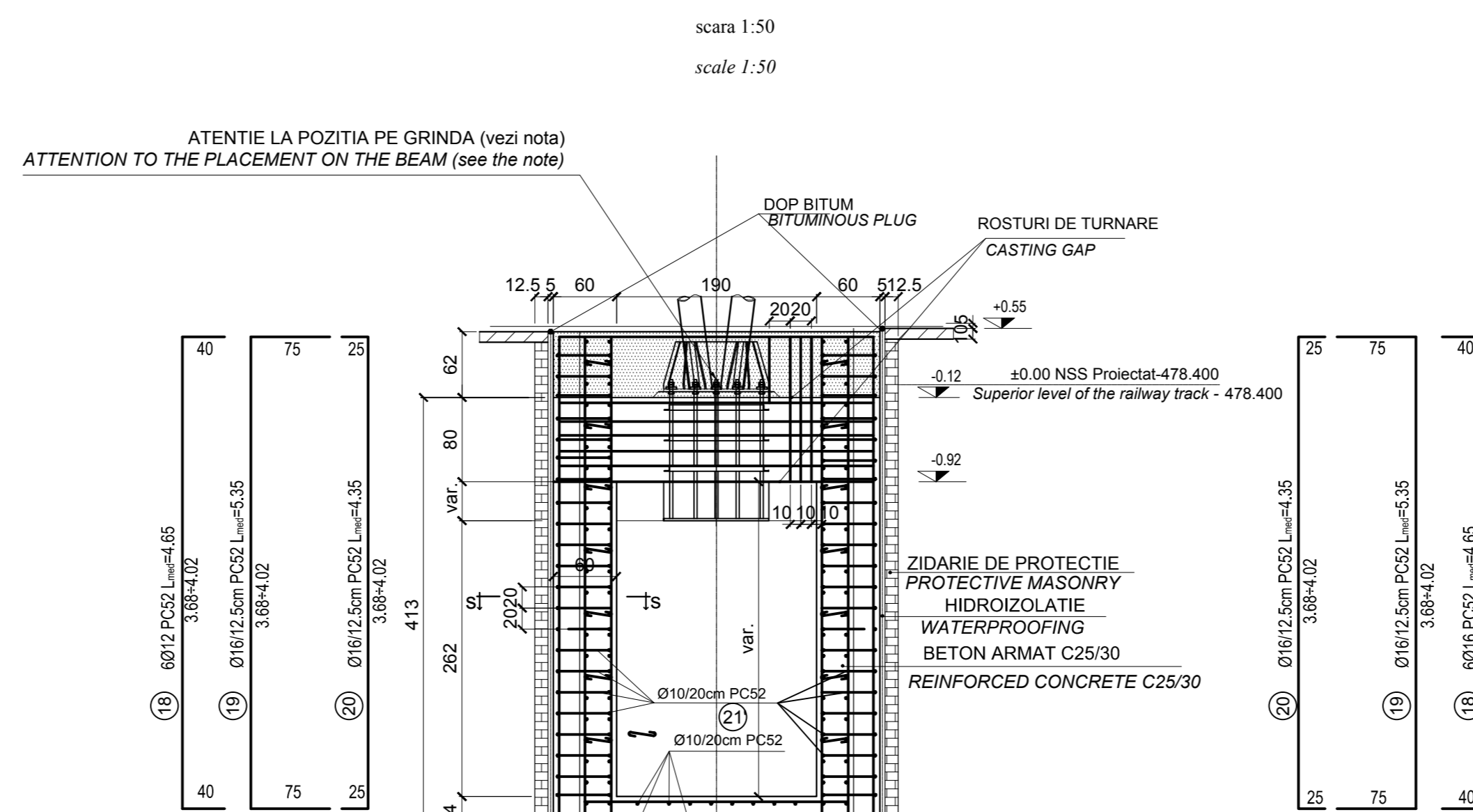
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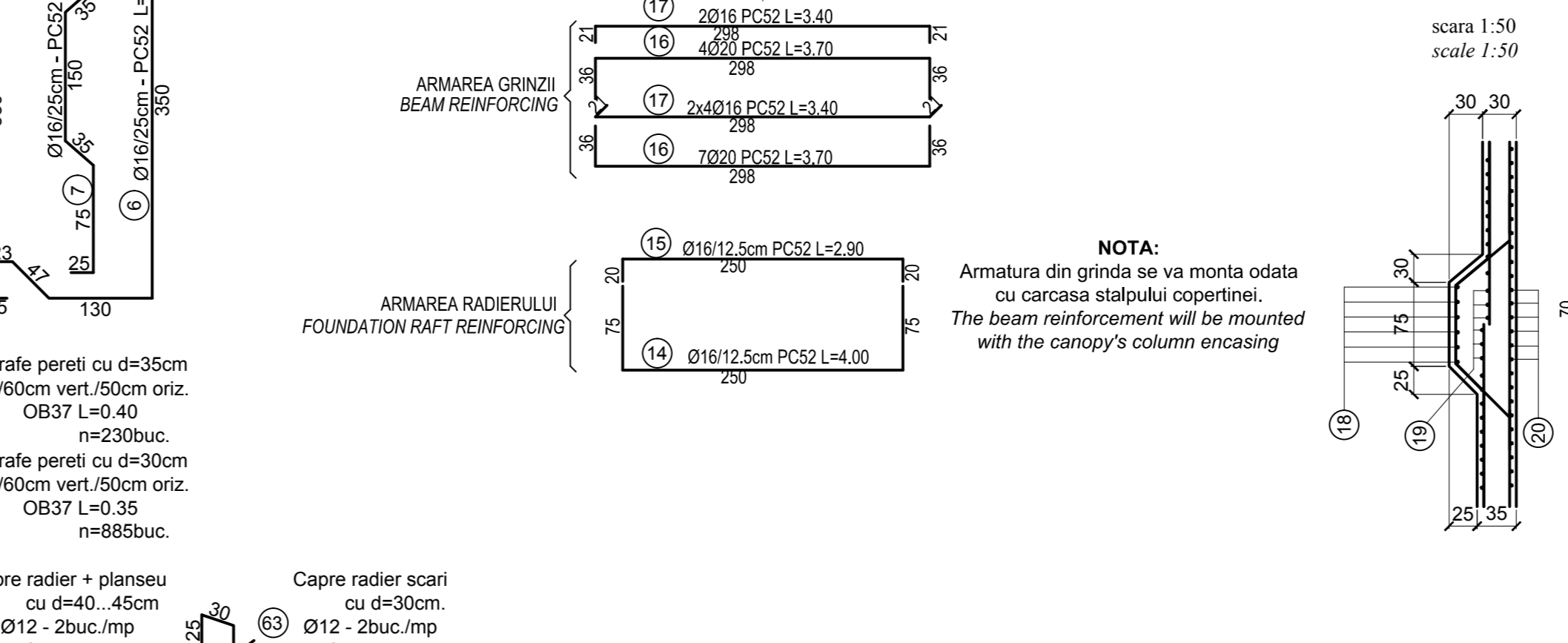
SECTIUNE : E-E
SECTION : E-E



SECTIUNE : F'-F'
SECTION : F'-F'



SECTIUNE : S-S
SECTION : S-S



RECOMANDARI TEHNOLOGICE SPECIFICE PENTRU FUNDATII STALPI COPERTINE PE TUNEL

Pentru pozitionarea carcasei cu buloanele de ancoraj in grinda tunelului se vor realiza urmatoarele :
In plan orizontal:
 Se materializeaza axa copertinei (din dreptul grinzii), pe cofraj.
 Se introduce carcasa in cofraj si se asigura verticalitatea buloanelor pe cele doua directii rectangulare
 Se aliniaza axa carcasei cu axa copertinei, prin deplasarea carcasei in lungii grinzii

In plan vertical:
 Cota superioara a grinzii tunelului (C.S.G.) trebuie sa fie la -0,12 m fata de N.S.S. proiectat (din dreptul grinzii) ; vezi : Sectiuni longitudinale prin scari acces tunel
OBSERVATIE 2 : In statiile in care nivelele este orizontala, C.S.G.stanga este identica cu C.S.G.dreapta. In statiile in care nivelele are panta ascendenta sau descendenta (dupa caz), C.S.G.stanga difera de C.S.G.dreapta, dar sunt intotdeauna la -0,12 m fata de N.S.S. proiectat (conf. punctului 2 - recomandari tehnologice generale) **Armare, betonare.**

Se armeaza grinda
 Partea superioara a carcasei buloanelor de ancoraj se va asigura obligatoriu intr-un tipar pentru a se evita deplasarea accidentala la turnarea betonului.
 Se betoneaza grinda.

SPECIFIC TECHNICAL RECOMMENDATIONS FOR CANOPY FOUNDATION ABOVE TUNNEL

To place the the anchoring bolts case in the tunnel beam, the following will be carried out :

Horizontal alignment:
 The axis of the canopy (nearby the beam) will be marked on the shuttering.
 The case will be introduced into the shuttering and the verticality of bolts will be provided on the two rectangular directions
 The case axis will be lined up with the canopy axis, by moving the case along the beam.

Vertical level alignment:
 The tunnel beam upper level (C.S.G.) shall be placed at -0,12 m from the designed rail upper level, R.U.L. (nearby the beam see Longitudinal sections through the tunnel access stairs
REMARK 2 : In the stations where the level is horizontal, C.S.G.left is identical to C.S.G.right. In the stations where the level follows the upward / downward slope (depending on the cases), C.S.G.left is different from C.S.G.right, but they are always placed at -0,12 m from the designed rail upper level R.U.L. ; (conf. conditions mentioning at point 2 - general technological recommendations).

Reinforcing, concreting:
 The beam will be reinforced (according to the Tunnel beams reinforcing details)
 The upper part of the anchoring bolt case will be compulsorily secured with a frame to avoid accidental shifting during concrete casting.
 The beam will be concreted.

PENTRU EXTRASUL DE ARMATURA VEZI PLAN TUNEL FOR THE REINFORCEMENT TABLE SEE THE TUNNEL PLAN

Beton simplu Plain concrete - C8/10 -P4 -T3 -IIA -I32.5 (R)
 Beton armat Reinforcing concrete - C25/30-P4 -T3 -IIA -I42.5 (R)
 Armaturi Reinforcements - PC 52
 Armaturi Reinforcements - OB 37

D					
C					
B					
A					

Index	Date	Modificare	Proiectant	Aprobat	Consultant	Aprobat
Index	Date	Modification/Revision	Designer	Approved	Consultant	Approved CFR



CLIENT / CLIENT
CFR
 C.N.C.F. "C.F.R." - S.A.



Approved	Spil project	R. Liuzzza	12.2011	
Approved	Project manager			
Approved	Coordinator Section 1	C. Gambelli	12.2011	
Checked	Verifier	Giuseppe Fioravanti	12.2011	

Approved	Responsabil Subcontractant	A. Stanciu - Dinulescu	12.2011	
Approved	Subcontractant Representative			
Income	Projectant	Catalin Alexandrescu	12.2011	
Income	Signatar			

Reabilitarea liniei de cale ferata Brasov - Sibiu, parte componenta a coridorului IV Pan European, pentru circulatia trenurilor cu viteza maxima de 160 km/h, Tronsoanel : Brasov - Sighisoara
 Reabilitarea liniei de cale ferata Brasov - Sibiu, parte componenta a coridorului IV Pan European, pentru circulatia trenurilor cu viteza maxima de 160 km/h, Faza / Phase: P.Th. / T.D.

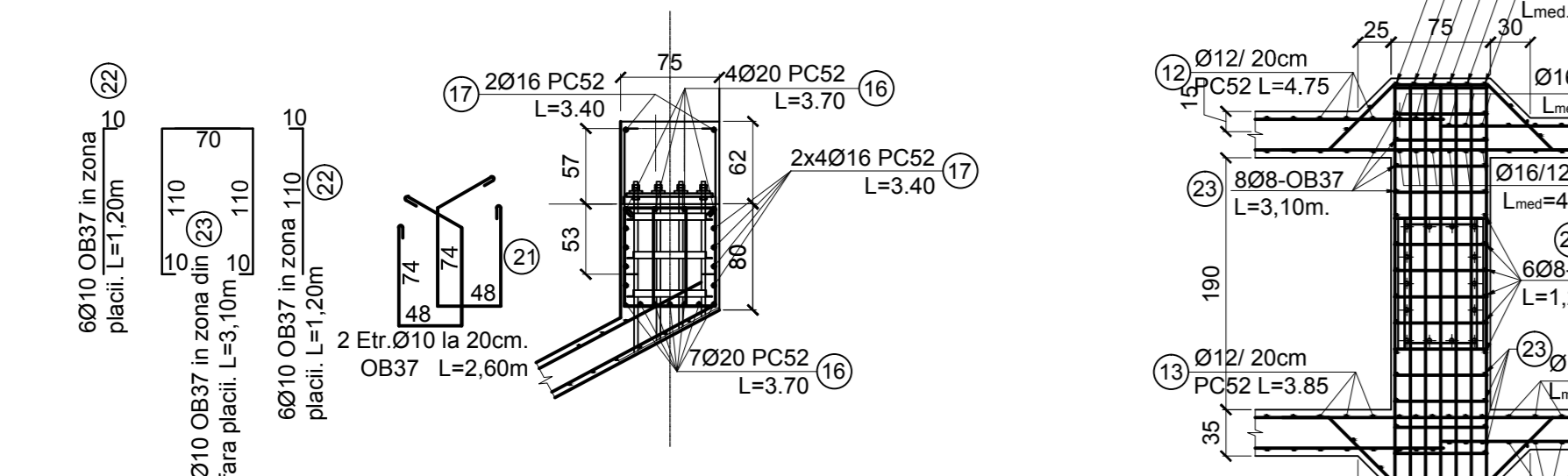
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STATIJA APATA -TUNEL PIETONAL SECTIUNI TRANSVERSALE E-E; F-F; F'-F'; G-G; APATA STATION -PEDESTRIAN TUNNEL CROSS SECTIONS F-F; E-E; F'-F';G-G; TUNNEL

BEAMS REINFORCEMENT DETAILS

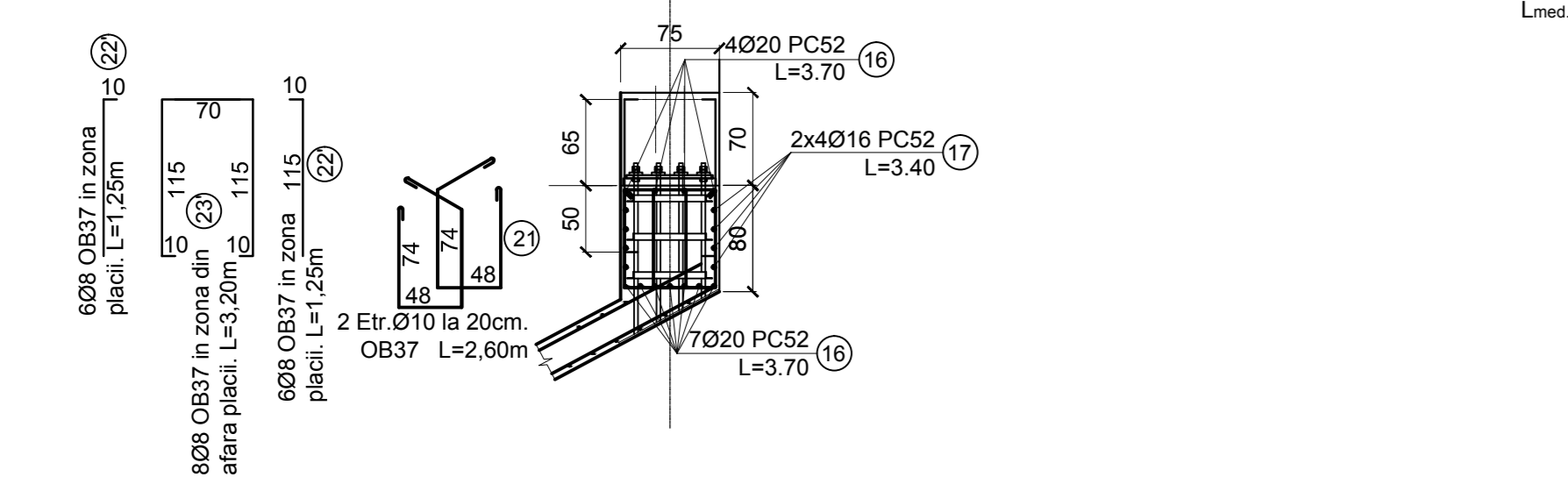
Codificare / Codification System	Scara / Scale	LOT/LOT	No. No. 01/01
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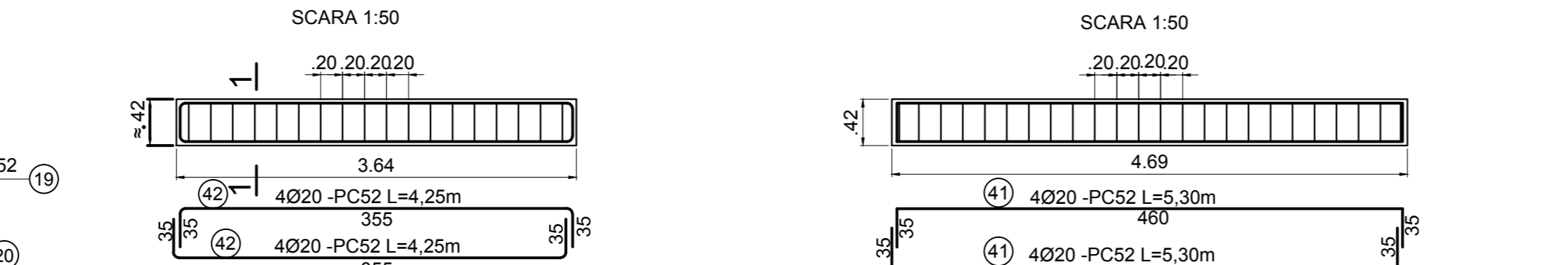
DETALII ARMARE GRINDA PE TUNEL
PENTRU SECTIUNEA C - C (D - D)



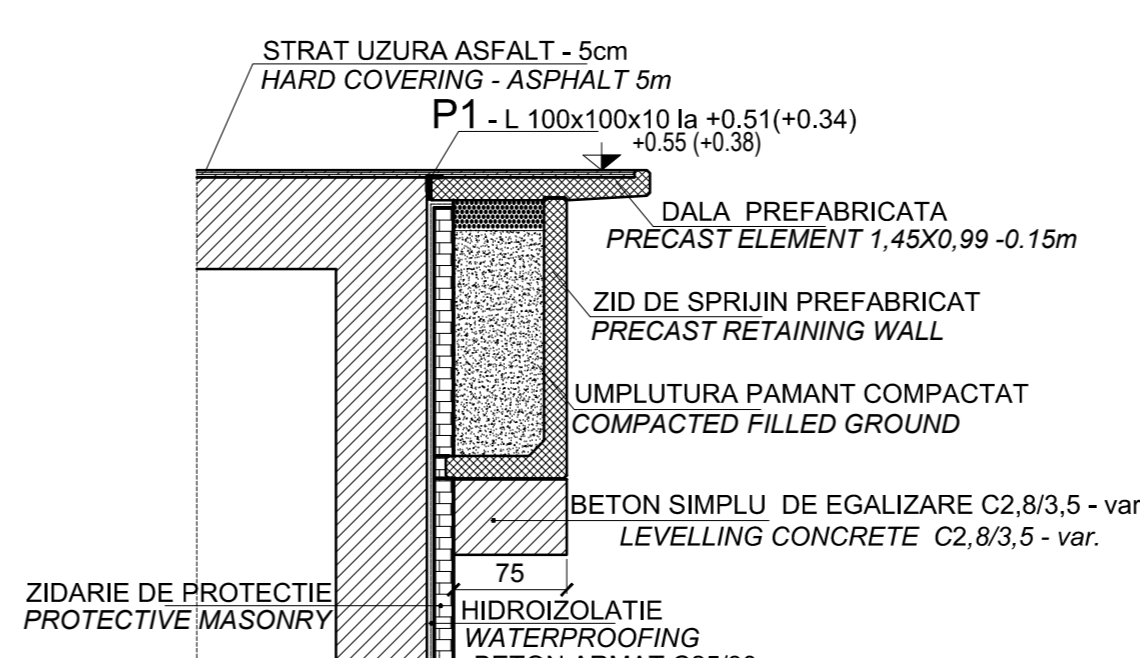
PENTRU SECTIUNEA B - B



ARMARE GRINDA G1 - 35x42 -3buc. ARMARE GRINDA G2 - 35x42 -2buc.



DETALII MONTARE DALA PREFABRICATA IN ZONA GRINDA FUNDATIE COPERTINA



EXTRAS LAMINATE										
pozitia elementului	Denumirea elementului	Grosime (mm)	Latime (mm)	Lungime (mm)	Greutate/mi (kg/m)	Tip Otel	Nr. Buc	Gr. (kg/buc)	Pozitie	Gr. Totala (kg)
P1	Tabla porsa	10	100	750	7.85	OL52	6	5.888		35.325
TOTAL GREUTATE SUBANSAMBLE NETIPIZATE (kg)										35.325
GREUTATE ELECTROZI DE SUDURA 3% (kg)										1.060
GREUTATE grund 0.4% (kg)										0.141
TOTAL GENERAL(kg)										37

NOTA:
 Este absolut necesara confirmarea caracteristicilor terenului de fundare (de catre proiectantul geotehnician), dupa executarea sapaturilor/ampulurilor (dupa caz). La executarea sapaturilor / ampulurilor, sa se realizeze un foraj suplimentar, de verificare, in amplasamentul tunelului pentru a se verifica daca informatiile din forajele pentru proiectare sunt corecte. In cazul in care exist eventuale diferente, lucrarile proiectate se vor adapta conform rezultatului acestor studii geotehnice de verificare.

NOTA:
 It is absolutely necessary that the geo-technician designer confirms characteristics of the foundation ground after carrying out the excavations / fillings (depending on the case). During the excavation / filling works, one supplementary checking borehole will be made in the tunnels location to see if the information from the borehole for the design stage are correct.