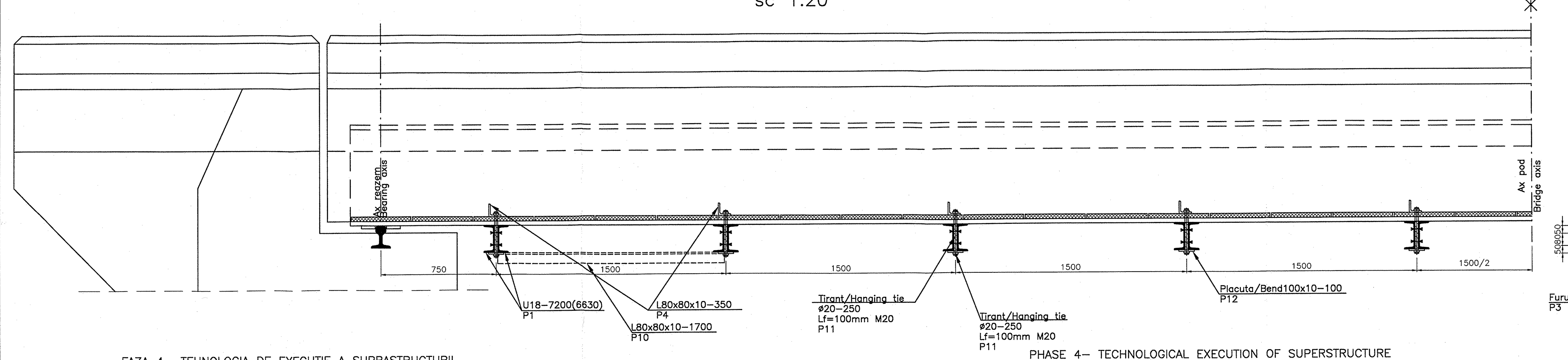
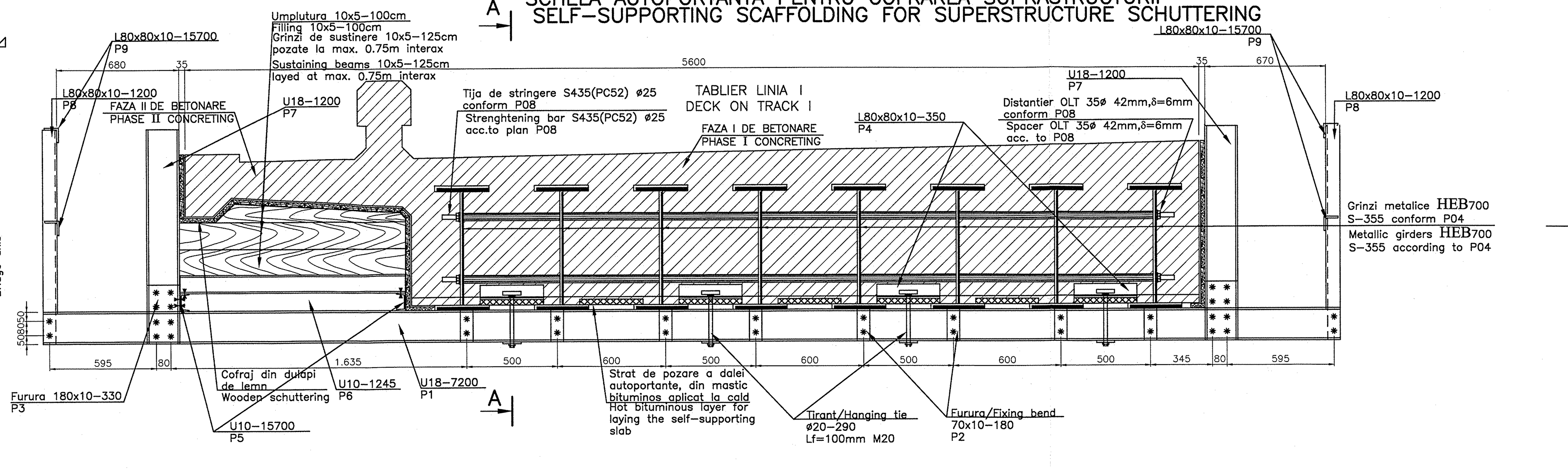
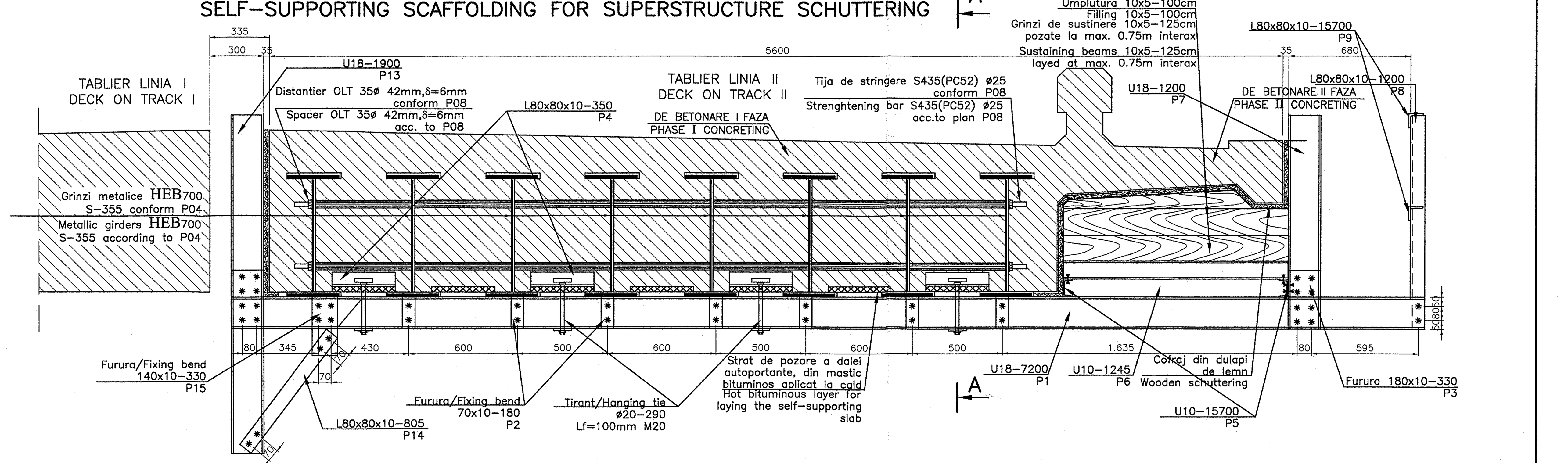
SECTIUNE A–A/SECTION A–A
sc 1:20



TABLIER FIR I
DECK ON TRACK I
SCHELA AUTOPORTANTA PENTRU COFRAREA SUPRASTRUCTURII
SELF–SUPPORTING SCAFFOLDING FOR SUPERSTRUCTURE SCHUTTERING



TABLIER FIR II
DECK ON TRACK II
SCHELA AUTOPORTANTA PENTRU COFRAREA SUPRASTRUCTURII
SELF–SUPPORTING SCAFFOLDING FOR SUPERSTRUCTURE SCHUTTERING



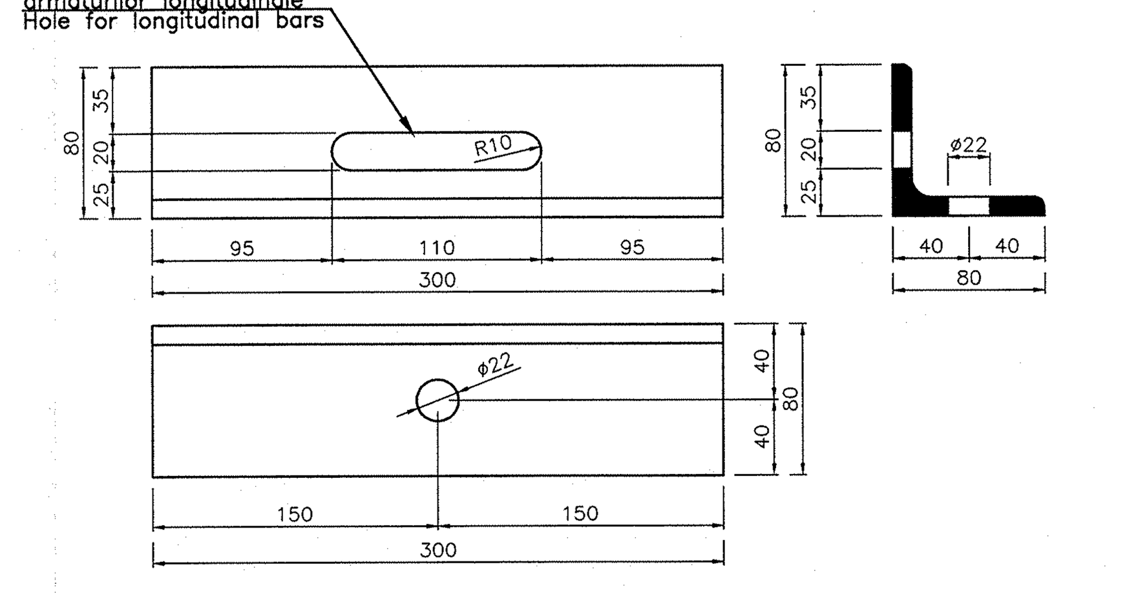
FAZA 4– TEHNOLOGIA DE EXECUTIE A SUPRASTRUCTURII
1. In inchidere de circulatie pe linia I si circulatie cu restrictie de viteza de 15km/h pe linia II:
–se scoate de sub tensiune firul de contact de pe firul I;
–se demonteaza calea de pe podurile provizorii tip G12 de pe firul I;
–se scot din cale, cu macaraua cf: podetul provizoriu U5, podurile provizorii G12 si fundatiile prefabricate de pe firul I;
–se monteaza grinzile metalice pe amplasamentul definitiv pe linia I, prin fixarea acestora cu distantieri si tije de stringere;
–pe talpa inferioara a grinzii metalice se pozeaza, pe un strat de mastic bituminos aplicat la cald, dalele prefabricate autoportante, iar rosturile se vor mata cu mortar de ciment M100;
–se monteaza schela autoportanta in vederea betonarii, avind cadre de rezistenta metalice montate in dreptul consolei de trotuar la max. 0.75m interax, iar pe latura din axul podului la max. 1.50m interax;
–cofrarea se va face cu panouri TEGO sprijinite pe dulapi orizontali si verticali (10x2,5cm)
–sustinerea schelei autoportante se realizeaza prin elemente metalice de rezistenta profil tip U18 avand lungimea de 7200mm, solidarizate de grinzile metalice cu tiranti verticali M20, prin intermediul unei corniere L80x80x10;
–se monteaza armatura conform planului de armare a suprastructurii P08 precum si "paharele" pentru pozarea parapetului metalic conform planului P10;
–betonarea se va face in doua faze: de la centru spre margini conform schemei prezentate mai sus. Betonarea se va face in flux continuu fara a se lasa rosturi de betonare;
–dupa atingerea rezistentei la decofrare a betonului (min.0,5Rcb), suprastructura se decofreaza ;
–concomitent cu realizarea suprastructurii se vor completa prin betonare si zidurile de garda aferente liniei I;
–se realizeaza hidroizolatia pe suprastructura si rosturile intre aceasta si culei;
–se realizeaza sapa armata cu plase sudate tip STNB 17GQ283 cu ochiuri 100x100x6,
–se monteaza parapetul metalic conform planului P10, fixarea acestuia facindu–se prin sudura electric manuala cu electrozi SUPERBAZ.
–se reface terasamentul in zona podului.
–se reface calea cu sina tip 60, la cota proiectata (N.S.T.existent+70cm);
2. Se redeschide circulatia pe linia I cu restrictie de viteza de 50km/h.
3. In inchidere de circulatie pe linia II si circulatie cu restrictie de viteza de 50km/h pe linia I:
–se scoate de sub tensiune firul de contact de pe firul II,
–se demonteaza calea de pe podurile provizorii tip G12 de pe firul II;
–se scot din cale, cu macaraua cf: podetul provizoriu U5, podurile provizorii G12 si fundatiile prefabricate de pe firul II;
Suprastructura se va executa in pozitie provizorie, la circa 25cm de axul definitiv al podului, inspre exterior dupa care se va ripa in amplasamentul definitiv.
–se monteaza grinzile metalice pe amplasamentul definitiv prin fixarea acestora cu distantieri si tije de stringere;
–pe talpa inferioara a grinzii metalice se pozeaza, pe un strat de mastic bituminos aplicat la cald, dalele prefabricate autoportante, iar rosturile se vor mata cu mortar de ciment M100;
–se monteaza schela autoportanta in vederea betonarii, avind elemente de rezistenta montate in dreptul consolei de trotuar la max. 0.75m interax, iar pe latura din axul podului la max. 1.50m interax;
–cofrarea se va face cu panouri TEGO sprijinite pe dulapi orizontali si verticali (10x2,5cm);
–sustinerea schelei autoportante se realizeaza prin elemente metalice de rezistenta profil tip U18 avand lungimea de 7200mm, solidarizate de grinzile metalice cu tiranti verticali M20, prin intermediul unei corniere L80x80x10;
–se monteaza armatura conform planului de armare a suprastructurii P08 precum si "paharele" pentru pozarea parapetului metalic conform planului P10;
–betonarea se va face in doua faze de la centru spre margini conform schemei prezentate mai sus. Betonarea se va face in flux continuu fara a se lasa rosturi de betonare;
–dupa atingerea rezistentei la decofrare a betonului (min.0,5Rcb), suprastructura se decofreaza si se ripeaza in amplasamentul definitiv;
–concomitent cu realizarea suprastructurii se vor completa prin betonare si zidurile de garda aferente liniei II;
–se realizeaza hidroizolatia pe suprastructura si rosturile intre aceasta si culei;
–se realizeaza sapa armata cu plase sudate tip STNB 17GQ283 cu ochiuri 100x100x6;
–se monteaza parapetul metalic conform planului P10, fixarea acestuia facindu–se prin sudura electric manuala cu electrozi SUPERBAZ.
–se reface terasamentul in zona podului;
–se acopera rostul longitudinal dintre tabliere cu rost tip TW60/130, conform P11;
–se reface calea cu sina tip 60 pe firul II, la cota proiectata (N.S.T.existent+70cm) completind stratul de balast;
4. Se refac circuitele de cale, se pune sub tensiune linia de contact si se redeschide circulatia pe ambele linii in trepte de viteza conform instructiilor cf in vigoare;

PHASE 4– TECHNOLOGICAL EXECUTION OF SUPERSTRUCTURE
1. Clossing traffic on track I and speed traffic restriction of 15km/h on track II:
–cutting out of voltage the contact wire on track I;
–dismantling the track from the temporary bridges G12, on track I;
–temporary bridges G12, U5 and provisory foundations afferent to track I are taking out of track;
–mounting the metallic girders in final emplacement, by fixing with spacers and clamping bars;
–placing the self–supporting slabs on the lower part of the metallic girder, on layer of bituminous mastic hot painted, and joints will be filled with M100 cement mortar;
–the self–supporting scaffold is mounted for concreting, having resistance frames mounted in front of sidewalk cantilever at max. 0.75m interax, and on the side from bridge axis at max. 1.50m interax;
–shuttering shall be realised with TEGO panels, sustained on horizontal and vertical boards (10x2,5cm);
–sustaining of self–supporting scaffold is carried out by resistence metallic elements U18 type, 7200mm length, wich are fixed with the metallic girders by verticals hanging ties M20, using a corner–angle L80x80x10;
–the reinforcement is mounted according to the superstructure reinforcement plan P08 and also the devices for metallic handrail acc.to plan P10;
–concreting is realised in two phases from centre to margins according to the up presented schedule. Concreting shall be done continuously without concrete joints;
–after achieving the concrete resistence at shuttering removal (min.0,5Rcb) the shuttering are removed from superstructure;
–in the same time with superstructure execution the guarding walls afferent to track I shall be filled out by concreting;
–waterproofing on superstructure and the joints between it and abutments is complied;
–realising the waterproofing covering, reinforced with welded net STNB 17GQ283 mesh 100x100x6;
–the metallic handrail is mounted acc. to plan P10, fixing it by manually electric welding with SUPERBAZ electrodes.
–renewing embankment in bridge area.
–mounting the rail 60 type on bridge, at projected level (existing U.S.L.+70cm);
2. Traffic reopening on track I with speed traffic of 50km/h restriction.
3. Closing traffic on track II and speed traffic of 50km/h restriction on track I:
–cutting out of voltage the contact wire on track II;
–dismantling the track from the temporary bridges G12, on track II;
–temporary bridges G12, U5 and provisory foundations afferent to track II are taking out of track;
Superstructure shall be executed in temporary position, at 25cm from final bridge axis, from outside to inside after then it shall be shifted in final emplacement.
–mounting the metallic girders in final emplacement, by fixing with spacers and clamping bars;
–placing the self–supporting slabs on the lower part of the metallic girder, on layer of bituminous mastic hot painted, and joints will be filled with M100 cement mortar;
–the self–supporting scaffold is mounted for concreting, having resistance frames mounted in front of sidewalk cantilever at max. 0.75m interax, and on the side from bridge axis at max. 1.50m interax;
–shuttering shall be realised with TEGO panels, sustained on horizontal and vertical boards (10x2,5cm);
–sustaining of self–supporting scaffold is carried out by resistence metallic elements U18 type, 7200mm length, wich are fixed with the metallic girders by verticals hanging ties M20, using a corner–angle L80x80x10;
–the reinforcement is mounted according to the superstructure reinforcement plan P08 and also the devices for metallic handrail acc.to plan P10;
–concreting is realised in two phases from centre to margins according to the up presented schedule. Concreting shall be done continuously without concrete joints;
–after achieving the concrete resistence at shuttering removal (min.0,5Rcb) the shuttering are removed from superstructure;
–in the same time with superstructure execution the guarding walls afferent to track II shall be filled out by concreting;
–waterproofing on superstructure and the joints between it and abutments is complied;
–realising the waterproofing covering, reinforced with welded net STNB 17GQ283 mesh 100x100x6;
–the metallic handrail is mounted acc. to plan P10, fixing it by manually electric welding with SUPERBAZ electrodes.
–renewing embankment in bridge area.
–covering the longitudinal joint between decks with expansion joint type TW60/130 acc. to P11;
–mounting the rail 60 type on bridge, at projected level (existing U.S.L.+70cm), filling out ballast layer;
4. Traffic reopening on both tracks, respecting the norms in force regarding returning to normal speed.

EXTRAS MATERIAL METALIC PENTRU SUSTINERE COFRAJ TABLIER FIR I
NECESSARY METALLIC MATERIAL FOR SUSTAINING THE SCHUTTERING FOR DECK I

POZITIE POSITION	DENUMIRE PIESA PIECE DENOMINATION	Buc. Pcs.	Dimensiuni Dimensions	Lungime Length	Greutati/Weights OL37 kg/m	kg
1	Profile U la cofraj tablier / U profiles at deck schuttering	20	U18	7.200	21.98	3165.12
2	Furura intre doua piese P1 / Fixing bend between two pcs. P1	100	70x10	0.180	5.50	99.00
3	Furura de fixare / Fixing bend	20	180x10	0.330	14.13	93.26
4	Corniera de fixare / Fixing corner angle	40	L80x80x10	0.300	11.85	142.20
5	Profile U pentru trotuar(longrine) / U profiles for sidewalk	2	U10	15.700	10.60	332.84
6	Profile U pentru trotuar / U profiles for sidewalk	20	U10	1.245	10.60	263.95
7	Profile pentru cofraj tablier / Profiles for deck schuttering	20	U18	1.200	21.98	527.52
8	Stalp parapet / Handrail pole	20	L80x80x10	1.200	11.85	284.40
9	Mana curenta / Hand rail	4	L80x80x10	15.700	11.85	744.18
10	Contravantuire inferioara / Lower brecing	2	L80x80x10	1.700	11.85	40.30
11	Tirant OB37 / OB37 hanging tie	40	Ø20	0.280	2.47	27.70
12	Placuta-saiba tirant / Bend-washer at hanging tie	40	100x10	0.100	7.85	31.40
		TOTAL(kg)				5752.00
	Suruburi /Screws (3%) (kg)					173.00
		GREUTATE TOTALA/TOTAL WEIGHT				5925.00

DETALII DEBITARE PIESA P4
DETAILS OF CUTTING PIECE P4
Sc. 1:5



EXTRAS MATERIAL METALIC PENTRU SUSTINERE COFRAJ TABLIER FIR II
NECESSARY METALLIC MATERIAL FOR SUSTAINING THE SCHUTTERING DECK II

POZITIE POSITION	DENUMIRE PIESA PIECE DENOMINATION	Buc. Pcs.	Dimensiuni Dimensions	Lungime Length	Greutati/Weights S235 JR kg/m	kg
1	Profile U la cofraj tablier / U profiles at deck schuttering	20	U18	6.630	21.98	2914.55
2	Furura intre doua piese P1 / Fixing bend between two pcs. P1	80	70x10	0.180	5.50	79.20
3	Furura de fixare / Fixing bend	20	180x10	0.330	14.13	93.26
4	Corniera de fixare / Fixing corner angle	40	L80x80x10	0.300	11.85	142.20
5	Profile U pentru trotuar(longrine) / U profiles for sidewalk	2	U10	15.700	10.60	332.84
6	Profile U pentru trotuar / U profiles for sidewalk	20	U10	1.245	10.60	263.95
7	Profile pentru cofraj tablier / Profiles for deck schuttering	10	U18	1.200	21.98	263.76
8	Stalp parapet / Handrail pole	10	L80x80x10	1.200	11.85	142.20
9	Mana curenta / Hand rail	2	L80x80x10	15.700	11.85	372.10
10	Contravantuire inferioara / Lower brecing	2	L80x80x10	1.700	11.85	40.30
11	Tirant OB37 / OB37 hanging tie	40	Ø20	0.280	2.47	27.70
12	Placuta-saiba tirant / Bend-washer at hanging tie	40	100x10	0.100	7.85	31.40
13	Profile pentru cofraj tablier / Profiles for deck schuttering	10	U18	1.900	21.98	417.62
14	Corniera de fixare / Fixing corner angle	10	L80x80x10	0.805	11.85	95.40
15	Furura intre doua piese P1 / Fixing bend between two pcs. P1	10	140x10	0.330	11.00	36.30
		TOTAL(kg)				5253.00
	Suruburi /Screws (3%) (kg)					158.00
		GREUTATE TOTALA/TOTAL WEIGHT				5415.00

MATERIALE/MATERIALS
Cherestea rasinoase/Resinous timber SR EN 1313–1+A1:2001
Cherestea fag/Beech timber SR EN 975–1:2000
Otel elemente sustinere cofraje S235 JR (SR EN10056–1:2000)
Steel in sustaining elements for schuttering S235 JR (SR EN10056–1:2000)

ASAMBLARE/ASSEMBLING
Suruburi cu cap hexagonal SR EN ISO 4017:2002
Hexagonal screw
Piulite cu cap hexagonal SR EN ISO 4032:2002
Hexagonal interior screw

LEGENDA SURUBURI
SCREW LIST
Surub/Screw M20 *

POPA V. NICOLAE – ROMANIA M.L.P.A.T. – VERIFICATOR DE PROIECTE

B			
A			
	Data / Date	Modificare / Modification / Revision	

BENEFICIAR/ BENEFICIARY: ROMANIAN RAILWAY NATIONAL COMPANY
AUTORITATEA DE IMPLEMENTARE/ IMPLEMENTUNG AUTHORITY – Ministerul Transporturilor / Ministry of Transports
AUTORITATEA CONTRACTANTA / CONTRACTING AUTHORITY – Ministerul Economiei si Finantelor Oficiul de Plati si Contractare Phare / Ministry of Economy and Finances Phare Payments &Contracting Office
CFCU – Contract / Contract: 1303/2007
prointec – CONSIS PROIECT
Proiect finantat de UNIUNEA EUROPEANA / Project financed by EUROPEAN UNION
POS Transport 2007- 2013
Faza / Phase: PTH/DDE TP/DD

Intocmit / Designed	Ing.Nicoleta FLORIAN	Scara / Scale: 1:20 1:5	PORTOFOLIU DE PROIECTE PHARE CES 2005 / PHARE CES 2005 PROJECTS PORTFOLIO LOT 1 – Asistenta tehnica pentru pregatirea unor lucrari de reabilitare pentru tuneluri si poduri de cale ferata / Technical assistance for preparing rehabilitation works required by railway tunnels and bridges
Verificat / Checked	Ing. Viorel ALDESCU	Data / Date: 05.2009	Denumire desen / Drawing Title: Sucursala RCF / Railway district IASI. Linia of 500/Railway line 500Ploiesti-Vicsani POD / BRIDGE KM 290+159 SCHELA AUTOPORTANTA TABLIERE / DECKS SELF-SUPPORTING SCAFFOLDING
Sef echipa / Team leader	Ing. Stelian Vara-Oros	Cod desen / Drawing Code: PT 18	Nr. / No: 09