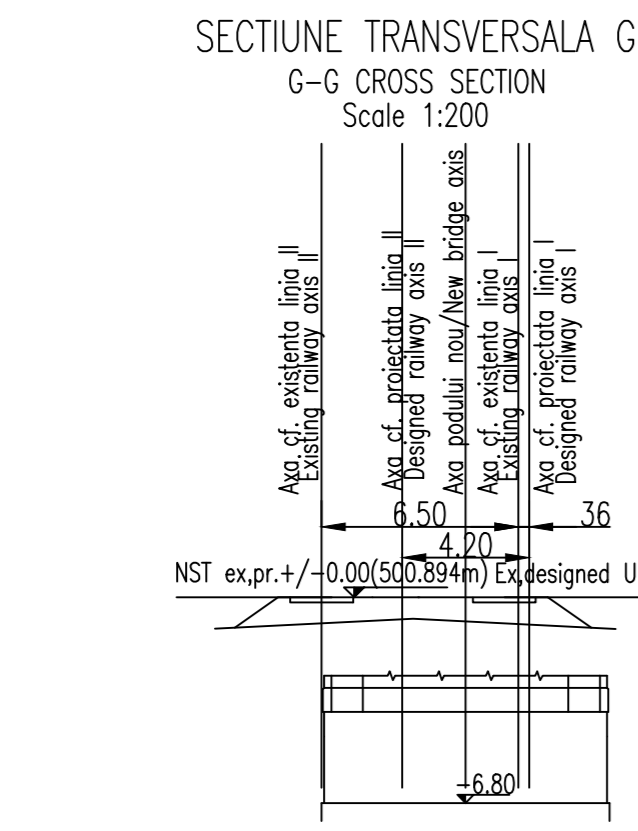
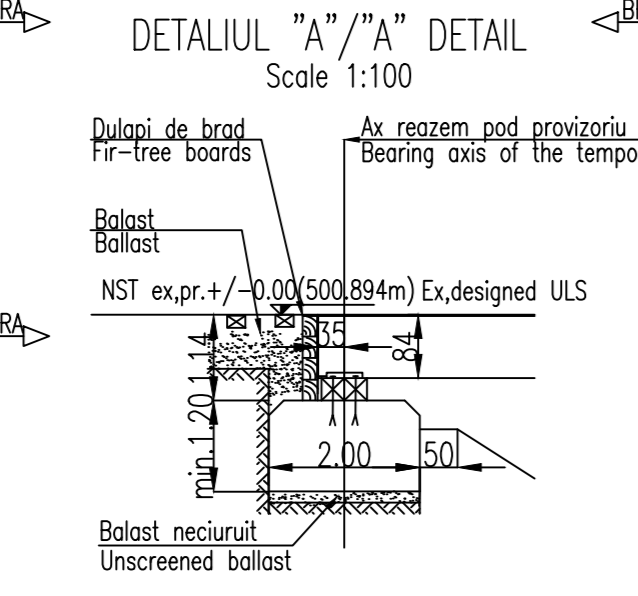
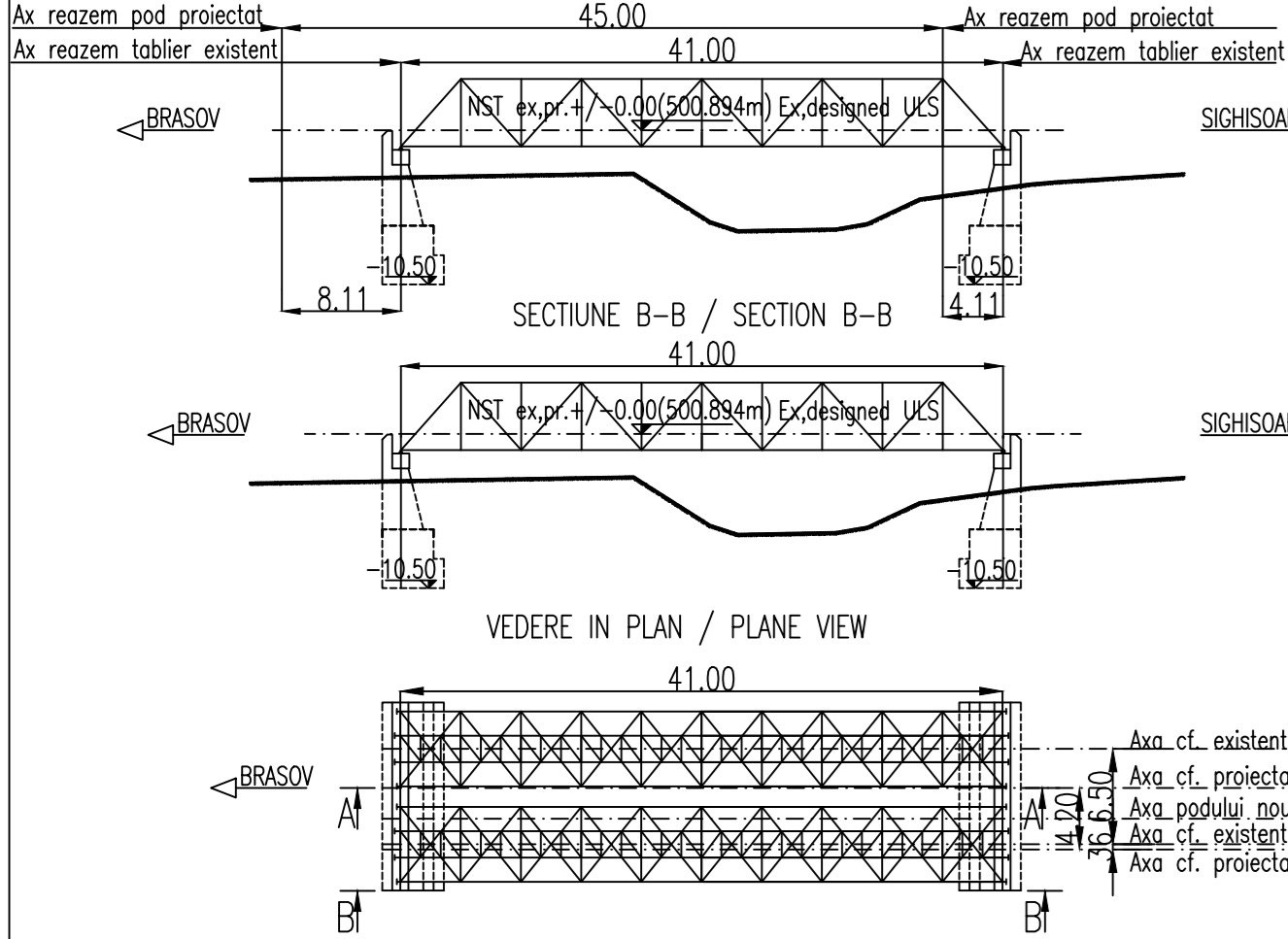


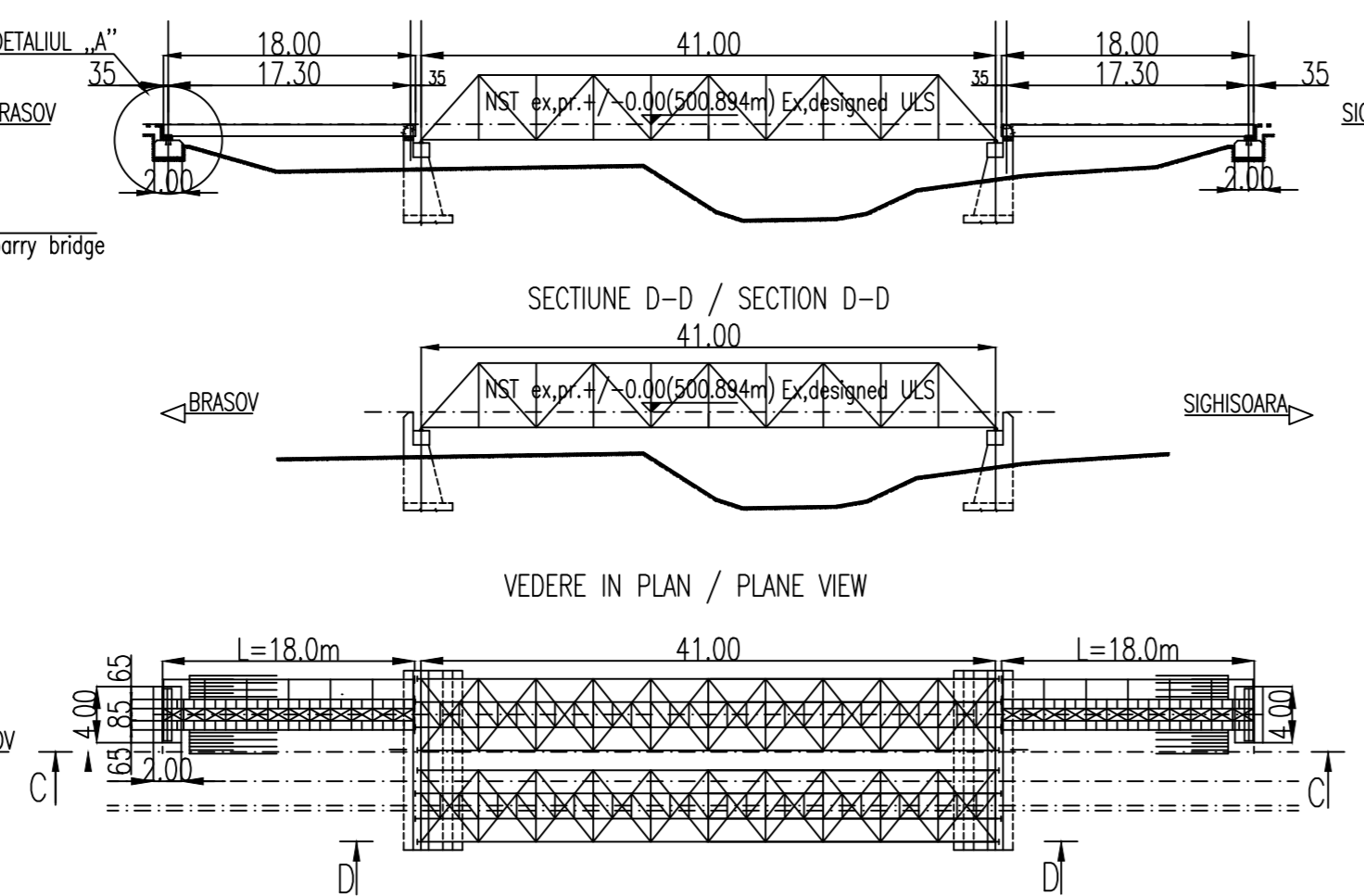
FAZA I / STAGE I
SECTIUNE A-A / SECTION A-A
Scara:1:500 / Scale 1:500



FAZA I
1 Lucrari pregatitoare
Circulatie normala pe ambele linii
-se curata albia raului de vegetatie si aluviuni in amonte si aval astfel incat sa se asigure scurgerea fluenta a apelor si conditiile pentru executarea lucrarilor de refacere a podului;
-se executa de o parte si de alta a caii ferate platforme pentru depozitarea tablierelor metalice existente care vor fi scoase din cale;

STAGE I
1 Preparatory works
Normal traffic on both lines
-clean vegetation and silt riverbed upstream and downstream of the bridge so as to ensure smooth flow waters condition for the execution of the rehabilitation of bridge;
-on both sides of the track, platforms will be executed for storing the existing metallic decks which was removed from tracks.

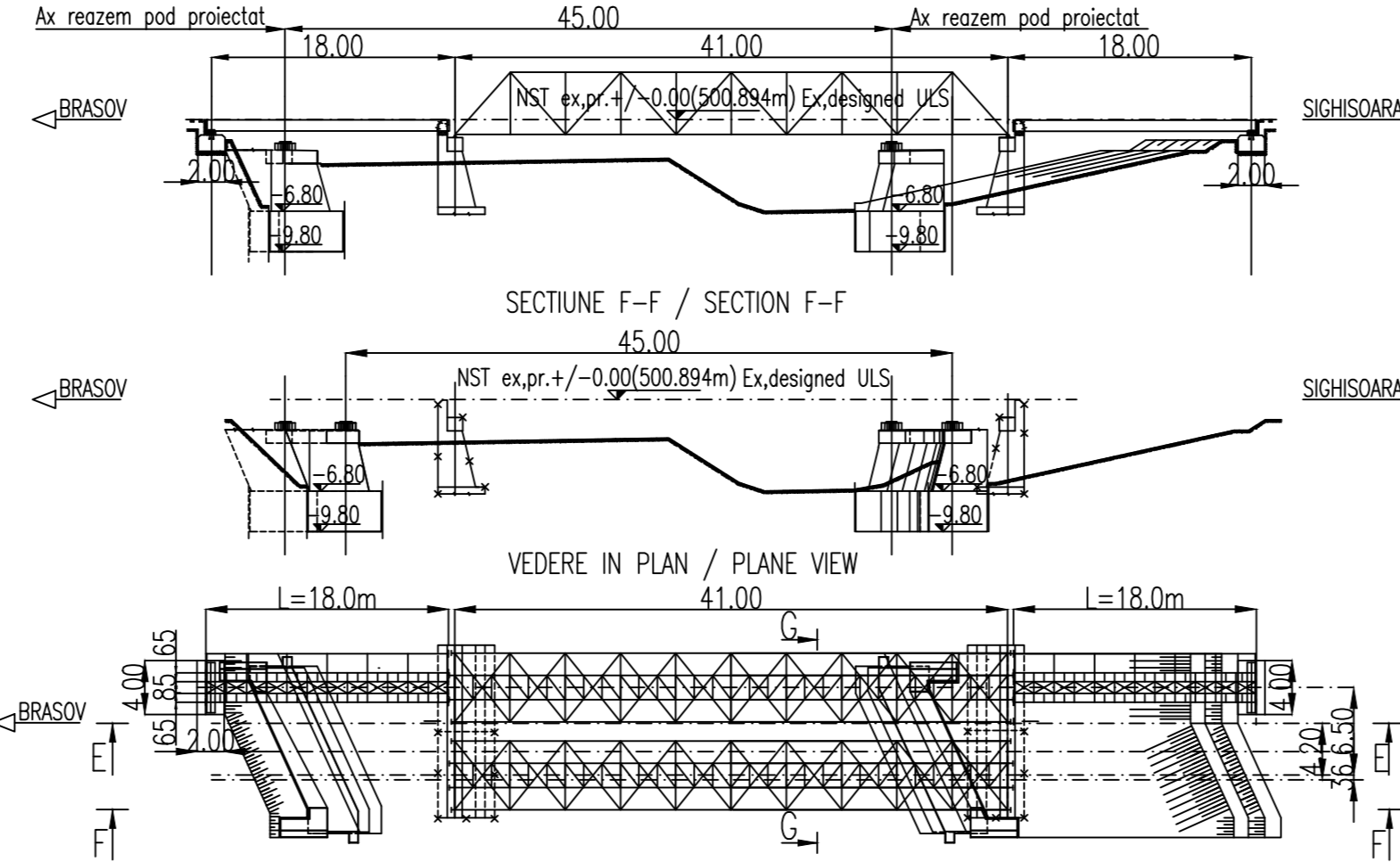
FAZA II / STAGE II
SECTIUNE C-C / SECTION C-C
Scara:1:500 / Scale 1:500



FAZA II
Circulatie inchisa pe linia II, linia de contact corespunzatoare scoasa de sub tensiune si circulatie cu restrictie de viteza de 30 km/h pe linia I.
- in spatele ambelor culei se executa reazemele pentru podurilor provizorii G 18 (blocurile de beton). Simultan se demoleaza zidurile de garda ale culeilor pana la nivelul impus de inaltimea pe reazeme a podurilor provizorii care vor rezema fiecare pe baze asezate pe zidurile de garda si pe reazemele din spatele culeilor executate in acest scop. In terasamentele din spatele culeilor se executa sapatura pentru crearea spatiului necesar montarii podurilor provizorii;
- se introduc in cale cele doua poduri provizorii tip G18;
- se realizeaza impamantarea podurilor provizorii si se restabileste continuitatea circuitelor de cale;
- se redeschide circulatia cu restrictie de viteza de 30 km/h pe linia II. Podurile provizorii G 18 se vor tine sub observatie pe toata durata in care acestea asigura circulatia convoaielor de cale ferata astfel incat sa se asigure functionarea normala a podurilor si implicit siguranta circulatiei convoaielor.

STAGE II
Traffic closing on track II, contact line out of voltage and traffic running with speed limit 30 km/h on track II.
- Behind both abutments the supports for the temporary bridges G 18 will be executed (concrete blocks). Simultaneous the guard walls will be demolished to the level required by the height of the supports of the temporary bridges which will rest on wooden bearing beams placed on the guard walls and the supports behind the abutments made for this purpose. On the embankments behind the abutments, digging will be executed for creating space for mounting the temporary bridges;
- The two temporary bridges G18 will be installed in the tracks
- The temporary bridges earthing is done to restore the continuity of track circuits;
- Traffic will reopen with speed limit 30 km/h on track II. G 18 temporary bridges will be kept under observation throughout the whole time they provide the circulation of convoys so they ensure the operation normaly of the bridges and the safety rules convoys.

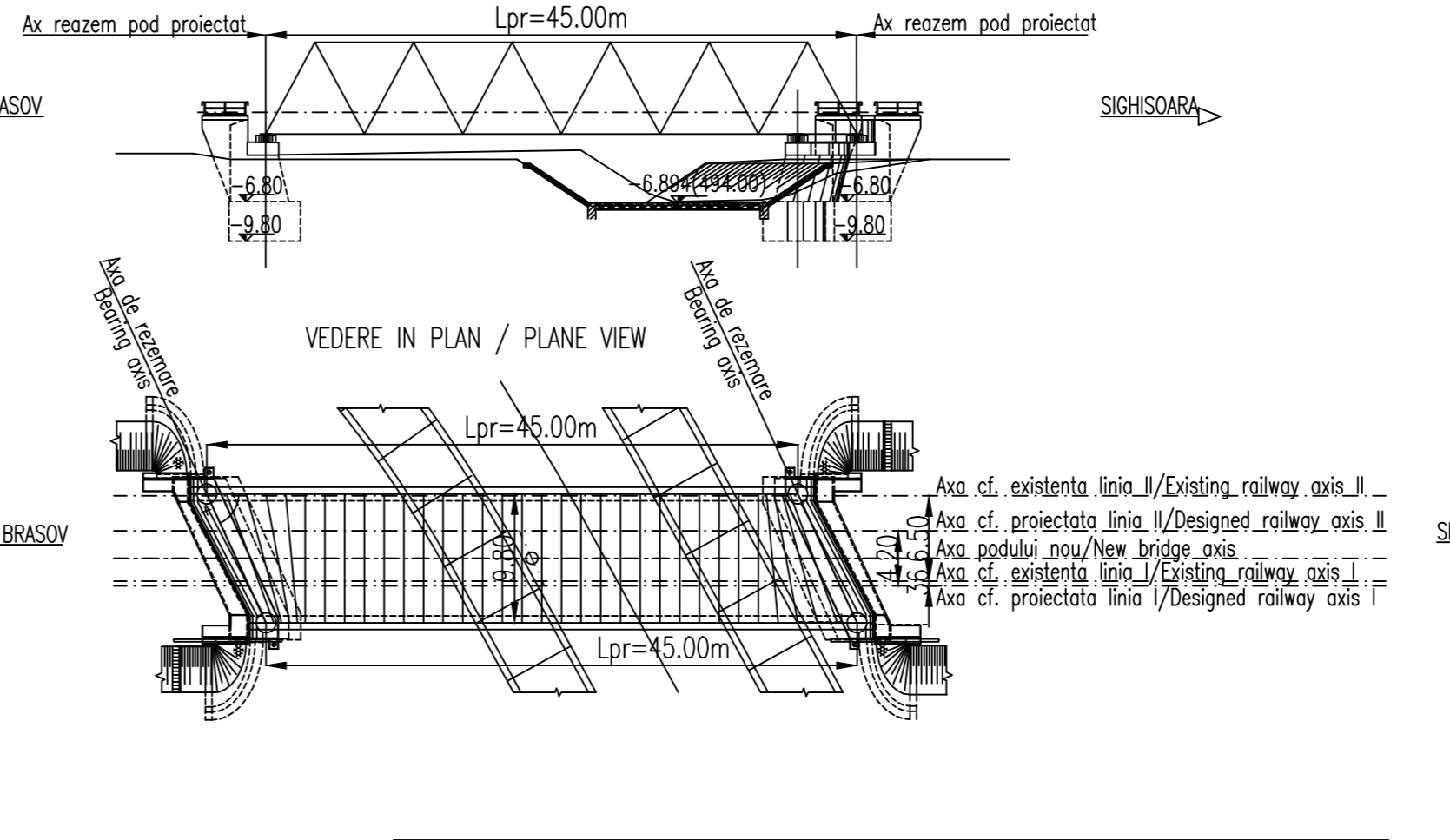
FAZA III / STAGE III
SECTIUNE E-E / SECTION E-E
Scara:1:500 / Scale 1:500



FAZA III
Circulatie cu restrictie de viteza de 30 km/h pe linia II, circulatie inchisa pe linia I si linia de contact corespunzatoare (liniei I) scoasa de sub tensiune.
-se demonteaza calea de pe pod si 20,00 m de o parte si de alta a acestuia;
-se demonteaza linia de contact pe aceeași lungime;
-se scoate din cale tablierul metalic de pe linia I si se depoziteaza pe platforma amenajata in acest scop pe partea dreapta a caii ferate;
-se executa schele de montare si reparare a noului tablier tinand cont de noua cota a niveletei caii pe pod, de pozitia noii infrastructuri si de inaltimea dispozitivelor cu ajutorul carora se executa repararea: carucioarea sau perne - patine cu teflon (se recomanda pernele - patinele);
-se executa cu sprijiniri, sapaturile necesare executarii culeilor noi;
-se executa culei noi pana la nivelul superior al cuzinetelor, se executa calea de ripare pe culei, simultan se executa montajul tablierului pe schele amenajate in acest scop;
- se aseaza structura metalica a tablierului pe patru reazeme dispuse in sectiunile definitive de reazeme ale acestuia (la capete); cu tablierul astfel reazemat se realizeaza cuva de beton armat si in continuare echiparea tablierului (coafraj, armare, betonare, hidroizolatie, cale);
-se pregatete / completeaza calea de ripare (se racordeaza calea de ripare de pe schele cu cele de pe culei);
-se demoleaza zonele superioare ale culeilor existente astfel incat sa se poata realiza repararea in cale a tablierului nou asigurandu-se circulatia in conditiile normale de siguranta a convoaielor pe linia II;
-pentru linia I se realizeaza terasamentele si calea la capetele podului la cota corespunzatoare noii pozitii in plan si de nivel al caii;

STAGE III
Traffic running with speed limit 30 km/h on track I, traffic closing on track II and the contact line out of voltage (track I).
- The line on the bridge and 20,00 m on both sides will be removed;
- the contact line will be dismantled on the same length;
- metallic deck from track I will be removed of the line and will be stored on the platform designed for this purpose on the right side of the track;
- scaffolds for mounting and shifting of the new deck will be executed taking into account the new level quota, the positioning of the new infrastructures and the height of the equipment for the shifting: trolleys and pillows - Teflon roller (recommended pillows - skates);
- digging with necessary propping ups for the abutments will be executed;
- the new abutments shall be executed till the superior level of the bearings, the shifting line will be executed on the abutments, simultaneously the deck will be assembly on the scaffolding adapted for this purpose. The metallic structure of the deck will rest on the four points corresponding to the leaning of the deck (the ends); with the deck in this position it shall be equipped with reinforcement concrete tank, casing, waterproofing and the line on bridge;
- the shifting line shall be prepared/completed (the shifting line on the scaffolds will be connected to the ones on the abutments);
- the upper areas of the existing abutments shall be demolished so the shifting of the new deck can be performed to ensure the traffic in normal safety conditions of the convoys on track II;
- for track I the embankments and the line at the bridge ends shall be done at the new level quota.

FAZA IV,V,VI / STAGE IV,V,VI
SECTIUNE G-G / SECTION G-G
Scara:1:500 / Scale 1:500



FAZA IV
Circulatie inchisa pe ambele linii de cale ferata (linia I si linia II), scoaterea de sub tensiune si demontarea liniei de contact corespunzatoare liniei II.
- se demonteaza linia de contact corespunzatoare liniei II pe pod si cate 20,00m la capetele acestuia;
- se scoate din cale tablierul corespunzator liniei II si se depoziteaza pe platforma din stanga caii ferate realizata in acest scop;
- se continua demolarrea culeilor existente pentru a permite repararea in amplasament a tablierului nou;
- se rizeaza in cale tablierul metalic nou si se aseaza corect pe reazemele definitive;
- se asigura continuitatea caii la capetele podului pe linia I cu ajutorul a doua podete provizorii U 5;
- se monteaza provizorii deasupra podului catenara corespunzatoare liniei I sustinuta de stalpi montati in terasamente la capetele podului;
- se pune sub tensiune linia de contact corespunzatoare liniei I;
- se deschide circulatia pe pod pe linia I cu restrictie de viteza de 30km/h;

STAGE IV
Traffic closing on both tracks (track I and track II), cutting out of voltage and dismantling the contact line for track II.
- Contact line corresponding to track II shall be demounted on the bridge and 20,00m at its ends;
- The line on the bridge shall be dismantled and the temporary bridges shall be removed;
- The deck corresponding to track II shall be removed and stored on the platform on the left side of the track;
- Demolishing the existing abutments shall continue for allowing the shifting of the new deck;
- The new metallic deck shall be shifted and placed on the final bearings;
- In order to assure the continuity of the line at the bridge ends, two temporary culverts U5 shall be placed;
- The catenary corresponding to track I shall be mounted temporary on poles mounted in the embankments at the bridge ends;
- reapplying voltage on the contact line corresponding to track I;
- traffic shall be reopen on track I with speed restriction 30km/h;

FAZA V

Circulatie cu restrictie de viteza de 30km/h pe linia I si circulatie inchisa pe linia II.
-se realizeaza partile superioare ale culeilor noi (zidurile intoarse, zidurile de garda, rosturile dintre tablier si culei si locurile pentru stalpii liniei de contact);
- se monteaza definitiv pe zidurile intoarse ale culeilor stalpii de sustinere ai liniei de contact pentru ambele linii;
- se realizeaza continuitatea caii de pe tablier si terasamentele de la capetele acestuia corespunzatoare liniei II;
- se realizeaza la cota din proiect terasamentele si calea corespunzatoare liniei II la capetele podului si se realizeaza racordarea caii de pe pod cu cea de pe terasamentele de la capetele acestuia;
- se realizeaza la cota definitiva linia de contact corespunzatoare liniei II pe pod si la capetele acestuia;
Dupa punerea sub tensiune a liniei de contact corespunzatoare liniei II se deschide circulatia cu restrictie de viteza de 30km/h.

STAGE V
Traffic running with speed limit 30 km/h on track I and traffic closing on track II.
- The upper areas of the new abutments shall be done (reversed walls, guard walls, joints between the deck and abutments and holes for catenary poles);
- The catenary poles shall be mounted on the final position on the guard walls of the abutments on both lines;
- the continuity of the line on the deck shall be done on the embankments corresponding to track II;
- embankments and the line corresponding to track II shall be done to the designed quota at ends of the bridge and the connection of the line with the one on the embankments shall be done also;
- the contact line corresponding to track II shall be done at the final quota on the bridge and at its ends;
After reapplying the voltage on the contact line corresponding to track II, the traffic shall be reopen with speed restriction 30 km/h.

FAZA VI

Circulatie cu restrictie de viteza de 30km/h pe linia II si in pauze de circulatie pe linia I.
- se scoate de sub tensiune linia de contact corespunzatoare liniei I;
- se muta linia de contact de pe stalpii provizorii pe stalpii de pe culei la cota definitiva pentru linia I;
- se scot din cale podetele U5 si se refaca calea definitiva la capetele podului pe linia I;
Dupa punerea sub tensiune a liniei de contact corespunzatoare liniei I se deschide circulatia cu viteza normala pe ambele linii.
Inchiderea si redeschiderea circulatiei precum si supravegherea podurilor provizorii se vor face conform instructiunilor in vigoare.

STAGE VI
Traffic running with speed limit 30 km/h on track II and on circulation breaks on track I.
- Cutting out the voltage of the contact line corresponding to track I;
- The contact line shall be moved from the temporary poles on the ones from the abutments at the quota for track I;
- The temporary culverts U5 shall be removed from the track and the final line is rebuild on the end of the bridge on track I;
After reapplying the voltage on the contact line corresponding to track I, the traffic shall be reopen on both line with normal speed.
Closing and reopening as well as monitoring the temporary bridges will be under instructions in force.

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A	11.2011	Revizia 1 1 Revision	Olar Mihai Adrian	Aprobat Consultant	Aprobat CFR
Indice Index	Data Date	Modificarea Modificator/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANTAT DE UNIUNEA EUROPEANA
EUROPEAN UNION FINANCED PROJECT

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

CLIENT / CLIENT

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GRUPPO FERROVIE DELLO STATO
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Consulting Engineers

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Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Dinulescu Stanciu	03.2011	
Intocmit Elaborated	Proiectant Designer	Olar Mihai Adrian	03.2011	

Reabilitarea liniei de cale ferata Brasov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h,
Tronsonul : 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/RO/16/PI/PA/003

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

Denumire desen / Drawing Title :

INTERVAL / SECTION BOD - FELDIOARA
Pod Km184+837.54 - D=45.00m - PROCES TEHNOLOGIC
Bridge Km 184+837.54 - SEQUENCE OF WORCK

Codificare / Codification System	Scara / Scale 1:500	LOT / LOT	Nr. / No 01 / 01
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D X	P V	0 0	3
0	0 0 4	1	