FAZA I: LUCRARI PREGATITOARE
Linia I: circulatie cu viteza normala;
Linia II: circulatie cu viteza normala;
1. Se amenajeaza drumul de access si platforma tehnologica.
2. Se realizeaza organizarea de santier.
3. Se identifica, se pichetaza si se pun in siguranta cablurile SCB, TTR de pe zona lucrarilor.
4. Se executa lucrari de protectie si/sau deviere instalatii de semnalizare si telecomunicatii.
5. Se executa un dig in amonte si se asigura transfazarea apei cand este cazul prin/-a conducta sau prin pompare;

STAGE I: PRELIMINARY WORKS
Line I: traffic with normal speed;
Line II: traffic with normal speed.
1. Arranging the access road and the technological platform.
2. Making the site organization.
3. Identifying, pegging-out and securing the SCB, TTR cables on the works' area.
4. Making works for protecting and/or deflecting the signalling and telecommunication installations.
5. Executing a dam upstream and ensuring the water passage when the case by a pipe or by pumping;

Prezentul plan s-a intocmit in baza urmatoarelor date:
– ridicarea topografica;
– studiu hidrologic;
– date culese pe teren.
This plan has been drawn up on the basis of the following data:
– topo layout;
– the hydrology study;
– acquisition of data to area.

1. Ordinea de executare a lucrarilor pe linia I sau II ramane la latitudinea constructiei.
2. Lucrarile le poate vor fi executate obligatoriu inainte de lucrarile la linie.
3. Detaliile prezentate in cazul plan nu sunt obligatorii si pot fi modificate sau adaptate in functie de detaliile constructiunii cu respectarea conditiilor de realizare a lucrarilor definite prevazute in caietele de sarcini.
4. Orice neconcordanta intre elementele evuite in vedere la elaborarea proiectului si teren va fi anunatata proiectantului pentru adaptare la situatia existenta.
5. Restrictia de viteza se va ridica dupa executia lucrarilor de ridicare a nivelete si terasamente la pozitia proiectata.
6. The works' execution sequence on line I or II is up to the constructor to decide.
7. The culvert works will be carried-out obligatorily before the line works.
8. The details presented in this plan are not compulsory and can be modified or adapted depending on the construction's endowments by observing the execution conditions of the
final works provide in the Technical Specifications.
9. Any incongruity between the elements taken into account when preparing the design and the site will be announced to the designer so that he can adapt to the existing situation.
10. The speed limit will be removed after the level lifting works and after bringing the lines to the designed position.

VEDERE PLANA / PLAN VIEW
Sc. 1:200

SECTIUNE A–A / SECTION A–A
Sc. 1:200

FAZA II–INTRODUCERE POD PROVIZORIU PE LINIA I

Linia I – circulatie cu restricte de viteza=50km/h;
Linia II–inchisa;
1. Se scoate de sub tensiune linia II si se asigura protectia electrica;
2. Se sectionezza si se dezmonteazza linia dupa care se demonteazza suprastructura CF pe zona podului;
3. Se scoate din cale tablerul eferent liniei II;
4. Se demoleazza partial infrastructurile eferente liniei II;
5. Se executa sapatura pentru introducerea in cale a fundatiilor prefabricate provizorii si a podurilor provizorii Tip G15 sub protectia sprijinirilor din lungul căii ferate;
6. Se introduc in cale fundatiile prefabricate ale podurilor provizorii, corespunzatoare liniei II;
7. Se introduc in cale podurile provizorii Tip G15;
8. Se montezza suprastructura c.f. pe podurile provizorii si se racordeazza la capete la situatia existenta. Montarea suprastructurii c.f. se va face la cota NSS existent;
9. Se executa lucrarile de protectie electrica a podurilor provizorii introduse in cale si se verifica electrizarizarea.
10. Se repune sub tensiune linia de contact si se redectichide circulatia, cu restricte de viteza de 30 km/h conform instructiilor c.f. in vigoare.
11. Se fin sub observatie podurile provizorii pe toata durata de exploatare, cu remedierea eventualelor defecte si aducerea lor in limita admise de tolerante.

VEDERE PLANA / PLAN VIEW
Sc. 1:200

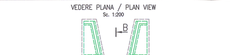
SECTIUNE A–A / SECTION A–A
Sc. 1:200

FAZA III–INTRODUCERE POD PROVIZORIU PE LINIA I

Linia I – inchisa;
Linia II – circulatie cu restricte de viteza de 30km/h;
1. Se scoate de sub tensiune linia II si se asigura protectia electrica;
2. Se sectionezza si se dezmonteazza linia dupa care se demonteazza suprastructura CF pe zona podului;
3. Se scoate din cale tablerul eferent liniei II;
4. Se demoleazza partial infrastructurile eferente liniei II;
5. Se executa sapatura pentru introducerea in cale a fundatiilor prefabricate provizorii si a podurilor provizorii Tip G15 sub protectia sprijinirilor din lungul căii ferate;
6. Se introduc in cale fundatiile prefabricate ale podurilor provizorii, corespunzatoare liniei II;
7. Se introduc in cale podurile provizorii Tip G15;
8. Se montezza suprastructura c.f. pe podurile provizorii si se racordeazza la capete la situatia existenta. Montarea suprastructurii c.f. se va face la cota NSS existent;
9. Se executa lucrarile de protectie electrica a podurilor provizorii introduse in cale si se verifica electrizarizarea.
10. Se repune sub tensiune linia de contact si se redectichide circulatia, cu restricte de viteza de 30 km/h conform instructiilor c.f. in vigoare.
11. Se fin sub observatie podurile provizorii pe toata durata de exploatare, cu remedierea eventualelor defecte si aducerea lor in limita admise de tolerante.

STAGE II – INTRODUCING THE TEMPORARY BRIDGE ON LINE I
Line I – closed
Line II – traffic with speed limit=50km/h
1. Cutting off the voltage of line II and ensuring the electric protection.
2. Sectioning and removing the voltage of the line and dismantling the railway superstructure on the bridge area.
3. Removing from the track the deck offerent to line II.
4. Partially dismantling the infrastructures offerent to line II.
5. Making the excavation in order to introduce in the track the temporary precast foundation and the temporary bridges type G15 under the protection of propping along the railway track.
6. Introducing in the track the precast foundations of the temporary bridges, corresponding to line II.
7. Introducing in the track the temporary bridges type G15.
8. Mounting the railway superstructure on the temporary bridge and connecting all the ends to the existing situation. The railway superstructure is mounted at existing NSS (top of rail) level.
9. Carrying out the electric protection works for the temporary bridge introduced in the track and checking the electric insulation.
10. Restoring the voltage to the contact line and reopening the traffic with speed limit of 30 km/h according to the railway instructions in force.
11. Monitoring the temporary bridge during the entire operation period, by remedying the eventual defaults and bringing them to the admitted tolerance level.

VEDERE PLANA / PLAN VIEW
Sc. 1:200



SECTIUNE A–A / SECTION A–A
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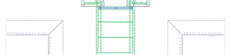

SECTIUNE B–B / SECTION B–B
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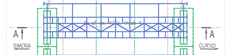
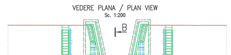


FAZA IV–REALIZARE PARTIALA PODET

Linia I – circulatie cu restricte de viteza de 30km/h;
Linia II – circulatie cu restricte de viteza de 30km/h;
1. Se demoleazza podetul existent si se executa sapatura pentru fundatia podetului nou. Odata cu avansarea sapaturilor se montezza si elemente de sprijinire;
2. Se executa fundatia podetului nou si a aripilor;
3. Se montezza 3 cadre prefabricate si aripile din amonte (partea dreapta a liniei);

VEDERE PLANA / PLAN VIEW
Sc. 1:200



SECTIUNE A–A / SECTION A–A
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SECTIUNE B–B / SECTION B–B
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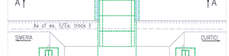

SECTIUNE A–A / SECTION A–A
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FAZA IV–REALIZARE PODET PE LINIA I

Linia I – circulatie cu restricte de viteza de 50km/h ;
Linia II – inchisa;
1. Se scoate de sub tensiune linia II si se asigura protectia electrica;
2. Se demoleazza suprastructura c.f. eferenta liniei II si linia de contact cu stalpii aferenti;
3. Se scoate din cale podul provizoriu si fundatiile prefabricate;
4. Se montezza inca 4 cadre prefabricate (codrul din zona podului provizoriu se montezza in pauze de circulatie);
5. Se executa umplutarile din jurul cadrelor montate si drenurile;
6. Se executa linia cf proiectata conform proiectului de suprastructura cf;
7. Se executa linia de contact noua conform proiectului de specialitate;
8. Se pune sub tensiune linia de contact pe linia I proiectata si se deschide circulatia, conform instructiilor c.f. in vigoare pana la viteza maxima de 30km/h.

STAGE IV – EXECUTION OF THE CULVERT ON LINE I
Line I – closed
Line II – traffic with speed limit of 30km/h
1. Cutting off the voltage of line I and ensuring the electric protection.
2. Dismantling the railway superstructure offerent to line I and the contact line with the offerent poles.
3. Removing from the track the temporary bridge and the precast foundations.
4. Mounting 4 precast frames (the frame from the area of the temporary bridge is mounted during traffic breaks).
5. Making the fillings around the mounted frames and the drains.
6. Making the designed railway line according to the railway superstructure design.
7. Making the new contact line according to the specialty design.
8. Restoring the voltage to the contact line on designed line I and opening the traffic according to the railway instructions in force up to the maximum speed of 30km/h.

VEDERE PLANA / PLAN VIEW
Sc. 1:200

SECTIUNE A–A / SECTION A–A
Sc. 1:200

STAGE IV – EXECUTION OF THE CULVERT ON LINE I
Line I – traffic with speed limit de 30km/h
Line II – closed
1. Cutting off the voltage of line II and ensuring the electric protection.
2. Dismantling the railway superstructure offerent to line I and the contact line with the offerent poles.
3. Removing from the track the temporary bridge and the precast foundations.
4. Mounting 4 precast frames (the frame from the area of the temporary bridge is mounted during traffic breaks).
5. Making the fillings around the mounted frames and the drains.
6. Making the designed railway line according to the railway superstructure design.
7. Making the new contact line according to the specialty design.
8. Restoring the voltage to the contact line on designed line I and opening the traffic on both lines, according to the railway instructions in force up to normal speed.

FAZA VII – ALTE TIPURI LUCRARI:
Linia I – circulatie cu viteza normala;
Linia II – circulatie cu viteza normala;
1. Se executa pereul in podet, intre aripi si in amenajarea din amonte conform diapozitie: generale, scara de access pe terasament si parapetul metalic.
2. Se executa rolleaua din armoceramite in ovoi.
4. Se realizeaza racordarea santurilor de colectare existente pe zona podetului cu amenajarea din amonte.
5. Se dezafectezza platforma tehnologica, accesele din zona de lucru si organizarea de santier.

STAGE VII – OTHER TYPES OF WORKS
Line I – traffic with normal speed
Line II – traffic with normal speed
1. Making the pitching in the culvert, between wings and in the upstream arrangement according to the general layout, the access ratio on the embankment and the metallic handrail.
2. Making the riprap mattress downstream.
3. Making the connection of existing collecting ditches on the culvert area with the upstream arrangement.
4. Dedocating the technological platform, the accesses from the work area and the site organization.

TEHNOLOGIA DE POZARE A PREFABRICATELOR:
–nge betonul de fundatie intarit se cotarn 2cm de mortar de cimentt pentru nivelare si 1cm pentru pozare;
–prefabricatele se cazesc in amplasament, dupa care se ridica si se observa urma lasata de stratul de mortar proaspat. In cazul in care nu e-o realizat cazarea pe baza suprafata, se completeaza cu mortar de ciment de poze.
Operatia se repeta pana cand se obtine rezemarea pe toata suprafata.

SECTIUNE PRIN PODURILE PROVIZORII
SECTION WITH TEMPORARY BRIDGE
1:200

Deschidere circulatie/feroviare pe podurile provizorii se face astfel:
– in primele 24h se va ridica viteza la treptele de 5km/h, se fine sub observatie permanenta a podurilor provizorii si a lucrarilor ajunse in exploatare; pe durata exploatarii podului provizoriu in cale ocazia se fine sub observatie permanenta, iar eventualele deficiente aparute se remediaza imediat.
– dupa 24h de la darea in exploatare a podului provizoriu se va ridica pe restricte de viteza de 30 km/h.
The reopening of the traffic on the temporary bridges will be carried out as follows:
– in the first 24 hours the speed is raised in stages of 5 km/h, the level is permanently kept under surveillance and there are rectified the level and settlings that occur during the operations. While the temporary bridge is in operation on the rail I is kept under permanent surveillance and the eventual deficiencies are instantly remedied.
–after 24 hours since the temporary bridge is in operation the traffic will be under speed restriction of 30 km/h.

PREFABRICATED ELEMENTS LAYING TEHNOLOGY:
–Concrete cement mortar for levelling and 1cm for laying are placed on the hardened foundation concrete.
–the prefabricated elements are placed on site, after than there are rising and the track leaved on the fresh mortar layer is observed. If the laying is not done on the whole surface, cement mortar is cast on.
The operation is repeated till the whole supporting surface is obtained.

DETALIU DE REZEMAREA PODULUI PROVIZORIU
DETAIL FOR TEMPORARY BRIDGE SUPPORTING
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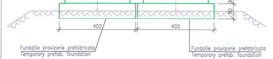

Prezentul plan anuleaza si inlocuieste versiunea anterioara
This plan cancels and replaces previous version

Verificator / Expert Checker / Expert	Cerinta Requirement	Semnatura Signature	Verificator / Expert Report / Expertise

European Investment Bank

MINISTERUL TRANSPORTURILOR

BENEFICIAR / BENEFICIARY:
CFR
COMPANIA NAȚIONALĂ DE CĂI FERATE "CFR" SA

PROIECTANT / DESIGNER:			Data Date	Semnatura Signature
Aprobat Approved	Sef de echipa Team leader	C. Teodorescu	01.2013	
Verificat Checked	Expert Chale Key Expert	R. Tudorascu	01.2013	
Subcontractant / Subcontractor				
Aprobat Approved	Adjunct Sef de echipa Deputy Team leader	A.M. Baicu	01.2013	
Proiectat Designed	Inginer Engineer	T. Toma	01.2013	

"Reabilitarea liniei c.f. Frontier à - Curtici - Simeria, parte componentă a Coridorului IV Pan - European pentru circulația pe linii feroviare cu viteză maximă de 160 km/h"
Transonul 3: Gurasada - Simeria

"Rehabilitation of the Railway Line Border - Curtici - Simeria , component Part of the IV Pan - European Corridor for The Trains Circulation with maximum speed of 160 km/h"
Section 3: Gurasada - Simeria

Proiect / Project Report / Expertise: Project 9/ 353111.1

Faza / Phase: PTH+CS / TD+TS

Denumire desen / Drawing name:
TEHNOLOGIE DE EXECUTIE / TECHNOLOGICAL PROCESS
PODET / CULVERT
KM.PR.(DSG.) 499+416.50 / KM.EX.(EX.) 500+489.00

Scara / Scale	Revizia / Revision	Cod desen / Drawing Code	Nr / No
1:200	1 / 04.2013	PT.03.02.23.PO.19.04	04