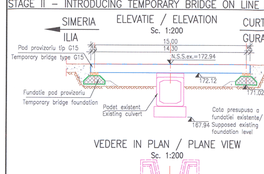
FAZA I – LUCRARI PREGATITOARE
STAGE I – PRELIMINARY WORKS
FAZA II – INTRODUCERE POD PROVIZORIU PE LINIA I
STAGE II – INTRODUCING TEMPORARY BRIDGE ON LINE I



DESCHIDEREA CIRCULATIEI FEROVIARE PE PODURILE PROVIZORII SE VA FACE ASTFEL:
– în primele 24h se reduce viteza în trepte de 5km/h, se tine sub observatie permanenta si se restiliza nivelul si taserile oponate in exploatare; pe durata exploatarii podului provizoriu in cale oceata se tine sub observatie permanenta, iar eventualele deficiente oparate se remediaza imediat.
– dupa 24h de la darea in exploatare a podului provizoriu se va circula cu restrictie de viteza de 30 km/h.

THE REOPENING OF THE TRAFFIC ON THE TEMPORARY BRIDGES WILL BE CARRIED AS FOLLOWING:
– in the first 24 hours the speed is raised in stepps 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 it 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.

FAZA II-A DEMOLIRE TEMPORARE
Linia I – circulatie cu viteza normala;
Linia II – circulatie cu viteza normala;
1. Se amenajeaza drumul de acces, platforma tehnologica si organizarea de santiere;
2. Se executa lucrari de proiectie si/sau devieri instalatii semnalizare si telecomunicatii;

STAGE I- PRELIMINARY WORKS
Line I – traffic with normal speed;
Line II – traffic with normal speed;
1. Arrangement of the access road, technological platform and site organization;
2. Execution of protection and/or deviation works at the signalling and telecommunication installations;

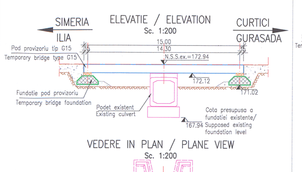
FAZA III – INTRODUCERE POD PROVIZORIU PE LINIA I
Linia I – inchidere de circulatie feroviara;
Linia II – restrictie de viteza de 30km/h;
1. Se scoate de sub tensiune linia de contact si se asigura protectia electrica.
2. Se dezmantoreaza si se tale sinele, se crearea rosturile de dilatatie.
3. Se demantoreaza si se scoate calea pe zona afectata de lucrari
4. Se executa lucrarile de protectie si modificari ale retelelor si cale vecinatate.
5. Se executa suporturile de terasament la adapostul sprijinirilor provizorii in lungul liniei si se pozeaza rezervele prefabricate di podului provizoriu pe perne de balast bine compactate.
6. Se degajeaza terasamentul si se introduce in cale podul provizoriu tip G15.
7. Se montezza suprastructura CF pe podul provizoriu si se racordeaza la cozeie pe terasament.
8. Se asigura continuitatea circuitelor de cale, se asigura electrizarea sinelor si protectia electrica a podurilor provizorii.
9. Se remontezza linia de contact, se pune sub tensiune si se deschide circulatia in trepte de viteza pana la limaxe = 30km/h conform normelor in vigoare si se tine sub observatie podul provizoriu pe toata durata exploatarii.

STAGE II- INTRODUCTION OF TEMPORARY BRIDGES ON LINE I
Line I – closure of railway traffic;
Line II – speed limit of 30km/h;
1. Cut-off the voltage on the contact line and provision of electric protection.
2. Cut-off of the voltage and cut of the rails, execution of expansion joints.
3. Lifting the level on the bridge at the Designed NSS (top of the rail) and connection on each 60m at the end of each bridge.
4. Execution of protection works at the existing track and nearby installations.
5. Execution of embankment excavations at the protection of the temporary propping along the railway and lay-down of precast bearing of the temporary bridge on well-compacted ballast beds.
6. Clearing the embankment and placing the temporary bridge type G15 into the track.
7. Montage of the railway superstructure on the temporary bridge and connection to the ends on the embankment.
8. Provision of track circuits' continuity, of rails' electric insulation and electric protection of the temporary bridges.
9. Mounting back the contact line, restoring the voltage and opening the traffic with speed limits Vmax = 30km/h according to the norms in force and keeping under surveillance the temporary bridge during the entire operation.

NOTA:
1. CONVOIUL DE CALCUL PENTRU PODURILE PROVIZORII: G1718.5
2. Podurile provizorii se ganesc in dotarea Beneficiarului si pot fi puse la dispozitia Constructorului
3. Circulatia pe podurile provizorii se face cu maxim 30 km/h

NOTE:
1. CALCULATION CONVOY FOR THE TEMPORARY BRIDGES: G1718.5
2. Temporary bridges are in the endowment of the Beneficiary and can be made available to the Contractor
3. Traffic on the temporary bridges takes place with maximum 30 km/h

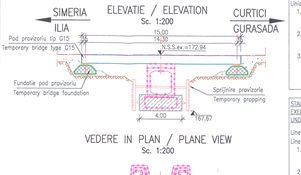
FAZA III – INTRODUCERE POD PROVIZORIU PE LINIA II
STAGE III – INTRODUCING TEMPORARY BRIDGE ON LINE II



FAZA III- INTRODUCERE PODURI PROVIZORII PE LINIA II
Linia I – restrictie de viteza de 30km/h;
Linia II – inchidere de circulatie feroviara;
1. Se repeta toate operatiile prevazute la FAZA II pe linia II.

STAGE III- INTRODUCTION OF TEMPORARY BRIDGES ON LINE II
Line I – speed limit of 30km/h;
Line II – closure of railway traffic;
1. Repeating all the operations from STAGE II on line II.

STAGE IV – DEMOLITION OF THE EXSITING CULVERT AND EXECUTION OF THE NEW FOUNDATION



FAZA IV – DEMOLIREA PODURILOR EXISTENTI SI EXECUTIA FUNDATIILOR PODULUI NOU LA ADAPOSTUL PODURILOR PROVIZORII:
Linia I – restrictie de viteza de 30km/h;
Linia II – restrictie de viteza de 30km/h;
1. Se degajeaza terasamentul din jurul podetului, se demoleaza podetul existent si recordarea cu terasamentul, inclusiv fundatiile acestora.
2. Se executa sapaturile pentru fundatii pentru podetului nou, montarea elementelor de sprijinire pe masura ce avansezza sapatura.
3. Se betoneaza fundatiile podetului, aripilor si camerei de colectare, iar in naturile unde fundatii se introduc doua fol de carton bitumat. Demontarea sprijinirilor se face dupa atingerea a 80% din clasa betonului din fundatie;

STAGE IV – DEMOLISH OF THE EXISTING CULVERT AND EXECUTION OF THE FOUNDATIONS FROM THE NEW CULVERT UNDER THE PROTECTION OF TEMPORARY BRIDGES:
Line I – speed limit of 30km/h;
Line II – speed limit of 30km/h;
1. Clearing the embankment around the culvert, demolishment of the existing culvert and connections to the embankment, including their foundations.
2. Execution of excavations for the foundation of the new bridge, while mounting propping-up elements as the excavation is carried on.
3. Concreting the foundations of the culvert, wings and collecting chamber and placing two sheets of bitumen boards into the joints between the foundations.
Demolishment of propping-ups is done after obtaining 80% of the class of the foundation concrete.

NOTA:
Prezentul plan s-a intocmit in baza urmatoarelor date:
– ridicarea topografica,
– diapozitie generala,
– date suiese pe teren.

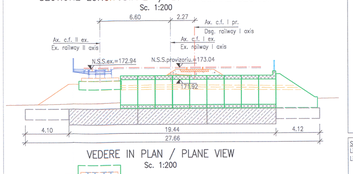
NOTE:
This plan has been drawn up on the basis of the following data:
– topo survey,
– general layout,
– acquisition of data to area.

NOTA:
1. Ordinea de etapare a lucrarilor pe linia I sau II rameane la latitudinea constructorului.
2. Lucrarile la pod vor fi executate obligatoriu inainte de lucrarile la linie.
3. Detaliile prezentate in acest plan nu sunt obligatorii si pot fi modificate sau adaptate in functie de datelor constructiilor cu respectarea conditiilor de realizare a lucrarilor definitive prevazute in caietele de sarcini si cu acordul proiectantilor.
4. Orice neconcordanta intre elementele avute in vedere la elaborarea proiectului si teren va fi anunturata proiectantului pentru adaptare la situatia existenta.

NOTE:
1. The work's execution sequence on line I or II is up to the constructor to decide.
2. The bridge works will be carried-out obligatorily before the line works.
3. The details presented in this plan are not compulsory and can be modified or adapted depending on the constructor's endowments by observing the execution conditions of the final works provided in the Technical Specifications and the designer's approval.
4. 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.

FAZA V – EXECUTIE PODET NOU PE LINIA I
STAGE V – EXECUTION OF THE NEW CULVERT ON LINE I

SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION
Sc. 1:200



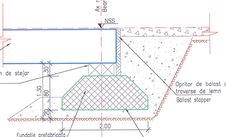
FAZA V – REALIZAREA PODETULUI NOU PE FIRUL II
Linia I – inchidere de circulatie feroviara;
Linia II – restrictie de viteza de 30km/h;
1. Se scoate de sub tensiune si se demontezza linia de contact.
2. Se demontezza si se scoate calea pe zona podului provizoriu.
3. Se scoate din cale podul provizoriu tip G15.
4. Se montezza 9 elemente prefabricate sub linia I conform tehnologie de montare.
5. Se realizezza racordarea cu terasamentul (prigi amonte).
6. Se executa sistemul drenturi si hidroizolatie.
7. Se executa umplutura, conform celetiului de sarcini, se reface terasamentul si cotele in zona podetului pana la cota NSS provizoriu.
8. Se montezza suprastructura CF pe linia I si se racordeaza la cozeie la diuatie existenta.
9. Se asigura continuitatea circuitelor de cale, se asigura electrizarea sinelor si protectie catodica.
10. Se remontezza linia de contact, se pune sub tensiune si se deschide circulatia in trepte de viteza pana la Vmax = 30km/h conform normelor in vigoare.

STAGE V – EXECUTION OF THE NEW CULVERT ON TRACK I:
Line I – closure of railway traffic;
Line II – speed limit of 30km/h;
1. Cutting-off the voltage and dismantling the contact line.
2. Dismantling and removing the track on the area of the temporary bridge.
3. Removing the track the temporary bridge type G15.
4. Mounting 9 precast elements from under Line I according to the montage technology.
5. Executing the connection to the embankment (upstream wings).
6. Execution of the drainage system and the waterproofing.
7. Executing the filling, according to the technical specifications, renewing the embankment and the track in the area of the culvert until a temporary level of the NSS (top of the rail).
8. Montage of the railway superstructure on line I and connection to the ends on the existing situation.
9. Provision of track circuits' continuity, of rails' electric insulation and cathode protection.
10. Mounting back the contact line, restoring the voltage and opening the traffic with speed limits Vmax = 30km/h according to the norms in force.

DETALIU DE REZEMARE A PODULUI PROVIZORIU
DETAIL FOR TEMPORARY BRIDGE SUPPORTING
Sc. 1:50

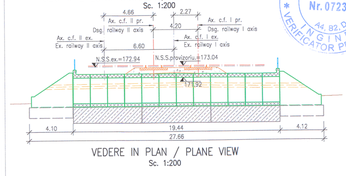
Tehnologia de pozare a prefabricatelor:
–pe betonul de fundatie intarit se astern 2cm de mortar de ciment pentru nivelare si 1cm pentru pozare;
–prefabricatele se ceesia in amplasament, dupa care se ridica si se aseaza urma lasata pe stratul de mortar proaspat. In cazul in care nu s-a realizat zezezezu pe toata suprafata, se completezza cu mortar de ciment de poza.
Operatia se repeta pana cand se obtine rezemarea pe toata suprafata.

Prefabricated elements laying technology:
–2cm 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.



FAZA VI – EXECUTIE PODET NOU PE LINIA II
STAGE VI – EXECUTION OF THE NEW CULVERT ON LINE II

SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION
Sc. 1:200



FAZA VI- EXECUTIE PODET NOU PE LINIA II
Linia I – restrictie de viteza de 30km/h;
Linia II – inchidere de circulatie feroviara;
1. Se repeta toate operatiile prevazute la FAZA V pe linia II.

STAGE VI- EXECUTION OF THE NEW CULVERT ON LINE II
Line I – speed limit of 30km/h;
Line II – closure of railway traffic;
1. Repeating all the operations from STAGE V on line II.

FAZA VIII – ALTE TIPURI LUCRARI:
FAZA VIII – OTHER TYPES OF WORKS:

FAZA VIII – ALTE TIPURI LUCRARI:
Linia I – circulatie cu viteza normala;
Linia II – circulatie cu viteza normala;
1. Se executa pereul in podet, intre aripi si scarile de acces pe terasament.
2. Se executa asfaltele din anticoverele in ovai si amonte.
3. Se decoseazezza platformele, accesele din zona de lucru, organizarea de santier.

STAGE VIII – OTHER TYPES OF WORKS:
Line I – traffic with normal speed;
Line II – traffic with normal speed;
1. Executing the plishing in the culvert, between the wings and the access stairs on the embankment.
2. Executing the riprap mattress in the downstream and upstream.
3. Closing-down the platforms, accesses to the work area, the site organization.

BACANEL I. IONUT-RADU
MPAA
Nr. 07230
AA, 82, 0
I.N.G.M.
VERIFICATOR DE PROIECTE

BRASOVEANU C. CONSTANTIN
ROMANIA
MPAA
NR. 1107
AA, 47, 84, 90, 0
I.N.G.M.
VERIFICATOR DE PROIECTE

NOTA:
In urma lucrarilor la podet linia a fost ridicata la cota NSS provizorie.
The lifting of the first bridge NSS (top of rail) level will be carried-out during the line works.

NOTE:
After the works at the culvert, the line was lifted at temporary NSS (top of rail) level.
The lifting of the first bridge NSS (top of rail) level will be carried-out during the line works.

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

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

European Investment Bank

MINISTERUL TRANSPORTURILOR

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

PROIECTANT / DESIGNER: PÖYRY

			Data Date	Semnatura Signature
Aprobat Approved	Sef de echipa Team leader	C. Teodorescu	01.2013	
Verificat Checked	Expert Cheie Key Expert	R. Tudoraşcu	01.2013	
Subcontractant / Subcontractor		VIOTOP		
Aprobat Approved	Adjunct Sef de echipa Deputy Team leader	A.M. Baicu	01.2013	
Proiectat Designed	Inginer Engineer	I. Pănuescu	01.2013	

"Reabilitarea liniei c.f. Frontier à - Curtici - Simeria , parte componentă a Coridorului IV Pan - European pentru circula ţia trenurilor cu viteză maximă de 160 km/h"
Section 3: Gurasada - Simeria

Project 9i 35311.1

"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

Faza / Phase: PTH+CS / TD+TS

Denumire desen / Drawing name:
TEHNOLOGIE DE EXECUTIE / TECHNOLOGICAL PROCESS
PODET / CULVERT KM.PR.(DSG.) 508+162.450 KM.EX. 509+232

Scara / Scale	Revizia / Revision	Cod desen / Drawing Code	Nr / No
1:200 ; 1:50	1 / 04.2013	PT.03.02.21.PO.04.04	04