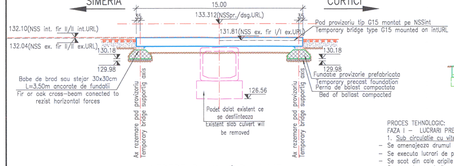
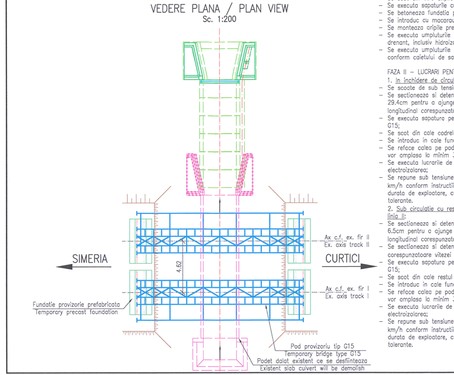
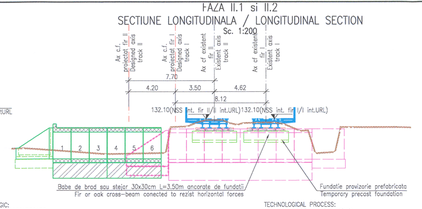
FAZA II.1 si II.2
SECTIUNE TRANSVERSALA / CROSS SECTION
Sc. 1:200



VEDERE PLANA / PLAN VIEW
Sc. 1:200



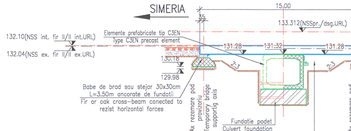
FAZA II.1 si II.2
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION
Sc. 1:200



PROCES TEHNOLOGIC:
FAZA I – LUCRARI PREGATITOARE:
1. Sub circulatie cu viteze normale pe ambele linii
– Se amenajeaza drumul de acces, platformele tehnologice si organizarea de santier;
– Se executa lucrari de protectie si/sau deviere instalatii semnalizare si telecomunicatii;
– Se sapa din cele arpile prefabricate existente cu sapitori longitudinale in nivelul timpanului;
– Se executa sapaturile cu sprijinirii pentru fundatiile noi;
– Se betoneaza fundatia podetului pentru primele 6 elemente prefabricate;
– Se introduc cu macaraua elementele prefabricate 1÷6;
– Se montează aripile prefabricate in amonte
– Se executa umplaturile prin retrogerare sprijinirilor din lungul podetului si se executa sistemul drenant, inclusiv hidroizolatia pe toata lungimea podetului;
– Se executa umplaturile ramase de la nivelul sistemului drenant, in straturi bine compactate, conform cutetului de santiri.

FAZA II – LUCRARI PENTRU INTRODUCEREA IN CALE A PODURILOR PROVIZORII TIP G15 C.M.:
1. In incidere de circulatie pe linia I si restrictie de viteza de 30km/h pe linia II
– Se asoote de sub tensiune linia de contact si se asigura protectia electrica a liniei I;
– Se sectioneaza si detensioneaza linia I c.f. existenta; se ridica nivelata NSS a liniei I cu 29,4cm pentru a ajunge la 132.10 NSS intermediar; se fac racordari in plan si profil longitudinal corespunzatoare vitezei de 30km/h;
– Se executa sapaturi pentru introducerea in cale a fundatiilor provizorii si a podului provizoriu G15;
– Se scot din cale cadrele prefabricate aferente liniei I si se montează sprijinirii;
– Se introduc in cale fundatiile provizorii si podul provizoriu G15 in NSS existent;
– Se reface calea pe podul provizoriu. Nu se admit joante mecanice pe podul provizoriu. Ele se vor amplasa la minim 3,00m de capetele podului provizoriu.
– Se executa lucrarile de protectie electrica o podului provizoriu introdus in cale si se verifica electrizatoarea;
– Se repune sub tensiune linia de contact, se redeschide circulatia, cu restrictie de viteza 30 km/h conform instructiilor of in vigoare si se tine sub observatie podul provizoriu pe toata durata de exploatare, eu remedierea eventualelor defecte si aducerea lor in limita admise de tolerante.
2. Sub circulatie cu restrictie de viteza de 30km/h pe linia I si inchidere de circulatie pe linia II
– Se sectioneaza si detensioneaza linia II c.f. existenta; se ridica nivelata NSS a liniei II cu 6,5cm pentru a ajunge la 132.10 NSS intermediar; se fac racordari in plan si profil longitudinal corespunzatoare vitezei de 30km/h;
– Se sectioneaza si detensioneaza linia II c.f. existenta asigurandu-se o lungime de racordare corespunzatoare vitezei de 30km/h;
– Se executa lucrarile pentru introducerea in cale a fundatiilor provizorii si a podului provizoriu G15;
– Se scot din cale restul cadrelor prefabricate si se introduc sprijinirii;
– Se introduc in cale fundatiile provizorii si podul provizoriu G15 in NSS existent al liniei II;
– Se reface calea pe podul provizoriu. Nu se admit joante mecanice pe podul provizoriu. Ele se vor amplasa la minim 3,00m de capetele podului provizoriu.
– Se executa lucrarile de protectie electrica o podului provizoriu introdus in cale si se verifica electrizatoarea;
– Se repune sub tensiune linia de contact, se redeschide circulatia, cu restrictie de viteza 30 km/h conform instructiilor of in vigoare si se tine sub observatie podul provizoriu pe toata durata de exploatare, cu remedierea eventualelor defecte si aducerea lor in limita admise de tolerante.

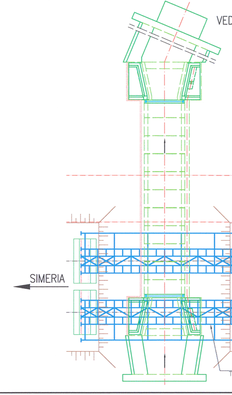
FAZA III.1 si III.2
SECTIUNE TRANSVERSALA / CROSS SECTION
Sc. 1:200



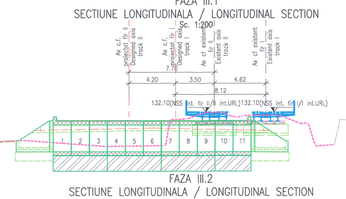
TECHNOLOGICAL PROCESS:
STAGE I – PRELIMINARY WORKS:
1. During traffic with normal speed on both lines
– Arrangement of the access road, technological platform and site organization;
– Execution of protection and/ or deviation works at the signaling and telecommunication installations;
– Removing from the track the existing precast wings with longitudinal propping-ups at the tympan's level;
– Executing the excavations with prop-ups for the new foundations;
– Concreting the foundations of the culvert for the first 6 precast elements;
– Placing into the track, by help of crane, the precast elements 1÷6;
– Mounting the precast wings on downstream;
– Executing the fillings by removing the prop-ups from along the culvert and executing the drainage system, including the waterproofing on the entire length of the culvert;
– Executing the fillings left from the level of the drainage system into well-compacted layers, according to the Technical Specifications.

STAGE II – WORKS FOR PLACING INTO THE TRACK THE TEMPORARY BRIDGE TYPE G15 TRACK ON THE MODEL :
1. During traffic closure on line I and speed limit of 30km/h on line II
– Cutting-off the voltage on the contact line and ensuring the electric protection of the line I;
– Sectioning and cutting-off the voltage on the existing railway line I; lifting the existing URL (top of the rail) of the line I level by 29,4cm in order to obtain 132.10 of the intermediary URL (top of the trail); making connections in plan and longitudinal profile for the speed of 30km/h;
– Executing the excavation in order to place into the track the temporary foundations and the temporary bridge G15;
– Removing from track the precast frames corresponding to the line I and mounting the propping-ups;
– Placing into the track the temporary foundations and the temporary bridge G15 at the existent URL (top of the rail);
– Renewing the track on the temporary bridge. No mechanicol joints are allowed on the temporary bridge. They will be placed at minimum 3,00 m away from the ends of the temporary bridge
– Executing the works of electric protection at the temporary bridge placed into the track and checking the electric insulation;
– Restoring the voltage on the contact line, reopening the traffic with speed limit of 30 km/h according to the railway instructions in force and keeping under surveillance the temporary bridge during its operation, while remedying the eventual defects and restoring them to the allowed limit of tolerance.
2. During traffic with speed limit of 30km/h on line I and traffic closure on line II
– Cutting-off the voltage on the contact line and ensuring the electric protection of the line II;
– Sectioning and cutting-off the voltage on the existing railway line I; lifting the existing URL (top of the rail) of the line II level by 6,5cm in order to obtain 132.10 of the intermediary URL (top of the trail); making connections in plan and longitudinal profile for the speed of 30km/h;
– Executing the excavation in order to place into the track the temporary foundations and the temporary bridge G15;
– Demolishing the precast frames corresponding to the line II and introducing the propping-ups;
– Placing into the track the temporary foundations and the temporary bridge G15 at the existent URL (top of the rail);
– Renewing the track on the temporary bridge. No mechanicol joints are allowed on the temporary bridge. They will be placed at minimum 3,00 m away from the ends of the temporary bridge
– Executing the works of electric protection at the temporary bridge placed into the track and checking the electric insulation;
– Restoring the voltage on the contact line, reopening the traffic with speed limit of 30 km/h according to the railway instructions in force and keeping under surveillance the temporary bridge during its operation, while remedying the eventual defects and restoring them to the allowed limit of tolerance.

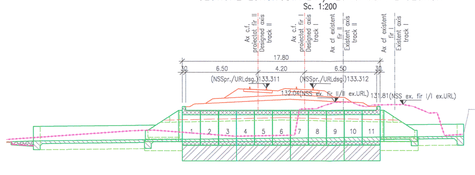
VEDERE PLANA / PLAN VIEW
Sc. 1:200



FAZA III.1
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION
Sc. 1:200



FAZA III.2
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION
Sc. 1:200



NOTA:
1. Podetul se va executa obligatoriu inainte de executia lucrarilor la linii.
2. Tehnologia de executie se poate adapta in functie de datorez constructorului.
3. Fazele de executie a lucrarilor de linii si restrictiile de trafic sunt impuse de Beneficiar. Orice neconformare cu prezentul la executie se va aduce la cunostinta proiectantului pentru a etabili solutia.
5. Convoiul de calcul pentru podurile provizorii: 0.9T18.5.
6. Circulatia pe podurile provizorii se face cu viteze de maxim 30 km/h

NOTE:
1. The culvert will be mandatorily executed before the execution of the line works.
2. The execution technology may be adapted depending on the constructor's endowment.
3. The execution phases of the line works and the traffic restrictions are imposed by the Beneficiary.
4. Any incongruity at execution with the design will be notified to the designer in order to find a solution.
5. Calculation convoy for the temporary bridges: 0.9T18.5.
6. Traffic on the temporary bridges takes place with maximum speed 30 km/h

FAZA III – LUCRARI PENTRU EXECUTAREA PODETULUI NOU:
1. Sub circulatie cu restrictie de viteza de 30km/h in adopostul podurilor provizorii pe linia I si II
– Se demolieaza podetul existent;
– Se executa sapaturile cu sprijinirii pentru fundatiile noi;
– Se betoneaza fundatia podetului pentru restul elementelor prefabricate.

FAZA IV – LUCRARI PENTRU EXECUTAREA PODETULUI NOU:
1. In incidere de circulatie pe linia II si circulatie cu restrictie de viteza de 30km/h pe linia I:
– Se asoote de sub tensiune linia de contact si se asigura protectia electrica a liniei II;
– Se desface calea de pe podul provizoriu;
– Se scot din cale podul provizoriu si fundatiile prefabricate ale acestuia;
– Se introduc cu macaraua elementele prefabricate 7÷11 (elementul prefabricat 11 se montează in pauze de circulatie si cu scoaterea de sub tensiune a liniei I).
– Se executa umplaturile prin retrogerare sprijinirilor din lungul podetului si se executa sistemul drenant, inclusiv hidroizolatia pe toata lungimea podetului;
– Se executa umplaturile ramase de la nivelul sistemului drenant, in straturi bine compactate, conform cutetului de santiri;
– Se realizeaza calea pe zona podetului nou;
– Se dau in circulatie linile I si II proiectate cu viteze normale.

FAZA V – ALTE TIPURI LUCRARI:
1. Sub circulatie cu viteza normala pe ambele linii proiectate si in inchidere de circulatie pe linia I existenta:
– Se asoote de sub tensiune linia de contact si se asigura protectia electrica a liniei I existenta;
– Se sectioneaza si detensioneaza linia c.f. I existenta;
– Se scot din cale podul provizoriu si fundatiile prefabricate ale acestuia;
– Se demoleaza zonele de cretere a epoare a podetului existent;
– Se monteaza aripile prefabricate in amonte;
– Se executa perusi si podet si intre arip;
– Se executa amenajarea albei in amonte;
– Se executa umplutura din amrocamente la capatul din aval al podetului;
– Se dezafectează platformele, accesele din zona de lucru, organizarea de santier.

STAGE III – WORKS TO EXECUTE THE NEW CULVERT:
1. During traffic with speed limit of 30km/h under the protection of temporary bridges on lines I and II
– Demolishing the existing culvert;
– Executing the excavations with prop-ups for the new foundations;
– Concreting the foundation of the culvert for the rest of the precast elements.

STAGE IV – WORKS TO EXECUTE THE NEW CULVERT:
1. During traffic closure on line II and traffic with speed limit of 30km/h on line I:
– Cutting-off the voltage on the contact line and ensuring the electric protection;
– Dismantling the track on the temporary bridge;
– Removing from the track the temporary bridge, its precast foundations;
– Placing into the track, by help of crane, the precast elements 7÷11 (the 11th precast element is mounted during traffic brakes and while cutting-off the voltage on line I);
– Executing the fillings by removing the prop-ups from along the culvert and executing the drainage system, including the waterproofing on the entire length of the culvert;
– Executing the fillings left from the level of the drainage system into well-compacted layers, according to the Technical Specifications;
– Executing the track renewal in the area of the new culvert;
– Rendering operative the designed lines I and II with normal speed.

STAGE V – OTHER TYPE OF WORKS:
1. During traffic with normal speed on both designed lines and on traffic closure on existing line I:
– Cutting-off the voltage on the contact line and ensuring the electric protection;
– Dismantling the track on the temporary bridge;
– Removing from the track the temporary bridge, its precast foundations;
– Demolishing waters' collecting chamber of the existent culvert;
– Mounting the precast wings on upstreams;
– Executing the plotting in the culvert bed between the wings;
– Profiling the riprap on downstream according to the design on both sides of the culvert;
– Executing the riprap mattress on the downstream of the culvert;
– Closing-down the platforms, access to the work areas, the site organization.

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 :
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. Tudorascu	01.2013	
Subcontractant / Subcontractor VIOTOP				
Aprobat Approved	Adjunct Sef de echipa Deputy Team leader	A.M. Baicu	01.2013	
Proiectat Designed	Inginer Engineer	D. Stanciu	01.2013	

"Reabilitarea liniei c.f. Frontier â - Curtici - Simeria , parte componentă a coridorului IV Pan - European pentru creşterea vitezei maximă de 160 km/h"
Transonul 2-A : km 614 - cap Y Bârzava
"Rehabilitation of the Railway Line Border - Curtici - Simeria , component Part of the IV Pan - European Corridor for the Train Circulation with maximum speed of 160 km/h"
Section 2-A : km 614 - end Y Bârzava

Project 9i 35311.1
Faza / Phase: PTH+CS / TD+TS

Denumire desen / Drawing name:
TEHNOLOGIE DE EXECUTIE / EXECUTION TECHNOLOGY
PODET / CULVERT KM pr. 587+421 (KM ex. 590+726)

Scara / Scale	Revizia / Revision	Cod desen / Drawing Code	Nr / No
1:200	1 / 04.2013	PT.02.02.07.PO.04.04	04