FAZA I – Linia I, linia II si linia 3 – Circulatie cu viteza normala;

1. Organizarea de santier;
2. Amenajare drum de acces;
3. Indentificarea, pichetarea si punerea in siguranta a cablurilor (SCB, TTR, CED) din zona lucrarilor;

STAGE I – Line I, line II and line 3 – Traffic with normal speed;

1. Site organization;
2. Arranging the access road;
3. Indentifying, pegging-out and securing the cables (SCB, TTR, CED) from the works' area;

FAZA II – Linia I – Inchiderea circulatiei;
– Linia II – Circulatie cu restrictie de viteza de 50km/h;
– Linia 3 – Circulatie cu viteza normala;

1. Se scoate de sub tensiune firul I si se asigura protectia electrica;
2. Se sectioneaza si se se detensioneaza linia pe zona podetului si se demonteaza suprastructura aferenta liniei I;
3. Se decapeaza terasamentul si se introduc in cale reazemele podului provizoriu;
4. Se introduce in cale podul provizoriu G12;
5. Se monteaza calea se verifica elecroizolarea sinelor si se asigura protectia electrica;
6. Se repune sub tensiune linia de contact, si se deschide circulatia in trepte de viteza conform instructiunilor CFR;

STAGE II – Line I – Traffic closure;
– Line II – Traffic with speed limit of 50km/h;
– Line 3 – Traffic with normal speed;

1. Removing the voltage from track I and ensuring the electric protection;
2. Sectioning and removing the voltage from the line on the culvert area and demounting the superstructure afferent to line I;
3. Scraping the embankment and introducing in the track the bearing of the temporary bridge;
4. Introducing in the track the temporary bridge G12;
5. Mounting the track, checking the electric insulation of the rails and ensuring the electric protection;
6. Restoring the voltage to the contact line and opening the traffic with speed limits according to the CFR instructions;

FAZA III – Linia I – Circulatie cu restrictie de viteza de 30km/h;
– Linia II – Inchiderea circulatiei;
– Linia 3 – Circulatie cu viteza normala;

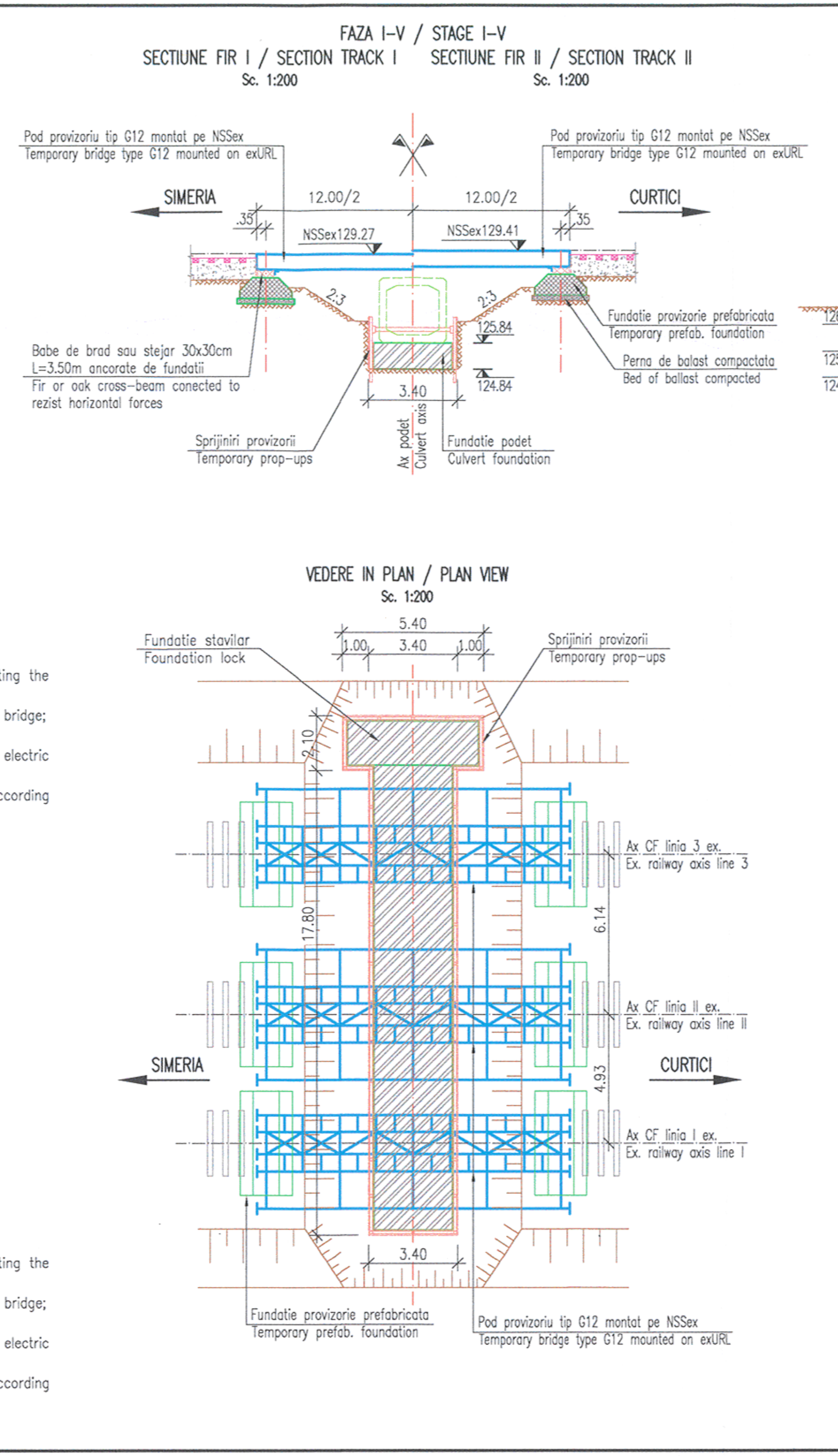
1. Se scoate de sub tensiune firul II si se asigura protectia electrica;
2. Se sectioneaza si se se detensioneaza linia pe zona podetului si se demonteaza suprastructura aferenta liniei II;
3. Se decapeaza terasamentul si se introduc in cale reazemele podului provizoriu;
4. Se introduce in cale podul provizoriu G12;
5. Se monteaza calea se verifica elecroizolarea sinelor si se asigura protectia electrica;
6. Se repune sub tensiune linia de contact, si se deschide circulatia in trepte de viteza conform instructiunilor CFR;

STAGE III – Line I – Traffic with speed limit of 30km/h;
– Line II – Traffic closure;
– Line 3 – Traffic with normal speed;

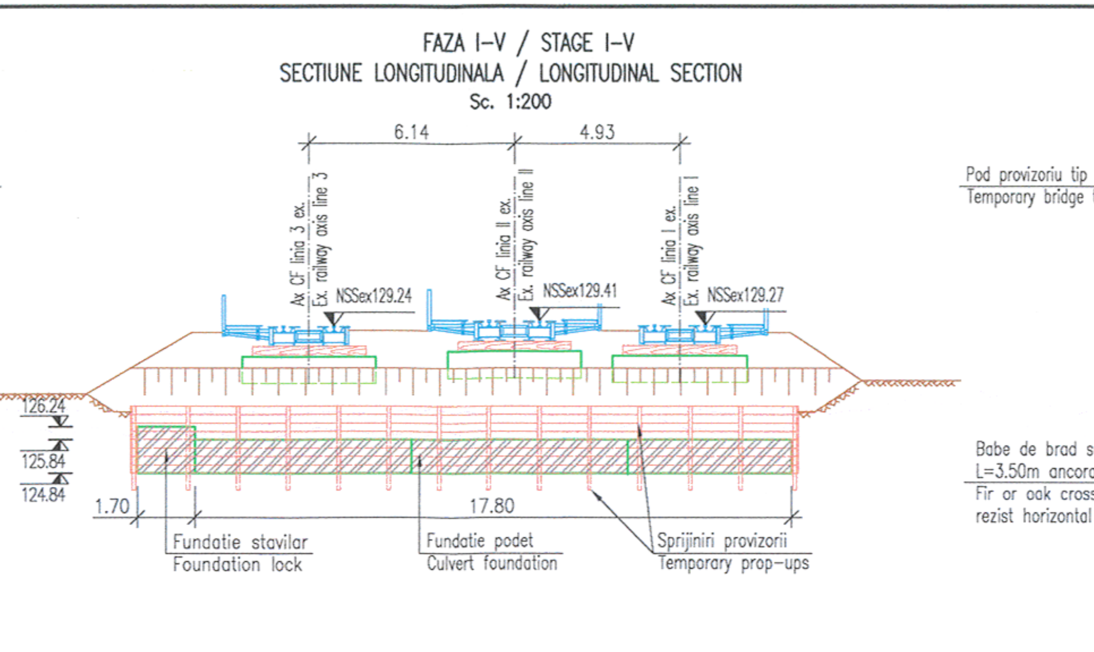
1. Removing the voltage from track II and ensuring the electric protection;
2. Sectioning and removing the voltage from the line on the culvert area and demounting the superstructure afferent to line II;
3. Scraping the embankment and introducing in the track the bearing of the temporary bridge;
4. Introducing in the track the temporary bridge G12;
5. Mounting the track, checking the electric insulation of the rails and ensuring the electric protection;
6. Restoring the voltage to the contact line and opening the traffic with speed limits according to the CFR instructions;

FAZA I–V / STAGE I–V
SECTIUNE FIR I / SECTION TRACK I — SECTIUNE FIR II / SECTION TRACK II — Sc. 1:200

VEDERE IN PLAN / PLAN VIEW — Sc. 1:200



FAZA I–V / STAGE I–V
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION — Sc. 1:200



FAZA IV – Linia I si linia II – Circulatie cu restrictie de viteza de 30km/h;
– Linia 3 – Inchiderea circulatiei;

1. Se scoate de sub tensiune firul 3 si se asigura protectia electrica;
2. Se sectioneaza si se se detensioneaza linia pe zona podetului si se demonteaza suprastructura aferenta liniei 3;
3. Se decapeaza terasamentul si se introduc in cale reazemele podului provizoriu;
4. Se introduce in cale podul provizoriu G12;
5. Se monteaza calea se verifica elecroizolarea sinelor si se asigura protectia electrica;
6. Se repune sub tensiune linia de contact, si se deschide circulatia in trepte de viteza conform instructiunilor CFR;

STAGE IV – Line I and line II – Traffic with speed limit of 30km/h;
– Line 3 – Traffic closure;

1. Removing the voltage from track 3 and ensuring the electric protection;
2. Sectioning and removing the voltage from the line on the culvert area and demounting the superstructure afferent to line 3;
3. Scraping the embankment and introducing in the track the bearing of the temporary bridge;
4. Introducing in the track the temporary bridge G12;
5. Mounting the track, checking the electric insulation of the rails and ensuring the electric protection;
6. Restoring the voltage to the contact line and opening the traffic with speed limits according to the CFR instructions;

FAZA V – Linia I, linia II si linia 3 – circulatie cu restrictie de viteza de 30km/h;

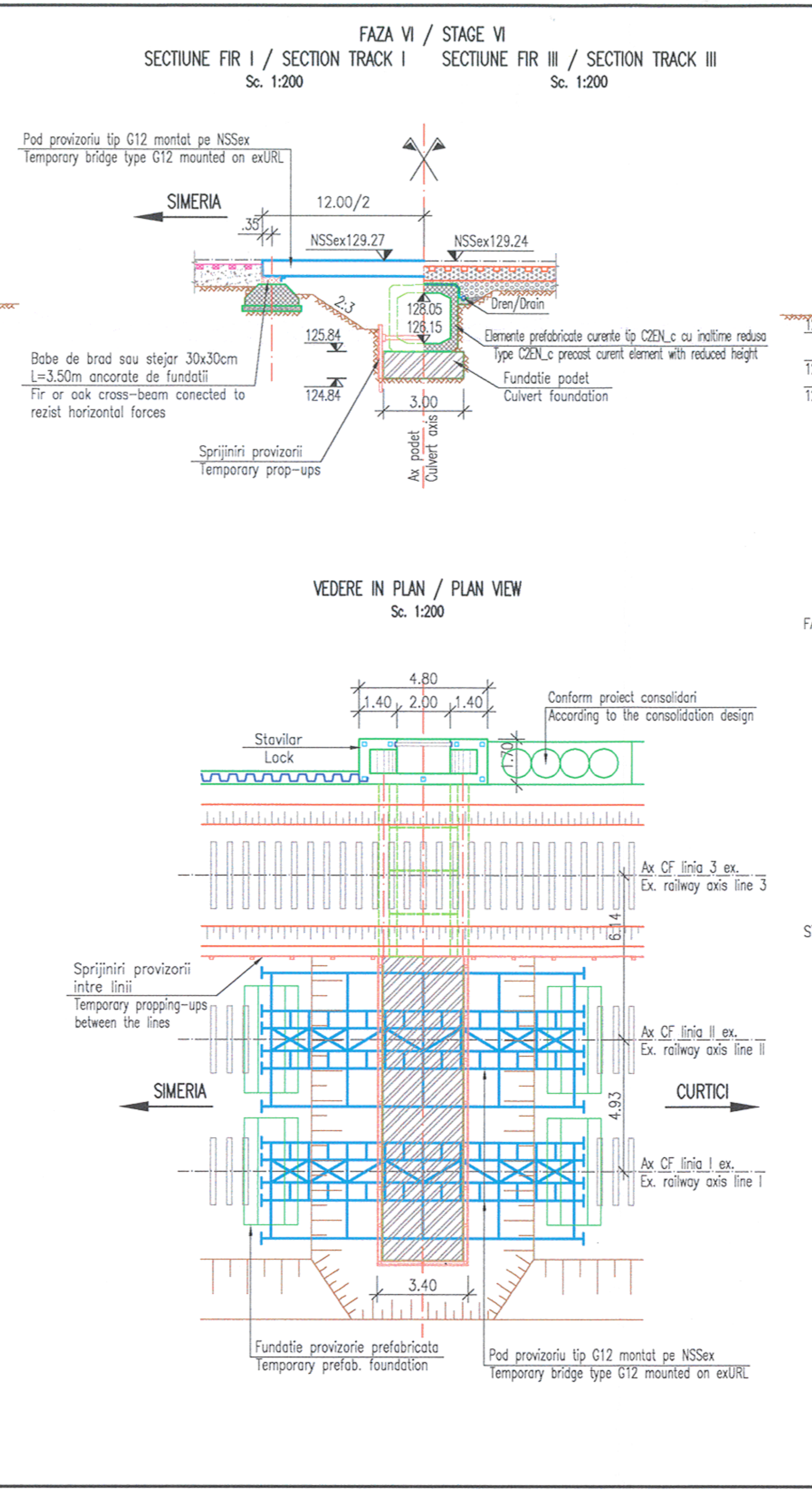
1. Se demoleaza podetul existent;
2. Se executa sapaturile pentru noul podet la adapoatul sprijinirilor;
3. Executarea fundatiilor noului podet si a fundatiei stavilarului din aval;

STAGE V – Line I, line II and line 3 – traffic with speed limit of 30km/h;

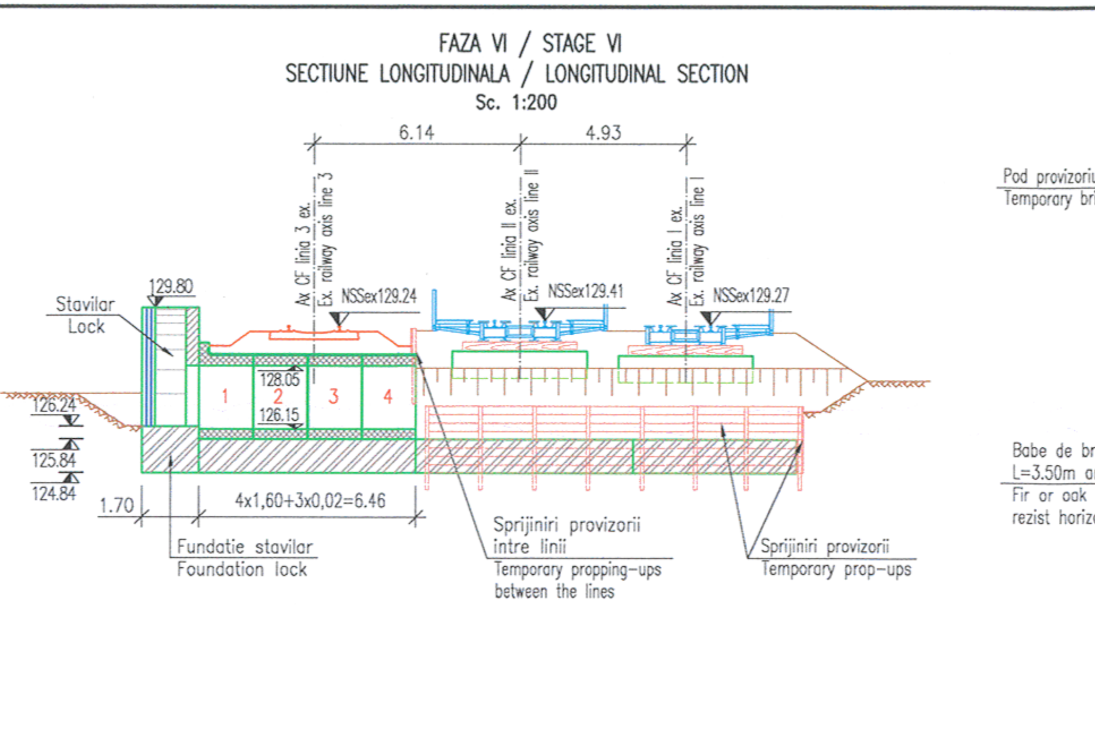
1. Demolishing the existing culvert;
2. Executing the excavations for the new culvert under the protection of the propping;
3. Executing the foundations of the new culvert and the foundation of the downstream dam;

FAZA VI / STAGE VI
SECTIUNE FIR I / SECTION TRACK I — SECTIUNE FIR III / SECTION TRACK III — Sc. 1:200

VEDERE IN PLAN / PLAN VIEW — Sc. 1:200



FAZA VI / STAGE VI
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION — Sc. 1:200



FAZA VI – Linia I si linia II – Circulatie cu restrictie de viteza de 30 km/h;
– Linia 3 – Inchiderea circulatiei;

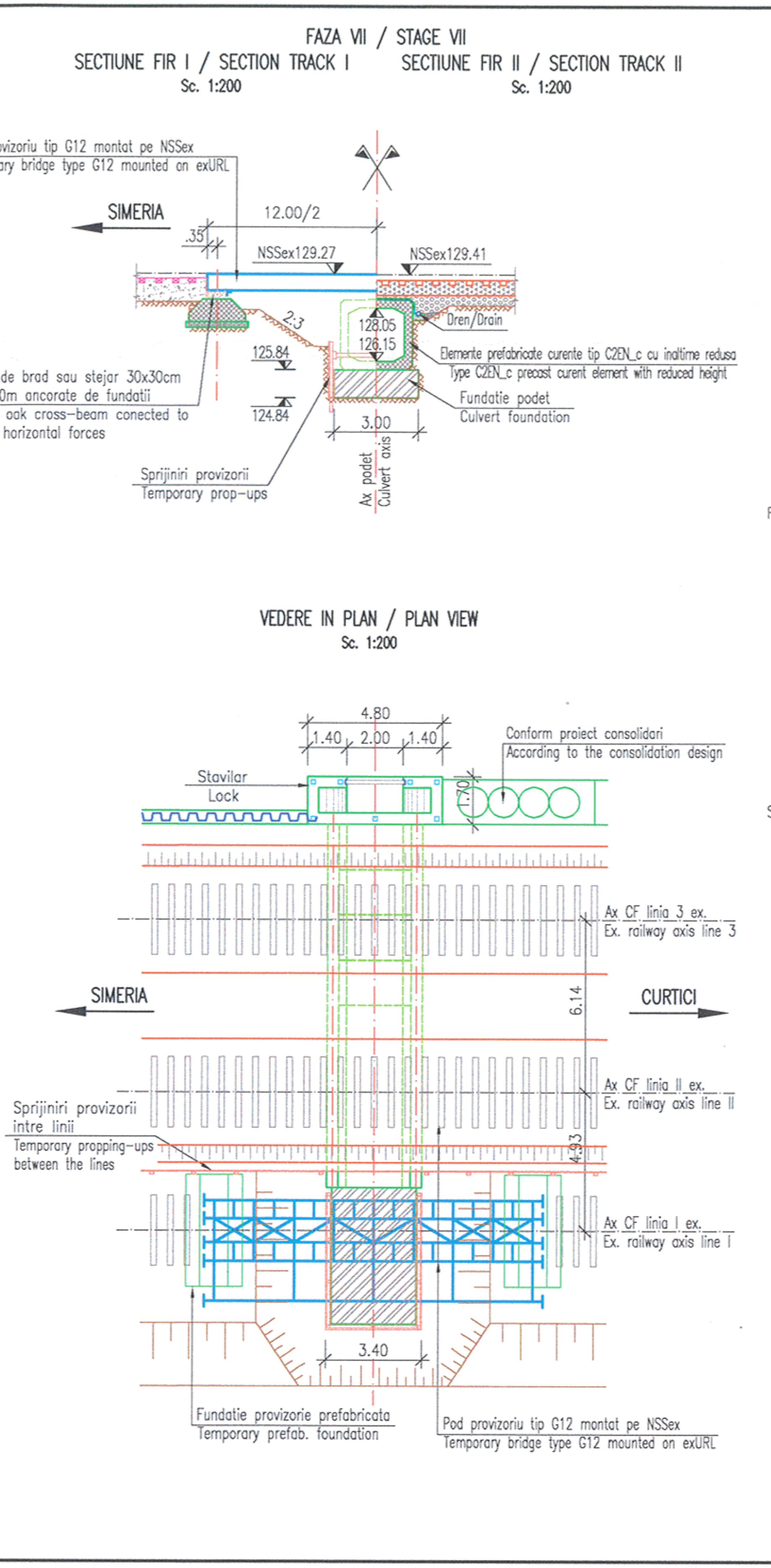
1. Se scoate de sub tensiune firul 3 si se asigura protectia electrica;
2. Se demonteaza si se scoate calea pe zona podului provizoriu;
3. Se scoate din cale podul provizoriu tip G12 si fundatiile acestuia;
4. Se monteaza primele 4 elemente prefabricate tip C2, si se trateaza rosturile dintre elementele prefabricate conform detaliilor din proiect;
5. Se executa elevatile stavilarului din aval de podet;
6. Se asterne hidroizolatia si sapa de protectie a hidroizolatiei;
7. Se executa umplutura si drenurile laterale la cota, conform detaliilor din proiect;
8. Se executa umplutura, conform caietului de sarcini, se reface terasamentul si calea în zona podetului racordand linia la pozitia si nivelul existent la data executiei;
9. Se asigura continuitatea circuitelor de cale, electroizolarea sinelor si protectia electrica;
10. Se repune sub tensiune linia de contact, si se deschide circulatia in trepte de viteza conform instructiunilor CFR;

STAGE VI – Line I and line II – Traffic with speed limit of 30km/h;
– Line 3 – Traffic closure;

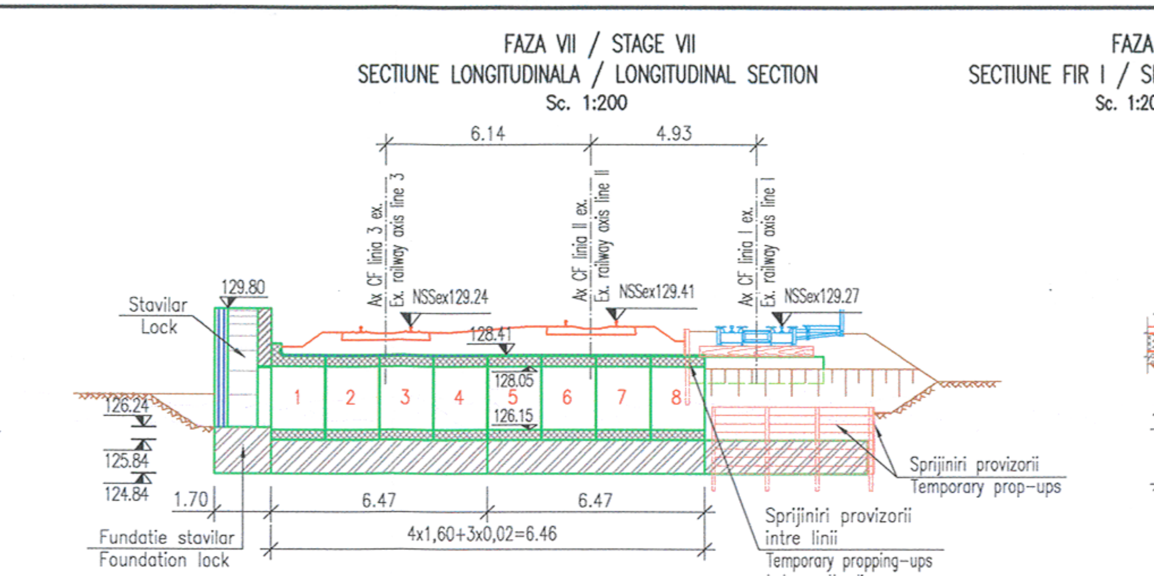
1. Removing the voltage from track 3 and ensuring the electric protection;
2. Demounting and removing the track on the area of the temporary bridge;
3. Removing from the track the temporary bridge type G12 and its foundations;
4. Mounting the first 4 precast elements type C2 and treating the joints between the precast elements according to the details from the design;
5. Executing the elevations of the dam downstream from the culvert;
6. Placing the waterproofing and the protection blanket of the waterproofing;
7. Executing the filling and the side drains at the dimension, according to the details from the design;
8. Executing the filling, according to the Technical Specifications, renewing the embankment and the track in the culvert's area connecting the line at the existing level and position at the execution date;
9. Ensuring the continuity of the track circuits, the electric insulation of the rails and the electric protection;
10. Restoring the voltage to the contact line and opening the traffic with speed limits according to the CFR instructions;

FAZA VII / STAGE VII
SECTIUNE FIR I / SECTION TRACK I — SECTIUNE FIR II / SECTION TRACK II — Sc. 1:200

VEDERE IN PLAN / PLAN VIEW — Sc. 1:200



FAZA VII / STAGE VII
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION — Sc. 1:200



FAZA VII – Linia I si linia 3 – Circulatie cu restrictie de viteza de 30 km/h;
– Linia II – Inchiderea circulatiei;

1. Se scoate de sub tensiune firul II si se asigura protectia electrica;
2. Se demonteaza si se scoate calea pe zona podului provizoriu;
3. Se scoate din cale podul provizoriu tip G12 si fundatiile acestuia;
4. Se monteaza urmatoarele 4 elemente prefabricate tip C2 (5–8), si se trateaza rosturile dintre elementele prefabricate conform detaliilor din proiect;
5. Se asterne hidroizolatia si sapa de protectie a hidroizolatiei;
6. Se executa umplutura si drenurile laterale la cota, conform detaliilor din proiect;
7. Se executa umplutura, conform caietului de sarcini, se reface terasamentul si calea în zona podetului racordand linia la pozitia si nivelul existent la data executiei;
8. Se asigura continuitatea circuitelor de cale, electroizolarea sinelor si protectia electrica;
9. Se repune sub tensiune linia de contact, si se deschide circulatia in trepte de viteza conform instructiunilor CFR;

STAGE VII – Line I and line 3 – Traffic with speed limit of 30km/h;
– Line II – Traffic closure;

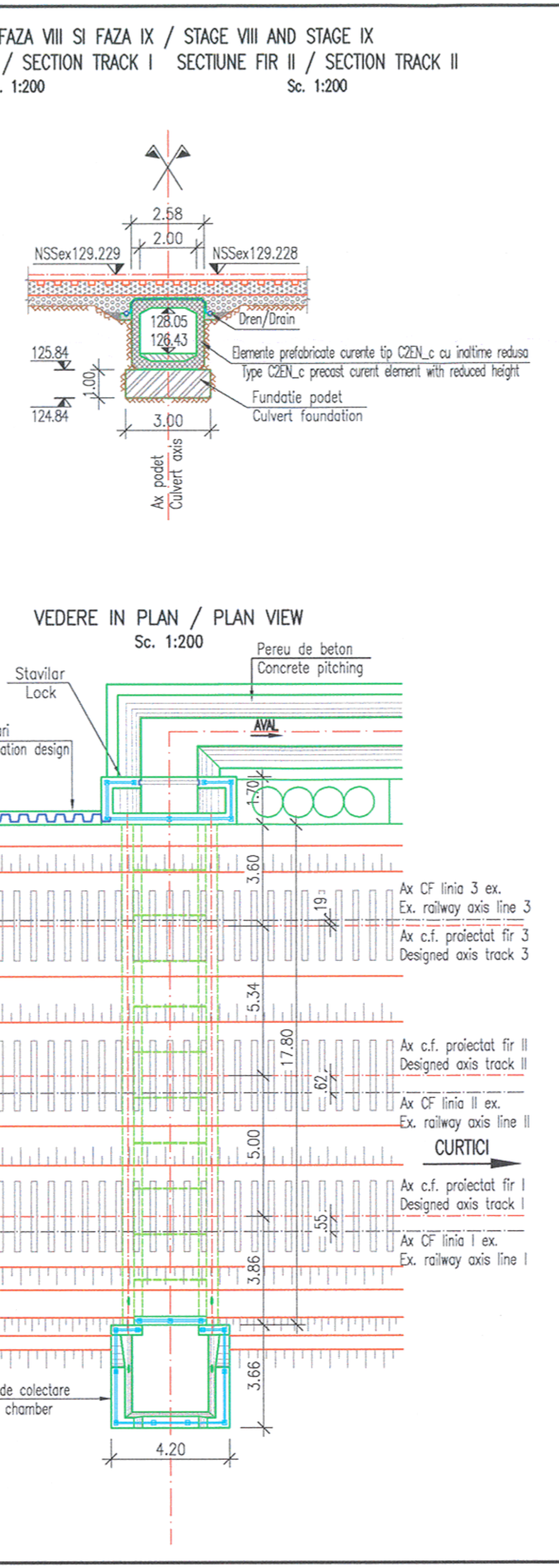
1. Removing the voltage from track II and ensuring the electric protection;
2. Demounting and removing the track on the area of the temporary bridge;
3. Removing from the track the temporary bridge type G12 and its foundations;
4. Mounting the next 4 precast elements type C2 (5–8) and treating the joints between the precast elements according to the details from the design;
5. Placing the waterproofing and the protection blanket of the waterproofing;
6. Executing the filling and the side drains at the dimension, according to the details from the design;
7. Executing the filling, according to the Technical Specifications, renewing the embankment and the track in the culvert's area connecting the line at the existing level and position at the execution date;
8. Ensuring the continuity of the track circuits, the electric insulation of the rails and the electric protection;
9. Restoring the voltage to the contact line and opening the traffic with speed limits according to the CFR instructions;

NOTA:
1. Podetul se va executa obligatoriu inainte de executia lucrarilor la linii.
2. Tehnologia de executie se poate adapta in functie de dotarea constructorului.
3. Orice nepotrivire cu proiectul la executie se va aduce la cunostinta proiectantului pentru a stabili solutia.
4. Convoiul de calcul pentru podurile provizorii: 0.9T8.5.
5. Circulatia pe podurile provizorii se face cu viteza de maxim 30 km/h.

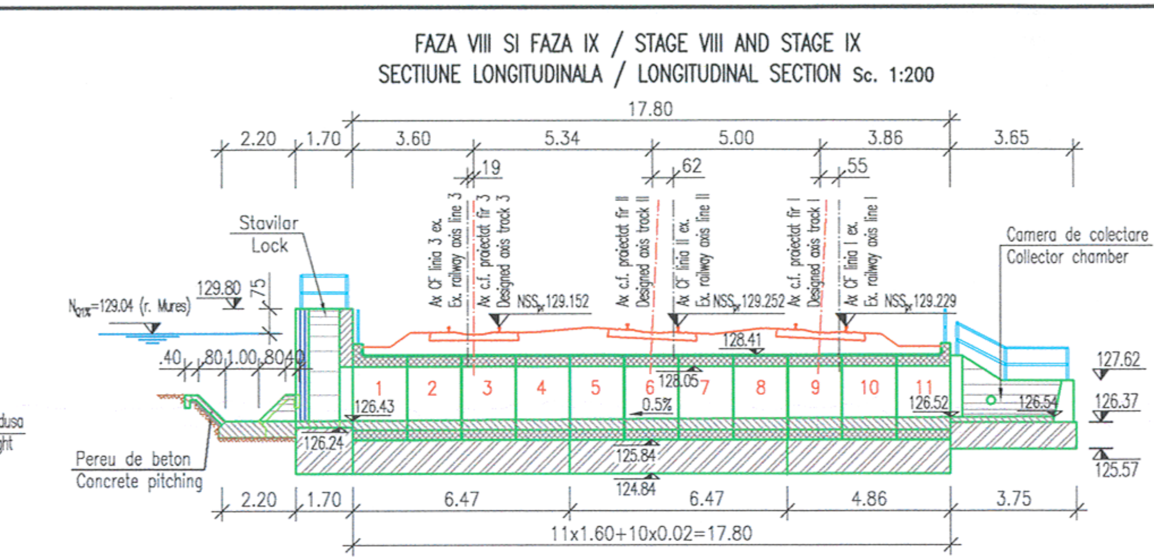
NOTE:
1. The culvert will be mandatorily executed before the execution of the line works.
2. The execution technology may be adapted depending on the constructor's endowment.
3. Any incongruity at execution with the design will be notified to the designer in order to find a solution.
4. Calculation convoy for the temporary bridges: 0.9T8.5.
5. Traffic on the temporary bridges takes place with maximum speed 30 km/h

FAZA VIII SI FAZA IX / STAGE VIII AND STAGE IX
SECTIUNE FIR I / SECTION TRACK I — SECTIUNE FIR II / SECTION TRACK II — Sc. 1:200

VEDERE IN PLAN / PLAN VIEW — Sc. 1:200



FAZA VIII SI FAZA IX / STAGE VIII AND STAGE IX
SECTIUNE LONGITUDINALA / LONGITUDINAL SECTION — Sc. 1:200



FAZA VIII – Linia II si linia 3 – Circulatie cu restrictie de viteza de 30 km/h;
– Linia I – Inchiderea circulatiei;

1. Se scoate de sub tensiune firul I si se asigura protectia electrica;
2. Se demonteaza si se scoate calea pe zona podului provizoriu;
3. Se scoate din cale podul provizoriu tip G12 si fundatiile acestuia;
4. Se monteaza restul de 3 elemente prefabricate tip C2 (9–11), si se trateaza rosturile dintre elementele prefabricate conform detaliilor din proiect;
5. Se executa camera de colectare din amonte de podet;
6. Se asterne hidroizolatia si sapa de protectie a hidroizolatiei;
7. Se executa umplutura si drenurile laterale la cota, conform detaliilor din proiect;
8. Se executa umplutura, conform caietului de sarcini, se reface terasamentul si calea în zona podetului racordand linia la pozitia si nivelul existent la data executiei;
9. Se asigura continuitatea circuitelor de cale, electroizolarea sinelor si protectia electrica;
10. Se repune sub tensiune linia de contact, si se deschide circulatia in trepte de viteza conform instructiunilor CFR;

STAGE VIII – Line II and line 3 – Traffic with speed limit of 30km/h;
– Line I – Traffic closure;

1. Removing the voltage from track I and ensuring the electric protection;
2. Demounting and removing the track on the area of the temporary bridge;
3. Removing from the track the temporary bridge type G12 and its foundations;
4. Mounting the other 3 precast elements type C2 (9–11) and treating the joints between the precast elements according to the details from the design;
5. Executing the collector chamber upstream from the culvert;
6. Placing the waterproofing and the protection blanket of the waterproofing;
7. Executing the filling and the side drains at the dimension, according to the details from the design;
8. Executing the filling, according to the Technical Specifications, renewing the embankment and the track in the culvert's area connecting the line at the existing level and position at the execution date;
9. Ensuring the continuity of the track circuits, the electric insulation of the rails and the electric protection;
10. Restoring the voltage to the contact line and opening the traffic with speed limits according to the CFR instructions;

FAZA IX – Linia I, linia II si linia 3 – Circulatie cu viteza normala;

1. Se monteaza parapetul metalic de protectie;
2. Se executa pereul din interiorul podetului, stavilar si camera de colectare din amonte;
3. Pereerea albiei din aval de stavilar pe 25m lungime;
4. Se executa saltelele din anrocamente de la capatul pereului;
5. Se dezafecteaza platformele de montaj si organizarea de santier si se redau terenurile ocupate temporar circuitului initial;

STAGE IX – Line I, line II and line 3 – Traffic with normal speed;

1. Mounting the metallic protection handrail;
2. Executing the pitching inside the culvert, the dam and the upstream collector chamber;
3. Pitching the riverbed downstream from the dam on a length of 25m;
4. Executing the riprap mattresses from the end of the pitching;
5. Closing-down the montage platforms and the site organization and restoring the sites occupied temporarily to the initial circuit;

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	Oct. Lupu	01.2013	

"Reabilitarea liniei c.f. Frontieră - Curtici - Simeria, parte componentă a coridorului IV Pan - European pentru circulaţia trenurilor cu viteză maximă de 160 km/h"
Tronsonul 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 Trains 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. 592+753 (KM ex. 596+078)

Scara / Scale	Revizia / Revision	Cod desen / Drawing Code	Nr / No
1:200	1 / 04.2013	PT.02.02.06.PO.07.04	04