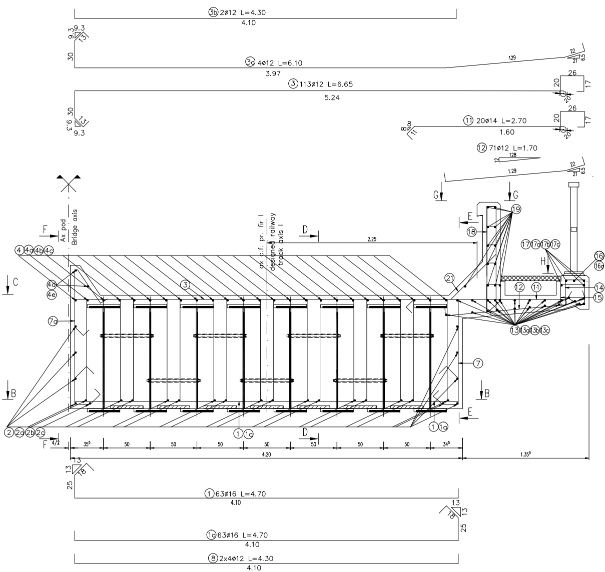
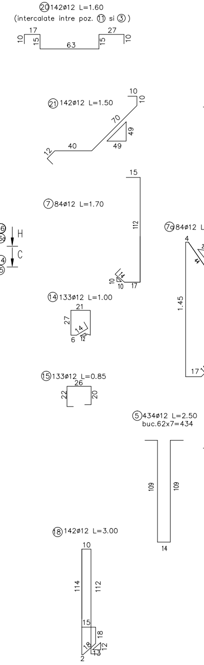
# SECTIUNE TRANSVERSALA A—A
# A—A CROSS SECTION

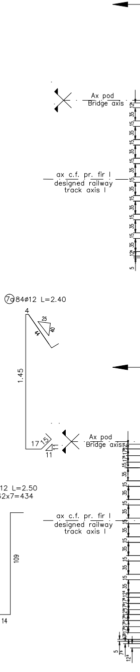
sc. 1:20



③b 2ø12 L=4.30
4.10
9.3
9.3
13
30
③a 4ø12 L=6.10
3.97
129
22
21
6.5
③ 113ø12 L=6.65
5.24
26
20
17
30
9.3
9.3
13
⑪ 20ø14 L=2.70
1.60
8
8
11
⑫ 71ø12 L=1.70
128
12
1.29
G
G
Ax pod
Bridge axis
ax c.f. pr. fir I
designed railway track axis I
F
D
2.25
E
⑱
⑲
④ ④a ④b ④c
④d
④e
⑦a
③
㉑
⑰ ⑰a ⑰b ⑰c
H
H
⑯
⑯a
⑫
⑪
⑭
⑮
C
C
⑬ ⑬a ⑬b ⑬c
⑦
B
B
E
② ②a ②b ②c
① ①a
① ①a
D
F
4/2
35⁵
50
50
50
50
50
50
50
50
34⁵
4.20
1.35⁵
13
13
18
25
① 63ø16 L=4.70
4.10
13
18
13
25
①a 63ø16 L=4.70
4.10
⑧ 2x4ø12 L=4.30
4.10

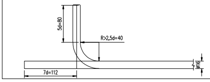


⑳ 142ø12 L=1.60
(intercalate intre poz. ⑪ si ③)
10
17
15
63
15
27
10
㉑ 142ø12 L=1.50
10
10
70
49
49
40
12
15
⑦ 84ø12 L=1.70
112
10
14
10
17
⑭ 133ø12 L=1.00
21
27
14
6
12
⑮ 133ø12 L=0.85
26
22
20
⑤ 434ø12 L=2.50
buc.62x7=434
109
109
14
⑱ 142ø12 L=3.00
10
114
112
15
18
18
12
13
2



⑦a 84ø12 L=2.40
4
25
40
44
1.45
17
15
11
11
Ax pod
Bridge axis
ax c.f. pr. fir I
designed railway track axis I
Ax pod
Bridge axis
ax c.f. pr. fir I
designed railway track axis I
15
35
5
12⁵

DETALIU "a" (STAS 10111/2-87)
"a" DETAIL (STAS 10111/2-87)
sc. 1:10

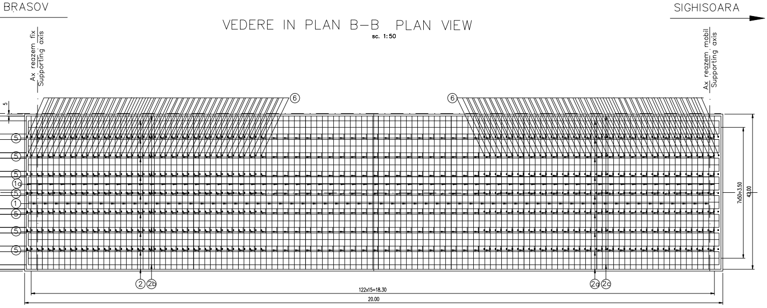


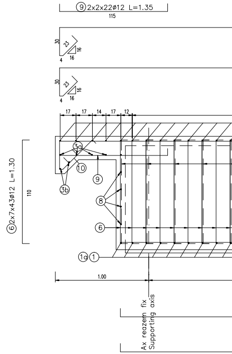
5d=80
R>2,5d=40
ø16
7d=112

| | |
|---|---|
| Beton:<br>Concrete: | – C30/37 suprastructura/superstructure |
| Tipul grinzilor:<br>Beams type: | – grinzi metalice inglobate/metal beams bean |
| Otel pentru grinzi:<br>Steel for the beams: | – (OL 37-EP) S275$J_3G_3$ (EN 10025/2004) |
| Armatura:<br>Reinforcement: | – S355; S345 |
| Strat de acoperire:<br>Concrete cover | – min. 4cm expunere in aer/air exposed |

## VEDERE IN PLAN B–B PLAN VIEW

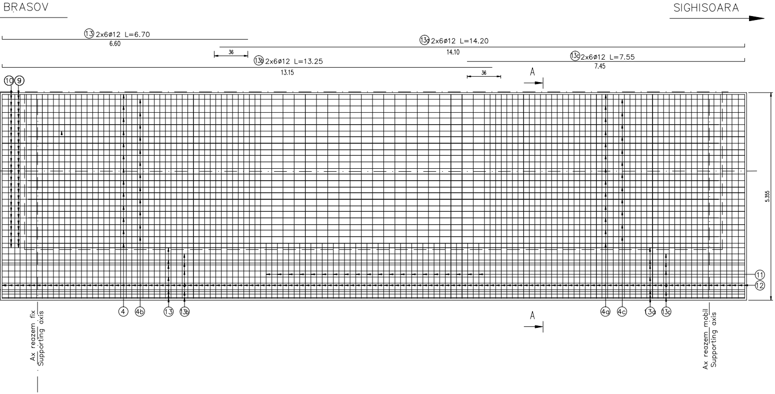
sc. 1:50

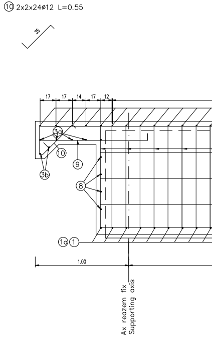

BRASOV
SIGHISOARA
Ax reazem fix
Supporting axis
Ax reazem mobil
Supporting axis
⑥
⑥
5
⑤
⑤
⑤
1a
⑤
①
⑤
⑤
⑤
② 2b
2a 2c
7x50=3.50
4.00
122x15=18.30
20.00


⑨ 2x2x22ø12 L=1.35
115
30
23
16
4
16
30
23
16
4
16
17 17 14 17 12
3a
⑩
⑨
3b
⑧
⑥
1a ①
⑥ 2x7x43ø12 L=1.30
110
1.00
Ax reazem fix
Supporting axis

## VEDERE IN PLAN C–C PLAN VIEW

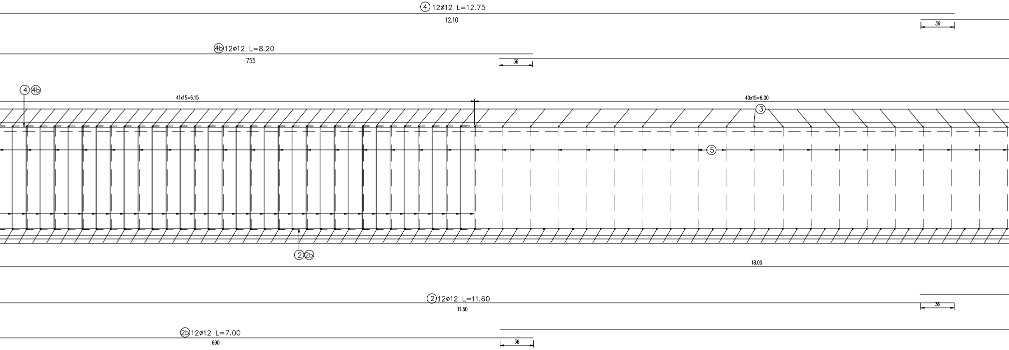
sc. 1:50


BRASOV
SIGHISOARA
⑬ 2x6ø12 L=6.70
6.60
13a 2x6ø12 L=14.20
14.10
36
13b 2x6ø12 L=13.25
13.15
13c 2x6ø12 L=7.55
7.45
36
⑩ ⑨
A
5.355
⑪
⑫
④ 4b ⑬ 13b
4a 4c 13a 13c
A
Ax reazem fix
Supporting axis
Ax reazem mobil
Supporting axis


⑩ 2x2x24ø12 L=0.55
35
17 17 14 17 12
3a
⑩
⑨
3b
⑧
1a ①
1.00
Ax reazem fix
Supporting axis

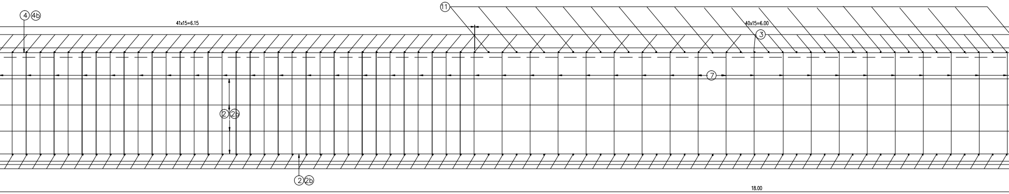
## SECTIUNE D–D SECTION

sc. 1:20

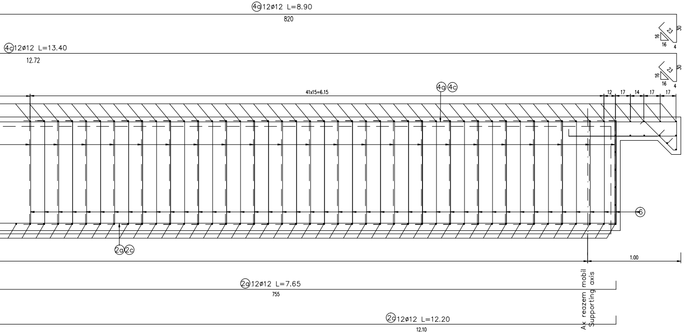

④ 12ø12 L=12.75
12.10
36
④b 12ø12 L=8.20
755
36
④ ④b
41x15=6.15
40x15=6.00
③
⑤
② ②b
18.00
② 12ø12 L=11.60
11.50
36
②b 12ø12 L=7.00
690
36

## SECTIUNE E–E SECTION

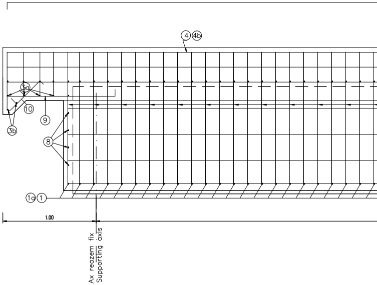
sc. 1:20


⑪
④ ④b
41x15=6.15
40x15=6.00
③
⑦
② ②b
② ②b
18.00

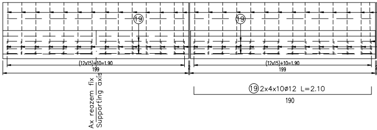
BRASOV



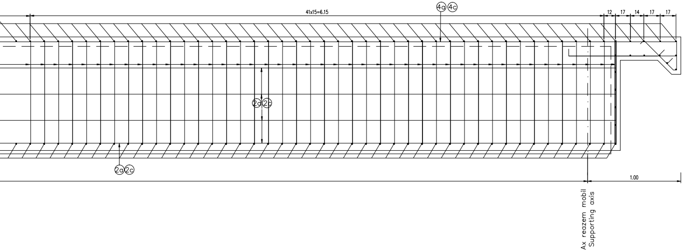
④a 12ø12 L=8.90
820
④c 12ø12 L=13.40
12.72
16
23
30
16
4
④a ④c
41x15=6.15
12
17
14
17
17
⑥
②a ②c
1.00
Ax reazem mobil
Supporting axis
②a 12ø12 L=7.65
755
②c 12ø12 L=12.20
12.10



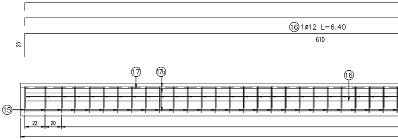
④ ④b
③a
⑩
⑨
③b
⑧
①a ①
1.00
Ax reazem fix
Supporting axis



⑲
⑲
(12x15)+10=1.90
199
(12x15)+10=1.90
199
Ax reazem fix
Supporting axis
⑲ 2x4x10ø12 L=2.10
190



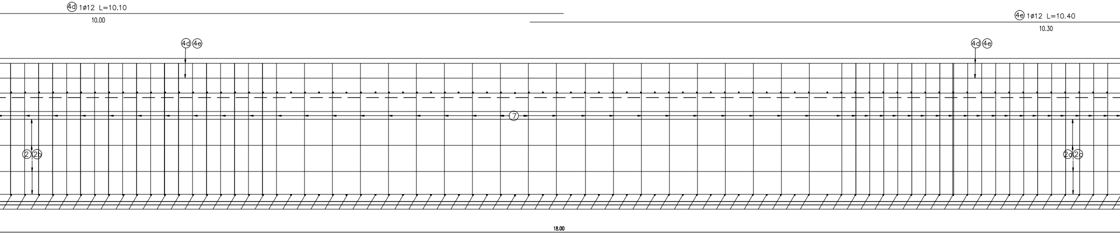
④a ④c
41x15=6.15
12
17
14
17
17
②a ②c
②a ②c
1.00
Ax reazem mobil
Supporting axis



⑯ 1ø12 L=6.40
610
25
⑰
⑰b
⑯
⑮
22
20

## SECTIUNE F–F SECTION

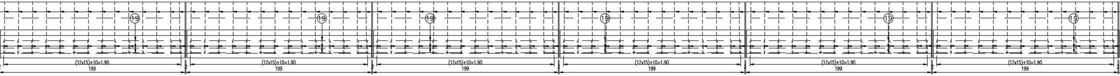
sc. 1:20



4d 1ø12 L=10.10
10.00
4e 1ø12 L=10.40
10.30
4d 4e
4d 4e
7
2 2b
2a 2c
18.00

## VEDERE G–G VIEW

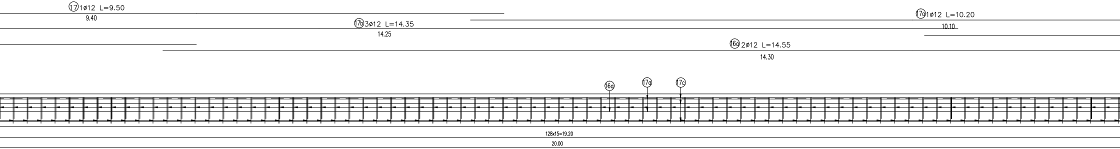
sc. 1:20



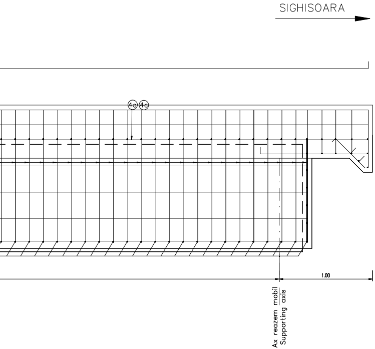
19
19
19
19
19
19
(12x15)+10=1.90
199
(12x15)+10=1.90
199
(12x15)+10=1.90
199
(12x15)+10=1.90
199
(12x15)+10=1.90
199
(12x15)+10=1.90
199

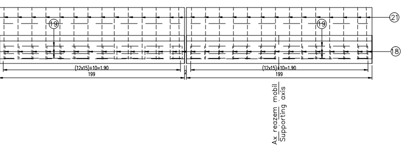
## VEDERE H–H VIEW

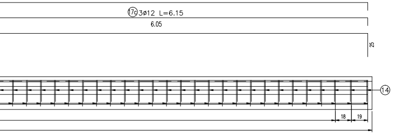
sc. 1:20



17 1ø12 L=9.50
9.40
17b 3ø12 L=14.35
14.25
17a 1ø12 L=10.20
10.10
16a 2ø12 L=14.55
14.30
16a
17a
17c
128x15=19.20
20.00


SIGHISOARA
4a
4c
1.00
Ax reazem mobil
Supporting axis


19
19
21
18
(12x15)+10=1.90
199
(12x15)+10=1.90
199
Ax reazem mobil
Supporting axis


17c 3ø12 L=6.15
6.05
25
14
18
19

## NOTA

1. Prezentul plan a fost intocmit pe baza:
   - Dispozitiei generale 22PP22DDE001
   - Plan cofraj suprastructura 22PP22DDE006
2. La executie se vor respecta cu strictete prevederile din "Codul de practica pentru executarea lucrarilor din beton, beton armat si beton precomprimat" NE 012-99.
3. Verificarea lucrarilor si receptia lor se va face conform prevederilor Normativului C56-85.

## NOTE

1. This Plan was drawn up based on the following data:
   - General Disposition 22PP22DDE001
   - Supersructure shuttering 22PP22DDE006
2. The following shall be strictly complied with: norm NE 012-1999 "Regulation for carrying out the works in concrete, in reinforced concrete and in pre-stressed" concrete" for building.
3. Verifying the quality of the works and their acceptance will be carried out according with Norm C56-1985.

## NOTA/NOTE

Pentru mentinerea pozitiei corecte in timpul betonarii, se vor monta distantieri minim 4buc./m$^2$. Distantierii trebuie legati cu sarma de carcasa de armatura.

In order to maintain the correct position during concreting, minimum 4pcs./m$^2$ distance pieces shall be mounted. The distance pieces shall be connected to the reinforcing framework, using wire.

## NOTA:

1. Prezentul plan s-a intocmit in conformitate cu dispozitia generala
2. Toate colturile betonului se vor tesi 25/25mm.
3. Convoaiele de calcul pentru infrastructura sunt UIC (LM 71 si SW/2.
4. La executie se vor respecta cu strictete prevederile din "Normativ pentru producerea betonului si executarea lucrarilor din beton, beton armat si beton precomprimat. Partea 1: Producerea betonului", indicativ NE 012/1-2007 si "Normativ pentru producerea betonului si executarea lucrarilor din beton, beton armat si beton precomprimat. Partea 2: Executarea lucrarilor din beton", indicativ NE 012/2-2010, iar verificarea calitatii lucrarilor si receptionarea lor se va face conform normativului C56-1985.
5. Constructia se incadreaza in categoria de importanta B (constructii de importanta deosebita), modelul 1-de asigurare a calitatii si clasa de importanta B, conform HG 766/1997.
6. Proiectul va fi verificat la exigentele A4.2; B2.2; D2.2.

## NOTE:

1. This plan has been drawn up according to the general disposition.
2. All concrete corners will be chamfered 25/25mm.
3. The bridge corresponds to the UIC determination convoys UIC(LM71 SW/2)
4. The execution will strictly comply with the provisions of "Practice code for the concrete production and works execution, reinforced and pre-stressed concrete - Part 1: Practice code for concrete production" NE 012/1-2007 and "Practice code for the concrete production and works execution, reinforced and pre-stressed concrete - Part 2: The execution of concrete works." NE 012/2-2010, and the quality and the reception of the works shall be made accordingly to Norm C 56-1985.
5. The construction has been classified in B category of importance (high important constructions), model 1-ensuring the quality and class of importance B according to G.O. 766/97.
6. The project will be checked in order to comply with the A4.2; B2.2; D2.2 requirements.

## EXTRAS DE ARMATURA PENTRU UN TABLIER DE CALE FERATA SIMPLA

## TABLE FOR REINFORCEMENTS FOR SINGLE TRACK RAILWAY DECK

| M | ø | B | L(m) | PC52 | | |
|---|---|---|---|---|---|---|
| | | | | S 355 | S 345 | |
| | | | | ø12 | ø14 | ø16 |
| 1 | 16 | 63 | 4.70 | | | 296.10 |
| 1a | 16 | 63 | 4.70 | | | 296.10 |
| 2 | 12 | 10 | 11.60 | 116.00 | | |
| 2a | 12 | 10 | 7.65 | 76.50 | | |
| 2b | 12 | 10 | 7,00 | 70.00 | | |
| 2c | 12 | 10 | 12.20 | 122.00 | | |
| 3 | 12 | 113 | 6.65 | 751.45 | | |
| 3a | 12 | 4 | 6.10 | 24.40 | | |
| 3b | 12 | 2 | 4.30 | 8.60 | | |
| 4 | 12 | 13 | 12.75 | 165.75 | | |
| 4a | 12 | 13 | 8.90 | 115.70 | | |
| 4b | 12 | 12 | 8.20 | 98.40 | | |
| 4c | 12 | 12 | 13.40 | 160.8 | | |
| 4d | 12 | 1 | 10.10 | 10.10 | | |
| 4e | 12 | 1 | 10.40 | 10.40 | | |
| 5 | 12 | 434 | 2.50 | 1085.00 | | |
| 6 | 12 | 602 | 1.30 | 782.60 | | |
| 7 | 12 | 84 | 1.70 | 142.80 | | |
| 7a | 12 | 84 | 2.40 | 201.60 | | |
| 8 | 12 | 8 | 4.30 | 34.40 | | |
| 9 | 12 | 26 | 1.35 | 35.10 | | |
| 10 | 12 | 26 | 0.55 | 14.30 | | |
| 11 | 14 | 20 | 2.70 | | 54,00 | |
| 12 | 12 | 133 | 1.70 | 226.10 | | |
| 13 | 12 | 7 | 6.70 | 46.90 | | |
| 13a | 12 | 7 | 14.20 | 99.40 | | |
| 13b | 12 | 6 | 13.25 | 79.50 | | |
| 13c | 12 | 6 | 7.55 | 45.30 | | |
| 14 | 12 | 133 | 1,00 | 133.00 | | |
| 15 | 12 | 133 | 0,85 | 113.05 | | |
| 16 | 12 | 1 | 6,40 | 6,40 | | |
| 16a | 12 | 1 | 14.55 | 14.55 | | |
| 17 | 12 | 1 | 9.50 | 9.50 | | |
| 17a | 12 | 1 | 10.20 | 10.20 | | |
| 17b | 12 | 3 | 14.35 | 43.05 | | |
| 17c | 12 | 3 | 6.15 | 18.45 | | |
| 18 | 12 | 142 | 3.00 | 426.00 | | |
| 19 | 12 | 80 | 2.10 | 168.00 | | |
| 20 | 12 | 142 | 1,60 | 227.20 | | |
| 21 | 12 | 142 | 1.50 | 213.00 | | |
| LUNGIMI/ø | | | | 5905.50 | 54,00 | 592.20 |
| GREUTATI/ML (kg) | | | | 0.888 | 1.210 | 1.578 |
| GREUTATI/ø | | | | 5244.10 | 64.80 | 934.50 |
| GREUTATI PE TIP DE OTEL | | | | | 6560 | |

TOTAL POD (2 TABLIERE): 2 x 6560kg=13120kg
TOTAL BRIDGE (2 DECKS): 2 x 6560kg=13120kg

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| | | | | | |
|---|---|---|---|---|---|
| D | | | | | |
| C | | | | | |
| B | | | | | |
| A | | | | | |
| Indice<br>Index | Data<br>Date | Modificare<br>Modification/Revision | Proiectant<br>Designer | Aprobat Consultant<br>Approved Consultant | Aprobat CFR<br>Approved CFR |

**GUVERNUL ROMANIEI**
**ROMANIAN GOVERNMENT**

**PROIECT FINANȚAT DE UNIUNEA EURO**
**EUROPEAN UNION FINANCED P**

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

**CLIENT / CLIENT**

ITALFERR
GRUPPO FERROVIE DELLO STATO
*Joint Venture leader*

Scott Wilson

OBERMEYER
PLANEN + BERATEN GmbH

TECNIC
Consulting Engineers

| **CONSULTANT / CONSULTANT** | | | Data<br>Date | Semnătură<br>Signature |
|---|---|---|---|---|
| Aprobat<br>Approved | Şef proiect<br>Project manager | R. Liuzza | | |
| Aprobat<br>Approved | Coordonator Secțiune 1<br>Section 1 Coordinator | C. Gambelli | | |
| Verificat<br>Checked | Expert Chele<br>Checking Expert | V. Kallidromitis | | |

**SUBCONTRACTANT / SUBCONTRACTOR**

AREX
COMPANY

| | | | | |
|---|---|---|---|---|
| Aprobat<br>Approved | Responsabil Subconsultant<br>Subconsultant Responsible | A.Stanciu - Dinulescu | 01.2012 | |
| Întocmit<br>Elaborated | Proiectant<br>Designer | Rentea Ioan | 02.2012 | |

Reabilitarea liniei de cale ferata Brașov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h,
**Tronsonul : Brașov - Sighișoara**
Rehabilitation of the railway line Brașov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h,
**Section : Brașov - Sighișoara**

*Proiect/Project*
*2004/RO/16/P/PA/003*

Faza / Phase:
D.E. / E.D.

Denumire desen / Drawing Title :

POD Km.201+403.520 L=18.00m
PLAN ARMARE SUPRASTRUCTURA

BRIDGE Km.201+403.520 D=18.00m
SUPERSTRUCTURE REINFORCEMENT PLAN

| Codificare / Codification System | Scara / Scale<br>1:10 / 1:20 / 1:50 | LOT / LOT | Nr. / No<br>01 / 01 |
|---|---|---|---|

E A 5 1 0 1 E 0 8 B C P V 0 1 7 3 0 1 1 0