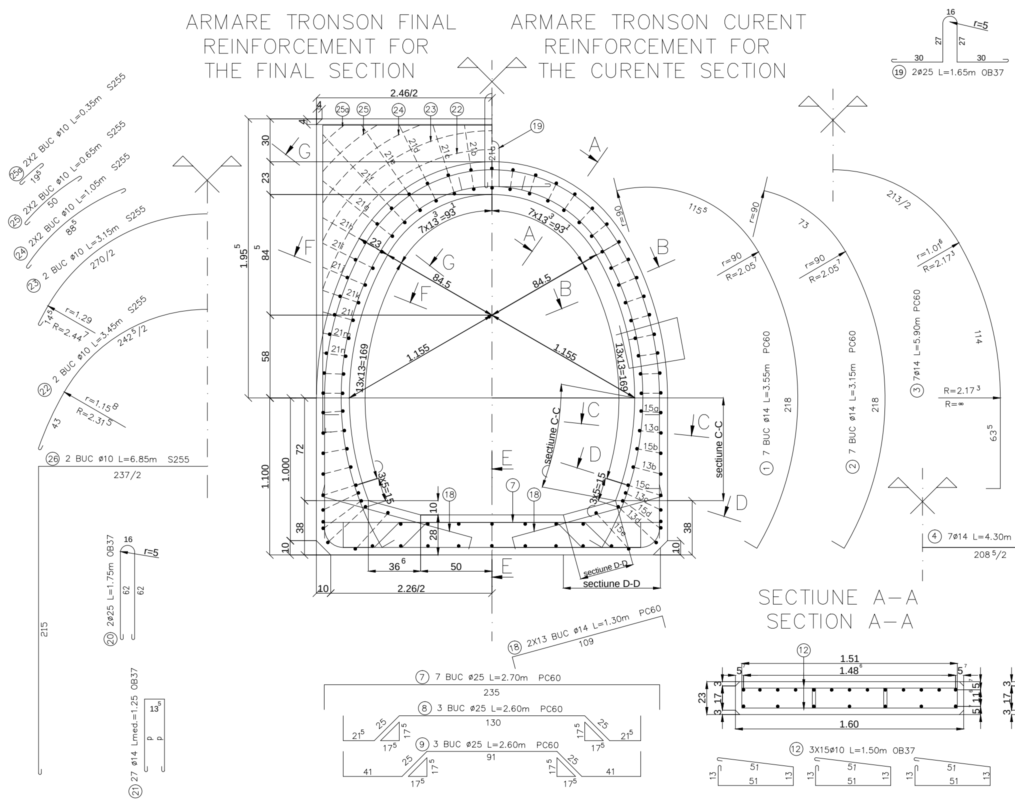
ARMARE TRONSON FINAL
REINFORCEMENT FOR THE FINAL SECTION

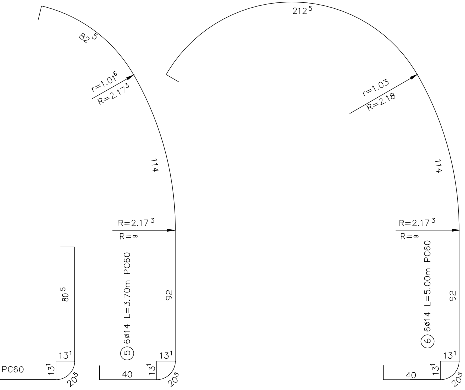
ARMARE TRONSON CURENT
REINFORCEMENT FOR THE CURENTE SECTION



(19) 2ø25 L=1.65m OB37
16
r=5
27
27
30
30
2.46/2
4
4
(25a)
(25)
(24)
(23)
(22)
(19)
30
23
1.95^5
84^5
58
1.100
1.000
72
38
10
10
38
28
10
21a
21b
21c
21d
21e
21f
21g
21h
21i
21j
21k
21l
21m
21n
7x13^3=93^1
7x13^3=93^1
23
84.5
84.5
1.155
1.155
13x13=169
13x13=169
3x5=15
3x5=15
r=90
15a
13a
15b
13b
15c
13c
15d
13d
15e
sectiune C-C
sectiune C-C
sectiune D-D
sectiune D-D
(18)
(7)
(18)
36^6
50
10
2.26/2
A
B
C
D
E
F
G
(25a) 2X2 BUC ø10 L=0.35m S255
19^5
(25) 2X2 BUC ø10 L=0.65m S255
50
(24) 2X2 BUC ø10 L=1.05m S255
88^5
(23) 2 BUC ø10 L=3.15m S255
270/2
14^5
r=1.29
R=2.44^7
(22) 2 BUC ø10 L=3.45m S255
242^5/2
r=1.15^8
R=2.31^5
43
(26) 2 BUC ø10 L=6.85m S255
237/2
215
(20) 2ø25 L=1.75m OB37
16
r=5
62
62
(21) 27 ø14 Lmed.=1.25 OB37
13^5
p
p
(18) 2X13 BUC ø14 L=1.30m PC60
109
(7) 7 BUC ø25 L=2.70m PC60
235
(8) 3 BUC ø25 L=2.60m PC60
130
21^5
25
17^5
17^5
(9) 3 BUC ø25 L=2.60m PC60
91
41
25
17^5
17^5
115^5
r=90
r=90
R=2.05^7
(1) 7 BUC ø14 L=3.55m PC60
218
73
r=90
R=2.05^7
(2) 7 BUC ø14 L=3.15m PC60
218
213/2
r=1.01^6
R=2.17^3
(3) 7ø14 L=5.90m PC60
114
R=2.17^3
R=∞
63^5
(4) 7ø14 L=4.30m
208^5/2
SECTIUNE A-A
SECTION A-A
(12)
1.51
1.48^6
5
5^7
23
3
17
3
11^6
5^7
1.60
(12) 3X15ø10 L=1.50m OB37
51
51
13
13

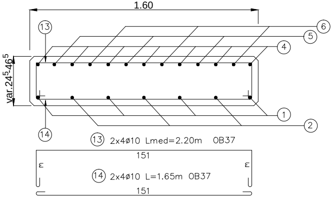
LUNGIMEA ARMATURILOR MARCA ㉑
LEGHT FOR THE REIFORCEMENT MARK ㉑

marca	21a	21b	21c	21d	21e	21f	21g	21h	21i	21j	21k	21l	21m	21n
p(cm)	44	45	50	59	72^5	84	62	47^5	39	32	26^5	21^5	18^5	16
L(m)	1.25	1.25	1.35	1.55	1.80	2.05	1.60	1.30	1.15	1.00	0.90	0.80	0.75	0.70



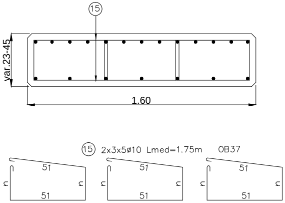
82^5
r=1.01^6
R=2.17^3
114
R=2.17^3
R=∞
80^5
⑤ 6ø14 L=3.70m PC60
92
13^1
PC60
13^1
40
13^1
20^5
20^5
212^5
r=1.03
R=2.18
114
R=2.17^3
R=∞
⑥ 6ø14 L=5.00m PC60
92
40
13^1
13^1
20^5

SECTIUNE C–C
SECTION C–C



1.60
⑬
⑥
⑤
④
var.24^5-46^5
①
②
⑭
⑬ 2x4ø10 Lmed=2.20m OB37
151
m
m
⑭ 2x4ø10 L=1.65m OB37
151

SECTIUNE D–D
SECTION D–D



⑮
var.23-45
1.60
⑮ 2x3x5ø10 Lmed=1.75m OB37
51
n
n
51
51
n
n
51
51
n
n
51

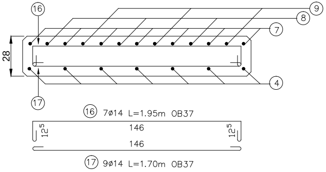
LUNGIMEA ARMATURILOR MARCA ⑬
LEGHT FOR THE REIFORCEMENT MARK ⑬

marca	13a	13b	13c	13d
n(cm)	15	21	27^5	36^5
L(m)	1.95	2.10	2.20	2.40

LUNGIMEA ARMATURILOR MARCA ⑮
LEGHT FOR THE REIFORCEMENT MARK ⑮

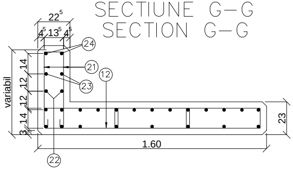
marca	15a	15b	15c	15d	15e
n(cm)	14	17	24	33	34
L(m)	1.50	1.55	1.70	1.90	1.90

SECTIUNE E–E
SECTION E–E



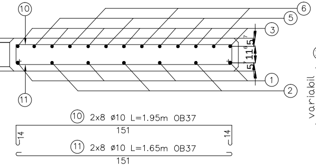
⑯
⑨
⑧
⑦
28
④
⑰
⑯ 7ø14 L=1.95m OB37
12^5
146
12^5
146
⑰ 9ø14 L=1.70m OB37

SECTIUNE G–G
SECTION G–G



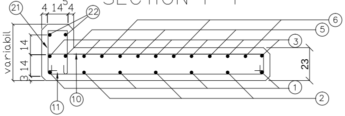
22^5
4^5 13^5 4^5
㉔
㉑
⑫
㉓
variabil
14
12
12
14
3
23
1.60
㉒

SECTIUNE B–B
SECTION B–B



⑩
⑥
⑤
③
5
11^6
5
①
②
⑪
⑩ 2x8 ø10 L=1.95m OB37
151
14
14
⑪ 2x8 ø10 L=1.65m OB37
151

SECTIUNE F–F
SECTION F–F



㉑
4 14^5 4
㉒
⑥
⑤
③
variabil
14
14
3
23
①
②
⑪
⑩

CLASA DE DURABILITATE/CLASS DURABILITY: D32/45a(XC3; XF3)
ACOPERIRE/COVERAGE: 4cm S4(XC3; XF3) pentru o durata de viata
de 50 ani/for a life duration of 50 years
ARMATURA/REINFORCEMENT – S255; S235; S405
BETON/CONCRETE – C 35/45

LEGENDA BETOANELOR/CONCRETE LEGEND

▨	Beton armat prefabricat in bolta. Concret for prefabricated in arches. C35/45–CEM II/A–S32,5–(XC4+XF3+XA1) A/C=0,50–Dmax22–Cl0,20.

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scopuri, fara
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EXTRAS DE ARMATURA PENTRU UN TRONSON CURENT
STANDARD FOR REINFORCEMENT FOR THE ONE CURRENT SECTIONE

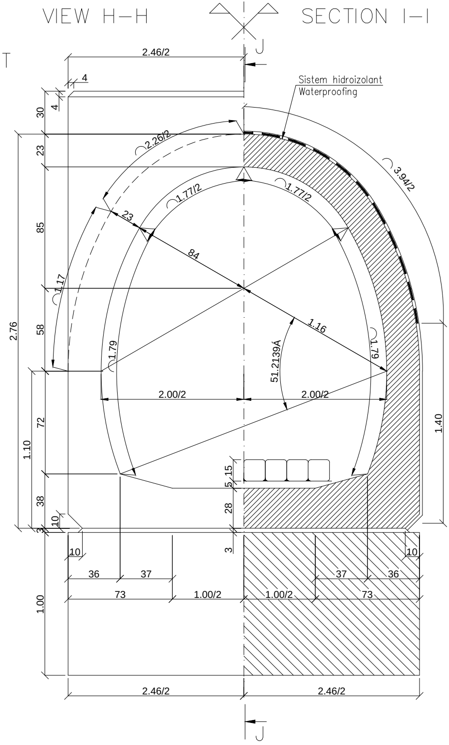
Marca Mark	Ø (mm)	Buc. asem. Similar pices	Lung. /buc. Lght /pcs.	Lungimi totale/diametru Total lenght/diameter (m)				
				S255	S235		S405	
				ø10	ø14	ø25	ø14	ø25
1	14	7	3.55				24.85	
2	14	7	3.15				22.05	
3	14	7	5.90				41.30	
4	14	7	4.30				30.10	
5	14	6	3.70				22.20	
6	14	6	5.00				30.00	
7	25	7	2.70					18.90
8	25	3	2.60					7.80
9	25	3	2.60					7.80
10	10	16	1.95	31.20				
11	10	16	1.65	26.40				
12	10	45	1.50	67.50				
13a	10	2	1.95	3.90				
13b	10	2	2.10	4.20				
13c	10	2	2.20	4.40				
13d	10	2	2.40	4.80				
14	10	8	1.65	13.20				
15a	10	6	1.50	9.00				
15b	10	6	1.55	9.30				
15c	10	6	1.70	10.20				
15d	10	6	1.90	11.40				
15e	10	6	1.90	11.40				
16	14	7	1.95		13.65			
17	14	9	1.70		15.30			
18	14	26	1.30				33.80	
19	25	2	1.65			3.30		
20	25	2	1.75			3.50		
Lungimi/diametre Leght/diameter (m)				206.90	28.95	6.80	204.30	34.50
Greutate/metru Weight/meter (kg/m)				0.617	1.208	3.853	1.208	3.853
Greutate/diametre Wight/diameter (kg)				128	35	27	247	133
Greutate/tip de otel Wight/type for steel (kg)				128	62		380	
TOTAL (kg)				570				

EXTRAS DE ARMATURA SUPLIMENTARA PENTRU TRONSONUL FINAL
STANDARD FOR REINFORCEMENT SUPPLEMENTARY FOR THE ONE FINAL SECTIONE

Marca Mark	Ø (mm)	Bucati asemenea Similar pieces	Lungime/buc. Lenght/pcs.	Lungimi totale/diametru Total lenght/diameter (m)	
				S255	S235
				ø10	ø14
21a	14	1	1.25	–	1.25
21b	14	2	1.25	–	2.50
21c	14	2	1.35	–	2.70
21d	14	2	1.55	–	3.10
21e	14	2	1.80	–	3.60
21f	14	2	2.05	–	4.10
21g	14	2	1.60	–	3.20
21h	14	2	1.30	–	2.60
21i	14	2	1.15	–	2.30
21j	14	2	1.00	–	2.00
21k	14	2	0.90	–	1.80
21l	14	2	0.80	–	1.60
21m	14	2	0.75	–	1.50
21n	14	2	0.70	–	1.40
22	10	2	3.45	6.90	–
23	10	2	3.15	6.30	–
24	10	4	1.05	4.20	–
25	10	4	0.65	2.60	–
25a	10	4	0.35	1.40	–
26	10	2	6.85	13.70	–
Lungimi/diametre Leght/diameter (m)				35.10	33.65
Greutate/metru Weight/meter (kg/m)				0.617	1.208
Greutate/diametre Wight/diameter (kg)				22	41
Greutate/tip de otel Wight/type for steel (kg)				22	41
TOTAL (kg)				63	

VEDERE H–H
VIEW H–H

SECTIUNE I–I
SECTION I–I



J
2.46/2
4
4
30
23
85
58
72
38
10
3
2.76
1.10
Sistem hidroizolant
Waterproofing
2.26/2
3.94/2
1.77/2
1.77/2
23
84
1.17
1.79
1.79
1.16
51.2139Á
2.00/2
2.00/2
1.40
5.15
28
3
10
10
36
37
37
36
73
1.00/2
1.00/2
73
1.00
2.46/2
2.46/2
J

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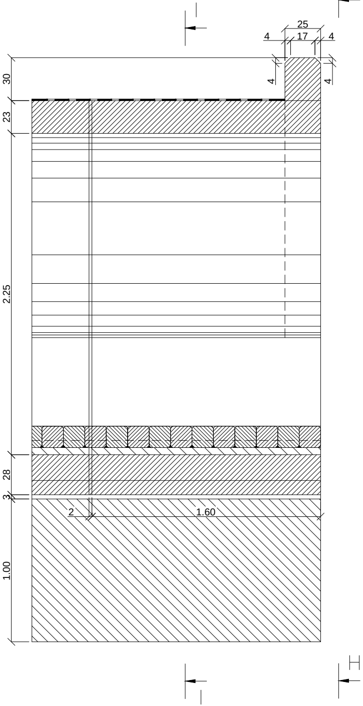
CLASA DE PRECIZIE/CLASS PRECISION = 7
CONFORM/ACCORDING SR EN 13369–89

SECTIUNE J–J
SECTION J–J



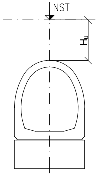
25
4
17
4
4
4
30
23
2.25
28
3
1.00
2
1.60

CARACTERISTICILE UNUI TRONSON PREFABRICAT CURENT DE 1.60m
THE CHARACTERISTIC FOR THE ONE PREFAB CURRENT SECTIONE TO 1.60m

1	Beton armat C35/45 Reinforcement concrete C35/45	m^3	3.60
2	Armaturi S255 Reinforcement S255	kg	128
3	Armaturi S235 Reinforcement S235	kg	62
4	Armaturi S405 Reinforcement S405	kg	380
5	Cofraje Shuttering	m^2	30.50
6	Greutate Weight	t	9.36

CARACTERISTICILE UNUI TRONSON PREFABRICAT CURENT DE 1.60m
THE CHARACTERISTIC FOR THE ONE PREFAB FINAL SECTIONE TO 1.60m

1	Beton armat C35/45 Reinforcement concrete C35/45	m^3	4.00
2	Armaturi S255 Reinforcement S255	kg	150
3	Armaturi S235 Reinforcement S235	kg	103
4	Armaturi S405 Reinforcement S405	kg	380
5	Cofraje Shuttering	m^2	35.60
6	Greutate Weight	t	10.40



Domeniu de aplicabilitate
Domain of application

Aliniament : $H_u=(2\div18)$m
Alignment
Curba : $H_u=(2\div18)$m
Curve

Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR
D					
C					
B					
A	12.2011	Revizia 1	Balan Carmen		

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANŢAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT

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

ITALFERR
GRUPPO FERROVIE DELLO STATO
Joint Venture leader

Scott Wilson

OBERMEYER
PLANEN + BERATEN GmbH

TECNIC
Consulting Engineers

CONSULTANT / CONSULTANT

			Data Date	SemnŁturŁ Signature
Aprobat Approved	ķef proiect Project manager	R. Liuzza		
Aprobat Approved	Coordonator SecŞune 1 Section 1 Coordinator	C. Gambelli		
Verificat Checked	Expert Cheie Checking Expert	V. Kallidromitis		VK

SUBCONTRACTANT / SUBCONTRACTOR

AREX COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Dinulescu Stanciu	11.2011	
Ĝtocmit Elaborated	Proiectant Designer	Balan Carmen	11.2011	

Reabilitarea liniei de cale ferata Brakov - Simeria, parte componentŁ a coridorului IV Pan European, pentru circulaŞa trenurilor cu viteza maximŁ de 160 km/h,
Tronsonul : Braşov - Sighişoara
Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h,
Section : Braşov - Sighişoara

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

Faza / Phase:
PTh. / T.D.

Denumire desen / Drawing Title :

PLAN COFRAJ SI ARMARE PENTRU ELEMENT PREFABRICAT B2
CONCRETE FORMING AND REINFORCEMENT PLAN FOR PRECAST ELEMENTS B2

Codificare / Codification System	Scara / Scale 1:20	LOT / LOT	Nr. / No 01 / 01

E A 5 1 | 0 1 | E | 0 0 | B C | P O | 0 0 | 0 | 0 | 0 0 8 | 1