DATE HIDRAULICE	
–Inaltimea de apa:in podet:	h=0.59m
–Perimertul udat:	P=6.18m
–Aria udata=	A=1.18m^2
–Viteza de curgere apa=	2.41m/s

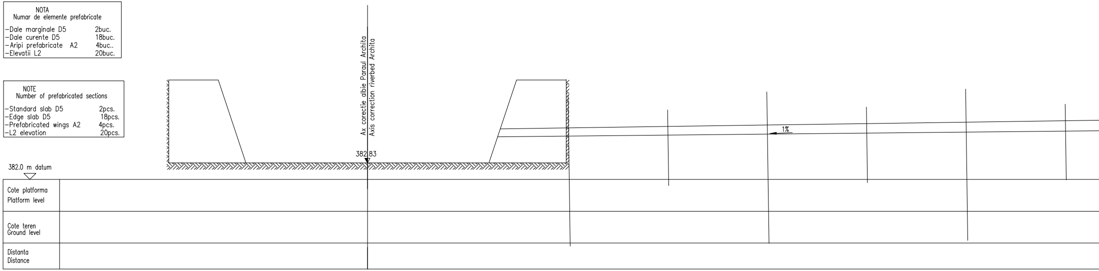
HYDRAULIC DATA	
–Hydraulic height:	h=0.59m
–Perimeter:	P=6.18m
–Surface=	1.18m^2
–Water flow speed=	V=2.41mc/s

NOTA
Numar de elemente prefabricate

–Dale marginale D5	2buc.
–Dale curente D5	18buc.
–Aripi prefabricate A2	4buc..
–Elevatii L2	20buc.

NOTE
Number of prefabricated sections

–Standard slab D5	2pcs.
–Edge slab D5	18pcs.
–Prefabricated wings A2	4pcs.
–L2 elevation	20pcs.


Ax corectie albie Paraul Archita
Axis correction riverbed Archita
382.83
1%
382.0 m datum
Cote platforma
Platform level
Cote teren
Ground level
Distanta
Distance

LEGENDA BETOANELOR UTILIZATA LA PODETE:
LEGEND OF CONCRETES USED FOR CULVERTS:

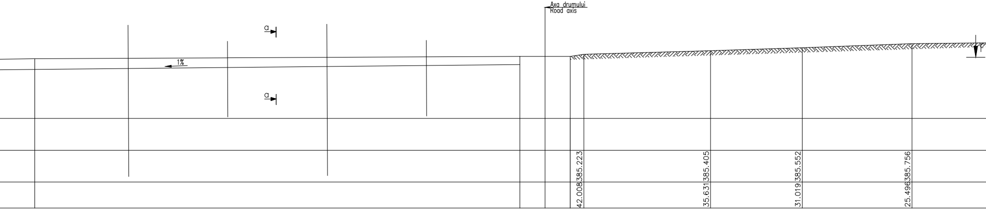
▨	- Beton în rigola drenurilor si pentru realizarea stratului suport pentru pereu: - Concrete for the drain gutters, and for the support layer of revetment: C 25/30 – CEM II/A – S 32,5 – (XC4+XF3+XA1) – A/C = 0,50 – Dmax32 – Cl 0,20
▨	- Beton de panta: - Slope concrete: C 25/30 – CEM II/A – S 32,5 – (XF3) – A/C = 0,55 – Dmax16 – Cl 0,20
▨	- Beton în fundatiile podetelor, a elementele de racordare (aripi, pinteni, etc), Concrete for the foundations of culverts, of connecting elements (wings, breakwaters, etc), C 25/30 – CEM II/A – S 32,5 – (XF1) – A/C = 0,50 – Dmax32 – Cl 0,20
▥	- Beton în stratul de protectie a hidroizolatiei: - Concrete for the waterproofing protection layer: C 25/30 – CEM II/A – S 32,5 – (XC4+XF3) – A/C = 0,50 – Dmax16 – Cl 0,20
▨	- Beton în elemente prefabricate în general (aripi, L–uri): - Concrete for prefabricated elements generally (wings, L–shaped elements): C 35/45 – CEM II/A – S 32,5 – (XC4+XF3+XA1) – A/C = 0,50 – Dmax22 – Cl 0,20
▨	- Beton în dalele prefabricate din beton precomprimat (D5, etc.): - Concrete for the pre–stressed concrete prefabricated slabs (D5, etc.): C 35/45 – CEM II/A – S 42,5 – (XC4+XF3+XA1) – A/C = 0,50 – Dmax16 – Cl 0,10

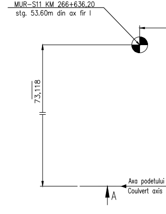
SE INTERZICE COPIEREA, DIFUZAREA, IMPRUMUTAREA SAU UTILIZAREA IN ALTE SCOPURI FARA PERMISIUNEA AREX LIDER COMPANY CA PROPRIETAR AL DESENULUI

THIS DRAWING IS FORBIDDEN TO BE COPIED, LENT OR USED IN OTHER PURPOSES THAN THOSE PREVIOUSLY APPROVED BY AREX LIDER COMPANY AS ITS OWNER.

NOTE:

1. This plan has been drawn up based on the following data:
–Lay–out Plan
–Longitudinal Profile
–Cross–section Profile
–Bridge's File
–Hydraulic determination
–Field Data
2. The culvert corresponds to the UIC determination convoys (LM71 and SW/2).
3. The execution will strictly comply with the provisions of "Practice code for the concrete production and works execution, reinforced and pre–stresse 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 sho be made accordingly to Norm C 56–1985.
4. If during the execution, discrepancies are found between the existing situation on site and the situation stated in the project, the designer will b noticed.
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.
7. Particular attention is drawn on binding prefabricated elevations settlement on block foundation through a layer of cement mortar to achieve a perfect contact over the entire surface between precast and foundation base.Propping is prohibited without direct layer of cement mortar.

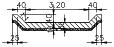

Axa drumului
Road axis
a
a
1%
42.008
385.223
35.631
385.405
31.019
385.552
25.496
385.756


MUR-S11 KM 266+636,20
stg. 53.60m din ax fir I
73,118
Axa podetului
Coulvert axis
A

NOTA:

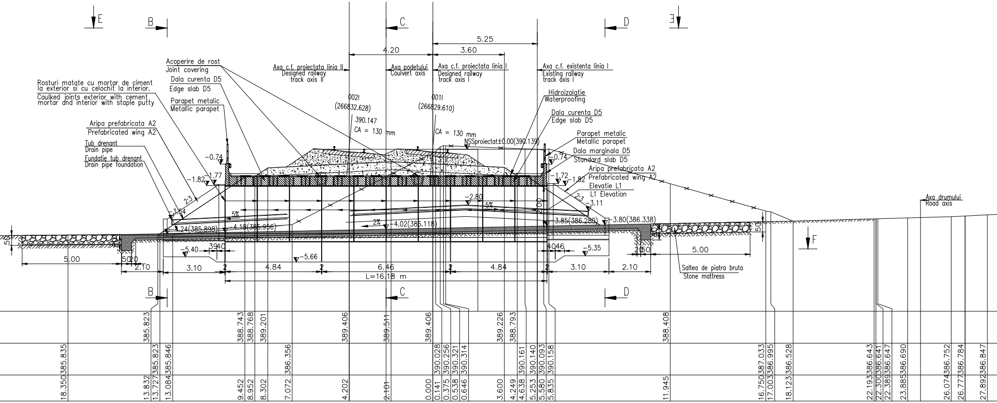
1. Prezentul plan s-a intocmit pe baza urmatoarelor date:
-plan de situatie
-profil in lung
-profil transversal
-fisa podului
-calcul hidraulic
-date culese pe teren
2. Podetul corespunde la convoaiele de calcul UIC (LM71 si SW/2)
3. La executie se vor respecta cu strictete prevederile din "Normativ 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.
4. Daca la executie se vor constata neconcordante intre situatia existenta pe teren si cea din proiect se va anunta proiectantul.
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.
7. Se atrage in mod deosebit atentia asupra obligativitatii rezemarii elevatiilor prefabricate pe blocul de fundatie prin intermediul unui strat de mortar de ciment pentru a se realiza un contact perfect pe toata suprafata intre talpa prefabricatului si fundatie. Se interzice rezemarea directa fara strat de moratar de ciment.

SECTIUNE TRANSVERSALA a-a
CROSS SECTION a-a


40
3,20
40
1:1
40
10
30
25
25

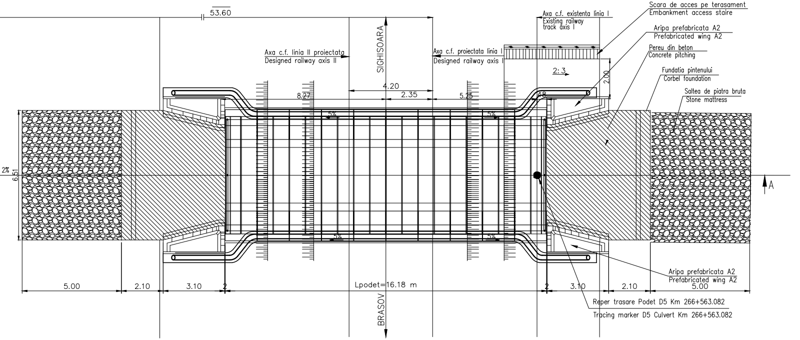
SECTIUNE LONGITUDINALA A–A / LONGITUDINAL SECTION A–A

Sc 1:100

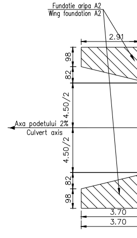


E
B
C
D
E
5.25
4.20
3.60
Acoperire de rost
Joint covering
Rosturi matate cu mortar de ciment la exterior si cu celochit la interior.
Caulked joints exterior with cement mortar and interior with staple putty
Dala curenta D5
Edge slab D5
Parapet metalic
Metallic parapet
Aripa prefabricata A2
Prefabricated wing A2
Tub drenant
Drain pipe
Fundatie tub drenant
Drain pipe foundation
Axa c.f. proiectata linia II
Designed railway track axis II
Axa podetului
Coulvert axis
Axa c.f. proiectata linia I
Designed railway track axis I
Axa c.f. existenta linia I
Existing railway track axis I
002I
(266832.628)
390.147
CA = 130 mm
001I
(266829.610)
CA = 130 mm
NSSproiectat±0.00(390.139)
Hidroizolatie
Waterproofing
Dala curenta D5
Edge slab D5
Parapet metalic
Metallic parapet
Dala marginala D5
Standard slab D5
Aripa prefabricata A2
Prefabricated wing A2
Elevatie L1
L1 Elevation
-0.74
-1.82
-1.77
2:3
-3.64
5%
-4.24(385.898)
-4.18(385.956)
2%
-4.02(386.118)
-2.80
5%
2.00
-0.74
-1.72
-1.82
2:3
-3.11
-3.85(386.280)
-3.80(386.338)
50
Axa drumului
Road axis
5.00
50
20
2.10
-5.40
39
40
3.10
2
-5.66
4.84
2
6.46
2
4.84
2
L=16.18 m
40
46
-5.35
3.10
20
50
2.10
5.00
Saltea de piatra bruta
Stone mattress
F
385.823
388.743
388.768
389.201
389.406
389.511
389.406
389.226
388.793
388.408
18.350385.835
13.727385.823
13.084385.846
7.072 386.356
0.141 390.028
0.375 390.256
0.538 390.321
0.646 390.314
4.638 390.161
5.253 390.140
5.580 390.093
5.835 390.158
16.750387.033
17.003386.995
18.123386.528
22.193386.643
22.300386.641
22.389386.647
23.885386.690
26.074386.752
26.777386.784
27.892386.847
13.832
9.452
8.952
8.302
4.202
2.101
0.000
3.600
4.249
11.945

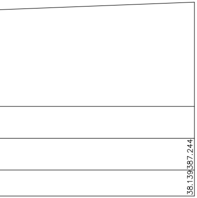
VEDERE IN PLAN E–E / E–E PLAN VIEW



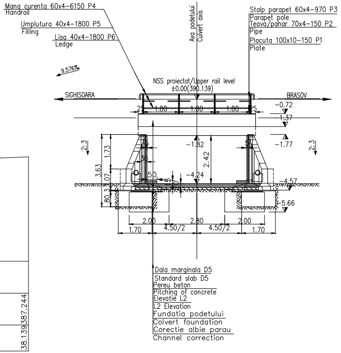
53.60
SIGHISOARA
Axa c.f. linia II proiectata
Designed railway axis II
Axa c.f. proiectata linia I
Designed railway axis I
Axa c.f. existenta linia I
Existing railway track axis I
Scara de acces pe terasament
Embankment access staire
Aripa prefabricata A2
Prefabricated wing A2
Pereu din beton
Concrete pitching
Fundatia pintenului
Corbel foundation
Saltea de piatra bruta
Stone mattress
2:3
2.00
4.20
2.35
8.27
5.25
18
5%
5%
5%
5%
2%
6.51
A
5.00
2.10
3.10
2
Lpodet=16.18 m
2
3.10
2.10
5.00
Aripa prefabricata A2
Prefabricated wing A2
BRASOV
Reper trasare Podet D5 Km 266+563.082
Tracing marker D5 Culvert Km 266+563.082



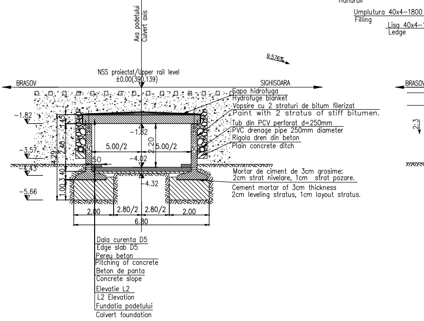
Fundatie aripa A2
Wing foundation A2
2.91
98
82
4.50/2
Axa podetului 2%
Culvert axis
4.50/2
82
98
3.70
3.70


38.139387.244

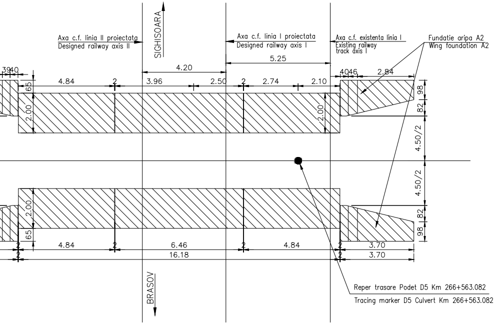
SECTIUNE B-B
B-B SECTION
scara 1:100


Mana curenta 60x4-6150 P4
Handrail
Umplutura 40x4-1800 P5
Filling
Lisa 40x4-1800 P6
Ledge
Axa podetului
Culvert axis
Stalp parapet 60x4-970 P3
Parapet pole
Teava/pahar 70x4-150 P2
Pipe
Placuta 100x10-150 P1
Plate
9.576‰
NSS proiectat/Upper rail level
±0.00(390.139)
SIGHISOARA
BRASOV
25
1.80
1.80
1.80
25
-0.72
-1.37
-1.82
-1.77
2:3
2:3
2.42
1.73
3.63
45
30
50
45
50
-4.24
-4.57
3.07
80
40
-5.66
2.00
2.80
2.00
1.70
4.50/2
4.50/2
1.70
Dala marginala D5
Standard slab D5
Pereu beton
Pitching of concrete
Elevatie L2
L2 Elevation
Fundatia podetului
Colvert foundation
Corectie albie parau
Channel correction

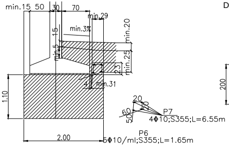
SECTIUNE C-C
C-C SECTION
scara 1:100


Axa podetului
Culvert axis
9.576‰
NSS proiectat/Upper rail level
±0.00(390.139)
BRASOV
SIGHISOARA
Sapa hidrofuga
Hydrofuge blanket
Vopsire cu 2 straturi de bitum filerizat
Paint with 2 stratus of stiff bitumen.
Tub din PCV perforat d=250mm
PVC drenage pipe 250mm diameter
Rigola dren din beton
Plain concrete ditch
Mortar de ciment de 3cm grosime:
2cm strat nivelare, 1cm strat pozare.
Cement mortar of 3cm thickness
2cm leveling stratus, 1cm layout stratus.
-1.82
-3.57
-4.43
-5.66
-1.82
-4.02
-4.32
1.45
2.40
4.29
3.40
1.00
2.20
5.00/2
5.00/2
30
50
2.00
2.80/2
2.80/2
2.00
6.80
Dala curenta D5
Edge slab D5
Pereu beton
Pitching of concrete
Beton de panta
Concrete slope
Elevatie L2
L2 Elevation
Fundatia podetului
Colvert foundation
Mana curenta 60x4-6150 P
Handrail
Umplutura 40x4-1800
Filling
Lisa 40x4-
Ledge
BRASOV
2:3

PLANUL FUNDATIILOR F-F/ F-F FOUNDATIONS PLAN
Sc 1:100


SIGHISOARA
Axa c.f. linia II proiectata
Designed railway axis II
Axa c.f. linia I proiectata
Designed railway axis I
Axa c.f. existenta linia I
Existing railway track axis I
Fundatie aripa A2
Wing foundation A2
4.20
5.25
3940
4.84
2
3.96
2.50
2
2.74
2.10
4046
2.84
65
2.00
2.00
98
82
4.50/2
4.50/2
82
98
2.00
65
4.84
2
6.46
2
4.84
2
3.70
16.18
3.70
BRASOV
Reper trasare Podet D5 Km 266+563.082
Tracing marker D5 Culvert Km 266+563.082

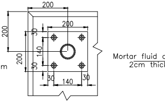
DETALIUL"G"
"G"DETAIL


min.15
50
30
70
min.29
15
min.3%
min.20
min.5
min.25
25
4
min.31
1.10
20
60
50
70
P7
4Φ10;S355;L=6.55m
2.00
P6
5Φ10/ml;S355;L=1.65m

DETALIU PENTRU PRINDEREA PLACUTELOR P1 DE TIMPAN
DETAIL TO JOIN THE SLABS P1 AT THE TYMPANUM
Scara 1:5

VEDERE IN PLAN

VIEW PLAN


200
200
200
30
140
30
200
30
140
30
Mortar fluid c
2cm thick

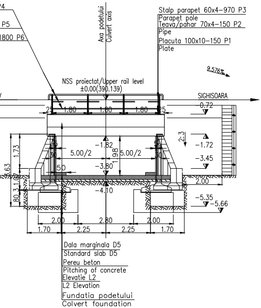
Extras armatura / Statement reinforcing

Poz. Piece	Denumirea materialului The denomination of the material S355	Buc.	Diametru Diametre	Lung. Long. (cm)	Sectiune/Section		
					kg/ml	kg/buc	kg
P6	Armatura Reinforced steel	20x4	Φ10	1.65	0.617	1.018	81.44
P7	Armatura Reinforced steel	4x4	Φ10	4.90	0.617	3.023	48.40
P8	Armatura Reinforced steel	2x32	Φ10	1.65	0.617	1.018	65.15
P9	Armatura Reinforced steel	2x4	Φ10	6.55	0.617	4.04	32.32
	Total partial Partially total						227.31
	Sudura 2% Welding 2%						4.54
	TOTAL kg						232.00

THE METAI

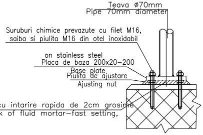
Poz. Piece	Denumirea materialului The denomination of the OL EN 10025 – S235 JR
P1	Mana curenta EN 10297 Handrail
P2	Umplutura EN 10058 Filling
P3	Lisa EN 10058 Ledge
P4	Stalp parapet EN 10297 Parapet pole
P5	Placuta prindere Clamping plate

SECTIUNE D–D
D–D SECTION
scara 1:100


P4
P5
1800 P6
Axa podetului
Culvert axis
Stalp parapet 60x4–970 P3
Parapet pole
Teava/pahar 70x4–150 P2
Pipe
Placuta 100x10–150 P1
Plate
9.576‰
NSS proiectat/Upper rail level
±0.00(390.139)
SIGHISOARA
25
1.80
1.80
1.80
25
–0.72
2:3
–1.72
–3.45
–1.82
45
30
5.00/2
1.98
5.00/2
30
50
–3.80
1.73
3.63
1.07
3.1
80
2.00
–4.10
–5.35
–5.66
2.00
2.80
2.00
1.70
2.25
2.25
1.70
Dala marginala D5
Standard slab D5
Pereu beton
Pitching of concrete
Elevatie L2
L2 Elevation
Fundatia podetului
Colvert foundation

This drawing is forbidden to be copied, lent or used in other purposes than those previously approved by AREX ***Lider*** Company as its owner.
Se interzice copierea, difuzarea, imprumutarea sau utilizarea in alte scopuri, fara permisiunea AREX ***Lider*** Company ca proprietar al desenului.

PARAPET DETAIL


Teava ⌀70mm
Pipe 70mm diameter
Suruburi chimice prevazute cu filet M16,
saiba si piulita M16 din otel inoxidabil
on stainless steel
Placa de baza 200x20–200
Base plate
Piulita de ajustare
Ajusting nut
cu intarire rapida de 2cm grosime
k of fluid mortar–fast setting,

LLIC MATERIAL TO BUILD PARAPET OF CULVERT

material	Buc.	Sectiune Section	Lung. Long. (mm)	Sectiune/Section		
				kg/ml	kg/buc	kg
– E275	2	70x4	6450	6.51	41.99	83.98
	6	38x3,5	1850	2.98	5.51	33.10
	6	38x3,5	1850	2.98	5.51	33.10
– E275	8	70x4	970	6.51	6.32	50.56
	8	200x20	200	31.40	6.28	50.24
	Total partial Partially total					250.99
	Sudura 2% Welding 2%					5.01
	TOTAL kg					255

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

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANŢAT DE UNIUNEA EUROPEAN Ă
EUROPEAN UNION FINANCED PROJECT

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 Date	Semnătură Signature
Aprobat Approved	Şef proiect Project manager	R. Liuzza		
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli		
Verificat Checked	Expert Cheie Key Expert	V.Kallidromitis		

SUBCONTRACTANT / SUBCONTRACTOR

AREX Lider COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Dinulescu Stanciu	08.2011	
Întocmit Elaborated	Proiectant Designer	Secu Andrei Razvan	08.2011	

Reabilitarea liniei de cale ferata Braşov - Simeria, parte componentă a coridorului IV Pan European, pentru circulaţia trenurilor cu viteza maximă de 160 km/h,
Tronsonul : Brasov - Sighisoara
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 : Brasov - Sighisoara

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

Faza / Phase:
P.Th. / T.D.

Denumire desen / Drawing Title :

INTERVAL / SECTION ARCHITA - VANATORI
PODET km 266+563.082 / DISPOZITIE GENERALA
CULVERT km 266+563.082 / GENERAL LAYOUT

Codificare / Codification System	Scara / Scale 1:100	LOT / LOT	Nr. / No 01 / 01

E A 5 1 | 0 1 | C | 1 6 | P A | P 0 | 0 8 | 5 | 1 | 0 0 2 | 1