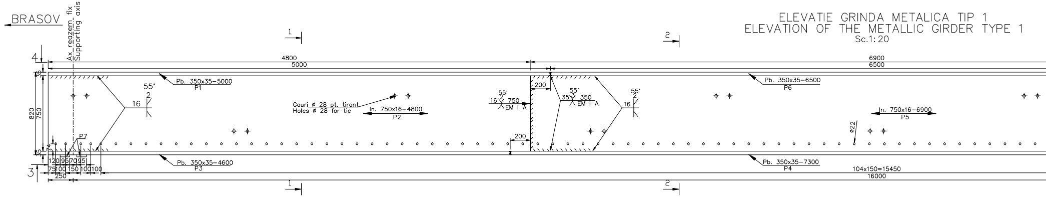
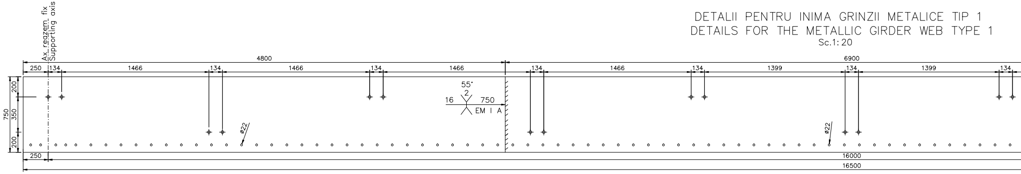
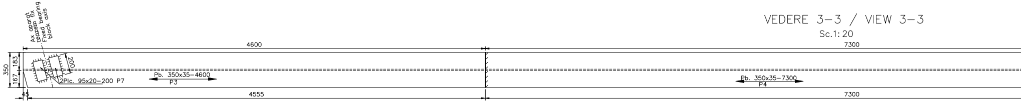
ELEVATIE GRINDA METALICA TIP 1
ELEVATION OF THE METALLIC GIRDER TYPE 1
Sc.1: 20


BRASOV
Ax reazem fix
Supporting axis
1
2
4
3
4800
5000
6900
6500
Pb. 350x35–5000
P1
55°
2
16
Gauri ø 28 pt. tirant
Holes ø 28 for tie
In. 750x16–4800
P2
16 55° 750
EM I A
200
35 55° 350
EM I A
Pb. 350x35–6500
P6
In. 750x16–6900
P5
ø22
Pb. 350x35–4600
P3
Pb. 350x35–7300
P4
104x150=15450
16000
820
750
35
74
P7
120 95 70 95
75 100 150 100 100
250

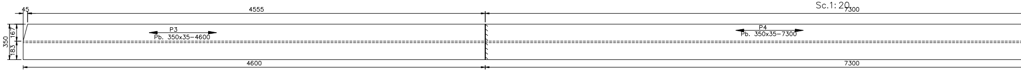
DETALII PENTRU INIMA GRINZII METALICE TIP 1
DETAILS FOR THE METALLIC GIRDER WEB TYPE 1
Sc.1: 20


Ax reazem fix
Supporting axis
4800
6900
250
134
1466
1399
200
350
750
55°
2
16
750
EM I A
ø22
16000
16500

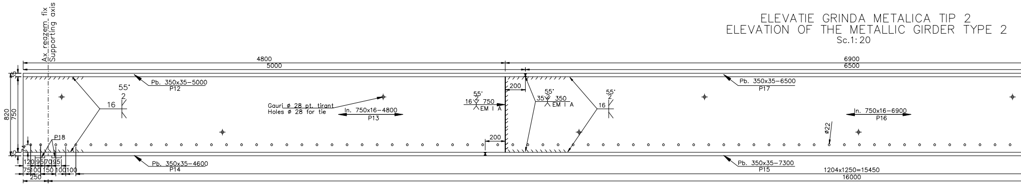
VEDERE 3–3 / VIEW 3–3
Sc.1: 20

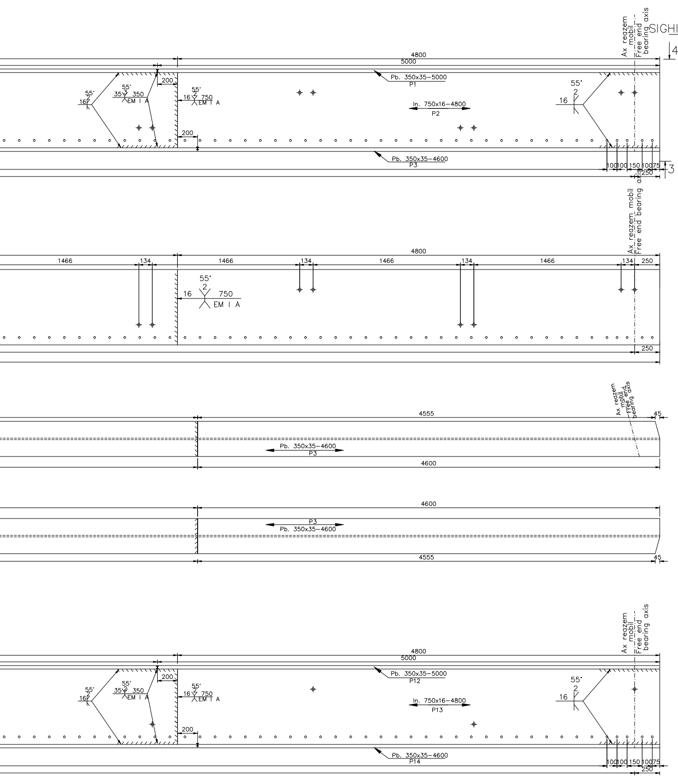

Ax aparat reazem fix
Fixed bearing block axis
4600
7300
350
183
167
200
2Plc. 95x20–200 P7
Pb. 350x35–4600
P3
Pb. 350x35–7300
P4
45
4555
7300

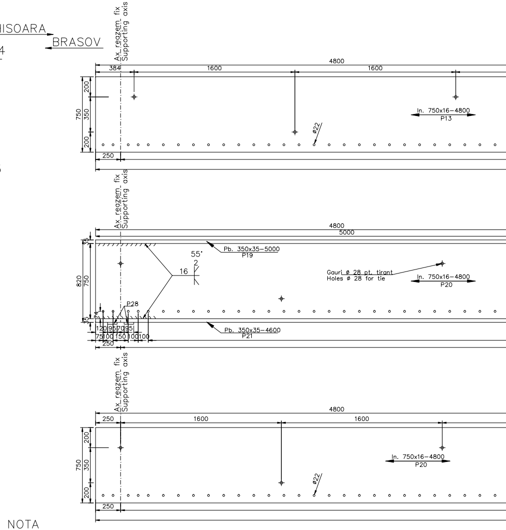
VEDERE 4–4 / VIEW 4–4
Sc.1: 20


45
4555
7300
350
167
183
P3
Pb. 350x35–4600
P4
Pb. 350x35–7300
4600
7300

ELEVATIE GRINDA METALICA TIP 2
ELEVATION OF THE METALLIC GIRDER TYPE 2
Sc.1: 20


Ax reazem fix
Supporting axis
4800
5000
6900
6500
Pb. 350x35–5000
P12
55°
2
16
Gauri ø 28 pt. tirant
Holes ø 28 for tie
In. 750x16–4800
P13
16 55° 750
EM I A
200
35 55° 350
EM I A
Pb. 350x35–6500
P17
In. 750x16–6900
P16
ø22
Pb. 350x35–4600
P14
Pb. 350x35–7300
P15
1204x1250=15450
16000
820
750
35
74
P18
120 95 70 95
75 100 150 100 100
250


Ax reazem mobil
Free end bearing axis
SIGHISOARA
4
4800
5000
Pb. 350x35−5000
P1
55˚
16
35
350
EM I A
200
750
In. 750x16−4800
P2
Pb. 350x35−4600
P3
100 100 150 100 75
250
3
1466
134
4555
45
4600
P12
P13
P14


BRASOV
Ax reazem fix
Supporting axis
4800
5000
384
1600
200
350
750
820
ø22
250
In. 750x16−4800
P13
Pb. 350x35−5000
P19
Gauri ø 28 pt. tirant
Holes ø 28 for tie
P20
P28
Pb. 350x35−4600
P21
120 95 70 95
75 100 150 100 100

NOTA

1.La executia in uzina a grinzilor metalice sudate se vor respecta cu strictete prevederile STAS 9407−75.

2.In uzina se va aplica o protectie anticoroziva pe talpile inferioare si pe o treime din inima grinzilor metalice.

3.Protectia anticoroziva se va executa dintr−un strat de baza alcatuit dintr−o pelicula de zinc de 80µm grosime si doua straturi de invelis poliuretanic, fiecare de 85µm.
Stratul de baza si un invelis poliuretanic se vor aplica in uzina, urmand ca ultimul strat poliuretanic sa fie aplicat pe santier dupa finalizarea lucrarilor la suprastructura.

4.Pregatirea suprafetelor metalice in vederea aplicarii procedeelor de protectie anticoroziva se face prin:
−Perierea de rugina cu ajutorul unor perii de sarma.
−Spalarea suprafetelor metalice.
−Degresarea cu solventi organici prin stergere sau cu emulsii.
−Dupa degresare se spala cu jet de apa pentru indepartarea urmelor de detergent. Solutia pentru degresare va fi aleasa astfel incat sa nu afecteze mediul.
Curatirea suprafetelor se va face conform gradului SA 1 1/2.

NOTE

1.The prvisions STAS 9407−75 will be strricthy observed when the welded metallic girders are manufactered in the factory.

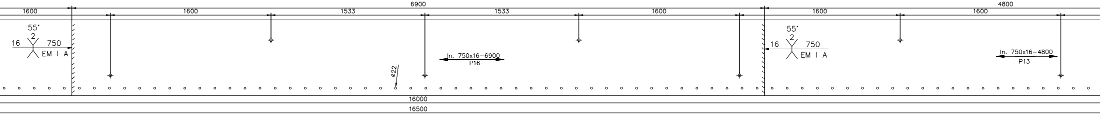
2.In the plant, corrosion protection will be applied on the lower flanges and on one third of the web of metallic girders.

3.The protection against corrosion will consist in a primary layer made of a zinc membrane (80µm thickness) and two polyurethane covering layer, each of 85µm thickness. The primary layer and the first polyurethane covering layer will be applied in the factory and the second polyurethane layer will be applied on site, after completing the superstructure works.
finalizarea lucrarilor la suprastructura.

4.Preparing the metallic surfaces in order to apply the dorrosion−proof procedures shall be made by:
−Rust removal using wire brushes.
−Washing the metallic surfaces.
−Organic solvent degreasing by wiping or using emulsions.
−After degreasing, the surface is washed by water jet to eliminate the detergent stains. The solution selected for degreasing shall not affect the environment. Cleaning the surfaces is made according to the SA 1 1/2.

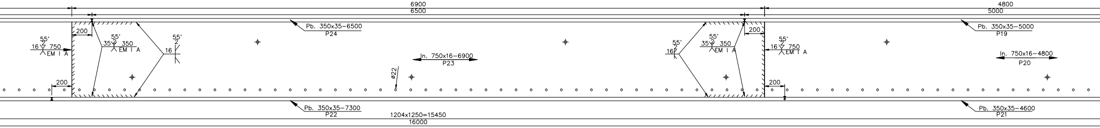
DETALII PENTRU INIMA GRINZII METALICE TIP 2
DETAILS FOR THE METALLIC GIRDER WEB TYPE 2

Sc.12:20


6900
4800
1600
1600
1533
1533
1600
1600
1600
55°
2
16
750
EM I A
In. 750x16–6900
P16
In. 750x16–4800
P13
ø22
16000
16500

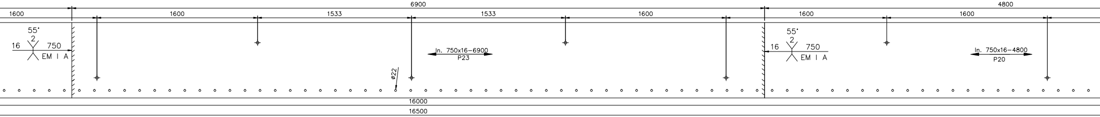
ELEVATIE GRINDA METALICA TIP 3
ELEVATION OF THE METALLIC GIRDER TYPE 3

Sc.1:20


6900
6500
4800
5000
Pb. 350x35–6500
P24
Pb. 350x35–5000
P19
200
55°
2
16
750
EM I A
35
350
In. 750x16–6900
P23
In. 750x16–4800
P20
ø22
Pb. 350x35–7300
P22
Pb. 350x35–4600
P21
1204x1250=15450
16000

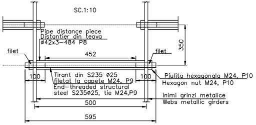
DETALII PENTRU INIMA GRINZII METALICE TIP 3
DETAILS FOR THE METALLIC GIRDER WEB TYPE 3

Sc.12:20


6900
4800
1600
1600
1533
1533
1600
1600
1600
55°
2
16
750
EM I A
In. 750x16–6900
P23
In. 750x16–4800
P20
ø22
16000
16500

DETALIU DE PRINDERE A GRINZILOR METALICE
DETAIL FOR METALLIC GIRDERS FASTENING

SC.1:10

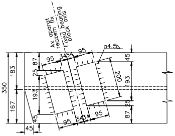

Pipe distance piece
Distantier din teava
ø42x3–484 P8
filet
filet
452
350
100
100
Tirant din S235 ø25
filetat la capete M24, P9
End–threaded structural
steel S235ø25, tie M24,P9
Piulita hexagonala M24, P10
Hexagon nut M24, P10
Inimi grinzi metalice
Webs metallic girders
500
595

ELEMENTE DE ASAMBLARE
- –Piulita M24 STAS 4971–88 Clasa de precizie 'C'
- –Saiba STAS 5200/4–91–24–OL 34

ASSEMBLY ELEMENTS
- –Nut M24 STAS 4971–88 Precision class 'C'
- –Washer STAS 5200/4–91–24–OL 34

DETALIU DE MONTARE PLACUTE/DETAIL TO MOUNT THE FIXED APARAT DE REAZEM FIX/ BEARING BLOCK PLATES

sc. 1:10


Ax aparat reazem fix
Fixed bearing block axis
a4.5
95
34 34
95
45
183
350
167
87
25
193
193
200
25
87
45
45
95
34 34
95

NOTA

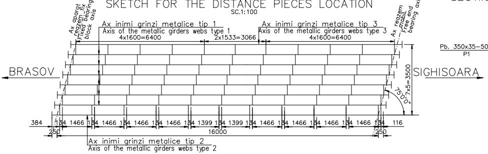
Placutele de la aparatele de reazem se vor samfrena cu un unghi de 60°. Gaurile din inima pentru armatura de rezistenta vor fi alezate.

NOTE

The plates of the bearing blocks will be chamfered at an angle of 60°. The web holes for the strong reinforcements will be bored.

SCHEMA AMPLASARII DISTANTIERILOR
SKETCH FOR THE DISTANCE PIECES LOCATION

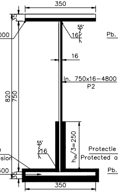
SC.1:100

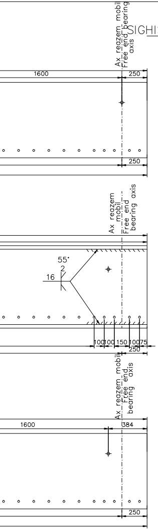

Ax aparat reazem fix
Fixed bearing block axis
Ax inimi grinzi metalice tip 1
Axis of the metallic girders webs type 1
4x1600=6400
2x1533=3066
Ax inimi grinzi metalice tip 3
Axis of the metallic girders webs type 3
4x1600=6400
Ax reazem mobil
Free end bearing axis
BRASOV
SIGHISOARA
7x5=3500
75°0'0"
384
134
1466
134
1466
134
1466
134
1466
134
1399
134
1399
134
1466
134
1466
134
1466
134
1466
134
116
250
16000
250
Ax inimi grinzi metalice tip 2
Axis of the metallic girders webs type 2

MATERIALE
(– OL37 EP STAS 12187–88 elementele grinzilor metalice.)
– S275J$_3$G$_3$ EN 10025/2004

SECTIIUNE 1–1/1–1 SECTIO

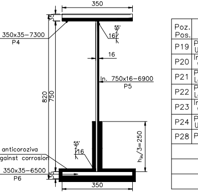
SC. 1:10


350
35
Pb. 350x35–5000
P1
55°
2
16
Pb.
16
In. 750x16–4800
P2
820
750
$h_{in}/3=250$
55°
2
16
Protectie anticoroziva
Protected against corrosion
Protectie
Protected a
Pb. 350x35–4600
P3
Pb.
35
350


Ax reazem mobil
Free end bearing axis
SIGHISOARA
1600
250
250
Ax reazem mobil
Free end bearing axis
55°
2
16
100
100
150
100
75
250
Ax reazem mobil
Free end bearing axis
1600
384
250

ON SECTIIUNE 2-2/2-2 SECTION

SC. 1:10


350
35
350x35-7300
P4
55°
2
16
16
In. 750x16-6900
P5
820
750
$h_{in}/3=250$
anticoroziva
gainst corrosion
55°
2
16
350x35-6500
P6
35
350

EXTRAS DE MATERIAL PENTRU O GRINDA METALICA OL37-EP TIP 1
MEASURING MATERIAL FOR UNE METALLIC GIRDERS OL37-EP TYPE 1

Poz. Pos.	Denumire Name	Dimensiuni Dimension	Nr. buc. asemenea Pieces	Greutate,Weight S 245 J_3 G_3		
				kg/ml	kg/buc.	Total(kg)
P1	Pb. superioara Upper band steel	350x35–5000	2	96.163	480.815	961.630
P2	Inima Web	750x16–4800	2	94.200	452.160	904.320
P3	Pb. inferioara Lower band steel	350x35–4600	2	96.163	442.350	884.700
P4	Pb. inferioara Lower band steel	350x35–7300	1	96.163	702.000	702.000
P5	Inima Web	750x16–6900	1	94.200	649.980	649.980
P6	Pb. superioara Upper band steel	350x35–6500	1	96.163	625.060	625.060
P7	Placute ap.fix	95x20–200	2	14.915	2.983	6.00
Total partial						4733.69
Spor 3% pt. sudura						143.00
Total pt. 1buc. grinda						4876.69

TOTAL PENTRU UN TABLIER: 6 grinzi x 4876.69kg=29260.14kg
TOTAL PENTRU 2 TABLIERE: 2 x 6 grinzi x 4876.69kg=58520.28kg
TOTAL FOR 1 DECK: 6 girders x 4876.69kg=29260.14kg
TOTAL FOR 2 DECKS: 2 x 6 girders x 4876.69kg=58520.28kg

EXTRAS DE MATERIAL PENTRU O GRINDA METALICA OL37-EP TIP 2
MEASURING MATERIAL FOR UNE METALLIC GIRDERS OL37-EP TYPE 2

Poz. Pos.	Denumire Name	Dimensiuni Dimension	Nr. buc. asemenea Pieces	Greutate,Weight S 245 J_3 G_3		
				kg/ml	kg/buc.	Total(kg)
P12	Pb. superioara Upper band steel	350x35–5000	2	96.163	480.815	961.630
P13	Inima Web	750x16–4800	2	94.200	452.160	904.320
P14	Pb. inferioara Lower band steel	350x35–4600	2	96.163	442.350	884.700
P15	Pb. inferioara Lower band steel	350x35–7300	1	96.163	702.000	702.000
P16	Inima Web	750x16–6900	1	94.200	649.980	649.980
P17	Pb. superioara Upper band steel	350x35–6500	1	96.163	625.060	625.060
P18	Placute ap.fix	95x20–200	2	14.915	2.983	6.00
Total partial						4733.69
Spor 3% pt. sudura						143.00
Total pt. 1buc. grinda						4876.69

TOTAL PENTRU UN TABLIER: 1 grinda x 4876.69kg=4876.69kg
TOTAL PENTRU 2 TABLIERE: 2 x 1 grinzi x 4876.69kg=9753.38kg
TOTAL FOR 1 DECK: 1 girder x 4876.69kg=4876.69kg
TOTAL FOR 2 DECKS: 2 x 1 girder x 4876.69kg=9753.388kg

EXTRAS DE MATERIAL PENTRU O GRINDA METALICA OL37-EP TIP 3
MEASURING MATERIAL FOR UNE METALLIC GIRDERS OL37-EP TYPE 2

Poz. Pos.	Denumire Name	Dimensiuni Dimension	Nr. buc. asemenea Pieces	Greutate,Weight S 245 J_3 G_3		
				kg/ml	kg/buc.	Total(kg)
P19	Pb. superioara Upper band steel	350x35–5000	2	96.163	480.815	961.630
P20	Inima Web	750x16–4800	2	94.200	452.160	904.320
P21	Pb. inferioara Lower band steel	350x35–4600	2	96.163	442.350	884.700
P22	Pb. inferioara Lower band steel	350x35–7300	1	96.163	702.000	702.000
P23	Inima Web	750x16–6900	1	94.200	649.980	649.980
P24	Pb. superioara Upper band steel	350x35–6500	1	96.163	625.060	625.060
P28	Placute ap.fix	95x20–200	2	14.915	2.983	6.00
Total partial						4733.69
Spor 3% pt. sudura						143.00
Total pt. 1buc. grinda						4876.69

TOTAL PENTRU UN TABLIER: 1 grinda x 4876.69kg=4876.69kg
TOTAL PENTRU 2 TABLIERE: 2 x 1 grinzi x 4876.69kg=9753.38kg
TOTAL FOR 1 DECK: 1 girder x 4876.69kg=4876.69kg
TOTAL FOR 2 DECKS: 2 x 1 girder x 4876.69kg=9753.388kg

EXTRAS DE MATERIAL PENTRU SOLIDARIZAREA GRINZILOR METALICE PENTRU UN TABLIER DE CALE FERATA SIMPLA
TABLE OF MATERIALS TO JOIN THE METALLIC GIRDERS FOR SINGLE TRACK RAILWAY BRIDGE DECK

Poz. Pos.	Denumire Name	Dimensiuni Dimension	Nr. buc. asemenea Pieces	Greutate,Weight S 245 J_3 G_3		
				kg/ml	kg/buc.	Total(kg)
P8	Distantier teava	ø42x3–484	77	2.88	1.40	130.90
P9	Tirant S235	ø25, L=595	77	3.85	2.29	207.90
P10	Piulite	M24	154	–	0.10	15.40
P11	Saibe	M24	154	–	0.023	3.60
					Total (kg)	357.80

TOTAL POD (2 TABLIERE): 2 x 357.80kg=715.60kg
TOTAL BRIDGE (2 DECKS): 2 x 357.80kg=715.60kg

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

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANȚAT 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	Semnătură Signature
Aprobat Approved	Șef proiect Project manager	R. Liuzza		
Aprobat Approved	Coordonator Secțiune 1 Section 1 Coordinator	C. Gambelli		Gambelli
Verificat Checked	Expert Cheie Checking Expert	V. Kallidromitis		VK

SUBCONTRACTANT / SUBCONTRACTOR

AREX Lider COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Dinulescu Stanciu	10.2011	
Întocmit Elaborated	Proiectant Designer	Dinu Andreea	10.2011	

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 :

INTERVAL ARCHITA-VANATORI
POD km 270+362.572 - GRINZI METALICE
BRIDGE designed km 270+362.572 - METALLIC GIRDERS

Codificare / Codification System	Scara / Scale	LOT / LOT	Nr. / No
	1:20;1:10;1:100		01 / 01

EA51 01 E 16 BC PV 04 3 3 004 1