

BLOCK SWITCHBOARD

*Secondary Doc Ref**PO**Document Item*

BUSDUCTS
Filled-In Data Sheets & routing drawings
5-SW-5-1/BD
PHASE 1*

E	12 Sep 14	Issued for Construction		
D	5 Sep 14	Issued for Construction		
C	8 August 14	Issued for Construction		
B	24 Jun 14	Issued for Construction		
A	18 Jul 13	Issued for Review		
Rev	Date	Description	Written By	Approved By
Document Revisions				

MANUFACTURER / CONSTRUCTEUR	ETA-COM B NV
ORDER NO / NUMERO DE COMMANDE	
CLIENT ORDER / NUMERO DE COMMANDE CLIENT	2014 IEC 60439-2
YEAR OF MANUFACTURE / ANNEE DE CONSTRUCTION	MH2 3x1200
REF. STD / NORME DE REFERENCE	5-SW-5-1/BD
TYPE / TYPE	IP68-IK10
EQUIPMENT TAG / REPERE EQUIPEMENT	690 V
PROTECTION CLASS / CLASSE DE PROTECTION	1000 V
Us = RATED SERVICE VOLTAGE / TENSION DE SERVICE	50 Hz
Ur = RATED INS.VOLTAGE MAIN BUSBARS / TENSION ASSIGNE	12 kV
Fr = RATED FREQUENCY / FREQUENCE ASSIGNE	
RATED IMPULSE WITHSTAND VOLTAGE FOR MAIN BUSBARS / TENSION DE CHOC ADMISSIBLE	114 kA
Ik = RATED SHORT TIME WITHSTAND CURRENT / COURANT DE COURTE DUREE ADMISSIBLE DE LA GAINE A BARRES	2500 A @ 40°C/MAX 45 °C 85 kg/m
Ir = MAIN BUSBAR RATED CURRENT / COURANT ADMISSIBLE	
BUSDUCT WEIGHT / POIDS GAINE A BARRES	
PROJECT / PROJET	
CONTRACTOR, ENGINEERING / ENTREPRENEUR, ETUDE	
END USER / CLIENT FINAL	

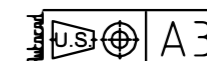
MANUFACTURER / CONSTRUCTEUR	ETA-COM B NV
ORDER NO / NUMERO DE COMMANDE	
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YEAR OF MANUFACTURE / ANNEE DE CONSTRUCTION	
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RATED IMPULSE WITHSTAND VOLTAGE FOR MAIN BUSBARS / TENSION DE CHOC ADMISSIBLE	12 kV
Ik = RATED SHORT TIME WITHSTAND CURRENT / COURANT DE COURTE DUREE ADMISSIBLE DE LA GAINE A BARRES	114 kA
Ir = MAIN BUSBAR RATED CURRENT / COURANT ADMISSIBLE	2500 A @ 40°C/MAX 45 °C
BUSDUCT WEIGHT / POIDS GAINE A BARRES	85 kg/m
PROJECT / PROJET	
CONTRACTOR, ENGINEERING / ENTREPRENEUR, ETUDE	
END USER / CLIENT FINAL	

Namplate material: Traffolyte
White letter on black background
Quantity:
Line 100: 1 pc
Line 200: 1 pc



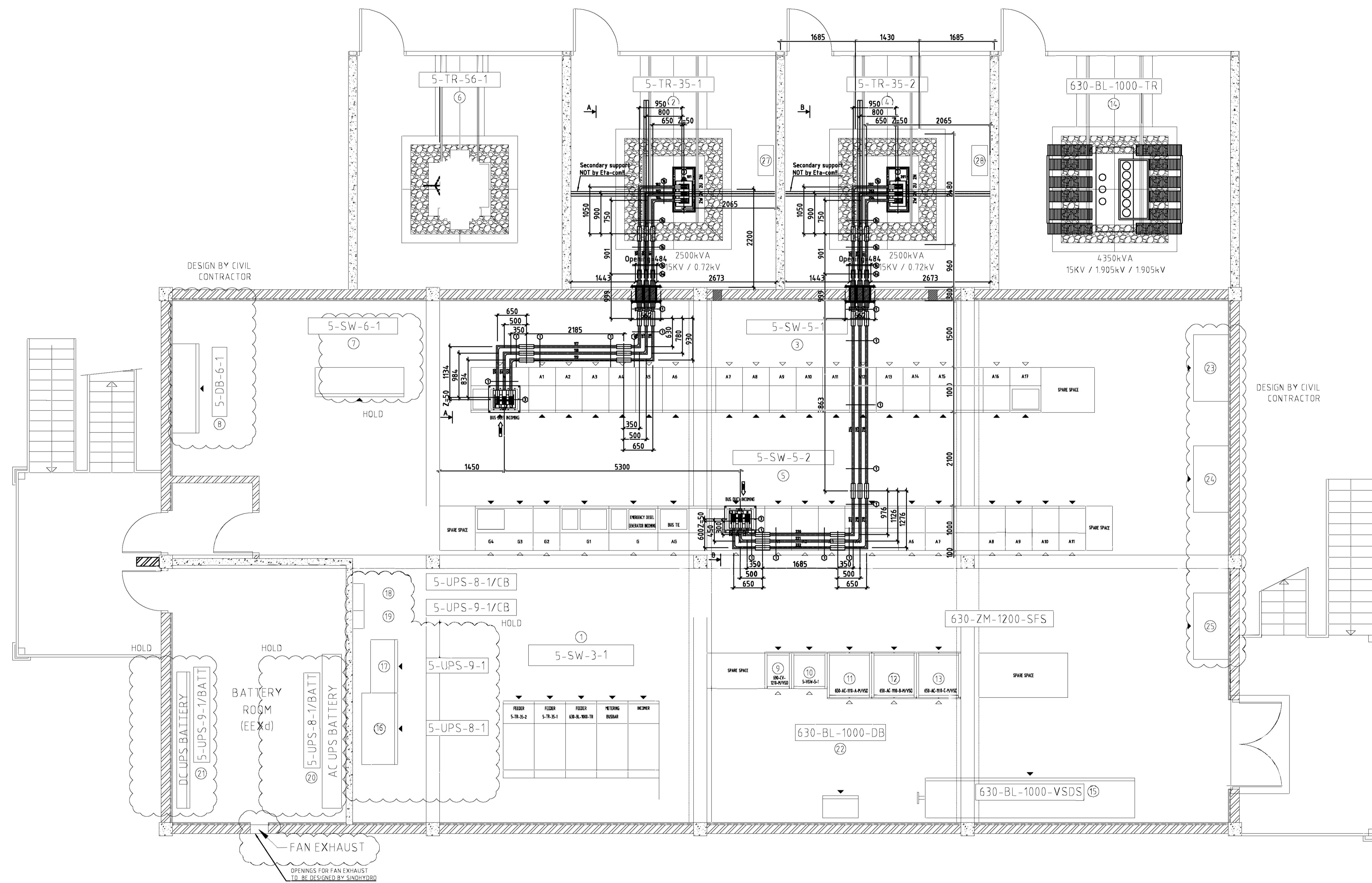
PROJECT
CLIENT

revision	A 03/09/'14
date	07/07/'14
scale	1:-
drawn	ron
checked	-
drawing number _____	

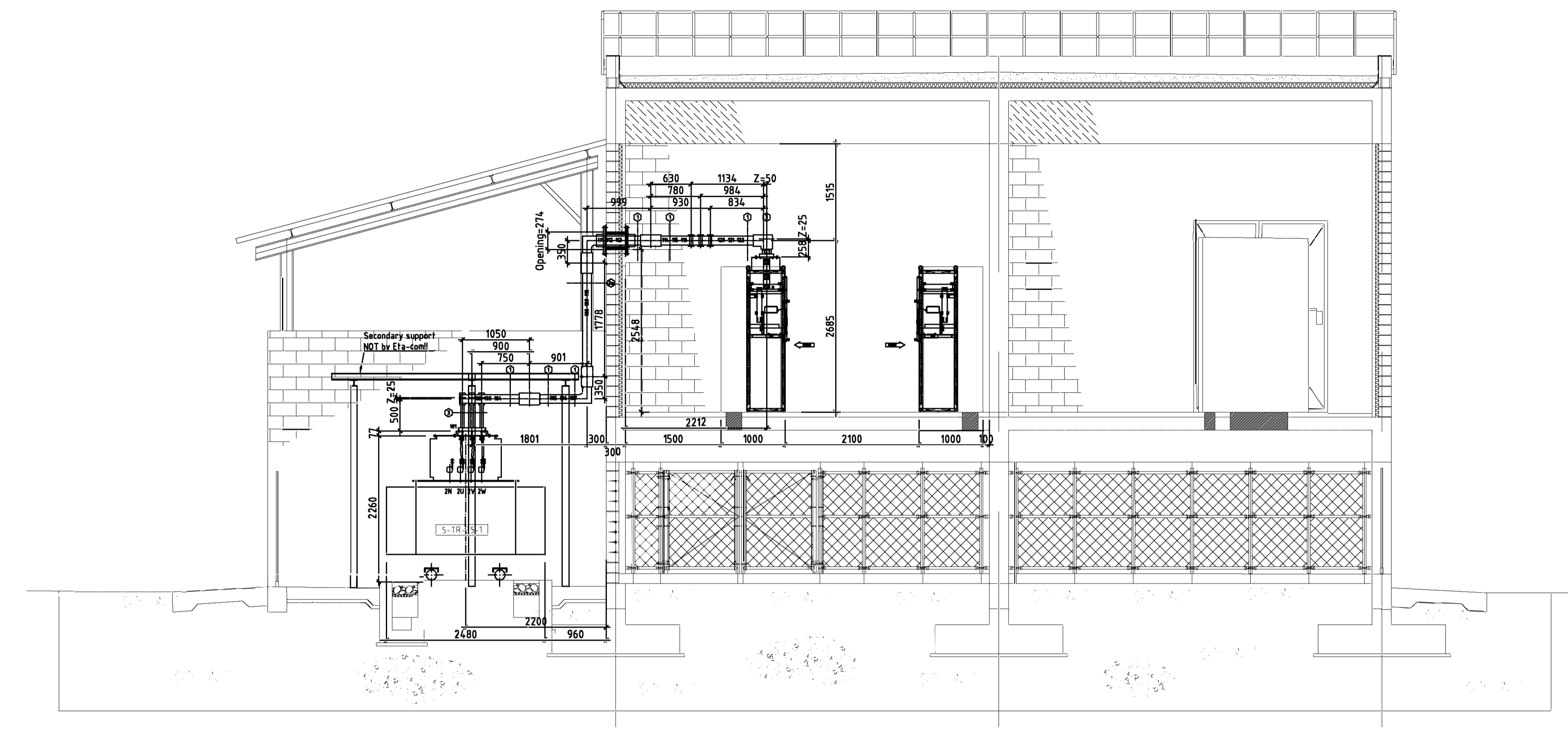


Technical data proposed busducts: 3 phase busduct (segregated phase)

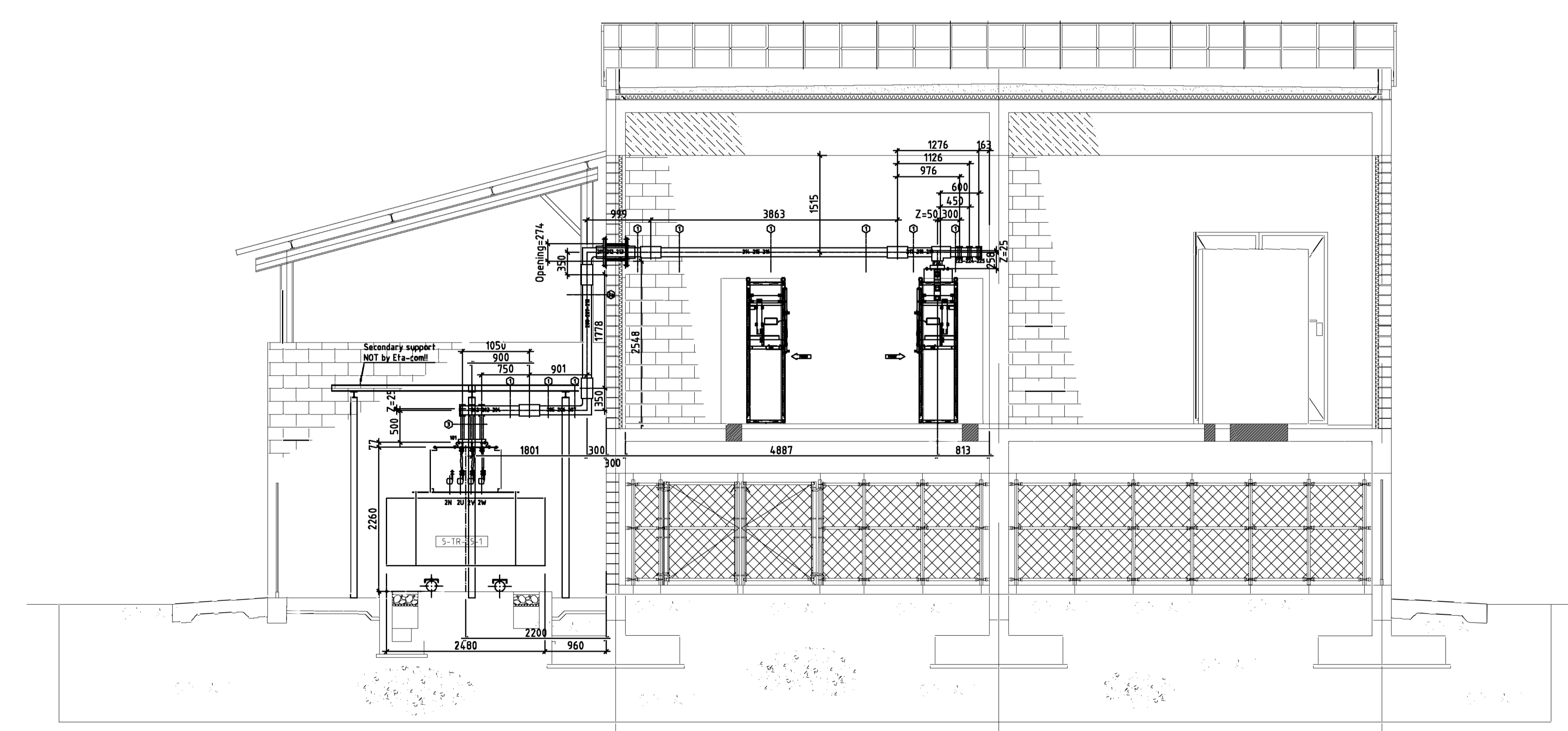
		690 V / 2500 A	Requirements
1)	betobar-r type Standard	MH2 3 x 1200 IEC 60439	
2)	Conductors : <ul style="list-style-type: none"> • Section phase mm² • Section neutral mm² • Section earth mm² 	Copper E-cu 57 1200 mm ² N/A N/A	
3)	Insulation voltage Impulse withstand voltage	1000 V / 50 Hz 12kV	690 V
4)	Encapsulation Metallic Enclosure Painting	Epoxy resin compound (IEC60331 & 2) None N/A	
5)	Nominal current rating : <ul style="list-style-type: none"> • at 35°C / max 40°C • at 40°C / max 45°C • at 42°C / max 47°C 	2630 A 2500 A 2445 A	2500 A
6)	Short-circuit withstand : <ul style="list-style-type: none"> • thermal rms 1 sec • dynamic 	114 kA 150 kA	50 kA
7)	Degree of protection	IP68-IK10	
8)	Weight copper kg/m Weight total kg/m	36.80 85.00	
9)	Dim. width x height (mm)	350 x 140	



GROUND FLOOR ELEV. 100.900



SECTION A-A



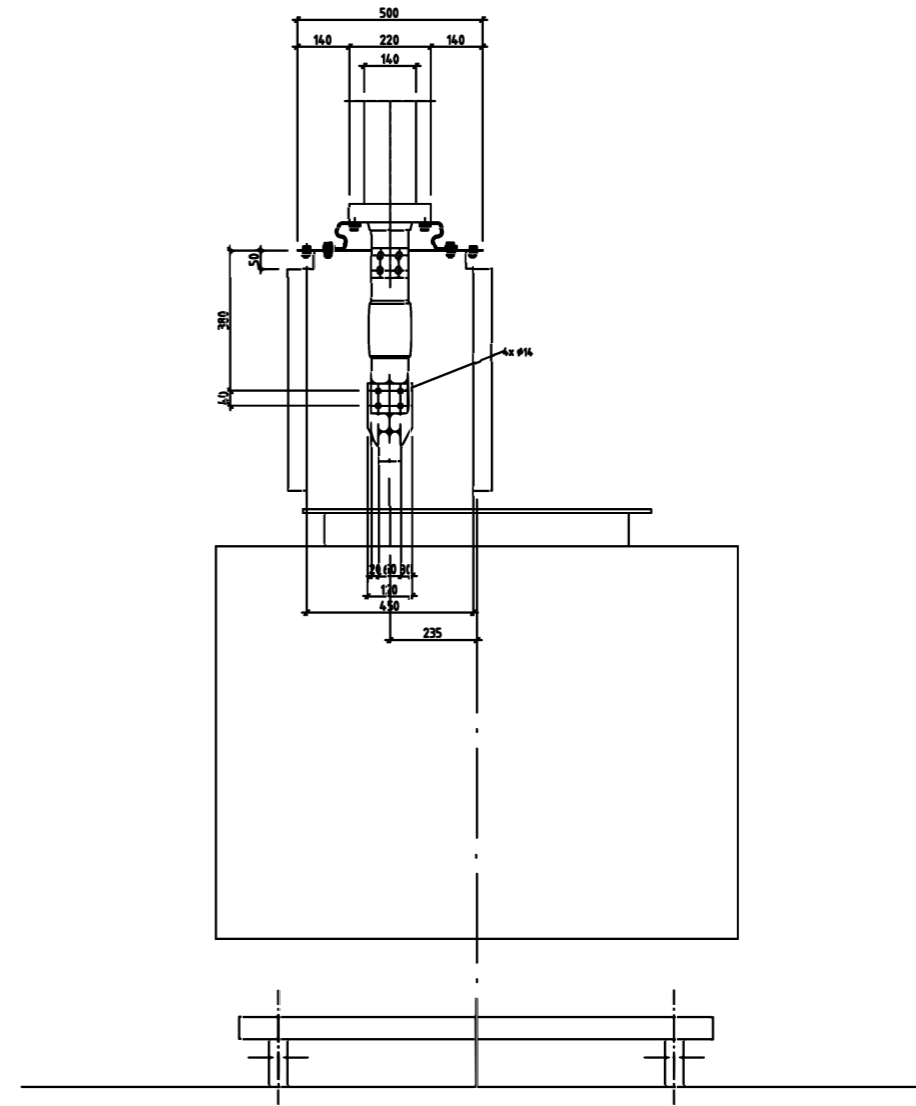
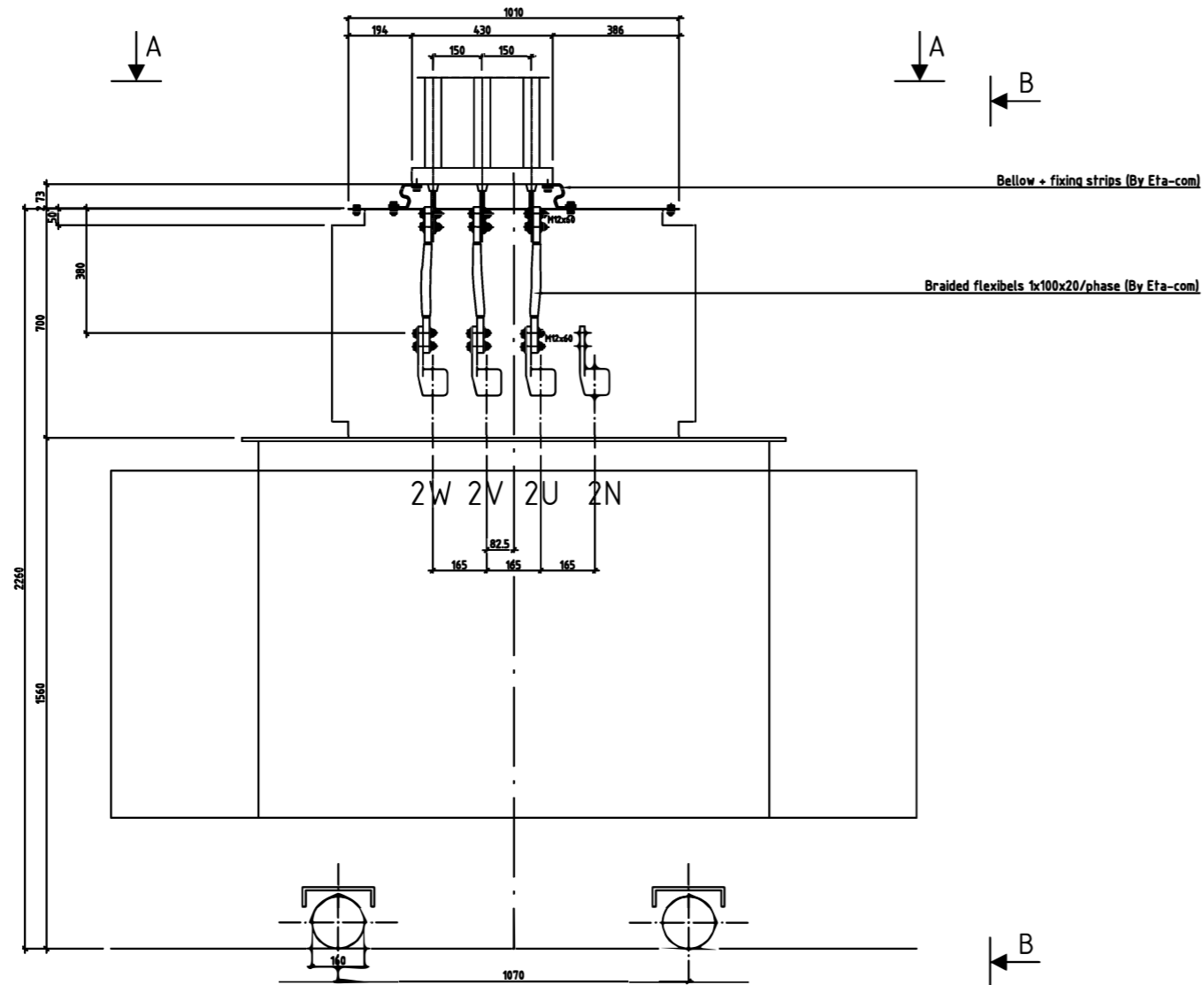
SECTION B-B

Supports see drawing P04608-04F

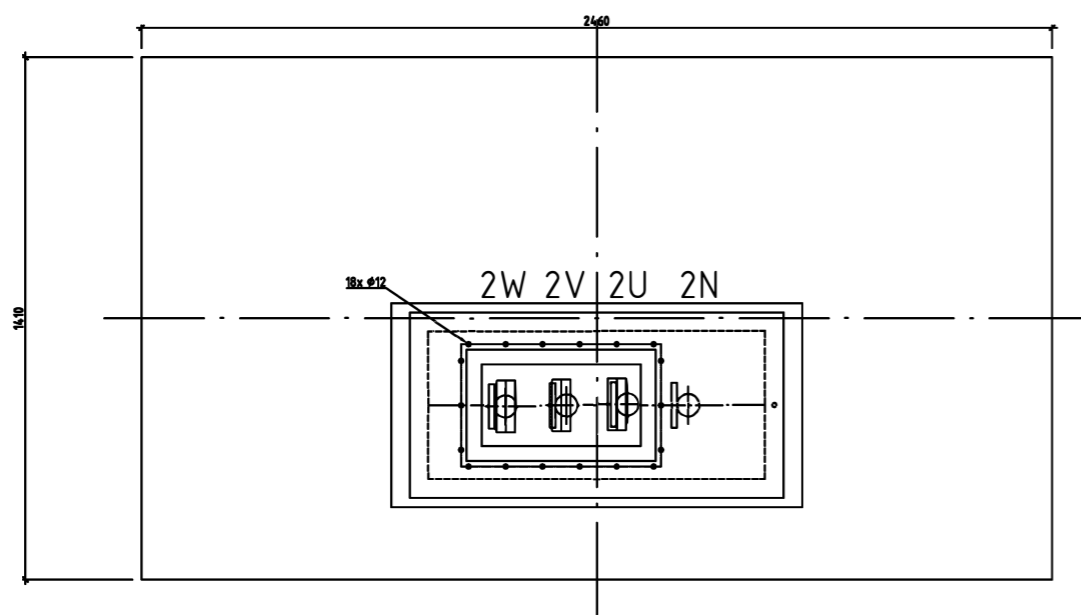
Line nrf(s) 100/200
 Betobar-r type MH2
 Dim 3x50x140mm weight 85.0kg/m
 Cu 3x1200
 Us= 1000V
 Is= 2500A

Rev	Rev. date	Description	Drawn	Check
A	13/08/14	Switchgear connection added	KCC	
B	16/08/14	Route changed	NRN	
C	11/08/14	Route changed	NRN	
D	02/09/14	Remarks client	NRN	

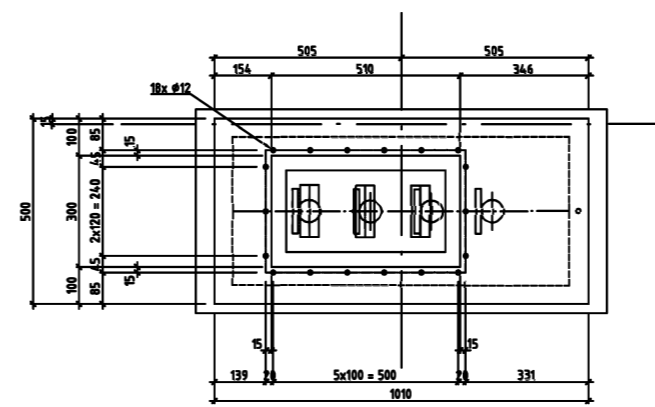
PROJECT: Busduct layout
 date: 24/11/13
 scale: 1:50
 revision: D1/09/2014
 checked: -
 drawing number: A0



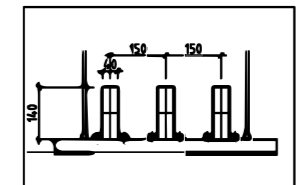
Side view B-B



Top view A-A




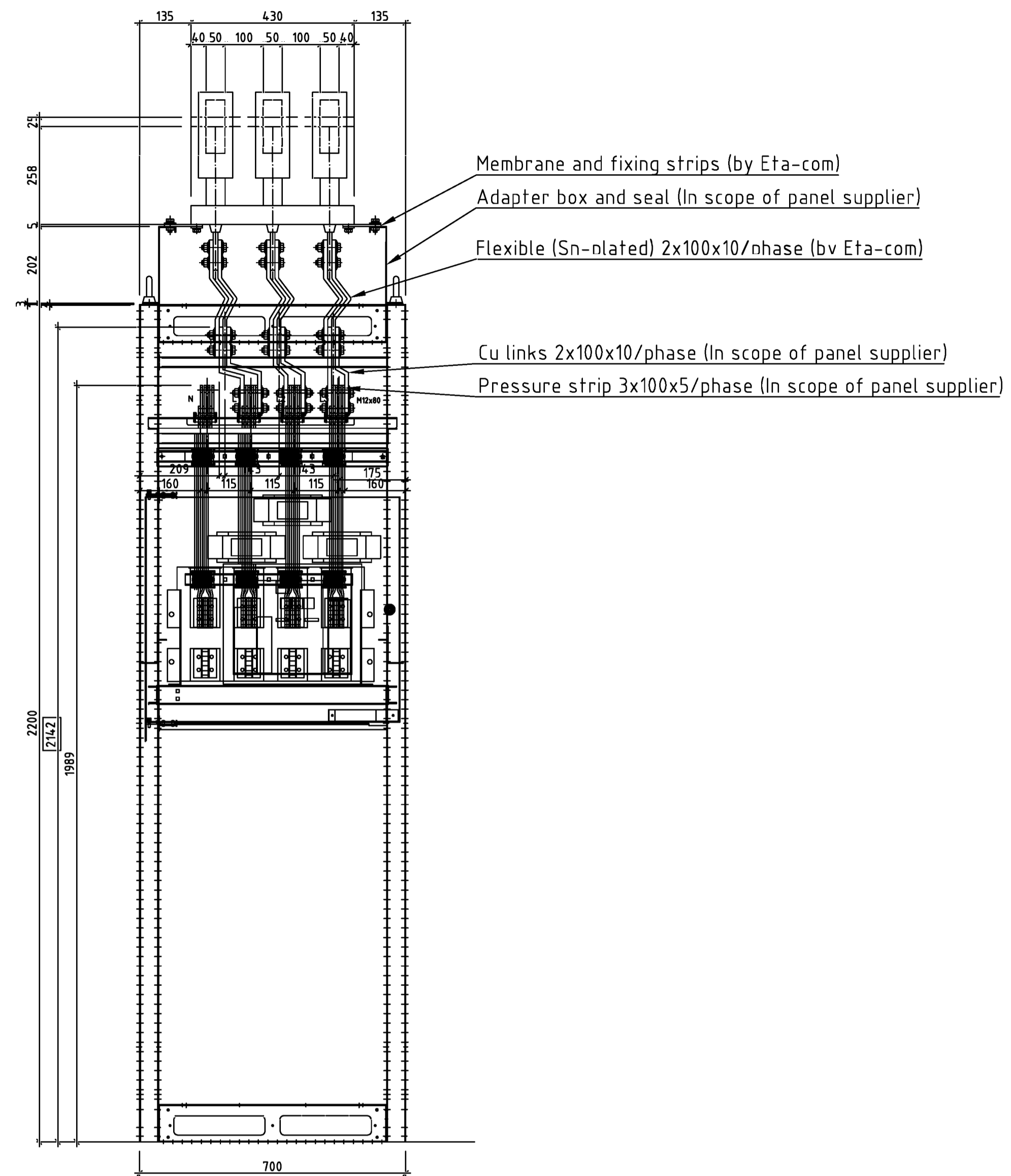
Opening and drilling pattern



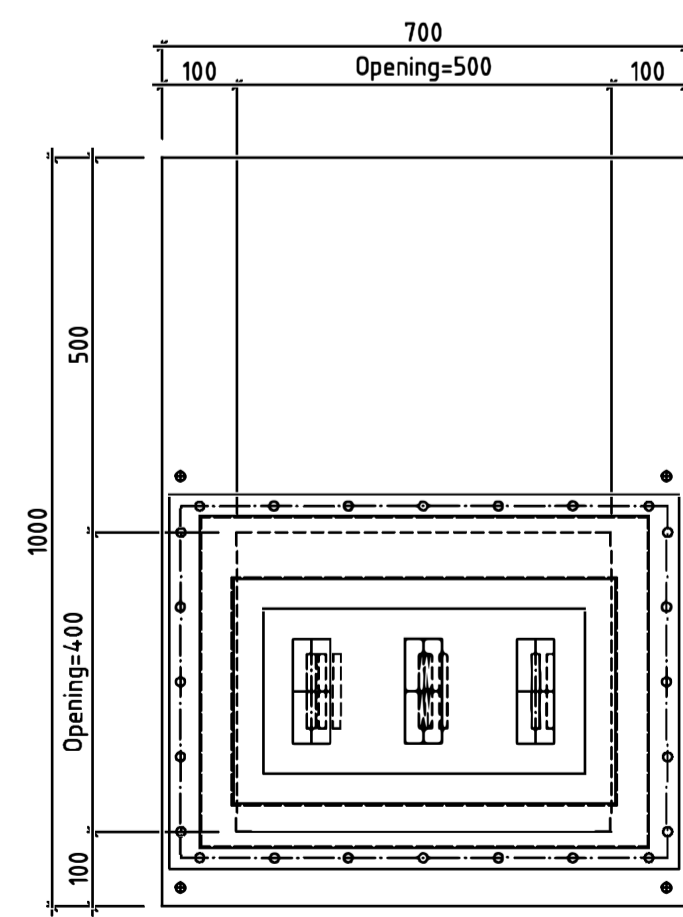
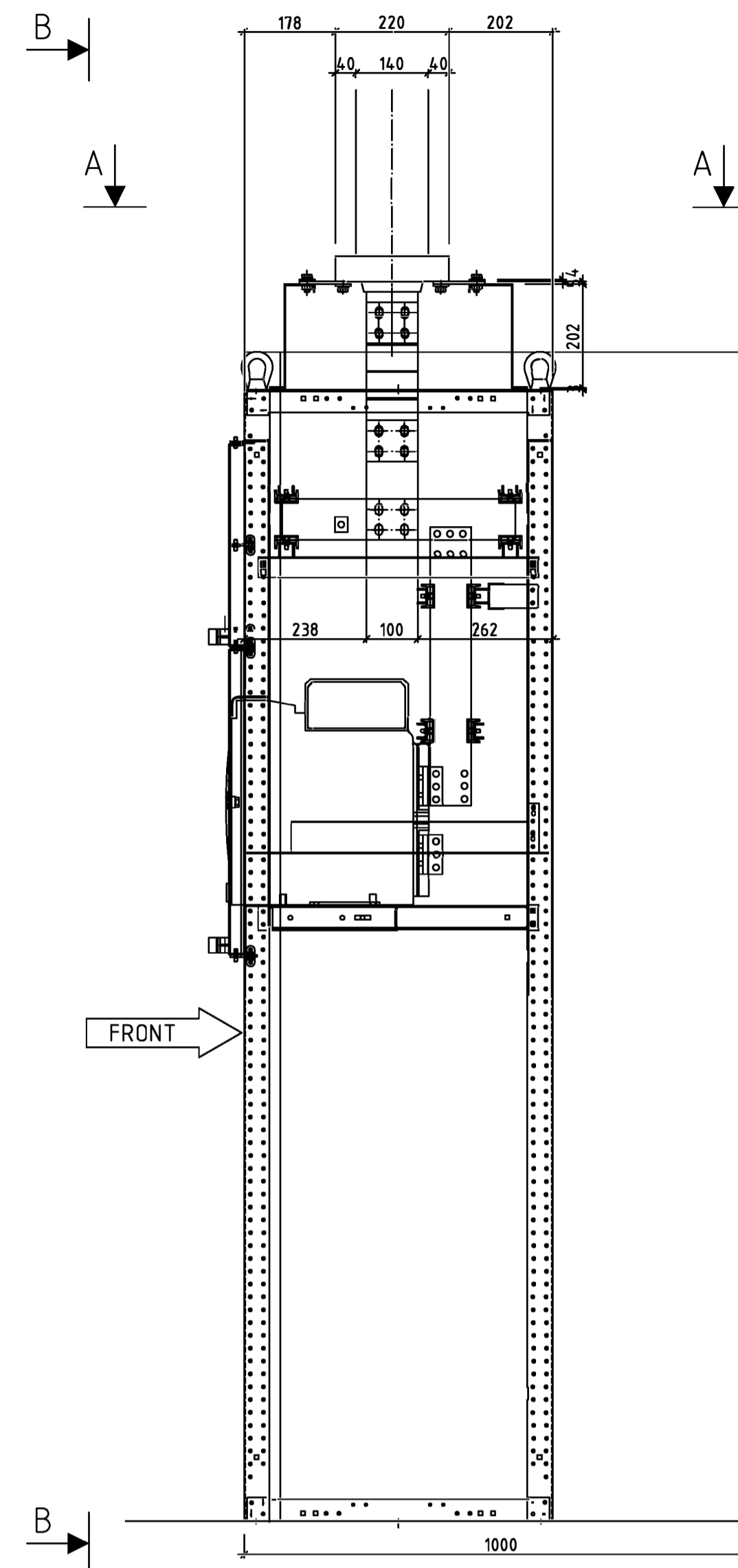
Line nr(s) 100/200
 Betobar-r type MH2
 Dim. 50x140mm weight 85.0kg/m
 Cu 3x1200
 Us= 1000V
 Is= 2500A

Rev	Rev. date	Description	Drawn	Check												
A	13/06/14	Width of flexibles	KCP													
B	04/08/14	Opening and drilling pattern in cover of transformer														
<table border="1"> <tr> <td>revision</td> <td>A) 13/06/14</td> </tr> <tr> <td>date</td> <td>28/11/13</td> </tr> <tr> <td>scale</td> <td>1:10</td> </tr> <tr> <td>drawn</td> <td>KCP</td> </tr> <tr> <td>checked</td> <td></td> </tr> <tr> <td>drawing number</td> <td></td> </tr> </table>					revision	A) 13/06/14	date	28/11/13	scale	1:10	drawn	KCP	checked		drawing number	
revision	A) 13/06/14															
date	28/11/13															
scale	1:10															
drawn	KCP															
checked																
drawing number																

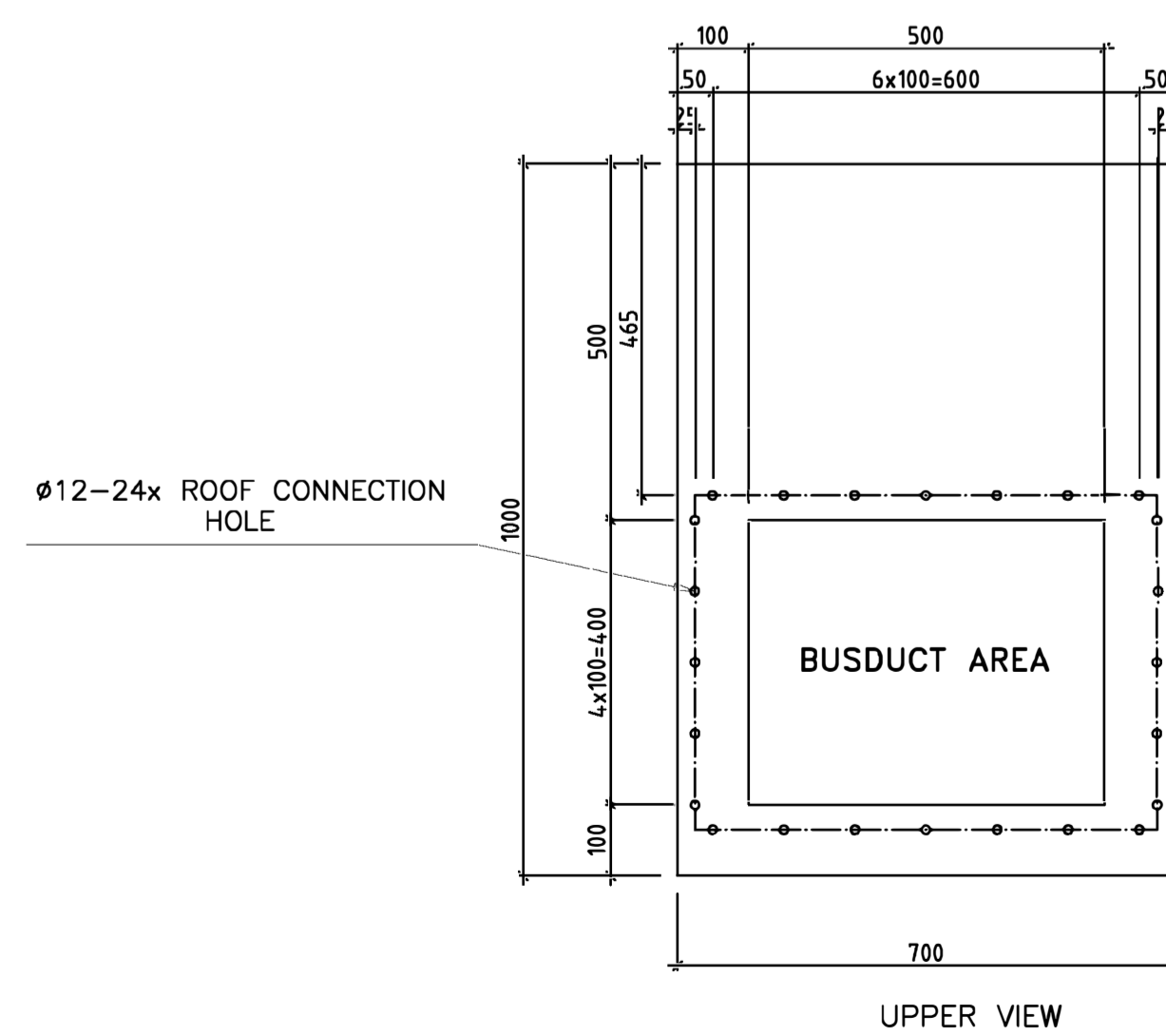
Transformer connection
 Detail
 ORDERNR.  A1



Side view B-B
(Front view)



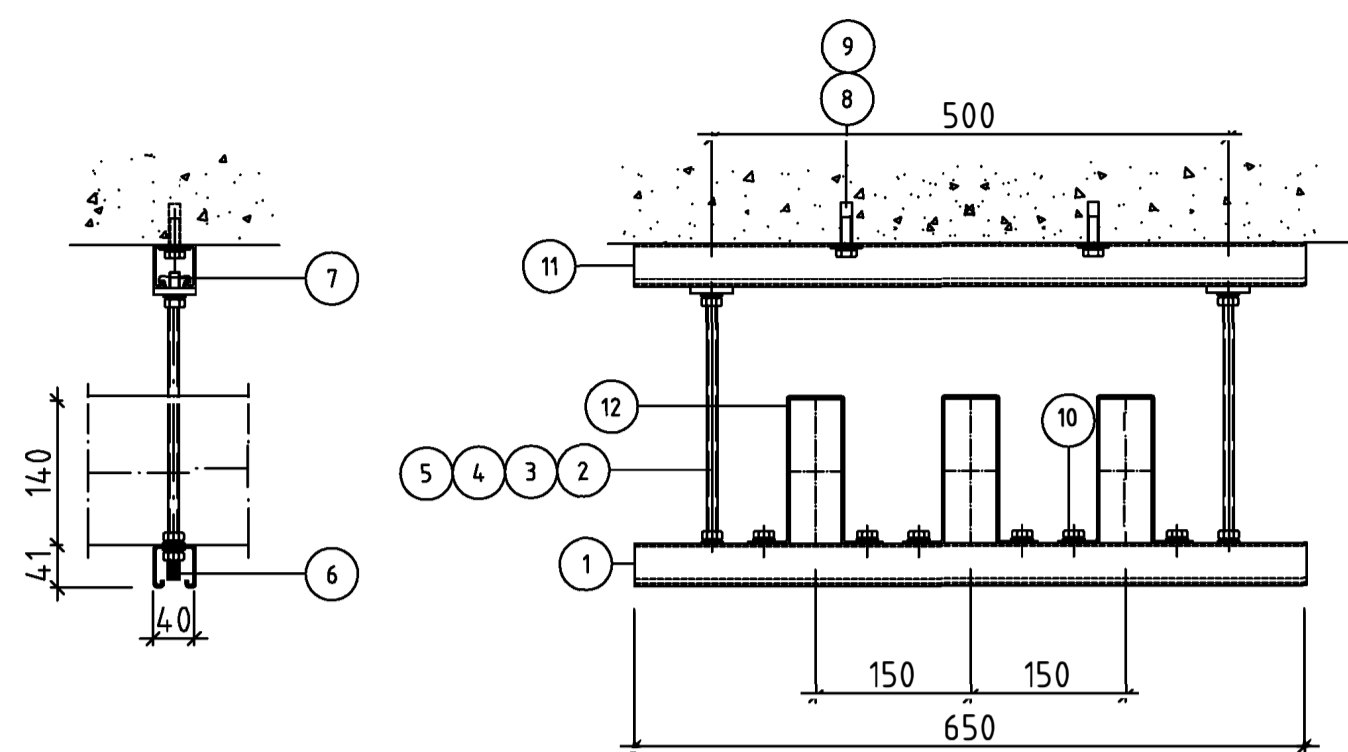
N L1 L2 L3
Side view A-A
(Top view)



Line nr(s) 100/200
Betobar-r type MH2
Dim. 50x140mm weight 85.0kg/m
Cu 3x1200
Us= 1000V
Is= 2500A

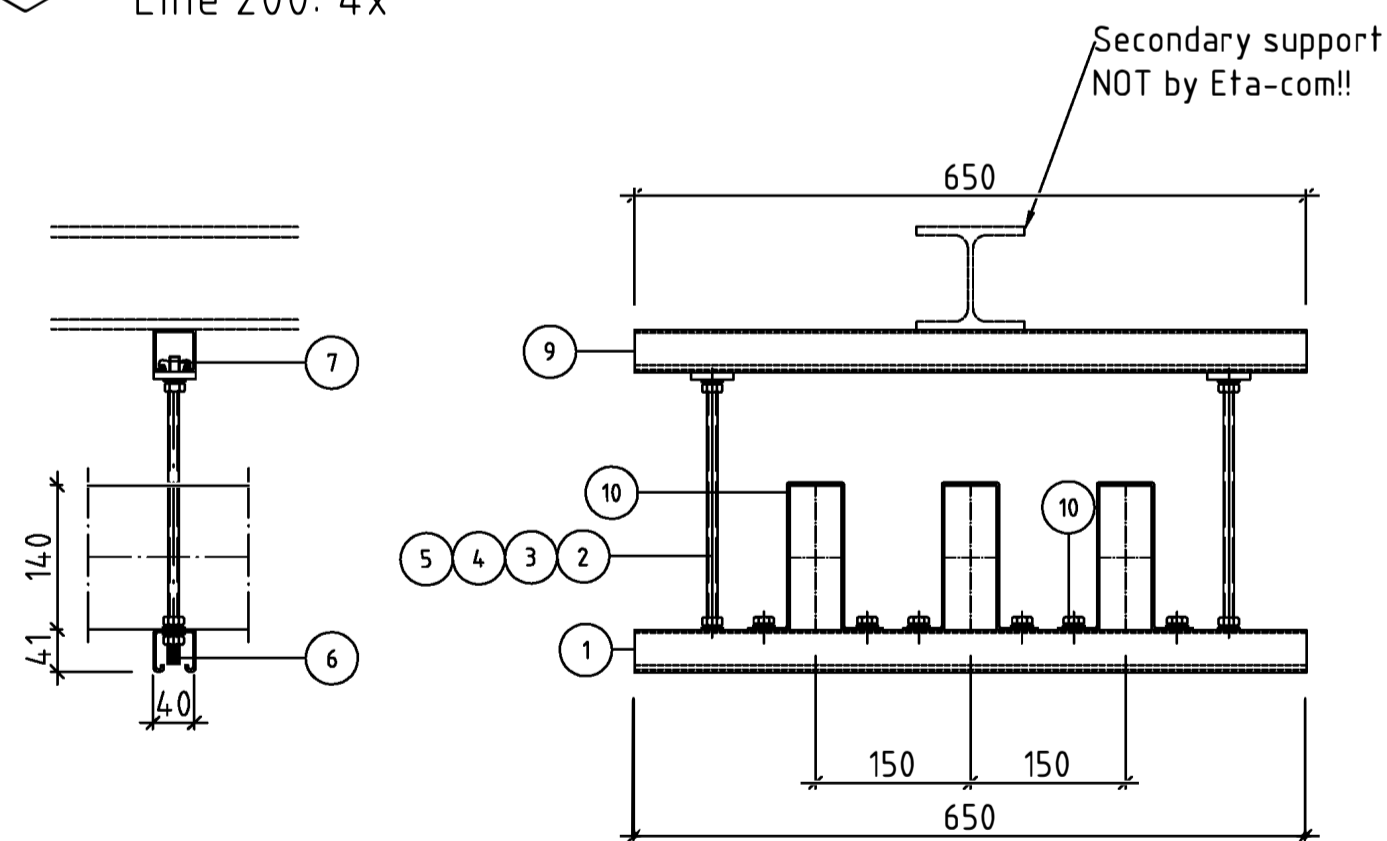
revision	date	scale	drawn	checked
B) 02/09/2014	28/11/13	1:10		

Type 1 Line 100: 7x
Line 200: 10x



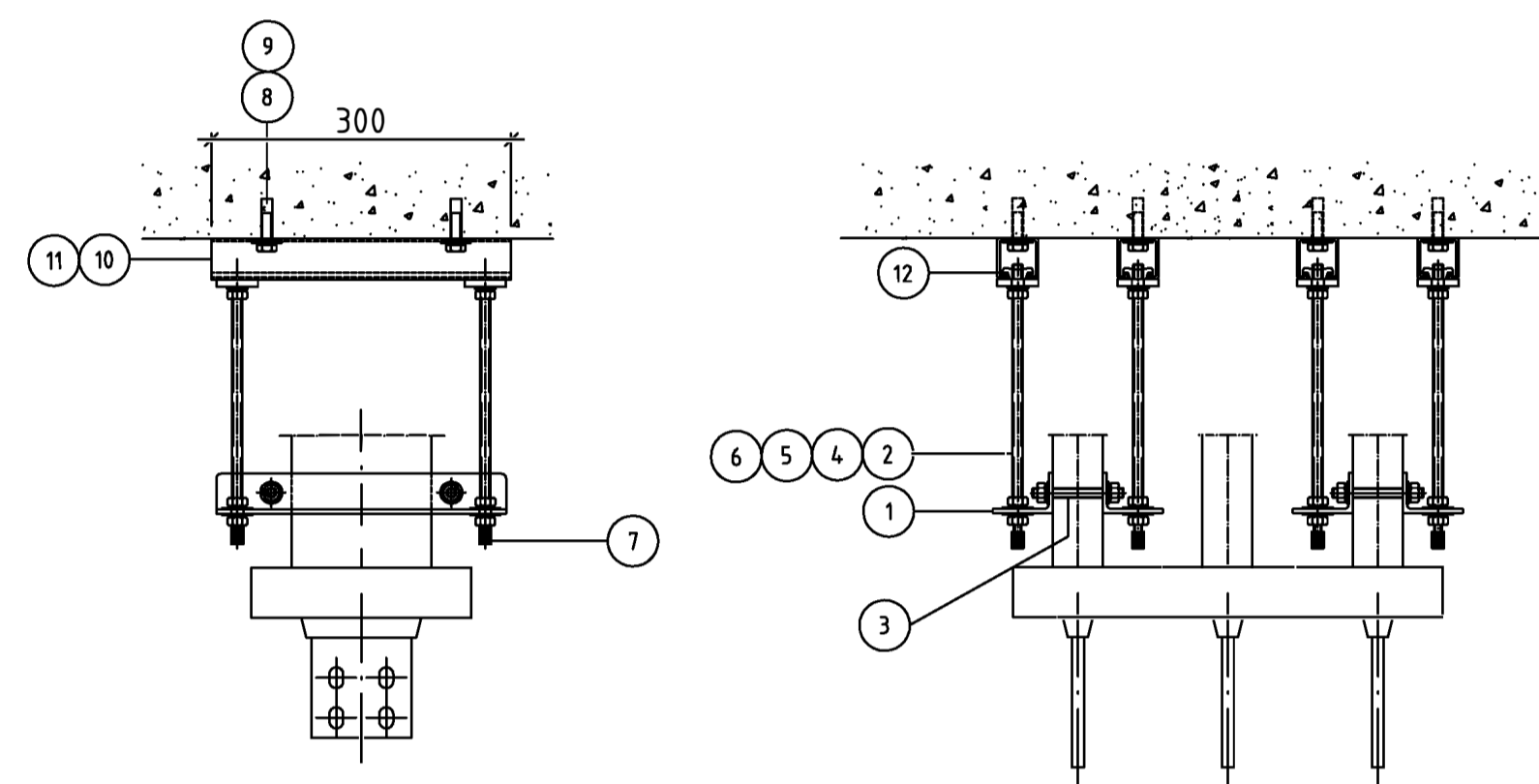
Nr	Parts	Description	Material	Code	QTY
1	Support profile UNISTRUT	C41x41x2.5 mm L=600mm	RVS304	MON00492	2
2	Threaded rod	M10x2000mm DIN975	RVS304	BVM00193	2
3	Hex. nut	M10 DIN934	RVS304	BVM00221	12
4	Plain washer	M10 DIN9021	RVS304	BVM00246	20
5	Spring lock washer	M10 DIN127	RVS304	BVM00203	20
6	Protection cap	M10	Plastic	ETL00035	2
7	Special nut HILTI	MQA 10	RVS316	BVM00714	2
8	Concrete anchor HILTI	HKD10	RVS304	BVM00777	2
9	Bolts	M10x25 DIN933	RVS304	BVM00144	2
10	Bolts	M10x35 DIN912	RVS304	BVM00082	6
11	Protection cap UNISTRUT		RVS304	MON00003	4
12	Fixation support		RVS304	ZZPROD	3

Type 1b Line 100: 4x
Line 200: 4x



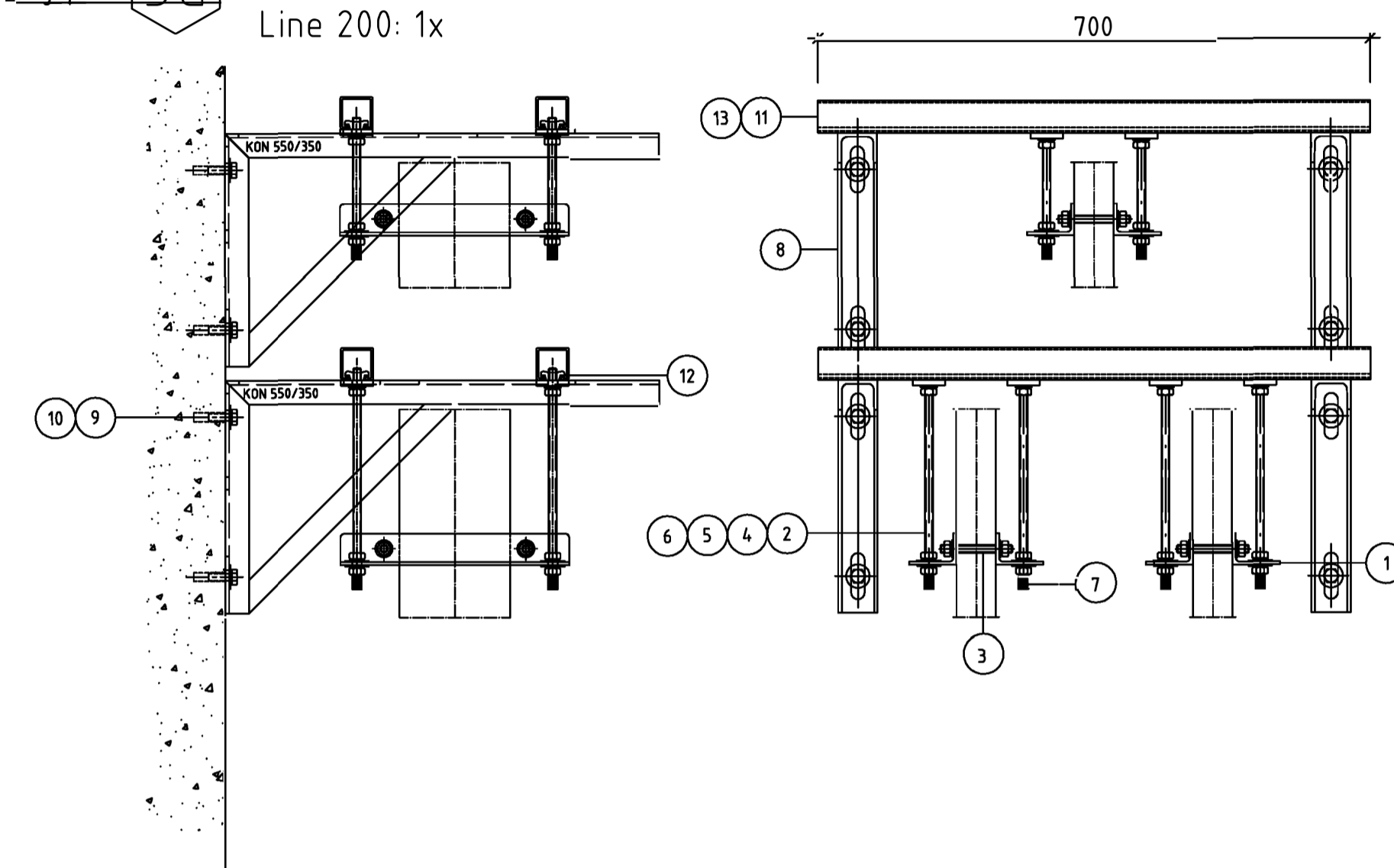
Nr	Parts	Description	Material	Code	QTY
1	Support profile UNISTRUT	C41x41x2.5 mm L=600mm	RVS304	MON00492	2
2	Threaded rod	M10x2000mm DIN975	RVS304	BVM00193	2
3	Hex. nut	M10 DIN934	RVS304	BVM00221	12
4	Plain washer	M10 DIN9021	RVS304	BVM00246	20
5	Spring lock washer	M10 DIN127	RVS304	BVM00203	20
6	Protection cap	M10	Plastic	ETL00035	2
7	Special nut HILTI	MQA 10	RVS316	BVM00714	2
8	Concrete anchor HILTI	HKD10	RVS304	BVM00777	2
9	Protection cap UNISTRUT		RVS304	MON00003	4
10	Fixation support		RVS304	ZZPROD	3

Type 3 Line 100: 2x
Line 200: 2x



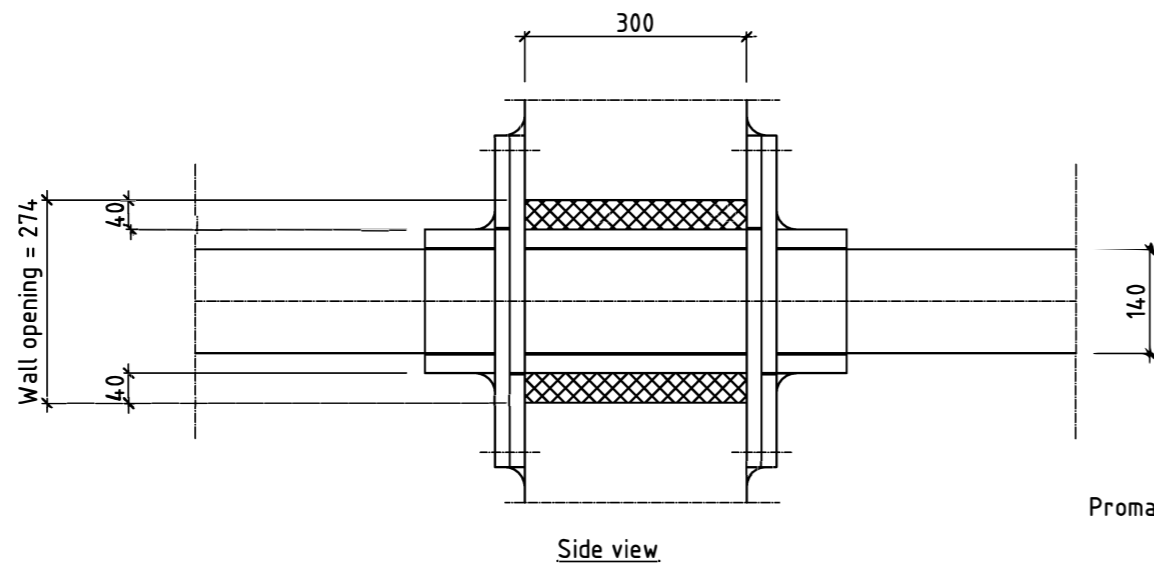
Nr	Parts	Description	Material	Code	QTY
1	Support profile	L60x40x4 mm	RVS304	ETL00573	8
2	Threaded rod	M10x2000 mm DIN975	RVS304	BVM00192	8
3	Threaded rod	M10x100mm DIN975	RVS304	ZZA-BVM00192	4
4	Hex. nut	M10 DIN934	RVS304	BVM00221	32
5	Plain washer	M10 DIN9021	RVS304	BVM00246	32
6	Spring lock washer	M10 DIN127	RVS304	BVM00203	32
7	Protection cap	M10	Plastic	ETL00035	8
8	Concrete anchor HILTI	HKD10	RVS304	BVM00777	8
9	Bolts	M10x25 DIN933	RVS304	BVM00144	8
10	Support profile UNISTRUT	C41x41x2.5 mm L=300mm	RVS304	MON00491	4
11	Protection cap UNISTRUT		Plastic	MON00003	8
12	Channelnut	M10	RVS306	BVM00714	8

Type 3a Line 100: 1x
Line 200: 1x

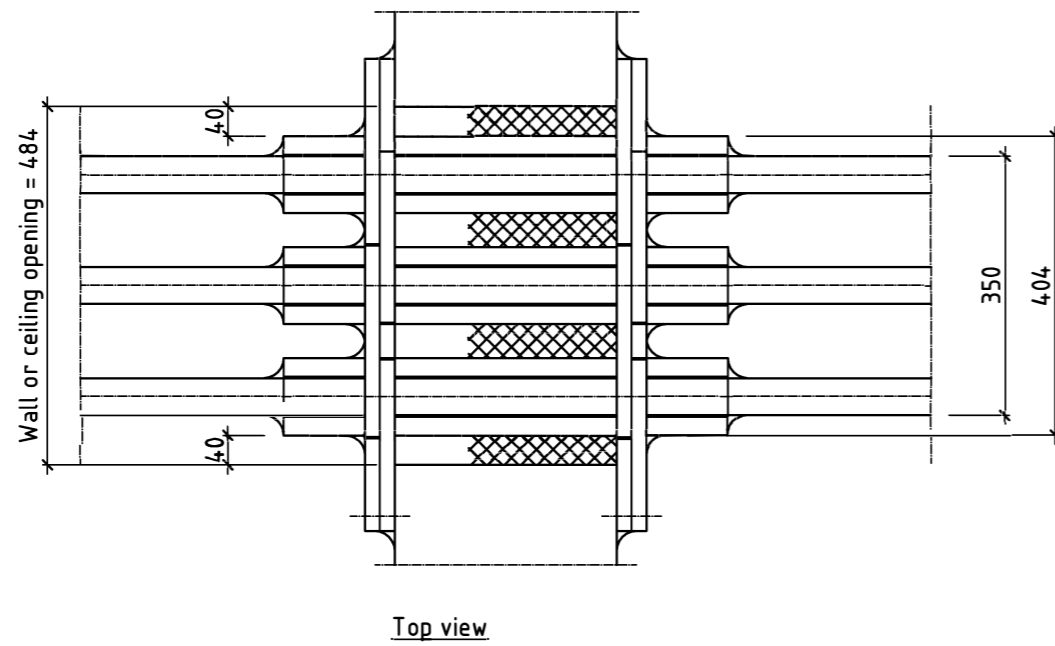
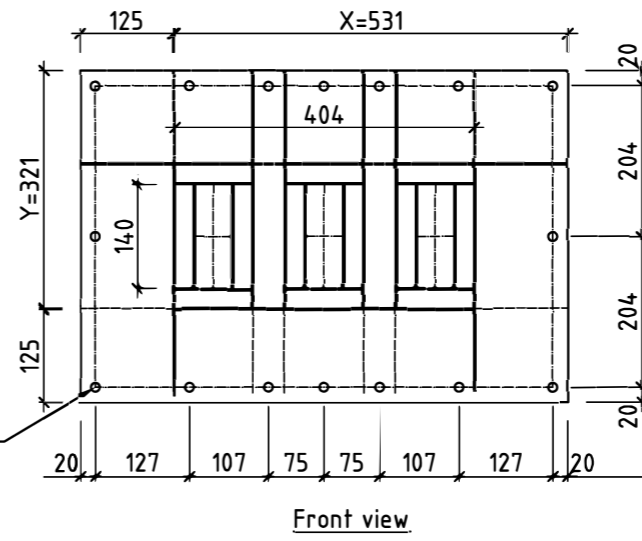


Nr	Parts	Description	Material	Code	QTY
1	Support profile	L60x40x4 mm L=290mm	RVS304	ETL00573	6
2	Threaded rod	M10x1000 mm DIN975	RVS304	BVM00192	12
3	Threaded rod	M10x100mm DIN975	RVS304	ZZA-BVM00192	6
4	Hex. nut	M10 DIN934	RVS304	BVM00221	48
5	Plain washer	M10 DIN9021	RVS304	BVM00246	56
6	Spring lock washer	M10 DIN127	RVS304	BVM00203	56
7	Protection cap	M10	Plastic	ETL00035	12
8	Angle bracket	KON550/350	RVS316	MON00454	4
9	Concrete anchor HILTI	HKD10	RVS304	BVM00777	8
10	Bolts	M10x25 DIN933	RVS304	BVM00144	8
11	Support profile UNISTRUT	C41x41x2.5 mm L=600mm	RVS304	MON00492	4
12	Special nut Hilti	MQA 10	RVS304	BVM00714	12
13	Protection cap UNISTRUT		Plastic	MON00003	8

		Drawn	Check
		KCP	
		NDN	
to new layout		NDN	
		KCP	
		NDN	
		NDN	
		NDN	
		revision date	F) 02/09/2014
		scale	05/12/'13
		drawn	1:10
		checked	
		drawing number	



Promaxon to be drilled on site!!



Line 100: 1x
Line 200: 1x



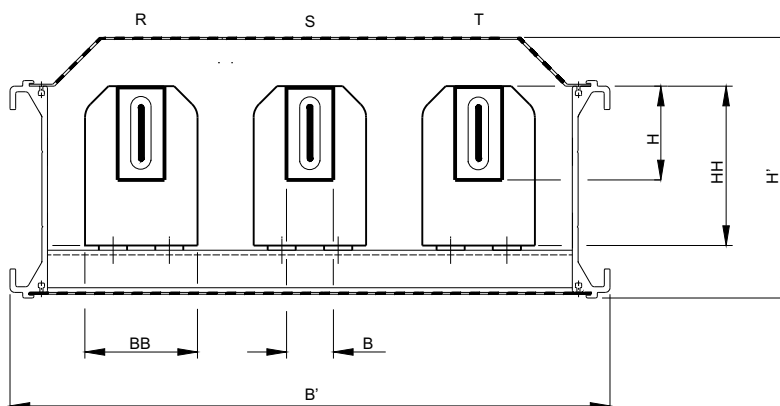
CLIENT
Wall penetration
Detail
ORDERNR. P04608

revision	A 02/09/'14
date	05/12/'14
scale	1:10
drawn	-
checked	-
drawing number	-



MH SS

Semi segregated

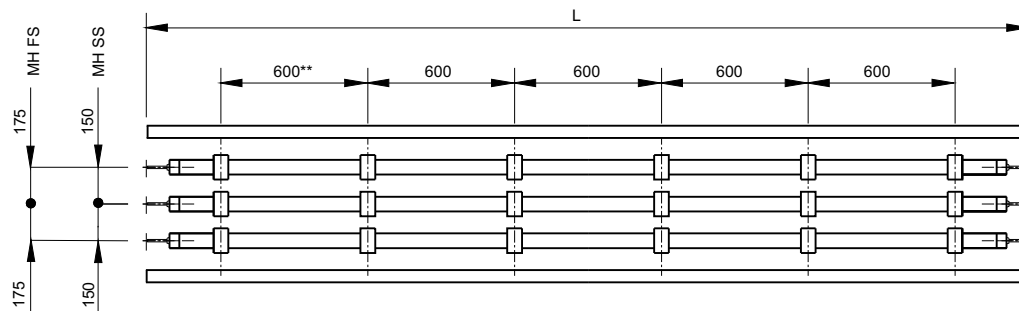
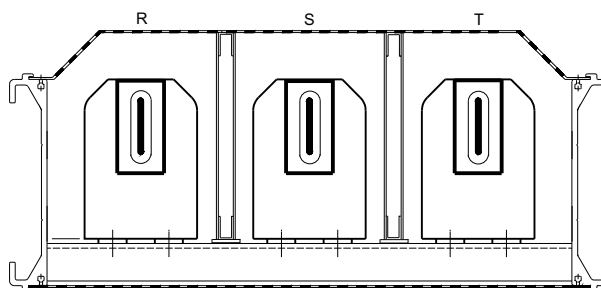


MH1 MH2
for rated voltage levels
3.6 - 7.2 - 12 - 17.5 - 24kV 50 Hz

Type	lr	IEC	Cu RST mm ²	B x H mm	BB x HH mm	B' x H'	G Cu		Z 50 Hz			lcc	kA
							kg/m	*	R 20	Rac 85	X		
MH1	1105	1000	240	50x100	120x175	SS	7,40	50	74,4	90,6	163	23	58
	1238	1250	300			640x278	9,20	51	59,7	73,6	162	29	75
	1340		360			FS	11,10	52	50,6	61,8	161	33	85
	1530		480			690x278	14,70	55	39,0	47,7	159	46	125
MH2	1600	1600	400	50x140	120x215	SS	12,30	68	45,9	55,3	134	38	75
	1765		500				15,40	70	37,5	45,0	133	47	90
	1915		600				18,40	72	32,1	38,4	132	57	105
	2165	2000	800				24,60	76	25,2	30,1	131	76	130
	2380		1000				30,70	80	20,8	24,9	130	95	150
	2525	2500	1200				36,80	85	18,1	21,6	129	114	150

MH FS

Fully segregated



Support profile screening Alu. = 4710mm² - Cu equivalent = 2842mm²

stainless steel = 2028mm² - Cu equivalent = 50.7mm²

* See page G1 (point 2)

** See page G1 (point 5)

Technical specifications may change without any further notice.