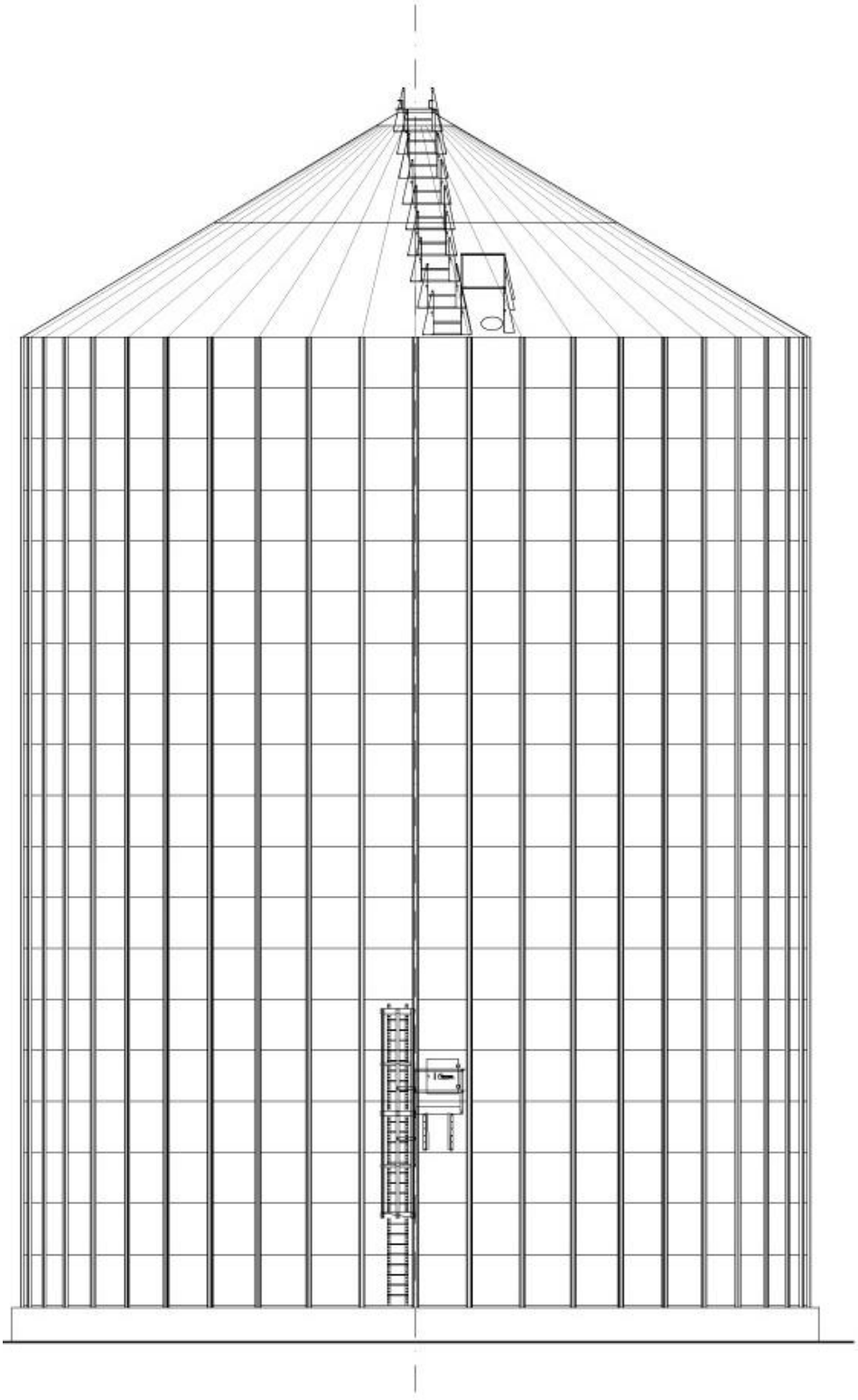
SYMAGA SILOS

FLAT BOTTOM SILO

Ø9,93-9 MEPU 6541



Assembly Instructions

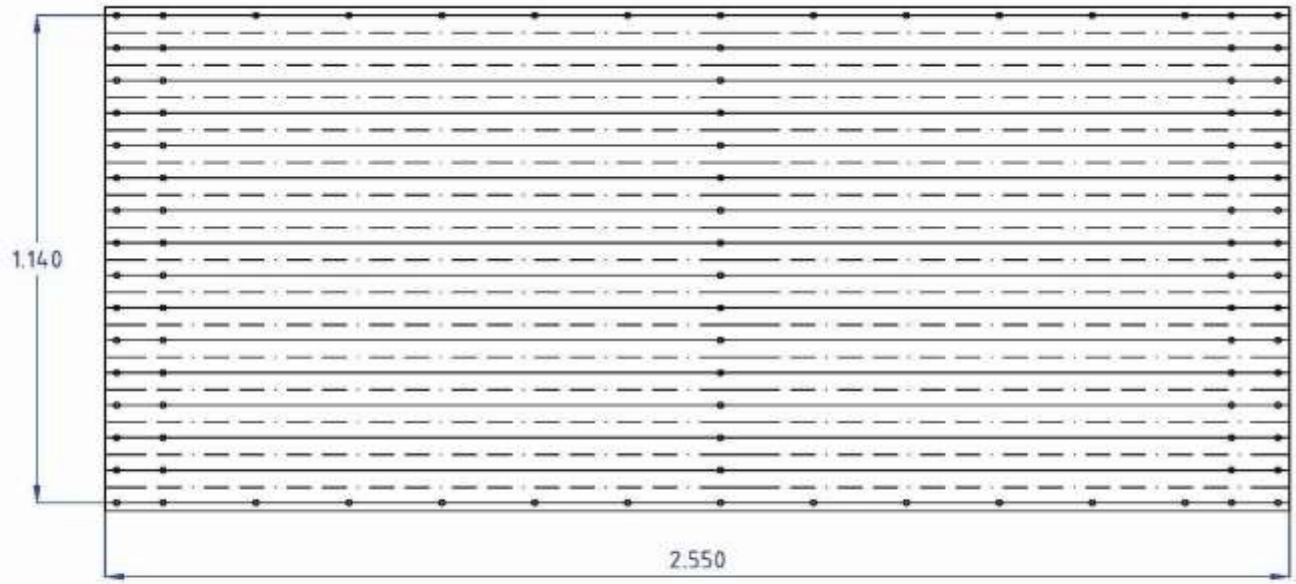
MARK	DESCRIPTION	THICKNESS	QUANTITY
	ROOF		
120504	ROOF SHEET	0,8	34
120541	ROOF SHEET WITH CIRCULAR HOLE	0,8	5
110155	ROOF COLLAR	3	1
120244	ROOF CENTER COLLAR D800mm	5	1
120241	TOP FOR ROOF CENTER COLLAR D800mm	3	1
120261	REINFORCEMENT FOR TOP FOR ROOF CENTER COLLAR D800mm	3	4
111420	FLASHING FOR ROOF COLLAR R1080mm FOR 4 REINFORCEMENTS	0,8	4
120384	REINFORCEMENT CENTER COLLAR "U" 75x30x760mm	2	12
110162	FLASHING SHEET	0,8	39
110011	SMALL ROOF'S CLIP	2	117
110012A	LARGE ROOF'S CLIP	2	39
120692	ROOF LADDER RUNG L= 418mm	3	12
120691	ROOF LADDER RUNG L= 1100mm	3	9
120715A	RING FOR MANHOLE	2	1
110295	COVER FOR MANHOLE	2	1
120780	"U" HINGE FOR MANHOLE	3	1
120779	"U" FOR HINGE-MANHOLE	3	1
121811	WEATHER STRIP L=1500 mm		1
	BOLT 8 X 30 ISO 4017 GALVANISED C-8.8		835
	BOLT 10 X 25 ISO 4017 GALVANISED C-8.8		185
	NUT M-8 ISO 4032 GALVANISED C-8.8		835
	NUT M-10 ISO 4032 GALVANISED C-8.8		185
	FLAT WASHER M-8 ISO 7091 GALVANISED		590
	FLAT WASHER M-8 ISO 7093 GALVANISED		300
	FLAT WASHER M-10 DISO 7091 GALVANISED		185
	WEATHERSEAL WASHER M-8 GALVANISED		835
	WEATHERSEAL WASHER M-10 GALVANISED		185
	METRE OF PLASTILINE D 6mm		18
	BODYSHEET		
110000A	BODYSHEET 2 STIFFENERS DOUBLE JOINT	0,8	39
110000A	BODYSHEET 2 STIFFENERS DOUBLE JOINT	1	26
110000A	BODYSHEET 2 STIFFENERS DOUBLE JOINT	1,2	52
122302	BODYSHEET 2 STIFFENERS DOUBLE JOINT WITH LOGO SYMAGA	0,8	1
111091	BODYSHEET (1) WITH MANHOLE 2 STIFFENERS DOUBLE JOINT	2	1
119714	LADDER'S RAIL L= 1326mm	1,5	4
119610	PLASTIC COVER FOR LADDER'S RAIL		4
119611	LADDER SUPPORT	3	8
119616	LADDER RUNG L= 460mm	1,5	10
	STIFFENERS		
113362	UPPER SHORT STIFFENER 75x988mm	1,5	26
111886	STANDARD STIFFENER 2 BODYSHEETS 75x2280mm	1,5	26
111886	STANDARD STIFFENER 2 BODYSHEETS 75x2280mm	2	26
111886	STANDARD STIFFENER 2 BODYSHEETS 75x2280mm	3	26
113363	LOWER STIFFENER 75x2432mm	4	26
111882	STIFFENER'S SPLICE 67x456mm	1,5	52
111882	STIFFENER'S SPLICE 67x456mm	2	26
111882	STIFFENER'S SPLICE 67x456mm	3	26

119975	ANCHOR PLATE TYPE "BF" 160x180x25mm D25	5 y 25 mm	26
	BOLT 8 X 20 ISO 4017 GALVANISED C-8.8		50
	BOLT 8 X 60 ISO 4017 GALVANISED C-8.8		30
	BOLT 10 X 20 ISO 4017 GALVANISED C-8.8		4650
	BOLT 10 X 25 ISO 4017 GALVANISED C-8.8		3700
	BOLT 10 X 35 ISO 4017 GALVANISED C-8.8		100
	NUT M-8 ISO 4032 GALVANISED C-8.8		80
	NUT M-10 ISO 4032 GALVANISED C-8.8		8400
	WEATHERSEAL WASHER M-10 GALVANISED		6850
	FLAT WASHER M-8 ISO 7091 GALVANISED		80
	FLAT WASHER M-10 DISO 7091 GALVANISED		6050
	METRE OF PLASTILINE D 6mm		253
	SILICONE TUBE		3
	COLD GALVANIZING SPRAY 985 ZINC		2
ROOF ACCESSORIES			
	INSULATOR FOR EAVE		39
	INSULATOR FOR WAVES OF ROOF SHEETS		39
115467	ROOF REINFORCEMENT L= 4300mm	2,5	39
114842	CLIP FOR REINFORCEMENT	3	39
	BOLT 8 X 20 ISO 4017 GALVANISED C-8.8		40
	NUT M-8 ISO 4032 GALVANISED C-8.8		590
	FLAT WASHER M-8 ISO 7091 GALVANISED		590
	WEATHERSEAL WASHER M-8 GALVANISED		40
HANDRAIL FOR ROOF LADDER			
120691	ROOF LADDER RUNG L= 1100mm	3	3
113915	HANDRAIL BRACKET	3	13
110026	GUSSET FOR HANDRAIL BRACKET	3	18
110129A	BANISTER L= 990mm	1,5	8
110059B	BANISTER L=1028mm	1,5	4
110058A	BANISTER L= 1488mm	1,5	2
110027B	BANISTER L= 1986mm	1,5	4
	BOLT 10 X 20 ISO 4017 GALVANISED C-8.8		150
	NUT M-10 ISO 4032 GALVANISED C-8.8		150
LADDER TO ROOF			
119608	LADDER'S RAIL L= 1138mm	1,5	18
119714	LADDER'S RAIL L= 1326mm	1,5	4
119610	PLASTIC COVER FOR LADDER'S RAIL		4
119611	LADDER SUPPORT	3	26
119612	LADDER SUPPORT ON EAVE-RING-HOPPER	3	2
119613	UPPER SAFETY BAND	2	1
119614	SAFETY BAND	2	8
119615	TRANSITION SAFETY BAND	2	2
119616	LADDER RUNG L= 460mm	1,5	46
119617	"U" SAFETY L= 1140mm	2	54
119619	ANGLE TO FLOOR	3	1
119764	HANDRAIL	1,5	2
119620	HANDRAIL BRACKET LEFT TRANSITION	3	1
119622	HANDRAIL BRACKET RIGHT TRANSITION	3	1
111663	VERTICAL ANGLE FOR PLATFORM	3	2
121152	CANTILEVERED ANGLE L= 950mm	3	2

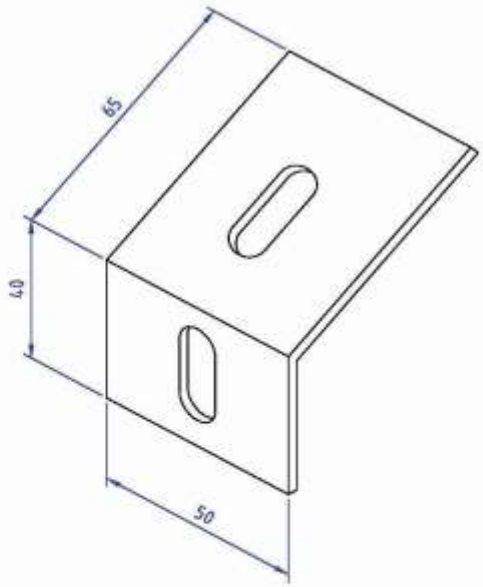
121123	LONG VERTICAL RAIL L=1250mm	3	2
119861	LONG VERTICAL RAIL	3	6
121127	HORIZONTAL ANGLE L= 800mm	3	2
121109A	PLATAFORM'S FLOOR 110x800mm	3	1
	BOLT 8 X 20 ISO 4017 GALVANISED C-8.8		250
	BOLT 8 X 60 ISO 4017 GALVANISED C-8.8		100
	BOLT 10 X 20 ISO 4017 GALVANISED C-8.8		60
	BOLT 10 X 40 ISO 4017GALVANISED C-8.8		30
	NUT M-8 ISO 4032 GALVANISED C-8.8		350
	NUT M-10 ISO 4032 GALVANISED C-8.8		90
	WEATHERSEAL WASHER M-10 GALVANISED		50
	FLAT WASHER M-8 ISO 7091 GALVANISED		350
	FLAT WASHER M-10 DISO 7091 GALVANISED		30
	SLEEVE ANCHOR M10x75		2
122207	LINTEL	3	3
122208	DOOR SIDE	3	2
122209	HINGE TIPE A		2
	CLOSING DOOR SPRING		1
	SELF DRILLING BOLT 4,8 X 13 WITHOUT WASHER		10
AERATION ROOF VENT			
119623	TOP COVER FOR AERATION	2	1
119624	BODY FOR AERATION	2	1
119625	SUPPORT CLIP	2	4
119626	MESH FOR AERATION		1
119627	FLANGE FOR AERATION	2	1
	BOLT 8 X 20 ISO 4017 GALVANISED C-8.8		40
	NUT M-8 ISO 4032 GALVANISED C-8.8		40
	FLAT WASHER M-8 ISO 7091 GALVANISED		40
	WEATHERSEAL WASHER M-8 GALVANISED		40
	METRE OF PLASTILINE D 6mm		3,5
AERATION SYSTEM			
	FAN CMR-1240-2T/N, 5,5CV, 200/380V, 50Hz, LG-270		1
	ASPIRATION CLAMP WITH GRILL B-400/350/ESP		1
	ELASTIC COUPLING ACE-400		1
	CLAMP TO DRIVE BIC-1240/N		1
122170	CLOSE ANGLE 9,93	3	13
122194	SHIM 180x77x2mm	2	26
122195	SHIM 180x77x3mm	3	26
122203	SPLICE	3	13
	Mts. POLYETHILENE JOINT 10x3 mm		32
	Mts. POLYETHILENE JOINT 40x15 mm		32
	BOLT 10 X 40 ISO 4017GALVANISED C-8.8		160
	NUT M-10 ISO 4032 GALVANISED C-8.8		320
	FLAT WASHER M-10 DISO 7091 GALVANISED		320
	WEATHERSEAL WASHER M-10 GALVANISED		320
122228	FLOOR PLANK e= 1,5mm L=2500mm	1,5	2
122230	FLOOR PLANK e= 1,5mm L=3500mm	1,5	2
122232	FLOOR PLANK e= 1,5mm L=4500mm	1,5	2

122234	FLOOR PLANK e= 1,5mm L=5500mm	1,5	2
122235	FLOOR PLANK e= 1,5mm L=6000mm	1,5	2
122236	FLOOR PLANK e= 1,5mm L=6500mm	1,5	2
122237	FLOOR PLANK e= 1,5mm L=7000mm	1,5	4
122238	FLOOR PLANK e= 1,5mm L=7500mm	1,5	4
122239	FLOOR PLANK e= 1,5mm L=8000mm	1,5	4
122240	FLOOR PLANK e= 1,5mm L=8500mm	1,5	4
122241	FLOOR PLANK e= 1,5mm L=9000mm	1,5	6
122242	FLOOR PLANK e= 1,5mm L=9500mm	1,5	6
122243	FLOOR PLANK e= 1,5mm L=10000mm	1,5	15
122204	CLOSING SHEET	2	156
120486	V SUPPORT		96
120487	DOUBLE SUPPORT		28
121039	CONNECTION TO FAN 500x250		1
121038	TRANSICION 315x400 - 500x250		1
	COLD GALVANIZING SPRAY 985 ZINC		1
	SELF DRILLING BOLT TRAXX 5,5X32 WITH GALVANIZED HEAD		570
	BOLT 10 X 30 ISO 4017 GALVANISED C-8.8		240
	NUT M-10 ISO 4032 GALVANISED C-8.8		240
	FLAT WASHER M-10 DISO 7091 GALVANISED		240
	WEATHERSEAL WASHER M-10 GALVANISED		240
	Mts. POLYETHILENE JOINT 15x20 mm		3
DOCUMENTATION			
	xxxxx ingles manual 1		1

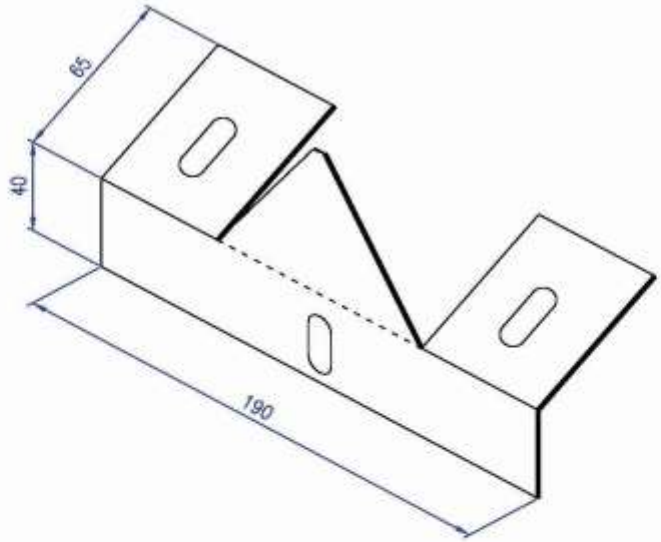
IDENTIFICATION OF MARKS



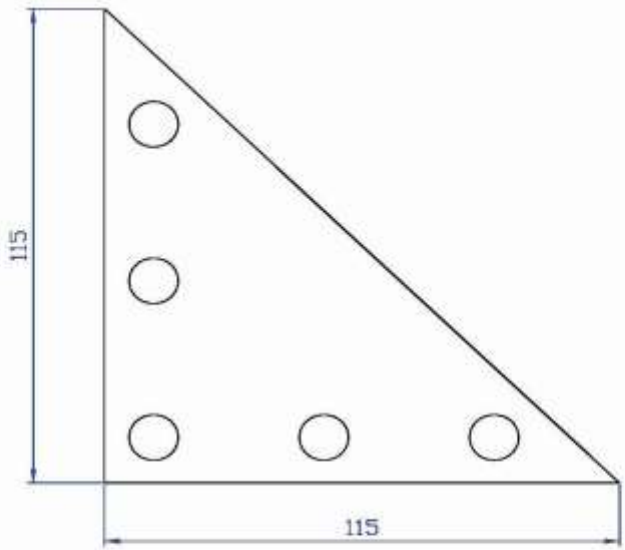
MARCA 110.000A	VIROLA 2 REFUERZOS DOBLE JUNTA
MARK 110.000A	BODYSHEET 2 STIFFENERS DOUBLE JOINT
MARQUE 110.000A	VIROLE 2 MONTANT DOUBLE JOINT



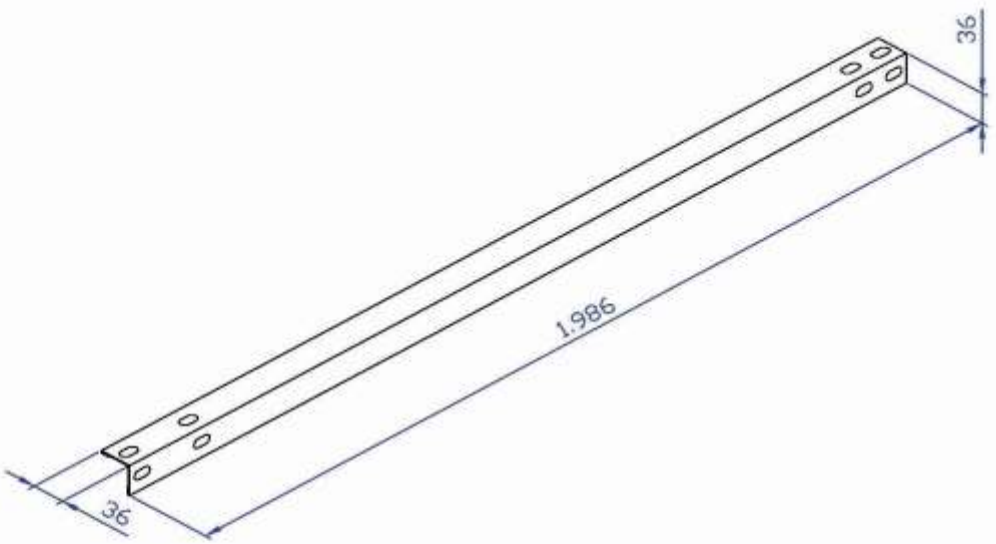
MARCA 110.011	CLIP NORMAL DE TECHO
MARK 110.011	SMALLROOF CLIP
MARQUE 110.011	CLIP PETIT



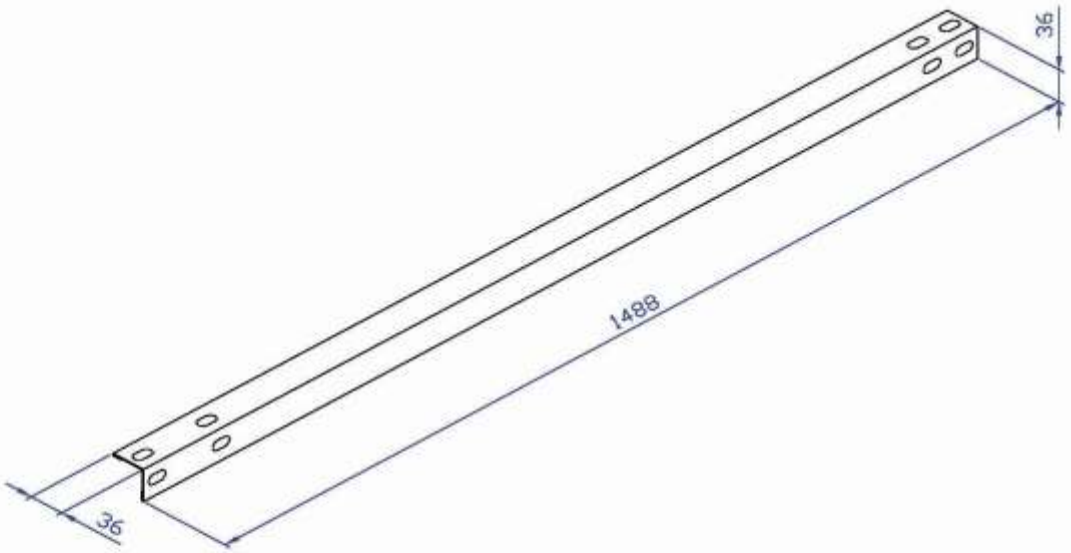
MARCA 110.012A CLIP DOBLE DE TECHO
MARK 110.012A LARGE ROOF CLIP
MARQUE 110.012A CLIP GRAND



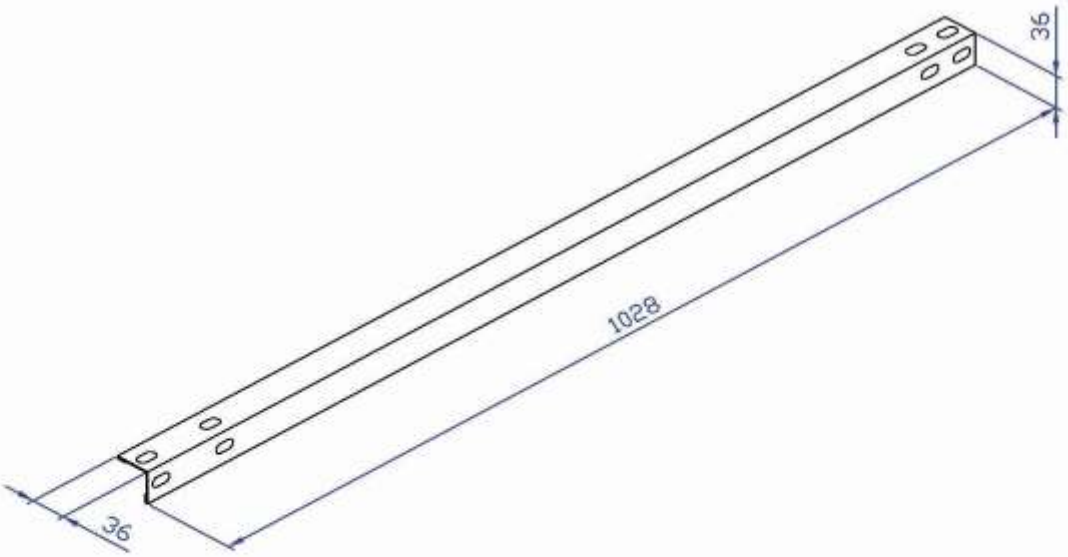
MARCA 110.026 CARTABON EN BARANDILLA TECHO
MARK 110.026 GUSSET
MARQUE 110.026 ECLIPSSE DE RAMBARDE



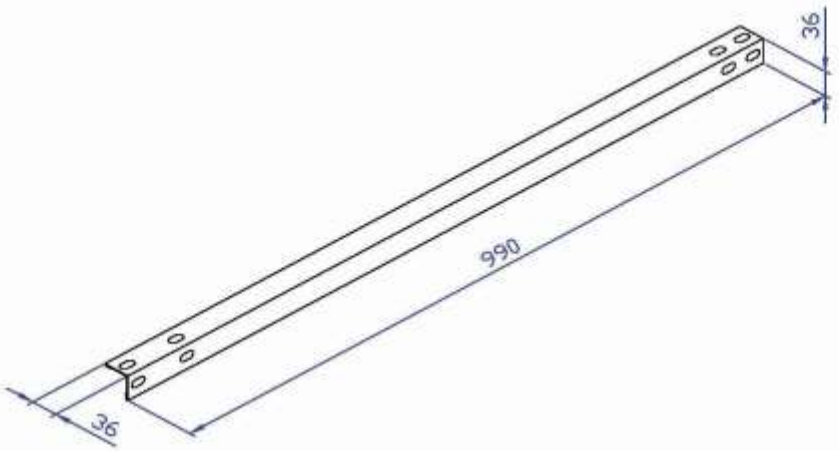
MARCA 110.027B ANGULAR BARANDILLA TECHO
MARK 110.027B HAND RAIL
MARQUE 110.027B ANGLE DE RAMBARDE



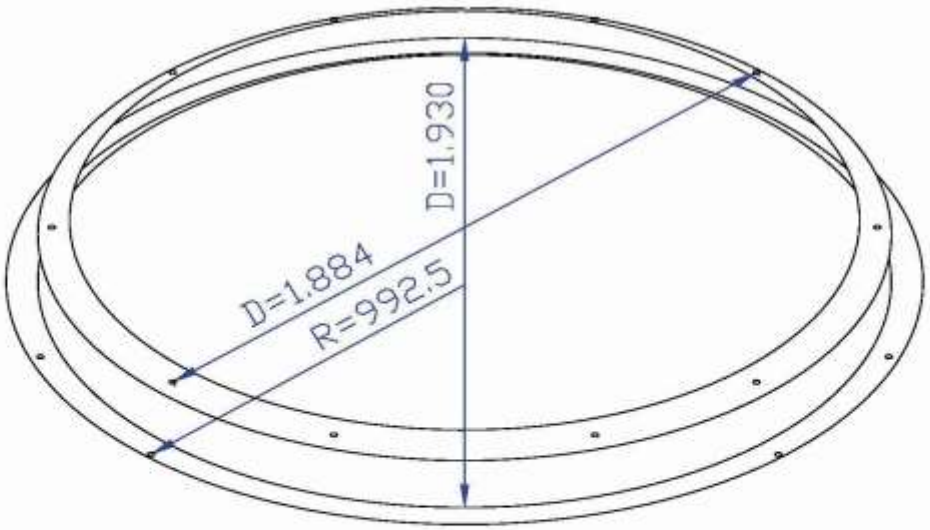
MARCA 110.058A ANGULAR BARANDILLA TECHO
MARK 110.058A HANDRAIL
MARQUE 110.058A ANGLE DE RAMBARDE



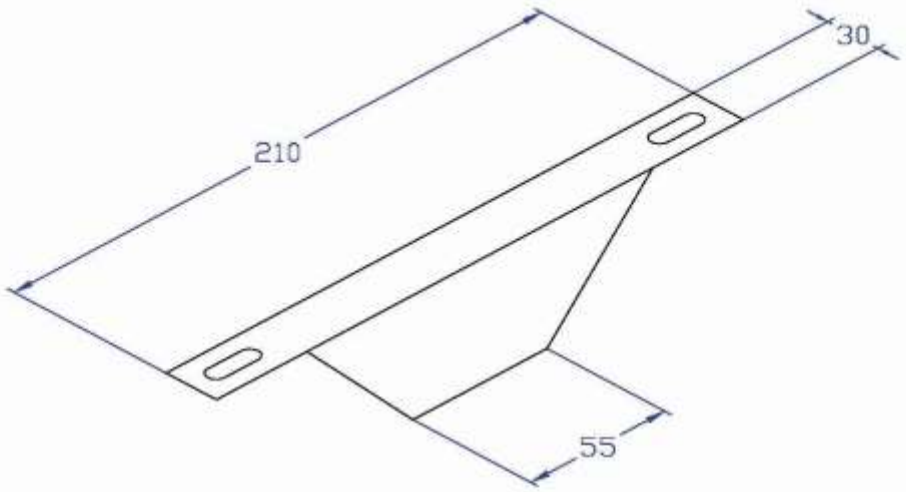
MARCA 110.059B ANGULAR BARANDILLA TECHO
MARK 110.059B HAND RAIL
MARQUE 110.059B ANGLE DE RAMBARDE



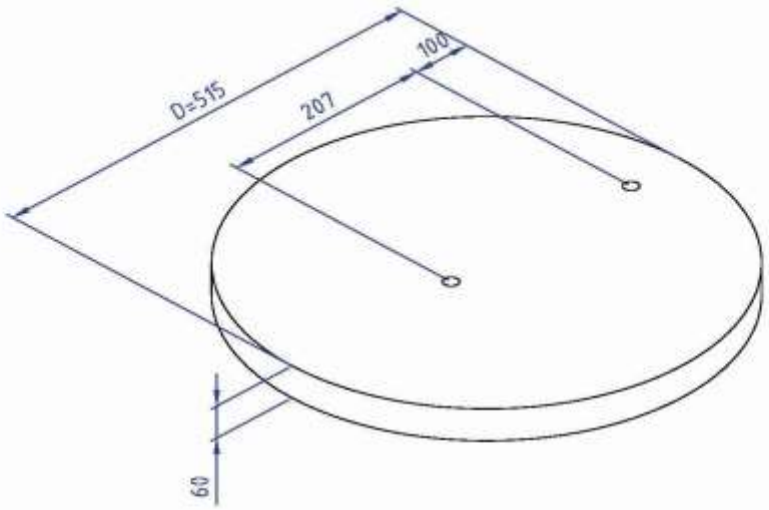
MARCA 110.129A ANGULAR BARANDILLA TECHO
MARK 110.129A HAND RAIL
MARQUE 110.129A ANGLE DE RAMBARDE



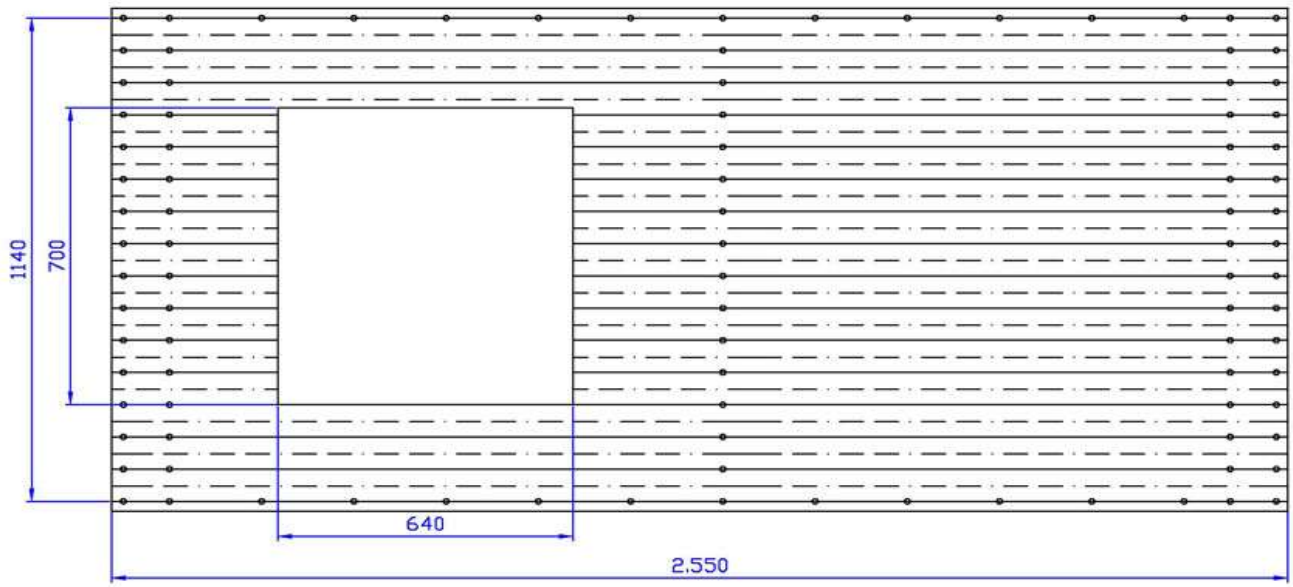
MARCA 110.155 COLLAR DE TECHO SILO 9,93 ø
MARK 110.155 ROOF COLLAR SILO 9,93 ø
MARQUE 110.155 ANNEAU DU TOIT SILO 9,93 ø



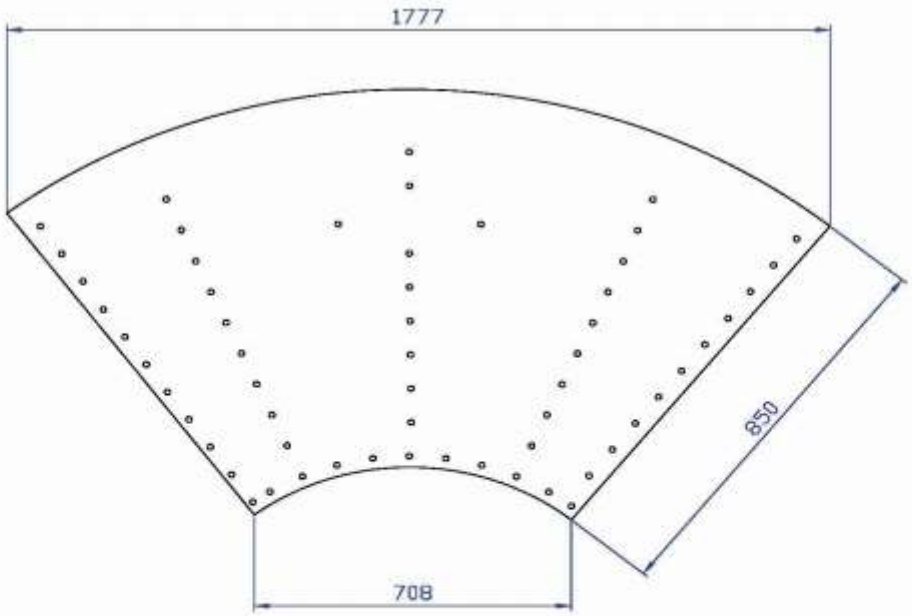
MARCA 110.162 CHAPA CIERRE SILO 9,93ø
MARK 110.162 ROOF FLASHING SILO 9,93ø
MARQUE 110.162 TOLE DE CLOTURE SILO 9,93ø



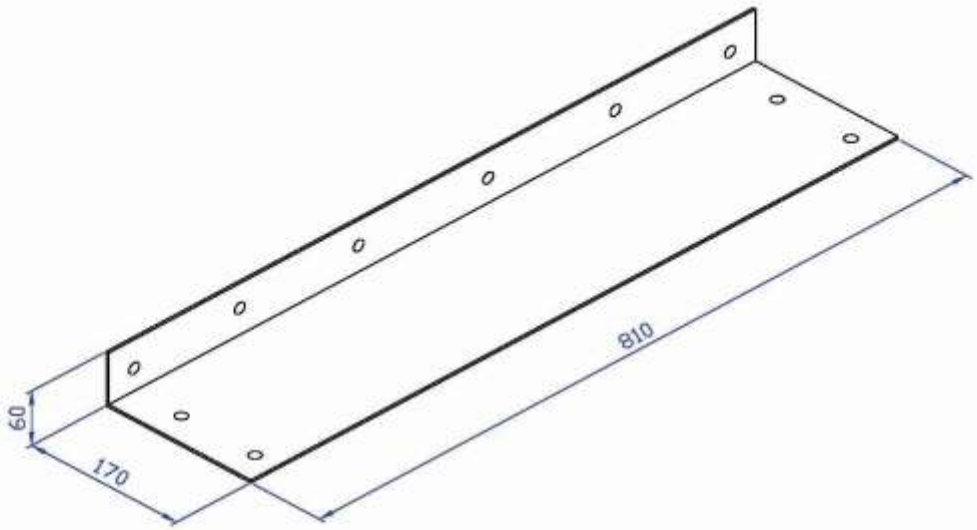
MARCA 110.295 TAPA PUERTA TECHO
MARK 110.295 COVER FOR MANHOLE
MARQUE 110.295 PORTE D'ACCESS



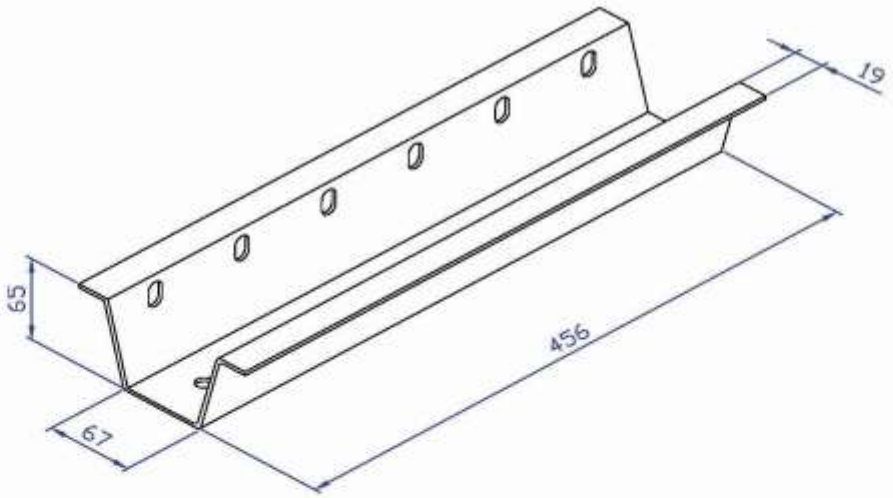
MARCA 111.091 VIROLA CON PUERTA 2 REFUERZOS DOBLE JUNTA
MARK 111.091 ACCESS BODYSHEET 2 STIFFENERS DOUBLE JOINT
MARQUE 111.091 VIROLE AVEC PORTE 2 MONTANT DOUBLE JOINT



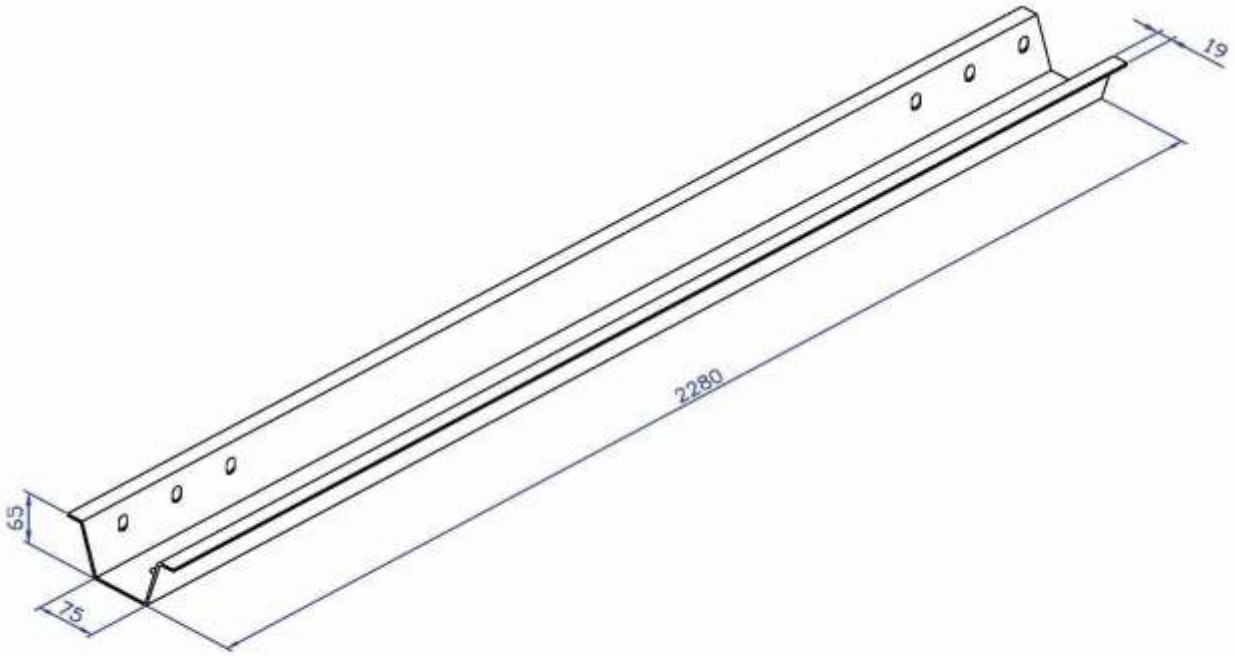
MARCA 111.420 FALDON PARA BOCA DE CARGA
MARK 111.420 FLASHING FOR ROOF CENTER COVER
MARQUE 111.420 BAVETTE POUR BOUCHE CHARGE



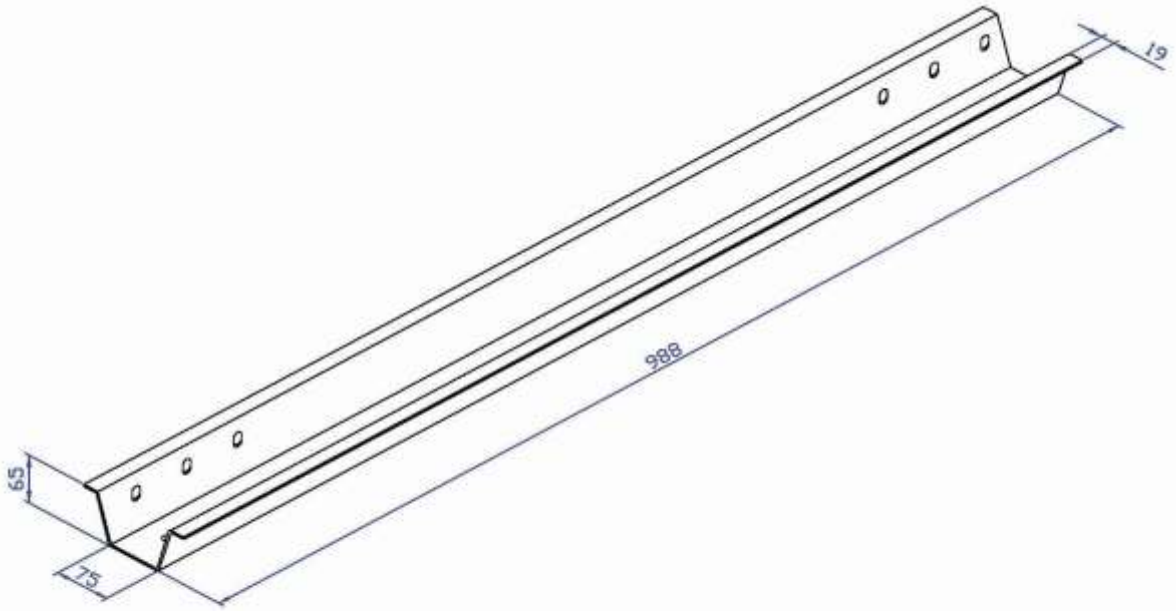
MARCA 111.663 ANGULO AMARRE A SILO
MARK 111.663 VERTICAL ANGLE TO SILO
MARQUE 111.663 VERTICAL ANGLE AU SILO



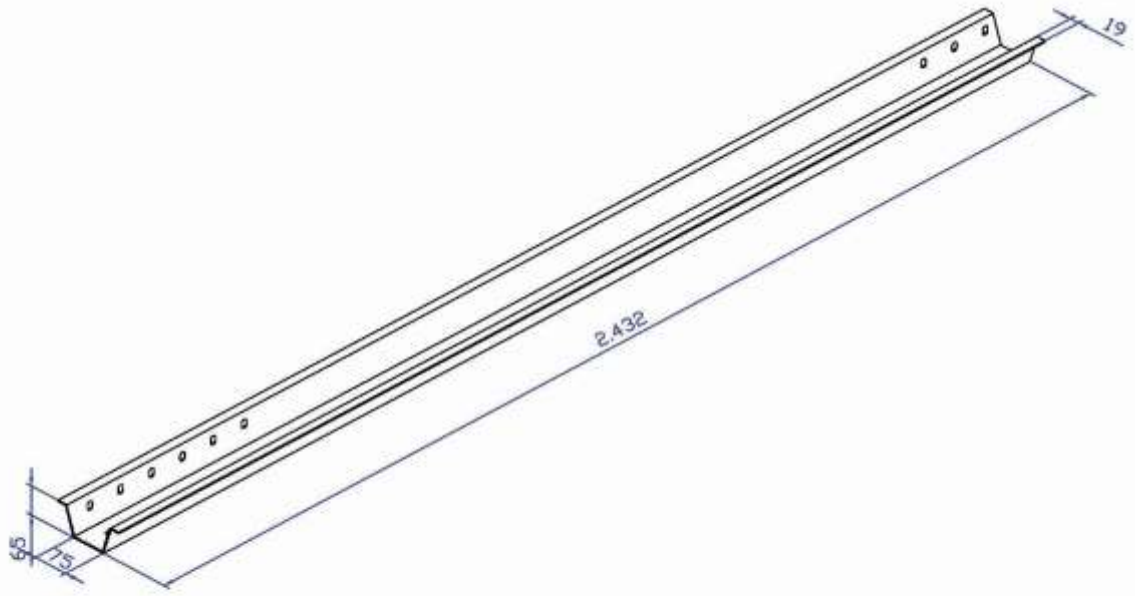
MARCA 111.882 EMPALME REFUERZO
MARK 111.882 SPLICE
MARQUE 111.882 ECLISSE



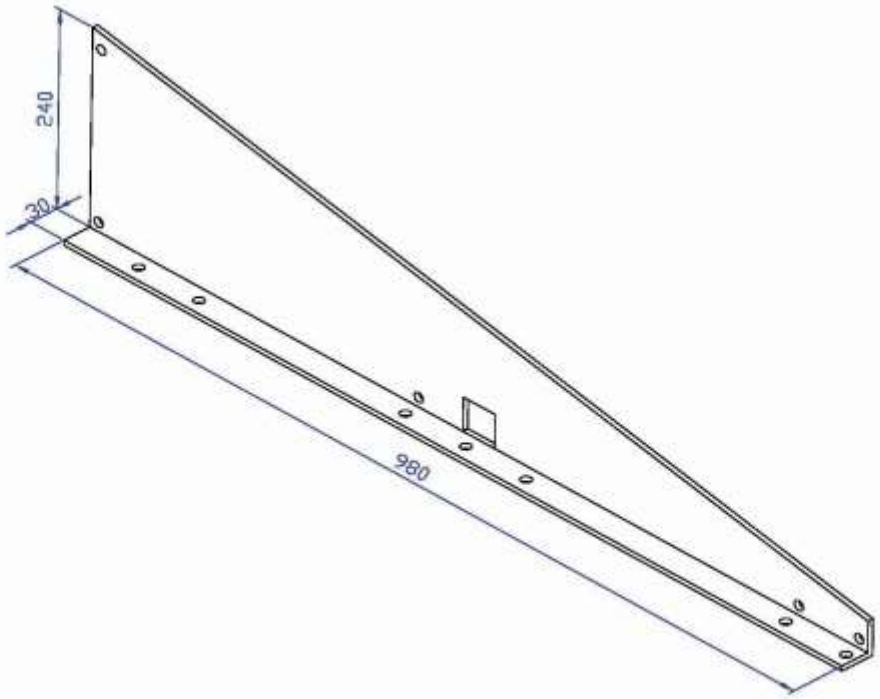
MARCA 111.886 REFUERZO NORMAL
MARK 111.886 STANDARD STIFFENER
MARQUE 111.886 MONTANT STANDARD



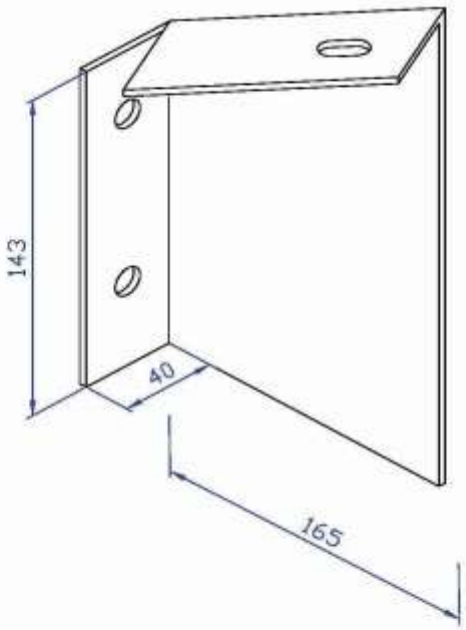
MARCA 113.362 REFUERZO SUPERIOR CORTO
MARK 113.362 SUPERIOR SHORT STIFFENER
MARQUE 113.362 MONTANT PETIT SUPERIEUR



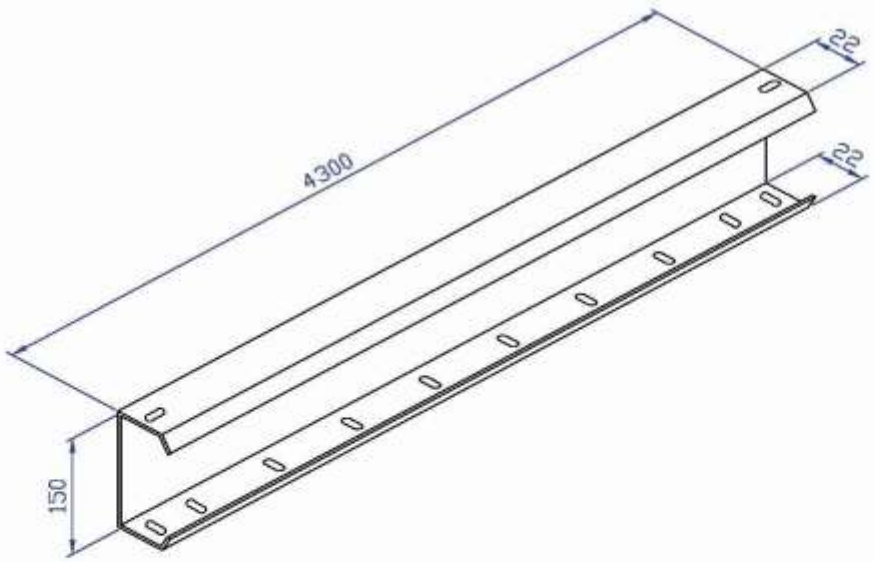
MARCA 113.363 REFUERZO INFERIOR
MARK 113.363 LOWER STIFFENER
MARQUE 113.363 MONTANT INFERIEUR



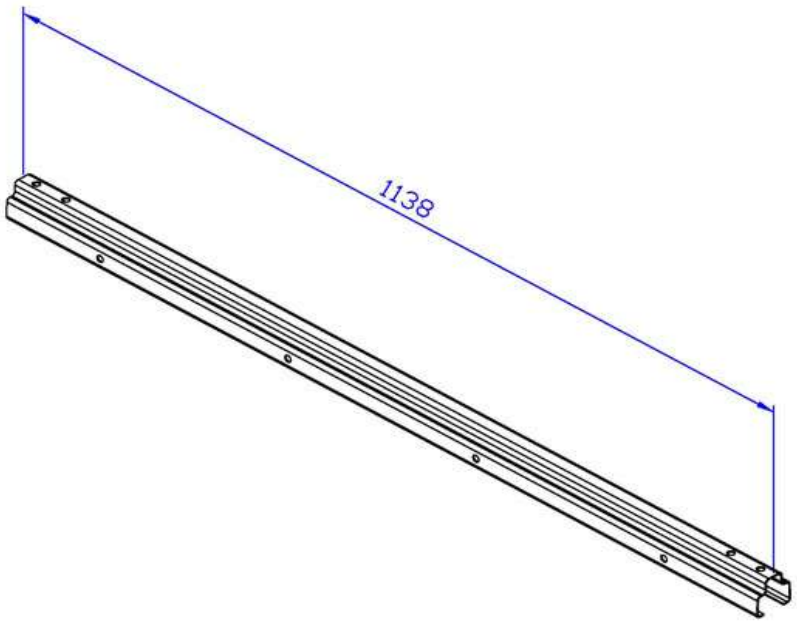
MARCA 113.915 CHAPA BARANDILLA DE TECHO
MARK 113.915 HANDRAIL BRACKET
MARQUE 113.915 POTEAU DE RAMBARDE DU TOIT



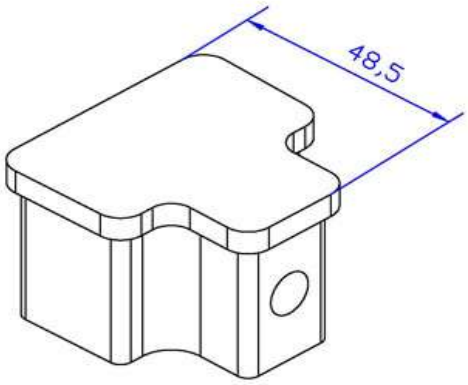
MARCA 114.842 CLIP REFUERZO DE TECHO SILO
MARK 114.842 CLIP REINFORT FOR ROOF SILO
MARQUE 114.842 CLIP RENFORT SILO



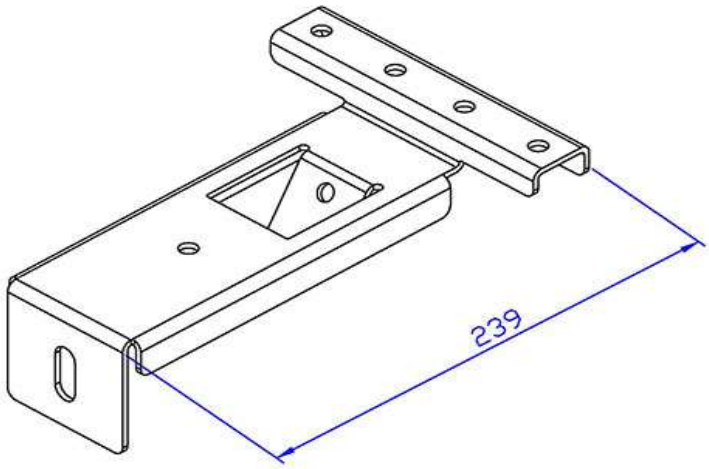
MARCA 115.467	REFUERZO TECHO L= 4.300 mm. SILO 9,33Ø
MARK 115.467	ROOF REINFORT L= 4.300 mm. SILO 9,33Ø
MARQUE 115.467	RENFORT DE TOIT L= 4.300 mm. SILO 9,33Ø



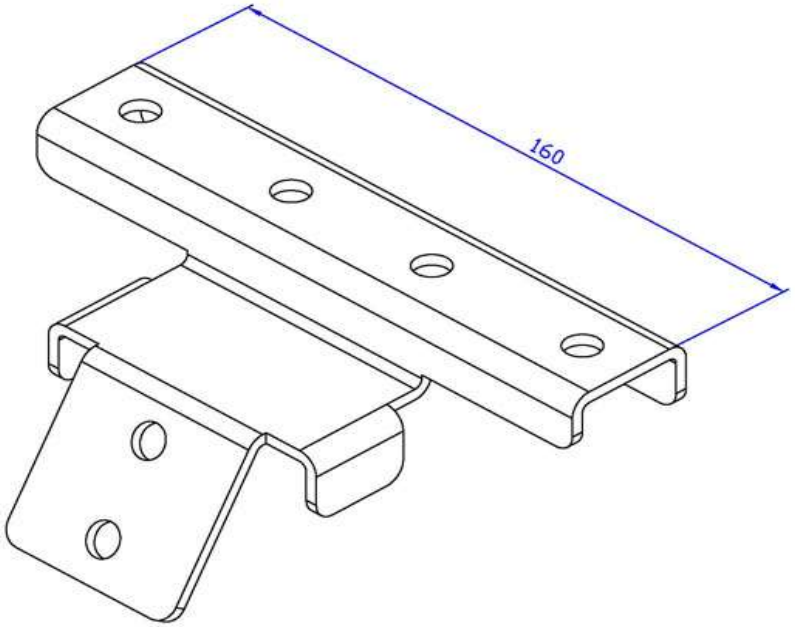
MARCA 119.608	RAIL ESCALERA L=1138 mm
MARK 119.608	LADDER'S RAIL L= 11386mm
MARQUE 119.608	RAIL D'ECHELLE L= 1138mm



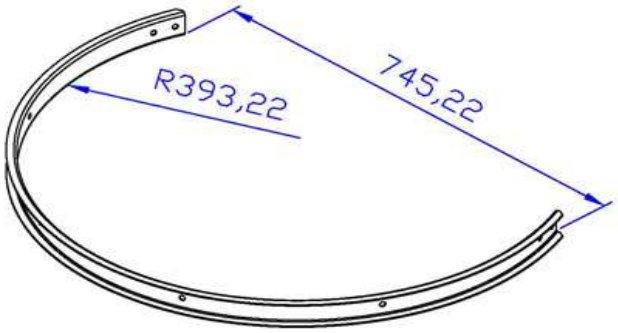
MARCA 119.610 TAPON PLASTICO RAIL ESCALERA
MARK 119.610 PLASTIC COVER FOR LADDER'S RAIL
MARQUE 119.610 COUVERTURE DU PLASTIQUE POUR L'ECHELLE



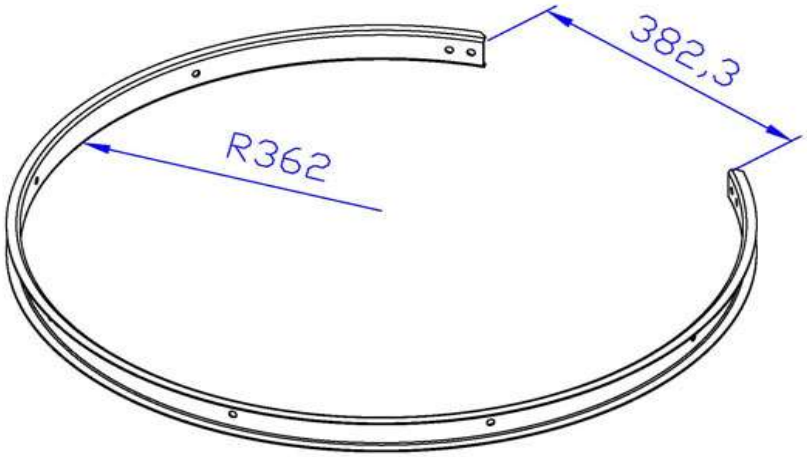
MARCA 119.611 SOPORTE DE RAIL
MARK 119.611 LADDER'S SUPPORT
MARQUE 119.611 SUPPORT D'ECHELLE



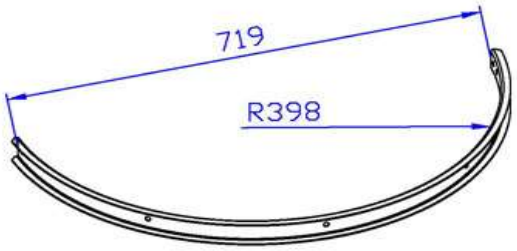
MARCA 119.612 SOPORTE RAIL ESCALERA ZONA ALERO–ANILLO–TOLVA
MARK 119.612 LADDER SUPPORT ON EAVE–RING–HOPPER
MARQUE 119.612 SOUPORT RAIL D'ECHELLE ZONE AUVENT–ANNEOU–TREMIE



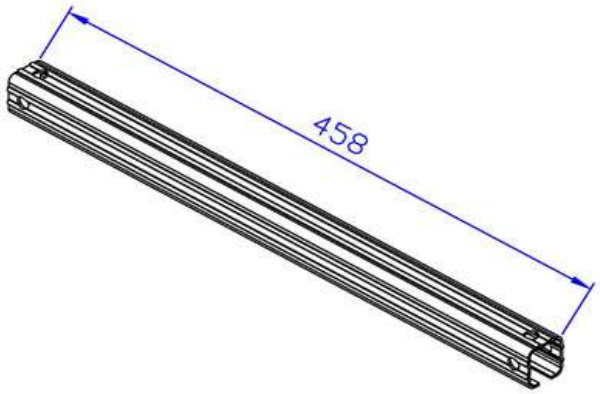
MARCA 119.613 FAJA DEFENSA SUPERIOR
MARK 119.613 UPPER SAFETY BAND
MARQUE 119.613 BANDE DE PROTECTION SUPERIEUR



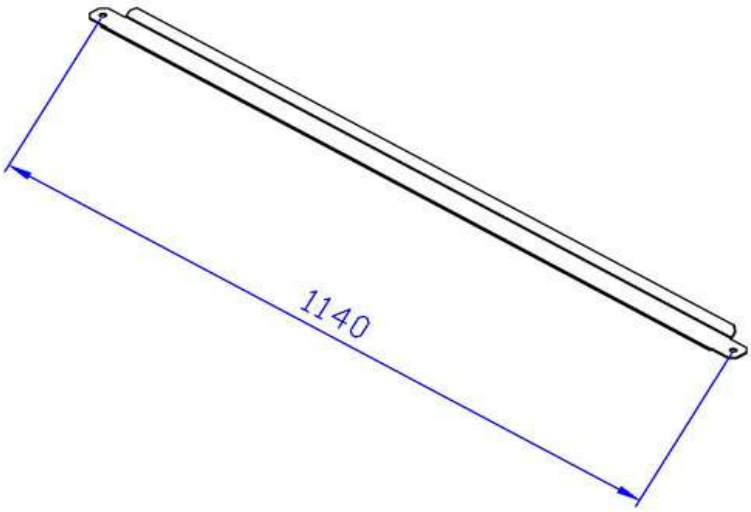
MARCA 119.614	FAJA DE DEFENSA
MARK 119.614	SAFETY BAND
MARQUE 119.614	BANDE DE PROTECTION



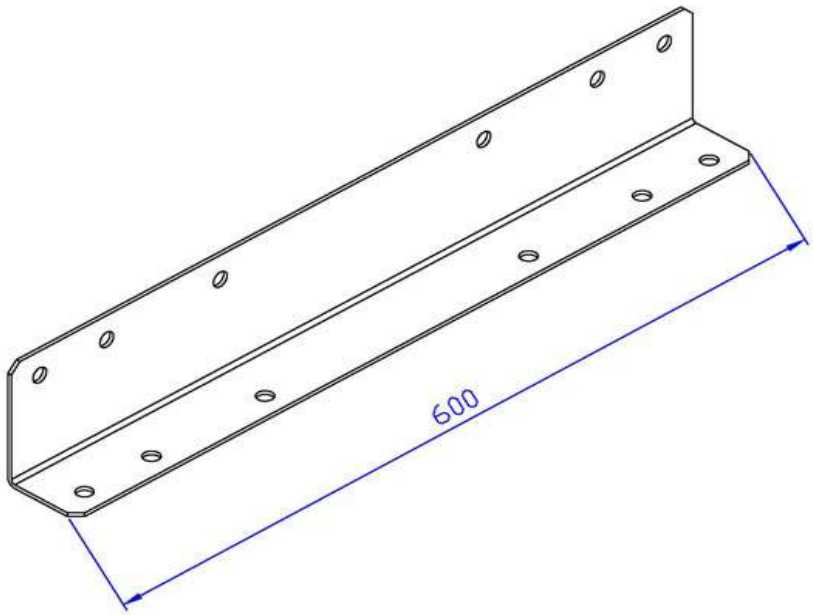
MARCA 119.615	FAJA DEFENSA TRANSICION
MARK 119.615	TRANSITION SAFETY BAND
MARQUE 119.615	BANDE DE PROTECTION POUR TRANSITION



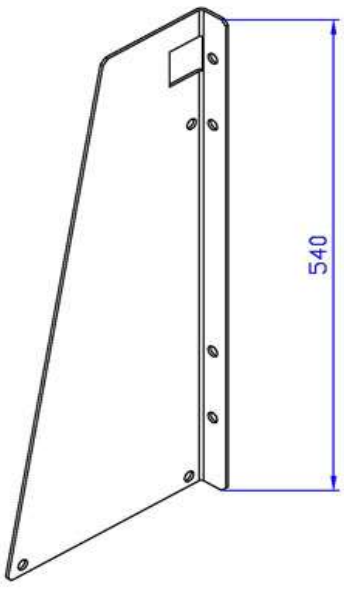
MARCA 119.616 PELDAÑO L= 460mm
MARK 119.616 LADDER RUNG L= 460mm
MARQUE 119.616 MARCHE POUR ECHELLE L= 460mm



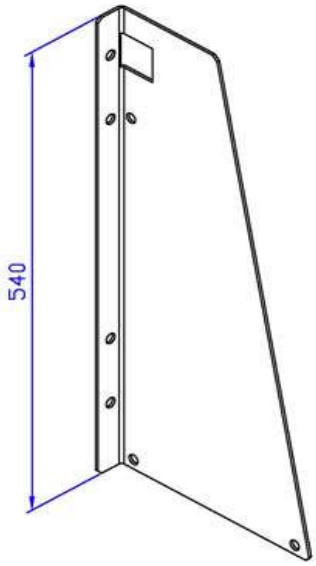
MARCA 119.617 "V" DEFENSA L=1140mm
MARK 119.617 "V" SAFETY L= 1140mm
MARQUE 119.617 "V" PROTECTION L= 1140mm



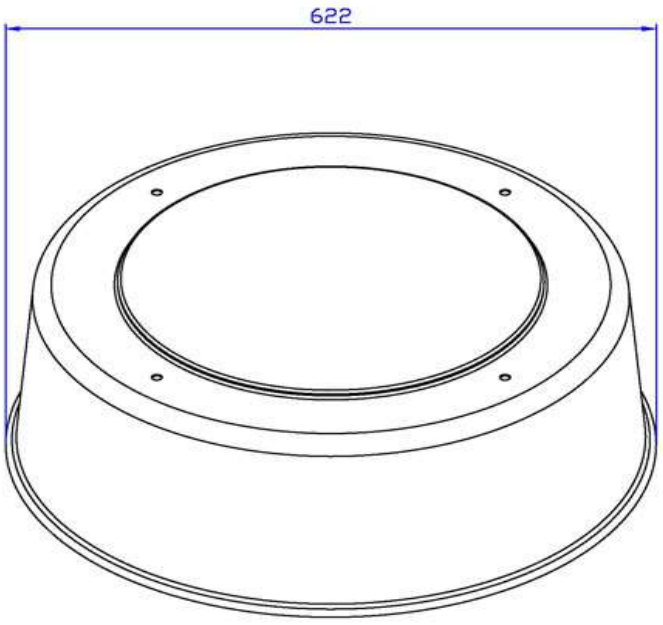
MARCA 119.619 ANGULO SUJECCION ESCALERA A SUELO
MARK 119.619 ANGLE TO FLOOR
MARQUE 119.619 ANGLE AU TERRE



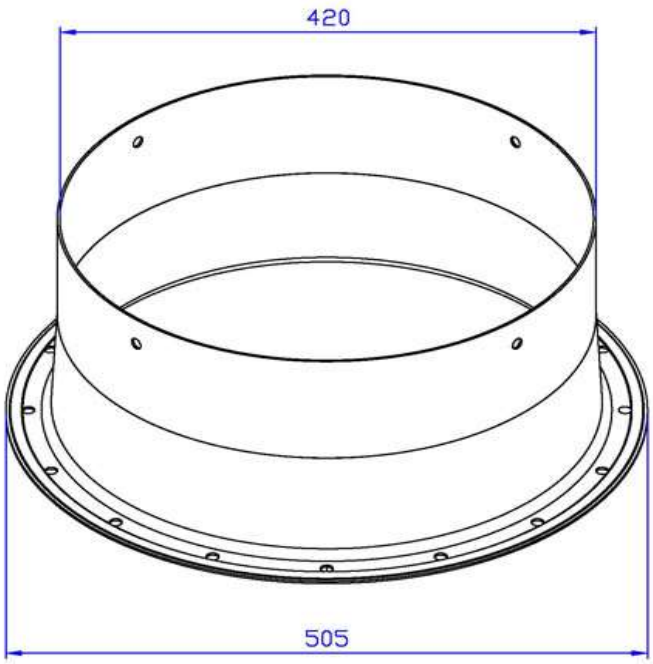
MARCA 119.620 CHAPA BARANDILLA TRANSICION IZQUIERDA
MARK 119.620 HANDRAIL BRACKET LEFT TRANSITION
MARQUE 119.620 POTEAU DE RAMBARDE GAUCHE



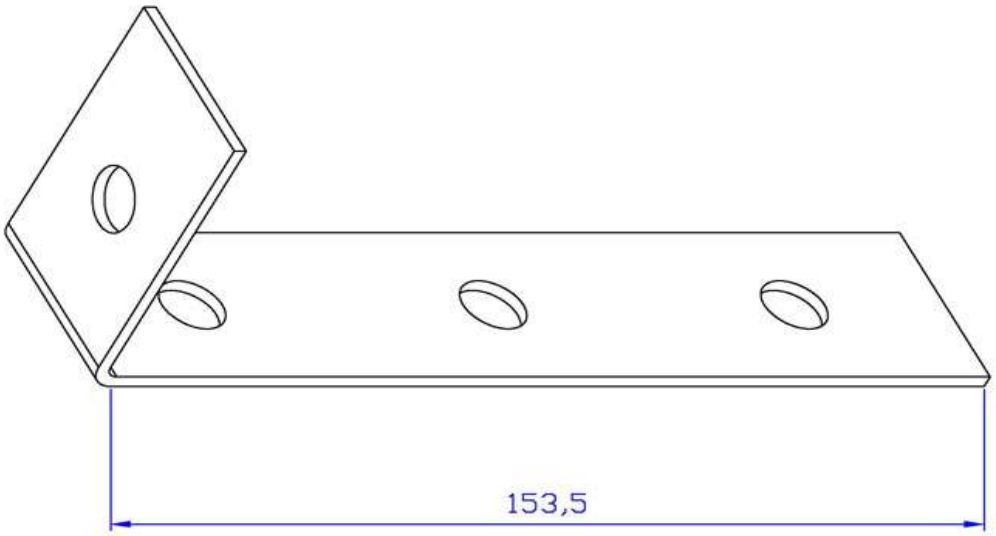
MARCA 119.622 CHAPA BARANDILLA TRANSICION DERECHA
MARK 119.622 HANDRAIL BRACKET RIGHT TRANSITION
MARQUE 119.622 POTEAU DE RAMBARDE DROITE



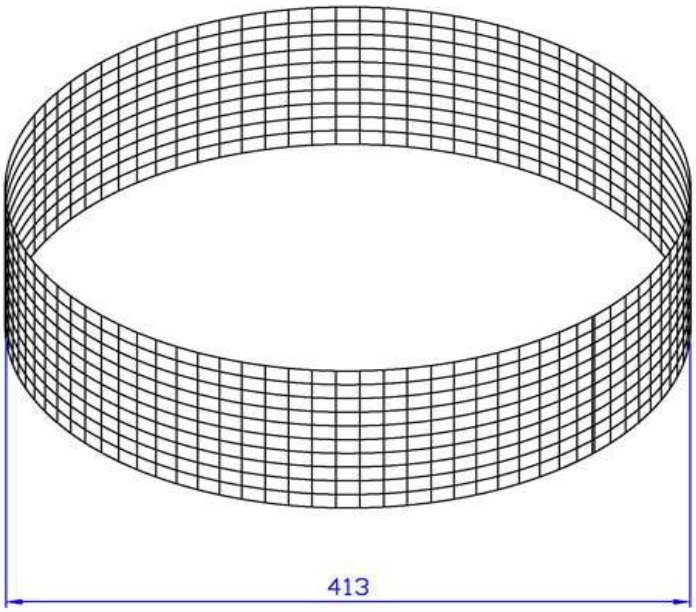
MARCA 119.623 TAPA AIREACIÓN CIRCULAR
MARK 119.623 TOP COVER FOR AERATION
MARQUE 119.623 TOIT DE LA COUVERTURE D'AERATION



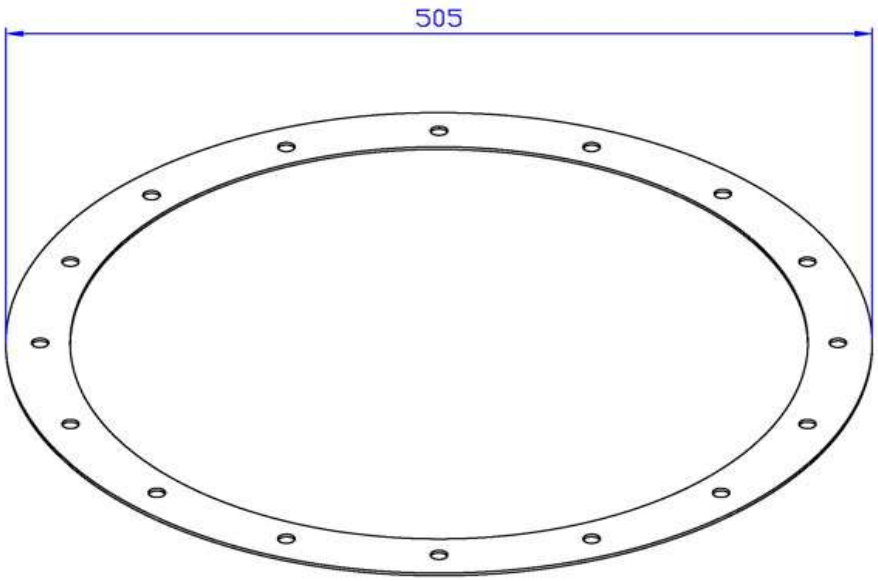
MARCA 119.624 CUERPO AIREACIÓN CIRCULAR
MARK 119.624 TOP COVER FOR AERATION
MARQUE 119.624 TOIT DE LA COUVERTURE D'AERATION



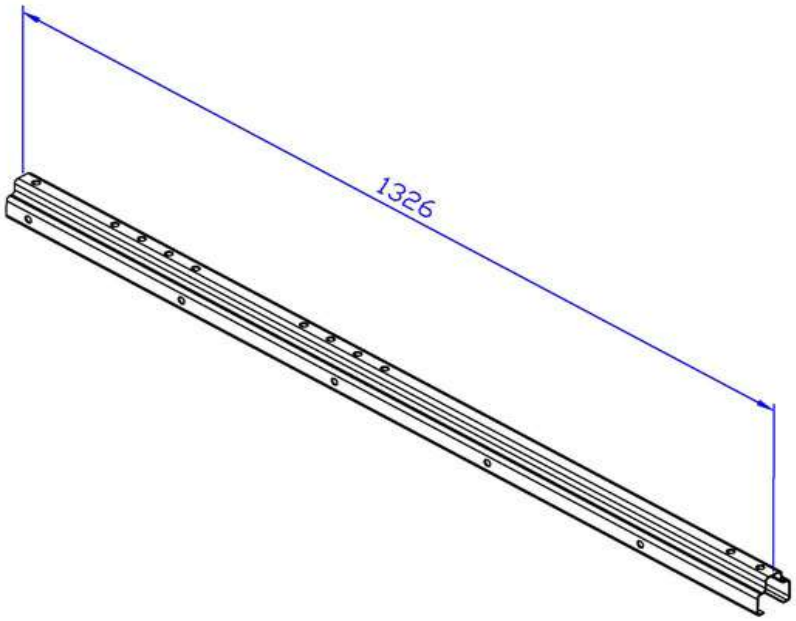
MARCA 119.625 CLIP AIREACIÓN CIRCULAR
MARK 119.625 SUPPORT CLIP
MARQUE 119.625 CLIP SUPPORT



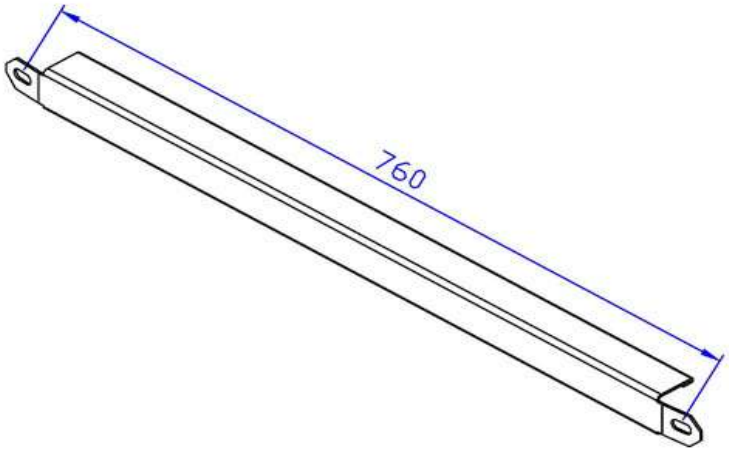
MARCA 119.626 MALLA AIREACIÓN CIRCULAR
MARK 119.626 MESH FOR AERATION
MARQUE 119.626 FILET POUR AERATION



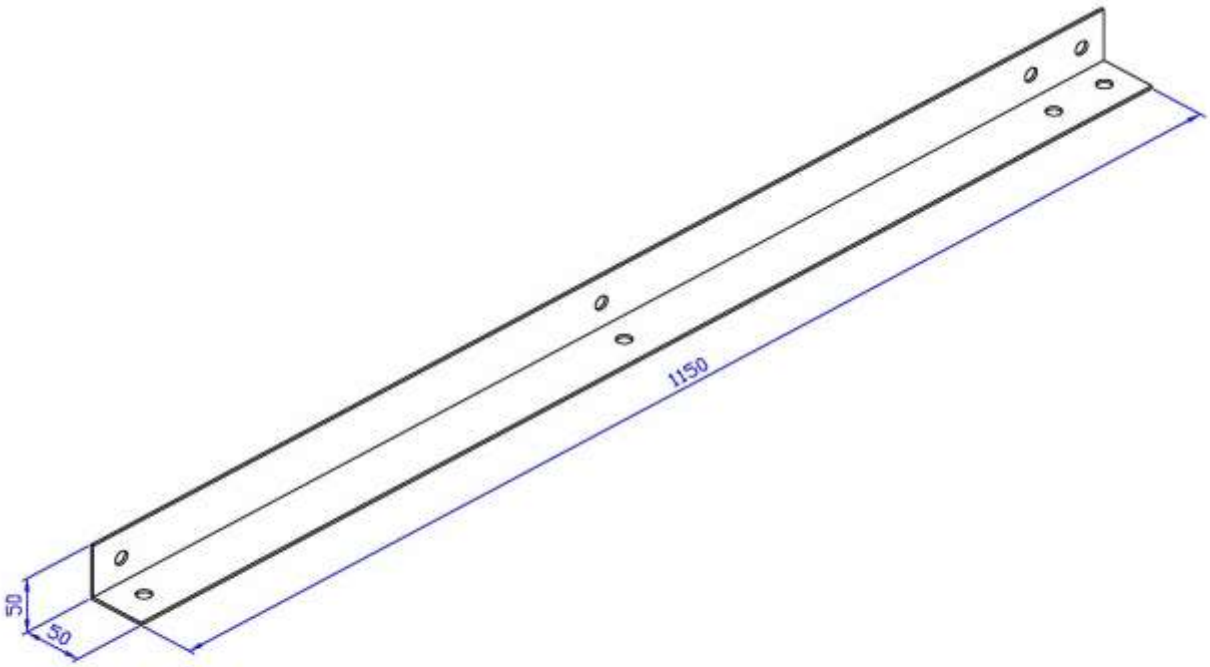
MARCA 119.627 BRIDA AIREACIÓN CIRCULAR
MARK 119.627 FLANGE FOR AERATION
MARQUE 119.627 BRIDE POUR AERATION



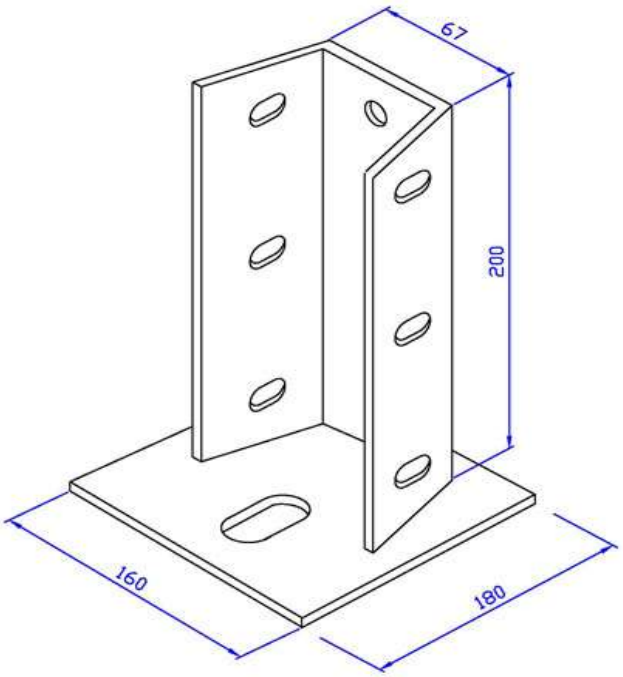
MARCA 119.714	RAIL ESCALERA TERMINAL L=1326 mm
MARK 119.714	LADDER'S TERMINAL RAIL L= 1326mm
MARQUE 119.714	RAIL D'ECHELLE TERMINAL L= 1326mm



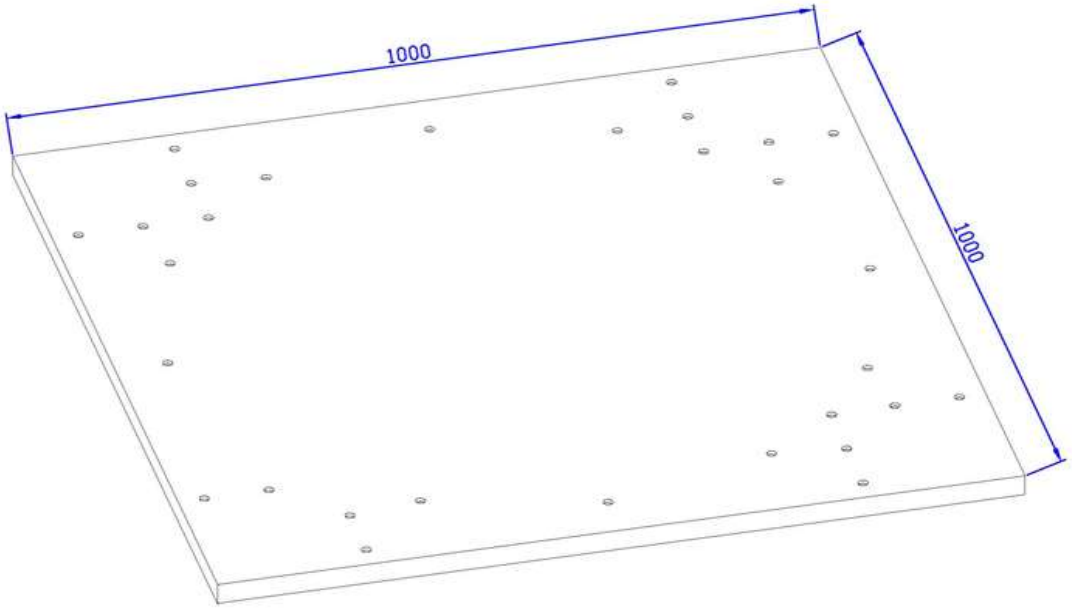
MARCA 119.764	PASAMANOS DE TRANSICIÓN L=760mm
MARK 119.764	HANDRAIL FOR TRANSITION L=760mm
MARQUE 119.764	– L= 760mm



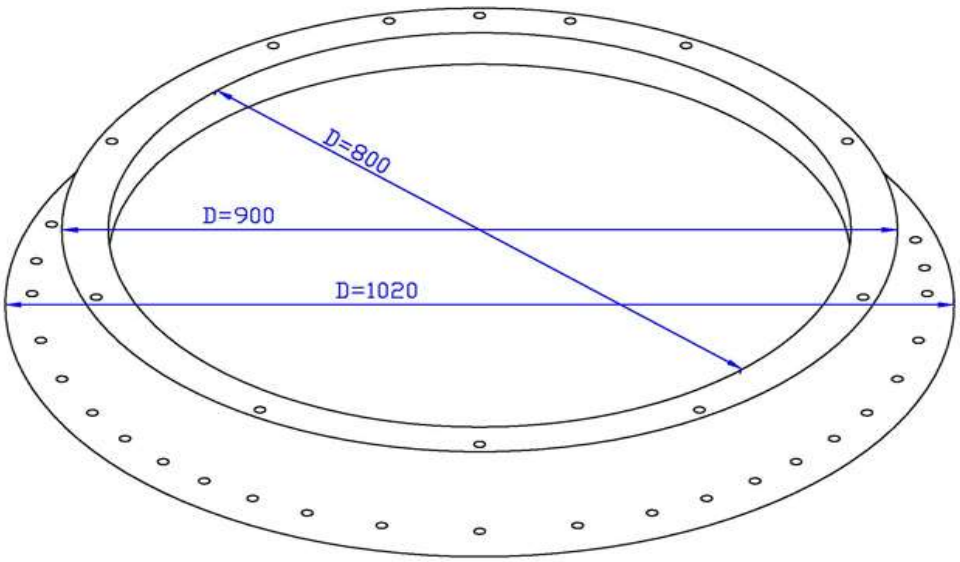
MARCA 119.861	RAIL VERTICAL CORTO
MARK 119.861	VERTICAL SHORT RAIL
MARQUE 119.861	VERTICAL RAIL



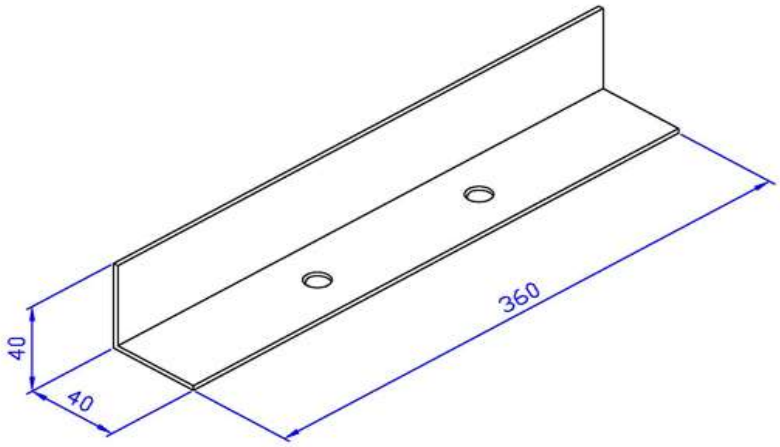
MARCA 119.975	PLACA ANCLAJE TIPO "BF"
MARK 119.975	ANCHOR PLATE TYPE "BF"
MARQUE 119.975	PLAQUE D'ANCRAGE "BF"



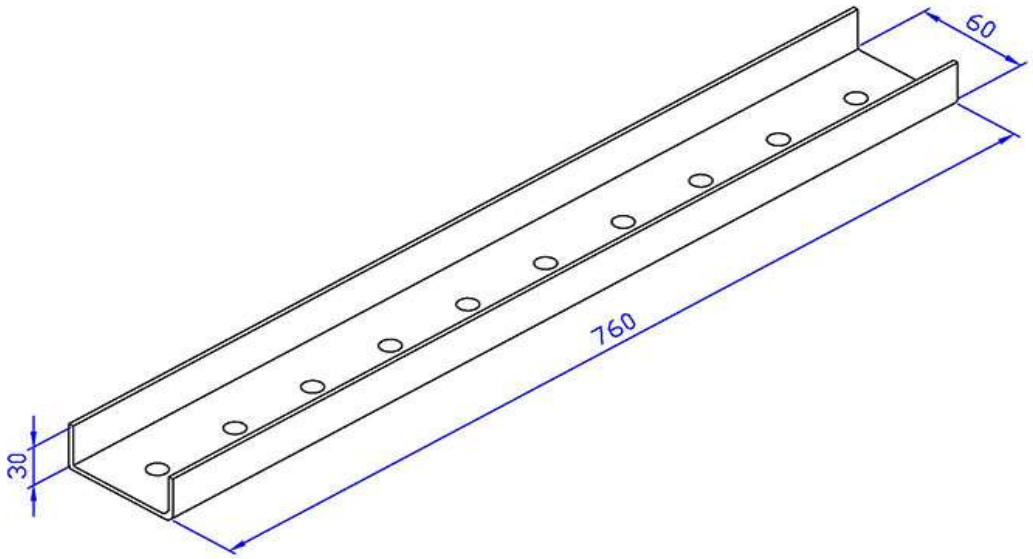
MARCA 120.241 TAPA BOCA DE CARGA
MARK 120.241 TOP FOR ROOF CENTER COLLAR
MARQUE 120.241 COUVERTURE BOUCHE DE CHARGE



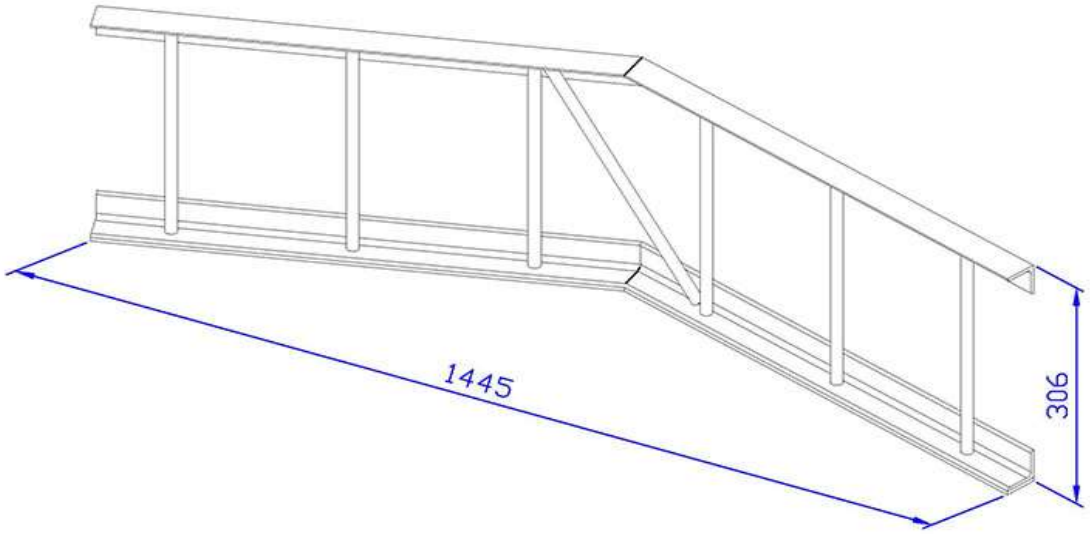
MARCA 120.244 BOCA DE CARGA
MARK 120.244 ROOF CENTER COLLAR
MARQUE 120.244 BOUCHE DE CHARGE



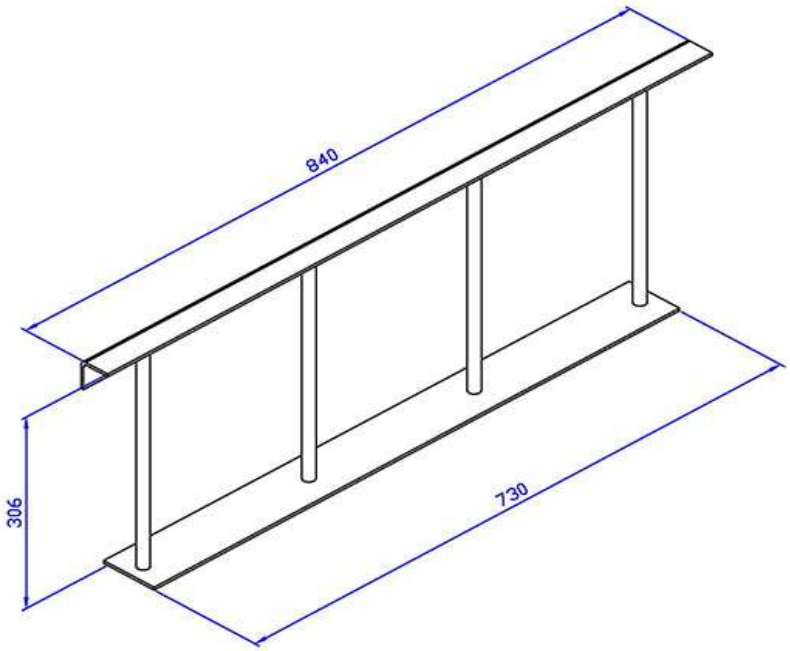
MARCA 120.261 REFUERZO TAPA BOCA DE CARGA
MARK 120.261 REINFORCEMENT FOR TOP FOR ROOF CENTER COLLAR
MARQUE 120.261 RENFORT COUVERTURE BOUCHE DE CHARGE



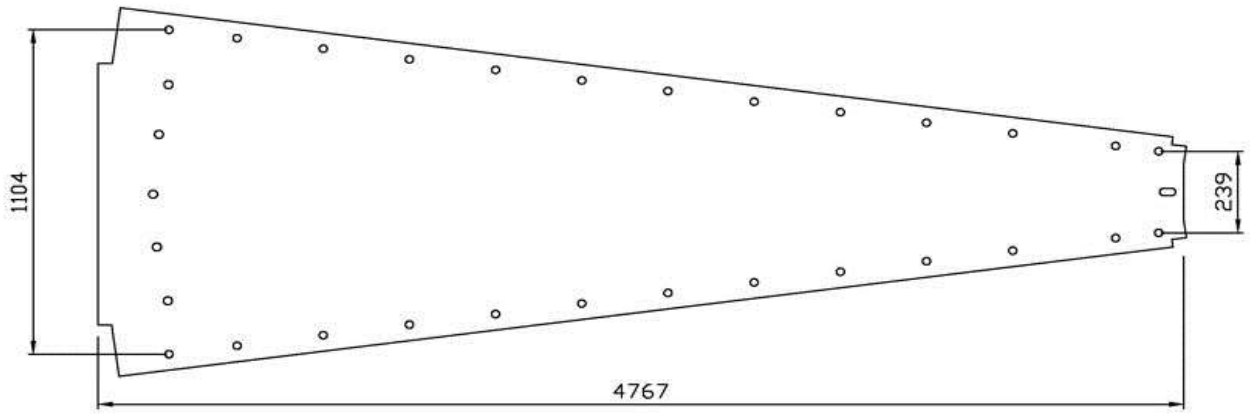
MARCA 120.384 REFUERZO BOCA DE CARGA
MARK 120.384 REINFOR ROOF CENTER COLLAR
MARQUE 120.384 RENFORT BOUCHE CHARGE



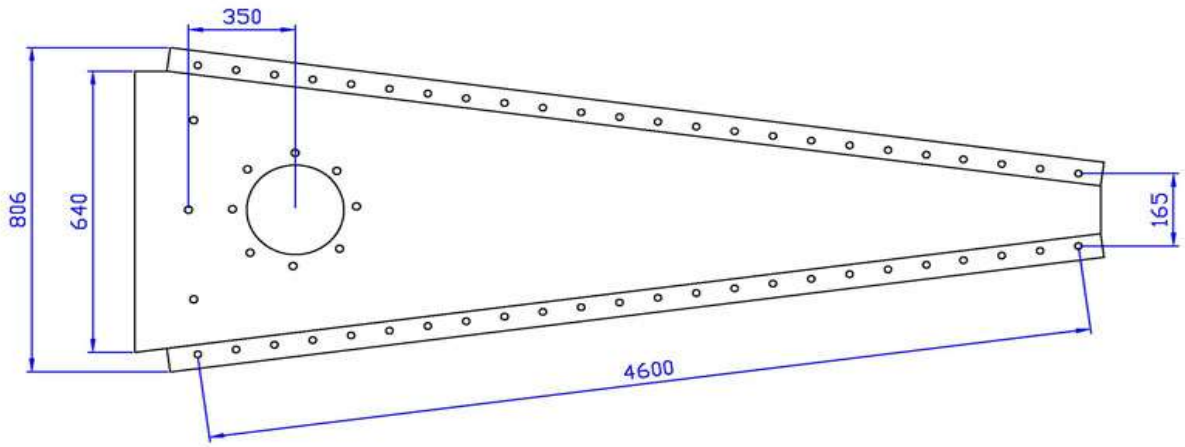
MARCA 120.486 AIREACIÓN EN CAJÓN ø1,5mm
MARK 120.486 VENTILATION TYPE DRAWER ø1,5mm
MARQUE 120.486 AERATION TYPE TIROIR ø1,5mm



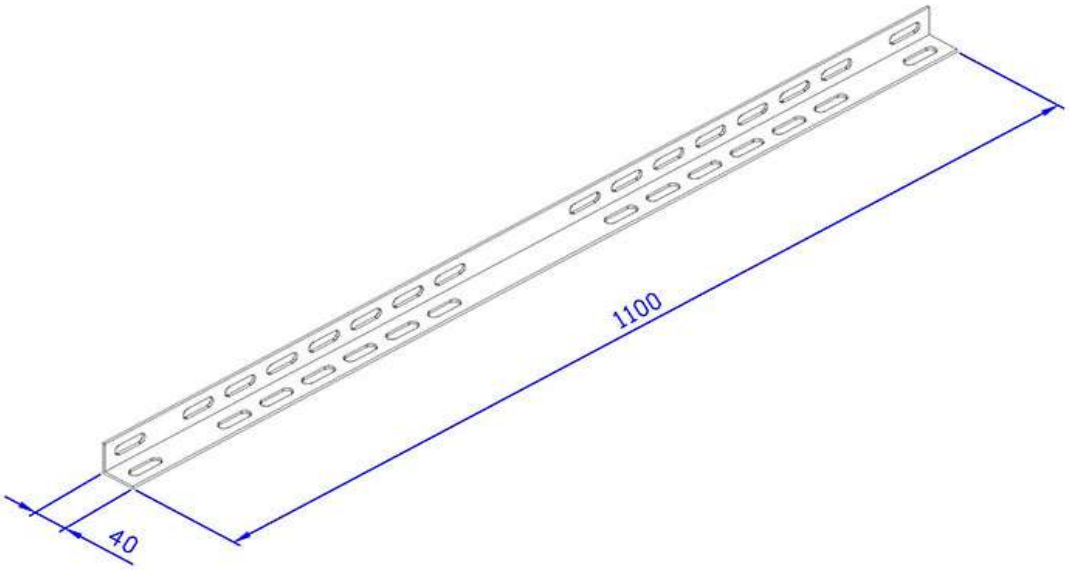
MARCA 120.487 SOPORTE DOBLE
MARK 120.487 DOUBLE SUPPORT
MARQUE 120.487 DOUBLE SUPPORT



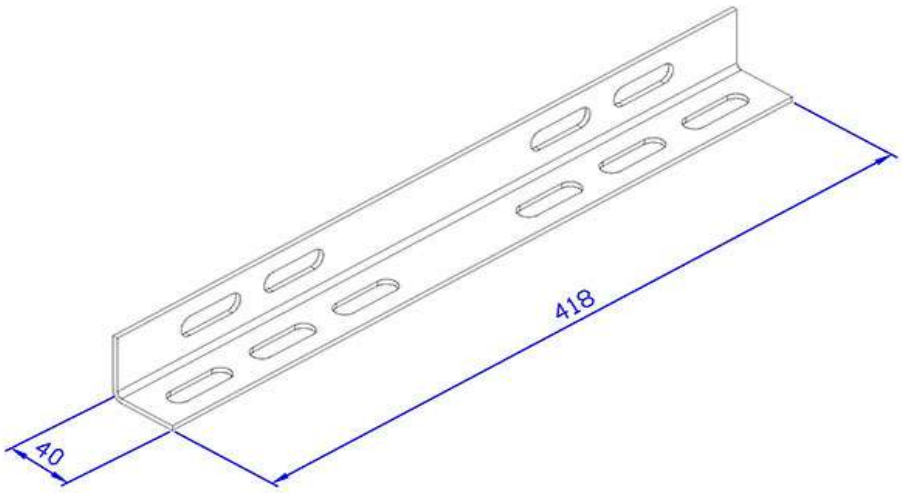
MARCA 120.504 SECTOR DE TECHO SILO 9,93ø
MARK 120.504 ROOF SHEET SILO 9,93ø
MARQUE 120.504 SECTEUR DU TOIT SILO 9,93ø



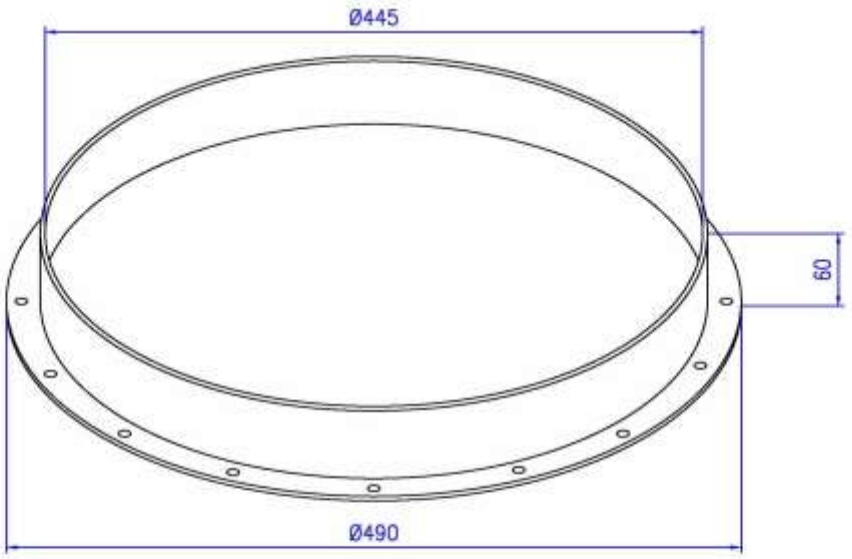
MARCA 120.541 SECTOR TECHO SILO 9.93 CON ABERTURA CIRCULAR
MARK 120.541 ROOF SHEET SILO 9.93 WITH CIRCULAROPNING
MARQUE 120.541 SECTEUR DU TOIT SILO 9.93 AVEC OUVERTURE CIRCULEURE



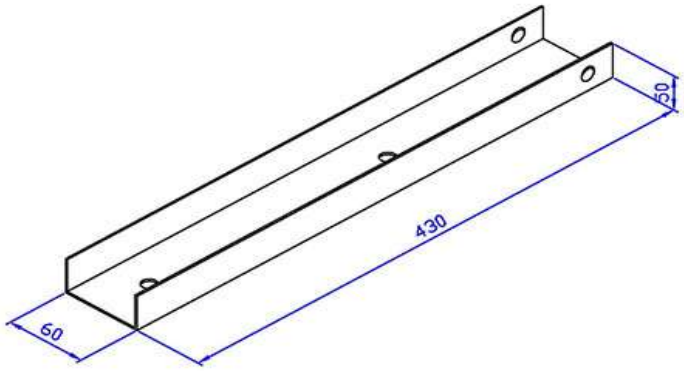
MARCA 120.691 PELDAÑO ESCALERA TECHO L=1100
MARK 120.691 ROOF LADDER RUNG L=1100
MARQUE 120.691 MARCHE DU TOIT L=1100



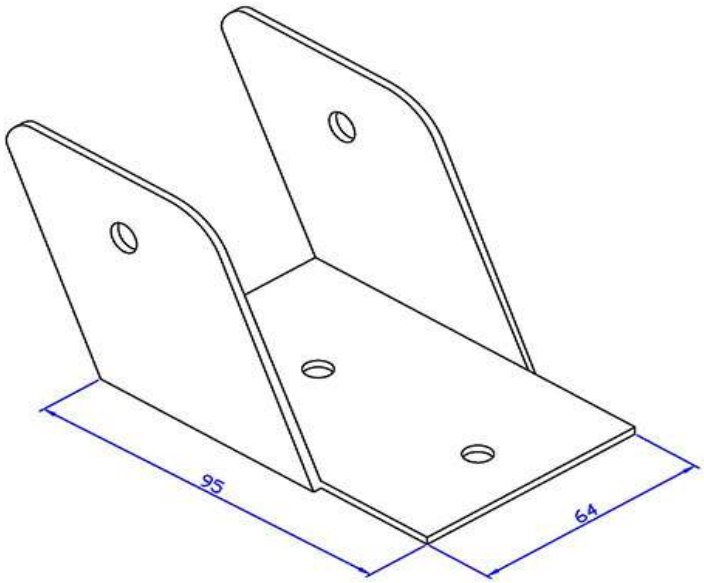
MARCA 120.692 PELDAÑO ESCALERA TECHO L=418
MARK 120.692 ROOF LADDER RUNG L=418
MARQUE 120.692 MARCHE DU TOIT L=418



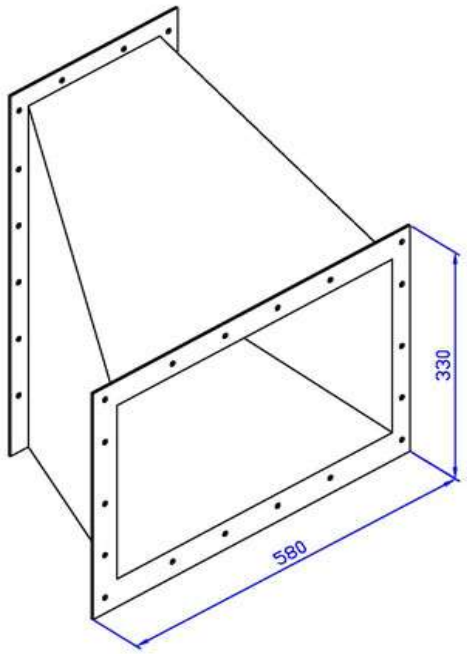
MARCA 120.715	ANILLO PUERTA TECHO
MARK 120.715	RING FOR MANHOLE
MARQUE 120.715	ANNEAU DU PORTE D'ACCESS



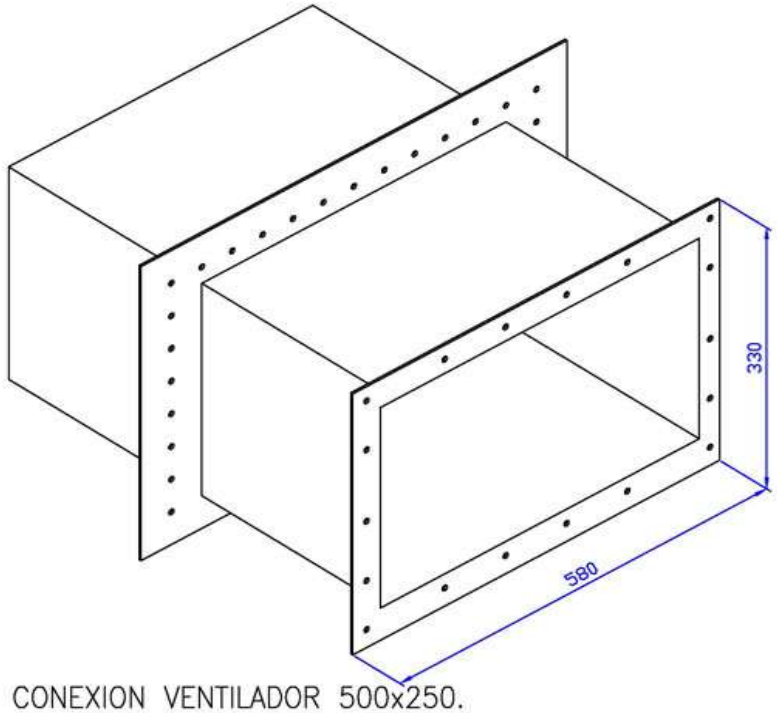
MARCA 120.779	"U" AMARRE BISAGRA
MARK 120.779	"U" FOR HINGE BASE
MARQUE 120.779	"U" ATTACHE POUR CHARNIÈRE



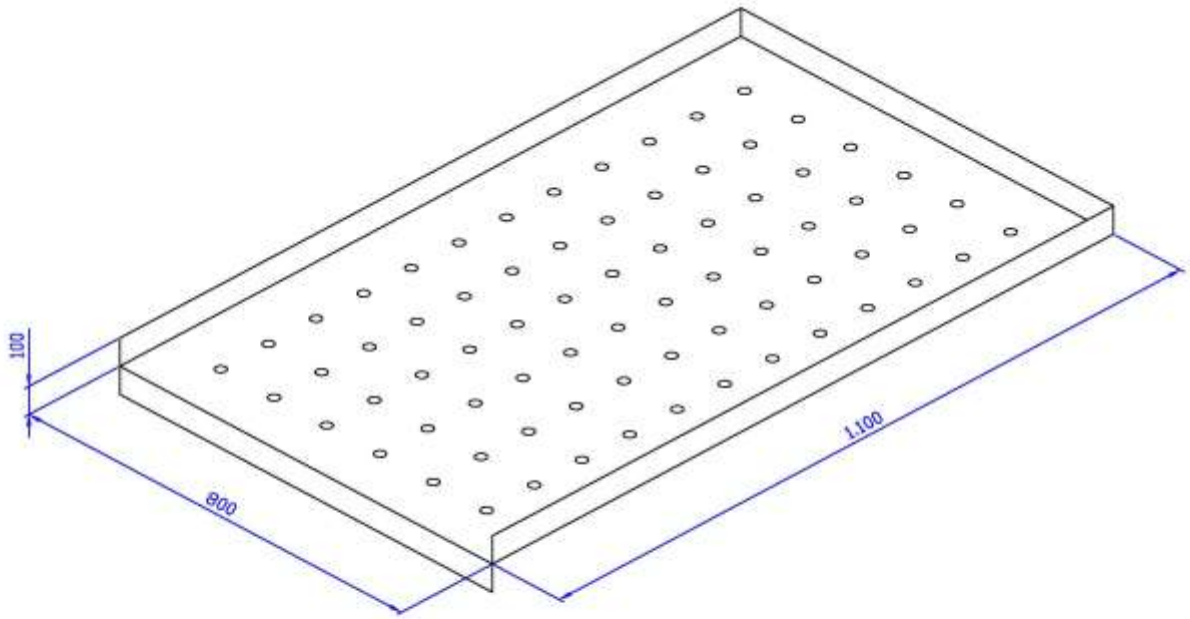
MARCA 120.780	"U" BISAGRA
MARK 120.780	"U" HINGE BASE
MARQUE 120.780	"U" CHARNIERE



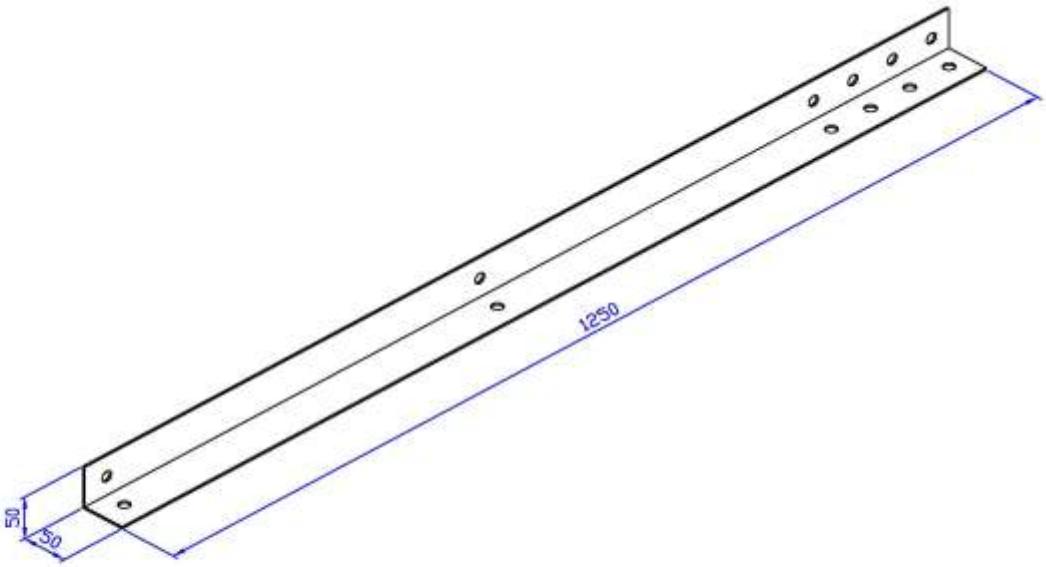
MARCA 121.038	TRANSICION 500x250.
MARK 121.038	TRANSITION 500x250.
MARQUE 121.038	TRANSITION 500x250.



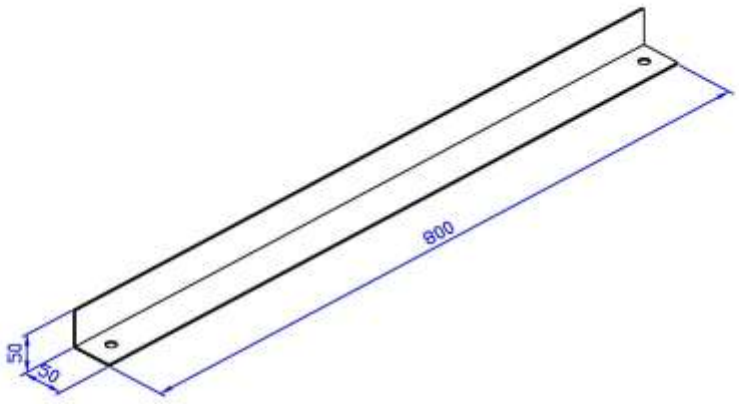
MARCA 121.039 CONEXION VENTILADOR 500x250.
MARK 121.039 FAN CONNEXION 500x250.
MARQUE 121.039 CONNEXION DU VENTILATEUR.



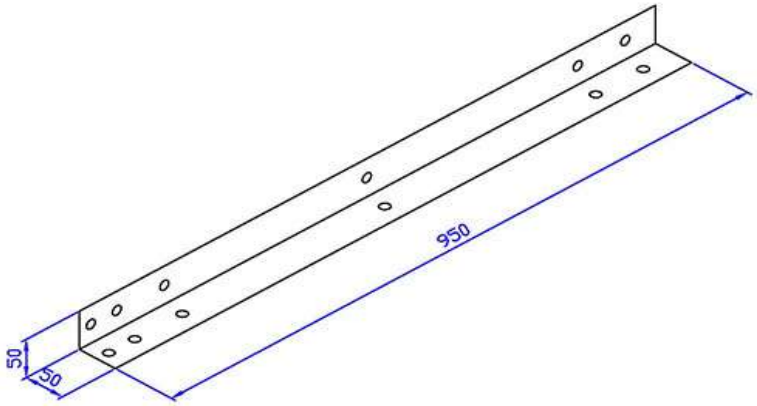
MARCA 121.109A PISO PLATAFORMA DESCASO 1100x800mm
MARK 121.109A FLOOR OF PLATAFORM 1100x800mm
MARQUE 121.109A PLANCHER DE LA PLATEFORME 1100x800mm



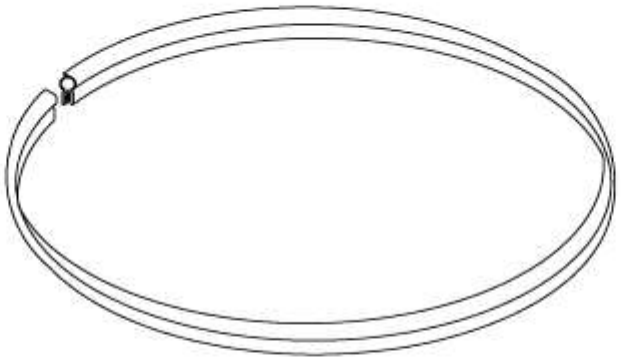
MARCA 121.123 RAIL VERTICAL CORTO L=1250mm
MARK 121.123 VERTICAL SHORT RAIL L=1250mm
MARQUE 121.123 VERTICAL RAIL L=1250mm



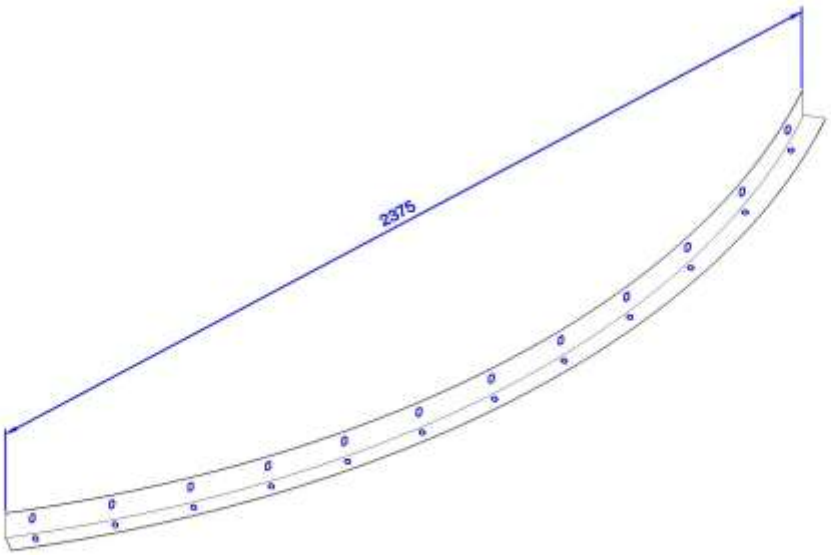
MARCA 121.127 ANGULO HORIZONTAL L=800mm
MARK 121.127 ANGLE L= 800mm
MARQUE 121.127 ANGLE L= 800mm



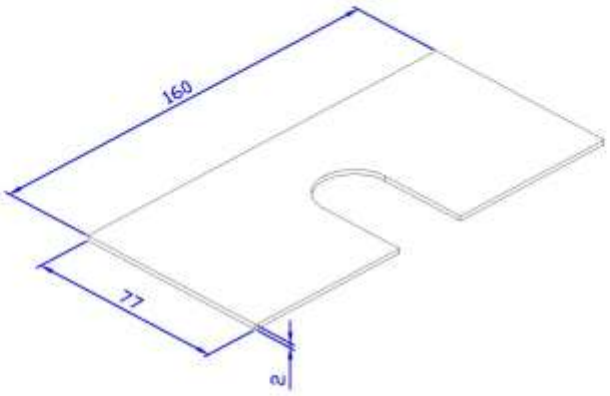
MARCA 121.152 ANGULO VOLADIZO L=950mm
MARK 121.152 CORNER ANGLE L=950mm
MARQUE 121.152 ANGLE HORIZONTAUX L=950mm



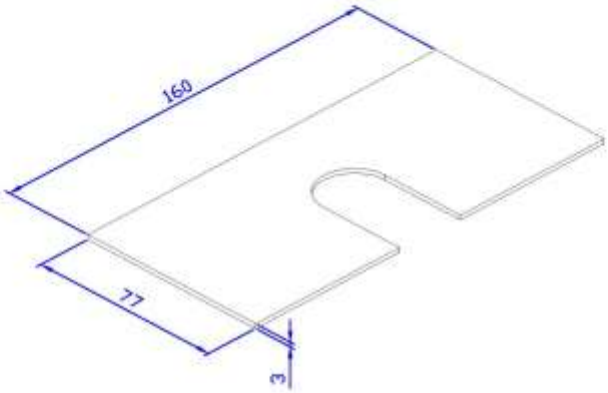
MARCA 121.811 JUNTA DE CONTORNO L=1500mm
MARK 121.811 CONTOUR JOINT L=1500mm
MARQUE 121.811 JOINT DE CONTOUR L=1500mm



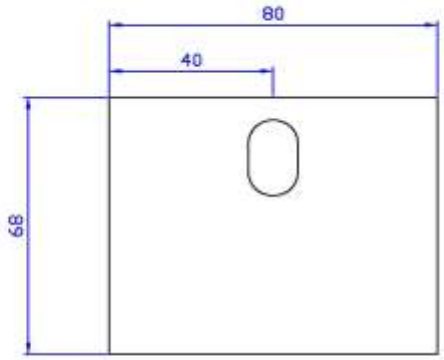
MARCA 122.170 ANGULO DE CIERRE ø9,93
MARK 122.170 CLOSING ANGLE SILO ø9,93
MARQUE 122.170 ANGLE DE FERMATURE ø9,93



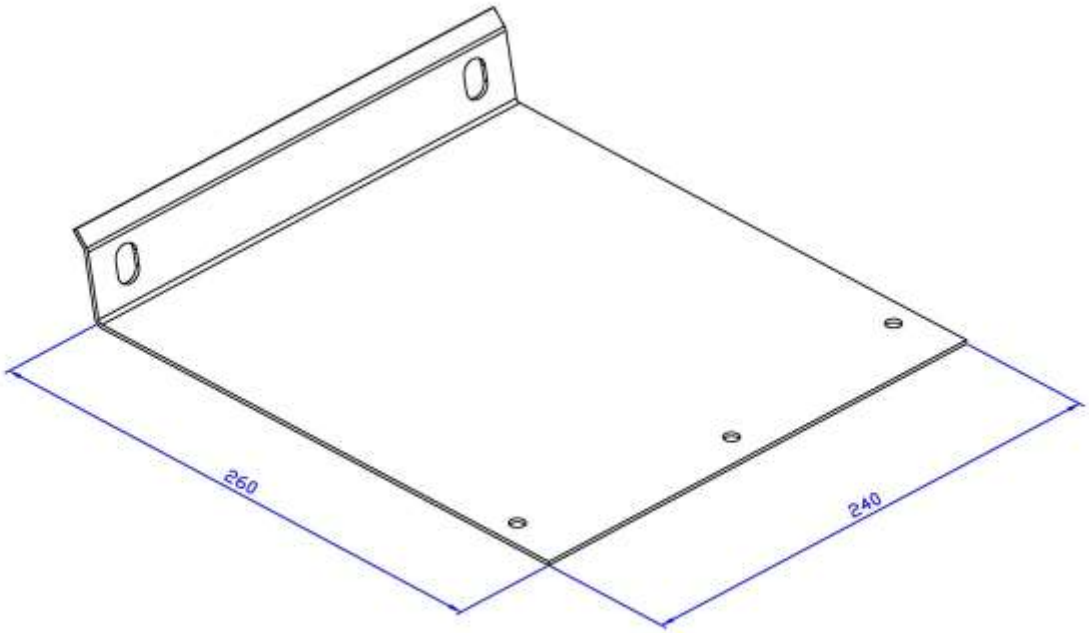
MARCA 122.194 CALCE PARA PLACA B/C 2 mm
MARK 122.194 SHIM FOR ANCHOR PLATE B/C 2 mm
MARQUE 122.194 CALE POUR PLAQUE D'ANCRAGE B/C 2 mm



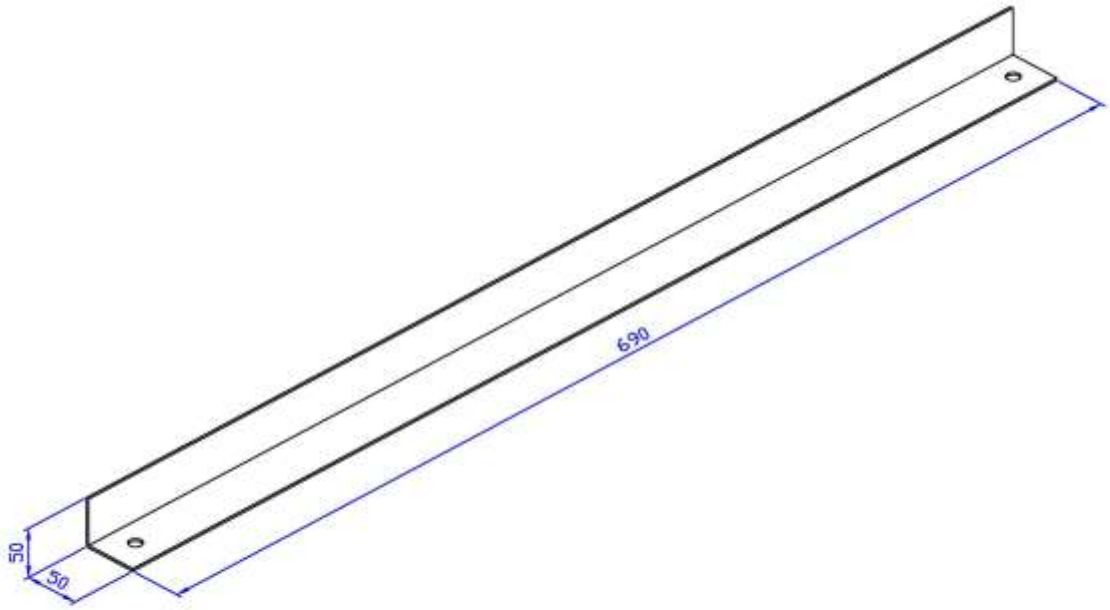
MARCA 122.195 CALCE PARA PLACA B/C 3 mm
MARK 122.195 SHIM FOR ANCHOR PLATE B/C 3 mm
MARQUE 122.195 CALE POUR PLAQUE D'ANCRAGE B/C 3 mm



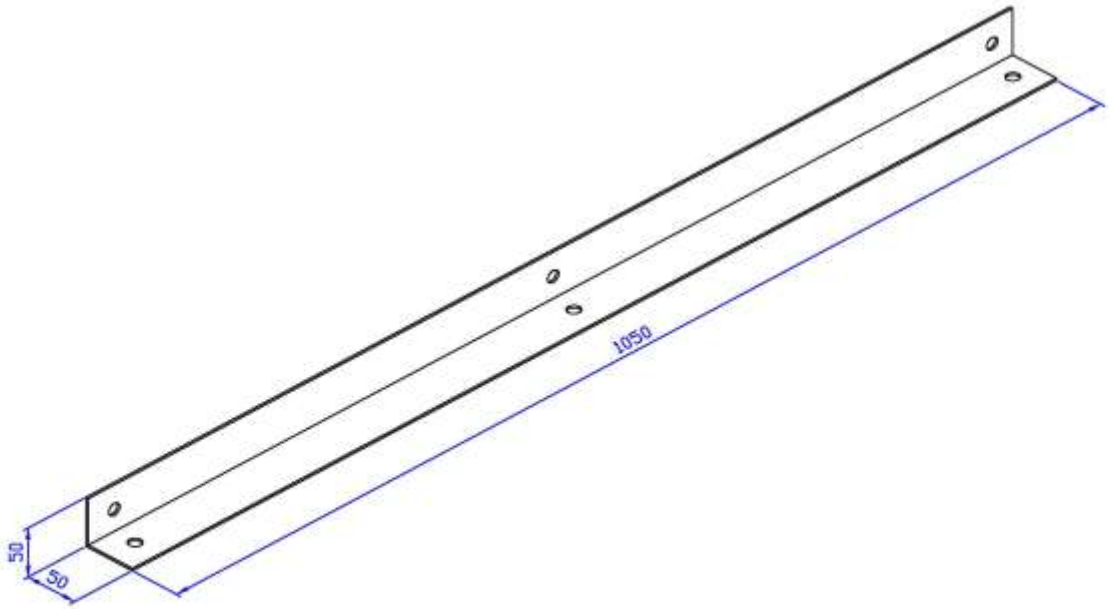
MARCA 122.203 CHAPA EMPALME ANGULO CIERRE
MARK 122.203 SPLICE
MARQUE 122.203 RACCORDEMENT



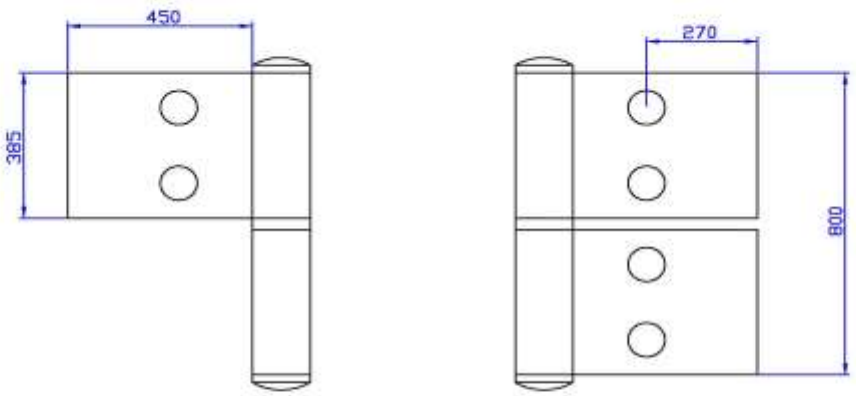
MARCA 122.204 RODAPIE SUELO AIREACIÓN
MARK 122.204 CLOSING SHEET
MARQUE 122.204 PLAQUE PÉRIMÈTRE



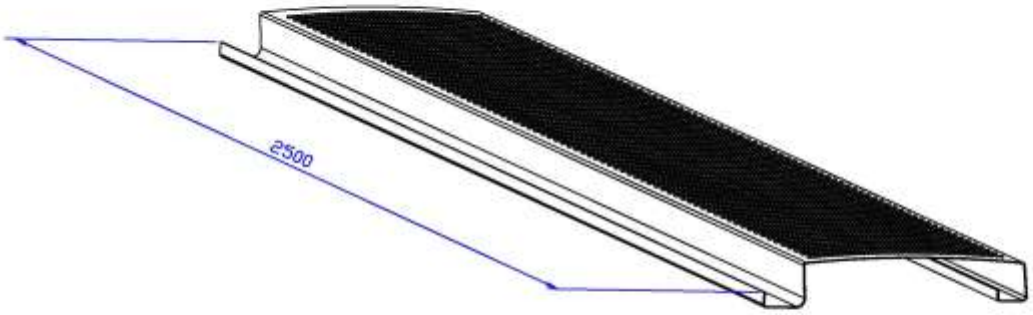
MARCA 122.207 DINTEL PORTILLA
MARK 122.207 LINTEL
MARQUE 122.207 LINTEAU



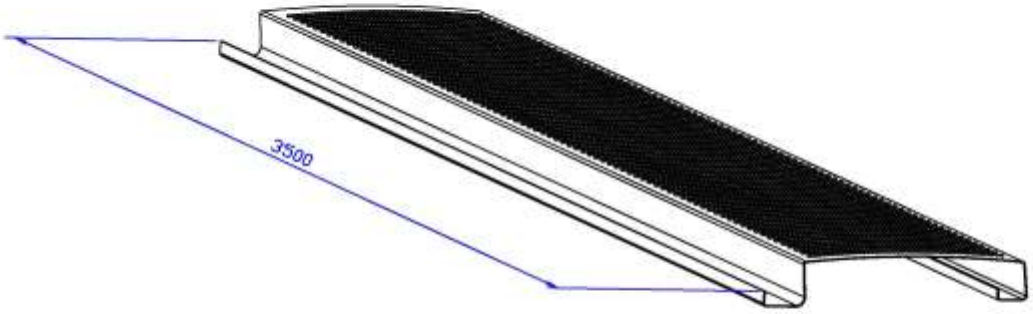
MARCA 122.208 LATERAL PORTILLA
MARK 122.208 DOOR SIDE
MARQUE 122.208 CÔTÉ POUR PORTE



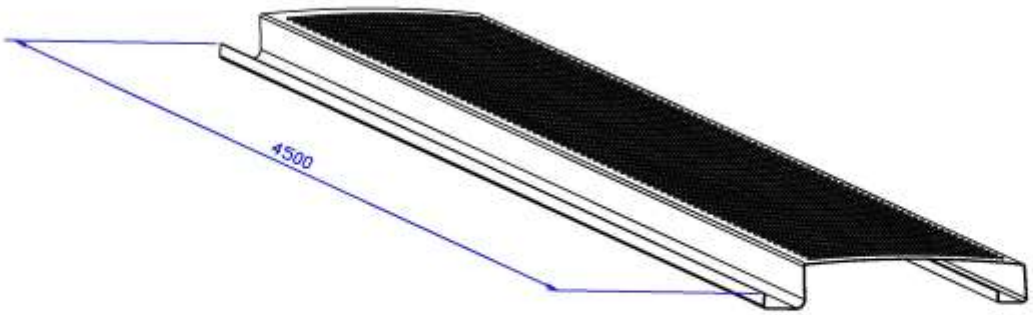
MARCA 122.209 BISAGRA TIPO A
MARK 122.209 HINGE TYPE A
MARQUE 122.209 CHARNIERE TYPE A



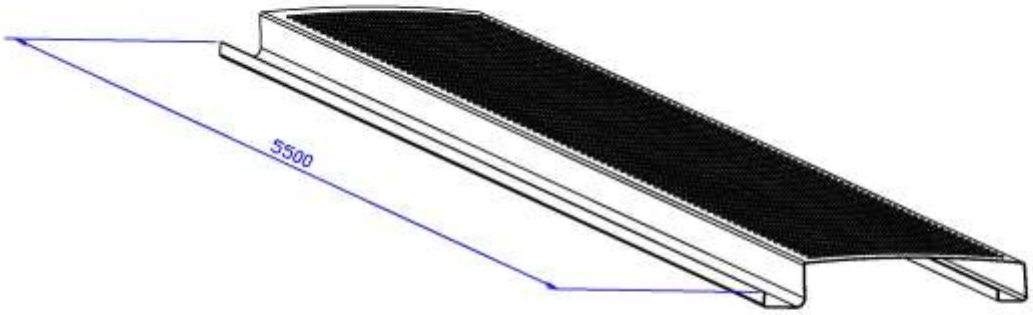
MARCA 122.228 CAJÓN DE AIREACIÓN e=1,5mm L= 2500
MARK 122.228 DRAWER AERATION e=1,5mm L= 2500
MARQUE 122.228 AÉRATION TIROIR e=1,5mm L= 2500



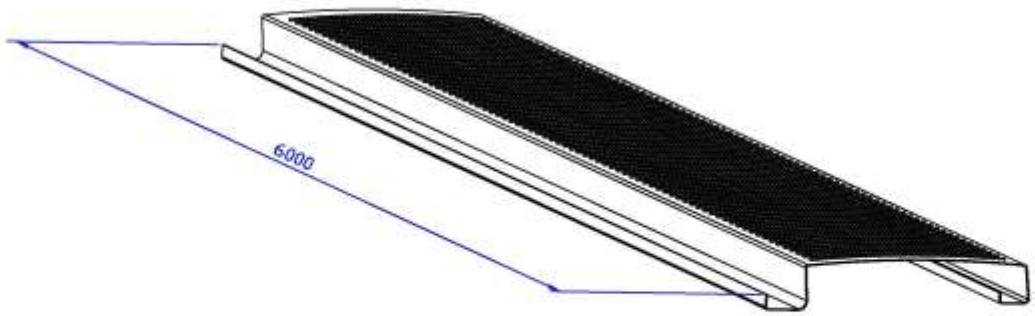
MARCA 122.230 CAJÓN DE AIREACIÓN e=1,5mm L= 3500
MARK 122.230 DRAWER AERATION e=1,5mm L= 3500
MARQUE 122.230 AÉRATION TIROIR e=1,5mm L= 3500



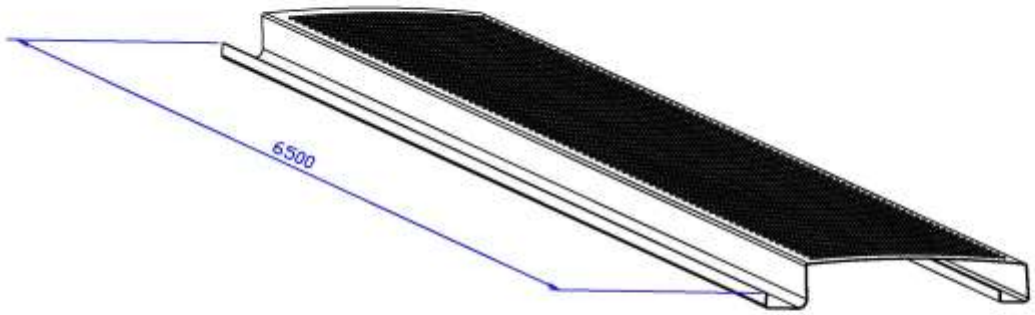
MARCA 122.232 CAJÓN DE AIREACIÓN e=1,5mm L= 4500
MARK 122.232 DRAWER AERATION e=1,5mm L= 4500
MARQUE 122.232 AÉRATION TIROIR e=1,5mm L= 4500



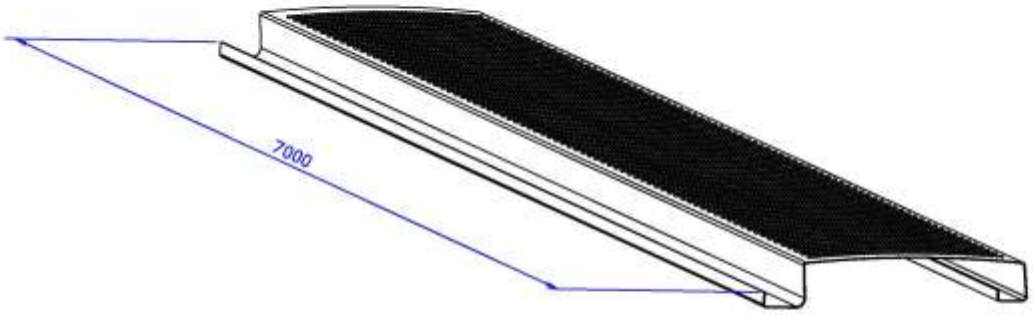
MARCA 122.234 CAJÓN DE AIREACIÓN e=1,5mm L= 5500
MARK 122.234 DRAWER AERATION e=1,5mm L= 5500
MARQUE 122.234 AÉRATION TIROIR e=1,5mm L= 5500



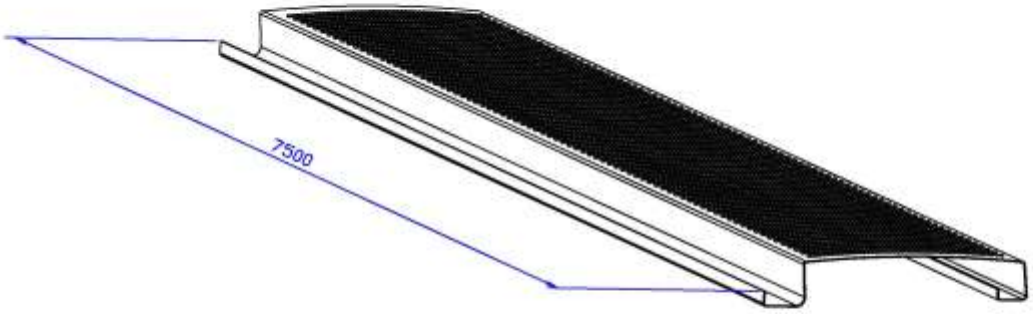
MARCA 122.235 CAJÓN DE AIREACIÓN e=1,5mm L= 6000
MARK 122.235 DRAWER AERATION e=1,5mm L= 6000
MARQUE 122.235 AÉRATION TIROIR e=1,5mm L= 6000



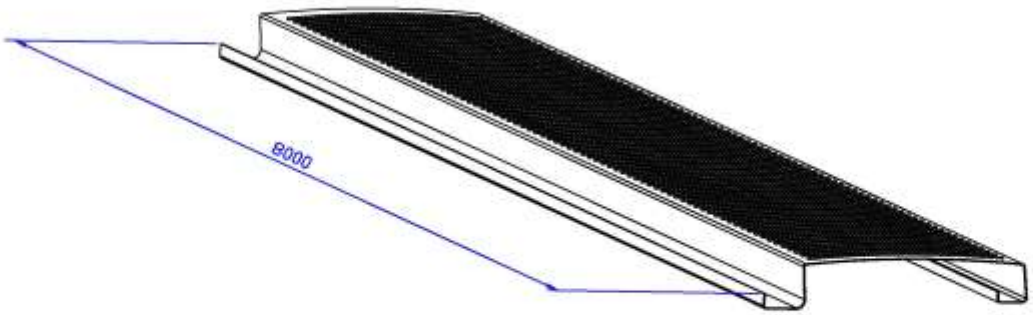
MARCA 122.236 CAJÓN DE AIREACIÓN e=1,5mm L= 6500
MARK 122.236 DRAWER AERATION e=1,5mm L= 6500
MARQUE 122.236 AÉRATION TIROIR e=1,5mm L= 6500



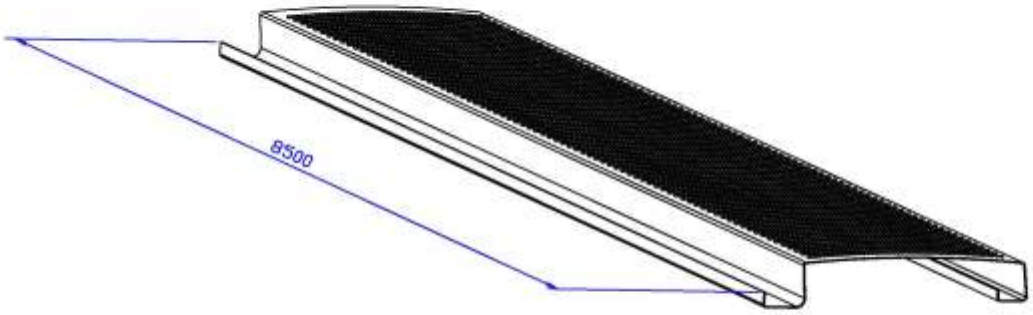
MARCA 122.237 CAJÓN DE AIREACIÓN e=1,5mm L= 7000
MARK 122.237 DRAWER AERATION e=1,5mm L= 7000
MARQUE 122.237 AÉRATION TIROIR e=1,5mm L= 7000



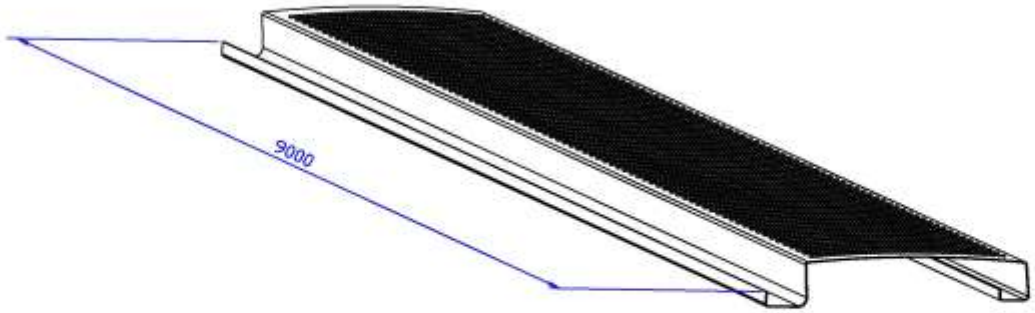
MARCA 122.238 CAJÓN DE AIREACIÓN e=1,5mm L= 7500
MARK 122.238 DRAWER AERATION e=1,5mm L= 7500
MARQUE 122.238 AÉRATION TIROIR e=1,5mm L= 7500



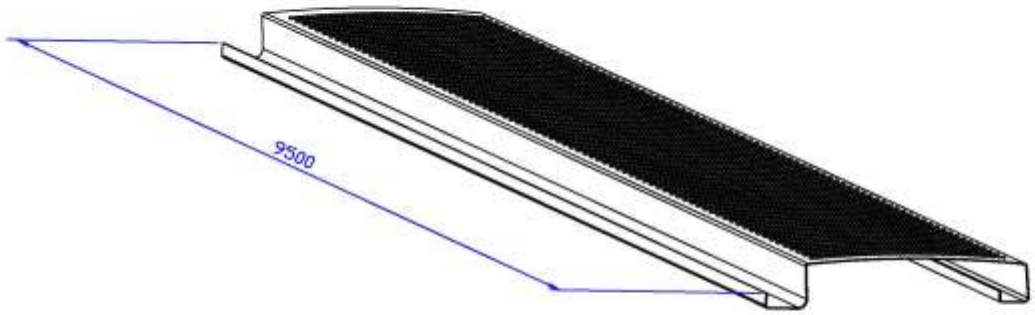
MARCA 122.239 CAJÓN DE AIREACIÓN e=1,5mm L= 8000
MARK 122.239 DRAWER AERATION e=1,5mm L= 8000
MARQUE 122.239 AÉRATION TIROIR e=1,5mm L= 8000



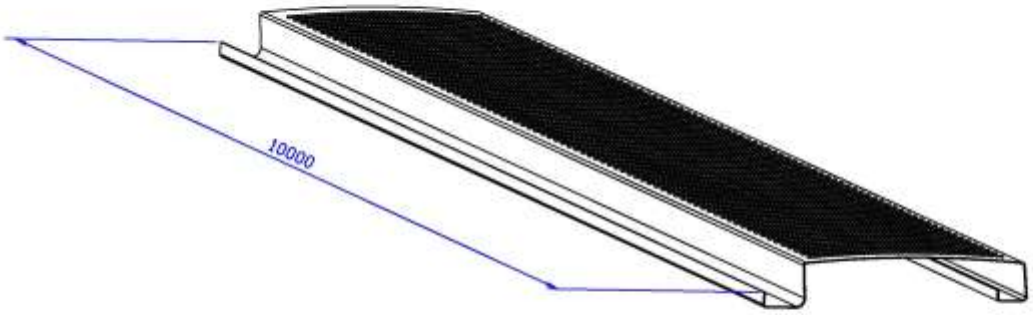
MARCA 122.240 CAJÓN DE AIREACIÓN e=1,5mm L= 8500
MARK 122.240 DRAWER AERATION e=1,5mm L= 8500
MARQUE 122.240 AÉRATION TIROIR e=1,5mm L= 8500



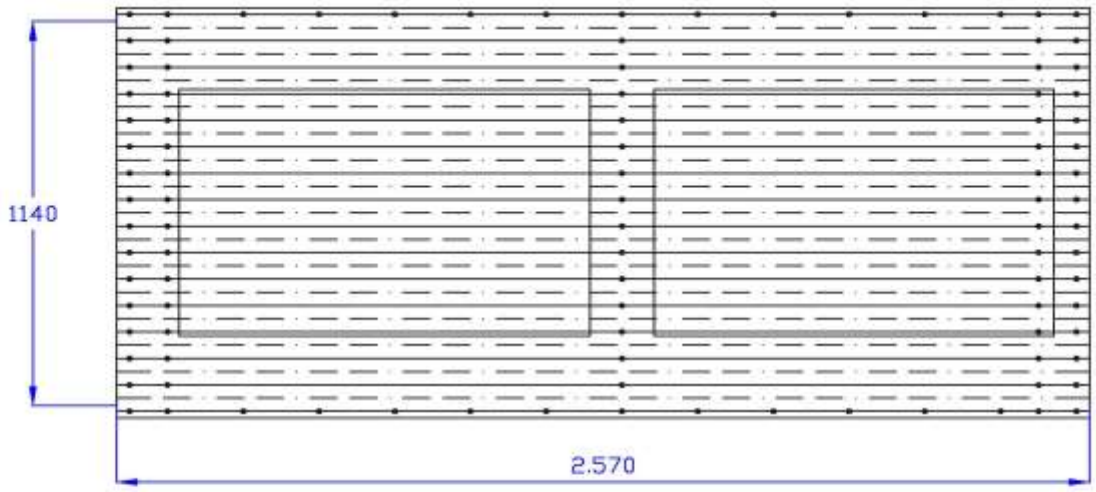
MARCA 122.241 CAJÓN DE AIREACIÓN e=1,5mm L= 9000
MARK 122.241 DRAWER AERATION e=1,5mm L= 9000
MARQUE 122.241 AÉRATION TIROIR e=1,5mm L= 9000



MARCA 122.242 CAJÓN DE AIREACIÓN e=1,5mm L= 9500
MARK 122.242 DRAWER AERATION e=1,5mm L= 9500
MARQUE 122.242 AÉRATION TIROIR e=1,5mm L= 9500



MARCA 122.243	CAJÓN DE AIREACIÓN e=1,5mm L= 10000
MARK 122.243	DRAWER AERATION e=1,5mm L= 10000
MARQUE 122.243	AÉRATION TIROIR e=1,5mm L= 10000



MARCA 122.302	VIROLA 2 REFUERZOS DOBLE JUNTA CON LOGO
MARK 122.302	BODYSHEET 2 STIFFENERS DOUBLE JOINT WITH LOGO
MARQUE 122.302	VIROLE 2 MONTANT DOUBLE JOINT AVEC LOGO

GENERAL WARRANTY CONDITIONS OF SYMAGA, S.A.

JANUARY 2013

SYMAGA S.A. MANUFACTURES AND SUPPLIES SILOS FOR FREE FLOWING GRAIN STORAGE UNDER MOST MODERN DESIGNS. THE LOAD CALCULATION IN THE SILOS FOLLOWS INTERNATIONAL NORMS LIKE “ANSI-ASAE”, “DIN” OR EUROCODE, ALWAYS ACCORDING TO THE SPECIFIC OFFER OR ORDER CONFIRMATION.

SYMAGA WARRANTS ALL PRODUCTS WHICH IT MANUFACTURES TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF 24 MONTHS AFTER DELIVERY, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN WRITING BY SYMAGA PRIOR TO DELIVERY.

IF SYMAGA´S PRODUCTS FAIL TO CONFORM THE ABOVE WARRANTY, AND IF SYMAGA IS INFORMED IN WRITING PRIOR TO THE TO THE END OF THE WARRANTY PERIOD, SYMAGA´S ONLY OBLIGATION SHALL BE TO REPAIR OR REPLACE, AT ITS EXPENSE, PRODUCTS THAT, IN SYMAGA´S SOLE JUDGMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP.

OFF-CENTER UNLOADING OF SILOS IS NOT APPROVED AND WILL BE STRUCTURALLY DETRIMENTAL TO A GRAIN SILO. ANY OFF-CENTER DISCHARGE OPENINGS SHOULD BE USED FOR THE SOLE PURPOSE OF CLEAN-OUT THE SILO AFTER CENTER DISCHARGE HAS BEEN COMPLETED TO THE GRAINS ANGLE OF REPOSE. THE USER IS RESPONSIBLE TO GUARANTEE THE PROPER USE OF ANY OFF-CENTER DISCHARGE OPENING. ANY DAMAGES OCCURRED DUE AN OFF-CENTER UNLOADING SHALL NOT BE COVERED BY SYMAGA´S STRUCTURAL WARRANTY.

ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM SYMAGA’S FACTORY WILL BE PURCHASER’S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM SYMAGA SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

COMPONENTS MANUFACTURED BY OTHERS, SUCH AS MOTORS, FANS, SWEEP AUGERS, CONTROL SYSTEMS, OR OTHER TRADE ACCESORIES ARE ONLY WARRANTED TO THE EXTENT WARRANTED BY THEIR RESPECTIVE MANUFACTURERS.

SYMAGA DOES NOT WARRANT AGAINST, OR SHALL NOT LIABLE FOR, LOSSES OR DAMAGES ARISING OUT OF CIRCUMSTANCES NOT SUBJECT TO ITS CONTROL, SUCH AS: OCCURENCES DURING SHIPMENT, HANDLING OR STORAGE; IMPROPER INSTALLATION, USE OR MAINTENANCE; ACTS OF THE OWNER; DESIGN, ENGINEERING OR INSTALLATION PROCEDURES NOT APPROVED BY SYMAGA IN WRITING .

SYMAGA SHALL NOT BE LIABLE FOR LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION DAMAGE TO THE CONTENTS OF A STRUCTURE, LOSS OF USE OF A PRODUCT, DAMAGE TO OTHER PROPERTY. ESPECIALLY SYMAGA SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS.

FURTHERMORE FOLLOWING CONDITIONS SHALL APPLY:

LIMITED MATERIAL WARRANTY GALVANIZED COATED SHEET STEEL PROTECTION, 600 GR/M² (Z-600)

GALVANISED COATED SHEET STEEL, PROTECTION Z 600 ACCORDING UNE- EN -36130 , SOLD FOR USE AS STEEL SILO COMPONENTS, WILL NOT RUPTURE, FAIL STRUCTURALLY OR PERFORATE WITHIN A PERIOD OF 18 MONTHS AFTER SHIPMENT FROM OUR FACTORY DUE TO NORMAL ATMOSPHERIC CORROSION. THIS WARRANTY ONLY COVERS THE MATERIAL AND NOT THE INSTALLATION.

THE MANUFACTURER WARRANTS ONLY THAT ITS PRODUCTS ARE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP ON THE DATE OF SHIPMENT FROM ITS PLANT.

THIS WARRANTY DOES NOT APPLY TO SHEETS EXPOSED AT ANY TIME TO CORROSIVE OR AGGRESSIVE ATMOSPHERIC CONDITIONS, INCLUDING BUT NOT LIMITED TO:

A) AREAS SUBJECT TO CONSTANT SPRAYING OF EITHER SALT OR FRESH WATER.
B) AREAS SUBJECT TO FALLOUT OR EXPOSURES TO CORROSIVE CHEMICALS, ASH, FUMES,CEMENT DUST OR ANIMAL WASTE.
C) AREAS SUBJECT TO WATER RUN-OFF FROM LEAD OR COPPER FLASHING OR AREAS IN METALLIC CONTACT WITH LEAD OR COPPER.
D) CONDITIONS OR CIRCUMSTANCES WHERE CORROSIVE FUMES OR CONDESATES ARE GENERATED OR RELEASED INSIDE OF SILOS.
E) TECHNICALLY THE LIFE OF THE GALVANIZATION IS REGULATED BY THE EUROPEAN STANDARDS ISO 9223, 9224 AND 9225

ISO – 9223: CORROSION OF METALS AND ALLOYS – CORROSIVITY OF ATMOSPHERES – CLASSIFICATION

ISO – 9224: CORROSION OF METALS AND ALLOYS – CORROSIVITY OF ATMOSPHERES – GUIDING VALUES FOR THE CORROSIVITY CATEGORIES

ISO – 9225: CORROSION OF METALS AND ALLOYS – CORROSIVITY OF ATMOSPHERES – MEASUREMENT OF POLLUTION.

THIS WARRANTY DOES NOT APPLY IN THE EVENT OF:

A) MECHANICAL, CHEMICAL OR OTHER DAMAGE SUSTAINED DURING THE SHIPMENT,STORAGE, ERECTION, OR AFTER ERECTION.

B) DAMAGE CAUSED BY IMPROPER SCOURING OR CLEANING PROCEDURES.
C) PRESENCE OF CORROSIVE DAMPS OR MATERIALS IN CONTACT WITH OR CLOSE PROXIMITY TO THE SHEETS.
D) DETERIORATION OF SHEETS CAUSED DIRECTLY OR INDIRECTLY BY OVERDRIVING THE BOLTS.
E) FLYING, BLOWN, OR FALLING OBJECTS, EXPLOSION, FIRE, ACTS OF GOD, OR OTHER SIMILAR EXTERNAL FORCES BEYOND SYMAGA REASONABLE CONTROL.
F) IMPROPER ERECTION OR CONSTRUCTION METHODS.
G) THE GALVANIZED MATERIALS LEAVE OUR PLANT IN PRIME CONDITION. DAMAGE CAUSED BY
H) WET OR UNPROPER STORAGE IS NOT COVERED BY THE WARRANTY. STORE MATERIALS IN DRY HIGH GROUND UNDER COVERED AREA, ELEVATED ON WOOD BLOQUING. DO NOT COVER WITH PLASTIC OR TARPAULINS SO AS TO PREVENT FREE AIR CIRCULATION. INSPECT BUNDLES DAILY FOR MOISTURE. IF BUNDLES CONTAINS MOISTURE, IT SHALL BE IMMEDIATELY OPENED AND DRIED.

THIS WARRANTY SHALL BE SUBJECT TO THE STIPULATIONS, LIMITATIONS AND CONDITIONS HEREIN AFTER SET FORTH:

A) SYMAGA'S LIABILITY FOR BREACH OF THIS WARRANTY SHALL BE LIMITED EXCLUSIVELY TO REPAIRING DEFECTIVE SHEETS OR AT SYMAGA'S SOLE OPTION, OF FURNISHING F.O.B. SYMAGA'S PLANT SUFFICIENT REPLACEMENT SHEETS FOR THE DEFECTIVE PIECES.

B) SYMAGA SHALL NOT IN ANY EVENT BE LIABLE FOR THE COST OF LABOUR TO REPLACE AND DEFECTIVE SHEET OR FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES TO ANYONE BY REASON OF THE FACT THAT SUCH SHEETS SHALL HAVE BEEN DEFECTIVE.

C) TITLE TO ANY REPLACED MATERIAL SHALL PASS TO SYMAGA.

D) CLAIMS MUST BE PROMPTLY REPORTED IN WRITING TO SYMAGA, AND SYMAGA SHALL BE GIVEN A REASONABLE OPPORTUNITY TO INSPECT THE SHEETS CLAIMED TO BE DEFECTIVE. ADEQUATE IDENTIFICATION OF THE MATERIAL INVOLVED IN THE CLAIM, INCLUDING DATE OF INSTALLATION, INVOICE NUMBER AND DATE OF SHIPMENT MUST BE ESTABLISHED BY THE BUYER.

E) SYMAGA DOES NOT WARRANT ANY PART, PRODUCT OR MATERIAL TO MEET LOCAL, MUNICIPAL OR STATE ORDINANCES, CODES LAWS OR REGULATIONS.

F) THE BUYER SHALL EXERCISE DILIGENCE IN INSPECTION OF SHEETS AS RECEIVED FROM SYMAGA SO AS TO MITIGATE REPAIR OR REPLACEMENT.

G) THIS WARRANTY SHALL EXTEND ONLY TO THE NAMED OWNER, SUCH NAMED OWNER WITHOUT THE WRITTEN CONSENT OF SYMAGA MAY NOT MAKE THIS WARRANTY SUBJECT TO ANY ASSIGNMENT OR TRANSFER.

H) SYMAGA RESERVES THE RIGHT TO TERMINATE THIS WARRANTY AT ANY TIME, (EXCEPT AS TO ORDERS ALREADY ACCEPTED) UPON THE GIVING OF WRITING NOTICE THERE OF.

I) WARRANTY DOES NOT COVER DAMAGE OR LOSS DURING SHIPMENT OF THE SYMAGA MATERIAL.

J) THE OBLIGATION OF SYMAGA UNDER THIS WARRANTY SHALL NOT ARISE UNLESS SYMAGA IS NOTIFIED AND THE WARRANTY IS PRESENTED TOGETHER WITH A WRITING STATEMENT SPECIFYING THE CLAIM OR FAILURE WITHIN THIRTY (30) DAYS AFTER A FAILURE IS FIRST CALLED TO THE ATTENTION OF THE OWNER AND NOT LATER THAN THE EXPIRATION OF THE APPLICABLE WARRANTY PERIOD.

K) SYMAGA'S LIABILITY FOR MISSING PARTS IS 15 DAYS. MATERIALS AND BUNDLES MUST BE CHECKED INMEDIATLY ON ARRIVAL TO INSTALLATION SITE BY PURCHASER ALONG WITH THE PACKING LIST PROVIDED BY SYMAGA.

RUST DAMAGE DUE TO IMPROPER STORAGE ISN'T COVERED BY SYMAGA'S WARRANTY

PROPER STORAGE OF GRAIN SILOS

MATERIALS PRIOR TO CONSTRUCTION TO PREVENT WET STORAGE STAIN:

WET STORAGE STAIN (RUST) WILL DEVELOP WHEN CLOSELY PACKED BUNDLES OF GALVANIZED MATERIAL SUCH AS SIDEWALL, ROOF AND HOPPER SHEETS AND HOPPER SILO LEGS HAVE MOISTURE PRESENT FROM ANY SOURCE. ROOF AND SIDEWALL BUNDLES SHOULD BE INSPECTED ON ARRIVAL FOR THE PRESENCE OF MOISTURE. IF MOISTURE IS PRESENT, MOISTURE MUST NOT BE PERMITTED TO REMAIN BETWEEN THE SHEETS. IN THE CASE OF MOISTURE PRESENCE, SHEETS OR PANELS SHOULD BE SEPARATED IMMEDIATELY, WIPED DOWN, DRIED AND SPRAYED WITH A LIGHT OIL OR DIESEL FUEL.

WHERE POSSIBLE, SIDEWALL BUNDLES, ROOF SHEETS AND OTHER CLOSELY PACKED MATERIALS (E.G. HOPPER SHEETS AND HOPPER SILO LEGS) SHOULD BE STORED IN A DRY, CLIMATE CONTROLLED BUILDING. STORAGE INSIDE A DRY BUILDING SHOULD BE DONE IF AT ALL POSSIBLE. WHERE OUTDOOR STORAGE IS UNAVOIDABLE, THE MATERIALS SHOULD BE RAISED OUT OF CONTACT FROM THE GROUND OR VEGETATION. STACKING AND SPACING MATERIALS SHOULD NOT BE CORROSIVE OR WET. MATERIALS MUST BE PROTECTED FROM THE WEATHER. WEATHER PROTECTION THAT PERMITS MORE AIR MOVEMENT AROUND THE BUNDLES IS BEST.

THE STORAGE METHOD OF THE ROOF BUNDLES AND SIDEWALL SHEETS MAY ALSO HELP MINIMIZE MOISTURE PRESENCE. ROOF BUNDLES SHOULD BE STORED INCLINED. THE BUNDLES SHOULD BE STORED AND SECURED IN A SAFE & STABLE MANNER. TURNING THE BUNDLES OVER AND STORING WITH THE CENTER OF THE DOME "UP" LIKE AN ARCH IS AN OPTION. SIDEWALL BUNDLES MAY BE STORED ON EDGE, HOWEVER THESE BUNDLES SHOULD BE SECURED IN SUCH AS WAY AS THEY CANNOT FALL OVER AND CAUSE INJURY.

SHOULD "WHITE RUST" OR "WET STORAGE STAIN" OCCUR, CONTACT THE MANUFACTURER IMMEDIATELY CONCERNING METHODS TO MINIMIZE THE ADVERSE EFFECT UPON THE GALVANIZED COATING.

PLASTILINE / SEALANT FOR SILO JOINTS HAS TO BE STORED UNDER DRY CONDITIONS BETWEEN + 5º AND +20 ºC.

GENERAL SAFETY STATEMENT

Our principal concern is your safety and the safety of others associated with grain handling equipment. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist and inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel.

Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

You should consider the location of the bin site relative to power line locations or electrical transmission equipment. We recommend you contact your local power company to review your installation plan or for information concerning required equipment clearance.

Clearance of portable equipment that may be taken to the bin site should be reviewed and considered as well. Any electrical control equipment in contact with the bin should be properly grounded and installed in accordance with National Electric Code provisions and other local or national codes.

This product is intended for the use of grain storage only. Any other use is a misuse of the product!

This product has sharp edges! These sharp edges may cause serious injury. To avoid injury, handle sharp edges with caution and use proper protective clothing and equipment at all times.

Sidewall bundles or sheets must be stored in a safe manner. The safest method of storing sidewall bundles is laying horizontally with the arch of the sheet upward or over like a dome.

Sidewall sheets stored on edge must be secured in a way that they cannot fall over and cause injury. Care should be taken in the handling and movement of sidewall bundles.

Personnel operating or working around equipment should read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

To avoid anyone becoming caught or trapped by grain, do NOT empty the silo whenever there are people inside it.

Keep hands, feet and clothing away from moving parts.

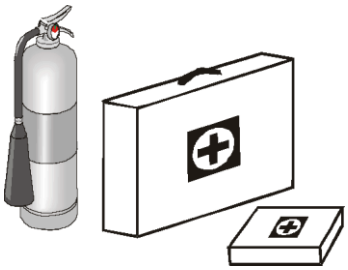
Fall from grain bins at any height can and will cause injury. Make sure all needed safety measures are taken.

PREPARE FOR EMERGENCIES

Be prepared if fire starts

Keep a first aid kit and fire extinguisher handy

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone



Keep emergency Equipment Quickly Accessible

WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Safety glasses should be worn at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

A respirator may be needed if a hog house has poor ventilation. Waste fumes can be toxic.

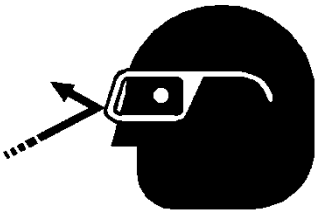
Wear hard hat and steel toe boots to help protect your head and toes from falling debris.

Remove all jewelry.

Tuck in any loose or dangling shoe strings.

Long hair should be tied up and back.

Eye protection



Gloves

Steel Toe Boots

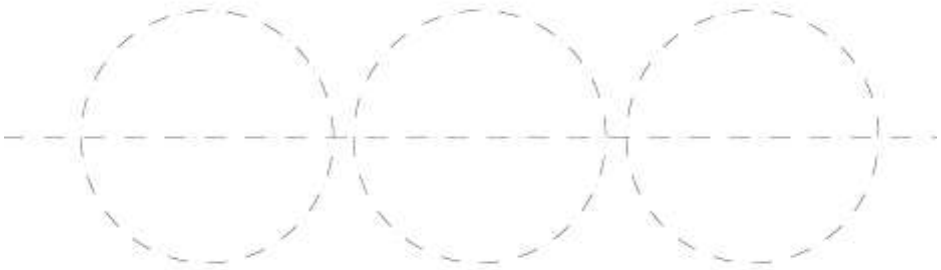
Respirator

Hard hat

PRIOR TO THE ERECTION

Axis tracing:

Trace the axis of the silos (both longitudinal and transverse) on the foundations. Trace as well the circumferences corresponding to the diameters of the silos. This will help to centre the silo properly.



Materials marking:

All the body-sheets, stiffeners and stiffener splices delivered by SYMAGA for the assembly of the silos are marked with a specific code that helps to identify the different body-sheets and stiffeners (according to their thickness and type of joint). These marks are introduced in the tables below:

Body-sheets

E 0.8	E 1	E 1.2	E 1.5	E 1.8	E 2	E 2.2	E 2.5	E 2.8	E 3	E 3.5	E 4	E 5
Body sheets with thickness of **0,8 mm**	Body sheets with thickness of **1,0 mm**	Body sheets with thickness of **1,2 mm**	Body sheets with thickness of **1,5 mm**	Body sheets with thickness of **1,8 mm**	Body sheets with thickness of **2,0 mm**	Body sheets with thickness of **2,2 mm**	Body sheets with thickness of **2,5 mm**	Body sheets with thickness of **2,8 mm**	Body sheets with thickness of **3,0 mm**	Body sheets with thickness of **3,5 mm**	Body sheets with thickness of **4,0 mm**	Body sheets with thickness of **5,0 mm**

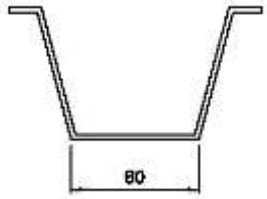
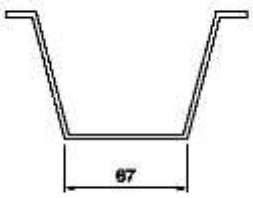
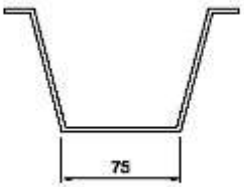
A	Body sheets with **double joint**
B	Body sheets with **triple joint**
C	Body sheets with **quadruple joint**
E	Body sheets with **quintuple joint**
G	Body sheets with **sextuple joint**

The packages of body sheets are also marked with a colour in the edge of the body sheets according to their thickness and based on the following table:

	COLOUR	THICKNESS	RAL
	White	0,80 mm	9016
	Red	1,00 mm	3020
	Yellow	1,20 mm	1016
	Blue	1,50 mm	5015
	Light green	1,80 mm	6032
	Black	2,00 mm	9017
	Gray khaki	2,20 mm	7008
	Orange	2,50 mm	1028
	Dark grey	2,80 mm	9007
	Brown	3,00 mm	8012
	Magenta	3,50 mm	4003
	Pink	4,00 mm	3015

Stiffeners

E 1.5	E 2	E 2.5	E 3	E 3.5	E 4
Stiffeners with thickness of **1,5 mm**	Stiffeners with thickness of **2,0 mm**	Stiffeners with thickness of **2,5 mm**	Stiffeners with thickness of **3,0 mm**	Stiffeners with thickness of **3,5 mm**	Stiffeners with thickness of **4,0 mm**

F	I	N
		

Stiffener splices

E 1.5	E 2	E 3
Splices with thickness of **1,5 mm**	Splices with thickness of **2,0 mm**	Splices with thickness of **3,0 mm**

F	I
	

Torque value

To tighten the bolts SYMAGA suggests different torque values depending on the quality and thread of the bolts provided.

It is very important not to exceed these values because greater values could damage the bolts

TORQUE VALUE (Cs, N x m)		
THREAD	**QUALITY**	
	8.8	**10.9**
M-8	20	28,8
M-10	39,2	57,6
M-12	68	100
M-14	108	160
M-16	168	248

The indicated grip-torques are exclusively for joints without neoprene washers. In joints with neoprene washers it shall be tightened until the neoprene will be expanded.

SILOS OPERATION AND MANAGEMENT

Loading and unloading:

Silos must be loaded through the centre roof cover. Off centre loading can lead to structural damages in the silo. Especially in larger silos it is recommended not to fill it with only one stage. It should be filled with multiple stages to allow proper settlement.

Before loading, make sure all gates are closed and sweep auger (in case it is supplied) is placed over intermediate sumps.

It is necessary to know maximum silo capacity in order not to overfill the silo. Overfilling may cause grain silo failure.

Start unloading through the centre sump until there is not any more grain flowing by gravity. Off centre unloading can cause structural damage.

Do not simultaneous fill and discharge the silo. Simultaneous filling and unloading results in a fluidic behaviour of the grain. This can cause increased sidewall loads. The service life of bins can be drastically reduced and risk of structural failure, economic loss, and personnel injury will increase by simultaneously loading and unloading.

Storing material:

Silos are designed to store dry and cool grain. It is not recommended to fill grain over 16% moisture in a storage bin.

Do not fill grain to top. Maximum fill height is 3 cm below eave.

Avoid increased pressures inside the silo. For this purpose, let the air leave the silo through roof vents or manhole (make sure they are not blocked by grain).

In case temperature cables are supplied, it is advisable to attach the temperature cables among them, in order to avoid the natural displacement to the outer regions of the silo.

ASSEMBLY INSTRUCTIONS FOR GRAIN SILOS

CONCRETE FOUNDATION

The fastest and most economical way to erect the grain silos is from the top to the bottom using lifting jacks. The suggested assembly procedure is explained below.

1- Assemble the top ring of body-sheets on the finished foundation bolting the vertical joint line free of stiffener with M10x20 bolts, and doing it in the clockwise direction; in other words, placing the one on the left over the one on the right, as it is shown in the drawing. (See figure 1)

Caulk with sealant the vertical joint. The vertical lines for the holes stiffeners must be aligned with the anchor bolts in the foundation. Check to be sure that the body-sheets are positioned correctly.

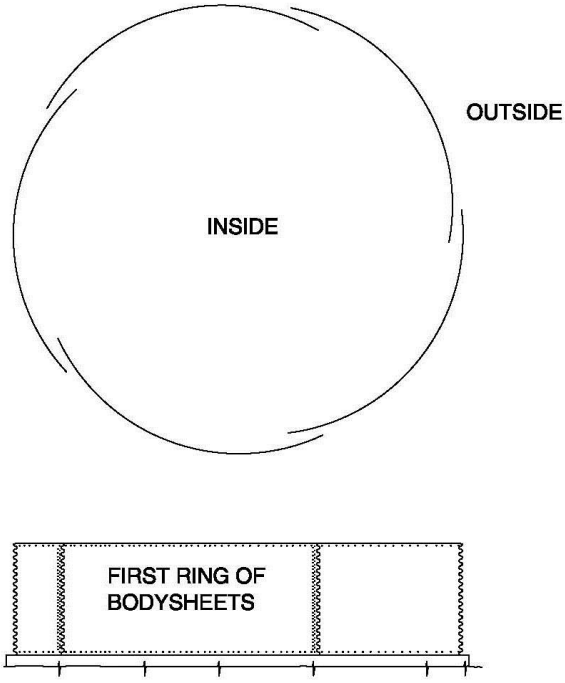


Figure 1

2- Place the central collar support in the centre of the foundation and adjust to obtain the required height (see detail). Choose the location of the manhole sheet and roof ladder and bolt the roof clips to the top of the body-sheets.

Begin the roof assembly installing four sheets at quarter points to stabilize the central collar. (See figure 2)

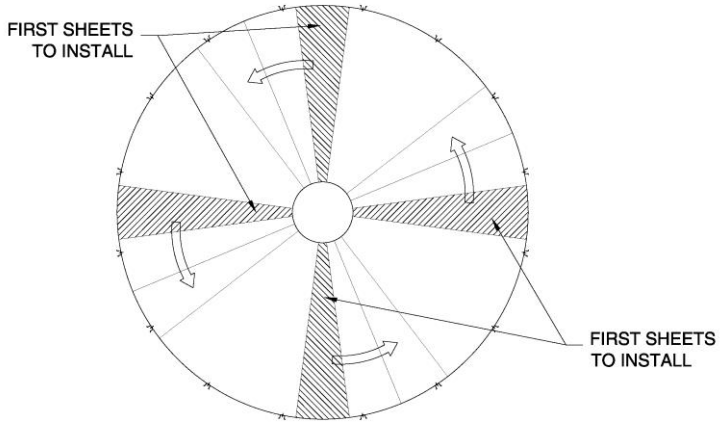


Figure 2

Complete the roof assembly and place the ladder rungs on the sheet right on the left of the manhole sheet. (See figure 3)

Assemble the manhole according to the detail drawing.

If the roof has any aeration, see the detail drawing to install it. In case no different information is given, the aeration will be distributed uniformly around the roof.

If the silo has temperature cables, see the detail drawings to install the additional support requirements.

If roof ladder has handrail, see the detail drawing to install it.

Right after the assembly of the roof it is advisable to check the sealing of the roof. For this the roof may be watered with a hose to verify all the points where the water could pass through. In case there is any point where the water can go easily through, they have to be resealed.

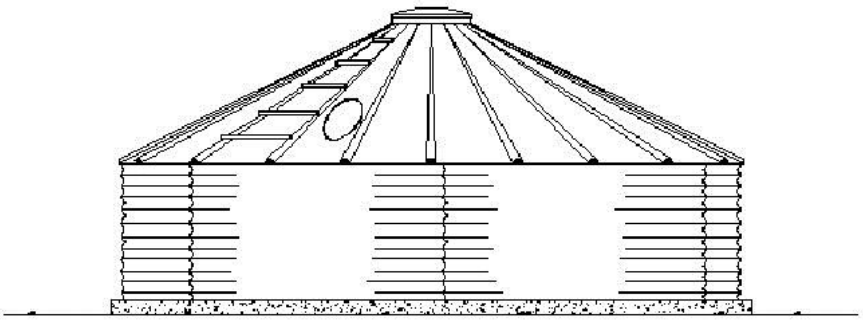


Figure 3

3- Attach the lifting jacks to the stiffeners (or to the holes lines of stiffeners in case they are not installed yet) and raise the silo high enough to let the assembly of the next body-sheets ring. (See figure 4).

Determine the number of required lifting jacks according to the diameter and weight of the silo.

The bolts must be adequate to lift the silo.

The vertical joint of body-sheets must be staggered (as shown in the drawing) to allow all the stiffener holes to be aligned. (See figure 4)

The body-sheets are assembled inside of the previous ring (see drawings).

Caulk with sealant the vertical joint.

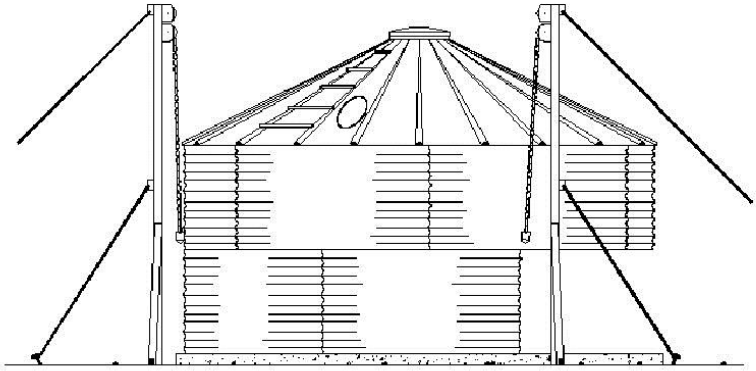


Figure 4

The stiffeners are assembled after installing one or two rings of body-sheets, depending on the length of the stiffeners used. Attach stiffeners to the body-sheets using the bolts specified in the detail. (See figure 5)

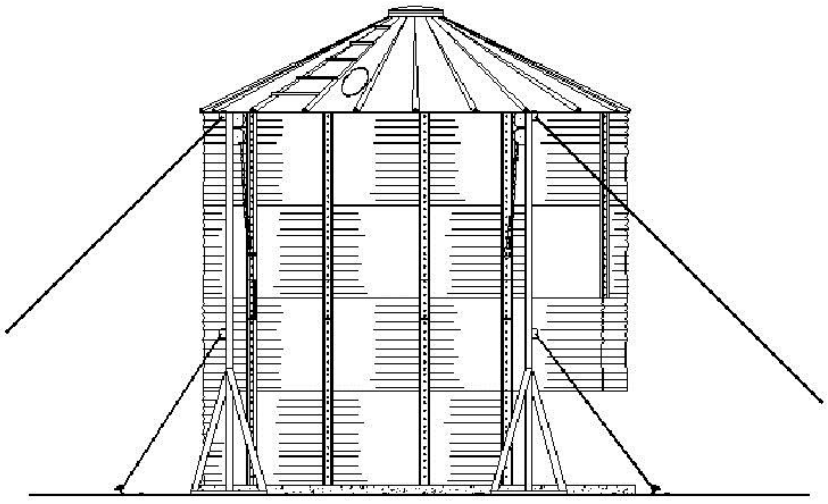


Figure 5

If the silo has any ladder, attach it to the body-sheets as the silo is raised. See ladder and safety cage details to assemble it.

If wind rings are required, see the detail drawing and assemble it as the silo is lifted.

If the silo has any columns attached to it, install these attachments according to the details included in the Columns Assembly Instructions.

While the silo is being erected the watering test should be done as well in order to check the sealing at every point.

4- Repeat step 3 as additional body-sheets are added.

Install the access body-sheet. See the drawing for the position. In silos with access body-sheet in the second ring from bottom, body-sheet with access door must be located in the axis of the silos and on the side of the bottom outlets.

5- After completing the bottom ring, level the silo, anchor it securely to the foundation and seal the base of the silo.

CAUTION

1- DO NOT LIFT THE SILO UNDER WINDY CONDITIONS. THIS COULD RESULT IN SILO DAMAGE. CONLLEVAR DAÑOS EN EL SILO.

If the wind blows during the installation so that the silo wobbles and it is unstable, proceed as follows:

1.1.-Rest the silo on the floor. Let the chain hoists tying the silo, tensed but not working.

1.2.-Fix anchor plates and tie them to the foundation by elements that can be released easily (as cables for example).

1.3.-Once that the wind stops, the anchor plates will be dismantled, and we will proceed with the assembly.

2- WHEN ASSEMBLING, RAISE THE SILO JUST ENOUGH TO ADD ONE BODY-SHEETS RING.

3- START ASSEMBLING EVERY NEW RING OF BODY-SHEETS BY THE WINDWARD SIDE OF THE TANK.

4- WHEN ASSEMBLING A NEW RING LEAVE THE BOLTS LOOSE UNTIL ALL THE BODY-SHEETS ARE ATTACHED.

5- LOWER THE SILO AND SECURE IT TO THE FOUNDATION BEFORE LEAVING THE JOBSITE.

6- CHECK THE THICKNESS OF THE BODY-SHEETS AND STIFFENERS AND INSTALL THEM IN THE PROPER POSITION ACCORDING TO THE DRAWING.

ASSEMBLY INSTRUCTIONS
FULL AERATION FLOOR

TARGET AND PURPOSE

The target and purpose of this document is to provide all information required for the correct assembling of the aeration floor supplied by Symaga.

In addition, it´s showed a recommended guideline concerning the precautions and safety procedures that are required during its use to avoid any hazards.

This Assembly Instructions Manual has been completed with the following information:

- General Warranty Conditions
- Safety recommendations to avoid possible problems.

Also, if you consider necessary you can request us the information below:

- Operating Instructions

The plant owner is required to observe specific workplace legislation.

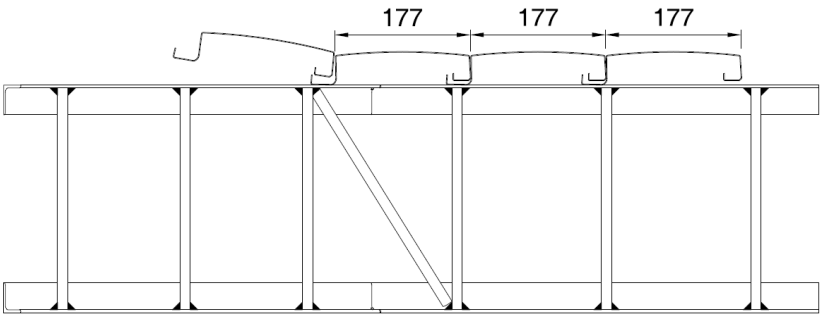
The work sites must be adequate and compliant with current regulations in order for the plant to be properly installed and operated

PRE-INSTALLATION CONSIDERATIONS

MEASURES TO BE CONSIDERED

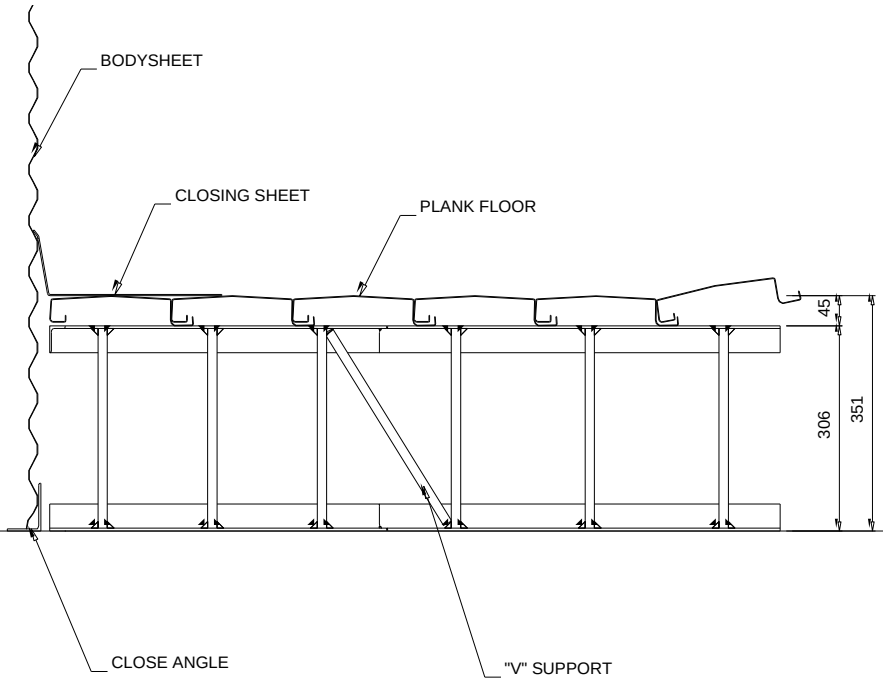
The aeration floor installation must adapt to particular circumstances and the different diameter of the silos. However in general, there are a number of conditions that must be considered for proper installation:

- The spacing between adjacent floor supports should not exceed the “S” dimension, which depends on the diameter and the number of rings of the silo.



Picture 1: Plank section

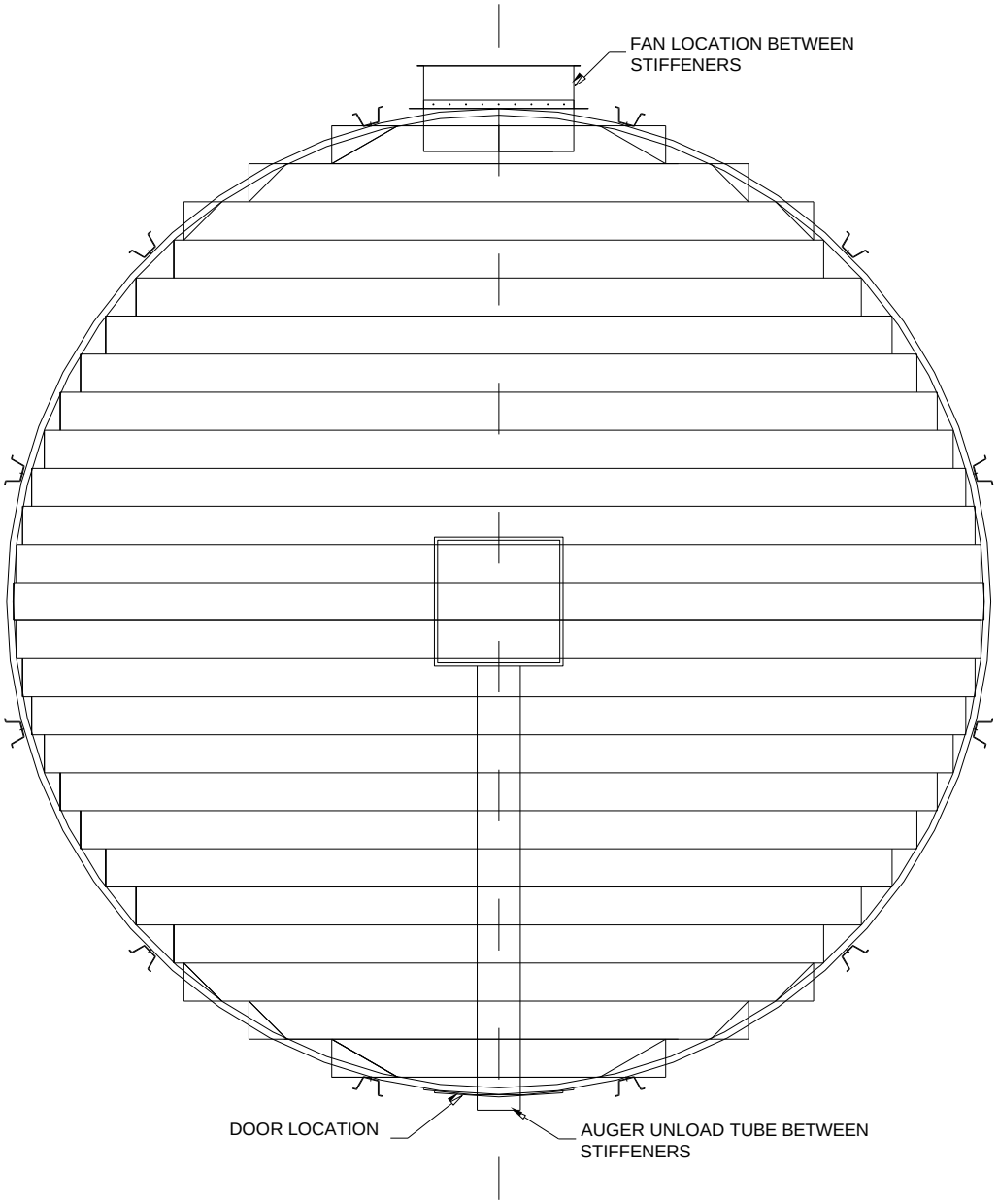
- The ends of the planks attached to the bodysheets or areas inside of the silo, must not have a length greater than S/2, in this case will be used double supports in order to reduce this length.
- If there is a short plank created to accommodate an unloading well, at least two supports are required to support each end of the short plank, even if the above two conditions are otherwise met.



Picture 2: Aeration Floor Detail

PLANNING

The aeration floor installation should be carried out as indicated in this manual for the correct assembly of the system.



Picture 3: Fans location

Determine where the unload auger will exit the silo. Generally this is directly or very close to the door. The unload auger, discharge hole and fan openings must be between the stiffeners and must avoid vertical wall sheet seams.

The unload auger discharge hole should be directly across from the fan for maximum grain drying efficiency. If two fans are used, they should be placed no more than 120º apart symmetrically from the axis of the silo and with their midpoint directly opposite of the auger discharge hole.

Prior to placing supports and soil aeration planks, it must be installed the connector to the fan as shown in the following sections of this manual.

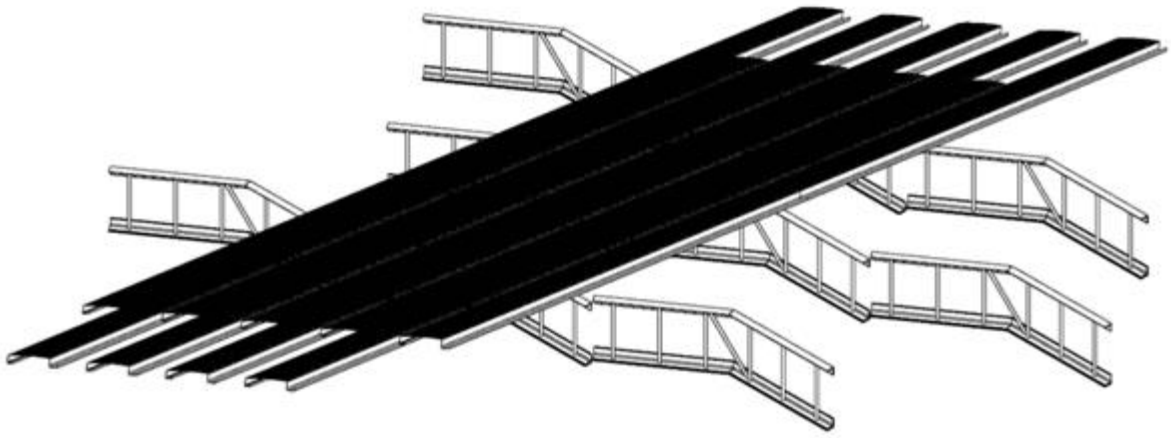
Both the floor plank layout and the floor support layout are required to properly assemble the aeration floor. Floor plank layouts are consistent for any given silo diameter and Floor support layouts are different for changing silo diameters and for the number of tiers of grain being supported.

Aeration Floor has been developed for flat bottom silos, so the concrete surface must be proper to install the supports.

At the end of this manual you can find the floor plank layout and the floor support layout according to the offered silo, also you can find a table where is indicated the distance "S" between the “V” supports and the distance “G” between the first plank and the bodysheet according to the number of rings of the silo.

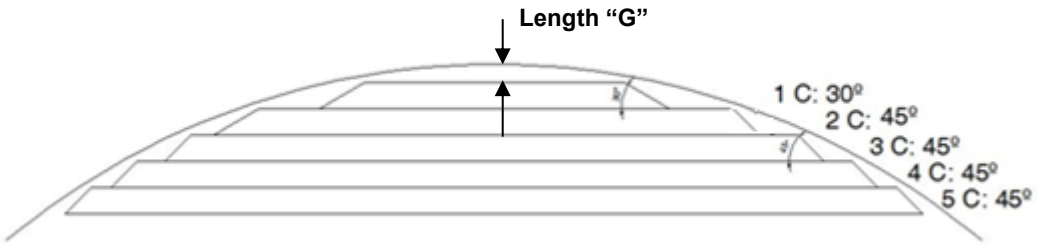
Floor plank layout shows the lengths considered for the planks, as well as the cutting length will be needed to install them, being marked with a "C" those in which it is necessary to make a cut at an angle to its assembly.

Position of the planks will be perpendicular to the position of the supports, for the placement of the first plank it is necessary to be considered the distance "G" with respect to the bodysheet, as is shown in floor plank layout.



Picture 4: Location of the Planks in relation to the Supports

The maximum permitted overhang from the end of a plank to a support shall not exceed in any case "S/2", if exceeded this distance will require installation of double supports.

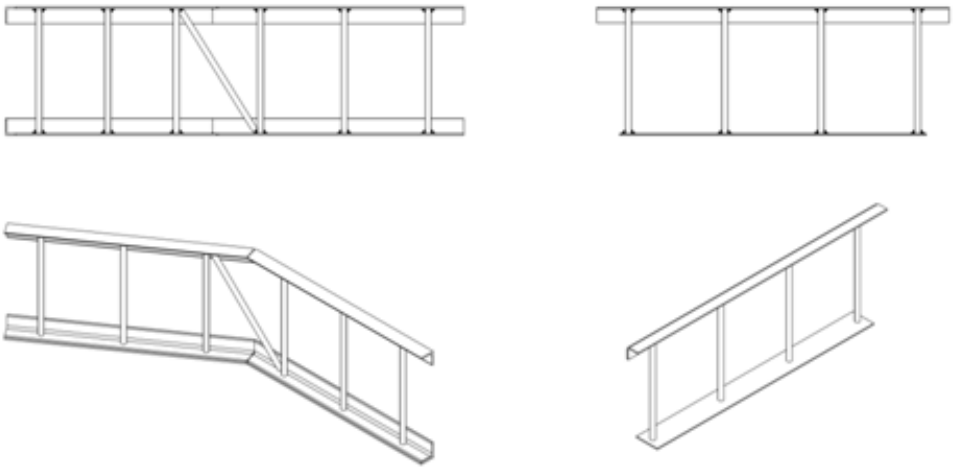


Picture 5: Installation of first Planks

The number "N" of supports required is shown in the table of floor plank layout.

TYPES OF SUPPORTS AND LOCATION

It is possible to use 2 different types of supports which must be installed on floor-standing, supporting aeration planks on top angular profile. These supports are shown below:



Picture 6: “V” supports and double supports

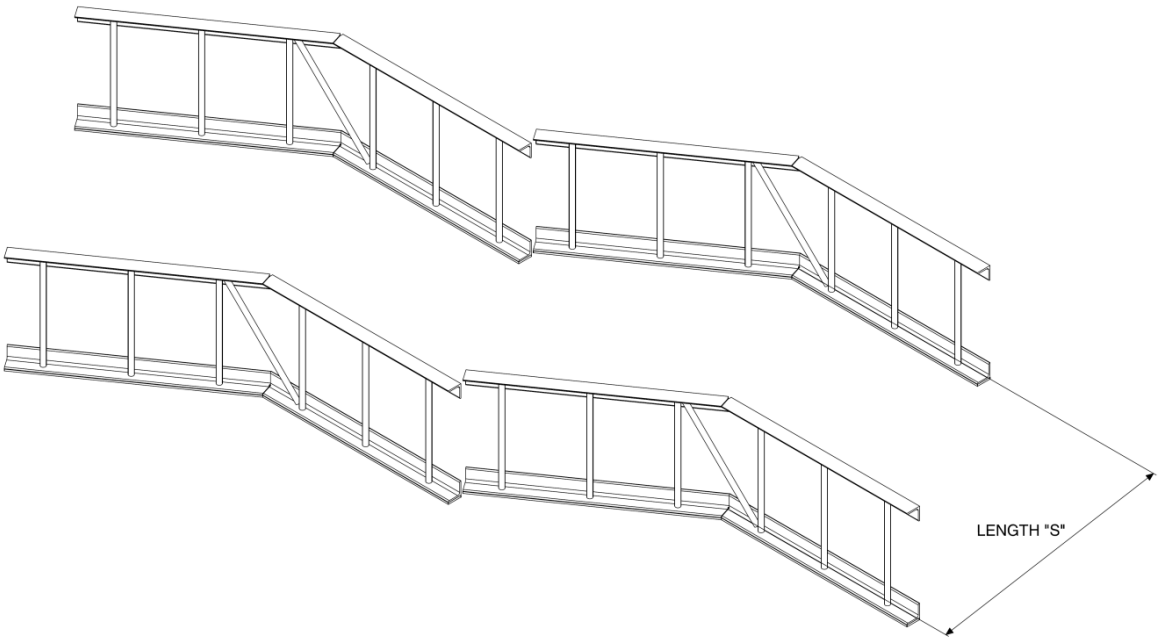
ASSEMBLY REQUERIMENTS

When assembling, it should take into account the following considerations:

SPACING BETWEEN SUPPORTS

The “S” dimension provided for a given silo diameter and tier height must not be exceeded between any corresponding points among adjacent supports.

A method of establishing a consistent spacing is to orient the supports in the center sections of the silo o be lined up in a grid pattern of columns and rows both along the “S” chalk lines and perpendicular to such lines.

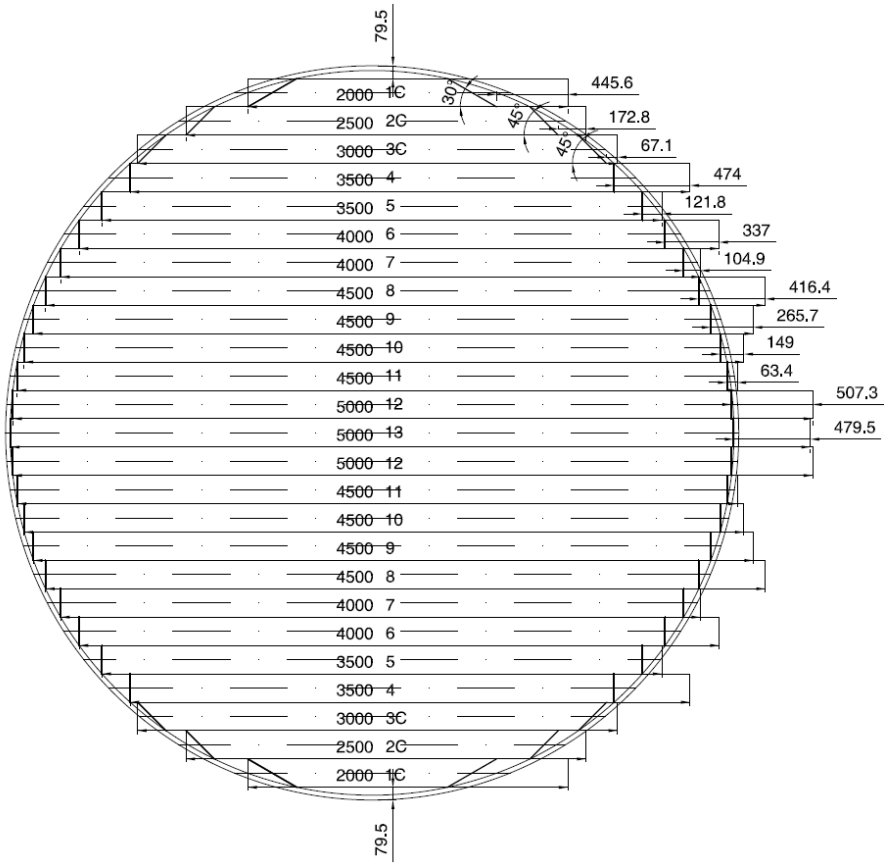


Picture 7: Length between “V” Supports

AERATION FLOOR PLANK IDENTIFICATION

A set of planks designed for a specific silo diameter consist of a number of pairs of planks, each of the planks of the pair being of the same size except the longest planks, which could be a unique or a pair of planks, depending on the diameter of the silo. In the floor layouts planks are numbered starting with 1 for the smallest pair of planks.

The plank identification numbers then increase sequentially as they progress towards the center of the silo, so that the plank with the highest numerical values are the center planks. The plank identification numbers then decrease sequentially back to 1.



Picture 8: Plank Identification

TYPES OF PLANKS

For larger silos, some of the middle planks are supplied as two shorter planks for shipping and handling purposes, each of the planks identified with the same number and either an A or B extension.

After encountering a plank needing splitting, all succeeding planks will also need such operation. Therefore extra double supports will be required at every joint for not exceeding maximum overhang “S/2”.

The identified planks with the letter "C" should be cut at both ends as the angle shown in the assembly drawing in this manual.

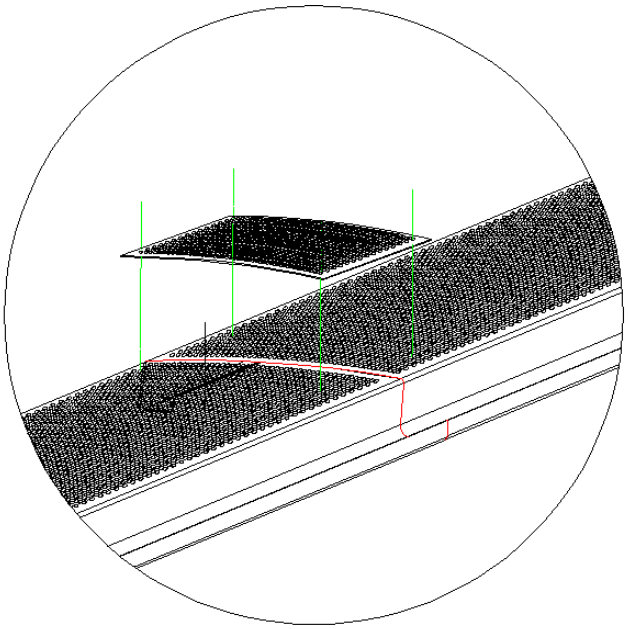
The plank or planks for each row have a greater length than necessary, so it will be necessary to cut at least one of the planks by row, in order to adjust them to the diameter of the silo.

As discussed, in larger silos may be necessary to use more than one plank in a row when the distance is greater than 11000 mm. In silos whose measure is less than 11000 mm (ø300 -

ø1070), the cuts will be made at the same end for all planks in each row. In the case of silos with larger sizes (ø1145 - ø3208) with two planks by row, the cut will be made in alternating rows as shown in the assembly drawing.

Thereby, we avoid lining up the successive joints where split planks meet end to end by positioning those joints staggered.

Splice plates are provided to cover joints between mating split planks. These splices are attached with 6 self drilling screws.



Picture 9: Splice

CUTTING PLANKS

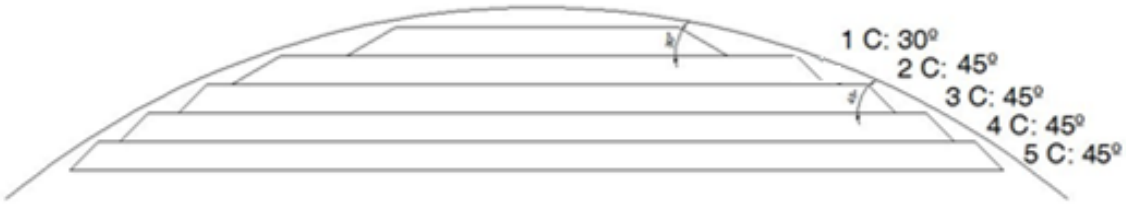
It will be necessary in the lower numbering plates (1, 2, ...), to cut their ends according to an angle.

These plates are marked with a "C" after its number. For example, in a silo ø1070 the planks numbered from 1C to 6C will be cut an angle at the time of assembly, 1C at 30º and from 2C to 6C at 45º.

It is important to consider that the shape of the cutting depends on the side of the silo, same plank but on opposite sides of the silos have opposite cuts.

- For the first plank (1C), cut planks a distance of 312 mm for a 30º cut angle.
- The rest of “C” planks, cut a distance of 180 mm for a 45º cut angle.

In the largest silos, where one line has two planks with labeled "C", you must make the cut at 45 degrees on both ends of this line.

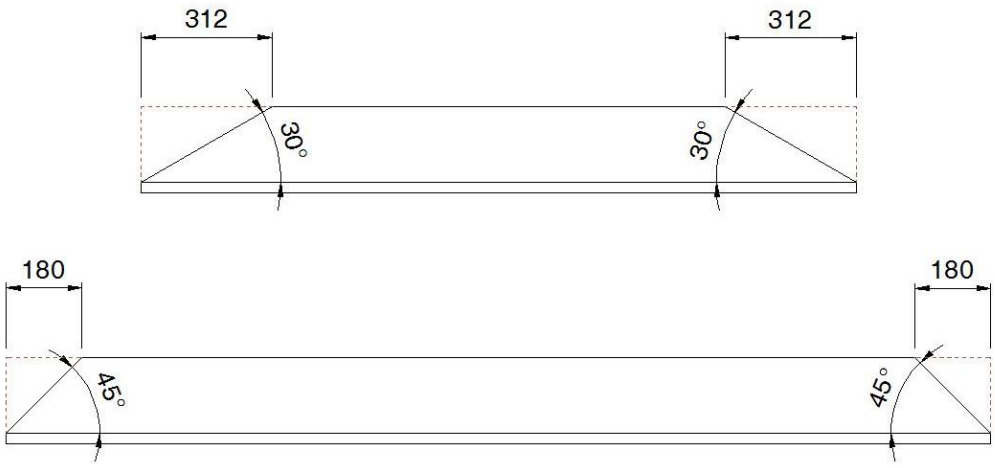


Picture 10: Installation the first Planks

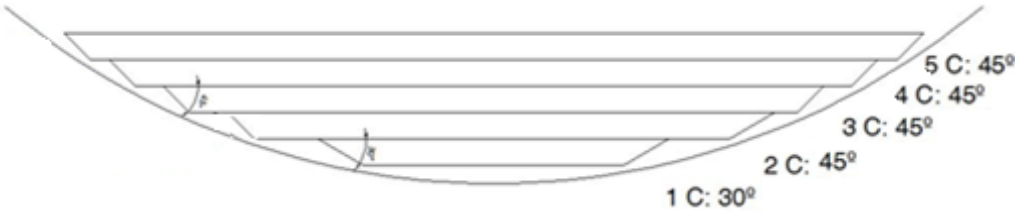
The drawing below shows the cut that it is necessary to perform in the first planks to install them, it should be taken into account that to the specified measurements it is necessary to add the cutting length corresponding to each plank.

Therefore, it is necessary to install the plank “1C” for a 30º angle and the length of court is 150 mm, for assembling the plank, one end must be cut as is shown in the figure, and the other it must be added 150 mm, so that it will be marked in the upper part the distance of 462 mm (150 mm + 312 mm) and in the bottom 150 mm, thereby it is achieved the length and angle required.

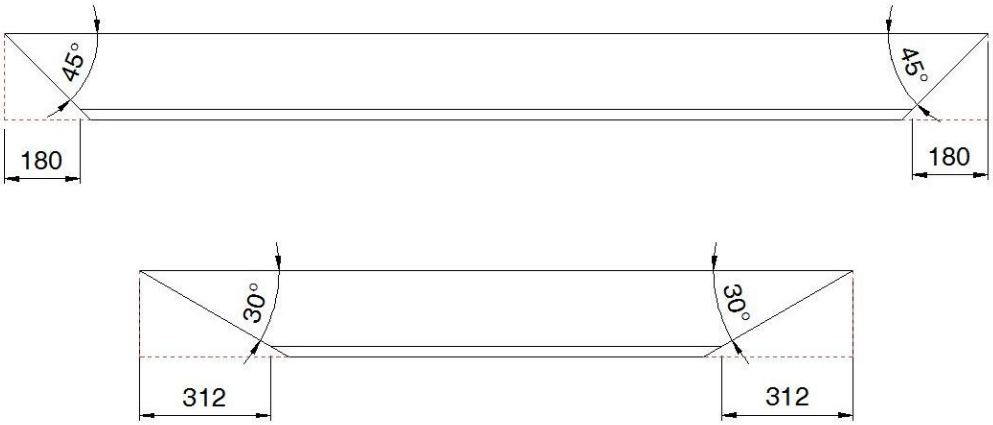
In any case, it must be used Zinc based paint to protect the cut surface before installation of the plank.



Picture 11: Cut planks (starting)



Picture 12: Installation the last Planks



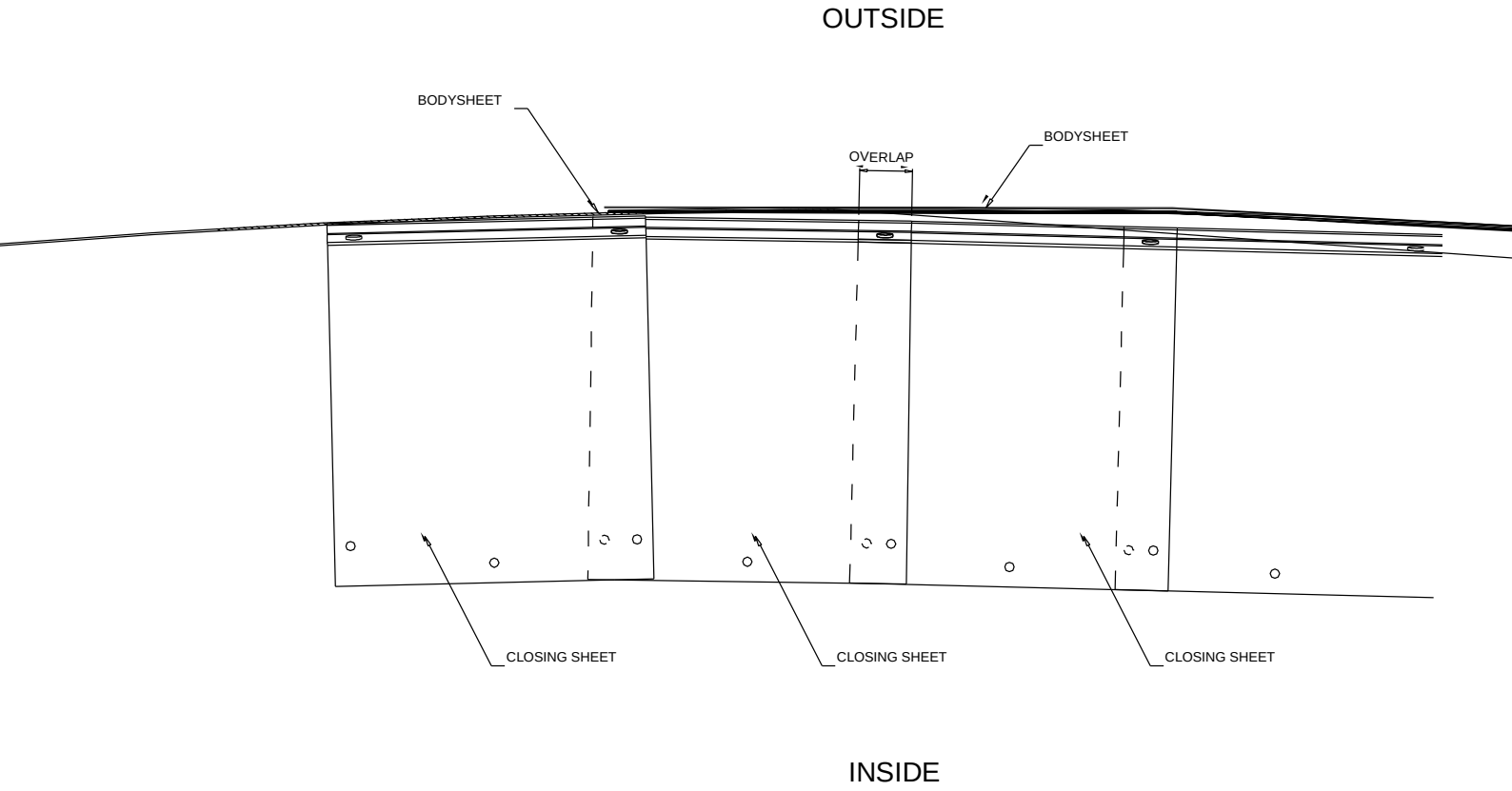
Picture 13: Cut planks (ending)

CLOSING SHEET

The closing sheet covers the space between the planks and bodysheet.

These closing sheets are bolted to the planks by self-drilling screws ø5,5 x 32mm. The bodysheets are bolted to the closing sheet with M10x30(8.8) bolts with head outside, weatherseal washer outside, flat washer inside and nut inside.

Closing sheets must be assembly anti-clockwise direction, allowing an improved rotation of the sweepauger.



Picture 14: Closing sheet Installation

INSTALLATION OF DISCHARGE SYSTEM

The discharge system should be installed before the aeration floor, according to manufacturer's instructions. The pivot point of the sweepauger, it should be at the center of the silo, the same way that the discharge outlet, the position of discharge system will be on the midline of the silo.

It will be necessary to add supports to reinforce the planks where the discharge outlet is located.

You must ensure the proper grip throughout the length of the discharge system. Likewise, it must be carried through cuts in the wall of the silo for this system can break through to the outside, these holes must be suitably sealed.

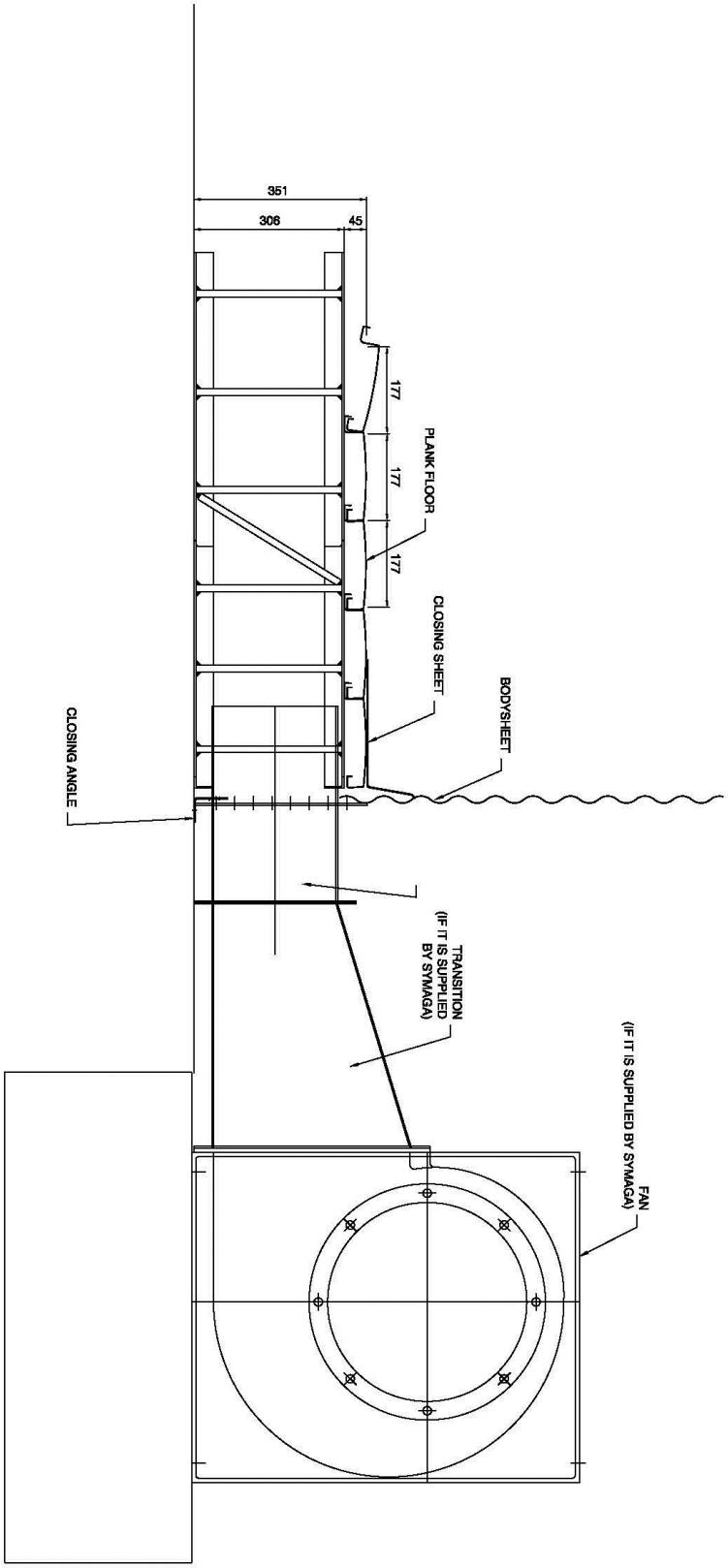
The top of the discharge system must be below the floor supports and in any way it must support the planks.

To adjust the discharge outlet in its location, it will be necessary to cut the planks where it must be fitted the outlet. In the case of overhangs greater than “S/2”, it will be required the installation of supports as indicated.

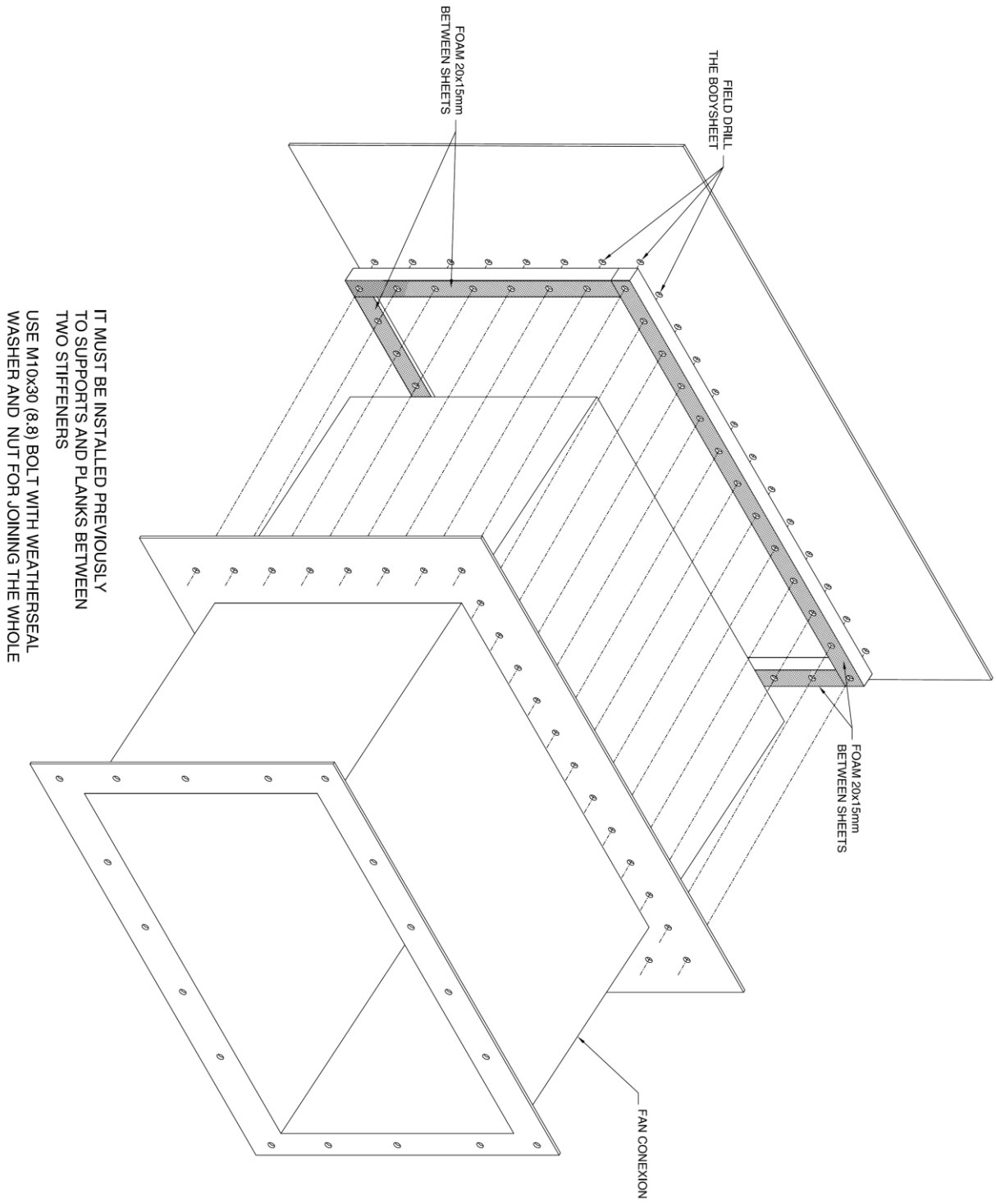
INSTALLATION OF FAN CONNECTION

The aeration input must be installed before assembling the aeration floor as is shown in the following drawings.

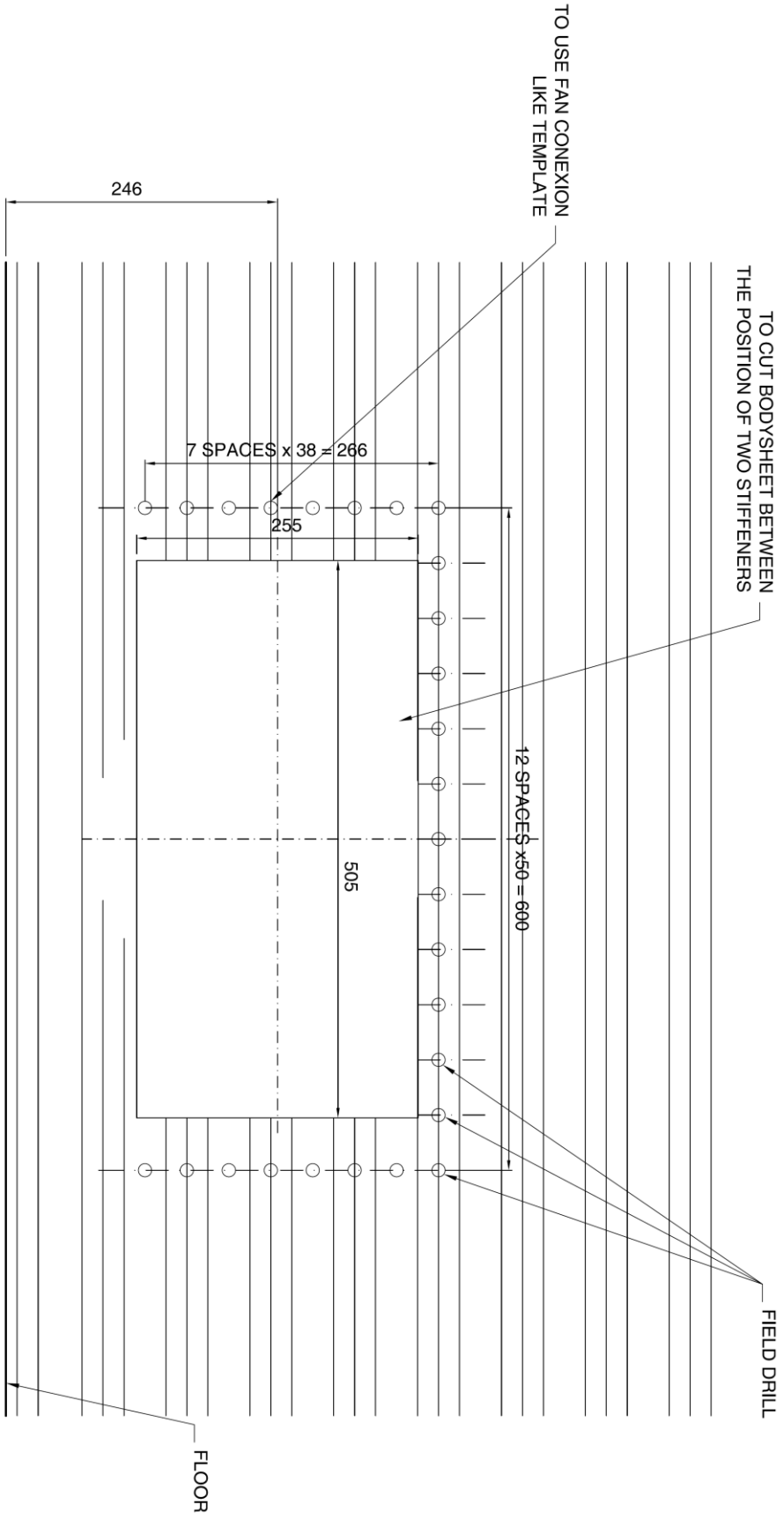
The air inlet should be placed in the center of two stiffeners. It must be used sealant to avoid losing aeration floor and prevent moisture intrusion.



Picture 15: Installation of Fan Connection



Picture 16: Assembly and Sealing of Fan Connection



Picture 17: Cut of the bodysheet

AERATION FLOOR INSTALATION

The following are the steps for assembling the aeration floor:

1. Find the corresponding floor and support layout to determine type, quantity, spacing “S” and “G” and distribution of floor supports for the specific silo diameter and height.

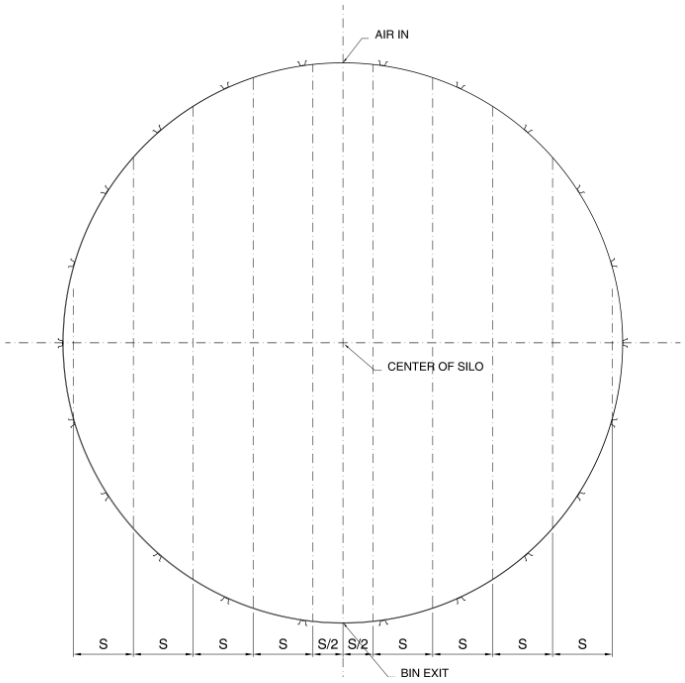
2. Planks must be arranged by lengths to facilitate assembly, in order to be found fast when they are needed.

3. Determine the exact center of the silo and mark this point.

4. Mark the point where the discharge system will exit the silo. Remember that the unload system and fan transitions must be installed prior to the floor, both of them must be installed between two stiffeners.

5. Mark the chalk line that represents the axis of the silo. Mark across the complete center of the silo starting at center point, passing through point of discharge and continuing to the other side. The unload system sits over this line.

6. Mark chalk lines at 1/2 of the support spacing “S” on either side from the center chalk line already marked. Continue to mark parallel chalk lines toward silo wall at spacing’s of “S”across the complete silo. The floor supports sit along these lines.



Picture 18: Supports location

It is essential to mark chalk lines on the floor to ensue correct support spacing throughout the silo. Incorrectly spaced supports may cause a floor failure.

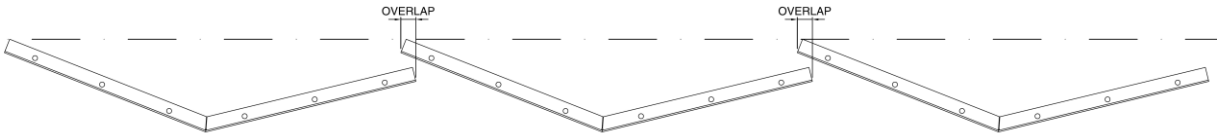
7. For proper placement of planks, it will be necessary to mark a line perpendicular to the direction of supports passing through the midpoint, so that this line will be a reference for subsequent placement of the planks.

8. “V” supports must be placed on the chalk line spaced at the “S” dimension, according to the support layout.

   When aligning supports, it is acceptable to butt them end to end with each other, but a plank support leg must not fall directly on the weak area where “V” supports meet. As his can be difficult to detect, it is preferable to overlap successive “V” supports. This is what is reflected in the support layout drawing.

   Note that the supports must not be placed on the center line, since that would interfere with the discharge system.

   Look at the picture to place the first row of supports, on the chalk lines spaced at the “S” dimension. In this way it is ensured that not exceeding the corresponding distance “S” between adjacent supports.



Picture 19: Overlap between supports

Install double support in order not to exceed the allowable distances.

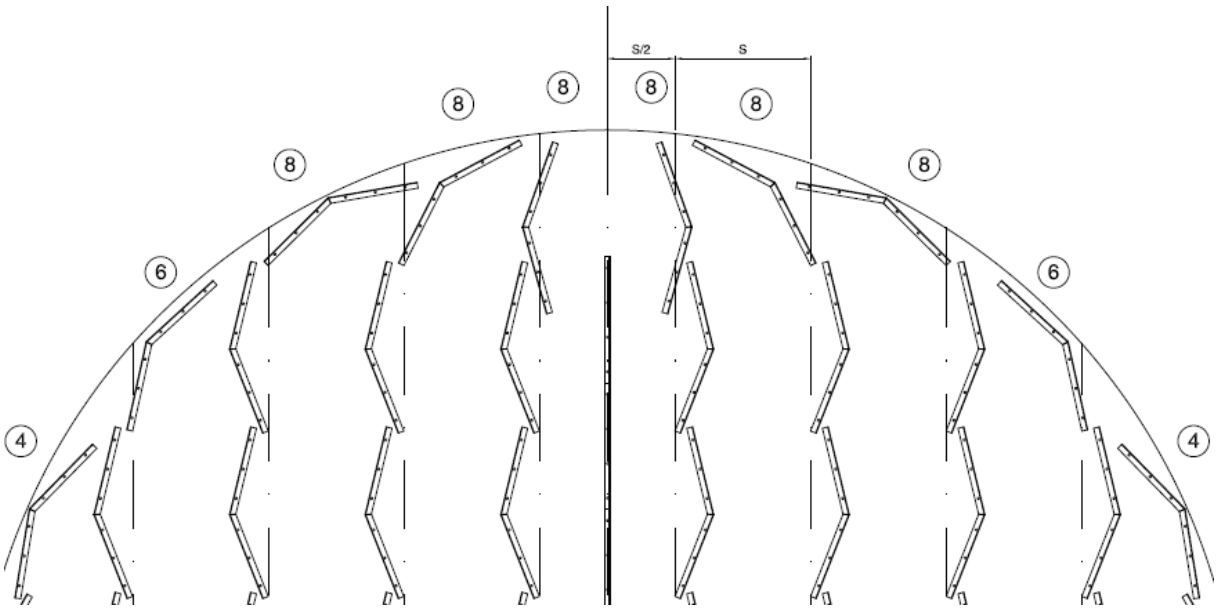
According to the floor plank layout, you must place two rows of double supports to either side of the main axis of alignment of the supports in the zone where the discharge system will be installed, the separation between them should allow proper installation of this system. In the other half of the axis, where it is not installed transport system only is necessary to install one line of double supports.

9. Cut the planks required as per the instructions provided in the cutting planks section.

10. Place the first plank on top of the floor supports and position such the gap between the upper corners of the plank and the inner side of the silo wall equals to distance “G”.

    The two plank legs must be supported, and every plank must be centered so that the space of each end is equal according to the previously marked line.

    Add additional V-Supports along the chalk lines where required.



Picture 20: Distance between supports

Check or ensure that the overhangs on the ends of the plank do not exceed the “S/2” dimension.

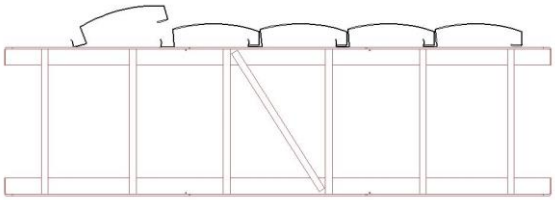
When installing “V” Supports in the vicinity of the silo wall it is often possible to crowd the ends inward to provide overhang support without compromising the required “S” spacing.

If it is no possible to use the “V” Supports o provide overhang supports, I may be necessary to position double supports under the plank ends, near the silo wall. See corresponding floor supports layout for indications. For angled cut planks, it would be beneficial to rotate the supports in order to provide better support.

11. Position the next plank adjacent to the previous and snap into place by applying downward pressure on the mating seam with a plastic coated sledge hammer in a tamping motion. Start at one end of the plank and work towards the other end.

12. Continue assembling the planks and perform the necessary cuts according to cutting planks section. It should consider the following details during the assembly of the profiles:

    - Use the Zn spray at the ends of the planks where the cut is made, to prevent oxidation in these areas
    - In larger silos may be necessary to use more than one plank in a row when the distance is greater than 11000 mm. In silos whose measure is less than 11000 mm (ø300 - ø1070), the cuts will be made at the same end for all planks in each row. In the case of silos with larger sizes (ø1145 - ø3208) with two planks by row, the cut will be made in alternating rows as shown in the assembly drawing.
    - Split planks will be encountered towards the centre of larger silos. Remember to stagger the joints and to insure that the overhangs are properly supported.
    - Every plank must be centered such that the space of each end is equal according to the previously marked line.
    - Check that the installation of supports is the same that Floor Plank Layout.
    - Check that the overhangs at the ends of the planks not exceed the distance "S/2". If it is not possible to use brackets in "V", it can be used double supports below the ends of the plates next to the wall of the silo.



Picture 21: Assembly Planks

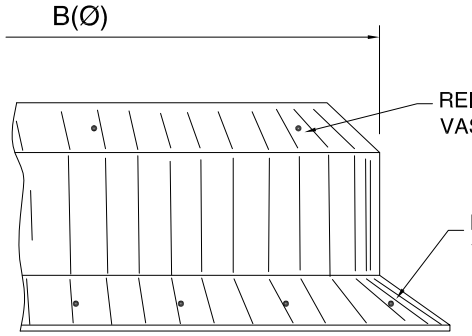
13. After installation of a few planks the flashing sheets can start to be installed which will serve to tie the floor to the silo wall. If desired the flashing can continue to be installed as you go.

    These sheets must be bolted to the planks by drilling screws ø5,5 x 32 mm.

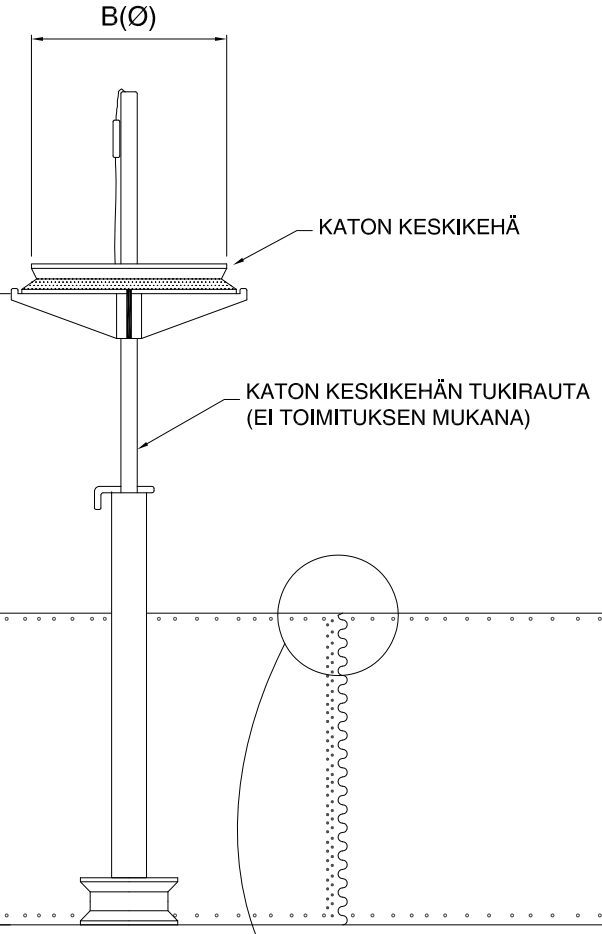
Closing sheets must be assembled anti-clockwise direction, allowing an improved rotation of the sweepauger.

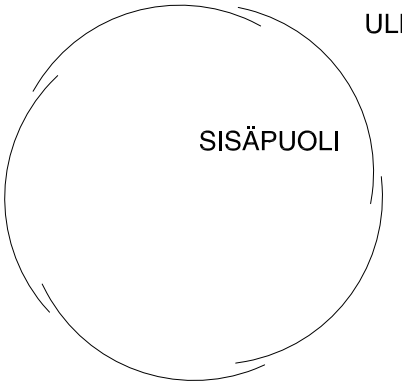
Picture 22: Movement of the sweepauger on the closing sheets

14. In the rows formed by more than one plank, it is necessary to install a splice by drilling screws 5.5 x 32 mm.



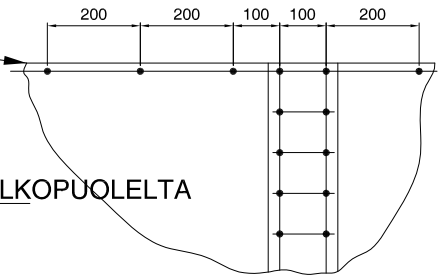
KATON KESKIKEHÄN DETALJI





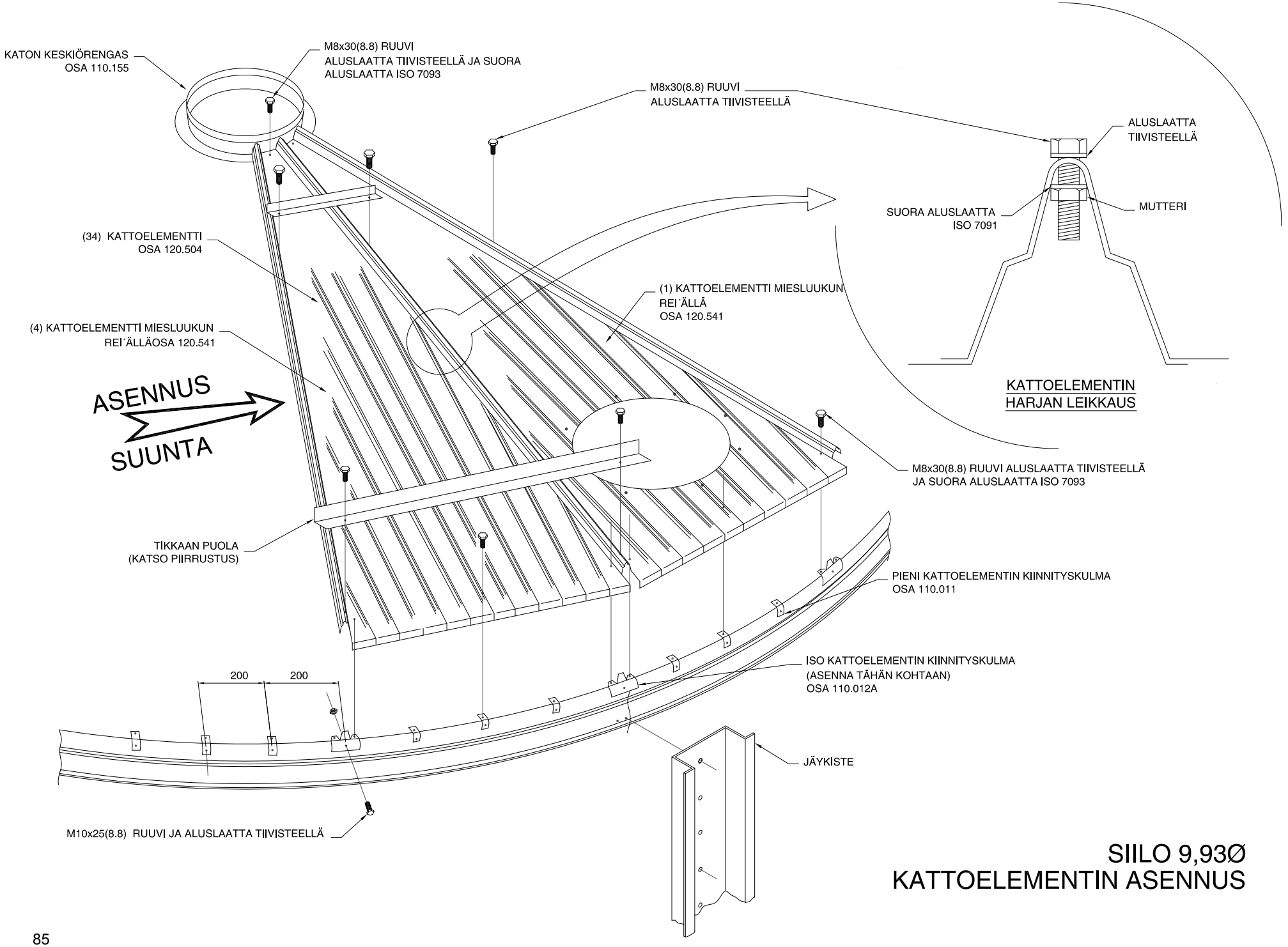
SIILOELEMENTTIEN ASENNUS

SIILO	(A) mm	(B) mm	N	MERKINTÄ
4.60	2.070	1.400	18	110.079
5.35	2.290	1.400	21	110.135
6.10	2.510	1.400	24	110.037
6.87	2.730	1.400	27	110.110
7.60	2.950	1.400	30	110.088
8.40	3.170	1.400	33	110.008
8.42	3.170	1.400	27	110.110
9.20	3.390	1.400	36	110.144
9.93	3.460	1.930	39	110.155
10.70	3.680	1.930	42	110.044
11.45	3.900	1.930	45	116.719
12.23	4.120	1.930	48	110.098

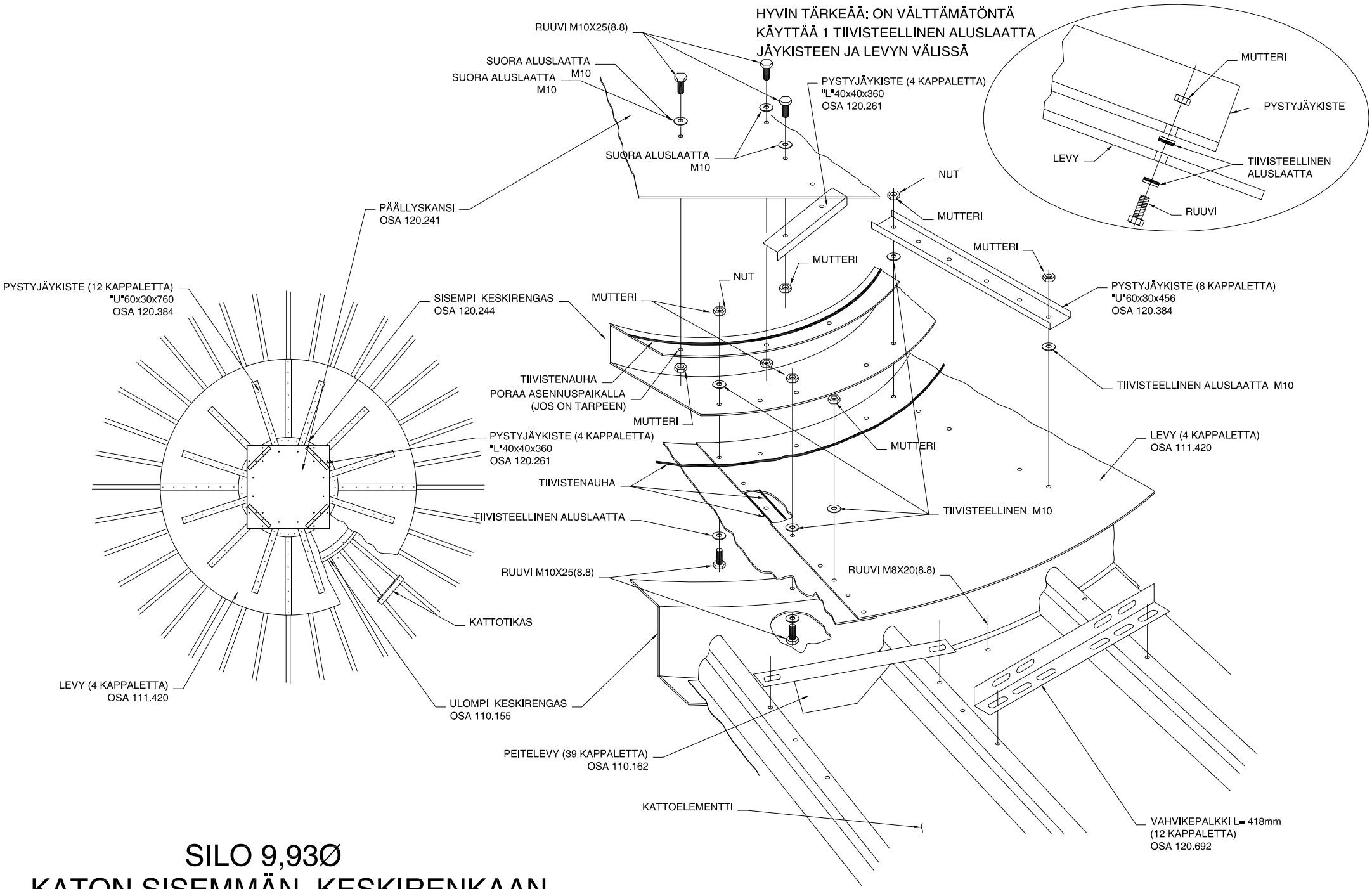


NÄKYMÄ ULKOPUOLELTA

KATON ASENNUSOHJE

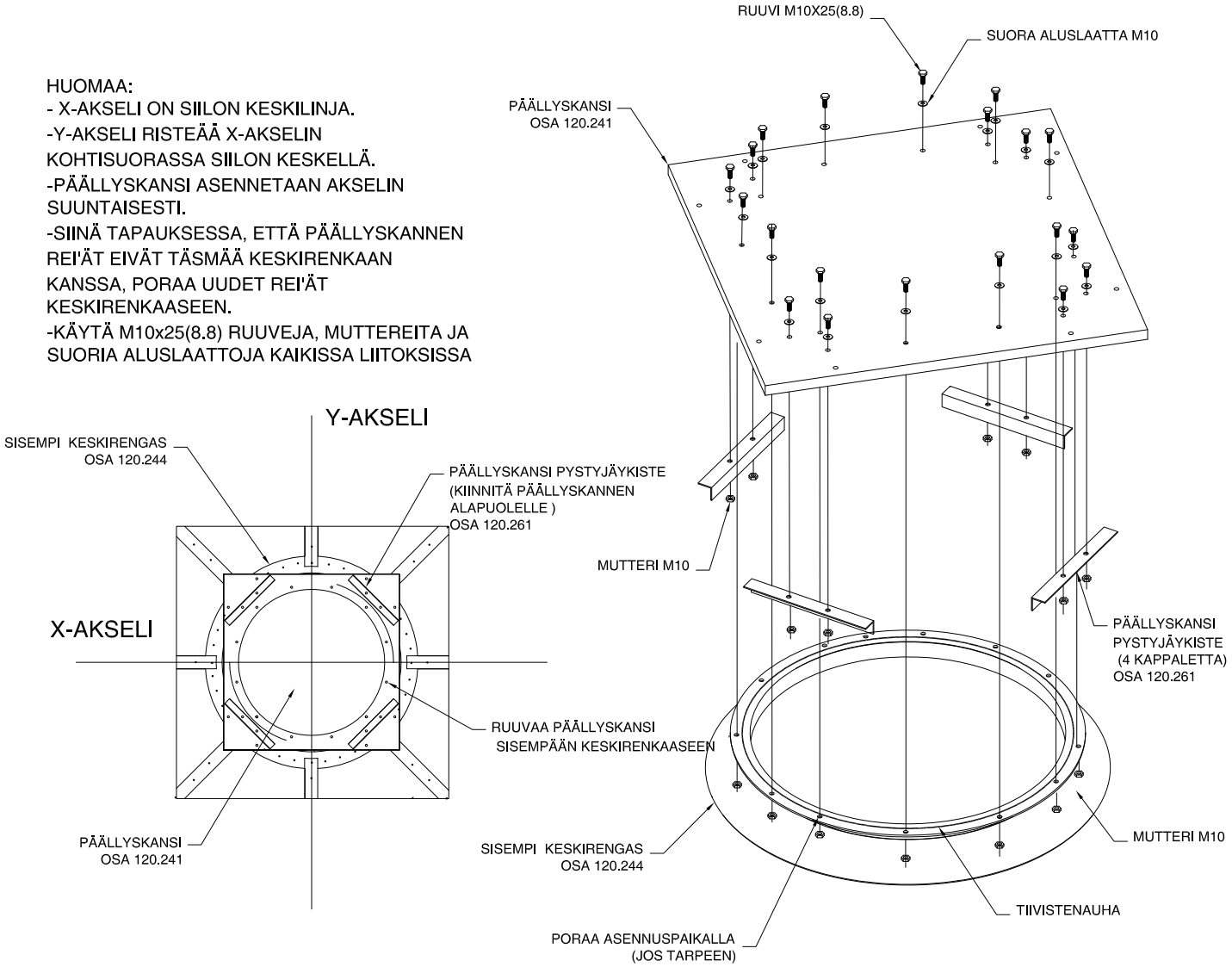


SIILO 9,93Ø
KATTOELEMENTIN ASENNUS

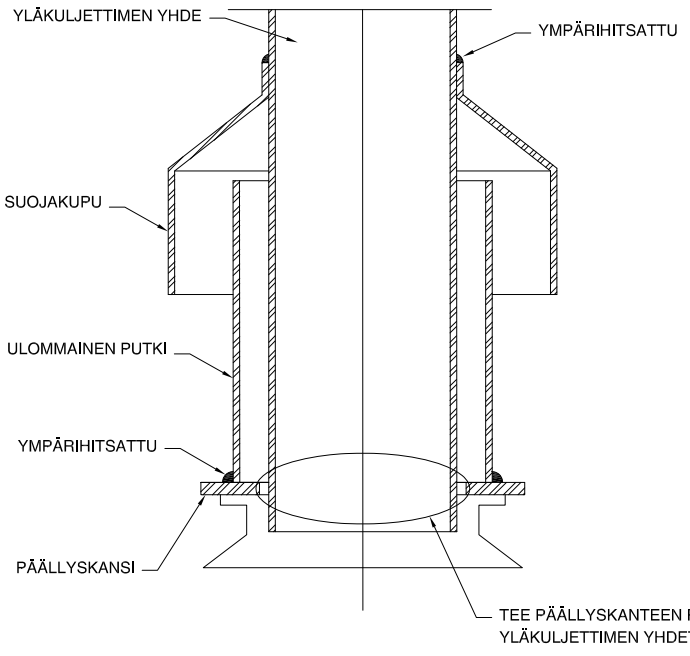


SILO 9,93Ø
KATON SISEMMÄN KESKIRENKAAN ASENNUS

HUOMAA:
- X-AKSELI ON SIILON KESKILINJA.
-Y-AKSELI RISTEÄÄ X-AKSELIN KOHTISUORASSA SIILON KESKELLÄ.
-PÄÄLLYSKANSI ASENNETAAN AKSELIN SUUNTAISESTI.
-SIINÄ TAPAUKSESSA, ETTÄ PÄÄLLYSKANNEN REI'ÄT EIVÄT TÄSMÄÄ KESKIRENKAAN KANSSA, PORAA UUDET REI'ÄT KESKIRENKAASEEN.
-KÄYTÄ M10x25(8.8) RUUVEJA, MUTTEREITA JA SUORIA ALUSLAATTOJA KAIKISSA LIITOKSISSA

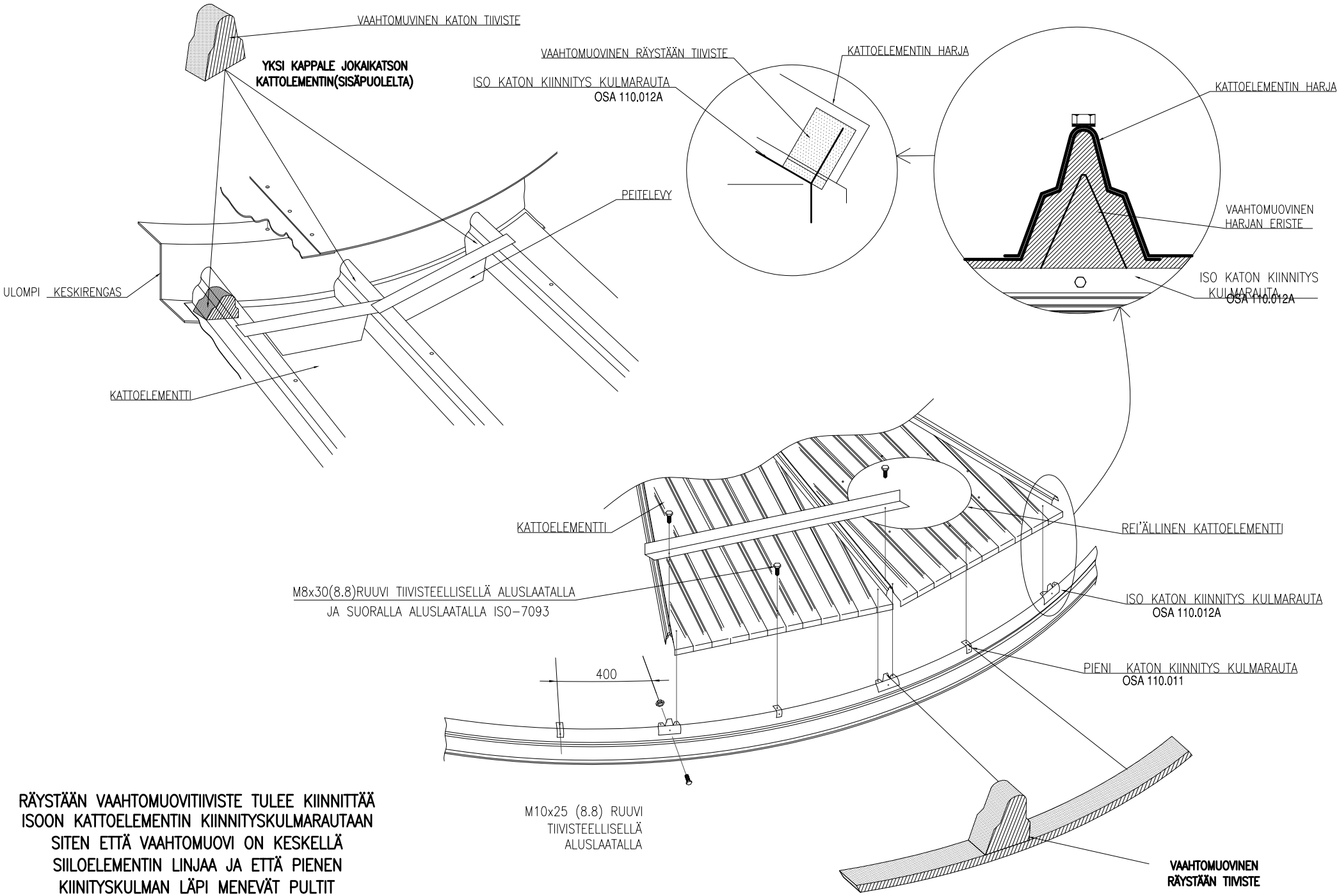


PÄÄLLYSKANSI-SISEMPI KESKIRENGAS LIITOS



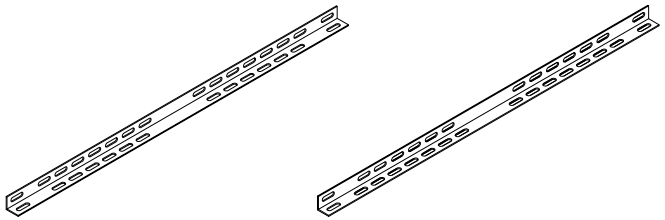
SUOSITELTAVA YLÄKULJETTIMEN JA SIILON LIITOS

ASENNUS PÄÄLLYSKANSI DETALJI



RÄYSTÄÄN VAAHTOMUOVITIIVISTE TULEE KIINNITTÄÄ ISOON KATTOELEMENTIN KIINNITYSKULMARAUTAAN SITEN ETTÄ VAAHTOMUOVI ON KESKELLÄ SIILOELEMENTIN LINJAA JA ETTÄ PIENEN KIINITYSKULMAN LÄPI MENEVÄT PULTIT LÄVISTÄVÄT VAAHTOMUOVIN.

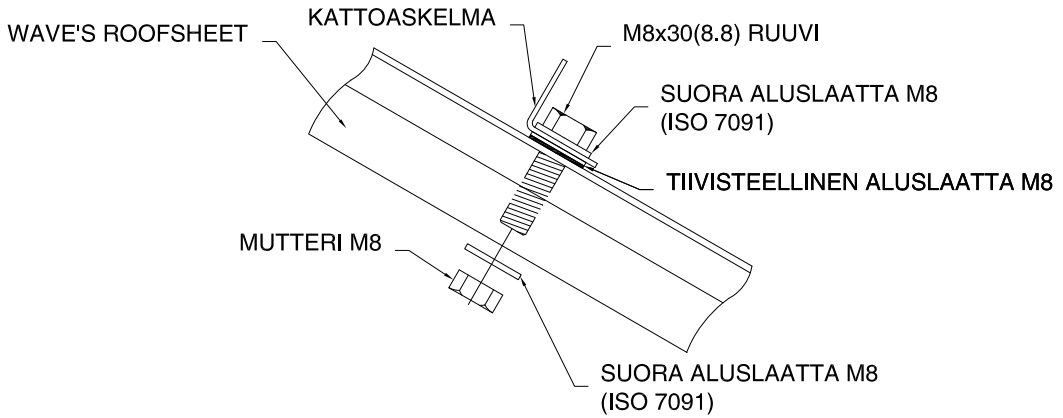
KATTOELEMENTIN TIIVISTEIDEN ASENNUS

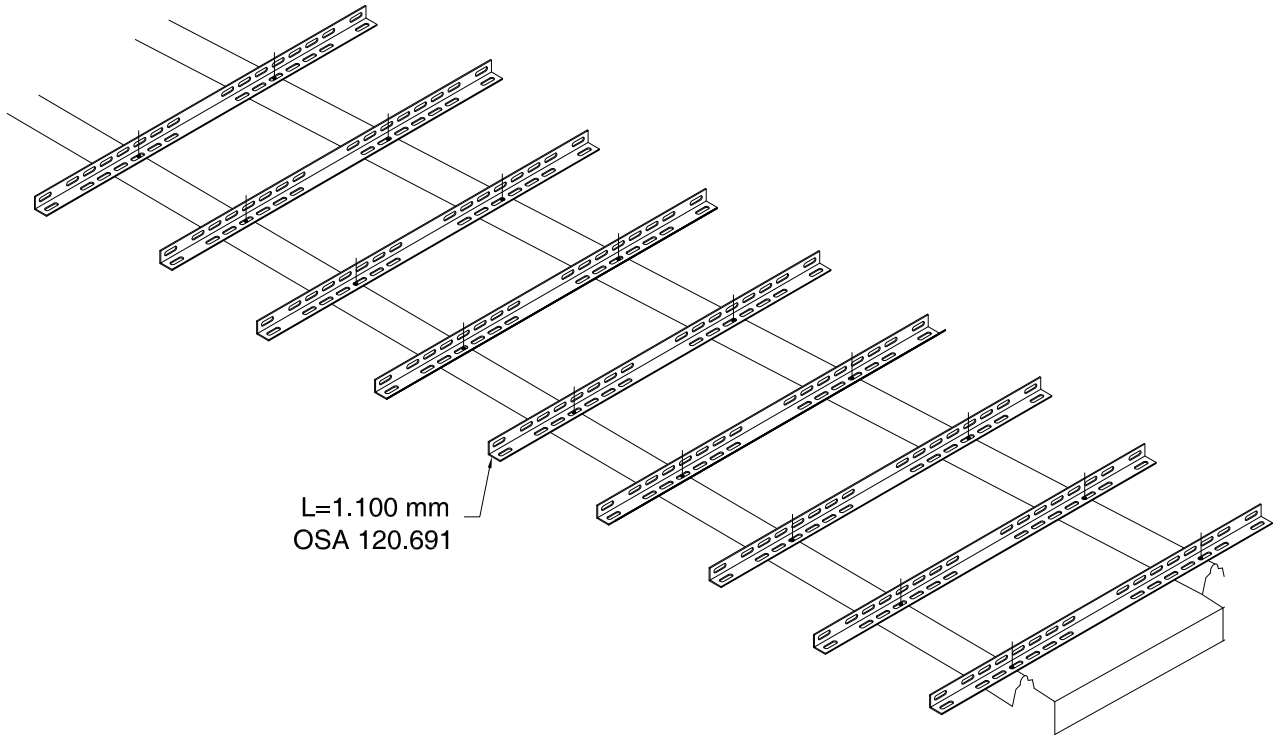


POSITION "A"

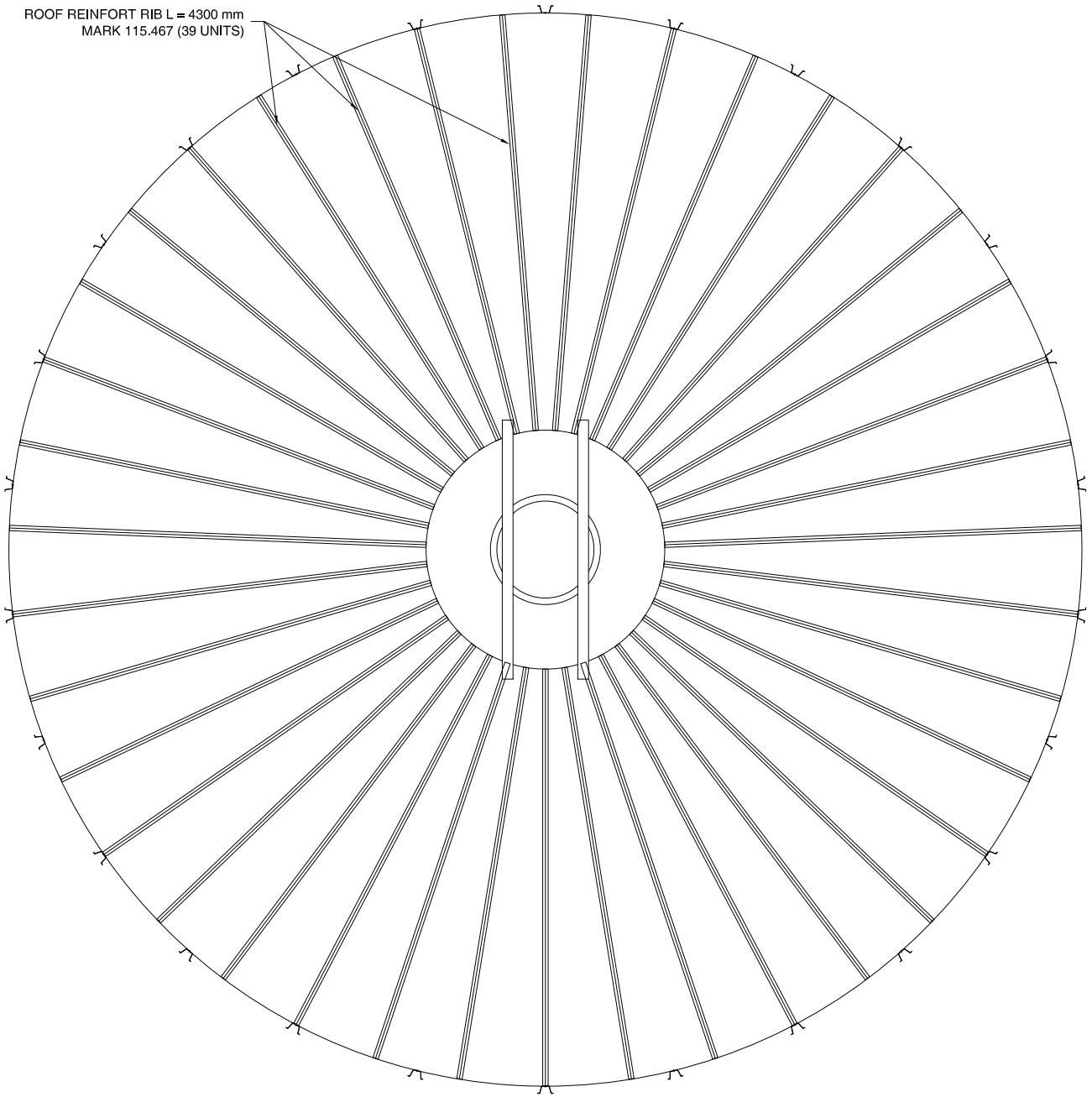
POSITION "B"

HUOMAA:
-ASENNA TIKKAAN ASKELMA SITEN ETTÄ PITKÄT REI´ÄT SOPIVAT YHTEEN KATTOELEMENTIN REIKIEN KANSSA.
-ASENNA TIKKAAN ASKELMAT 500 mm VÄLEIN



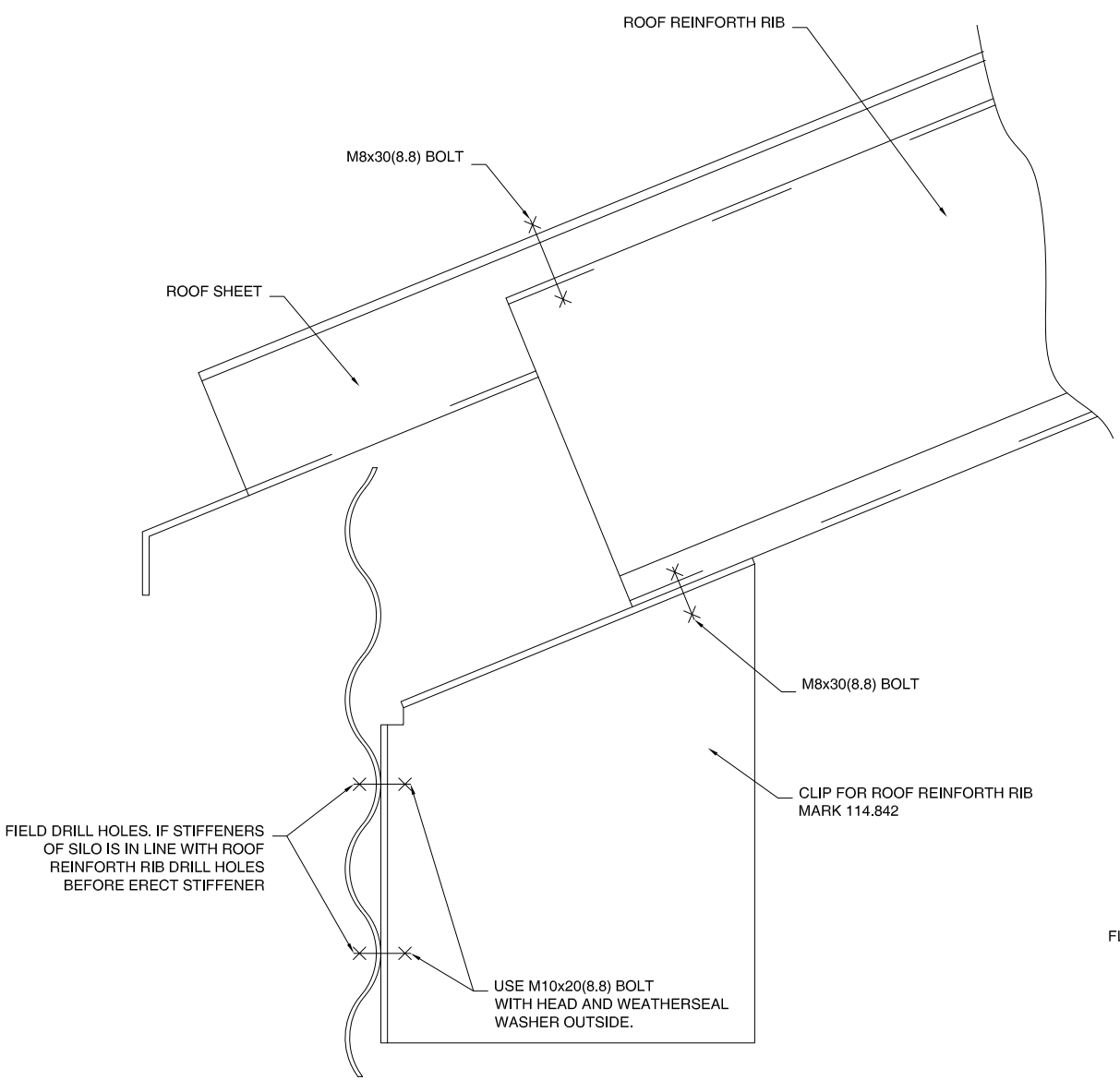


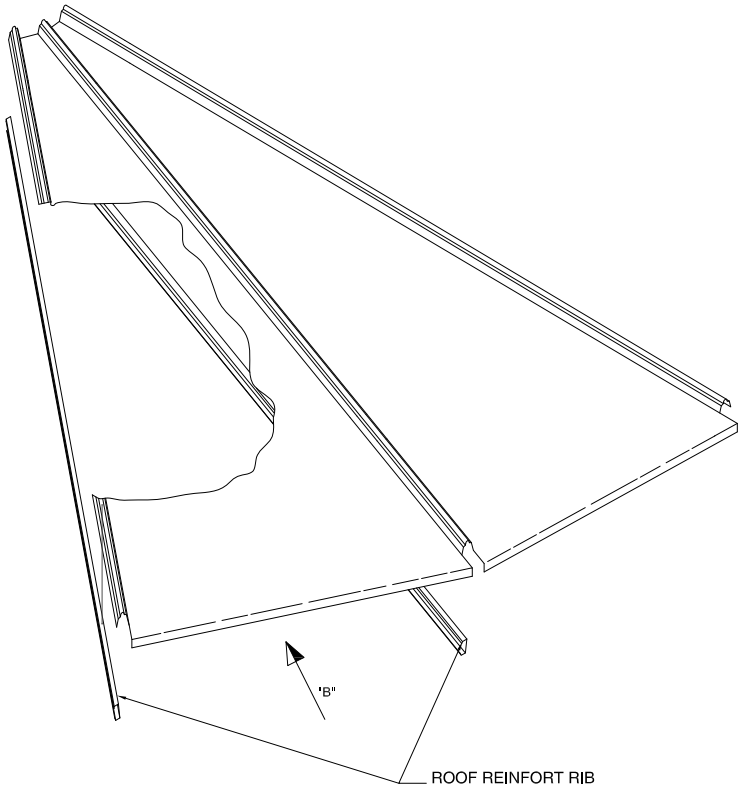
KATTOTIKKAIDEN ASENNUS SIILO 9,93Ø

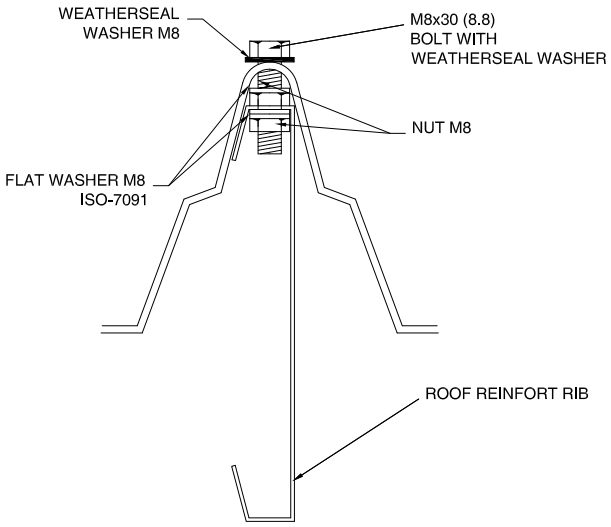


SILO 9,93 Ø

ROOF REINFORT INSTALLATION





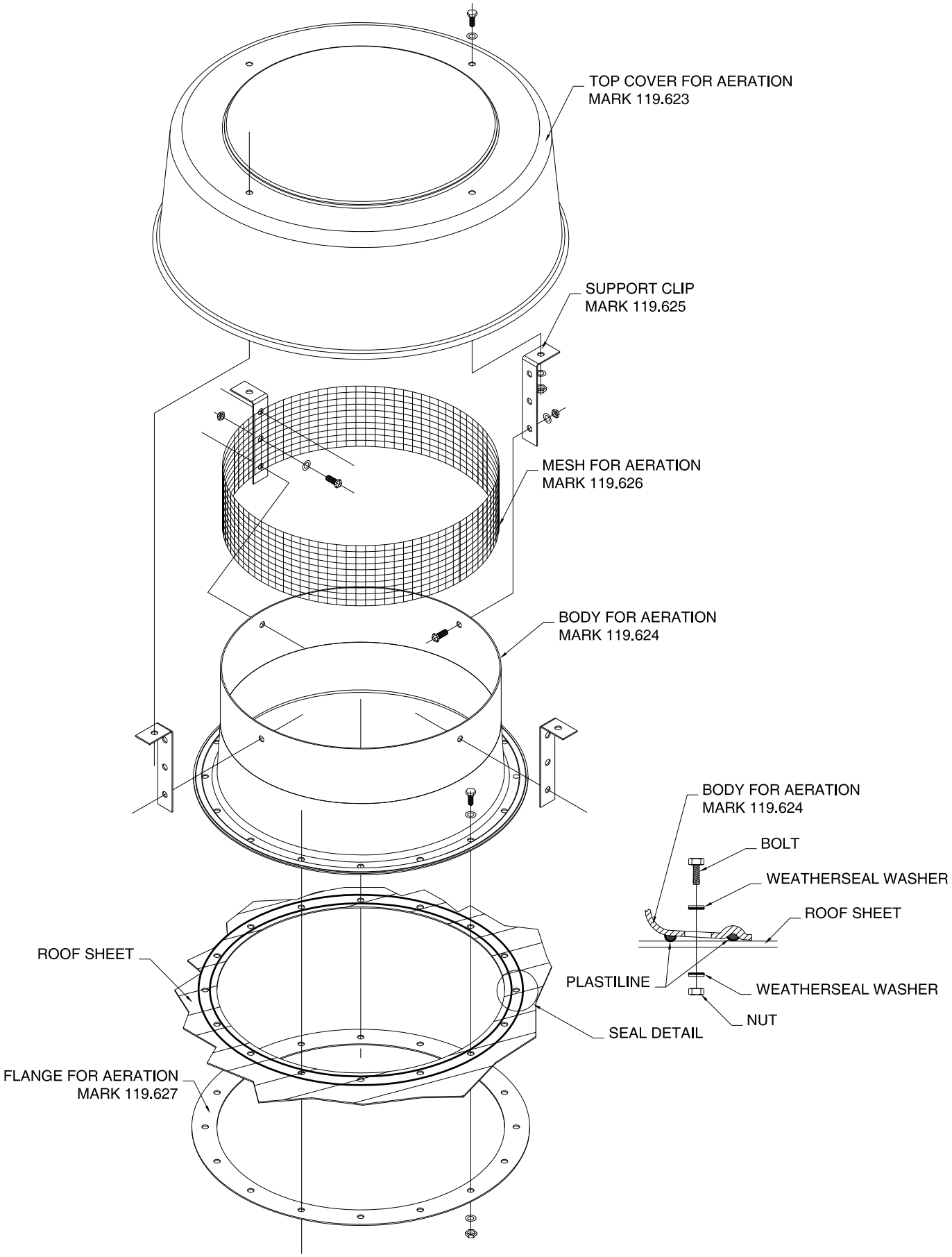


VIEW FROM "B"

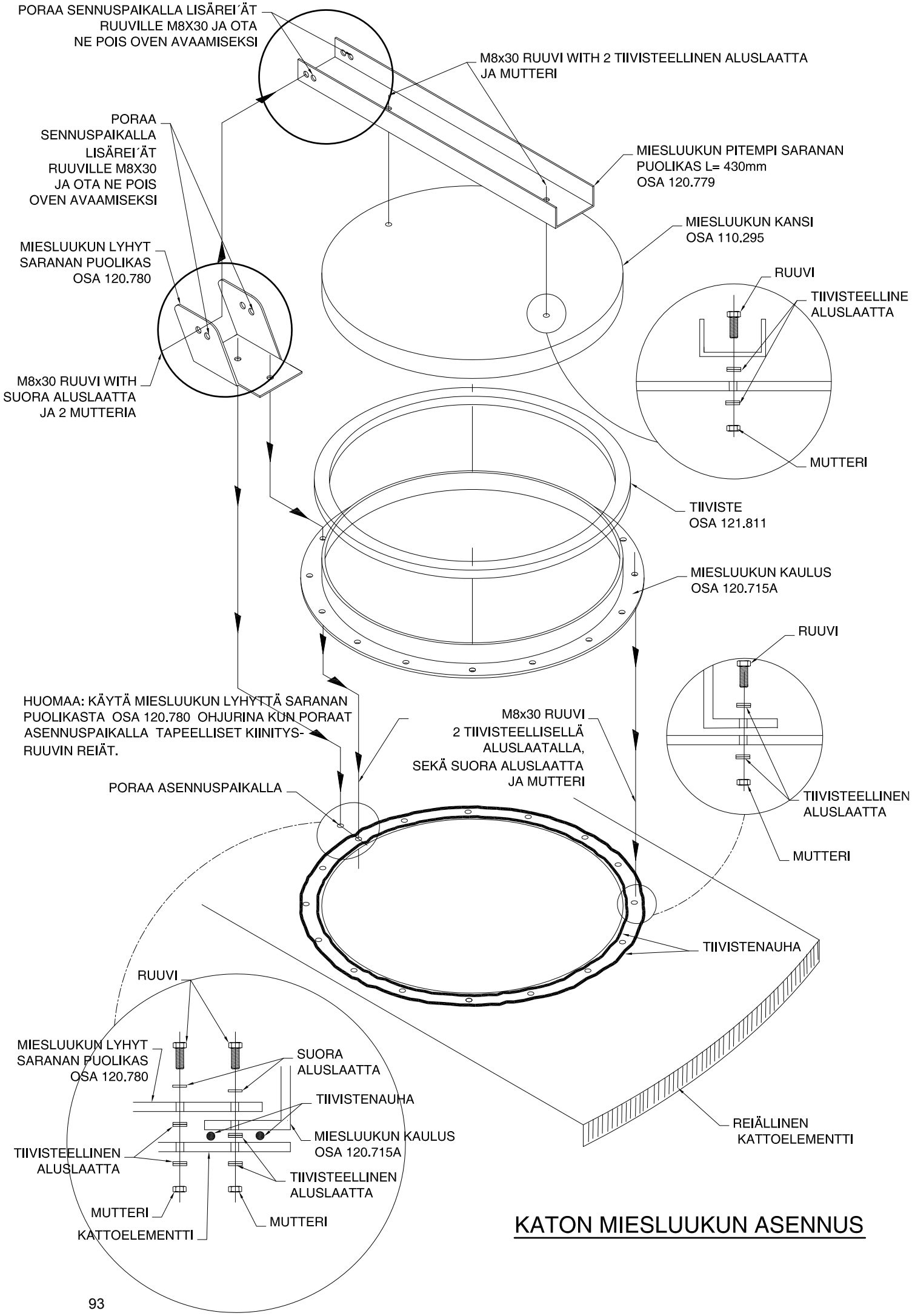
SILO 9,93 Ø

ROOF REINFORT INSTALLATION

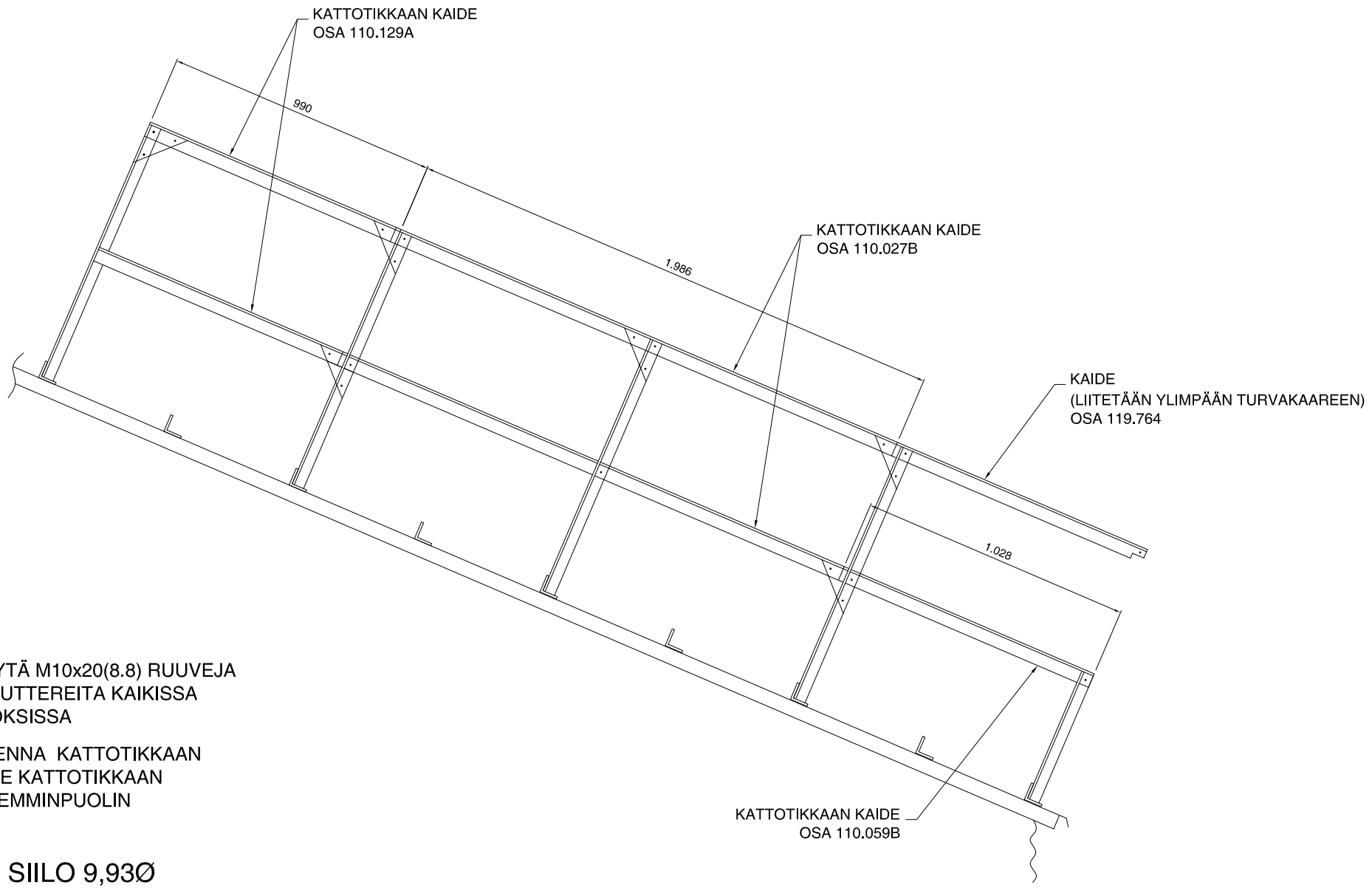
- IT IS VERY IMPORTANT TO SEAL CORRECTLY ALL JOINTS BETWEEN PARTS WITH PLASTILINE
- USE BOLTS M8x20 (8.8) WITH HEAD OUTSIDE, WEATHERSEAL WASHER OUTSIDE, FLAT WASHER AND NUT INSIDE
- THE DISTRIBUTION OF ROOF AERATION MUST BE UNIFORM AROUND THE SILO ROOF



INSTALLATION OF ROOF AERATION



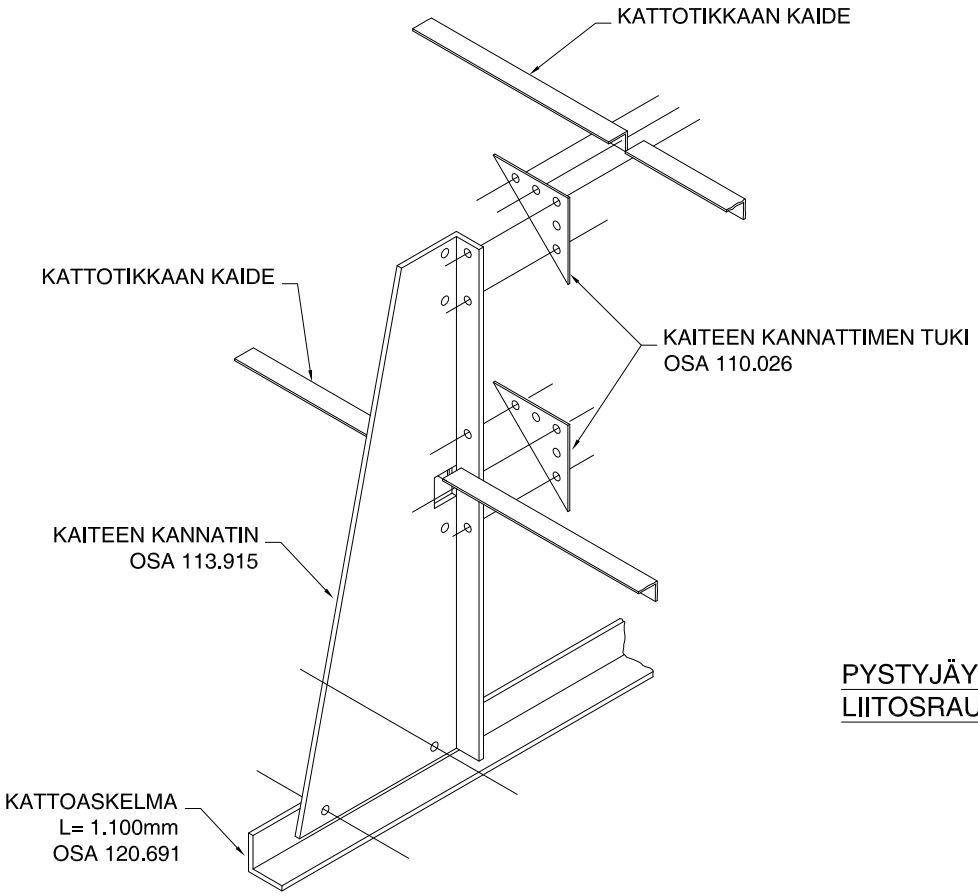
KATON MIESLUUKUN ASENNUS



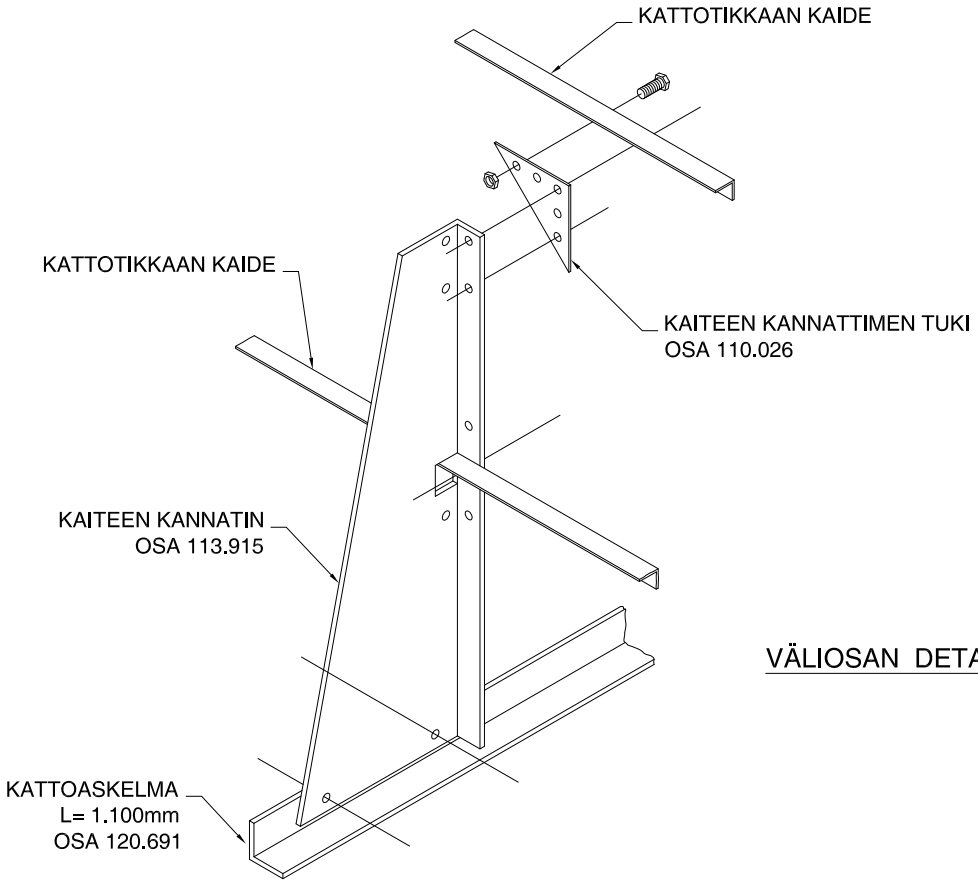
- KÄYTÄ M10x20(8.8) RUUVEJA JA MUTTEREITA KAIKISSA LIITOKSISSA

- ASENNA KATTOTIKKAAN KAIDE KATTOTIKKAAN MOLEMMINPUOLIN

SIILO 9,93Ø
KATTOTIKKAAN KAIDE DETALJI

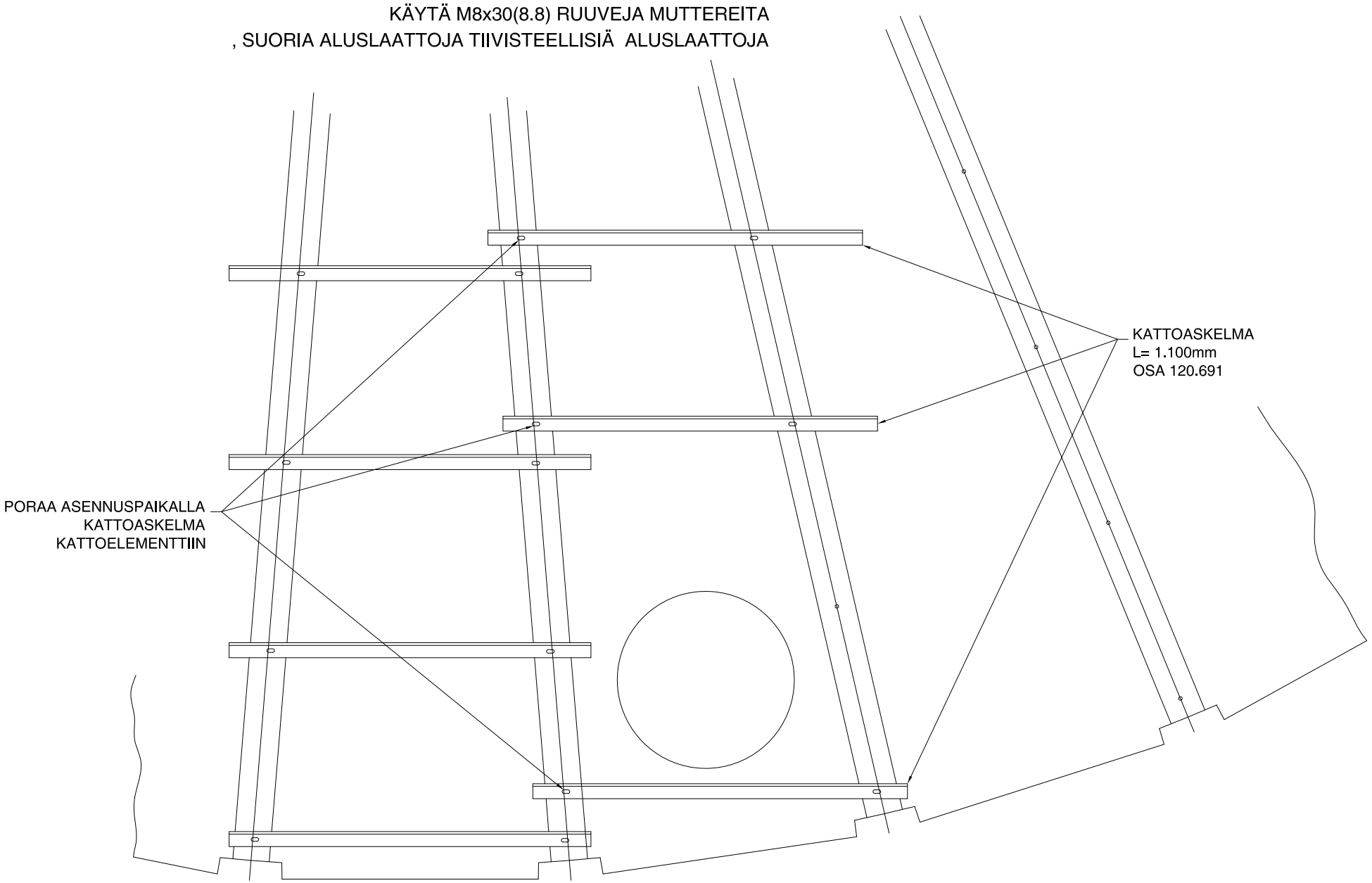


PYSTYJÄYKISTEEN
LIITOSRAUTA DETALJI

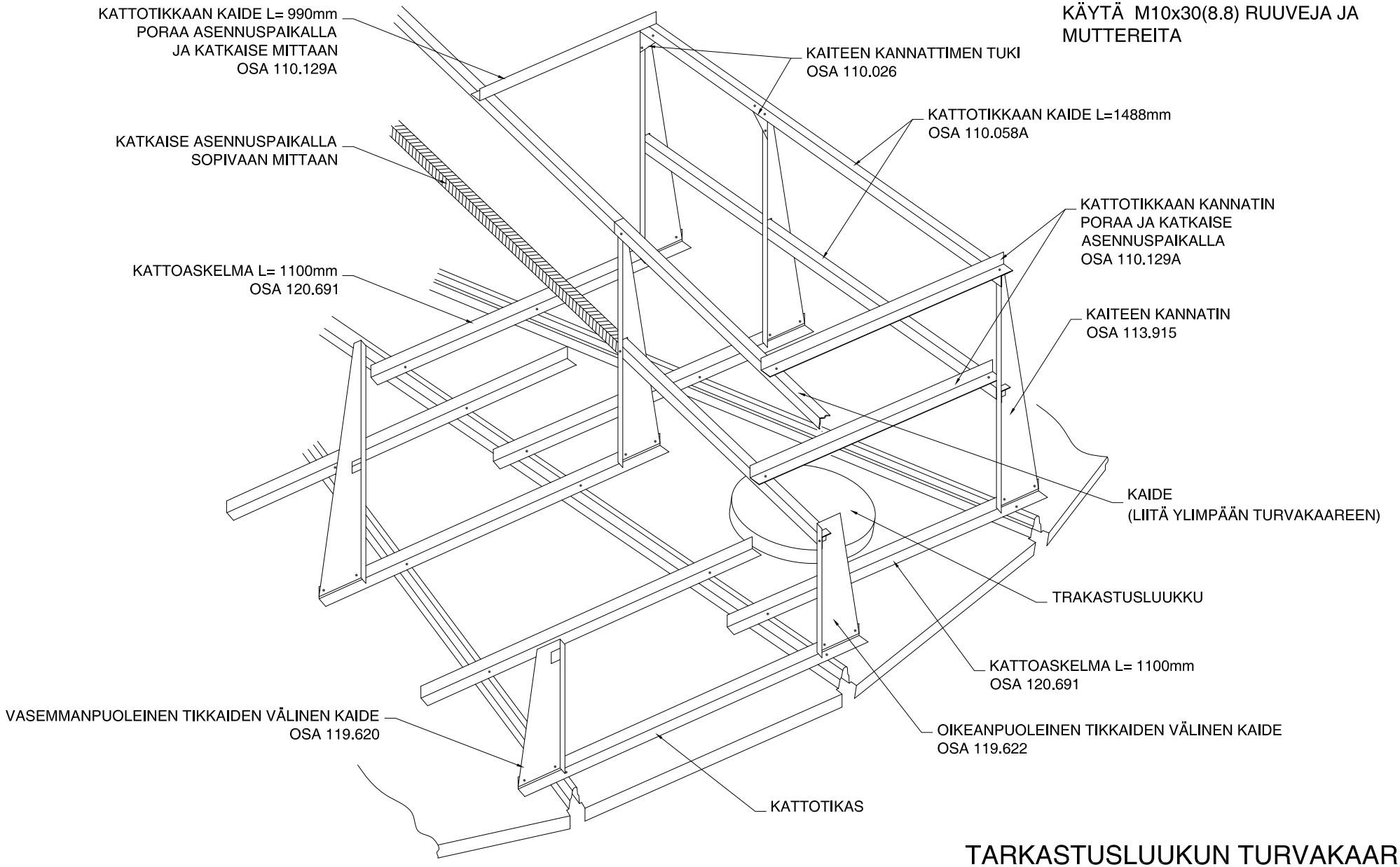


VÄLIOSAN DETALJI

KATTOTIKKAAN KAIDE
DETALJI



KATTOTIKKAIDEN JA MIESLUUKUN SUOJAKAITEIDEN ASENNUS

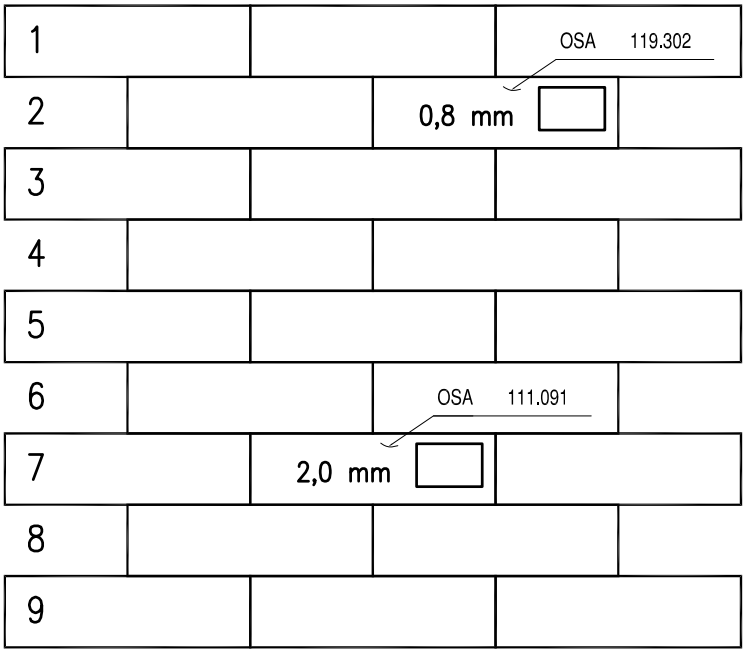


TARKASTUSLUUKUN TURVAKAARIEN ASENNUS

HYVIN TÄRKEÄ:

ASENNUKSESTA VASTAAVAN TYÖNJOHTAJAN ON TARKASTETTAVA ENNEN ASENNUKSEN ALOITTAMISTA ETTÄ ON RIITTÄVÄSTI OIKEAN VAHVUISIA ELEMENTTEJÄ KOKO SIILON ASENTAMISEKSI.

SIILO 9,93/9



SIILOELEMENTTI

MÄÄRÄ	PAKSUUS (mm)	OSA
13	0,8	110.000A
12	0,8	110.000A
13	0,8	110.000A
13	1	110.000A
13	1	110.000A
13	1,2	110.000A
13	1,2	110.000A
12	1,2	110.000A
13	1,2	110.000A

SIILON ELEMENTTIEN LIITOS

KÄYTÄ M10x20(8.8) RUVEJA JA TIIVISTTEELISÄ ALUSLAATTOJA (JÄÄVÄT ULKOPUOLELLE) SUORA ALUSLAATTA JA MUTTERI SISÄPUOLELLE

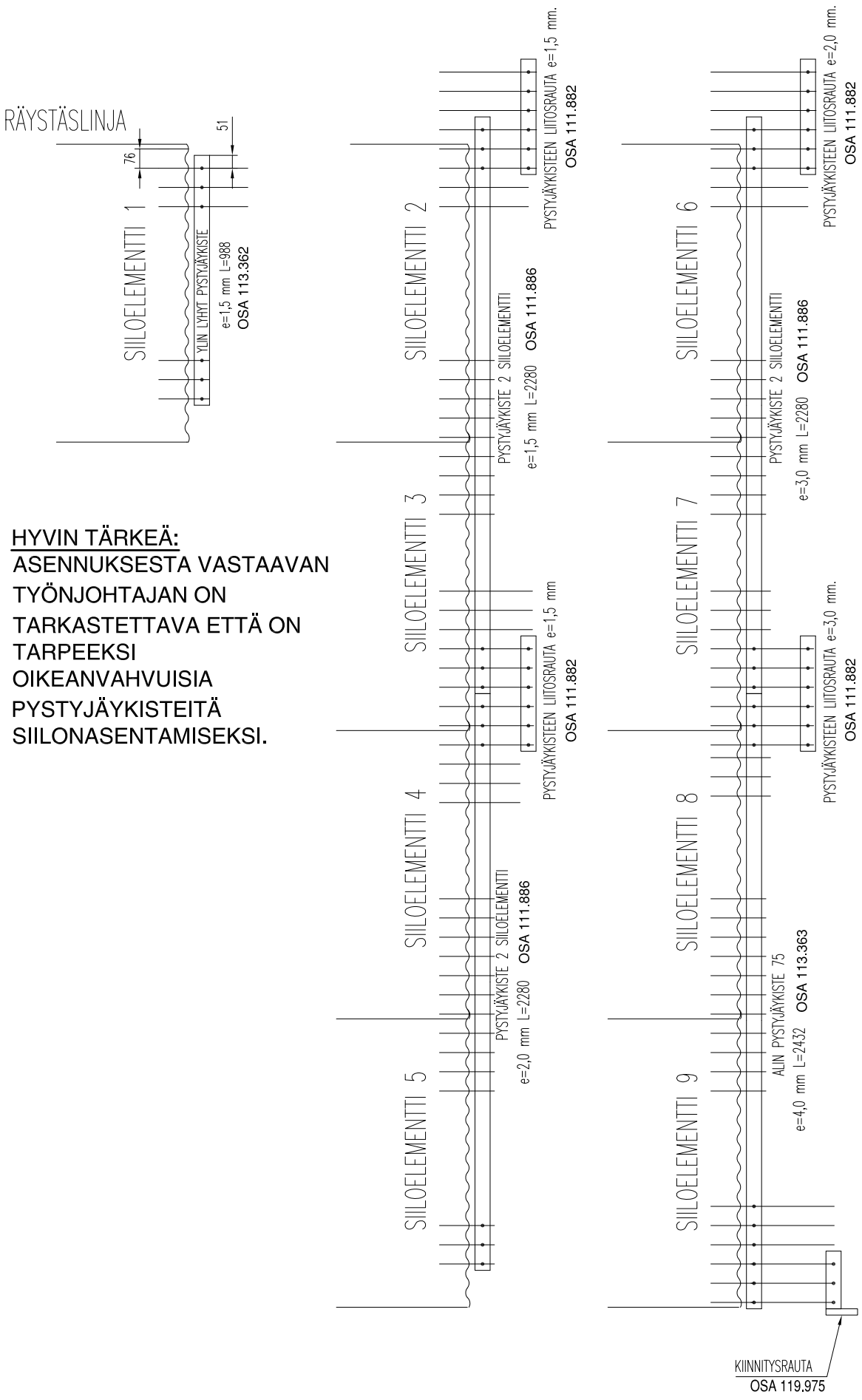
SIILOELEMENTIN JA PYSTYJÄYKISTEEN LIITOS

KÄYTÄ M10x25(8.8) RUUVEJA KANTA JA TIIVISTEELINEN ALUSLAATTA SISÄPUOLELLA JA MUTTERI ULKOPUOLELLA.

PYSTYJÄYKISTE/PYSTYJÄYKISTEEN LIITOSRAUTA

KÄYTÄ M10x20(8.8) RUUVEJA, MUTTEREITA JA SUORIA ALUSLAATTOJA

SIILOELEMENTTIEN ASENNUSJÄRJESTYS



HYVIN TÄRKEÄ:
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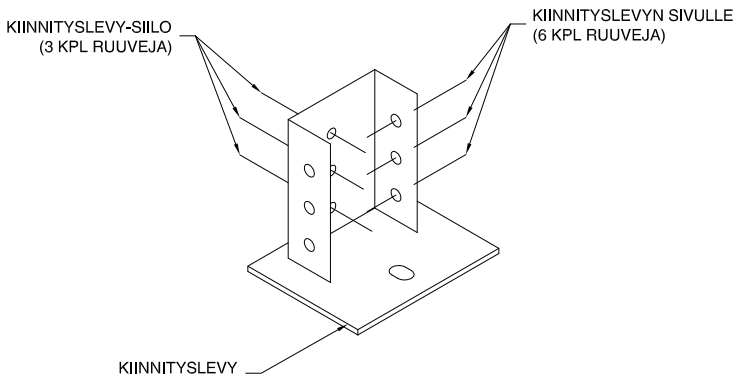
KAKSI PYSTYJÄYKISTETTÄ PER SIILOELEMENTTI

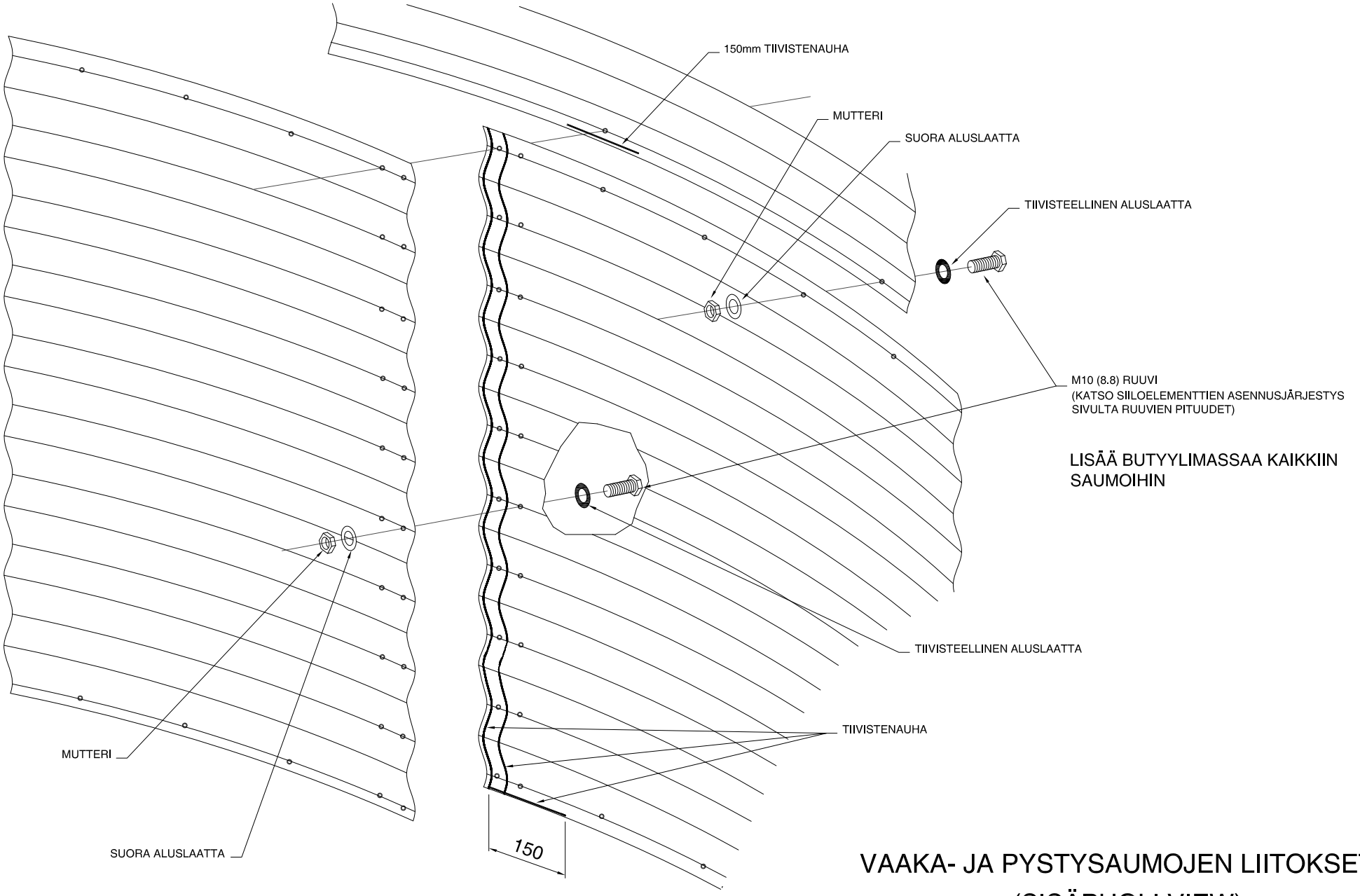
SIILO 9,93/9

PYSTYJÄYKISTEIDEN ASENNUS

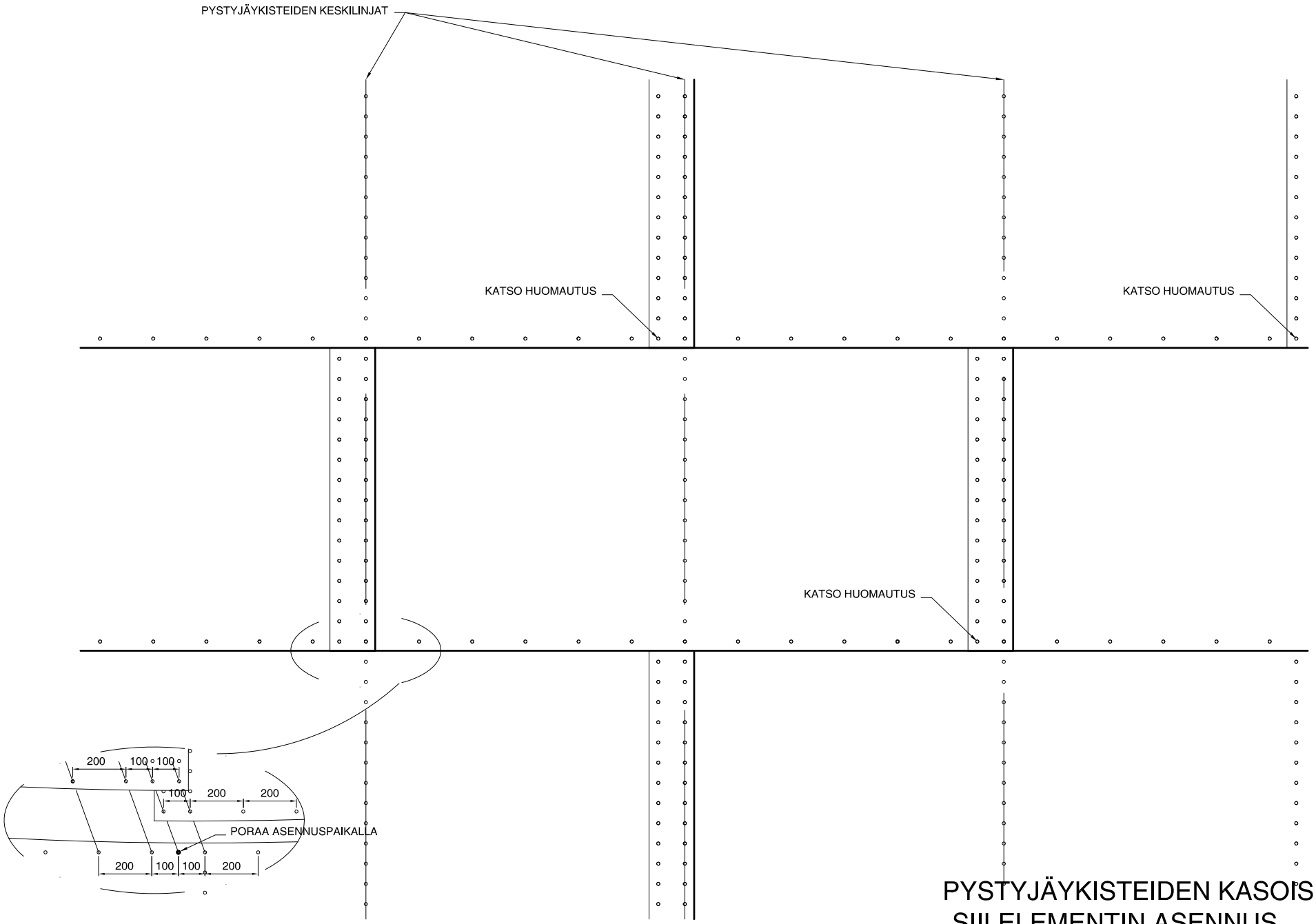
KIINNITYSRAUTA	KIINNIYSLEVYN SIVU	KIINNITYSRAUTA-SIILO
OSA 119.972	M10x30 (8.8) RUUVI	M10x35 (8.8) RUUVI
OSA 119.973	M10x35 (8.8) RUUVI	M10x40 (8.8) RUUVI
OSA 119.974	M10x40 (8.8) RUUVI	M10x50 (8.8) RUUVI
OSA 119.975	M10x30 (8.8) RUUVI	M10x35 (8.8) RUUVI
OSA 119.976	M10x35 (8.8) RUUVI	M10x40 (8.8) RUUVI
OSA 119.977	M10x40 (8.8) RUUVI	M10x50 (8.8) RUUVI
OSA 119.983	M10x40 (8.8) RUUVI	M10x50 (8.8) RUUVI
OSA 121.077	M10x40 (8.8) RUUVI	M10x50 (8.8) RUUVI



KIINNITYSRAUDAN RUUVIT



VAAKA- JA PYSTYSAUMOJEN LIITOKSET (SISÄPUOLI VIEW)



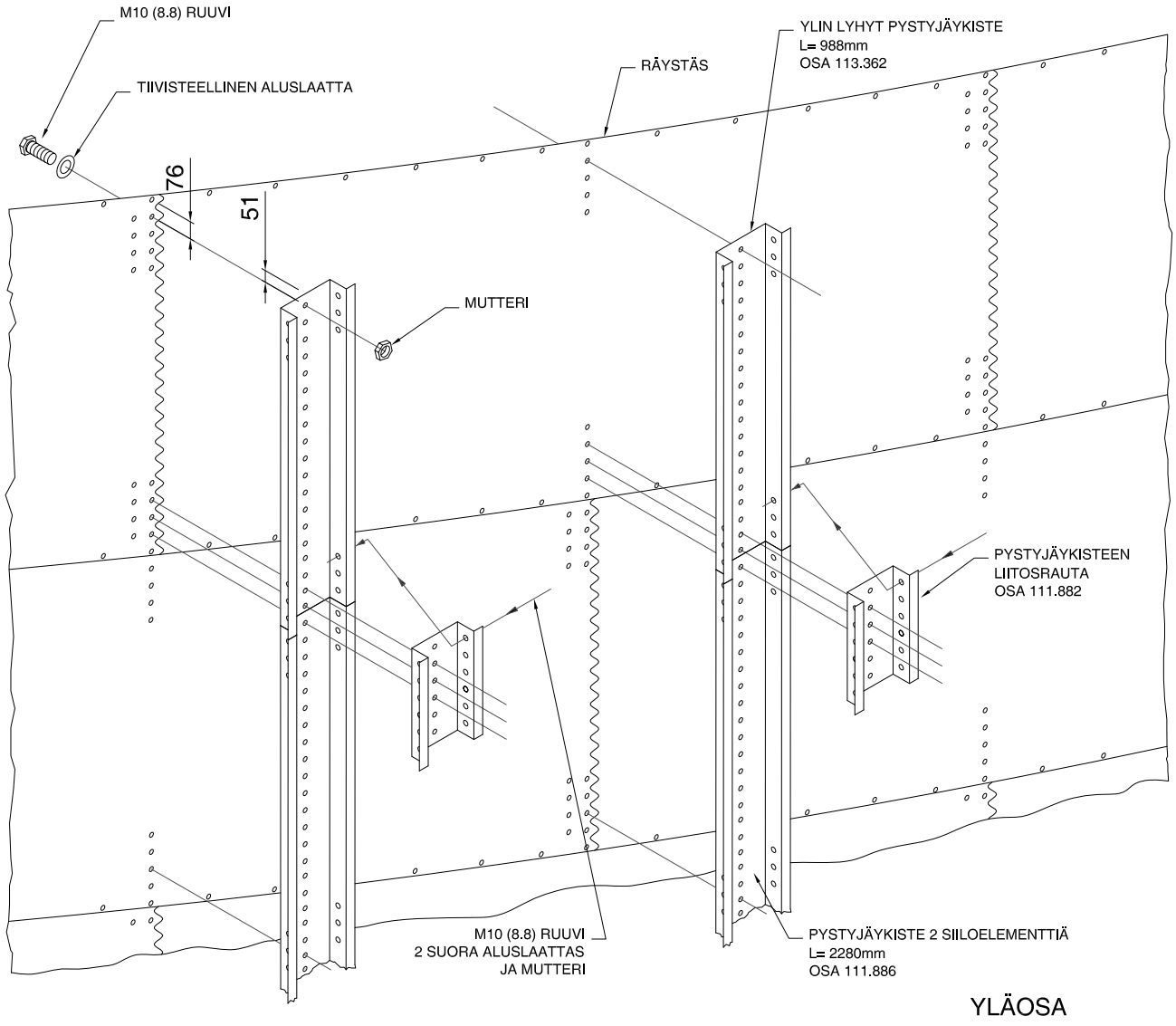
PYSTYJÄYKISTEIDEN KASOISLIITOS JA SIILELEMENTIN ASENNUS

(NÄKYMÄ ULKOPUOLELTA)

HUOMAA:

EI OLE TARPEELLISTA PORATA ASENNUSPAIKALLA REIKIÄ SIILOELEMENTTIIN. SIILON KESTÄVYYS ON LASKETTU ILMAN NÄITÄ LISÄRUUVEJA. KYSEESSÄ VAIN VISUAALINEN ASIA

* KATSO SIILOELEMENTTIEN ASENNUSJÄRJESTYS
PIIRRUSTUKSESTA RUUVIEN PITUUDET

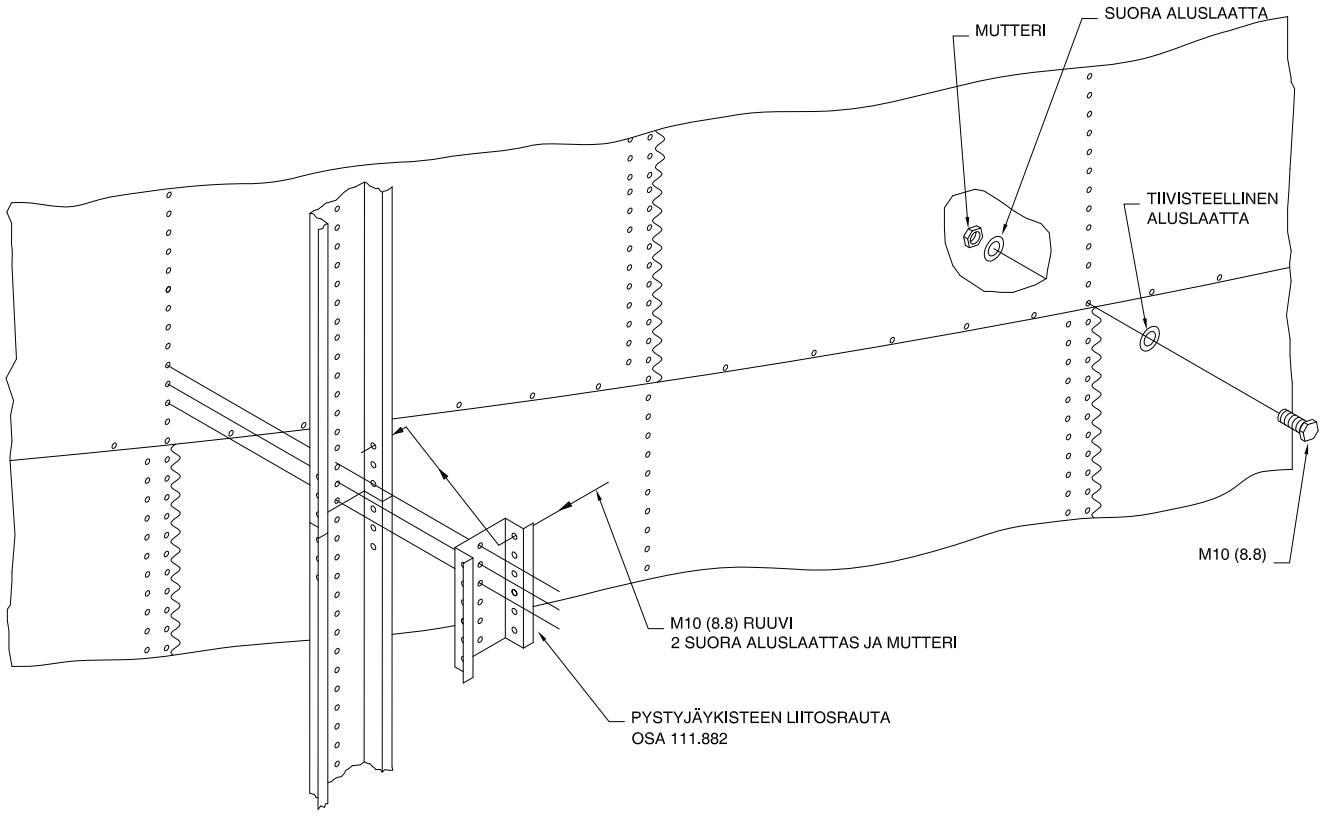


YLÄOSA

HUOMAA:
KUN ASENNAT PYSTYJÄYKISTEITÄ ÄLÄ ANNA PYSTYJÄYKISTEIDEN VALUA ALAS ENNEN RUUVIEN KIRISTÄMISTÄ. PYSTYJÄYKISTEIDEN PITÄÄ OLLA HYVIN YHDESSÄ ENNEN KIRISTÄMISTÄ.

SIILOELEMENTTIEN JA PYSTYJÄYKISTEIDEN ASENNUS (NÄKYMÄ ULKOPUOLELTA)

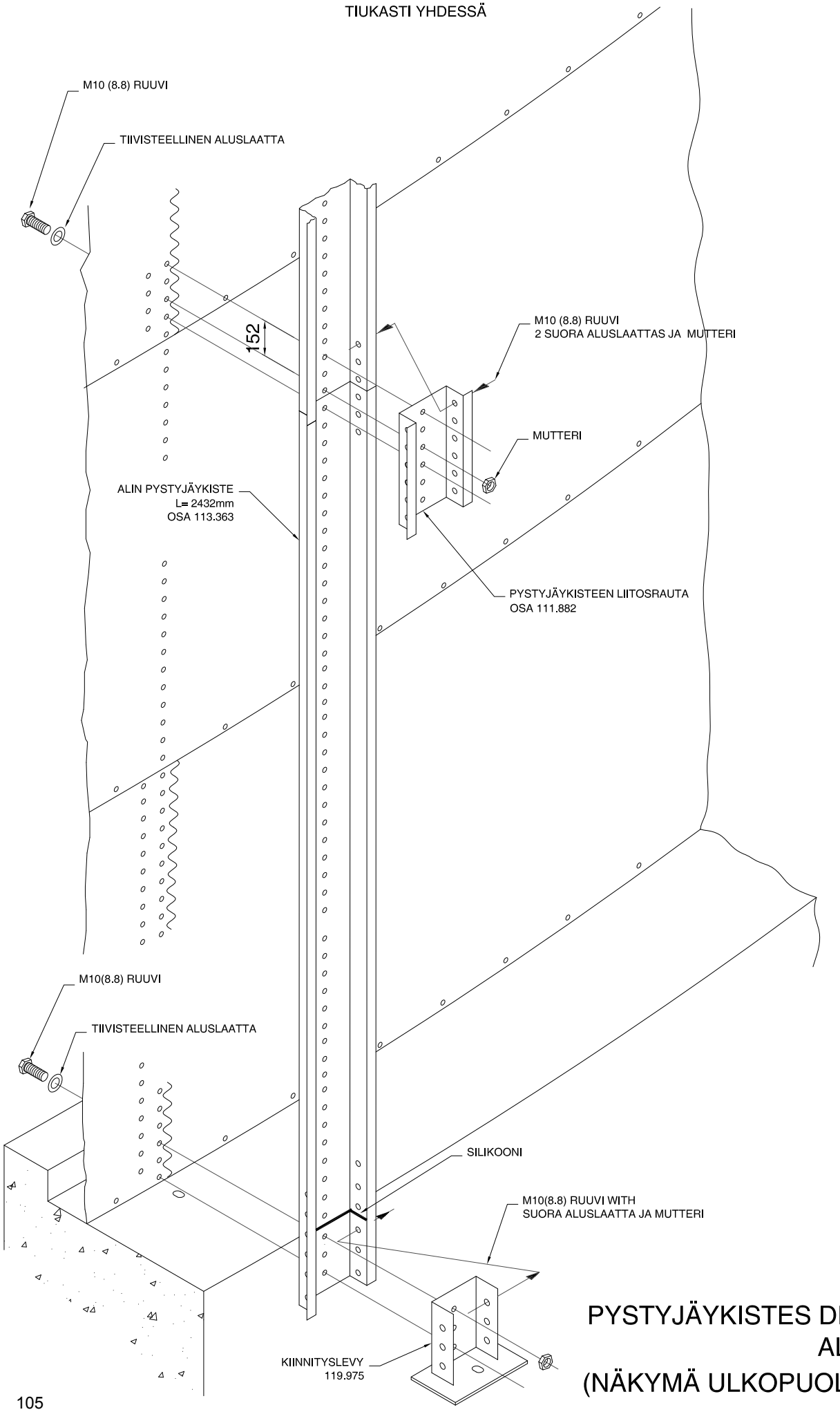
KESKIOSA



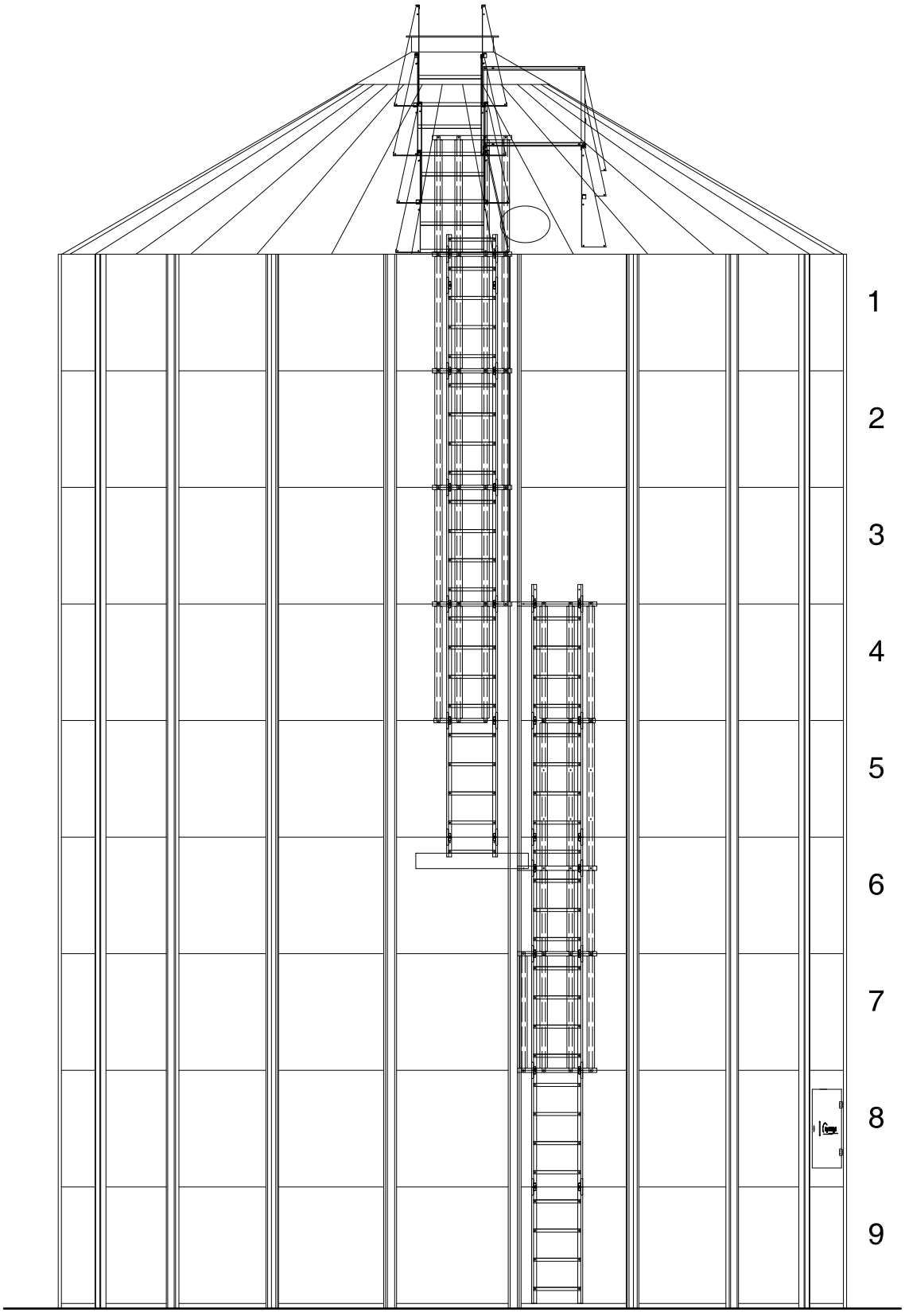
HUOMAA: KUN ASENNAT PYSTYJÄYKISTEITÄ VARMISTA ETTEI NE VALU ALAS JA ETTÄ
ENNEN RUUVIEN KIRTISTÄMISTÄ NE OVAT TIUKASTI YHDESSÄ

SIILOELEMENTTIEN JA PYSTYJÄYKISTEIDEN ASENNUS (NÄKYMÄ ULKOPUOLELTA)

HUOMAA: KUN ASENNAT PYSTYJÄYKISTEITÄ VARMISTA ETTEI NE VALU ALAS JA ETTÄ ENNEN RUUVIEN KIRTISTÄMISTÄ NE OVAT TIUKASTI YHDESSÄ



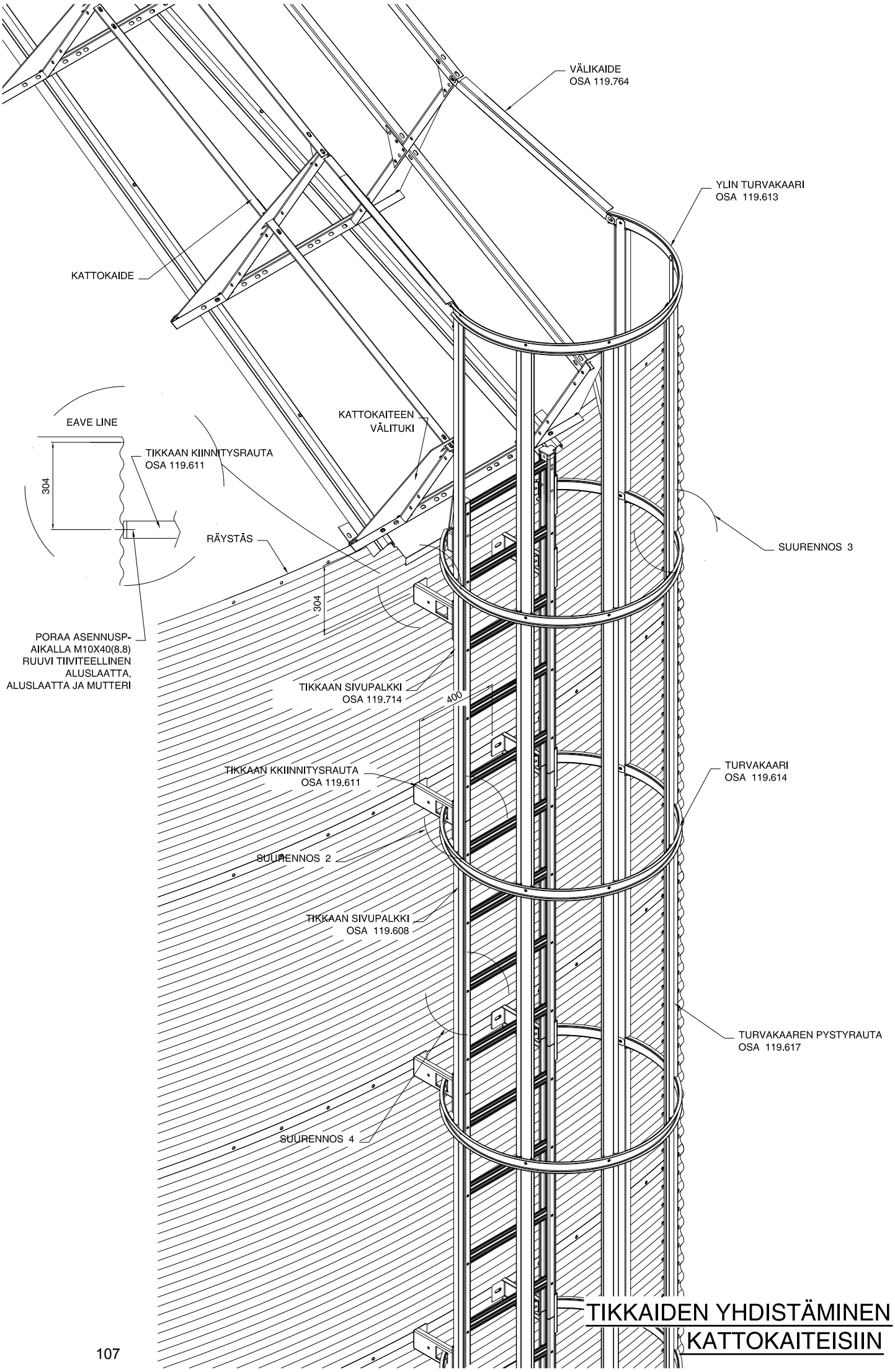
PYSTYJÄYKISTES DETALJI ALAOSA (NÄKYMÄ ULKOPUOLELTA)



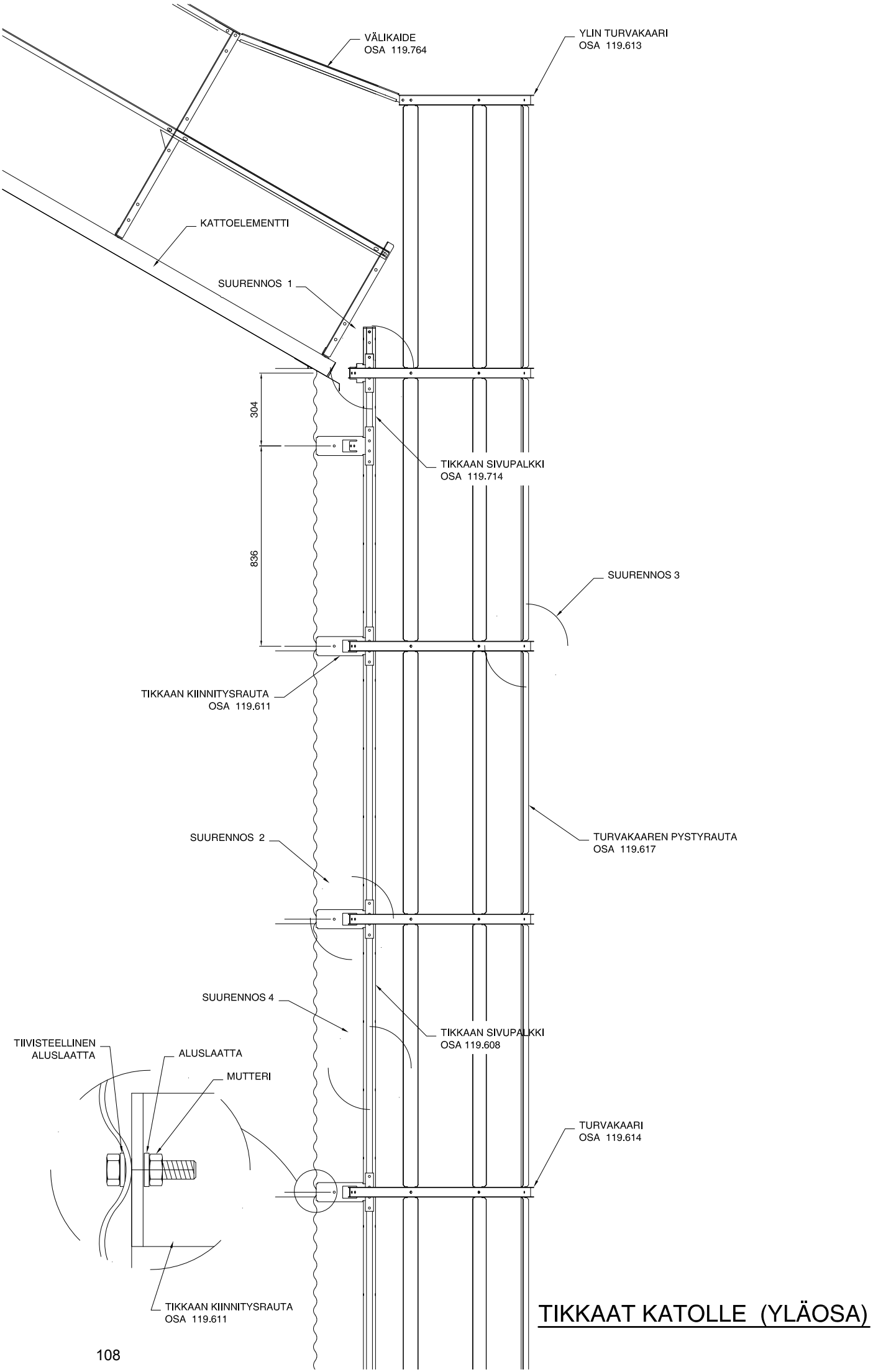
YHTEEN SIILOON

SIILO 9
MIESLUUKUN
KAULUS

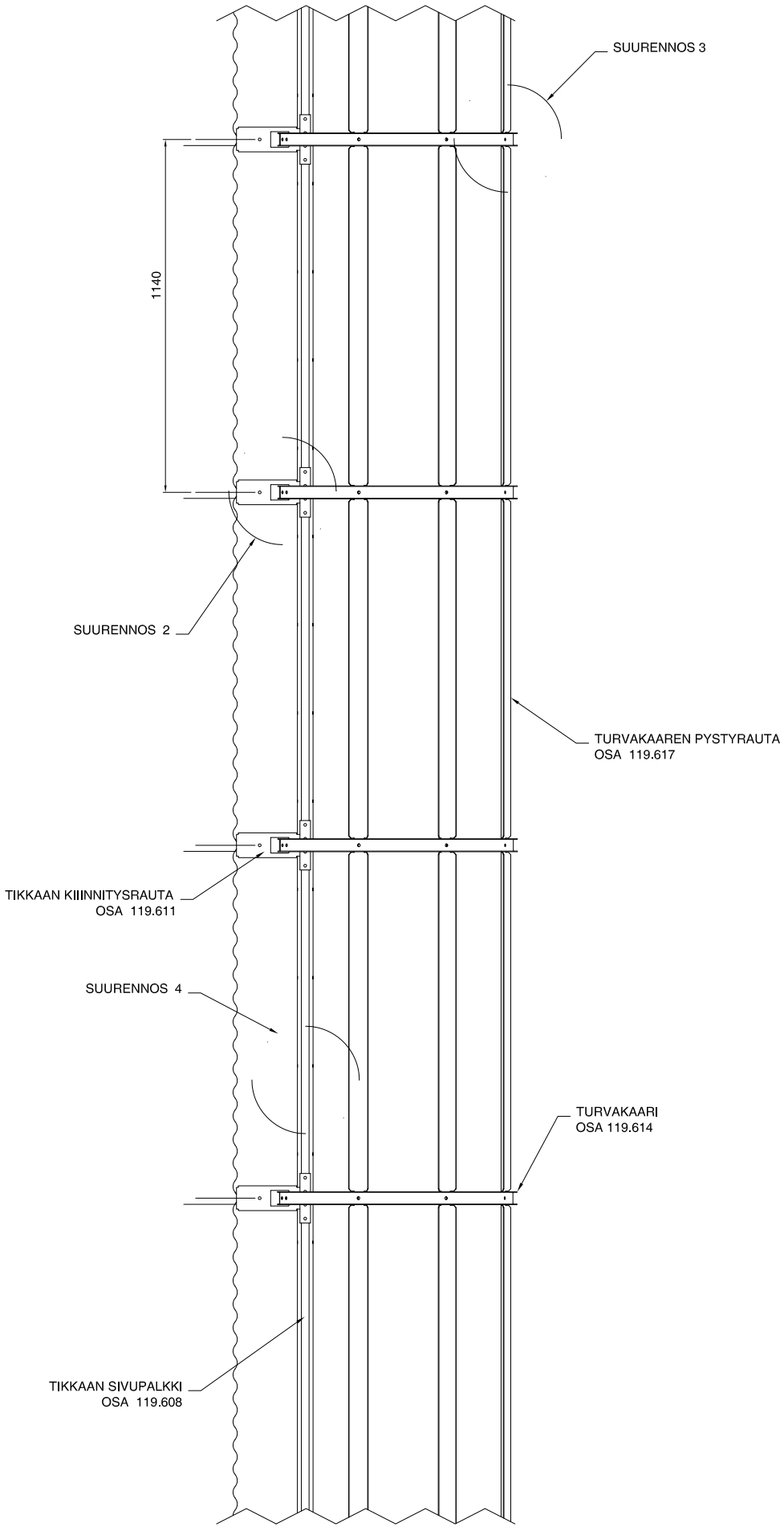
TIKKAAT KATOLLE OHJE



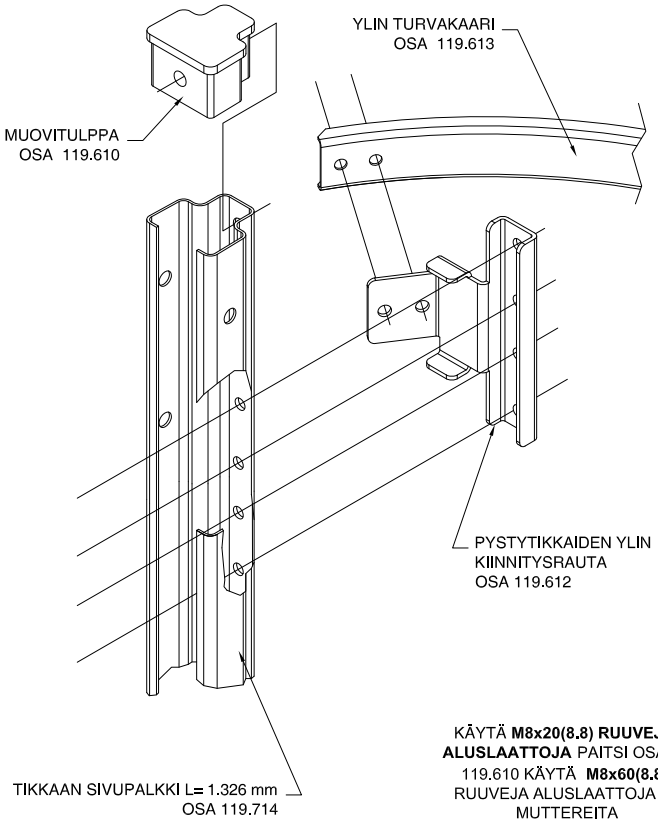
TIKKAIDEN YHDISTÄMINEN KATTOKAITEISIIN



TIKKAAT KATOLLE (YLÄOSA)

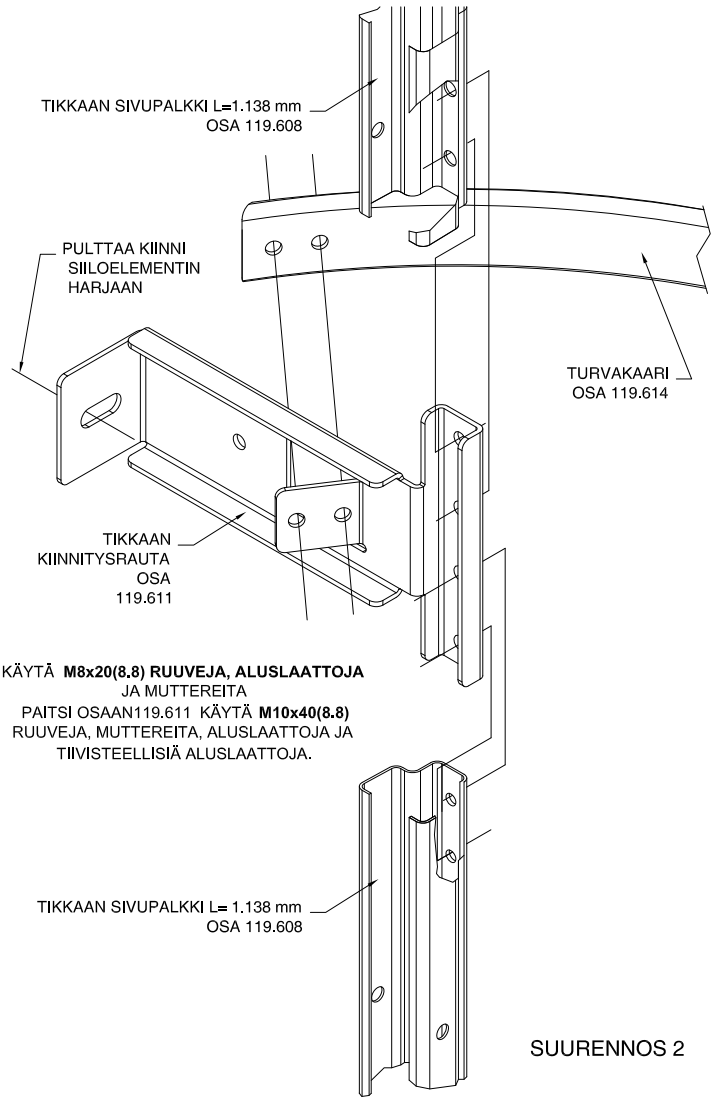


PYSTYTIKKAAT (KESKIOSA)



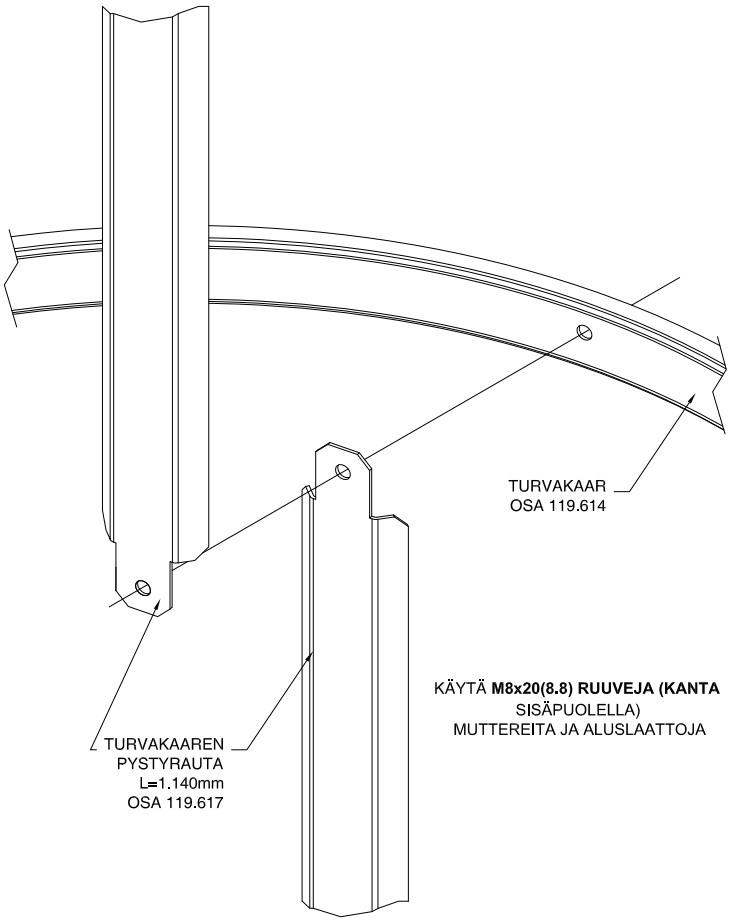
KÄYTÄ **M8x20(8.8) RUUVEJA ALUSLAATTOJA** PAITSI OSAAN 119.610 KÄYTÄ **M8x60(8.8)** RUUVEJA ALUSLAATTOJA JA MUTTEREITA

SUURENNOS 1



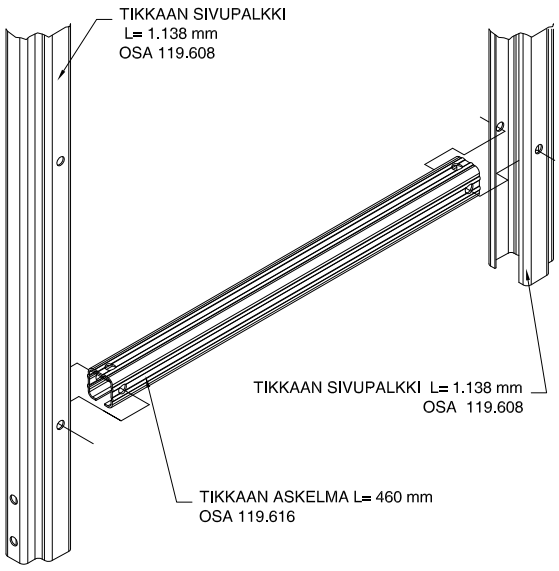
KÄYTÄ **M8x20(8.8) RUUVEJA, ALUSLAATTOJA** JA MUTTEREITA PAITSI OSAAN119.611 KÄYTÄ **M10x40(8.8)** RUUVEJA, MUTTEREITA, ALUSLAATTOJA JA TIIVISTEELLISIÄ ALUSLAATTOJA.

SUURENNOS 2



KÄYTÄ **M8x20(8.8) RUUVEJA (KANTA** SISÄPUOLELLA) MUTTEREITA JA ALUSLAATTOJA

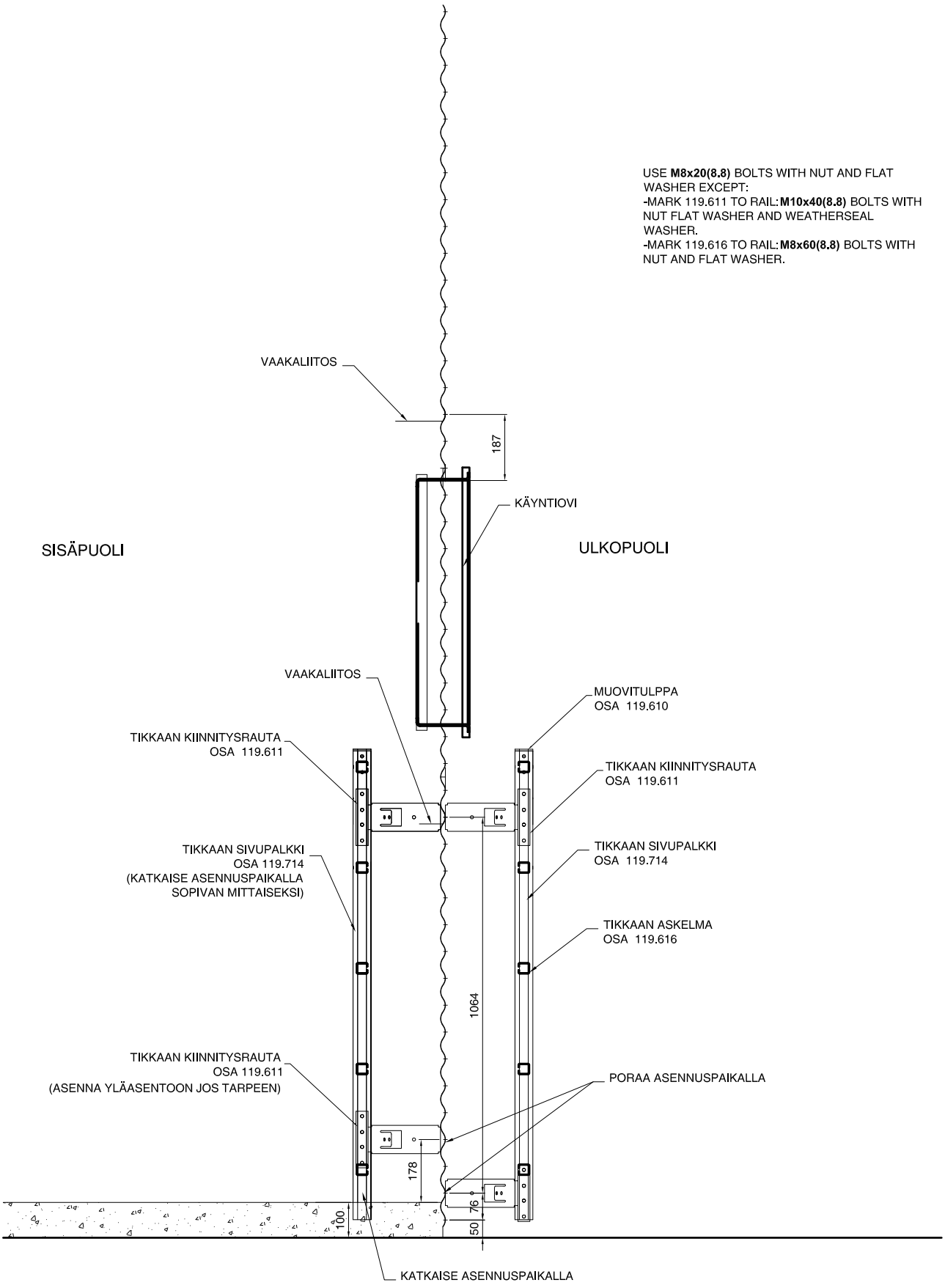
SUURENNOS 3



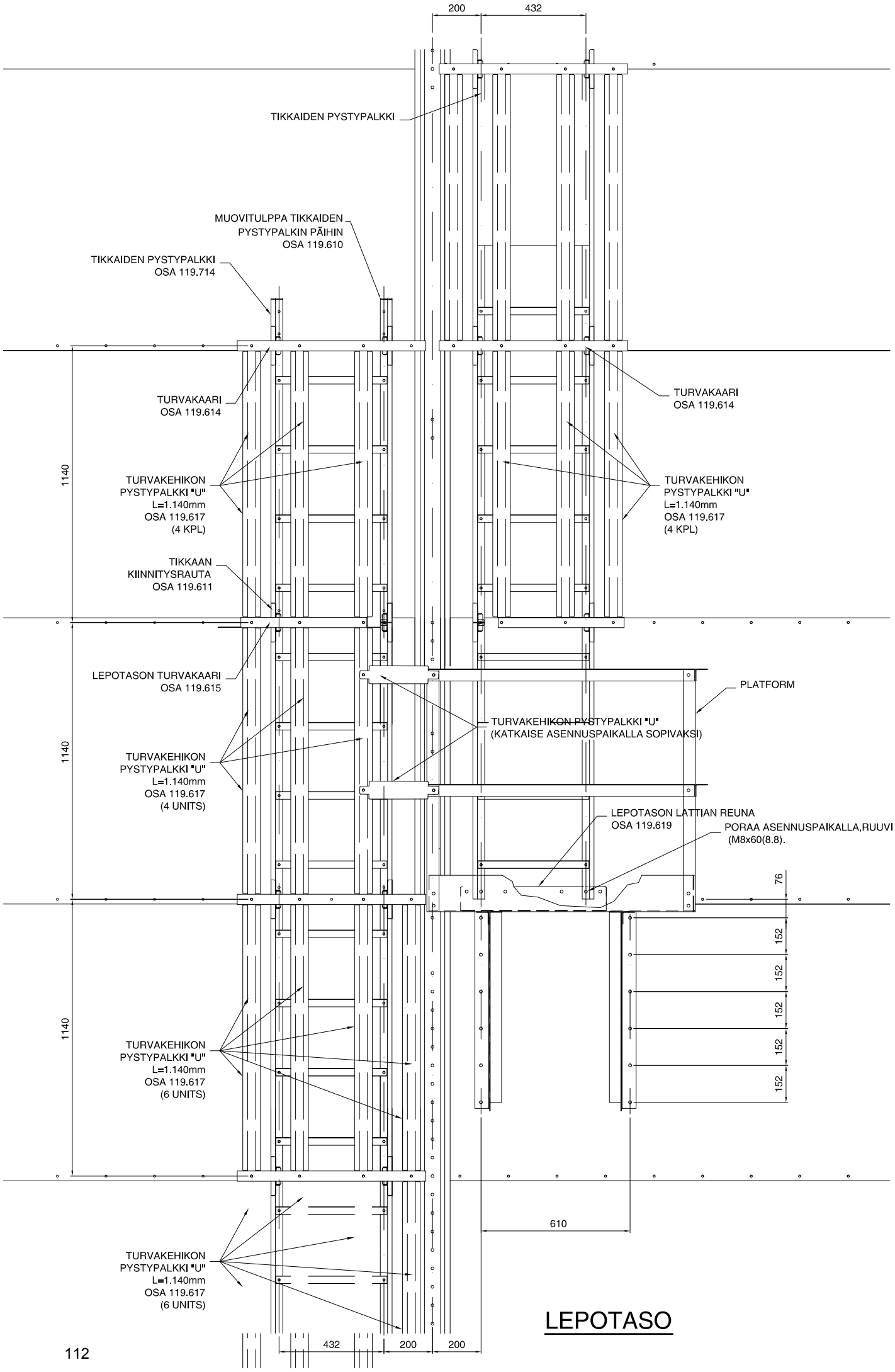
KÄYTÄ **M8x60(8.8) RUUVEJA, MUTTEREITA JA ALUSLAATTOJA.**

SUURENNOS 4

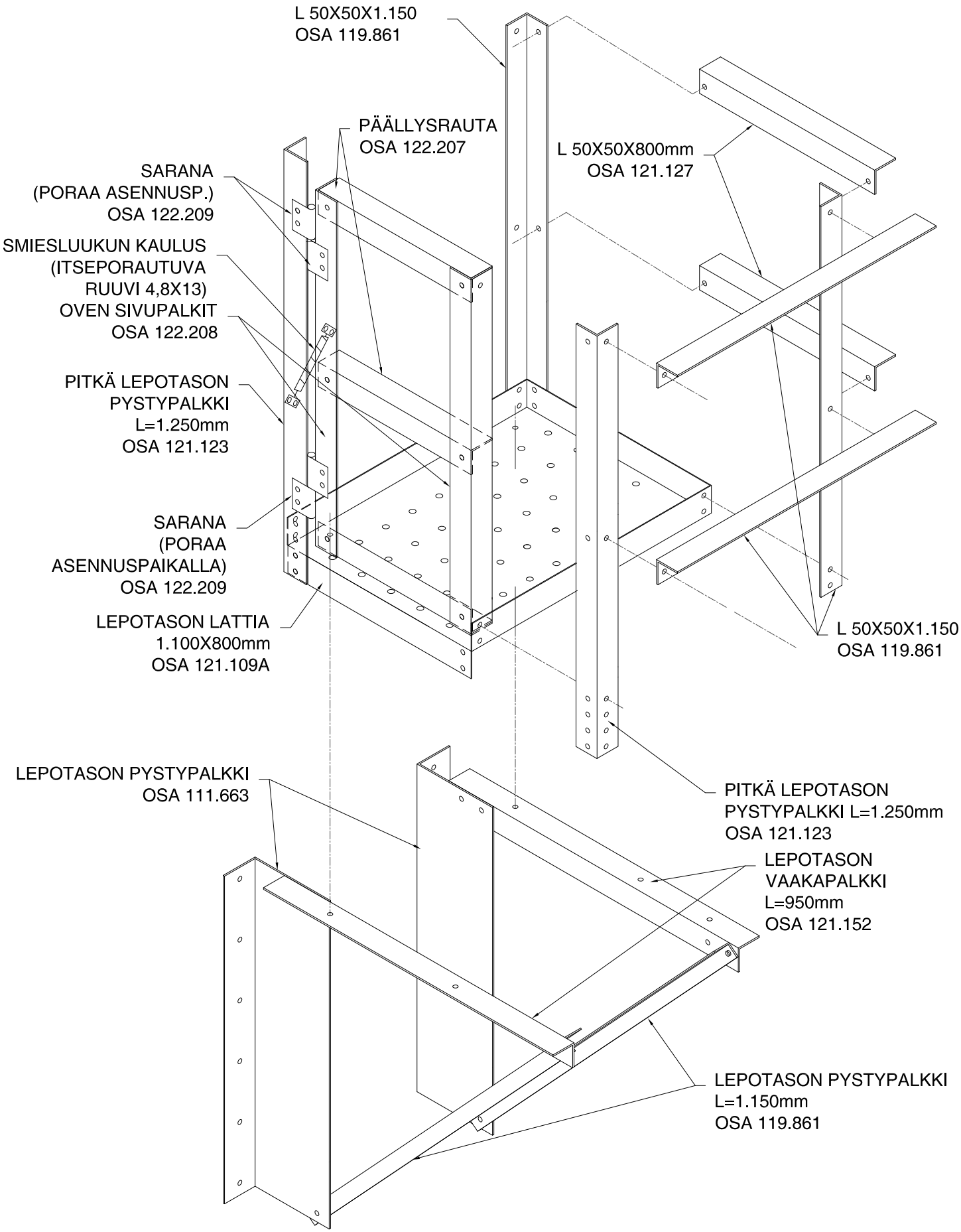
TIKKAAT



TIKKAAT KÄYNTIOVELLE


200
432
TIKKAIDEN PYSTYPALKKI
MUOVITULPPA TIKKAIDEN
PYSTYPALKIN PÄIHIN
OSA 119.610
TIKKAIDEN PYSTYPALKKI
OSA 119.714
TURVAKAARI
OSA 119.614
TURVAKAARI
OSA 119.614
1140
TURVAKEHIKON
PYSTYPALKKI "U"
L=1.140mm
OSA 119.617
(4 KPL)
TURVAKEHIKON
PYSTYPALKKI "U"
L=1.140mm
OSA 119.617
(4 KPL)
TIKKAAN
KIINNITYSRAUTA
OSA 119.611
LEPOTASON TURVAKAARI
OSA 119.615
PLATFORM
TURVAKEHIKON PYSTYPALKKI "U"
(KATKAISE ASENNUSPAIKALLA SOPIVAKSI)
1140
TURVAKEHIKON
PYSTYPALKKI "U"
L=1.140mm
OSA 119.617
(4 UNITS)
LEPOTASON LATTIAN REUNA
OSA 119.619
PORAA ASENNUSPAIKALLA,RUUVI
(M8x60(8.8).
76
152
152
152
152
152
1140
TURVAKEHIKON
PYSTYPALKKI "U"
L=1.140mm
OSA 119.617
(6 UNITS)
610
TURVAKEHIKON
PYSTYPALKKI "U"
L=1.140mm
OSA 119.617
(6 UNITS)
432
200
200

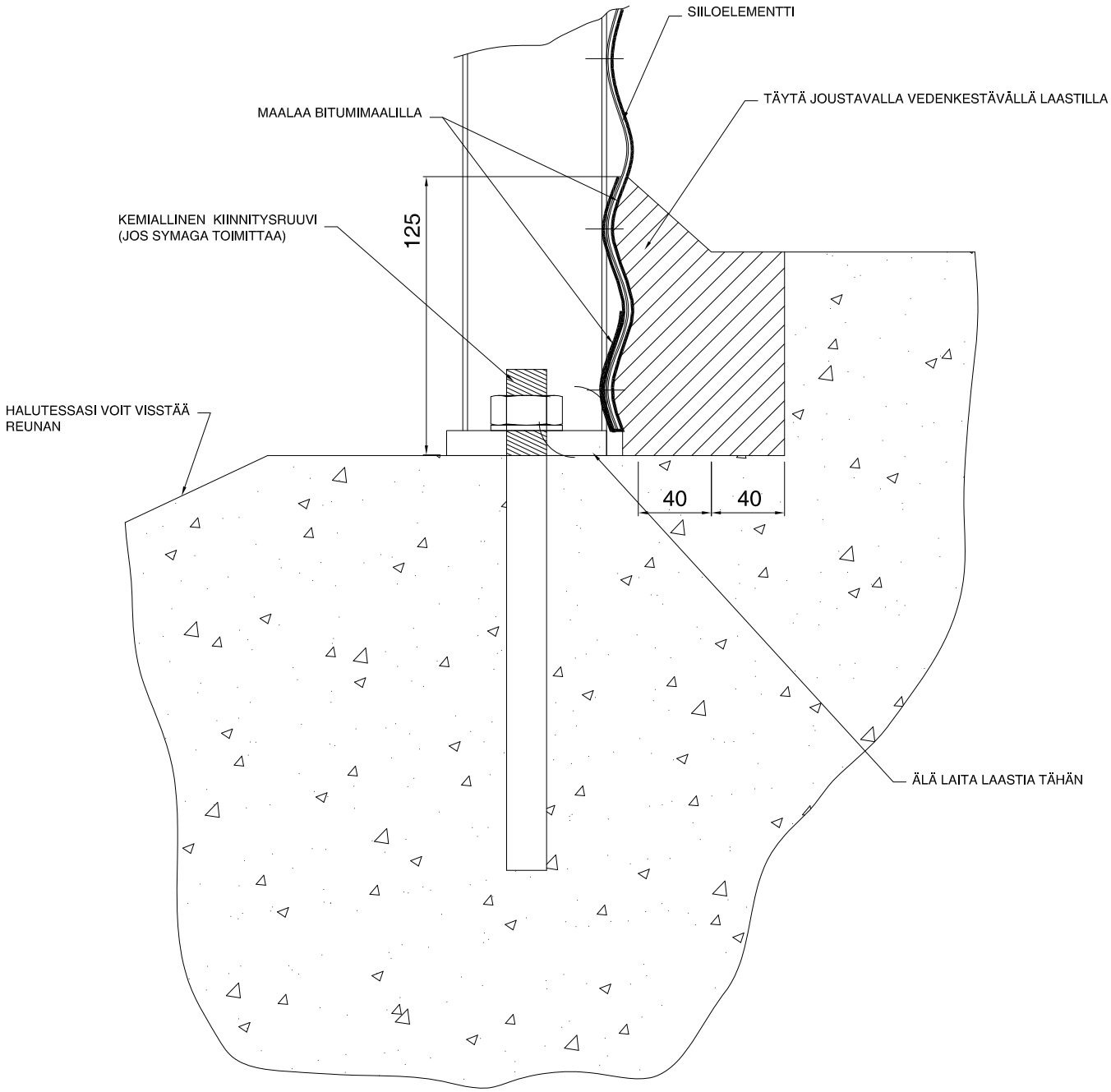
LEPOTASO



HUOMAA:
VIRITÄ MIESLUUKUN JOUSI ENNEN RUUVIEN KIRISTÄMISTÄ.

KÄYTÄM10X20(8.8)RUUVIA JA MUTTERIA, PAITSI SARANA M8X20(8.8)RUUVI

LEPOTASO 1.100X800



PERUSTUKSEN TIIVISTYSOHJE:

1.-KUN LOPULLINEN KIINNITYSRAUTAJEN PAIKKA ON TIEDOSSA, KÄYTÄ KIINITYSLEVYN REIKIÄ OHJURINA REIKÄ PORATESSASI. PUHDISTA REIÄT ENNEN RUUVIEN ASENNUSTA

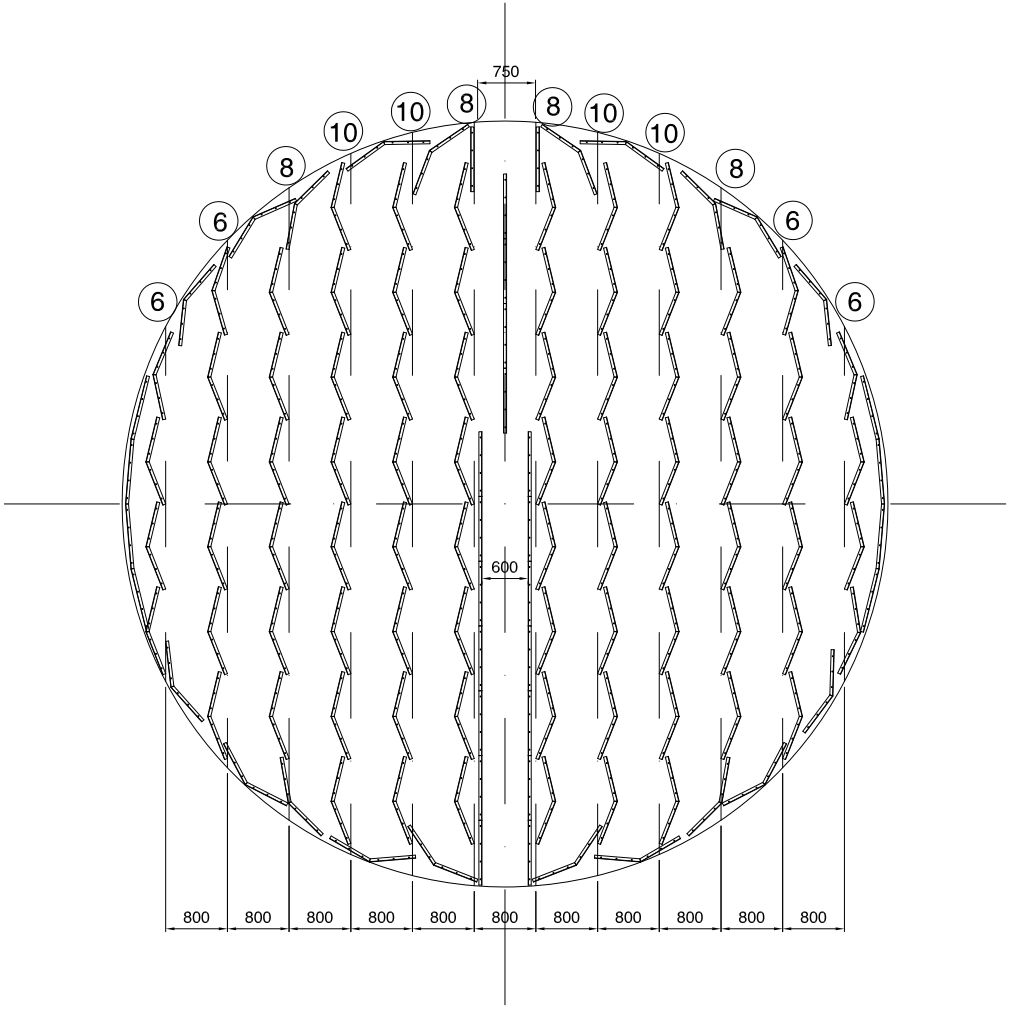
2.-PUDISTA SIILON REUNA JA MAALAA SIILON ELEMENTIT BITUMIMAALILLA SISÄ- JA ULKOPUOLELTA KUTEN KUVASSA ON MERKITTY.

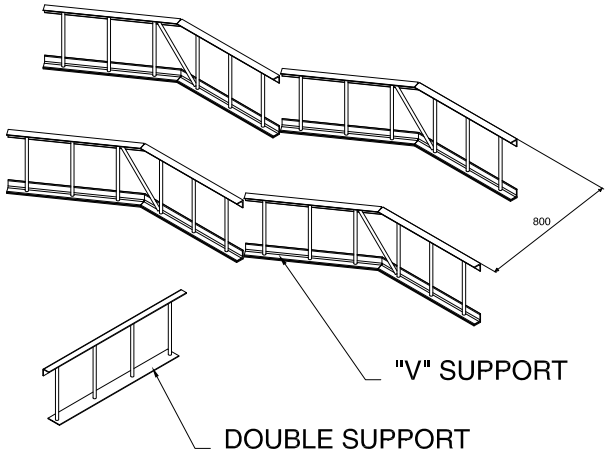
3.-TÄYTÄ VÄLI JOUSTAVALLA JA VEDENKESTÄVÄLLÄ LAASTILLA.

4.-HALUETSSASI VOIT TEHDÄ SIILON PERUSTAN KEHÄLLE VIISTEEN. ÄLÄ LAITA LASSTIA SIILON ULKIOPUOLELLE (KATSO PIIRUSTUS).

SIILON KIINNITYS PERUSTUKKATSON

AERATION FLOOR SUPPORTS SILO Ø9.93	
TYPE	QUANTITY
"V" SUPPORT	96
DOUBLE SUPPORT	28



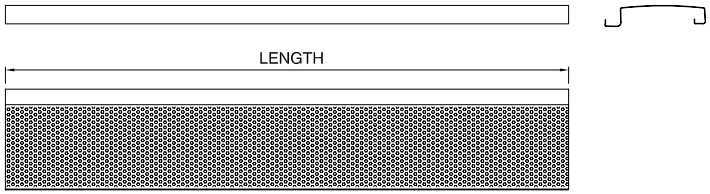


Cliente/customer: MEPU					Oferta/Order Nº: 47.872
Ref. /project: REFERENCIA					
Plano/drawing: PLANO					
Dibujado/drawer: A.R.S.	24-05-2017	Rev:	Escala/scale:	Tamaño/Paper size:	
Aprob. /confirmed: D.T.	24-05-2017	1	1/100	A3	
Categoria/Issued: CATEGORIA					
Nombre/Drawing: NOMBRE-DIBUJO					
Observ. /Notes: OBSERVACIONES					
OBSERVACIONES-II					

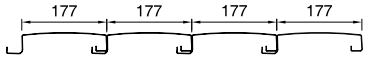
SYMAGA SILOS

C/Azcona 37, Madrid C.P. 28028 Phone: +34 917284304 www.symaga.com

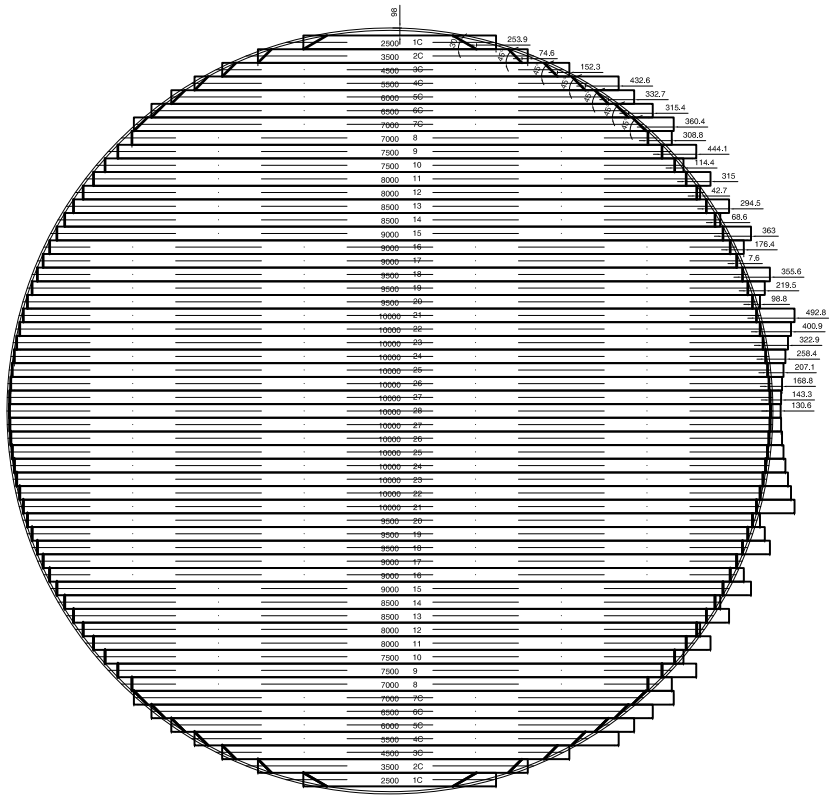
PLANKS



PLANKS
ASSEMBLY



* Planks "1C" will be cut at 30°, the rest of planks with "C" will be cut at 45° according to the assembly instructions.



PLANK Nº		CUTTING ANGLE	QUANTITY	LENGTH (mm)	CUTTING LENGTH (mm)
1	C	30°	2	2500	253,9
2	C	45°	2	3500	74,6
3	C	45°	2	4500	152,3
4	C	45°	2	5500	432,6
5	C	45°	2	6000	332,7
6	C	45°	2	6500	315,4
7	C	45°	2	7000	360,4
8			2	7000	308,8
9			2	7500	444,1
10			2	7500	114,4
11			2	8000	315,0
12			2	8000	42,7
13			2	8500	294,5
14			2	8500	68,8
15			2	9000	363,0
16			2	9000	176,4
17			2	9000	7,6
18			2	9500	355,6
19			2	9500	219,5
20			2	9500	98,8
21			2	10000	492,8
22			2	10000	400,9
23			2	10000	322,9
24			2	10000	258,4
25			2	10000	207,1
26			2	10000	168,8
27			2	10000	143,3
28			1	10000	130,6

Cliente/customer: MEPU				Oferta/Order Nº: 47.872
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Plano/drawing: PLANO				
Dibujado/drawer: A.R.S.	24-05-2017	Rev:	Escala/scale:	Tamaño/Paper size:
Aprob. /confirmed: D.T.	24-05-2017	1	1/100	A3
Categoria/Issued: CATEGORIA				
Nombre/Drawing: NOMBRE-DIBUJO				
Observ. /Notes: OBSERVACIONES				
OBSERVACIONES-II				

SYMAGA BLOB

C/Azcona 37, Madrid C.P. 28028 Phone +34 917284304 www.symaga.com