

TF2LL

Loftnet og turn.

Fyrirlestur í ÍRA 5. janúar 2012.

Georg Magnússon.

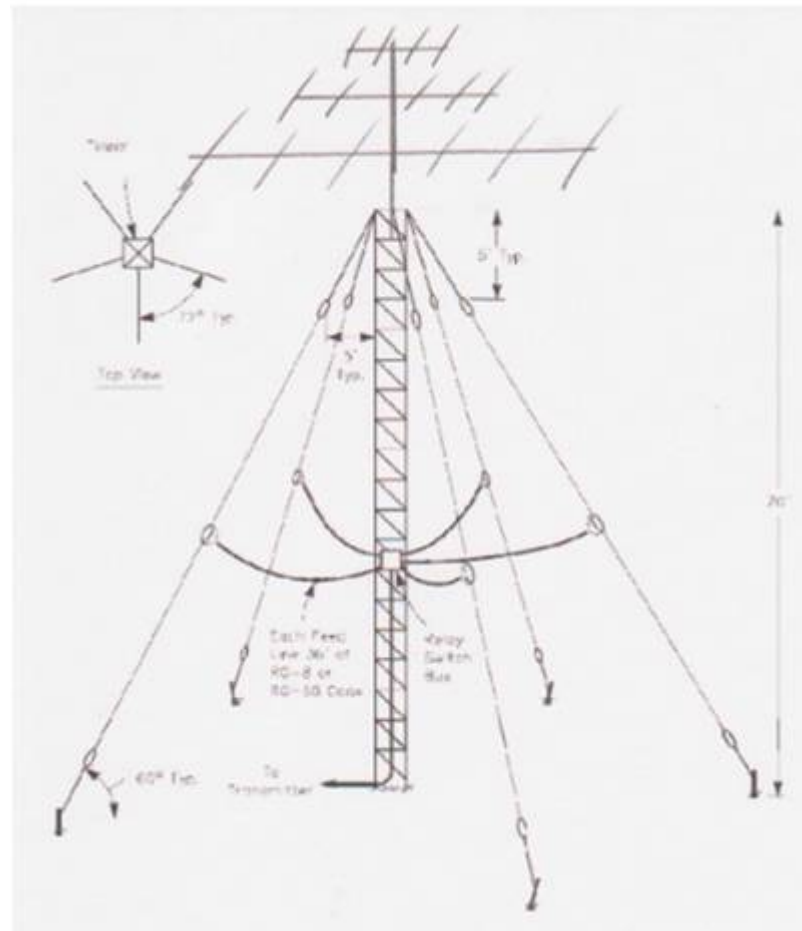
Yfirlit.

- 1. Ýmsar hugmyndir um loftnet og turna.
- 2. Loftnetsval.
- 3. Stjórnsýslan.
- 4. OptiBeam 18-6 samsetning.
- 5. Turninn.
- 6. Byrjað að smíða, leyfin klár.
- 7. Að festa turninn við sökkulinn.
- 8. Ný hugsun, OptiBeam 1-80+.
- 9. Turninn reistur.
- 10. OptiBeam 1-80+ element brotnar.
- 11. Rótorinn bilar.
- 12. Penetrox og fljótandi gúmmí.
- 13. Öryggi.
- 14. Niðurstaðan.
- 15. Næsta skref.

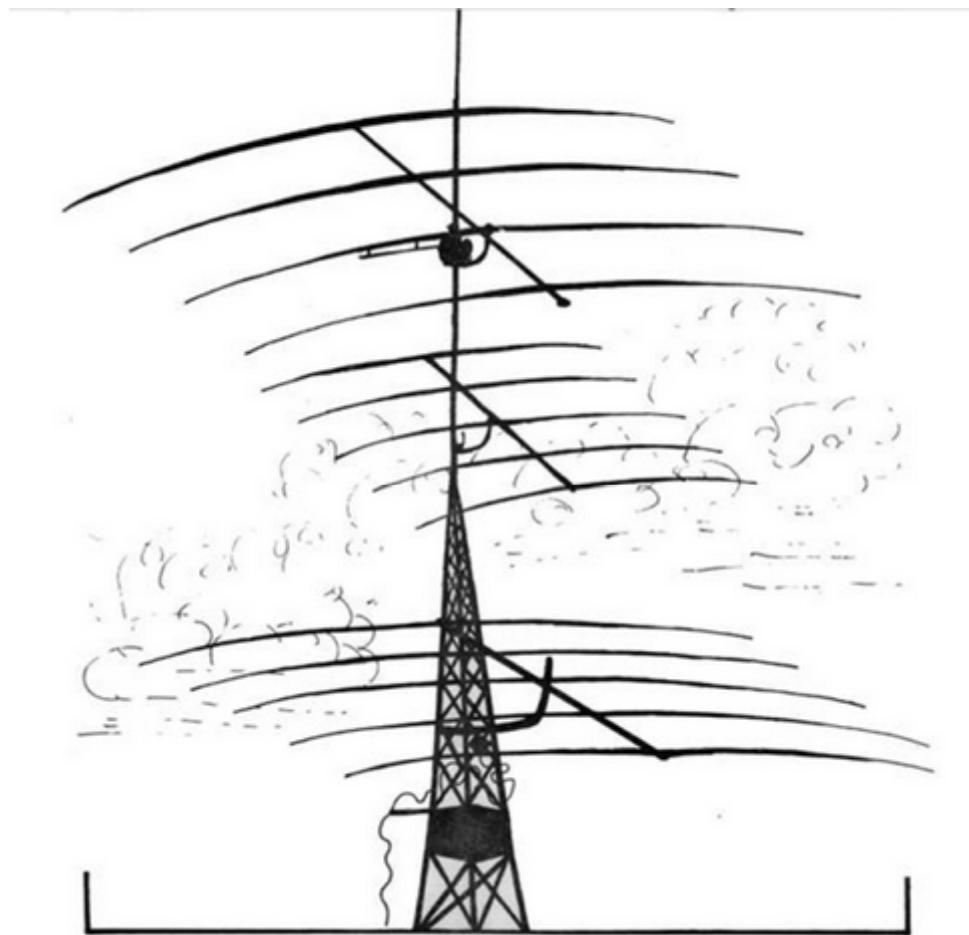
Ýmsar hugmyndir.

- Loftnet.
- Turnar.
- Radíalar.
- Staðsetning.

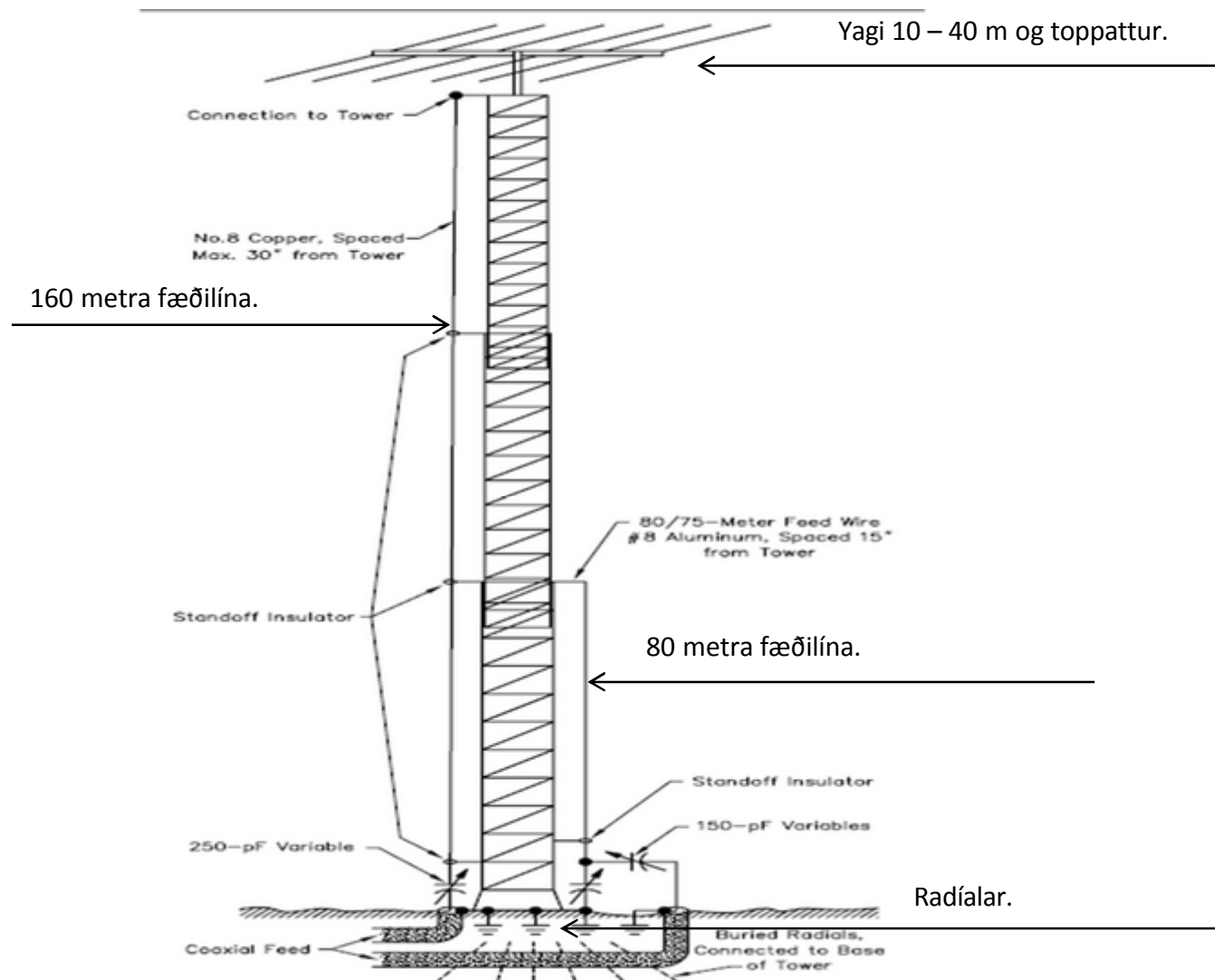
Turn með yagi og sloper.



Stakkað stefnuvirkt.



Turninn sem loftnet f. 160 og 80 m.



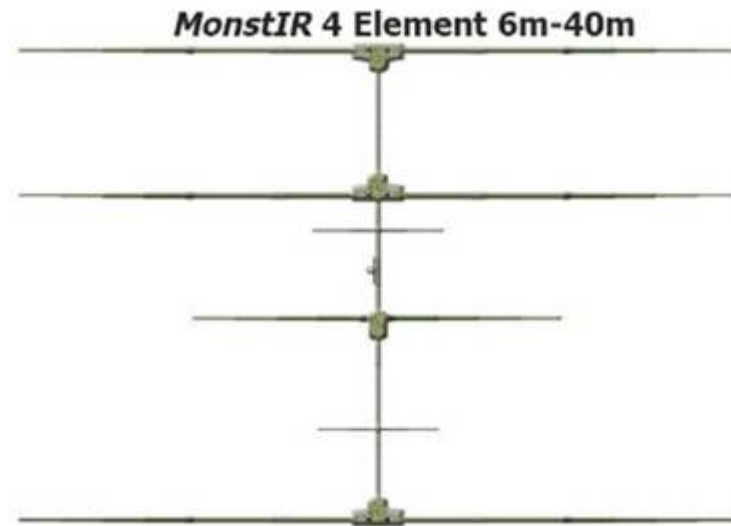
Loftnetsval.

- Eitt loftnet eða mörg loftnet ?
- Krafan : Stefnuvirkt fjölbanda net.
- 10 – 40 metrar.
- Yagi, Logperiodic eða Quad ?
- Mikið skoðað og spekúlerað um loftnet.
- Samanburður loftneta, sjá CQTF 2.tbl.2009.

Ýmis loftnet skoðuð.

- SteppIR
- M2
- Titanex
- Cupical Quad
- R-Quad
- OptiBeam
- Giovanni

SteppIR MonstIR

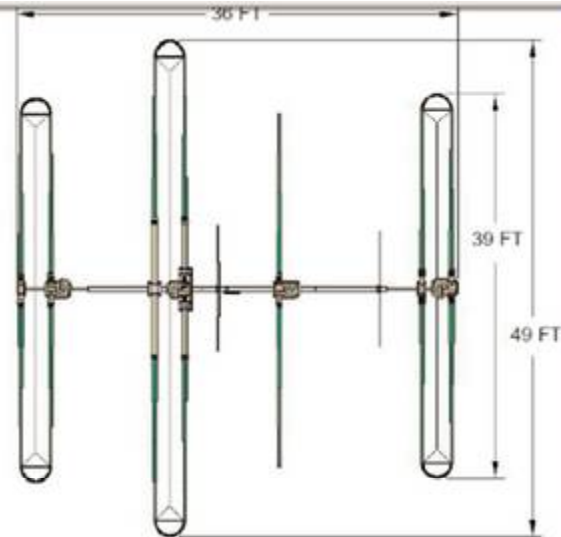


SteppIr DB 36

options as our original yagi antennas. Options include, 6M passive kit, transceiver interface, 33 volt power supply, "Y" cable, and Array Solutions surge suppressors.



SteppIr's Dream Beam 36 in the great Northwest.

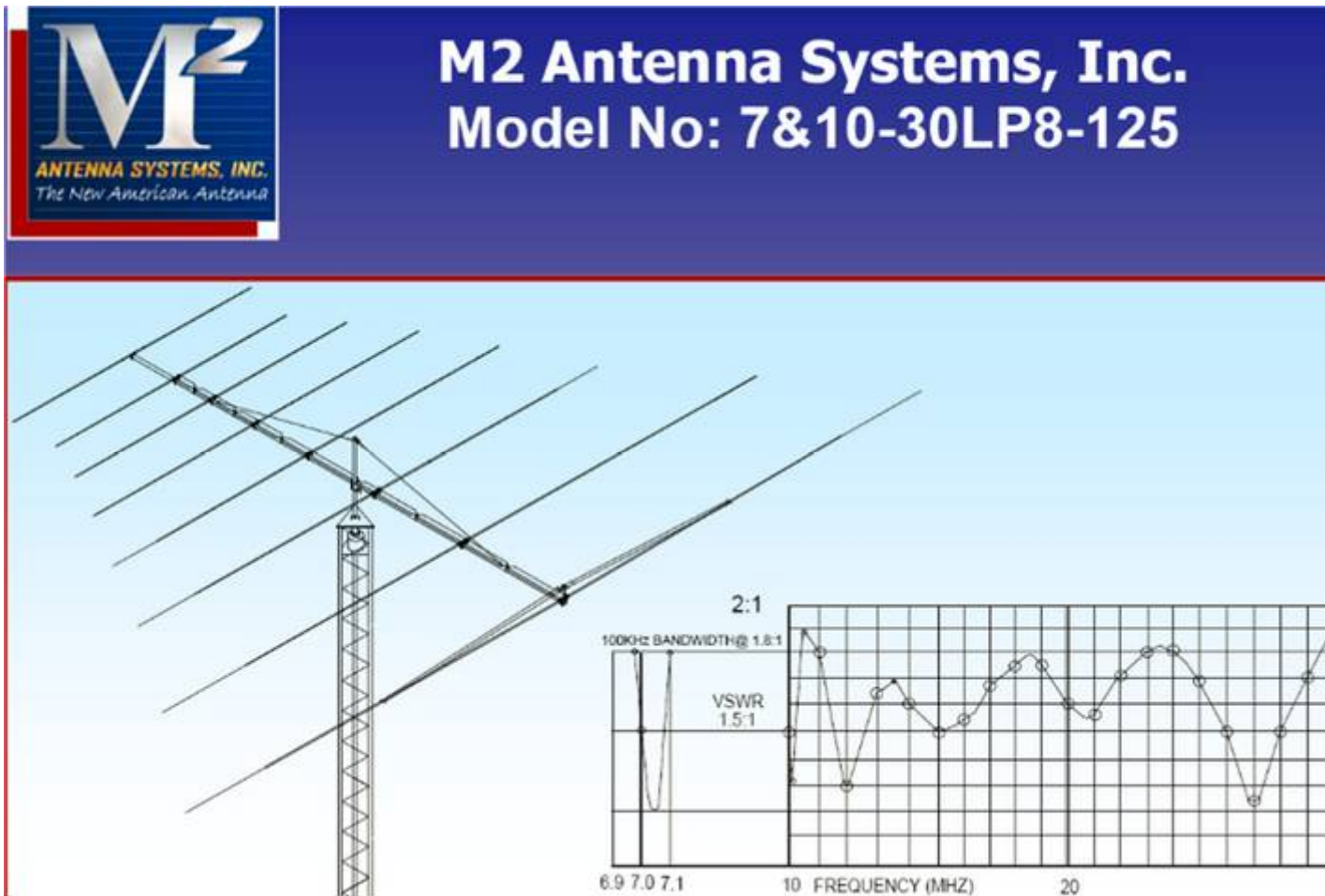


Antenna Specs	Dream Beam 36
Weight	160 lb / 72.8 kg
Wind load	17.5 sq ft / 1.63 sq m
Longest element	48 ft / 15.1 m
Turning radius	26 ft / 8.0 m
Boom length	35' 10" ft / 11.1 m
Mast clamps (incl.)	2.0 in / 5.08 cm
Power rating	3 KW
Wind rating	100 mph EIA-222-C
Frequency coverage	**3.4 MHz - 54 MHz
Cable requirements	16 conductor 22 gauge shielded
Tuning rate	1.33 ft/sec. - .4 m/sec.

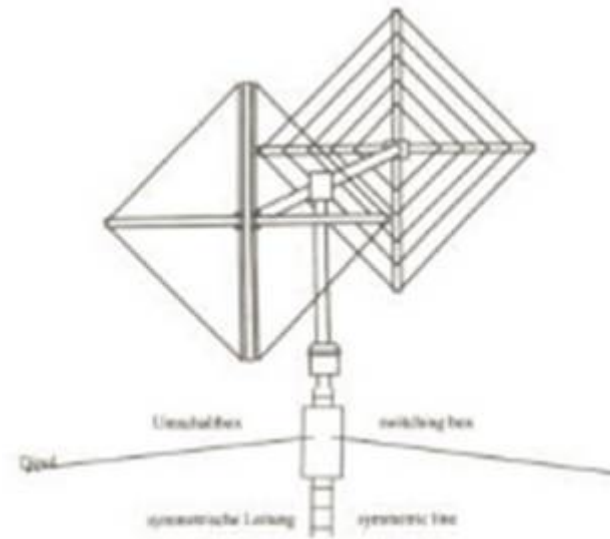
Performance		
Band	dBi Gain	F/R dB
80m	1.35	N/A
40m	7.2	21
30m	8.2	18
20m	9.27	21.5
17m	9.88	26.5
15m	10.21	27.1
12m	10.43	21.1
10m	10.65	11.0
6m	4.0*(12.75)	1.78(27.4)

- Sketch shown with optional 6m passive kit
- Gain and F/R measured in free space
- *with optional 6m passive element kit
- **with 80m - 40m optional dipole

M2 logperiodic



Titanex quad 160 – 10 m.



R – Quad, 40 – 10 m.



Lengd = 10 m

Breidd = 7,8 m

Þyngd = 125 kg

Vindfang = 2,6 m²

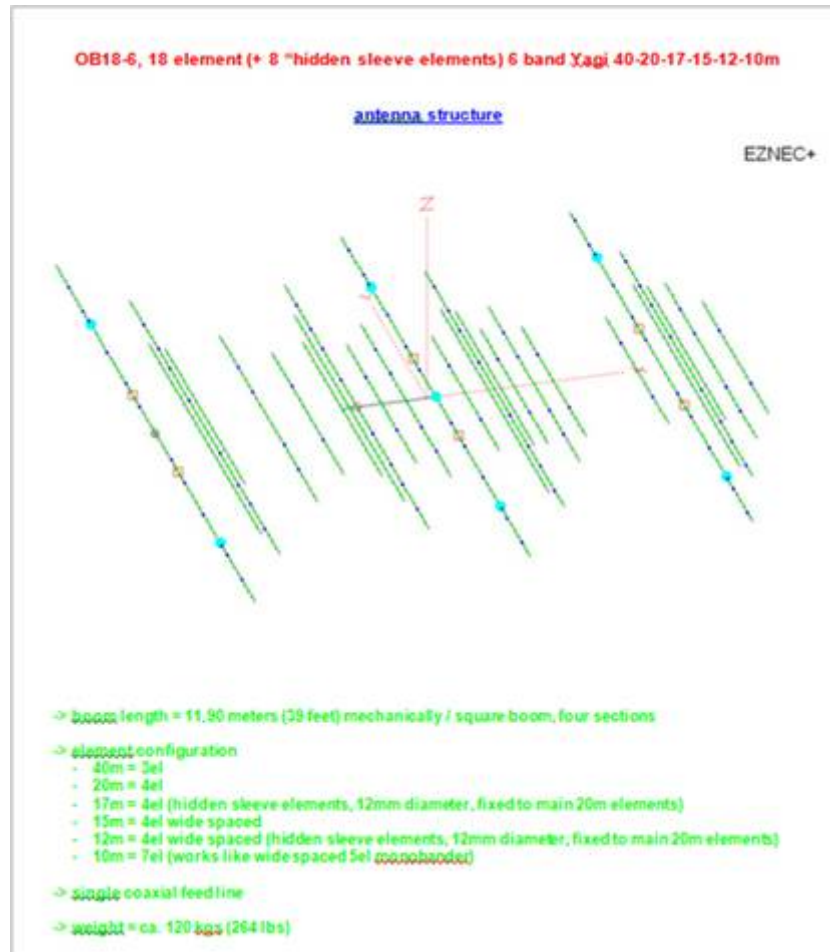
Fyrir valinu varð : OptiBeam 18-6



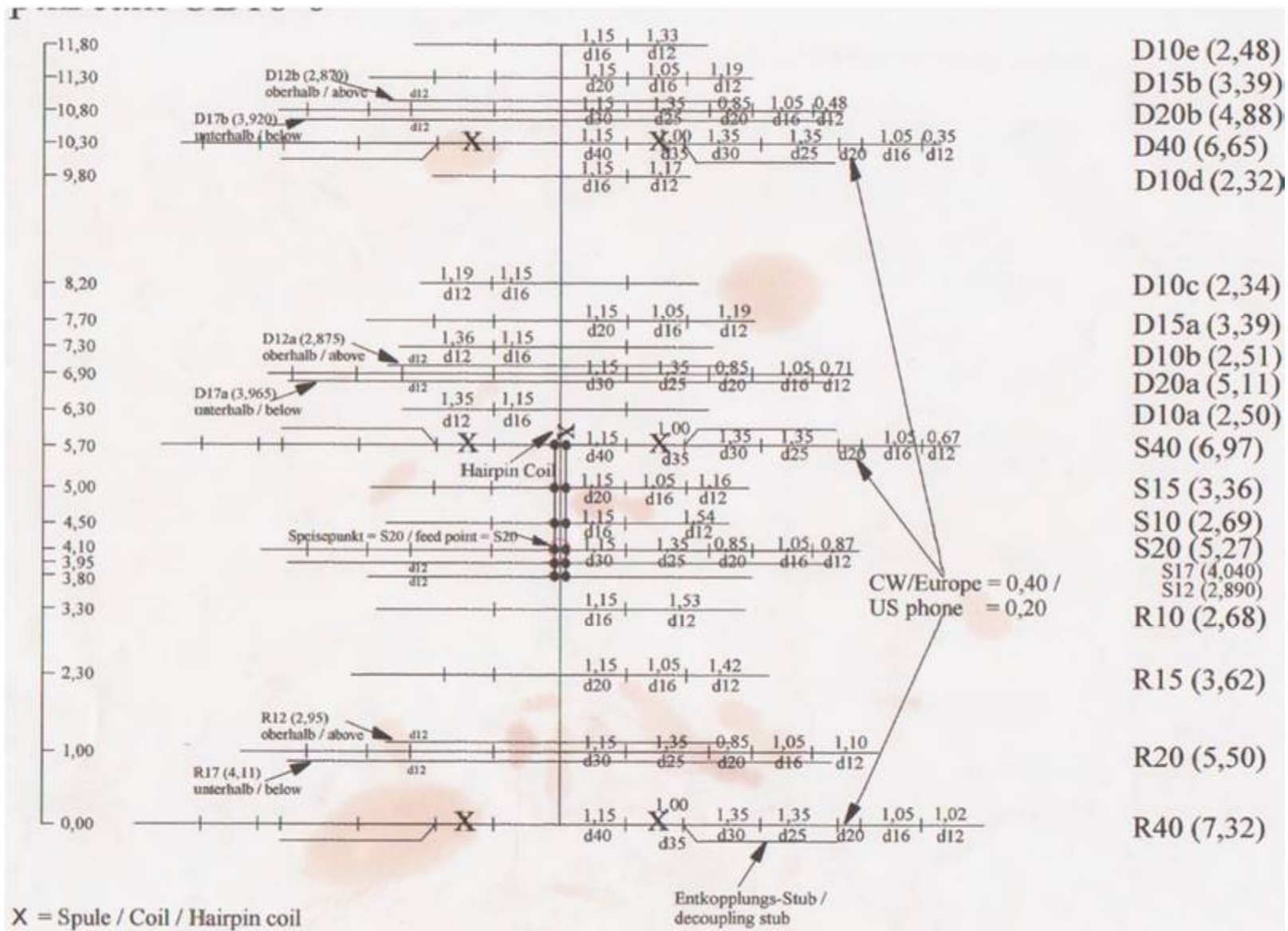
OptiBeam 18-6, helstu tölur.

OB18-6	18 Element Yagi 40-20-17-15-12-10m
Bands	40 / 20 / 17 / 15 / 12 / 10
Gain (dBd) *	4,8 / 7,3 / 7,5 / 7,8 / 7,0 / 7,7
Gain (dBi) **	11,8 / 14,7 / 15,1 / 15,5 / 14,8 / 15,6
F/B (dB)	25 / 18 / 25 / 22 / 22 / 15
VSWR	
40 m CW/Europe setting:	
7,00 - 7,05 - 7,15	1,7 - 1,1 - 1,8
40 m USA phone setting:	
7,15 - 7,21 - 7,30	1,7 - 1,1 - 1,8
14,000 - 14,160 - 14,350	1,3 - 1,1 - 1,4
18,069 - 18,150 - 18,169	1,4 - 1,1 - 1,2
21,000 - 21,270 - 21,450	1,4 - 1,1 - 1,3
24,890 - 24,950 - 24,990	1,3 - 1,1 - 1,3
28,000 - 28,500 - 29,000	1,5 - 1,1 - 1,7
Elements (number)	18 (+ 8 hidden sleeve für 12/17m)
Active Elements	3 / 4 / 4 / 4 / 4 / 7
Max. Elementlength (m)	14.64
Boomlength (m)	11.9
Turning Radius (m)	9.16
Feedlines (number)	1 Coax 50 Ohm
Weight (kg)	115
Windload at 130 km/h	2.466 N / 3,09 m² / 33,37 feet²

OptiBeam 18-6 uppbygging.

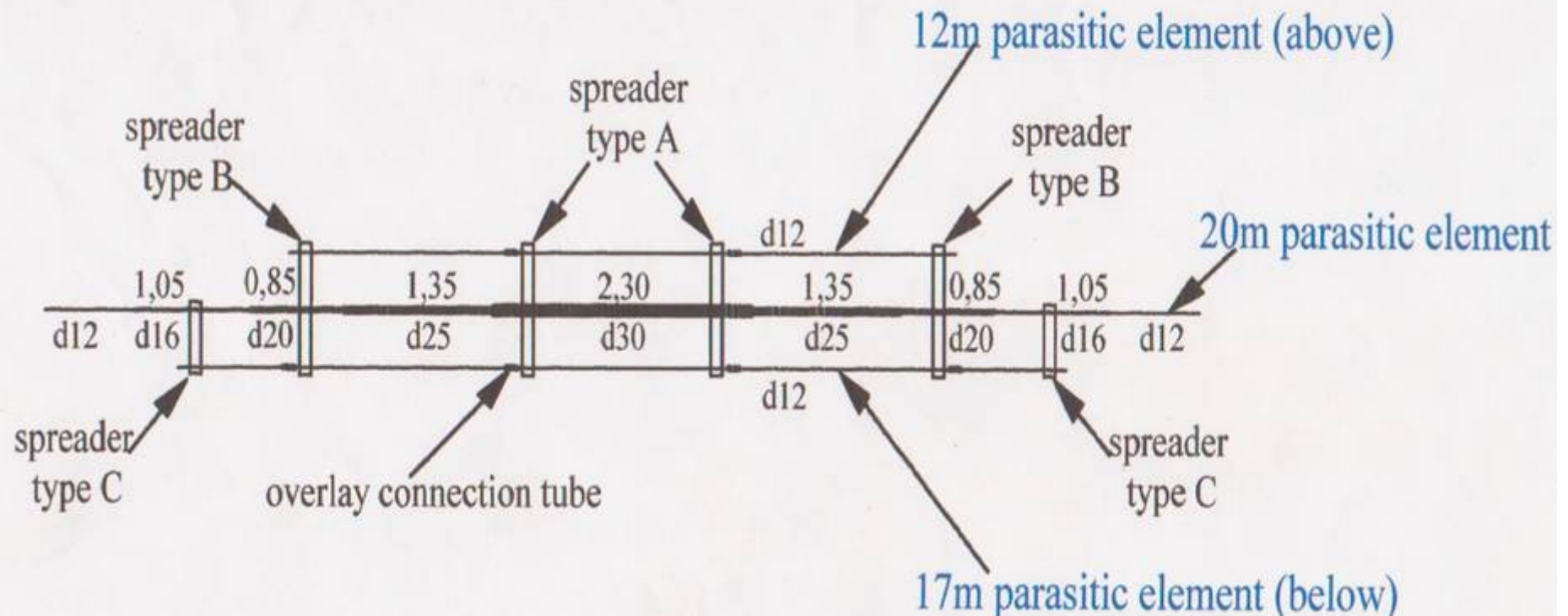


OptiBeam, málsetningar.



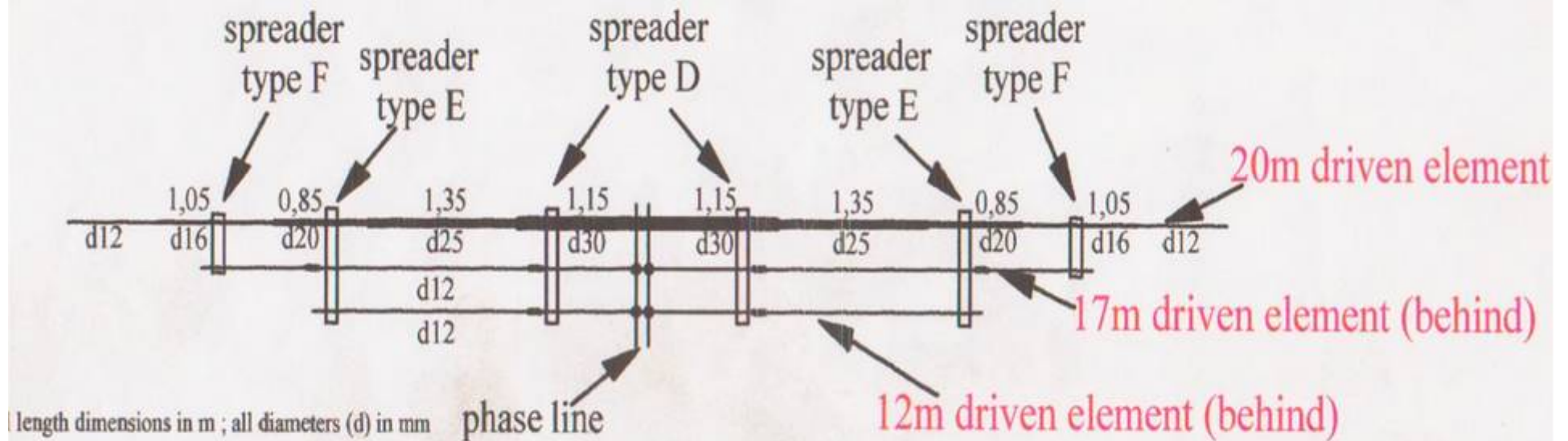
Demonstration Sleeve Elements.

parasitic organisation (vertical)



Demonstration Sleeve Elements.

driver organisation (horizontal)



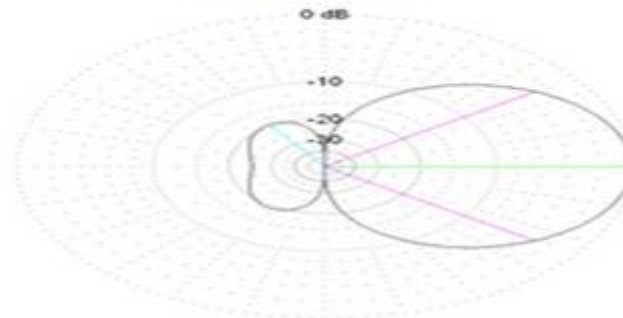
OptiBeam 18-6 40 m

DB18-6, 18 element (+ 8 "hidden sleeve elements) 6 band Yagi 40-20-17-15-12-10m

40m Azimut plot

* Total Field

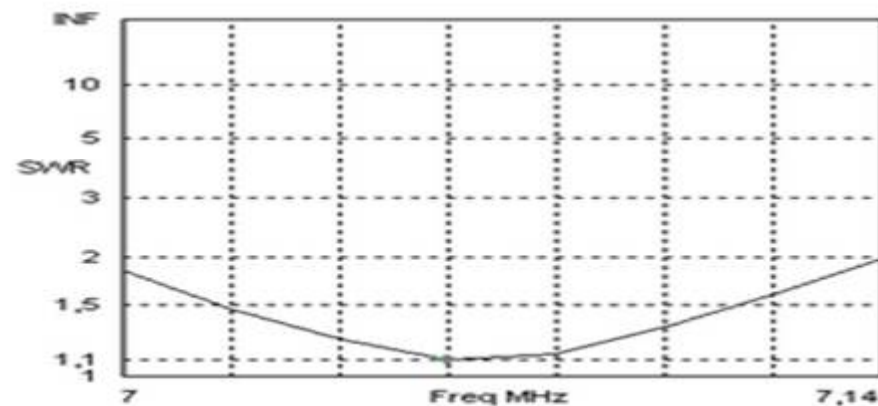
EZNEC+



Antenna Pos
Direction Angle 0.0 deg
Gain dBS 6.47 dBS
Gain Max Gain 6.47 dBS @ Az Angle = 0.0 deg
Front/back 19.7 dB
Back/forw 11.5 dB, Gain @ 134.2, 215.8 deg
Side/back 14.28 dBS @ Az Angle = 135.0 deg
Front/back 19.7 dB

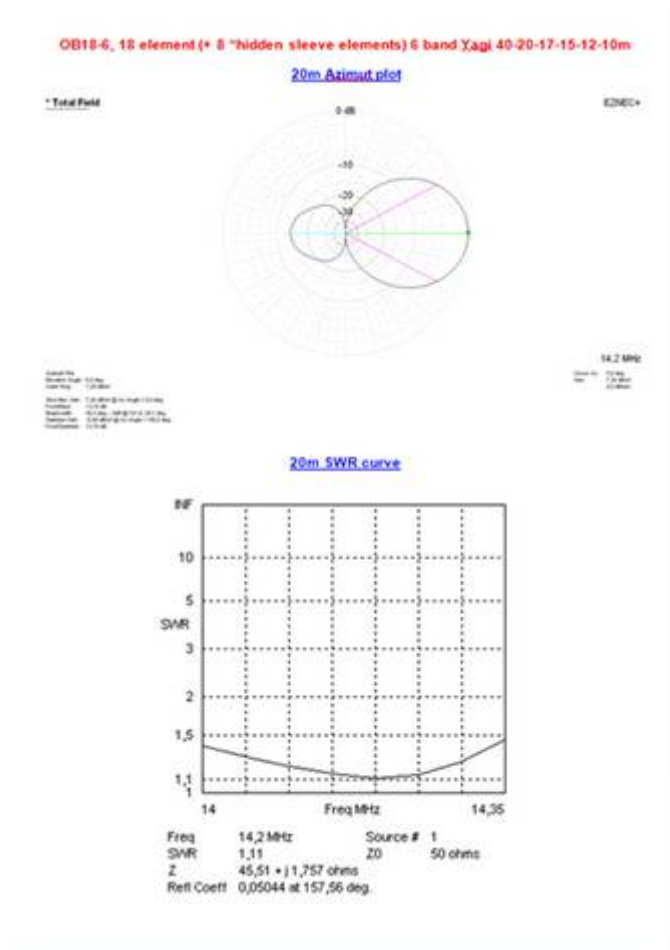
7.05 MHz
Current Pos 0.0 deg
Gain 6.47 dBS
Gain 6.47 dBS

40m SWR curve

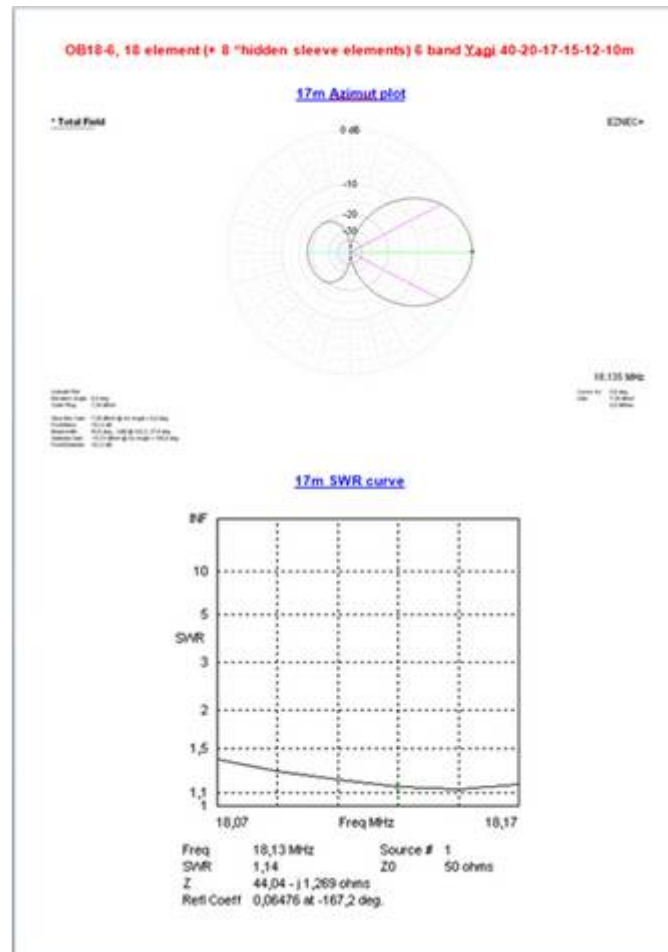


Freq	7.06 MHz	Source #	1
SWR	1.092	Z0	50 ohms
Z	48.86 - j 4.221 ohms		
Ref Coeff	0.04419 at -102.65 deg.		

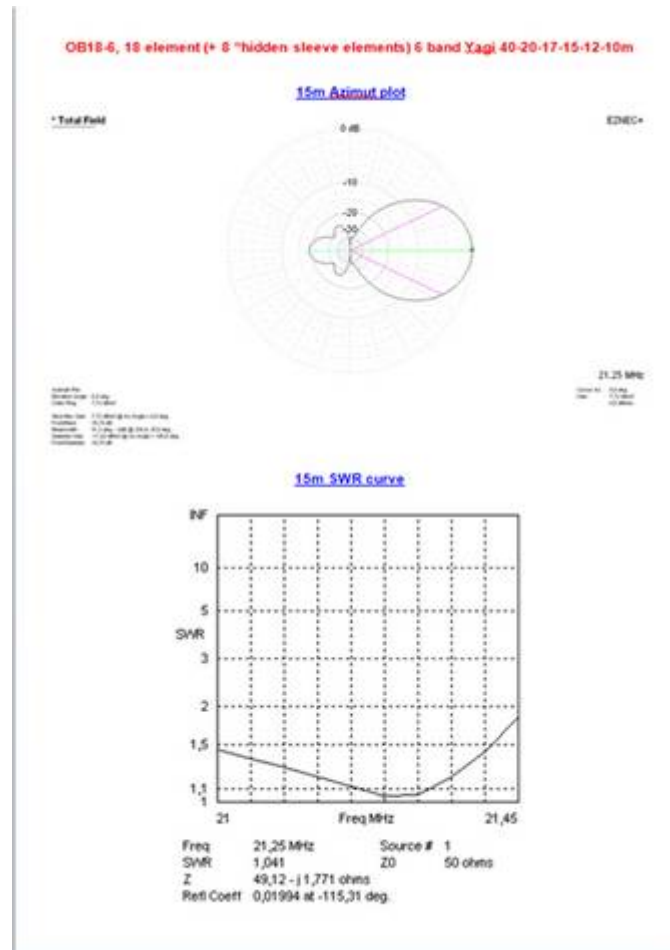
OptiBeam 18-6 20 m.



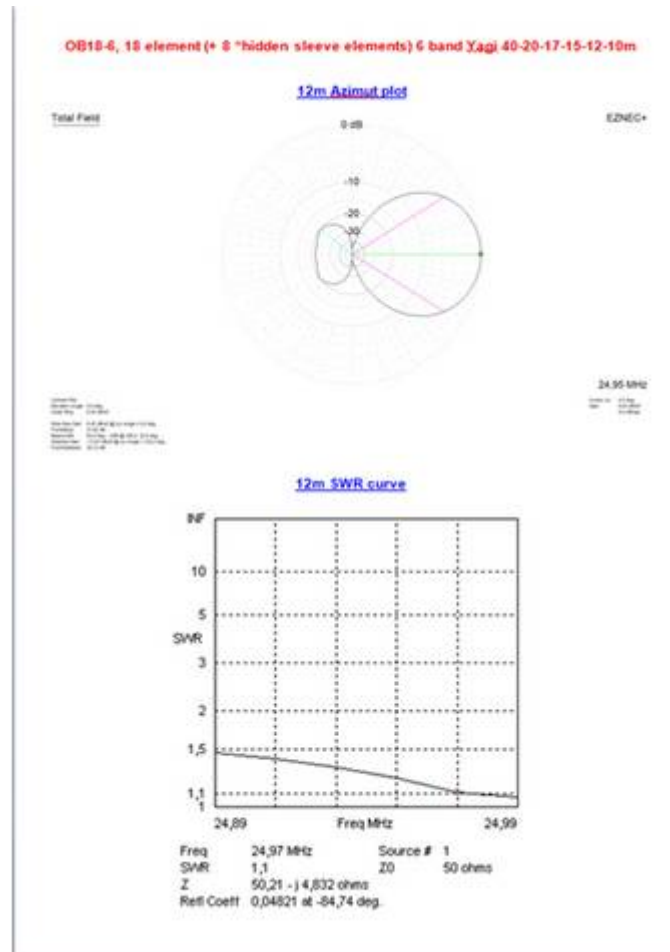
OptiBeam 18-6 17 m.



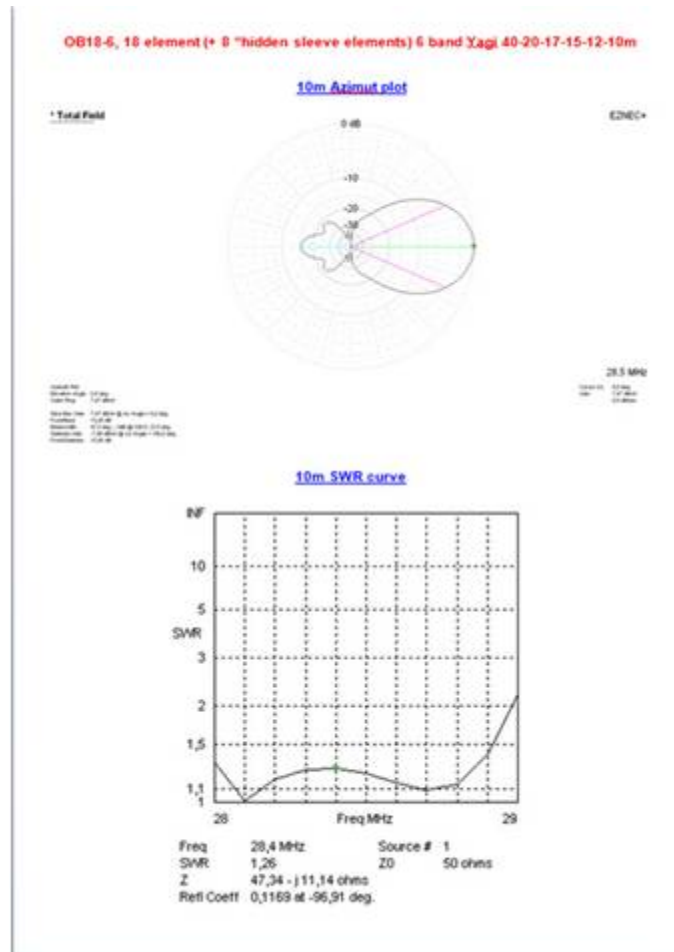
OptiBeam 18-6 15 m.



OptiBeam 18-6 12 m.



OptiBeam 18-6 10 m.



Rótorinn valinn miðað við loftnet.



Rótor, Prosistel PST 71D.

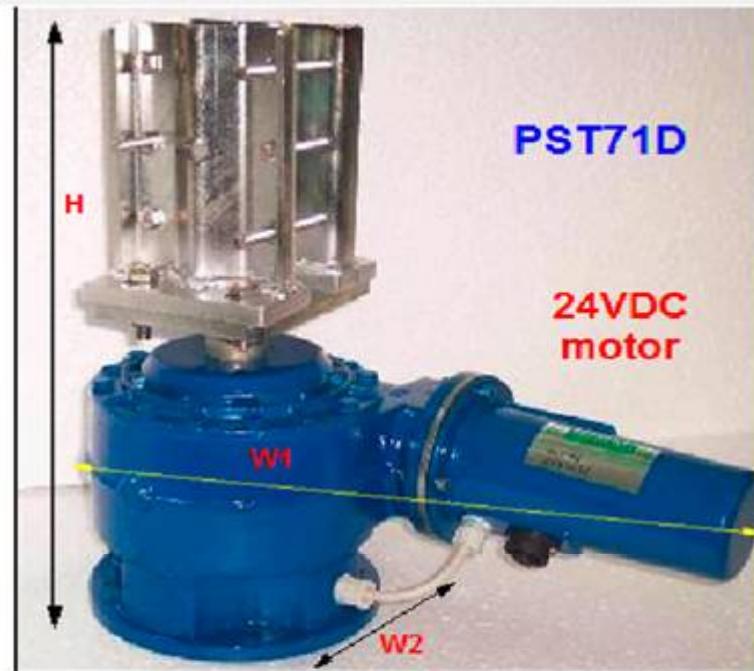


New control box "D"

The ultimate new controller fully computer controllable via RS232.

This room is not enough to list all "D" controller features

To learn more please look up the controller web page>



Specifications

Wind load	8.8 m2 80 sq.ft	Rotation range	500°	Output shaft diameter	35 mm 1 1/2"
Starting torque	14.000 Kg/cm 12.320 in/lbs	Motor volts	12 Vdc	Control box Power input	115 Vac 230 Vac
Braking torque	52.325 Kg/cm 46.000 in/lbs	Rotor cable	5 wires	High H Rotor + flexy	40 cm - 16" 60 cm - 20"
Vertical load	1000 Kg 2.200 lbs	Accuracy	1 degree	Whide W2 Whide W1	20 cm - 8" 52 cm - 20 3/4"
Rotation speed/ 360°	± 120"	Rotore weight Controller weight	Kg 30 - 66 lbs 9 Kg - 20 lbs	Shipping weight	40 Kg 88 lbs

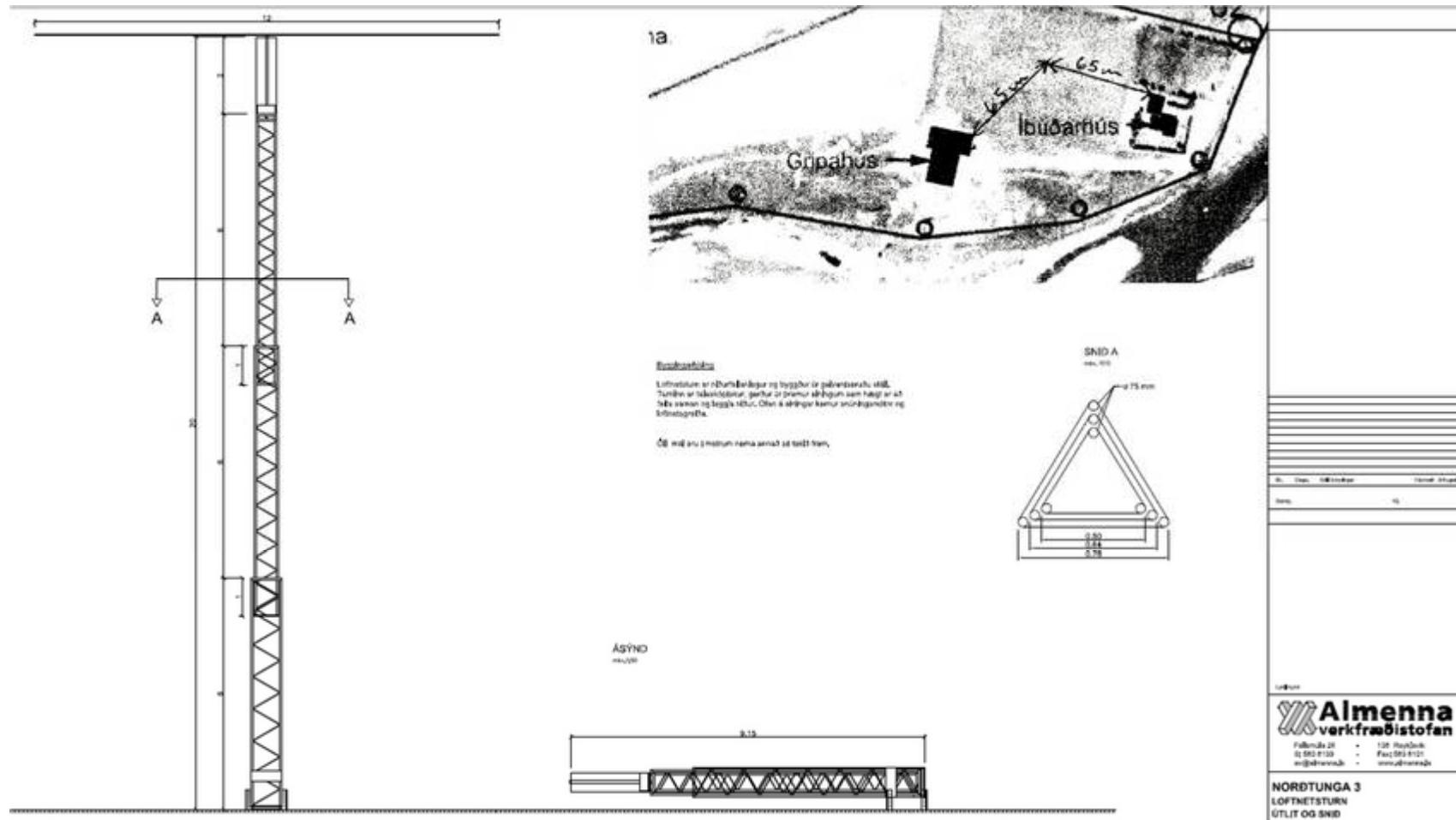
Fyrsti áfanginn.

- Haft samband við byggingafulltrúa.
- Loftnetið ákveðið og pantað.
- Rótorinn valinn og pantaður.
- Sjá samanburð loftneta og heimsókn til OptiBeam, CQTF 2.tbl 2009.
- Ákveðið að shunt feeda turninn.
- Fyrir 160 og 80 m.
- OB 18-6 er án 30 metrana en hugsað fyrir vír seinna meir.

Stjórnsýslan.

- Þá var kominn tími til þess að sækja um leyfi.
- Skila þarf inn bygginganefndarteikningu.
- Síðan er grenndar kynning.
- Þá þarf að skila inn burðarþolsteikningum.
- Uppáskrifaðar af byggingameistara.
- Síðan þarf að finna löggildan byggingastjóra.
- Þá loks er framkvæmdaleyfið gefið út.

Bygginganefndarteikning.



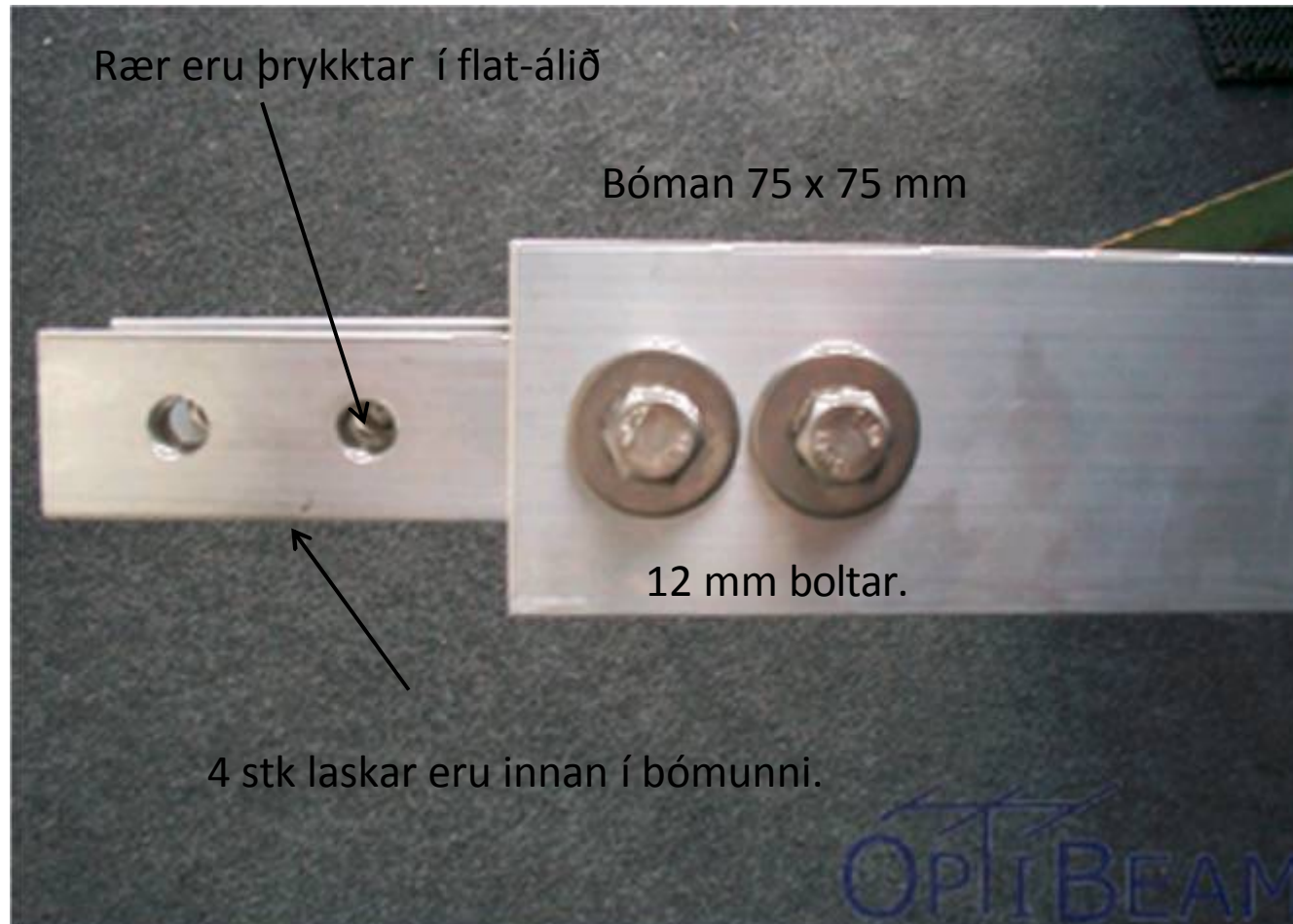
OptiBeam 18-6.

- Framleiðslunúmer 12.
- Byrjað að setja saman, fyrst inni.
- Síðan úti og girt í kring til að verjast ágangi forvitinna húsdýra.

Element sitja í plast baulum.



Samsetning á bómu.



OB 18-6 40 m spóla.



OB 18-6 40 m spóla.



OB 18-6 spóla á 40 m drifna elementinu.

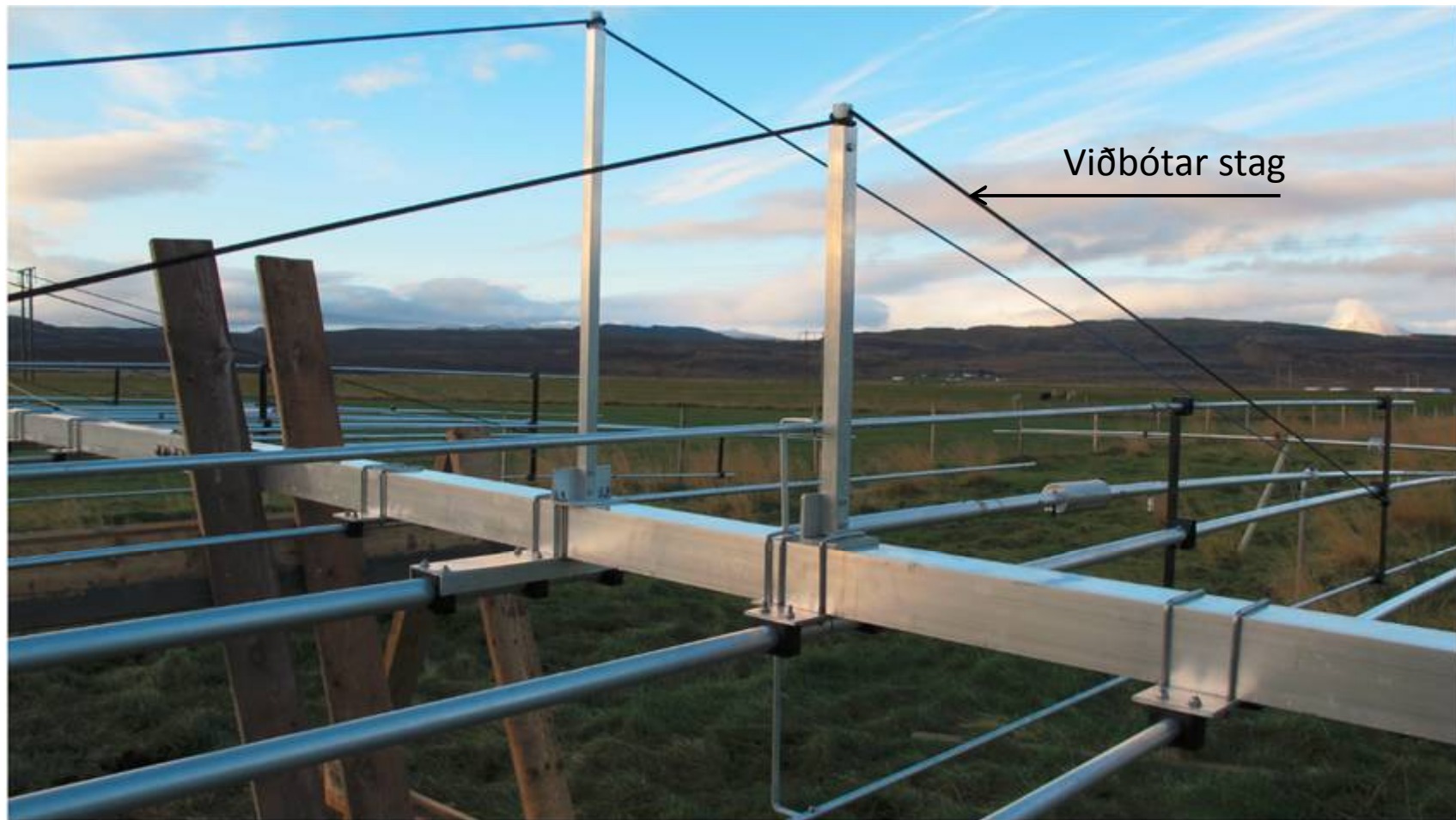


Vegna styttra 40 m elementa er impedance 30
og því notuð spóla til þess að breyta í 50 Ohm.

OB 18-6 balun 1:1



OB 18-6



OB 18-6, auka stag.



OB 18-6 auka stag.



OB 18-6 stag á drif elementum.



OB 18-6 ytri endi á decoupling stubs.



OB 18-6 miðja á decoupling stubs.



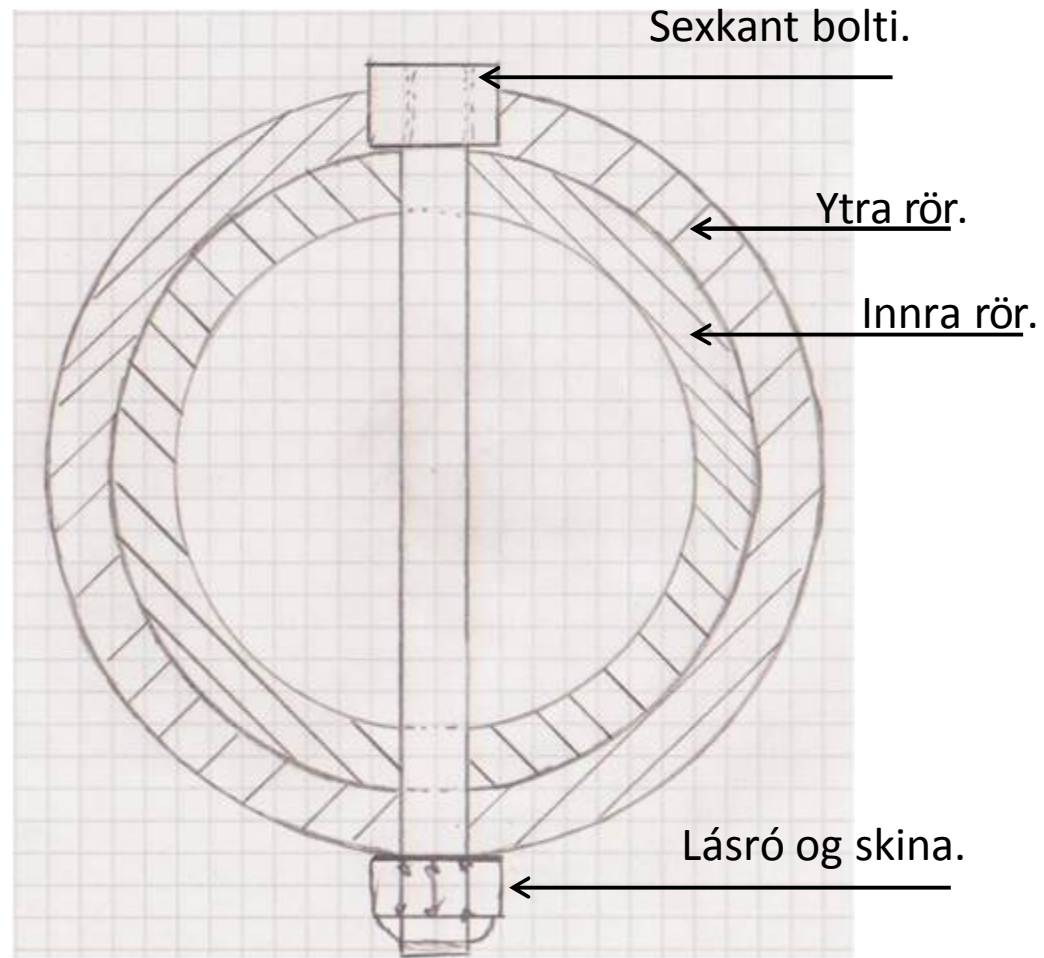
OB 18-6 innri endi á decoupling stubs.



Auka stag á eliment.



Samsetning ObtiBeam elementa.



OB 18-6 auka stag.



OB 18-6



OB 18-6 að verða klárt.



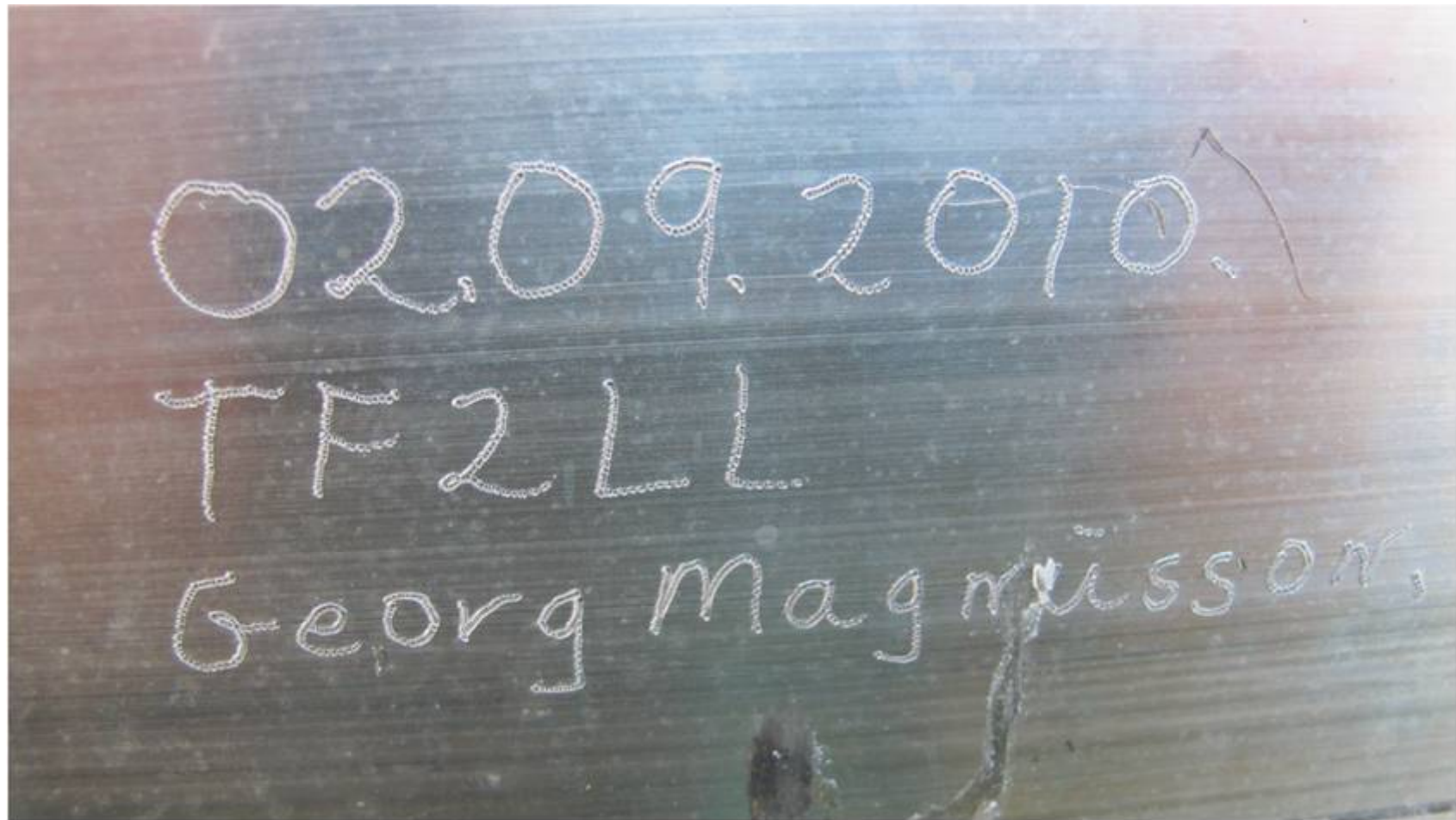
OB 18-6 samsett úti á túni.



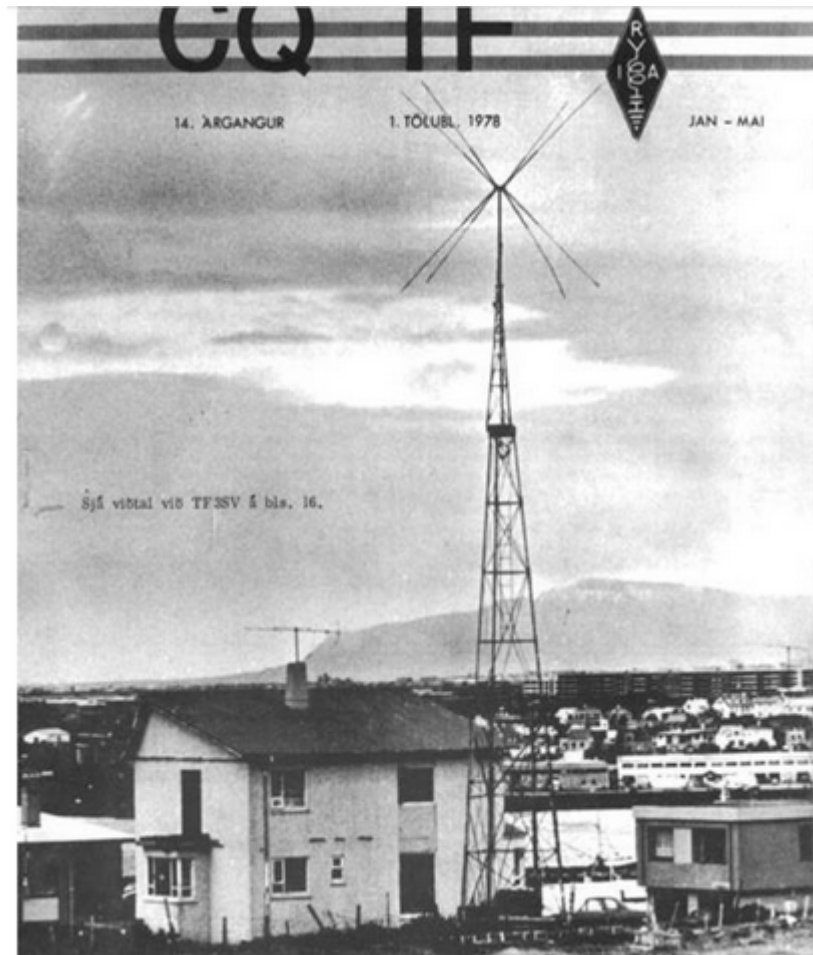
OB 18-6 samsett og tilbúið.



OB 18-6



Turninn.



Hvernig turn ?

- Teleskóp ?
- Fellanlegan ?
- Ál, stál ?
- Lítinn, stóran ?
- Grind eða rör ?

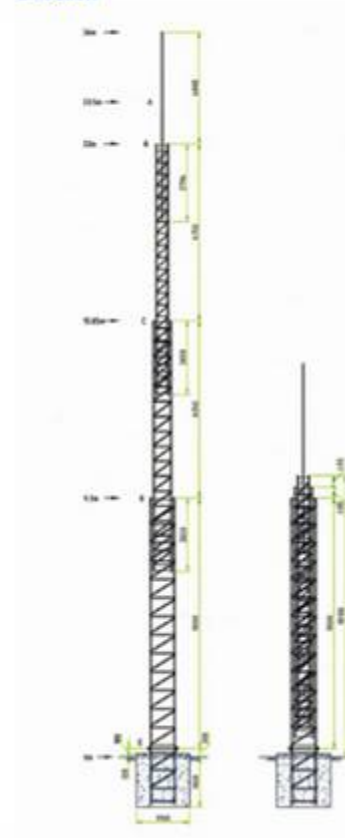
Margir turnar skoðaðir.

- Luso.
- US Tower.
- Rohn.
- Universal towers.
- Tashjian Towers.
- Heimasníðað.

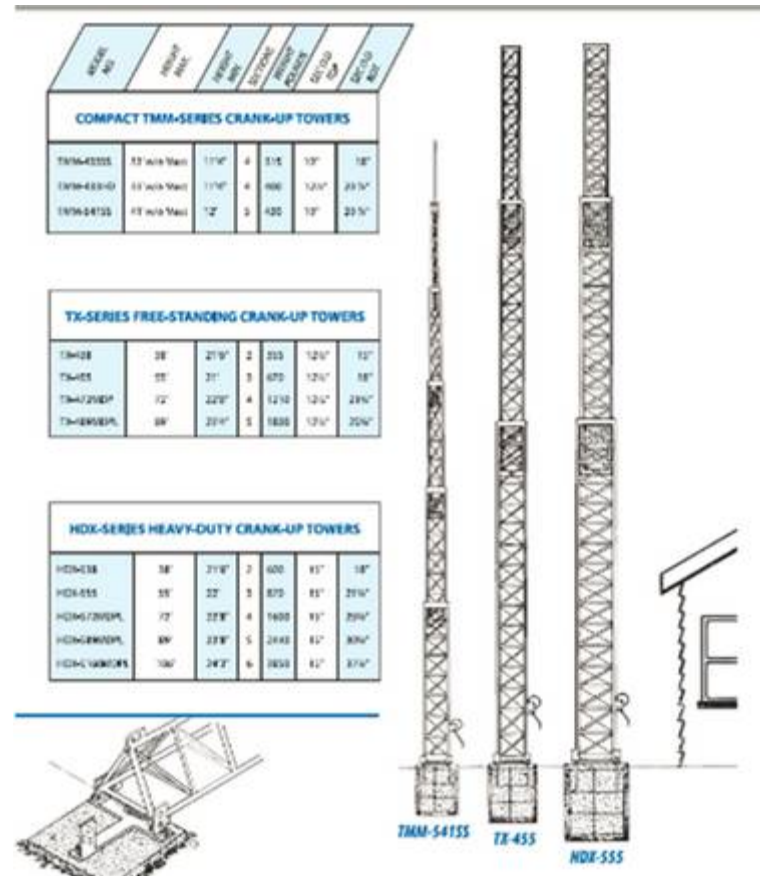
Luso telescope.

See previous page in terms of options.

elevation



US Towers.



Texas towers.

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The Online Ham Radio Store

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SALES@TEXASTOWERS.COM

SSG MIDSECTION \$219

The Rohn SSG tower is an extra heavy duty 48" face triangular design using 4.5" steel side rails and solid steel 7/16" cross bracing. Multiple sections make 30 feet long. Sections fit together with a double bolt joint for strength. The tower is designed to use three guy points radially spaced 120 degrees apart, with anchors set out from the tower 80% of the tower height. All SSG tower sections and optional accessories have a hot dip galvanized finish to assure years of trouble-free service. Sections are supplied with galvanized nuts and bolts.

DANGER
NO TOWER IS SELF-SUPPORTING DURING CONSTRUCTION! ALWAYS USE TEMPORARY GUY LINES OR THE TOP SECTION NET FOR AND INSTALL PERMANENT GUYS AS SOON AS A GUY POINT IS REACHED.

ROHN SSG OPTIONS & ACCESSORIES

3/4" L39P, Pier Pin for SSG50G	\$12
RA4220 , Rotor Plate	\$418
BPC58G, Road Concrete Base Plate	\$190
BS55G , Base Plate	\$549
EP2104-3, Equalizer Plate (3-hole)	\$79
EP2104-S, Equalizer Plate (S-hole)	\$80
CAS5G0, Guy Assembly	\$240
GA5C400S , Guy Anchor	\$139
GA5C20 , Concrete Guy Anchor Rod	\$20
HBUTVBC, Adjustable House Bracket	\$220
SS55G , Short Base Section (60")	\$179
TS3 , Thrust Bearing (3")	\$150
TS4 , Thrust Bearing (3")	\$185
GP58G, Truck Platform	\$295

OptiBeam á Hummel ál turni.



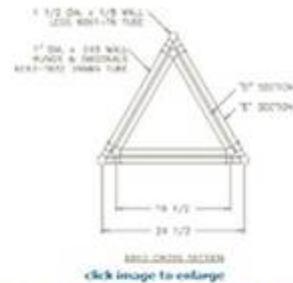
Aluma Towers.

EXTRA, EXTRA HEAVY DUTY

The Extra, Extra Heavy-Duty aluminum crankup towers are designed to accommodate large, heavy-duty rotators and pedestals. This model is designed for heavier dead weights up to 300 lbs and up to 25sq. ft. of antenna surface area. Telescoping towers are complete with a heavy duty 2" x .250 wall x 6' long mast, guy ears on each section, heavy duty building bracket and tilt base.

Model	T-40XXHD	T-50XXHD
Approx. Extended Height, Including Mast	40 ft.	50 ft.
Nested Height w/o Mast	20 ft.	25 ft.
Number/Length of Sections	2-20 ft.	2-25 ft.
Tower Sections	0.6	0.6
Raising System	Worm Gear Winch	Worm Gear Winch
Approximate Weight	168 lbs.	191 lbs.

Section Sizes for Extra Extra Heavy Duty Towers

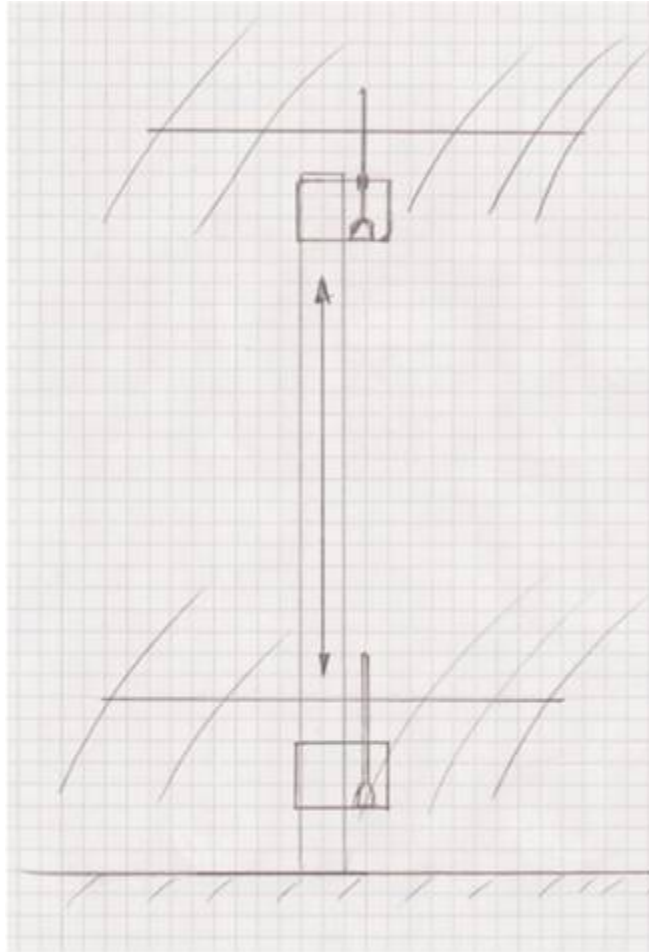


[click image to enlarge](#)

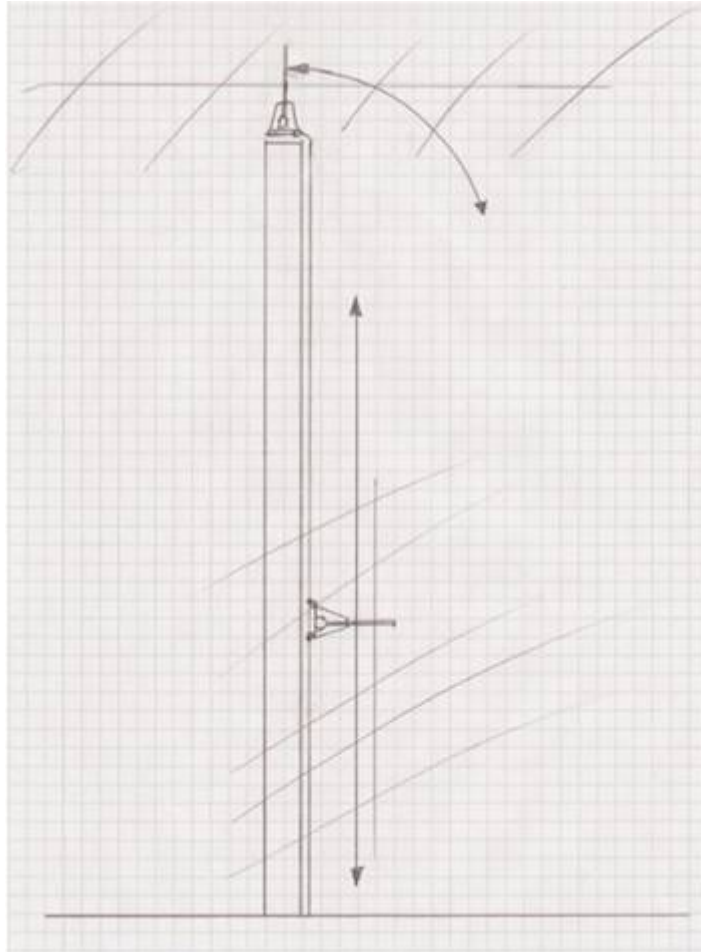
CAUTION: Take care to avoid any contact with overhead power-lines when raising, installing, or lowering your tower. [Click here for full WARNING.](#)



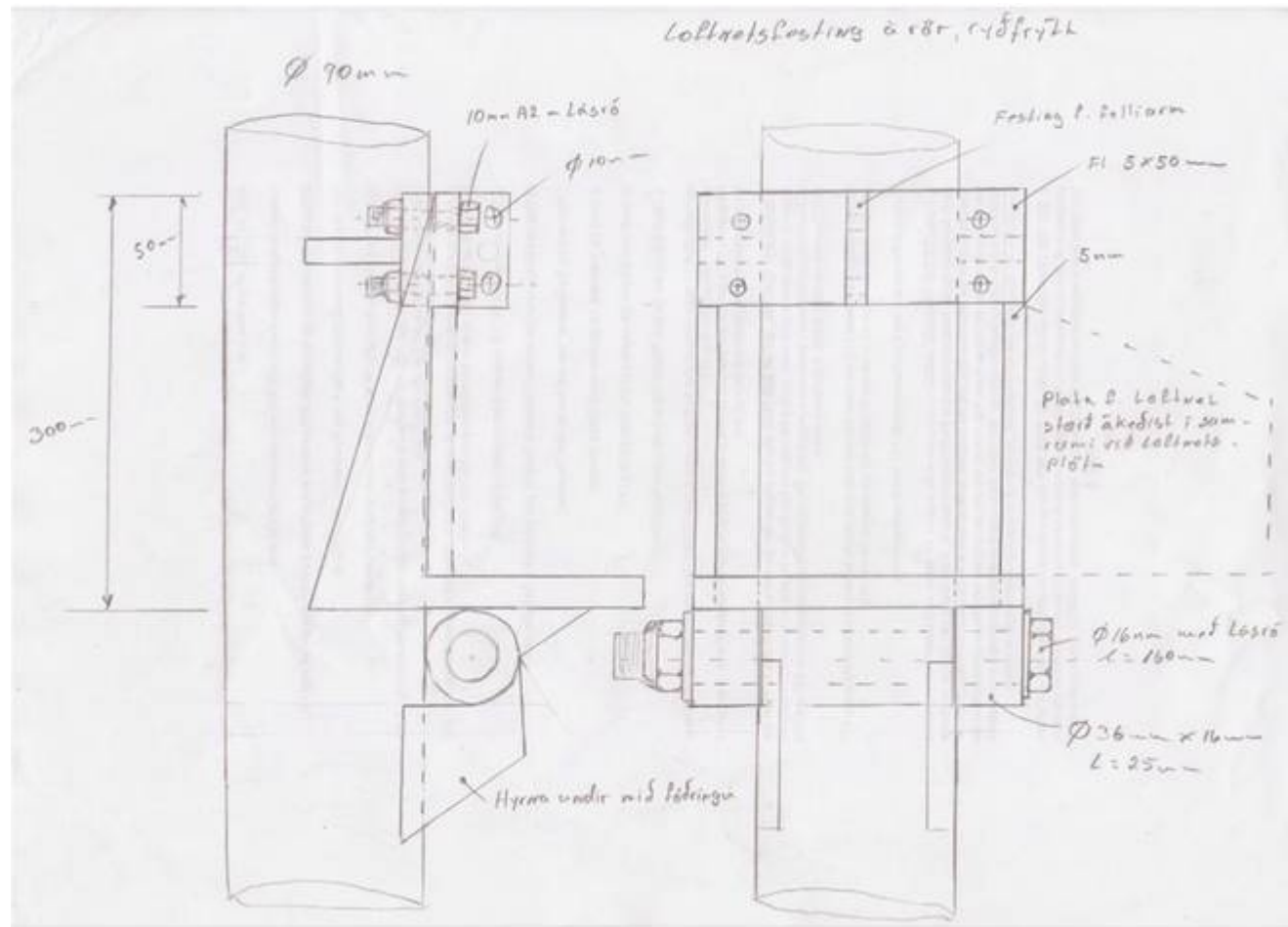
Sleđi utan um turn.



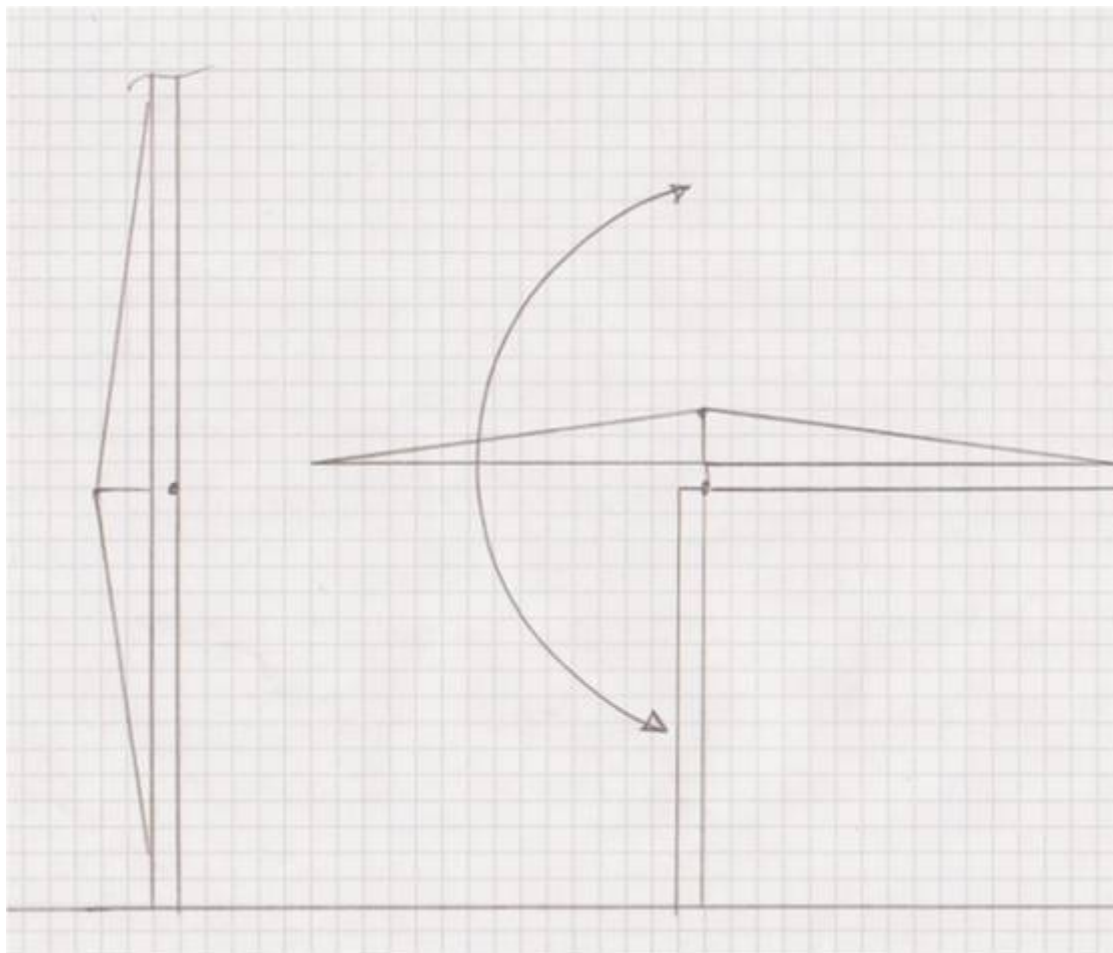
Sleđi utan á turn með löm.



Tillt löm fyrir loftnetsbómu.



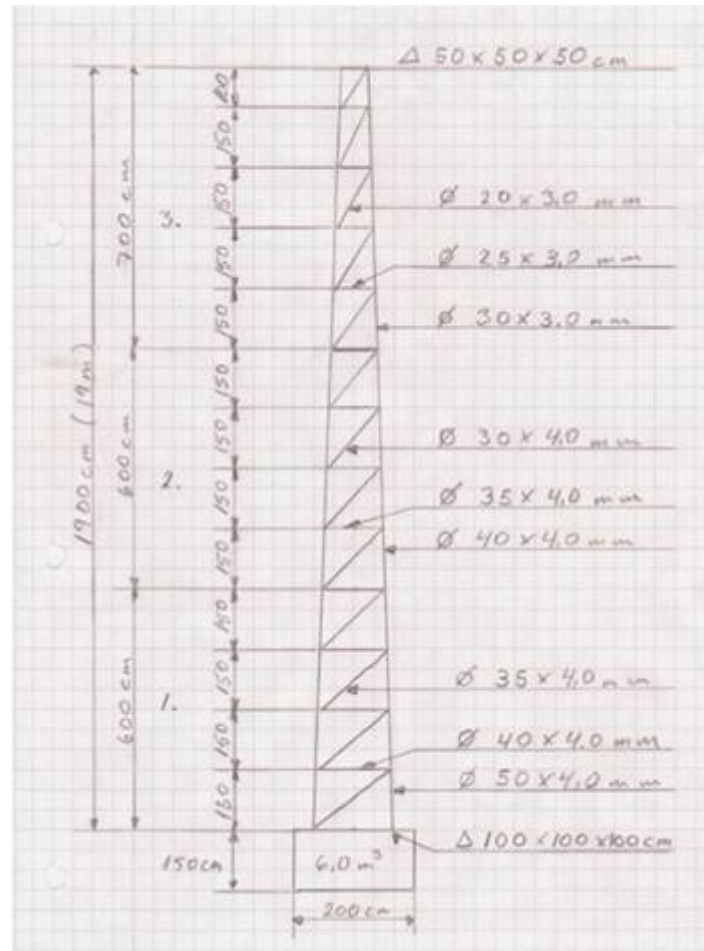
Turn með löm, tvískiptur.



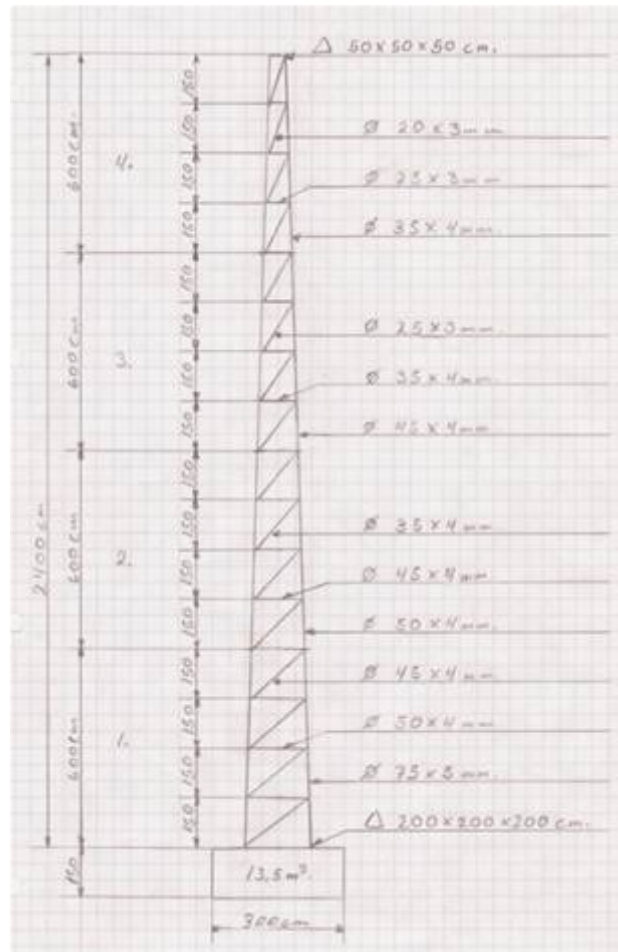
OptiBeam á tilt plötu.



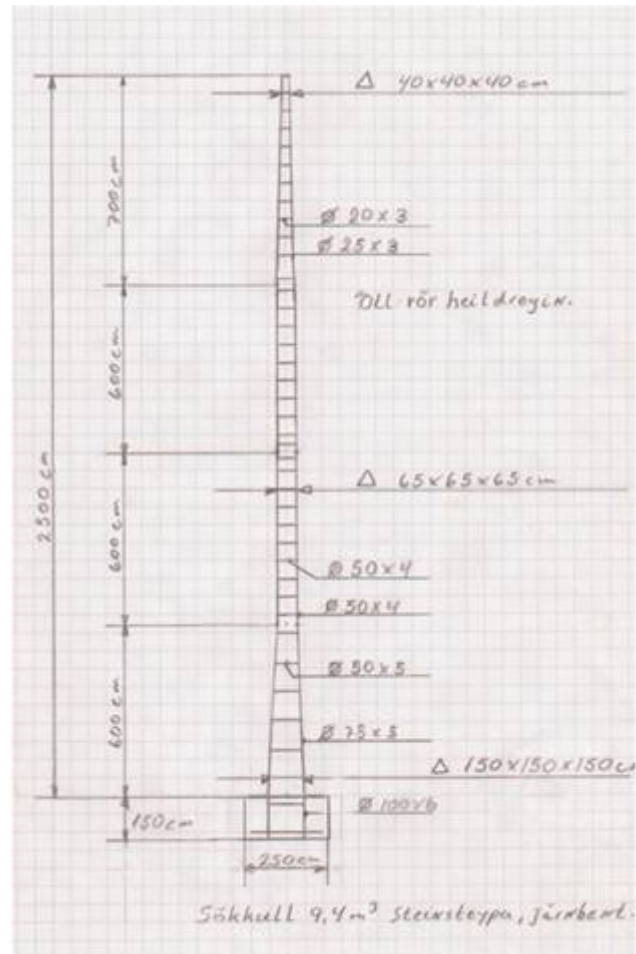
19 m þrístrendur.



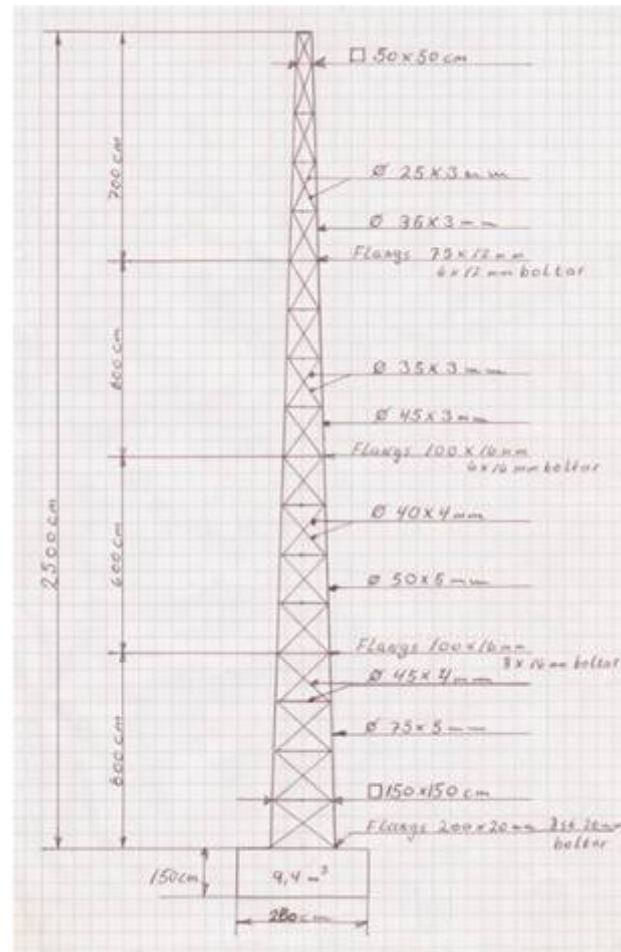
24 m þrístrendur.



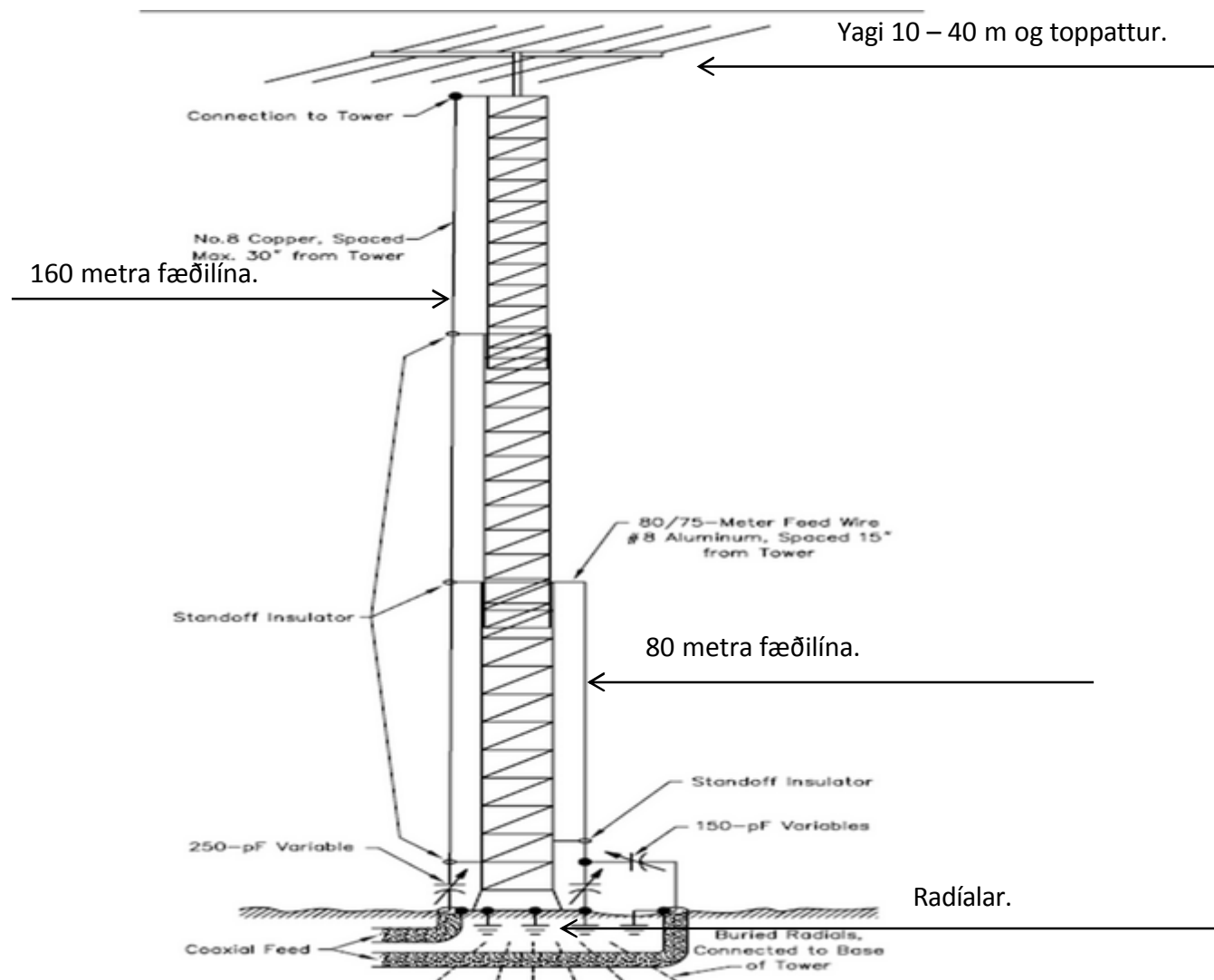
25 m þrístrendur.



25 m ferhýrndur.



Þessi útfærsla valin.



Radíalar.

128 stk.

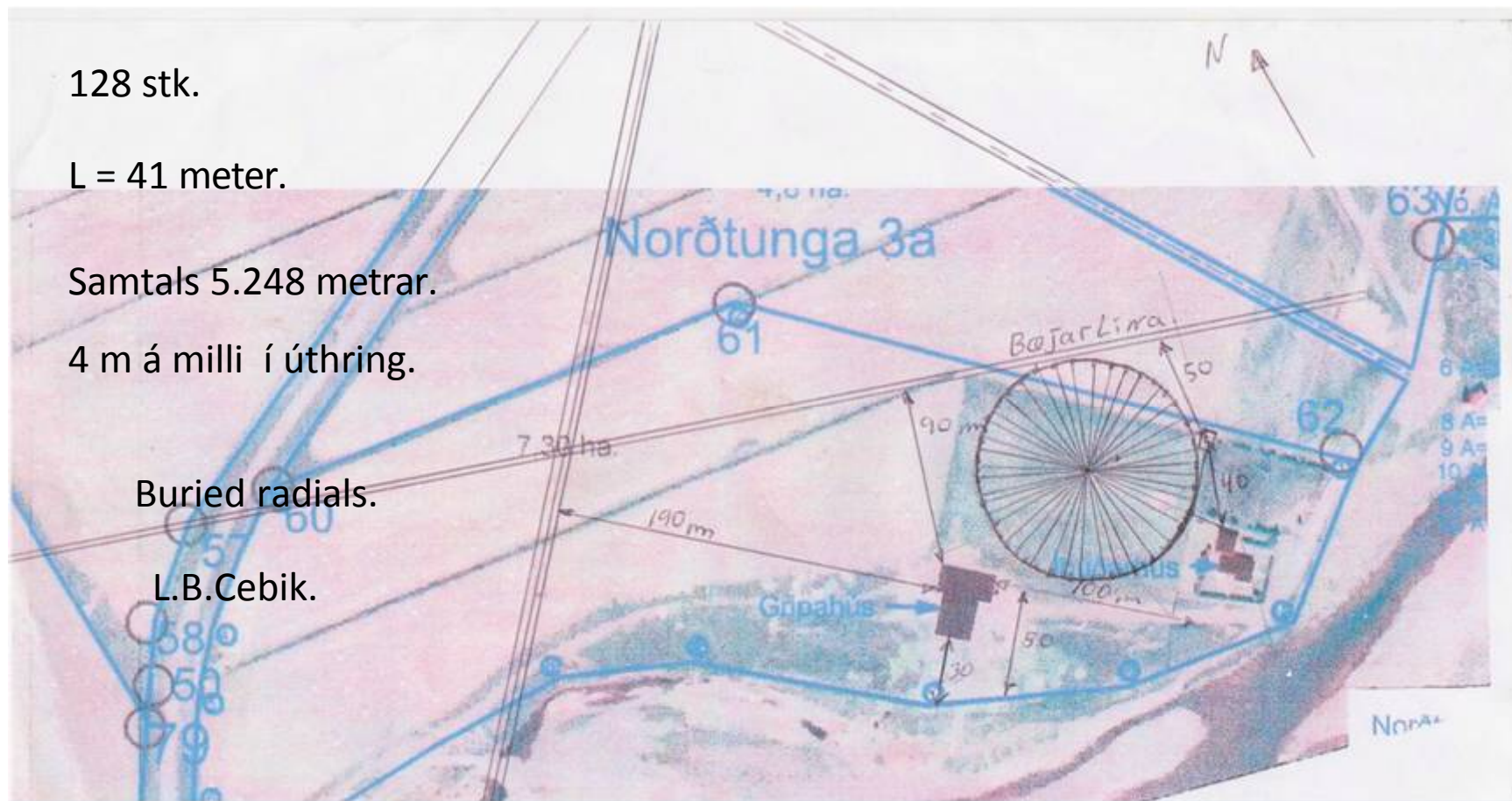
L = 41 meter.

Samtals 5.248 metrar.

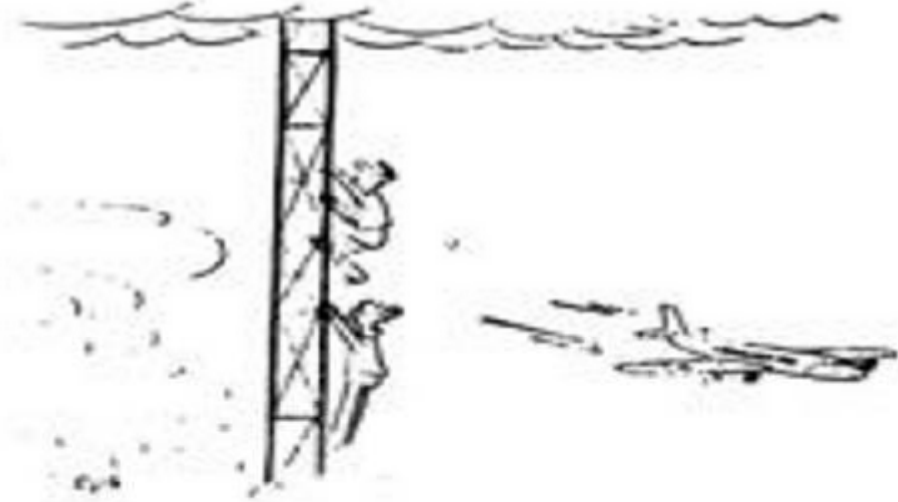
4 m á milli í úthring.

Buried radials.

L.B.Cebik.

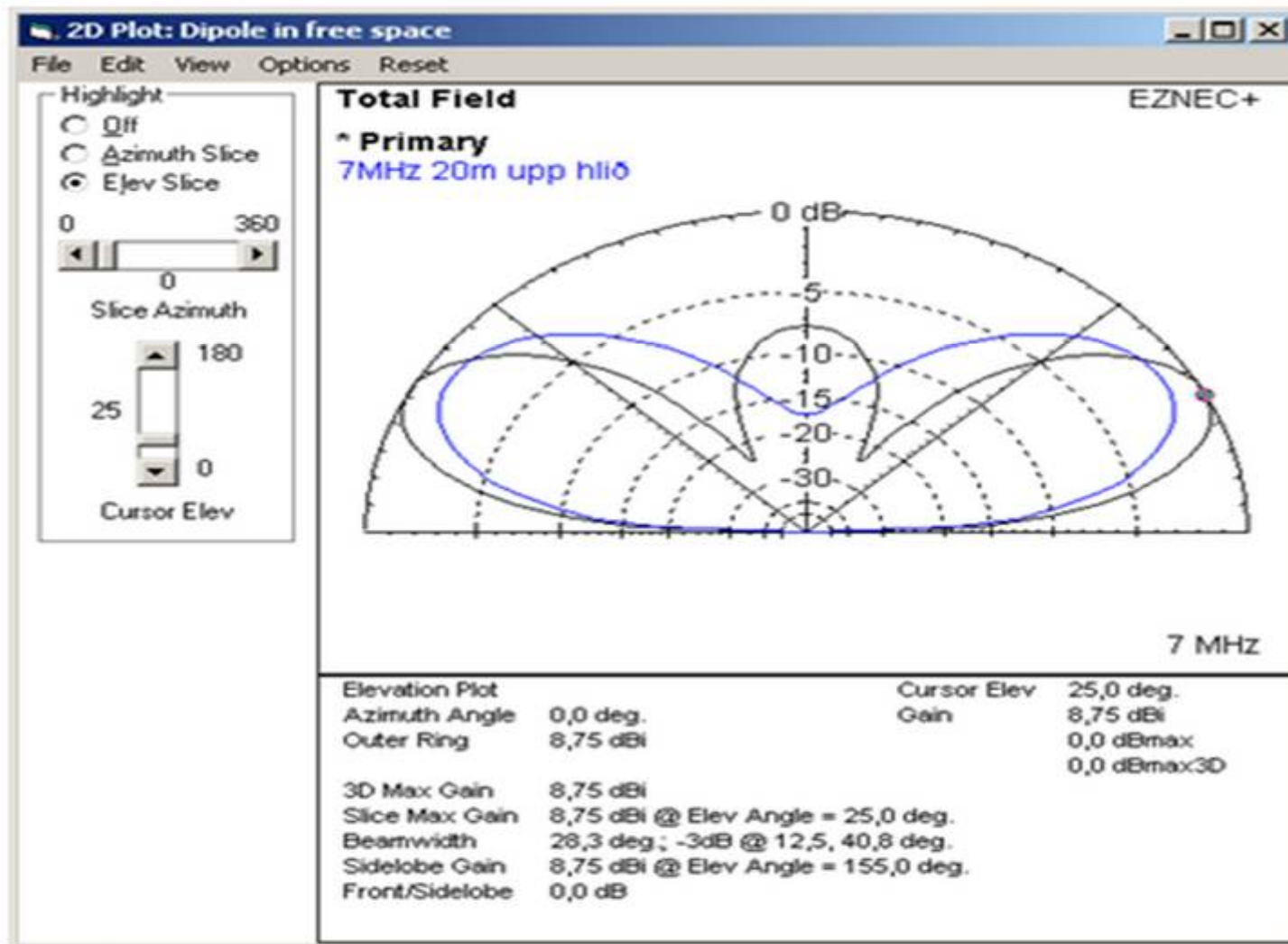


Hve háan turn ?



"Ingi, **Ingi**...erum við
ekki bráðum komnir upp."

Hæð frá jörðu, 7 MHz.

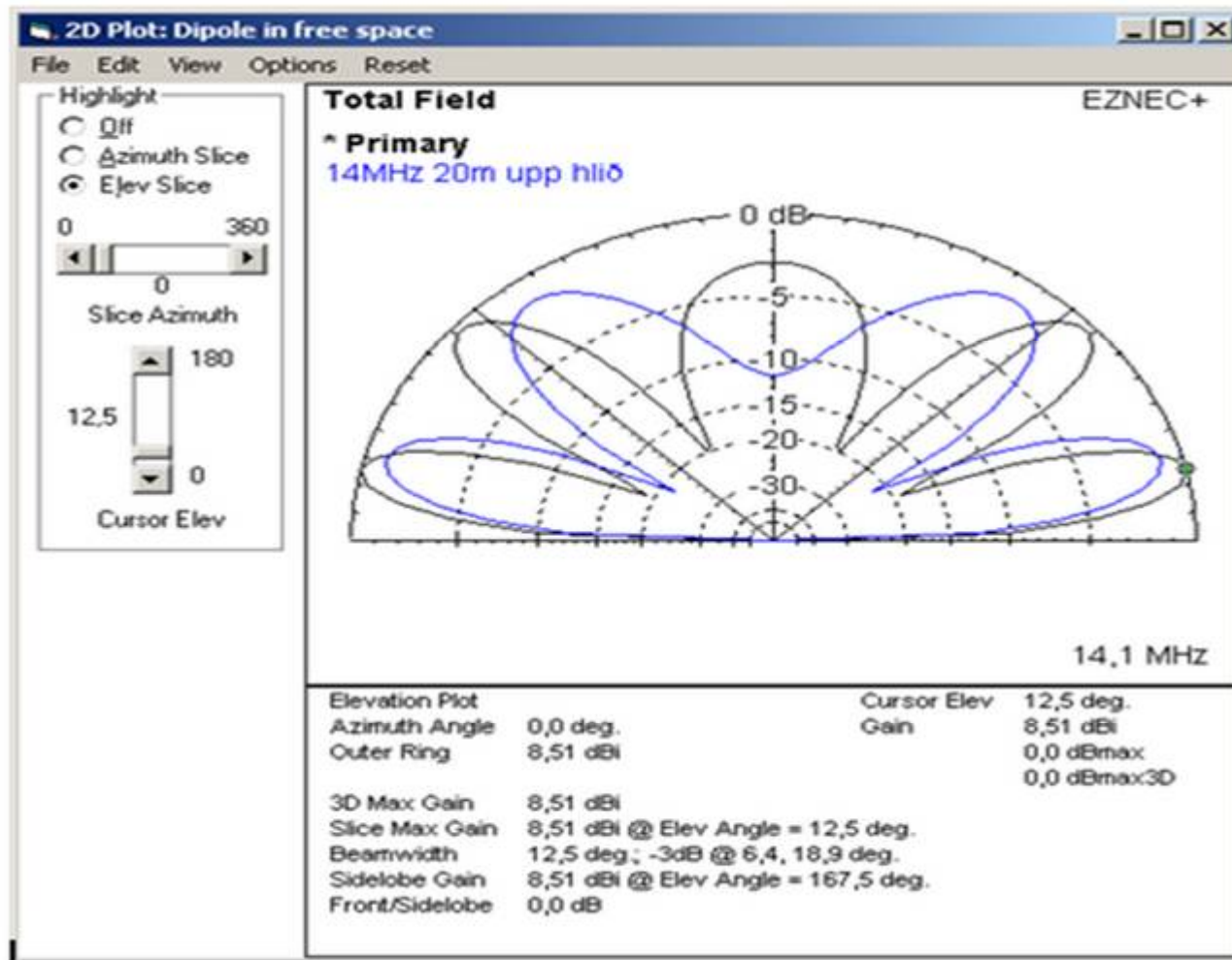


Svört lína: 7MHz, 24m hæð

Blá lína: 7MHz, 20m hæð

TF3AM

Hæð frá jörðu, 14,1 MHz.

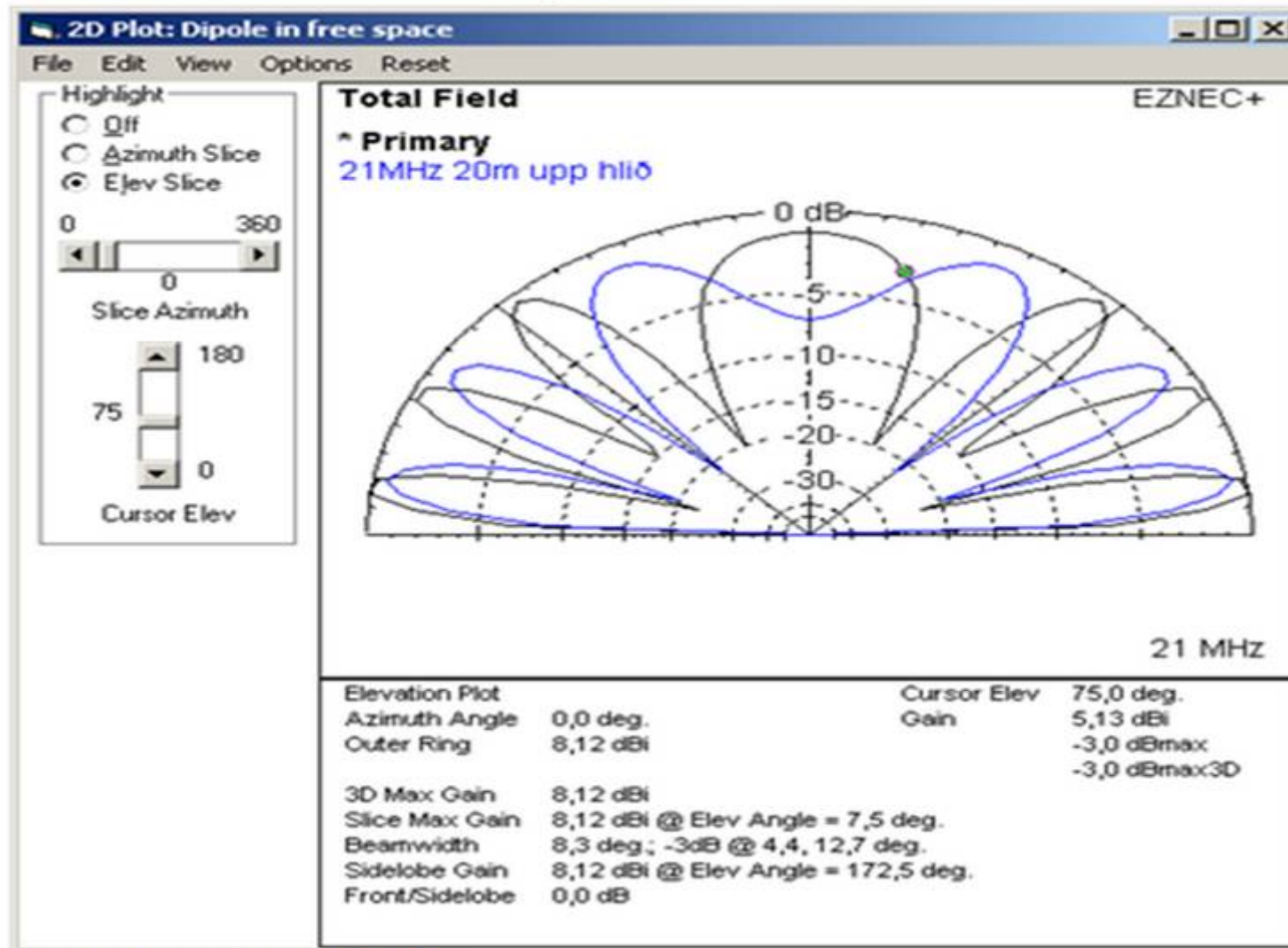


Svört lína: 14,1MHz, 24m hæð

Blá lína: 14,1MHz, 20m hæð

TF3AM

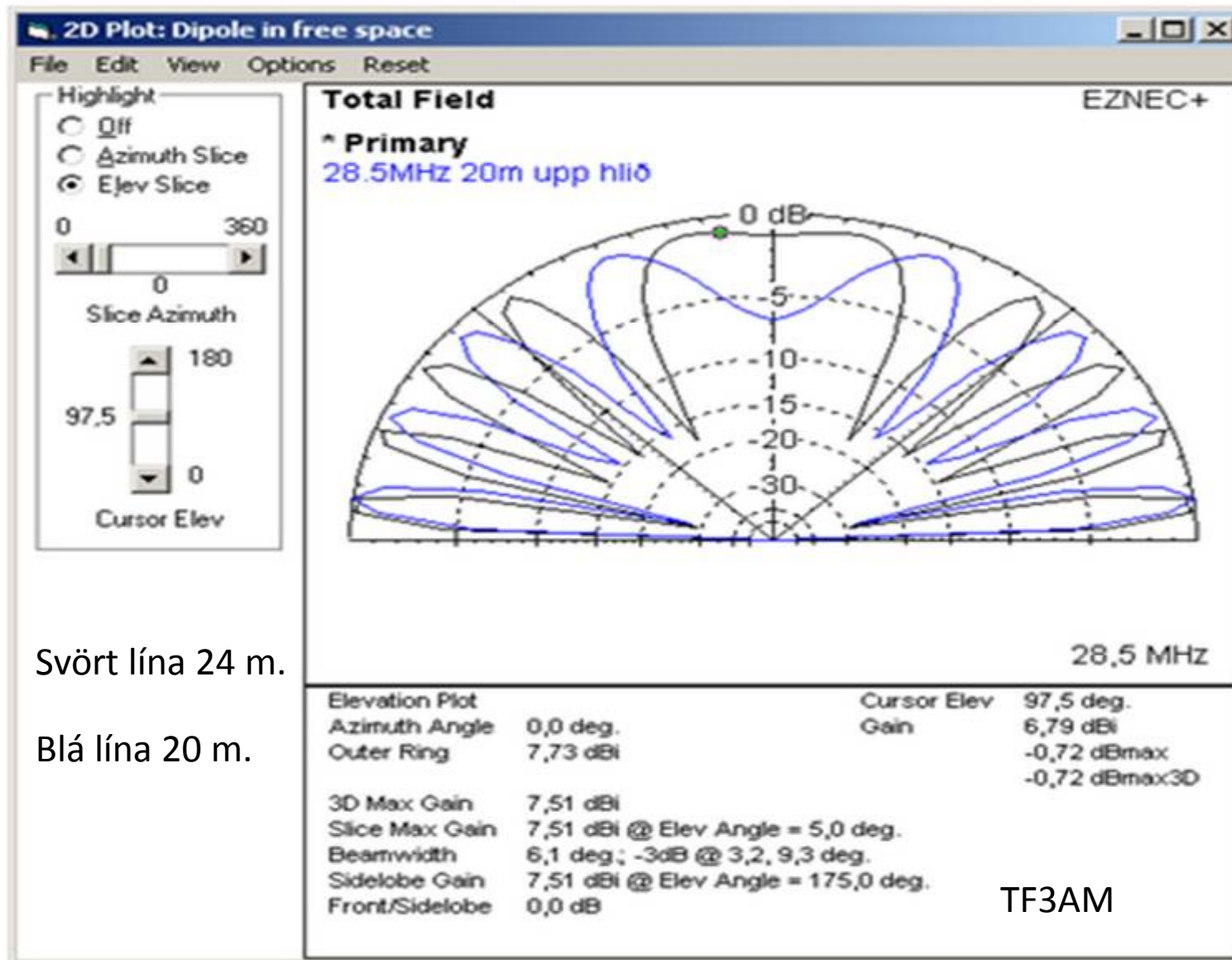
Hæð frá jörðu, 21 MHz.



Svört lína: 21MHz, 24m hæð
Blá lína: 21MHz, 20m hæð

TF3AM

Hæð frá jörðu, 28,5 MHz.



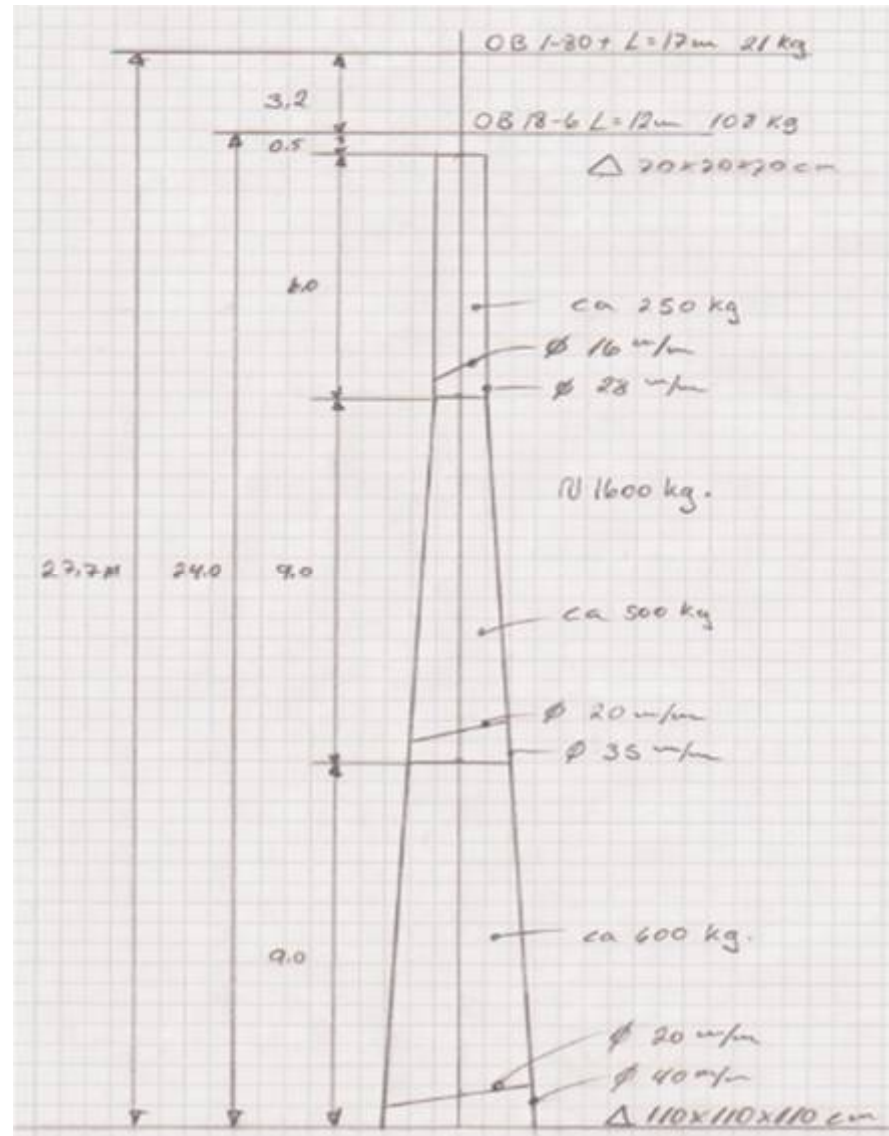
Svört lína 24 m.

Blá lína 20 m.

Byrjað að smíða turn, leyfin klár.

- Ákveðið að hafa turninn 24 metra háan.
- (aðeins teygt á hæðinni)
- Heila grind, sjálfstandandi. Þ.e. án staga.
- Fenginn 18 metra ljósamastursgrind hjá
- Ægi, TF2CT í Stykkishólmi.
- Smíðuð 6 metra grind til hækkunar.
- Ákveðið að hafa rótorinn niðri.
- Hannað rótorhús með burðarlegu.
- Hannað drifskaft með stýrilegum o.fl.

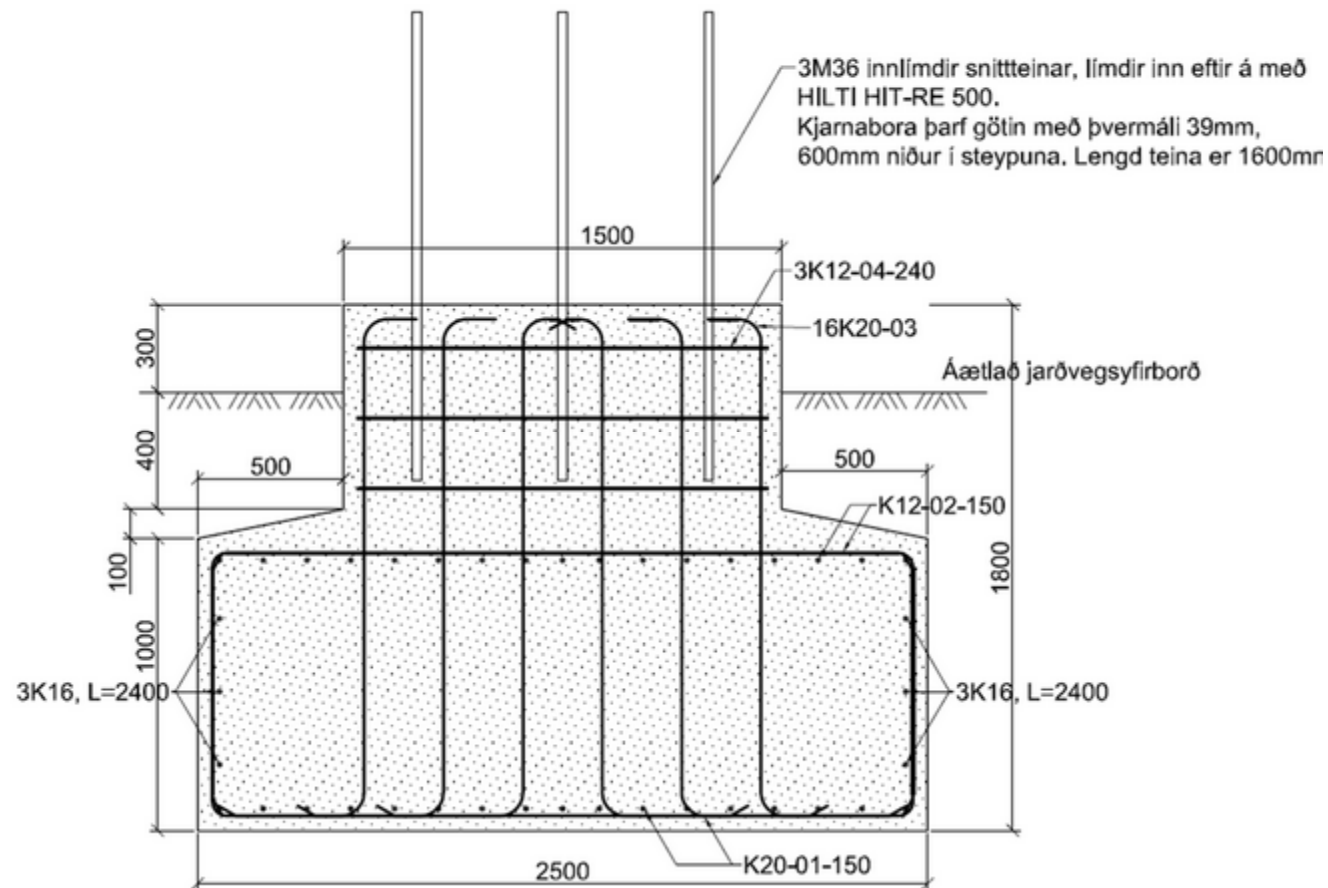
Turn, helstu mál.



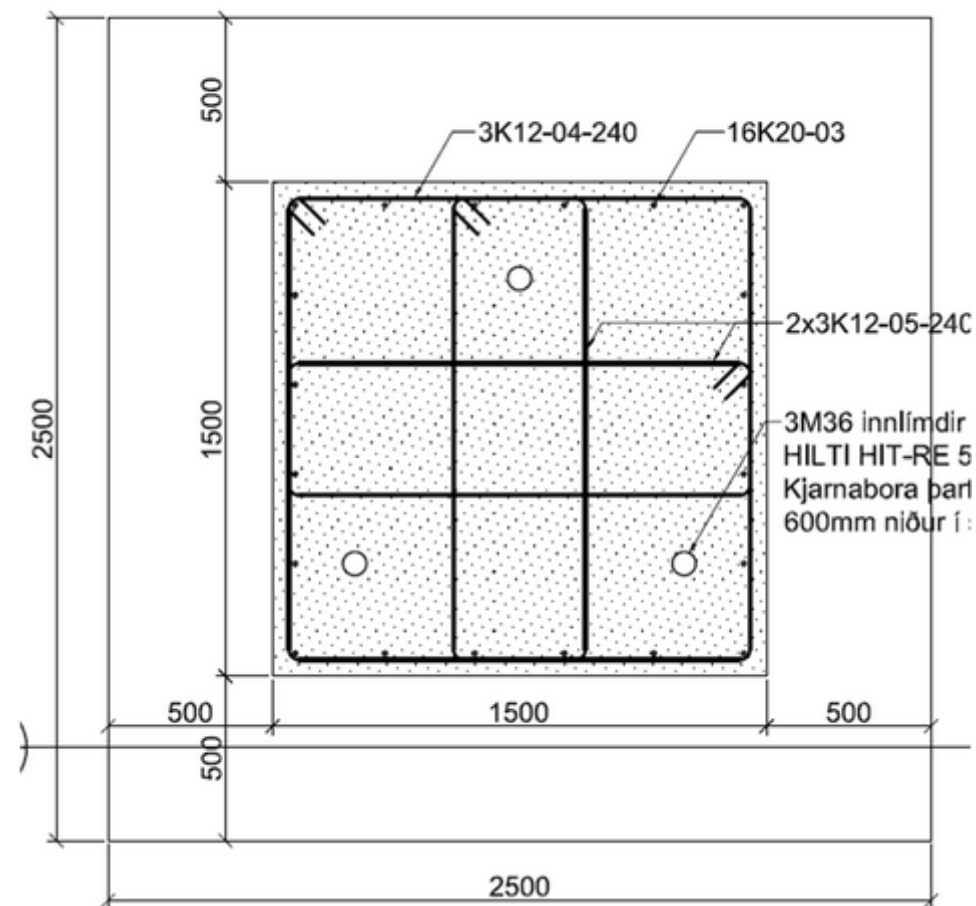
Að festa turninn niður á sökkul.

- Útfærsla Almennu Verkfræðistofunnar lögð til hliðar.
- Ýmsar hugmyndir skissaðar upp.
- Endirinn var að smíða Té-laga bita og leggja hann í steypuna.
- Með festibaulum og stilliboltum.

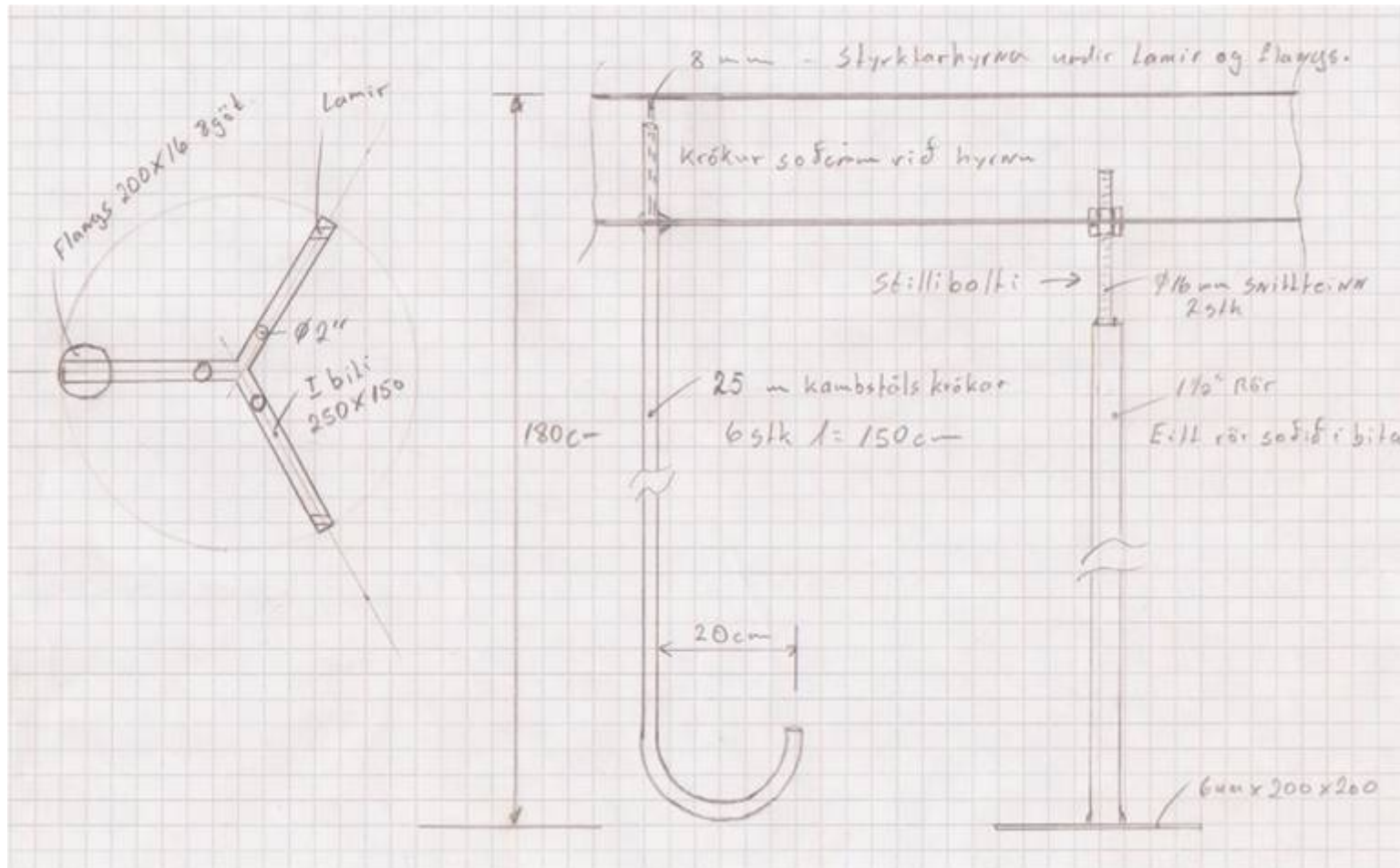
Turnsökkull, járnateikning.



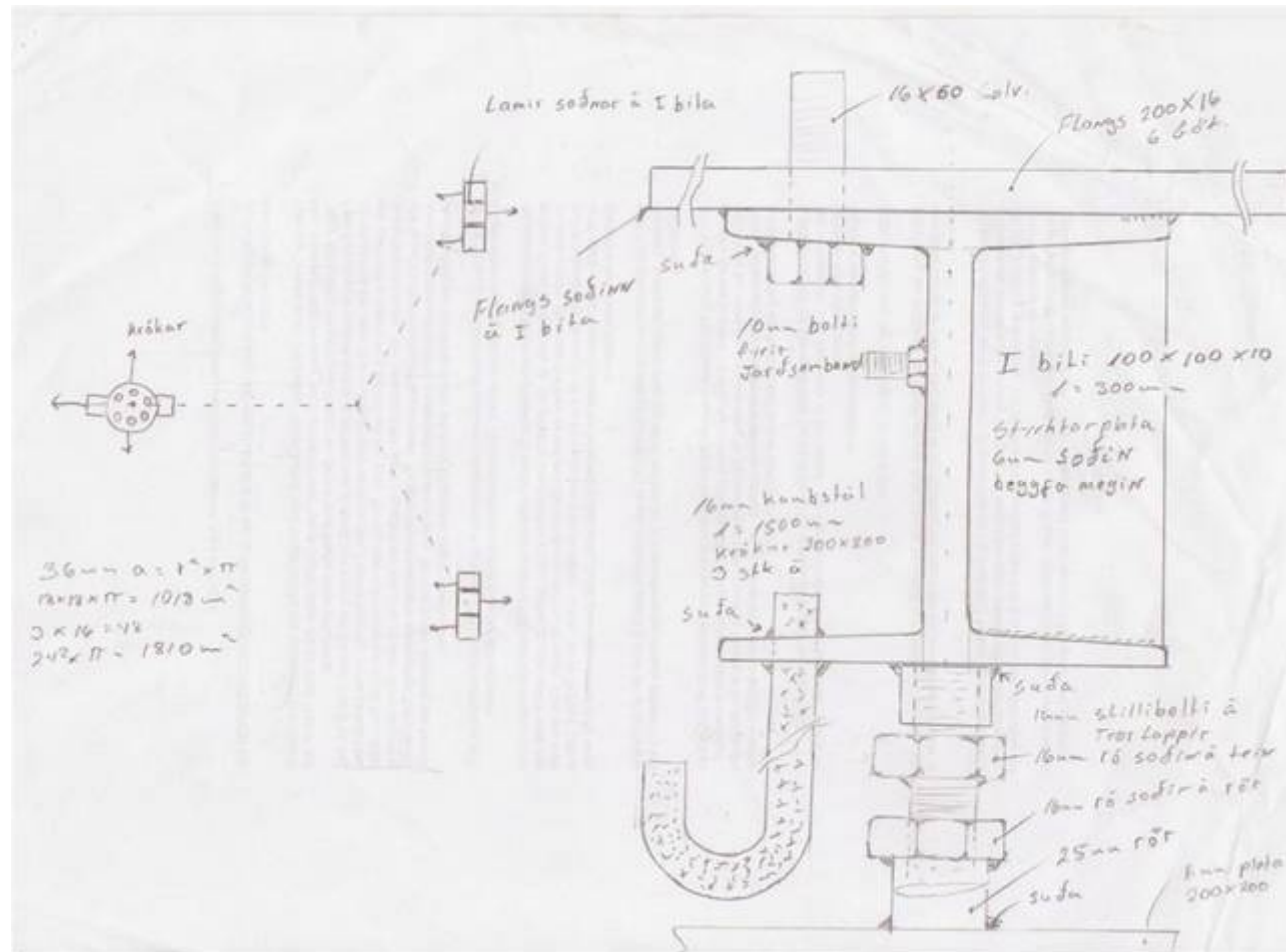
Turnsökkull, snið ofan.



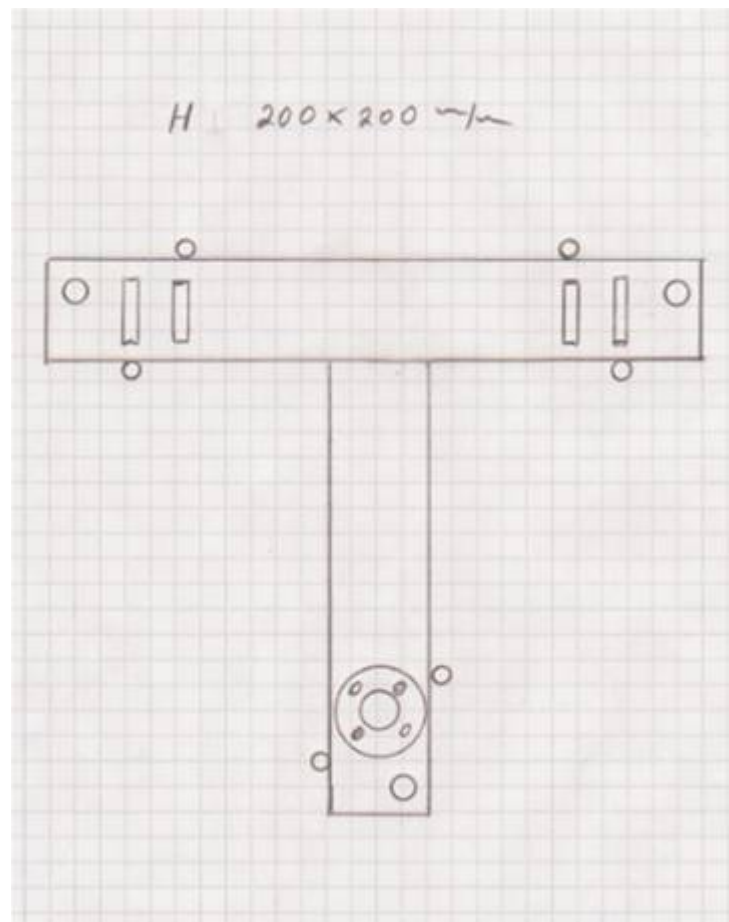
Krókur og stillibolti.



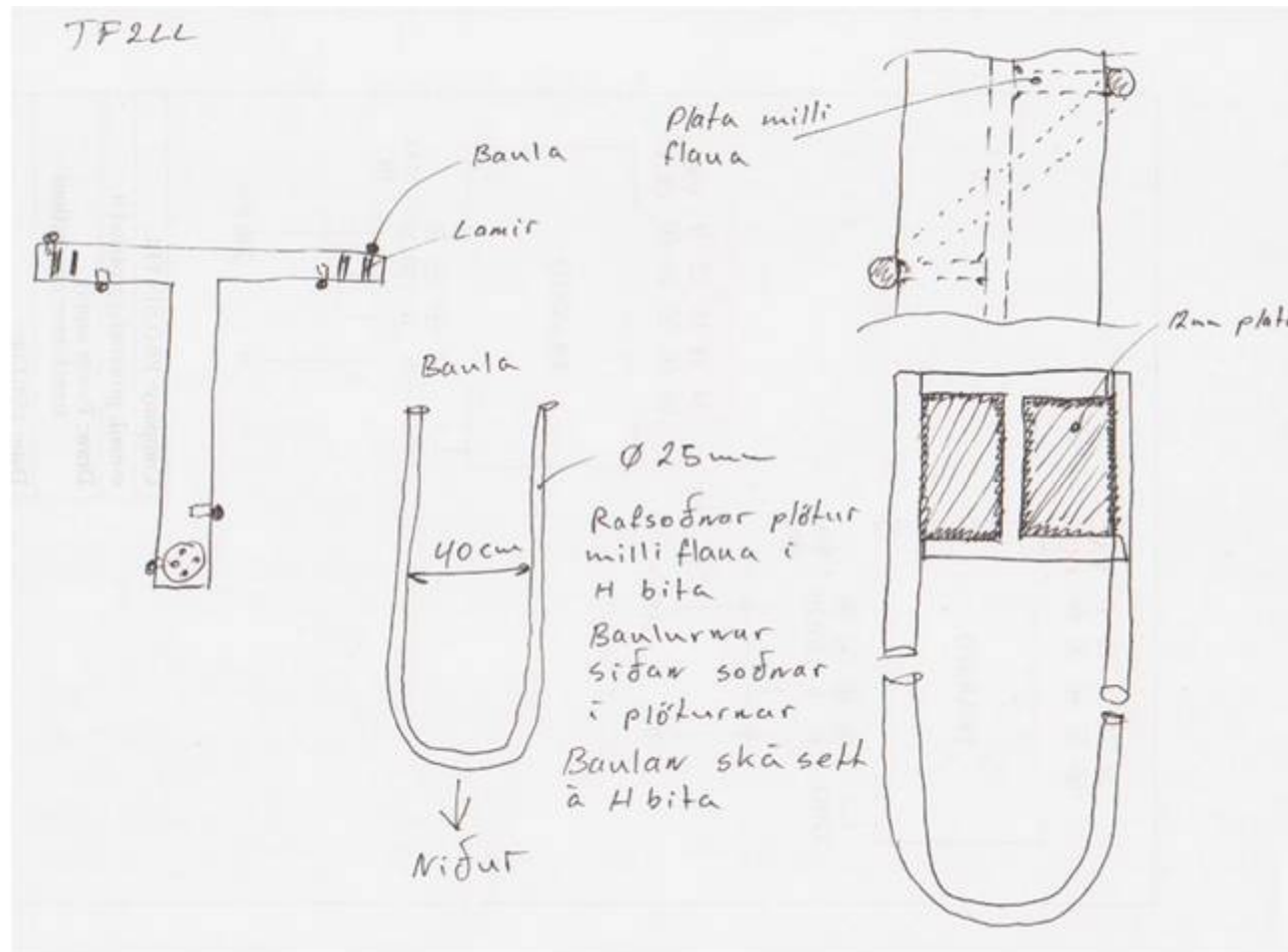
Riss af króki og stillibolta.



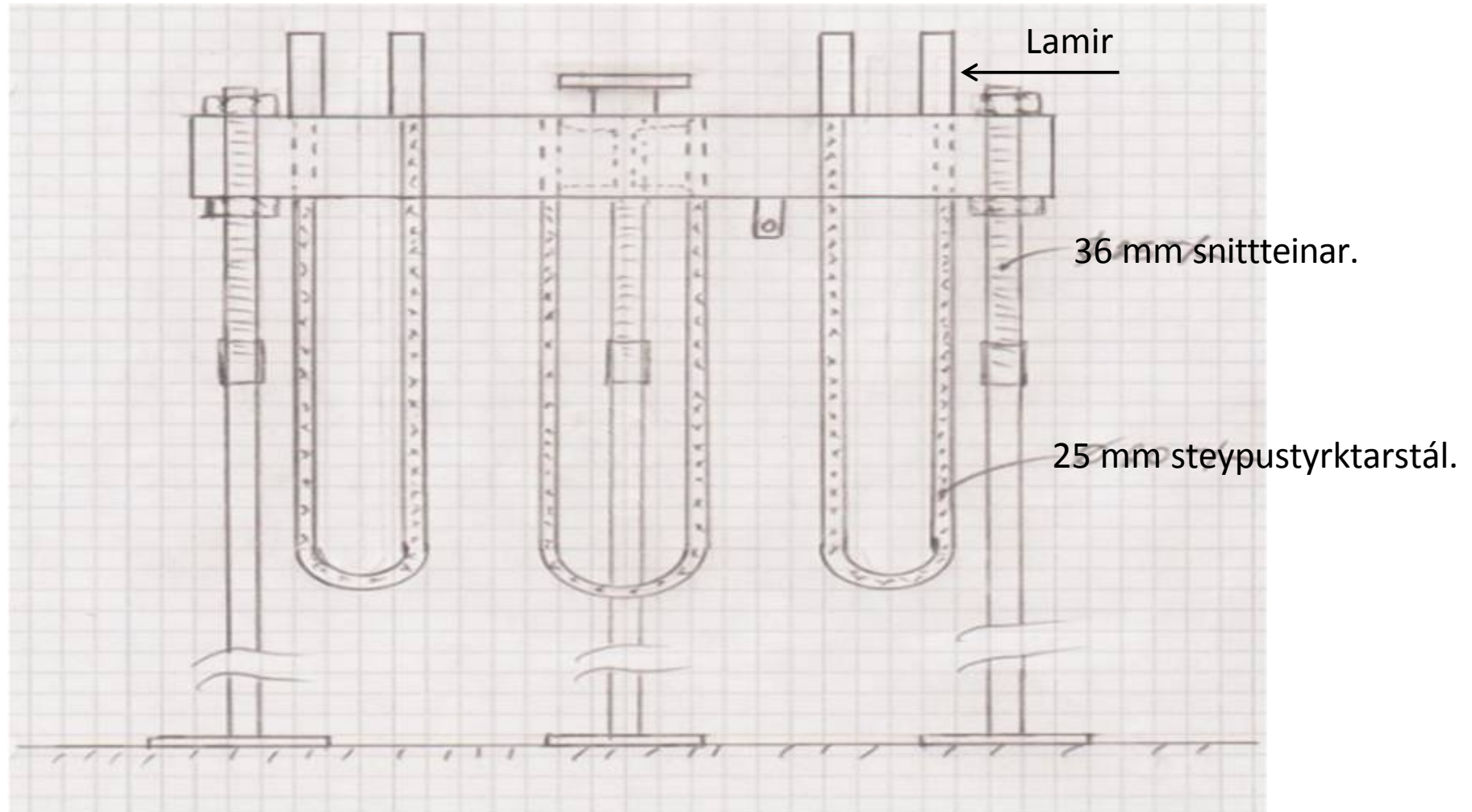
Undirstađa, Té biti.



Bauluriss fyrir Té bita.



Té biti, endanleg festing í steypu.



667 kg á pallinum.



Suðutækt kambstál.

Byrjað að setja saman járnagrindina.



Við smíðina var ma. stuðst við :

- Eitt og annað úr bók Johns Devoldere ON4UN
- Low-Band-Dxing notað beint og óbeint.
- Loftneta handbók ARRL.
- Up The Tower eftir Steve Morris K7LXC.
- Internetið.
- Og síðan ekki síst úr viskubrunni fjölmargra
- ÍRA félaga.

ON4UN turn í endurbyggingu.



ON4UN, prýstilega.



ON4UN, prýstilegan smurð.



ON4UN loftnets rótor.



ON4UN turnsökkull.



Luso turn undirstađa.



Byggingareglugerðin segir :

- Turninn verður að falla undir reglugerðir.
- Burðarþol miðað við vindálag, ísingu ofl.
- Innfluttan turn þarf að teikna upp og reikna.
- Innfluttningur því óraunhæfur vegna kostnaðar.



Unnið við blakkar arma.



Driftskift og millilega.



90 (88,9 x 4,05)mm drifskrift.



75 (x 2.9) mm drifskrift.



Topplega og armar f. Vírablakkir.

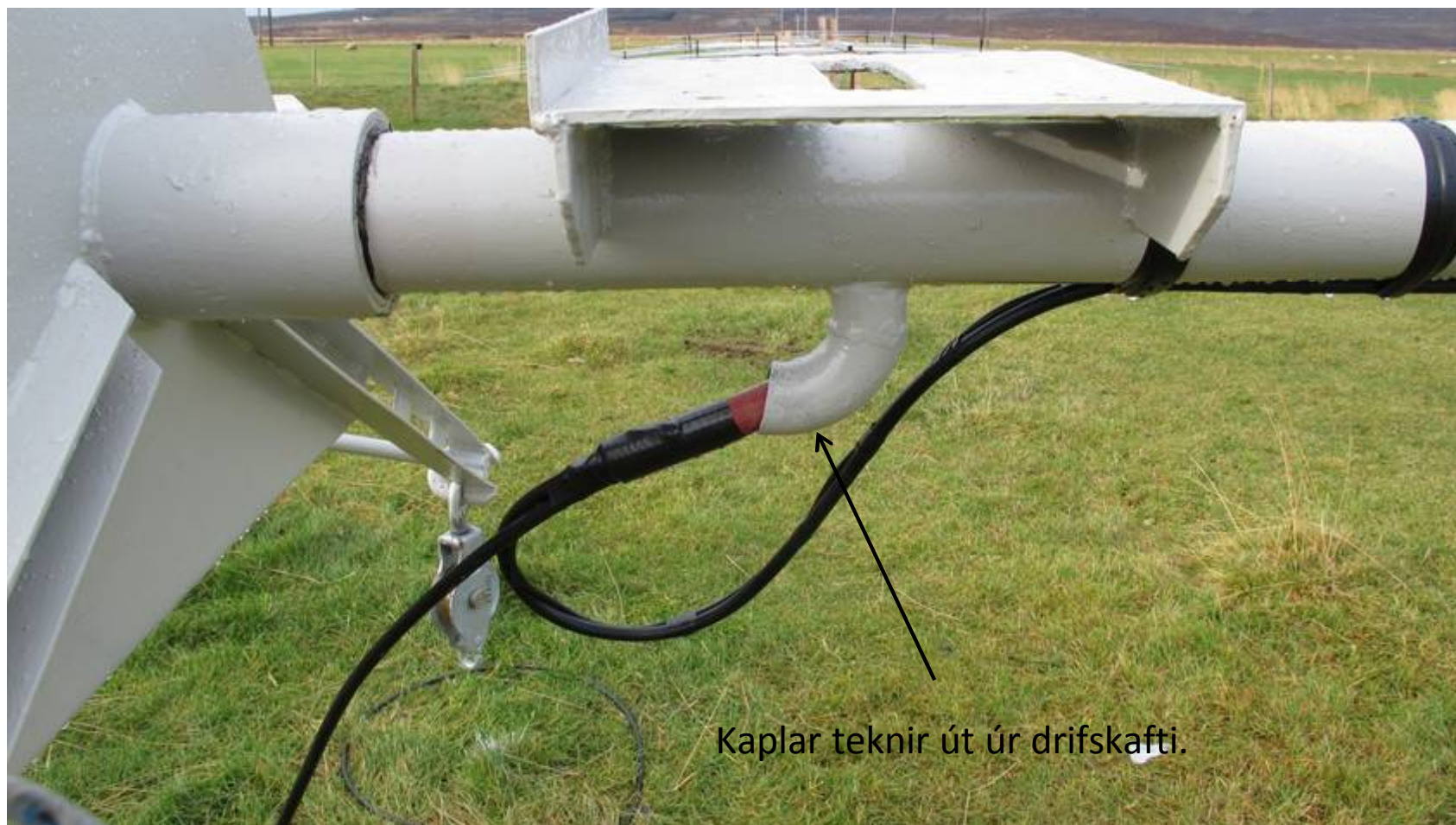


Sleði er utan á turngrindinni fyrir kapla.

Armur og vírablökk.



Bómufesting fyrir 18-6.



Kaplar teknir út úr drifskaftri.

Neðra úrtak.

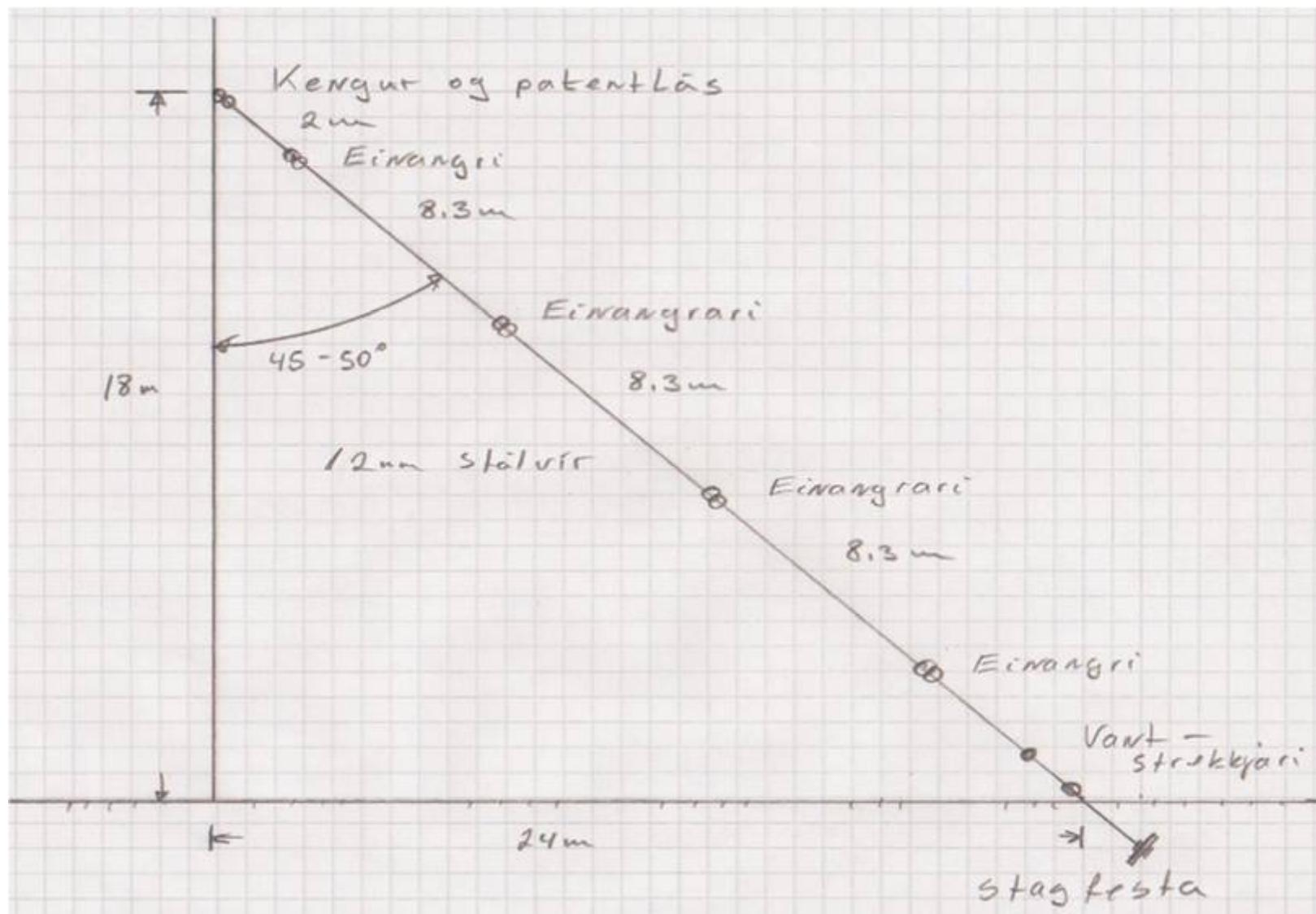


Neðra úrtakið er ca 2 metra fyrir ofan rótor.

Stagfesting.



Stag.



Stög og einangrarar.



Jarðbundið yfir flangsa.



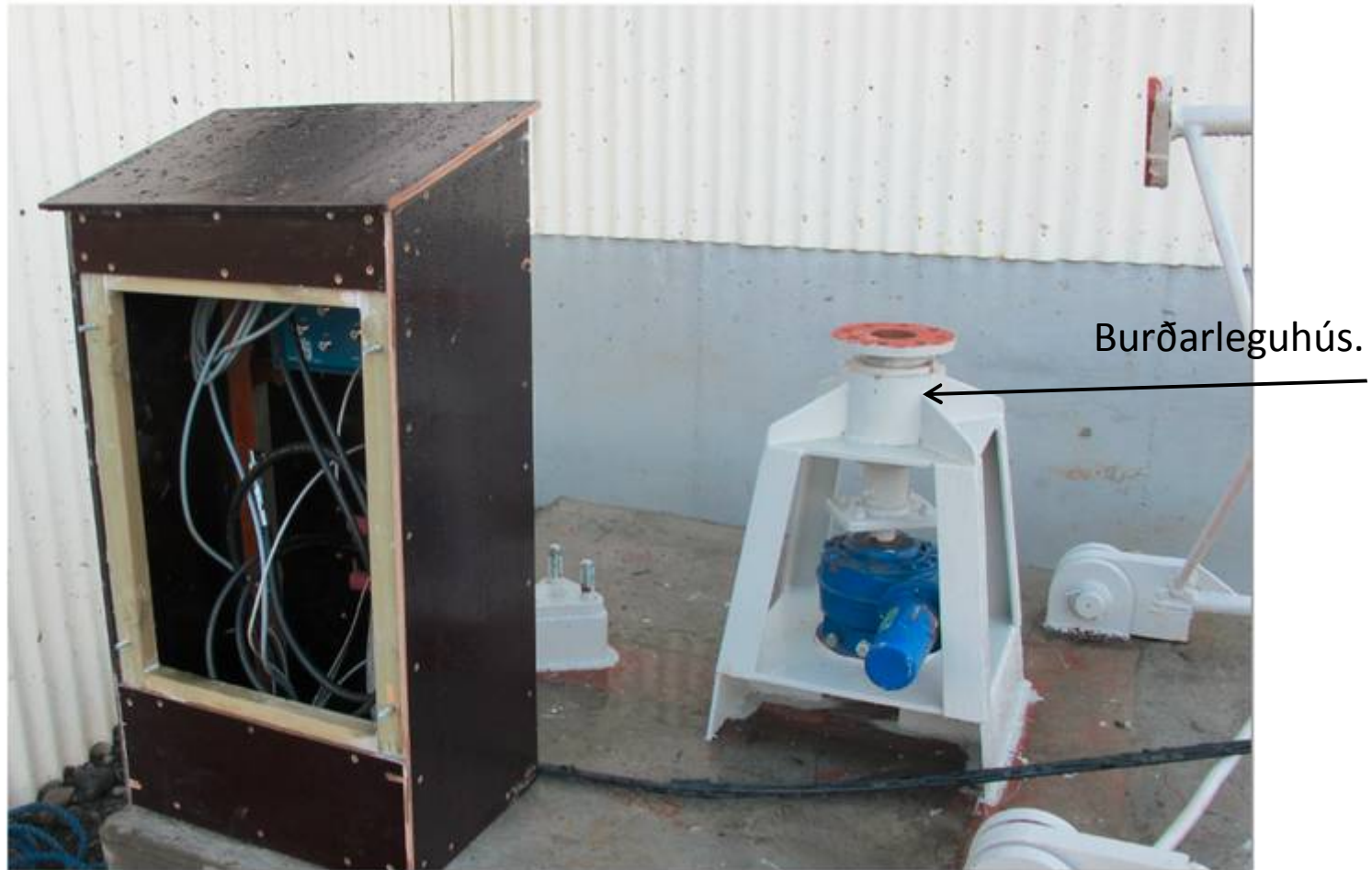
Turntoppur.



Neðri topplega.

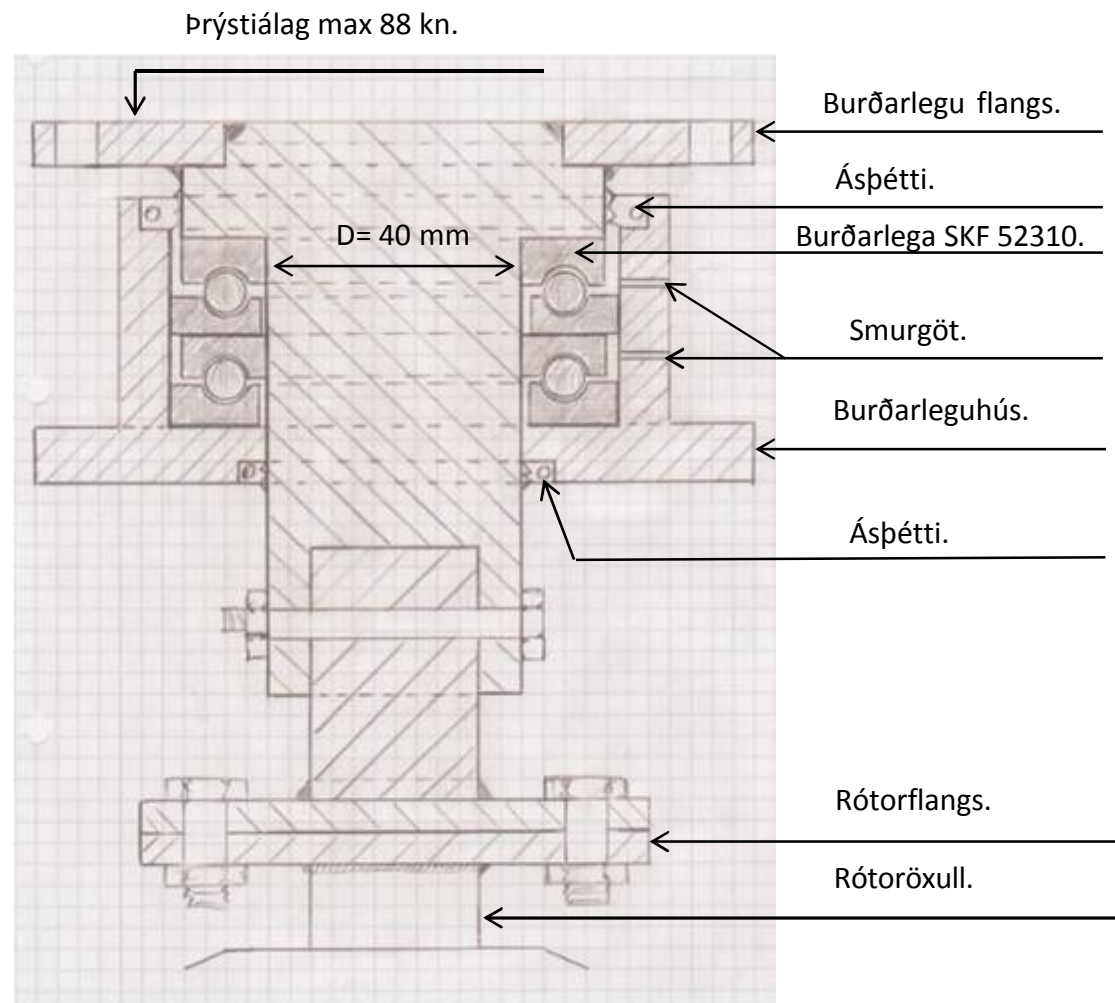


Tengihús og rótorhús.



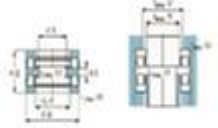
Kapalrör tekið inn í tengihús up í gegn um sökkul.

Burðarlega fyrir drifskaft.



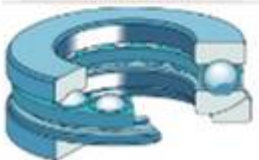
SKF 52310 burđarlega.

SKF 52310 bearing 52310 SKF bearings dimensions



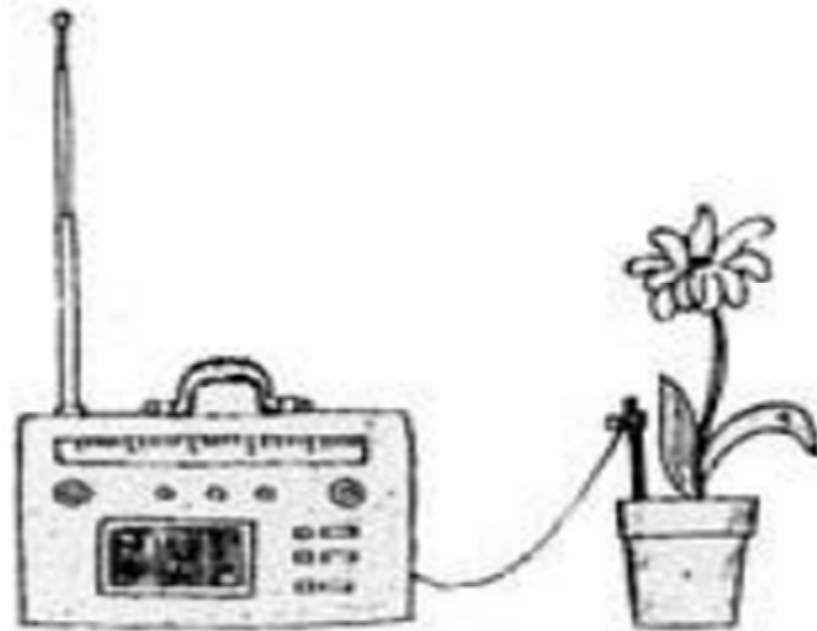
- > product name : 52310 SKF distribute
- > product categories : SKF 52310 bearings
- > EMK@bartonbearings.com
- > Key words : SKF 52310 bearing 52310 SKF
- > Price : -00652-32509959 / sales@bartonbearings.com
- > please contact Email if any inquiry

Characteristics



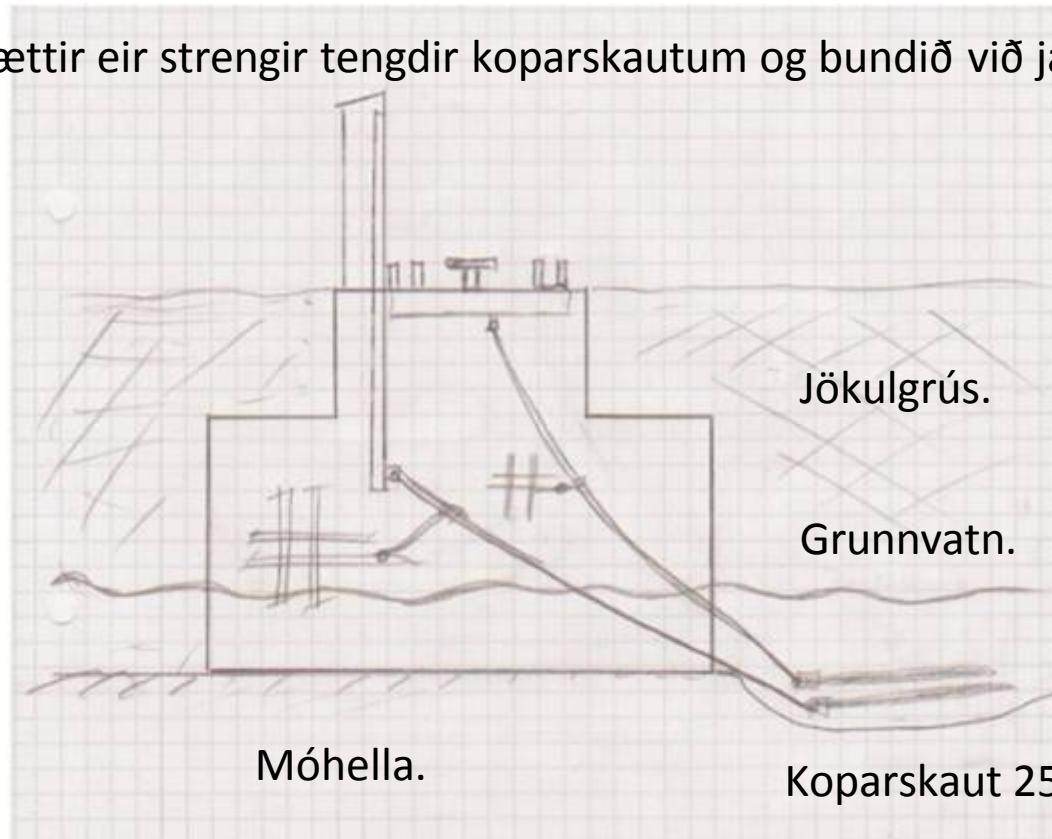
d	40mm	double direction
D	90mm	Thrust ball bearings
H	50mm	
Limit	3500r/min	Limiting Speed ratings

Jarðbinding.



Útfærslan á jarðbindingunni.

Margþættir eir strengir tengdir koparskautum og bundið við járnagrind.



Kaplar lagðir í jörð.



"..... Nammmmm.....RG-8U/Polyfoam...
.....Það bezta sem ég fæ....."

100 mm plaströr milli turns og sjakks.



Nú kom babb í bátinn !!

- Turninn verður ekki shunt-feedaður !!
- Til þess að nota Yagi sem topphatt verða öll elementin að vera fest beint við bómuna.
- Öll element á OB 18-6 eru einangruð frá bómu.
- Sama gildir um SteppIR.
- Menn hafa sett reley yfir drifnu elementin.

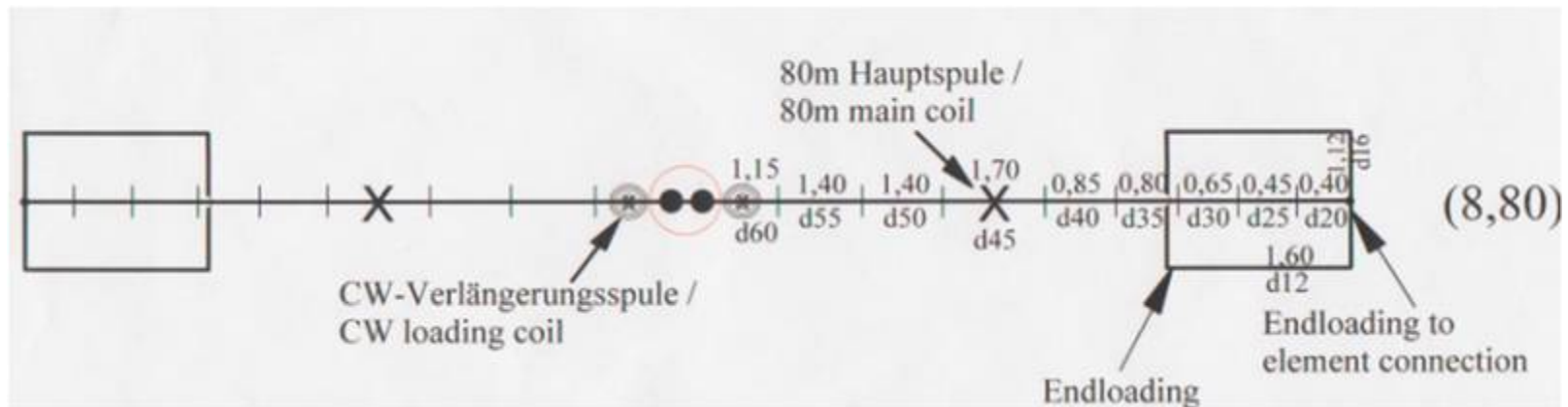
Nú þurfti að hugsa allt upp á nýtt.

- Niðurstaðan :
- Setja OptiBeam OB 1-80+ fyrir ofan 18-6.
- Víramöguleikarnir enn til staðar.
- Færa turninn að hlöðunni til þess að,
- Eiga plássíð til góða fyrir 160-80 m vertikal.
- Sleppa því að leggja veg út á tún fyrir steypubíla og fjarlægja veginn aftur !

OptiBeam 1-80+



OB 1-80+ málsetningar.



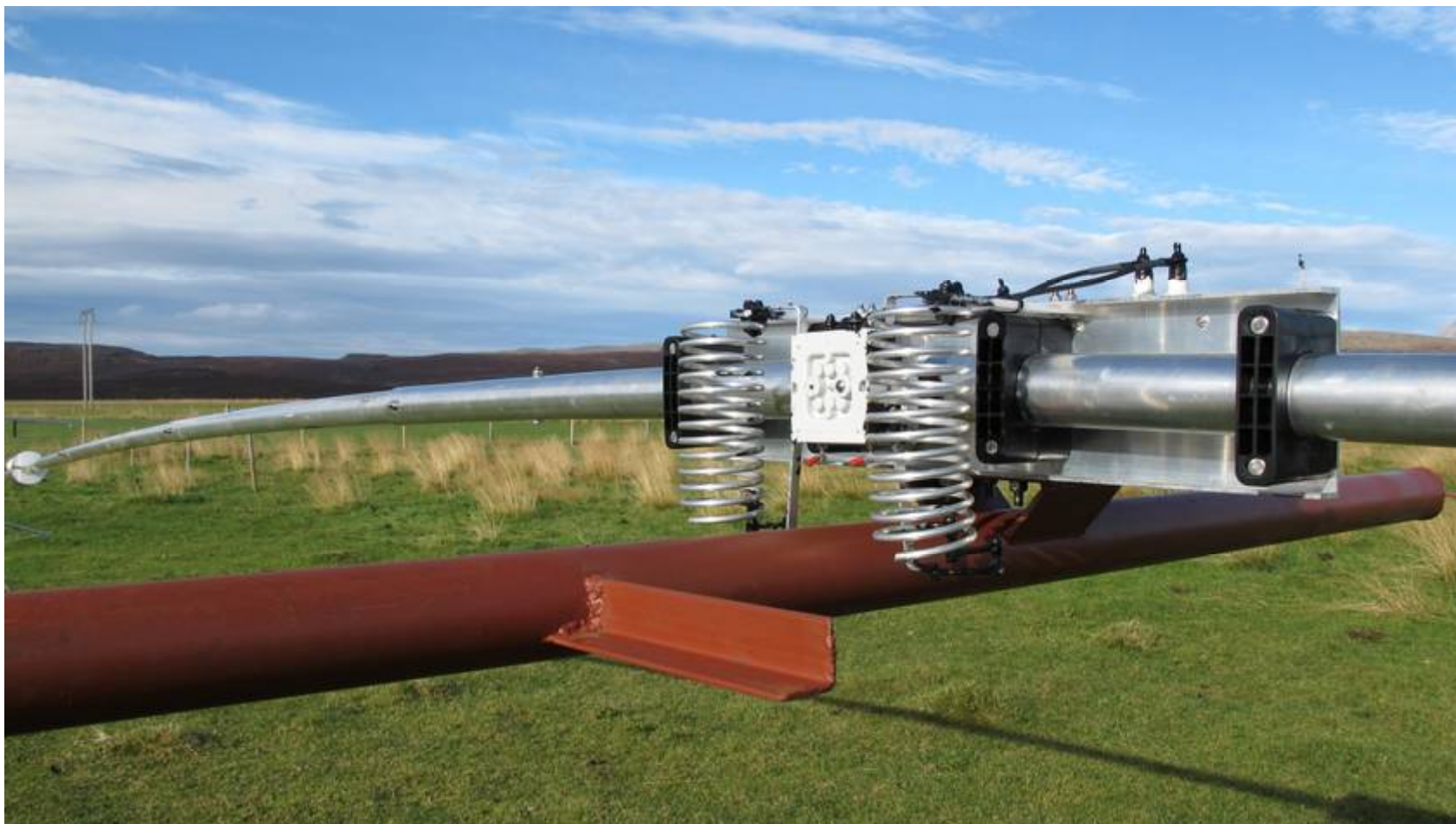
OB 1-80+ helstu tölur.

OB1-80+	1 Element Yagi 80m (SSB+CW)
Bands	80
Gain (dBi) *	0
Gain (dBi) **	5.3
F/B (dB)	0
VSWR (with the OptiBeam multi switch):	
SSB 1: 3,770 - 3,795 - 3,830	2,0 - 1,1 - 2,0
SSB 2: 3,720 - 3,745 - 3,790	2,0 - 1,1 - 2,0
SSB 3: 3,680 - 3,705 - 3,750	2,0 - 1,1 - 2,0
CW: 3,500 - 3,520 - 3,565	1,7 - 1,2 - 2,0
Elements (number)	1
Max. Elementlength (m)	17.6
Turning Radius (m)	8.8
Feedlines (number)	1 Coax 50 Ohm
Weight (kg)	25
Windload at 130 km/h	590 N / 0,74 m² / 8,0 feet²

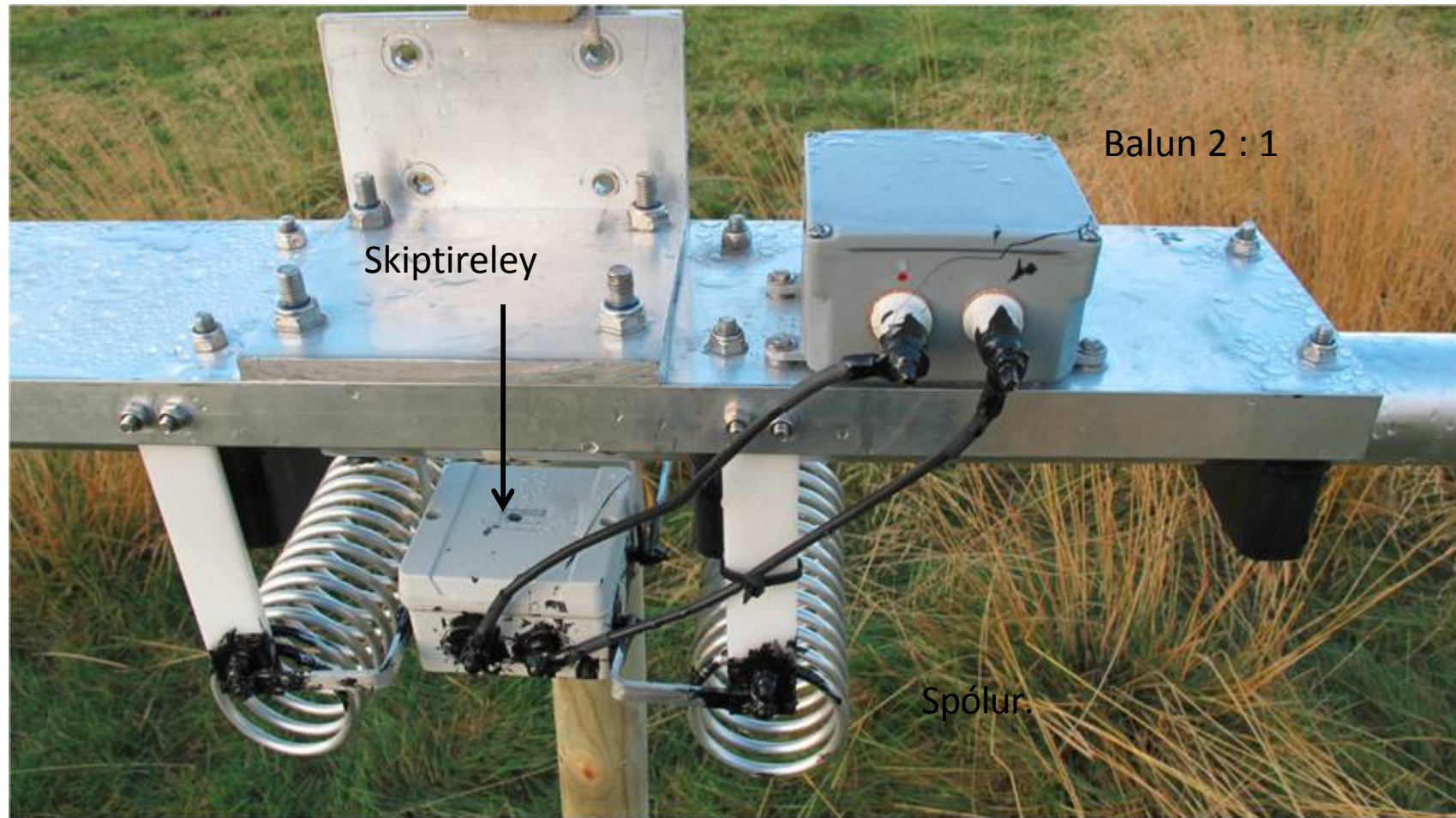
OptiBeam 18-6 og 1-80+



OB 1-80+, spólur.



OB 1-80+ miðja.



OB 1-80+ styttingar spóla.



Stag á OB 1-80+ elementi.



Festiplatti fyrir OB 1-80+.



OB 1-80+ endloading.



Fyrsta skóflustungan.



Skrafað og skeggrætt.



Spáð í rafmagnskapal.



Húkkað í járnagrindina.



Byrjað að steypa.



12.5 m³ af steypu fóru í sökkulinn en það eru ca 31 tonn.

Búið að steypa sökkul.



Fæðilínur.

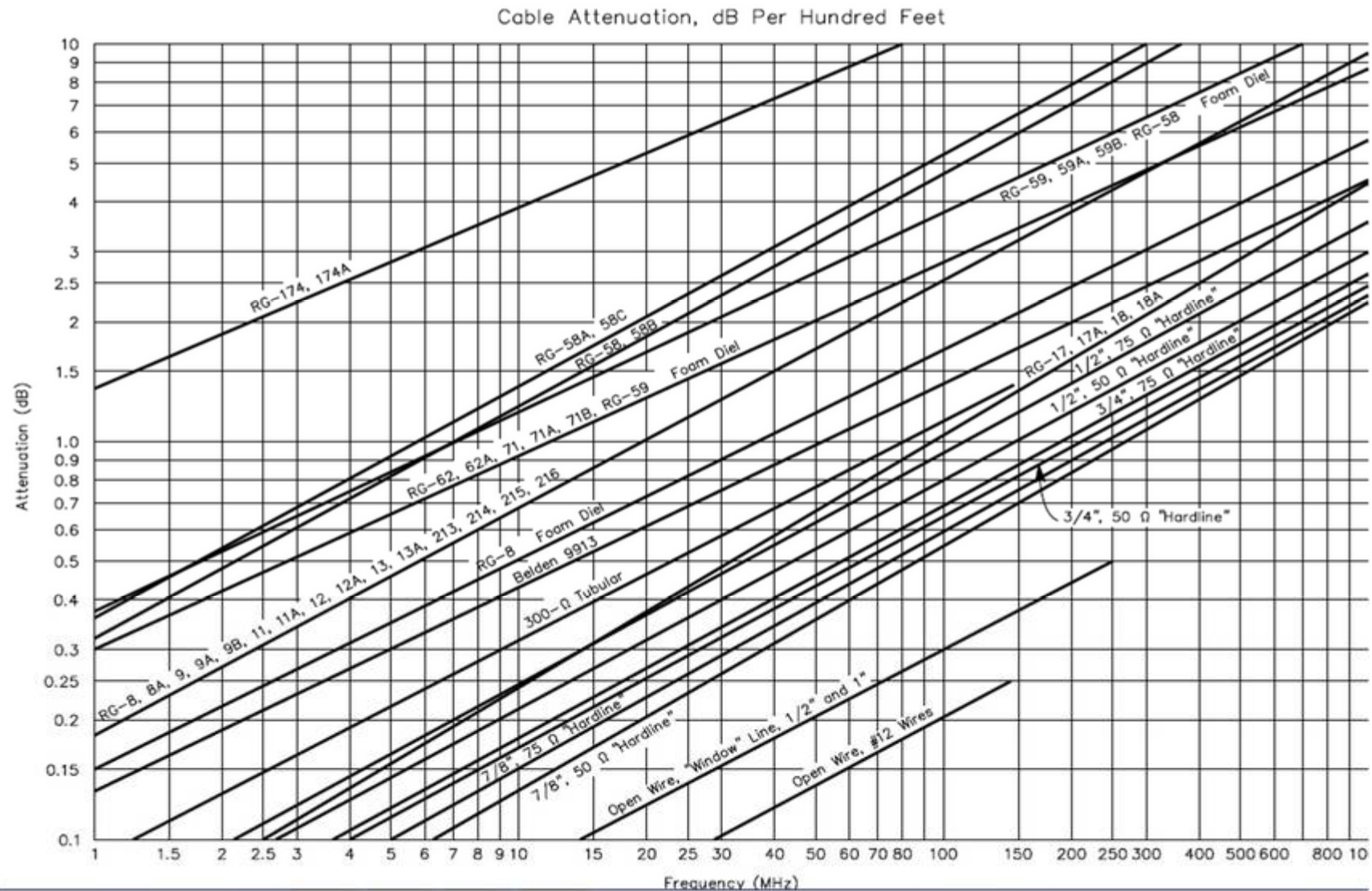
Fyrir valinu varð :

Úr sjakk í turn, LDF4-50A ½“ hardline coax.

Úr tengihúsi upp turn í loftnet, Buryflex.

Auk, rótorkapals og CAT 5 kapals.

Tap í fæðilínum ARRL línurit kafli 24



Buryflex.

Flexible Low-Loss Coax

By combining a gas-injected foamed dielectric with a dual foil and braid shield construction, **BURY-FLEX™** provides the electrical and performance characteristics found in the more expensive 400-series coaxes as well as typical air dielectric type cables.

The Polyethylene (PE) jacket is durable enough for Direct Burial, yet flexible enough to be used for Rotator Loops. The PE jacket also provides improved UV resistance compared to typical PVC jackets, significantly extending the life of your cable.

Pricing Table				
QTY	<100 ft	<499 ft	<999 ft	>1000 ft
COST	\$.95/ft	\$.89/ft	\$.85/ft	\$.78/ft



Typical Characteristics	
Impedance:	50 Ohms
Capacitance:	24.6 pF/FT
Velocity:	82% nom.
Attenuation dB/100 FT	
10 MHz	.6
50 MHz	1.1

Physical Properties	
Conductor:	9.5 AWG Stranded Bare Copper
Dielectric:	Foamed PE
Shield 1:	Bonded Foil (100% Coverage).
Shield 2:	Tinned Copper Braid (97% Coverage)

Fæðilína ½“ hardline.

LDF4-50A

Standard coaxial cable, 1/2", 50 ohm foam HELIAX (Wideband from 0.5-8800 MHz)

CHARACTERISTICS

Mechanical Specifications

Pressurizable:	No
Weight (lb/ft):	0.15
Weight (kg/m):	0.22
Tensile Strength (lb):	250.00
Tensile Strength (kg):	113.00
Flat Plate Crush Strength (lb/in):	110.00
Flat Plate Crush Strength (kg/mm):	2.00
Minimum Bending Radius (inches):	5.00
Minimum Bend Radius (millimeters):	125.00
Bending Moment (lb-ft):	2.90
Bending Moment (N-m):	3.80
Number of Bends (minimum):	15.00
Number of Bends (typical):	50.00

Electrical Specifications

Cable Impedance (ohms):	50.00
Maximum Frequency (GHz):	8.80
Velocity percentage:	88.00
Peak Power Rating (kW):	40.00
DC Resistance Inner (ohms/1000ft):	0.45
DC Resistance Inner (ohms/1000m):	1.48
DC Resistance Outer (ohms/1000ft):	0.58
DC Resistance Outer (ohms/1000m):	1.90
Cable Test Voltage (VDC):	4000.00
Jacket Spark volts (RMS):	8000.00
Capacitance (pF/ft):	23.10
Capacitance (pF/m):	75.80
Inductance (microH/ft):	0.06
Inductance (microH/m):	0.20
Insulation Resistance (Meg-Ohms):	100000.00

Construction Materials

Dielectric Type:	Low Density Foam Dielectric
Dielectric Material:	Polyethylene Foam
Jacket Color:	Black
Jacket Description:	Polyethylene

Kapaltengi frá Andrew.



Ratpack loftnetaskiptir.



The Array Solutions RATPAK System - Remote Antenna Switch

Turninn reistur.

- OB 1-80+ loftnetið sett á turn og reist með.
- OB 18-6 híft upp eftir að turninn var kominn upp.
- Gengið frá stögum.

Turninn reistur



Reising



OB 18-6 híft upp



Unnið við OB 18-6



OB 18-6 komiď á bäs



Lagfært element.



Unnið við að festa stag



Útsýnið úr sjakknum.



Fæðilína í 1:1 balun



OB 18-6 , elementa stög.



Frágangur kapla ofl.

Ryðfrír platti undir bolta og ró



Blökk fyrir víra

Bómustögin.



Ryðfrýr platti undir bómubolta



40 m drifna elementið.



Þrep upp í efra loftnet



OB 1-80 samsíða OB 18-6



Glæsilegt.



Glæsilegt útsýni



Sést varla !



Vetrarríki.



OB 1-80+ element brotnar.

- Ofsaveður gekk yfir.
- Áætlaðir amk 55 m/sek í kviðum.

Brotiď OB 1-80+ element.



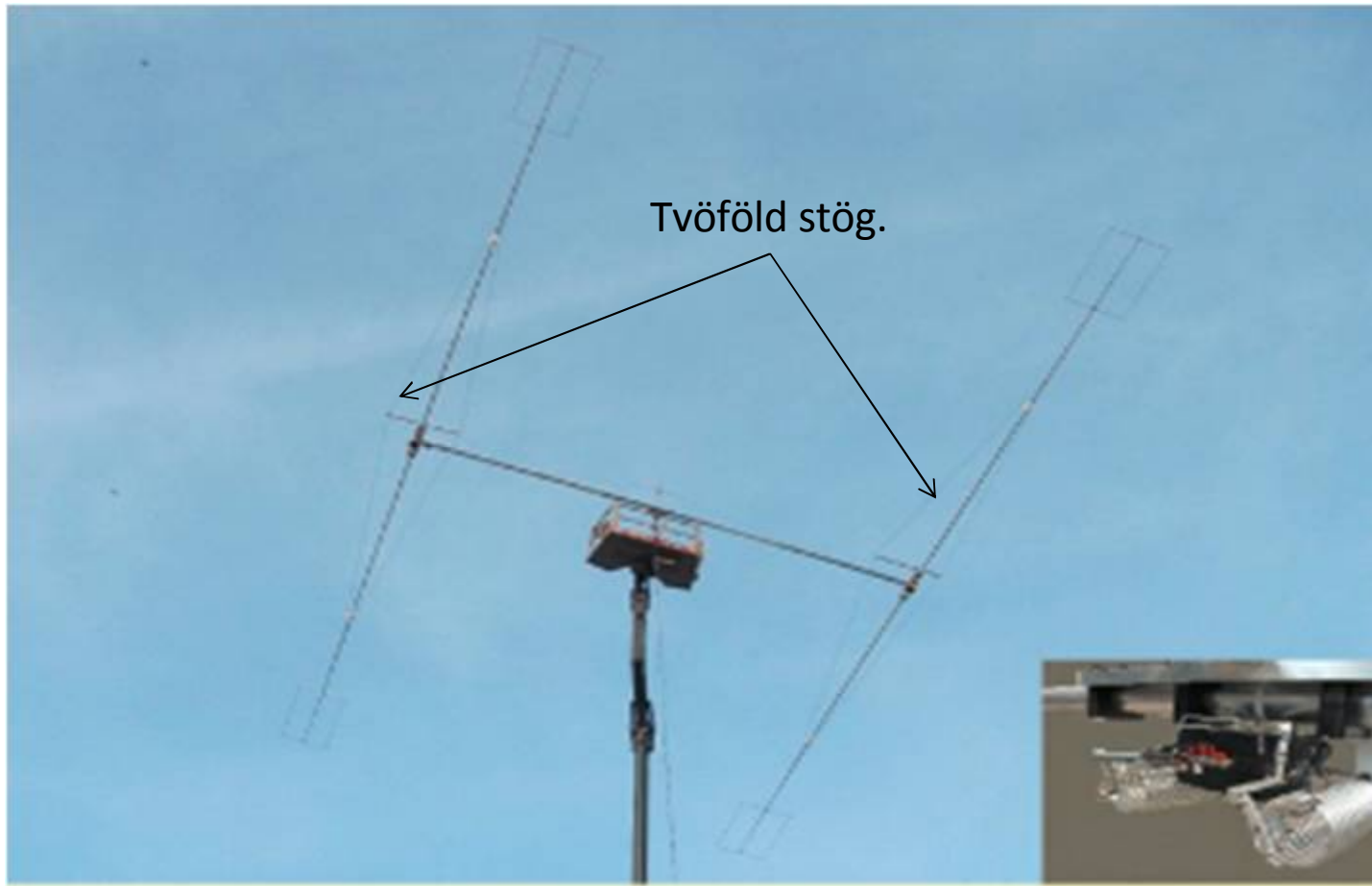
Brotið OB 1-80+ element tekið niður.



Unnið að viðgerð á OB 1-80+.



OptiBeam 2-80s



Endurbætt stag f. OB 1-80+.



Rótorinn bilar.

- 10 k viðnámið undir rótornum bilar.

Lélegur frágangur undir rótor



Smur og varnarefni.

- Notað Penetrox á öll samskeyti.
- Notuð fljótandi gúmmíkvoða á allar tengingar.
- Notuð smurolía á alla ryðfría bolta og rær.

And-oxunar feiti notað, á öll samskeyti.



Features

- Anti-oxidant and anti-seizing compound
- Reduces galling and seizing on aluminum conduit joints
- Suspended zinc particles penetrate and cut aluminum oxide
- Carrier material excludes air to prevent further oxidation
- Improves service life of aluminum electrical applications

Fljótandi gúmmí, notað á tengi.



Öryggi.

- Klífa ekki turn nema að hafa til þess getu og kunnáttu.
- Notaðu ávallt besta fáanlegan öryggisbúnað.

Öryggisbelti, fallvesti.



Líflína, falllína.



Niðurstaðan.

- OB 18-6 hefur staðið undir væntingum.
- OB 1-80+ virkar fínt í DX en verð ekki var við mikinn mun eftir hvernig það snýr.
- Öfugt vaff virkar betur innanlands.
- Það verður að vera hægt að fella turn eða slaka niður loftnetinu án utanað komandi aðstoðar.

Næsta skref ??



Eða kannski þetta ????

- DB 42 var ekki kominn á markað
- 2009 en all verulegar líkur eru á því að það hefði verið tekið fram fyrir
- OptiBeam 18-6 !!

SteppIR DB 42 MonstIR



Lengd = 13,0 m

Breidd = 14.9 m

Þyngd = 108 kg

Vindfang = 1,85 m²

Var ekki komið á markað 2009.