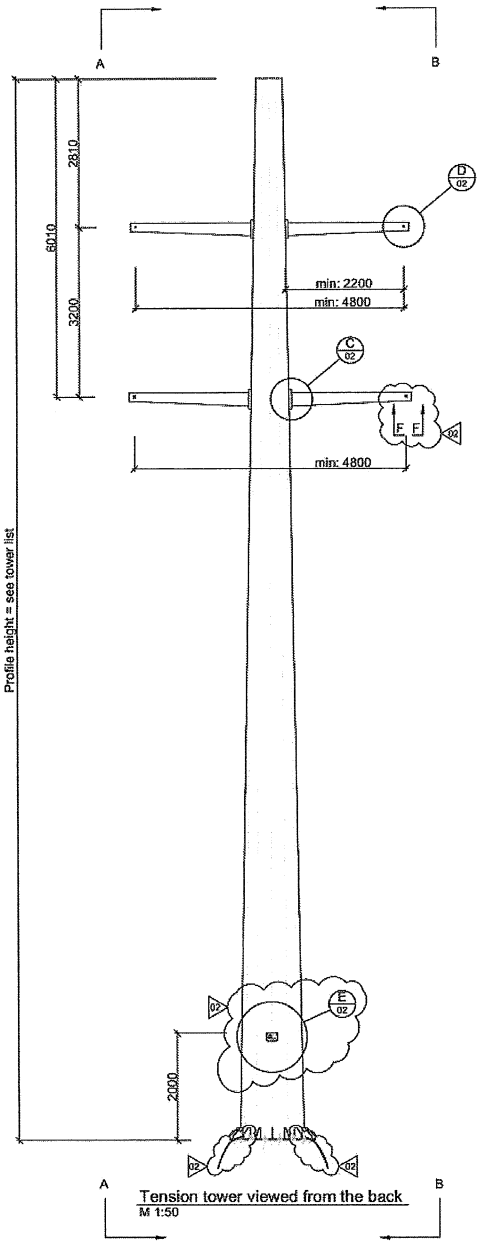
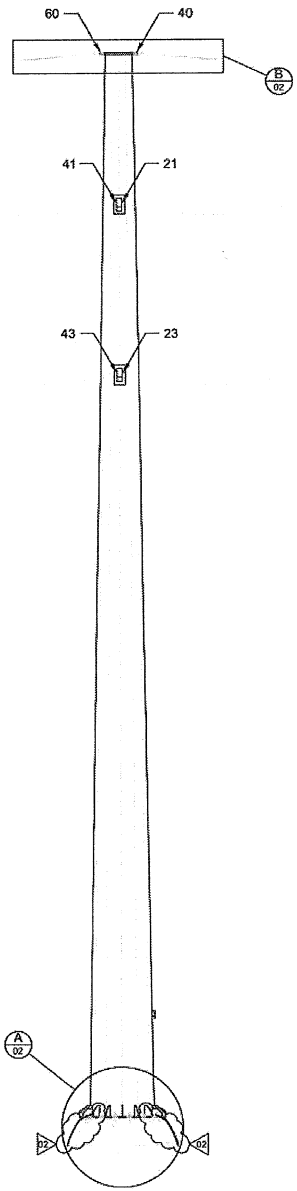
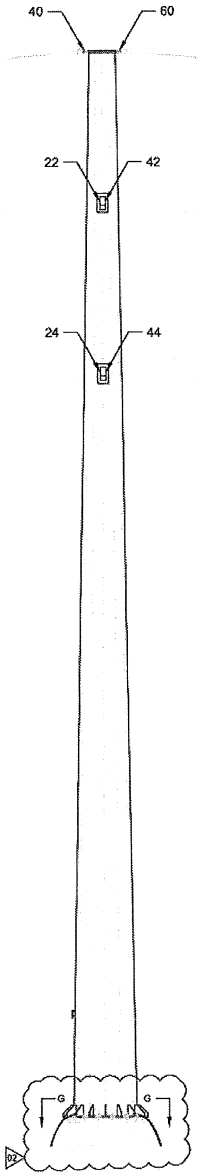
Tension tower viewed from above
M 1:50



Tension tower viewed from the back
M 1:50



View A-A
M 1:50



View B-B
M 1:50

Design
Manufacturer is responsible for the tower design fulfilling all requirements listed up on drawing, design description and relevant standards.
Final geometry and tower design is subject to approval by Hafslund Nett/EFLA.

Steel
Steel quality in all steel parts must fulfill their relevant EN standards
- Hollow profiles: S355J2+H
- Plates: S355J2+N
- Other profiles: S355J2+AR

Weld quality must be according to EN 729-2
Hot dip galvanizing according to EN ISO 1461

Cross arms
- Phase spacing must fulfill requirements put forth on drawing
- Attachment point must be designed by manufacturer to fit strain insulator strings in drawing "AS21E0803" and "AS21E0805"
  - Example of an approved attachment point variation can be seen in detail (H)
- Underside must have attachment point to vertically suspend post insulator in drawing see detail (F)
  - Including bolts, nuts and washers

Shield wire
- Shield wire attachment to be designed by manufacturer to fit universal joint in drawing "AO01E0774"
  - Suggestion can be seen in detail (B)
- Attachment point must be provided for earthing clamp, see drawing "AO01E0774"
  - Suggestion can be seen in detail (B)

Foot plates
- Manufacturer is asked to limit their design to 3 different types of foot plates
- Plate design must account for connection type between foundation and tower
  - See detail (A)

Climbing system
Manufacturer is responsible for design and implementation of a climbing system in the towers.
- The climbing system must have be an anti-falling rail with step bolts
- All relevant locations in the tower must be accessible using such system
- System shall start from height of 2.5 m and reach to the top of the tower

Earthing system
- Four connection point for the earthing system must be provided see detail (G)
  - The connection will be made with M16 bolt
  - Suggestion can be seen in detail (A)

Tower signs
Connection point for tower sign must be provided on the tower.
- Suggestion can be seen in detail (E)

Loads
Every tension tower has a corresponding load file (.LCA) with load points matching points shown in views A-A and B-B. Manufacturer is responsible for applying the load file to their own tower models for design.

REV	DATO	REVISJONEN GJELDER	TEGN	GODK.	GODK. DATO
02	27.02.2019	Added: earthing, tower sign, views E, F, G, H	KHG	ÅKS	27.02.2019
01	05.02.2019	Første versjon	KHG	ÅKS	13.02.2019

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132 kV Kråkerøy–Hvaler
Main dimension drawing Tension tower
Location of load points
7090-002-DWG-030
1/2

DATO: 05.02.2019
TEGNET AV: KHG
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FORMAT: A1
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