

Groundwater level: 0.000

0.330

-0.47

2.07

Groundwater level: -2.768

3098

700

2300

-2.768

-3.098

Foundation side view:

Foundation top view:

Ø21700

Main Axis

Y-Axis

Possible door position

Possible door position

Outlet area Ø1000

Main Axis

Y-Axis

Max. tube height above top of concrete level: 25mm (see description 0017-5653). Precaution to be taken to prevent damage of HV-cables (e.g. during tube cutting) and to prevent concrete / water intrusion into tubes.

Cross-section of Cable

40

Blinding layer

See site specific cable layout

High pressure water cleaning before ground

C45/55

Ø1000 For the cables

13.1

10.2

11.1

6.1

2.1

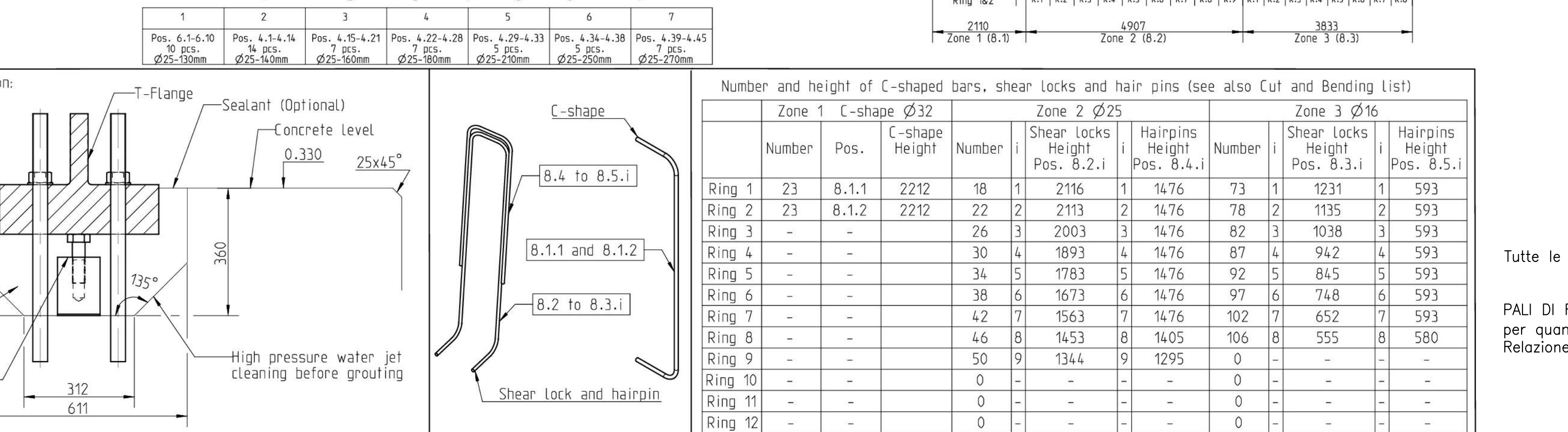
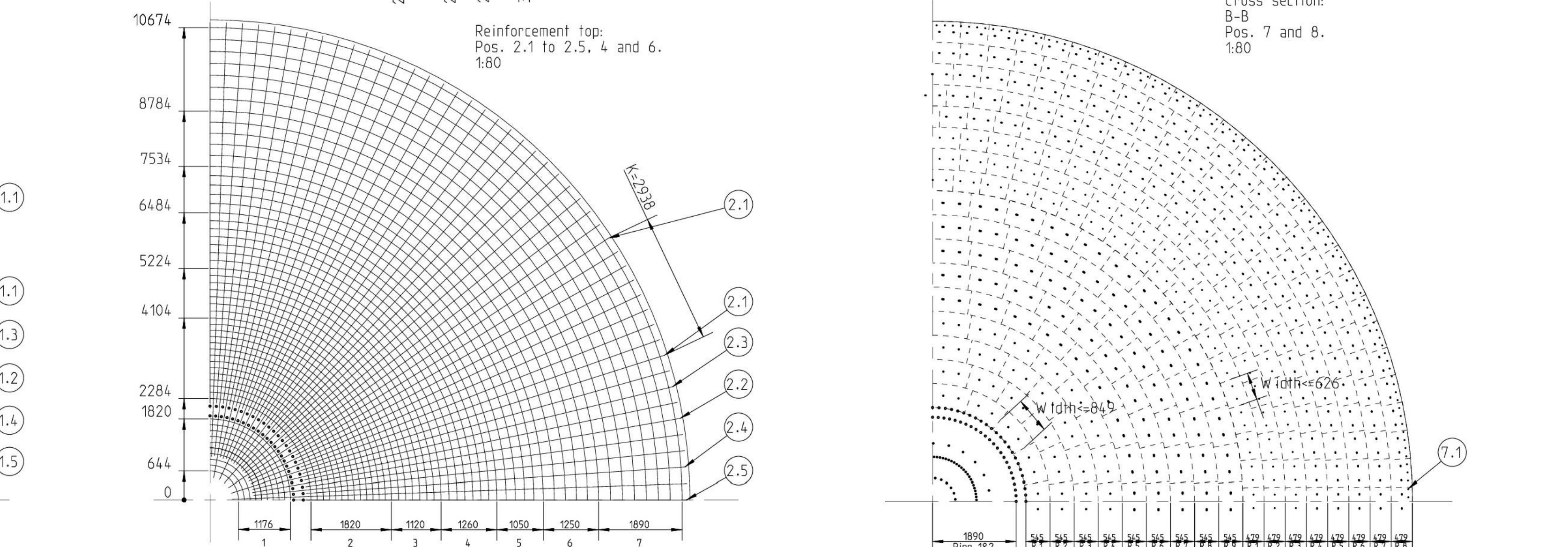
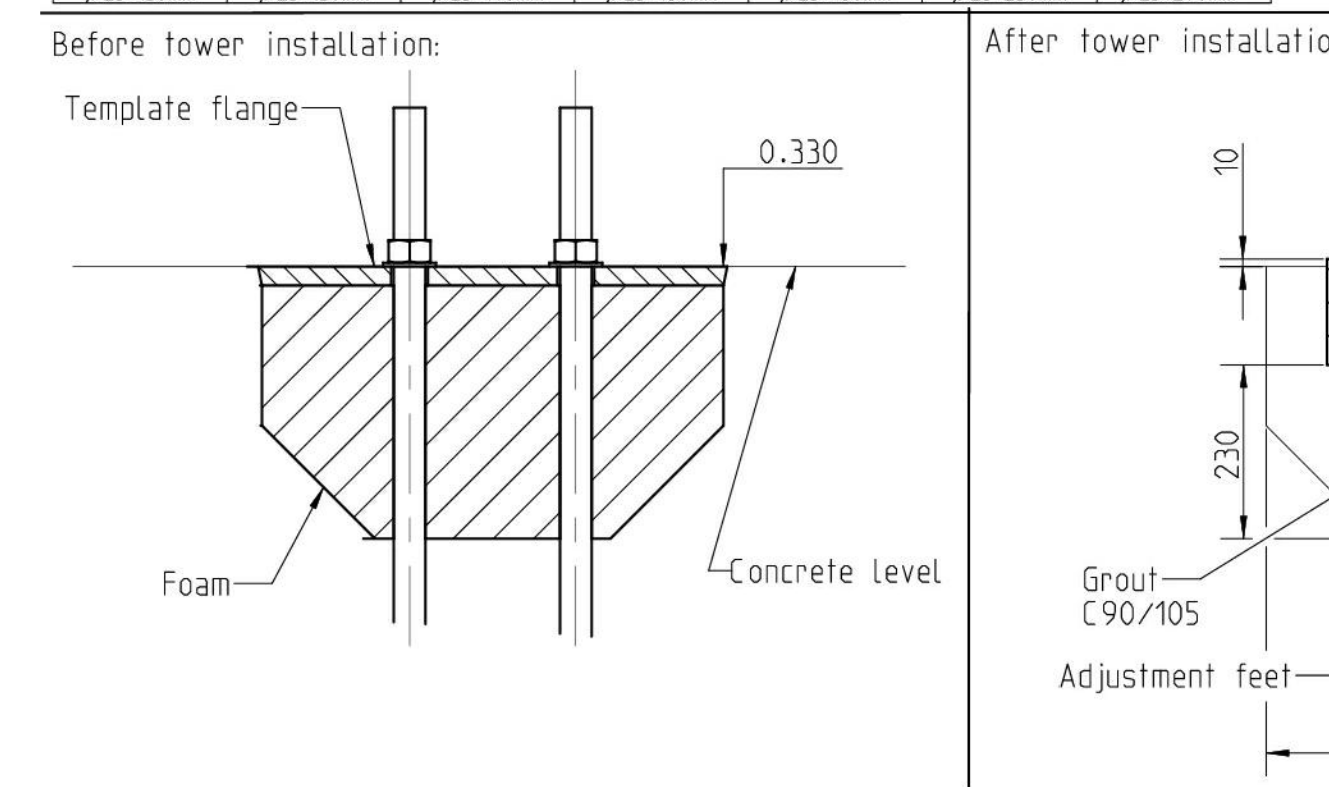
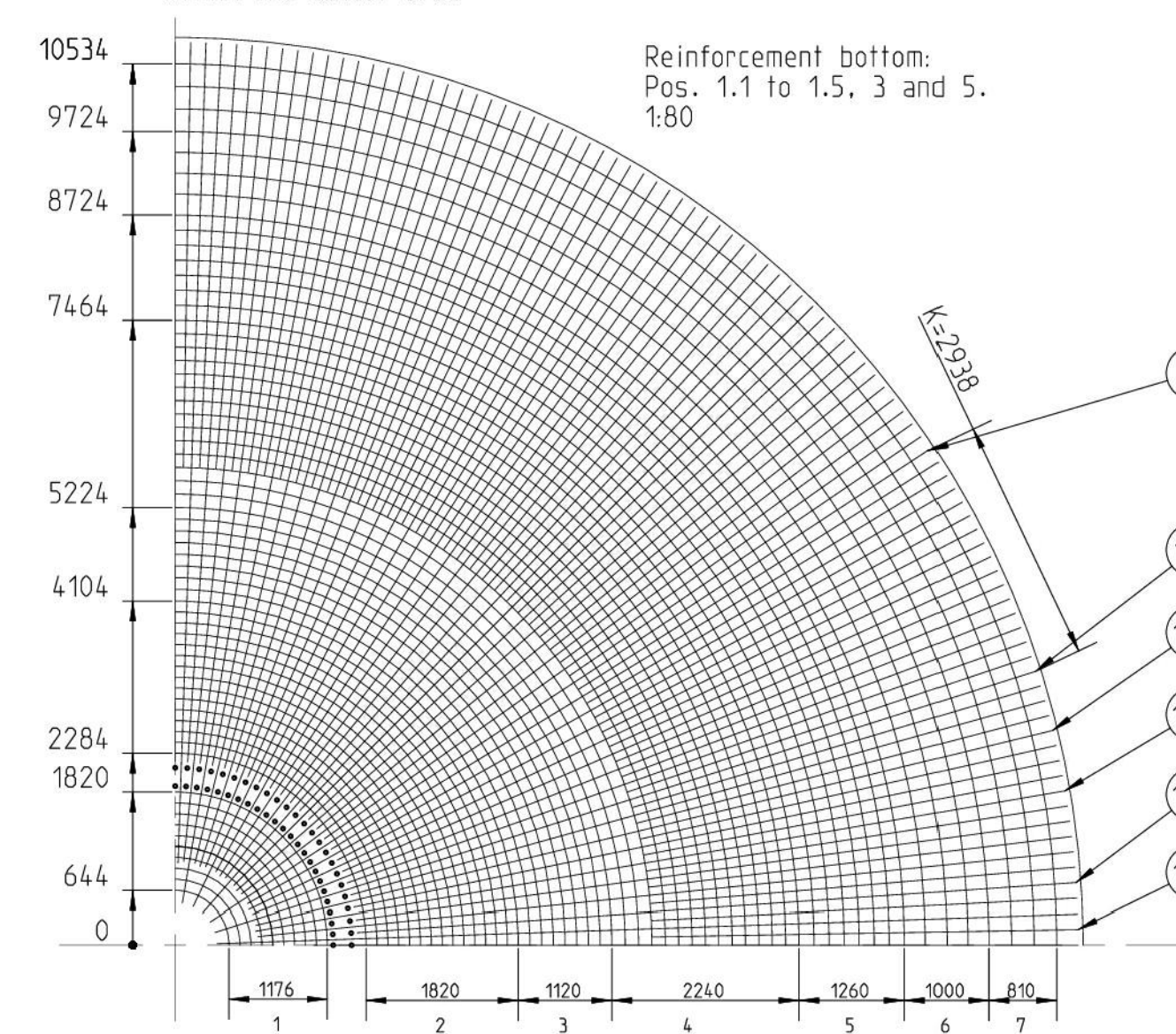
2.6

8.1.2

8.1.1

5.1

B



Information for design engineer:

Loads: 07/04-8846, calculations: 07/05-1449, V02

Soil condition to be fulfilled:

Assumed characteristic soil parameters: friction angle 30° or undrained shear strength 55 kN/m².
Min. density of soil 18.9 kN/m³, design of backfilling 18.0 kN/m³.
Weight of backfilling is included in stability and shall not be removed.
Max. ground water level: 2.768 m under terrain
to drainage required.

Required rotational stiffness: min. 100 kNm/rad according to load report 07/04-8846
according to the foundation due to permanent settlements: 3 mm

Max. plastic design soil pressure: 193 kN/m², constant over substitute area, with a
PSF of 1.33 on wdg, 0.9 on tower weight and backfilling, 1.0 on foundation weight.
Max. vertical design soil pressure: 223 kN/m² with PSF equal to 1.0 for all loads.

Soil investigations at the site shall be in accordance with EN 1997-1:2004, section 2.4, and must also
conform with the design assumption.

Specifications:

All works carried out acc. to EN 1992-1-1/AC:2010 Design of Concrete Structures, EN 1997-1/AC:2009
Geotechnical Design, general rules, EN 1997-2/AC:2010 Geotechnical Design, investigation and testing,
General design (0005-849). Design life: 10 years.

Anchor cage, approval drawing 07/04-9532_V01:

The anchor cage incl. adjustment feet is provided by Vestas as loose parts or assembled.
The anchor cage is to be installed vertically and adjusted to the correct position vertically and
horizontally by using the adjustment feet at the lower flange. During casting, which must be
straightened, the cage must be placed inside the cap to ensure that the cage does not displace and that the lower flange is in full contact with compacted
concrete, below and above flange. Max. vertical deviation after concreting 17° 4 mm.

Weight of anchor cage, approx. 1860 kg total

Anchors shall be post tensioned according to approval drawing 07/04-9532_V01

Concrete:

Concrete works acc. to EN 13670-2009 "Execution of concrete structures".
The concrete must be compacted, mixed and prepared according to EN 206-1 in the strength
class: C30/37 for plate, C45/55 for pedestal. Exposure class: XC4 / XF1 / XF3 / XF4
Maximum concrete size: the area of the bottom and top reinforcement: 16mm (in other areas max. 32m
Blinding layer min. 100 mm and dimension is not represented in the drawing.
Concrete strength class for concrete for other building units, low heat of hydration
min. required density of concrete due to stability: 2338 kg/m³.
Covering: Column = 60 mm against form work or blinding layer, Column = 110 mm against soil (no formwork).
Concrete quality control according to EN 206-1

Reinforcement:

Steel bars S500 ductility class B or C according to EN 10080 with min Fyk = 500 N/mm².

Grout:

Non-shrink grout, min. compression strength 30/10/05
Min. compression strength at time of post tension 64 N/mm² and after 1 day: 10 N/mm².
The grout must be free of air, full for the Gr-10.9 anchors and an elongation of 7.4 to 9.7 mm

Cable conduits (PVC tubes) – NOT a Vestas delivery:

See general description in "Switchgear installation vs foundation tubes" 0017-5653.
Provide a specific cable layout for actual number and size of conduits.

Earthing:

See "Vestas Earthing System", esp. description 0019-2575 "Earthing on anchor cage foundation"
incl. copper conductors, bolts, nuts and washers delivered with the anchor cage.

Reinforcement and Bending Lists: 0075-1456_V02

Radiol bars, bottom part:

1.1 23 pcs. Ø32 x 10290 mm, through anchors.
1.2 23 pcs. Ø32 x 9816 mm, through anchors.
1.3 44 pcs. Ø32 x 9311 mm, through anchors.
1.4 92 pcs. Ø32 x 8806 mm, outside anchors.
1.5 184 pcs. Ø32 x 5079 mm, outside anchors.
1.6 92 pcs. Ø32 x 5593 mm, above 1.1-1.3.

Radiol bars, top part:

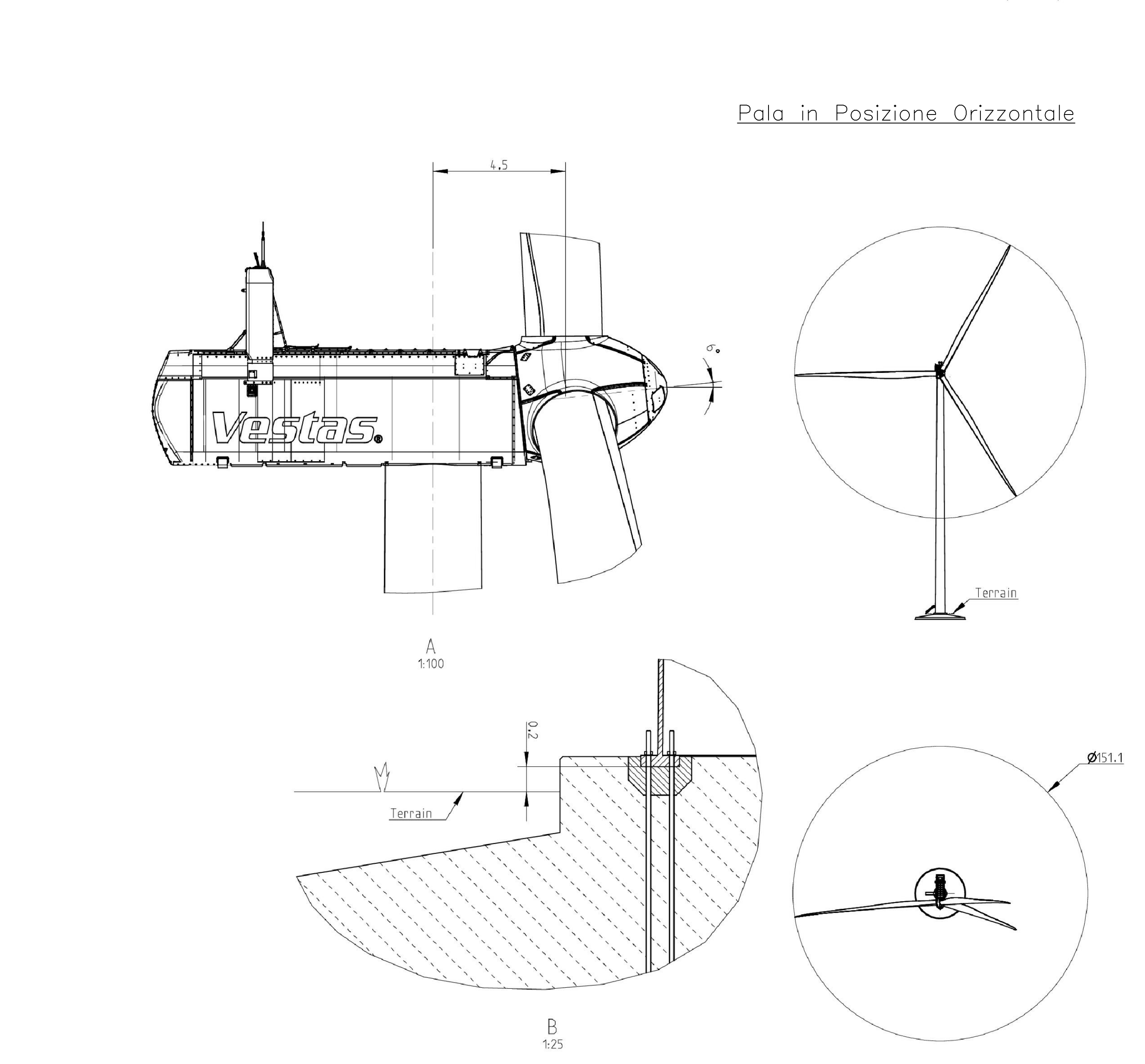
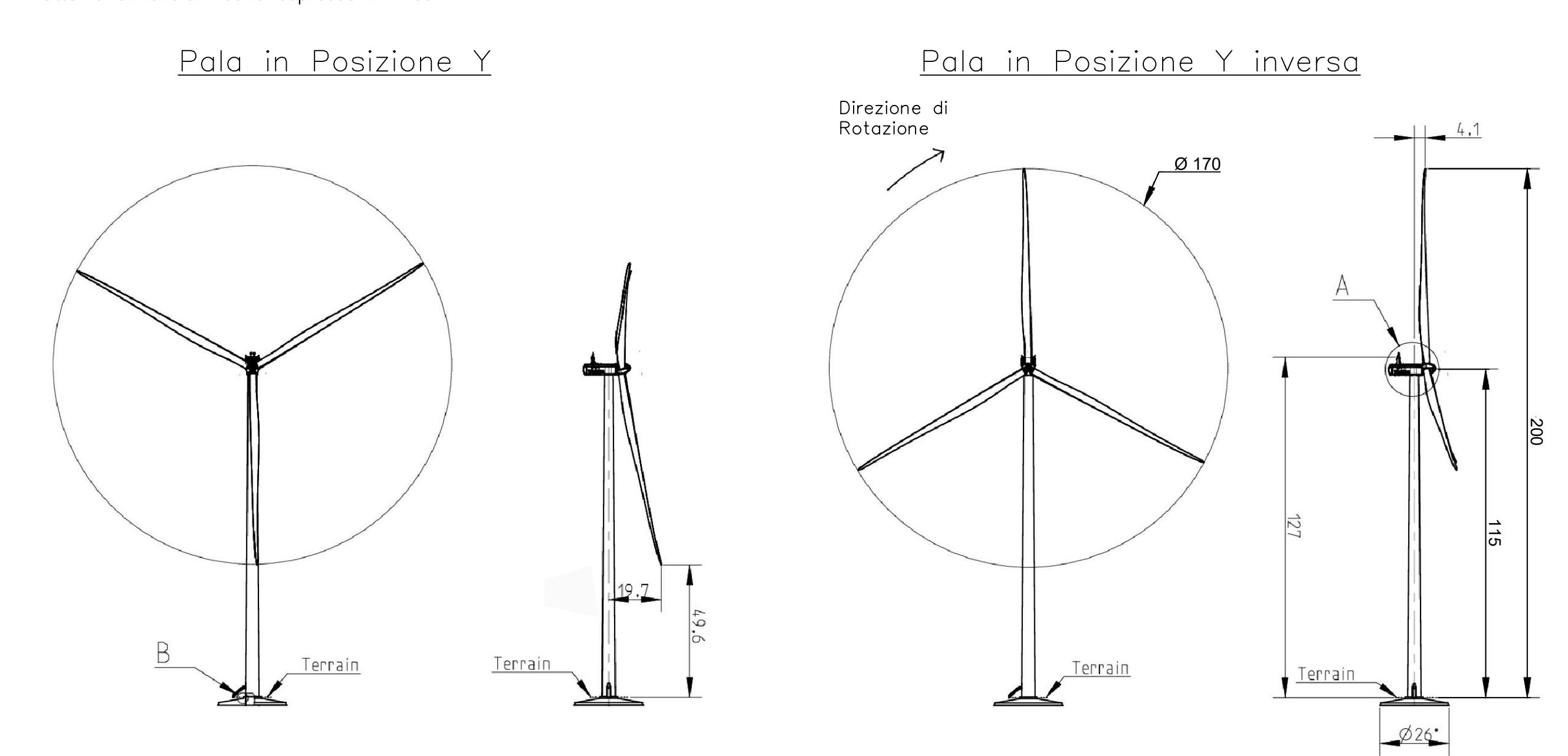
1.1 23 pcs. Ø32 x 10445 mm, through anchors.
2.1 23 pcs. Ø32 x 9974 mm, through anchors.
2.2 44 pcs. Ø32 x 9469 mm, through anchors.
2.3 92 pcs. Ø32 x 8764 mm, outside anchors.
2.5 N/A

1.6 92 pcs. Ø32 x 6110 mm, below 2.1-2.3.

Concetric bars outside anchors, bottom part:

3.1 1/2" ring Ø4568, 3 mm, L=15743 mm, outer ring no. 1.
3.1 1/2" ring Ø2166, 6 mm, L=11990 mm, outer ring no. 51.
See table in Cl & Bending List.

Tutte le dimensioni sono espresse in metri



Il diametro della fondazione è indicativo
dipende dalle effettive condizioni del sito

Tutte le dimensioni sono espresse in mm

PALI DI FONDAZIONE:
per quanto riguarda il plinto di fondazione si rimanda all'elaborato specifico F0533AR08A_A.11 - Relazione preliminare sulle strutture.


 REGIONE
TOSCANA


 COMUNE DI
MANCIANO


 PROVINCIA
DI GROSSETO

PROGETTO DEFINITIVO

Impianto di produzione di energia elettrica da fonte eolica "Fiora" di potenza nominale pari a 52.8 MW e relative opere connesse da realizzarsi nel comune di Manciano (GR)

Titolo elaborato

Sezione tipo degli aerogeneratori, disegni architettonici e particolari di ancoraggio

Codice progetto

F0612AT19A

Scala

VARIE

Riproduzione e consegna a terzi sono espressamente vietati senza permesso scritto dalla specifica autorizzazione.

Progettazione



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AENOR
 INSTITUTO ESPAÑOL DE NORMALIZACIÓN Y CERTIFICACIÓN

Società certificata secondo le norme UNI-EN ISO 9001:2015 e UNI-EN ISO 14001:2015 per l'prestazione di servizi di ingegneria nei settori: civile, idraulica, acustica, energia, ambiente (settore IAF: 34).



Consorzio Specie
 Consorzio di tutela delle specie animali e vegetali della Toscana

Consulenze specialistiche

Committee

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Data	Descrizione	Redatto	Verificato	Approvato
Dicembre 2023	Prima emissione	FTR	FTR	GMA

File sorgente: **F0612AT19A - Sezione tipo degli aerogeneratori, disegni architettonici e particolari di ancoraggio.dwg**