### Ergon Energy Document Revision List

**Project**: Sub-Transmission Construction Manual  
**Electronic - Website Version**

#### Section 20 - Pole Manufacturing Dwgs Pages 14-1 to 14-10

**Version**: Ver 2

<table>
<thead>
<tr>
<th>Date of Issue</th>
<th>Section Title / Drawing Number</th>
<th>Current Published</th>
<th>Issued Document Revision Number</th>
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- **Section 20 - Pole Manufacturing Dwgs Pages 14-1 to 14-10**  
  4-Apr-16  
  5-20-14-1  
  5-20-14-2  
  5-20-14-3  
  5-20-14-4  
  5-20-14-5  
  5-20-14-6  
  5-20-14-7  
  5-20-14-8  
  5-20-14-9  
  5-20-14-10

- **Issued Document Revision Number**: 1 2

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Degree symbols in the title boxes are displayed as °. This does not affect the accuracy of the drawings. This will be resolved in the next revision.
NOTE:
1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. No subsidiary to be incorporated on 18m poles.
7. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-18-14 for Pole Construction

OVERHEAD SUB-TRANSMISSION
66kV CONCRETE POLE MANUFACTURING DETAILS
SINGLE CIRCUIT RURAL VERTICAL STRAIN
18m X 60kN AND 75kN X 85° ANGLE POLE
### Description

#### Earth:
- M12 ferrule (30mm thread)
- M16 ferrule (25mm thread)
- M16 earth ferrule
- M10 ferrule
- M10 earth ferrule
- M12 ferrule (20mm thread length)
- M10 earth ferrule (25mm thread length)
- M16 ferrule (25mm thread length)
- M20 earth ferrule (25mm thread length)
- M16 ferrule (25mm thread length)
- M12 ferrule (20mm thread length)
- M12 earth ferrule (30mm thread)
- M16 ferrule (25mm thread length)
- M12 earth ferrule (30mm thread)
- M16 ferrule (25mm thread length)
- M16 ferrule (25mm thread length)
- M12 earth ferrule (30mm thread)
- M12 earth ferrule (30mm thread)
- M16 ferrule (25mm thread length)
- M12 earth ferrule (30mm thread)
- M16 ferrule (25mm thread length)

#### 32 OD S/S tube:
- Fall Arrest Bracket and Step bolt to pole
- 5mm galv. cross wires (access barrier)
- 25 OD S/S tube for M20 bolt
- 19 OD S/S tube for M12 bolt

#### 38 OD S/S tube:
- Access barrier

### Table: Fitting Description

<table>
<thead>
<tr>
<th>DISTANCE FROM 1P (mm)</th>
<th>ORIENTATION</th>
<th>FITTING DESCRIPTION</th>
<th>TUBE</th>
<th>FITTING PURPOSE</th>
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</thead>
<tbody>
<tr>
<td>150</td>
<td>F</td>
<td>32 OD S/S tube</td>
<td>403</td>
<td>Stylish bracket, backing plate, eye nut top bolt (M14)</td>
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<tr>
<td>150</td>
<td>F</td>
<td>32 OD S/S tube</td>
<td>404</td>
<td>Stylish bracket, backing plate, eye nut top bolt (M14)</td>
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<tr>
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<td>F</td>
<td>32 OD S/S tube</td>
<td>405</td>
<td>Upper Bisect Stay, backing plate top bolt (M20)</td>
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<td>250</td>
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<td>32 OD S/S tube</td>
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<td>Stylish bracket, backing plate, eye nut bottom bolt (M14)</td>
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<td>300</td>
<td>F</td>
<td>32 OD S/S tube</td>
<td>407</td>
<td>Upper Bisect Stay, backing plate, eye nut bottom bolt (M14)</td>
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</table>

### Notes

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

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Refer dwg 5-7-3-2 for Foundations

Refer dwg 5-4-18-14 for Pole Construction
NOTES

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformation.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-18-14 for Pole Construction
25 OD S/S tube
Fall Arrest Bracket and Step bolt to pole
Top Phase Flanged Eye Bolt (M20)

32 OD S/S tube
Fall Arrest Bracket and Step bolt to pole
Middle Phase Flanged Eye Bolt (M20)

25 OD S/S tube
Fall Arrest Bracket and Step bolt to pole
Bottom Phase Flanged Eye Bolt (M20)

Earth
Depth Indication Marker (Normal Soil)

Earth
Depth Indication Marker (Black Soil)

5mm galv. cross wires

For Maintenance purposes

M12 earth ferrule (30mm thread)
**NOTES**

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.

**REFERENCES**

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-18-14 for Pole Construction
### Notes:

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require ±2 mm tolerance between them and ±1 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. No subsidiary to be incorporated on 18m poles.
7. Temporary stays may be required during construction and/or maintenance works.

### Table:

<table>
<thead>
<tr>
<th>DISTANCE</th>
<th>ORIENTATION</th>
<th>FITTING DESCRIPTION</th>
<th>TUBE</th>
<th>FITTING PURPOSE</th>
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<td>32 OD SS tube</td>
<td>400</td>
<td>Slit bracket, backing plate, eye nut top bolt (M14)</td>
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<td>100-250</td>
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<td>500-750</td>
<td>D</td>
<td>32 OD SS tube</td>
<td>400</td>
<td>Slit bracket, backing plate, eye nut bottom bolt (M14)</td>
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<tr>
<td>750-1000</td>
<td>D</td>
<td>32 OD SS tube</td>
<td>400</td>
<td>Upper Slit Bracket, backing plate, eye nut bottom bolt (M14)</td>
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<tr>
<td>1000-1250</td>
<td>D</td>
<td>32 OD SS tube</td>
<td>400</td>
<td>Upper Slit Bracket, backing plate, eye nut bottom bolt (M14)</td>
</tr>
</tbody>
</table>

**References:**
- dwg 5-7-3-2 for Foundations
- dwg 5-4-18-14 for Pole Construction
### Notes

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

### Table: Name Plate Information

<table>
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<th>Stock Code</th>
<th>Structure Type</th>
<th>Length of Pole (m) / Limit State Design Load</th>
<th>Month and Year of Manufacture</th>
<th>Manufacturer's Name/Trade Mark</th>
<th>Standard / Marine Grade</th>
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<td>ERGON ENERGY</td>
<td>SINGLE CIRCUIT RURAL VERTICAL STRAIN</td>
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### Diagram

Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-18-14 for Pole Construction

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**Diagram Details:**

- **Access barrier:** 5mm galv. cross wires
- **Joint:** M16 ferrule (25mm thread)
- **Earth:** M12 earth ferrule (30mm thread)
- **Tip ring and pole cap:** 32 OD S/S tube
- **Top Phase Flanged Eye Bolt (M20):** 32 OD S/S tube
- **Middle Phase Flanged Eye Bolt (M20):** 32 OD S/S tube
- **Bottom Phase Flanged Eye Bolt (M20):** 32 OD S/S tube
- **Access barrier:** 5mm galv. cross wires
- **Tip ring and pole cap:** 32 OD S/S tube
- **Top Phase Flanged Eye Bolt (M20):** 32 OD S/S tube
- **Middle Phase Flanged Eye Bolt (M20):** 32 OD S/S tube
- **Bottom Phase Flanged Eye Bolt (M20):** 32 OD S/S tube
**NOTES**

1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.

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Refer dwg 5-7-3-2 for Foundations

Refer dwg 5-4-18-14 for Pole Construction

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**OVERHEAD SUB-TRANSMISSION**

69KV CONCRETE POLE MANUFACTURING DETAILS

SINGLE CIRCUIT RURAL VERTICAL STRAIN

24m X 80N AND 75% - 85% ANGLE POLE
Refer dwg 5-7-3-2 for Foundations
Refer dwg 5-4-18-4 for Pole Construction

66kV CONCRETE POLE MANUFACTURING DETAILS
SINGLE CIRCUIT RURAL VERTICAL, STRAIGHT

NOTES
1. Orientation is measured clockwise when looking down on pole tip.
2. Bracketed fittings require +/- 2 mm tolerance between them and +/- 2 mm orientation tolerance.
3. Longitudinal capacities to be not less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal 210° (pole) is required at the centre of the through tube provided for square rigging.
6. Temporary stays may be required during construction and/or maintenance works.
**NOTES**

1. Orientation is measured clockwise when looking down on pole lip.
2. Bevelled fittings require ±2 mm tolerance between them and ±2 mm orientation tolerance.
3. Longitudinal capacities to be no less than transverse capacities.
4. Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
5. A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.

**Refer dwg 5-7-3-2 for Foundations**
**Refer dwg 5-4-18-14 for Pole Construction**