



OVERHEAD SUB-TRANSMISSION
CONSTRUCTION MANUAL

POLE
MANUFACTURING DRAWINGS-
SWITCHES

CONSTRUCTION	DESCRIPTION	DWG No.	CONSTRUCTION	DESCRIPTION	DWG No.
66KV SINGLE CIRCUIT DOUBLE BREAK ABS POLE MANUFACTURING DETAILS					
C6SHSA3BL/R 14m x 30kN Horizontal Double Break ABS Pole C6SHZA3BL/R		5-23-2-1			
132KV SINGLE CIRCUIT DOUBLE BREAK ABS POLE MANUFACTURING DETAILS					
C1SHSA3CL/R 18m x 30kN Horizontal Double Break ABS Pole C1SHZA3CL/R		5-23-3-1			

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Ergon Energy Corporation Ltd
ABN 50 087 646 062

Approved P DE SOUSA ROQUE
Date 26/04/2016
Checked R MARGANI
Drawn K STOLZ

OVERHEAD SUB-TRANSMISSION CONCRETE POLE MANUFACTURING DETAILS ABS POLE MANUFACTURING DETAILS INDEX				
DRAWING NUMBER:5-23-1-1	VOLUME 5	FOLDER 23	PAGE 1-1	ISSUE 0C

SUPERSEDES:

LENGTH (m) 14

LIMIT STATE DESIGN LOAD (kN) 30

TIP DIA. (mm) 315

BUTT DIA. (mm) 525

PLANTING DEPTH (m) 2.6 (NORMAL SOIL)

STRUCTURE TYPE: C6SHSA3BL/R, C6SHZA3BL/R

STOCK CODE: 2447852

NAME PLATE INFORMATION

MANUFACTURER'S NAME/TRADE MARK
 MONTH AND YEAR OF MANUFACTURE
 LENGTH OF POLE (m) / LIMIT STATE DESIGN LOAD
 STRUCTURE TYPE
 POLE MANUFACTURE
 BATCH NO.
 STANDARD / MARINE GRADE
 ERGON ENERGY
 STOCK CODE

STRENGTH LIMIT STATE DESIGN LOAD

DISTANCE FROM POLE TIP (m)	BENDING MOMENT M* KNm	SHEAR V* KN	TORSION T* KNm
0	30	105	25
1	30	111	25
2	60	117	25
3	90	123	25
4	120	129	25
5	150	135	25
6	180	141	25
7	210	147	25
8	240	153	25
9	270	159	25
10	300	165	25
11	330	171	25
12	360	177	25
13	390	183	25
14	420	189	25

DISTANCE FROM TIP (mm)	ORIENTATION				FITTING DESCRIPTION	TUBE LENGTH	FITTING PURPOSE
	0°	180°	90°	270°			
0	A	A			Tip Ring and Pole cap (plain)		Tip ring and pole cap
150	E	E			25 OD S/S tube	313	Stub Channel (M20)
560	E	E			25 OD S/S tube	319	Angle Bracket (M20)
660	G	G			M12 earth ferrule (30mm thread)		Angle Bracket Earth
3150	D	D			22 OD S/S tube	358	Down Rod Guide Bracket (M16)
3300	D	D			22 OD S/S tube	361	Down Rod Guide Bracket (M16)
6500	D	D			22 OD S/S tube	409	Down Rod Guide Bracket (M16)
6650	D	D			22 OD S/S tube	411	Down Rod Guide Bracket (M16)
8900			I		Name Plate		Name Plate
10200	D	D			22 OD S/S tube	464	Earth Switch Handle Mount (M16)
10250			G	G	M12 ferrule (30mm thread)		Flexible Braid Earth
10288			G	G	M12 ferrule (30mm thread)		Flexible Braid Earth
10400	T	T			38 OD S/S tube	467	For maintenance purpose
10500	D	D			22 OD S/S tube	469	Earth Switch Handle Mount (M16)
11100			G	G	M12 earth ferrule (30mm thread)		Additional earthing (for poles in normal soil)
11400			J	J	Depth Indication Mark		Depth indication marker (normal soil)
13500	K	K	K	K	5mm galv cross wires	514	Access barrier
14000							Pole butt

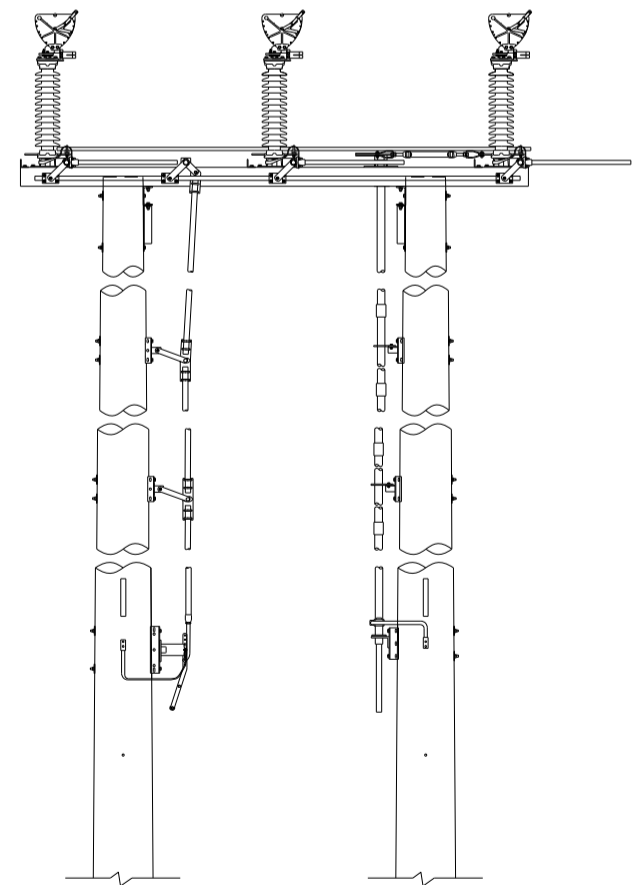
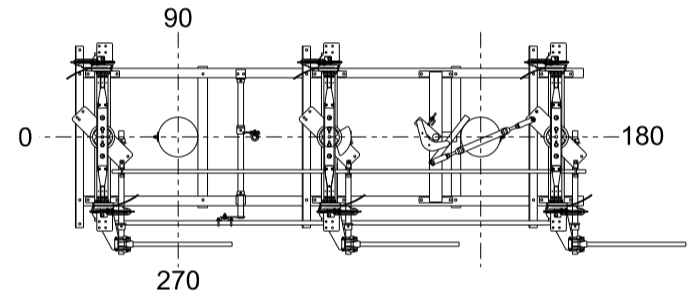
NOTES

- Orientation is measured clockwise when looking down on pole tip.
- Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance
- Longitudinal capacities to be not less than transverse capacities.
- Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
- A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
- No climbing access to ABS pole

POLE DESIGN LOADS

Pole is to be designed for :-

- A strength limit state tip load of H* = 30kN
- A strength limit state tip moment capacity of M* = 30kNm
- Limit state loads at through tubes
 M16 Bolt V^m = 50kN
 M20 Bolt V^m = 80kN



C6SHSA3BL
C6SHZA3BL

C6SHSA3BR
C6SHZA3BR

Horizontal ABS

SET	FITTING	DESCRIPTION	QTY
1	A	Tip ring & pole cap	1
2	J	Depth indication mark	1
1	I	Name plate	1
1	G	M12 earth ferrule (30mm thread length)	8
2	D	22 OD S/S tube for M16 bolt	6
2	E	25 OD S/S tube for M20 bolt	2
2	T	38 OD S/S tube	1
2	K	5mm galv. cross wires (access barrier)	2

Refer dwg 5-7-3-1 for Foundations
 Refer dwg 5-12-3-1 for pole construction

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OVERHEAD SUB-TRANSMISSION
 CONCRETE POLE MANUFACTURING DETAILS
 66kV HORIZONTAL DOUBLE BREAK ABS
 14m x 30kN

DRAWING NUMBER: 5-23-2-1

VOLUME	FOLDER	PAGE	ISSUE
5	23	2-1	0C

SUPERSEDES:

LENGTH (m) 18
 LIMIT STATE DESIGN LOAD (kN) 30
 TIP DIA. (mm) 315
 BUTT DIA. (mm) 548
 PLANTING DEPTH (m) 2.9 (NORMAL SOIL)
 STRUCTURE TYPE: C1SHSA3CL/R, C1SHZA3CL/R
 STOCK CODE: 2454734

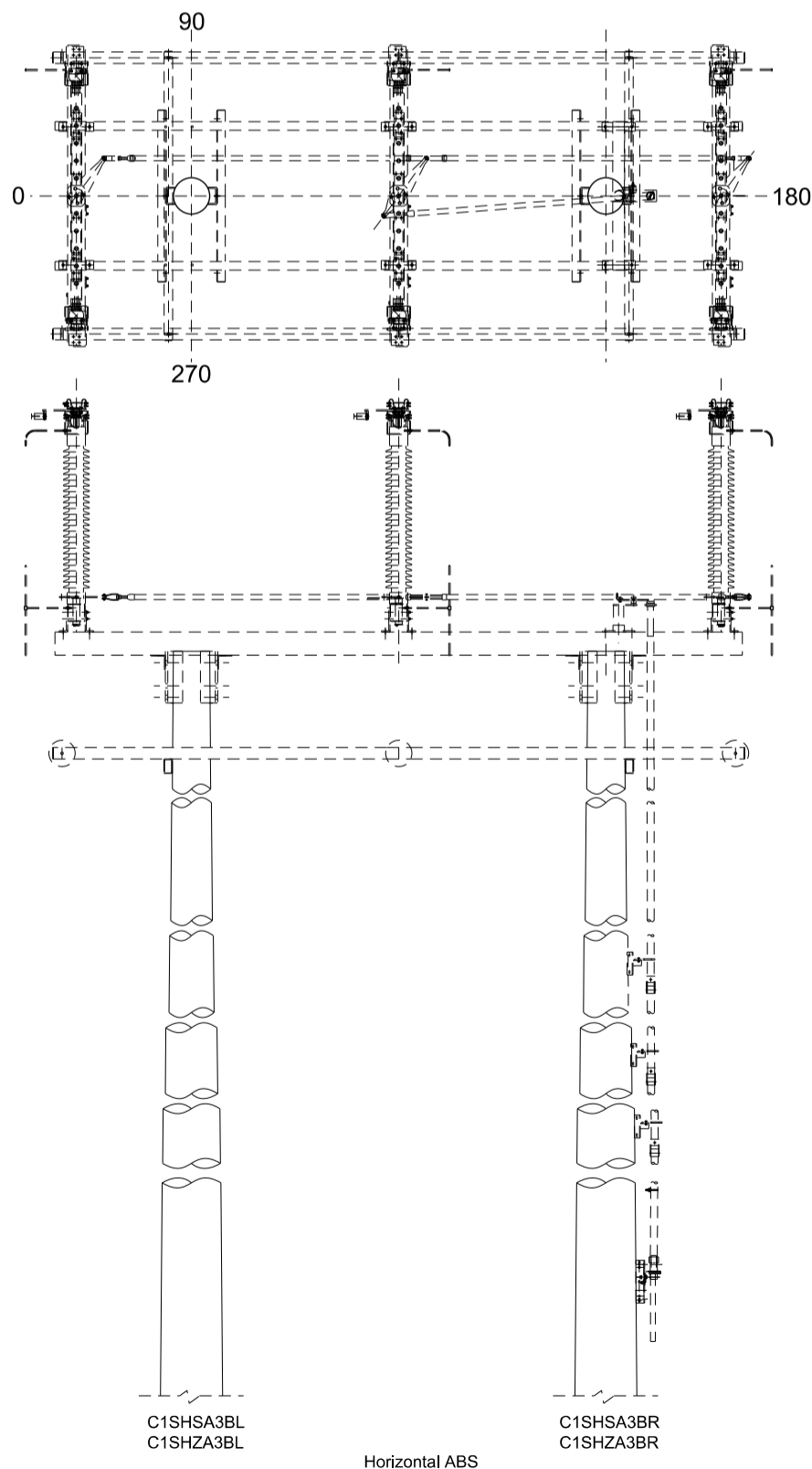
NAME PLATE INFORMATION

MANUFACTURER'S NAME/TRADE MARK
 MONTH AND YEAR OF MANUFACTURE
 LENGTH OF POLE (m) / LIMIT STATE DESIGN LOAD
 STRUCTURE TYPE
 POLE MANUFACTURE
 BATCH NO.
 STANDARD / MARINE GRADE
 ERGON ENERGY
 STOCK CODE

DISTANCE FROM TIP (mm)	ORIENTATION				FITTING DESCRIPTION	TUBE LENGTH	FITTING PURPOSE
	0°	180°	90°	270°			
	0.0	0.50	0.25	0.75			
0	A	A			Tip Ring and Pole cap (plain)		Tip ring and pole cap
100	E	E			25 OD S/S tube	315	ABS Base (M20)
300	E	E			25 OD S/S tube	316	ABS Base (M20)
400	G	G			M12 earth ferrule (30mm thread)		ABS Base Earth
1000	E	E			25 OD S/S tube	326	Cross Member (M20)
1100	G	G			M12 earth ferrule (30mm thread)		Cross Member Earth
4275	D	D			22 OD S/S tube	375	Down Rod Guide Bracket (M16)
4425	D	D			22 OD S/S tube	377	Down Rod Guide Bracket (M16)
8275	D	D			22 OD S/S tube	435	Down Rod Guide Bracket (M16)
8475	D	D			22 OD S/S tube	437	Down Rod Guide Bracket (M16)
12275	D	D			22 OD S/S tube	495	Down Rod Guide Bracket (M16)
12425	D	D			22 OD S/S tube	497	Down Rod Guide Bracket (M16)
12600			I		Name Plate		Name Plate
13825	D	D			22 OD S/S tube	518	ABS Handle Mount (M16)
13960			G	G	M12 ferrule (30mm thread)		Flexible Braid Earth
13998			G	G	M12 ferrule (30mm thread)		Flexible Braid Earth
14125	D	D			22 OD S/S tube	523	ABS Handle Mount (M16)
14200	T	T			38 OD S/S tube	524	For maintenance purpose
14800			G	G	M12 earth ferrule (30mm thread)		Additional earthing (for poles in normal soil)
15100			J	J	Depth Indication Mark		Depth indication marker (normal soil)
17500	K	K	K	K	5mm galv cross wires	574	Access barrier
18000							Pole butt

NOTES

- Orientation is measured clockwise when looking down on pole tip.
- Bracketed fittings require +/- 2 mm tolerance between them and +/- 2mm orientation tolerance
- Longitudinal capacities to be not less than transverse capacities.
- Stainless steel tubes are to be accurately positioned and free from concrete and deformity.
- A nominal Ø10 vent hole is required at the centre of the through tube provided for square rigging.
- No climbing access to ABS pole



SET	FITTING	DESCRIPTION	QTY
1	A	Tip ring & pole cap	1
2	J	Depth indication mark	2
1	I	Name plate	1
1	G	M12 earth ferrule (30mm thread length)	12
2	D	22 OD S/S tube for M16 bolt	8
2	E	25 OD S/S tube for M20 bolt	3
2	T	38 OD S/S tube	1
2	K	5mm galv. cross wires (access barrier)	2

Refer dwg 5-7-3-1 for Foundations
 Refer dwg 5-12-8-2 for pole construction

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**OVERHEAD SUB-TRANSMISSION
 CONCRETE POLE MANUFACTURING DETAILS
 132kV HORIZONTAL DOUBLE BREAK ABS
 18m x 30kN**

DRAWING NUMBER: 5-23-3-1

VOLUME	FOLDER	PAGE	ISSUE
5	23	3-1	0B

SUPERSEDES: