

Western Power's Asset Management System

Distribution Design Catalogue Stay Section 06



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Content Owner/Custodian: Distribution Design and Standards

This Revision: 7 – April 2025

Date for Next Review: April 2028

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Document control

Endorsement approvals

	Name	Title	Signature and Date
Compiled by	Nory Cerrado	Distribution Draftsperson	Signature on file
Checked by	Chris Omodei	Principal Engineer	Signature on file
Endorsed by	Ken Tiong	Team Leader	Signature on file
Approved by	Pep Ngwenya	Distribution Design & Standards Manager	Signature on file

Record of revisions

Revision No.	Date	EDM Version	Compiled by	Description
1	07/04/2025	9	Nory Cerrado	First Revision with new Format and 3 yearly review

This document gives direction to and influences the following documents.

Doc	Title of document
ALL CHAPTERS	DDC - DISTRIBUTION DESIGN CATALOGUE
ALL CHAPTERS	DCSH - DISTRIBUTION CONSTRUCTION STANDARD HANDBOOK
ALL CHAPTERS	DSPM - DISTRIBUTION SUBSTATION PLANT MANUAL

Stakeholders (people that were consulted when document was updated)

Business Unit / Function

Asset Management - Asset Performance

Asset Management – Safety Environment Quality and Training

Asset Management - Grid Transformation

Asset Operations – Network Operations

Asset Operations – Operational Services

Asset Operations – Customer Connection Services

Business and Customer Service – Customer Service

Notification list (people to be notified when document is updated)

Business Unit / Function

Asset Management - Asset Performance

Asset Management – Safety Environment Quality and Training

Asset Management - Grid Transformation

Asset Operations – Network Operations

Asset Operations – Operational Services

Asset Operations – Customer Connection Services

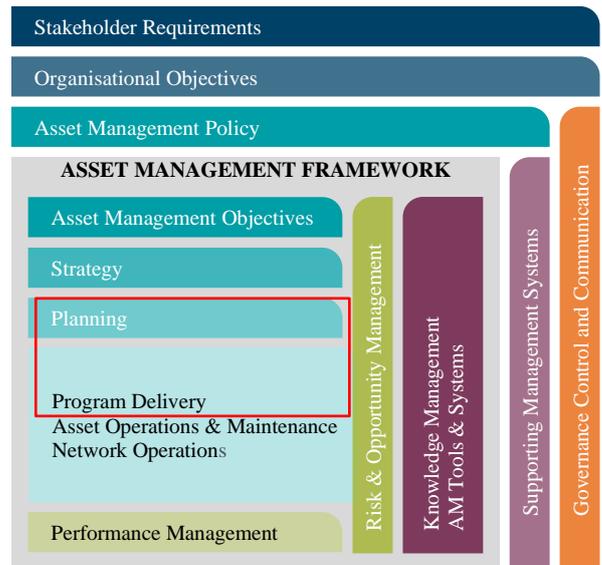
Business and Customer Service – Customer Service

This document must not be made available to personnel outside Western Power without the prior written approval of Western Power.

Document classification and hierarchy

A key requirement of the Western Power Asset Management Policy (AMP) is to develop and maintain an Asset Management System (AMS). This Distribution Substation Plant Manual is defined as a technical document within the AMS document classification and structure and sits within the planning and Program Delivery components of the AMS.

The AMS and the interrelationships between the collection of documents, tools and systems that are used for asset management are described in the AMS document EDM# [40304923](#).



Revision List

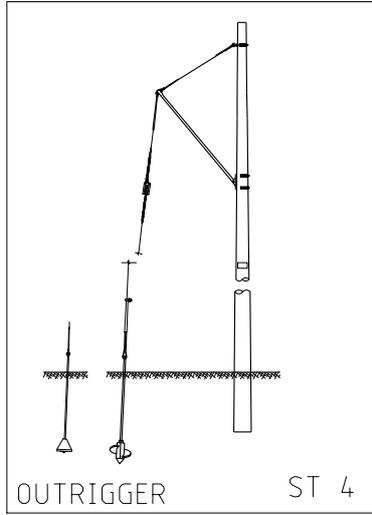
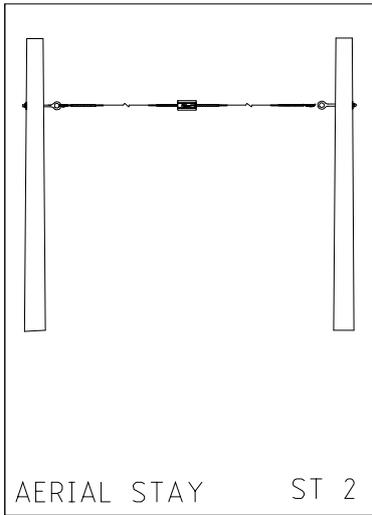
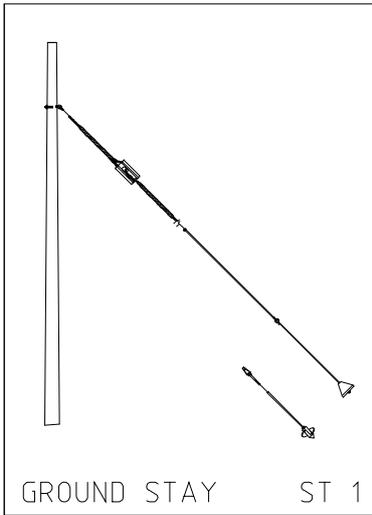
For drawing revisions please refer to the DDC Amendment list EDM# 24803827

General Notes

NOTE #	DESCRIPTION
1	Driving point is not required for normal ground conditions including small coffee rocks and shale. For harder ground condition, a driving point is recommended. (It is unlikely the driving point will be suitable for granite rock)
2	Expulsion Dropout Fuse (EDO) base and links as well as K-Mate fuse current limiters are not included in CUs but listed in HV51. Fault Tamer fuse base and links are listed in HV52. Fault Tamer fuse are not to be used on 33kV networks and have a maximum rating of 20A. EDOs are used on 33kV networks and for current rating greater than 20A.
3	For the physical dimension tables the uppermost king bolt / eye bolt is the reference point with coordinates X=0.0, Y=0.0 (Datum)
4	The conductor location in the Y axis of the physical dimension tables lists the height of the conductor on the top of the post insulator above the datum. This dimension has been rounded down taking equipment differences, manufacturing tolerances and installation variations into account. On angle structures, where the conductor is attached to the side of the insulator head the conductor is located marginally lower than if located on the top of the insulator. No adjustment is considered necessary to the Y dimension in these cases.
5	For conductor clashing calculation, apply the correct Y dimension which may differ from that listed in the dimension table which is used for ground clearance simulation purposes. E.g. HV09 RHS span (centre to outer phase) Ydim to be 230mm and not 310mm.
6	HV isolators to be selected according to HV53.

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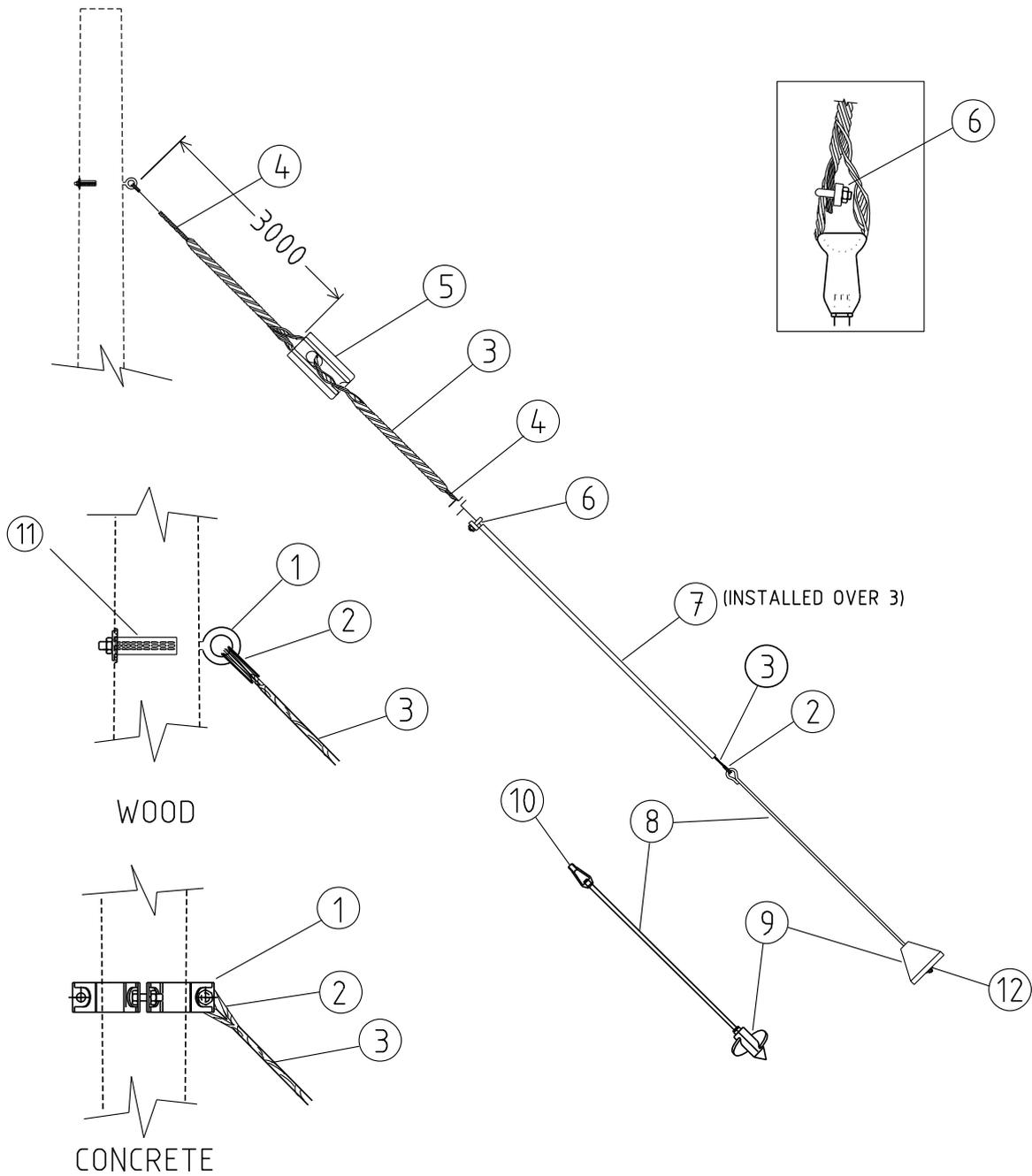


				COMPATIBLE UNIT			DISTRIBUTION DESIGN CATALOGUE			
				TITLE			DRAWN: JRR DATE: 22-04-2014		DRG. No.	
				ST COMPATIBLE UNITS			ORIGINATED: AT SCALE: NTS		ST INDEX	
							CHECKED: REE		REV. C	
							APPROVED: GRANT STACY		SHT.	
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRD.					
C	16.06.15	FORMAT CHANGED & ST 5 & 6 DELETED		AT	REE	GS				
B	13.10.09	ORIGINAL ISSUE								



Stays CU List

CU	CU DESCRIPTION
ST1_19/200C	Ground stay_19/2.00 concrete pole – screw anchor
ST1_19/275C	Ground stay_19/2.75 concrete pole – screw anchor
ST1_19/200W	Ground stay_19/2.00 wood pole – screw anchor
ST1_19/200WC	Ground stay_19/2.00 wood pole – concrete anchor
ST1_19/275W	Ground stay_19/2.75 wood pole – screw anchor
ST1_19/275WC	Ground stay_19/2.75 wood pole – concrete anchor
ST2_19/200C	Aerial stay_19/2.00 concrete pole
ST2_19/200W	Aerial stay_19/2.00 wood pole
ST2_19/200CW	Aerial stay_19/2.00 concrete pole to wood pole
ST4_19/200C	Outrigger stay 19/2.00_ concrete pole – screw anchor
ST4_19/275C	Outrigger stay 19/2.75_ concrete pole – screw anchor
ST4_19/200W	Outrigger stay 19/2.00_ wood pole – screw anchor
ST4_19/200WC	Outrigger stay 19/2.00_ wood pole – concrete anchor
ST4_19/275W	Outrigger stay 19/2.75_ wood pole – screw anchor
ST4_19/275WC	Outrigger stay 19/2.72_ wood pole – concrete anchor



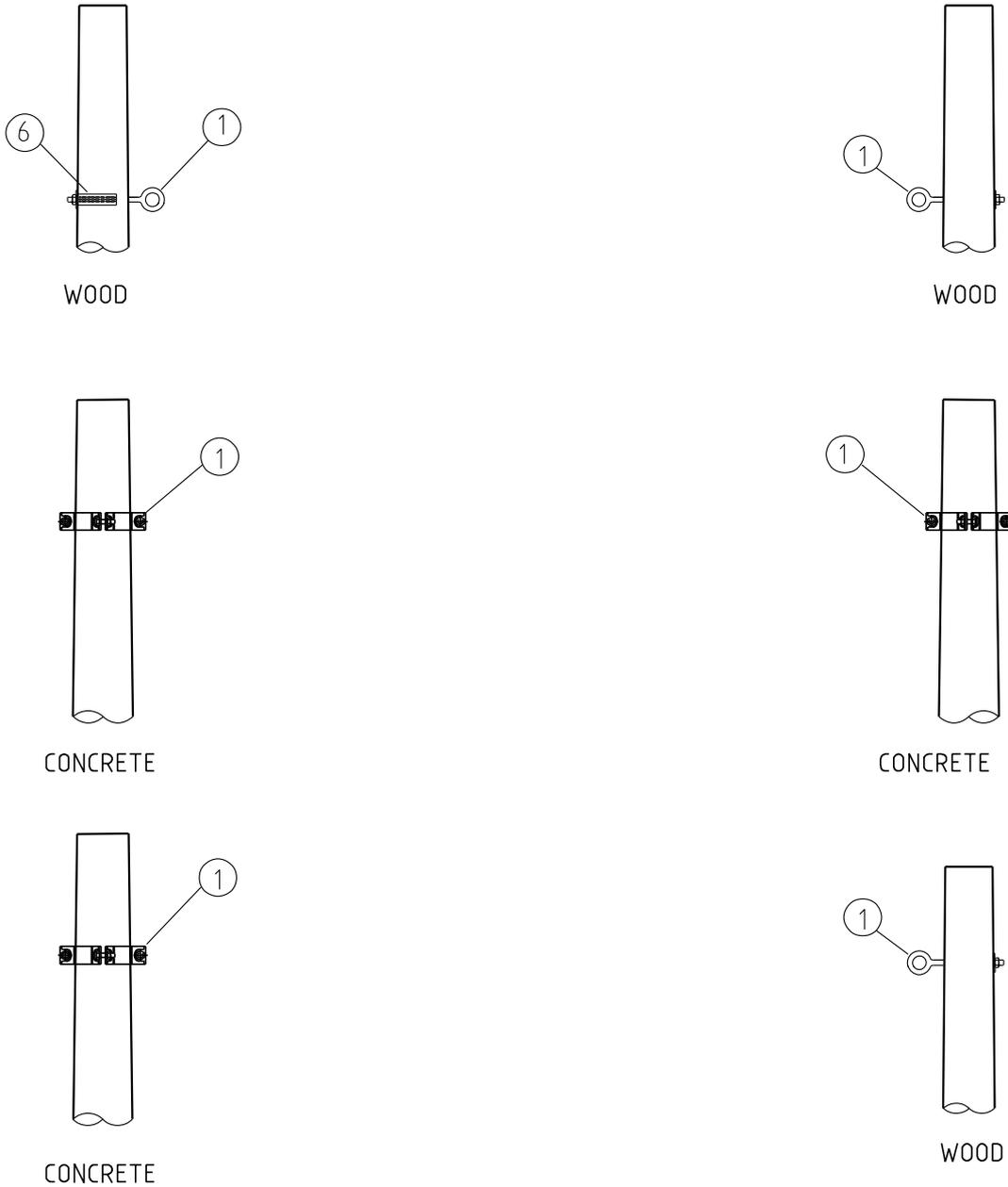
NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. IF THE STAY WIRE PASSES THROUGH L.V. MAINS THEN THE L.V. MAINS MUST BE CONSTRUCTED ON A 2100mm CROSSARM.

				COMPATIBLE UNIT			DISTRIBUTION DESIGN CATALOGUE		westernpower		
				TITLE			DRAWN: JRR		DATE: 22-04-2014		
				GROUND STAY			ORIGINATED:		SCALE: NTS		
							CHECKED: REE		DRG. No.		
							APPROVED: GRANT STACY		ST01		
							REV. E		SHT.		
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRD.						
E	20 10 17	FOOT NOTE ABOUT STAY EARTHING DELETED		BP	JC	GS					
D	26 10 10	ORIGINAL ISSUE									

CU	CU Description				
ST1_19/200C Ground stay 19/2.00_ concrete pole – screw anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CB3041	stay clamp conc pole with bolts	1	ea	
2	OT0064	rope thimble 20mm	1	ea	
3	CF0664	helical termination steel 19/2.00	4	ea	
4	ES0062	stay wire 19/2.00, 15m coil	1	ea	
5	IA0053	stay insulator	1	ea	
6	OG0352	wire rope grip	2	ea	
7	CG0005	UPVC stay protector	1	ea	
8	CA0151	rod anchor 1"	1	ea	
9	CA0027	screw anchor 200mm diam.	1	ea	
10	CA9050	thimble eye nut	1	ea	
ST1_19/275C Ground stay 19/2.75_ concrete pole – screw anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CB3041	stay clamp conc pole with bolts	1	ea	
2	OT0064	rope thimble 20mm	1	ea	
3	CF0662	helical termination steel 19/2.75	4	ea	
4	ES0061	stay wire 19/2.75, 15m coil	1	ea	
5	IA0053	stay insulator	1	ea	
6	OG0352	wire rope grip	2	ea	
7	CG0005	UPVC stay protector	1	ea	
8	CA0151	rod anchor 1"	1	ea	
9	CA0029	screw anchor 300mm diam.	1	ea	
10	CA9050	thimble eye nut	1	ea	
ST1_19/200W Ground stay 19/2.00_ wood pole – screw anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
2	OT0064	rope thimble 20mm	1	ea	
3	CF0664	helical termination steel 19/2.00	4	ea	
4	ES0062	stay wire 19/2.00, 15m coil	1	ea	
5	IA0053	stay insulator	1	ea	
6	OG0352	wire rope grip	2	ea	
7	CG0005	UPVC stay protector	1	ea	
8	CA0151	rod anchor 1"	1	ea	
9	CA0027	screw anchor 200mm diam.	1	ea	
10	CA9050	thimble eye nut	1	ea	
11	CE7541	dispersion plate	1	ea	

CU	CU Description				
ST1_19/200WC Ground stay 19/2.00_ wood pole - concrete anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
2	OT0064	rope thimble 20mm	2	ea	
3	CF0664	helical termination steel 19/2.00	4	ea	
4	ES0062	stay wire 19/2.00, 15m coil	1	ea	
5	IA0053	stay insulator	1	ea	
6	OG0352	wire rope grip	2	ea	
7	CG0005	UPVC stay protector	1	ea	
8	CS0436	eye bolt 2400mm lg 24mm diam	1	ea	
9	CA0006	concrete anchor 480mm diam.	1	ea	
11	CE7541	dispersion plate	1	ea	
12	AW3582	150mm sq flat washer M24	1	ea	
ST1_19/275W Ground stay 19/2.75_ wood pole – screw anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
2	OT0064	rope thimble 20mm	1	ea	
3	CF0662	helical termination steel 19/2.75	4	ea	
4	ES0061	stay wire 19/2.75, 15m coil	1	ea	
5	IA0053	stay insulator	1	ea	
6	OG0352	wire rope grip	2	ea	
7	CG0005	UPVC stay protector	1	ea	
8	CA0151	rod anchor 1"	1	ea	
9	CA0029	screw anchor 300m diam.	1	ea	
10	CA9050	thimble eye nut	1	ea	
11	CE7541	dispersion plate	1	ea	
ST1_19/275WC Ground stay 19/2.75_ wood pole – concrete anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
2	OT0064	rope thimble 20mm	2	ea	
3	CF0662	helical termination steel 19/2.75	4	ea	
4	ES0061	stay wire 19/2.75, 15m coil	1	ea	
5	IA0053	stay insulator	1	ea	
6	OG0352	wire rope grip	2	ea	
7	CG0005	UPVC stay protector	1	ea	
8	CS0436	eye bolt 2400mm lg 24mm diam	1	ea	
9	CA0006	concrete anchor 480mm diam.	1	ea	
11	CE7541	dispersion plate	1	ea	
12	AW3582	150mm sq flat washer M24	1	ea	



NOTES:-
 1. DISPERSION PLATE ON NETWORK SIDE ONLY.

				COMPATIBLE UNIT			DISTRIBUTION DESIGN CATALOGUE		westernpower	
				AERIAL STAY			DRAWN: JRR DATE: 22-04-2014 DRG. No.		ST02	
							ORIGINATED: SCALE: NTS			
							CHECKED: REE			
							APPROVED: GRANT STACY		REV. C SHT.	
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRD.					
C	05.07.17	NOTES REVEISED	JC	REE	GS					
B	17.06.16	CONCRETE POLE TO WOOD POLE STAY DETAILS ADDED	JC	REE	GS					
A	06.11.09	ORIGINAL ISSUE								

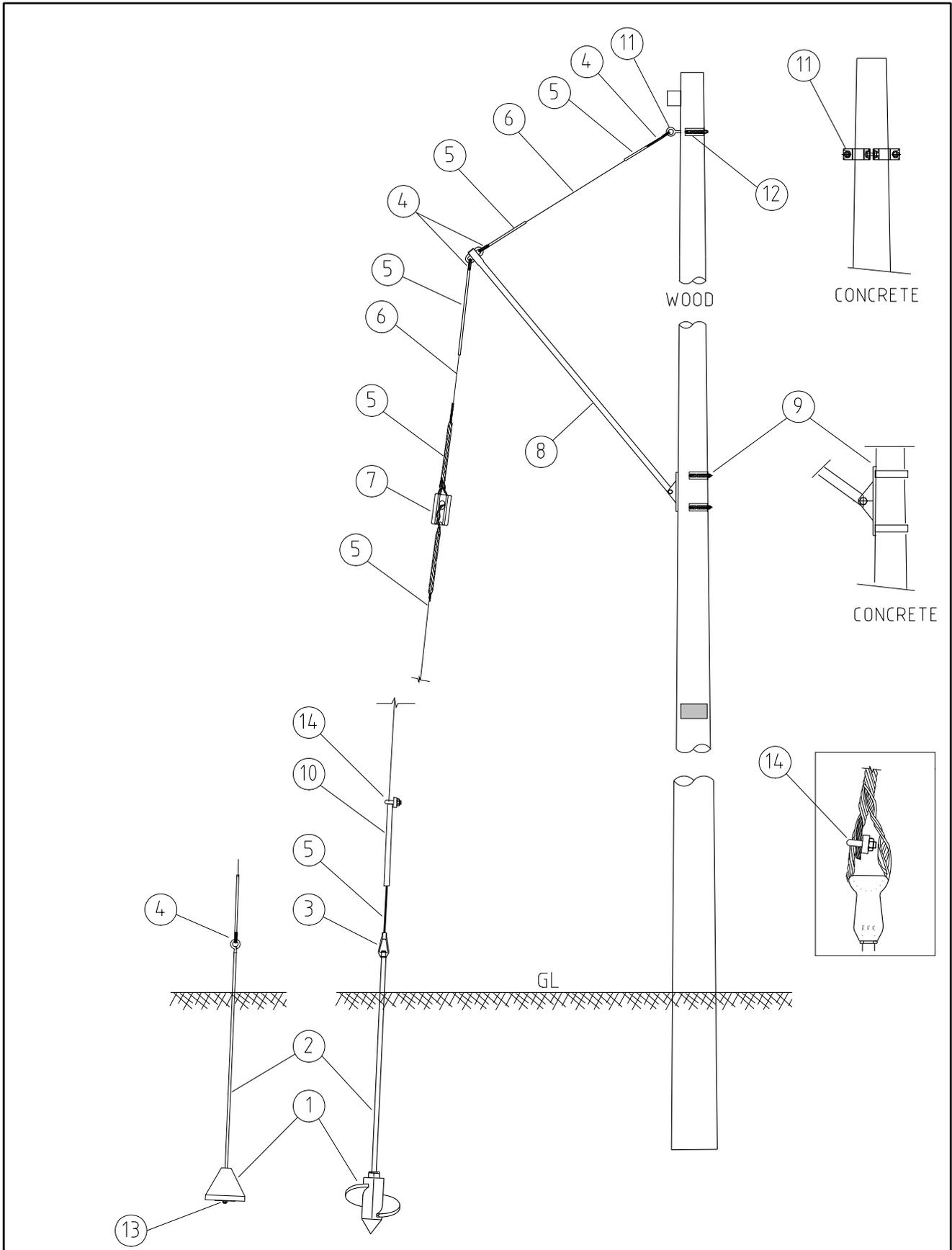


CU	CU Description
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ST2_19/200C		Aerial stay 19/2.00_ concrete pole			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CB3041	stay clamp conc pole with bolts	2	ea	
2	OT0064	rope thimble	2	ea	
3	CF0664	helical termination steel 19/2.00	4	ea	
4	ES0062	stay wire 19/2.00, 15m coil	2	ea	
5	IA0053	stay insulator	1	ea	

ST2_19/200W		Aerial stay 19/2.00_ wood pole			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	AB6039	eyebolt 20dia x 400 lg with nut and washer	2	ea	
2	OT0064	rope thimble	2	ea	
3	CF0664	helical termination steel 19/2.00	4	ea	
4	ES0062	stay wire 19/2.00, 15m coil	2	ea	
5	IA0053	stay insulator	1	ea	
6	CE7541	dispersion plate	1	ea	

ST2_19/200CW		Aerial stay 19/2.00_ concrete pole to wood pole			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
1	CB3041	stay clamp conc pole with bolts	1	ea	
2	OT0064	rope thimble	2	ea	
3	CF0664	helical termination steel 19/2.00	4	ea	
4	ES0062	stay wire 19/2.00, 15m coil	2	ea	
5	IA0053	stay insulator	1	ea	



				COMPATIBLE UNIT		DISTRIBUTION DESIGN CATALOGUE			
				OUTRIGGER STAY		DRAWN: JRR DATE: 22-04-2014 DRG. No.		ST04	
						ORIGINATED: SCALE: NTS			
						CHECKED: AT		REV. F SHT.	
						APPROVED: GRANT STACY			
REV	DATE	DESCRIPTION	ORGD.	CHKD.	APRD.				
F	16.06.15	FORMAT CHANGED AND REDRAWN		AT	DVT				
E	01.10.10	ORIGINAL ISSUE			GS				

CU	CU Description
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ST4_19/200C		Outrigger stay 19/2.00_ concrete pole – screw anchor			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CA0027	screw anchor 200mm diam.	1	ea	
2	CA0151	rod anchor 1"	1	ea	
3	CA9050	thimble eye nut	1	ea	
4	OT0064	rope thimble 20mm	3	ea	
5	CF0664	helical termination steel 19/2.00	6	ea	
6	ES0062	stay wire 19/2.00, 15m coil	1	ea	
7	IA0053	stay insulator	1	ea	
8	CB0476	outrigger bracket	1	ea	
9	FM0900	outrigger clamp	2	ea	
10	CG0003	UPVC stay protector helical split style	1	ea	
11	CB3041	stay clamp conc pole with bolts	1	ea	
14	OG0352	wire rope grip	2	ea	

ST4_19/275C		Outrigger stay 19/2.75_ concrete pole – screw anchor			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CA0029	screw anchor 300mm diam.	1	ea	
2	CA0151	rod anchor 1"	1	ea	
3	CA9050	thimble eye nut	1	ea	
4	OT0064	rope thimble 20mm	3	ea	
5	CF0662	helical termination steel 19/2.75	6	ea	
6	ES0061	stay wire 19/2.75, 15m coil	1	ea	
7	IA0053	stay insulator	1	ea	
8	CB0476	outrigger bracket	1	ea	
9	FM0900	outrigger clamp	2	ea	
10	CG0003	UPVC stay protector helical split style	1	ea	
11	CB3041	stay clamp conc pole with bolts	1	ea	
14	OG0352	wire rope grip	2	ea	

CU	CU Description
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ST4_19/200W		Outrigger stay 19/2.00_ wood pole – screw anchor			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CA0027	screw anchor 200mm diam.	1	ea	
2	CA0151	rod anchor 1"	1	ea	
3	CA9050	thimble eye nut	1	ea	
4	OT0064	rope thimble 20mm	3	ea	
5	CF0664	helical termination steel 19/2.00	6	ea	
6	ES0062	stay wire 19/2.00, 15m coil	1	ea	
7	IA0053	stay insulator	1	ea	
8	CB0476	outrigger bracket	1	ea	
9	AB6737	pole bolt 400mm lg M20	2	ea	
10	CG0003	UPVC stay protector helical split style	1	ea	
11	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
12	CE7541	dispersion plate	1	ea	
14	OG0352	wire rope grip	2	ea	

ST4_19/200WC		Outrigger stay 19/2.00_ wood pole – concrete anchor			
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CA0006	concrete anchor 480mm diam.	1	ea	
2	CS0436	eye bolt 2400mm lg 24mm diam	1	ea	
4	OT0064	rope thimble 20mm	4	ea	
5	CF0664	helical termination steel 19/2.00	6	ea	
6	ES0062	stay wire 19/2.00, 15m coil	1	ea	
7	IA0053	stay insulator	1	ea	
8	CB0476	outrigger bracket	1	ea	
9	AB6737	pole bolt 400mm lg M20	2	ea	
10	CG0003	UPVC stay protector helical split style	1	ea	
11	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
12	CE7541	dispersion plate	1	ea	
13	AW3582	150mm sq flat washer M24	1	ea	
14	OG0352	wire rope grip	2	ea	

CU	CU Description
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ST4_19/275W Outrigger stay 19/2.75_ wood pole – screw anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CA0029	screw anchor 300mm diam.	1	ea	
2	CA0151	rod anchor 1"	1	ea	
3	CA9050	thimble eye nut	1	ea	
4	OT0064	rope thimble 20mm	3	ea	
5	CF0662	helical termination steel 19/2.75	6	ea	
6	ES0061	stay wire 19/2.75, 15m coil	1	ea	
7	IA0053	stay insulator	1	ea	
8	CB0476	outrigger bracket	1	ea	
9	AB6737	pole bolt 400mm lg M20	2	ea	
10	CG0003	UPVC stay protector helical split style	1	ea	
11	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
12	CE7541	dispersion plate	1	ea	
14	OG0352	wire rope grip	2	ea	

ST4_19/275WC Outrigger stay 19/2.75_ wood pole – concrete anchor					
ITEM NUMBER	STOCK CODE	DESCRIPTION	QTY RQD	UNIT OF MEASURE	REMARKS
1	CA0006	concrete anchor 480mm diam.	1	ea	
2	CS0436	eye bolt 2400mm lg 24mm diam	1	ea	
4	OT0064	rope thimble 20mm	4	ea	
5	CF0662	helical termination steel 19/2.75	6	ea	
6	ES0061	stay wire 19/2.75, 15m coil	1	ea	
7	IA0053	stay insulator	1	ea	
8	CB0476	outrigger bracket	1	ea	
9	AB6737	pole bolt 400mm lg M20	2	ea	
10	CG0003	UPVC stay protector helical split style	1	ea	
11	AB6039	eyebolt 20dia x 400 lg with nut and washer	1	ea	
12	CE7541	dispersion plate	1	ea	
13	AW3582	150mm sq flat washer M24	1	ea	
14	OG0352	wire rope grip	2	ea	