

# Western Power's Asset Management System

## Distribution Construction Standard Handbook Low Voltage Overhead Part 06 (L)



Original Issue: November 2003

Content Owner/Custodian: Distribution Design and Standards

This Revision: 1 – 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	01/04/2025	13	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

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Business and Customer Service – Customer Service

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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](#).



## General Notes

Clearances of conductors from ground, other structures and other conductors shall be undertaken in accordance with Distribution Overhead Line Design Manual – Clearances chapter, EDM 29636820.

The low voltage neutral shall be continuous at all times, including where low voltage isolation is provided as indicated in drawing L06 and terminations as shown in L03.

All aerial connections shall be undertaken by mechanical means, hand splicing is not acceptable. Any in-line service extensions shall match the existing conductor size unless otherwise rated for connected load.

All poles supporting transposed open aerial conductors must be identified. Approved 'LV Transposed' signs must be attached on the roadside of the pole; refer to the Distribution Equipment Labelling Standard (DELS), EDM 25433005. A transposed sign may also indicate incorrect phase positions.

No LV bonding wire or dispersion plates on LV required if only LV on structure or HV with running earth present.

## Low Voltage Spreaders

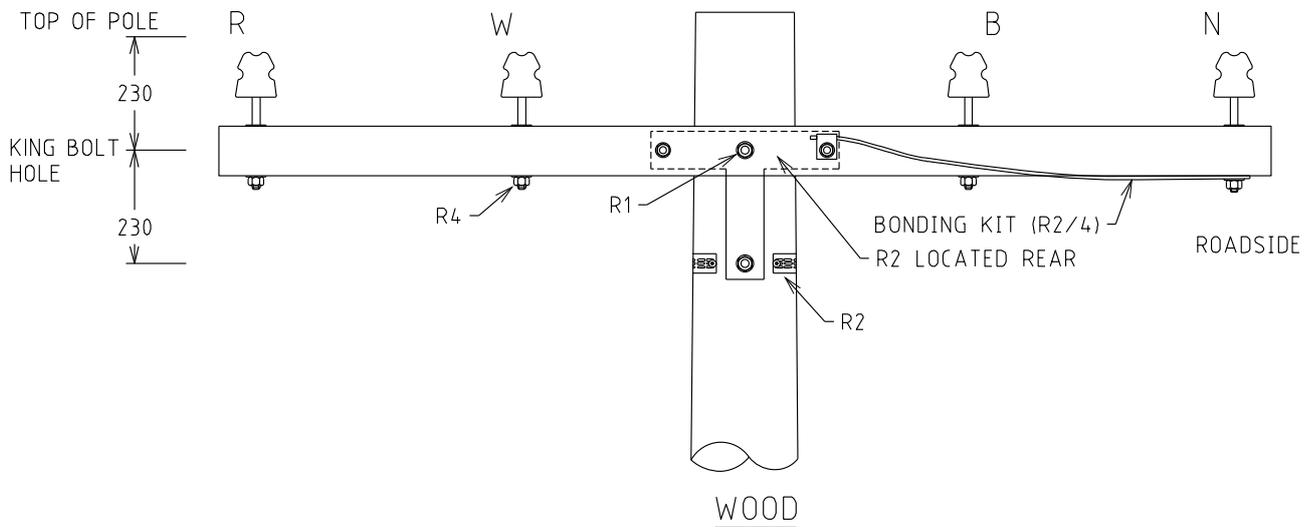
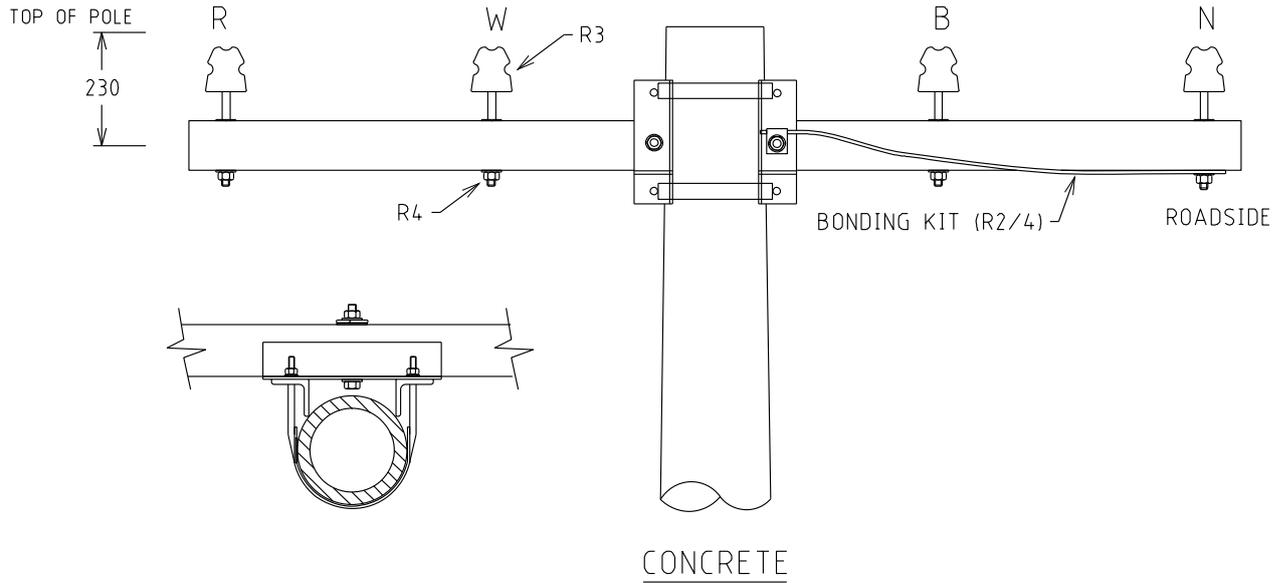
All LV spreader requirements shall be as detailed in the Low Voltage Spreaders Standard, EDM 27665827.

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**Drawing Register**

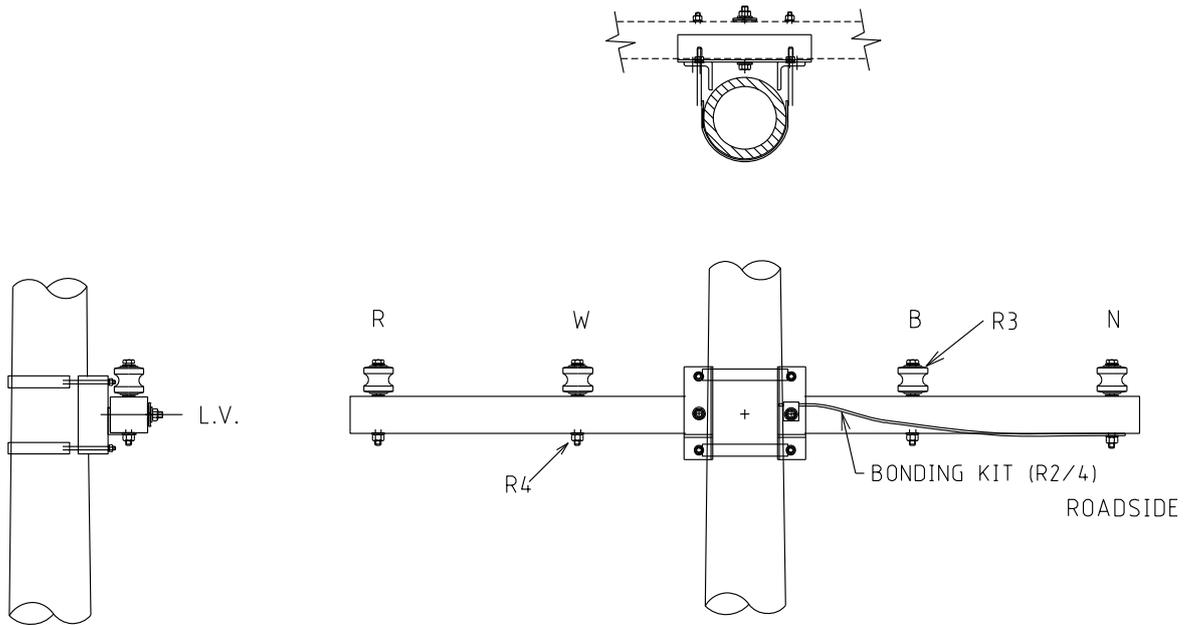
<b>Number</b>	<b>Revision</b>	<b>Description</b>
L01	E	LV Intermediate Deviation 0 to 2°
L02	E	LV Intermediate Deviation 2 - 20°
L03	E	Inline Strain or Angle 21 - 40°
L05	D	Termination
L06	E	L.V. Isolators Underslung
L07	D	Two Cross-arms



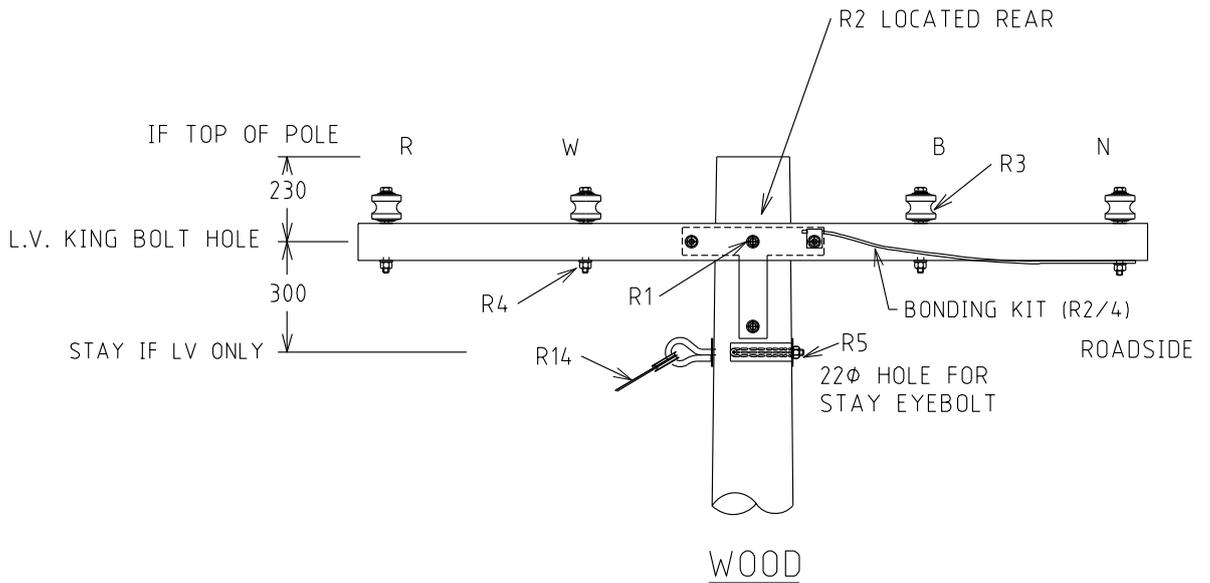
NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL HOLES 18DIA U.O.N.
3. IF SERVICE FUSE IS FITTED SEE R11.
4. BONDING KIT TO BE USED FOR WOOD CROSS-ARM ONLY.
5. DISPERSION PLATES ONLY REQUIRED IF HV IS PRESENT ON POLE.

				STRUCTURE			DISTRIBUTION CONSTR. STANDARD			
				TITLE			DRAWN: JRR		DATE: 25-03-2014	
				LV INTERMEDIATE DEVIATION 0 to 2°			ORIGINATED:		SCALE: NTS	
							CHECKED: REE		REV. E	
							APPROVED: GRANT STACY		SHT. E	
REV	DATE	DESCRIPTION	DRGD	CHKD	APRD					
E	23.11.18	NOTE 5 ADDED	JN	REE	GS					
D	13.09.17	TITLE CHANGED AND INSULATOR DISTANCES DELETED	JB	NMc	GS					
C	24.02.17	BONDING KIT, NOTE 4 AND DIMENSION 'D' ADDED	KT	JC	GS					
B	14.10.13	ORIGINAL ISSUE								



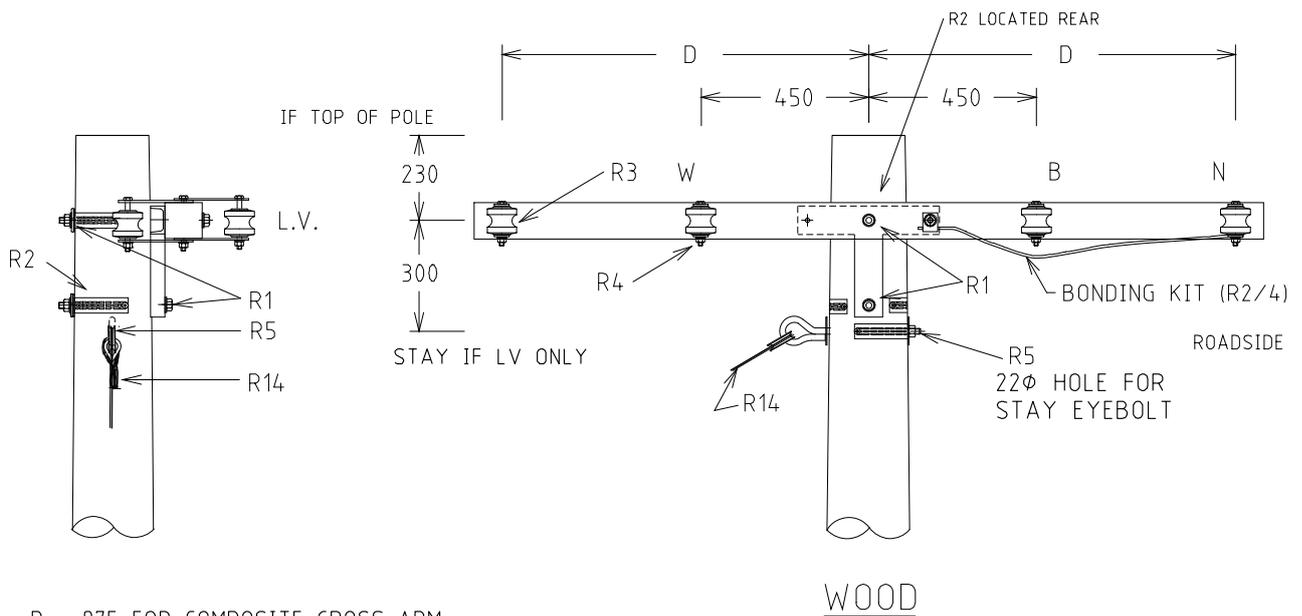
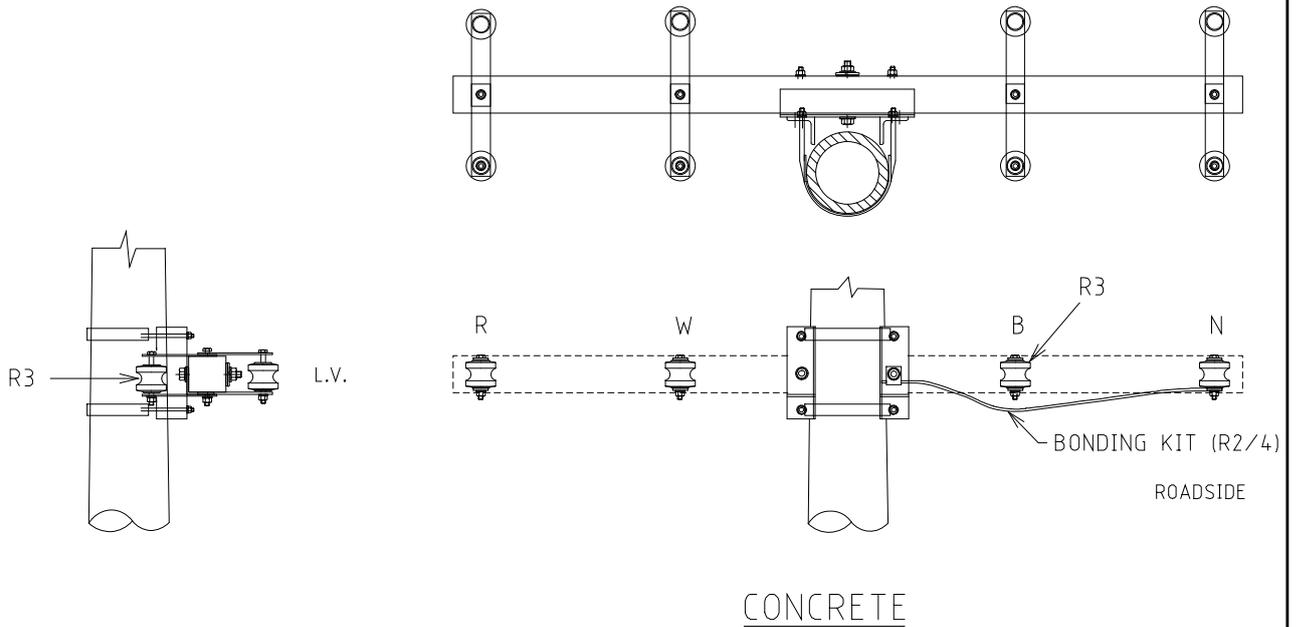
CONCRETE



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL HOLES 18DIA U.O.N.
3. IF SERVICE FUSE IS FITTED SEE R11.
4. IF EXTRA CLEARANCE REQUIRED DISTANCE CAN BE REDUCED TO 600mm
5. BONDING KIT TO BE USED FOR WOOD CROSS-ARM ONLY.
6. DISPERSION PLATES ONLY REQUIRED IF HV IS PRESENT ON POLE.

				STRUCTURE			DISTRIBUTION CONSTR. STANDARD			
				TITLE			DRAWN: JRR		DATE: 25-03-2014	
				LV INTERMEDIATE			ORIGINATED:		SCALE: NTS	
				DEVIATION 2° - 20°			CHECKED: REE		DRG. No. L02	
							APPROVED: GRANT STACY		REV. E	
REV	DATE	DESCRIPTION	DRGD	CHKD	APRD					

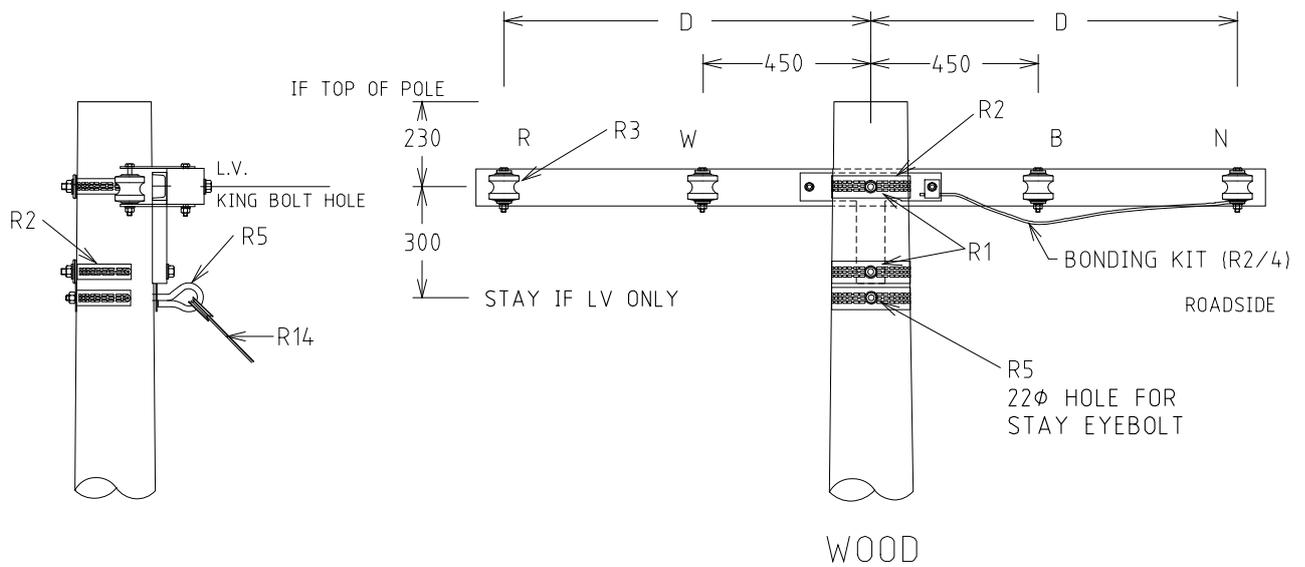
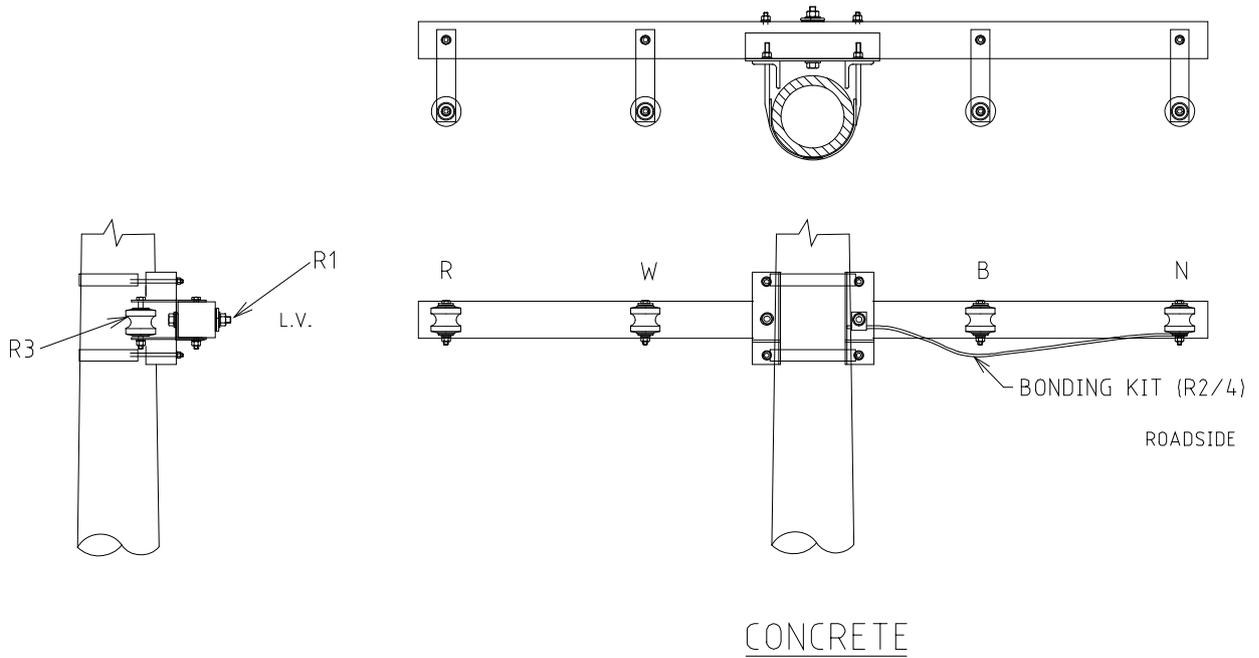


D = 975 FOR COMPOSITE CROSS-ARM  
985 FOR TIMBER CROSS-ARM

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL HOLES 18DIA U.O.N.
3. IF SERVICE FUSE IS FITTED SEE R11.
4. BONDING KIT TO BE USED FOR WOOD CROSS-ARM ONLY.
5. DISPERSION PLATES ONLY REQUIRED IF HV IS PRESENT ON POLE.

				STRUCTURE			DISTRIBUTION CONSTR. STANDARD			
				TITLE			DRAWN: JRR		DATE: 25-03-2014	
				INLINE STRAIN OR ANGLE 21° - 40°			ORIGINATED:		SCALE: NTS	
							CHECKED: REE		APPROVED: GRANT STACY	
REV	DATE	DESCRIPTION	DRGD	CHKD	APRD					



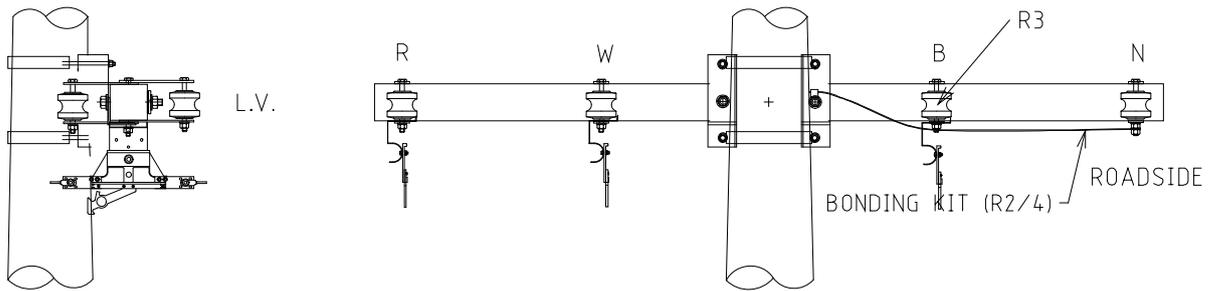
D = 975 FOR COMPOSITE CROSS-ARM  
985 FOR TIMBER CROSS-ARM

NOTES:-

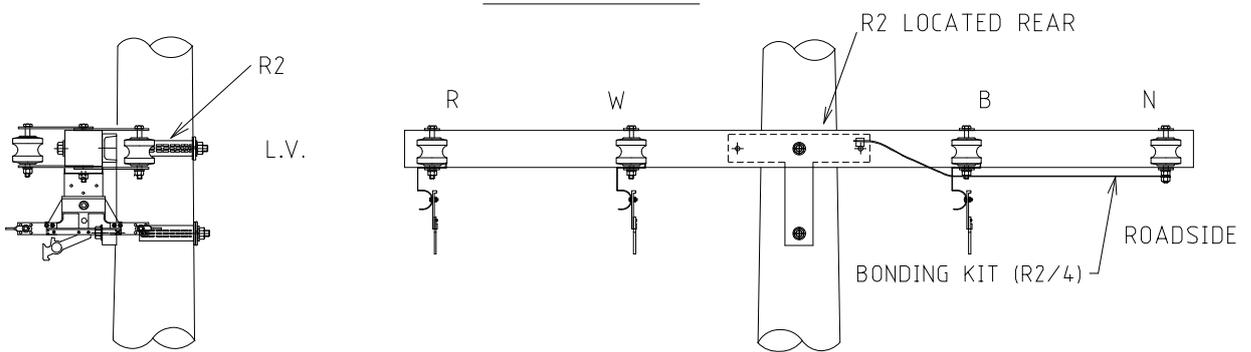
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL HOLES 18φ U.O.N.
3. IF SERVICE FUSE IS FITTED SEE R11.
4. BONDING KIT TO BE USED FOR WOOD CROSS-ARM ONLY.
5. DISPERSION PLATES ONLY REQUIRED IF HV IS PRESENT ON POLE.

				STRUCTURE			DISTRIBUTION CONSTR. STANDARD		westernpower	
				TITLE			DRAWN: JRR		DATE: 25-03-2014	
				TERMINATION			ORIGINATED:		SCALE: NTS	
							CHECKED: REE		DRG. No. L05	
							APPROVED: GRANT STACY		REV. D	
REV	DATE	DESCRIPTION	DRGD	CHKD	APRD					
D	23.11.18	NOTE 5 ADDED	JN	REE	GS					
C	24.02.17	BONDING KIT, NOTE 4 AND DIMENSION 'D' ADDED	KT	JC	GS					
B	05.12.13	ORIGINAL ISSUE								

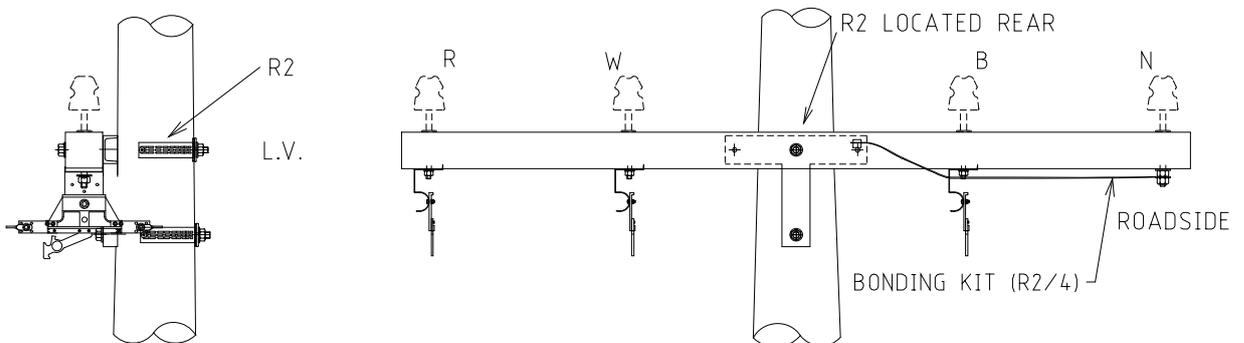
### CONCRETE POLE



### WOOD POLE



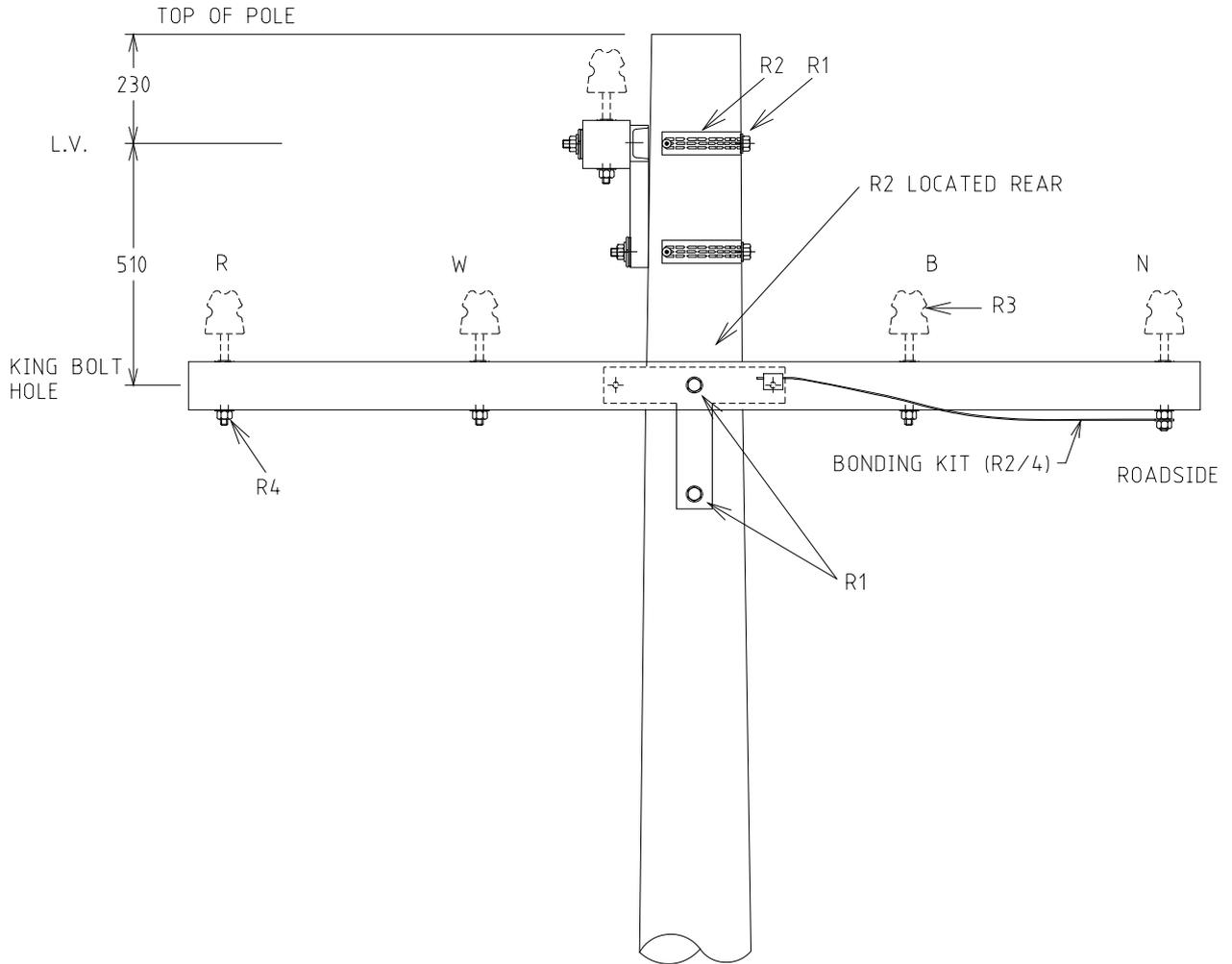
### UNDER TRANSFORMER



**NOTES:-**

1. ALL HOLES 18DIA U.O.N.
2. IF SERVICE FUSE IS FITTED SEE R11.
3. THE NEUTRAL MUST ALWAYS BE CONTINUOUS INCLUDING POLES WHERE ISOLATORS ARE FITTED.
4. BONDING KIT TO BE USED FOR WOOD CROSS-ARM ONLY.
5. DISPERSION PLATES ONLY REQUIRED IF HV IS PRESENT ON POLE.

				STRUCTURE			DISTRIBUTION CONSTR. STANDARD				
				TITLE			DRAWN: JRR		DATE: 25-03-2014		
				L.V. ISOLATORS UNDERSLUNG			ORIGINATED:		SCALE: NTS		
							CHECKED: REE		REV. E		
							APPROVED: GRANT STACY		SHT. E		
REV	DATE	DESCRIPTION	DRGD	CHKD	APRD						
E	23.11.18	NOTE 5 ADDED		JN	REE	GS					
D	09.08.17	LV UNDERSLUNG SWITCH REVISED		REE	JC	GS					
C	24.02.17	BONDING KIT AND NOTE 4 ADDED		KT	JC	GS					
B	05.12.13	ORIGINAL ISSUE									



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL HOLES 18DIA U.O.N.
3. IF SERVICE FUSE IS FITTED SEE R11.
4. REFER R14 FOR STAYS ON TERMINATION AND ANGLES.
5. BONDING KIT TO BE USED FOR WOOD CROSS-ARM ONLY.
6. DISPERSION PLATES ONLY REQUIRED IF HV IS PRESENT ON POLE.

				STRUCTURE		DISTRIBUTION CONSTR. STANDARD		westernpower	
				TITLE		DRAWN: JRR		DATE: 25-03-2014	
				TWO CROSSARM		ORIGINATED:		SCALE: NTS	
						CHECKED: REE		DRG. No. L07	
						APPROVED: GRANT STACY		REV. D	
REV	DATE	DESCRIPTION	DRG.	CHKD.	APRD.				
D	23.11.18	NOTE 6 ADDED		JN	REE	GS			
C	24.02.17	BONDING KIT AND NOTE 5 ADDED		KT	JC	GS			
B	05.12.13	ORIGINAL ISSUE							