

PROTECTED



DISTRIBUTION CONSTRUCTION STANDARDS

Part 11

Date Published: 4 April 2023

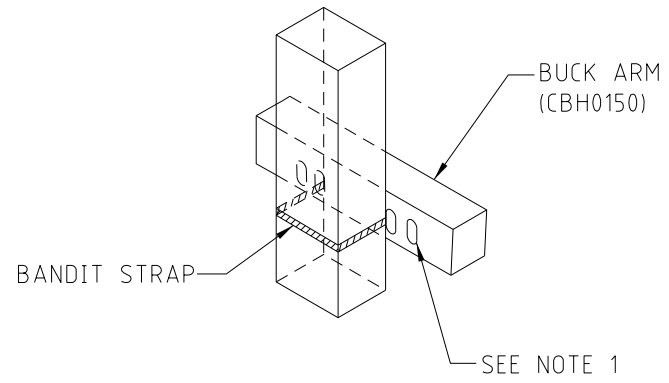
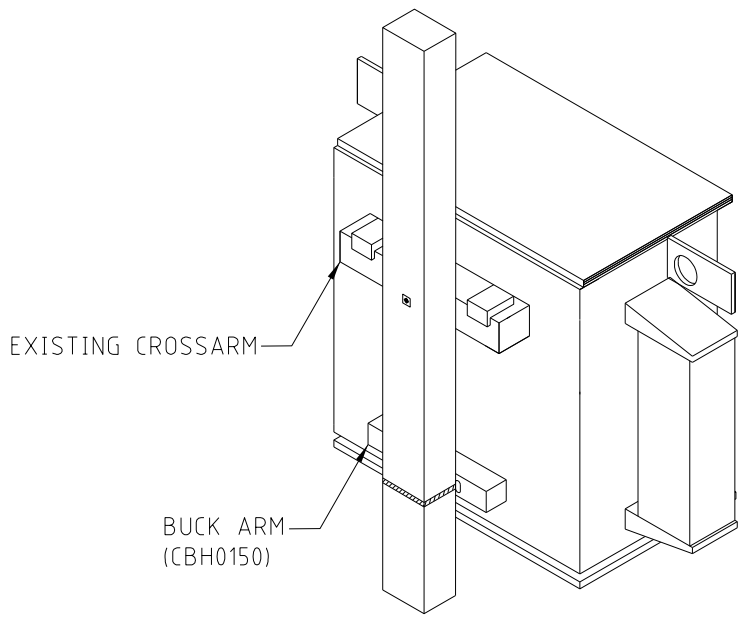
X - MAINTENANCE

For application to
Horizon Power
Electricity Distribution Networks


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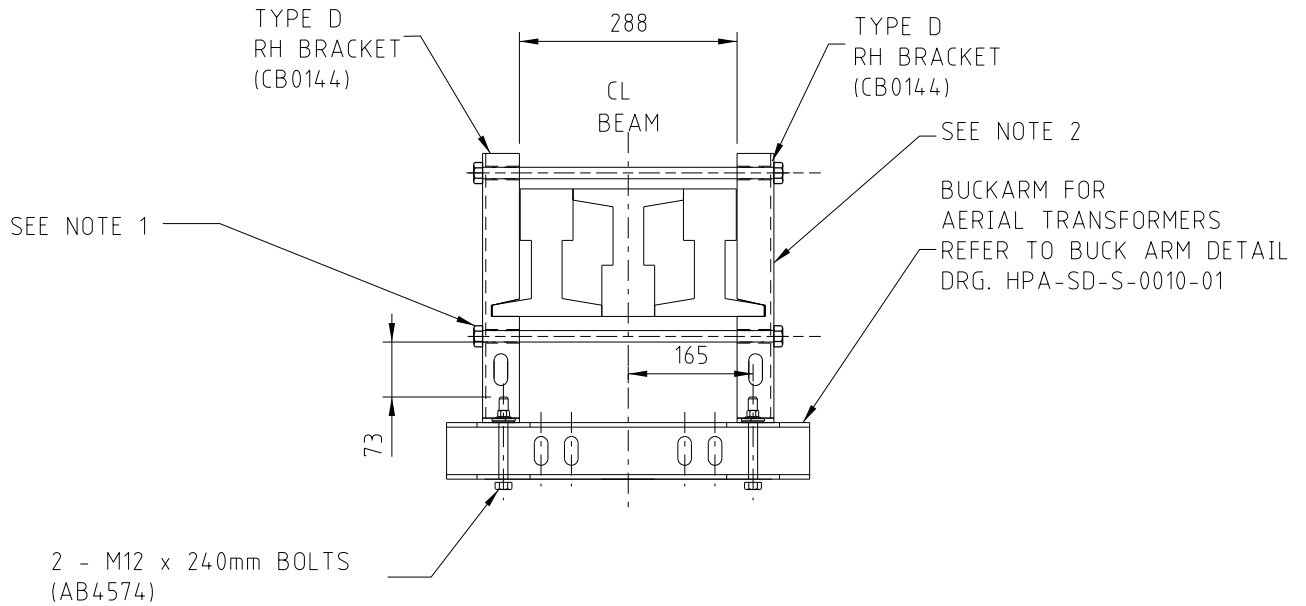
Part 11 – Maintenance – Drawing Register

Number	Description
X001	Buck Arm For Legacy Transformers
X001-1	Transformer Buck Arm Web Mounted Double Box Rail Pole
X002-1	Box Rail Pole Transformer Crossarm Bracket Installation Detail
X002-2	Box Rail Pole Web Mounted HV Intermediate 2.4m Non-Unitised Crossarm (No Stay)
X002-3	Box Rail Pole Web Mounted HV Termination 2m Termination Crossarm with Stay
X002-4	Box Rail Pole Web Mounted HV Intermediate 2.4m Non- Unitised Crossarm (No Stay)
X002-5	Double Box Rail Pole Web Mounted HV Intermediate 2.4m Non- Unitised Crossarm (No Stay)
X005-1	Wood Pole – Bonding – Intermediate
X005-2	Wood Pole – Bonding - Strain
X005-3	Wood Pole - 3 Phase Intermediate Double Cross-Arm
X005-4	Wood Pole - Horizontal Termination Anti Swan Cross-Arm
X005-5	Running Disc Angle or Vertical Termination
X005-6	Running Disc Angle or Vertical Termination (1200mm Spacing)
X006-1	Earthing for Wood Pole
X007-1	Three Phase Intermediate Reactor Open Aerial



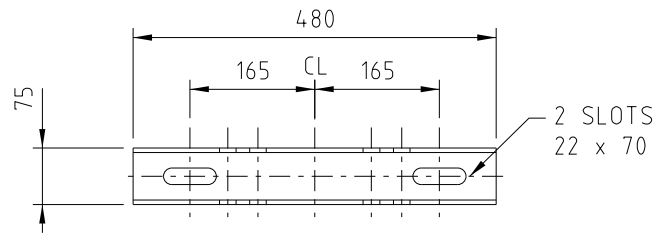
- NOTES:
1. USE APPROPRIATE SLOTS FOR POLE SIZE.
 2. BUCK ARM IS REQUIRED BASED ON TRANSFORMER DESIGN TO ENSURE TRANSFORMER IS VERTICAL AGAINST POLE.

 DISTRIBUTION CONSTRUCTION STANDARDS	MAINTENANCE DRAWING	REVISION A	DATE 06/08/2020
	BUCK ARM FOR LEGACY TRANSFORMERS	DRAWING No. X001	
OPERATIONS DIVISION			



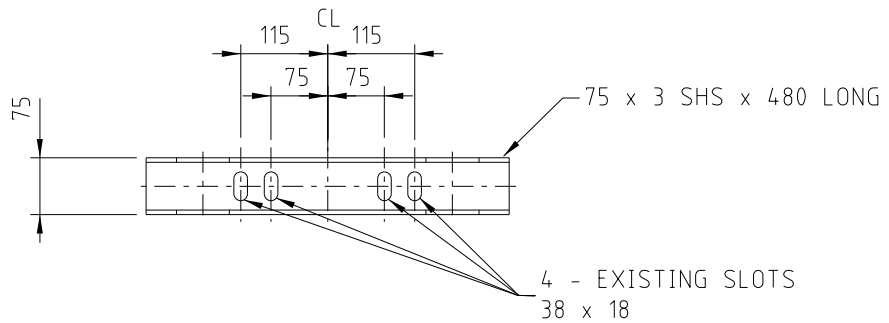
BOX RAIL POLE

SCALE 1:10



TOP VIEW - BUCK ARM

SCALE 1:10



FRONT VIEW - BUCK ARM

SCALE 1:10

NOTES:

1. SEE BRACKET BOLT TABLE FOR SIZES.
2. BRACKET DETAIL REFER TO DRG HPA-SD-S-0008-02

BRACKET BOLT TABLE

POLE	RAIL TYPE	BOLT	STOCKS
SINGLE BOX RAIL	119LB	M20 x 300mm	AB4687
	132LB	M20 x 325mm	AB4689
	136LB	M20 x 350mm	AB4691
DOUBLE BOX RAIL	119LB	M20 x 450mm	AB4699
	136LB	M20 x 450mm	AB4699



DISTRIBUTION CONSTRUCTION
STANDARDS

OPERATIONS DIVISION

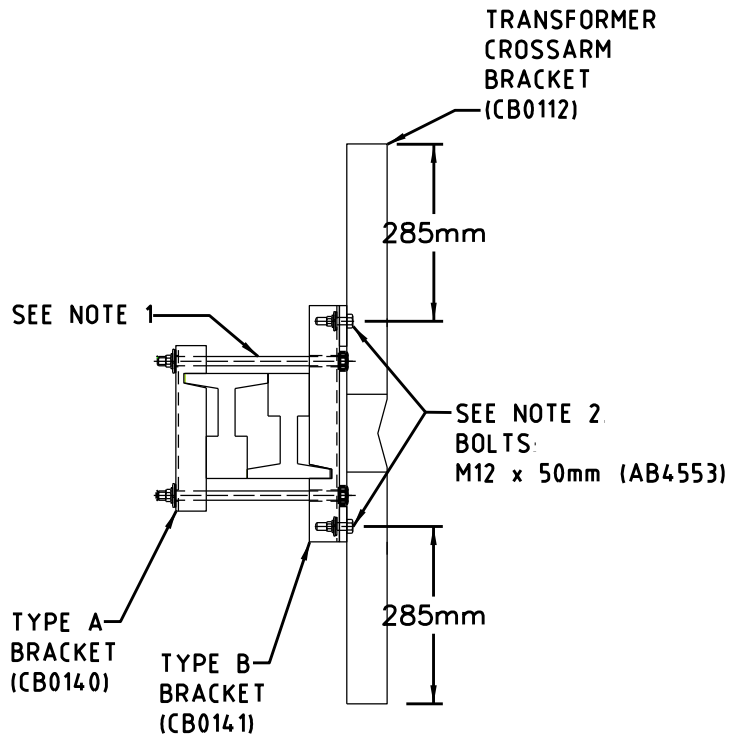
MAINTENANCE DRAWING

DOUBLE BOX RAIL POLE
WEB MOUNTED TRANSFORMER BUCK ARM

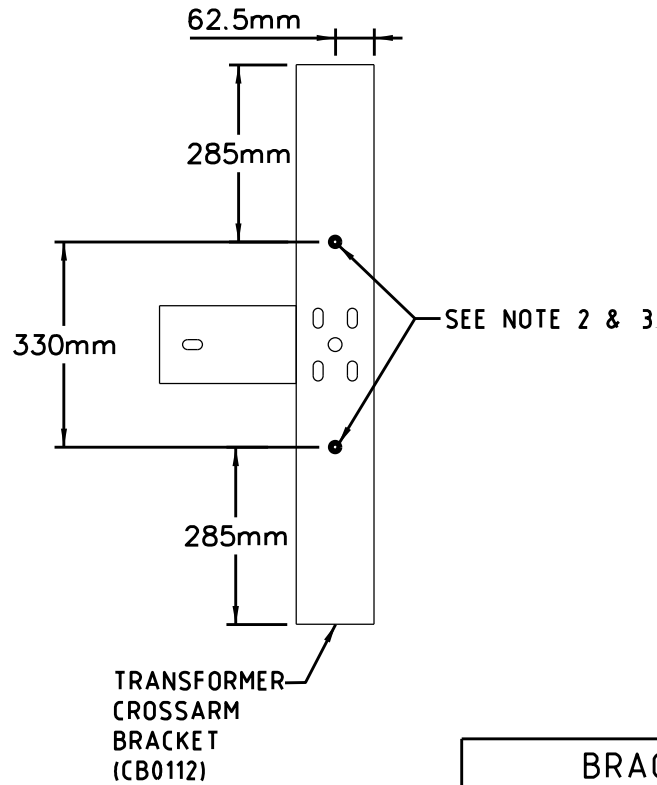
REVISION
A

DATE
10/03/2023

DRAWING No.
X001-1




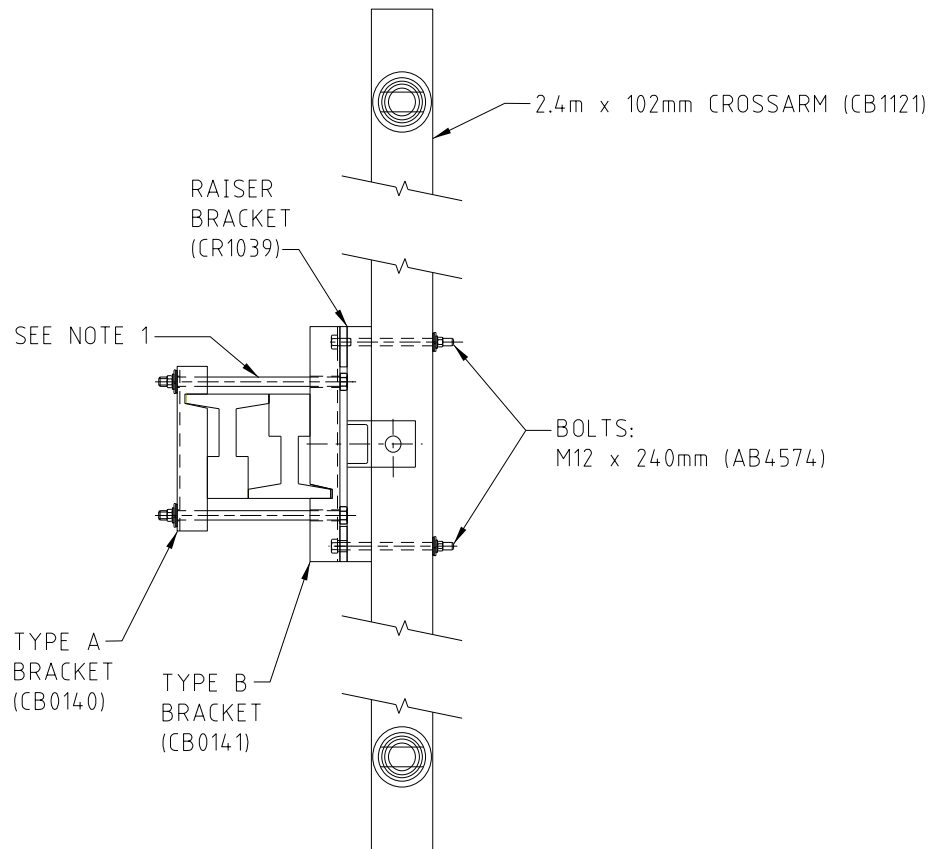
DRILLING PATTERN FOR CB0112



- NOTES**
1. SEE BRACKET BOLT TABLE FOR SIZES.
 2. TWO HOLES (DIA. 14mm) TO BE DRILLED AS PER DRILLING PATTERN
 3. DRILLED HOLES TO BE DE-BURRED AND PAINTED WITH GALVANISED PAINT


BRACKET BOLT TABLE			
POLE	RAIL TYPE	BOLT	STOCKS
SINGLE BOX RAIL	119LB	M20 x 300mm	AB4687
	132LB	M20 x 325mm	AB4689
	136LB	M20 x 350mm	AB4691
DOUBLE BOX RAIL	119LB	M20 x 450mm	AB4699
	136LB	M20 x 450mm	AB4699

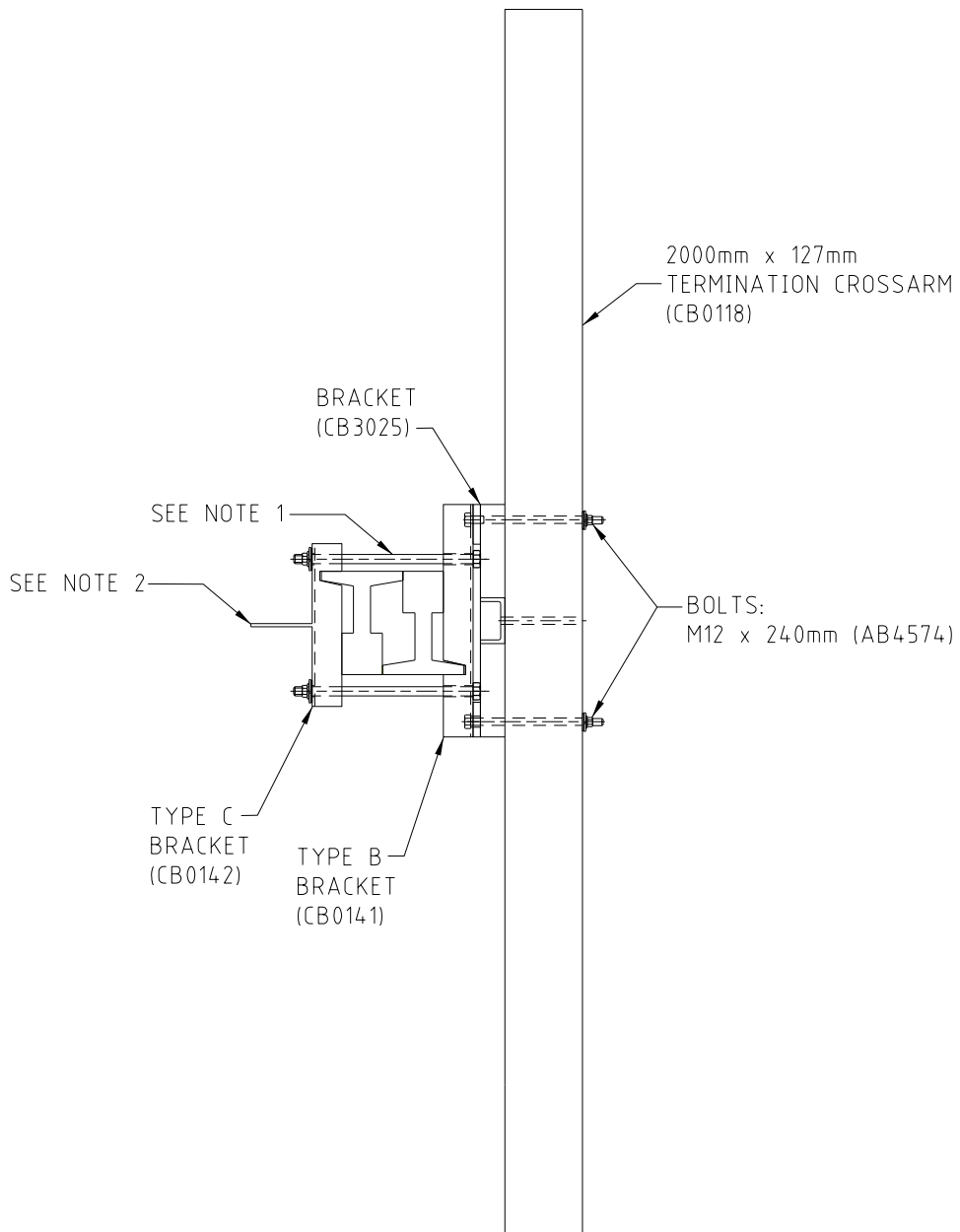
 DISTRIBUTION CONSTRUCTION STANDARDS OPERATIONS DIVISION	MAINTENANCE DRAWING	REVISION A	DATE 22/02/2023
	BOX RAIL POLE TRANSFORMER CROSSARM BRACKET INSTALLATION DETAIL		DRAWING No. X002-1



BRACKET BOLT TABLE			
POLE	RAIL TYPE	BOLT	STOCKS
SINGLE BOX RAIL	119LB	M20 x 300mm	AB4687
	132LB	M20 x 325mm	AB4689
	136LB	M20 x 350mm	AB4691
DOUBLE BOX RAIL	119LB	M20 x 450mm	AB4699
	136LB	M20 x 450mm	AB4699


NOTES:
1. SEE BRACKET BOLT TABLE FOR SIZES.

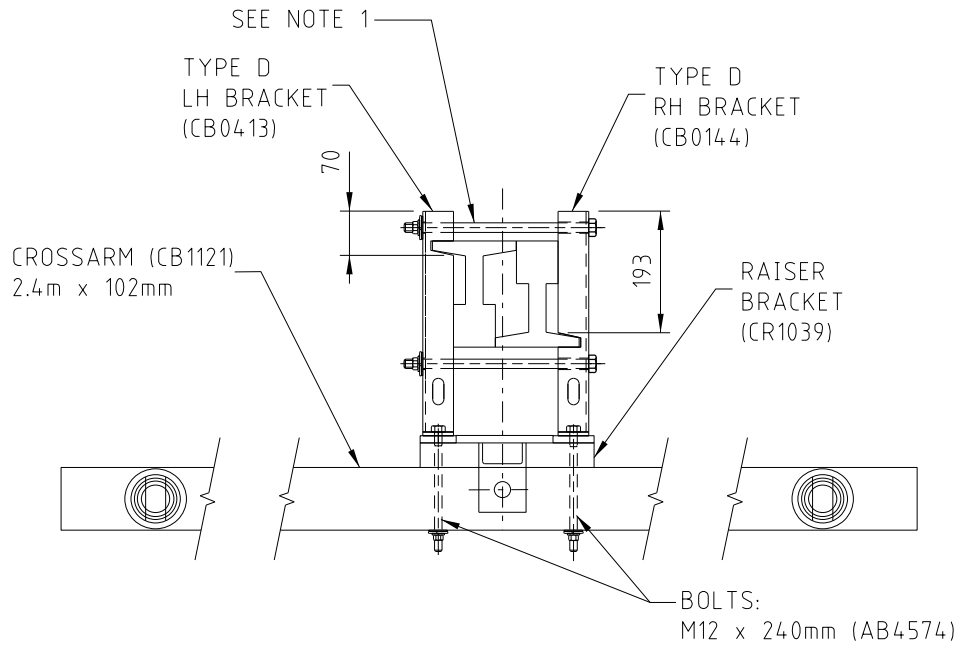
 DISTRIBUTION CONSTRUCTION STANDARDS OPERATIONS DIVISION	MAINTENANCE DRAWING	REVISION A	DATE 22/02/2023
	BOX RAIL POLE WEB MOUNTED HV INTERMEDIATE 2.4m NON - UNITISED CROSSARM (NO STAY)	DRAWING No. X002-2	



- NOTES:
 1. SEE BRACKET BOLT TABLE FOR SIZES.
 2. INSTALL STAY ON STAY ROPE LUG.

BRACKET BOLT TABLE			
POLE	RAIL TYPE	BOLT	STOCKS
SINGLE BOX RAIL	119LB	M20 x 300mm	AB4687
	132LB	M20 x 325mm	AB4689
	136LB	M20 x 350mm	AB4691
DOUBLE BOX RAIL	119LB	M20 x 450mm	AB4699
	136LB	M20 x 450mm	AB4699

 DISTRIBUTION CONSTRUCTION STANDARDS OPERATIONS DIVISION	MAINTENANCE DRAWING	REVISION A	DATE 22/02/2023
	BOX RAIL POLE WEB MOUNTED HV TERMINATION 2m TERMINATION CROSSARM WITH STAY	DRAWING No. X002-3	



NOTES:
1. SEE BRACKET BOLT TABLE FOR SIZES.

BRACKET BOLT TABLE			
POLE	RAIL TYPE	BOLT	STOCKS
SINGLE BOX RAIL	119LB	M20 x 300mm	AB4687
	132LB	M20 x 325mm	AB4689
	136LB	M20 x 350mm	AB4691
DOUBLE BOX RAIL	119LB	M20 x 450mm	AB4699
	136LB	M20 x 450mm	AB4699



DISTRIBUTION CONSTRUCTION
STANDARDS

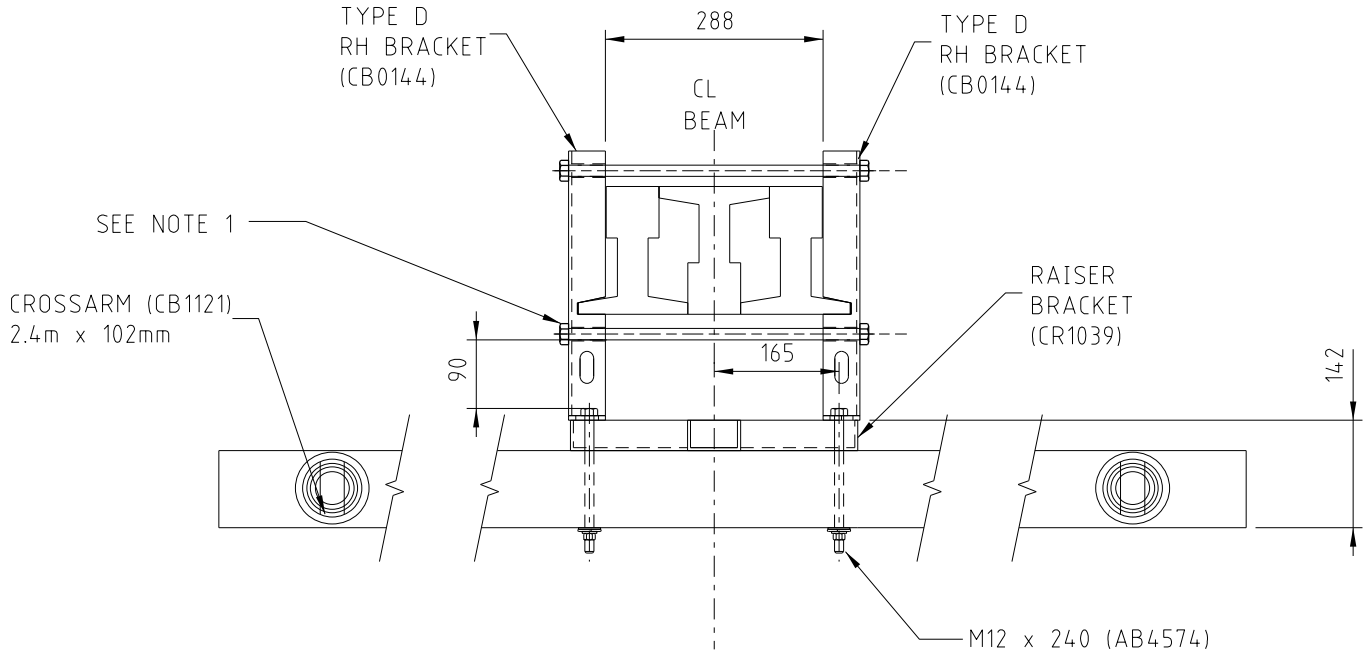
OPERATIONS DIVISION

MAINTENANCE DRAWING

BOX RAIL POLE
WEB MOUNTED HV INTERMEDIATE
2.4m NON - UNITISED CROSSARM (NO STAY)

REVISION DATE
A 14/02/2023

DRAWING No.
X002-4



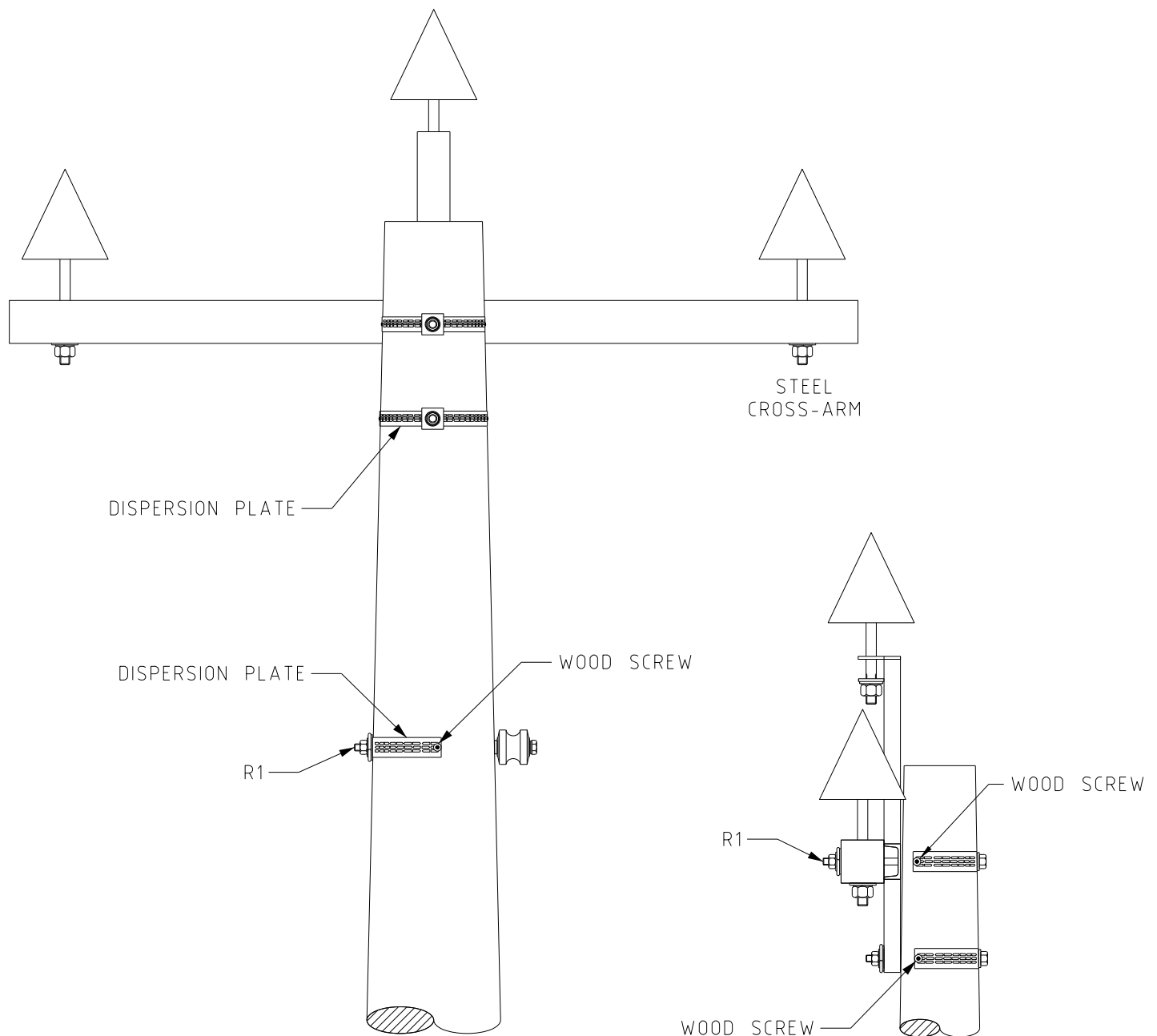
DOUBLE BOX RAIL POLE

SCALE 1:10

NOTES:
1. SEE BRACKET BOLT TABLE FOR SIZES.

BRACKET BOLT TABLE			
POLE	RAIL TYPE	BOLT	STOCKS
SINGLE BOX RAIL	119LB	M20 x 300mm	AB4687
	132LB	M20 x 325mm	AB4689
	136LB	M20 x 350mm	AB4691
DOUBLE BOX RAIL	119LB	M20 x 450mm	AB4699
	136LB	M20 x 450mm	AB4699

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS OPERATIONS DIVISION	MAINTENANCE DRAWING		REVISION A	DATE 10/03/2023	
	DOUBLE BOX RAIL POLE			DRAWING No. <u>X002-5</u>	
	WEB MOUNTED HV INTERMEDIATE				
	2.4m NON - UNITISED CROSSARM (NO STAY)				



NOTES:-

- 1 INSTALL A DISPERSION PLATE TO ALL BOLTS WHICH PASS THROUGH A WOOD SECTION OF A POLE INCLUDING STAYS & STREET LIGHTS.
- 2 MUST BE SECURED DIRECTLY OVER THE HOLE, IN DIRECT CONTACT WITH A SQUARE WASHER OR METAL CROSS-ARM.
- 3 USE WOOD SCREW FOR INSTALLATION OF DISPERSION PLATE END ONTO POLE.

STOCK CODE	DESCRIPTION	TYPICAL APPLICATION
CE7541	DISPERSION PLATE	WOOD POLES
AS2512	WOOD SCREW 25mm LONG	HARD WOOD POLES
AS2513	WOOD SCREW 50mm LONG	SOFT WOOD POLES



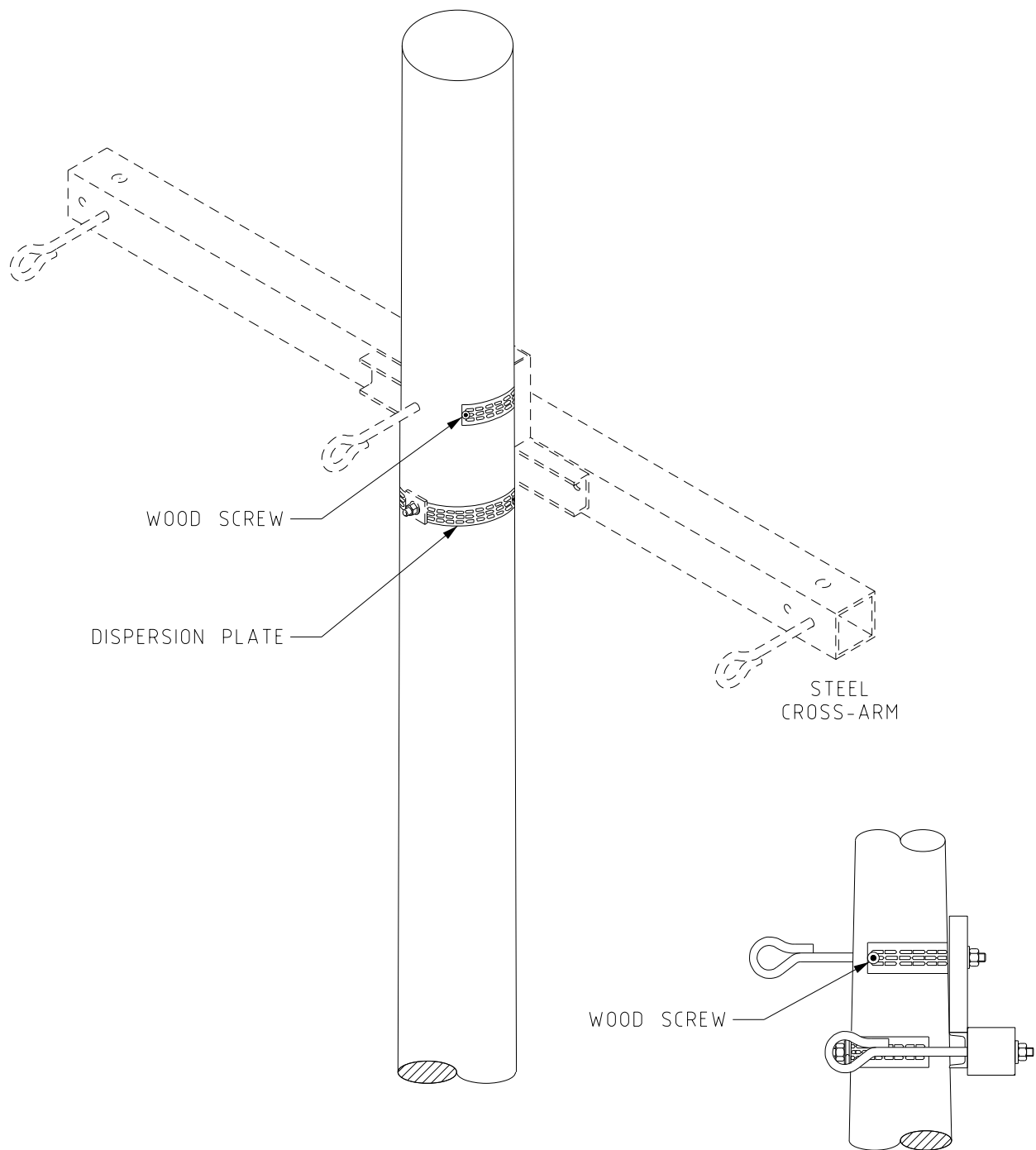
DISTRIBUTION CONSTRUCTION STANDARDS

WOOD POLE BONDING - INTERMEDIATE

REVISION A	DATE 28/08/20
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DRAWING No.

X005-1



NOTES:-

1. INSTALL A DISPERSION PLATE TO ALL BOLTS WHICH PASS THROUGH A WOOD SECTION OF A POLE INCLUDING STAYS & STREET LIGHTS
2. MUST BE SECURED DIRECTLY OVER THE HOLE, IN DIRECT CONTACT WITH A SQUARE WASHER OR METAL CROSS-ARM
3. USE WOOD SCREW FOR INSTALLATION OF DISPERSION PLATE END ONTO POLE

STOCK CODE	DESCRIPTION	TYPICAL APPLICATION
CE7541	DISPERSION PLATE	WOOD POLES
AS2512	WOOD SCREW 25mm LONG	HARD WOOD POLES
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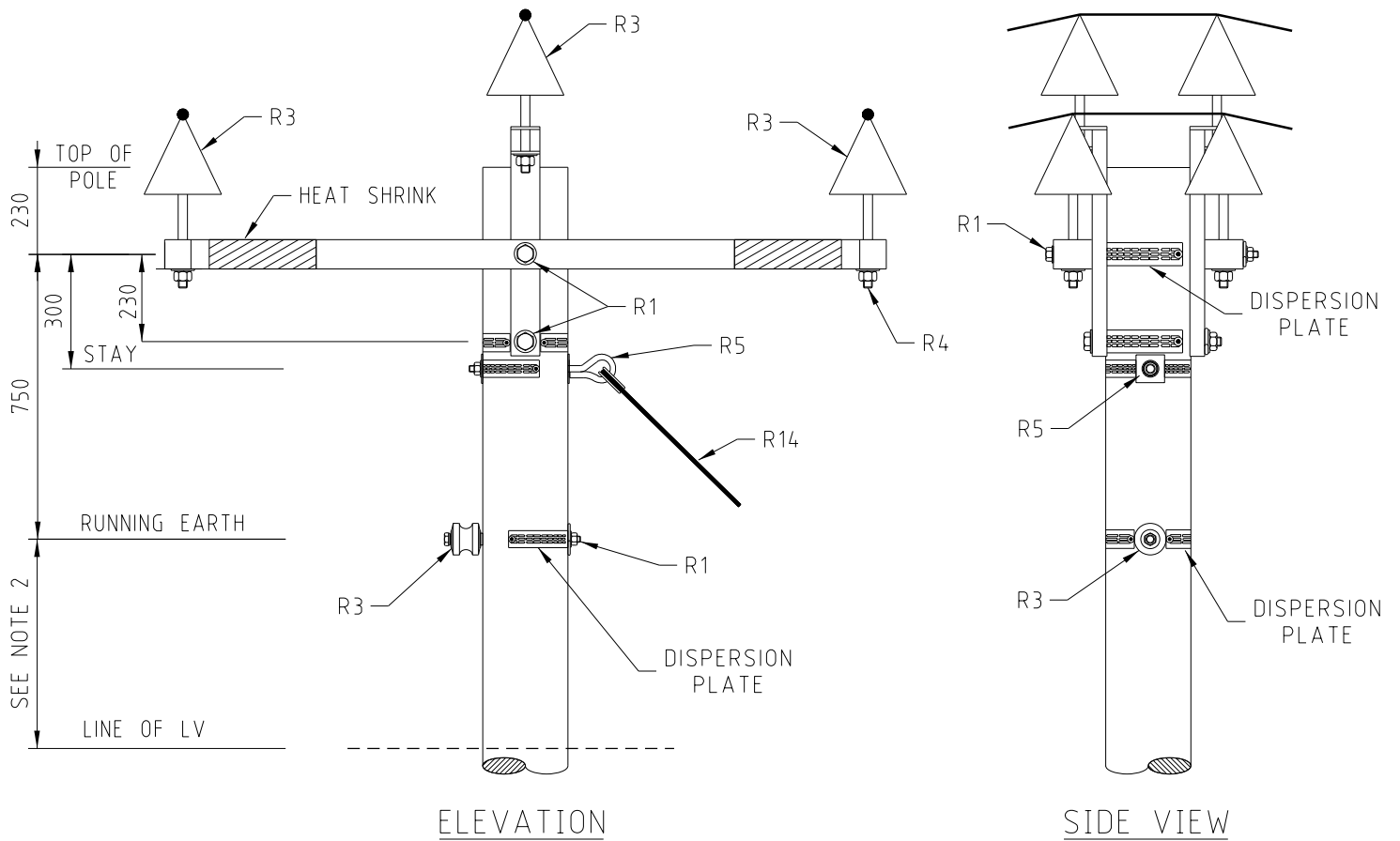
DISTRIBUTION CONSTRUCTION
STANDARDS

WOOD POLE
BONDING - STRAIN

REVISION A	DATE 28/08/20
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DRAWING No.

X005-2



NOTES

1. INSTALL A DISPERSION PLATE TO ALL BOLTS WHICH PASS THROUGH A WOOD SECTION OF A POLE
2. TOP HOLE POSITION FOR LV ABC BRACKET MUST BE:
 - a. 440mm BELOW R/E FOR NON-AAAC RUNNING EARTH.
 - b. 800mm BELOW R/E FOR AAAC RUNNING EARTH.
3. USE GALVANISED WOOD SCREW FOR INSTALLATION OF DISPERSION PLATE END ONTO POLE
 - a. 25mm LONG SCREW WITH NEO WASHER FOR HARD WOOD POLES.
 - b. 50mm LONG SCREW WITH NEO WASHER FOR SOFT WOOD POLES.
4. DISPERSION PLATE MUST BE SECURED DIRECTLY OVER THE HOLE, IN DIRECT CONTACT WITH A SQUARE WASHER OR METAL CROSS-ARM.

STOCK CODE	DESCRIPTION
CE7541	DISPERSION PLATE



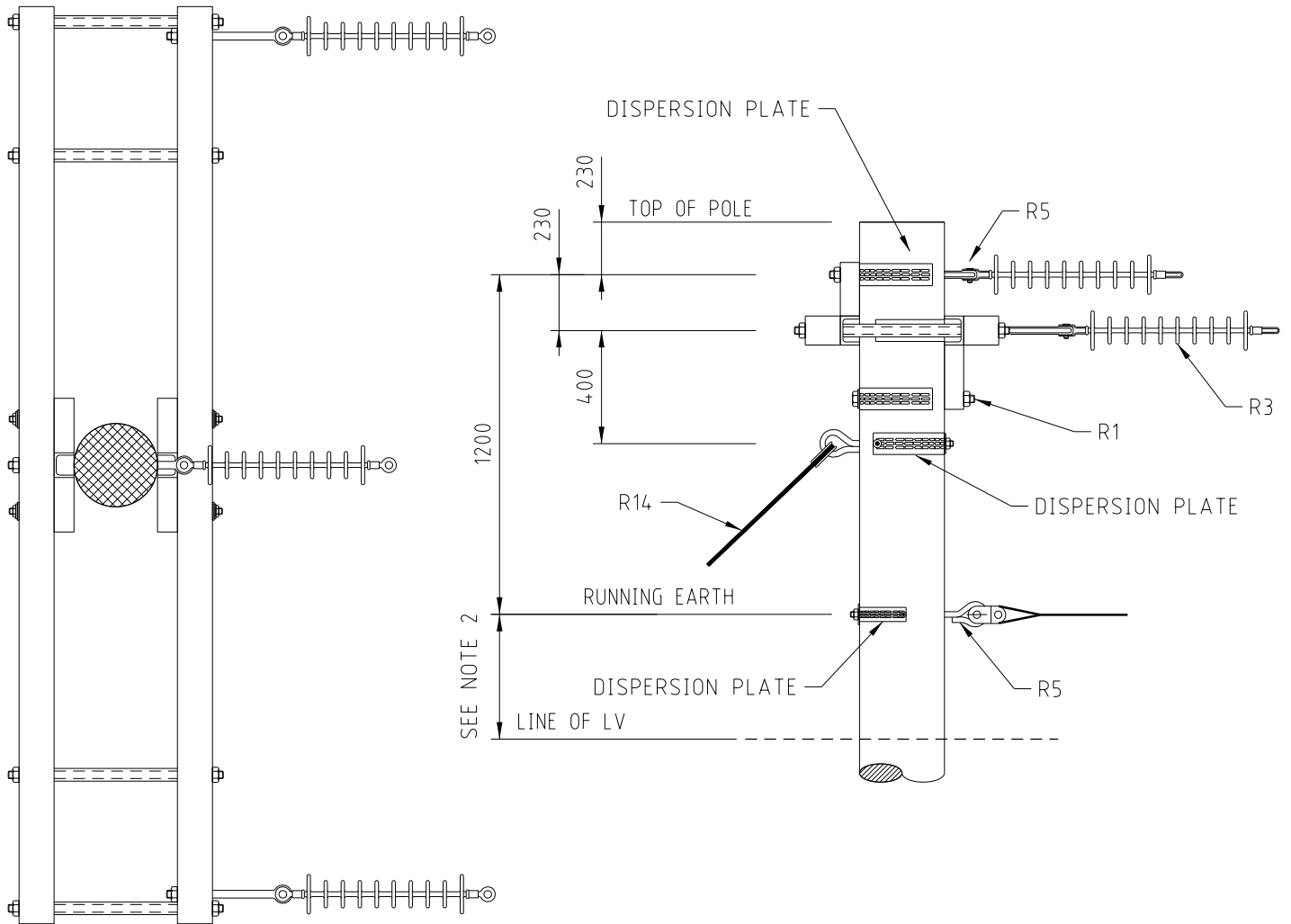
DISTRIBUTION CONSTRUCTION STANDARDS

WOOD POLE
3 PHASE INTERMEDIATE
DOUBLE CROSS-ARM

REVISION	DATE
A	08/10/2020

DRAWING No.

X005-3



NOTES

1. INSTALL A DISPERSION PLATE TO ALL BOLTS WHICH PASS THROUGH A WOOD SECTION OF A POLE
2. TOP HOLE POSITION FOR LV ABC BRACKET MUST BE:
 - a. 440mm BELOW R/E FOR NON-AAAC RUNNING EARTH.
 - b. 800mm BELOW R/E FOR AAAC RUNNING EARTH
3. USE GALVANISED WOOD SCREW FOR INSTALLATION OF DISPERSION PLATE END ONTO POLE
 - a. 25mm LONG SCREW WITH NEO WASHER FOR HARD WOOD POLES.
 - b. 50mm LONG SCREW WITH NEO WASHER FOR SOFT WOOD POLES
4. DISPERSION PLATE MUST BE SECURED DIRECTLY OVER THE HOLE, IN DIRECT CONTACT WITH A SQUARE WASHER OR METAL CROSS-ARM

STOCK CODE	DESCRIPTION
CE7541	DISPERSION PLATE



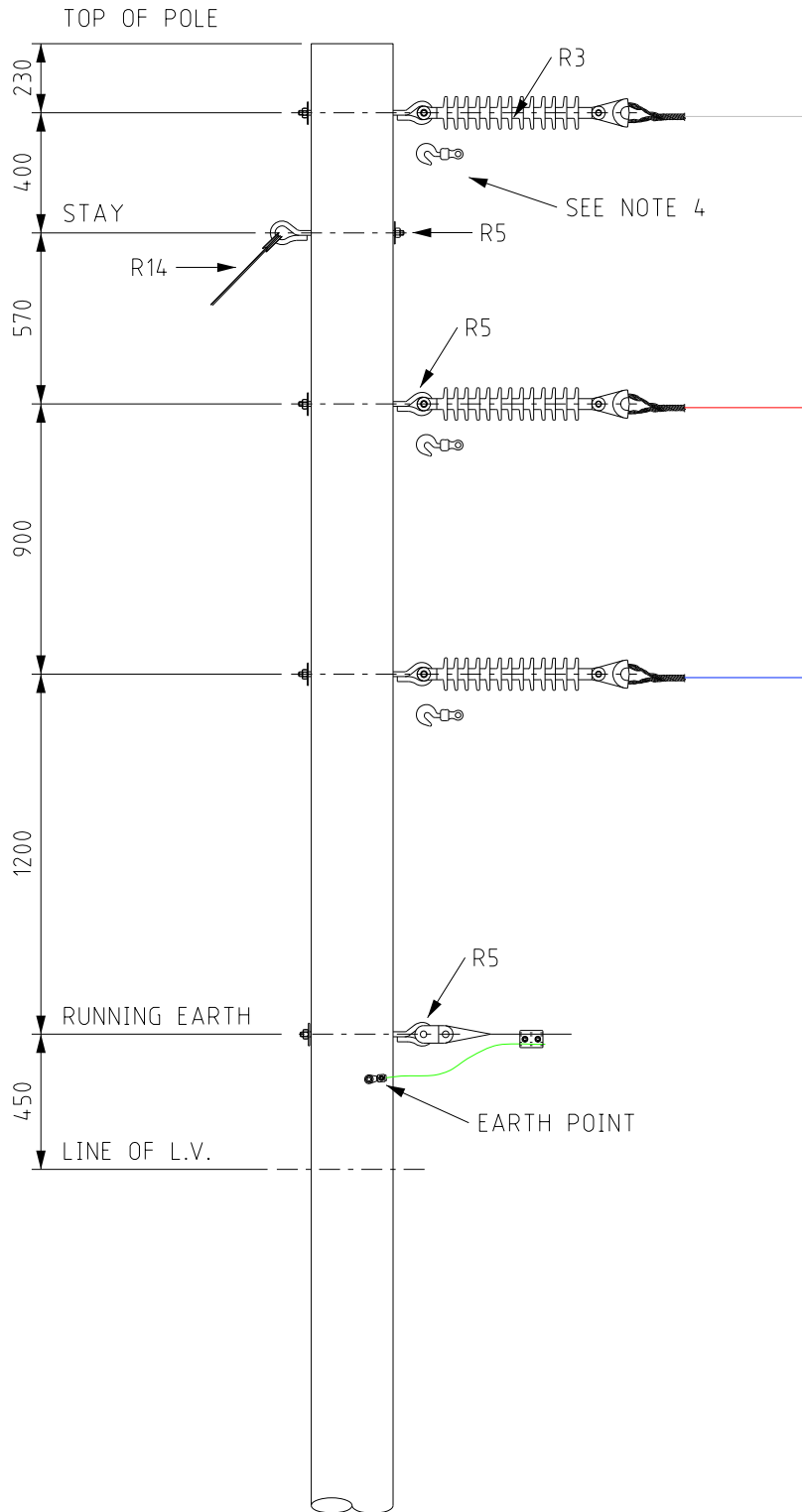
DISTRIBUTION CONSTRUCTION STANDARDS

WOOD POLE
HORIZONTAL TERMINATION
ANTI SWAN CROSS-ARM

REVISION A	DATE 08/10/2020
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DRAWING No.

X005-4



NOTE:

1. FOR BAY LENGTHS LESS THAN 55m WITH R/E - 12.5m POLE.
2. FOR BAY LENGTHS LESS THAN 80m ON A 12.5m POLE, X017 CONDUCTOR SPACINGS APPLY. ALL OTHER GROUND CLEARANCES ALSO APPLY.
3. FOR BAY LENGTHS OVER 80m USE 12.5m OR 14m POLE WITH 1200mm PHASE SPACING. ALL OTHER GROUND CLEARANCES STILL APPLY.
4. FOR RDA USE BALLHOOK AND SOCKET



DISTRIBUTION CONSTRUCTION
STANDARDS

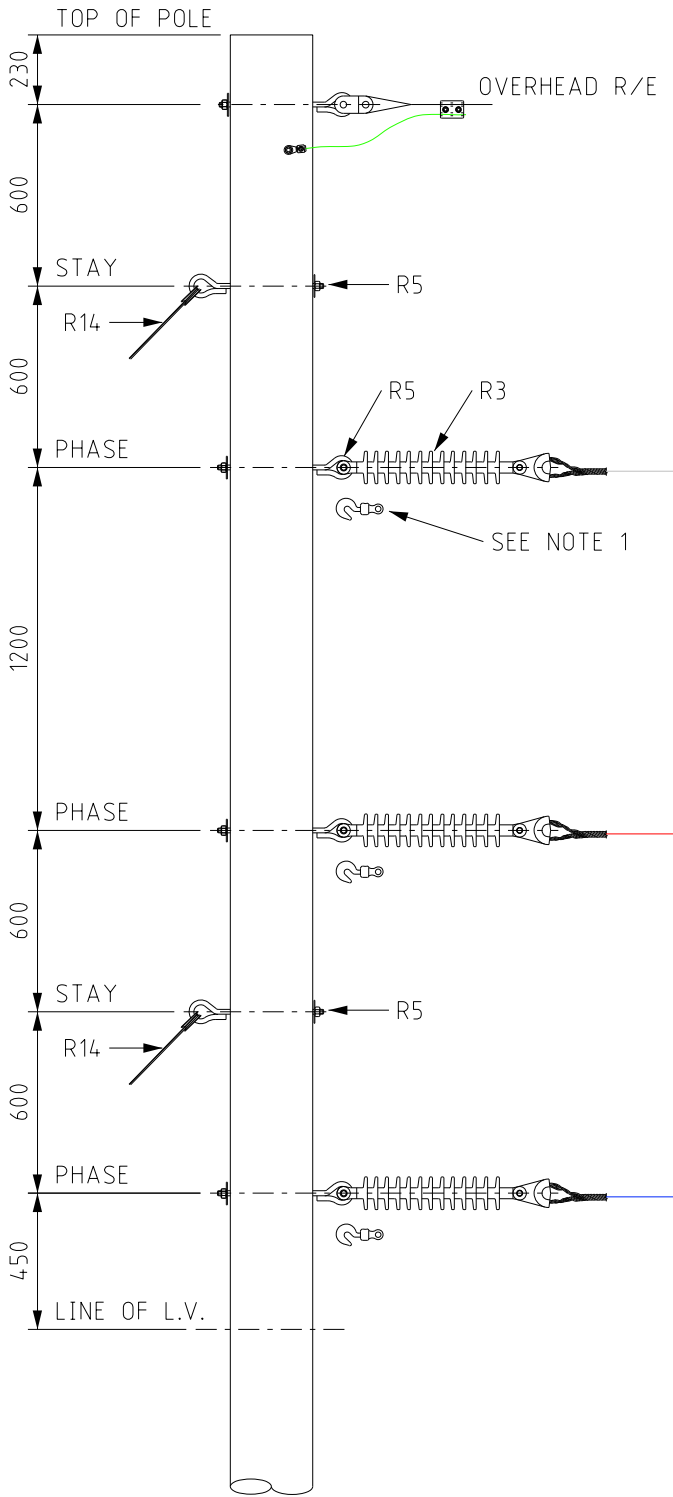
OPERATIONS

STRUCTURE - 12.5m

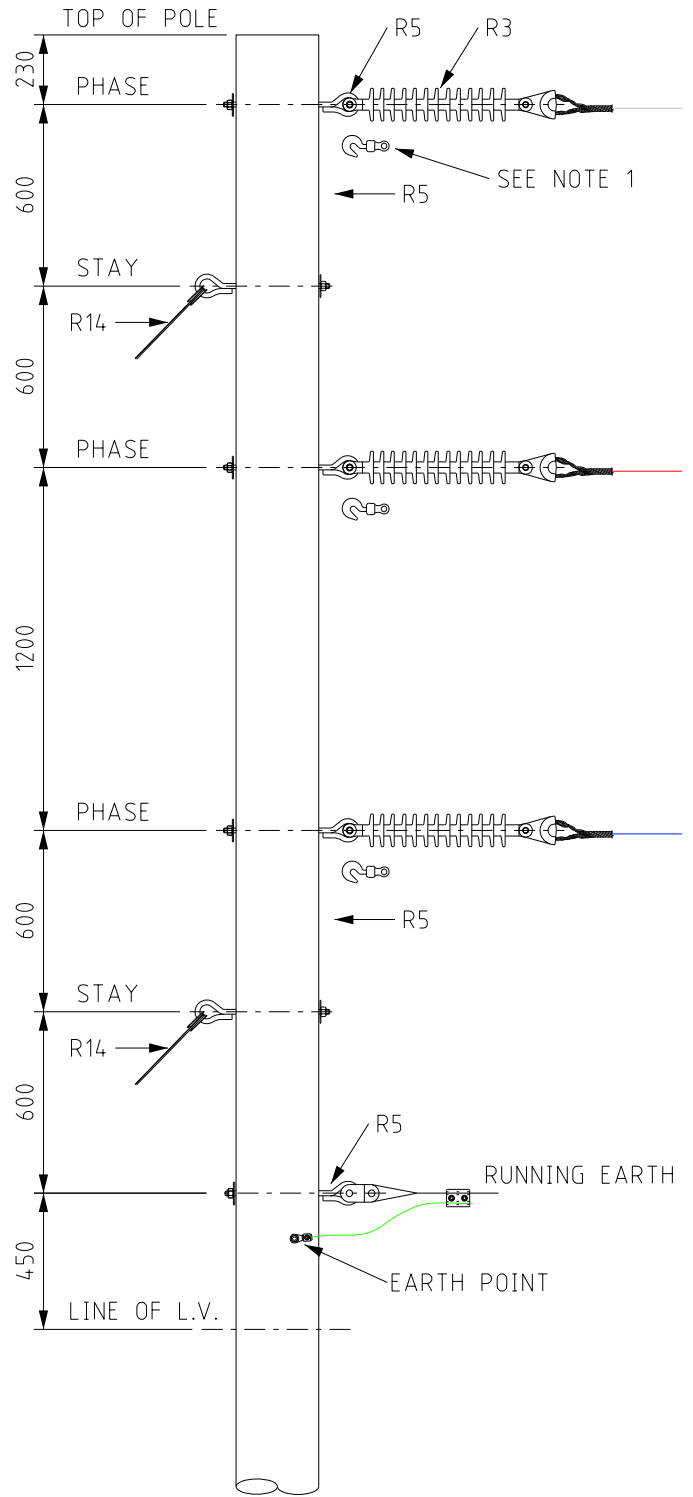
RUNNING DISC ANGLE
OR VERTICAL TERMINATION

REVISION	DATE
A	22/02/2023

DRAWING No.
X005-5



OVERHEAD RUNNING EARTH ARRANGEMENT



STANDARD RUNNING EARTH ARRANGEMENT

NOTE:

1. FOR RDA USE BALLHOOK AND SOCKET



DISTRIBUTION CONSTRUCTION STANDARDS

OPERATIONS

STRUCTURE - 14m

RUNNING DISC ANGLE OR VERTICAL TERMINATION (1200mm SPACING)

REVISION	DATE
A	22/02/2023

DRAWING No.
X005-6

CONNECT
EARTH CABLE
TO EQUIPMENT
OR RUNNING
EARTH

EE1264
70mm' CU
EARTH CABLE

R6-1

12mm METALLIC
CABLE SADDLE

10MM GALVANIZED
SCREWS TO BE USED
TO FASTEN SADDLE
TO POLE.

NOTE:
CABLE SADDLES ARE NOT STANDARD STOCK ITEMS

HORIZON
POWER

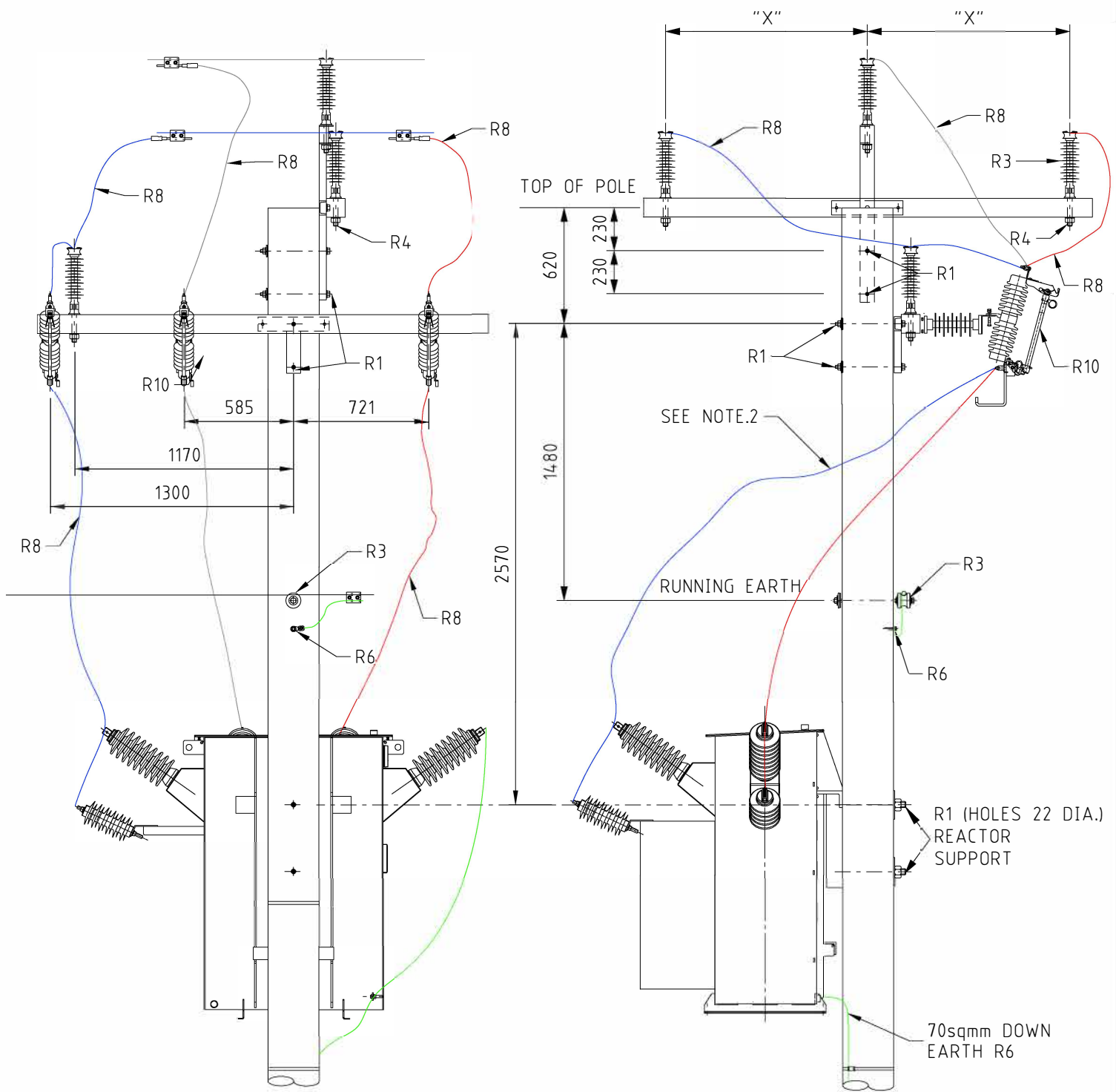
DISTRIBUTION CONSTRUCTION
STANDARDS

X - MAINTENANCE

REVISION	DATE
A	22/02/2023

EARTHING FOR WOOD POLE

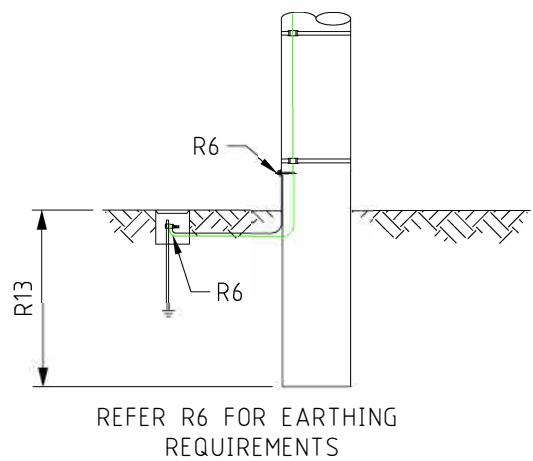
DRAWING No.
X006-1



X-ARM LENGTH (mm)	X (mm)
1900	800
2400	1050
3300	1500

NOTE:

- 1 REFER TO GENERAL NOTE OF HV OVERHEAD REGARDING X-ARM.
2. TRAIN JUMPERS AWAY FROM POLE, R/E AND TOP OF TANK.
3. STAND OFF INSULATOR TO TRAIN INSULATED JUMPERS MINIMISING SAG AND PRESSURE ON DOF CONNECTION. BLUE PHASE SHOWN FOR ILLUSTRATION ONLY



DISTRIBUTION CONSTRUCTION STANDARDS

STRUCTURE - 12.5m

3 PHASE INTERMEDIATE REACTOR OPEN AERIAL

REVISION	DATE
A	MARCH 23

DRAWING No.
X007-1