Western Power's Asset Management System

Distribution Construction
Standard Handbook
Maintenance Manual
Part 09 (MM)



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Content Owner/Custodian: Distribution Design and Standards

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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	19	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

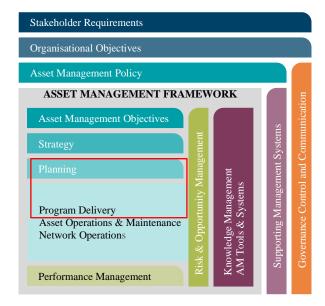
This document must not be made available to personnel outside Western Power without the prior written approval of Western Power.



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.





General Notes

The Maintenance Manual (MM series) is a collection of drawings for superseded construction standards. These can be used where existing pole top assets are being reinstalled on a new pole (in accordance with an approved asset strategy). This will typically occur when poles with pole top assets attached are being changed as part of the pole replacement program.

The MM series can also be used on a 'like-for-like' basis to match the original pole top configuration where use of the current standard would compromise other aspects of the design.

For any other replacement activities, the current standard in the DCSH should be applied.

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Drawing Register

Dwg. No.	Revision	Title				
MM01	В	TRANSFORMER REINSTALLATION				
MM01-H46	A	Intermediate Transformer with or without Dropout Fuse				
MM01-H47-1	A	Termination Transformer with or without Dropout Fuse				
MM02	В	POLE TOP SWITCH REINSTALLATION				
MM02-01	A	Pole Top Switch - Retaining Spring Installation				
MM02-02	A	Falcon 22kV Pole Top Switch Maintenance Spares				
MM02-R03	A	HV Insulator Ties Steel Conductor Non-Metallic Head Insulators				
MM02-R6-1	A	Pole Top Switch Earthing				
MM02-R6-2	В	Pole Top Switch Down Earth Repair for Vandalism/Copper Theft				
MM02-H12-1	A	22kV Pole top switch including Earth				
MM02-H12-2	В	22kV PTS for covered conductor - detail of parts required				
MM02-H14-1	A	Combination Switch & Fuse with Raiser (11 & 22kV) (Fly-over S)				
MM02-H14-2	A	Combination Switch & Fuse with Raiser (11 & 22kV)				
MM02-H14-3	A	PTS Fuses / Isolators Layout for 2 Cables				
MM02-H18	A	Termination Pole top Switch with Cable & Dropout Fuse				
MM02-H19	A	Termination Pole Top Switch with Cable Arrangement				
MM02-H20	A	Isolation Transformer				
MM02-H60-4	A	3Ф Recloser / Load Break Switch HV Bare – HV ABC/Hendrix With LV Aerial Supply				
MM02-H61-1	A	Pole Mounted 3Φ Recloser / Load Break Switch with By-pass Switch				
MM02-H61-2	A	Pole Mounted 3Φ Recloser / Load Break Switch with By-pass Switch (Aerial LV Supply)				
MM02-H62-1	A	3Φ Recloser / Load Break Switch on Termination PTS Pole Arrangement (22kV)				
MM02-H62-2	A	Combination PTS & Raiser with 3 Φ Recloser / Load Break Switch (ABB 33kV PTS)				
MM03	В	RECLOSER REINSTALLATION				
MM03-H16-1	A	Pole Mounted Recloser with By-Pass Switch				
MM03-H17-1	В	Recloser on Termination PTS Pole Arrangement				
MM03-H17-4	A	Intermediate Tx (1 Φ) 3 Φ inline cables/2x1 Φ spurs with/without Dropout Fuse				
MM03-H51-2	A	Single Phase Recloser In-Line Anti-Clash With 1Φ Tx Supply				
MM03-H51-4	A	1Ф Recloser By-Pass Isolators/Strain Termination With 1Ф ТХ Supply				
MM03-H62-1	A	3Ф Recloser / Load Break Switch on Termination PTS Pole Arrangement				
MM03-H62-2	A	Combination PTS & Raiser with 3Φ Recloser / Load Break Switch				
MM03-H62-3	A	Intermediate Pole With 3Φ Recloser / Load Break Switch and Cable				
MM03-H62-4	A	Termination Pole with 3Φ Recloser / Load Break Switch				



Dwg. No.	Revision	Title				
MM03-H63-1	A	1Ф Recloser/Load Break Switch In-Line Anti-Clash With 1Ф ТХ or LV Supply				
MM04	В	LOAD BREAK SWITCH REINSTALLATION				
MM04-H16-2	A	Pole Mount Load Break Switch with Bypass Switch & Antenna, Sht1 One Bushing, Sht2 Two Bushing				
MM05	A	SECTIONALISER REINSTALLATION				
MM06	A	REGULATING TRANSFORMERS REINSTALLATION				
MM07	A	DROP OUT FUSE REINSTALLATION				
MM08	A	CAPACITORS REINSTALLATION				
MM09	A	GENERAL OVERHEAD LINE MAINTENANCE				
MM09-1-1	С	Pole Top Construction				
MM09-1-2	В	Pole Top Construction				
MM09-1-3	В	Pole Top Construction				
MM09-1-4	В	Pole Top Construction				
MM09-2-1	A	Pole Top Checks/Splits Repair with Band-it Straps				
MM09-2-2	A	Pole Top Checks/Splits Repair with Band-it Straps				
MM09-3-1	С	General Overhead Line HV spreader 46Kv Silicone Interphase				
MM09-5	A	Enhanced Foundation Details In-situ Distribution Pole				
MM09-H40-1	С	Extended Raiser for Single Phase HV on 9m Pole				
MM09-LV-01	В	Vertical LV intermediate/angle/termination construction				
MM09-R09	В	HV Cable Termination Retrospective Earth Parking Stud Install				
MM09-R24	В	Mechanical Tension Repair Splice (MTRS)				
MM10	С	BELOW GROUND SERVICES				
MM10-R31	A	Mini Pillar Neutral (Extra) Fitting Requirement				
MM10-U08-3	A	Mini Pillar 480V Wiring Arrangement				
MM10-EXT	A	Mini & Uni Pillar - Cable Extension Guide				
MM11	A	SECURITY LIGHTING INSTALLATION				
MM11-S13	A	Mounting Arrangement for Steel Streetlight Columns				
MM11-S14	A	Mounting Arrangement for Wood or Concrete Pole On Bare Aerial Connection				
MM11-S15	A	Mounting Arrangement for Wood or Concrete Pole ABC Connection				
MM11-S16	A	Steel Column - Double Insulated (Class 2)				
MM11-S17	A	Wood or Concrete Pole Double Insulated - (Class 2)				
MM11-S18	A	Wood or Concrete Pole Single Insulated - (Class 1)				
MM13	A	Streetlight Maintenance				
MM13-01	A	Legacy Streetlight Cable Repair				
MM13-02	В	Electrical Connections for Narrow Style Streetlight column				



Dwg. No.	Revision	Title		
MM13-03	A	Legacy Streetlight Column with Concrete Foundation		
MM13-04	A	Paint Sylvania Suburban Lens Cover to Function as Front Glare Shield		
MM13-R26-1 A		reetlight Cut-out Single Phase Supply for Single Insulated (Class 1) uminaires - 1		
MM13-R26-2	A	Streetlight Cut-out Single Phase Supply for Single Insulated Equipment		
MM13-R26-3 A		Streetlight Cut-out Single Phase Supply for Double Insulated (Class 1) Luminaires - 2		
MM13-R26-4	A	Avenue Streetlights Luminaire Installation		
MM13-R26-5	С	Streetlight (LED) Wiring Installation Standard (Part 1)		
MM13-S02-1	A	Legacy Minor Road – Short Streetlight Bracket on wood Pole and Crossarm with new LED		



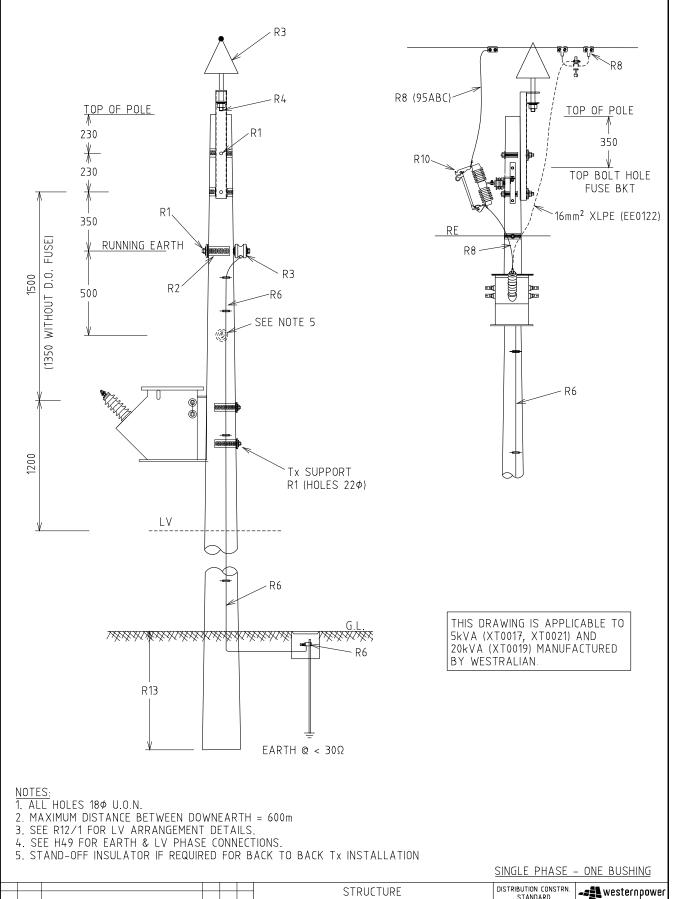
STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
XT0016	WESTRALIAN, 3Φ, 200KVA	H10-1, H10-2, H11-1, H11-2
XT0017	WESTRALIAN, 1Φ, 5KVA	
XT0019	WESTRALIAN, 1Φ, 20KVA	MM01-H46, MM01-H47-1
XT0021	WESTRALIAN, 1Φ, 5KVA	

NOTES:-

- 1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS) BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).
- 2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION
- 3. SURGE ARRESTERS DO NOT NEED TO BE INSTALLED IF THERE ARE NO APPROPRIATE MOUNTING POINTS ON THE TANK.
- 4. LV BUSHING LINK PLATES (GF1510) MAY BE REPLACED WITH 95mm²LV ABC OR 25mm² COPPER TAP, WITH APPROPRIATE LUGS, ON SINGLE PHASE TRANSFORMERS.
- 5. EARTH STUD ON TRANSFORMER TANKS MAY BE EXTENDED USING A COPPER PLATE (GF1592) IF STUD THREAD LENGTH TOO SHORT FOR ATTACHMENT OF NEUTRAL TO EARTH LINK & DOWNEARTH LUGS.

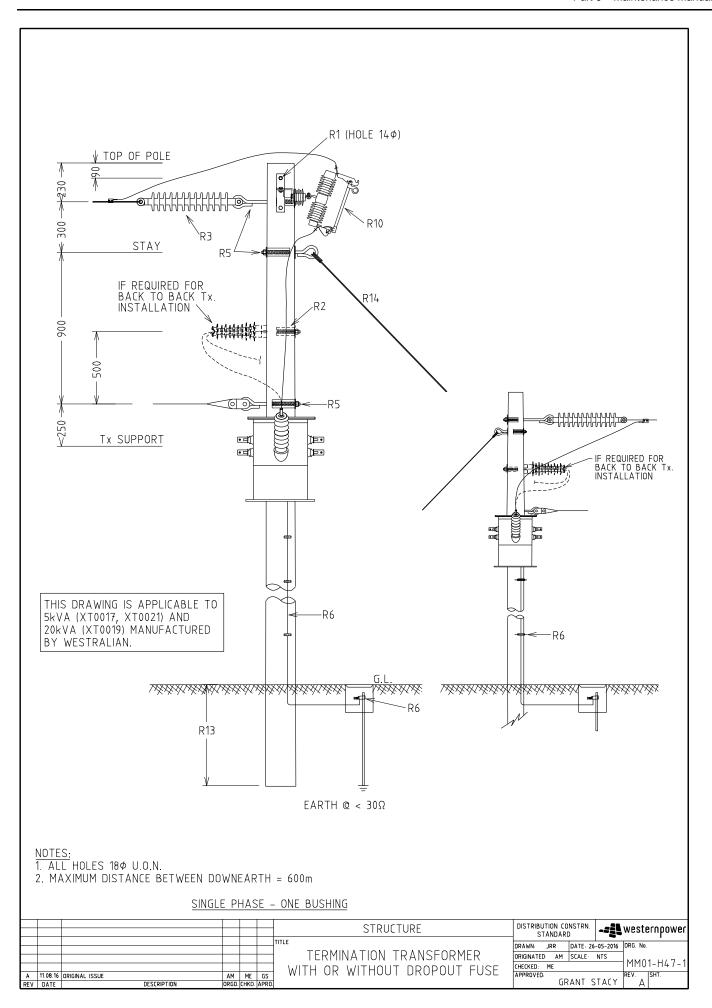
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						STRUCTURE	STANDARD
						TITLE	2044 W 100 0475 20 44 2444 1006 NO
							DRAWN: JRR DATE: 29-06-2016 DRG. NO.
						TO ANCHODIMED DEINICTALL ATION	ORIGINATED JC SCALE NTS NAMA 1
В	25.09.19	NOTES 4 & 5 ADDED	NMc	CO	GS	TRANSFORMER REINSTALLATION	CHECKED REE MYS
Α	11.08.16	ORIGINAL ISSUE	JC	REE	GS		APPROVED REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO		GRANT STACY B





						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-≥ westernpower
						INTERMEDIATE TRANSFORMER WITH OR WITHOUT DROPOUT FUSE		DRG. No. NTS MM01-H46
_	11 08 16	ORIGINAL ISSUE	AM	ME	GS	1	CHECKED: ME APPROVED:	REV. ISHT.
REV	DATE		ORGD.			(1 PHASE)	GRANT S	





STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
GS0115	22kV PTS	H12, H14-2, H14-3

FLEX TAIL DOUBLE	BOLT CONVERSION
STOCK CODE	QUANTITY
GZ0036	3
GZ0045	3
CB3056	3
CT0020	3 (IE DEOUIDED)
CT0021	3 (IF REQUIRED)
S/S NUTS, BOLTS AND WASHERS	AS REQUIRED

<u>NOTES</u>

- NOTES:

 1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)
 BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

 2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

 3. FLEX TAIL CONNECTION MUST BE DOUBLE BOLTED AND FITTED WITH BRAID SPRINGS.
 REFER TO MM02-01.

							STRUCTURE	DISTRIBUTION CO	DNSTRN.	{}	westernpower
-						TITLE		DRAWN: JRR	DATE: 29-	-06-2016	DRG. NO.
						DOLE TOD	CLUTCH DEINCTALLATION	ORIGINATED: JC	SCALE	NTS	MMA
В	24.08.17	NOTE REVISED	JB		GS	POLE TOP	SWITCH REINSTALLATION	CHECKED: ME			MM02
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS			APPROVED	C		REV SHT
REV	DATE	DESCRIPTION	ORGD.	CHKD.	APRD			l uh	RANT S	IALY	l Bl



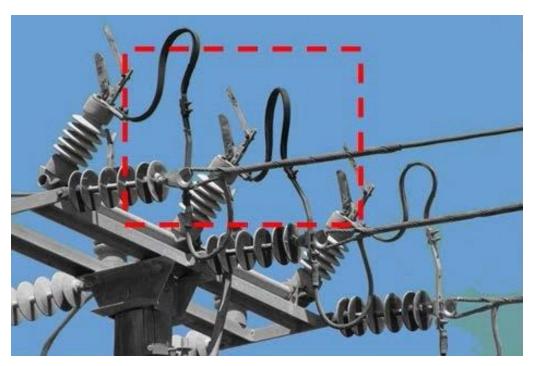


FIGURE 1

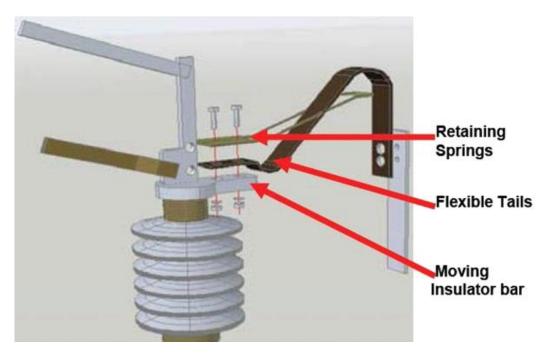


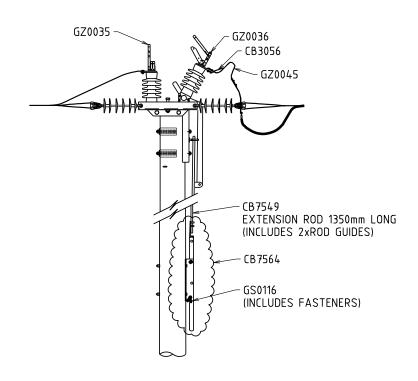
FIGURE 2

- NOTES:
 1. OLD POLE TOP SWITCHES REQUIRE THE INSTALLATION OF A SPRING
 (STOCK CODE CB 3056), AS SHOWN IN FIGURES 1 (SWITCH THAT REQUIRES
 RETAINING SPRINGS) AND FIGURE 2 (RETAINING SPRING ASSEMBLY).
 THE SPRING IS A STANDARD FITTING ON ALL NEW POLE TOP SWITCHES.
 2. USE A WIRE BRUSH TO CLEAN THE SURFACE OF THE FLEXI-TAILS AND
 THE MOVING INSULATOR BAR TO ENABLE A GOOD ELECTRICAL CONTACT.
 3. FIT THE RETAINING SPRING TO THE TOP OF THE FLEXI-TAILS AT THE BOLTED
 CONNECTION OF THE MOVING INSULATOR BAR (SEE FIGURE 2 (RETAINING SPRING ASSEMBLY)).

					REFERENCE DRAWING	DISTRIBUTION CONSTRN. STANDARD	-≉ westernpower
-				+		DRAWN: JRR DATE: 24	-08-2017 DRG. No.
						ORIGINATED GS SCALE	NTS MMO2 01
					I RETAINING SPRING INSTALLATION	CHECKED: CO	MM02-01
Α	24.08.17	ORIGINAL ISSUE	JB	GS	1	APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGO. CHK	D. APRI	D.	GRANT S	DIALY A

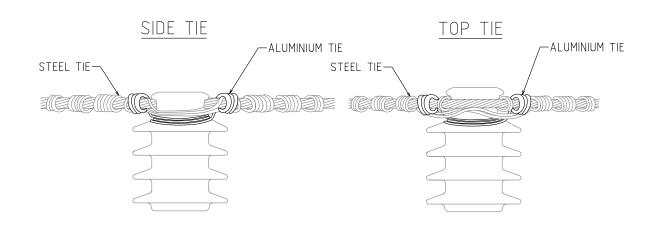


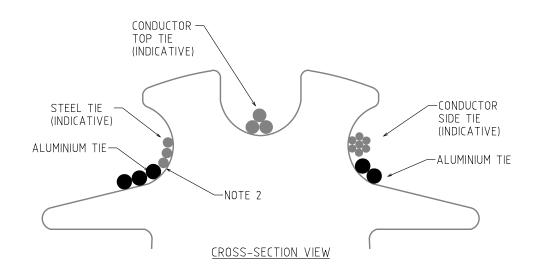
STOCK CODE	DESCRIPTION	COMMENTS			
CB3056	POLE TOP SWITCH BRAID SPRING	SPRING TO PREVENT BRAID FROM COLLAPSING			
CB7549	PTS ROD EXTENSION KIT	ACTUATING ROD EXTENSION FOR 12.5m POLES INCLUDING 2xROD GUIDES			
GS0116	TINNED COPPER BRAID WIRE, LUGGED AT BOTH ENDS, 320mm LONG	PTS HANDLE BONDING BRAID			
GZ0035	CONTACT ASSEMBLY, W/CLAMP TERM, POLE-TOP SWITCH 11kV & 22kV, FEMALE	PTS FEMALE CONTACT ASSEMBLY COMPLETE			
GZ0036	CONTACT ASSEMBLY, W/CLAMP TERM, POLE-TOP SWITCH 11kV & 22kV, MALE	PTS MALE CONTACT ASSEMBLY COMPLETE.			
GZ0045	FLEXIBLE COPPER BRAIDS FOR POLE TOP SWITCHES, 2 HOLE TYPE	BRAID FOR POLE TOP SWITCH MOVING CONTACT SIDE.			
CB7564	PTS HANDLE ASSEMBLY COMPLETE (NO DOWN ROD)	ENTIRE PTS HANDLE ASSEMBLY			



						STROCTORE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
						FALCON 22kV POLE TOP SWITCH	DRAWN JRR DATE 11- ORIGINATED REE SCALE CHECKED: JC	DRG. No. MM02-02
A REV	15.05.18 DATE	ORIGINAL ISSUE DESCRIPTION	REE ORGD	FK CHKD	GS APR		APPROVED GRANT S	STACY A SHT.







SEQUENCE OF OPERATIONS USING STEEL TIE:

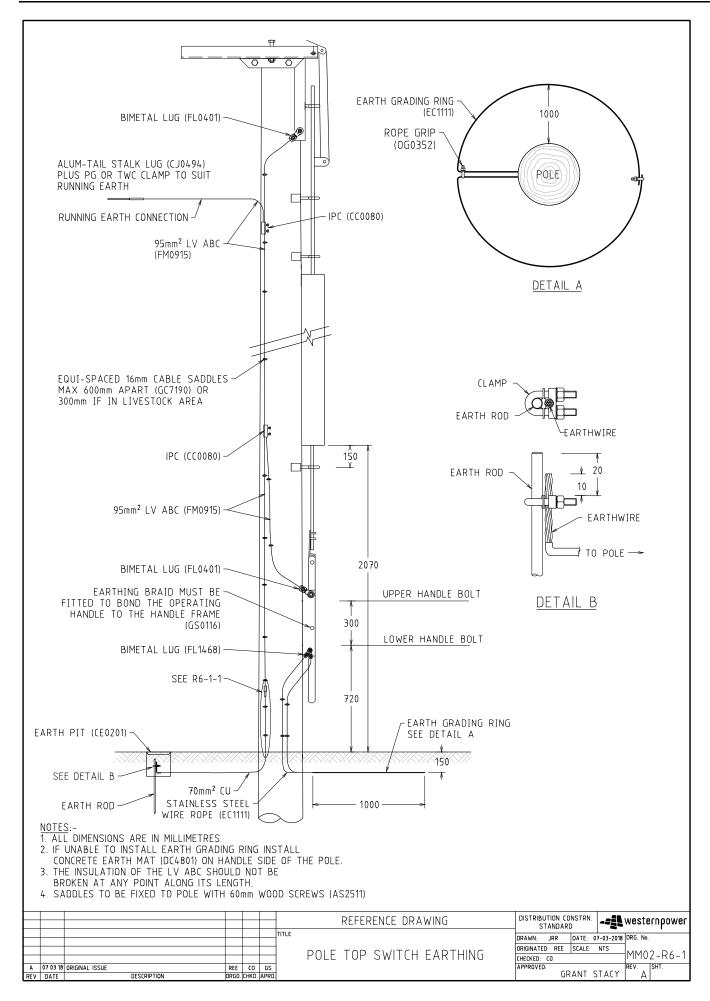
- A) SECURE CONDUCTOR TO INSULATOR AS PER R03-2
- USING ALUMINIUM TIE:
- B) WRAP THREE TURNS OVER THE STEEL TIE ON ONE SIDE OF THE INSULATOR HEAD.
- C) WRAP TIE TWO AND HALF TURNS AROUND THE INSULATOR SURFACE BELOW THE STEEL TIE, FLAT.AS SHOWN.
- D) COMPLETE THE WRAP WITH THREE TURNS AROUND THE STEEL TIE ON THE OTHER SIDE OF THE INSULATOR
- E) TRIM EXCESS TIE.

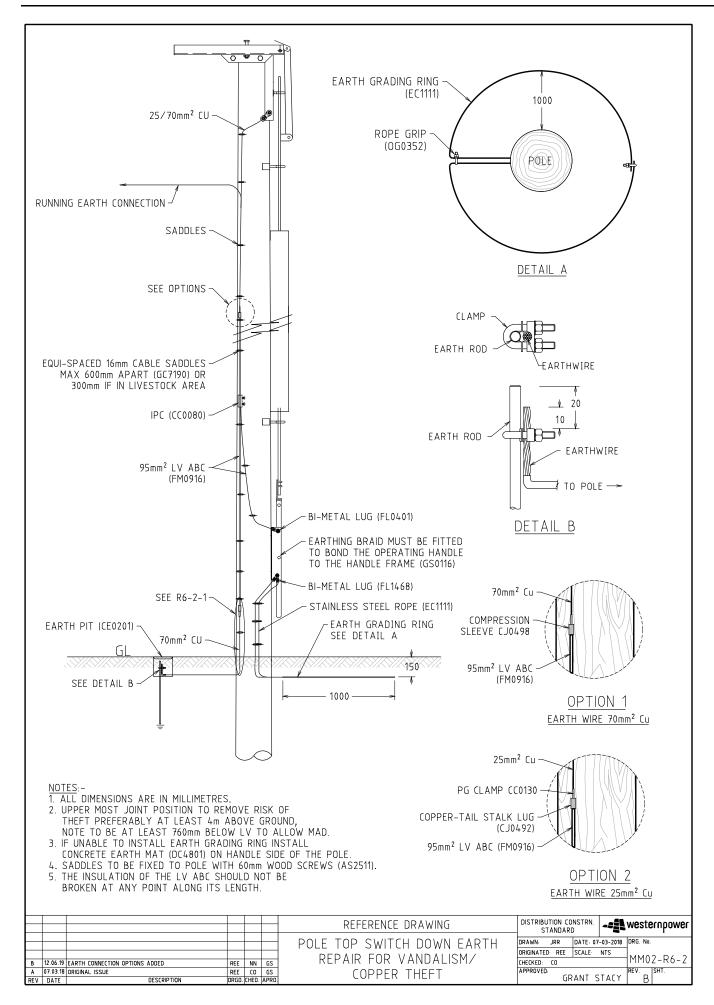
NOTES:

- 1. NON-METALIC HEAD INSULATORS TYPES ARE:
 - ALL PORCELAIN POST & PIN
 - ALL CYCLO-ALIPHATIC / GREY RESIN (IC0072 & IC0073)
- 2. ALUMINIUM TIE STRANDS TO:
 - BE TIGHTLY WRAPPED FLAT AGAINST THE INSULATOR TOP SHED SURFACE.
 - NO OVERLAPPING
- 3. ALUMINIUM TIE FORMS AN "ARCING RING", PROTECTING THE GALVANISING COATING ON THE STEEL TIE.

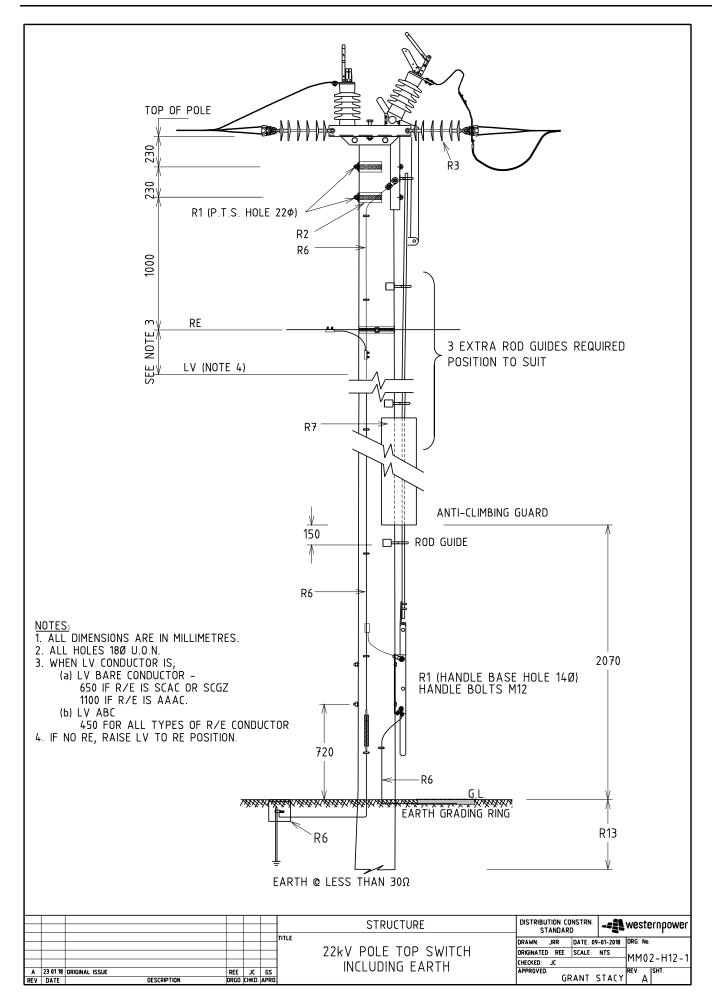
					REFERENCE DRAWING	DISTRIBUTION CONSTRN. STANDARD	westernpower
-					HV INSULATOR TIES		B-03-2025 DRG. No.
					STEEL COMPLICTOR	ORIGINATED VS SCALE CHECKED NMc	MM02-R03
A REV	28.03 25 DATE	ORIGINAL ISSUE DESCRIPTION	VS ORGD.	NMc	NON-METALIC HEAD INSULATORS	APPROVED CHRIS O	MODE I REV. SHT.

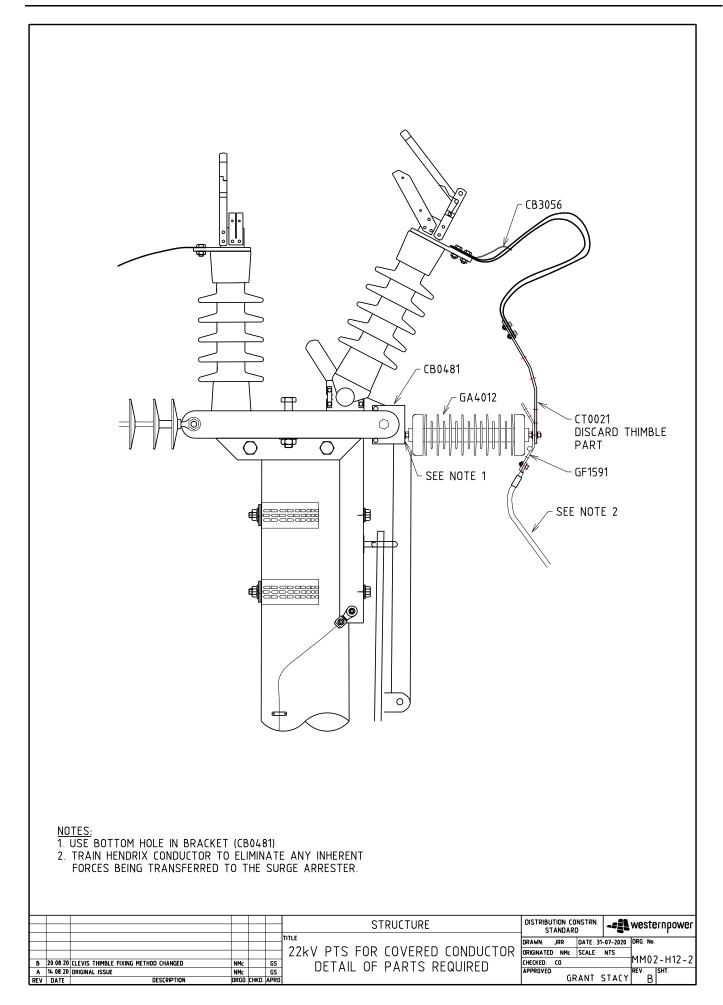


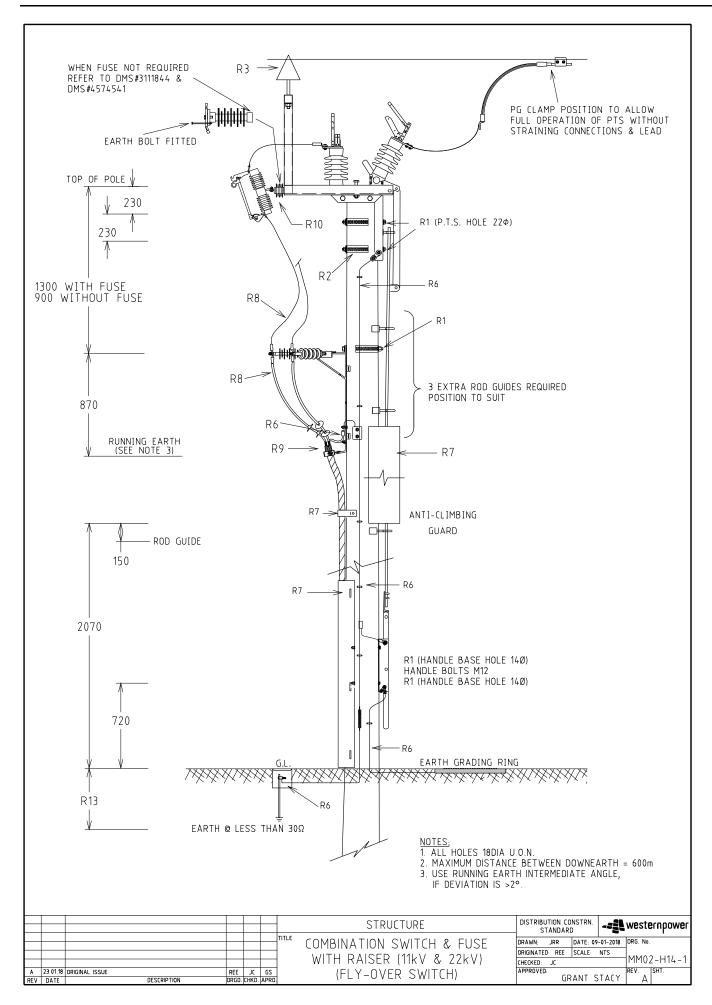


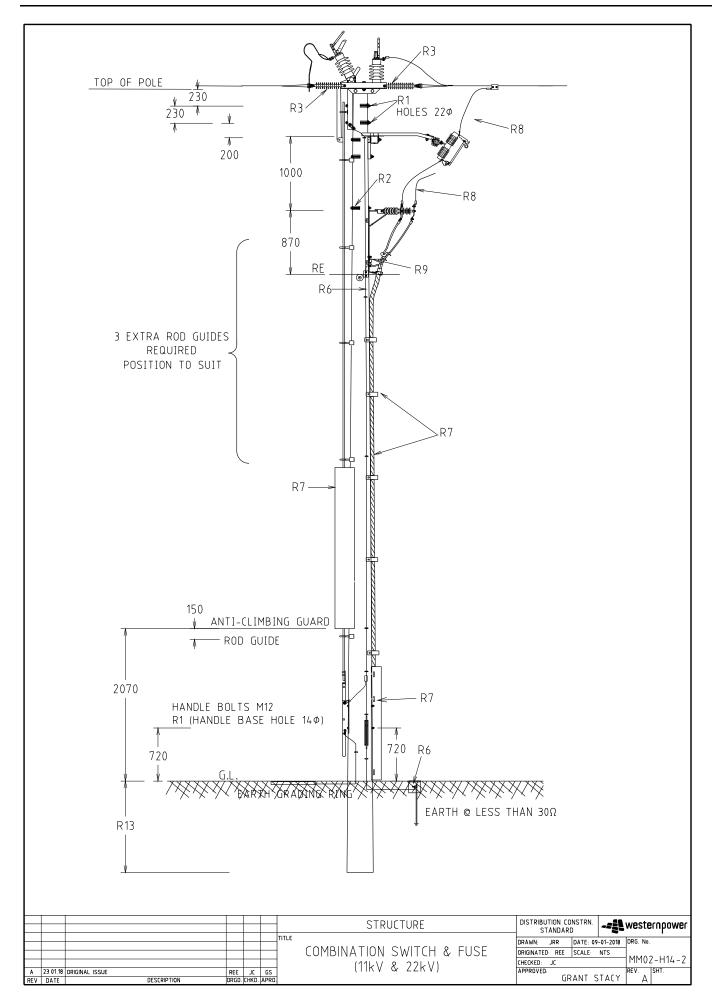




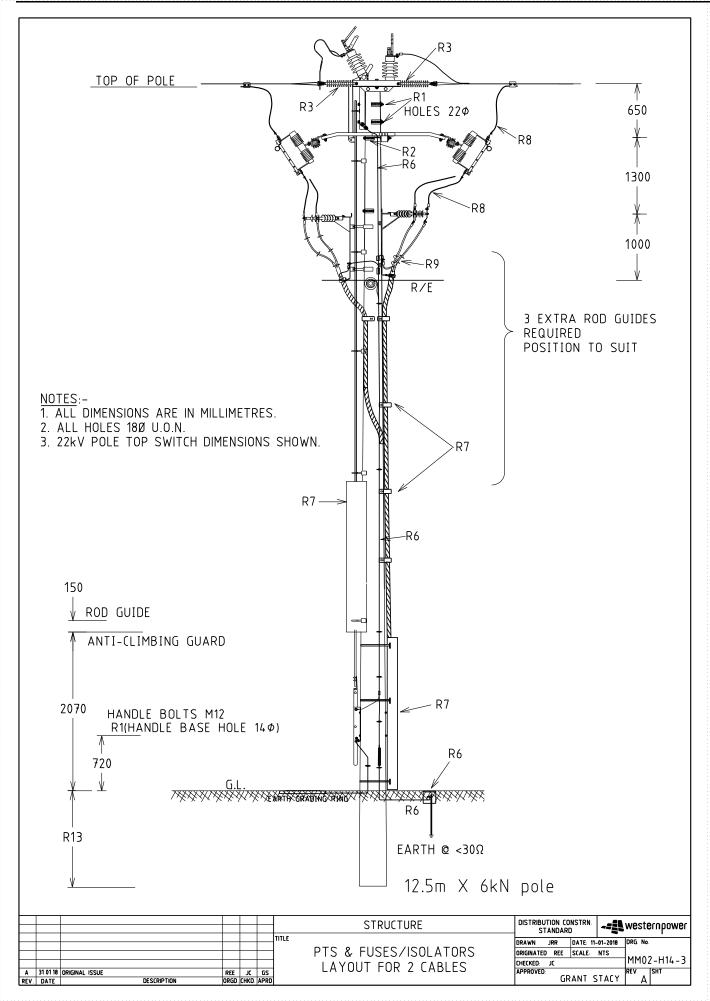


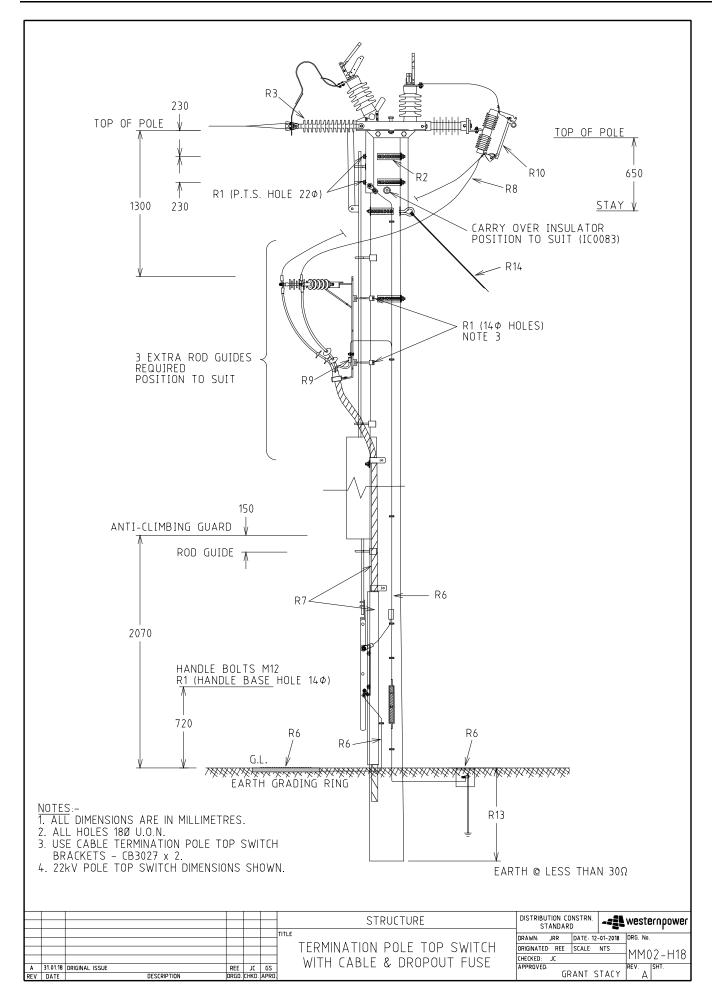


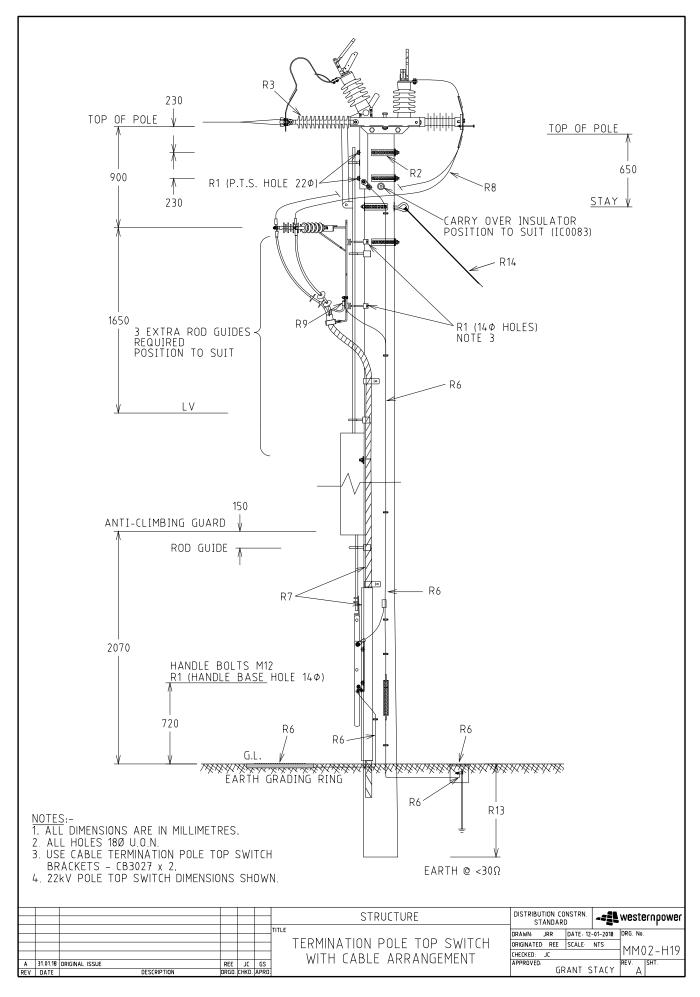


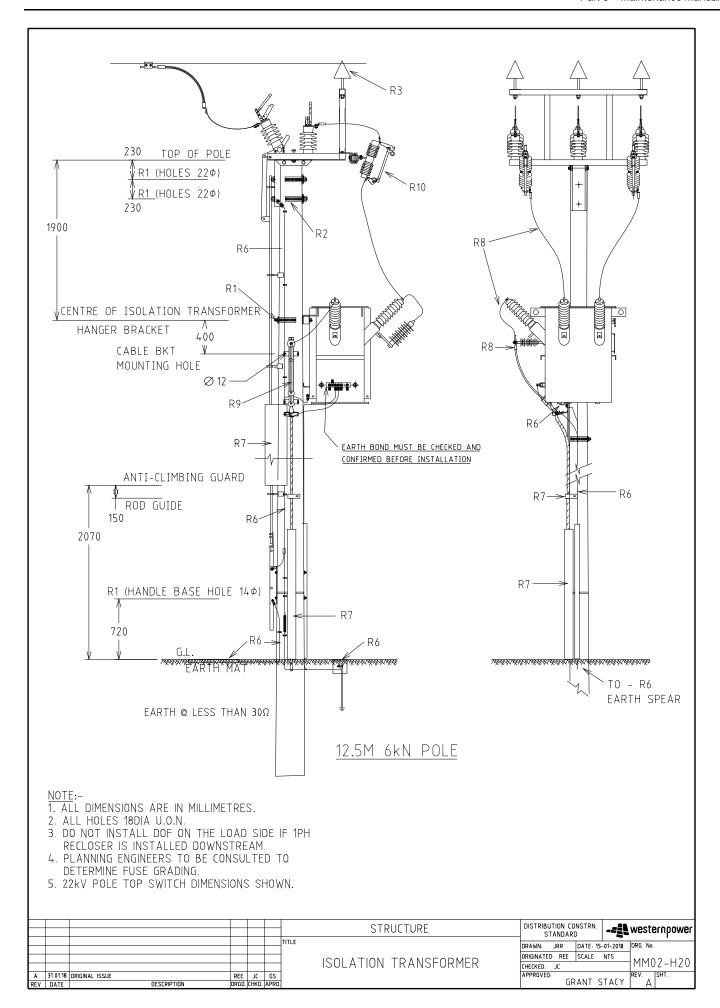


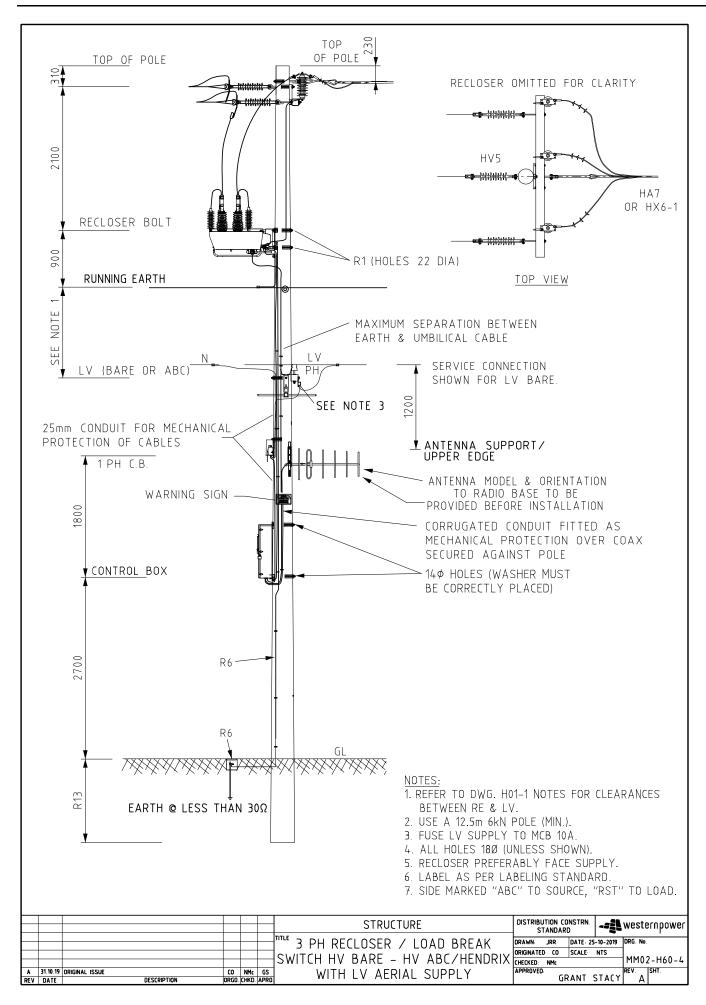


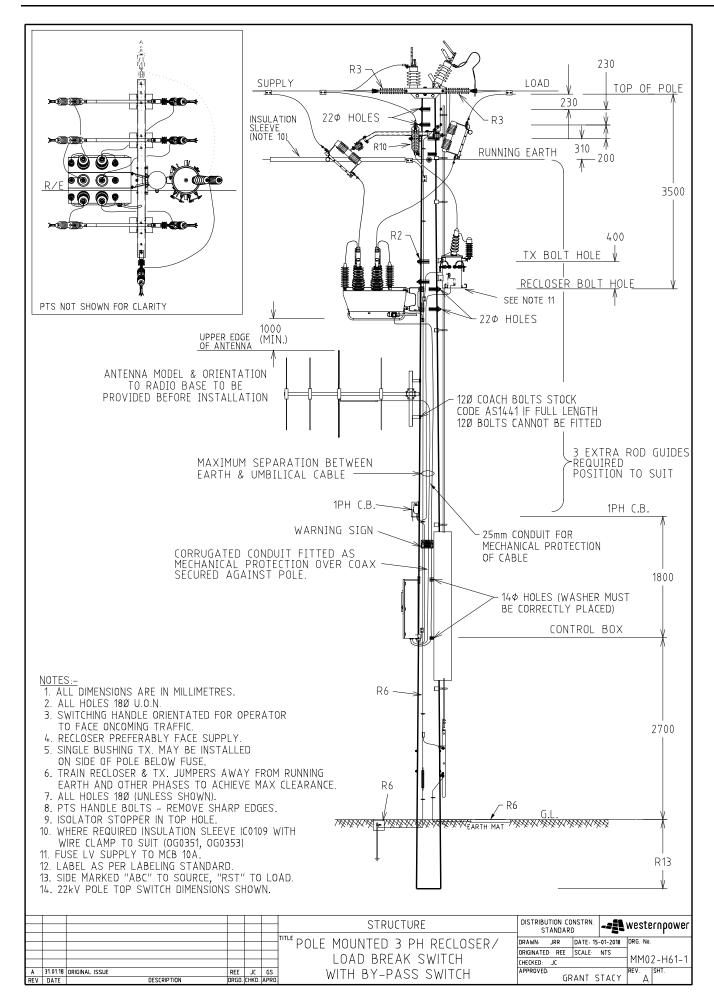


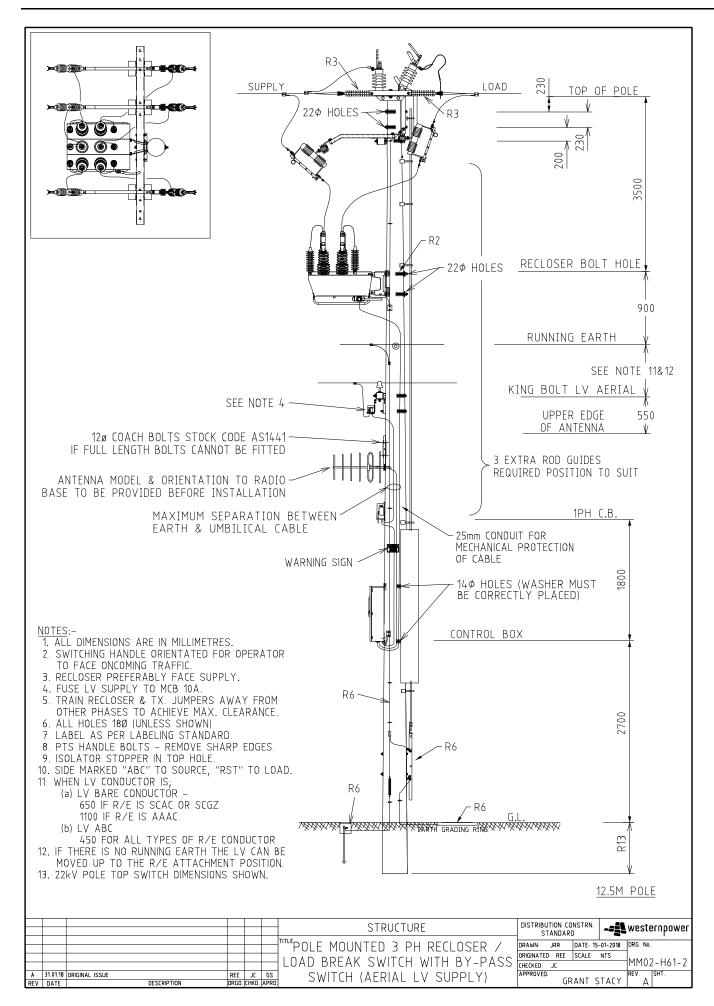


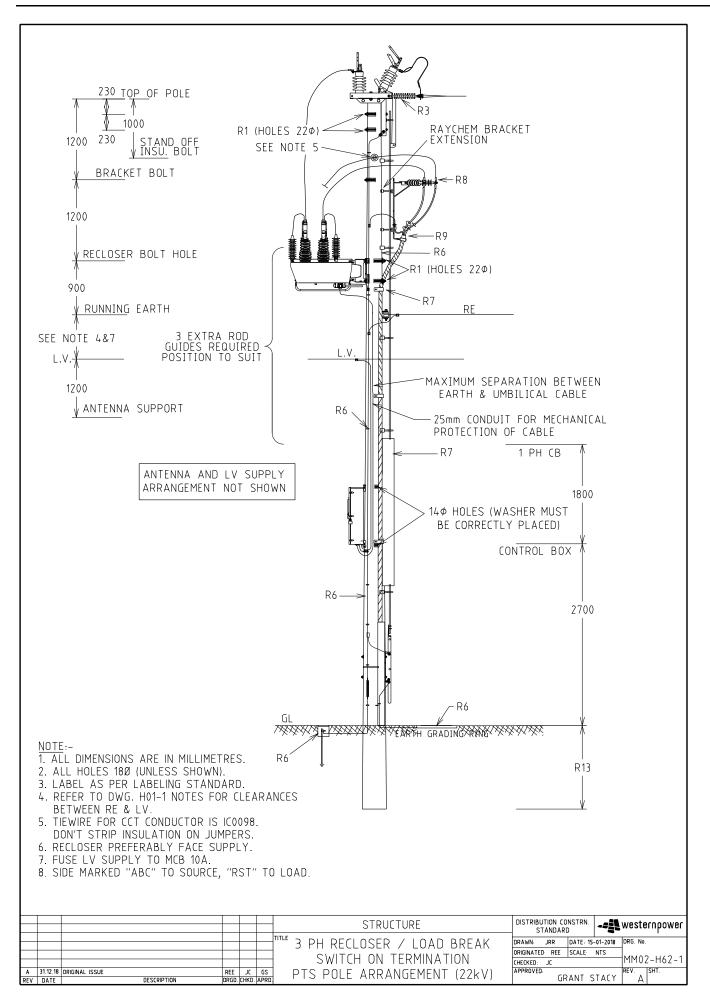


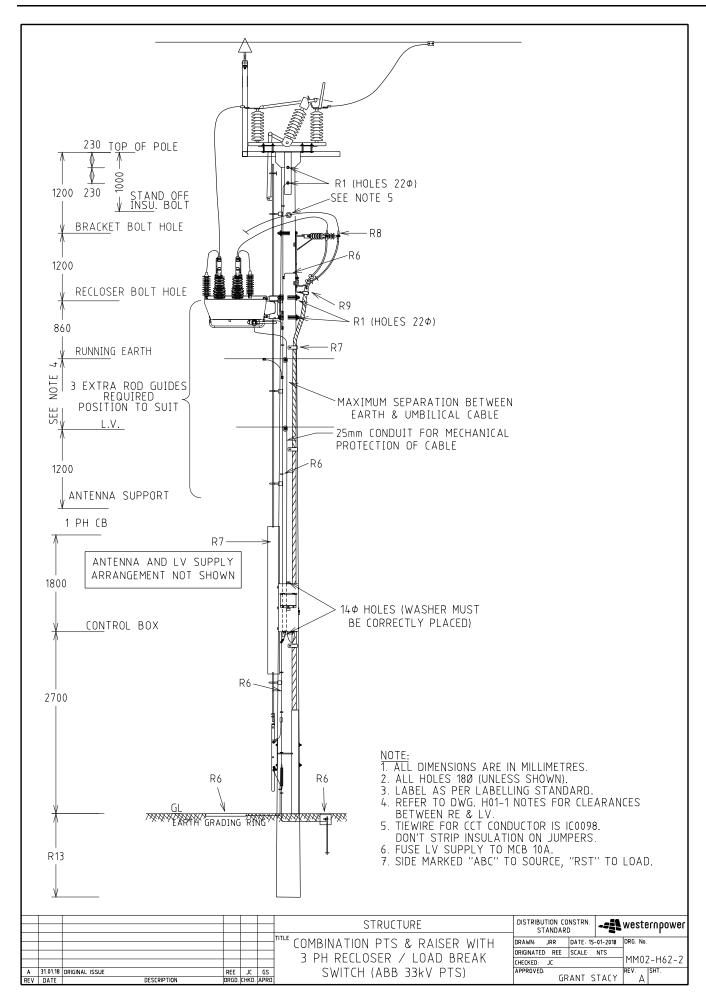












STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS		
GS0311	SCHNEIDER/NULEC 3¢ 22kV RECLOSER	MM03-H16-1, MM03-H17-1		
GS0312	SCHNEIDER/NULEC 3¢ 33kV RECLOSER			
GS0310	SCHNEIDER/NULEC 1¢ 12.7kV RECLOSER	MM03-H51-2, MM03-H51-4		
GS0314	SCHNEIDER/NULEC 1¢ 19.1kV RECLOSER			
GS0303	1Φ HYDRAULIC RECLOSER (KYLE TYPE 'E' RECLOSER	FUTURE		

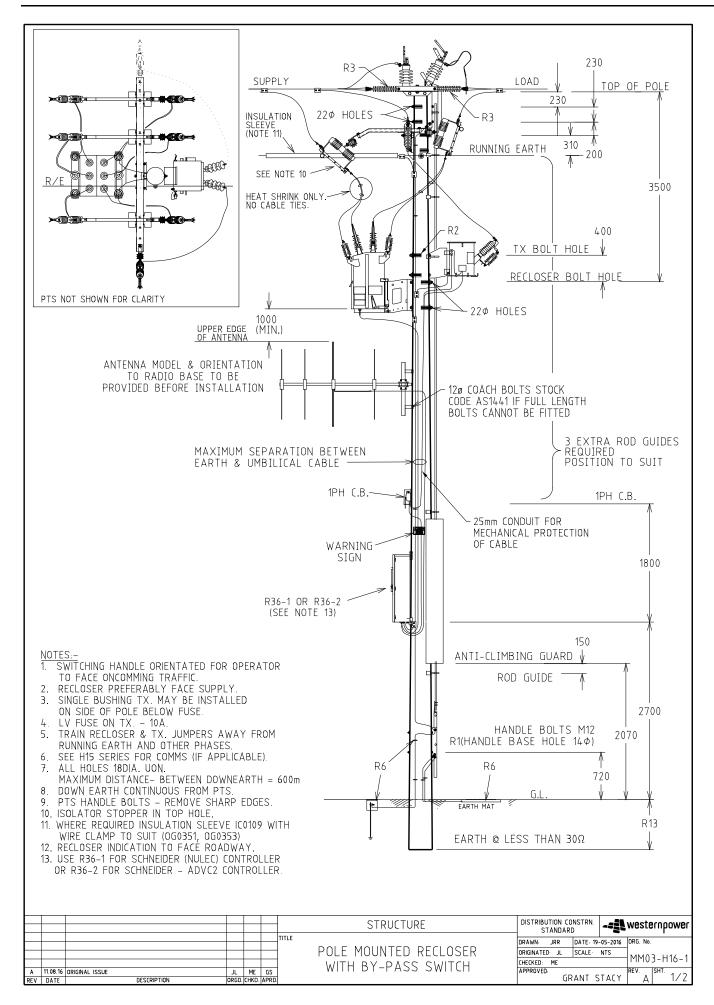
- NOTES:

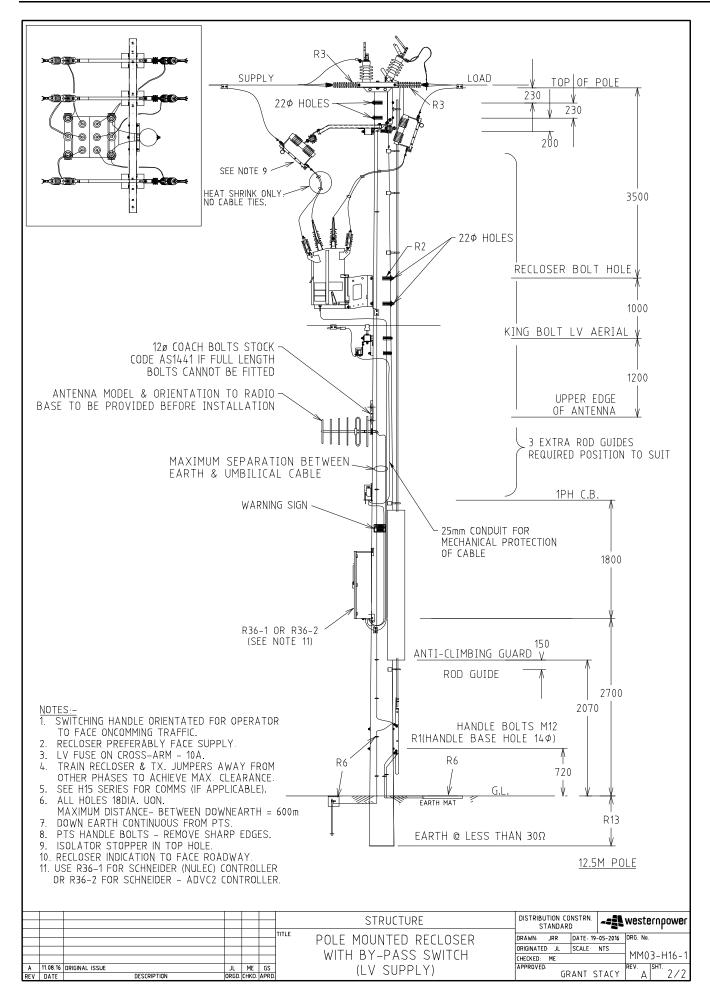
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 BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

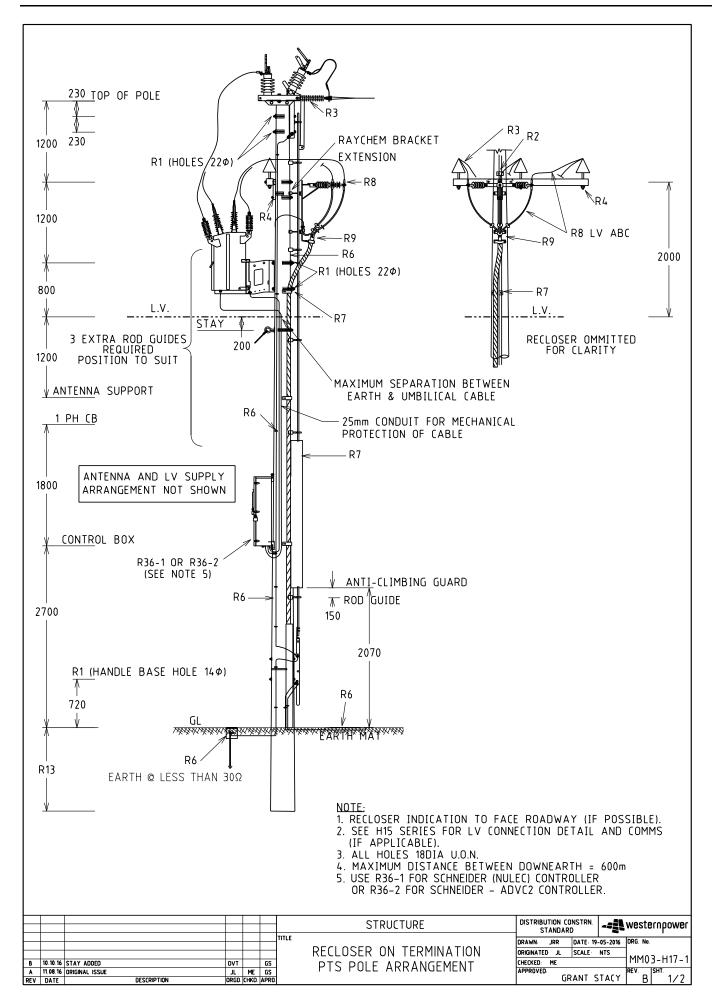
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 3) SUPERSEDED: IN LINE ISOLATOR ARRANGEMENTS FOR RECLOSERS DUE TO FIELD COMMENTS.

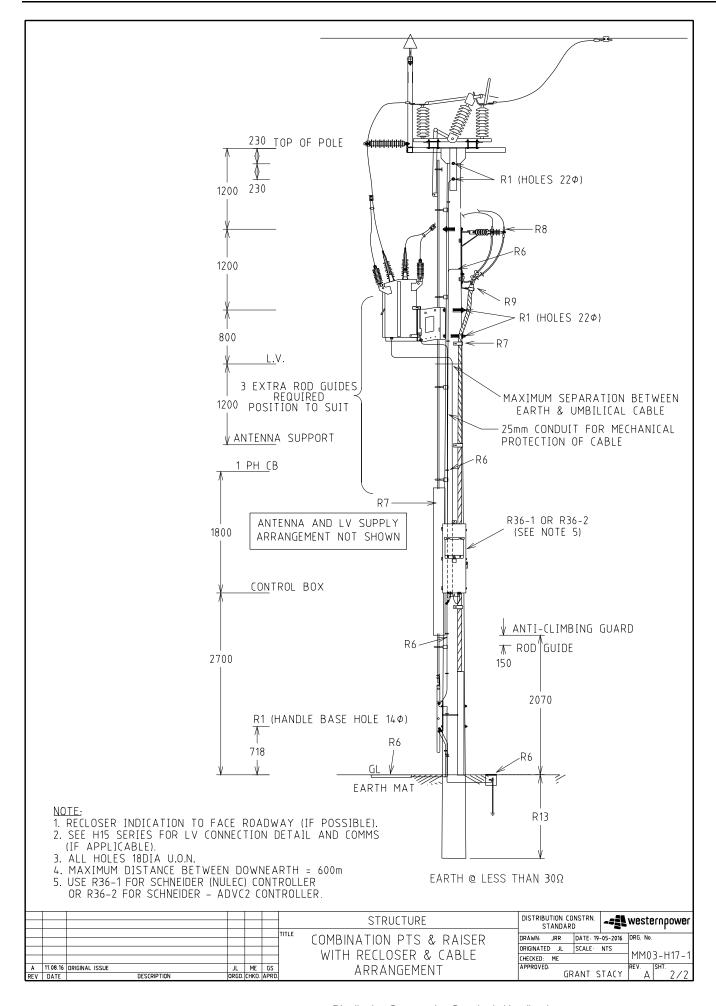
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<u> </u>						TITLE		DRAWN JRR DATE 25	-06-2016 DRG NO.
							DECLOCED INCTALLATION		NTC
В	19.12.19	TABLE OF DRAWING NUMBERS REVISED	CO	NMc	GS		RECLOSER INSTALLATION	CHECKED: ME	MM03
A	11.08.16	ORIGINAL ISSUE	JC	ME	GS			APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO			GRANT	STACY B

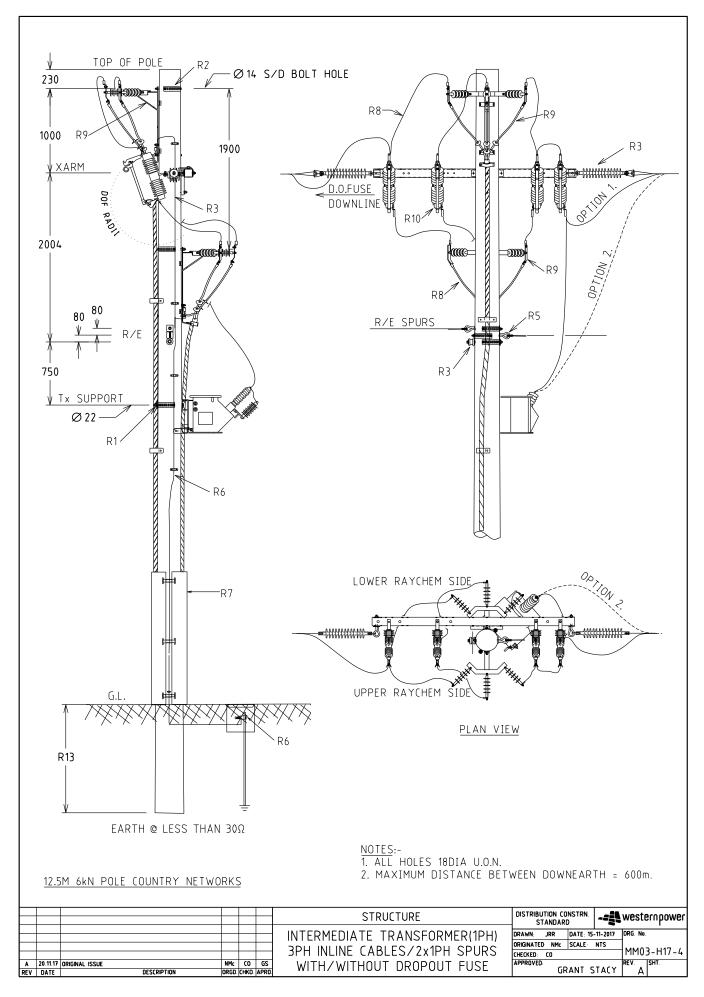




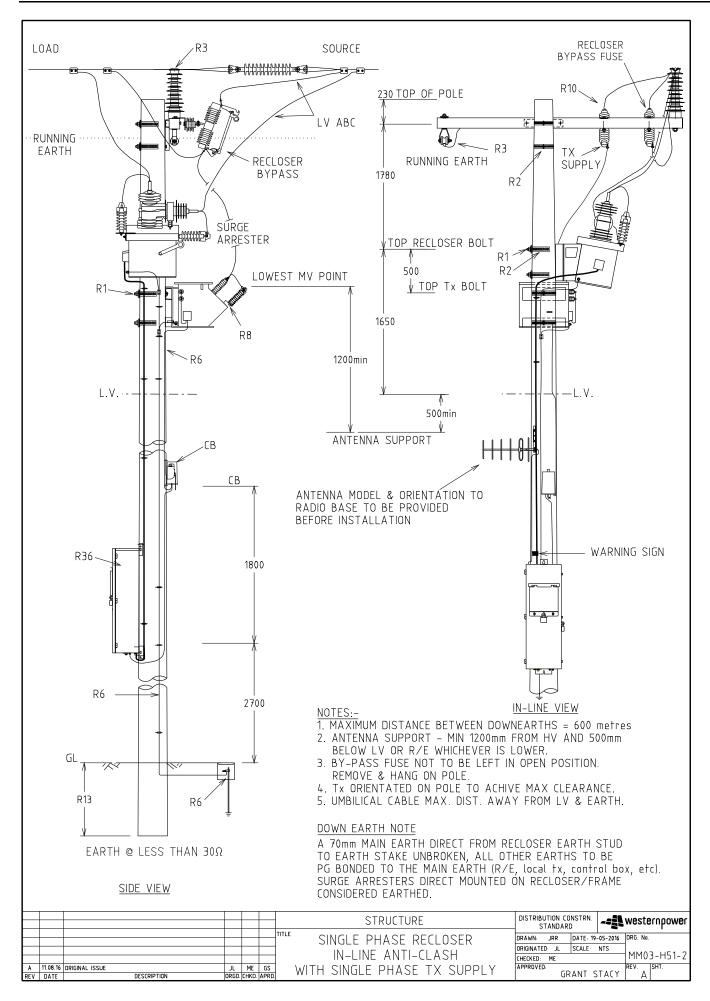


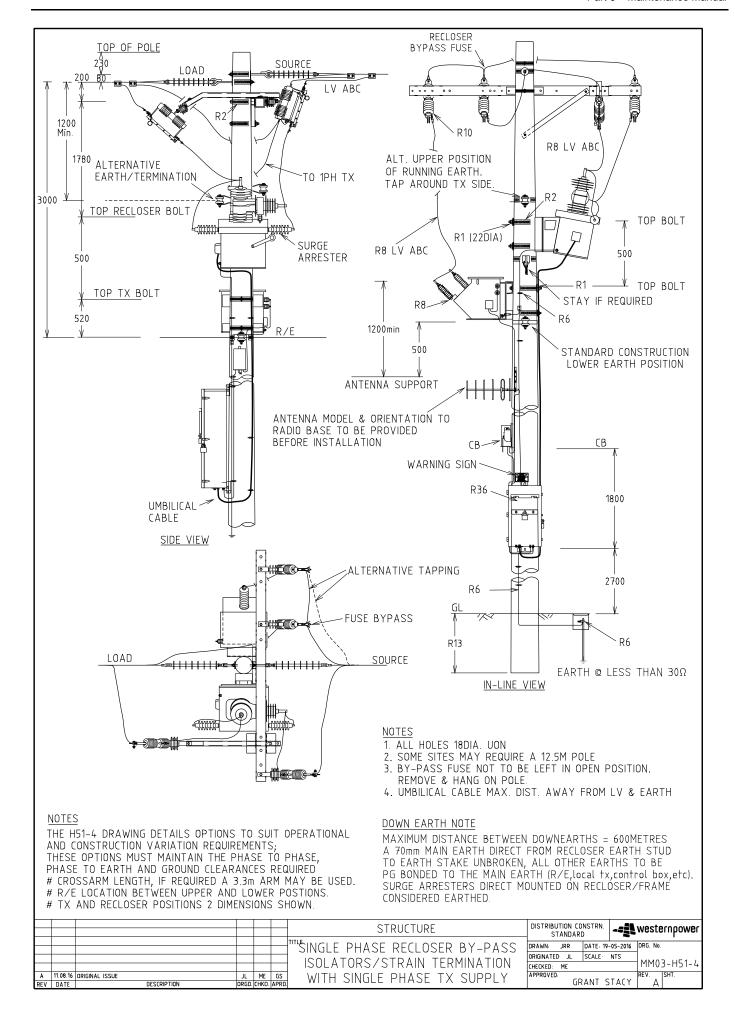




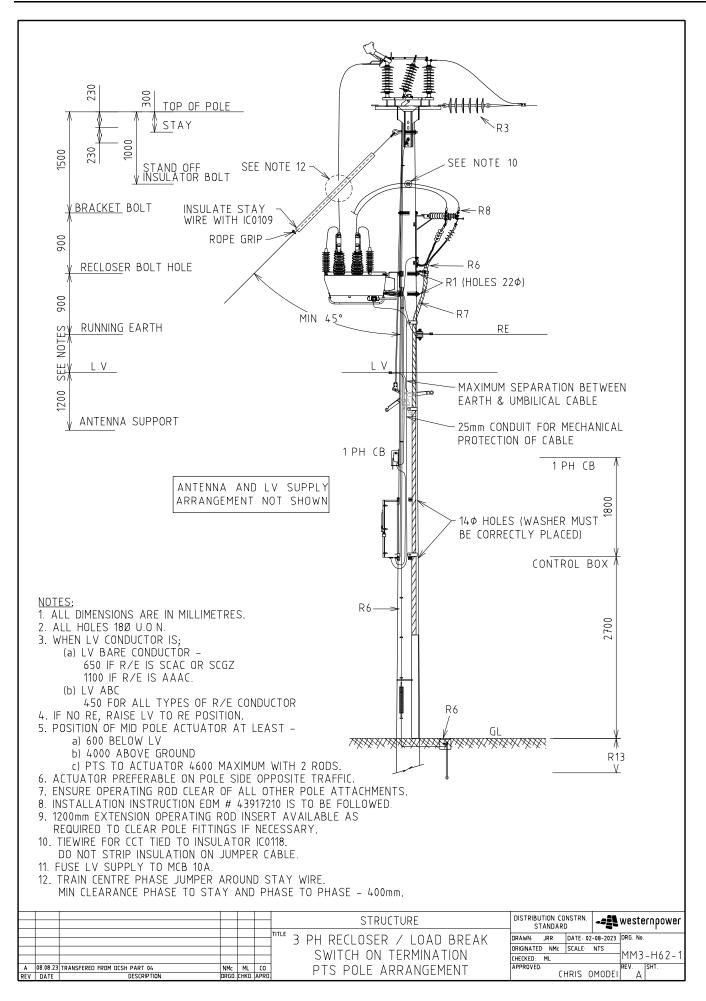




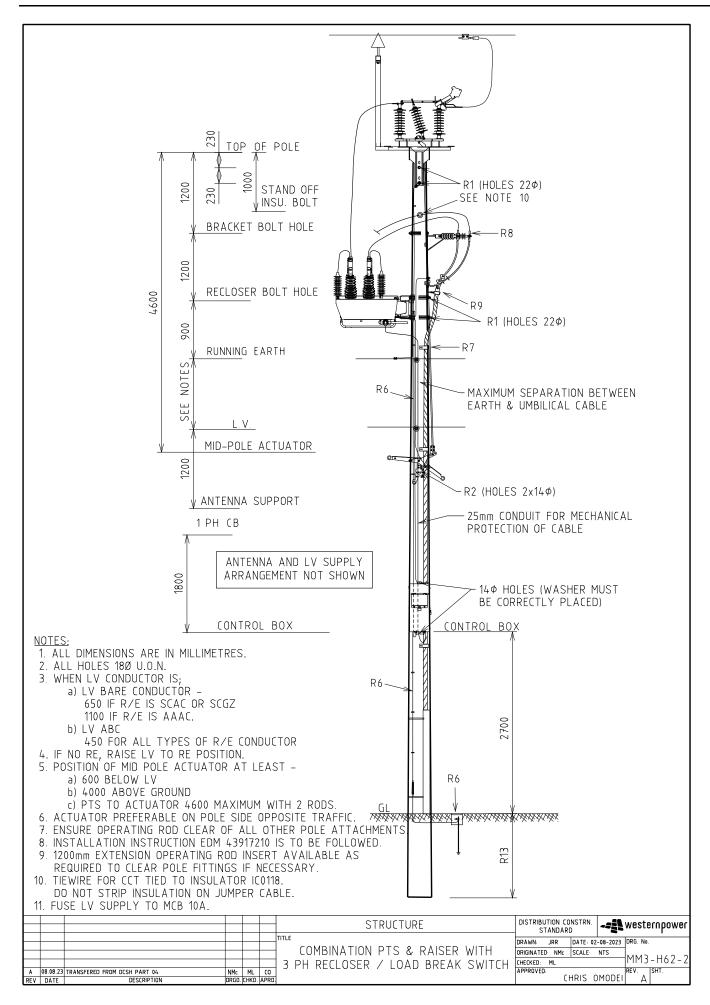


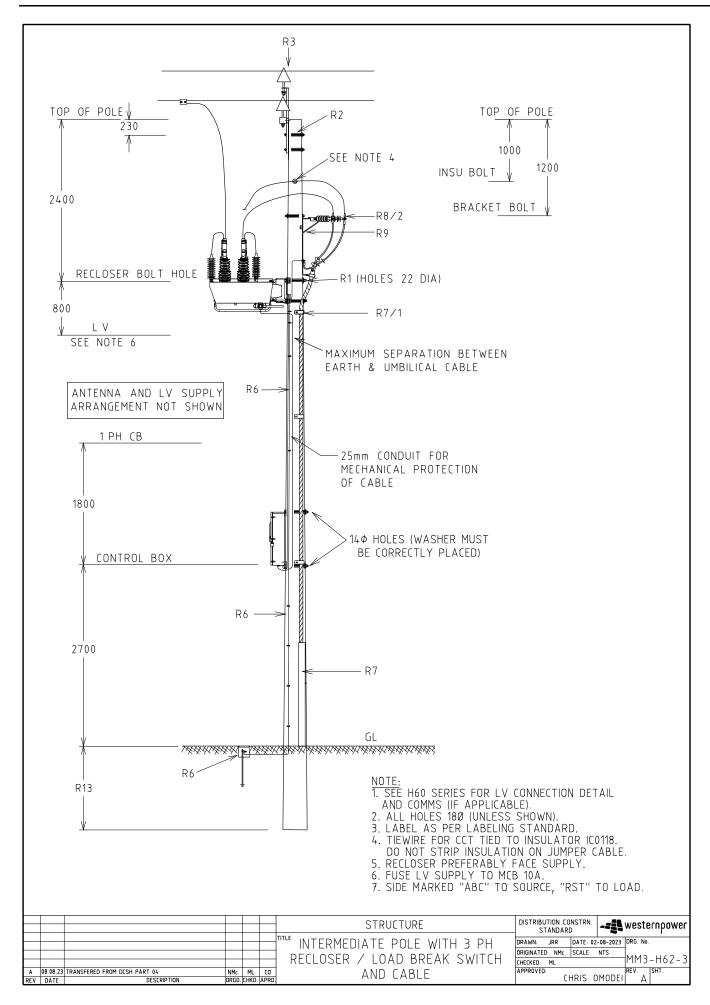


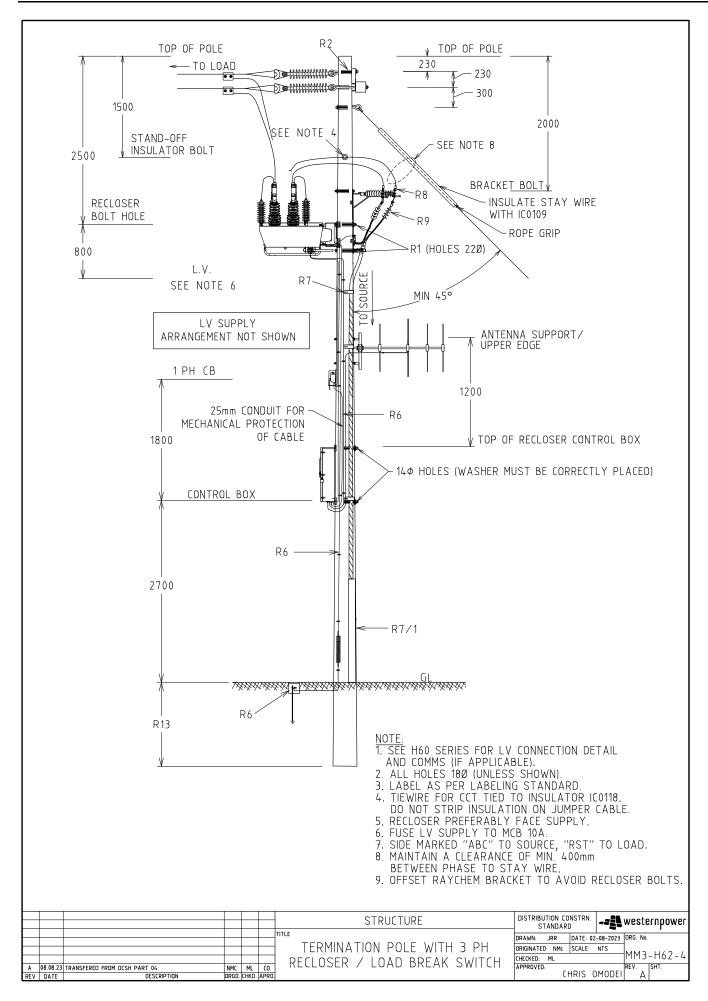


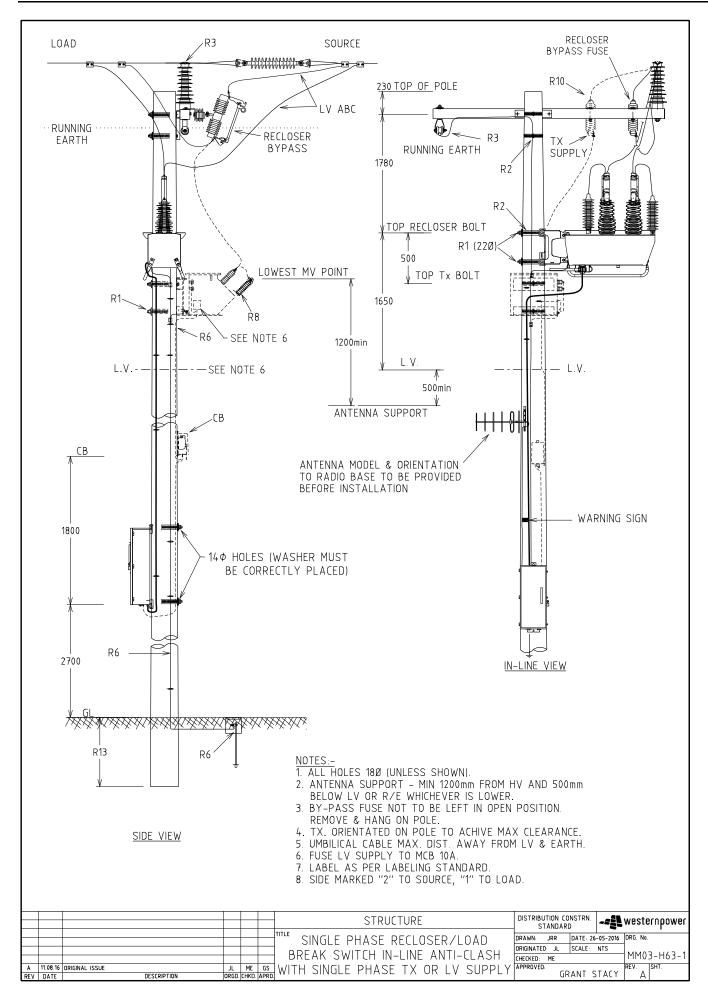












STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
GS0131	33kV NULEC/SCHNEIDER LBS	MM04-H16-2

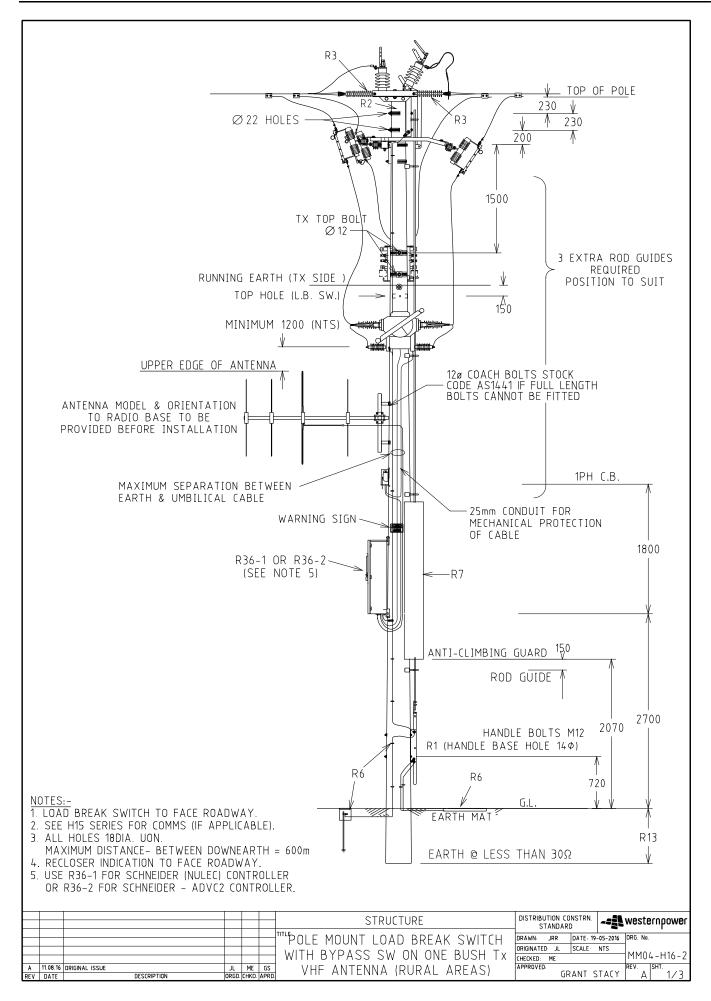
NOTES:

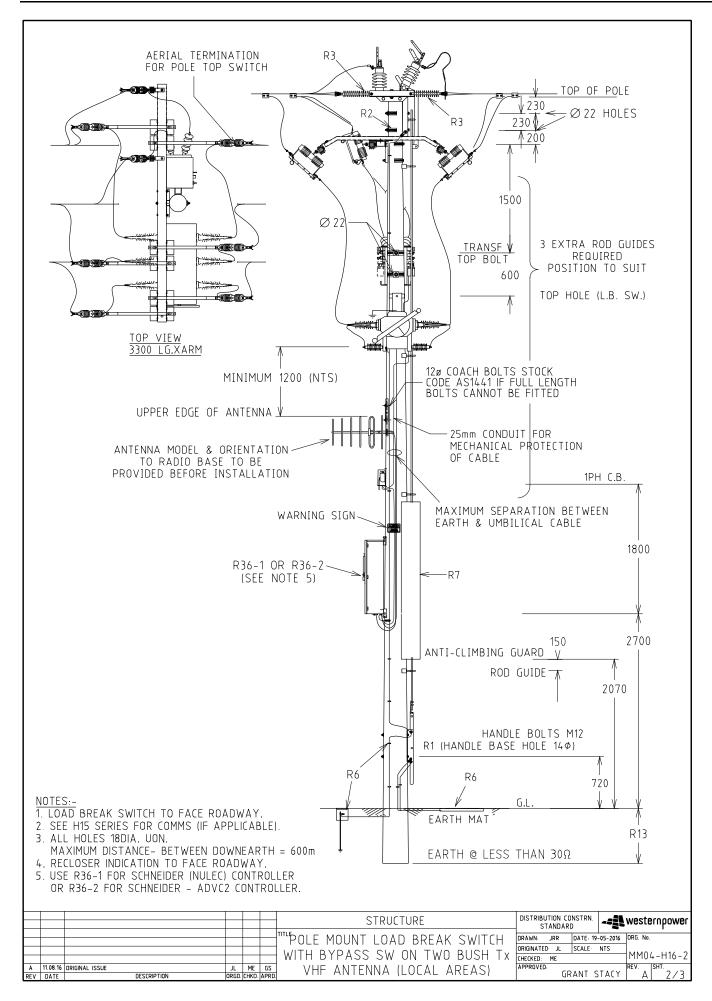
1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)
BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

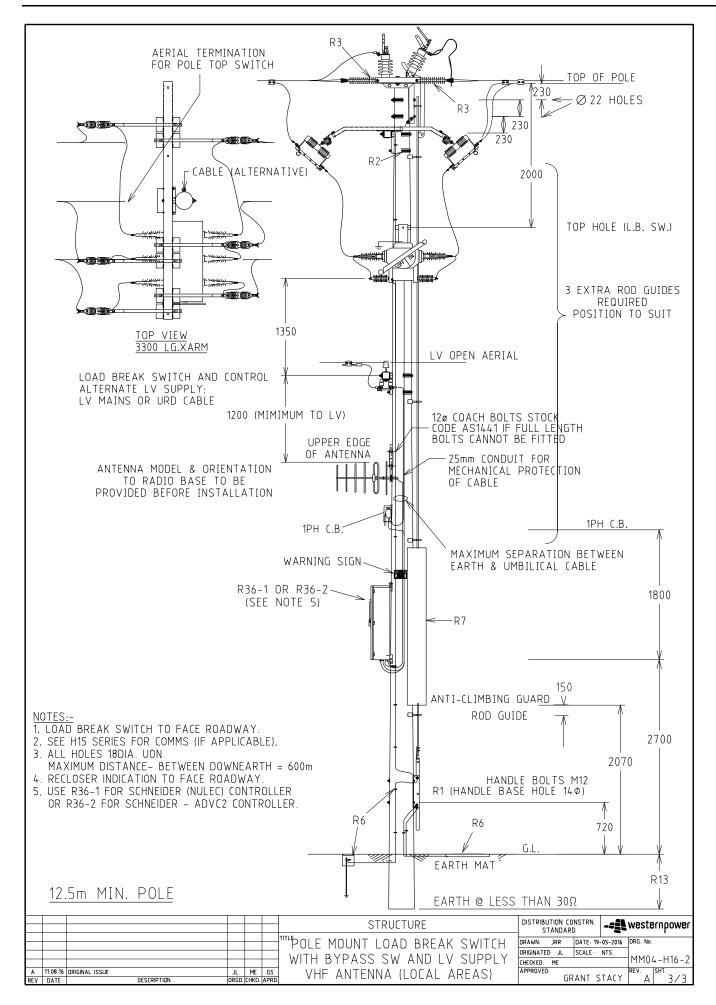
2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

							STRUCTURE	DISTRIBUTION CONSTRN.	westernpower
							STRUCTURE	STANDARD	-=== mezreilihomei
						TITLE		DRAWN JRR DATE 2	9-06-2016 DRG NO.
							LOAD DOEAL OF HECH	DRAWN: JRK DATE: 2	9-06-2016 DRG. 140.
							LOAD BREAK SWITCH	ORIGINATED JC SCALE	NTS MANA
В	19.12.19	LIST OF DRAWINGS IN THE TABLE REVISED	co	NMc	GS		REINSTALLATION	CHECKED: ME	MM04
A	11.08.16	ORIGINAL ISSUE	JC	ME	GS	1	KLINSTALLATION	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO	CHKD.	APRO	1		GRANT	STACY B









STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
GS6017	SECTIONALISER FOR RECLOSER W/10A COIL;3 SHOT;120SEC RECLAIM TIME;MANUAL RESET	H53

- NOTES:
 1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)
 BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).
 2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	westernpower
							DRAWN: JRR DATE: 29-06-2016 ORIGINATED: JC SCALE: NTS	1
A REV	11.08.16 DATE	DRIGINAL ISSUE DESCRIPTION	JC ORGD.	ME CHKD.	GS APRO	SECTIONALISER REINSTALLATION	CHECKED: ME APPROVED: GRANT STACY	MM05



STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS

1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)
BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).
2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

							STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
						TITLE		DRAWN: JRR DATE: 29 ORIGINATED JC SCALE	9-06-2016 DRG. NO.
A	11.08.16	ORIGINAL ISSUE	JC	ME	GS		REINSTALLATION (FUTURE)	CHECKED: ME APPROVED:	MM06
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRD			GRANT S	STACY A



STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
GF0020	DOF	
GF0021	DOF	SEE RELEVANT
GF0041	DOF	CONSTRUCTION STANDARDS DRAWING
GF1540	FUSELINK	STANDARDS DRAWING PART 4 HV OVERHEAD
GF1850	DOF	
GF1913	FAULT TAMER	

- 1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS) BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

 2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

 3. LIST OF DRAWINGS HAVE NOT BEEN LISTED FOR CLARITY DUE TO THEIR WIDESPREAD USE.

							STRUCTURE	DISTRIBUTION CONST	TRN.	westernpower
						TITLI	LE	DRAWN: JRR DA	TE: 29-06-2016	DRG. NO.
						1	DDOD OUT FUCE DEINCTALL ATION	ORIGINATED JC SC	ALE: NTS	MMA 0.7
						1		CHECKED: ME		MM07
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS			APPROVED:		REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO	1		UKAN	Y)ATZ TV	A



STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
RC0002	22kVAr CAPACITOR	H31-1, H31-2, H32-1, H32-2

NOTES:

1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)
BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

							STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-= westernpower
						TITLE	CADACIINDE DEINELALIATION	ORIGINATED JC SCALE I	06-2016 DRG. NO. NTS MM 0 8
A REV	11.08.16 DATE	DRIGINAL ISSUE DESCRIPTION	JC ORGD.	ME CHKD.	GS APRE	1.		APPROVED: GRANT S	REV. SHT.



THIS SECTION OF THE MANUAL INCLUDES GENERAL OVERHEAD LINE MAINTENANCE, SUCH AS

- * POLE TOP CONSTRUCTION GUIDANCE
- * POLE CHECKS & SPLITS REPAIR
- * CONDUCTOR REPAIR
- * CONDUCTOR SPEADER INSTALL

						STRUCTURE	DISTRIBUTION CONSTRN. westernpower
							STANDARD STANDARD
						ITLE	DRAWN: JRR DATE 02-04-2019 DRG NO.
						GENERAL OVERHEAD LINE	ORIGINATED CO SCALE NTS
							CHECKED NMc MMO9
- -	AC 1/ 10	ODICINAL ICCUS		***		MAINTENANCE	APPROVED: REV ISHT
		ORIGINAL ISSUE		NMc	GS		
REV	DATE	DESCRIPTION	ORGO	CHKD.	APRO		GRANT STACY A



DESCRIPTION	RELEVANT DRAWINGS	APPLICATION
SINGLE PHASE INTERMEDIATE WITH EXTENDED RAISER	MM09-H40-1	WHEN THE EXISTING EXTENDED RAISER BRACKET IS UNSERVICEABLE BUT THE POLE IS FIT FOR PURPOSE REPLACE THE RAISER BRACKET USING THIS CONSTRUCTION. IF THE POLE IS UNSERVICEABLE, IT SHOULD BE REPLACED WITH AN APPROPRIATELY SIZED POLE AND DCSH H40-1.
VERTICAL INTERMEDIATE LV CONSTRUCTION	MM09-L01	SUITABLE FOR SINGLE POLE REPLACEMENT WHERE ADJACENT STRUCTURES ARE ALSO VERTICAL.
3 PHASE INTERMEDIATE WITH RUNNING EARTH	H01-1	APPLY WHEN HISTORICAL CONSTRUCTION TYPES HAVE BEEN USED, SEE THE PICTURE.

- NOTES:

 1. POLE FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)

 BEFORE INSTALLATION TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).
- 2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

							ST	RUCTURE	DISTRIBUTION CO		-=== westernpower
						TITLE			DRAWN: JRR	DATE: 29	-06-2016 DRG: NO:
<u> </u>										SCALE	MTC
C	05.04.19	DRAWING NUMBER CHANGED	CO	NMc	GS	POL		CONSTRUCTION	ORIGINATED. JC	SCALL	MM09-1-11
В	03.02.17	DRAWING NUMBER CHANGED AND MORE DETAILS ADDED	CO	REE	GS] FUL	_ 106		CHECKED: REE		
Α	09.08.16	ORIGINAL ISSUE	JC	REE	GS				APPROVED:		REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO				լ նե	RANT S	IALY [



DESCRIPTION	RELEVANT DRAWINGS	APPLICATION
3 PHASE INTERMEDIATE ANTI-SWAN CROSSARM	H01-3	APPLY WHEN A HIGH RAISER OR STRING INSULATOR HAS BEEN USED TO MITIGATE CLASHING, BIRD STRIKES OR LONG BAYS. SEE BELOW. (GROUND CLEARANCE TO BE CHECKED)
INTERMEDIATE WISHBONE WITH OVERHEAD EARTH WIRE	H22	APPLY INTERMEDIATE WISHBONE CONSTRUCTION, SEE BELOW.
INTERMEDIATE FLAT CONSTRUCTION WITH OVERHEAD EARTH WIRE	H23	
		STRUCTURE DISTRIBUTION CONSTRN. STANDARD DRAWN: JRR DATE: 30-11-2016 DRG. NO.
05.04.19 DRAWING NUMBER CHANGED 03.02.17 ORIGINAL ISSUE DATE DESCRI		POLE TOP CONSTRUCTION ORIGINATED CO SCALE: NTS CHECKED: REE MM09-

DESCRIPTION	RELEVANT DRAWINGS	APPLICATION	
VERTICAL STRAIN	H26		
INLINE STRAIN WITH OVER HEAD EARTH WIRE	H26-2		
VERTICAL STRAIN ANGLE	H28		
		STRUCTURE DISTRIBUTION CONSTRUCTURE STANDARD	
05.04.19 DRAWING NUMBER CHANGED 03.02.17 DRIGINAL ISSUE DATE DESCR	CO CO PIPTION ORG	POLE TOP CONSTRUCTION DRAWN: JRK DATE:	30-11-2016 DRG NO NTS MM 0 9 - 1 - STACY REV. B SHT

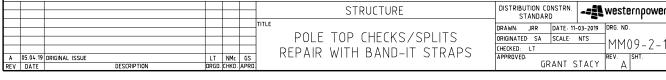


APPLY LONG BAY 3 POLE INSTALLATION, SEE BELOW 1 PHASE DOUBLE TERMINATION TERMINATION THANSFORMER WITHOUT DROPOUT FUSC. No. No.		DESCRIPTION	RELEVANT DRAWINGS	APPLICATION	
TERMINATION TRANSFORMER WITHOUT DROPOUT FUSE STRUCTURE Distribution constrail STRUCTURE Distribution constrail STRUCTURE Distribution constrail STRUCTURE Distribution constrail STRUCTURE		3X1 POLE LONG BAY SOLUTION	H41-2	APPLY LONG BAY 3 POLE INSTALLATION, SEE BELOW	
TERMINATION TRANSFORMER WITHOUT DROPOUT FUSE STRUCTURE DISTRIBUTION CONSTR. STRUCTURE DISTRIBUTION CONSTR. STRUCTURE DISTRIBUTION CONSTR. STRUCTURE STRU					
STANDARD STANDARD DRG. NO.		TERMINATION TRANSFORMER WITHOUT DROPOUT	H47-3		
STANDARD STANDARD STANDARD DRG. NO.					
STANDARD STANDARD OFF. 04-01-2017 ORG. NO.					
STANDARD STANDARD OFF. 04-01-2017 ORG. NO.					
STANDARD STANDARD OFF. 04-01-2017 ORG. NO.					
STANDARD STANDARD STANDARD DRG. NO.					
TITLE STANDARD STANDARD STANDARD BY DRG. NO.					
TITLE DRAWN: JRR DATE: 04-01-2017 DRG. NO.				STRUCTURE DISTRIBUTION CONSTRN. STANDARD CONSTRN.	
B 05.04.19 DRAWING NUMBER CHANGED CO NMC GS RE GS REALE OF SCALE O	В	05.04.19 DRAWING NUMBER CHANGED		DRAWN: JRR DATE: 04-01-2017 DRG. NO. OR NW. 55 POLE TOP CONSTRUCTION CHECKED: REE OR NO. OR SCALE: NTS MM09-	

WOOD POLE TOP CHECKS & SPLITS REPAIR ASSESS THE CONDITION OF THE POLE, CONDUCTORS, MOUNTED EQUIPMENT AND HARDWARE PRE-WORK TO ENSURE THAT THE WORK CAN BE CARRIED OUT SAFELY: • POLES ARE FREE OF ALL OTHER DEFECTS EXCEPT CHECKS OR SPLITS • POLE TOP HAS SUFFICIENT GOOD WOOD PRESENT TO SECURE THE STRAPS. • TOP BOLT IS AT >50mm FROM THE POLE TOP. • POLE IS SOUND AND NOT SEVERELY INFECTED WITH ROT/TERMITES. • ENSURE AVAILABILITY OF TOOLS AND EQUIPMENT NEEDED TO SUPPORT CROSS-ARMS AND CONDUCTORS WHEN REQUIRED STRAP • APPLY 32mm BAND-IT STRAPS. IN SITUATIONS WHERE THERE IS INSUFFICIENT SPACE OR INSTALLATION CLEARANCES TO USE THE 32mm BAND-IT TOOL, CONSIDER USING 3 OF 16mm BAND-IT STRAPS, FITTED AS CLOSE AS POSSIBLE TO EACH OTHER. • CUT AND SHAPE THE STRAP TO FIT THE POLE CIRCUMFERENCE AVOIDING EXCESSIVE LENGTH OF STRAP BECOMING A HAZARD. • INSTALL THE FIRST STRAP AT THE TOP, AND WORK DOWNWARDS FOLLOWING THE INSTALLATION GUIDELINES.

GUIDELINES:

DESCRIPTION	APPLICATION	POLE TOP SCENARIO
ATTACHING BAND-IT STRAPS AT THE TOP KING BOLT OR STAY EYE BOLT	AT THE TOP KING BOLT OR STAY EYE BOLT: ● INSTALL STRAPS AS CLOSE AS POSSIBLE TO THE KING BOLT OR ATTACH IT UNDERNEATH THE WASHER. ● WHEREVER POSSIBLE AVOID INSTALLING THE STRAP ON THE BULGING AREAS, OVER KNOTS OR OVER THE WASHER.	
ATTACHING BAND-IT STRAPS TO SUPPORT STAY EYE BOLT	AT STAY EYE BOLT: ● INSTALL A STRAP IMMEDIATELY ABOVE THE TOP AND ANOTHER STRAP BELOW THE BOTTOM OF STAY EYE BOLT.	
ATTACHING BAND-IT STRAPS TO SUPPORT RAISER BOLTS	AT RAISER BOLTS: ● INSTALL 32mm STRAPS (IN ALL CASES) ABOVE AND BELOW AND AS CLOSE AS POSSIBLE TO THE RAISER BOLTS DIRECTLY TO WOOD, AS SHOWN, NOT AROUND RAISER	O O Raiser
	STRUCTU	STANDARD
	POLE TOP CHEC	DRAWN: JRR DATE: 11-03-2019 DRG. NO. ORIGINATED: SA SCALE: NTS MM.O. 9. 2





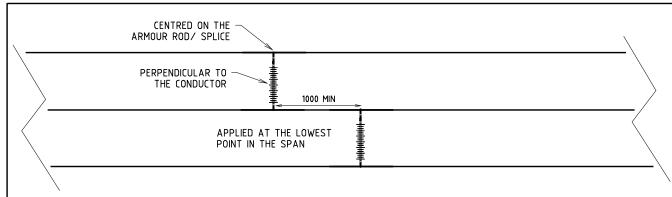
DESCRIPTION	APPLICATION	POLE TOP SCENARIO
WASHER REPLACEMENT (75mmx75mm)	IF THE SPLIT WIDTH AFTER REPAIR IS <20mm, EXISTING WASHER (45mm x 45mm) DOES NOT NEED TO BE REPLACED. WASHER REPLACEMENT IS REQUIRED IF: ● SPLIT WIDTH AFTER REPAIR IS ≥20mm ● EXISTING WASHER IS DEFORMED REPLACEMENT SCENARIOS: (1) WASHER ON THE HEAD SIDE OF THE BOLT PULL-THROUGH LOAD: ● INSTALL STRAPS ABOVE AND BELOW THE BOLT UNDERNEATH THE EXISTING WASHER. ● SUPPORT THE LOWER STRAP WITH A FEW SCREWS TO AVOID SLIDING DOWN. (2) WASHER ON THE CROSS ARM: ● INSTALL STRAPS ABOVE AND BELOW THE CROSS ARM AS CLOSE AS POSSIBLE.	Cross arm O Screws
BAND-IT TOOL OPERATION	 CHECK CLEARANCES BETWEEN HV AND LV CONDUCTORS AND OTHER HARDWARE TO ENSURE THAT THE BAND-IT TOOL CAN BE USED SAFELY. A RADIUS OF 400mm AND ANGLE OF 90-120° IS REQUIRED FOR TOOL OPERATION. CARE MUST BE TAKEN TO AVOID OVER TENSIONING THE STRAPS. AS A GENERAL RULE, AT THE FIRST WOOD CRACKING SOUND, THE BAND TIGHTENING CAN BE STOPPED. 	Pole 90° - 120° Strap Band-It tool

<u>NOTES:</u>

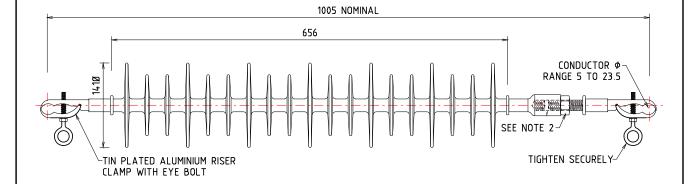
- 1. THE INTENT OF STRAPPING IS TO PREVENT FURTHER SPLITTING OF THE POLE, NOT TO CLOSE THE SPLIT, ALTHOUGH THIS MAY OCCUR DURING TIGHTENING OF THE BAND-IT STRAP.
- 2. ATTACH ADDITIONAL STRAPS AS REQUIRED BETWEEN BOLTS IF THE CHECK/SPLIT IS PRESENT AND THE DISTANCE BETWEEN STRAPS IS GREATER THAN 300mm.
- 3. RE-TIGHTEN ANY LOOSE BOLTS, e.g. KING BOLT, BRACING STRAPS, RAISER, Etc. AFTER STRAP IS APPLIED.

				\dashv		STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
				#		TITLE	DRAWN: JRR DATE: 11-	
				\equiv		POLE TOP CHECKS/SPLIT	ORIGINATED SA SCALE	MM09-2-2
A	05.04.19	ORIGINAL ISSUE	LT	NMc	GS	REPAIR WITH BAND-IT STRAPS	CHECKED: LT APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGO. C	HKD.	4PRO		GRANT S	STACY A





TYPICAL BAY - PLAN VIEW



SPECIFICATIONS - (STOCK CODE IC0003)

INSULATION MATERIAL : SILICONE WEIGHT : 3.7kg SPECIFIED MECHANICAL LOAD (SML) 70kN IMPULSE WITHSTAND VOLTAGE (BIL) : 460kV FLASHOVER WITHSTAND VOLTAGE (WET): 215kV

INSTALLATION INSTRUCTIONS:

MAINTENANCE STOCK ITEM USED TO ELIMINATE CONDUCTOR CLASHING DUE TO UNDER TENSIONED CONDUCTORS. TYPICALLY INSTALLED MIDSPAN ON LONG BAYS.

SPREADERS SHALL BE INSTALLED:

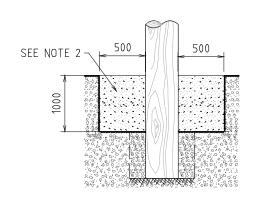
- *ON ISOLATED AND EARTHED HV LINE.
- *ON BARE HV OVERHEAD CONDUCTORS ONLY, VIZ. ALUMINIUM, ACSR AND AC OR GZ STEEL
- *INDIVIDUALLY (PREFERRED) OR AS A PAIR BETWEEN PHASE CONDUCTORS.
- *OVER AN ARMOUR ROD OR HELICAL SPLICE TO PROTECT THE CONDUCTOR FROM WEAR.
- *KRYPTON CONDUCTOR APPLY ALUMINIUM TAPE (CT0114) 100mm WIDE UNDER CLAMP.
- *WITH CLAMPS A MIN. 1000mm APART WHEN MORE THAN ONE CLAMP ATTACHED TO SAME CONDUCTOR E.G. CENTRE PHASE.
- *AT 90° TO THE CONDUCTOR TO PREVENT EXCESSIVE AND UNEVEN WEAR.
- *BAYS (TYPICALLY LONG BAYS) WITH LARGE ATTACHMENT HEIGHT VARIATION, SPREADER/S TO BE INSTALLED AT CENTRE OF SAG, NOT MIDSPAN.

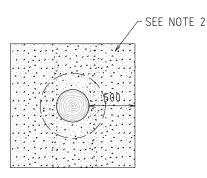
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ROTATE CLAMP TO ENSURE PROPER FITMENT TO CONDUCTOR. LOCK NUT TIGHTENED AS SHOWN.

SEE L18-05

							STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-=== westernpower
						TITLE	GENERAL OVERHEAD LINE	DRAWN: JRR DATE 0	5-04-2019 DRG. NO.
c	17.02.20	INSTALLATION INSTRUCTION REVISED	NMc	CO	GS		HV SPREADER 61kV	ORIGINATED CO SCALE	MM09-3-1
В	20.11.19	REVISED TO SUIT WITH NEW SPREADER	NMc		GS		UN SEKEADEK DIKA	CHECKED: NMc	1
Α	05.04.19	ORIGINAL ISSUE	CO	NMc	GS		SILICONE INTERPHASE	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO		SILICONE INTLINITIASE	GRANT	STACY (





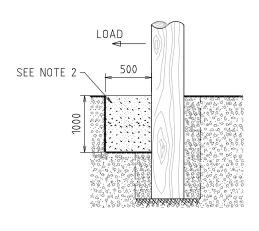


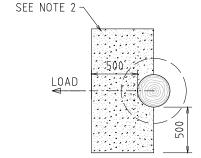
SECTION VIEW

PLAN VIEW

<u>SOIL RATING</u> = MEDIUM (BEFORE TREATMENT) GOOD (AFTER TREATMENT)

OPTION-1





SECTION VIEW

PLAN VIEW

OPTION-2

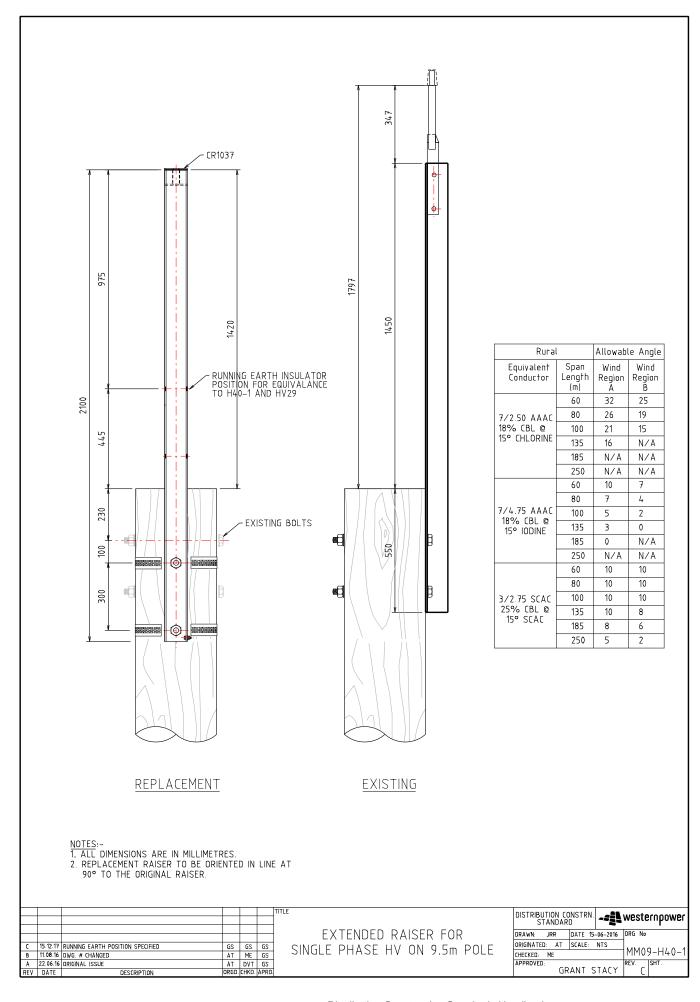
NOTES:-

- 1. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
- 2. BACKFILL WITH EITHER
 - a) ROAD BASE OR
 - b) 5:1 SAND/CRUSHED LIMESTONE MIX COMPACTED IN 200 LAYERS
- 3. THIS DRAWING IS ONLY APPLICABLE TO EXISTING
- POLES, ≤10 YEARS. 4. POLE TO BE SUPPORTED DURING SOIL ENHANCEMENT.
- 5. COMPACT THE LAYER BENEATH THE EXCAVATED AREA TO ENSURE WELL COMPACTED SOIL UNDER THE ENHANCED ZONE.
- 6. SSPs, TERMINATION POLE AND T-OFFS SHOULD BE ASSESSED BY DISTRIBUTION STANDARD SUPPORT BEFORE FOUNDATION ENHANCEMENT.

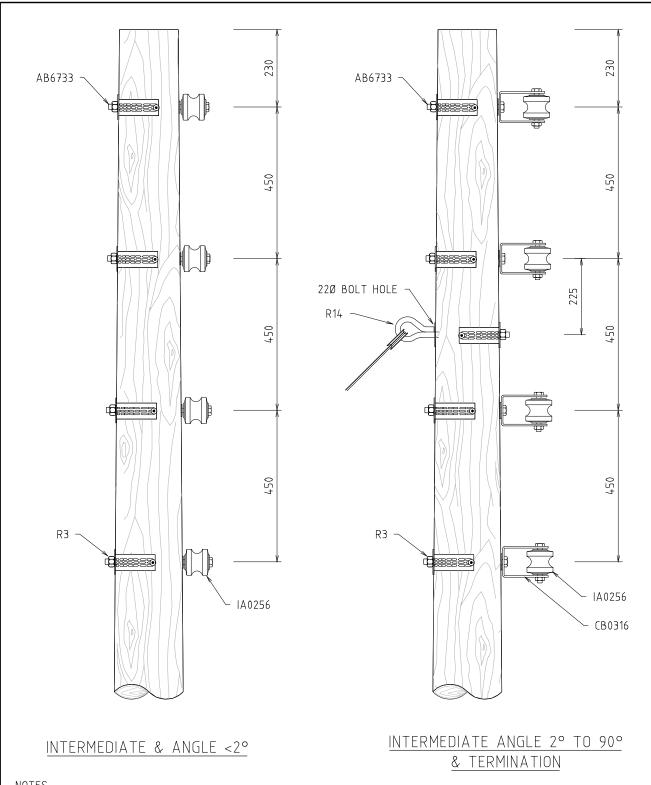
FOUNDATION ENHANCEMENT	APPLICATION									
OPTION-1	EXISTING POLES FAILING FOUNDATION CAPACITY IN MEDIUM SOILS									
OPTION-2	NNGLE POLES UPTO 10° DEVIATION, SINGLE IRCUIT, MAX 50m BAYS, WHERE STAY IS IOT FEASIBLE									
	EXISTING POLES UPGRADING TO 315kVA TX IN MEDIUM SOILS.									

						MAINTENANCE MANUAL	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
							DRAWN: JRR DATE: 19	9-07-2023 DRG. No.
\vdash						ENHANCED FOUNDATION DETAILS	ORIGINATED SJ SCALE	NTS MM09-5
						IN-SITU DISTRIBUTION POLE	CHECKED: LT	
Α	19.07.23	ORIGINAL ISSUE	۲S	LT	CO	1 IN-3110 DISTRIBUTION FOLL	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRD	1.	CHRIS (JMUDEI A I









NOTES:-

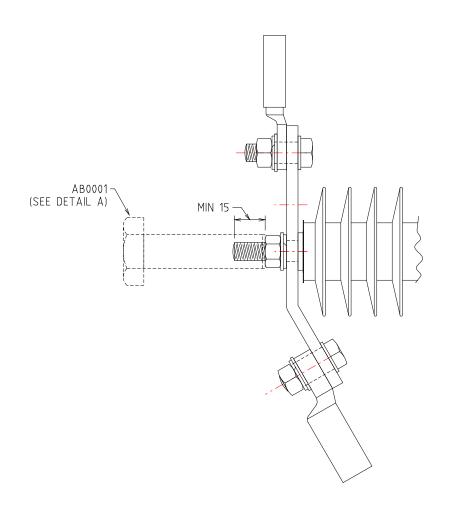
- 1. ALL DIMENSIONS ARE IN MILLIMETRES.
- 2. BOLT HOLES 18Ø U.O.N.

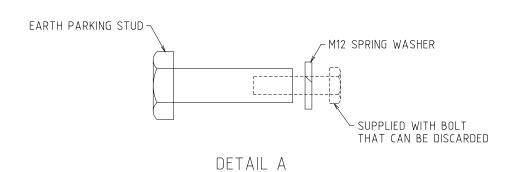
- BOLT HULES 160 O.U.N.
 REFER TO DCSH R16/2 SERIES FOR REQUIREMENT OF STAY INSTALLATION.
 APPLICABLE FOR FLAT GROUND BAYS UPTO 60m FOR CONDUCTORS UPTO 7/4.75 AAAC, 7/4.75 AAC OR 7/12 Cu.
 LV SPREADER IR0006 & CLIPS IR0007 ARE TO BE USE WHEN TRANSITIONING FROM VERTICAL CONFIGURATION TO HORIZONTAL CONFIGURATION.

							MAINTENANCE MANUAL	DISTRIBUTION CONSTRI STANDARD	=	westernpower
						TITLE	VENTICAL LV INTLINITEDIATE/			DRG. No.
В	11.08.16	DRG # CHANGED, "INTERMEDIATE & ANGLE <2°" DETAIL ADDED AND DISTANCE BETWEEN INSULATORS CHANGED	JC	ME	GS		ANGLE / TERMINATION	ORIGINATED CO SCALE CHECKED AK	NTS	MM09-LV-01
Α	30.04.15	ORIGINAL ISSUE	CO	AK	GS	1	CONSTRUCTION	APPROVED:	CT 1 CV	REV. SHT.
REV	DATE	DESCRIPTION	ORGD.	CHKD.	APRE	I.	201131110211011	GRANT	STALY	В



EARTH PARKING STUD ONLY TO BE USED WHEN THE EARTH PARKING BOLT (R09-1) CANNOT BE APPLIED. FOR EXAMPLE IF THE HOLE FOR THE EARTH PARKING BOLT IS NOT PRESENT OR RESTRICTED.

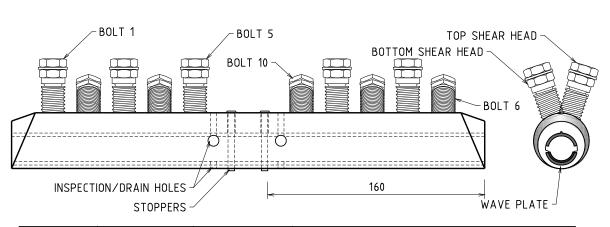




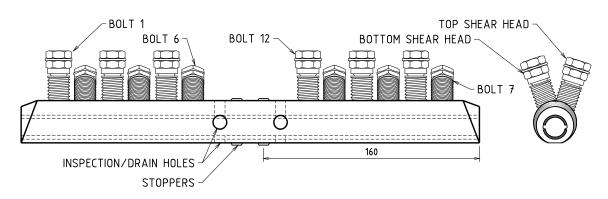
- NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. EARTH LEADS TO BE APPLIED ON THE RHS OF THE EARTH PARKING STUD TO PREVENT LOOSENING OF STUD.

					1	REFERENCE DRAWING	DISTRIBUTION CONSTRN. STANDARD		-=== westernpower	
					TITLE		DRAWN: .	JRR DATE: 0	1-08-2022	DRG. No.
					† HV		ORIGINATED:	CO SCALE	NTS	MM09-R09
B 21.0	9.22 DRAWING NUMBER CHANGED AND MORE DETAILS ADDED	CO	NMc	GS		EARTH PARKING STUD INSTALL	ericariae,	NMc		
A 23.0	8.22 ORIGINAL ISSUE	CO	NMc	GS			APPROVED:	CDANIT		REV. SHT.
REV DA	TE DESCRIPTION	ORGO.	CHKD.	APRO.				GRANT	STACY	В





STOCK CODE	PRODUCT NAME	RANGE (Ø)	CONDUCTOR TYPE & PURPOSE
CJ0585	MTRS 10-14	10mm TO 14.3mm	AAC, AAAC FOR JOINING OLD 7/4.50 OR 7/3.75 TO NEW 7/4.75



STOCK CODE	PRODUCT NAME	RANGE (Ø)	CONDUCTOR TYPE & PURPOSE
CJ0586	MTRS 06-11-EHT	6mm TO 11.3mm	AAC, AAAC, ACSR FOR JOINING ARCHERY 6/1/3.0 TO CHLORINE 7/2.50

INSTALLATION INSTRUCTIONS:-

- CUT CONDUCTOR SQUARE, ALL STRANDS EVEN AND BURR FREE.
- STRAIGHTEN CONDUCTOR IF CURVED.
- CONDUCTOR BRUSH CLEANED, NO GREASE TO BE APPLIED TO CONDUCTOR.
- MARK CONDUCTOR APPROX. 160mm TO CONFIRM INSERTED CORRECTLY.
- INSERT CONDUCTOR TO REACH STOPPER.
- USING 19mm SOCKET SEQUENTIALLY TIGHTEN TOP SHEAR BOLTS FROM BOLT 1 TO BOLT 5/6 UNTIL THE TOP HEADS SHEAR AND THEN FROM BOLT 6/7 TO 10/12.
- REPEAT SHEARING OF BOTTOM SHEAR HEADS IN THE SAME SEQUENCE.
- SHEAR HEADS TO BE FLUSH WITH BODY OF MTRS AFTER INSTALLATION.
- KEEP MTRS IN PLASTIC WRAPPING AND CLEAN UNTIL INSTALLATION, ESPECIALLY SHEAR BOLT THREADS, TO PREVENT INGRESS OF DUST AND TO ENSURE CORRECT TORQUE ACHIEVED.

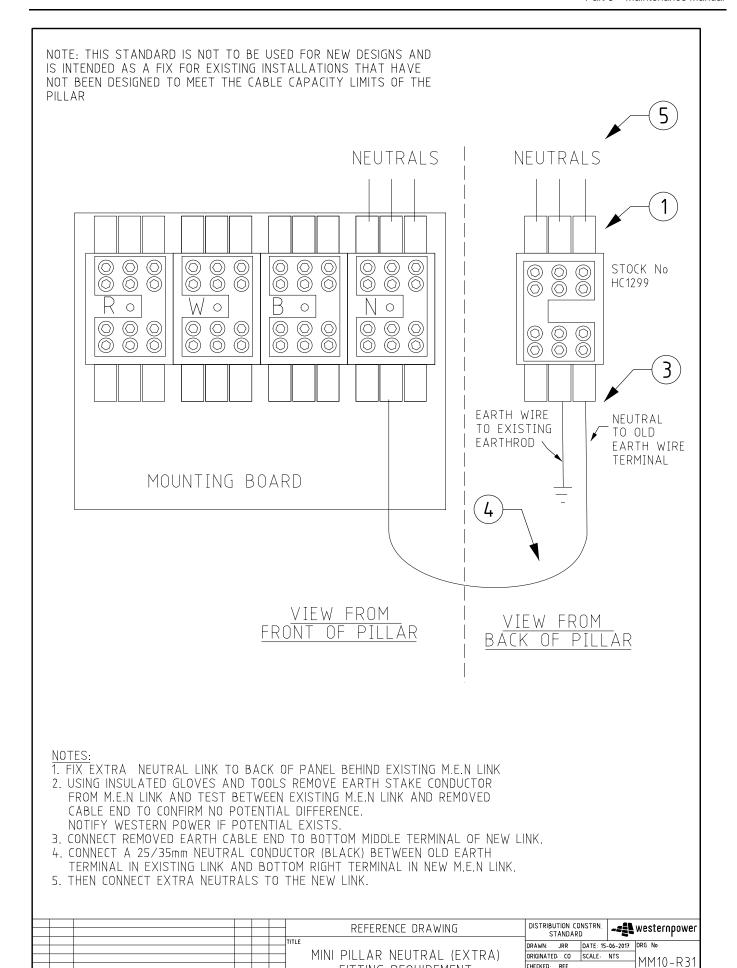
							TRUCTURE	DISTRIBUTION CON STANDARD		est westernpower
						MECHAI			DATE 02-04- SCALE NTS	DRG No. MM09-R24
В		DETAILS OF CJ0586 ADDED	REE	NMc	GS	₽₽₽ΛI₽	SPLICE (MTRS)	CHECKED: CO		
		ORIGINAL ISSUE	NMc	CO	GS	ILLI AIII	JI LICE (ITTINS)	APPROVED:	ANT STA	REV. SHT.
REV	DATE	DESCRIPTION	ORGO	CHKD.	APRO			uk	ANI SIA	ACY B



DESCRIPTION	RELEVANT DRAWINGS	APPLICATION				
BELOW GROUND SERVICE MINI PILLAR INSTALLATION GUIDE	MM10-U08	REPLACEMENT OF EXISTING FB0059. NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY.				
BELOW GROUND SERVICE PIT INSTALLATION DETAIL	MM10-U30-1	REPLACEMENT OF EXISTING HL0360. NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY. REPLACEMENT OF EXISTING HL0360. NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY.				
BELOW GROUND SERVICE PIT INSTALLATION DETAIL APPLICATION GUIDE LINE	MM10-U30-2					
BELOW GROUND SERVICE MINI PILLAR NEUTRAL (EXTRA) FITTING REQUIREMENT	MM10-R31	REPLACEMENT OF EXISTING FB0059. NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY.				
BELOW GROUND SERVICE MINI PILLAR 240V SUPPLY FROM SPUDS OR POLE	MM10-R35-1	REPLACEMENT OF EXISTING FB0059 NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY.				
BELOW GROUND SERVICE MINI PILLAR 480V SUPPLY ARRANGEMENT	MM10-R35-2	REPLACEMENT OF EXISTING FB0059 NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY.				

							STRUCTURE	DISTRIBUTION CONS	TRN.	westernower
							STRUCTURE	DISTRIBUTION CONSTRN. STANDARD *** Wes		Mesreilihomei
						TITLE		DRAWN: JRR DA	TE: 18-11-2016	DRG. NO.
								DIVANIA DA	11E. 10 11 2010	
						1	DELOW COOLIND CEDVICEC	ORIGINATED CO SC	ALE NTS	→ MM10
В	26.07.17	MINI PILLAR DETAILS ADDED	NMc	CO	GS	i	BELOW GROUND SERVICES	CHECKED: JC		14114110
Α	01.12.16	ORIGINAL ISSUE	CO	JC	GS	1		APPROVED:		REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO			[GRA	NT STACY	B







26.07.17 ORIGINAL ISSUE

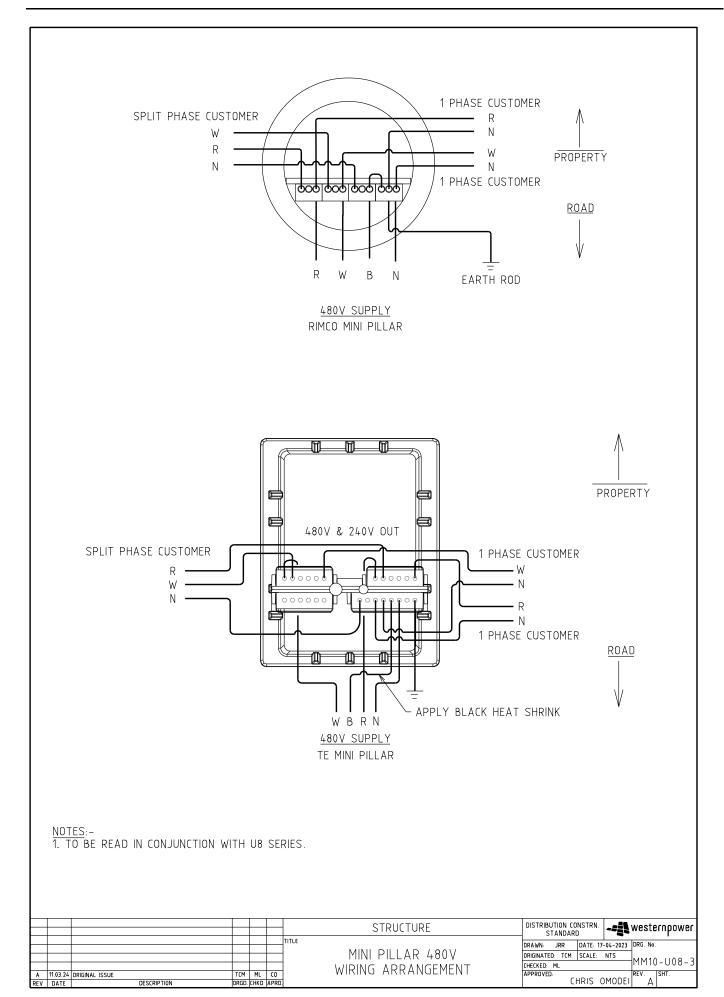
DESCRIPTION

FITTING REQUIREMENT

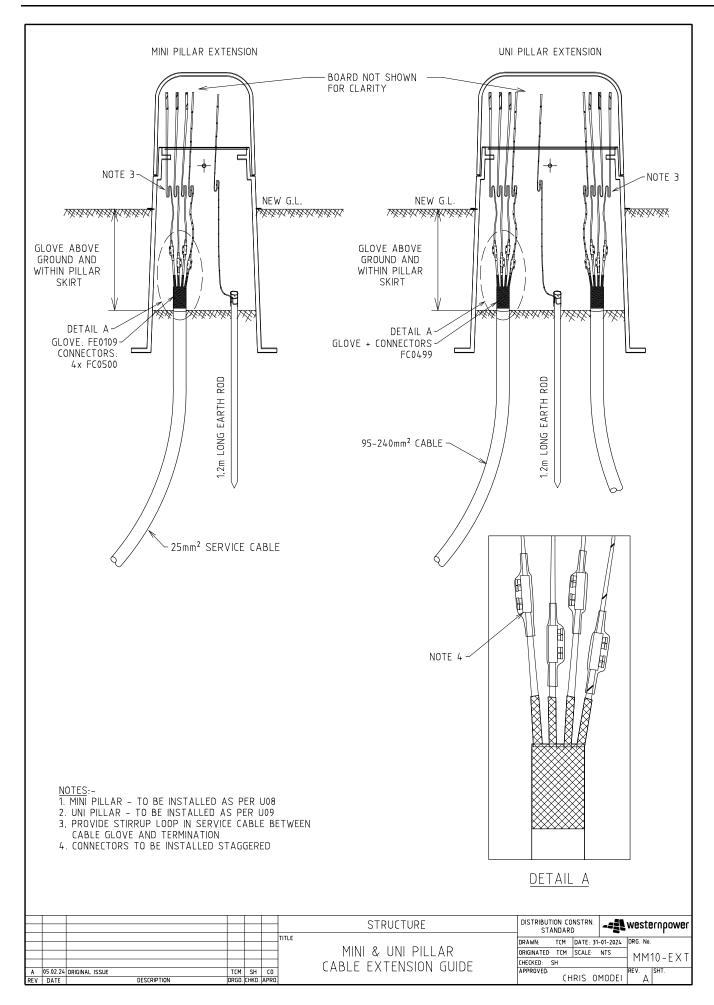
Д ІЗНТ.

GRANT STACY

CHECKED: REE APPROVED:







DRG. No.	DESCRIPTION
MM11-S13	MOUNTING ARRANGEMENT FOR STEEL STREETLIGHT COLUMNS
MM11-S14	MOUNTING ARRANGEMENT FOR WOOD OR CONCRETE POLE ON BARE AERIAL CONNECTION
MM11-S15	MOUNTING ARRANGEMENT FOR WOOD OR CONCRETE POLE ABC CONNECTION
MM11-S16	STEEL COLUMN - DOUBLE INSULATED (CLASS 2)
MM11-S17	WOOD OR CONCRETE POLE DOUBLE INSULATED - (CLASS 2)
MM11-S18	WOOD OR CONCRETE POLE SINGLE INSULATED - (CLASS 1)

STOCK CODE	DESCRIPTION
HL3351	1000W FIXTURE
GL1892	1000W CONTROL GEAR BOX
GL1886	1000W MH GLOBE
HL3350	400W FIXTURE
GL1891	400W CONTROL GEAR BOX
GL1890	400W MH GLOBE
GL1871	400W HPS GLOBE
GF1803	CONCRETE FUSEHOLDER
GF1802	WOODEN FUSEHOLDER
HL5557	PE CELL
GF0550	FUSE
GL1850	BRACKET FOR WOODEN POLES
GL1851	BRACKET FOR METAL POLES

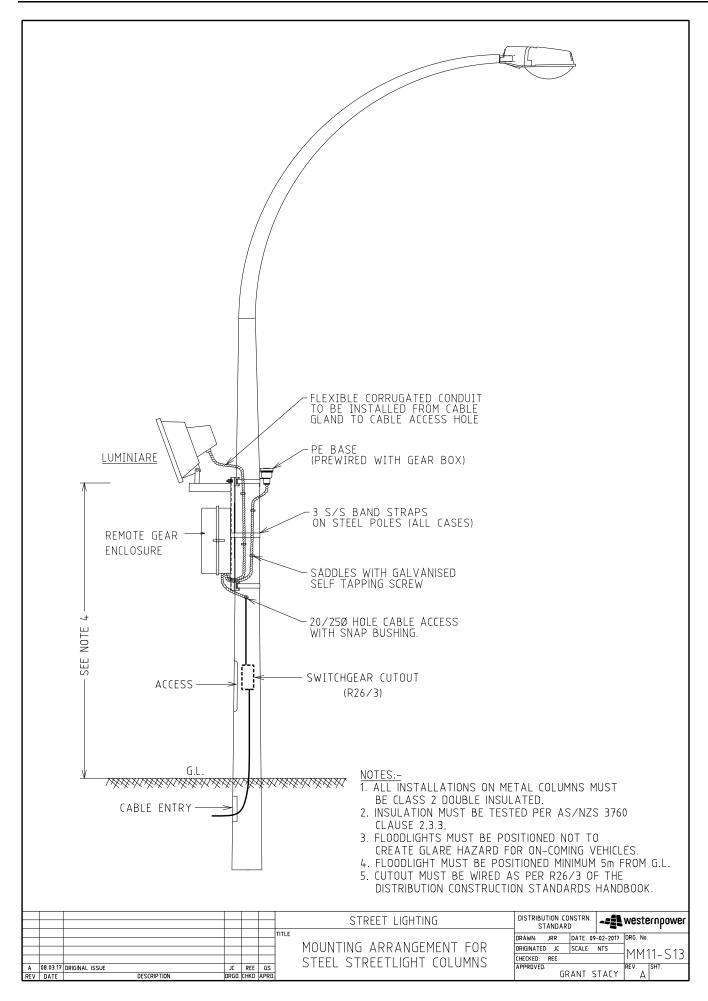
NOTES:-

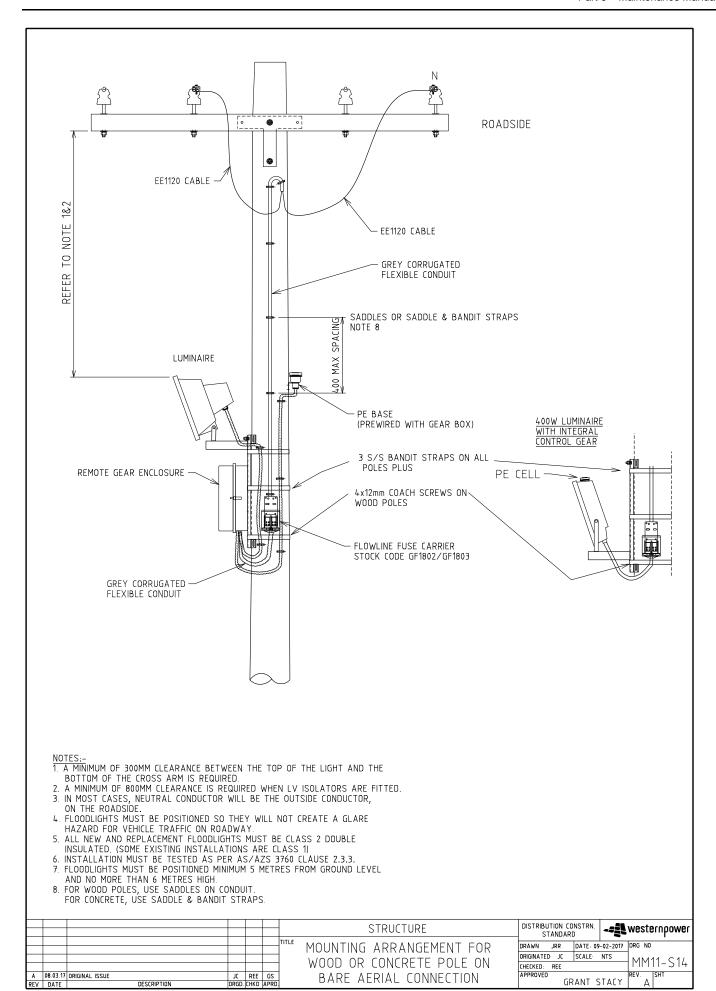
1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS) BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

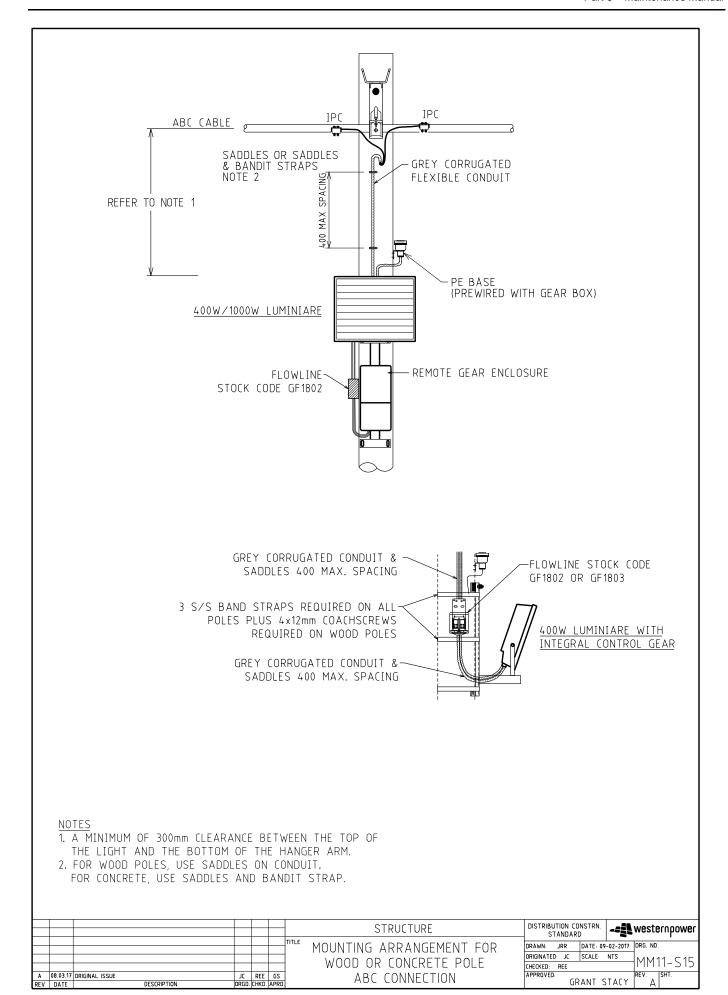
					STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	sternpower
					TITLE - - SECURITY LIGHTING INSTALLATION	DRAWN: JRR DATE: 09-02-2017 DRG. ORIGINATED JC SCALE NTS	. NO. MM11
A REV	08.03.17 DATE	DRIGINAL ISSUE DESCRIPTION	JC ORGD.	REE CHKD.		CHECKED: REE APPROVED: GRANT STACY REV.	A



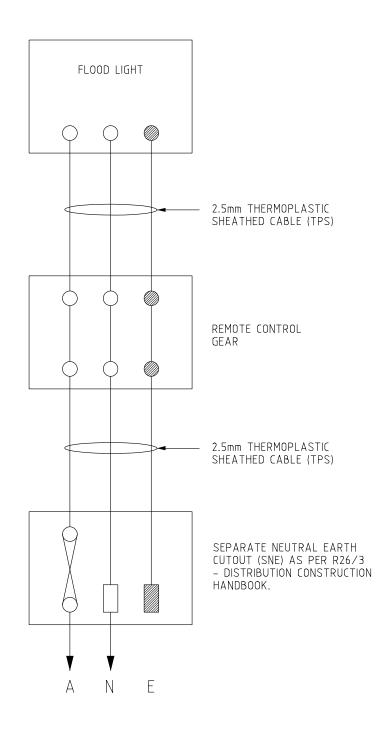










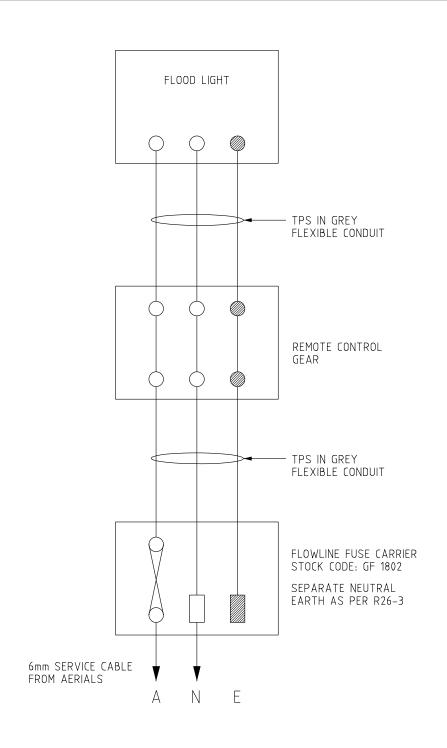


- NOTES:
 1. ALL STEEL COLUMN INSTALLATIONS MUST BE DOUBLE INSULATED (CLASS 2).
 2. ALL EXPOSED TPS NEEDS TO BE INSTALLED IN GREY FLEXIBLE CONDUIT

 AND MOUNTED TO COLUMN WITH GALVANISED SELF TAPPING DRILL SCREWS AND SADDLES.
- 3. EARTH TERMINALS ARE A TERMINATION POINT FOR EARTH CABLES ONLY AND **MUST NOT** BE BONDED TO THE STEEL WORK AT ANY POINT.

					STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-=== westernpower
E	09 03 17	ORIGINAL ISSUE		255	STEEL COLUMN - DOUBLE INSULATED (CLASS 2)	DRAWN: JRR DATE: 0 ORIGINATED: JC SCALE: CHECKED: REE APPROVED:	19-02-2017 DRG. NO. NTS MM11-S16 REV. ISHT.
REV	DATE	DESCRIPTION	ORGD.	REE CHKD.	1	GRANT	

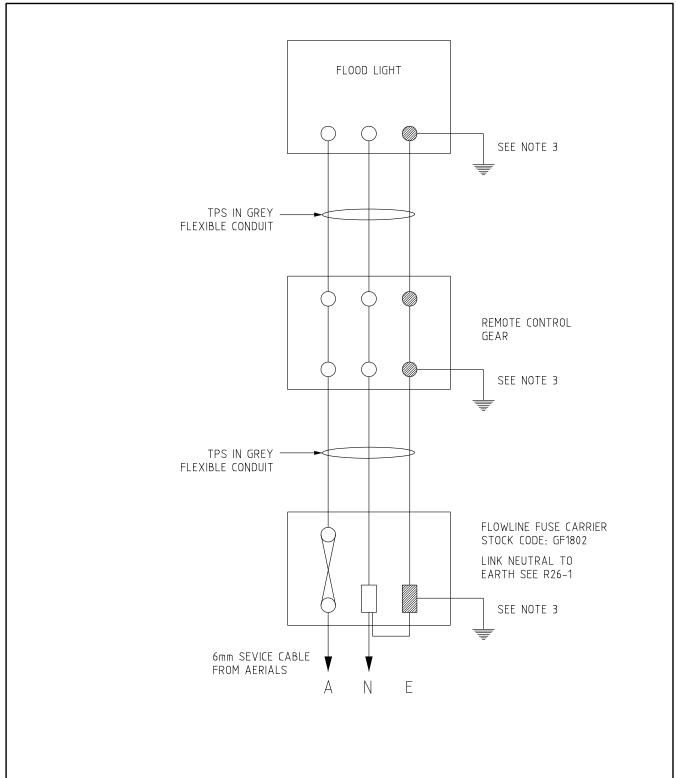




- 1. ALL STEEL POLE INSTALLATIONS MUST BE DOUBLE INSULATED (CLASS 2).
 2. ALL EXPOSED TPS NEEDS TO BE INSTALLED IN GREY FLEXIBLE CONDUIT AND MOUNTED TO POLE WITH GALVANISED SELF TAPPING DRILL SCREWS AND SADDLES.
 3. GREY FLEXIBLE CONDUIT MUST BE BANDIT STRAPPED TO CONCRETE POLES.

						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-= westernpower
						TITLE	DRAWN: JRR DATE 09-	-02-2017 DRG. NO.
1						WOOD OR CONCRETE POLE	ORIGINATED JC SCALE	MM11-S17
						DOUBLE INSULATED - (CLASS 2)	CHECKED: REE	11 11 1-51/
Α	08.03.17	ORIGINAL ISSUE	JC	REE	GS	DOODLE INSOLATED - (CLASS Z)	APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	HKD.	APRO		GRANT S	TALY A





NOTES:

- 1. CLASS 1 BONDED TO METAL BODY OF FIXTURE. CLASS 2 MUST NOT BE BONDED.
- IF EXISTING FIXTURE AND CONTROL GEAR ARE UNSERVICEABLE, A NEW CLASS 2 INSTALLATION IS REQUIRED PER MM11-S17.
- 3. EARTHS MUST BE BONDED TO STEEL BODY OF FITTING.

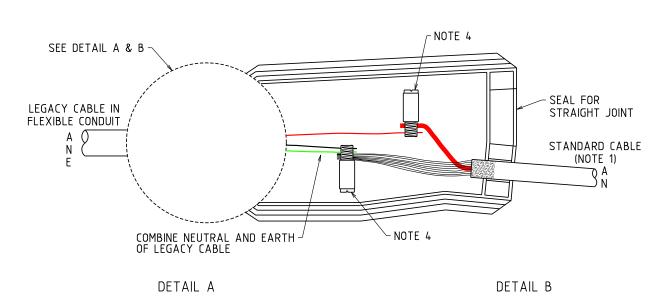
					STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
					11000 011 001101101101101	ORIGINATED JC SCALE	DRG. NO. NTS
A REV	08.03.17 ORIGINAL ISSUE DATE DESCRIPTION	JC ORGO. C	REE HKD.	GS APRD	SINGLE INSULATED - (CLASS 1)	APPROVED: GRANT S	REV SHT

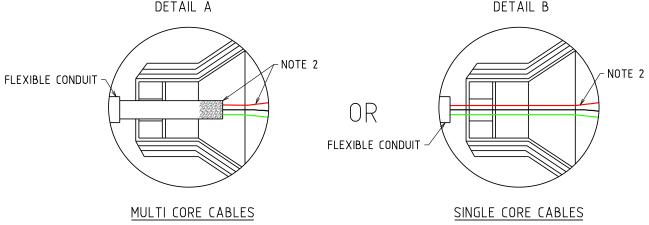


DESCRIPTION	RELEVANT DRAWINGS
STREET LIGHT CUTOUT SINGLE PHASE SUPPLY FOR SINGLE INSULATED (CLASS 1) LUMINAIRES - 1	MM13-R26-1
STREET LIGHT CUTOUT SINGLE PHASE SUPPLY FOR SINGLE INSULATED (CLASS 1) LUMINAIRES - 2	MM13-R26-2

						1	STRUCTURE	DISTRIBUTION CONSTRN STANDARD	westernpow
						TITLE		DRAWN: JRR DATE:	08-01-2018 DRG NO
						1	STREET LIGHT MAINTENANCE	NTS MM1	
<u></u>	09 01.18	DRIGINAL ISSUE	JC	REE	GS	1	STREET LIGHT HAINTENANCE	CHECKED REE APPROVED	REV. SHT.
	DATE		ORGO	CHKD		1		GRANT	STACY A







LEGACY	CABLE	STANDARD CABLE
CABLE TYPE	CABLE RANGE	STANDARD CABLE
2 CORE	2.5 - 16mm²	16mm ² 1 CORE HELICAL SCREEN
3 CORE	2.5 - 16mm²	16mm ² 1 CORE HELICAL SCREEN
2x1 CORE	2.5 - 16mm²	16mm ² 1 CORE HELICAL SCREEN
3x1 CORE	2.5 - 16mm ²	16mm ² 1 CORE HELICAL SCREEN

NOTES:

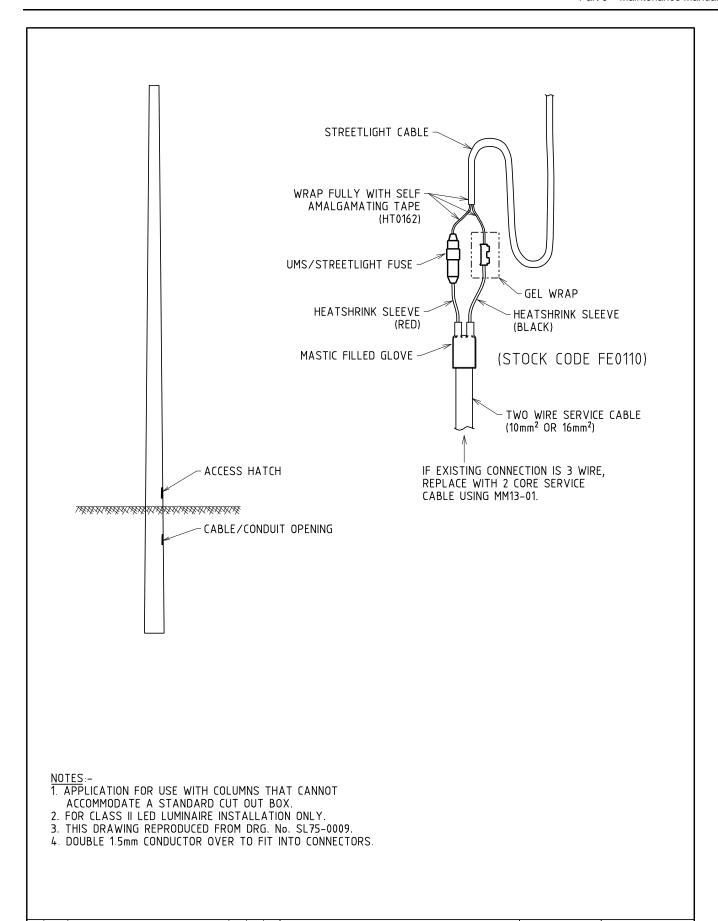
- 1. WHEN STANDARD CABLE IS JOINTED TO LEGACY CABLE AND TERMINATED,
 I.E. INTO A PILLAR, STREETLIGHT ETC., THEN ATTACH A CAUTION TAG
 TO THE CABLE TERMINATION STATING "CONNECTED TO LEGACY CABLE".
- 2. ABRADE ALL INSULATION ON CORES AND SHEATHS THAT ENTER JOINT.
- 3. REFER TO COMMISSIONING INSTRUCTION 2.10.
- 4. THE SMALLER CROSS SECTIONAL AREA CORE(S) SHALL BE PLACED IN THE BOTTOM OF THE CONNECTOR.

eg:- TPS (3 CORE)

	IN	THE BUTTUM OF THE CONNECT	UK.			STOCK (ODE: FJ0241
					STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	westernpower
					1 F(* V(A C DFF	DRAWN: JRR DATE: 12-10-2018 ORIGINATED CO SCALE NTS CHECKED: REE	DRG. No. MM13-01
A REV		ORIGINAL ISSUE DESCRIPTION	CO ORGD.	FK APRD		APPROVED: FARHAN KHAN	REV SHT



eg:- BUILDING WIRE (3x1 CORE)







INSTALLATION INSTRUCTIONS

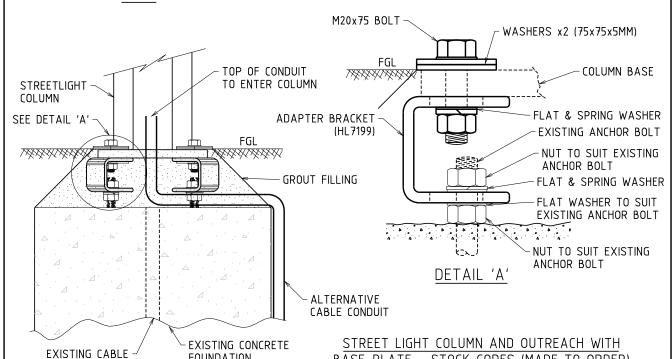
- 1. REMOVE EXISTING COLUMN AND EXISTING NUTS.
- 2. CLEAN ANCHOR BOLT THREADS WITH WIRE BRUSH.
- 3. ASSESS CONDITION OF ANCHOR BOLTS. CONSULT ENGINEERING IF ANCHOR BOLTS ARE.
 - SMALLER THAN 16MM
 - EXCESSIVELY CORRODED, THREAD NOT SUITABLE. BEND IS GREATER THAT 5 DEG.
- 4. IF ANCHOR BOLTS ARE IN GOOD CONDITION, APPLY COLD GALV OVER THREAD
- 5. ATTACH ADAPTER BRACKETS TO THE EXISTING ANCHOR BOLTS USING SUITABLE NUTS x2, WASHERS x2 AND SPRING WASHER, SEE DETAIL 'A'
- 6. LEVEL BRACKETS USING WASHER/NUTS BELOW ADAPTER BRACKETS.
- 7. BRACKETS CAN BE ORIENTATED TO SUIT ANY EXISTING ANCHOR BOLT DIMENSION/POSITION. ENSURE BRACKET FACES INWARDS AS PER ELEVATION VIEW.
- 8. PREFERENCE TO INSTALL CABLE IN EXISTING CONDUIT. IF NOT POSSIBLE, USE ALTERNATIVE CONDUIT POSITION AS INDICATED.
- 9. ATTACH THE COLUMN WITH BASE PLATE TO THE ADAPTER BRACKET USING NUTS, BOLTS AND WASHERS SUPPLIED WITH HL7199, SEE DETAIL 'A'.

PLAN

SEE DETAIL 'A'

ADAPTER BRACKET

(HL 7199)



STREETLIGHT COLUMN BASE PLATE

ELEVATION

CONDUIT

FOUNDATION

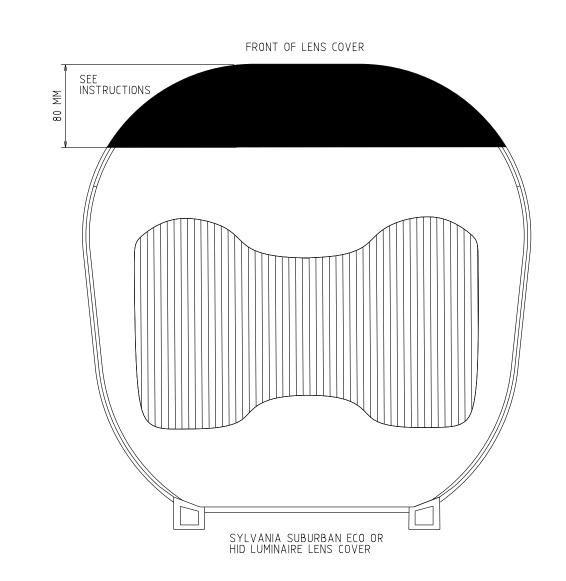
1. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.

FINISH	POLE HEIGHT	SINGLE OUTREACH	DOUBLE OUTREACH
GALVANISED	10.5m	CW4111	CW4112
GALVANIZED	12.5m	CW4113	CW4114
DOWDED COATED	10.5m	CW4115	CW4116
POWDER COATED	12 Sm	CW4117	CW4118

BASE-PLATE - STOCK CODES (MADE TO ORDER)

							STRUCTURE DISTRIBUTION CO STANDARI		-= westernpower
A REV	26 11.20 DATE	ORIGINAL ISSUE DESCRIPTION	SA ORGD	CO	GS APRI	WITH	CY STREETLIGHT COLUMN I CONCRETE FOUNDATION	DRAWN: JRR DATE: 2 ORIGINATED SA SCALE CHECKED: CO APPROVED: GRANT	IVIIVI 13 – U.3





NOTES:-

1. APPLICABLE TO THE SYLVANIA SUBURBAN ECO AND HID SERIES OF LUMINAIRES -HL6230 (42W CFL), HL6189 (70W HPS), HL6190 (80W MV).

INSTRUCTIONS:-

- 1. REMOVE THE LENS COVER FROM THE LUMINAIRE.

- 2. CLEAN AND DRY THE INSIDE OF THE LENS COVER.

 3. MASK OFF THE OUTSIDE OF THE AREA TO BE PAINTED.

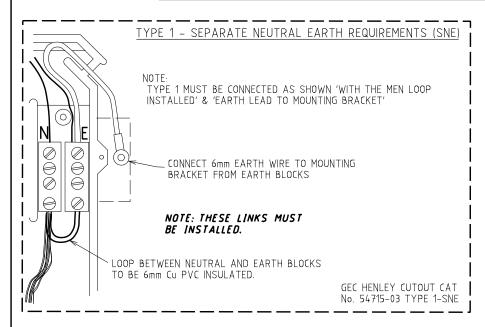
 4. PAINT THE INSIDE OF THE LENS COVER USING GALMET (QP3225)
 TO THE DIMENSIONS AS SHOWN.
- 5. AVOID PAINT OVERSPRAY TO OTHER AREAS AND THE OUTSIDE OF THE LENS COVER.

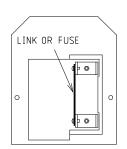
EQUIVALENT TO THE OBSOLETE HL0590

						1	MAINTENANCE MANUAL	DISTRIBUTION CON STANDARD		_we sternpower
					\vdash	TITLE	PAINT SYLVANIA SUBURBAN LENS	DRAWN: ML	DATE: 30-07-202	L DRG. No.
						1		ORIGINATED ML	SCALE NTS	⊐мм13_04
								CHECKED: NM		
	_	ORIGINAL ISSUE		NMc	CO	1	AS FRONT GLARE SHIELD	APPROVED: CHRIS	OMODEI	REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO			CIIICIS	OHODE	A

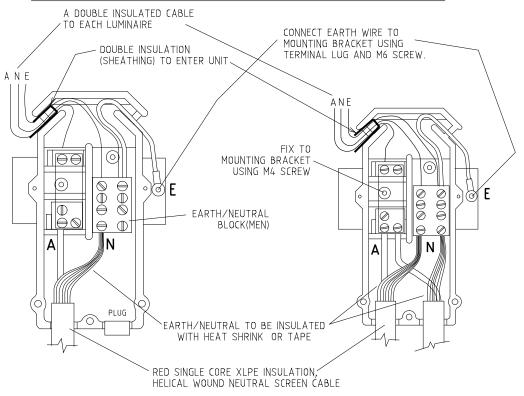


FOR SINGLE INSULATED CLASS 1 EQUIPMENT ONLY





VIEW ON INSIDE OF FRONT COVER TYPE 2 - COMMON NEUTRAL EARTH (CNE)



SINGLE SERVICE SUPPLY

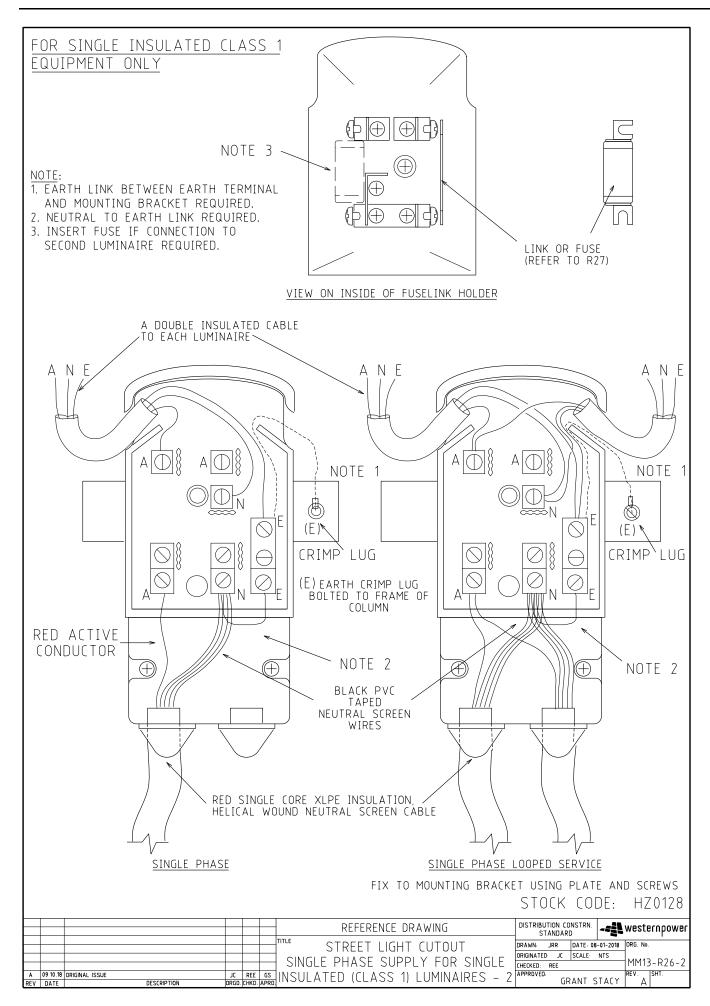
LOOPED SERVICE SUPPLY

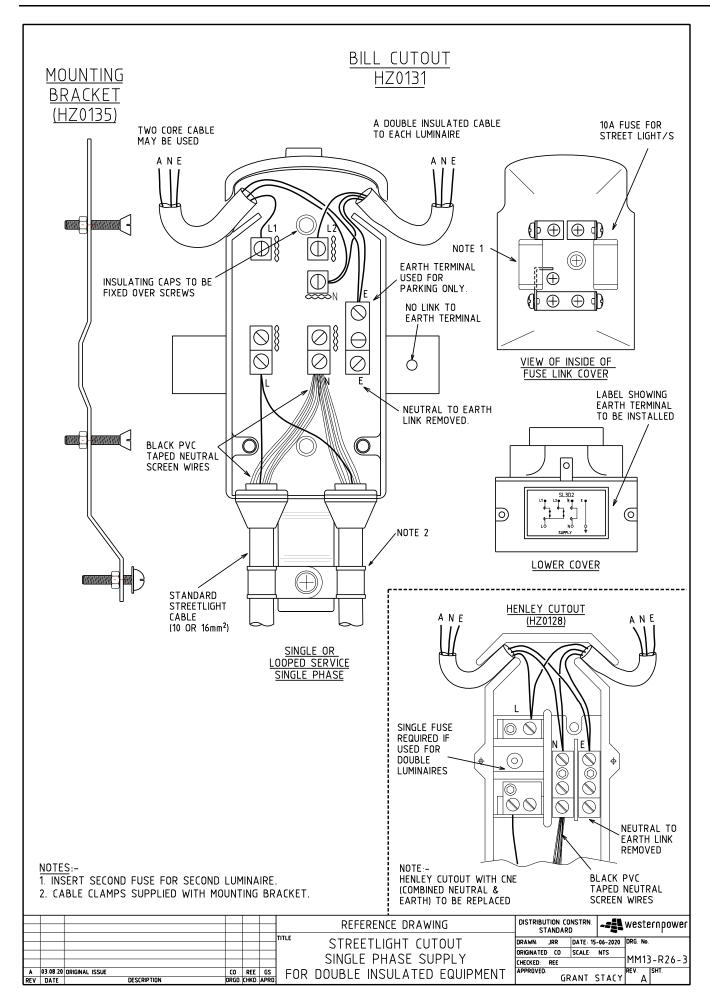
SUPERSEDED TYPE 2 UNIT USE TYPE 1 - SNE ABOVE OR SEE R26/2 FOR REPLACEMENT

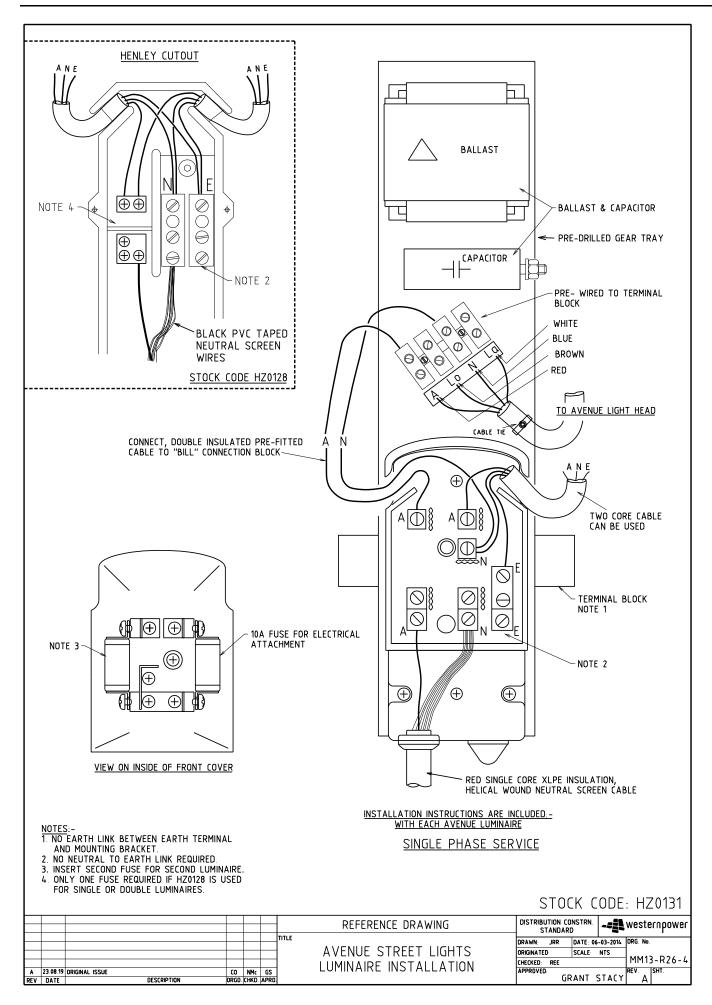
GEC HENLEY STREET LIGHTING SERVICE CUTOUT CAT No. 8DE 54715-04 TYPE 2

						REFERENCE DRAWING	DISTRIBU S	JTION CO TANDARI		{\}	westernpower
						JINEET EIGHT COTOOT	DRAWN:		_		DRG. No.
						CINIC.	ORIGINATEI CHECKED		SCALE	NTS	MM13-R26-1
A REV	09 01.18 DATE	ORIGINAL ISSUE DESCRIPTION	JC ORGO. (REE CHKD.	GS APRO	1 N \	APPROVED		ANT S	TACY	REV. SHT.



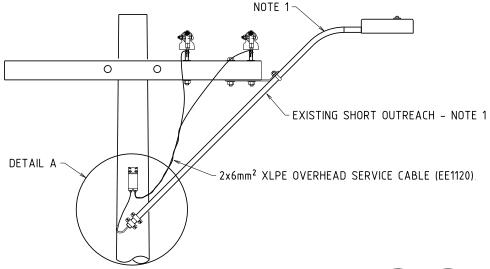


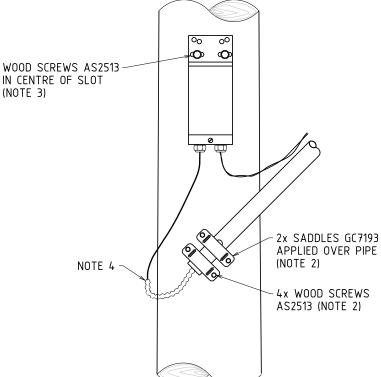




PURPOSE:-

INSTALLING NEW LED LUMINAIRE ON LEGACY MINOR ROAD - SHORT (2m LONG) STREETLIGHT BRACKET WHERE BRACKET PIPE DIAMETER IS TOO SMALL TO FIT CABLE TOGETHER WITH 12mm BOLT.





NOTES: -

1. ATTACHED TO CROSSARM OR TWISTED STRAPS SIMILAR S20.

- 2. ATTACH 2x SADDLES GC7193 WITH 4x WOOD SCREWS AS2513 STRAIGHT INTO THE POLE, I.E. PERPENDICULAR TO POLE FACE.
- 3. INSTALL FUSE BOX GF1804 DIRECTLY TO POLE OR ONTO EXISTING FUSE SUPPORT.
- 4. INSTALL 20mm FLEXIBLE CONDUIT OR HOSE (APPROXIMATELY 300mm LONG) OVER CONDUCTOR AND INTO PIPE.

DETAIL A

								STRUCTUR	RE		DISTRIBL S	TION C		-=[]	westernpower
\vdash			-			TITLE IF	GACY	MINOR ROA	AD - 9	SHORT	DRAWN:	JRR	DATE: 1	4-08-2019	DRG. No.
								IGHT BRACK		J WOOD	ORIGINATE		SCALE	NTS] MM13-S02-1
\perp	02 00 10	ORIGINAL ISSUE	СО	NMc	GS							NMc			REV. ISHT.
REV		DESCRIPTION	ORGD			POLE	ANU	CROSSARM	WIIH	NEW LED	APPROVED	G	RANT:	STACY	A S

