

# **Distribution Construction Standards Handbook**

**Maintenance Manual** 

Part 9

# **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The Maintenance Manual (MM series) is a collection of drawings for superseded construction standards.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.



# **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-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	3 Ф Recloser / Load Break Switch HV Bare – HV ABC/Hendrix With LV Aerial Supply
MM02-H61-1	A	Pole Mounted 3 Φ Recloser / Load Break Switch with By-pass Switch
MM02-H61-2	A	Pole Mounted 3 Φ Recloser / Load Break Switch with By-pass Switch (Aerial LV Supply)
MM02-H62-1	A	3 Ф 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 (1Ph) 3Ph inline cables/2x1Ph 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	3 PH Recloser / Load Break Switch on Termination PTS Pole Arrangement
MM03-H62-2	A	Combination PTS & Raiser with 3 Ph Recloser / Load Break Switch
MM03-H62-3	A	Intermediate Pole With 3 Ph Recloser / Load Break Switch and Cable



MM03-H62-4	A	Termination Pole with 3 Ph Recloser / Load Break Switch				
MM03-H63-1	A	1Ф Recloser/Load Break Switch In-Line Anti-Clash With 1Ф ТХ or LV Supply				
MM04	A	LOAD BREAK SWITCH REINSTALLATION				
MM04-H16-2	A	Pole Mount Load Break Switch with Bypass Switch & Antenna, Sht1 One Bushing, Sht2 Two Bushing				
MM04-H16-3	A	Pole Mount LBS In-Line Strain with TX Supply				
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	A	Pole Top Construction				
MM09-1-2	A	Pole Top Construction				
MM09-1-3	A	Pole Top Construction				
MM09-1-4	A	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	В	BELOW GROUND SERVICES				
MM10-R31	A	Mini Pillar Neutral (Extra) Fitting Requirement				
MM10-R35-1	A	Mini Pillar 240V Supply from Spuds or Pole				
MM10-R35-2	A	Mini Pillar 480V Supply Arrangement				
MM10-U08	A	Mini Pillar Installation Guide				
MM10-U30-1	В	Below Ground Service Pit Installation Detail				
MM10-U30-2	В	Below Ground Service Pit Installation Detail - Application Guideline				
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			
MM13-03	A	Legacy Streetlight Column with Concrete Foundation			
MM13-R26-1	A	Streetlight Cut-out Single Phase Supply for Single Insulated (Class 1) Luminaires - 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-S02-1	A	Legacy Minor Road – Short Streetlight Bracket on wood Pole and Crossarm with new LED			

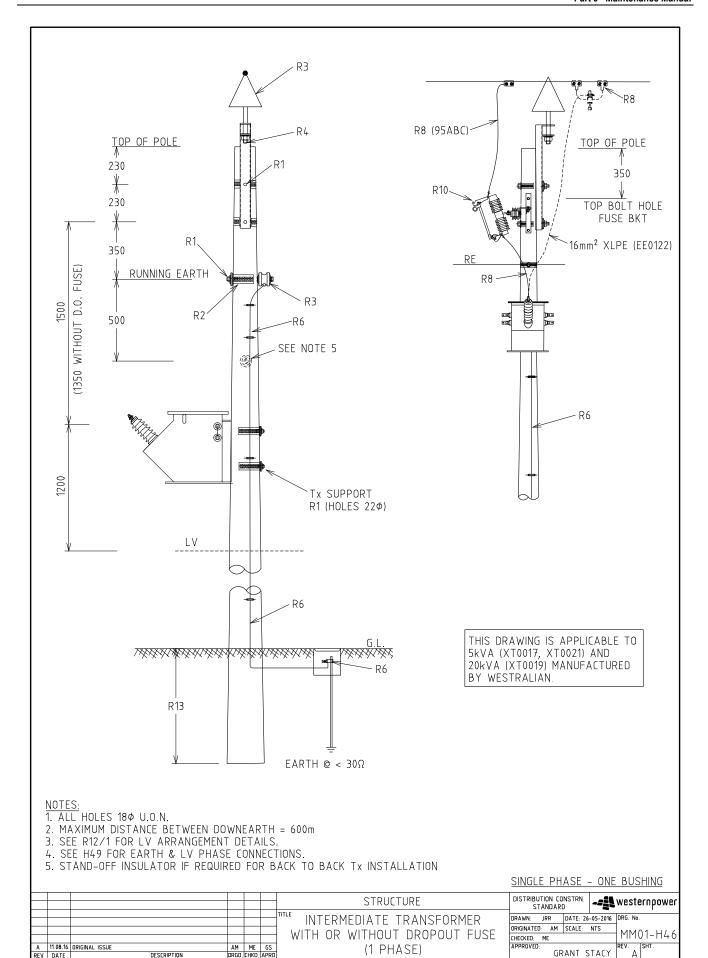


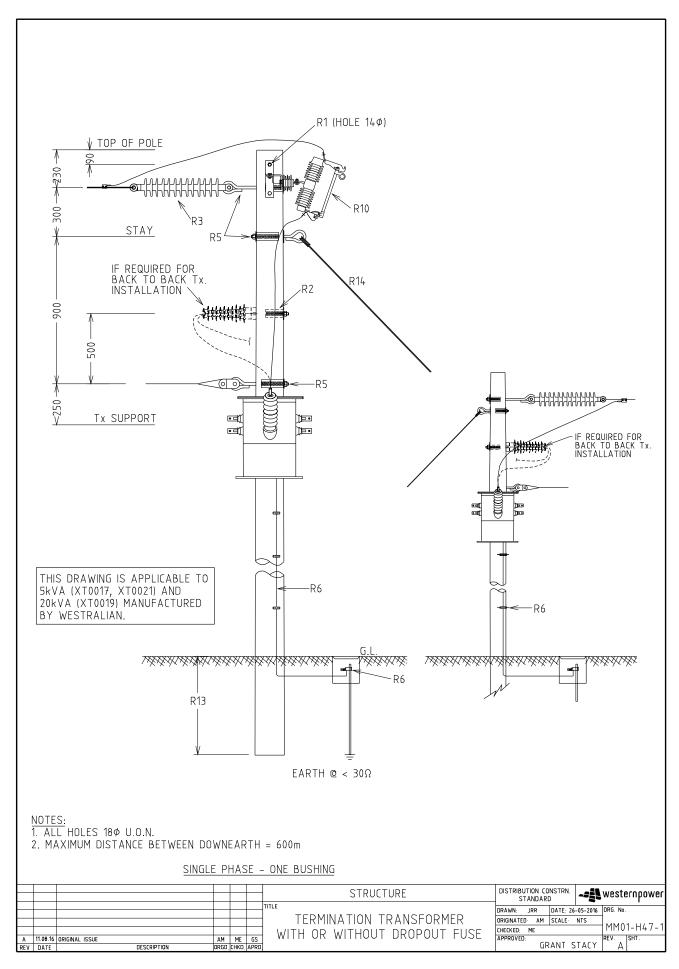
STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
XT0016	WESTRALIAN, 3Φ, 200KVA	H10-1, H10-2, H11-1, H11-2
XT0017	WESTRALIAN, 1Φ, 5KVA	
XT0019	WESTRALIAN, 1Φ, 20KVA	MM01-H46, MM01-H47-1
XT0021	WESTRALIAN, 1Φ, 5KVA	

# 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 95mm<sup>2</sup> LV ABC OR 25mm<sup>2</sup> 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.

-						STRUCTURE	DISTRIBUTION CONSTRN.	-=5€ westernpower
			-	_	_		STANDARD	
						TITLE	DRAWN: JRR DATE 29	9-06-2016 DRG. NO.
							URAWN: JRK DATE 29	7-06-2016 DRU. NO.
						TO ANCHODMED DEINCTALL ATION	ORIGINATED JC SCALE	NTS MANAGA
В	25.09.19	NOTES 4 & 5 ADDED	NMc	CO	GS	TRANSFORMER REINSTALLATION	CHECKED: REE	MM01
Α	11.08.16	ORIGINAL ISSUE	JC	REE	GS		APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGD.	CHKD.	APRO		GRANT !	STACY B





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

BOLT CONVERSION
QUANTITY
3
3
3
ז (וב הבסוווהבה)
3 (IF REQUIRED)
AS REQUIRED

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

								STRUCTURE	DISTRIBUTION	CONSTRN	51	westernpower
							STRUCTURE		STANDARD			wester iipowei
						TITLE			DRAWN: JRR	DATE: 29	06 2016	DDG NO
1									DRAWN. JAK	DATE. 23	7-00-2010	D
						ן הטור	TOD	CHUTCH DEINCTALLATION	ORIGINATED: JC	SCALE	NTS	LOMM
В	24.08.17	NOTE REVISED	JB		GS	POLE	TOP	SWITCH REINSTALLATION	CHECKED: ME			MM02
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS	1			APPROVED:			REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD	APRO	1				GRANT S	STACY	l Bl I

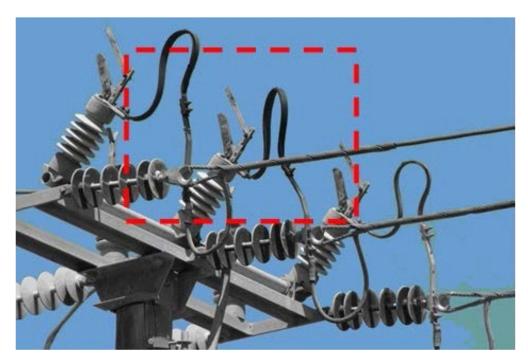


FIGURE 1

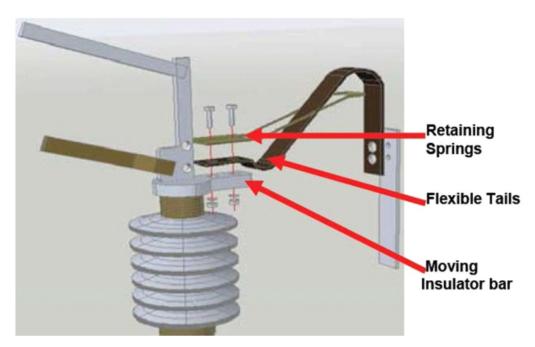


FIGURE 2

- 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).

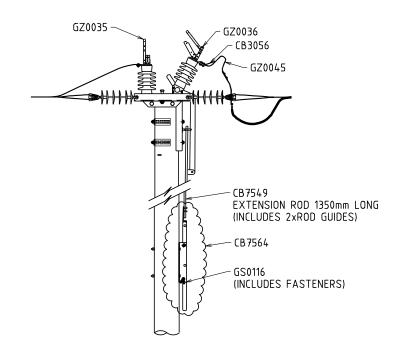
  THE SPRING IS A STANDARD FITTING ON ALL NEW POLE TOP SWITCHES.

  2. USE A WIRE BRUSH TO CLEAN THE SURFACE OF THE FLEXI-TAILS AND THE MOVING INSULATOR BAR TO ENABLE A GOOD ELECTRICAL CONTACT.

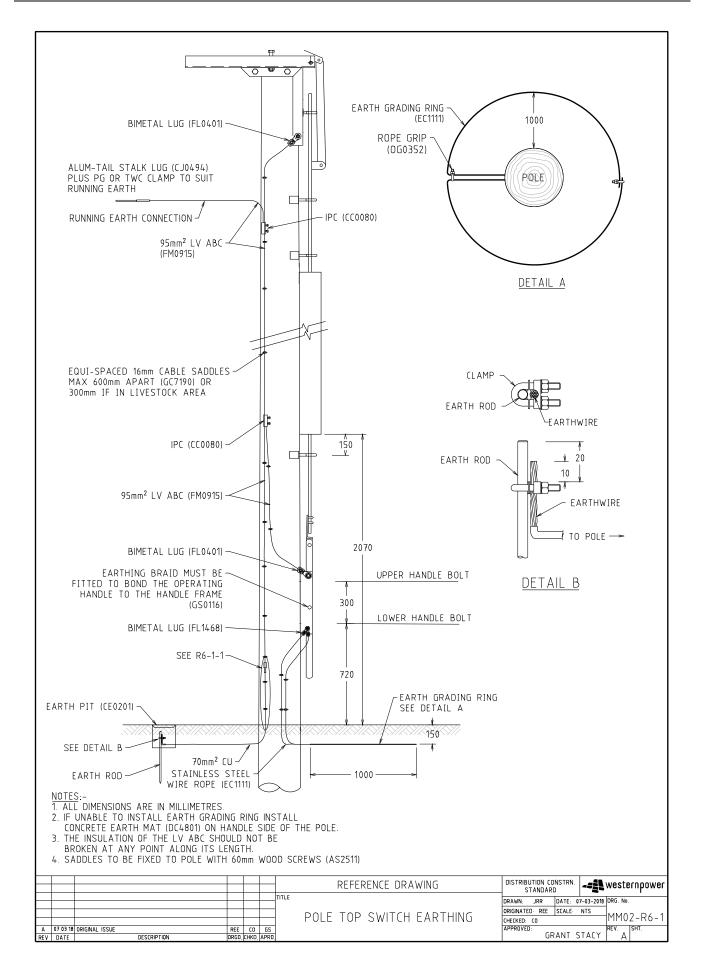
  3. FIT THE RETAINING SPRING TO THE TOP OF THE FLEXI-TAILS AT THE BOLTED CONNECTION OF THE MOVING INSULATOR BAR (SEE FIGURE 2 (RETAINING SPRING ASSEMBLY))

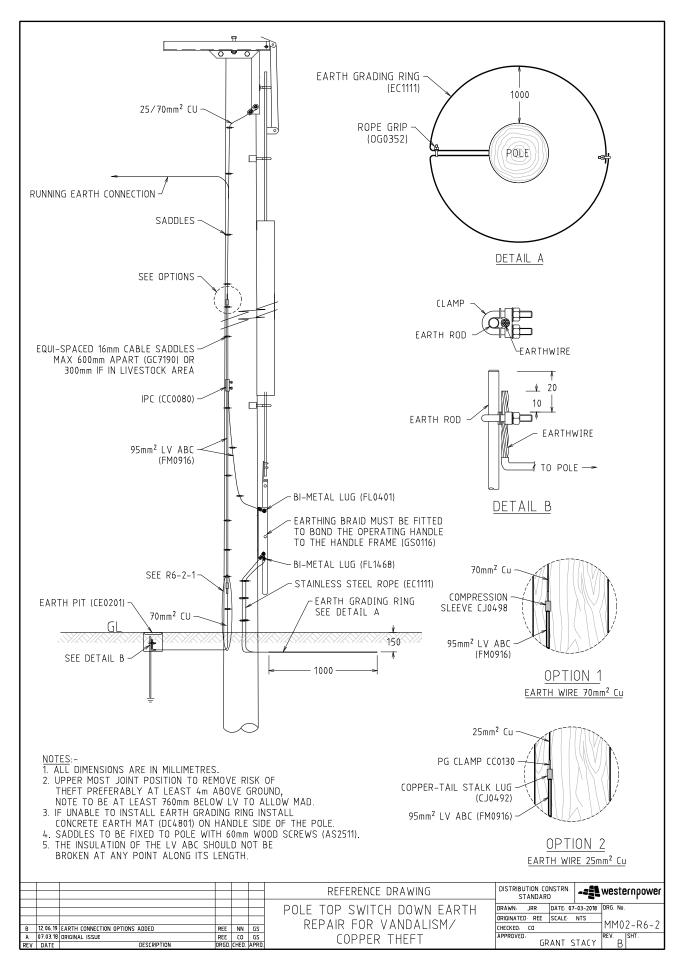
						REFERENCE DRAWING	DISTRIBUTION O		-= <u>{</u> }	westernpower
	24.08.17	ORIGINAL ISSUE	JB		GS	POLE TOP SWITCH	DRAWN: JRR ORIGINATED GS CHECKED: CO APPROVED:		NTS	DRG. No.  MM02-01  REV.   SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO			RANT S	STACY	A

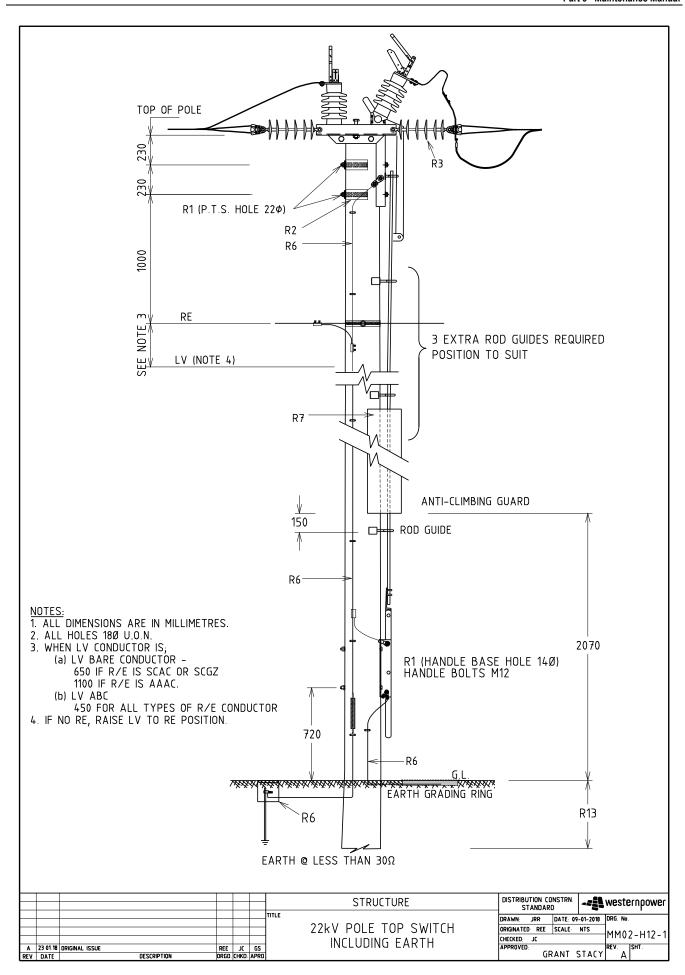
STOCK CODE	DESCRIPTION	COMMENTS
CB3056	POLE TOP SWITCH BRAID SPRING	SPRING TO PREVENT BRAID FROM COLLAPSING
CB7549	PTS ROD EXTENSION KIT	ACTUATING ROD EXTENSION FOR 12.5m POLES INCLUDING 2xROD GUIDES
GS0116	TINNED COPPER BRAID WIRE, LUGGED AT BOTH ENDS, 320mm LONG	PTS HANDLE BONDING BRAID
GZ0035	CONTACT 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

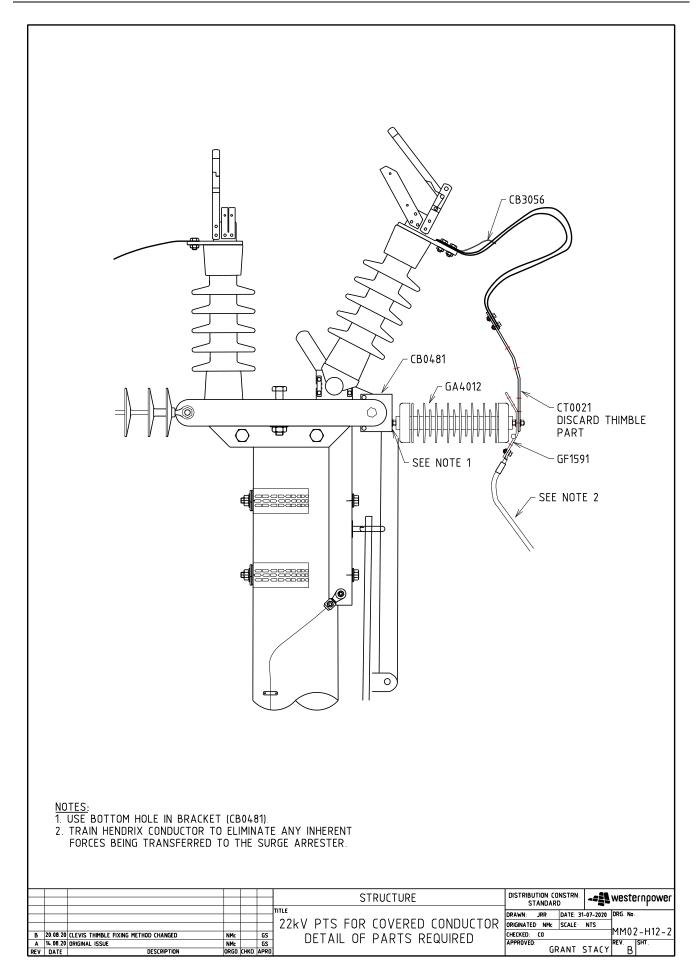


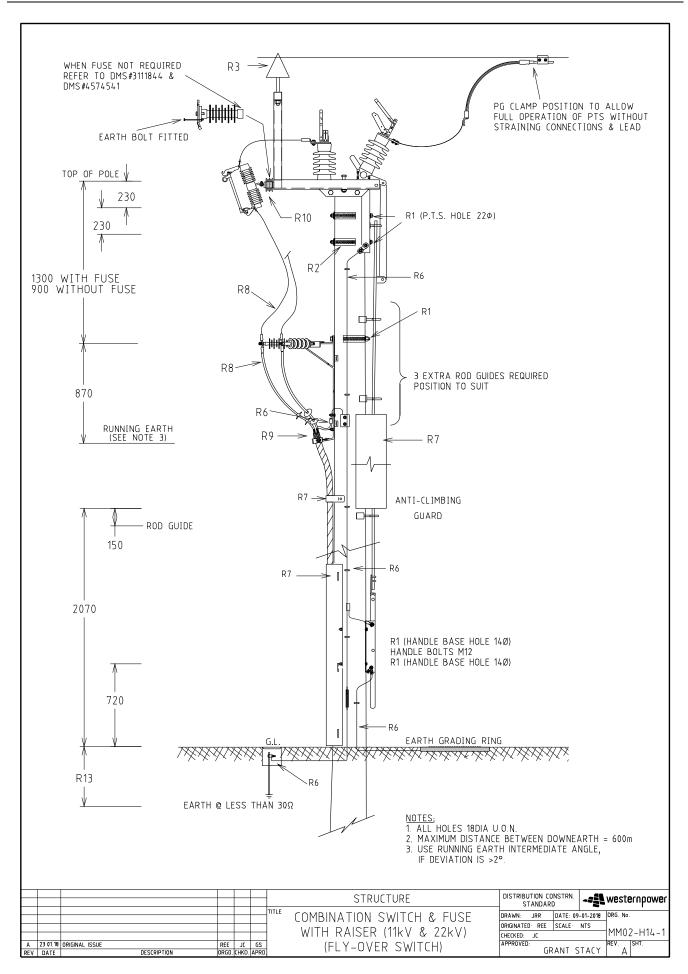
						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-=== westernpower
_	15.05.18	ORIGINAL ISSUE	REE	FK	GS	FALCON 22kV POLE TOP SWITCH MAINTENANCE SPARES	DRAWN: JRR DATE: 11 ORIGINATED REE SCALE: CHECKED: JC APPROVED:	MM02-02
REV	DATE		ORGO			<u> </u>	GRANT S	STACY   A

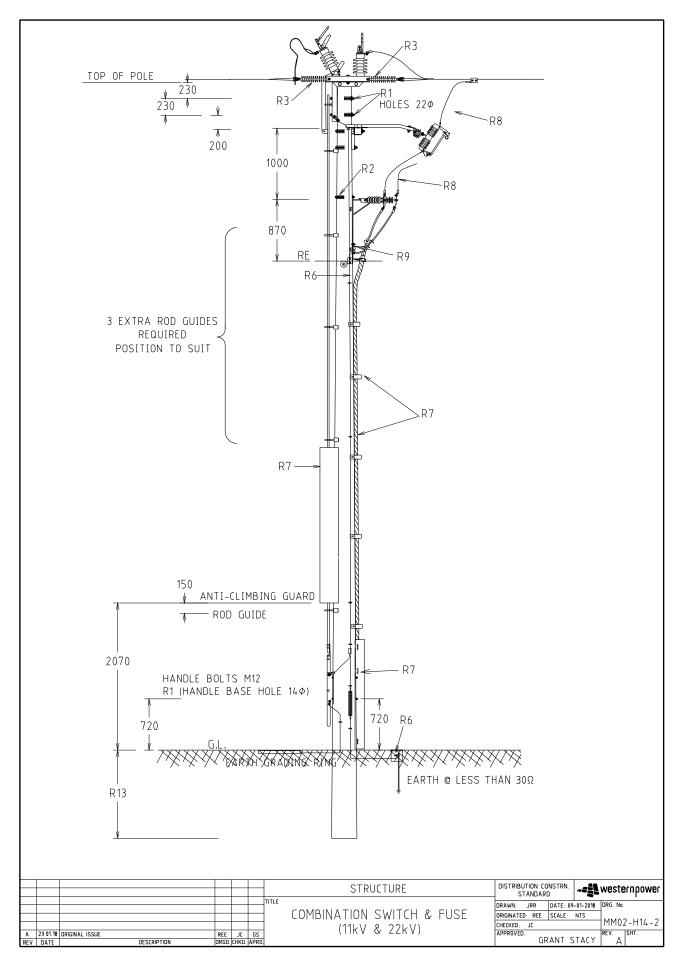


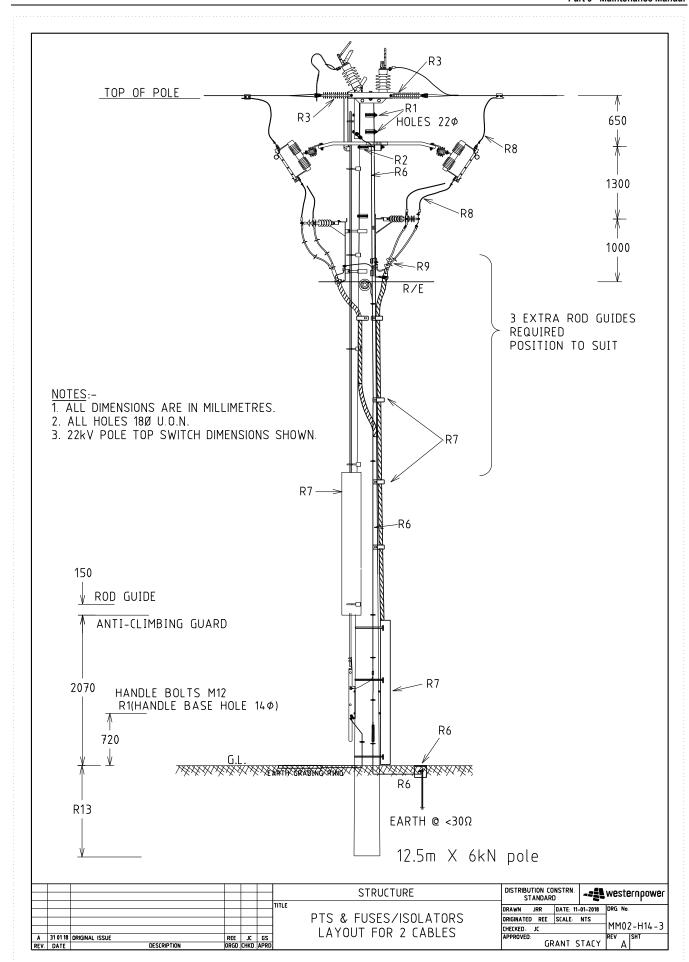


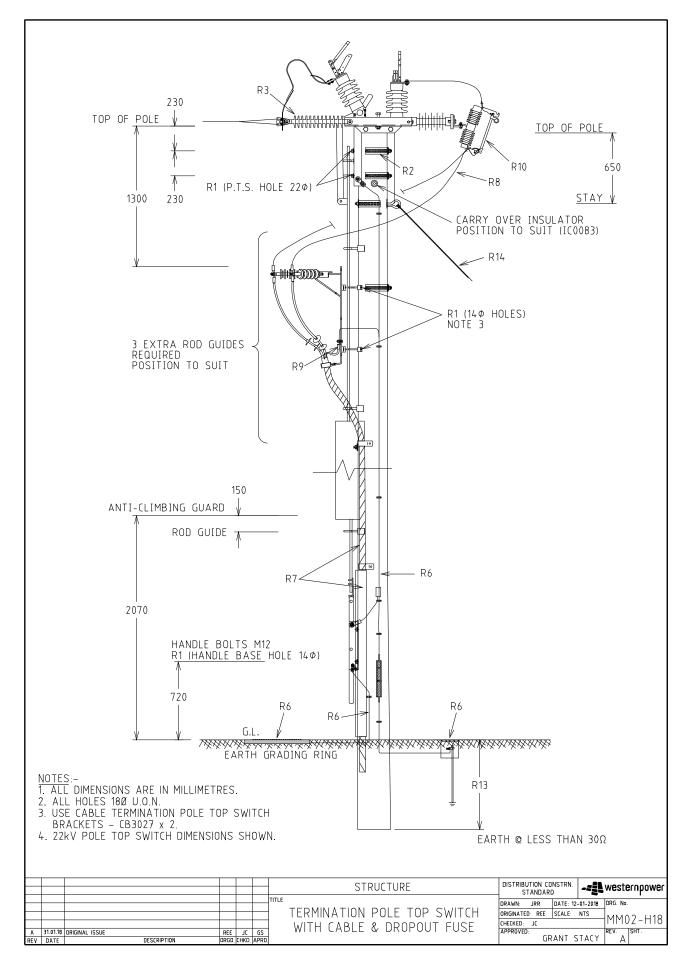


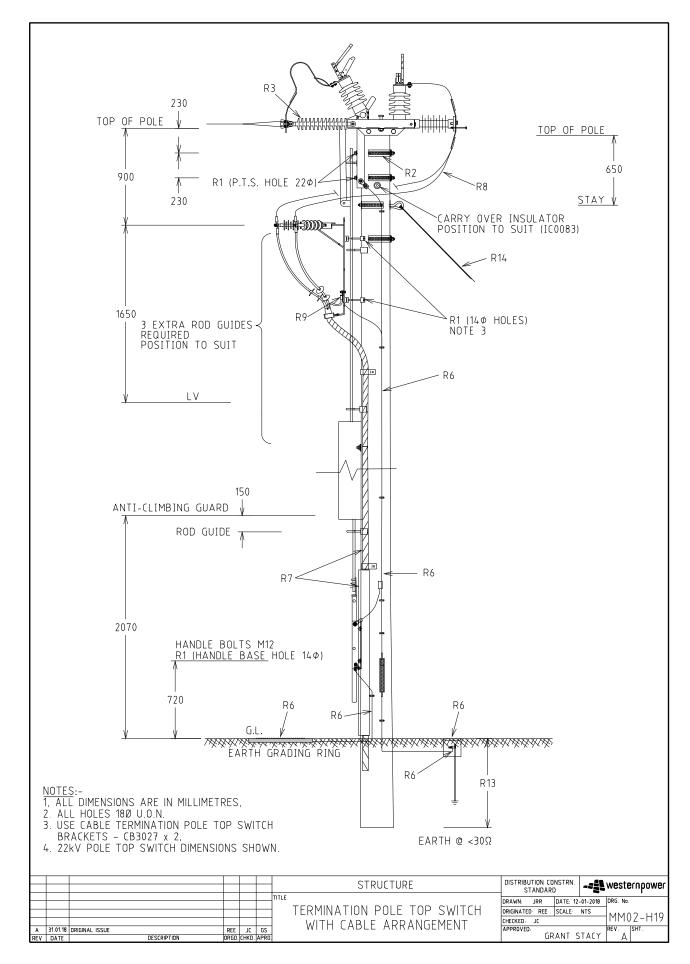


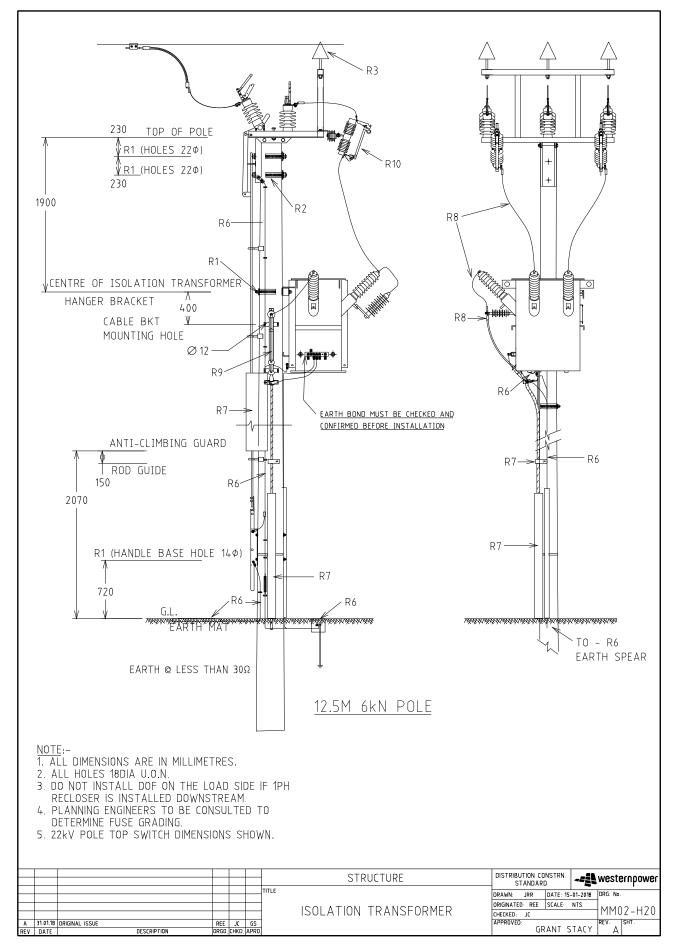


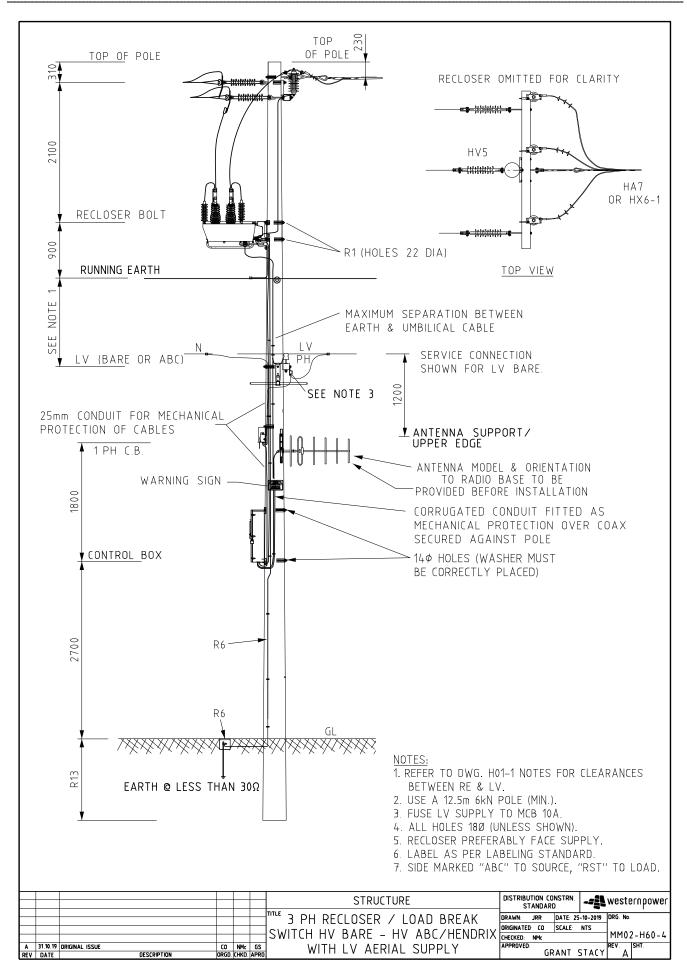


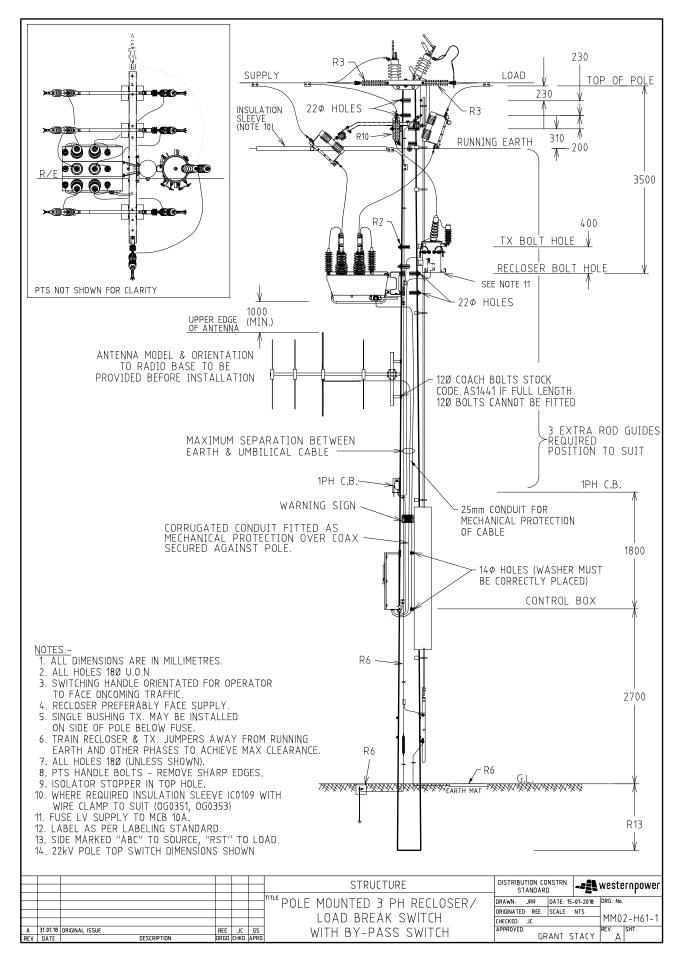


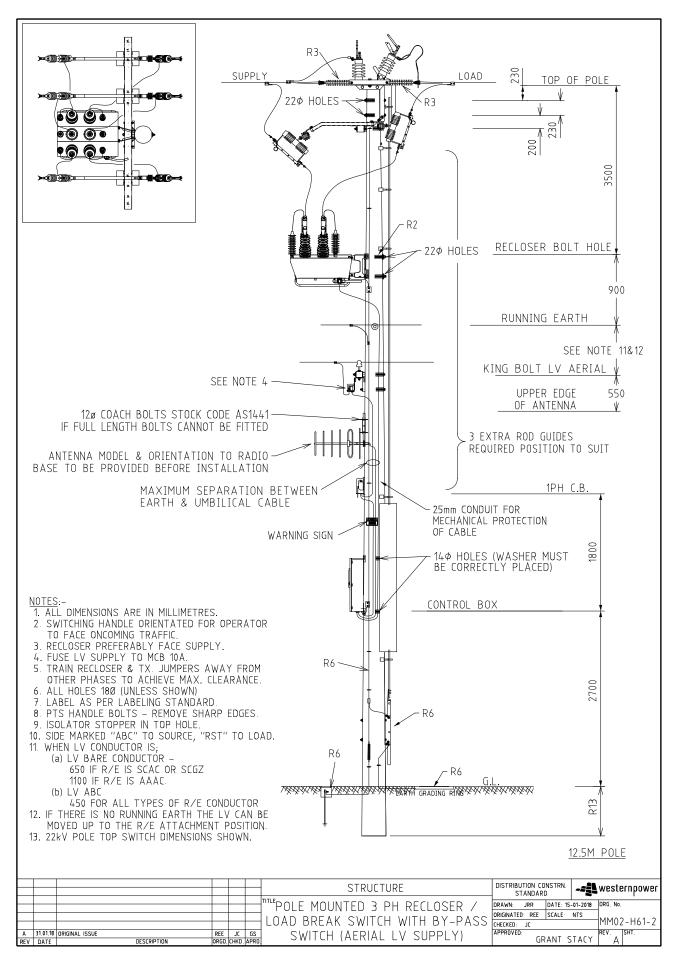


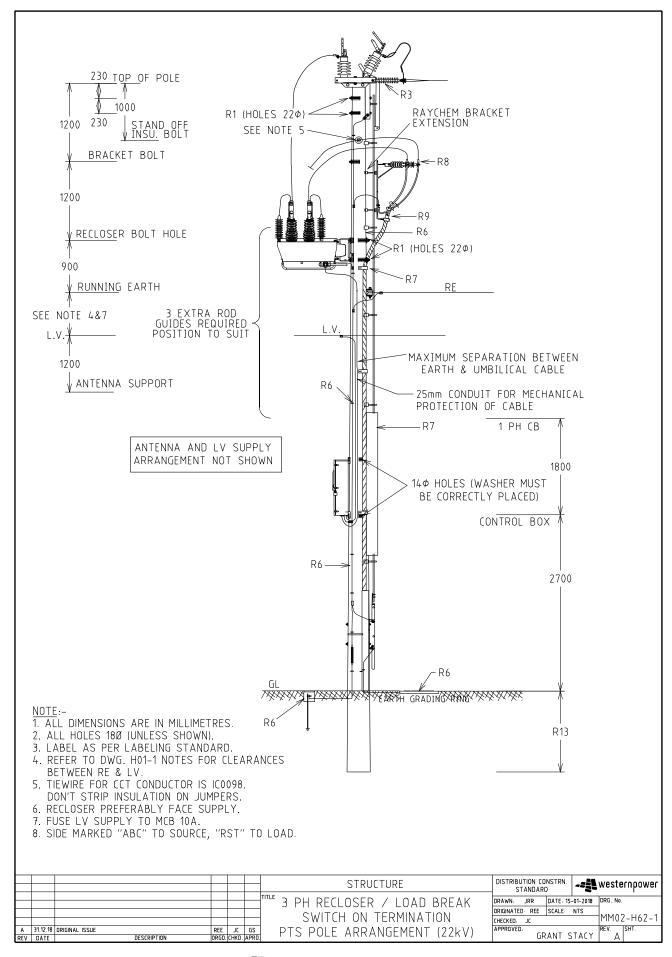


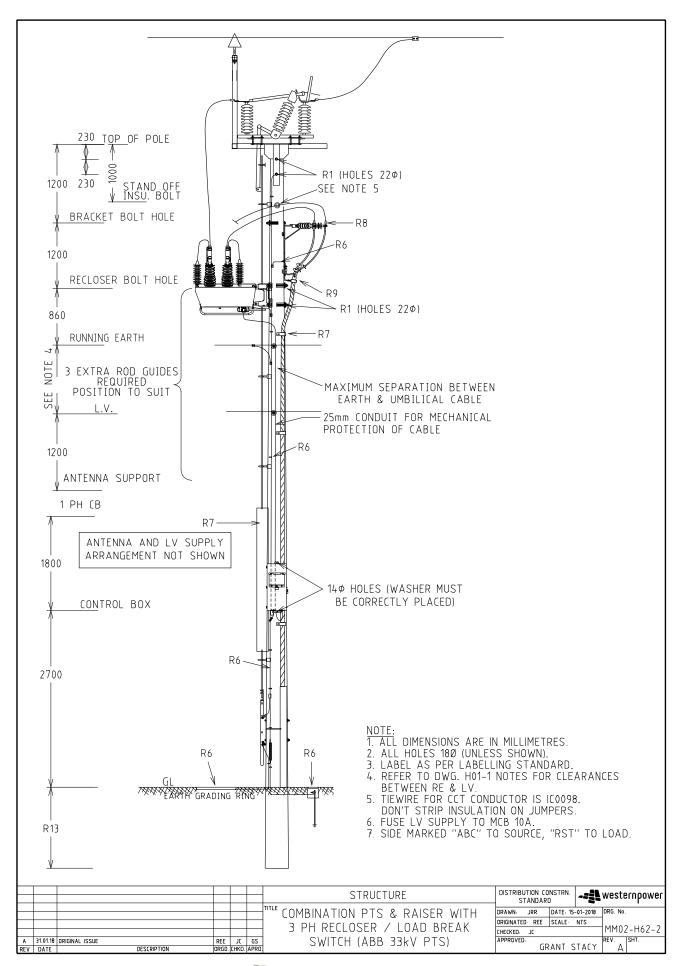








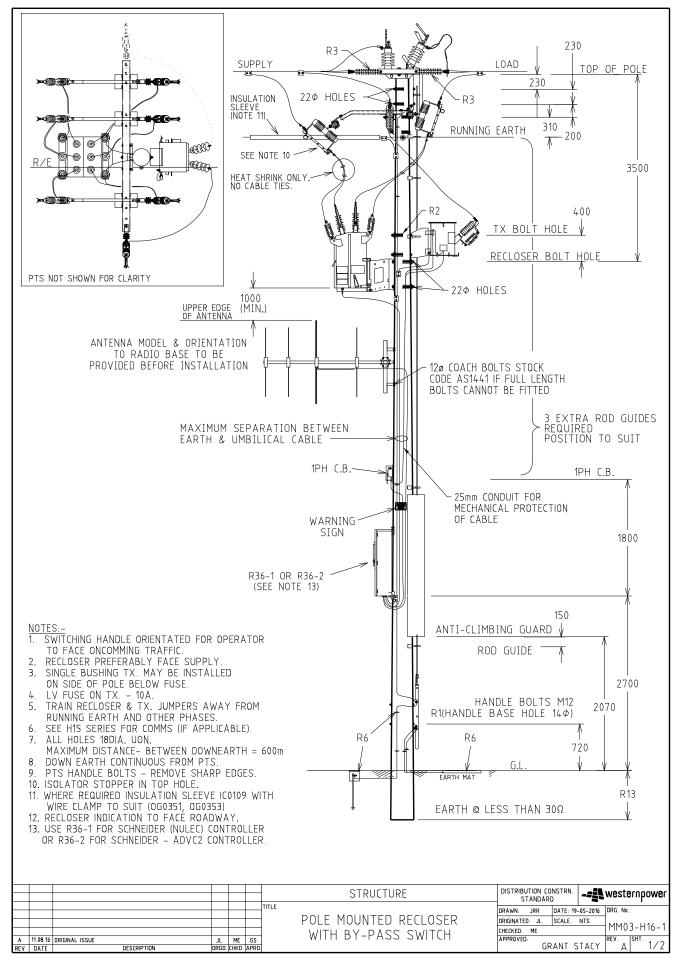


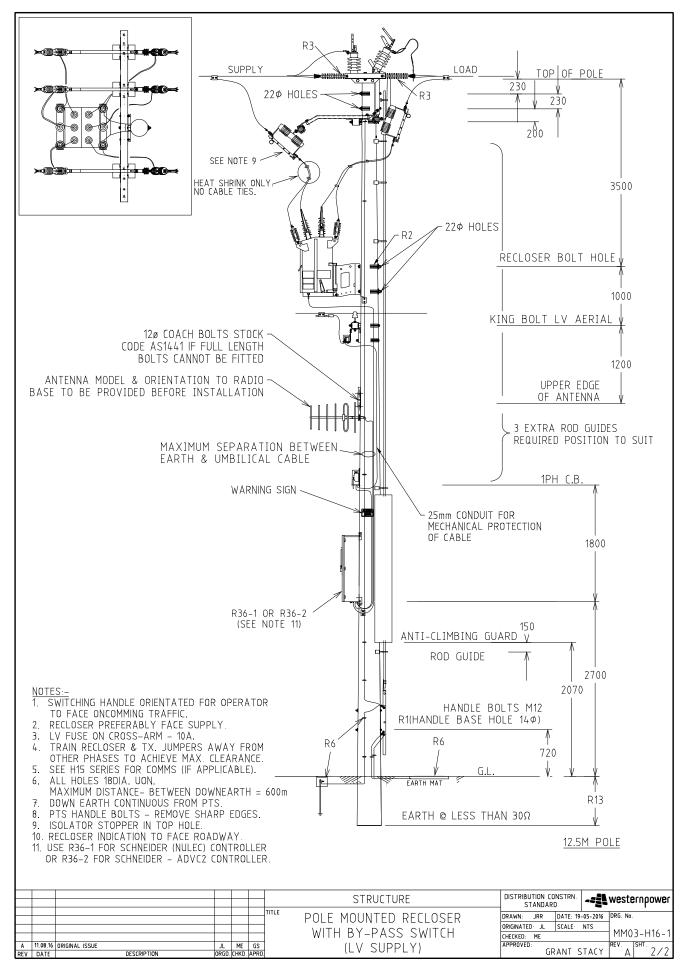


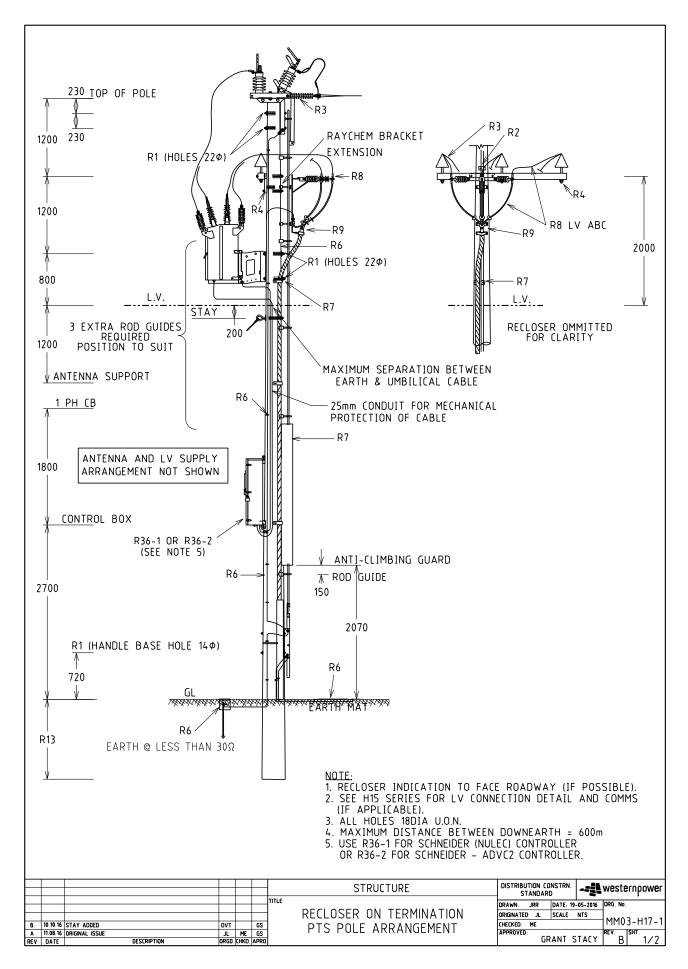
STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
GS0311	SCHNEIDER/NULEC 3Φ 22kV RECLOSER	   MM03–H16–1, MM03–H17–1
GS0312	SCHNEIDER/NULEC 3¢ 33kV RECLOSER	
GS0310	SCHNEIDER/NULEC 1¢ 12.7kV RECLOSER	   MM03–H51–2, MM03–H51–4
GS0314	SCHNEIDER/NULEC 1¢ 19.1kV RECLOSER	111103-1131-2, 1111103-1131-4
GS0303	1Φ HYDRAULIC RECLOSER (KYLE TYPE 'E' RECLOSER	FUTURE

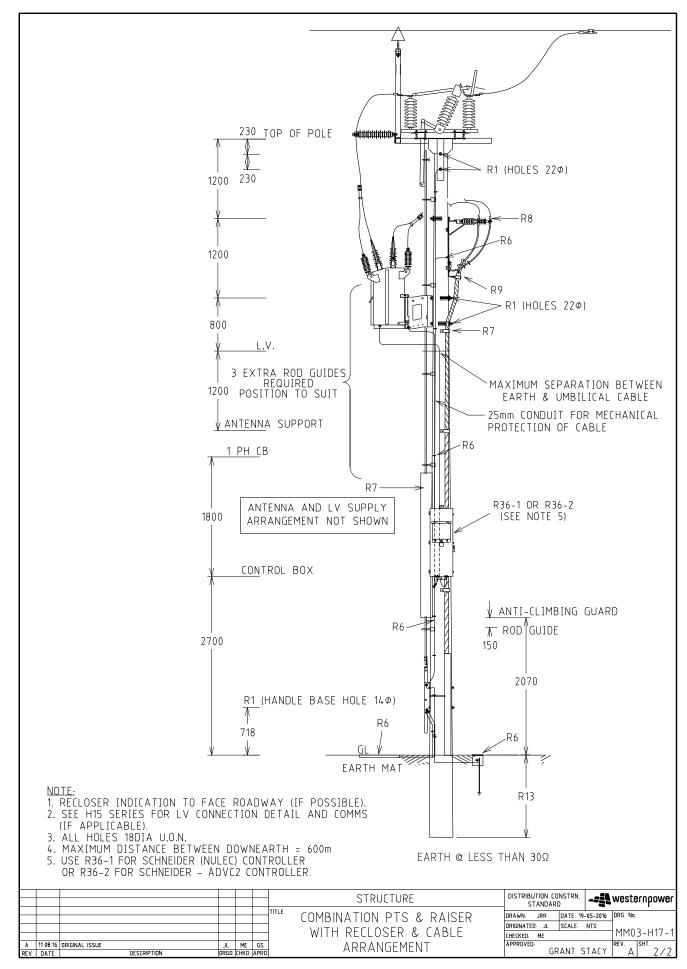
- 1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS)
  BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).
  2) APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION
  3) SUPERSEDED: IN LINE ISOLATOR ARRANGEMENTS FOR RECLOSERS DUE TO FIELD COMMENTS.

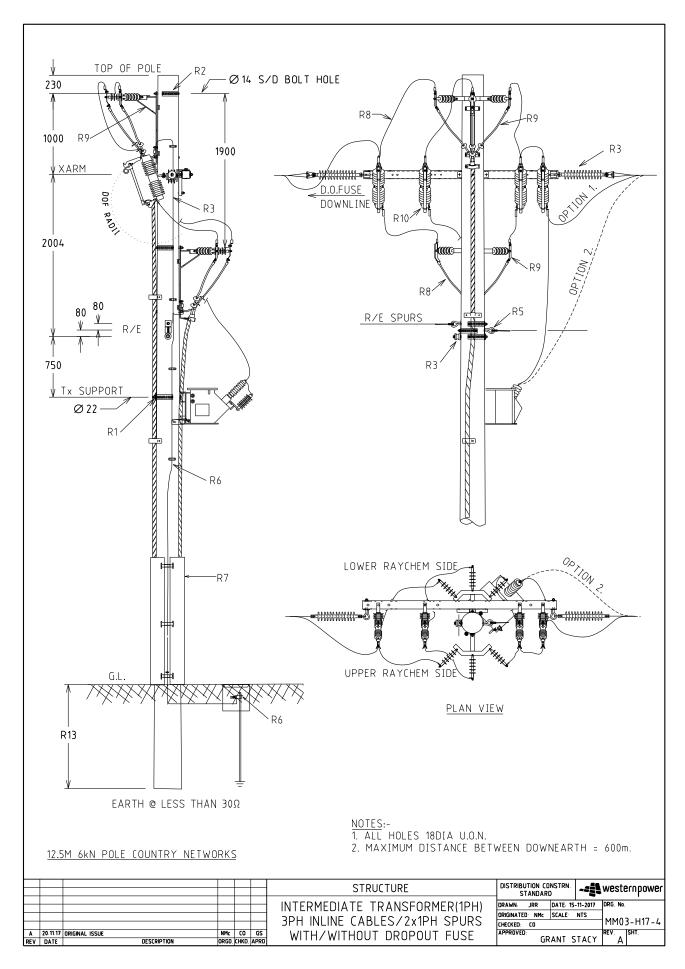
							STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
						TITLE	RECLOSER INSTALLATION	DRAWN JRR DATE 29 ORIGINATED JC SCALE	0-06-2016 DRG. NO.
		TABLE OF DRAWING NUMBERS REVISED	CO	NMc	GS	]		CHECKED: ME	MM03
A	11.08.16	DRIGINAL ISSUE	JC	ME	GS	l		APPROVED	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO			GRANT S	STACY  B

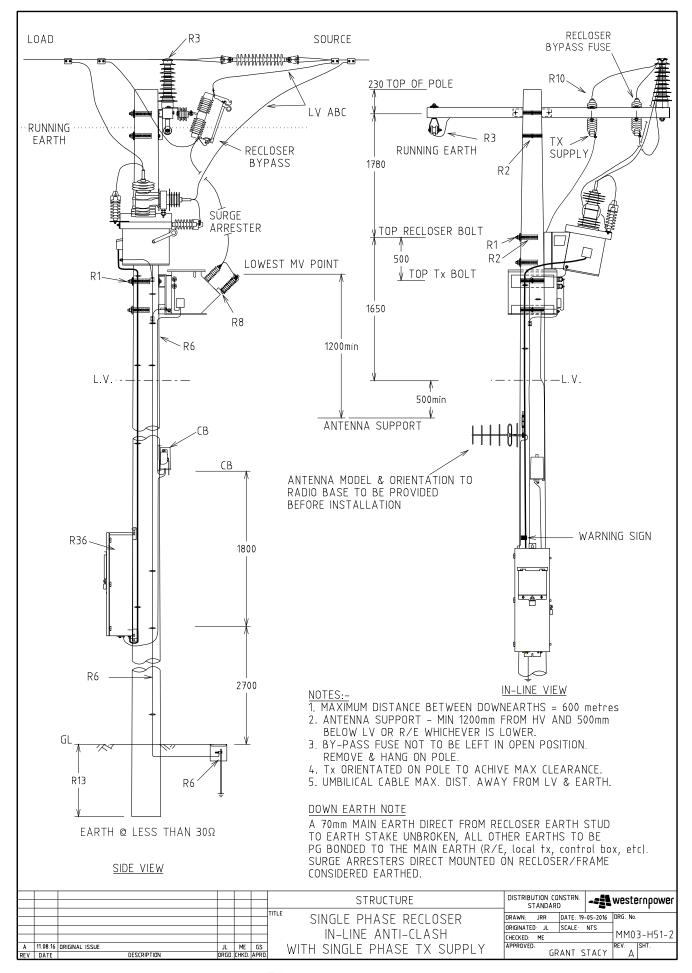


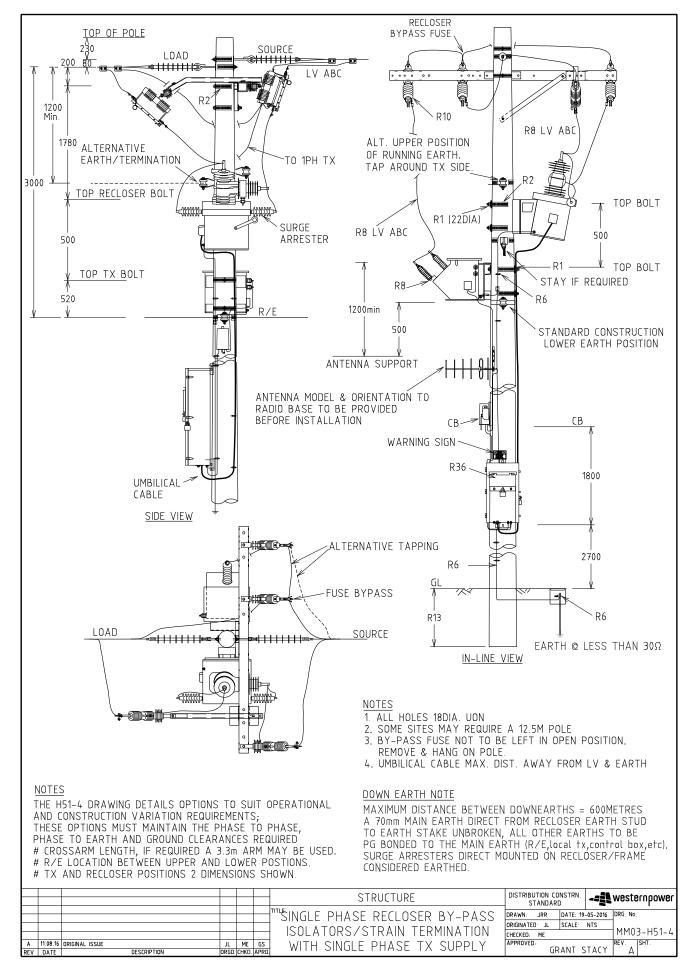


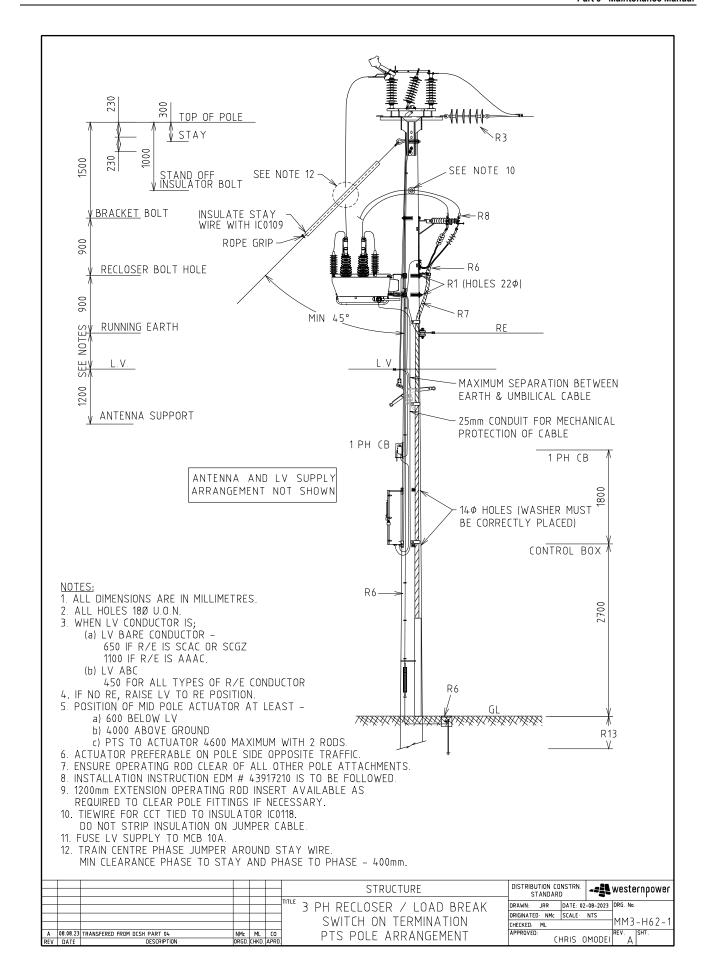


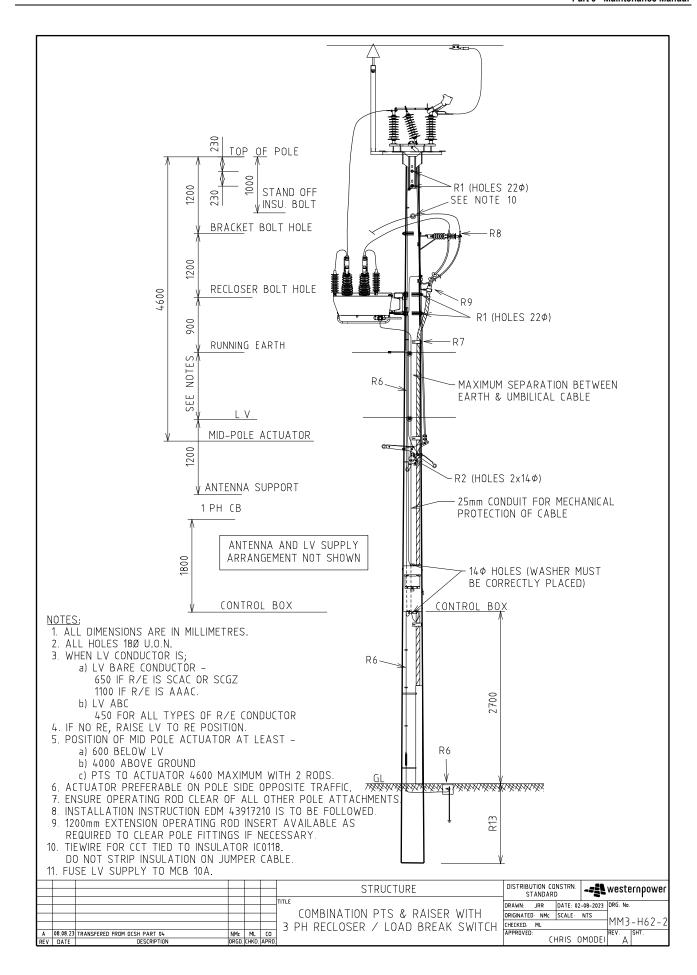


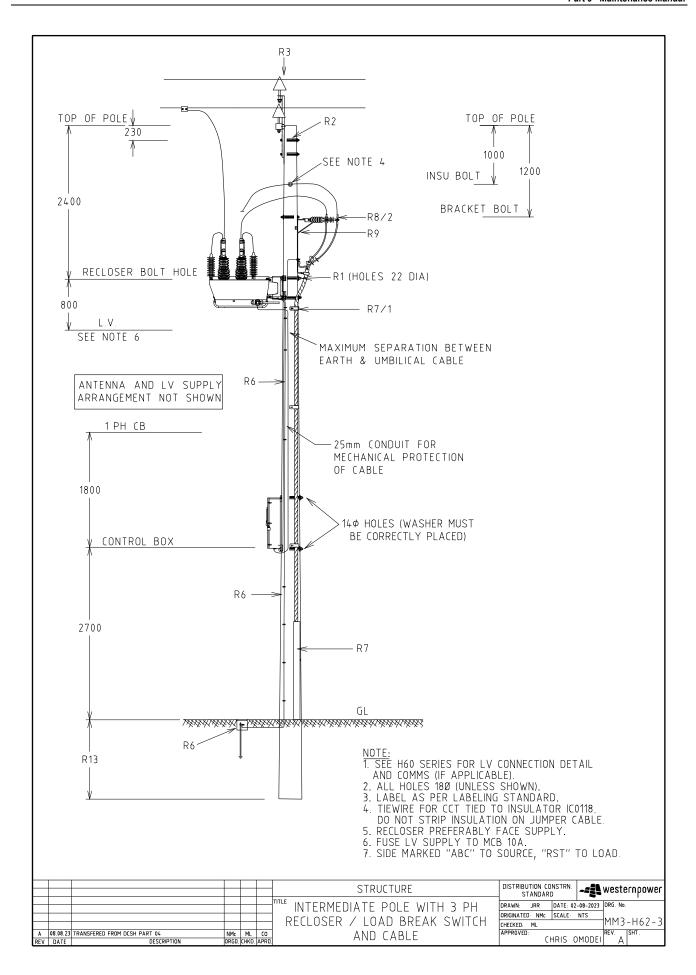


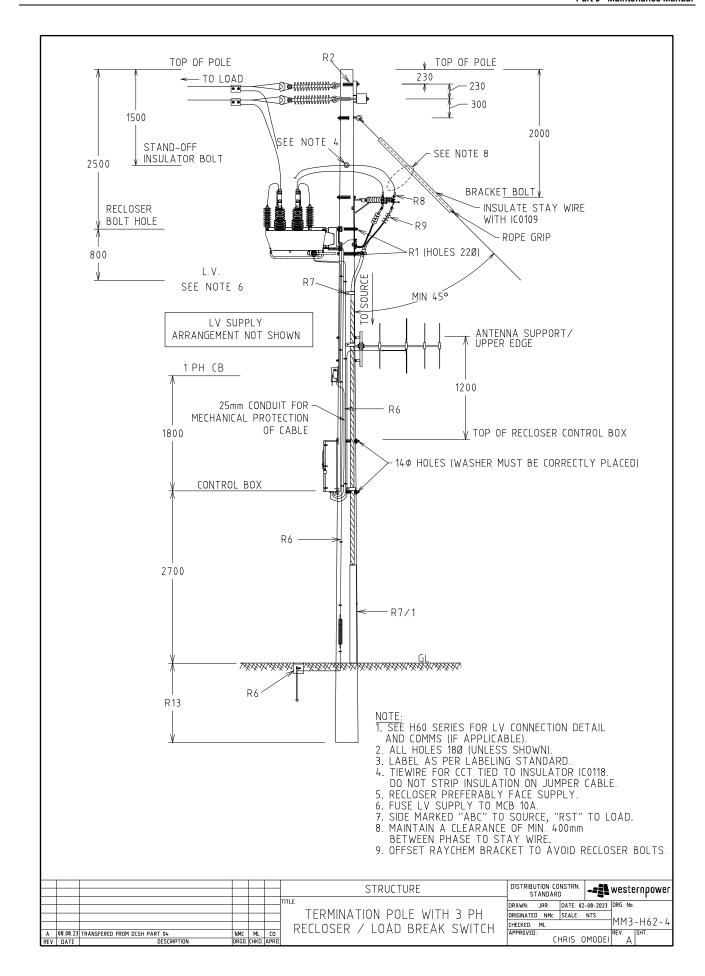


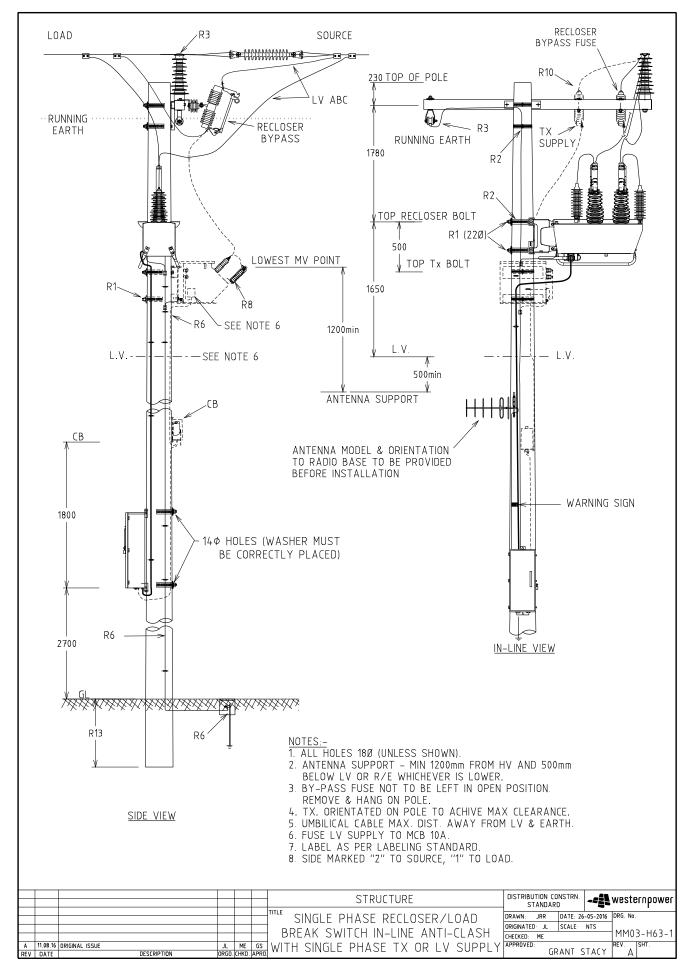










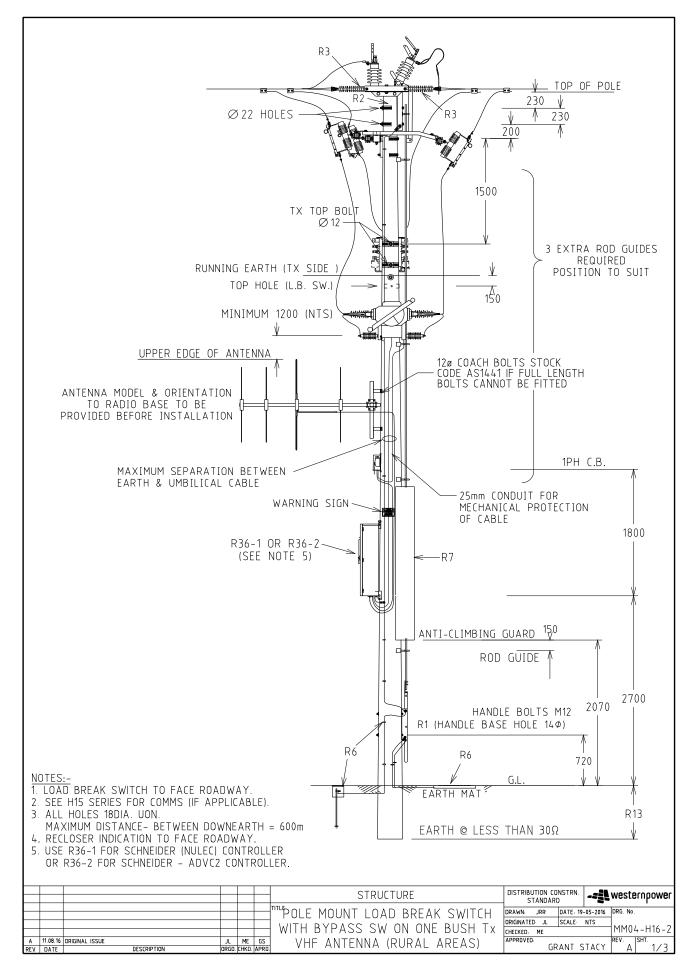


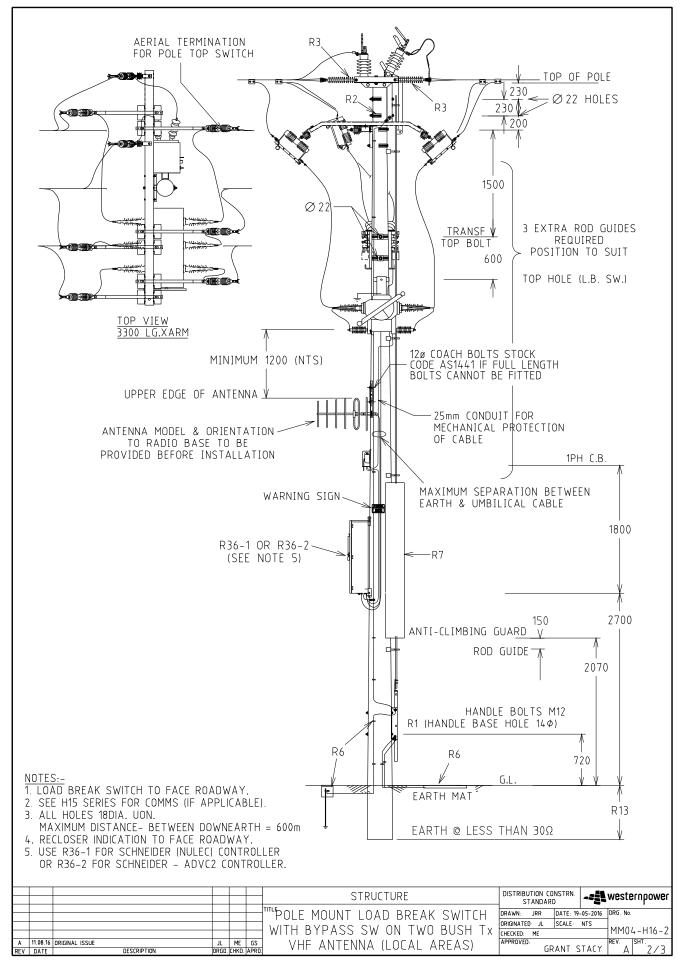
STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS
GS0131	33kV NULEC/SCHNEIDER LBS	MM04-H16-2

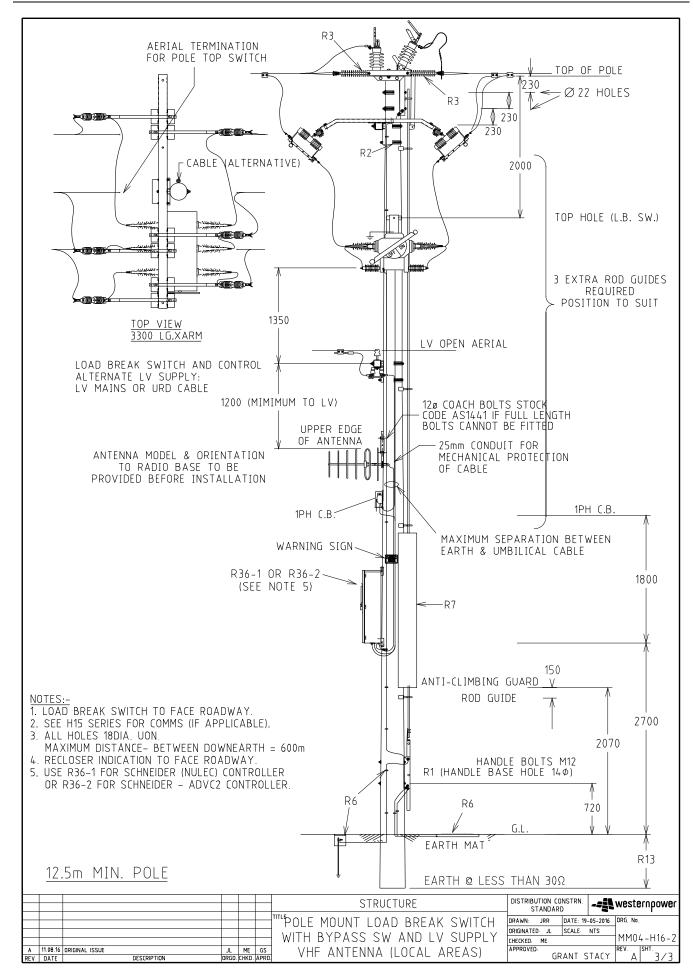
NOTES:

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. STANDARD	westernpower
						NTLE	DRAWN JRR DATE 29-06-201	6 DRG. NO.
						LOAD BREAK SWITCH	ORIGINATED JC SCALE NTS	∃ MM04
В	19.12.19	LIST OF DRAWINGS IN THE TABLE REVISED	co	NMc	GS	REINSTALLATION	CHECKED: ME	1111104
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS	KLINSTALLATION	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO		GRANT STAC	Y  B







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

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	wastasaaawas
						STRUCTURE	STANDARD	-= westernpower
						TITLE		
							DRAWN: JRR DATE: 2	9-06-2016 DRG. NO.
						CECTIONIALICED DEINICTALL ATION	ORIGINATED JC SCALE	NTS NAMO F
						SECTIONALISER REINSTALLATION	CHECKED: ME	MM05
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS		APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRE		GRANT	STACY   A

STOCK CODE	DESCRIPTION	RELEVANT DRAWINGS

- 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
$\vdash$						TITLE		911111011110	
						11116		DRAWN: JRR DATE: 2'	9-06-2016 DRG. NO.
						1	REGULATING TRANSFORMERS	ORIGINATED JC SCALE	NTS NAMO (
							REINSTALLATION (FUTURE)	CHECKED: ME	MM06
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS	1	REINSTALLATION (FUTURE)	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO	Į.		GRANT S	STALY   A

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

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

						STRUCTURE	DISTRIBUTION CONSTRN	-== westernpower
						STRUCTURE	STANDARD	-=== mesterribower
						TITLE		DDC NO
							DRAWN: JRR DATE: 2	9-06-2016 DRG. NO.
						DDOD OUT FUCE DEMOTALL ATION	ORIGINATED JC SCALE	NTS MANOT
						DROP OUT FUSE REINSTALLATION	CHECKED: ME	MM07
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS		APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO	CHKD	APRO		GRANT !	STACY   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.

							STRUCTURF	DISTRIBUTION CO	INSTRN	-50	westernpower
							STRUCTURE	STANDAR	D		mezrei iihomei 1
						TITLE		DRAWN: JRR	DATE 20	-06-2016	DDG NO
								DRAWN: JKK	DATE: 29	-00-2010	Dita. No.
						1	CADACITODO DEINOTALLATION	ORIGINATED: JC	SCALE	NTS	D O DANA
						1	CAPACITORS REINSTALLATION	CHECKED: ME			MM08
Α	11.08.16	ORIGINAL ISSUE	JC	ME	GS			APPROVED:			REV SHT
REV	DATE	DESCRIPTION	ORGO	CHKD	APRI	ī		I GH	RANT S	STACY	AI I

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
							STRUCTURE	STANDARD	-=== Mezrei iihomei
1						TITLE			lone ve
						1		DRAWN: JRR DATE: 02	2-04-2019 DRG. NO.
						1	GENERAL OVERHEAD LINE	ORIGINATED CO SCALE	NTS MMOO
						1	MAINTENANCE	CHECKED: NMc	MM09
Α	05.14.19	ORIGINAL ISSUE	CO	NMc		1	MAINTLINANCE	APPROVED	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO	1		GRANT S	STALY   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.

- 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 C STANDAR		-= <u>{</u>	westernpower
$\vdash$						TITLE				_		DRG. NO.
С	05.04.19	DRAWING NUMBER CHANGED	CO	NMc	GS	וחם	E TOD	CONSTRUCTION	ORIGINATED: JC	SCALE	NTS	MM09-1-1
В	03.02.17	DRAWING NUMBER CHANGED AND MORE DETAILS ADDED	CO	REE	GS	ן פענ	LE TUP		CHECKED: REE			
Α	09.08.16	ORIGINAL ISSUE	JC	REE	GS				APPROVED:		T 4 6 V	REV. SHT.
REV	DATE	DESCRIPTION	ORGD.	CHKD.	APRD				ا	RANT S	STACY	



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
05 04 19 DRAWING NUMBER CHANGED 03 02 17 ORIGINAL ISSUE DATE DESCRIE	CC CC PTION OR	TITLE  DRAWN JRR DATE 30-11-2016 DRG NO ORIGINATED CO SCALE NTS MM0 9 - 1  NMC GS  POLE TOP CONSTRUCTION

DESCRIPTION	RELEVANT DRAWINGS	APPLICATION
VERTICAL STRAIN	H26	
INLINE STRAIN WITH OVER HEAD EARTH WIRE	H26-2	
VERTICAL STRAIN ANGLE	H28	
		STRUCTURE DISTRIBUTION CONSTRN STANDARD CONSTRN
05 04 19 DRAWING NUMBER CHANGED 03 02 17 ORIGINAL ISSUE	00	STRUCTURE  DISTRIBUTION CONSTRN STANDARD  DRAWN JRR DATE 30-11-2016 DRG NO. ORIGINATED CO SCALE NTS CHECKED REE APPROVED GRANT STACY  REV B ISHT.

DESCRIPTION	RELEVANT DRAWINGS	APPLICATION
3X1 POLE LONG BAY SOLUTION	H41-2	APPLY LONG BAY 3 POLE INSTALLATION, SEE BELOW
1 PHASE DOUBLE TERMINATION TRANSFORMER WITHOUT DROPOUT FUSE	H47-3	
		STRUCTURE DISTRIBUTION CONSTRN CTANDADO CTANDADO CONSTRN
B 05 04 19 DRAWING NUMBER CHANGED A 03 02 17 ORIGINAL ISSUE REV DATE DESCRIPT	CO CO	STRUCTURE  DISTRIBUTION CONSTRU  TITLE  DRAWN JRR DATE 04-01-2017 DRG NO  ORIGINATED CO SCALE NTS  CHECKED REE  APPROVED  GRANT STACY  B Westernpower  DRAWN JRR DATE 04-01-2017 DRG NO  ORIGINATED CO SCALE NTS  CHECKED REE  APPROVED  GRANT STACY  B SHT.

### 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 • APPLY 32mm BAND-IT STRAPS. IN SITUATIONS WHERE THERE IS INSUFFICIENT SPACE OR STRAP 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
	STRUCTO	URE DISTRIBUTION CONSTRN STANDARD



TITLE

POLE TOP CHECKS/SPLITS

DRG. NO

MM09-2-

DRAWN: JRR DATE: 11-03-2019

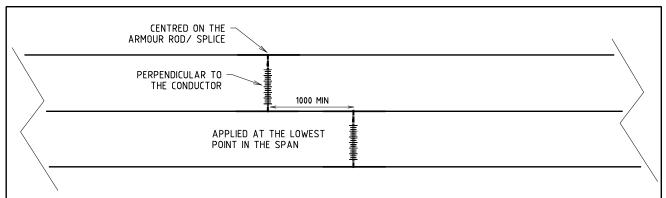
GRANT STACY

ORIGINATED SA SCALE NTS

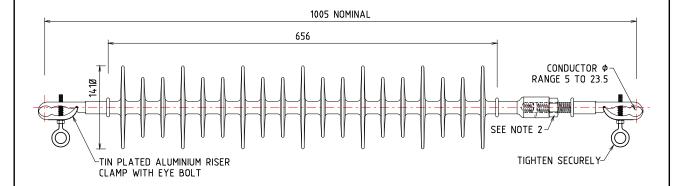
DESCRIPTION	APPLICATION	POLE TOP SCENARIO
WASHER REPLACEMENT (75mmx75mm)	IF THE SPLIT WIDTH AFTER REPAIR IS <20mm, EXISTING WASHER (45mm x 45mm) DOES NOT NEED TO BE REPLACED.  WASHER REPLACEMENT IS REQUIRED IF:  ● SPLIT WIDTH AFTER REPAIR IS ≥20mm  ● EXISTING WASHER IS DEFORMED  REPLACEMENT SCENARIOS:  (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	<ul> <li>◆ CHECK CLEARANCES BETWEEN HV AND LV CONDUCTORS AND OTHER HARDWARE TO ENSURE THAT THE BAND-IT TOOL CAN BE USED SAFELY.</li> <li>◆ A RADIUS OF 400mm AND ANGLE OF 90-120° IS REQUIRED FOR TOOL OPERATION.</li> <li>◆ 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.</li> </ul>	Pole  90° - 120°  Rand-It tool

- 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.

						STRUCTURE	DISTRIBUTION CO STANDARD		-: <u>[</u> ]	westernpower
$\vdash$								DATE: 11-0		DRG. NO.
						1 322 131 211221(3) 31 211	ORIGINATED: SA CHECKED: LT	SCALE: N	NTS	MM09-2-2
A REV	05.04.19 DATE	ORIGINAL ISSUE DESCRIPTION	LT	NMc CHKD	GS APRD		APPROVED: GR	ANT ST		REV. SHT.



# 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:

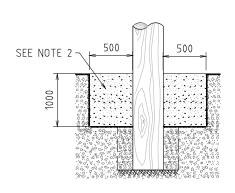
- \*ON ISOLATED AND EARTHED HV LINE.
- \*ON BARE HV OVERHEAD CONDUCTORS ONLY, VIZ. ALUMINIUM, ACSR AND AC OR GZ STEEL
- \*INDIVIDUALLY (PREFERRED) OR AS A PAIR BETWEEN PHASE CONDUCTORS.
- \*OVER AN ARMOUR ROD OR HELICAL SPLICE TO PROTECT THE CONDUCTOR FROM WEAR.
- \*KRYPTON CONDUCTOR APPLY ALUMINIUM 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.

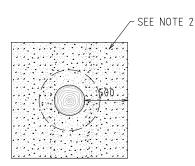
### NOTES:-

- 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	<b>-=</b> ₩ westernpower
Ļ	17 02 20	INSTALLATION INSTRUCTION REVISED	NMc	CO	GS	TITLE	GENERAL OVERHEAD LINE		DRG. NO.
_			NMc		GS	1	HV SPREADER 61kV	CHECKED: NMc	MM09-3-1
Α	05.04.19	ORIGINAL ISSUE		NMc	GS	]	SILICONE INTERPHASE	APPROVED	STACY REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO		SILICOINE INTERNITASE	GRANT	STACY (



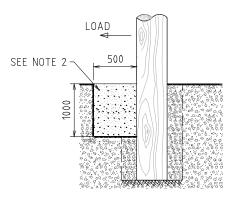


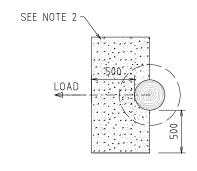
SECTION VIEW

PLAN VIEW

SOIL RATING = MEDIUM (BEFORE TREATMENT)GOOD (AFTER TREATMENT)

# OPTION-1





SECTION VIEW

PLAN VIEW

# OPTION-2

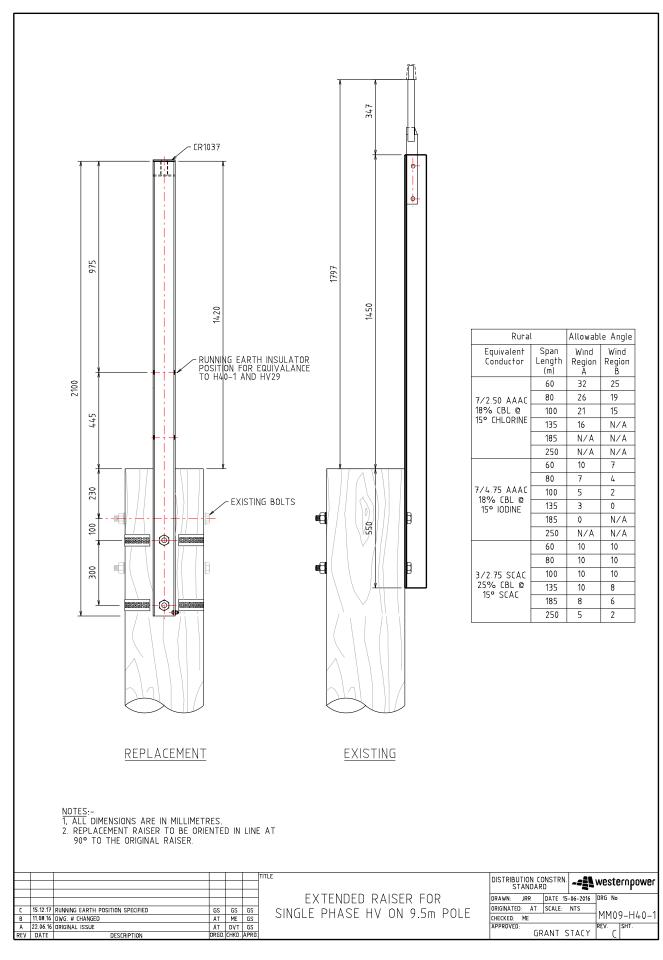
- 1. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
- 2. BACKFILL WITH EITHER
  - a) ROAD BASE OR
- b) 5:1 SAND/CRUSHED LIMESTONE MIX
  COMPACTED IN 200 LAYERS
  3. THIS DRAWING IS ONLY APPLICABLE TO EXISTING
- POLES, ≤10 YEARS.

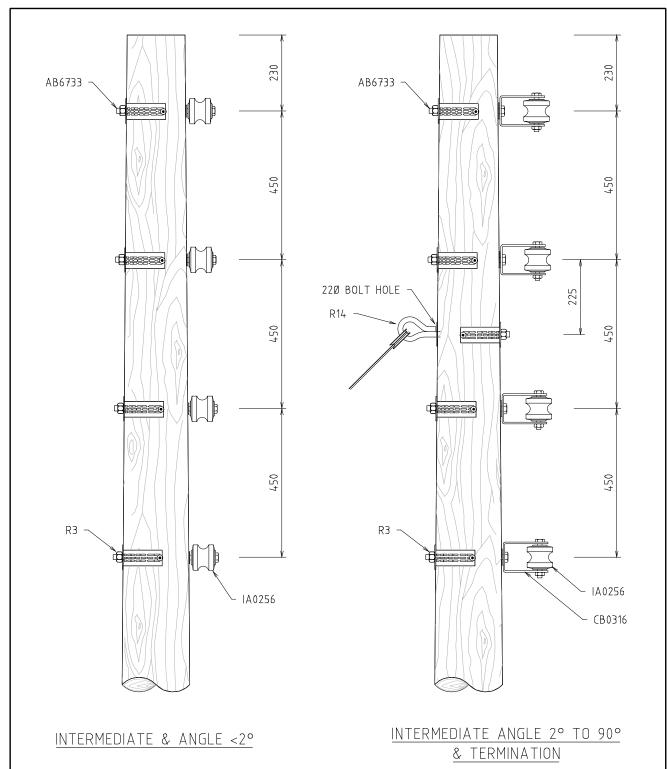
  4. POLE TO BE SUPPORTED DURING SOIL ENHANCEMENT.

  5. COMPACT THE LAYER BENEATH THE EXCAVATED AREA
  TO ENSURE WELL COMPACTED SOIL UNDER THE ENHANCED ZONE
- 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	ANGLE POLES UPTO 10° DEVIATION, SINGLE CIRCUIT, MAX 50m BAYS, WHERE STAY IS NOT FEASIBLE
	EXISTING POLES UPGRADING TO 315kVA TX IN MEDIUM SOILS

						MAINTENANCE MANUAL	DISTRIBUTION CONSTRI STANDARD	westernpower
						ENHANCED FOUNDATION DETAILS	ORIGINATED SJ SCALE	19-07-2023 DRG No. NTS MM() 9 - 5
A REV	19.07.23 DATE	DESCRIPTION	SJ ORGD.	LT CHKD.	CO APRD	IN-SITU DISTRIBUTION POLE	APPROVED: CHRIS	OMODEI REV. SHT.



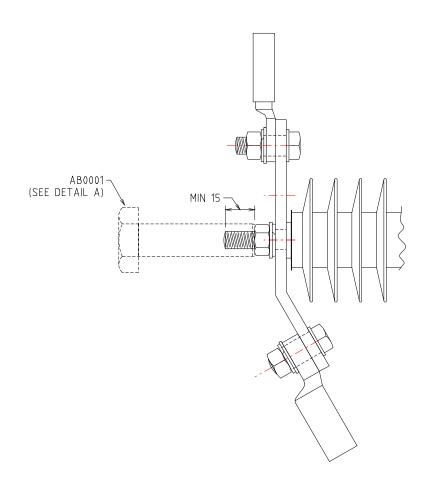


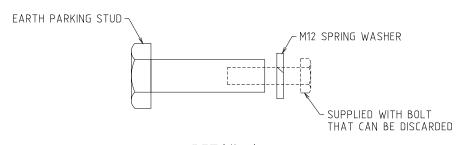
1. ALL DIMENSIONS ARE IN MILLIMETRES.

- 1. ACL DIMENSIONS ARE IN MILLIMETRES.
  2. BOLT HOLES 180 U.O.N.
  3. REFER TO DCSH R16/2 SERIES FOR REQUIREMENT OF STAY INSTALLATION.
  4. APPLICABLE FOR FLAT GROUND BAYS UPTO 60m FOR CONDUCTORS UPTO 7/4.75 AAAC, 7/4.75 AAC OR 7/12 Cu.
  5. LV SPREADER IR0006 & CLIPS IR0007 ARE TO BE USE WHEN TRANSITIONING FROM VERTICAL CONFIGURATION TO HORIZONTAL CONFIGURATION.

							MAINTENANCE MANUAL	DISTRIBUTION CONSTRI	westernpower
						TITLE	VENTICAL LV INTENTILDIATE/		10-04-2015 DRG. No.
В	11.08.16	DRG # CHANGED, "INTERMEDIATE & ANGLE <2°" DETAIL ADDED AND DISTANCE BETWEEN INSULATORS CHANGED	JC	ME	GS		ANIA E / LEDMINA LIAN	ORIGINATED CO SCALE CHECKED AK	MM09-LV-01
Α	30.04.15	DRIGINAL ISSUE	CO	AK	GS	1	CONSTRUCTION	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO	]	2011911/0211011	GRANT	STACY   B

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.

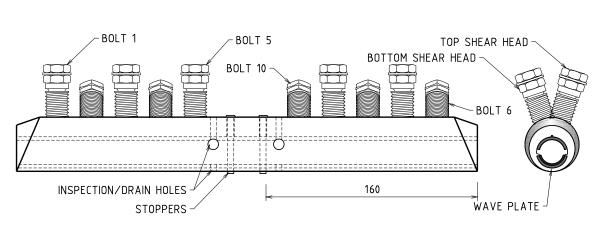




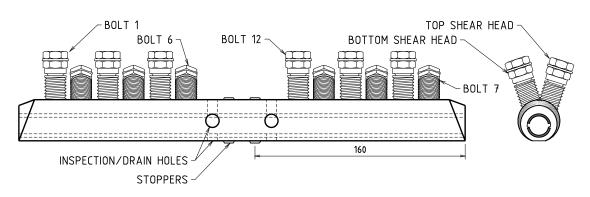
# DETAIL A

- 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.

							REFERENCE DRAWING	DISTRIBUTION CONSTRN. STANDARD	-= westernpower
						TITLE HV CA	DIE TERMINATION RETROCRECTIVE	DRAWN JRR DATE OF	1-08-2022 DRG. No.
В	21.09.22	DRAWING NUMBER CHANGED AND MORE DETAILS ADDED	CO	NMc	GS	F.A	ARTH PARKING STUD INSTALL	CHECKED: NMc	MM09-R09
A	23.08.22	ORIGINAL ISSUE	(0	NMc	GS	_,		APPROVED:	REV. SHT.
REV	DATE	DESCRIPTION	ORGD	CHKD.	APRO.			GRANT	STACY B



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

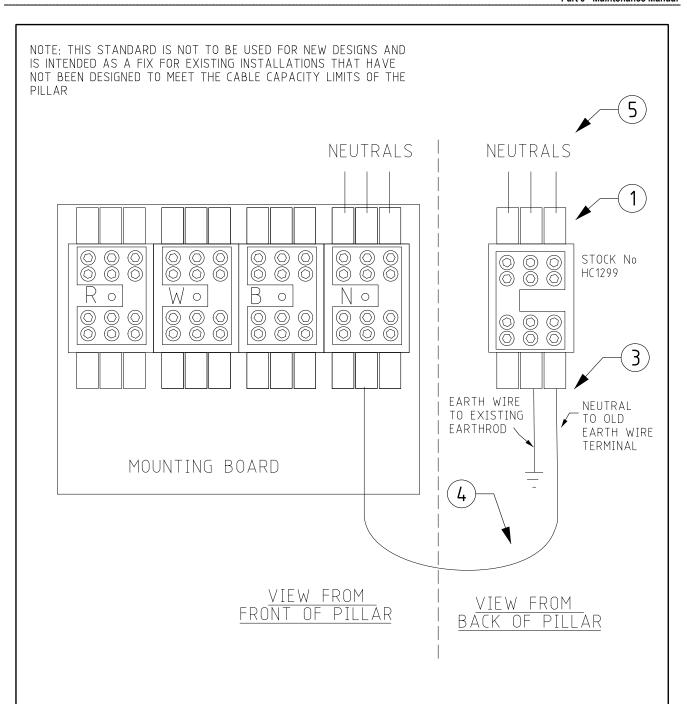
## INSTALLATION INSTRUCTIONS:-

- 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.

							STRUCTURE	DISTRIBUTION CO	ONSTRN	<b>L</b> westernpower
							STRUCTURE	STANDAR	D   ***	Mesternhower
-						TITLE		DRAWN: JRR	DATE: 02-04-20	IN DRG No
							MECHANICAL TENCION			
									SCALE NTS	⊣MM09-R24
В	19 11 20	DETAILS OF CJ0586 ADDED	REE	NMc	GS			CHECKED: CO		
Α	05 04 19	ORIGINAL ISSUE	NMc	(0			MERAIN SPEICE (ITTNS)	APPROVED:		REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD	APRO	Ī,		լ ն	RANT STAC`	/   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.				
BELOW GROUND SERVICE PIT INSTALLATION DETAIL APPLICATION GUIDE LINE	MM10-U30-2	REPLACEMENT OF EXISTING HL0360 NOT FOR NEW INSTALLATIONS IN GREEN FIELD OR BROWN FIELD, MAINTENANCE ONLY.				
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.				

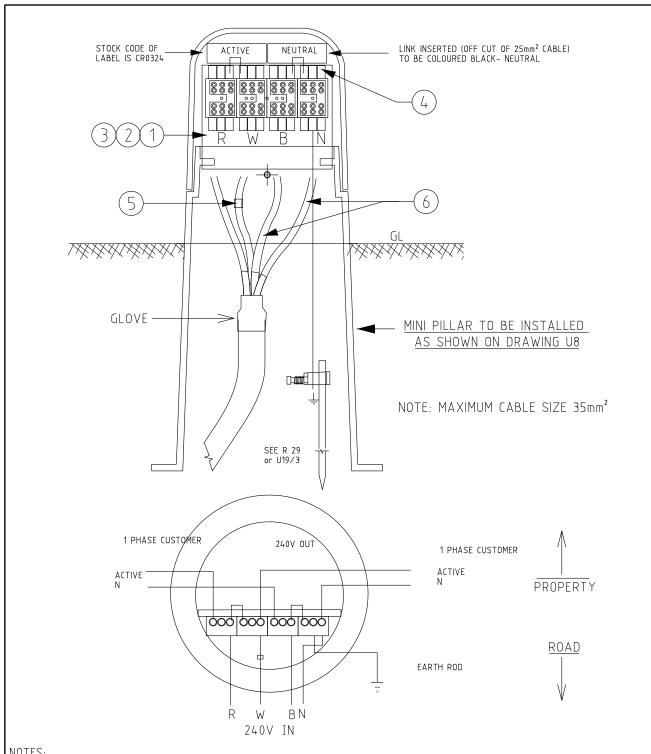
							STRUCTURE	DISTRIBUTION CONSTRN. westernpower		
							STROCTORE	STANDARD		
						TITLE		DRAWN: JRR DATE: 18-11-2016 DRG. NO.		
ı								DRAWN: JRR DATE: 16-11-2016 DRG, NO.		
						1	DELOW CDOUND CEDVICEC	ORIGINATED CO SCALE NTS MM10		
В	26.07.17	MINI PILLAR DETAILS ADDED	NMc	[0	GS		BELOW GROUND SERVICES	CHECKED: JC		
A	01.12.16	ORIGINAL ISSUE	CO	JC	GS	1		APPROVED: REV. SHT.		
RFV	DATE	DESCRIPTION	ORGO	CHKD	APRD			GRANT STACY   B		



### NOTES

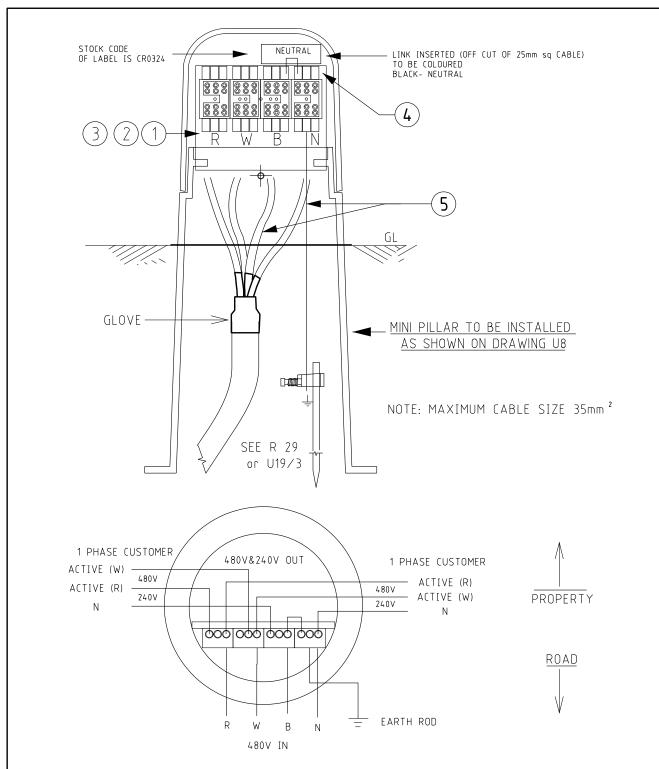
- 1. FIX EXTRA NEUTRAL LINK TO BACK OF PANEL BEHIND EXISTING M.E.N LINK
- 2. USING INSULATED GLOVES AND TOOLS REMOVE EARTH STAKE CONDUCTOR FROM M.E.N LINK AND TEST BETWEEN EXISTING M.E.N LINK AND REMOVED CABLE END TO CONFIRM NO POTENTIAL DIFFERENCE. NOTIFY WESTERN POWER IF POTENTIAL EXISTS.
- 3. CONNECT REMOVED EARTH CABLE END TO BOTTOM MIDDLE TERMINAL OF NEW LINK.
- 4. CONNECT A 25/35mm NEUTRAL CONDUCTOR (BLACK) BETWEEN OLD EARTH TERMINAL IN EXISTING LINK AND BOTTOM RIGHT TERMINAL IN NEW M.E.N LINK.
- 5. THEN CONNECT EXTRA NEUTRALS TO THE NEW LINK.

					_	REFERENCE DRAWING	DISTRIBUTION CONSTRN.	<b>-≤</b> westernpower
$\vdash$					TITLE		STANDARD	
					-		DRAWN: JRR DATE: 15	-06-2017 DRG No
						MINI PILLAR NEUTRAL (EXTRA) FITTING REQUIREMENT	ORIGINATED: CO SCALE:	MM10-R31
							CHECKED: REE	1
Α	26.07.17	ORIGINAL ISSUE				TITTING NEWOINCHIENT	APPROVED:	REV SHT
REV.	DATE	DESCRIPTION	ORGO. CI	IKD. APR	0		GRANI	STACY A



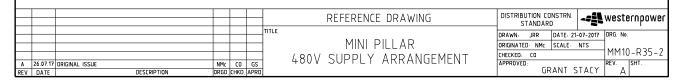
- 1. ALL WP 25mm<sup>2</sup> SERVICE CABLES TO ENTER BOTTOM OF TERMINAL BLOCKS
- 2. SOURCE OF SUPPLY TO THE PILLAR ON THE RIGHT SIDE OF THE TERMINAL BLOCK
- 3. FEED TO ANOTHER PILLAR TO BE ON THE LEFT SIDE OF THE TERMINAL BLOCK
- 4. CONSUMERS AND STREET LIGHT TO BE CONNECTED TO THE TOP OF THE TERMINAL BLOCK (LEFT OF BLOCK FOR CUSTOMER ON THE LEFT, RIGHT OF BLOCK FOR CUSTOMER ON THE RIGHT, STREET LIGHT CENTER), SEE: R32 5. WHITE PHASE TO BE CAPPED ON BOTH ENDS FOR POLE TO PILLAR APPLICATIONS WITH SINGLE TX (U19/3)
- 6. NEUTRAL SCREEN AND BLUE PHASE TO BE COVERED IN BLACK HEAT SHRINK

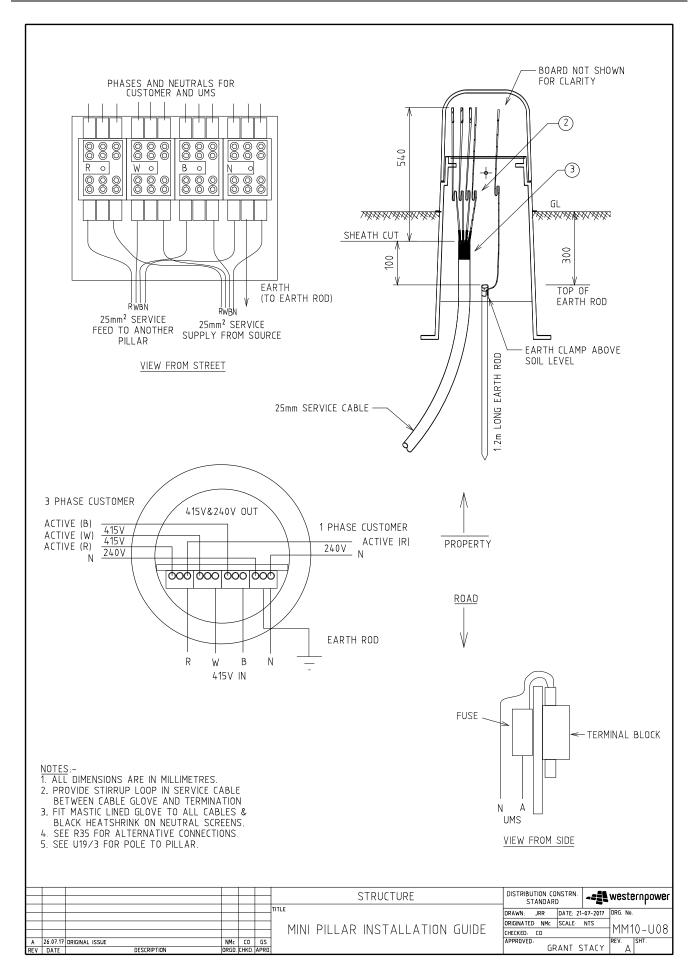
			-	<u> </u>	₩	REFERENCE DRAWING	DISTRIBUTION CONSTRN. Westernpower
-				<del> </del>	-	TITLE	STANDARD
	_			<del>                                     </del>	+		DRAWN: JRR DATE: 21-07-2017 DRG. No.
						MINI PILLAR 240V SUPPLY FROM	ORIGINATED NMC SCALE NTS MM10-R35-1
						SPUDS OR POLE	CHECKED: CO
Α		ORIGINAL ISSUE	NMc	CO	GS		APPROVED: REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD	APRE	Ц	GRANT STACY   A

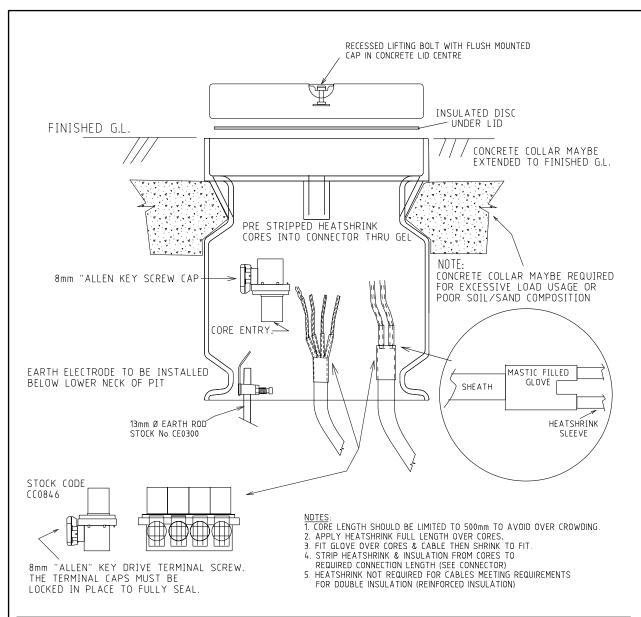


### NOTES:

- 1. ALL WP 25mm<sup>2</sup> SERVICE CABLES TO ENTER BOTTOM OF TERMINAL BLOCKS
- 2. SOURCE OF SUPPLY TO THE PILLAR ON THE RIGHT SIDE OF THE TERMINAL BLOCK
- 3. FEED TO ANOTHER PILLAR TO BE ON THE LEFT SIDE OF THE TERMINAL BLOCK
- 4. CONSUMERS AND STREET LIGHT TO BE CONNECTED TO THE TOP OF THE TERMINAL BLOCK (LEFT OF BLOCK FOR CUSTOMER ON THE LEFT, RIGHT OF BLOCK FOR CUSTOMER ON THE RIGHT, STREET LIGHT CENTER)SEE: R32
- 5. NEUTRAL SCREEN AND BLUE PHASE TO BE COVERED IN BLACK HEAT SHRINK







$  \lceil$	DESCRI	PTION		COLOUR CODE							
	DESCHI	1 11014	RED	WHITE	BLUE	BLACK					
	2 1	WPC stock		/	/	FE0032					
	2 Finger glove	Raychem part no.	N/A	N/A	N/A	302K333-23/239(S20)					
	4 Finger glove	WPC stock				FE0031					
	4 Tillger grove	Raychem part no.				502K033-53/239(S15)					
	Heatshrink tubing	WPC stock	FE0106	FE0107	FE0108	FE0105					
	6mm2	Raychem part no.	RNF100 3/8" Rd	RNF100 3/8" Wh	RNF100 3/8" BI	RNF100 3/8" Bk					
	Heatshrink tubing	WPC stock	FE0102	FE0103	FE0104	FE0071					
П	10-25mm2	Raychem part no.	RNF100 1/2" Rd	RNF100 1/2" Wh	RNF100 1/2" Bl	RNF100 1/2" Bk					

This drawing is valid ONLY when read in conjunction with drawings MM10 & MM10-U30-2

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2	lUL	N.	LUI	JE	ПL	0360

							STRUCTURE	DISTRIBUTION CO	INSTRN	_56	wastaraaawar
							STRUCTURE	STANDAR			westernpower
1						TITLE					
			1					DRAWN: JRR	DATE: 17-	-10-2016	DRG. No.
			+				BELOW GROUND SERVICE	ORIGINA TED:	SCALE:	NTS	l
-			+		_	-					1MM10-U30-1
В	01.12.16	FOOTNOTE REVISED & MM10 REFERENCE ADDED	CO	JC	GS		PIT INSTALLATION DETAIL	CHECKED: REE			111110 030 1
Α	18.10.16	ORIGINAL ISSUE	JC	FK	GS		FIT INSTALLATION DETAIL	APPROVED:		T 1 5 1 /	REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO			լ նե	RANT S	TACY	l Bl

### APPLICATION GUIDELINE

REFER TO MM10

### NOTE

- 1. DUST CAPS MUST BE LEFT ON ANY UNUSED CONNECTOR CABLE ENTRY TO AVOID GEL CONTAMINATION.
- 2. DOUBLE INSULATION IS TO BE MAINTAINED INTO CONNECTOR GEL
- 3. STRIP INSULATION/HEAT SHRINK FROM CORE END. SEE CONNECTOR FOR STRIP LENGTH.
- 4. WIPE CLEAN THE STRIPPED CORE AND ENSURE IT IS NOT CONTAMINATED WITH SAND, GREASE, ETC.
- 5. INSERT THE STRIPPED CORE GENTLY THRU THE GEL AND HOLD IT FULLY HOME AGAINST THE TERMINAL BLOCK WHILE TIGHTENING THE CLAMPING BOLT WITH A 8MM ALLEN KEYDRIVE. THE RECOMMENDED TORQUE SETTINGS ARE LISTED BELOW IF TORQUE WRENCHES ARE USED.
  - 4 TO 15mm<sup>2</sup> CONDUCTOR ---- 14.1 TO 19.8Nm TORQUE
  - 21.1 TO 53.5mm<sup>2</sup> CONDUCTOR ---- 25.4 TO 31.1Nm TORQUE
  - 67.4 TO 180mm<sup>2</sup> CONDUCTOR ---- 31.1 TO 39.5Nm TORQUE
- 6. UPON TIGHTENING THE CLAMPING BOLT, GIVE THE CORE A SWIFT TUG TO ENSURE THAT IT DOES NOT COME LOOSE/OUT OF THE TERMINAL BLOCK
- 7. AFTER CLAMPING CABLE THE CLAMP CAP MUST BE LOCKED IN PLACE TO FULLY SEAL
- 8. WHEN DISCONNECTING CABLE FROM CONNECTOR REMOVE SLOWLY TO ALLOW GEL TO RE-SEAL ITSELF BEHIND THE CABLE AS IT IS REMOVED.
- 9. TEMPORARY DISCONNECTION COVER CABLE PORT WITH BLUE CAP OR TAPE TO AVOID GEL CONTAMINATION. MARK PORT WITH ONE SCRIBE FOR EACH DISCONNECTION. REPLACE CONNECTOR AFTER 3 DISCONNECTS FOR ANY ONE PORT.
- 10. FOR PERMANENT DISCONNECTION DO NOT REMOVE CABLE FROM PORT. CUT CABLE TO LEAVE APPROX 50MM PROTRUDING OUT OF GELPORT THEN CAP WITH HEATSHRINK.

  CAUTION WHEN APPLYING HEATSHRINK TO AVOID DAMAGE TO GEL AREA.

THIS DRAWING IS VALID ONLY WHEN READ IN CONJUNCTION WITH DRAWING MM10-U30-1

							STRUCTURE	DISTRIBUTION CON	NSTRN.	westernpower
						TITLE	BELOW GROUND SERVICE PIT	DRAWN: JRR I	DATE: 17-10-2016	DRG. No.
							INSTALLATION DETAIL	ORIGINATED:	SCALE NTS	T MM10-U30-2
В	01.12.16	APPLICATION GUIDELINE REVISED	CO	JC	GS			CHECKED: REE		
Α	18.10.16	ORIGINAL ISSUE	JC	FK	GS	1	APPLICATION GUIDELINE	APPROVED:		REV. SHT.
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO	1	ALL FICK HOLL GOLDEFILLE	l GRA	ANT STACY	I BI



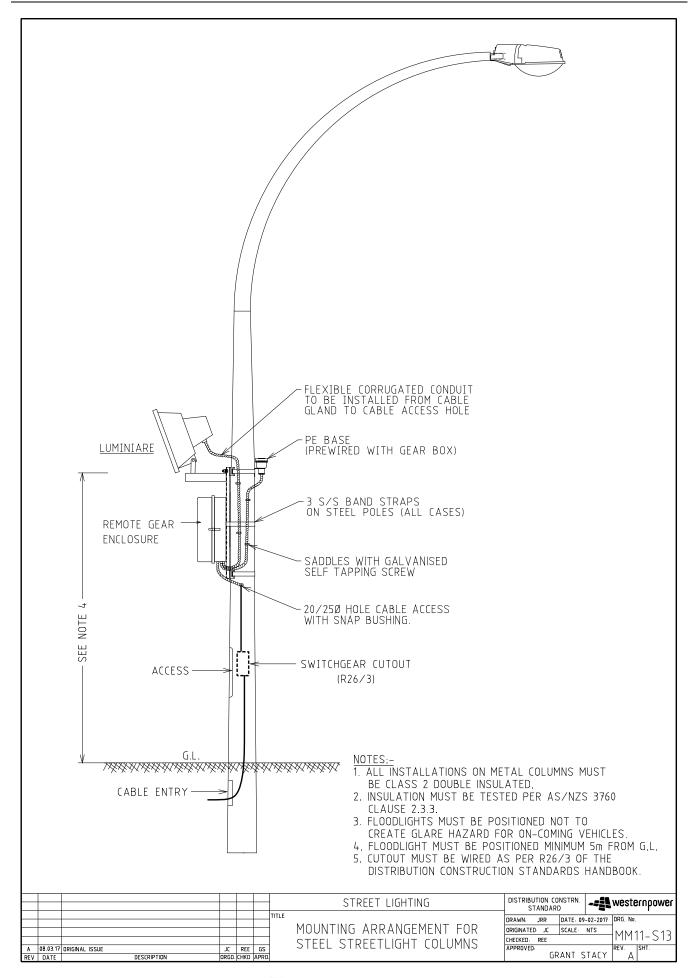
DRG. No.	DESCRIPTION
MM11-S13	MOUNTING ARRANGEMENT FOR STEEL STREETLIGHT COLUMNS
MM11-S14	MOUNTING ARRANGEMENT FOR WOOD OR CONCRETE POLE ON BARE AERIAL CONNECTION
MM11-S15	MOUNTING ARRANGEMENT FOR WOOD OR CONCRETE POLE ABC CONNECTION
MM11-S16	STEEL COLUMN - DOUBLE INSULATED (CLASS 2)
MM11-S17	WOOD OR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

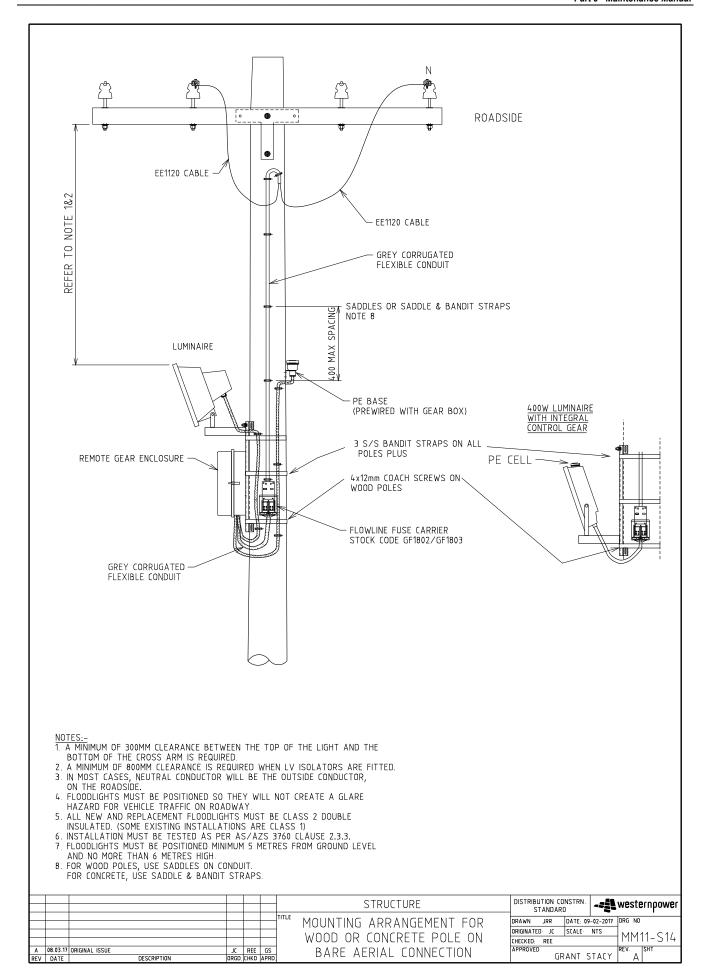
STOCK CODE	DESCRIPTION
HL3351	1000W FIXTURE
GL1892	1000W CONTROL GEAR BOX
GL1886	1000W MH GLOBE
HL3350	400W FIXTURE
GL1891	400W CONTROL GEAR BOX
GL1890	400W MH GLOBE
GL1871	400W HPS GLOBE
GF1803	CONCRETE FUSEHOLDER
GF1802	WOODEN FUSEHOLDER
HL5557	PE CELL
GF0550	FUSE
GL1850	BRACKET FOR WOODEN POLES
GL1851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

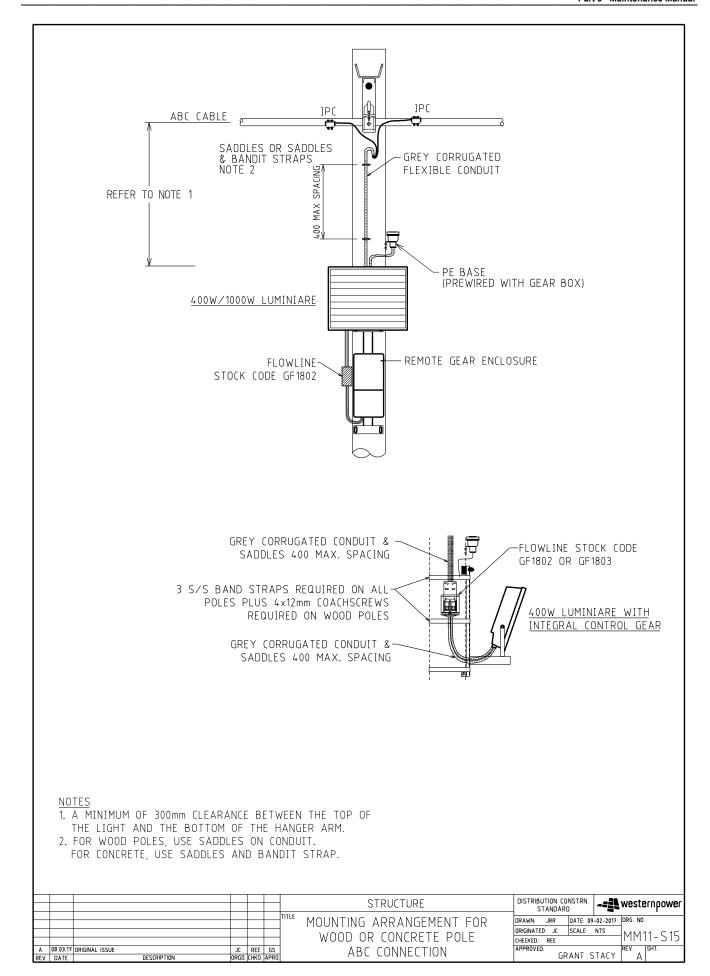
- NOTES:
  1. ITEM FOR RE-USE TO BE CONFIRMED IN WORKING ORDER (NO 'REPLACE' DEFECTS) BEFORE ATTACHMENT TO POLE (REFER TO DEFECT SEVERITY CATALOGUE).

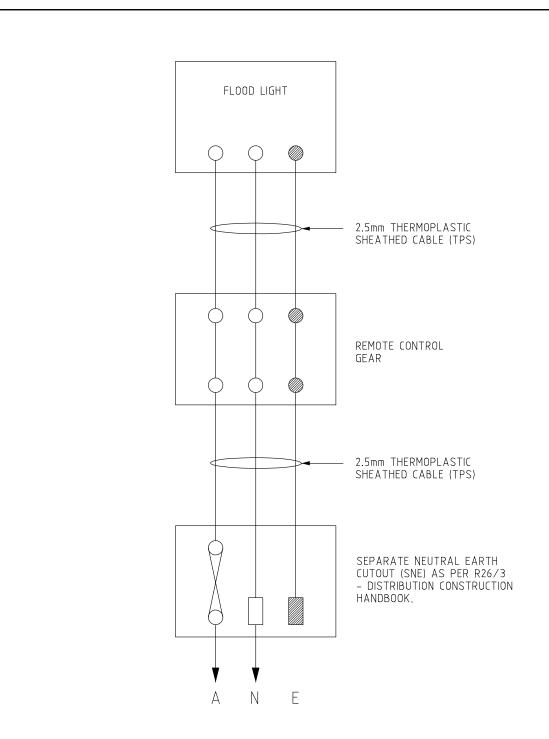
  2. APPROPRIATE DRAWING TO BE USED DEPENDING ON EXISTING POLE CONFIGURATION.

						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
						TITLE		
							DRAWN: JRR DATE: 0	19-02-2017 DRG: NO:
						CECUDITY LICUTING INCTALL ATION	ORIGINATED JC SCALE	NTS MAA11
						SECURITY LIGHTING INSTALLATION	CHECKED: REE	MM11
Α	08.03.17	ORIGINAL ISSUE	JC	REE	GS	1	APPROVED	REV SHT
REV	DATE	DESCRIPTION	ORGO	CHKD.	APRO		GRANT	STACY   A



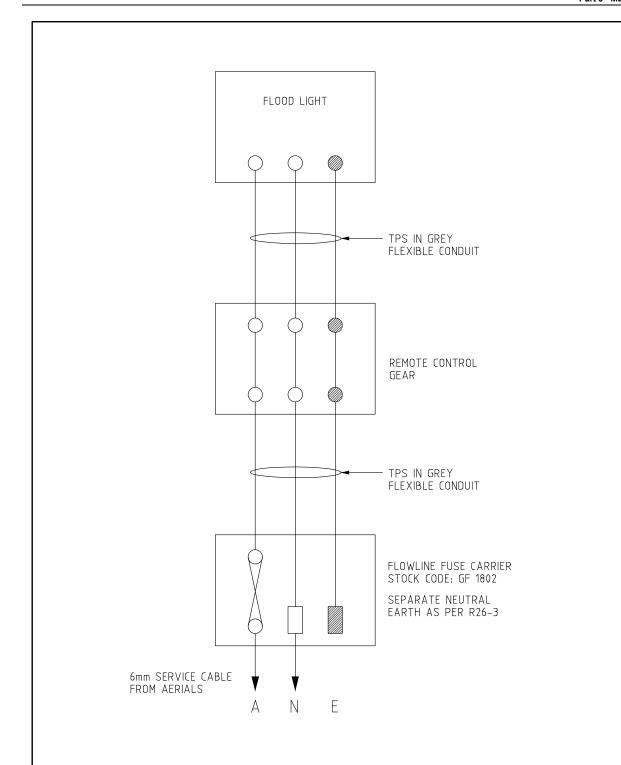






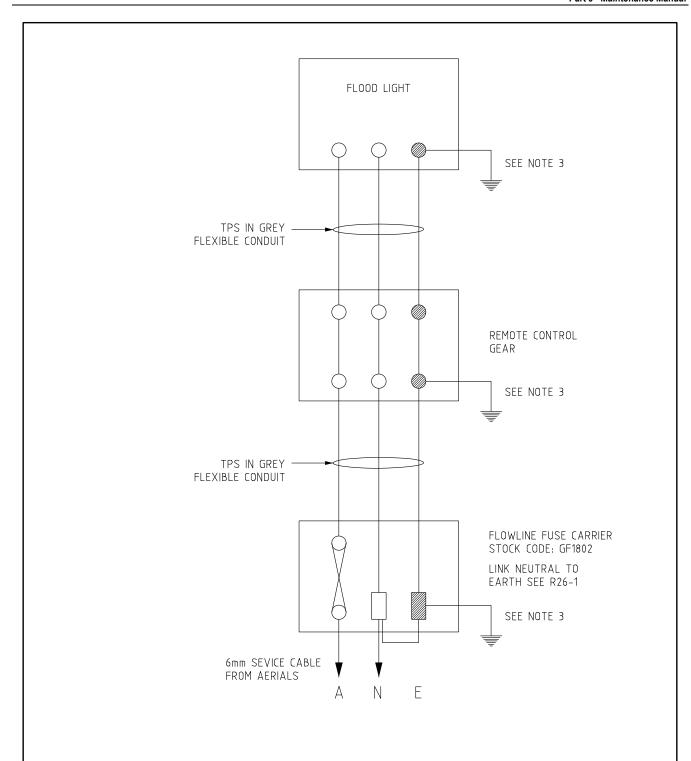
- NOTES:
  1. ALL STEEL COLUMN INSTALLATIONS MUST BE DOUBLE INSULATED (CLASS 2).
  2. ALL EXPOSED TPS NEEDS TO BE INSTALLED IN GREY FLEXIBLE CONDUIT AND MOUNTED TO COLUMN WITH GALVANISED SELF TAPPING DRILL SCREWS AND SADDLES.
- 3. EARTH TERMINALS ARE A TERMINATION POINT FOR EARTH CABLES ONLY AND **MUST NOT** BE BONDED TO THE STEEL WORK AT ANY POINT.

						STRUCTURE	DISTRIBUTION CONSTRN.	-== westernpower
						STRUCTURE	STANDARD	-=== westernhower
						TITLE	DRAWN: JRR DATE: 0	9-02-2017 DRG. NO.
							DRAWN: JRK DATE: 0	9-02-2017 DKG. NO.
						STEEL COLUMN - DOUBLE INSULATED	ORIGINATED JC SCALE	MM11-S16
						(CLASS 2)	CHECKED: REE	14114111-210
Α	08.03.17	ORIGINAL ISSUE	JC	REE	GS	1 (CLASS 2)	APPROVED:	REV SHT
REV	DATE	DESCRIPTION	ORGO	. снко	APRO		GRANT S	STALY   A



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 CONSTR	NSD	westernower	
						STRUCTURE	STANDARD		-== westernpower	
						TITLE	DRAWN: JRR DATE	09-02-2017	DPG NO	
						LICOD OD CONCDETE DOLE			Ditta: No	
						WOOD OR CONCRETE POLE	ORIGINATED JC SCAL	NTS	MM11_ \$17	
						DOUBLE INSULATED - (CLASS 2)	CHECKED: REE		1,11,111-211	
Α	08.03.17	ORIGINAL ISSUE	JC	REE	GS	1 DOODLE INSULATED - (CLASS Z)	APPROVED:		REV SHT	
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO	ī.	GRANI	STACY	A	

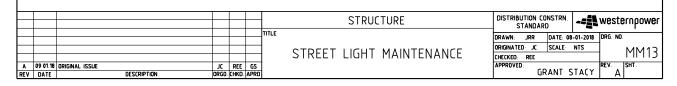


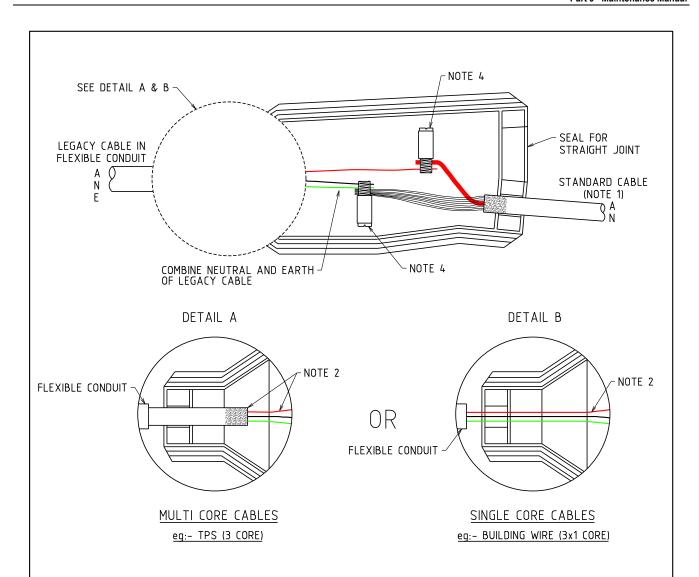
### NOTES:

- 1. CLASS 1 BONDED TO METAL BODY OF FIXTURE. CLASS 2 MUST NOT BE BONDED.
- 2. 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 CONSTR	westernpower
				$\vdash$		TITLE		STAIRBARD	
						1	LICOR OR CONCRETE DOLE		09-02-2017 DRG. NO.
						1	WOOD OR CONCRETE POLE	ORIGINATED JC SCALI	MM11_S18
							SINGLE INSULATED - (CLASS 1)	CHECKED: REE	111111 310
		ORIGINAL ISSUE	JC	REE			SINGLE INSOLATED - (CLASS I)	APPROVED:	CTACY REV. A SHT.
REV	DATE	DESCRIPTION	ORGO	CHKD	APRO	1		UKANI	STACY   A

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





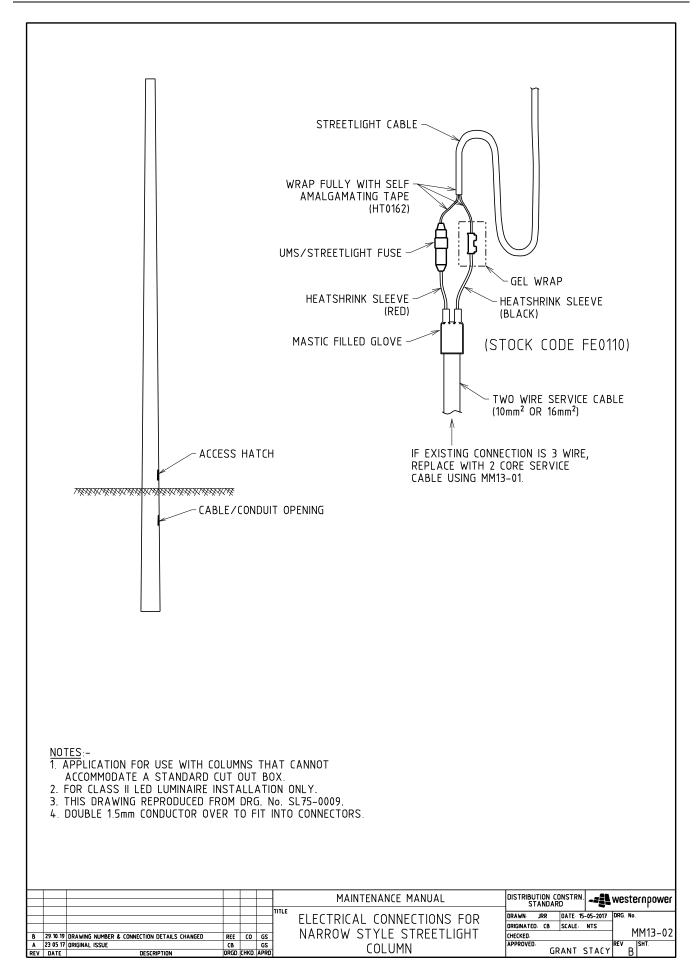
LEGACY	CABLE	STANDARD CABLE					
CABLE TYPE	CABLE RANGE	STANDARD CABLE					
2 CORE	2.5 - 16mm²	16mm <sup>2</sup> 1 CORE HELICAL SCREEN					
3 CORE	2.5 - 16mm²	16mm <sup>2</sup> 1 CORE HELICAL SCREEN					
2x1 CORE	2.5 - 16mm²	16mm <sup>2</sup> 1 CORE HELICAL SCREEN					
3x1 CORE	2.5 - 16mm²	16mm <sup>2</sup> 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.

						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
							DRAWN: JRR DATE: 12- ORIGINATED CO SCALE	-10-2018 DRG. No. MM13-01
		DRIGINAL ISSUE	CO	NMc	FK		CHECKED: REE APPROVED: FARHAN	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO		FARHAN	KHAN   A

STOCK CODE: FJ0241



# 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 'Á'

STREETLIGHT COLUMN BASE PLATE SEE DETAIL 'A'

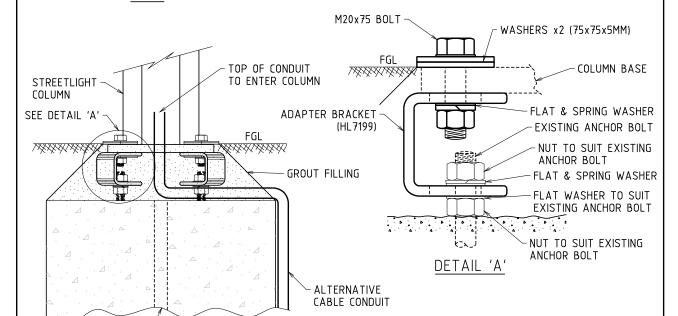
EXISTING CONCRETE

**FOUNDATION** 

PLAN

ADAPTER BRACKET

(HL 7199)



STREET LIGHT COLUMN AND OUTREACH WITH BASE-PLATE - STOCK CODES (MADE TO ORDER)

**ELEVATION** 

EXISTING CABLE -

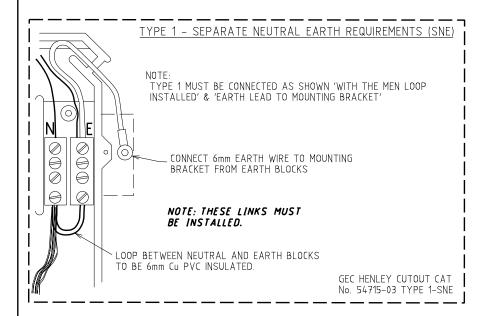
CONDUIT

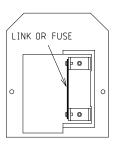
NOTES:-1. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.

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

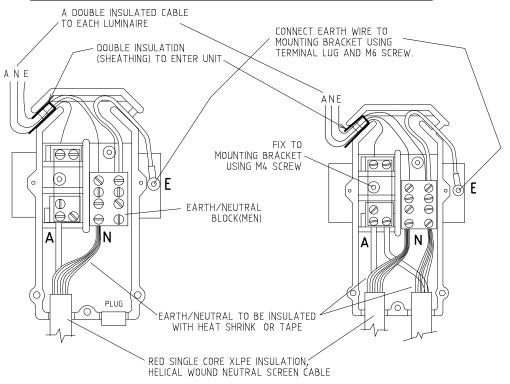
						STRUCTURE	DISTRIBUTION CONSTRN. STANDARD	-== westernpower
$\vdash$						TITLE	DRAWN: JRR DATE: 2	2-05-2020 DRG. No.
						LEGACY STREETLIGHT COLUMN	ORIGINATED SA SCALE	NTS MM13_03
						WITH CONCRETE FOUNDATION	CHECKED CO	-ט כוווון
A	26 11.20	ORIGINAL ISSUE	SA	CO	GS	WITH CONCILL FOUNDATION	APPROVED	REV SHT
REV	DATE	DESCRIPTION	ORGO.	CHKD.	APRO		GRANT	STACY   A

# FOR SINGLE INSULATED CLASS 1 EQUIPMENT ONLY





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



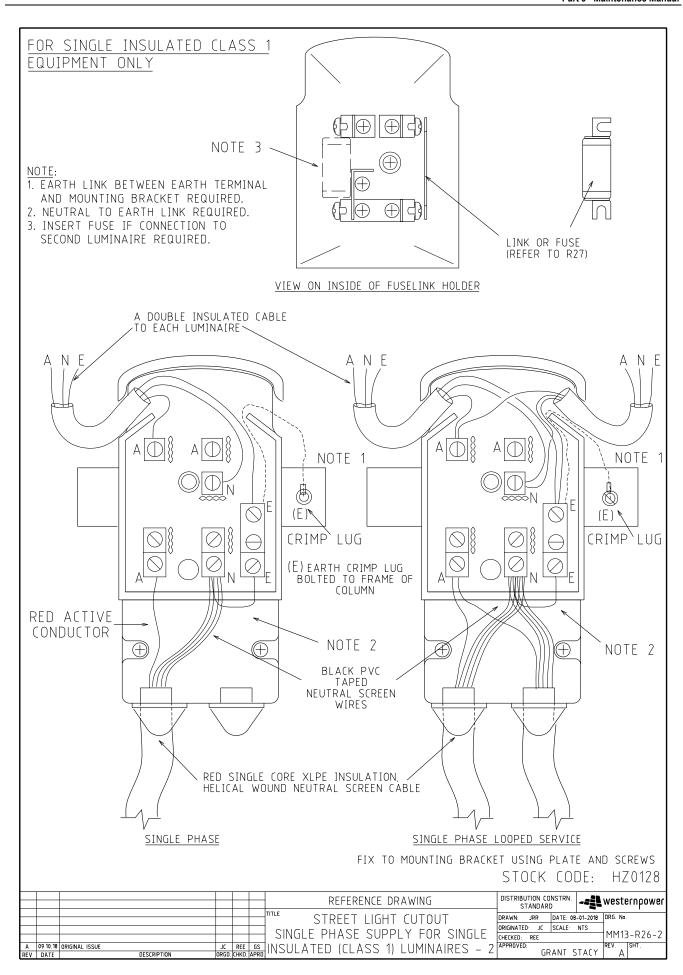
SINGLE SERVICE SUPPLY

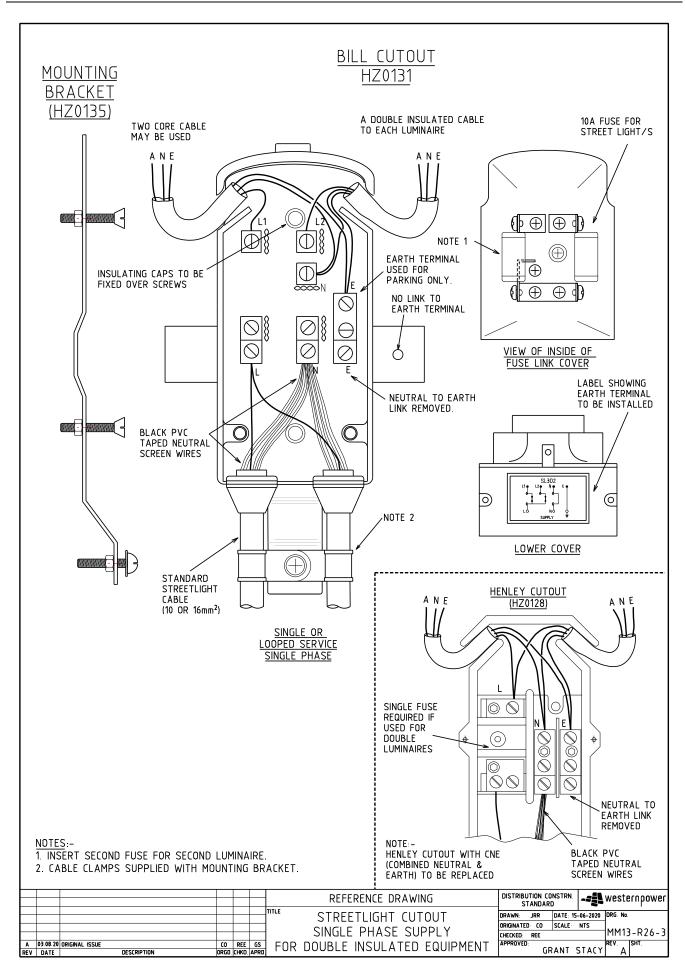
LOOPED SERVICE SUPPLY

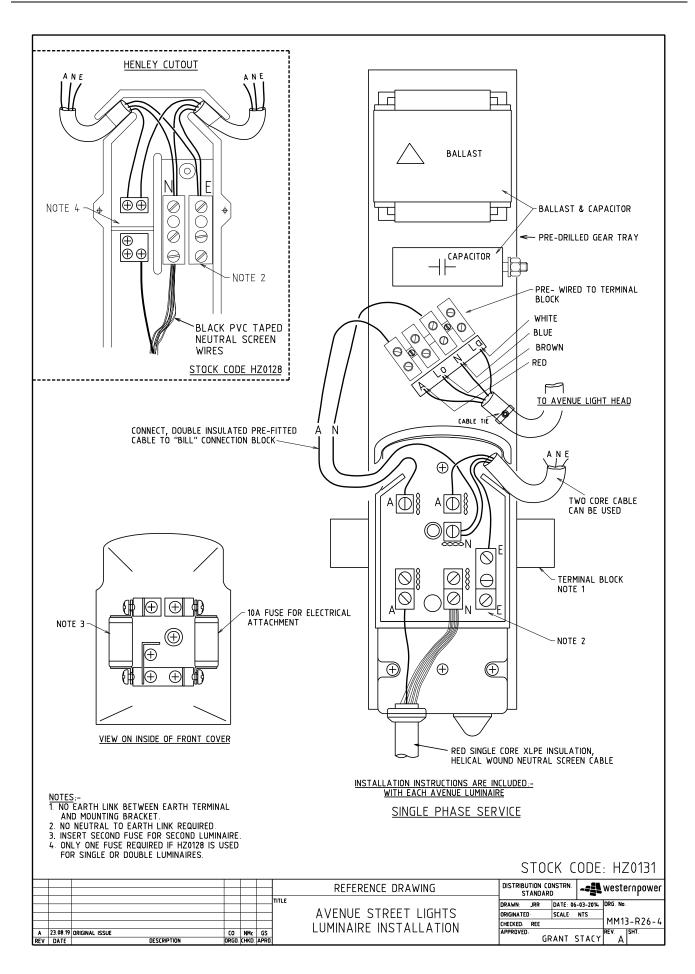
# <u>SUPERSEDED TYPE 2 UNIT USE TYPE 1 - SNE ABOVE OR</u> <u>SEE R26/2 FOR REPLACEMENT</u>

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

						REFERENCE DRAWING	DISTRIBUTION CO	NSTRN.	-= <u>{</u> }	westernpower
						STREET LIGHT CUTOUT	DRAWN: JRR	DATE: 08	-01-2018	DRG. No.
						I CINICI E DUACE CHIDDI V END CINICI E		SCALE:	NTS	  MM13-R26-1
						1	CHECKED: REE			
		ORIGINAL ISSUE		REE			APPROVED:	ANT S	TACV	REV. SHT.
RFV	DATE	DESCRIPTION	ORGO.	ichkd.	IAPRO	1 1130E/(120 (CE/135 1) E01 1111/11/11/125	l ur	C INIA	IALI	I AI

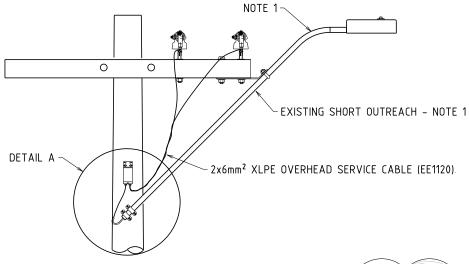


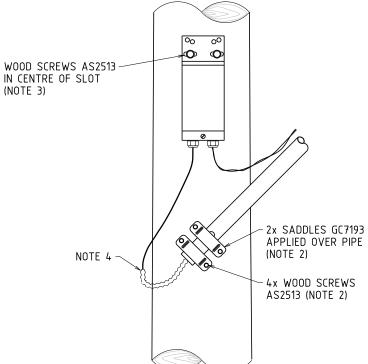




### PURPOSE:-

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

						STRUCTURE	DISTRIBUTION CONSTRN	<b>-≥</b> westernpower	
						STRUCTURE	STANDARD	~==== wezreriihowei	
			1			TITLE LEGACY MUNICIPED DOAD CHOPT		<del></del>	
						"" LEGACY MINOR ROAD - SHORT	DRAWN: JRR DATE: 14	-08-2019 DRG No.	
			_				ORIGINATED CO SCALE	NTS	
-						STREETLIGHT BRACKET ON WOOD	CHECKED NMc	MM13-S02-1	
_			_	_	_				
A	03.09.1	9 ORIGINAL ISSUE	CO	NMc	GS		APPROVED:	REV SHT	
RE	/. DATE	DESCRIPTION	ORGD.	CHKD	APRD	I OLL AND CHOSSANII WITH NEW LLD	GRANT S	STACY   A	