

# **OVERHEAD CONSTRUCTION MANUAL**

## **Section 6 – Non Standard Construction**

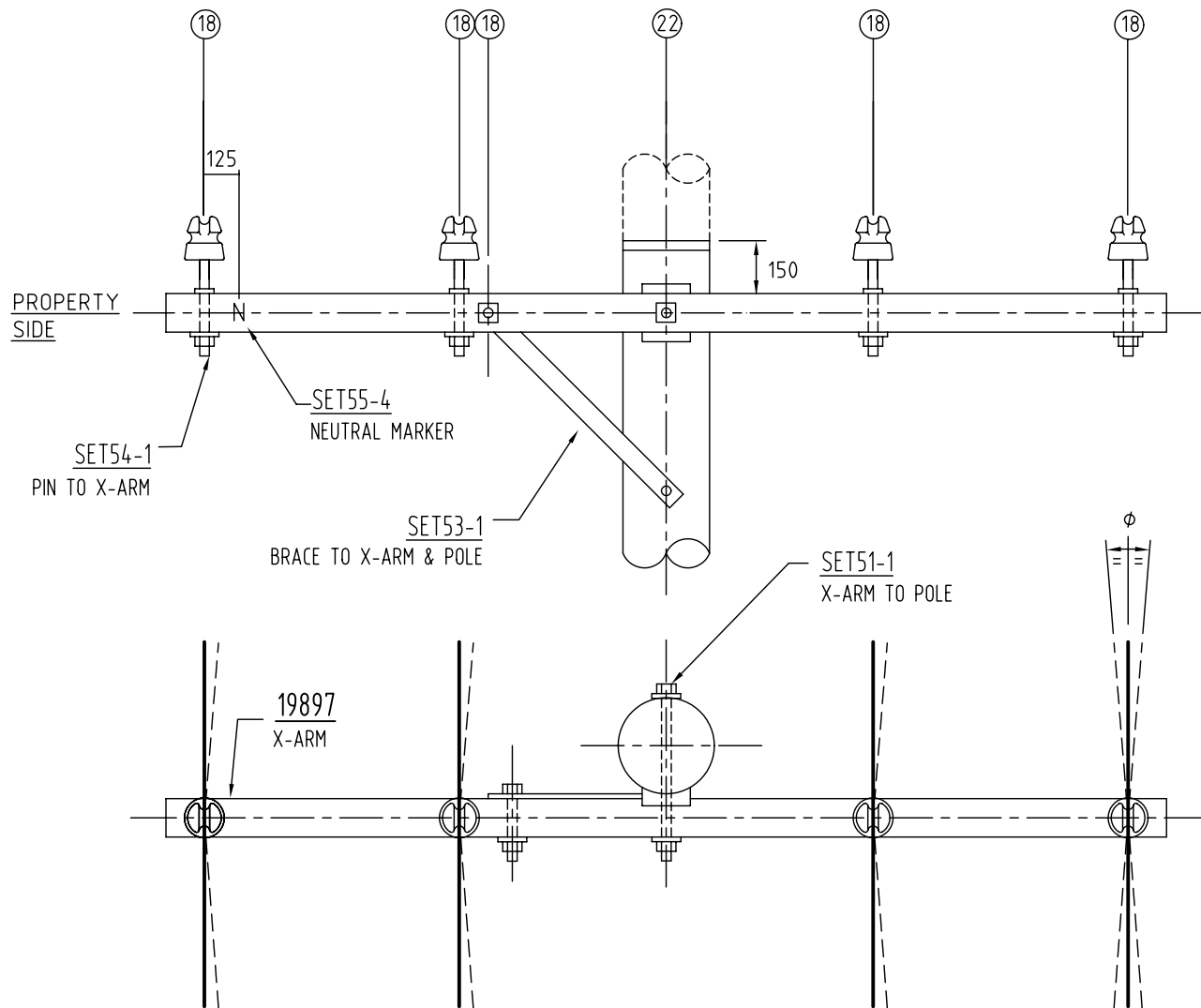
Approved by: C Noel

CU		DESCRIPTION		PAGE	DWG.No.	CU	DESCRIPTION		PAGE	DWG.No.		
		<u>LV CONSTRUCTIONS</u>						<u>33kV CONSTRUCTIONS</u>				
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11LT 11LT2 11LS 11LS2	11kV Lightweight Termination Constn. 6kN MWT		6-11	4920-A4-11		33/11kV H Frame Shackle Double Pole, Timber Poles, Steel Crossarm		6-71	4920-A4-71			
	11kV Lightweight Termination Constn. 12kN MWT		6-12	4920-A4-12		33/11kV H Frame Shackle Double Pole, Timber Poles, Steel Crossarm		6-72	4920-A4-72			
	11kV Lightweight Shackle Constn. 6kN MWT		6-13	4920-A4-13		33/11kV H Frame Suspension Double Pole, Timber Poles, Steel Crossarm		6-75	4920-A4-75			
	11kV Lightweight Shackle Constn. 12kN MWT		6-14	4920-A4-14		33/11kV H Frame Suspension Double Pole, Timber Poles, Steel Crossarm		6-76	4920-A4-76			
11TM 11SM 11DCI 11DCS7 11DCS9	11kV Termination Metropolitan Construction		6-21	4920-A4-21								
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	11kV Double Circuit Shackle Construction (71°-90°)		6-25	4920-A4-25								
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						OVERHEAD CONSTRUCTION MANUAL		APP'D	P.RAINBIRD	TECH STDS		AUTOCAD
						NON STANDARD CONSTRUCTION		DATE	31/5/96	4920-A4		K
						INDEX		REC'D		SECT	PAGE	
								CKD	G.DOWLING	6	i	
								DWN	M.WELSH	SHEET 1 OF 1		
								FILE:				

## CU LIST -

LVPM

SET51-1	1
SET53-1	1
SET54-1	4
SET55-1	1
19897 (X-ARM)	1



A	ORIGINAL ISSUE	
D	DATE	2-5-07
	APPD K.NUTTALL	
CKD	J.TUNNEY	
DRN	G.JAYAWERA	
NEW TEMPLATE		
Composite xarm used		



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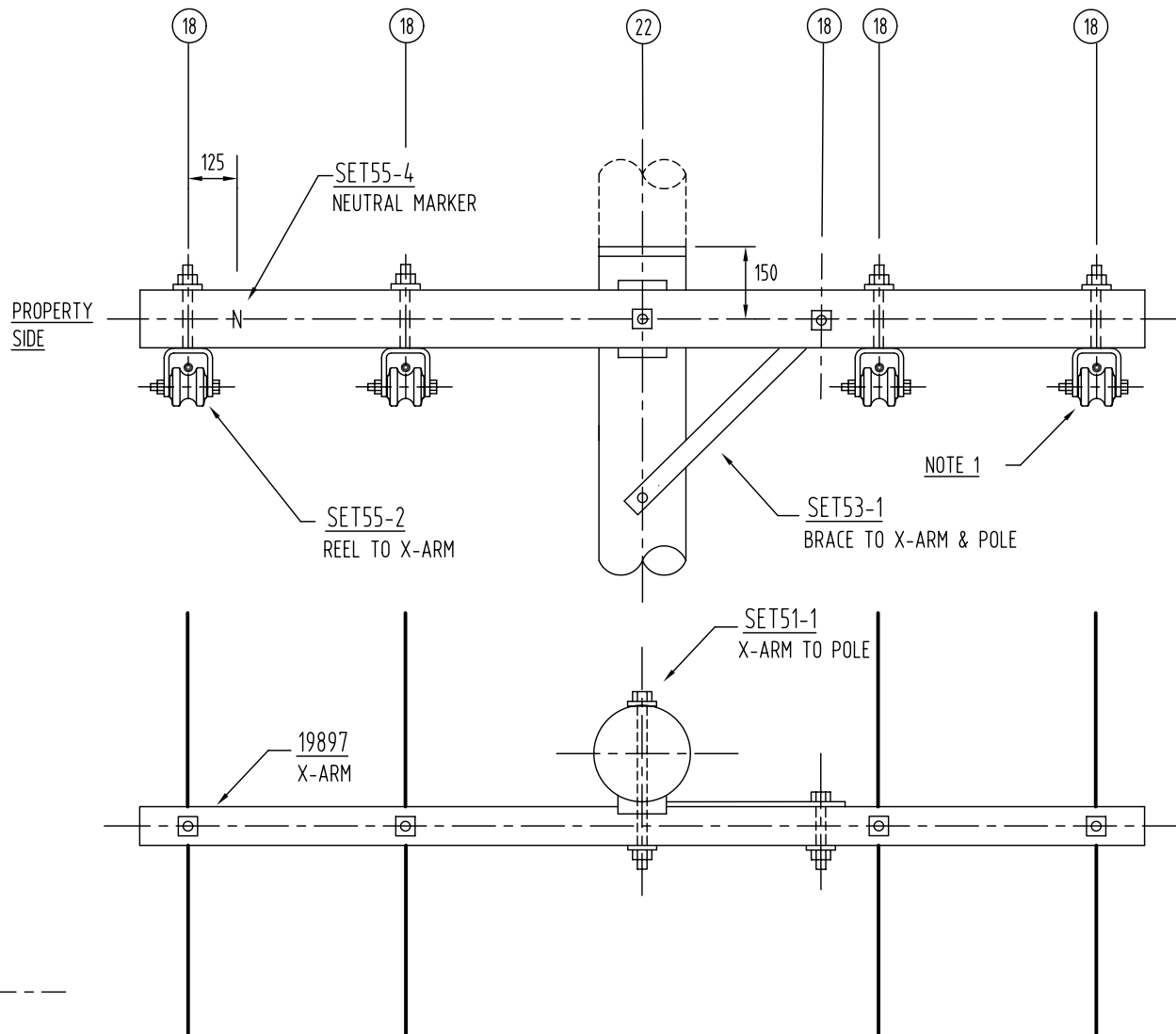
OVERHEAD CONSTRUCTION MANUAL  
NON STANDARD CONSTRUCTION  
LVPM  
LV PIN METROPOLITAN CONSTRUCTION  
(WOOD POLE)

APP'D	K.BALL	TECH STDS		AUTOCAD
DATE	02-12-92	4920-A4 D		
REC'D		SECT	PAGE	
CKD		6	1	
DWN	M.WELSH	SHEET 1 OF 1		
		FILE:		

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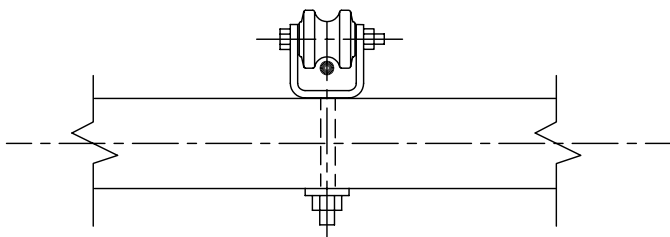
LVUM

SET51-1	1
SET53-1	1
SET55-2	4
SET55-4	1
19897 (X-ARM)	1



## NOTE :

1. ALTERNATIVE METHOD OF INSULATOR ATTACHMENT.



ORIGINAL ISSUE	DATE	2-5-07	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	NEW TEMPLATE	COMPOSITE XARM USED
B	C									



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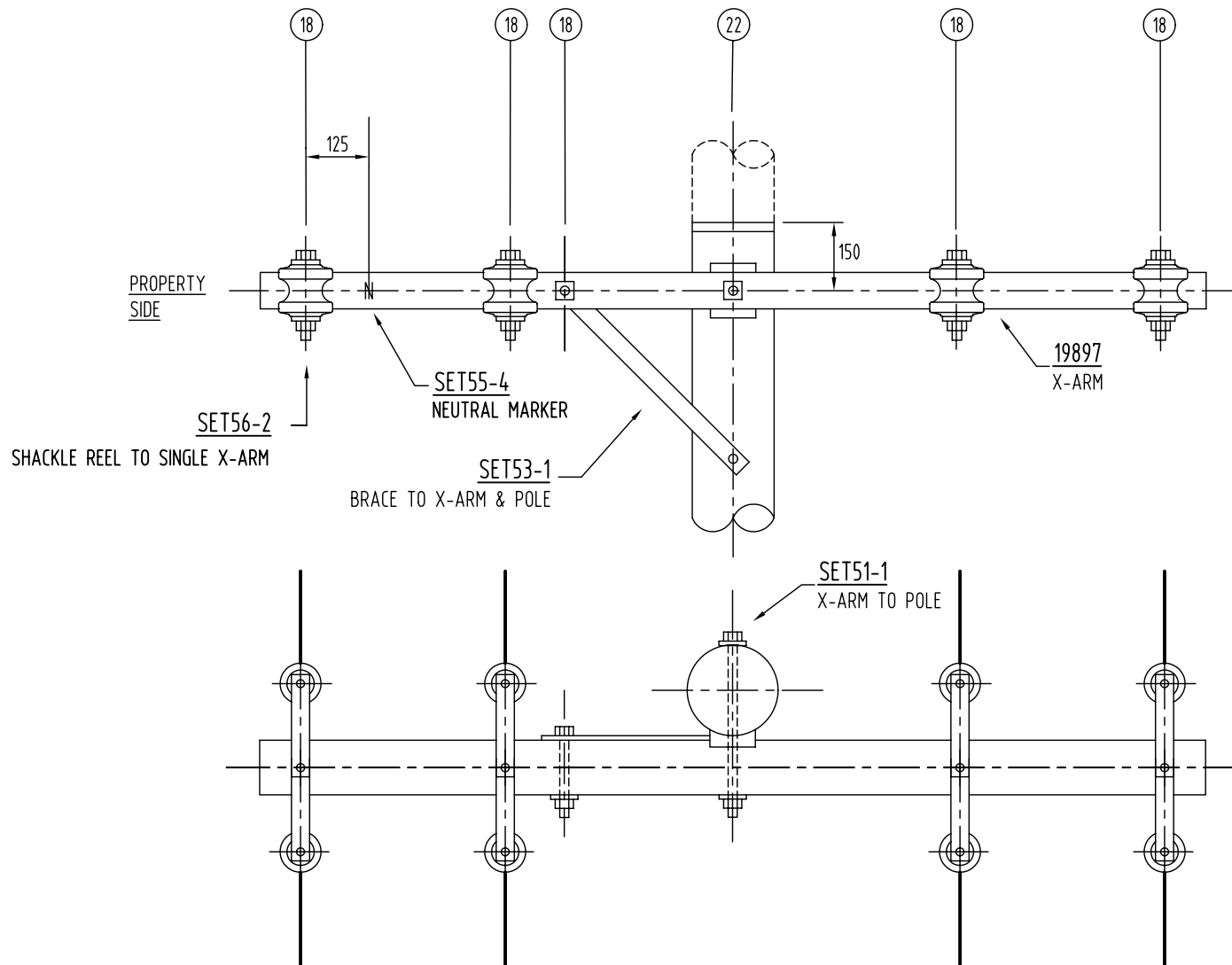
OVERHEAD CONSTRUCTION MANUAL  
NON STANDARD CONSTRUCTION  
LVUM  
LV UPLIFT METROPOLITAN CONSTRUCTION (WOOD POLE)

APP'D	C.WILIAMSON	TECH STDS	AUTOCAD
DATE	18-09-89	4920-A4	C
REC'D		SECT	PAGE
CKD		6	2
DWN	B.G.Y	SHEET	1 OF 1
		FILE:	

## CU LIST -

LVSM

SET51-1	1
SET53-1	1
SET56-2	4
SET55-4	1
19897 (X-ARM)	1



ORIGINAL ISSUE	DATE	2-5-07	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	NEW TEMPLATE	COMPOSITE X-ARM USED
B	C									



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## LVSM

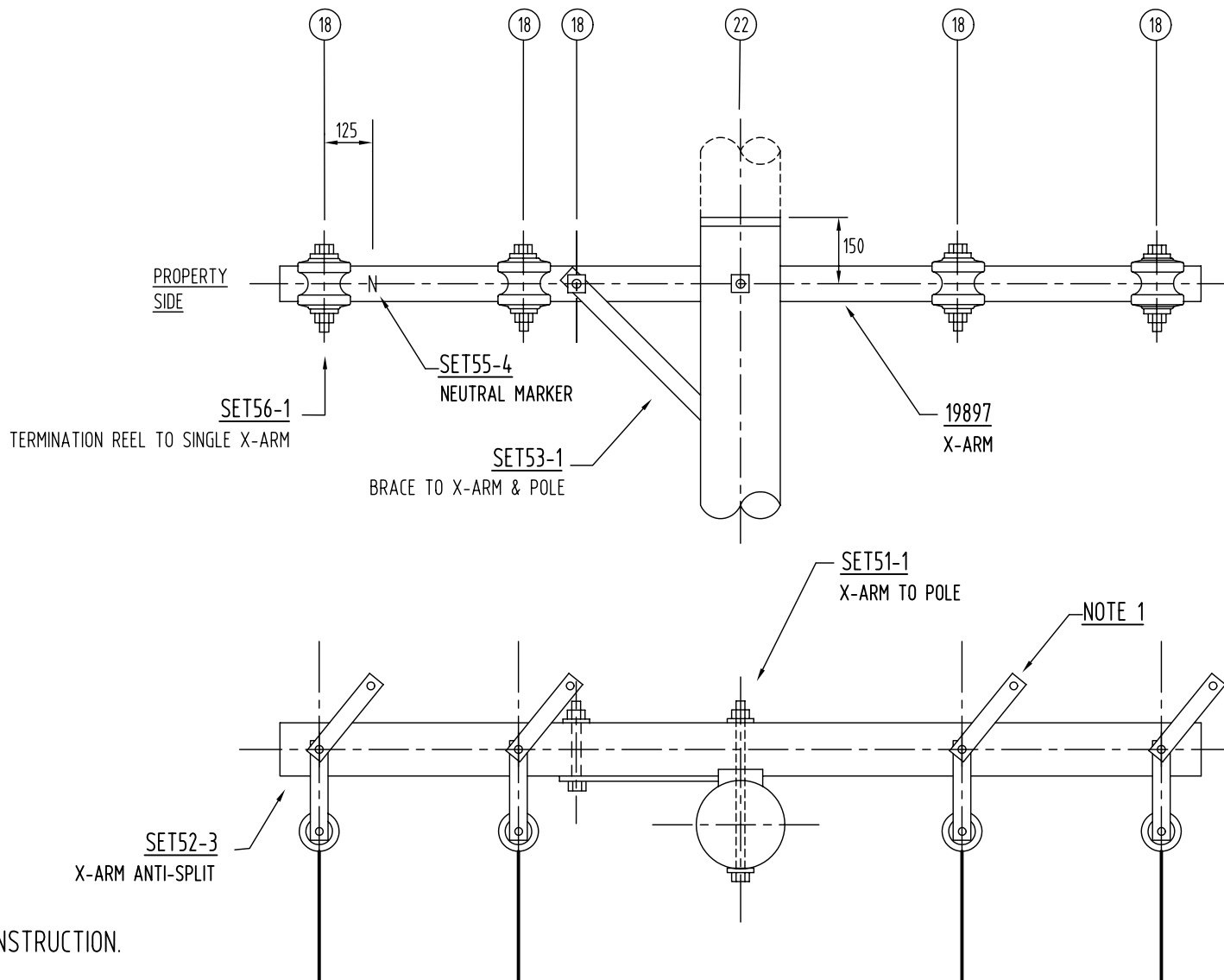
LV SHACKLE METROPOLITAN CONSTRUCTION (WOOD POLE)

APP'D	C.WILLIAMSON	TECH STDS	AUTOCAD
DATE	18-09-89	4920-A4	C
REC'D		SECT	PAGE
CKD		6	3
DWN	B.G.Y	SHEET	1 OF 1
		FILE:	

## CU LIST -

LVTM

SET51-1	1
SET53-1	1
SET56-1	4
SET52-3	2
SET55-4	1
19897 (X-ARM)	1



## NOTE

1. FOR FUTURE SHACKLE CONSTRUCTION.

ORIGINAL ISSUE	DATE	APPD	CKD	DRN	NEW TEMPLATE	COMPOSITE X-ARM USED
B	C	K.NUTTALL	J.TUNNEY	G.JAYAWERA		
	2-5-07					



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OVERHEAD CONSTRUCTION MANUAL

NON STANDARD CONSTRUCTION

LVTM

LV TERMINATION METROPOLITAN CONSTRUCTION (WOOD POLE)

APP'D	C.WILIAMSON	TECH STDS	AUTOCAD
DATE	18-09-89	4920-A4	C
REC'D		SECT	PAGE
CKD		6	4
DWN	B.G.Y	SHEET	1 OF 1
		FILE:	

## CU LIST -

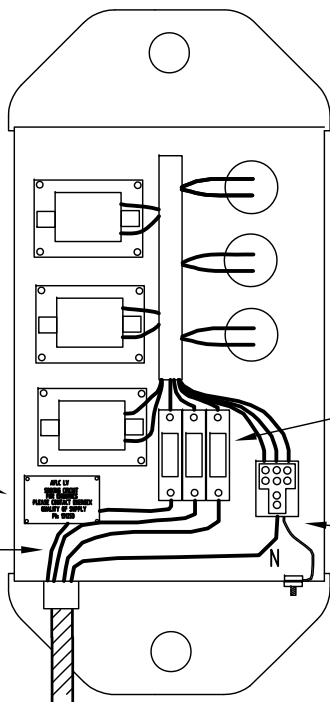
AFLCOW

SET2-4	1
00684	2
22110	6
16023	3
04929	10
19766	1
23700	1
23701	1

## AFLC FILTER DETAIL

23701  
AFLC FILTER LABEL  
ZIP TIE TO SECURE

6mm XLPE 4C

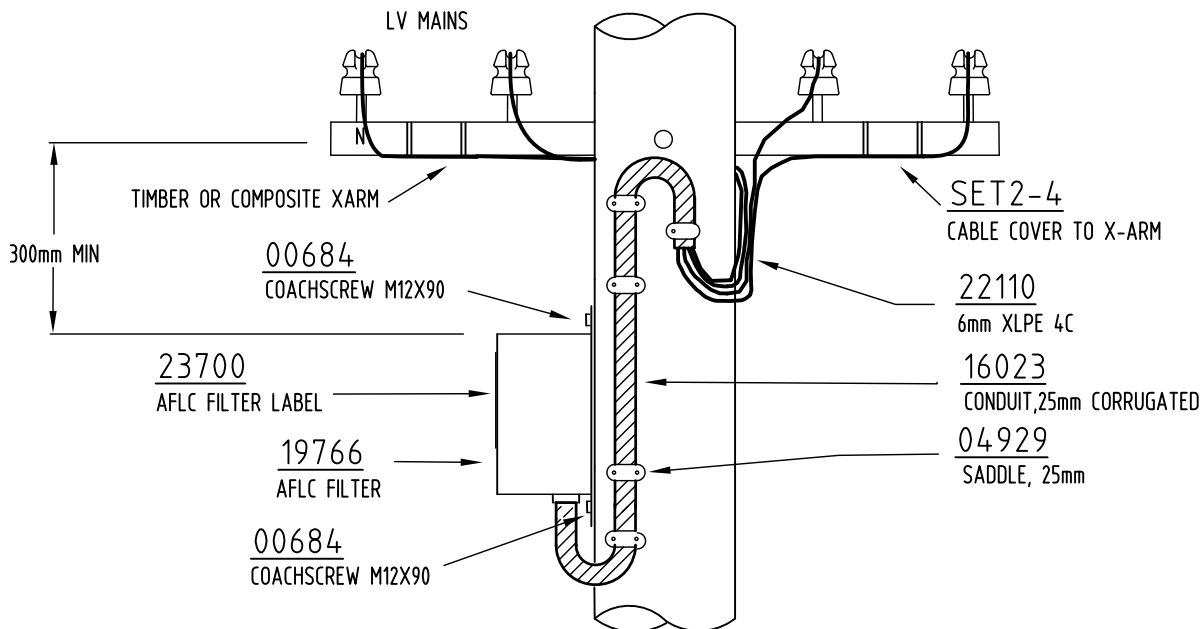


10 AMP FUSES SUPPLIED WITH FILTER

## NOTE

1. REMOVE CONNECTION BETWEEN NEUTRAL LINK AND EARTH STUD ON BOX
2. CONNECT NEUTRAL TO BOTTOM TERMINAL OF NEUTRAL LINK

## AFLCOW



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## AFLCOW

AFLC FILTER OVERHEAD  
(WOOD POLE)

APP'D A.SMITH DE PEREZ

DATE 28-11-2013

REC'D

CKD P. RELF

DWN P. JUDGE

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

6 5

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE

A

## CU LIST -

11LT  
11LT/N  
11LT/F  
11LT/S

SET157-1	1	1	1	1
SET156-1	2	2	2	2
SET152-11	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-5				3

21238 (XARM)	1	1	1	1
--------------	---	---	---	---

SET156-1  
11/33kV TERMINATION

21238  
6kN X-ARM

SET161-2

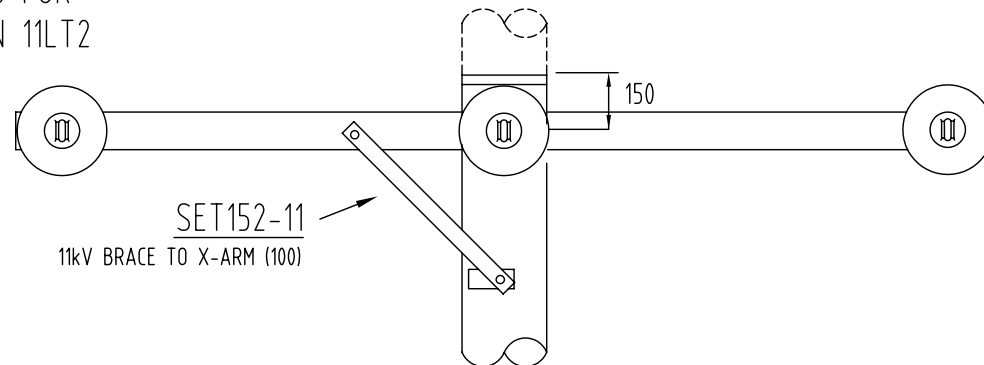
OR  
SET161-4

OR  
SET161-5

INSULATOR TYPES

SET157-1  
11/33kV TERMINATION TO POLE

'X' MARKS ON TOP OF X-ARM  
INDICATE BOLT HOLES FOR  
REINFORCING USED ON 11LT2



## LAYOUT GUIDE: 11LT

	AAC												ACSR			COPPER																
TABLE	880 & 660				440				220				110				110			880&660		440			220			110				
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75+7/1.60 CHERRY	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	
Max Span/ Max Angle	60/60°				100/60°				100/ 50°	140/36° 100/43°				140/21° 100/30°		200/25°		-		200/24°		-	60/60°		100/ 60°	100/ 52°	120/ 60°	140/ 44°	-	200/ 53°	200/ 30°	-

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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 11LT

11kV LIGHTWEIGHT TERMINATION CONSTRUCTION  
6kN MWT (WOOD POLE)

APP'D Roy English

DATE 4-9-2008

REC'D J. Tunney

CKD J. Tunney

DWN J. Tunney

TECH STDS AUTOCAD

4920-A4 A

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SHEET 1 OF 1

FILE:



## CU LIST -

11LT2

11LT2/N

11LT2/F

11LT2/S

SET157-1	1	1	1	1
SET156-1	2	2	2	2
SET152-11	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-5				3
21238 (XARM)	1	1	1	1
19837	1	1	1	1

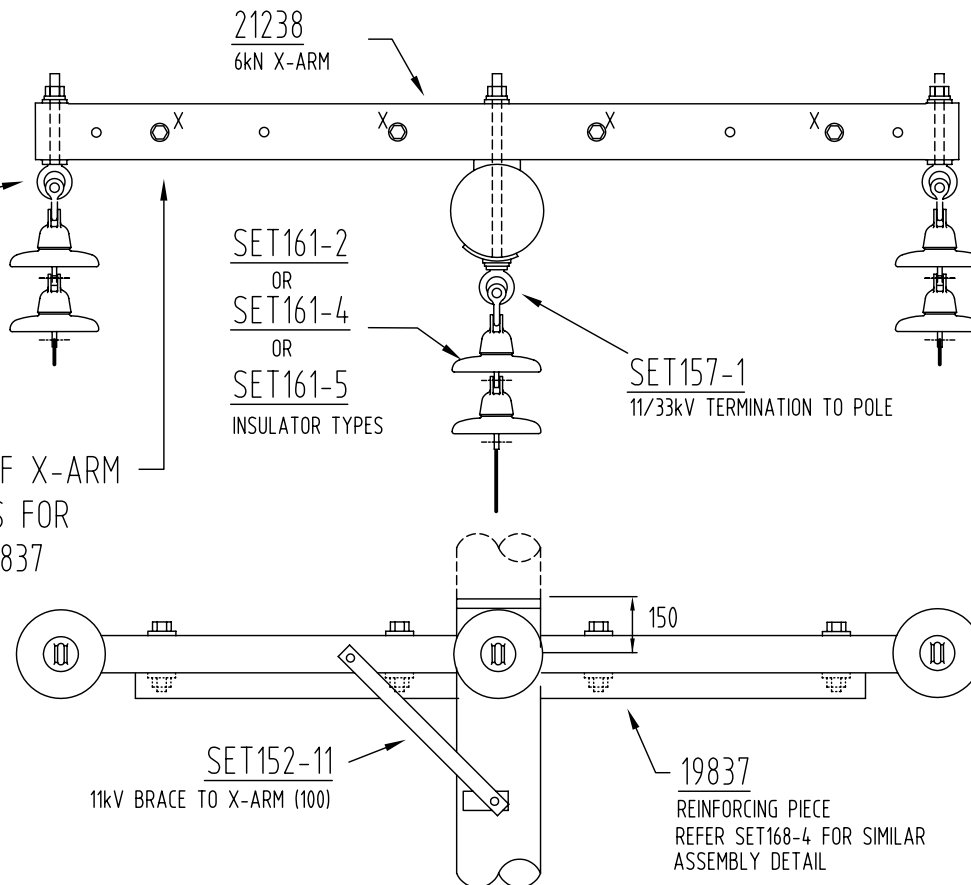
'X' MARKS ON TOP OF X-ARM  
INDICATE BOLT HOLES FOR  
REINFORCING PIECE 19837

## NOTE:

WHEN FITTING IN AIR TO EXISTING POLE  
FIT X-ARM FIRST, THEN FIT REINFORCING PIECE

## LAYOUT GUIDE: 11LT2

	AAC								ACSR							COPPER							
TABLE	220				110				110			65				42	220			110			
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75*7/1.60 CHERRY	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75*7/1.60 CHERRY	3/4/2.50 RAISIN	7/.080 7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	
Max Span/ Max Angle							200/ 16°	200/ 9°			200/ 16°	240/ 25°	240/ 15°	240/ 9°	310/ 13°							200/ 20°	200/ 10°



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 11LT2

11kV LIGHTWEIGHT TERMINATION CONSTRUCTION  
REINFORCED TO 12kN MWT (WOOD POLE)

APP'D Roy English

DATE 4-9-2008

REC'D J. Tunney

CKD J. Tunney

DWN J. Tunney

## TECH STDS

AUTOCAD

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## CU LIST -

11LS  
11LS/N  
11LS/F  
11LS/S

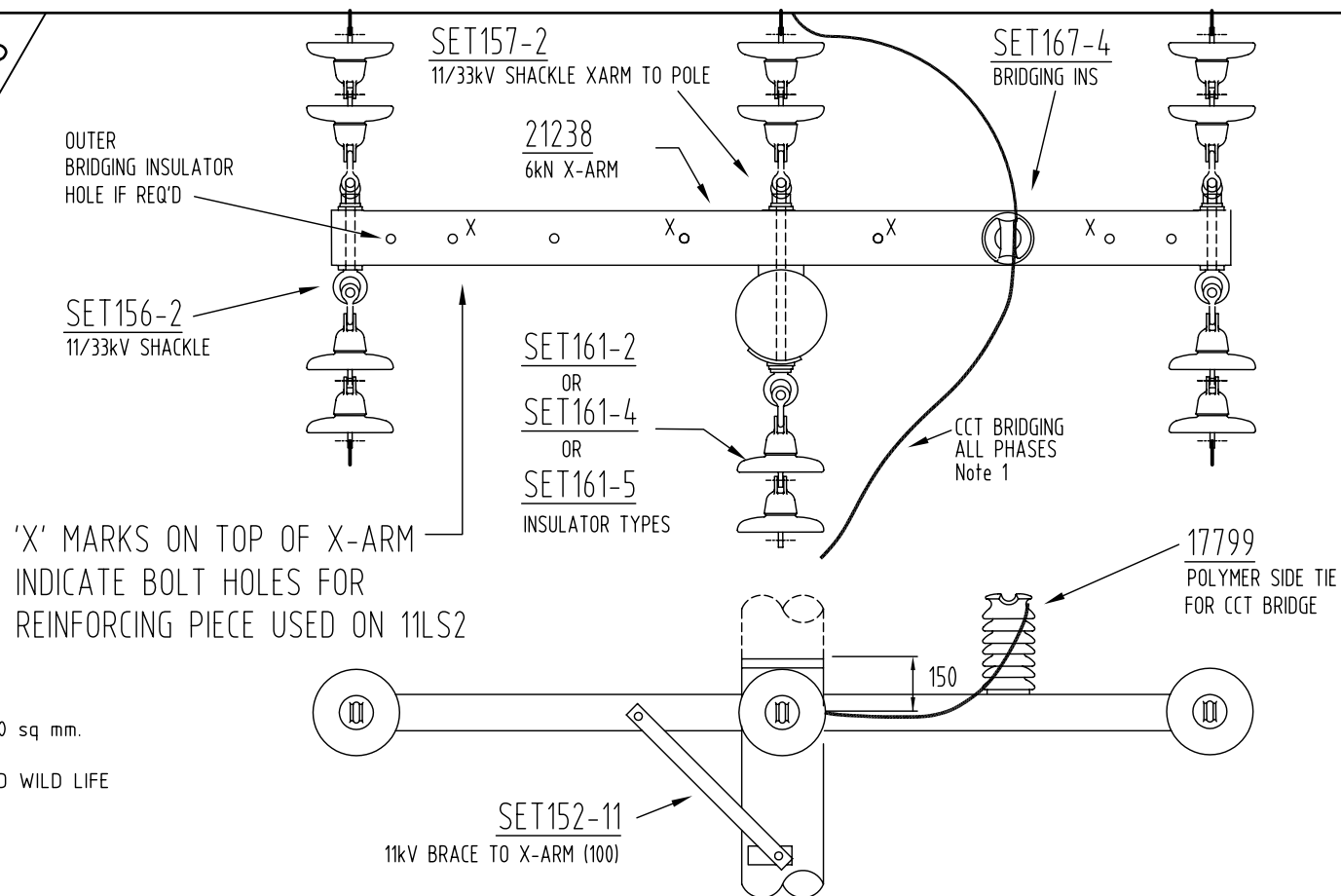
SET157-2	1	1	1	1
SET156-2	2	2	2	2
SET152-11	1	1	1	1
SET167-4	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-5				3

21238 (XARM)	1	1	1	1
17799 (TIE)	1	1	1	1
20279 (CCT)	6	6	6	6

## NOTES:

- 1 CCT BRIDGING IS SUITABLE FOR MAINS UP TO 120 sq mm.  
EQUIVALENT TO MOON & CHERRY.  
WHERE LARGER BRIDGING CONDUCTOR IS REQUIRED WILD LIFE  
PROOFING MEASURES MUST BE UNDERTAKEN.

## LAYOUT GUIDE: 11LS



	AAC												ACSR			COPPER																				
TABLE	880 & 660				440				220				110				110			880&660			440			220			110							
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75+7/1.60 CHERRY	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101					
	Max Span/ Max Angle	60/60°				100/60°				100/ 50°	140/36° 100/43°				140/21° 100/30°				200/25°		-		200/24°		-		60/60°		100/ 60°		100/ 52°	120/ 60°	140/ 44°	-	200/ 53°	200/ 30°

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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 11LS

11kV LIGHTWEIGHT SHACKLE CONSTRUCTION  
6kN MWT (WOOD POLE)

APP'D Roy English

DATE 4-9-2008

REC'D J. Tunney

CKD J. Tunney

DWN J. Tunney

TECH STDS

AUTOCAD

4920-A4 A

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SHEET 1 OF 1

FILE:

## CU LIST -

11LS2

11LS2/N

11LS2/F

11LS2/S

SET157-2	1	1	1	1
SET156-2	2	2	2	2
SET152-11	1	1	1	1
SET167-4	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-5				3

21238 (XARM)	1	1	1	1
19837	1	1	1	1
17799 (TIE)	1	1	1	1
20279 (CCT)	6	6	6	6

OUTER  
BRIDGING INSULATOR  
HOLE IF REQ'DSET156-2  
11/33kV SHACKLE'X' MARKS ON TOP OF X-ARM  
INDICATE BOLT HOLES FOR  
REINFORCING PIECE 19837SET157-2  
11/33kV SHACKLE XARM TO POLE21238  
6kN X-ARM

SET161-2

OR  
SET161-4OR  
SET161-5

INSULATOR TYPES

SET167-4  
BRIDGING INSCCT BRIDGING  
ALL PHASES  
Note 117799  
POLYMER SIDE TIE  
FOR CCT BRIDGESET152-11  
11kV BRACE TO X-ARM (100)19837  
REINFORCING PIECE  
REFER SET168-4 FOR SIMILAR  
ASSEMBLY DETAIL

## NOTES:

- 1 CCT BRIDGING IS SUITABLE FOR MAINS UP TO 120 sq mm. EQUIVALENT TO MOON & CHERRY. WHERE LARGER BRIDGING CONDUCTOR IS REQUIRED WILD LIFE PROOFING MEASURES MUST BE UNDERTAKEN.
- 2 WHEN FITTING IN AIR TO EXISTING POLE FIT X-ARM FIRST, THEN FIT REINFORCING PIECE

## LAYOUT GUIDE: 11LS2

	AAC								ACSR						COPPER								
TABLE	220				110				110			65			42	220			110				
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75*7/160 CHERRY	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75*7/160 CHERRY	3/4/2.50 RAISIN	7/7.080 7/7.104	19/7.083	19/7.101	7/7.080	7/7.104	19/7.083	19/7.101	
Max Span/ Max Angle							200/ 16°	200/ 9°	200/24°		200/ 16°				240/ 9°	310/ 13°						200/ 20°	200/ 10°

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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 11LS2

11kV LIGHTWEIGHT SHACKLE CONSTRUCTION  
REINFORCED TO 12kN MWT (WOOD POLE)

APP'D Roy English

DATE 4-9-2008

REC'D J. Tunney

CKD J. Tunney

DWN J. Tunney

TECH STDS

AUTOCAD

4920-A4 A

SECT

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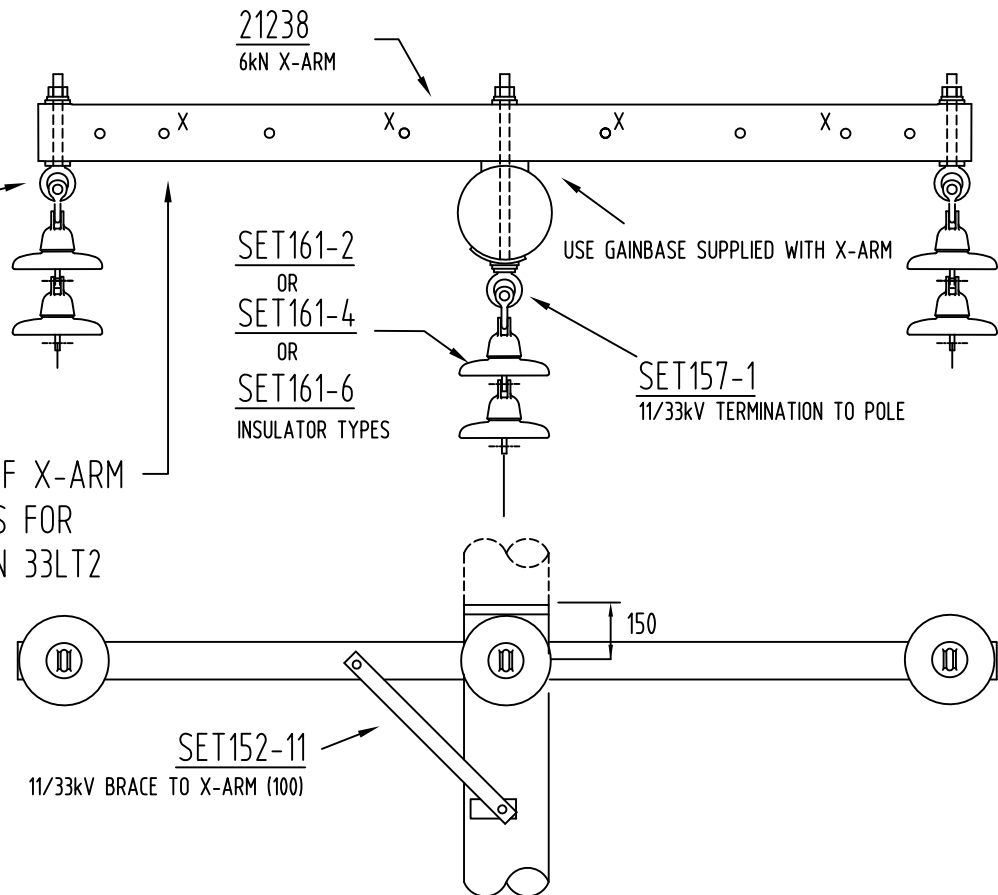
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## CU LIST -

33LT  
33LT/N  
33LT/F  
33LT/S


SET157-1	1	1	1	1
SET156-1	2	2	2	2
SET152-11	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-6				3
21238 (XARM)	1	1	1	1

'X' MARKS ON TOP OF X-ARM  
INDICATE BOLT HOLES FOR  
REINFORCING USED ON 33LT2



## LAYOUT GUIDE: 33LT

	AAC												ACSR			COPPER																	
TABLE	880 & 660				440				220				110				110			880&660		440			220			110					
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75+7/1.60 CHERRY	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101		
Max Span/ Max Angle	60/60°				100/60°				100/ 50°	140/36° 100/43°				140/21° 100/30°		200/25°		-		200/24°		-	60/60°		100/ 60°	100/ 52°	120/ 60°	140/ 44°	-	200/ 53°	200/ 30°	-	

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			NON STANDARD CONSTRUCTION														DATE	19-03-2012	4920-A4		A	
			33LT														REC'D	J. Tunney	SECT		PAGE	
			33kV LIGHTWEIGHT TERMINATION CONSTRUCTION														CKD	J. Tunney	6		15	
			6kN MWT (WOOD POLE)														DWN	J. Chung	SHEET 1 OF 1		FILE:	

## CU LIST -

33LT2  
33LT2/N  
33LT2/F  
33LT2/S

SET157-1	1	1	1	1
SET156-1	2	2	2	2
SET152-11	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-6				3
21238 (XARM)	1	1	1	1
19837	1	1	1	1

'X' MARKS ON TOP OF X-ARM  
INDICATE BOLT HOLES FOR  
REINFORCING PIECE 19837

SET156-1  
11/33kV TERMINATION

21238  
6kN X-ARM

SET161-2  
OR  
SET161-4  
OR  
SET161-6  
INSULATOR TYPES

USE GAINBASE SUPPLIED WITH X-ARM

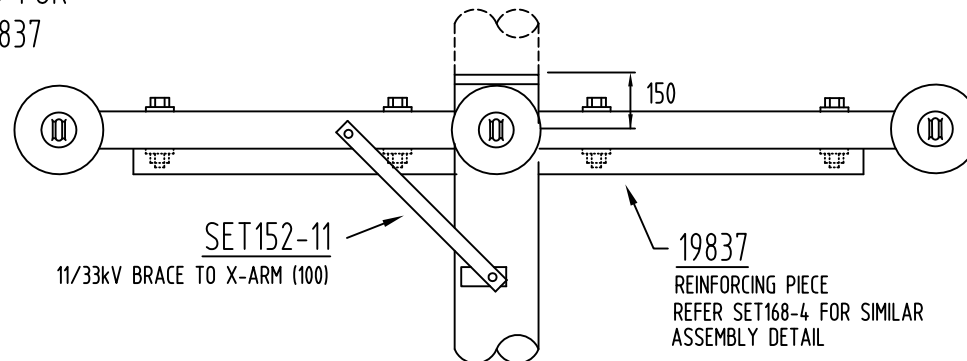
SET157-1  
11/33kV TERMINATION TO POLE

## NOTE:

WHEN FITTING IN AIR TO EXISTING POLE  
FIT X-ARM FIRST, THEN FIT REINFORCING PIECE

## LAYOUT GUIDE: 33LT2

	AAC								ACSR						COPPER								
TABLE	220				110				110			65			42	220			110				
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75*7/1.60 CHERRY	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75*7/1.60 CHERRY	3/4/2.50 RAISIN	7/.080 7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	
Max Span/ Max Angle							200/ 16°	200/ 9°			200/ 16°	240/ 25°	240/ 15°	240/ 9°	310/ 13°							200/ 20°	200/ 10°



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 33LT2

33kV LIGHTWEIGHT TERMINATION CONSTRUCTION  
REINFORCED TO 12kN MWT (WOOD POLE)

APP'D	R. English	TECH STDS	AUTOCAD
DATE	19-03-2012	4920-A4	A
REC'D	J. Tunney	SECT	PAGE
CKD	J. Tunney	6	16
DWN	J. Chung	SHEET	1 OF 1
FILE:			

## CU LIST -

33LS

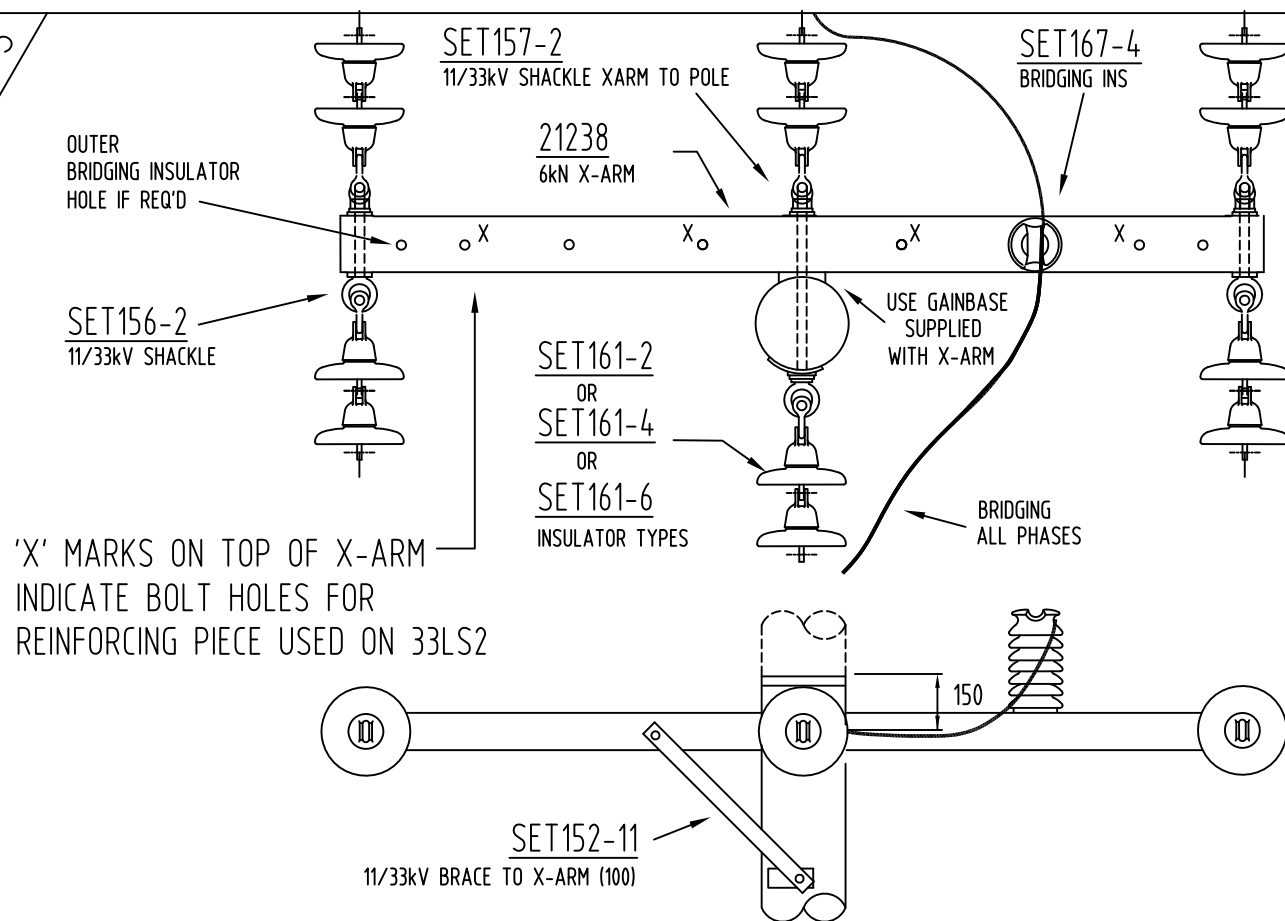
33LS/N

33LS/F

33LS/S

SET157-2	1	1	1	1
SET156-2	2	2	2	2
SET152-11	1	1	1	1
SET167-4	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-6				3

21238 (XARM)	1	1	1	1
--------------	---	---	---	---



## LAYOUT GUIDE: 33LS

	AAC												ACSR			COPPER																		
TABLE	880 & 660				440				220				110				110			880&660			440			220			110					
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4.75+7/1.60 CHERRY	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101	7/.080	7/.104	19/.083	19/.101			
Max Span/ Max Angle	60/60°				100/60°				100/ 50°	140/36° 100/43°				140/21° 100/30°		200/25°		-		200/24°		-	60/60°			100/ 60°		100/ 52°	120/ 60°	140/ 44°	-	200/ 53°	200/ 30°	-

ORIGINAL ISSUE

A



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 33LS

33kV LIGHTWEIGHT SHACKLE CONSTRUCTION  
6kN MWT (WOOD POLE)

APP'D R. English

DATE 19-03-2012

REC'D J. Tunney

CKD J. Tunney

DWN J. Chung

TECH STDS AUTOCAD

4920-A4 A

SECT 6 PAGE 17

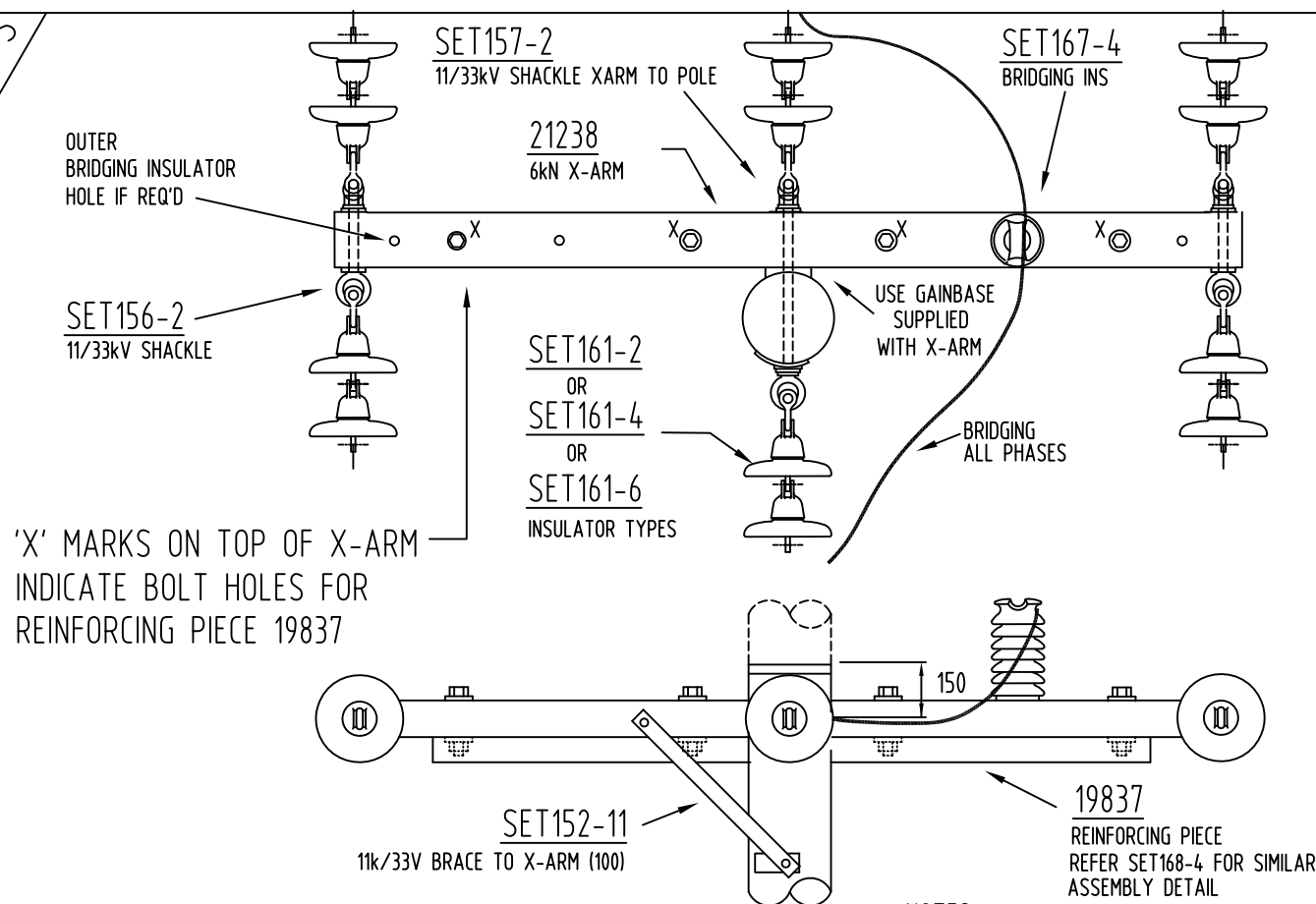
SHEET 1 OF 1

FILE:

## CU LIST -

33LS2  
33LS2/N  
33LS2/F  
33LS2/S

SET157-2	1	1	1	1
SET156-2	2	2	2	2
SET152-11	1	1	1	1
SET167-4	1	1	1	1
SET161-2		3		
SET161-4			3	
SET161-6				3
21238 (XARM)	1	1	1	1
19837	1	1	1	1



## NOTES:

- 1 WHEN FITTING IN AIR TO EXISTING POLE  
FIT X-ARM FIRST, THEN FIT REINFORCING PIECE

## LAYOUT GUIDE: 33LS2

	AAC				ACSR				COPPER			
TABLE	220				110				110			
COND.	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	7/3.00 LIBRA	7/3.75 MARS	7/4.75 MOON	19/3.75 PLUTO	6/1/3.00 APPLE	6/1/3.75 BANANA	6/4/75*7/160 CHERRY	3/4/2.50 RAISIN
Max Span/ Max Angle					200/ 16°	200/ 9°			240/ 9°	310/ 13°		



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## 33LS2

33kV LIGHTWEIGHT SHACKLE CONSTRUCTION  
REINFORCED TO 12kN MWT (WOOD POLE)

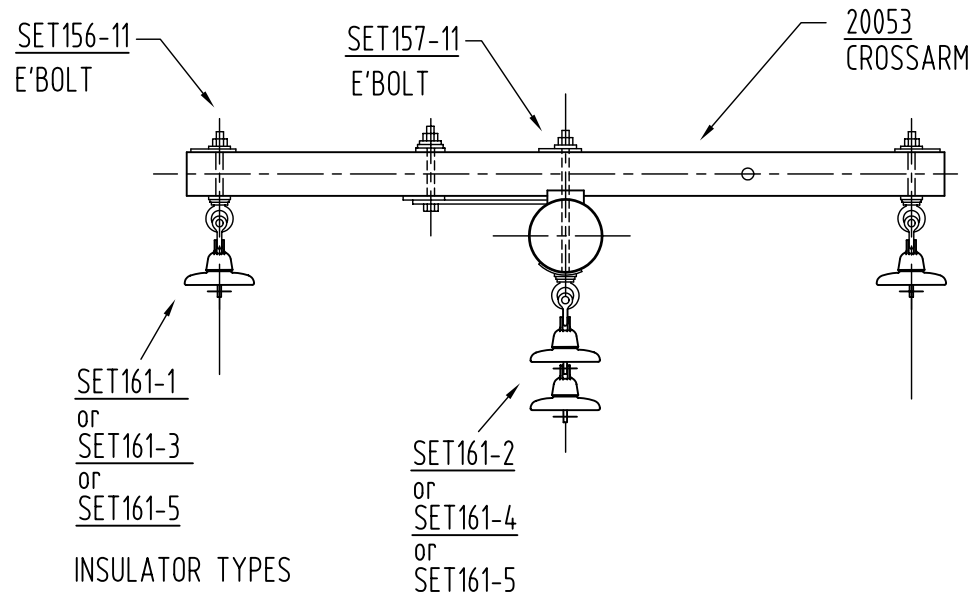
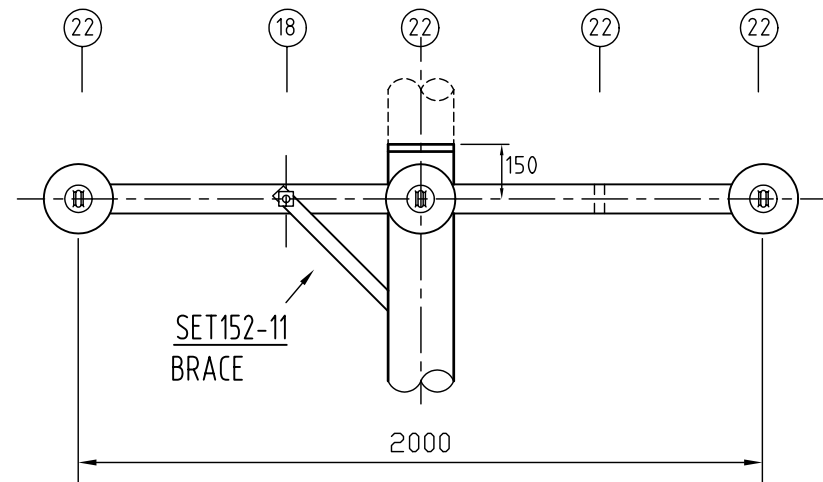
APP'D	R. English	TECH STDS	AUTOCAD
DATE	19-03-2012	4920-A4	A
REC'D	J. Tunney	SECT	PAGE
CKD	J. Tunney	6	18
DWN	J. Chung	SHEET	1 OF 1
		FILE:	

ORIGINAL ISSUE

A


## CU LIST -

	11TM	11TM/N	11TM/F	11TM/S
SET152-11	1	1	1	1
SET157-11	1	1	1	1
SET156-11	2	2	2	2
SET161-1		2		
SET161-2		1		
SET161-3			2	
SET161-4			1	
SET161-5				3
20053 (XARM)	1			



## NOTES:

1. STANDARD DISC INSULATOR SHOWN.
2. MAX SPAN 45m @ T880 & T660 STRINGING.
3. MAX SPAN 20m @ SLACK STRINGING.

B	ORIGINAL ISSUE		APPD K.NUTTALL	CKD J.TUNNEY	DRN G.JAYAWERA	NEW TEMPLATE COMPOSITE XARM USED		 ©COPYRIGHT 2007 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL  NON STANDARD CONSTRUCTION  11TM  11kV TERMINATION METROPOLITAN CONSTRUCTION (WOOD POLE)	APP'D C.WILLIAMSON	TECH STDS		AUTOCAD	
	C	DATE 2-5-07								DATE 18-09-89	4920-A4		C	
		REC'D								CKD	DWN B.G.Y	SECT 6	PAGE 21	
												SHEET 1 OF 1		
												FILE:		

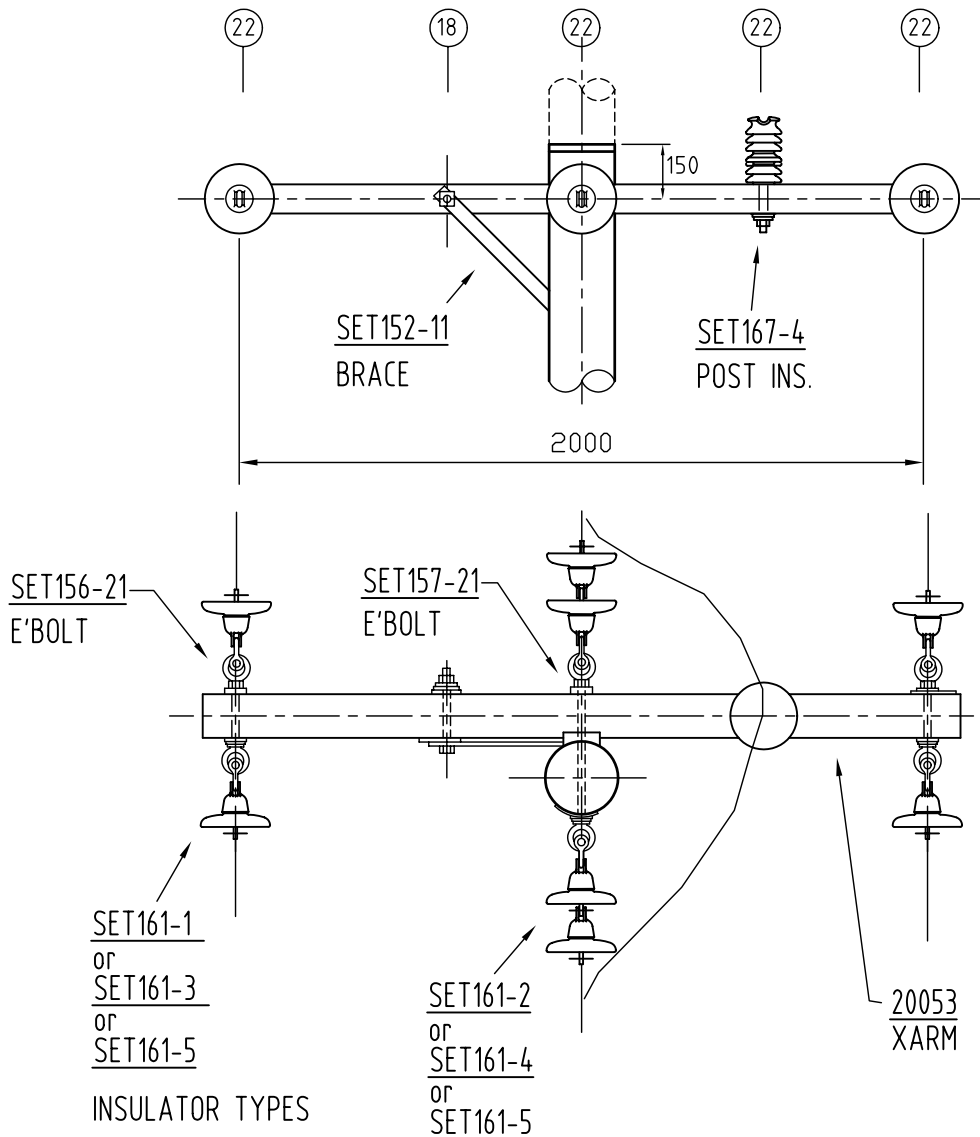


## CU LIST -

	11SM	11SM/N	11SM/F	11SM/S
SET157-21	1	1	1	1
SET152-11	1	1	1	1
SET156-21	2	2	2	2
SET161-1		4		
SET161-2		2		
SET161-3			4	
SET161-4			2	
SET161-5				6
SET167-4	1	1	1	1
20053 (XARM)	1			

## NOTES:

1. STANDARD DISC INSULATOR SHOWN.
2. MAX SPAN 45m @ T880 & T660 STRINGING.
3. MAX SPAN 20m @ SLACK STRINGING.



INSULATOR TYPES



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OVERHEAD CONSTRUCTION MANUAL  
NON STANDARD CONSTRUCTION  
11SM  
11kV SHACKLE METROPOLITAN CONSTRUCTION  
(WOOD POLE)

APP'D C.WILLIAMSON

DATE 18-09-89

REC'D

CKD

DWN

TECH STDS AUTOCAD

4920-A4 C

SECT	PAGE
6	22

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	NEW TEMPLATE	COMPOSITE XARM USED
B	2-5-07	K.NUTTALL	J.TUNNEY	G.JAYAWERA		
C						

# CU LIST

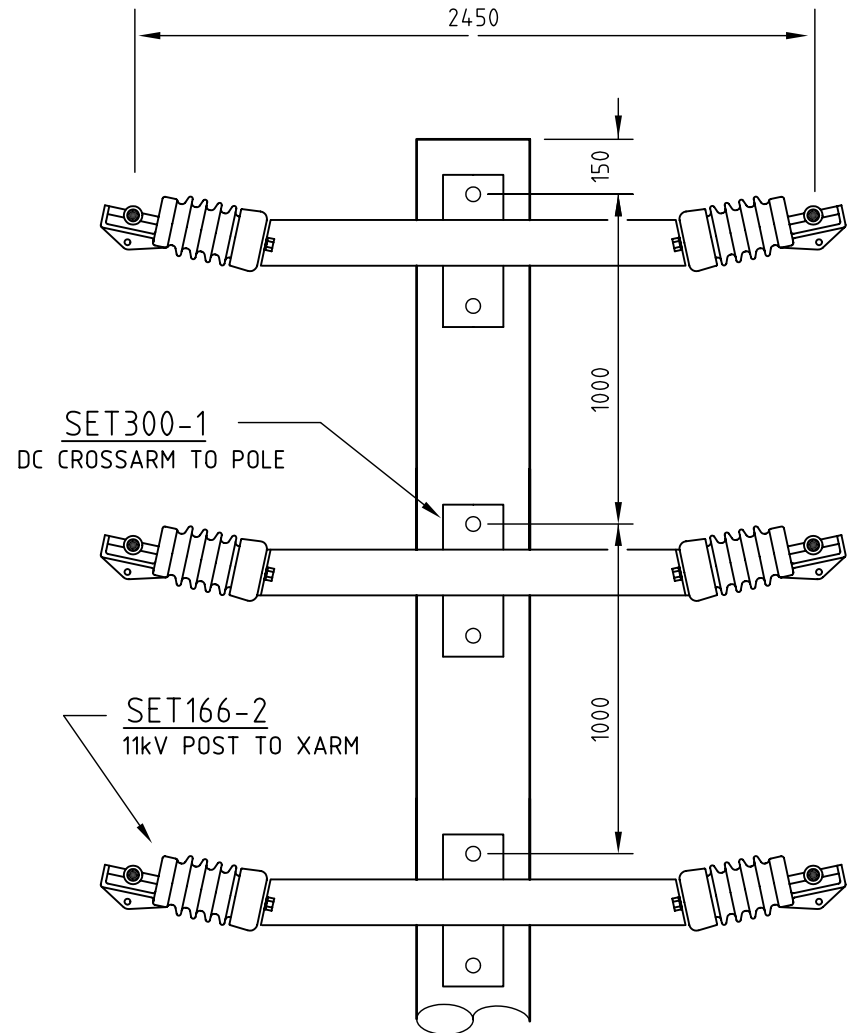
SET300-1

3

3

SET166-2

6



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## OVERHEAD CONSTRUCTION MANUAL

### NON STANDARD CONSTRUCTION

11DCI

11kV DOUBLE CIRCUIT INTERMEDIATE CONSTRUCTION (WOOD POLE)

APP'D K.NUTTALL

DATE 2-5-07

REC'D J.TUNNEY

CKD J.TUNNEY

DWN G.JAYAWEERA

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

6 23

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE

A

## CU LIST

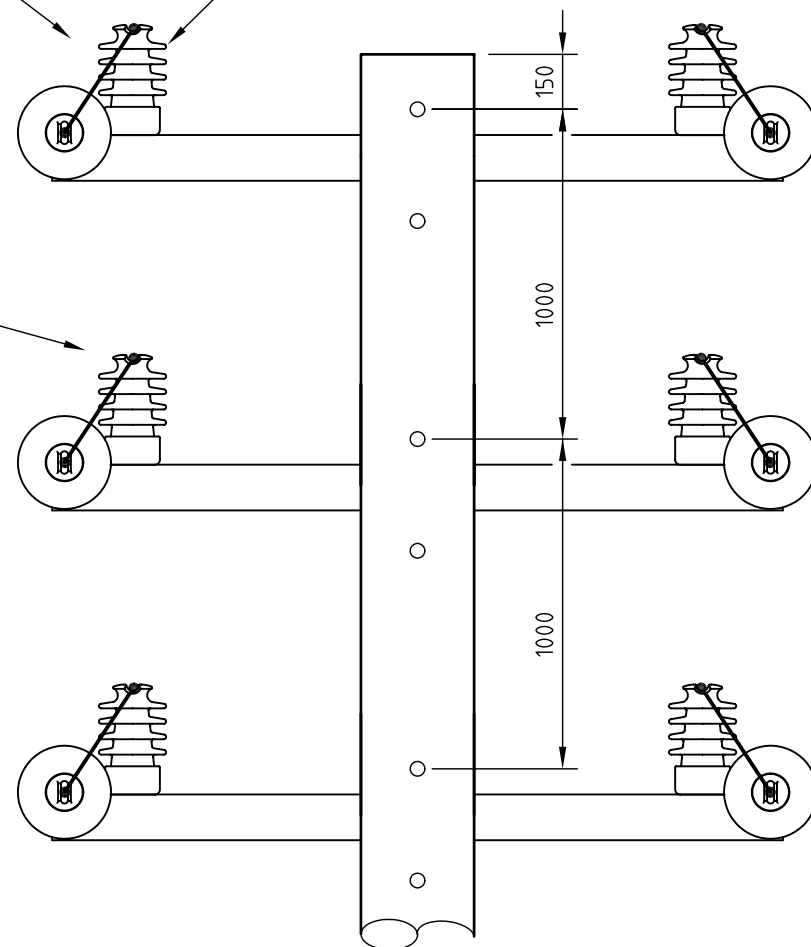
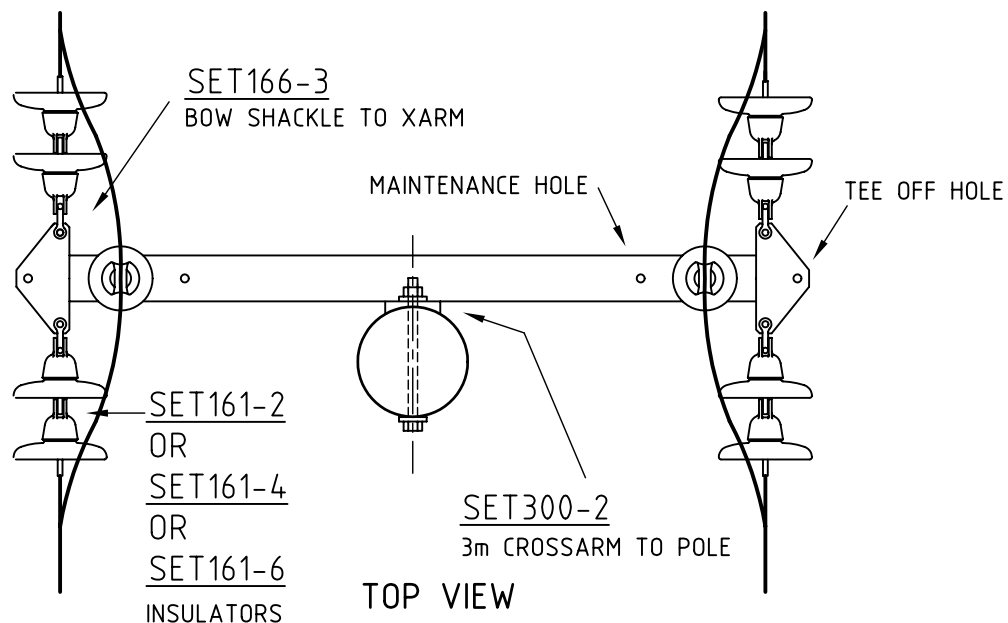
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SET300-2	3	3	3	3
SET300-3	6	6	6	6
SET166-3	12	12	12	12
SET161-2		24		
SET161-4			24	
SET161-6				12
17799 (TIE)		6	6	6
20279 (CCT)		12	12	12

BRIDGING CONDUCTOR TO BE CCT 120 SQ MM  
OR WILDLIFE PROOFED BARE CONDUCTOR  
ON ALL PHASES

SET300-3

11kV BRIDGING POST TO XARM

17799

POLYMER SIDE TIE  
FOR CCT BRIDGE

NOTE : INSUFFICIENT CLIMBING CORRIDOR  
WHERE DEVIATION ANGLE EXCEEDS 30°



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

11DCS7

11kV DOUBLE CIRCUIT SHACKLE CONSTRUCTION  
(0° - 70° DEVIATION) (WOOD POLE)

APP'D K.NUTTALL

DATE 2-5-07

REC'D J.TUNNEY

CKD J.TUNNEY

DWN G.JAYAWERA

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

6 24

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE

A

## CU LIST

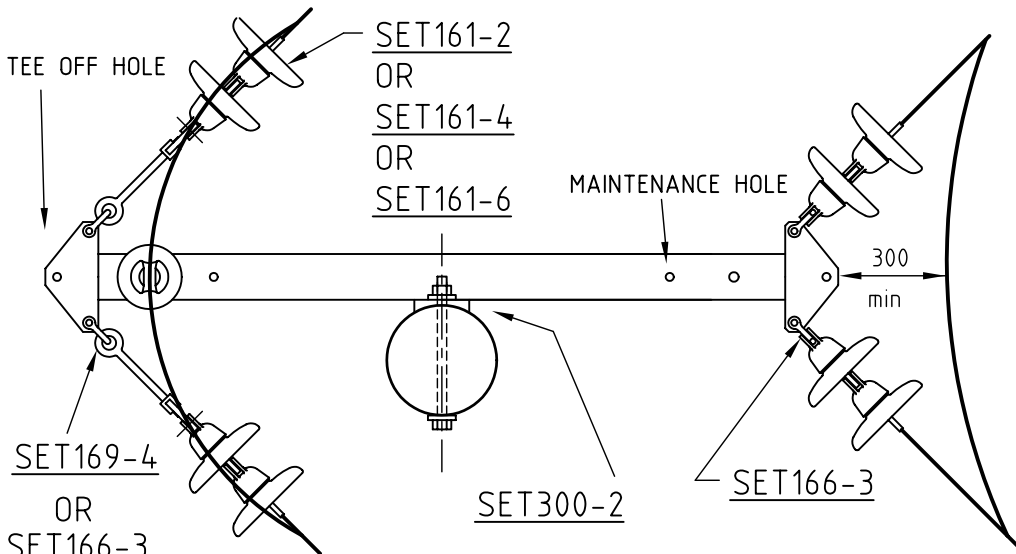
	11DCS9	11DCS9/N	11DCS9/F	11DCS9/S
SET300-2	3	3	3	3
SET300-3	3	3	3	3
SET169-4	6	6	6	
SET166-3	6	6	6	12
SET161-2		24		
SET161-4			24	
SET161-6				12
17799 (TIE)		3	3	3
20279 (CCT)		12	12	12

BRIDGING CONDUCTOR TO BE CCT120 SQ MM  
OR WILDLIFE PROOFED BARE CONDUCTOR  
ON ALL PHASES

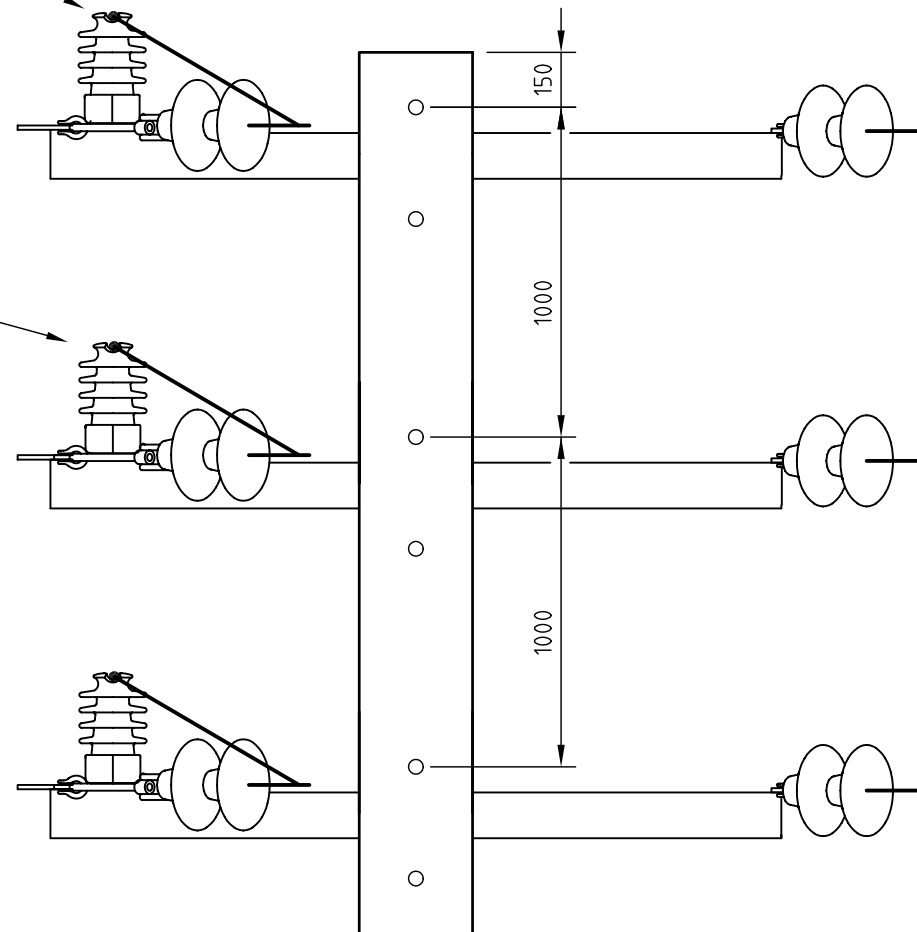
SET300-3

11kV BRIDGING POST TO XARM

17799

POLYMER SIDE TIE  
FOR CCT BRIDGE

TOP VIEW



NOTE : INSUFFICIENT CLIMBING CORRIDOR  
NOT TO BE CLIMBED WHILST ENERGISED



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

11DCS9

11kV DOUBLE CIRCUIT SHACKLE CONSTRUCTION  
(71° - 90° DEVIATION) (WOOD POLE)

APP'D K.NUTTALL

DATE 2-5-07

REC'D J.TUNNEY

CKD J.TUNNEY

DWN G.JAYAWEERA

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

6 25

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE

A

## CU LIST

SET300-1

3

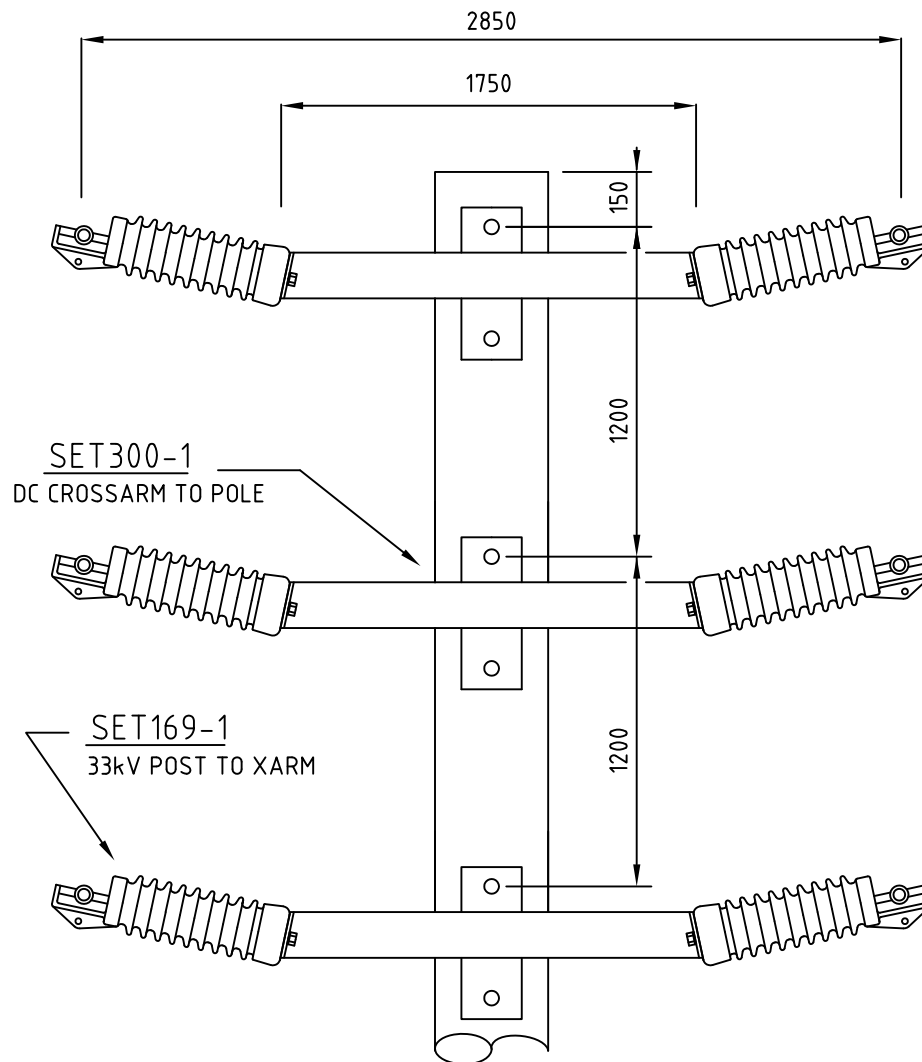
3

SET169-1

6

16385

AR

SC16385 - TRUNNION CLAMP FOR COPPER MAINS

A	ORIGINAL ISSUE	
	DATE	27/01/2016
B	APPD	F. ZAINI
	CKD	P. RELF
	DRN	P. RELF
ADDED SC16385		



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

33DCI

33kV DOUBLE CIRCUIT INTERMEDIATE CONSTRUCTION  
(WOOD POLE)

APP'D	K.NUTTALL	TECH STDS		AUTOCAD
DATE	2-5-07	4920-A4 B		
REC'D	J.TUNNEY	SECT	PAGE	
CKD	J.TUNNEY	6	40	
DWN	G.JAYAWEERA	SHEET 1 OF 1		
		FILE:		

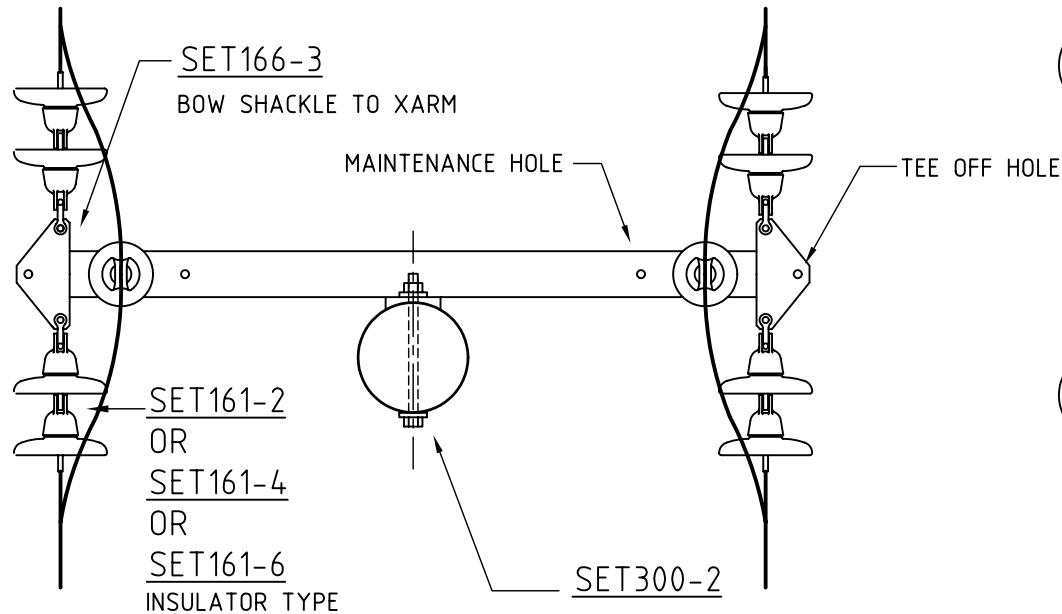
# CU LIST

	33DCS7	33DCS7/N	33DCS7/F	33DCS7/S
SET300-2	3	3	3	3
SET169-3	6	6	6	6
SET166-3	12	12	12	12
SET161-2		24		
SET161-4			24	
SET161-6				12

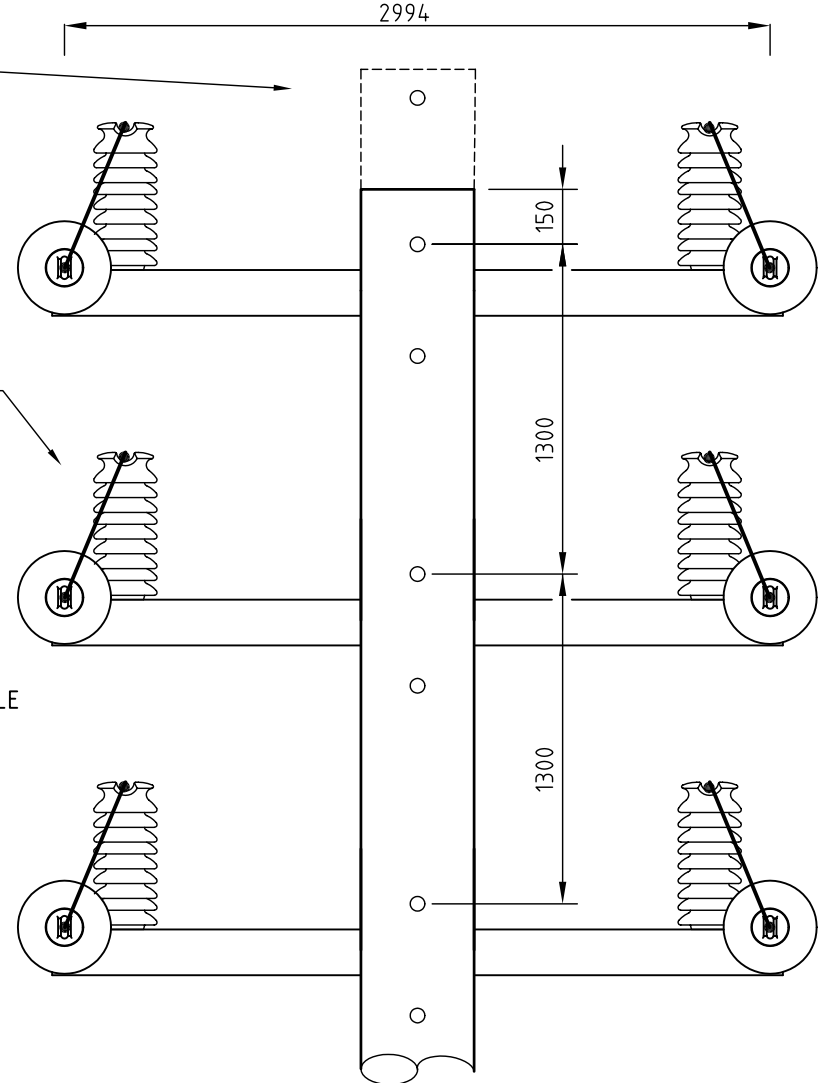
EXTRA POLE HEIGHT FOR  
OHEW IF REQ'D (1.5M)

SET169-3

33kV BRIDGING POST TO XARM



TOP VIEW



NOTE : INSUFFICIENT CLIMBING CORRIDOR  
WHERE DEVIATION ANGLE EXCEEDS 30°



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OVERHEAD CONSTRUCTION MANUAL

NON STANDARD CONSTRUCTION

33DCS7

33kV DOUBLE CIRCUIT SHACKLE CONSTRUCTION  
(0° - 70° DEVIATION) (WOOD POLE)

APP'D K.NUTTALL

DATE 2-5-07

REC'D J.TUNNEY

CKD J.TUNNEY

DWN G.JAYAWEERA

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

6 41

SHEET 1 OF 1

FILE:

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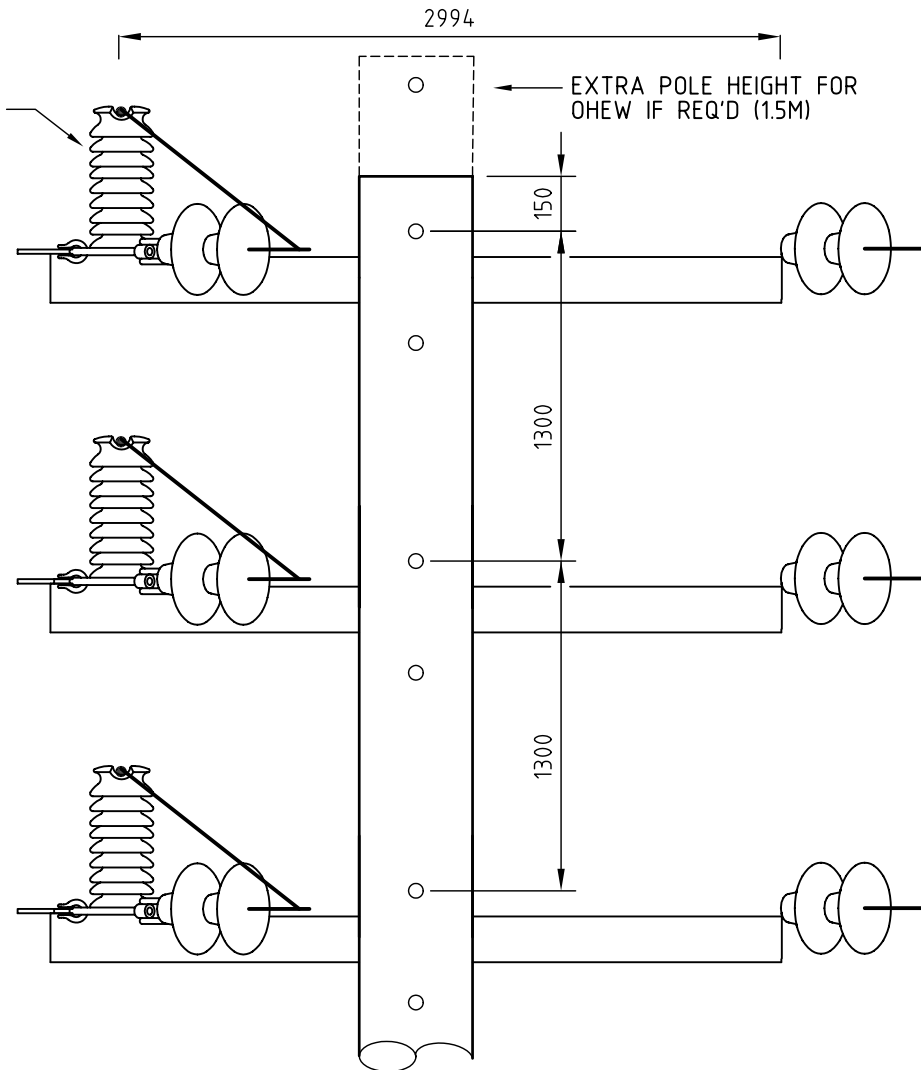
A

# CU LIST

	33DCS9	33DCS9/N	33DCS9/F	33DCS9/S
SET300-2	3	3	3	3
SET169-3	3	3	3	3
SET169-4	6	6	6	
SET166-3	6	6	6	12
SET161-2		24		
SET161-4			24	
SET161-6				12

## SET169-3

33kV BRIDGING POST TO XARM



SET161-2  
OR  
SET161-4  
OR  
SET161-6  
INSULATORS

TEE OFF HOLE

SET169-4  
OR  
SET166-3

MAINTENANCE HOLE

SET300-2

8kN DC STEEL 3m CROSSARM TO POLE

TOP VIEW

NOTE : INSUFFICIENT CLIMBING CORRIDOR  
NOT TO BE CLIMBED WHILST ENERGISED



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## OVERHEAD CONSTRUCTION MANUAL

### NON STANDARD CONSTRUCTION

33DCS9

33kV DOUBLE CIRCUIT SHACKLE CONSTRUCTION  
(71° - 90° DEVIATION) (WOOD POLE)

APP'D K.NUTTALL

DATE 2-5-07

REC'D J.TUNNEY

CKD J.TUNNEY

DWN G.JAYAWEERA

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

6 42

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE

A

## CU LIST

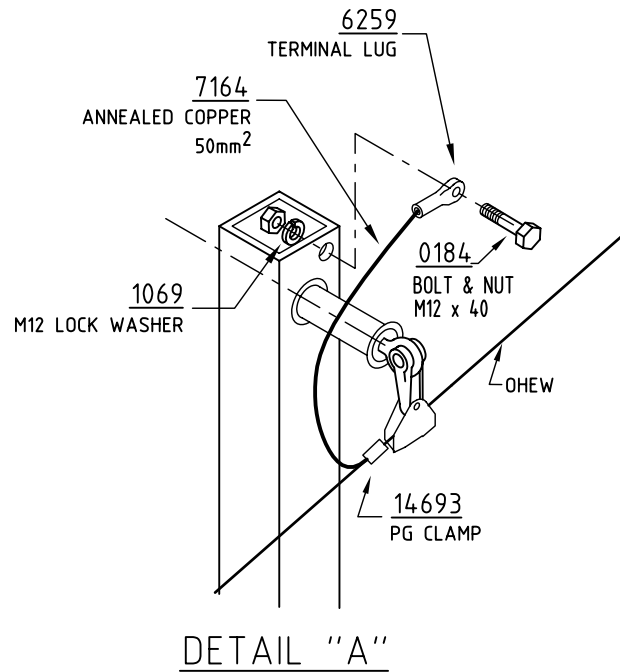
33EDCI

SET261-1

1

SET300-4

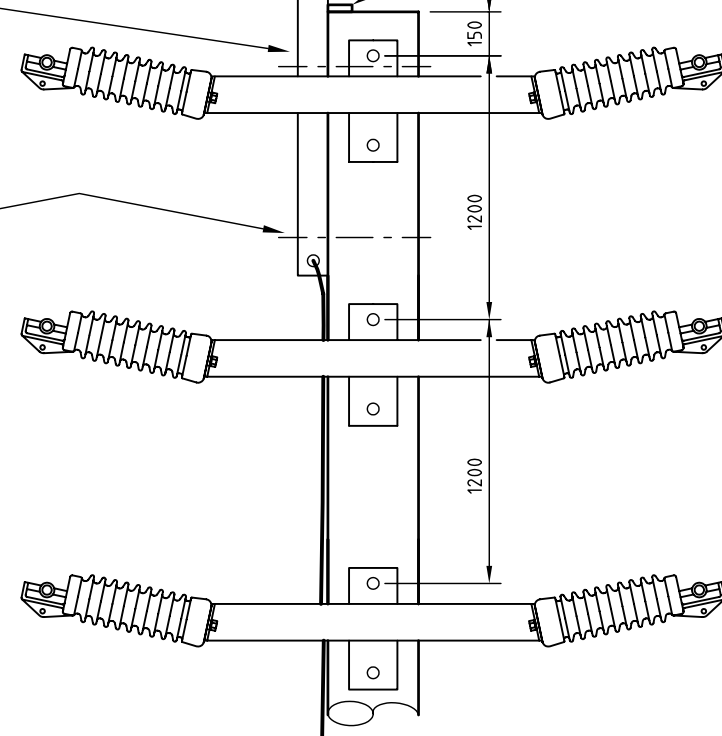
1



DETAIL "A"

SET261-1  
OHEW SUSPENSION


POSITION RISER BRACKET TO SIDE OF POLE OPPOSITE THE ANGLE WHERE ANGLE IS 0° BRACKET MAY BE INSTALLED EITHER SIDE OF POLE. SUSPENSION CLAMP IS ALWAYS SITUATED ABOVE POLE

SET300-4  
EARTHWIRE RISER TO POLETOP OF POLE  
INDICATOR

2xM20 NUT & BOLTS  
TO BE USED, ONE IN  
EACH OF THE UPPER  
AND LOWER HOLE  
GROUPS

## NOTES:

1. Keep download as far as possible from other pole hardware or equipment.

ORIGINAL ISSUE		DATE		APPD	RENGISH	CKD	J.TUNNEY	DRN	P.PREF	REMOVE EARTH CONNECTION BETWEEN STEEL CROSS ARM AND OHEW	<div> energex</div> <div>© COPYRIGHT 2010 ENERGEX</div> <div>This drawing must not be reproduced in part or whole without written permission from ENERGEX</div>	OVERHEAD CONSTRUCTION MANUAL		APP'D	K.NUTTALL	TECH STDS		AUTOCAD	
A	B	7/10/10										NON STANDARD CONSTRUCTION		DATE	2-5-07	4920-A4		B	
												33EDCI		REC'D	J.TUNNEY	SECT	PAGE		
												OHEW CONSTRUCTION		CKD	J.TUNNEY	6	43		
												33kV DOUBLE CIRCUIT INTERMEDIATE CONSTRUCTION		DWN	G.JAYAWEERA	SHEET 1 OF 1		FILE:	



## CU LIST -

CON1

SET151-4	2
SET153-3	2
SET156-3	3
SET153-4	1
SET153-1	3
SET153-2	1
SET161-2	AR
SET161-4	AR
SET161-6	AR
10894 (X-ARM)	1
5869 (X-ARM)	1

Cut from 10894

X-ARM (UPPER)  
NOTE 2SET153-1  
ANTI SPLIT BOLT

NOTE 2

SET153-4  
X-ARM ATTACHMENTSET151-4  
X-ARM TO POLESET156-3  
SUS'P TO X-ARMSET153-2  
ANTI SPLIT BOLTSET153-3  
X-ARM STABILIZERCut from 5869  
X-ARM (LOWER)  
NOTE 2SET161-2  
or  
SET161-4  
or  
SET161-6  
INSULATORS

## NOTES.

- STANDARD DISC INSULATOR SHOWN
- CUT & DRILL XARMS ON SITE  
Top xarm cut to 3000 lg (150 x 100)  
Bottom xarm cut to 1930 lg (150 x 100)



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## CON1 (SEAQ)

33kV WISHBONE CONSTRUCTION (WOOD POLE)  
(MAINTENANCE PURPOSE ONLY)

APP'D K.NUTTALL

DATE 2-5-07

REC'D J.TUNNEY

CKD J.TUNNEY

DWN GJ

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

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SHEET 1 OF 1

FILE:

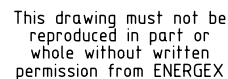
ORIGINAL ISSUE

A

CON2

2	2	3	1	3	1	AR	AR	AR	1	1
---	---	---	---	---	---	----	----	----	---	---

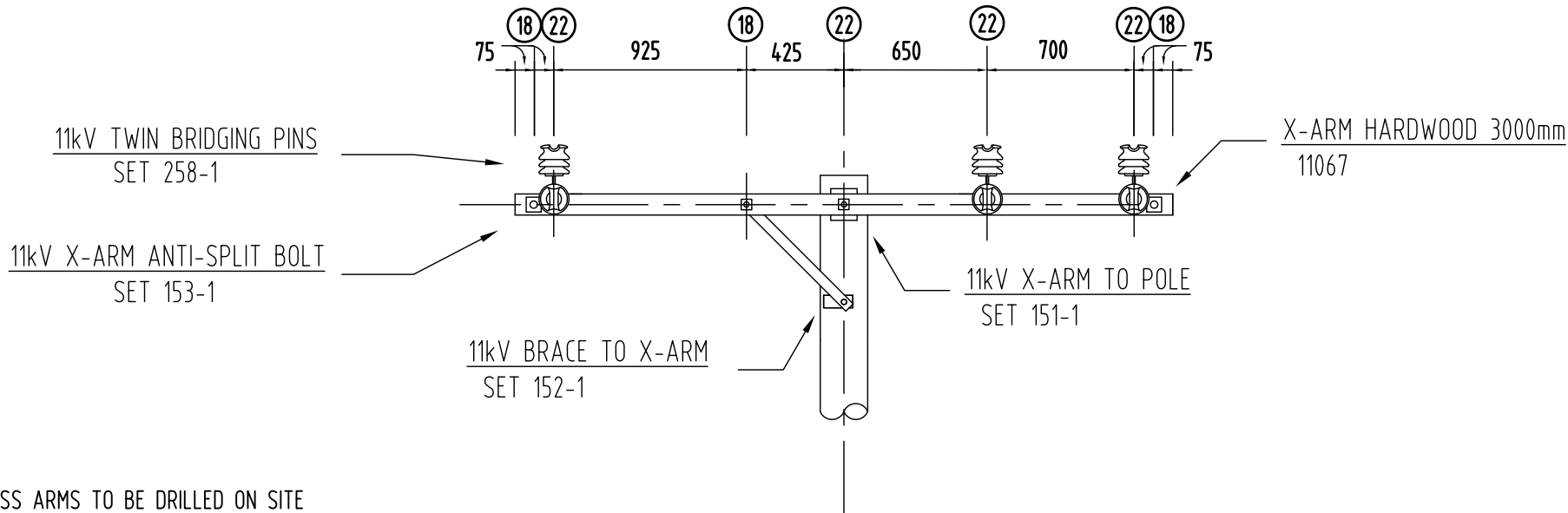
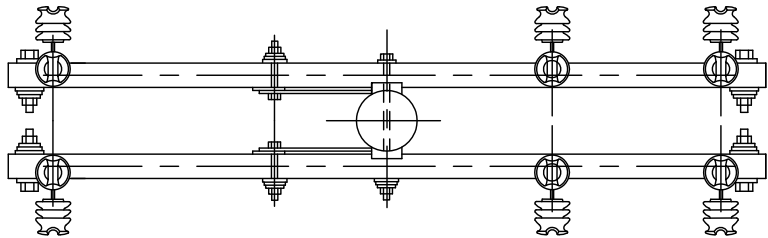
1. STANDARD DISC INSULATOR SHOWN
2. CUT & DRILL XARMS ON SITE  
Bottom xarm cut to 1930 long (150 x 100)




APP'D	K.NUTTALL	TECH STDS		AUTOCAD
DATE	2-5-07	4920-A4		A
REC'D	J.TUNNEY	SECT	PAGE	
		6	45	
CKD	J.TUNNEY	SHEET 1 OF 1		
DWN	GJ	FILE:		

# CU LIST -

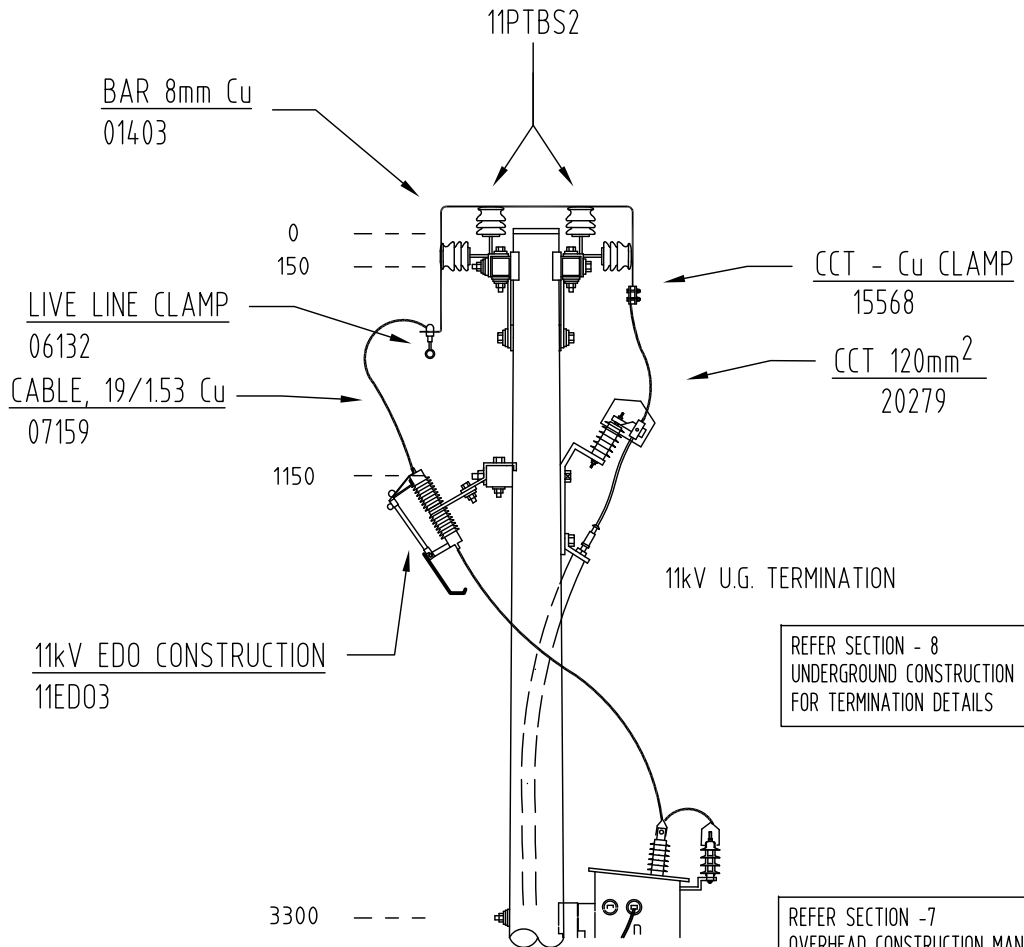
STOCK CODE	DESCRIPTION	11P/TBS2
SET 151-1	11kV X-ARM TO POLE	1
SET 152-1	11kV BRACE TO X-ARM	2
SET 153-1	11kV X-ARM ANTI-SPLIT BOLT	4
SET 258-1	11kV TWIN BRIDGING PINS	6
11067	X-ARM HARDWOOD 3000MM	2
01403	BAR 8mm Cu	3



NOTE.  
1. CROSS ARMS TO BE DRILLED ON SITE

ORIGINAL ISSUE	A	 <p>©COPYRIGHT 2012 ENERGEX</p> <p>This drawing must not be reproduced in part or whole without written permission from ENERGEX</p>	OVERHEAD CONSTRUCTION MANUAL		APP'D R. ENGLISH	TECH STDS	AUTOCAD	
			NON STANDARD CONSTRUCTION		DATE 11/05/12	4920-A4	A	
			11kV BRIDGE SUPPORT CONSTRUCTION FOR PT SUPPLIED BY UG CABLE		REC'D	SECT 6	PAGE 51	
					CKD J. TUNNEY	SHEET 1 OF 1		
					DWN P. RELF	FILE:		

# 11kV PT BRIDGE SUPPORT CONSTRUCTION



## NOTE.

1. BEND 8mm Cu BAR AS SHOWN
2. 11PTBS2 SEE 6-51 FOR MORE DETAIL
3. 11ED03 SEE 4-23 FOR MORE DETAIL
4. EDO X-ARM ON OPPOSITE SIDE OF POLE TO OCM SECT 4 PAGE 23

ORIGINAL ISSUE

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## OVERHEAD CONSTRUCTION MANUAL

### NON STANDARD CONSTRUCTION

11PTUG

PT SUPPLIED BY UG CABLE

APP'D R. ENGLISH

DATE 11/05/12

REC'D

CKD J. TUNNEY

DWN P. RELF

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

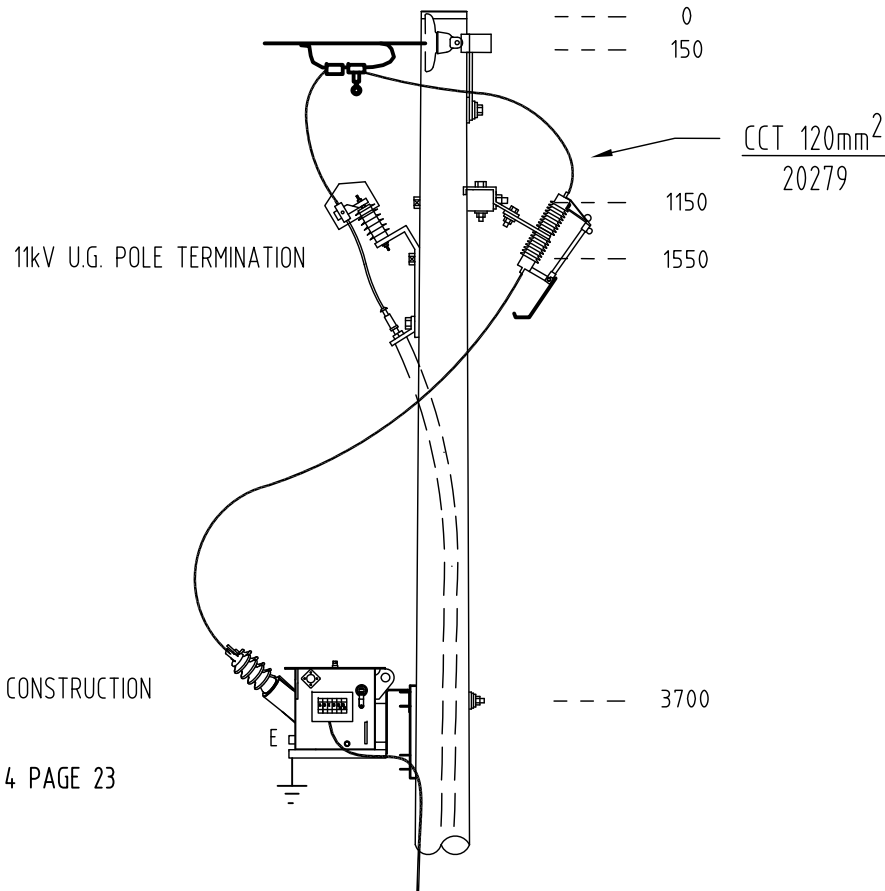
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FILE:

# 11kV VT CONSTRUCTION

11VT




## NOTE.

1. 11ED03 SEE 4-23 FOR MORE DETAIL
2. EDO X-ARM ON OPPOSITE SIDE OF POLE TO OHCM SECT 4 PAGE 23
3. 11VT SEE 7-32 FOR MORE DETAIL
4. 11VT SEE 7-31 FOR CONNECTION AND WIRING DETAILS
5. SEE 4-28 FOR 11kV UG POLE TERMINATION
6. SURGE ARRESTORS NOT REQUIRED ON VT DUE TO PRESENCE OF SURGE ARRESTORS ON 11kV UG POLE TERMINATION

REFER SECTION - 8  
UNDERGROUND CONSTRUCTION MANUAL  
FOR TERMINATION DETAILS

REFER SECTION -7 OVERHEAD  
CONSTRUCTION MANUAL FOR VOLTAGE  
TRANSFORMER MOUNTING DETAILS

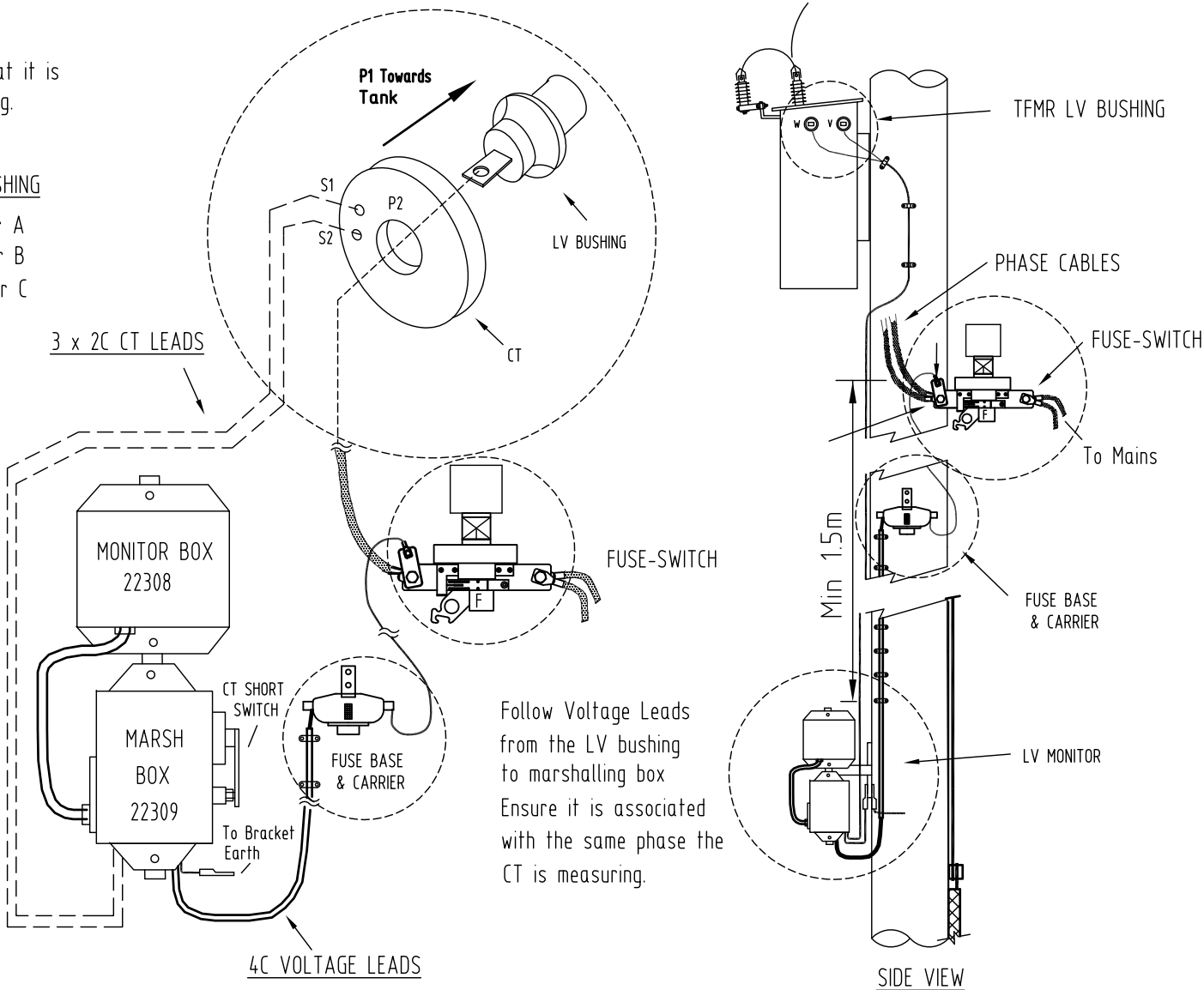
ORIGINAL ISSUE <div>A</div>		<div> energex © COPYRIGHT 2014 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX</div>	OVERHEAD CONSTRUCTION MANUAL		APP'D Colin Lee	TECH STDS		AUTOCAD
			NON STANDARD CONSTRUCTION 11kV VT WITH U.G. POLE TERMINATION		DATE 05/09/2014	4920-A4		A
					REC'D Ajay Anand	SECT 6	PAGE 53	
					CKD Ajay Anand	SHEET 1 OF 1		
					DWN Paul Relf	FILE: < < < <		

IMPORTANT NOTE:


1. ENSURE Voltage Leads are connected so that it is on the SAME phase that the CT is measuring.  
( REGARDLESS of phase configuration )

VOLTAGE LEAD	CT LEAD	LV BUSHING
1 Rib	<-----> RED	<-----> U or A
2 Rib	<-----> WHITE	<-----> V or B
3 Rib	<-----> BLUE	<-----> W or C

2. Fully Ribbed = Neutral
3. Refer To 6-62 for Construction Details
4. Refer to Work Practice WP1007 for installation & commissioning procedures
5. DWG 21891-A3 for Marsh Box details
6. Dwg 23393-A3 for Monitor Box details



A	ORIGINAL ISSUE		D	DATE 02/08/13		APPD C.LEE	CKD P.RELF	DRN J.CHUNG	Moved from 7-93c

  
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OVERHEAD CONSTRUCTION MANUAL  
NON STANDARD CONSTRUCTION  
CT WIRING ARRANGEMENT FOR LV MONITORS  
2-BOX VERSION

APP'D	R.ENGLISH	TECH STDS		AUTOCAD
DATE	11/05/11	4920-A4 D		
REC'D		SECT	PAGE	
CKD	J.TUNNEY	6	61	
DWN	P.RELF	SHEET 1 OF 1		
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## CU LIST -

	PTSMNW	PTSMNC	PTSMRW	PTSMRC
SET2-1	1	1	1	1
SET260-1	1	1	1	1
00403	3	3	3	3
00907	2	2	2	2
01053	2	2	2	2
01079	3	3	3	3
04930	30	30	30	30
06247	1	1	1	1
06249	3	3	3	3
06271			6	6
06486			AR	AR
07208	Supplied	Note 3		
10885	2	2	2	2
11430	AR	AR		
12060		2		2
12061		AR		AR
21086	3	3	3	3
20707		AR		AR
21832	3	3	3	3
22110	Supplied	Note 3		
22308	1	1	1	1
22309			1	1
22313	3	3	3	3
22362			3	3
22447	(Roll)	0.5	0.5	0.5

## NOTE.

1. Refer to drawing 6-61 for CT wiring schematic
2. Cable (SC 7208 and SC 22110) supplied with marshalling box
3. Timber poles - refer to drawing 7-601 and 7-602 for earthing
4. Concrete poles - refer to drawings 7-619 and 7-620 for earthing

## PT STATION MONITOR

PTSMNW	NEW INSTALLATION - WOOD POLE
PTSMNC	NEW INSTALLATION - CONCRETE POLE
PTSMRW	RETROFIT - WOOD POLE
PTSMRC	RETROFIT - CONCRETE POLE

MOUNT FUSES TO POLE AS NEAR AS POSSIBLE TO UNDERSIDE OF CROSSARM TO SUIT SPACE AND OPERATIONAL REQUIREMENTS

SET2-1 3 PH SERVICE FUSE BRACKET  
FUSE BASE & CARRIER 21086  
FUSE 20A 22313

MOUNT MARSHALLING BOX AND METER BOX AWAY FROM TRAFFIC SIDE OF POLE AS SPACE PERMITS

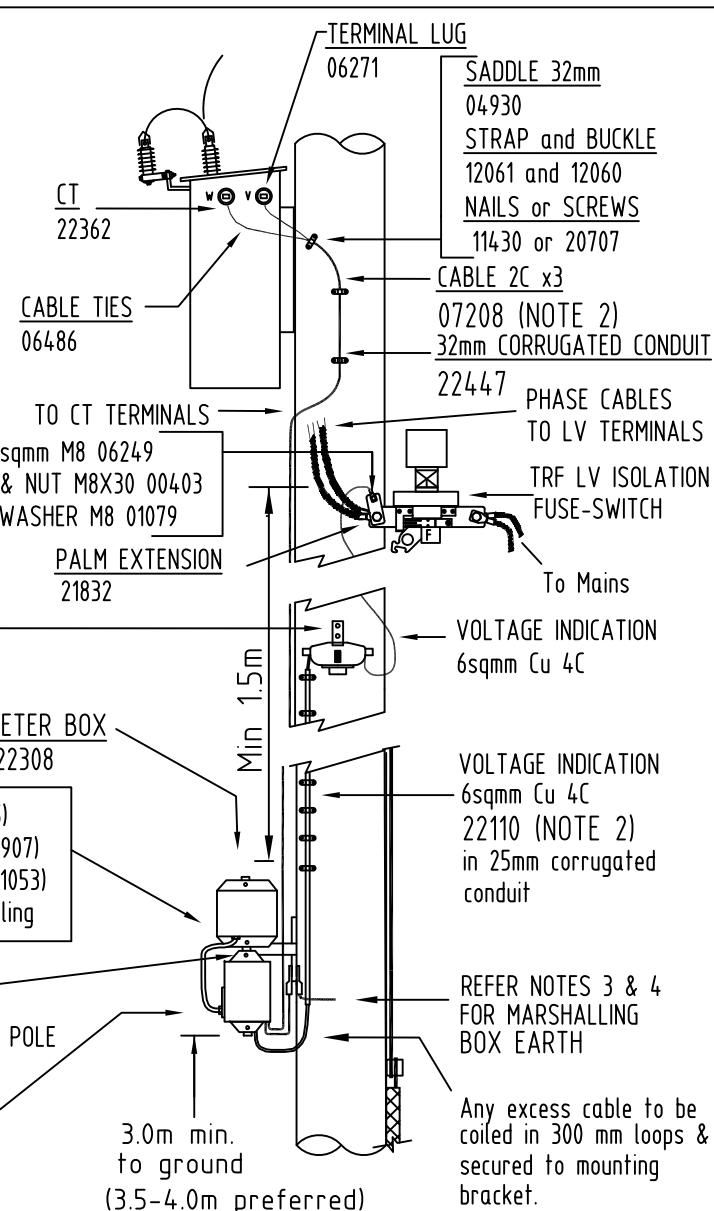
TOP OF CONTROL BRACKET AT LEAST 1.5m BELOW X-ARM TO ALLOW FOR SAFE ACCESS TO LV AND FUTURE BROADBAND CABLE.

MARSHALLING BOX SUPPLIED WITH 4mm EARTH TO BE CUT TO REQUIRED LENGTH AND LUGGED (SC 06247) TO BRACKET EARTH AT CONTROL BOX BRACKET

UNISTRUT NUTS M12 (10885)  
SETSCREW S/S M12x25 (00907)  
WASHER, LOCK S/S M12 (01053)  
to mount meter & marshalling box to unistrut

SET260-1  
CONTROL BOX BRACKET TO POLE

MARSHALLING BOX  
22309



ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	15/09/2014	F.ZAINI	P.RELF	J.CHUNG	Note 3 revised fixed reference
A	G								



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## PTSM

## PT STATION MONITOR

## (2-BOX SYTLE)

APP'D	R.ENGISH	TECH STDS	AUTOCAD
DATE	16/02/11	4920-A4	G
REC'D		SECT	PAGE
CKD	J.TUNNEY	6	62
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CONSTRUCTION MATERIAL LIST				
SET	DESCRIPTION	I.I.No.	QTY	REMARKS
A	WASHER, M20 RD	01046	2	
	BOW SHACKLE	02569	2	
		06013	2	
		05990	1	
	EYENUT, M20	08989	1	
		09924	2	
	EYEBOLT & NUT, M20 x AR	-	1	
	INSULATOR	-	-	AS REQUIRED
B		-	-	
	CROSSARM STEEL	-	1	REFER TABLE BELOW
	BOLT & NUT, M20 x AR	-	4	
	WASHER, M20, RD	01046	6	
	WASHER, M20, SQ	08521	4	
	WASHER, M20, VOLUTE	10447	4	
	COACHSCREW, M16 x 130	00689	2	FOR INITIAL SUPPORT
C	WASHER, M16, RD	01045	2	
	EARTHWIRE, 19/1.78 Cu PVC, INS.	07235	AR	REFER SECT 7, PAGE 605
	LUG, 19/1.78 Cu	06259	2	O/HEAD CONST'N MANUAL
	BOLT & NUT, M12 x 25 SS	00410	2	
	WASHER, M12, SP, SS	01081	2	
	EARTH GUARD	06162	1	
	STAPLE	03215	AR	
	SADDLE	04926	AR	
	NAIL, 30mm LONG	11430	AR	
	NAIL, 75mm LONG	11431	AR	
	P.G. CLAMP	15075	1	

TABLE OF CROSSARM DRAWINGS

CONDUCTOR / EDT (%UTS AT 15°C) (MES UP TO 400m, WEIGHT SPAN UP TO 600m)							
POLE CENTRES	7/104 Cu	MARS	MOON	PLUTO	CHERRY	CHERRY	CHERRY
	(23%)	(20%)	(20%)	(20%)	(13.6% UTS)	(20% UTS)	(23% UTS)
	DRAWING NUMBER						
2.4	7216-A2	7217-A2	7217-A2	7219-A2	7217-A2	7219-A2	7218-A2
2.7	7216-A2	7216-A2	7217-A2	7219-A2	7217-A2	7219-A2	7218-A2
3	7216-A2	7216-A2	7216-A2	7219-A2	7217-A2	7219-A2	7218-A2


CROSSARM DWG.No.	DESCRIPTION	SC	CU	DIMENSION 'A' (mm)	DIMENSION 'B' (mm)
7216-A2	150 x 100 x 5 H Frame Shackle Arm	19951	SC0019951	330	380
7217-A2	150 x 150 x 5 H Frame Shackle Arm	19952	SC0019952	380	430
7218-A2	200 x 200 x 5 H Frame Shackle Arm	19953	SC0019953	480	530
7219-A2	150 x 150 x 6 H Frame Shackle Arm	19954	SC0019954	380	430

H FRAME SHACKLE CONSTRUCTION (x-arm and poles not included)	
CU NAME	CU DESCRIPTION
HFRAMESH2	H Frame Shackle Accessories for 2 X-arms
HFRAMESH1	H Frame Shackle Accessories for 1 X-arm
HFRAMESHSETA	H Frame Shackle Set A
HFRAMESHSETB	H Frame Shackle Set B
HFRAMESHSETC	H Frame Shackle Set C

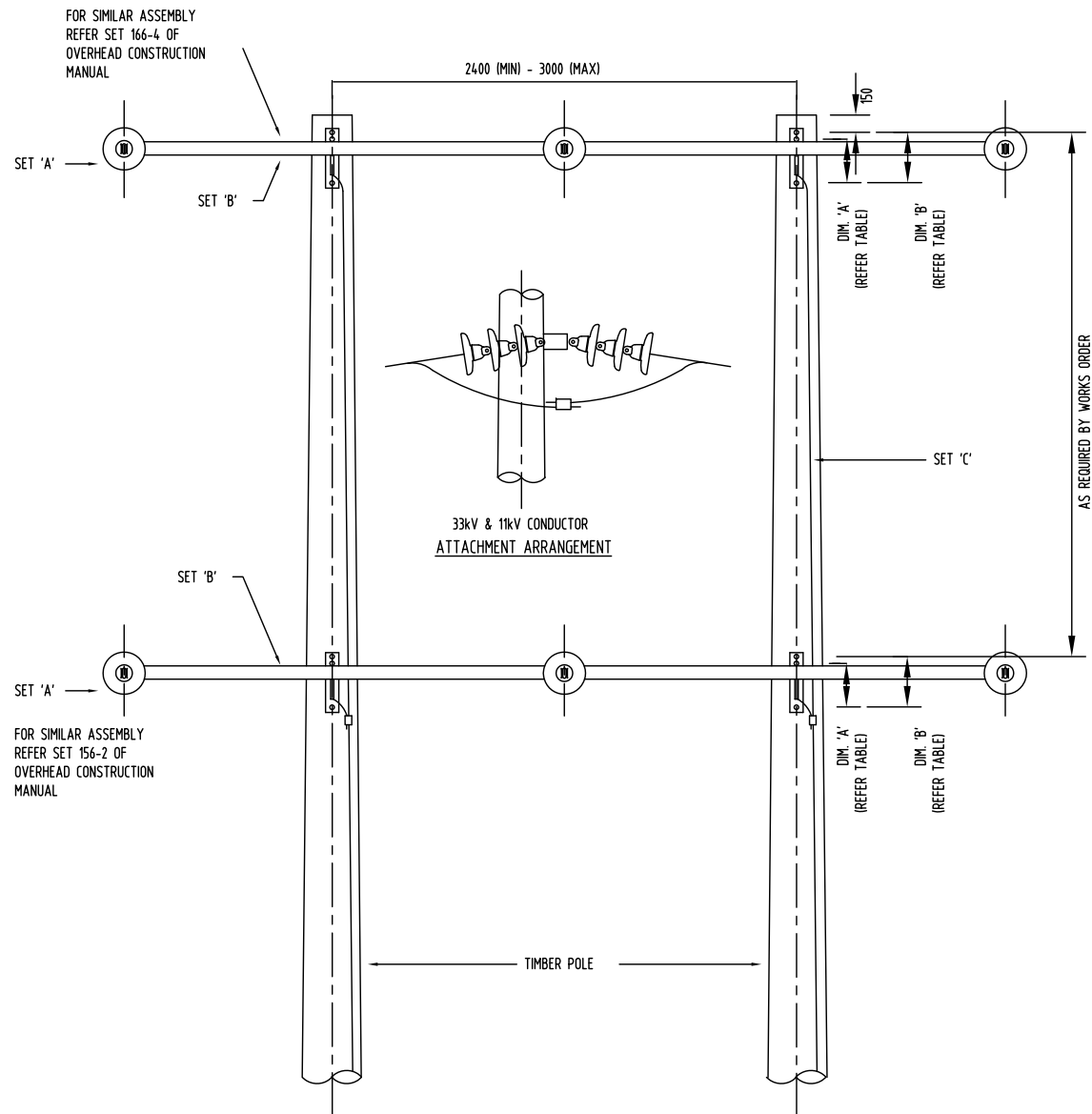
NOTES:

- This is a general arrangement drawing based on assembly drawing DWG 6670-A2. Contact Engineering Standards and Technology for a copy of this drawing if required.
- Ensure the following stringing sequence :-
  - Centre Conductor
  - Outer Conductor
  - Outer Conductor

Bring all three conductors up to tension simultaneously..

A	ORIGINAL ISSUE		APPD	CKD	DRN	ADDED STOCKCODES AND CU's	THIS PAGE TO BE READ WITH PAGE 72	 © COPYRIGHT 2017 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL		APP'D	F. ZAINI	TECH STDS		AUTOCAD				
	B	DATE							06/02/2017	NON STANDARD CONSTRUCTION		DATE	17/10/2014	4920-A4		B			
F. ZAINI		P. RELF							P. RELF		REC'D		SECT		PAGE				
											CKD		P. JUDGE		6		71		
											DWN		P. RELF		SHEET		1 OF 1		
															FILE:				





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## OVERHEAD CONSTRUCTION MANUAL

### NON STANDARD CONSTRUCTION

#### 33/11kV "H" FRAME

SHACKLE, DOUBLE POLE

TIMBER POLES, STEEL CROSSARM

APP'D F.ZAINI

DATE 17/10/2014

REC'D

CKD P. JUDGE

DWN P. RELF

TECH STDS AUTOCAD

4920-A4 A

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FILE: ocm\s6\ohc-6-72a.dwg

ORIGINAL ISSUE

A

CONSTRUCTION MATERIAL LIST				
SET	DESCRIPTION	I.I.No.	QTY	REMARKS
A	BOW SHACKLE	02569	1	
	INSULATOR	-	AR	
B	CROSSARM STEEL	-	1	REFER DWG.No. 6668-A2
	BOLT & NUT, M20 x AR	-	4	
	WASHER, M20, RD	01046	4	
	WASHER, M20, SQ	08521	4	
	WASHER, M20, VOLUTE	10447	4	
	COACHSCREW, M16 x 130	00689	2	FOR INITIAL SUPPORT
	WASHER, M16, RD	01045	2	
C	EARTHWIRE, 19/1.78 Cu PVC, INS.	07235	AR	REF. SECT 7 PAGE 605 OF O/HEAD CONST'N MANUAL
	LUG, 19/1.78 Cu	06259	2	
	BOLT & NUT, M12 x 25 SS	00410	2	
	WASHER, M12, SP, SS	01081	2	
	EARTH GUARD	06162	1	
	STAPLE	03215	AR	
	SADDLE	04926	AR	
	NAIL, 30mm LONG	11430	AR	
	NAIL, 75mm LONG	11431	AR	
	P.G. CLAMP	15075	1	


CROSSARM DWG.No.	DESCRIPTION	SC	CU
6668-A2	150 x 100 x 5 H Frame Suspension Arm	19950	SC0019950

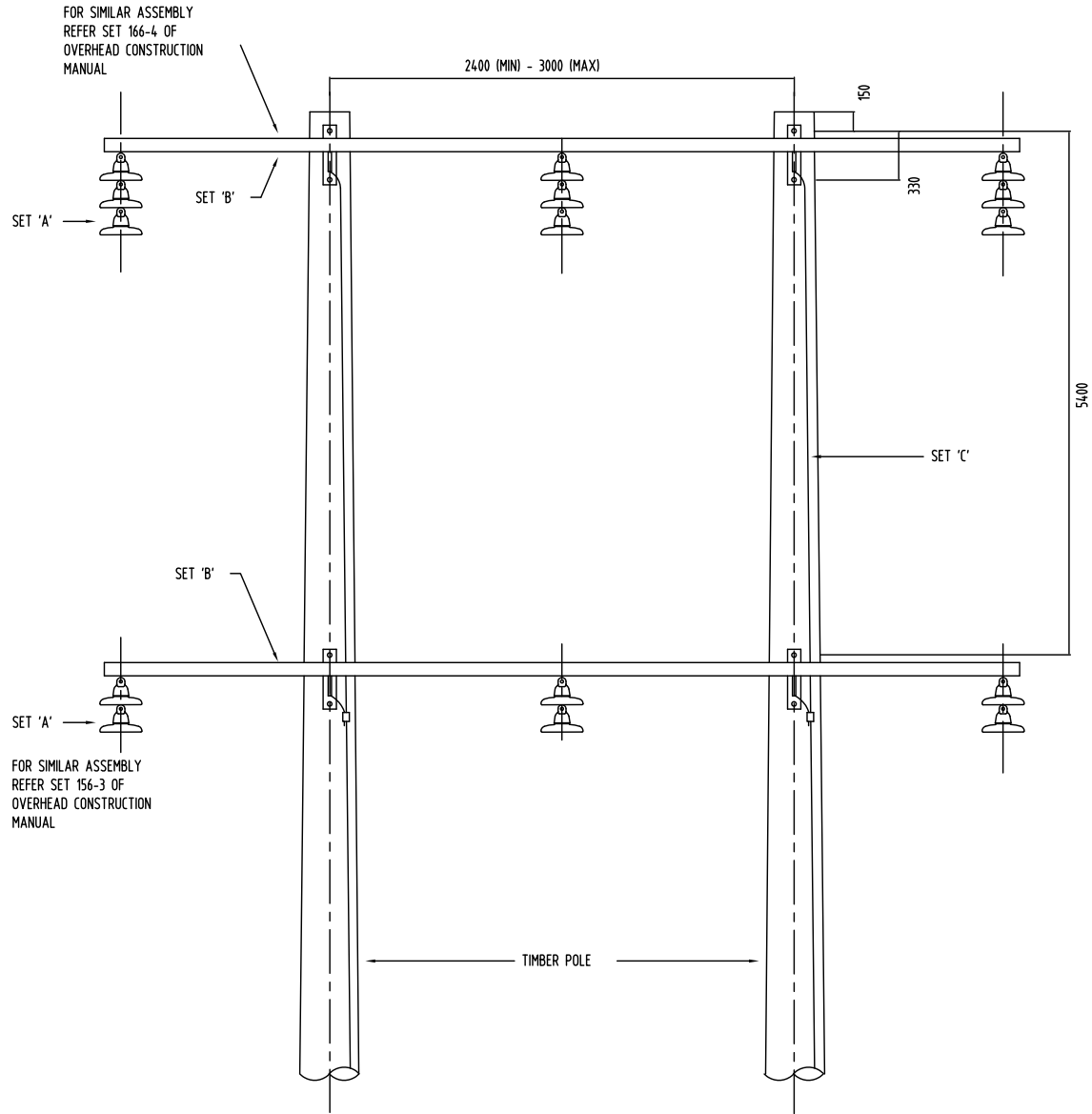
H FRAME SUSPENSION CONSTRUCTION (x-arm and poles not included)	
CU NAME	CU DESCRIPTION
HFRAMESU2	H Frame Suspension Accessories for 2 X-arms
HFRAMESU1	H Frame Suspension Accessories for 1 X-arm
HFRAMESUSETA	H Frame Suspension Set A
HFRAMESUSETB	H Frame Suspension Set B
HFRAMESUSETC	H Frame Suspension Set C

NOTES:

- This is a general arrangement drawing based on assembly drawing DWG 6671-A2. Contact Engineering Standards and Technology for a copy of this drawing if required.
- Ensure the following stringing sequence :-
  - Centre Conductor
  - Outer Conductor
  - Outer Conductor

Bring all three conductors up to tension simultaneously.
- This Structure (including steel crossarms to Drawing No. 6668-A2) has been designed for span lengths up to 500m (Maximum Weight Span 700m) for the following conductors:
  - 7/.104 HD Cu, AAC conductors up to and including 19/3.75 Pluto, and ACSR conductors up to and including 6/4.75 - 7/1.60 Cherry.

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	B	DATE										NON STANDARD CONSTRUCTION		DATE	17/10/2014	4920-A4		B
												33/11kV "H" FRAME SUSPENSION, DOUBLE POLE TIMBER POLES, STEEL CROSSARM		REC'D		SECT	PAGE	
														CKD	P. JUDGE	6	75	
														DWN	P. RELF	SHEET 1 OF 1		
														FILE:				



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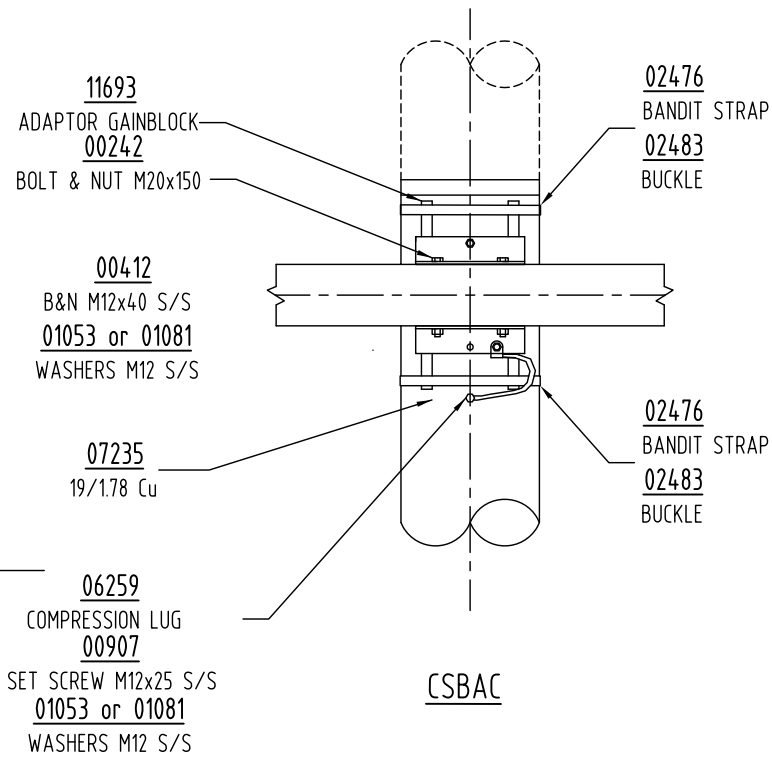
OVERHEAD CONSTRUCTION MANUAL  
NON STANDARD CONSTRUCTION  
33/11kV "H" FRAME  
SUSPENSION, DOUBLE POLE  
TIMBER POLES, STEEL CROSSARM

APP'D	F.ZAINI	TECH STDS	AUTOCAD
DATE	17/10/2014	4920-A4	A
REC'D		SECT	PAGE
CKD	P. JUDGE	6	76
DWN	P. RELF	SHEET	1 OF 1
FILE: ocm\s6\ohc-6-76a.dwg			

## CU LIST -

CSBAC

00242	2
00412	1
00907	1
01053	2
01081	2
02476	1
02483	2
06259	1
07235	AR
08521	
11693	1
12466	AR
B & N M20	



## NOTE

1. UNSUITABLE FOR USE WITH COMPOSITE CROSSARM.
2. ONLY TO BE USED FOR BRIDGING BETWEEN HV MAINS AND EDO ARM



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## OVERHEAD CONSTRUCTION MANUAL

## NON STANDARD CONSTRUCTION

## CSBAC

CROSSARM SUPPORT FOR BRIDGING ARM  
(CONCRETE POLE)

APP'D F. ZAINI

DATE 27/03/14

REC'D

CKD J.CHUNG

DWN P. RELF

TECH STDS AUTOCAD

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