

OVERHEAD CONSTRUCTION MANUAL

Section 4 – 11kV Construction

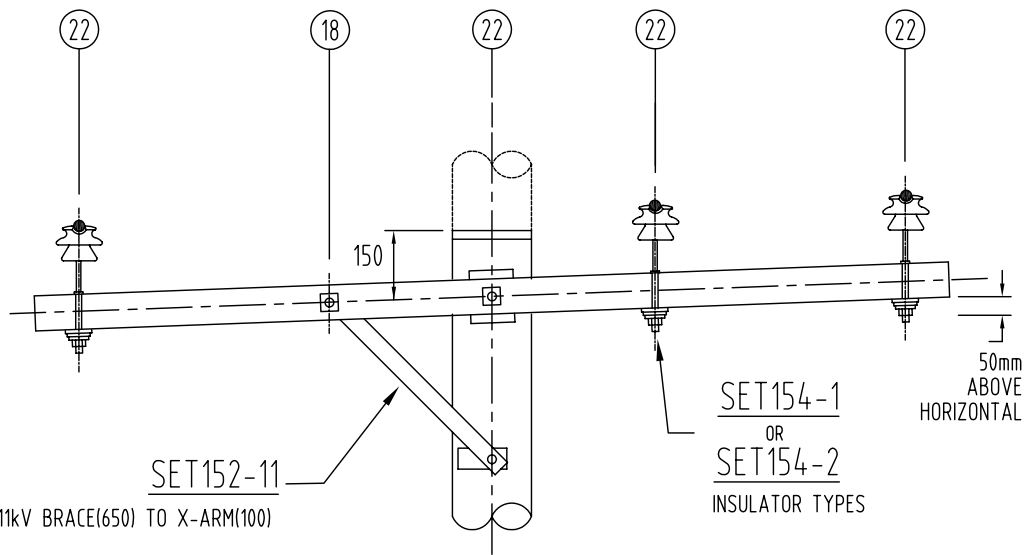
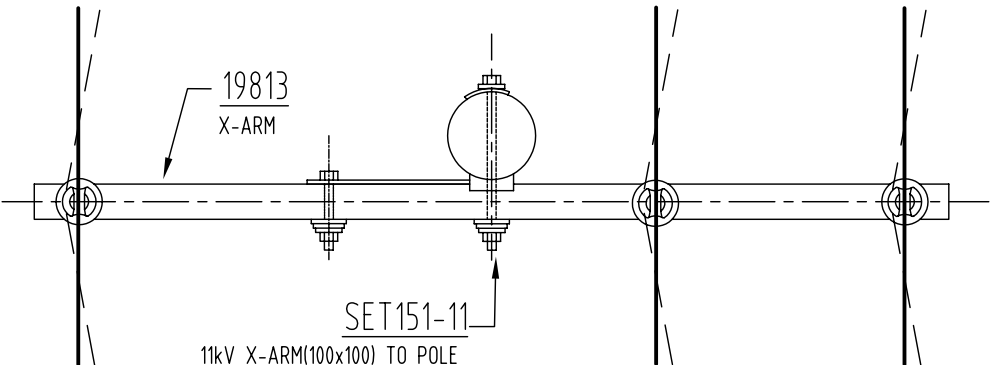
Approved by: C Noel

SET	DESCRIPTION	PAGE	DWG.No.	SET	DESCRIPTION	PAGE	DWG.No.
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CU	DESCRIPTION	PAGE	DWG.No.	CU	DESCRIPTION	PAGE	DWG.No.
	<u>CCT LOK CONSTRUCTION</u>				<u>BRIDGING</u>		
					<u>BRIDGING ARRANGEMENTS</u>		
11TDNCCTLOK	11kV Trident Straight Line & Angle	4-121	4920-A4-121		Normal Bridging - Flat (Over Arm)		
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	Construction - CCT LOK						
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	Construction - CCT LOK (Wood Pole)						
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	Construction - CCT (wood Pole)						
11NTDANCCTLO	11kV Narrow Trident Angle	4-133	4920-A4-133				
	Construction - CCT LOK (Wood Pole)						

CU LIST -

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SET151-11	1	1	1
SET152-11	1	1	1
SET154-1		3	
SET154-2			3
19813 (XARM)	1	1	1



ORIGINAL ISSUE	DATE	15/11/06	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	Composite X-Arm introduced
C	D								


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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

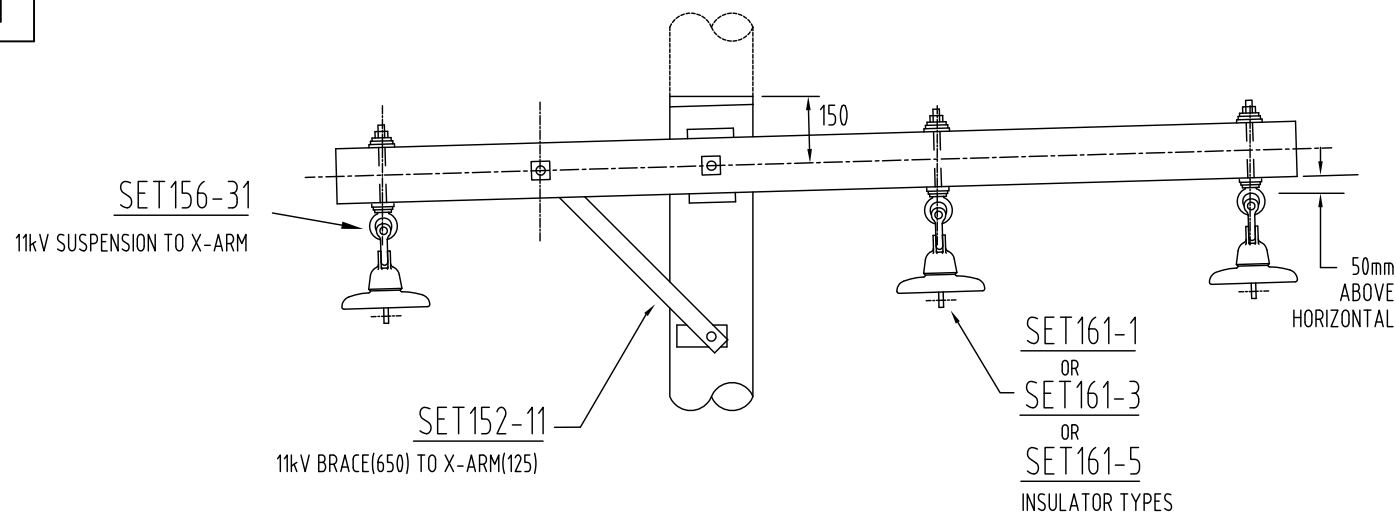
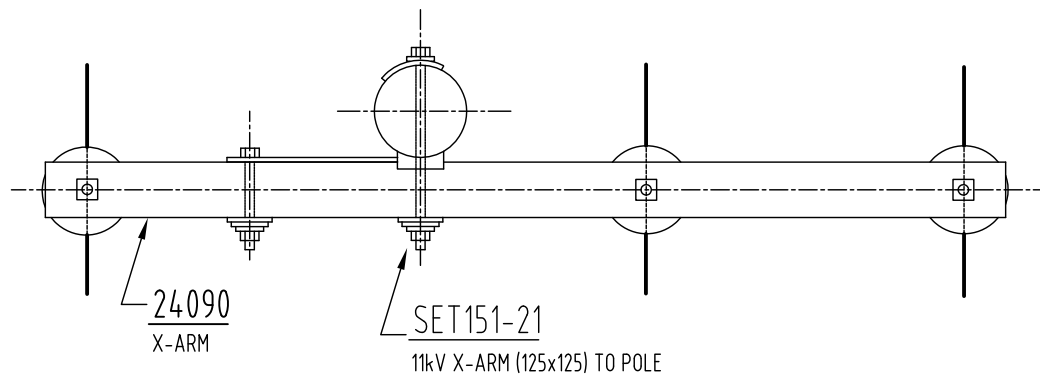
11P

11kV PIN CONSTRUCTION (WOOD POLE)

APP'D	Paul Rainbird	TECH STDS	AUTOCAD
DATE	31-05-96	4920-A4	D
REC'D	John Tunney	SECT	PAGE
CKD	Greg Dowling	4	1
DWN	M. Welsh	SHEET	1 OF 1
FILE:ocm\s4\ohc4-01d.dwg			

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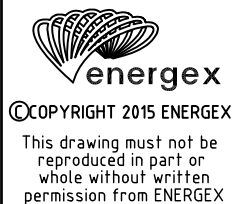
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SET152-11	1	1	1	1
SET156-31	3	3	3	3
SET161-1		3		
SET161-3			3	
SET161-5				3
24090 (XARM)	1	1	1	1



NOTES

1. STANDARD DISC INSULATOR SHOWN.

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	UPDATED TO COMPOSITE CROSSARM
E	23/12/2015	F. ZAINI	P. RELF	P. RELF	



OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11SUC

11kV SUSPENSION CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird	TECH STDS	AUTOCAD
DATE 31-05-96	4920-A4	E
REC'D John Tunney	SECT 4	PAGE 2
CKD Greg Dowling	SHEET 1 OF 1	
DWN M. Welsh	FILE:	

CU LIST -

11A

11A/N

11A/NCCT

SET151-11

1

1

1

SET155-2

3

3

SET152-11

1

1

1

19813 (X-ARM)

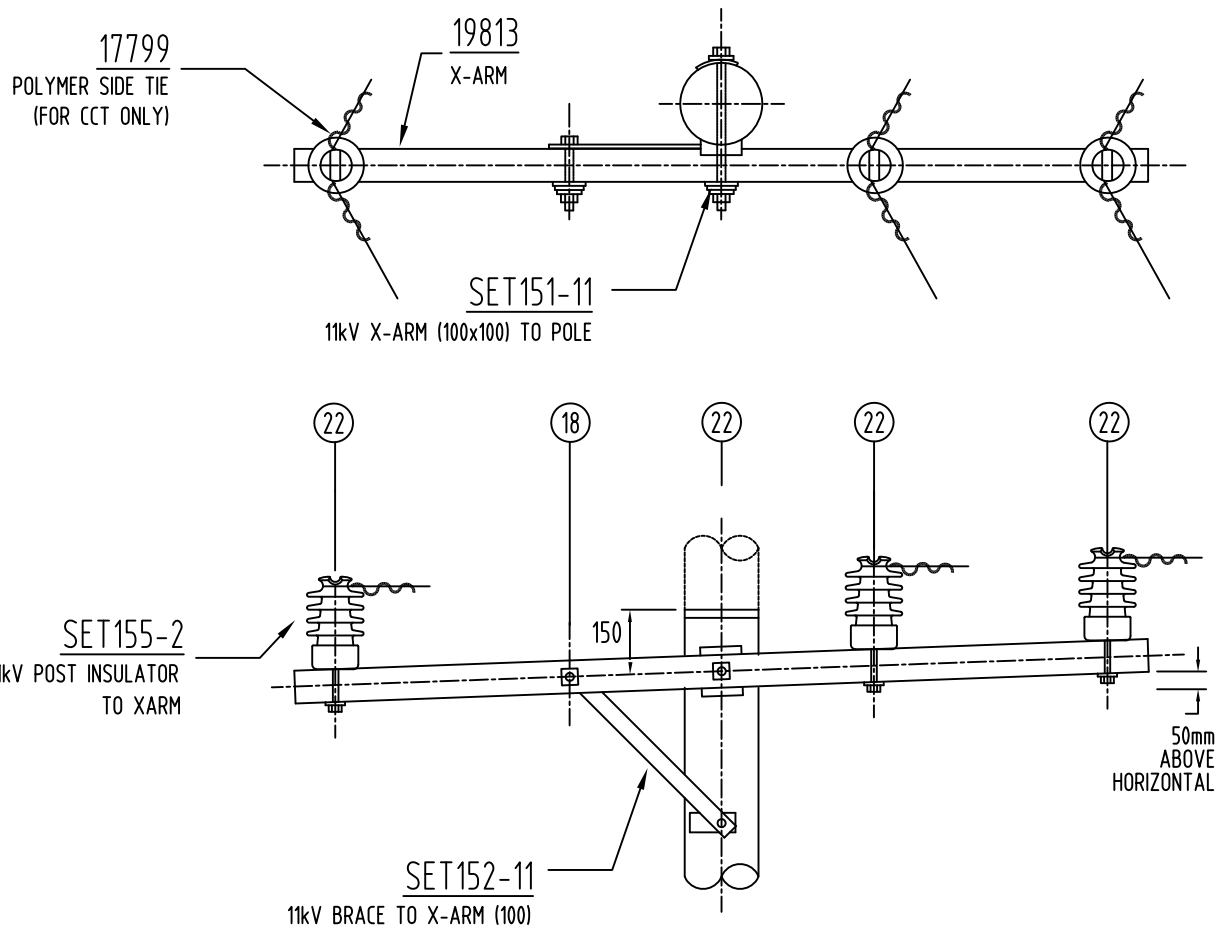
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1

1

17799 (TIE)

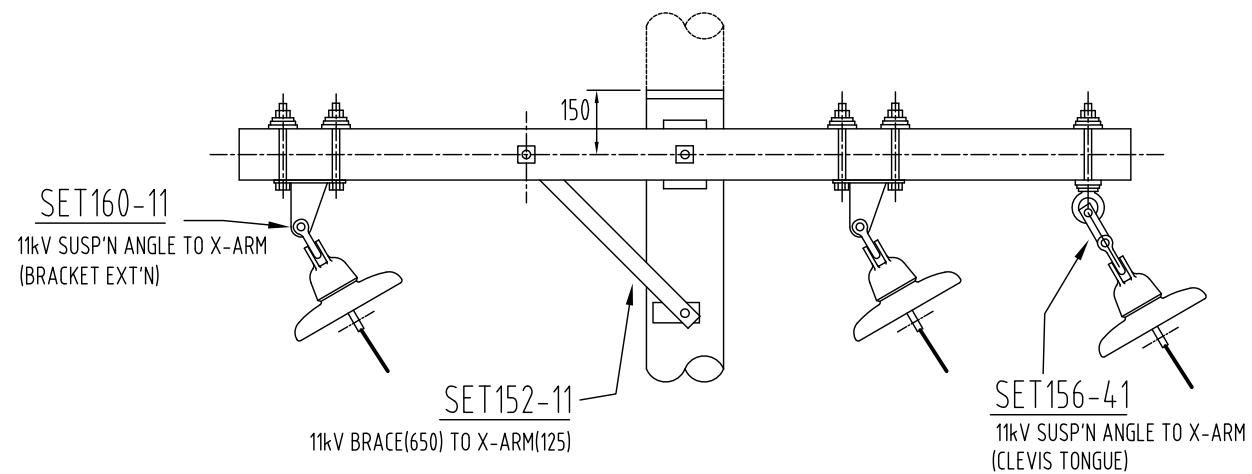
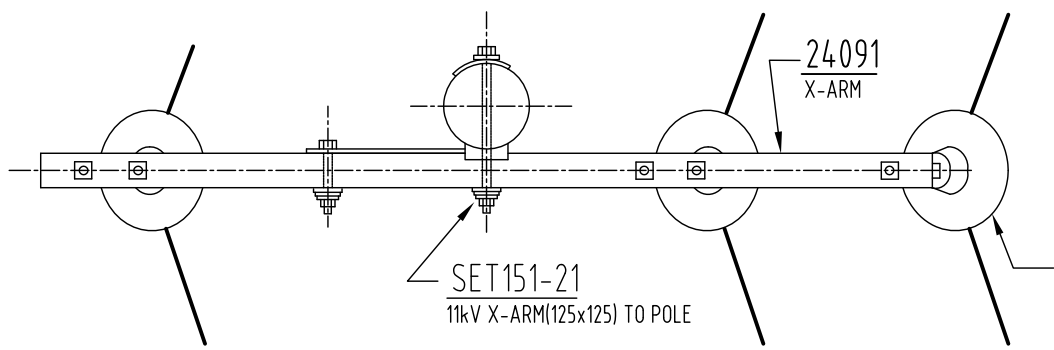
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ORIGINAL ISSUE	DATE	6/10/10	APPD	RENGISH	CKD	J.TUNNEY	DRN	P.RELF	CORRECT CU 11A/NCCT		 © COPYRIGHT 2010 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL				APP'D Paul Rainbird	TECH STDS		AUTOCAD	
												DATE	31-05-96	4920-A4		G				
												REC'D John Tunney	SECT		PAGE					
												CKD Greg Dowling	4		3					
												DWN M. Welsh	SHEET 1 OF 1		FILE:ocm\s4\ohc4-03e.dwg					
												11kV CONSTRUCTION								
												11A								
												11kV ANGLE CONSTRUCTION (WOOD POLE)								


CU LIST -

	11SUAC	11SUAC/N	11SUAC/F	11SUAC/S
SET151-21	1	1	1	1
SET152-11	1	1	1	1
SET156-41	1	1	1	1
SET160-11	2	2	2	2
SET161-1		3		
SET161-3			3	
SET161-5				3
24091 (XARM)	1	1	1	1



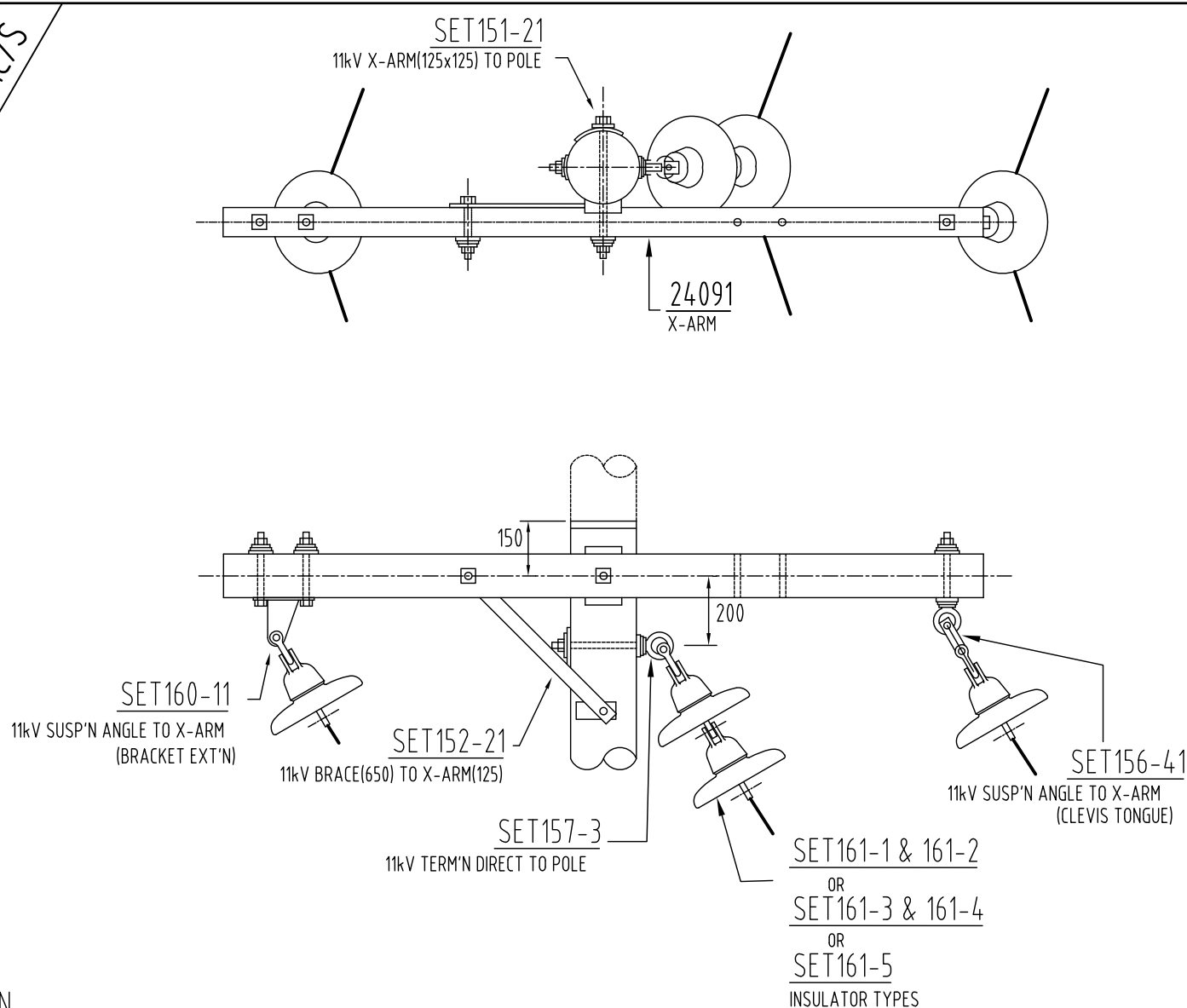
NOTE :

1. STANDARD DISC INSULATOR SHOWN

D	ORIGINAL ISSUE		APPD F. ZAINI	CKD P. RELF	DRN P. RELF	UPDATED TO COMPOSITE CROSSARM		 ©COPYRIGHT 2015 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL		APP'D Paul Rainbird	TECH STDS		AUTOCAD
	E	DATE 23/12/2015							11kV CONSTRUCTION		DATE 31-05-96	4920-A4		E
									11SUAC		REC'D John Tunney	SECT 4	PAGE 5	
									11kV SUSPENSION ANGLE CONSTRUCTION (WOOD POLE)		CKD Greg Dowling	SHEET 1 OF 1		
											DWN M. Welsh	FILE:		


CU LIST -

	11SUAHC	11SUAHC/N	11SUAHC/F	11SUAHC/S
SET151-21	1	1	1	1
SET152-21	1	1	1	1
SET156-41	1	1	1	1
SET160-11	1	1	1	1
SET157-3	1	1	1	1
SET161-1		2		
SET161-2		1		
SET161-3			2	
SET161-4			1	
SET161-5				3
24091 (XARM)	1	1	1	1



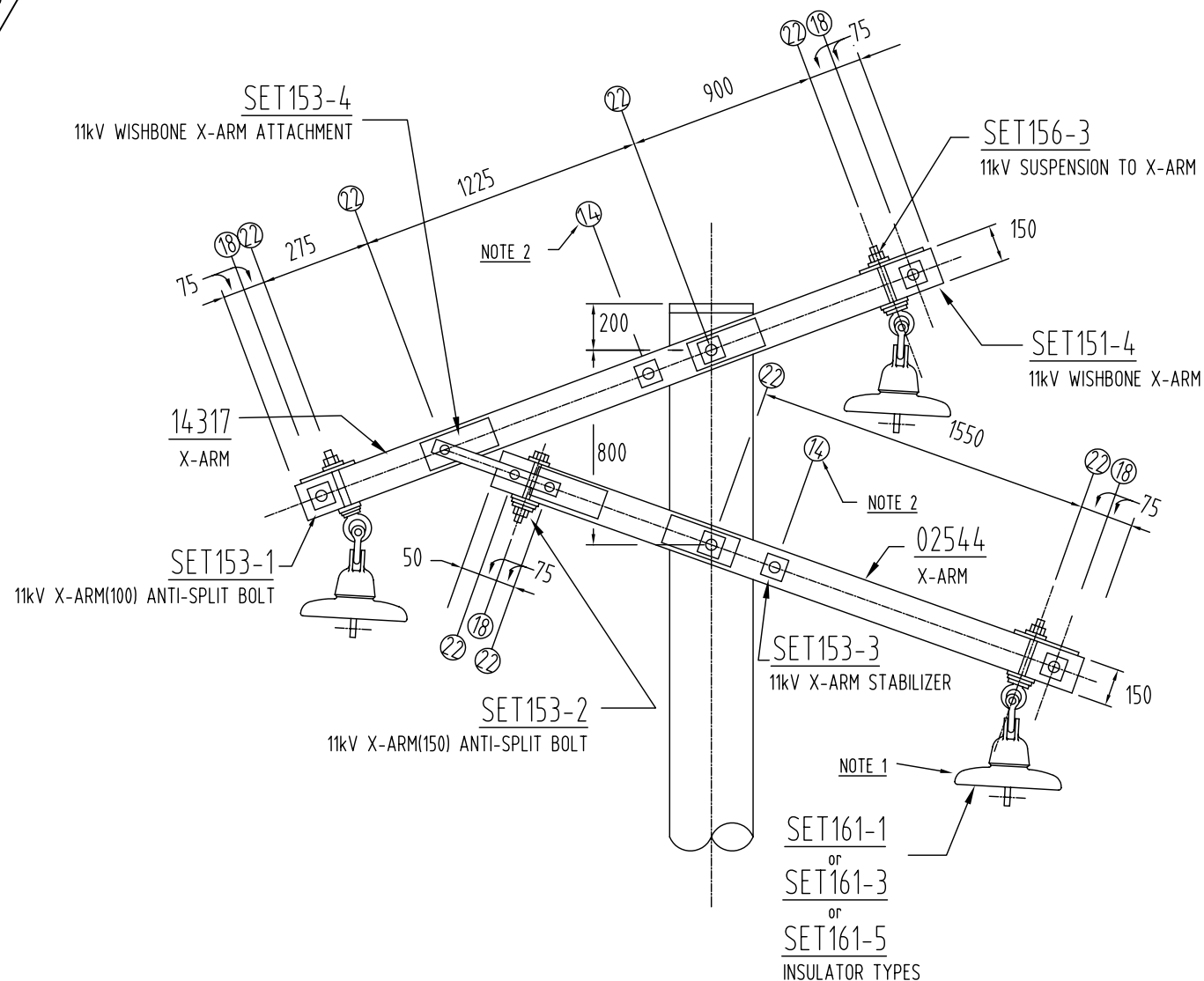
NOTE :

1. STANDARD DISC INSULATOR SHOWN

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								DATE 31-05-96	4920-A4		E	
D	E	APP'D F. ZAINI	CKD P. RELF	DRN P. RELF	UPDATED TO COMPOSITE CROSSARM		©COPYRIGHT 2015 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	11kV CONSTRUCTION	REC'D John Tunney	SECT 4	PAGE 6	
								11SUAHC	CKD Greg Dowling	SHEET 1 OF 1		
								11kV SUSPENSION ANGLE HEAVY CONSTRUCTION (WOOD POLE)	DWN M. Welsh	FILE:ocm\s4\ohc4-6d.dwg		


CU LIST -

	11W	11W/N	11W/F	11W/S
SET151-4	2	2	2	2
SET153-3	2	2	2	2
SET156-3	3	3	3	3
SET153-1	3	3	3	3
SET153-2	1	1	1	1
SET153-4	1	1	1	1
SET161-1		3		
SET161-3			3	
SET161-5				3
2544 (XARM)	1	1	1	1
14317 (XARM)	1	1	1	1



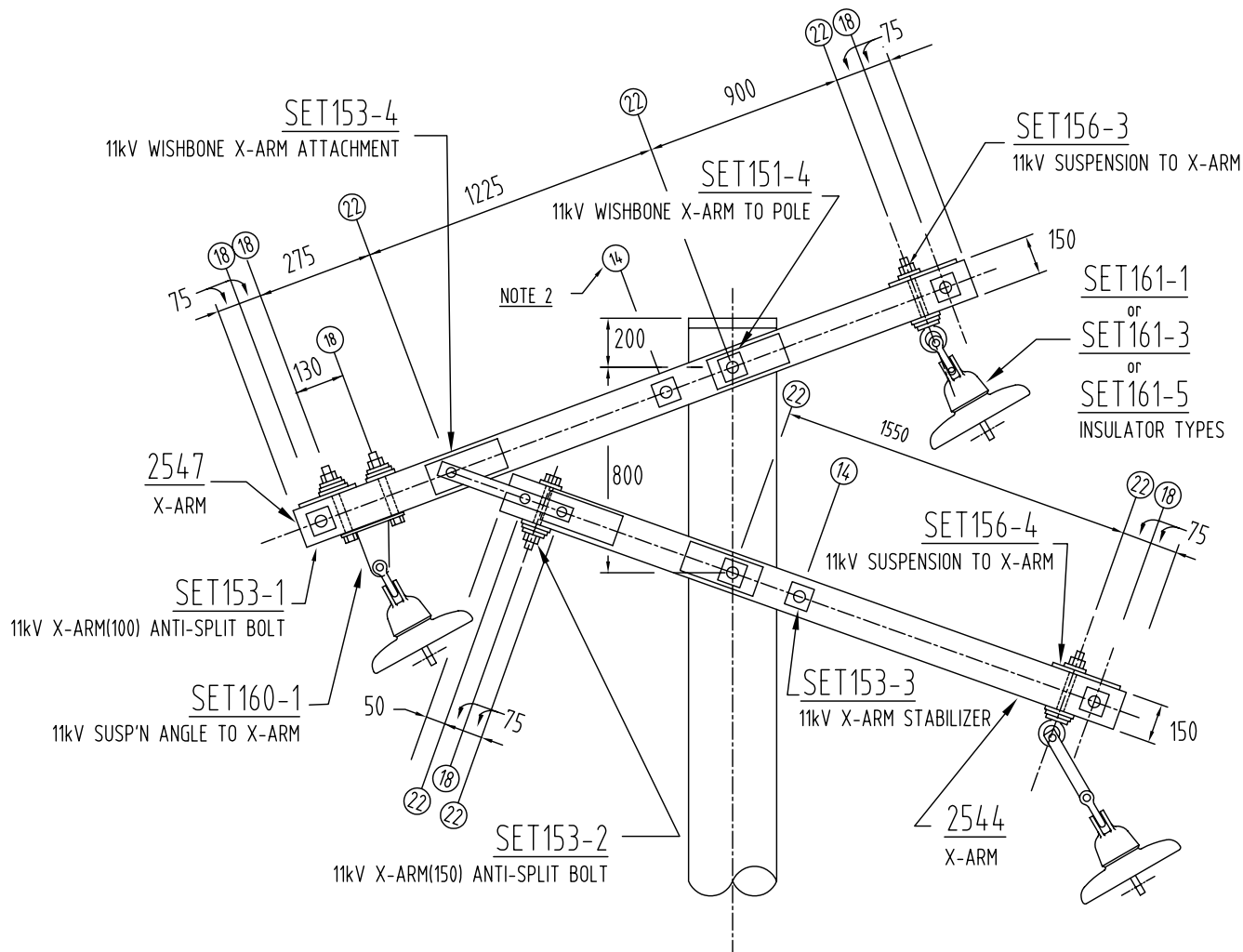
NOTES.

1. DISC INSULATOR APPLICATION
PAGE 1-161.
2. STABILISING BRACKET HOLES
TO BE DRILLED ON SITE.

ORIGINAL ISSUE	DATE 15/11/06	APPD K.NUTTALL	CKD J.TUNNEY	DRN G.JAYAMEERA	TEMPLATE CHANGED	<div> ©COPYRIGHT 2006 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX</div>	OVERHEAD CONSTRUCTION MANUAL	APP'D Paul Rainbird	TECH STDS		AUTOCAD
							DATE 31-05-96	4920-A4		D	
							REC'D John Tunney	SECT 4	PAGE 7		
							CKD Greg Dowling	SHEET 1 OF 1			
							DWN M. Welsh	FILE:ocm\s4\ohc4-7d.dwg			
							11kV CONSTRUCTION 11W 11kV WISHBONE CONSTRUCTION (WOOD POLE)				

CU LIST -

	11WA	11WA/N	11WA/F	11WA/S
SET151-4	2	2	2	2
SET153-3	2	2	2	2
SET156-3	1	1	1	1
SET156-4	1	1	1	1
SET160-1	1	1	1	1
SET153-1	3	3	3	3
SET153-2	1	1	1	1
SET153-4	1	1	1	1
SET161-1		3		
SET161-3			3	
SET161-5				3
2544 (XARM)	1	1	1	1
2547 (XARM)	1	1	1	1



NOTES.

1. DISC INSULATOR APPLICATION
PAGE 1-161.
2. STABILISING BRACKET HOLES
TO BE DRILLED ON SITE.

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	TEMPLATE CHANGED
C	15/11/06	KNUUTTALL	J.TUNNEY	G.JAYAWEERA	



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11WA

11kV WISHBONE ANGLE CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 D

SECT 4

PAGE 8

SHEET 1 OF 1

FILE:ocm\s4\ohc4-8d.dwg

CU LIST -

11VA

11VA/N

11VA/F

11VA/S

SET157-3

3

3

3

3

SET161-2

3

3

SET161-4

3

SET161-5

3

NOTES :

1. STANDARD DISC INSULATOR SHOWN.
2. IF CONDUCTORS ROLL FROM VERTICAL TO FLAT CONSTRUCTION INCREASE PHASE SPACING FROM 825 TO 1100mm.

SET157-3

11kV TERM'N DIRECT TO POLE

DEVIATION ANGLE

NOTE 2

825-1100

NOTE 2

825-1100

SET161-2

or

SET161-4

or

SET161-5

INSULATOR TYPES

ORIGINAL ISSUE	DATE	15/11/06	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	TEMPLATE CHANGED
C	D								



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11VA

11kV VERTICAL ANGLE CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 D

SECT PAGE

4 15

SHEET 1 OF 1

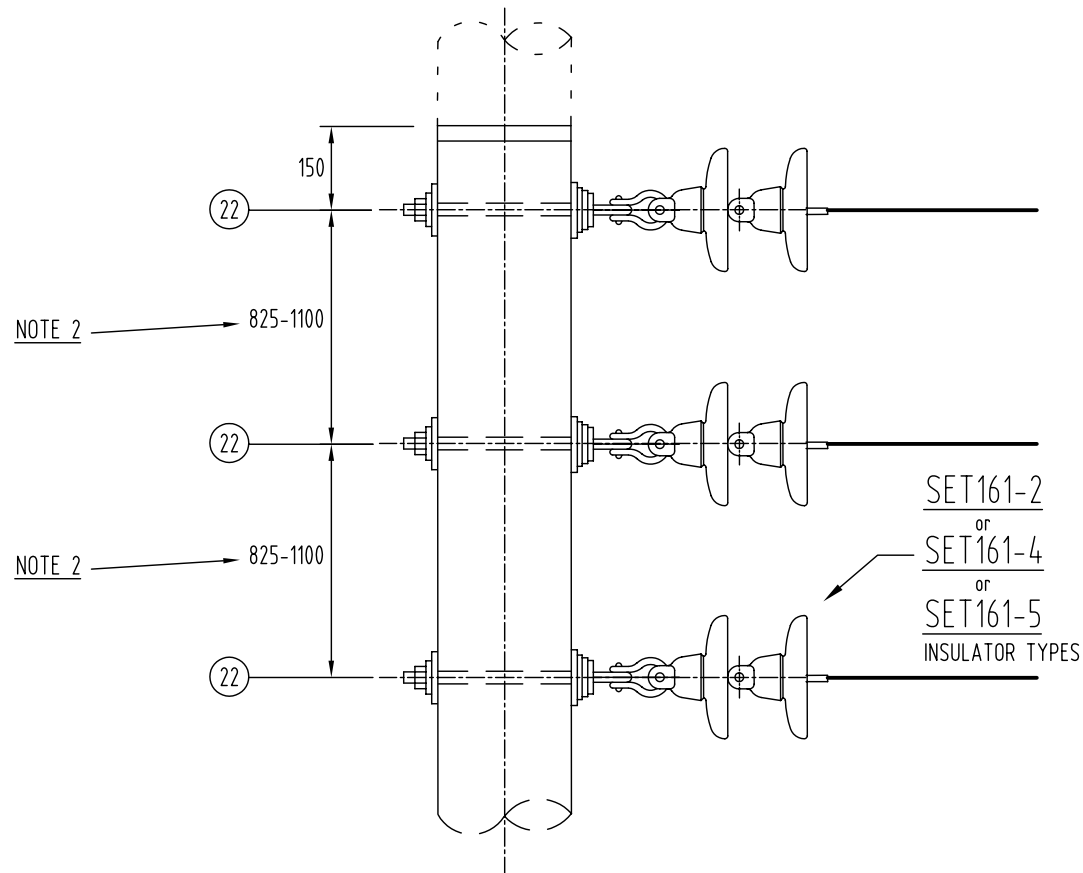
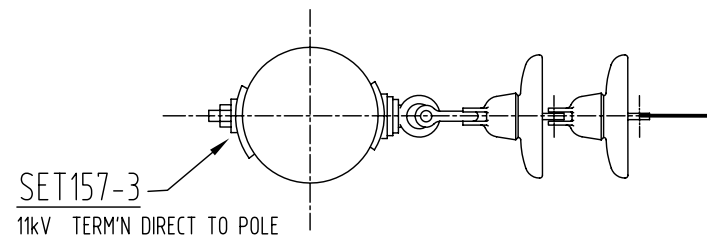
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CU LIST -

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SET157-3	3	3	3	3
SET161-2		3		
SET161-4			3	
SET161-5				3

NOTES :

- STANDARD DISC INSULATOR SHOWN.
- IF CONDUCTORS ROLL FROM VERTICAL TO FLAT CONSTRUCTION INCREASE PHASE SPACING FROM 825 TO 1100mm.



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C	D								



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11VT

11kV VERTICAL TERMINATION CONSTRUCTION (WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 D

SECT PAGE

4 16

SHEET 1 OF 1

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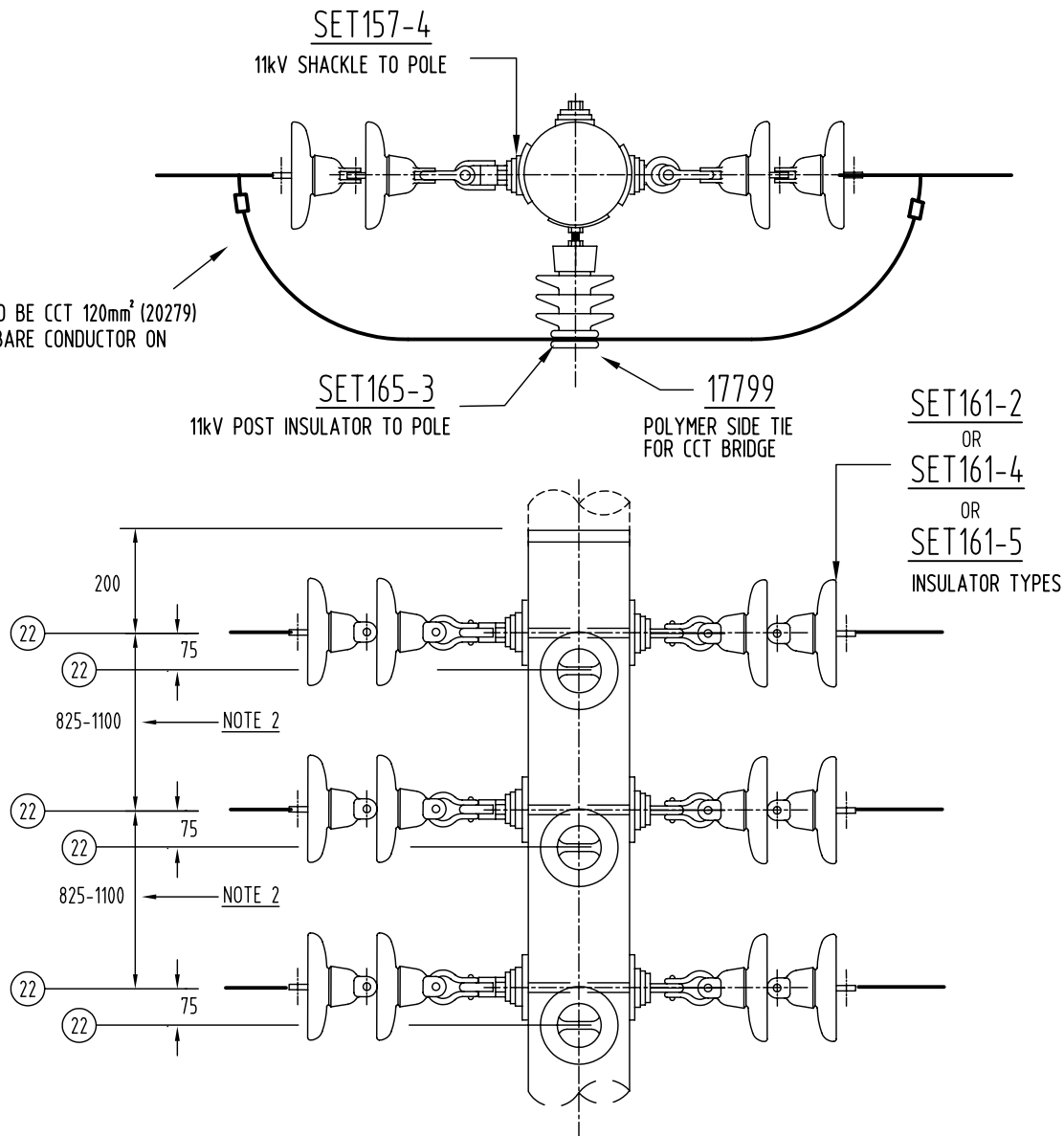
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SET157-4	3	3	3	3
SET165-3	3	3	3	3
SET161-2		6		
SET161-4			6	
SET161-5				6
17799 (TIE)		3	3	3
20279 (CCT)		6	6	6

NOTES :

- STANDARD DISC INSULATOR SHOWN.
- IF CONDUCTORS ROLL FROM VERTICAL TO FLAT CONSTRUCTION INCREASE PHASE SPACING FROM 825 TO 1100mm.
- 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.

BRIDGING CONDUCTOR TO BE CCT 120mm² (20279)
OR WILDLIFE PROOFED BARE CONDUCTOR ON
ALL PHASES



ORIGINAL ISSUE	DATE	15/11/06	APP'D	KNUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	TEMPLATE CHANGED
C	D								



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11VS

11kV VERTICAL SHACKLE CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 D

SECT PAGE

4 17

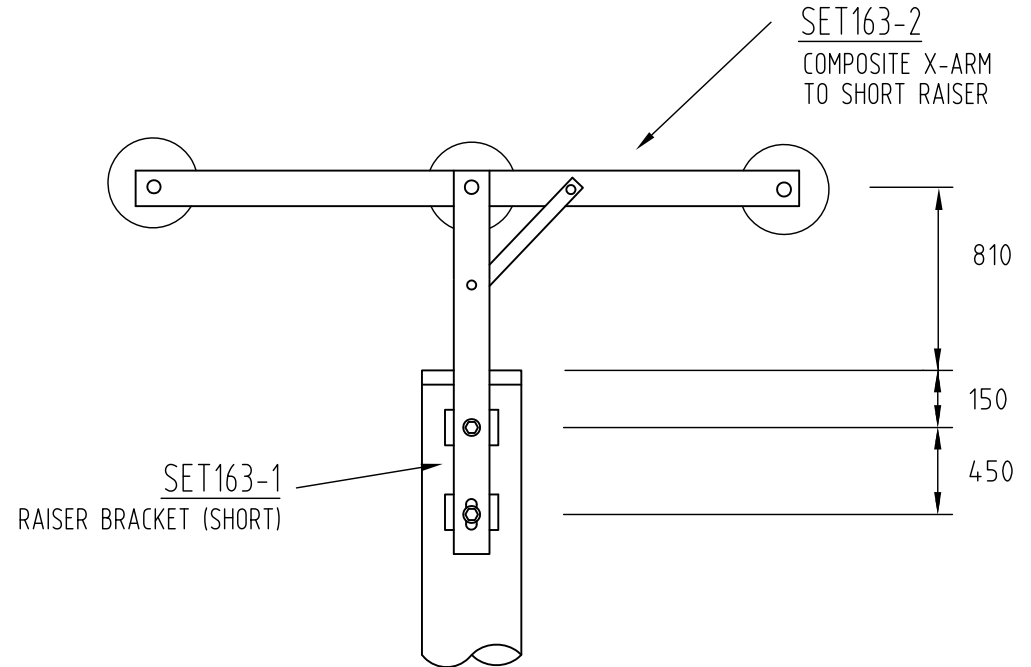
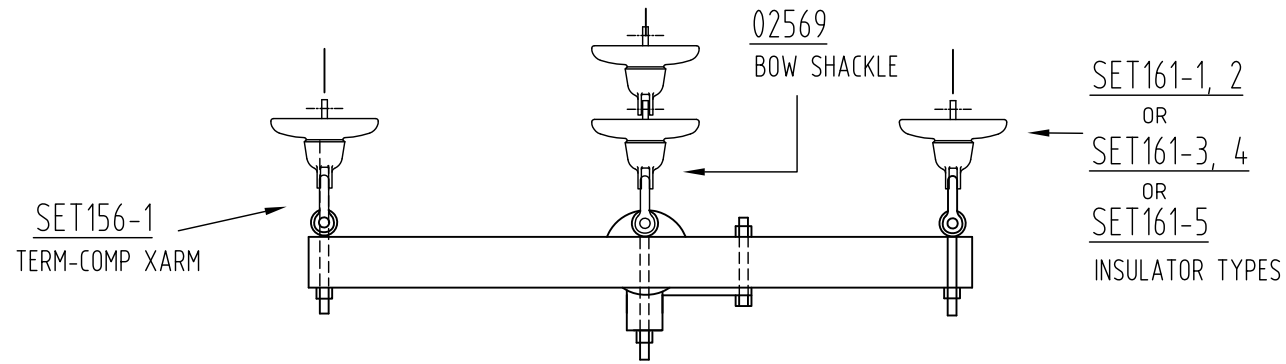
SHEET 1 OF 1

FILE:ocm\s4\ohc4-17d.dwg

CU LIST -


11PET
11PET/N
11PET/F
11PET/S

SET163-1	1	1	1	1
SET163-2	1	1	1	1
SET156-1	2	2	2	2
02569	1	1	1	1
SET161-1		2		
SET161-2		1		
SET161-3			2	
SET161-4			1	
SET161-5				3



NOTES :

1. STANDARD DISC INSULATOR SHOWN.

ORIGINAL ISSUE A	DATE 12-08-2011 E	APPD ROY ENGLISH	CKD J.TUNNEY	DRN J.TUNNEY	UPDATED FOR COMPOSITE X-ARM		 © COPYRIGHT 2011 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL 11kV CONSTRUCTION 11PET 11kV POLE EXTENSION-SHORT TERMINATION CONSTRUCTION (WOOD POLE)	APP'D P. RAINBIRD	TECH STDS		AUTOCAD
									DATE 31-05-1996	4920-A4		E
									REC'D	SECT	PAGE	
									CKD J.TUNNEY	4	19	
									DWN M.WELSH	SHEET 1 OF 1		FILE:

CU LIST -

11PEP

11PEP/N

11PEP/NCCT

SET163-1

1

1

1

SET163-3

1

1

1

SET166-1

2

2

SET166-2

1

1

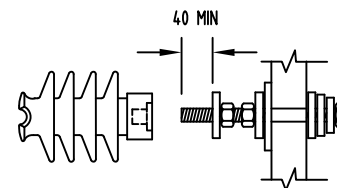
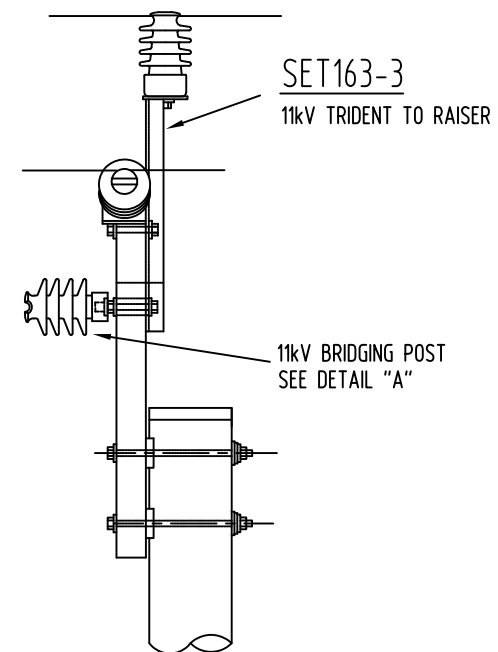
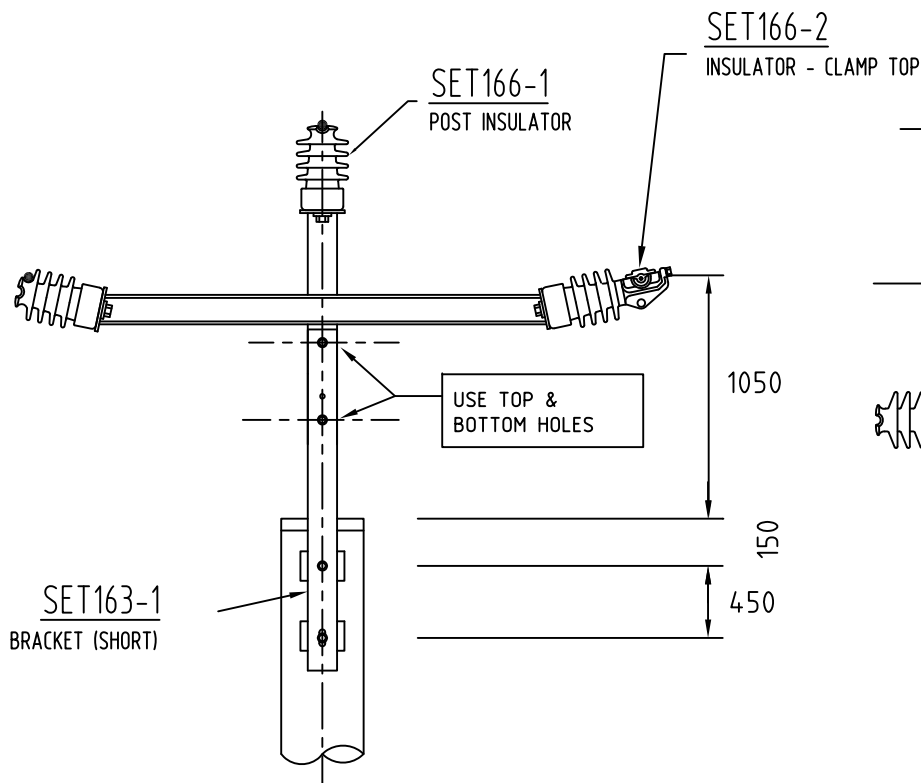
17799(S/TIE)

1

17803(T/TIE)

1

SET163-1
RAISER BRACKET (SHORT)



DETAIL "A"

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	CORRECT CU 11PEP/NCCT
E	6/10/10	RENGISH	J.TUNNEY	P.RELF	



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11PEP

11kV POLE EXTENSION-SHORT
TRIDENT POST CONSTRUCTION (WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 E

SECT PAGE

4 20

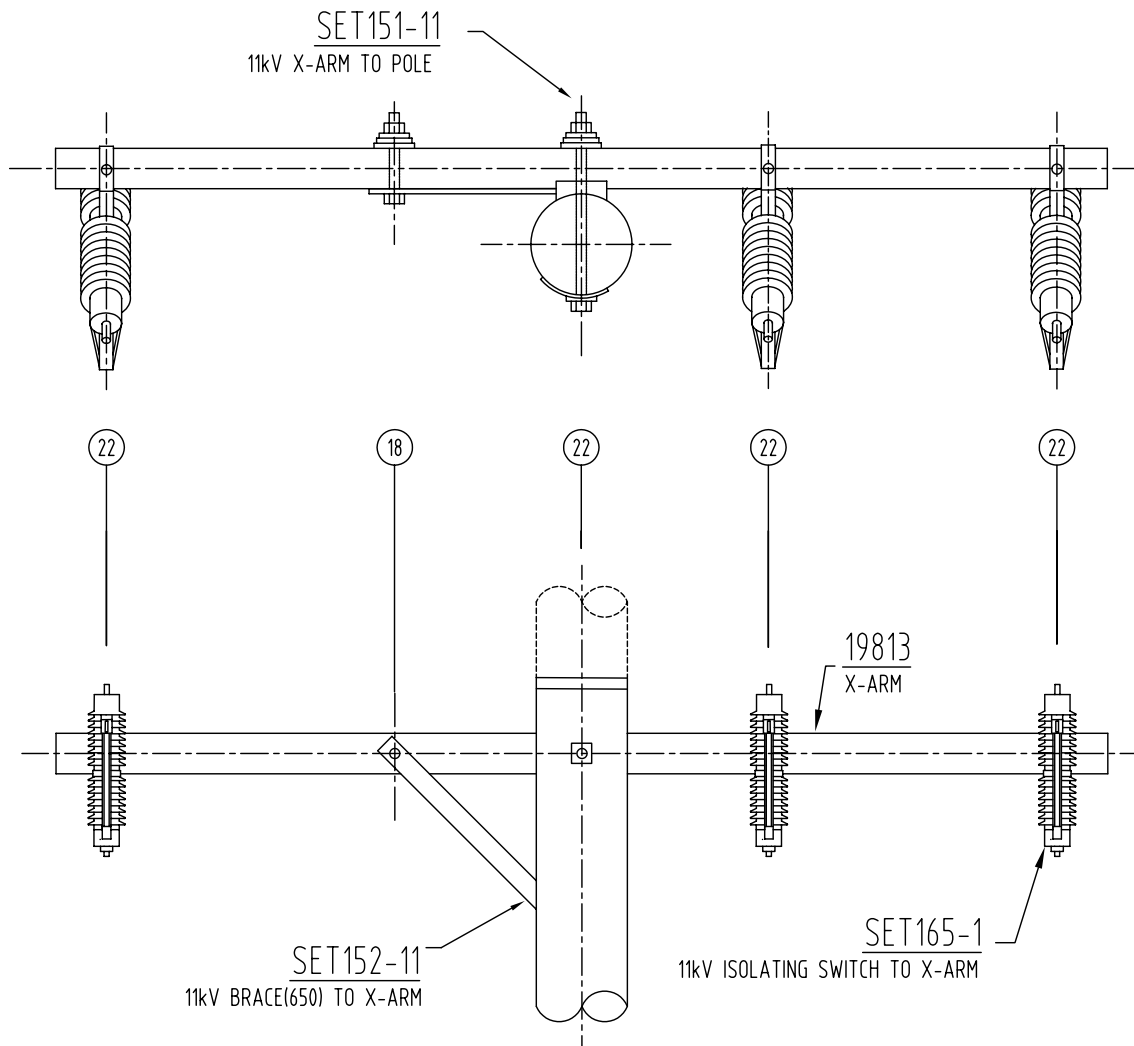
SHEET 1 OF 1

FILE:ocm\s4\ohc4-20d.dwg

CU LIST -

11ISO

SET151-11	1
SET152-11	1
SET165-1	3
19813 (XARM)	1



B	ORIGINAL ISSUE	C	DATE	15/11/06	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	COMPOSITE X-ARM INTRODUCED
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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11ISO

11kV ISOLATING SWITCH CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 C

SECT PAGE

4 21

SHEET 1 OF 1

FILE:ocm\s4\ohc4-21c.dwg

CU LIST -

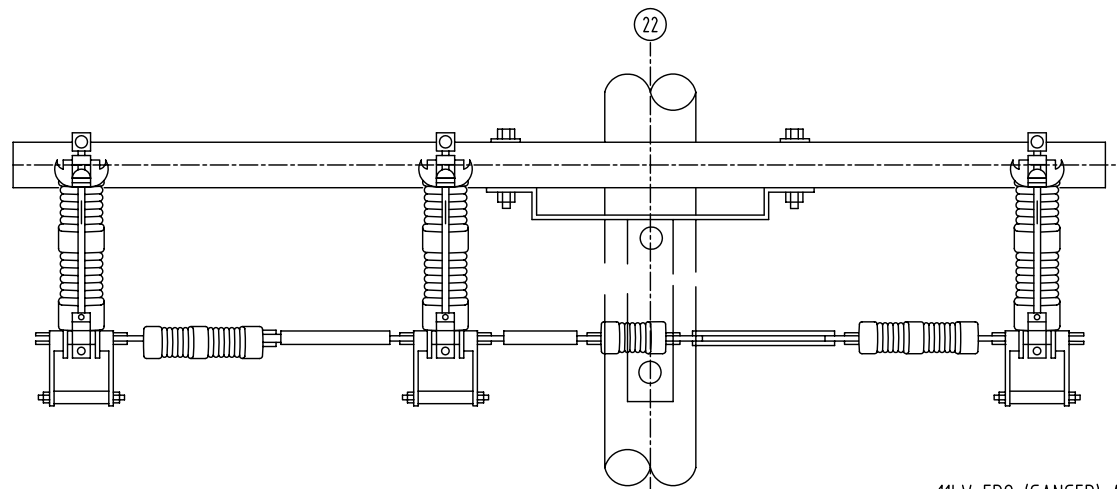
11EDOG

SET259-1

1

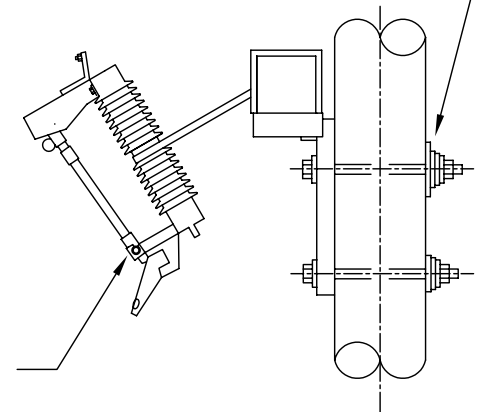
15083

1



15083

11kV EDO (GANGED) ASSEMBLY

SET259-1
11kV EDO (GANGED) TO POLE

NOTE :

1. REFER MANUFACTURER'S INSTRUCTIONS FOR OPERATION DETAILS.

ORIGINAL ISSUE	DATE	APPD	CKD	DRN	TEMPLATE CHANGED
C	D 15/11/06	K NUTTALL	J. TUNNEY	G. JAYAWEERA	



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11EDOG

11kV EDO (GANGED) CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 D

SECT PAGE

4 22

SHEET 1 OF 1

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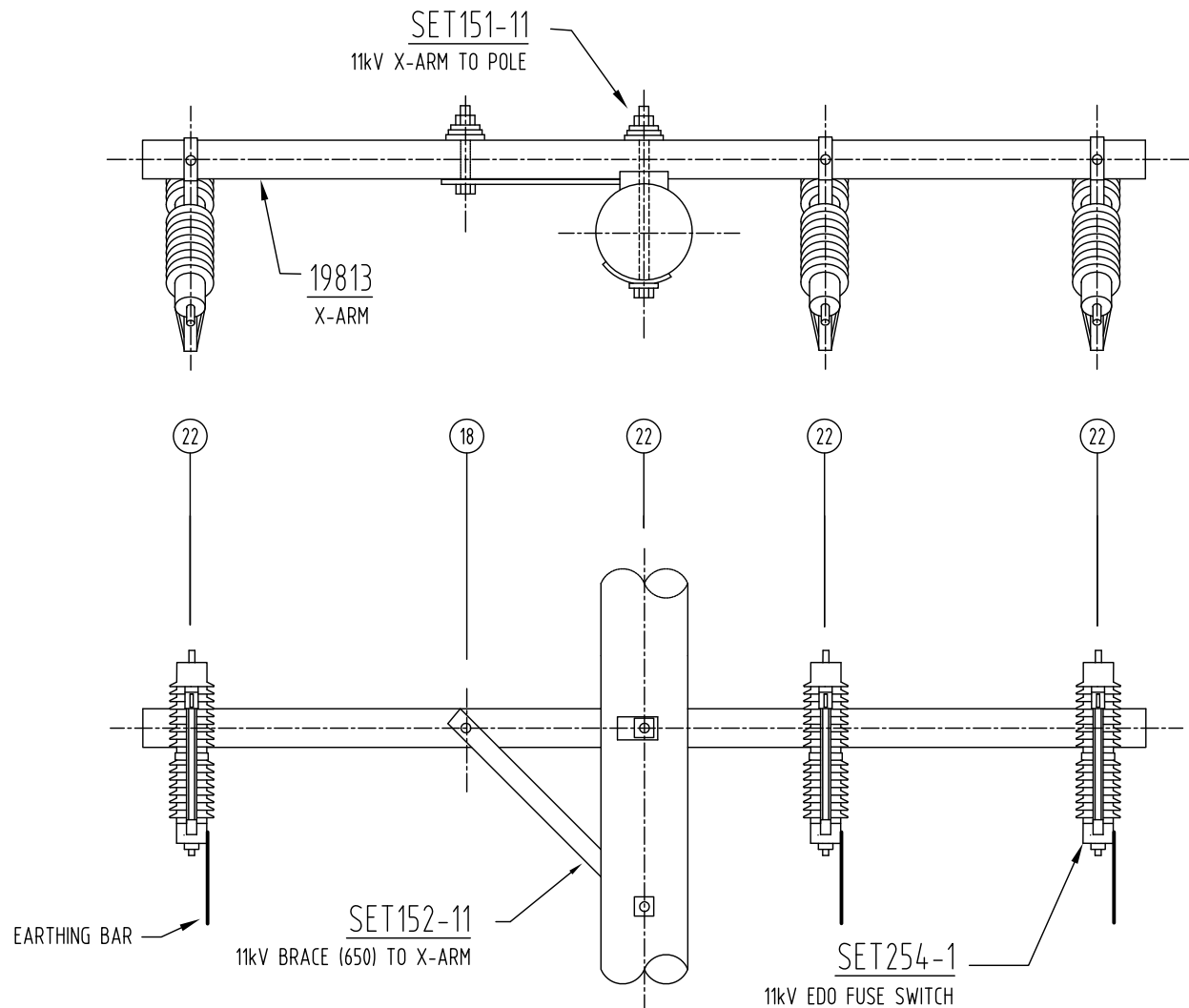
CU LIST -

11ED03

11ED02

SET151-11	1	1
SET152-11	1	1
SET254-1	3	2
19813 (XARM)	1	1

NOTE: DO NOT USE IN
BUSHFIRE AREAS



NOTE :

1. Centre EDO not required for 11ED02.
2. Use 11SD03 and 11SD02 (see 4-24) in bushfire areas

ORIGINAL ISSUE	DATE	19/01/12	APPD	RENGISH	CKD	J.TUNNEY	DRN	P.RELF	ADD NOTES FOR BUSHFIRE ZONES
A	E								



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11ED03 & 11ED02

11kV EDO CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 E

SECT PAGE

4 23

SHEET 1 OF 1

FILE: X X X X

CU LIST -

11SD03

11SD02

SET151-11	1	1
SET152-11	1	1
SET254-5	3	2
19813 (XARM)	1	1

COMPLETE UNIT

SPARKLESS FUSE UNIT

FUSE CARRIER

CURRENT LIMITER

SET254-5

11kV EDO UNIT WITH COMPLETE SPARKLESS FUSE UNIT

REMOVE FUSE CARRIER FROM EDO BODY AND REPLACE WITH COMPLETE SPARKLESS FUSE UNIT

EARTHING BAR

SET151-11
11kV X-ARM TO POLE19813
X-ARM

SET152-11

11kV BRACE (650) TO X-ARM

NOTES :

1. CENTRE EDO/SPARKLESS FUSE NOT REQUIRED FOR 11FT2
2. SPARE FUSE CARRIER IS SC 22103
3. SPARE CURRENT LIMITER IS SC 22102
4. SPARE COMPLETE UNIT IS SC 22101
5. REFER CURRENT VERSION OF TECH. INSTRUCTION TSD0019 FOR FUSE LINKS AVAILABLE.
6. SPARKLESS FUSE UNIT IS APPLICABLE ONLY FOR POLE TRANSFORMER SITES ($\leq 200\text{kVA}$). NOT FOR MDO SITES

ORIGINAL ISSUE	DATE	C.LEE	A.ANAND	P.RELF	ADD NOTE 6
A	20/10/2014				
B					
APPD					
CKD					
DRN					



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11SD03 & 11SD02

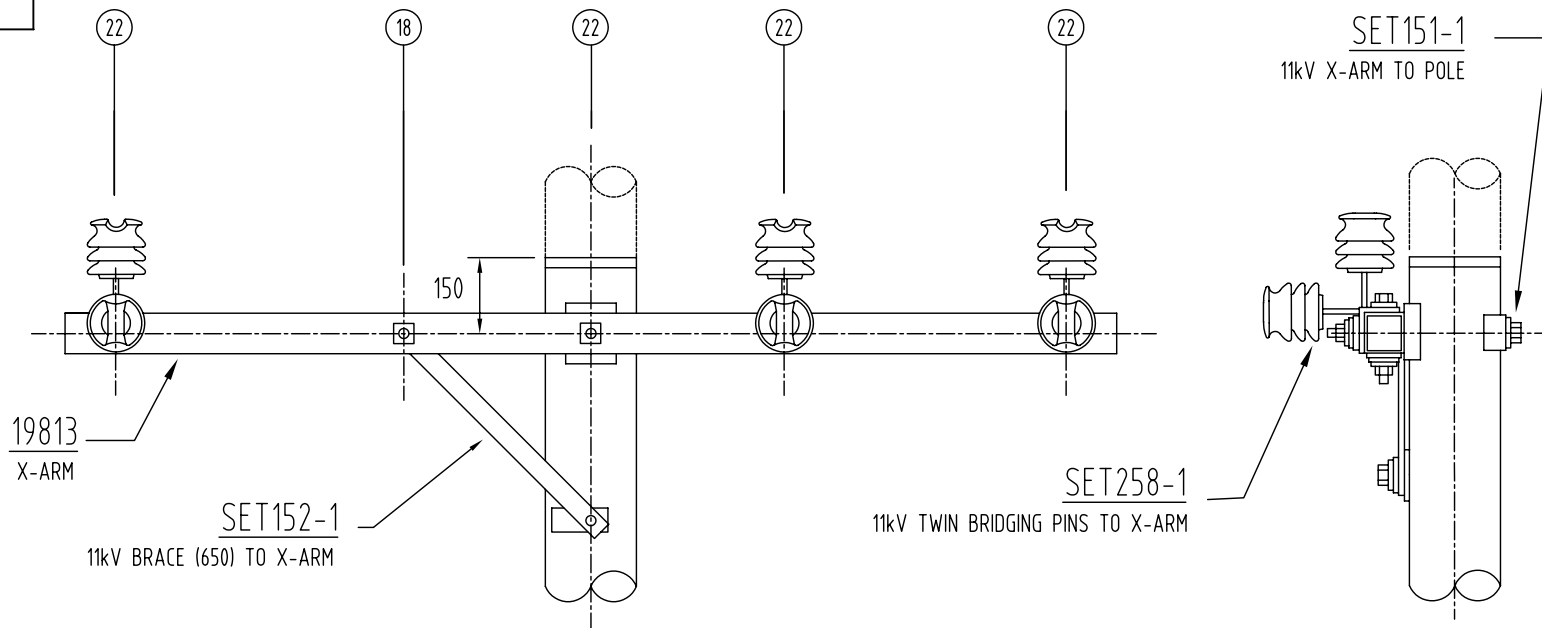
11kV SPARKLESS DROP-OUT CONSTRUCTION (WOOD POLE)

APP'D	R. ENGLISH	TECH STDS	AUTOCAD
DATE	8-7-2010	4920-A4	B
REC'D		SECT	PAGE
CKD	J. TUNNEY	4	24
DWN	John Tunney	SHEET	1 OF 1
FILE:			

CU LIST -

11PTBS

SET151-1	1
SET152-1	1
SET258-1	3
19813	1



ORIGINAL ISSUE	DATE	15/11/06	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA	COMPOSITE X-ARM INTRODUCED
C	D								



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11PTBS

11kV PT BRIDGE SUPPORT CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

4920-A4 D

SECT PAGE

4 25

SHEET 1 OF 1

FILE: < < < <

CU LIST -

11BS

11BS1

SET151-1

1

1

SET152-1

1

1

SET153-1

2

2

SET154-4

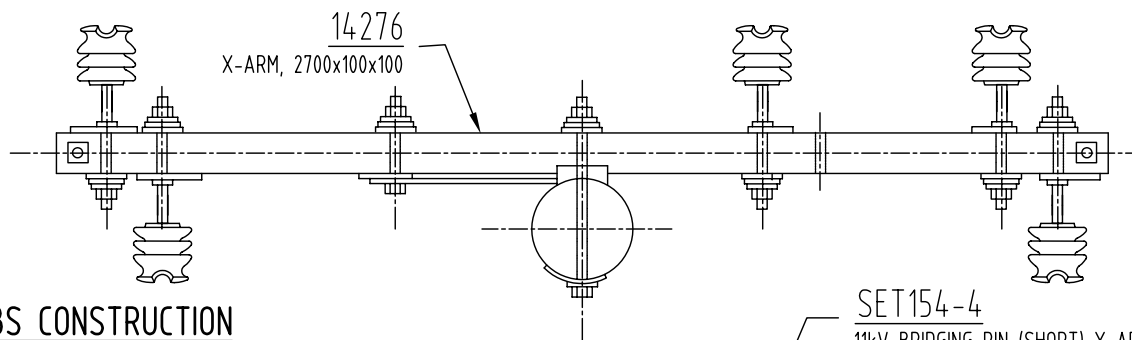
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6

14276

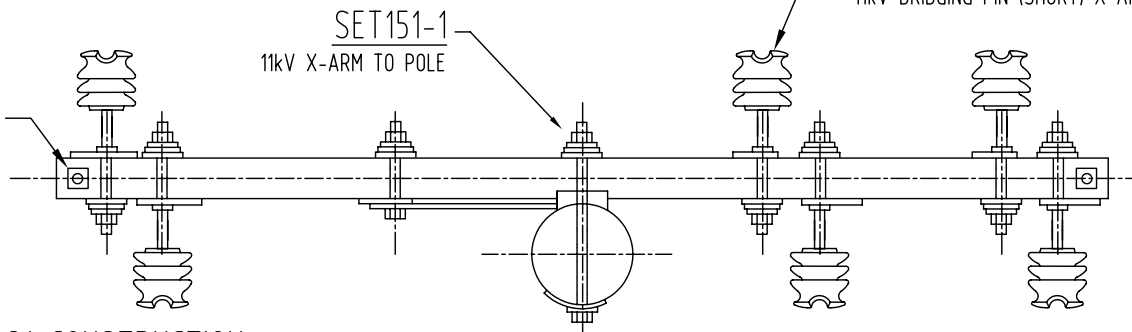
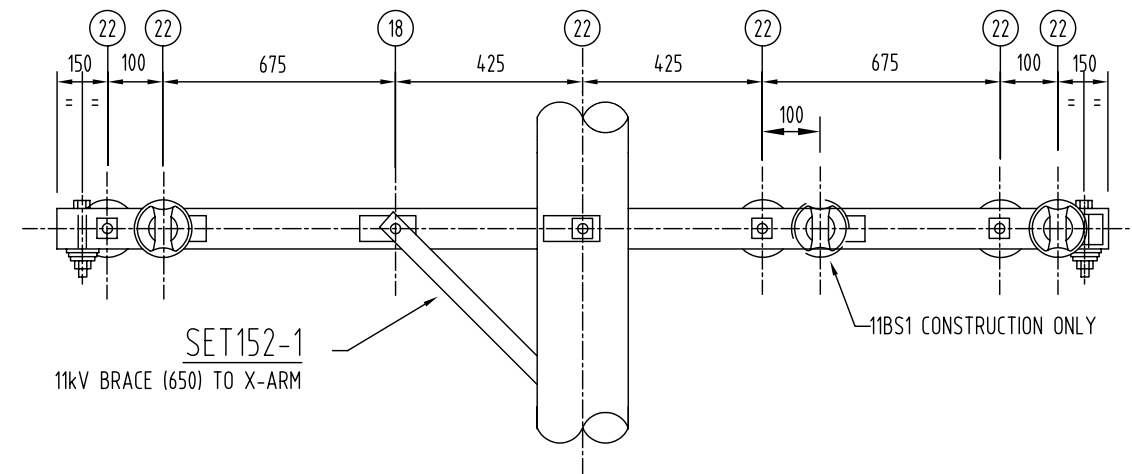
1

1

11BS CONSTRUCTION

SET153-1

11kV X-ARM (100) ANTI-SPLIT BOLT

11BS1 CONSTRUCTION

SET152-1

11kV BRACE (650) TO X-ARM

11BS1 CONSTRUCTION ONLY

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	TEMPLATE CHANGED
B	15/11/06	B.SOMERS	J.TUNNEY	G.JAYAWEERA	



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11BS, 11BS1

11kV BRIDGE SUPPORT CONSTRUCTION (WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

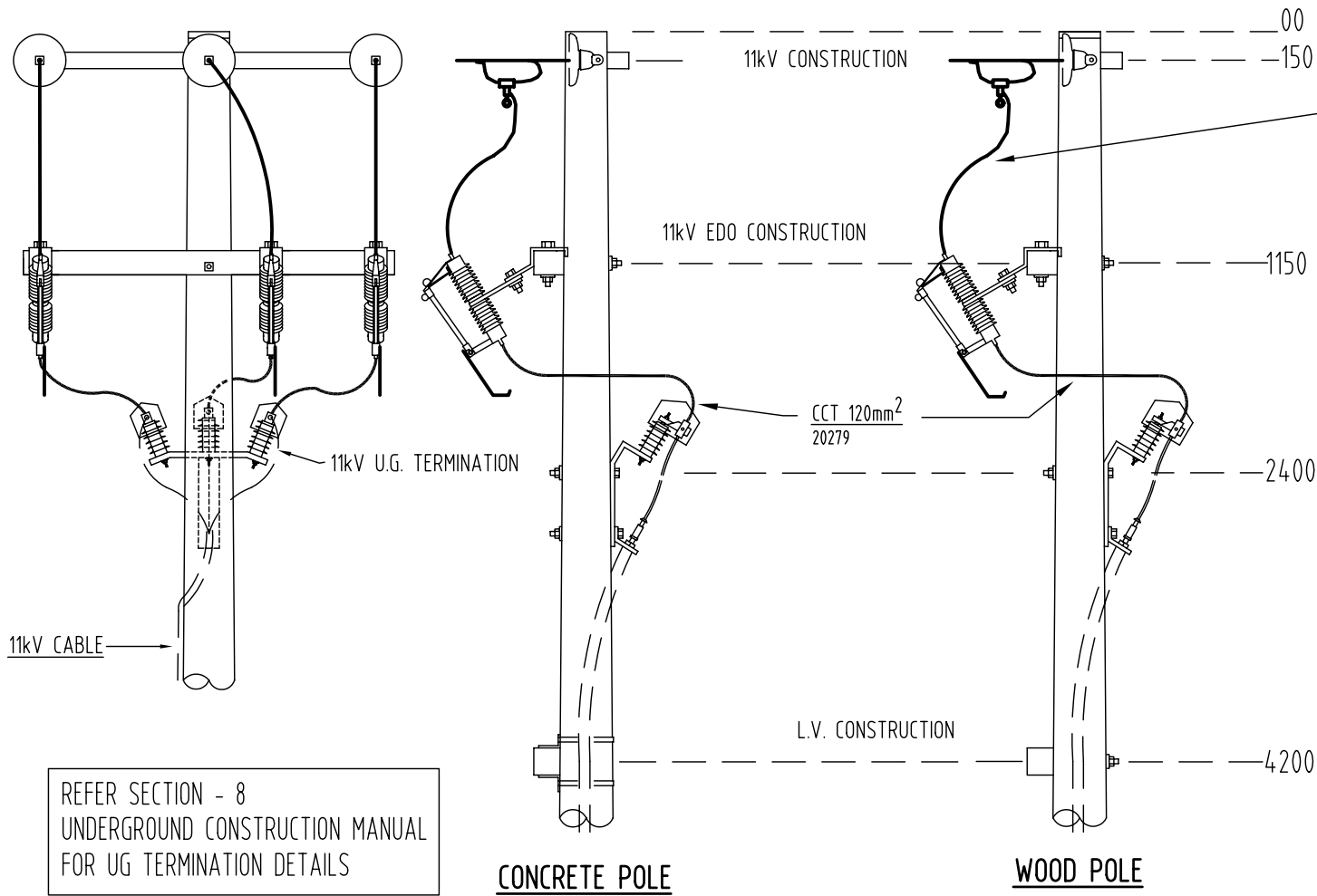
4920-A4 C

SECT PAGE

4 26

SHEET 1 OF 1


FILE: X X X X



BRIDGING FROM OH MAINS TO EDO WITH 19/153 CU BLACK PVC & LIVE LINE CLAMP		
CU LIST	FROM	TO
PAGE7-53-4	AL TERMINATION LOOP	to EDO
PAGE7-53-3	AL MAINS BAIL CLAMP	to EDO
PAGE7-53-2	CU TERMINATION LOOP	to EDO
PAGE7-53-1	CU MAINS BAIL CLAMP	to EDO

REFER SECTION - 8
UNDERGROUND CONSTRUCTION MANUAL
FOR UG TERMINATION DETAILS

B	ORIGINAL ISSUE
C	DATE 15/11/06
APPD	K.NUTTALL
CKD	J.TUNNEY
DRN	G.JAYAWERA
TEMPLATE CHANGED CCT BRIDGING ADDED	



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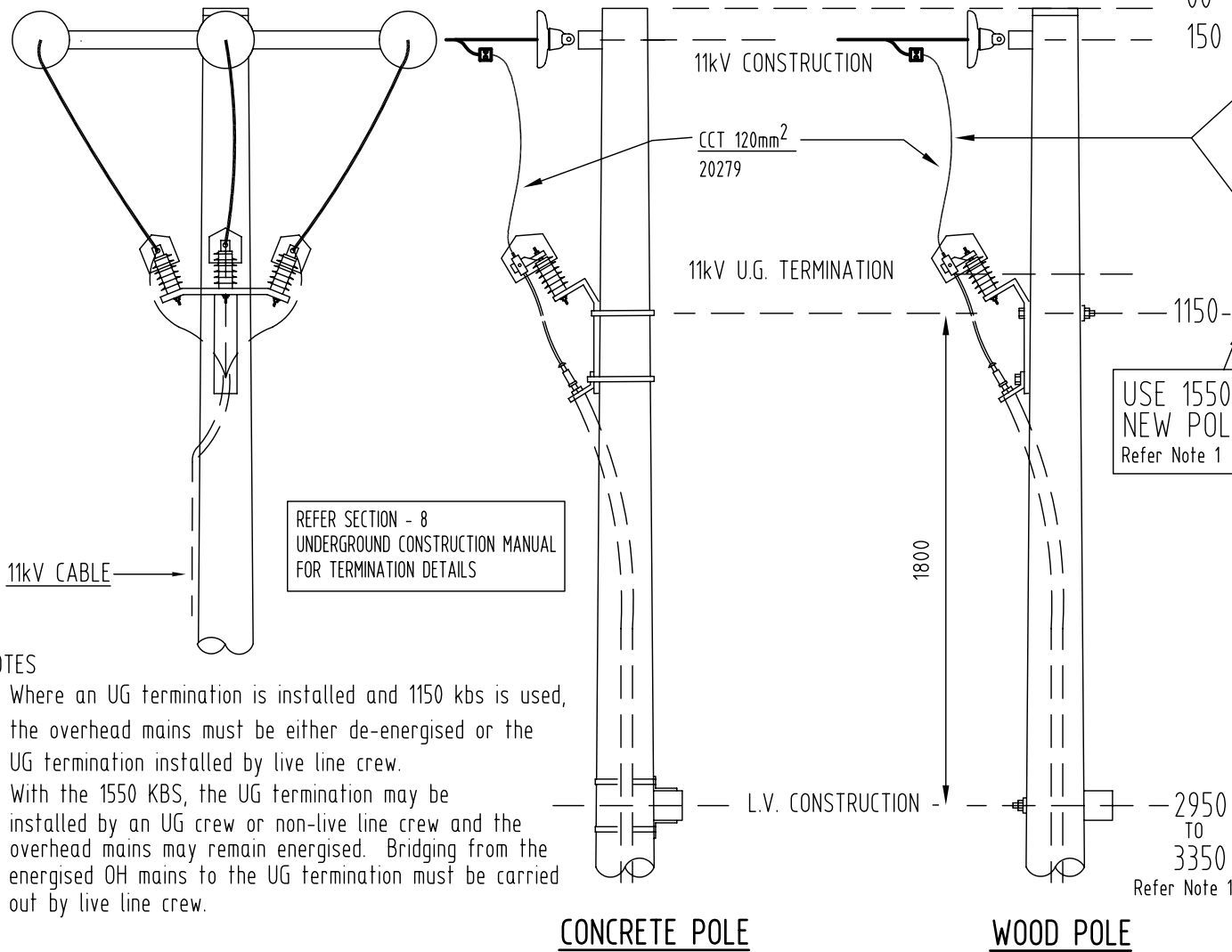
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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION
11kV U.G. POLE TERMINATION WITH EDO

APP'D	Paul Rainbird
DATE	31-05-96
REC'D	John Tunney
CKD	Greg Dowling
DWN	M. Welsh

TECH STDS		AUTOCAD
4920-A4		D
SECT	PAGE	
4	27	
SHEET 1 OF 1		
FILE: 		



BRIDGING FROM OH MAINS TO XLPE UG CABLE with 120mm ² CCT (20279) 400A rating		
CU LIST	FROM	TO
11BRAL/240XL	AL MAINS 25-150mm ² to all XLPE	
11BRA1/240XL	AL MAINS 95-260mm ² to all XLPE	
11BRCU/240XL	CU MAINS 10-95mm ² to all XLPE	
11BRC1/240XL	CU MAINS 70-185mm ² to all XLPE	

BRIDGING FROM OH MAINS TO PLY UG CABLE with 120mm ² CCT (20279) 400A rating		
CU LIST	FROM	TO
11BRIDG185AL	AL MAINS 25-150mm ² to 185 PLY	
11BRIDG300AL	AL MAINS 95-260mm ² to 300 PLY	
11BRIDG185CU	CU MAINS 10-95mm ² to 185 PLY	
11BRIDG300CU	CU MAINS 70-185mm ² to 300 PLY	


USE 1550 ON NEW POLES
Refer Note 1

COMMON OH MAINS CONDUCTORS & NOM. CSA (mm ²)			
	CONDUCTOR	OD(mm)	CSA(mm ²)
ALUMINIUM TYPES	RAISIN	7.5	18
	LIBRA, APPLE	9.0	50
	MARS, BANANA	11.3	77
	MOON, CHERRY, IODINE	14.3	124
	PLUTO, NEON	18.8	210
	SATURN, LEMON, NITROGEN	21.0	261
COPPER TYPES	7/.064, 7/.16	4.9	14
	7/.080, 7/.14	6.1	23
	7/.104, 7/.12	7.9	38
	19/.064, 19/.16	8.1	39
	19/.083, 19/.14	10.5	66
	19/.101, 19/.12	12.8	95

NOTES

- Where an UG termination is installed and 1150 kbs is used, the overhead mains must be either de-energised or the UG termination installed by live line crew. With the 1550 KBS, the UG termination may be installed by an UG crew or non-live line crew and the overhead mains may remain energised. Bridging from the energised OH mains to the UG termination must be carried out by live line crew.

ORIGINAL ISSUE	DATE 30-01-2008	APPD R. ENGLISH	CKD J. TUNNEY	DRN J. TUNNEY	DISTANCE TO SUBCIRCUIT SHOWN FOR CLARITY
A	E				


energen
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OVERHEAD CONSTRUCTION MANUAL 11kV CONSTRUCTION 11kV U.G. POLE TERMINATION

APP'D Paul Rainbird	TECH STDS	AUTOCAD
DATE 31-05-96	4920-A4	E
REC'D John Tunney	SECT 4	PAGE 28
CKD Greg Dowling	SHEET 1 OF 1	
DWN M. Welsh	FILE: X X X X	

CU LIST -

11TD

11TD/N

11TD/NCCT

SET165-2

1

1

1

SET166-1

1

3

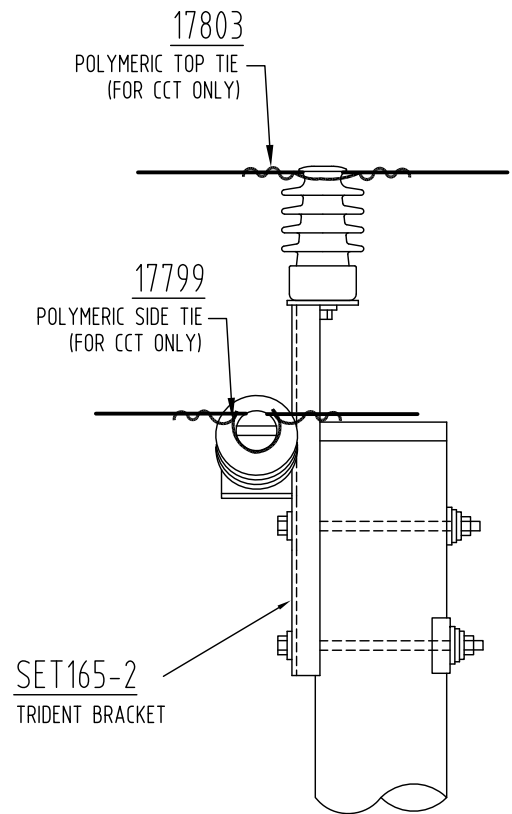
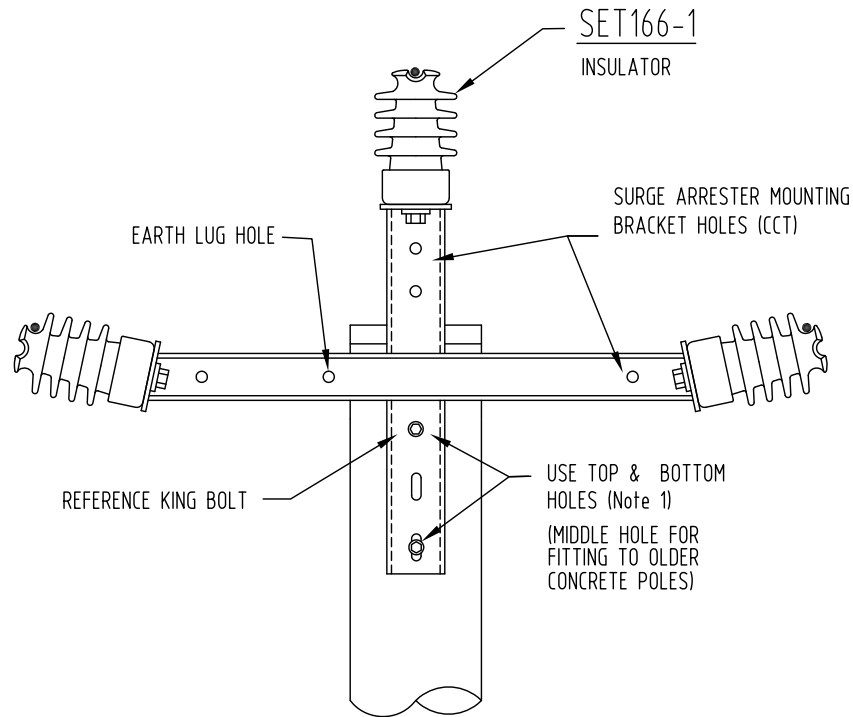
3

17803

1


17799

2



NOTES

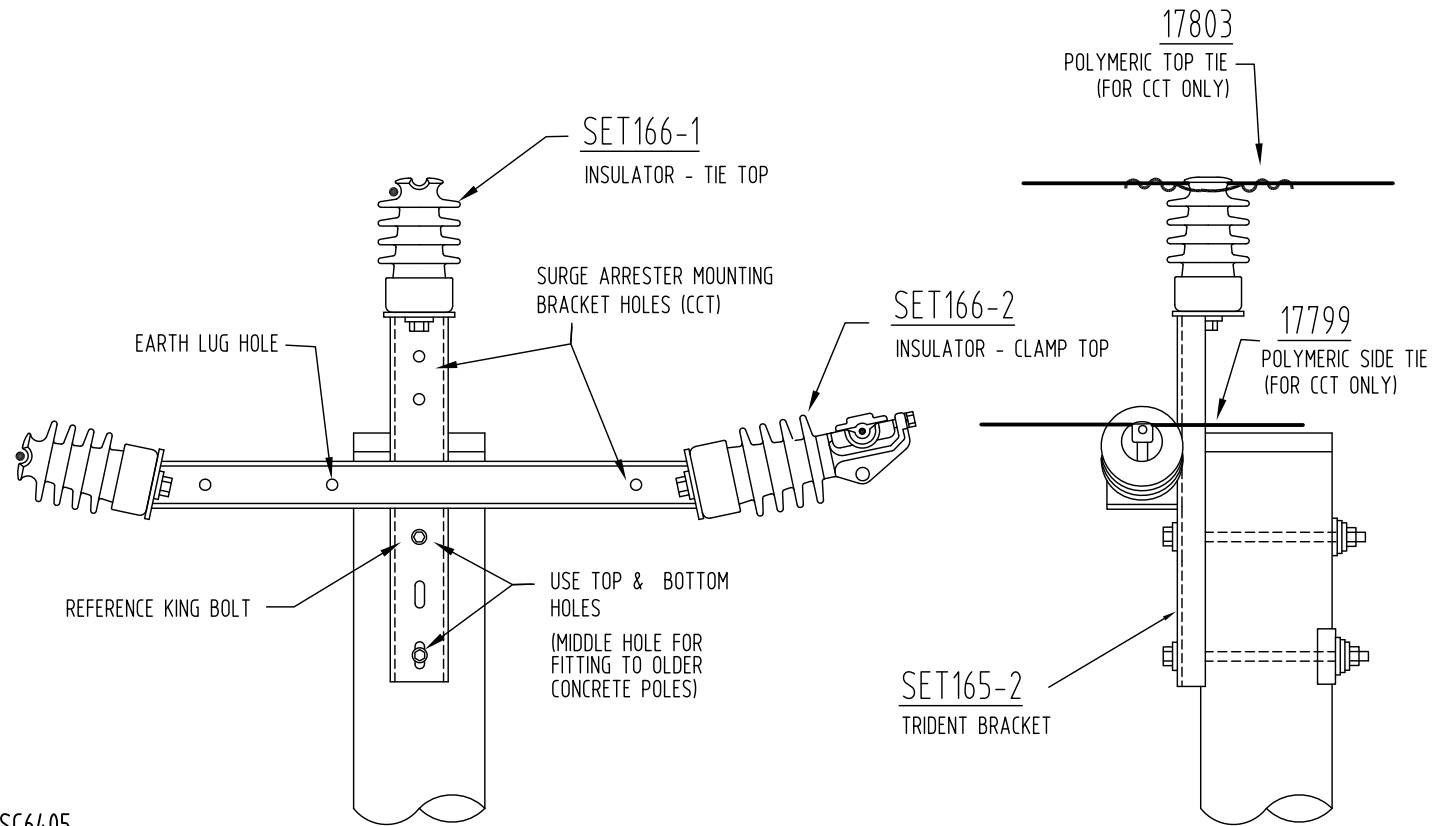
1. ON TIMBER POLES, TOP AND MIDDLE HOLES MAY BE USED IF REPLACING NARROW TRIDENT WITH THIS CONSTRUCTION.
2. DEVIATION ANGLE MUST NOT EXCEED 5 DEGREES.

ORIGINAL ISSUE	DATE	RENGISH	J.TUNNEY	J. Tunney	Note added		 © COPYRIGHT 2012 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL		APP'D Paul Rainbird	TECH STDS		AUTOCAD
										DATE 31-05-96	4920-A4		G
								11kV CONSTRUCTION 11TD (WOOD POLE) 11kV TRIDENT (EXPANDED) STRAIGHT LINE CONSTRUCTION		REC'D John Tunney	SECT 4	PAGE 29	
										CKD Greg Dowling	SHEET 1 OF 1		
								DWN M. Welsh	FILE: XX XX XX XX				

CU LIST -

	11TDA	11TDA/N	11TDA/NCCT
SET165-2	1	1	1
SET166-1		2	2
SET166-2		1	1
16385			
17803			1
17799			1
6405			

SC16385 - TRUNNION CLAMP FOR COPPER COND.



NOTE - WHEN USING 7/080 USE HELICAL SPLICE SC6405 TO BUILD UP CONDUCTOR TO PREVENT SLIDING THROUGH THE TRUNNION CLAMP

ORIGINAL ISSUE	DATE	RENGISH	P.JUDGE	P.PREF	11TDCA,11TDCA/N REMOVED
C	16-09-2011	APPD	CKD	DRN	



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11TDA & 11TDCA

11kV TRIDENT ANGLE CONSTRUCTION (WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD Greg Dowling

DWN M. Welsh

TECH STDS AUTOCAD

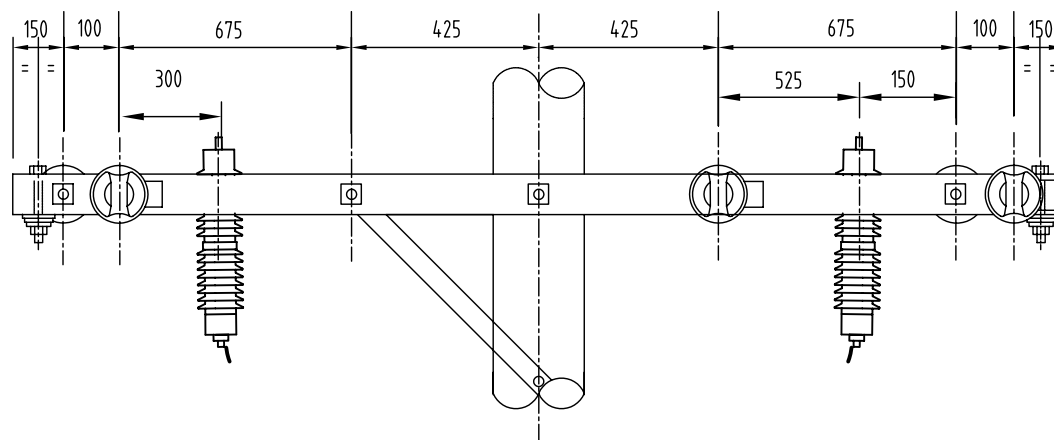
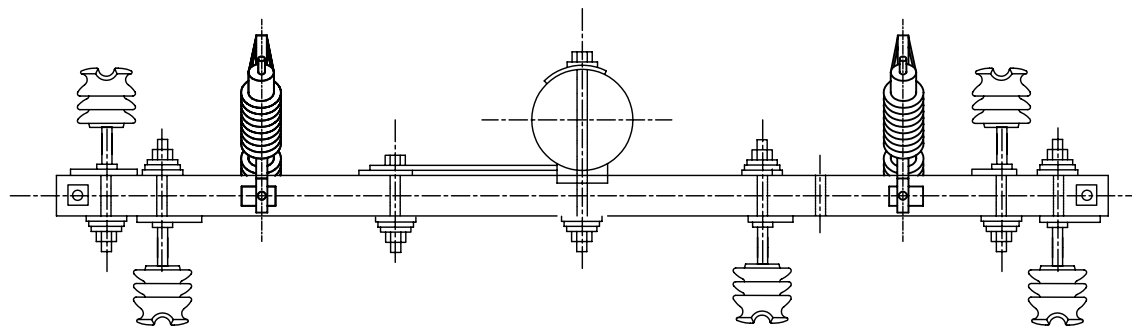
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SECT PAGE

4 30

SHEET 1 OF 1

FILE: X X X X



ORIGINAL ISSUE

A



energex

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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

GENERAL ARRANGEMENT
11kV EDO AND BRIDGE SUPPORT CONSTRUCTION
FOR VT FOR MESH RADIO (WOOD POLE)

APP'D R. ENGLISH

DATE 14/10/10

REC'D

CKD P. JUDGE

DWN P. RELF

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 31

SHEET 1 OF 1

FILE: X X X X

CU LIST -

		11FAS	11FAS-3	11FAS32	11FAS32-3
FUSE SAVER 1 PHASE KIT (100A, 4KA)	23933	1	3		
FUSE SAVER 1 PHASE KIT (32A, 1KA)	23945			1	3
CABLE, INSULATED HARD DRAWN Cu 35mm ²	07159	2	6	2	6
LUG COMPRESSION Cu 35mm ² M12	06257	3	9	3	9
PG CONNECTOR		AR	AR	AR	AR

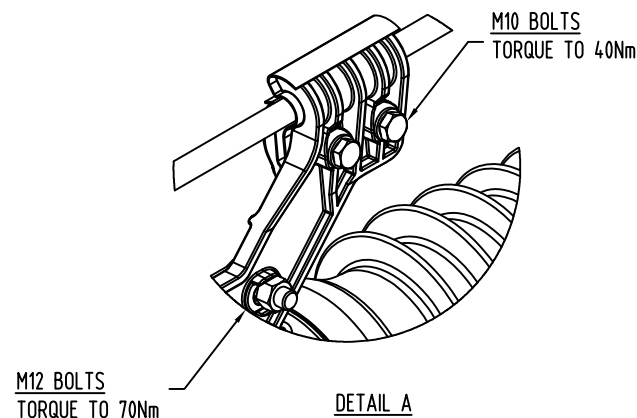
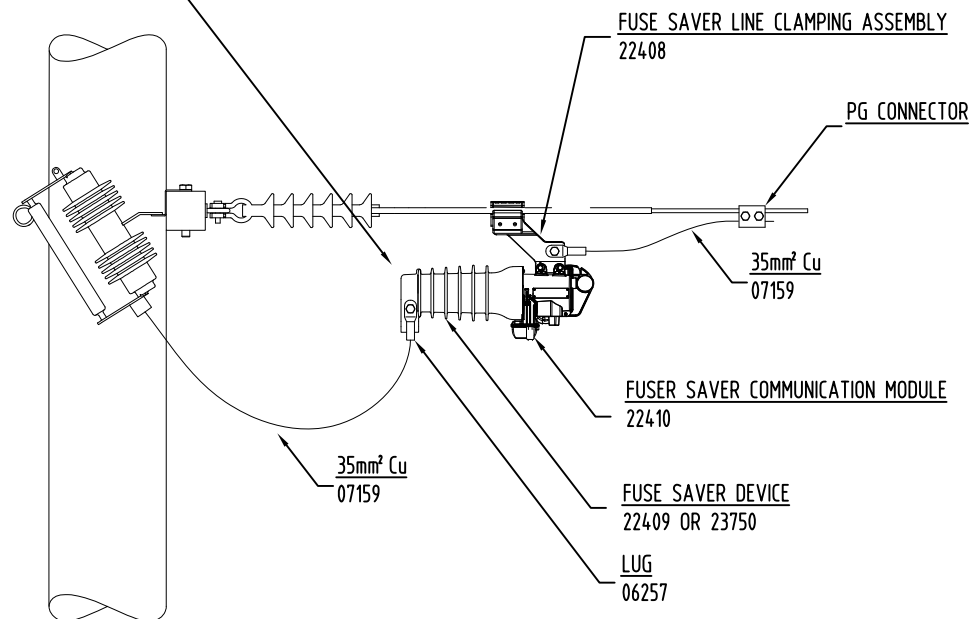
FUSE SAVER INDIVIDUAL PART LIST

FUSE SAVER 1 PHASE DEVICE (100A, 4KA)	22409
FUSE SAVER 1 PHASE DEVICE (32A, 1KA)	23750
FUSE SAVER LINE CLAMPING ASSEMBLY	22408
FUSE SAVER COMMUNICATION MODULE	22410
FUSE SAVER BIRD GUARD	22411

NOTES:

1. PREFERRED MOUNTING OF FUSE SAVER IS ON DEAD-ENDS
2. FUSE SAVER LINE CLAMP SUITS DEAD-ENDS OF DIAMETER 8-19mm
3. USE 2 SPANNERS WHEN TIGHTENING BRIDGING CABLES TO MINIMISE CANTILEVER LOAD THROUGH FUSE SAVER (REFER "DETAIL A")
4. FUSE SAVER SHALL BE MOUNTED ON LOAD SIDE OF EDO'S
5. FUSE SAVER SHALL NOT BE INSTALLED ON SPANS MORE THAN 200m LONG
6. FUSE SAVER (100A) SUITABLE FOR NORMAL LINE CURRENT >0.50A
7. FUSE SAVER (32A) SUITABLE FOR NORMAL LINE CURRENT >0.15A

FUSE SAVER BIRD GUARD
22411



ORIGINAL ISSUE	DATE	C. LEE	A. ANAND	P. RELF
A	24/10/14			
D				
APPD				
CKD				
DRN				

Combine individual items into one SC
Add individual part list



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11FAS

FUSE SAVER CONDUCTOR MOUNTED

APP'D	C. LEE	TECH STDS	AUTOCAD
DATE	10/09/12	4920-A4	D
REC'D	A. ANAND	SECT	PAGE
CKD	A. ANAND	4	32
DWN	P. RELF	SHEET	1 OF 1
		FILE:	

CU LIST -

11PES

11PES/N

11PES/F

11PES/S

SET163-1	1	1	1	1
SET163-2	1	1	1	1
SET156-2	2	2	2	2
SET167-4	1	1	1	1
02569	2	2	2	2
08989	1	1	1	1
SET161-1		4		
SET161-2		2		
SET161-3			4	
SET161-4			2	
SET161-5				6
17799 (TIE)		1	1	1
20279 (CCT)		9	9	9

NOTES :

1. STANDARD DISC INSULATOR SHOWN.

SET156-2
SHACKLE-COMP XARM17799
POLYMER SIDE TIE
FOR CCT BRIDGESET167-4
BRIDGING INSULATORSET163-1
RAISER BRACKET (SHORT)02569
BOW SHACKLE08989
EYENUTSET161-1, 2
OR
SET161-3, 4
OR
SET161-5
INSULATOR TYPESSET163-2
COMPOSITE X-ARM
TO SHORT RAISER

810

150

450



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11PES

11kV POLE EXTENSION-SHORT
SHACKLE CONSTRUCTION (WOOD POLE)

APP'D ROY ENGLISH

DATE 12-08-2011

REC'D

CKD J.TUNNEY

DWN P.RELF

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 33

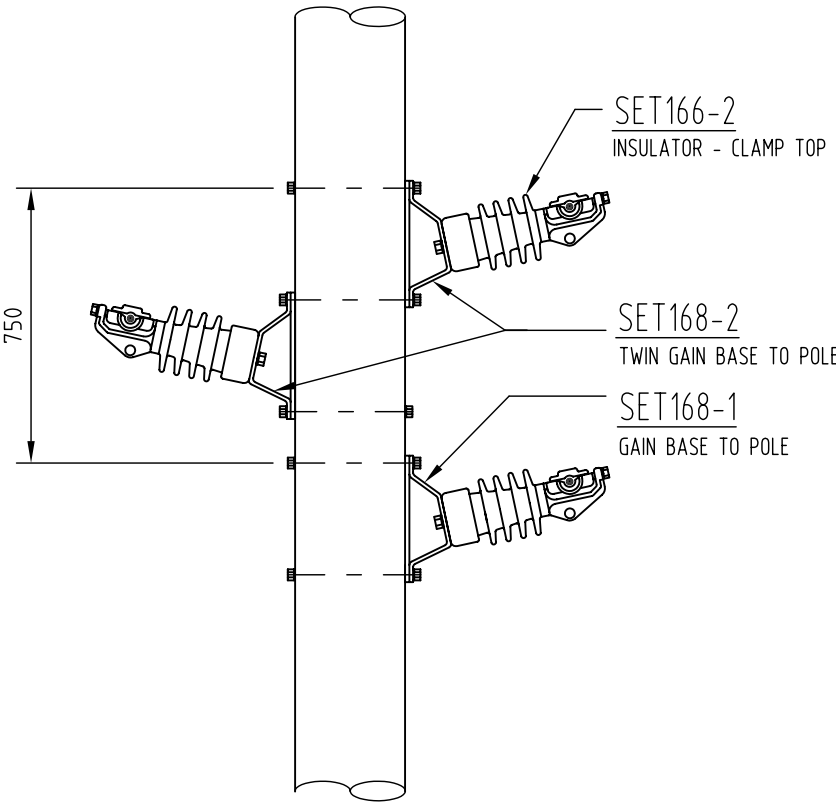
SHEET 1 OF 1

FILE:

CU LIST -

	11VDU	11VDU/N	11VDU/NCCT
SET168-2	1	1	1
SET168-1	1	1	1
SET166-2		3	3
16385		AR	
6405		AR	

SC16385 - TRUNNION CLAMP FOR COPPER MAINS



NOTE - WHEN USING 7/080 USE HELICAL SPLICE SC6405 TO BUILD UP CONDUCTOR TO PREVENT SLIDING THROUGH THE TRUNNION CLAMP

CU LIST -

11VOU

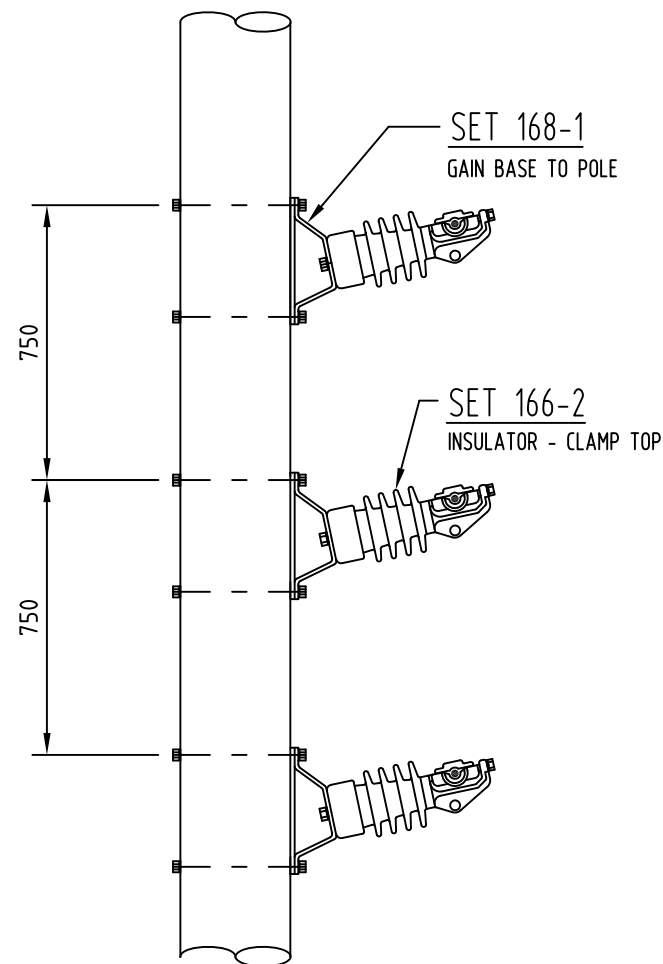
11VOU/N

11VOU/NCCT

SET168-1	3	3	3
SET166-2		3	3
16385		AR	
6405		AR	

SC16385 - TRUNNION CLAMP FOR COPPER MAINSNOTE -

1. WHEN ROLLING FROM VERTICAL TO FLAT
REDUCE ALLOWABLE SPAN BY 30%.
OR USE 11VOR CONSTRUCTION
2. WHEN USING 7/.080 USE HELICAL SPLICE SC6405
TO BUILD UP CONDUCTOR TO PREVENT SLIDING
THROUGH THE TRUNNION CLAMP



ORIGINAL ISSUE	DATE	RENGISH	P.JUDGE	P.RELF	ADDED SC 6405 HELICAL SPLICE FOR 7/.080
A	C	APPD	CKD	DRN	
	9/12/10				



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11VOU

11kV VERTICAL OFFSET URBAN CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-97

REC'D John Tunney

CKD John Tunney

DWN R.Wassell

TECH STDS AUTOCAD

4920-A4 C

SECT PAGE

4 36

SHEET 1 OF 1

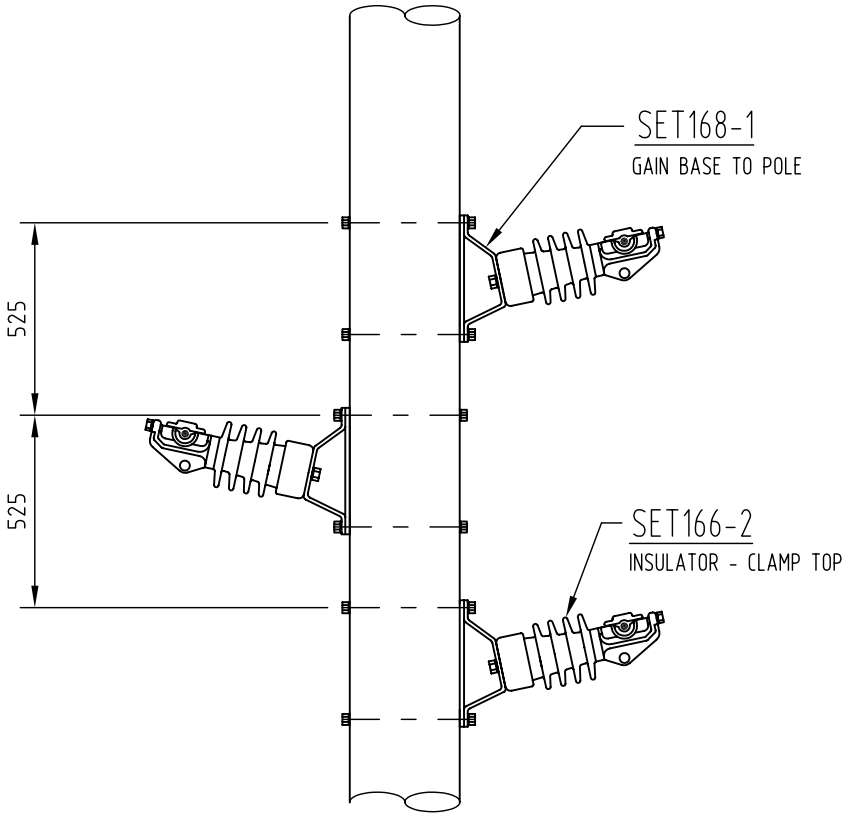
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CU LIST -

11VDR
11VDR/N

SET168-1	3	3
SET166-2		3
16385		AR
6405		AR

SC16385 - TRUNNION CLAMP FOR COPPER MAINS



NOTE - WHEN USING 7/080 USE HELICAL SPLICE SC6405 TO BUILD UP CONDUCTOR TO PREVENT SLIDING THROUGH THE TRUNNION CLAMP

CU LIST -

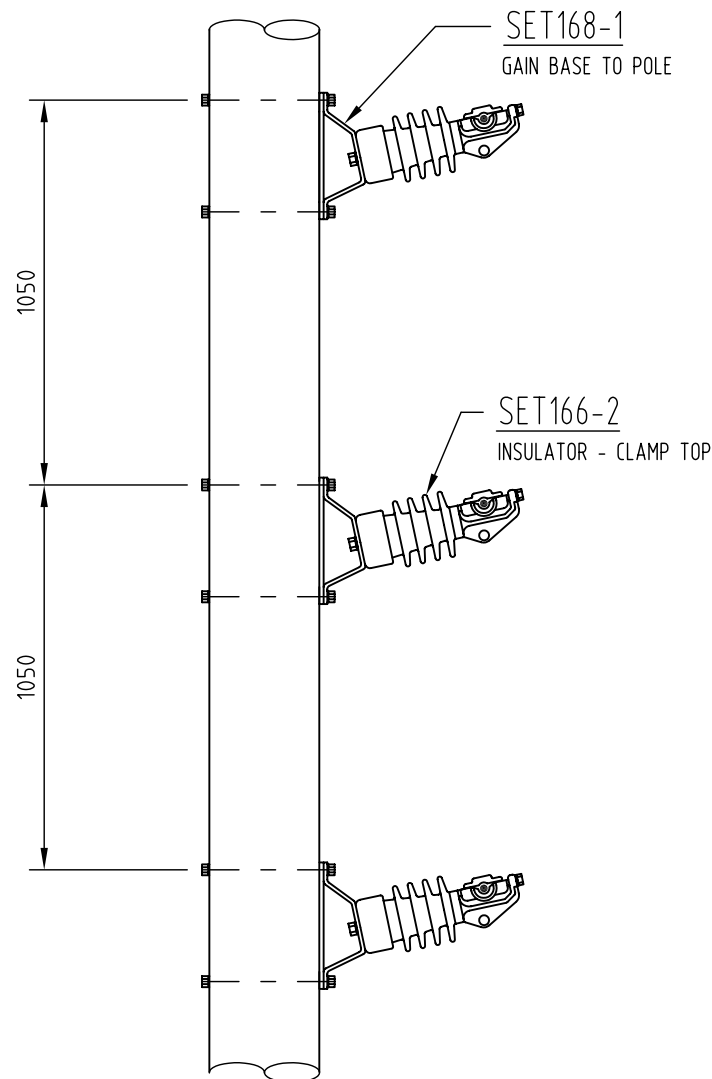
11VOR

11VOR/N

SET168-1	3	3
SET166-2		3
16385		AR
6405		AR

SC16385 - TRUNNION CLAMP FOR COPPER MAINSNOTE -

1. WHEN ROLLING FROM VERTICAL TO FLAT
REDUCE ALLOWABLE SPAN BY 30%.
2. WHEN USING 7/.080 USE HELICAL SPLICE SC6405
TO BUILD UP CONDUCTOR TO PREVENT SLIDING
THROUGH THE TRUNNION CLAMP



ORIGINAL ISSUE	DATE	9/12/10	RENGISH	P.JUDGE	P.RELF	ADDED SC 6405 HELICAL SPLICE FOR 7/.080
A	C					



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11VOR

11kV VERTICAL OFFSET RURAL CONSTRUCTION
(WOOD POLE)

APP'D Paul Rainbird

DATE 31-05-97

REC'D John Tunney

CKD John Tunney

DWN R.Wassell

TECH STDS AUTOCAD

4920-A4 C

SECT PAGE

4 38

SHEET 1 OF 1

FILE: X X X X

CU LIST -

11PETD

SET166-1	3
SET169-2	1
SET163-4	1
00689	1

SET166-1
POST INSULATOR

SET169-2
11kV TRIDENT TO RAISER

USE TOP &
BOTTOM HOLES

MAINTENANCE CLEARANCE
PROVIDED FOR ACCESS TO
EXISTING KINGBOLT HEAD


100 Min

SET163-4
11kV LONG RAISER TO POLE

EXISTING LV CONSTRUCTION

INSTALL TEST POINT COACH SCREW
(00689) AT 2.7m ABOVE GROUND

ORIGINAL ISSUE	DATE	APPD	CKD	DRN	NEW RISER BRACKET
A	15/11/06	K.NUTTALL	J.TUNNEY	G.JAYAWEERA	
B					


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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION
11PETD
11kV POLE EXTENSION - LONG
TRIDENT POST CONSTRUCTION (WOOD POLE)

APP'D ROD DOUGLAS
DATE 12-7-2000
REC'D JOHN TUNNEY
CKD JOHN TUNNEY
DWN W WILLIAMSON

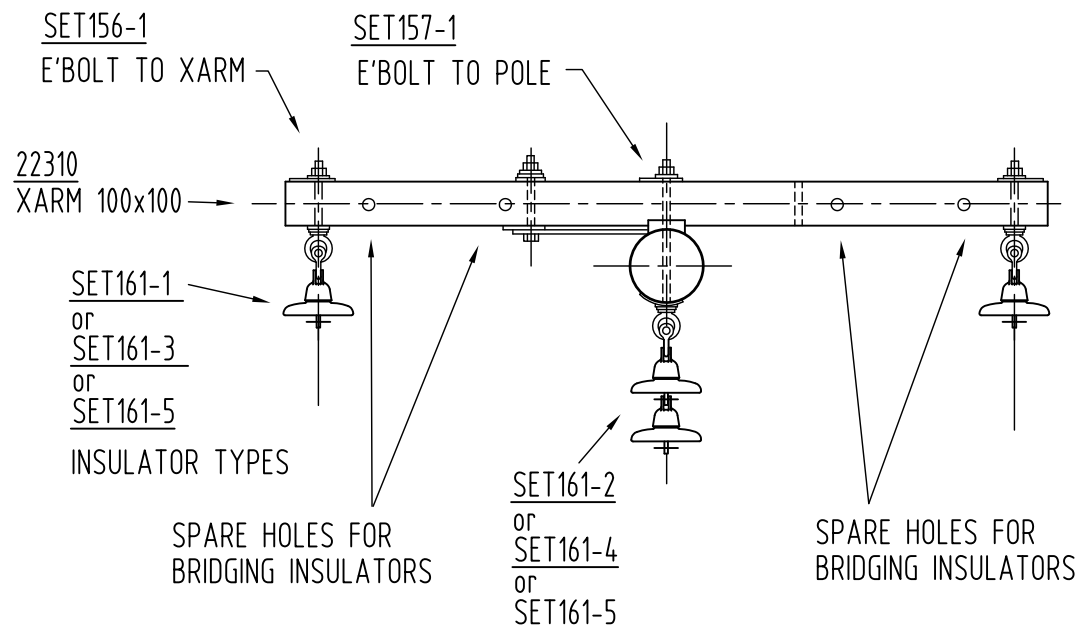
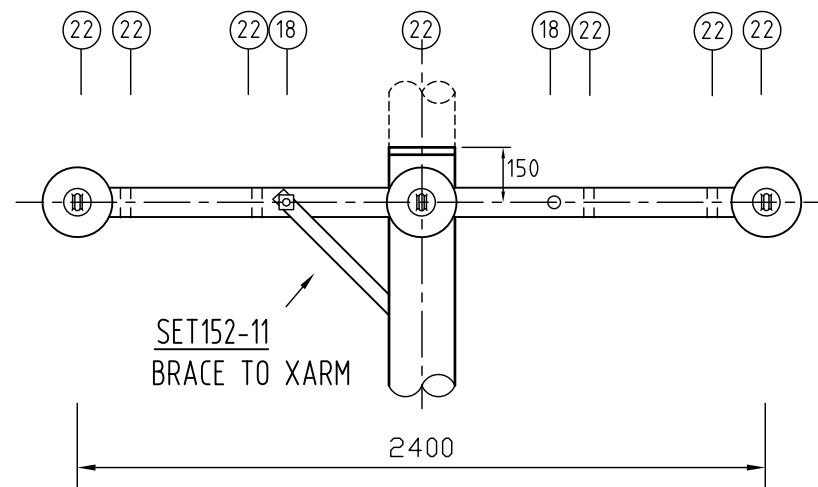
TECH STDS	AUTOCAD
4920-A4	B
SECT 4	PAGE 77
SHEET 1 OF 1	
FILE:ocm\s4\ohc4-20d.dwg	


CU LIST -

	11TC	11TC/N	11TC/F	11TC/S	11TC/SCCT
SET152-11	1	1	1	1	1
SET157-1	1	1	1	1	1
SET156-1	2	2	2	2	2
SET161-1		2			
SET161-2		1			
SET161-3			2		
SET161-4			1		
SET161-5				3	3
CCTWC					3
22310 (XARM)	1	1	1	1	1

NOTES:

1. STANDARD DISC INSULATOR SHOWN.
2. (22) = NOMINAL HOLE SIZE PROVIDED IN CROSSARM.



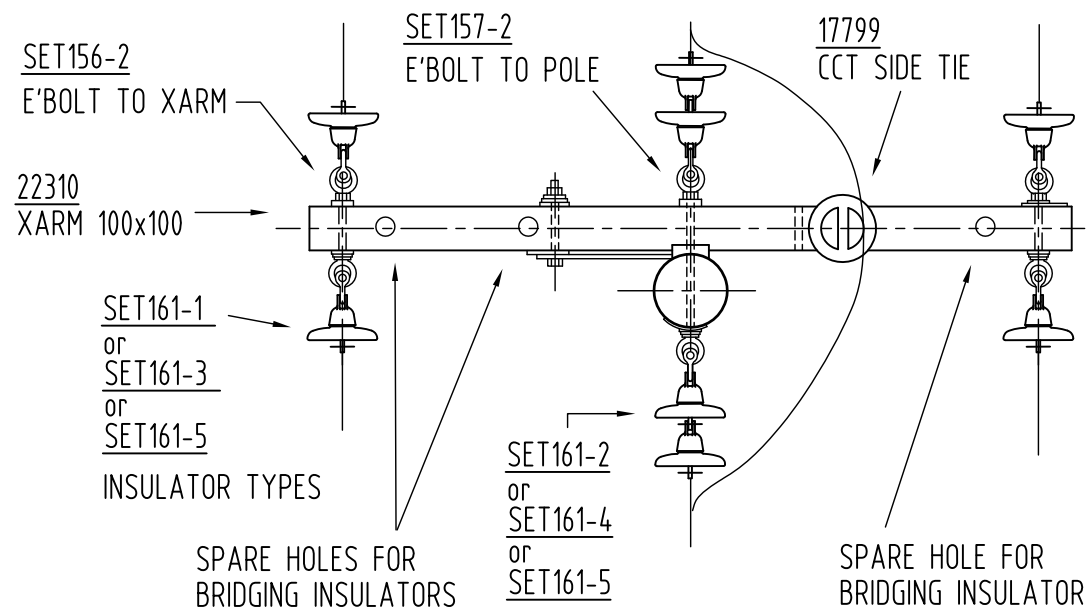
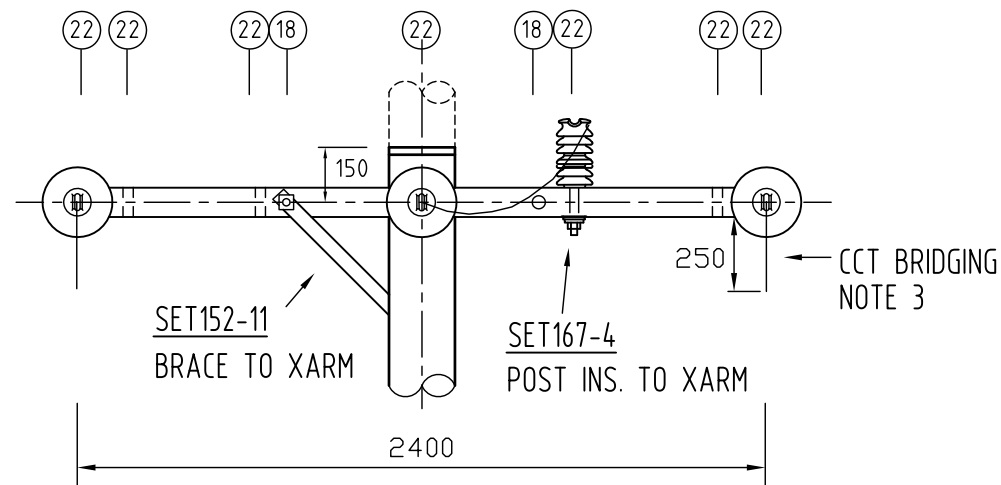
A	ORIGINAL ISSUE				 © COPYRIGHT 2012 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL <u>11kV CONSTRUCTION</u> 11TC 11kV TERMINATION CONSTN COMPOSITE X-ARM 7kN MWT (WOOD POLE)	APP'D Roy English	TECH STDS		AUTOCAD
	B	DATE 28-12-2012					DATE 20/01/11	4920-A4		B
	APPD F. ZAINI	CKD J.CHUNG					REC'D	SECT 4	PAGE 79	
	DRN	P.RELF					CKD John Tunney	SHEET 1 OF 1		
	ADDED 11TC/SCCT CU						DWN John Tunney	FILE:		

CU LIST -

	11SC	11SC/N	11SC/F	11SC/S	11SC/SCCT
SET157-2	1	1	1	1	1
SET152-11	1	1	1	1	1
SET156-2	2	2	2	2	2
SET161-1		4			
SET161-2		2			
SET161-3			4		
SET161-4			2		
SET161-5				6	6
SET167-4	1	1	1	1	1
CCTWC					6
17799 (TIE)		1	1	1	1
22310 (XARM)	1	1	1	1	1
20279 (CCT)		9	9	9	9

NOTES:

- STANDARD DISC INSULATOR SHOWN.
- ⊘ = NOMINAL HOLE SIZE PROVIDED IN CROSSARM.
- 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.



ORIGINAL ISSUE	DATE	APPD	CKD	DRN	ADDED
A	28-12-2012	F. ZAINI	J.CHUNG	P.PREF	11SC/SCCT CU



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11SC

11kV SHACKLE CONSTRUCTION COMPOSITE X-ARM
7kN MWT (WOOD POLE)

APP'D Roy English

DATE 20/01/11

REC'D

CKD John Tunney

DWN John Tunney

TECH STDS AUTOCAD

4920-A4 B

SECT PAGE

4 80

SHEET 1 OF 1

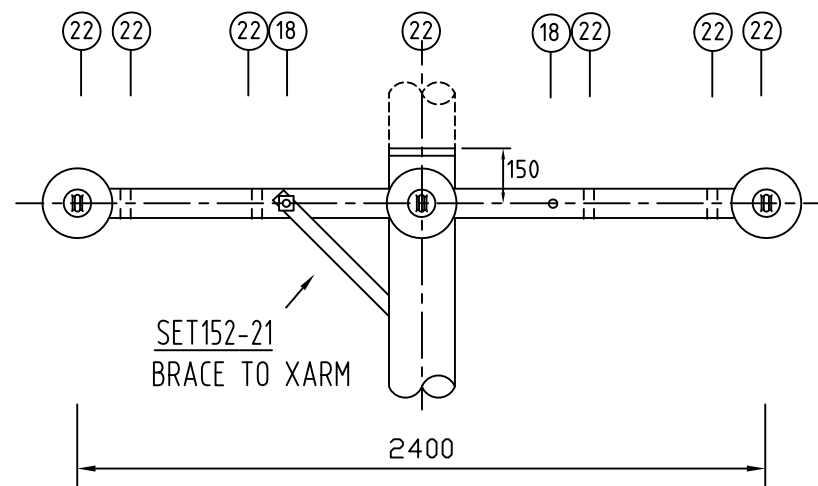
FILE:

CU LIST -

	11TC2	11TC2/N	11TC2/F	11TC2/S
SET152-21	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
22277 (XARM)	1	1	1	1

NOTES:

1. STANDARD DISC INSULATOR SHOWN.
2. (22) = NOMINAL HOLE SIZE PROVIDED IN CROSSARM.



SET156-11

E'BOLT TO XARM

SET157-11

E'BOLT TO POLE

22277

XARM 125x125

SET161-1

OR

SET161-3

OR

SET161-5

INSULATOR TYPES

SPARE HOLES FOR
BRIDGING INSULATORS

SET161-2

OR

SET161-4

OR

SET161-5

SPARE HOLES FOR
BRIDGING INSULATORS

energeX

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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11TC2

11kV TERMINATION CONSTN COMPOSITE X-ARM
13kN MWT (WOOD POLE)

APP'D Roy English

DATE 20/01/11

REC'D

CKD John Tunney

DWN John Tunney

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 81

SHEET 1 OF 1

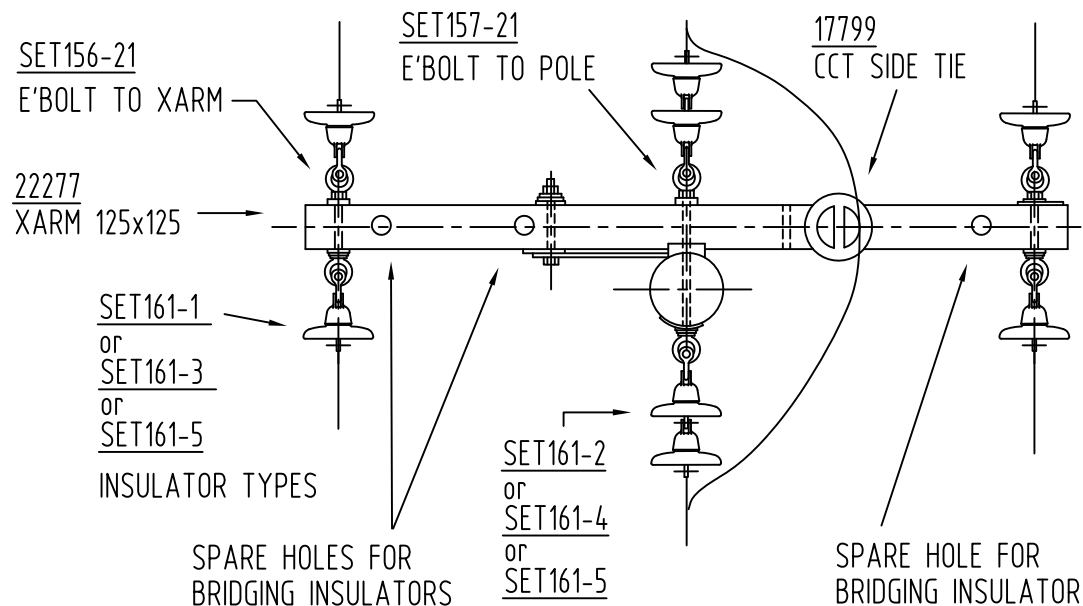
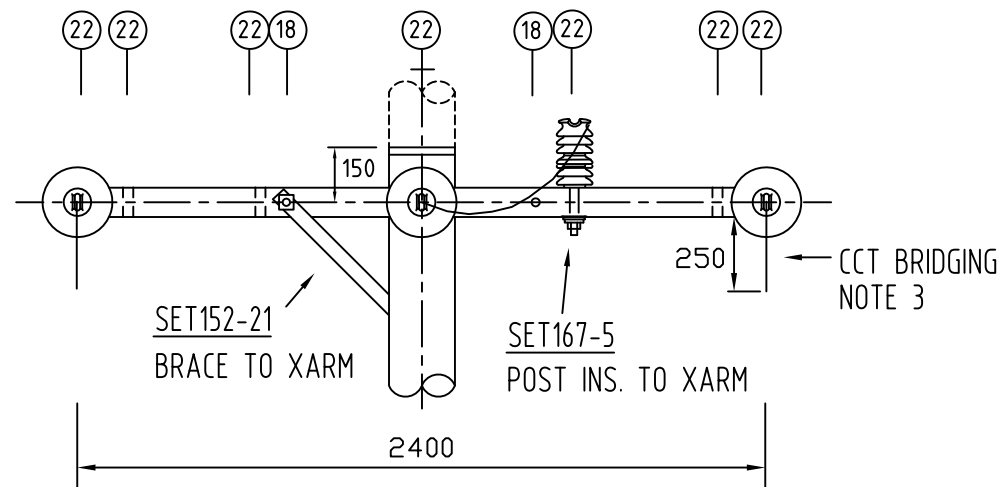
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CU LIST -

	11SC2	11SC2/N	11SC2/F	11SC2/S
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SET152-21	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
SET167-5	1	1	1	1
17799 (TIE)		1	1	1
22277 (XARM)	1	1	1	1
20279 (CCT)		9	9	9

NOTES:

- STANDARD DISC INSULATOR SHOWN.
- ⌀22 = NOMINAL HOLE SIZE PROVIDED IN CROSSARM.
- 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.



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11SC2

11kV SHACKLE CONSTRUCTION COMPOSITE X-ARM
13kN MWT (WOOD POLE)

APP'D Roy English

DATE 20/01/11

REC'D

CKD John Tunney

DWN John Tunney

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 82

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE

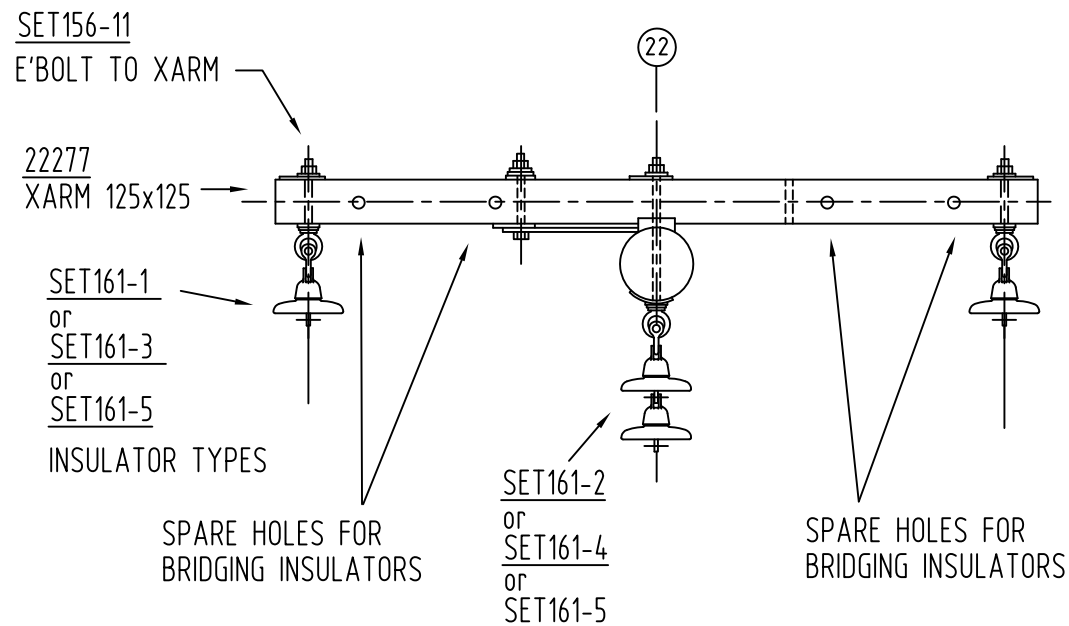
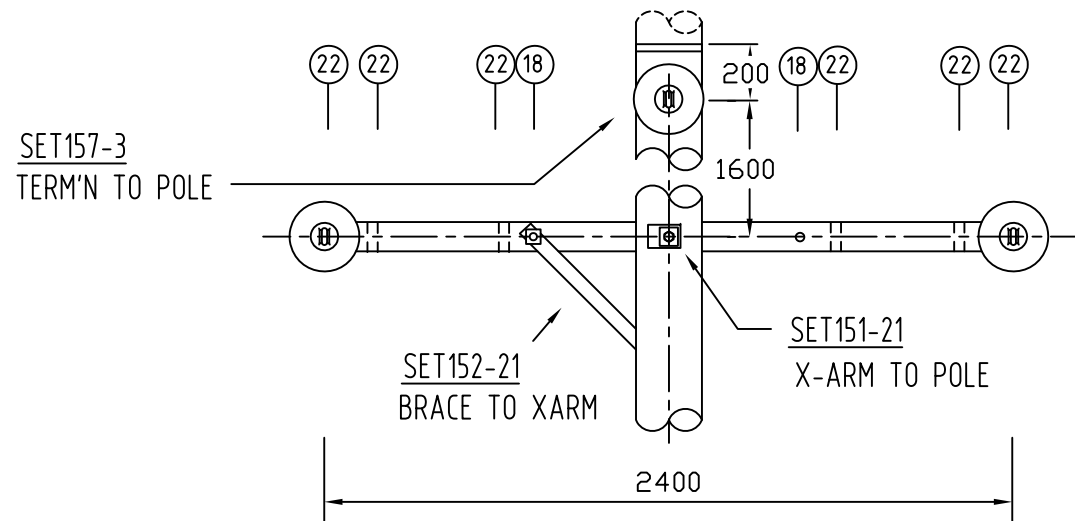
A

CU LIST -

	11TTC2	11TTC2/N	11TTC2/F	11TTC2/S
SET152-21	1	1	1	1
SET151-21	1	1	1	1
SET156-11	2	2	2	2
SET157-3	1	1	1	1
SET161-1		2		
SET161-2		1		
SET161-3			2	
SET161-4			1	
SET161-5				3
22277 (XARM)	1	1	1	1

NOTES:

1. STANDARD DISC INSULATOR SHOWN.
2. (22) = NOMINAL HOLE SIZE PROVIDED IN CROSSARM.



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11TTC2

11kV TRIANGULAR TERMINATION CONSTRUCTION
COMPOSITE X-ARM 13kN MWT (WOOD POLE)

APP'D Roy English

DATE 20/01/11

REC'D

CKD John Tunney

DWN John Tunney

TECH STDS AUTOCAD

4920-A4 A

SECT 4 PAGE 83

SHEET 1 OF 1

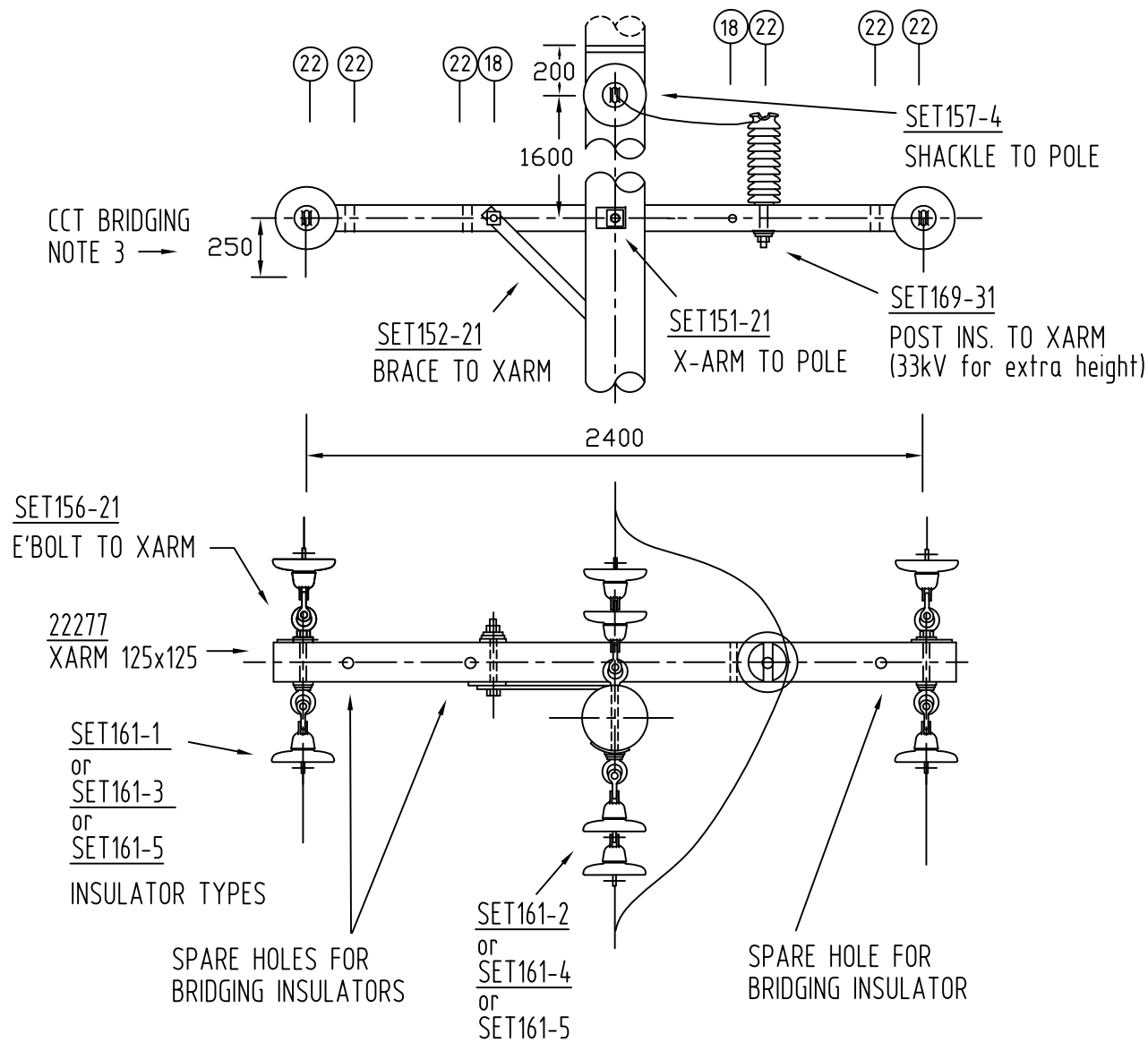
FILE:

CU LIST -

	11TSC2	11TSC2/N	11TSC2/F	11TSC2/S
SET152-21	1	1	1	1
SET151-21	1	1	1	1
SET156-21	2	2	2	2
SET157-4	1	1	1	1
SET169-31	1	1	1	1
SET161-1		4		
SET161-2		2		
SET161-3			4	
SET161-4			2	
SET161-5				6
17799 (TIE)		1	1	1
22277 (XARM)	1	1	1	1
20279 (CCT)		9	9	9

NOTES:

- STANDARD DISC INSULATOR SHOWN.
- ⊘22 = NOMINAL HOLE SIZE PROVIDED IN CROSSARM.
- 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.



ORIGINAL ISSUE

A



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11TSC2

11kV TRIANGULAR SHACKLE CONSTRUCTION
COMPOSITE X-ARM 13kN MWT (WOOD POLE)

APP'D Roy English

DATE 20/01/11

REC'D

CKD John Tunney

DWN John Tunney

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 84

SHEET 1 OF 1

FILE:

11ABC PHASE CONNECTIONS AND EARTH BARS AT CROSSARM JOINTS.

11ABCJ1 and 11ABCJ2 Joint Arrangements (Refer pages 105 & 106)

All ABC terminations bolt to the bottom outside surface of the aluminium jointing plates on 11ABCJ1 and 11ABCJ2 arrangements.

All CCT terminations bolt to the top outside surface of the aluminium jointing plates on 11ABCJ1 and 11ABCJ2 arrangements. CCT terminations use the same kit as 120 sq mm 11ABC, however the shed is not required to be installed.

11ABCJ3 Joint Arrangement (refer page 107)

With 11ABCJ3 joints, because this arrangement has the joint rotated 90 degrees, the CCT is usually for bridging to pole mounted plant below. The CCT and Earthing Bars are fitted to the bottom of the jointing plate in these arrangements. CCT bolts to the outside, Earth bars to the inside of the plates.

EARTH BARS

Aluminium Earth Bars with removable wildlife covers are provided for attaching operational earths. The Earth Bars bolt to the top inside surface of the jointing plate on 11ABCJ1 and 11ABCJ2 arrangements. Refer 11ABCJ3 notes above regarding bolting on that arrangement.

SURGE ARRESTERS

Surge arresters are required at joints where the feeder transitions from open wire or CCT to 11ABC. At these locations, the 11ABCJ1 joint is required.

Surge arresters are always fitted to the same side of the jointing crossarm as the open wire or CCT.

Surge arresters are supplied with wildlife covers, live end leads insulated to 11kV, and expulsion units at the base of the arrester that connect to earthed mounting plates provided with the joint assembly. The arresters are also supplied with the bottom earth lead that connects the expulsion unit at the base of the arrester to the earthed mounting plate.

When connecting the surge arrester live end lead to the joint plate of the 11ABCJ1 arrangement, a bi-metal shear-off terminal lug must be used. The live end leads must never exit the same wildlife cover hole used by 11ABC.

EARTHING CONNECTIONS

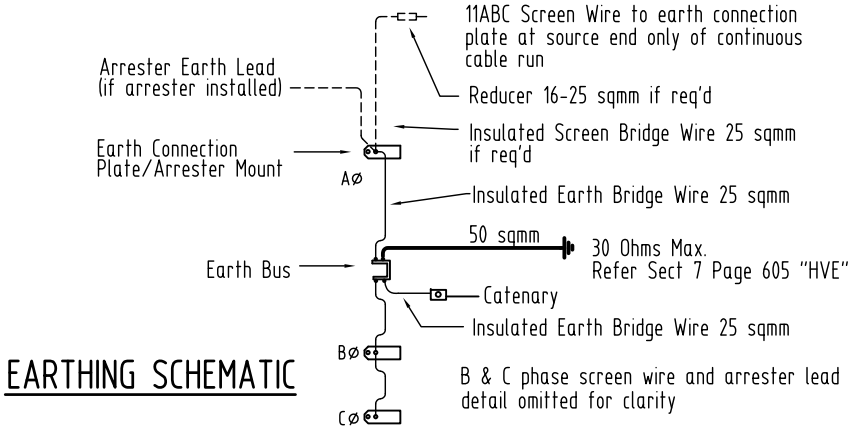
11ABC1, 11ABC2, and 11ABC3 joint arrangements have galvanised earth plates provided for each phase that are electrically connected to the centrally located tinned copper earthing bus by 25 sq mm, 11kV insulated cable. The earth plates are also used as mounting points for surge arresters and their base earth lead if the 11ABCJ1 arrangement is used. The centrally located earth bus is connected to the 50 sq mm download and the 11ABC catenary wire. The catenary wire is to be earthed via the 50 sq mm download at regular intervals of no more than 300 metres. to 30 ohms maximum earth resistance.

SCREEN WIRES


Each continuous section of screen is to be earthed at source end of the cable run. Where required to be earthed, each of the the 16 sq mm phase screen wires shall be connected via reducing compression sleeves to 25 sq mm, 11kV insulated cables which connect to each of the phase earth plates.

WILDLIFE PROOFING

The operational earth bars are supplied with link stick removable covers. All jointing plates are provided with wildlife proofing covers and blanking pieces to cover unused cable entry holes. Insulating hoods are also provided to cover the bolt heads on the crossarms.

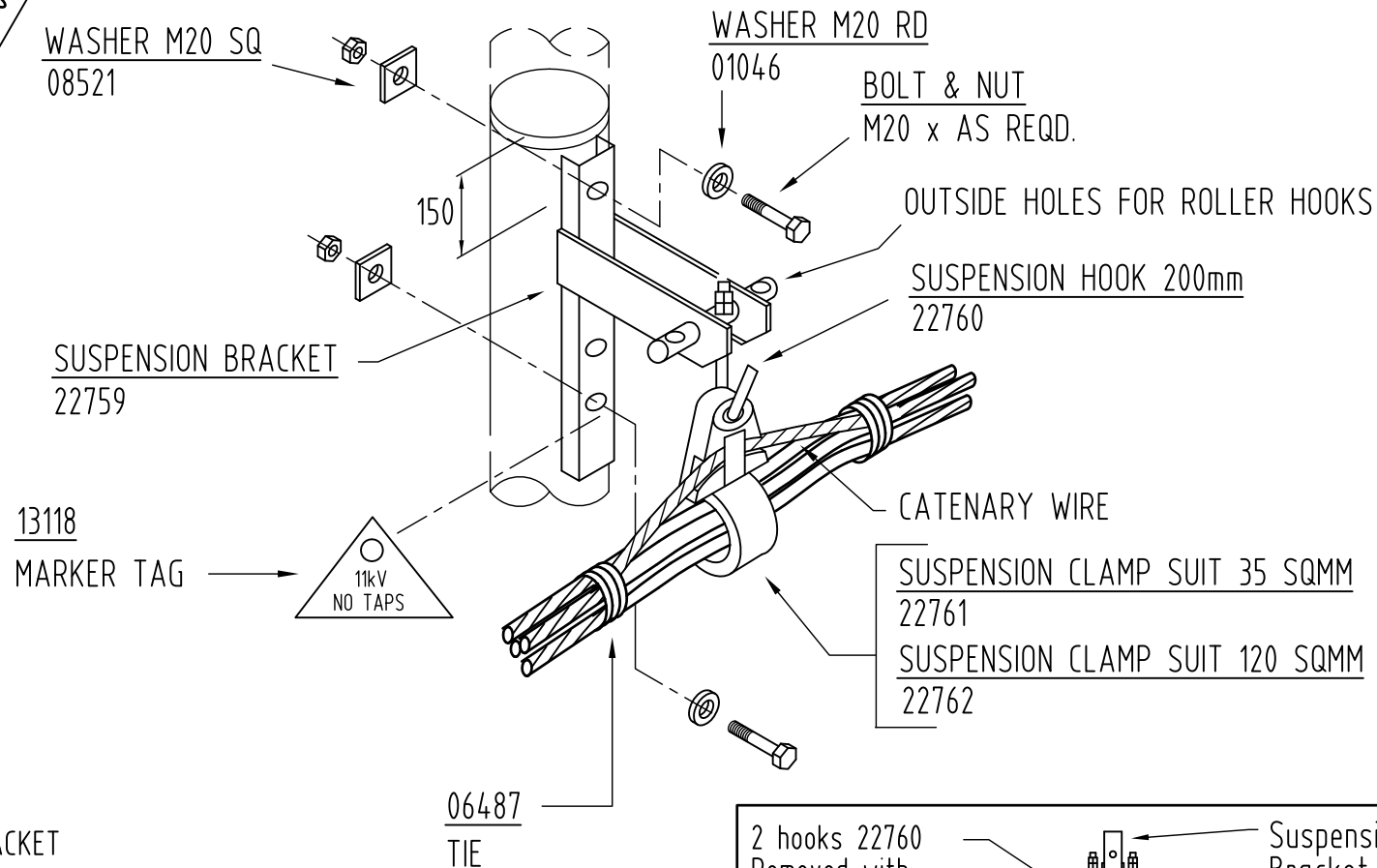


EARTHING SCHEMATIC

ORIGINAL ISSUE A	 © COPYRIGHT 2012 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL		APP'D	Colin Lee			AUTOCAD
		11kV ABC CONSTRUCTION X-ARM JOINTING PRACTICE PHASE CONNECTIONS AND EARTHING		DATE	23-11-2012	4920-A4		A
				REC'D		SECT	PAGE	
				CKD	John Tunney	4	100	
				DWN	John Tunney	SHEET 1 OF 1		
				FILE:				

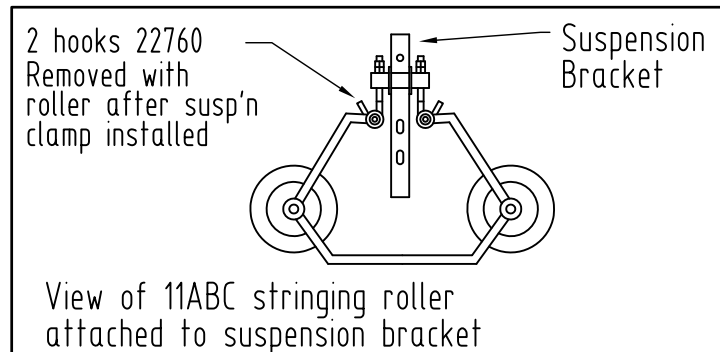
CU LIST -

	11ABCSU/35	11ABCSU/120
08521	2	2
01046	2	2
22759	1	1
22760	1	1
22761	1	
22762		1
06487	6	6
13118	1	1
M20 Bolt & Nut	2	2




NOTES :

- DO NOT EARTH SUSPENSION BRACKET



11ABCSU/35 - 11kV ABC SUSPENSION CONSTRUCTION 35 sq mm

11ABCSU/120 - 11kV ABC SUSPENSION CONSTRUCTION 120 sq mm

ORIGINAL ISSUE	DATE	25-7-2012	APPD	Roy English	CKD	J.TUNNEY	DRN	J.TUNNEY	Redesign		<div> © COPYRIGHT 2012 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX</div>	OVERHEAD CONSTRUCTION MANUAL		APP'D Paul Rainbird		TECH STDS		AUTOCAD																
														DATE 31-05-96		4920-A4		E																
	E																								REC'D John Tunney		SECT		PAGE					
																									CKD G.Dowling		4				101			
																									DWN M.Welsh		SHEET				1 OF 1			
								FILE:																										

11kV CONSTRUCTION

11ABCSU

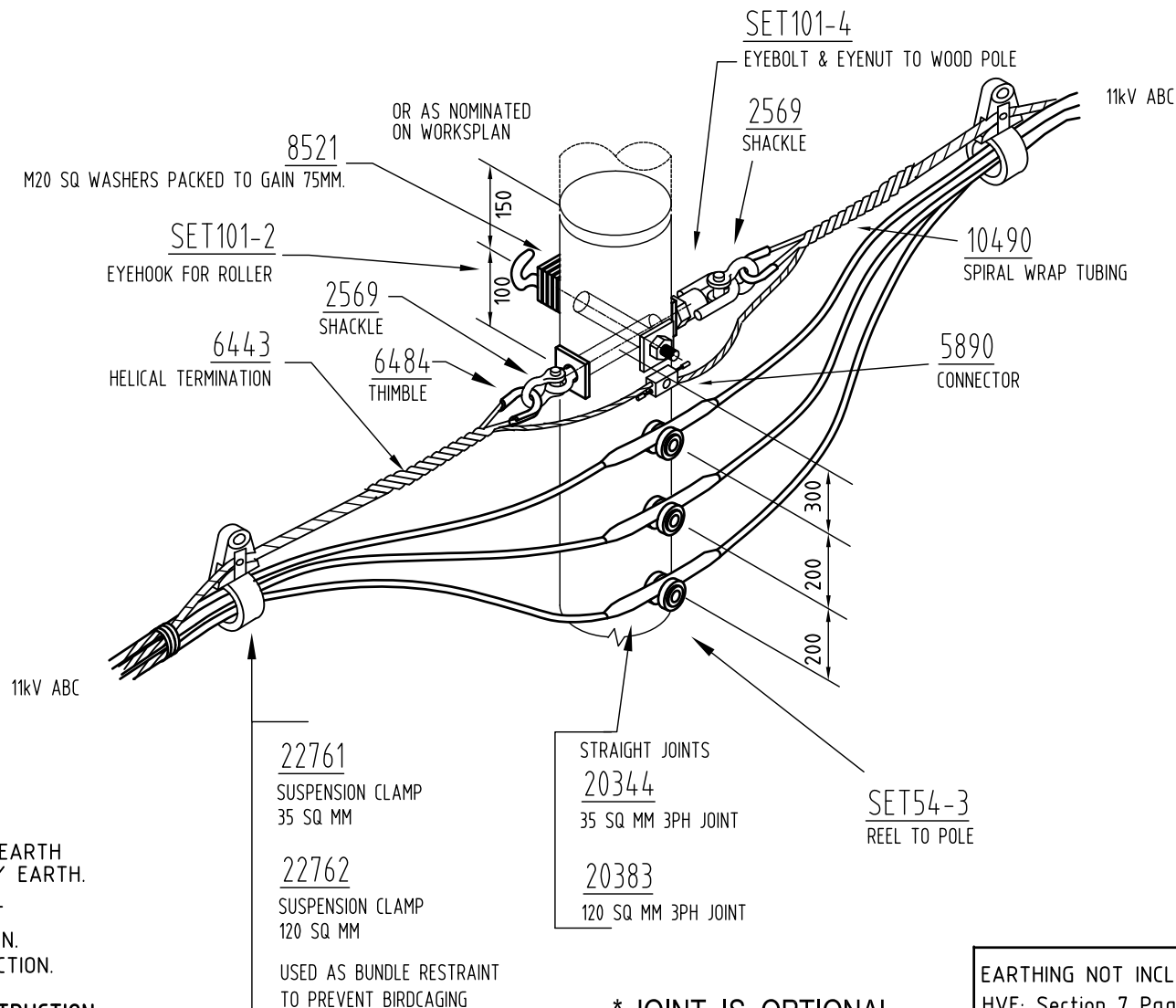
11kV ABC SUSPENSION CONSTRUCTION
STRAIGHT LINE AND ANGLE

CU LIST -

	11ABC/S	11ABC/S35	11ABC/S120
SET101-4	1	1	1
SET54-3	3	3	3
5890	1	1	1
6443	2	2	2
6484	2	2	2
10490	AR	AR	AR
8521	15	15	15
SET101-2	1	1	1
02569	2	2	2
20344		1	
22761		2	
20383			1
22762			2

NOTES :

1. EARTH CATENARY WIRE TO MAX. 30 OHMS EARTH IF OVER 300 METRES FROM NEXT CATENARY EARTH.
2. SCREEN WIRES ARE JOINTED CONTINUOUS AT EACH STRAIGHT JOINT IN THIS CONSTRUCTION. DO NOT EARTH SCREENS AT THIS CONSTRUCTION.

11ABC/S - 11kV ABC SHACKLE CONSTRUCTION*** JOINT IS OPTIONAL**

EARTHING NOT INCLUDED
HVE: Section 7 Page 605

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	11ABC/S35 & 11ABC/S120
A	25-7-2012	F	J.TUNNEY	D.MICHELL	ADDED 11ABC/T REMOVED FROM THIS PAGE TO 103



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION**11ABC/S****11kV ABC SHACKLE CONSTRUCTION**

APP'D Paul Rainbird	TECH STDS		AUTOCAD
DATE 31-05-96	4920-A4		F
REC'D John Tunney	SECT 4	PAGE 102	
CKD G.Dowling	SHEET 1 OF 1		
DWN M.Welsh	FILE:		

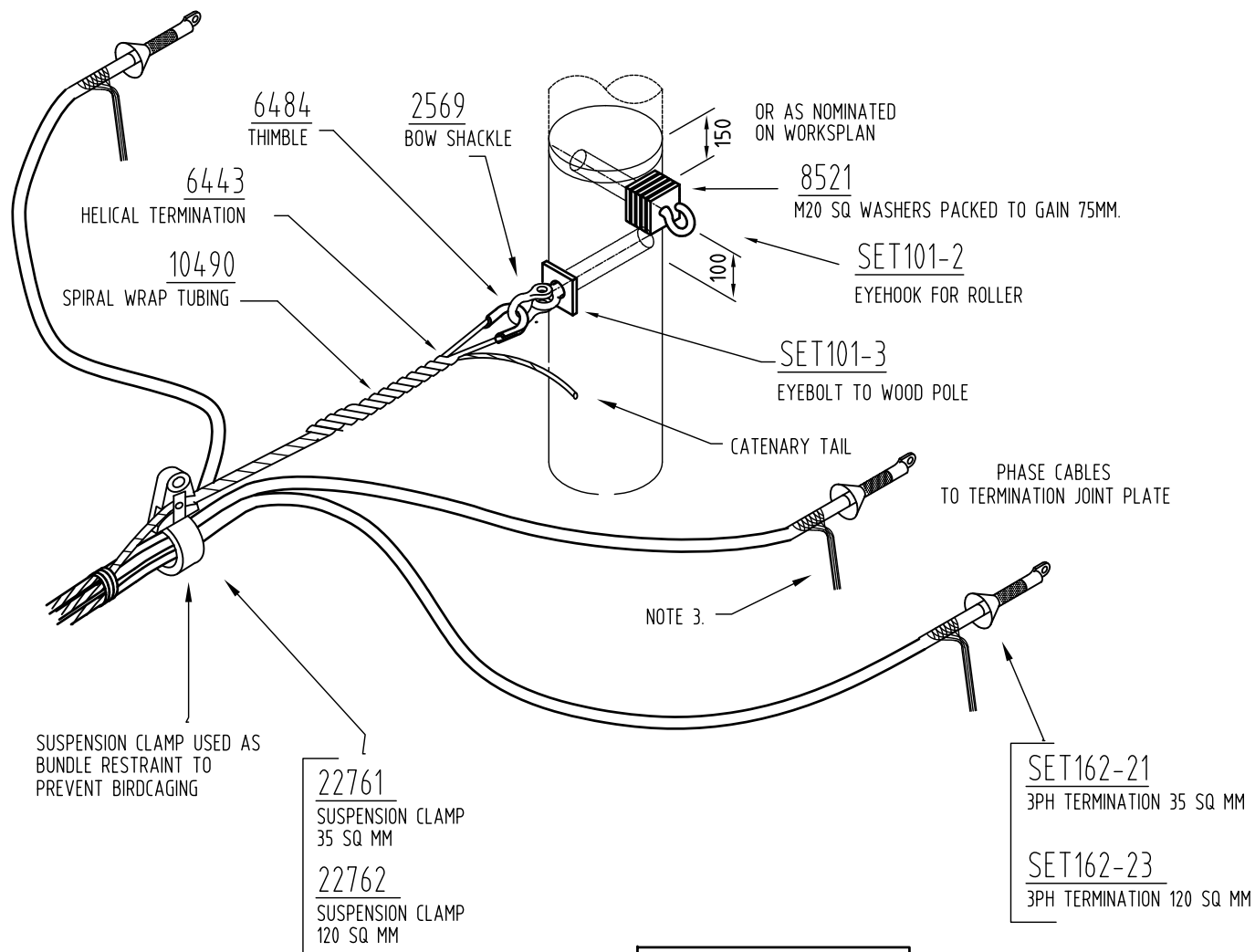
CU LIST -

	11ABC/T	11ABC/T35	11ABC/T120
SET101-3	1	1	1
SET101-2	1	1	1
10490	AR	AR	AR
6484	1	1	1
6443	1	1	1
2569	1	1	1
8521	15	15	15
22761		1	
22762			1
SET162-21		1	
SET162-23			1

NOTES :

1. EARTH CATENARY WIRE TO MAX 30 OHMS EARTH AT REGULAR INTERVALS. (NO MORE 300 METRES.)
2. EACH CONTINUOUS SECTION OF SCREEN TO BE EARTHED ONCE ONLY REFER 4-100.
3. DO NOT FORM TAIL FROM SCREEN WIRES IF NOT REQUIRED TO BE EARTHED.

11ABC/T - 11kV ABC TERMINATION CONSTRUCTION



EARTHING NOT INCLUDED
HVE: Section 7 Page 605



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11ABC/T

11kV ABC TERMINATION

APP'D Paul Rainbird

DATE 31-05-96

REC'D John Tunney

CKD G.Dowling

DWN M.Welsh

TECH STDS AUTOCAD

4920-A4 F

SECT

4

PAGE

103

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE	DATE 06-02-2013	APP'D C LEE	CKD P. RELF	DRN K. DE MANSER	UPDATED NOTE 2
A	F				

CU LIST -

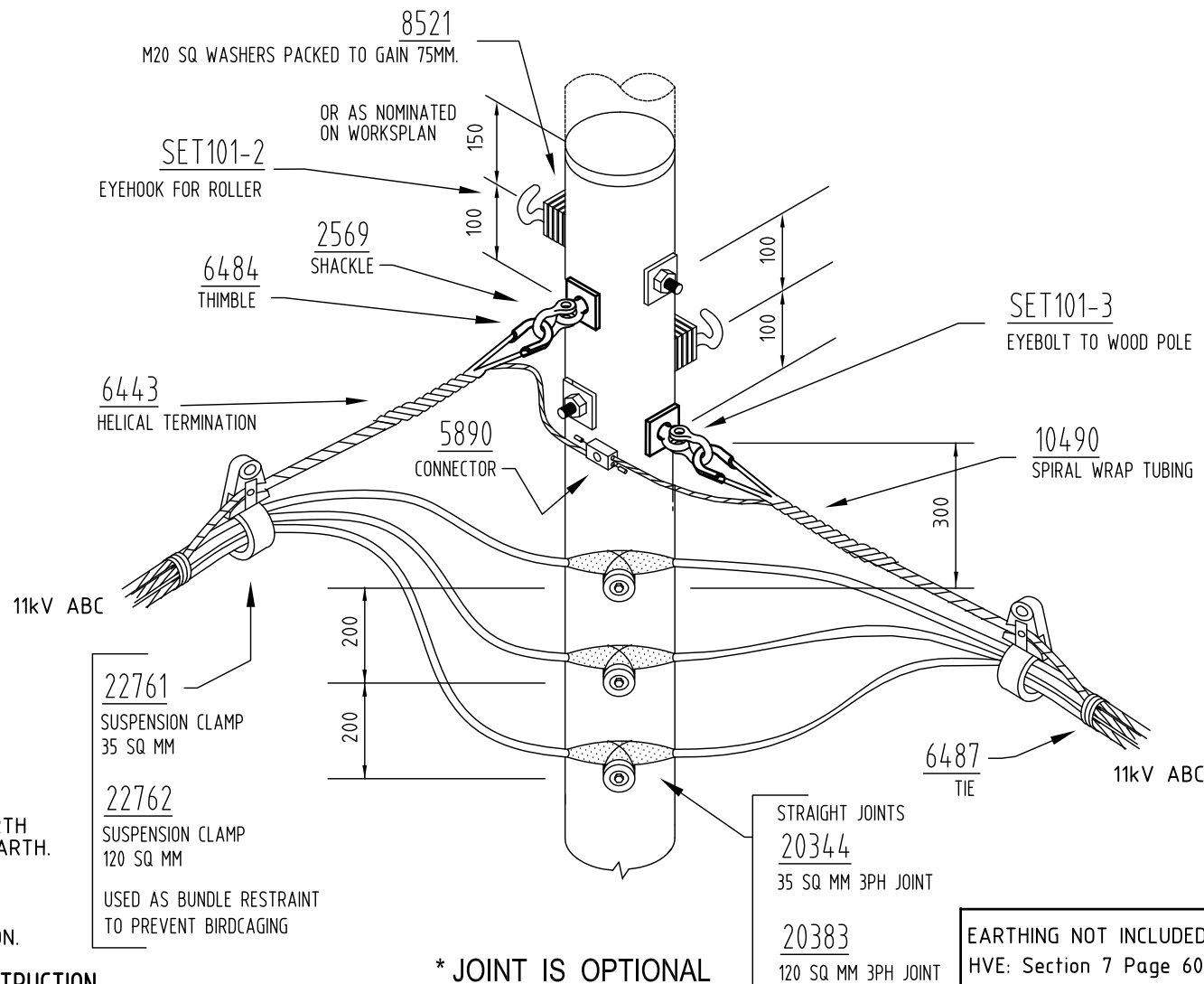
11ABC/XS
11ABC/XS35
11ABC/XS120

SET101-3	2	2	2
SET54-3	3	3	3
5890	1	1	1
6443	2	2	2
6484	2	2	2
6487	4	4	4
10490	AR	AR	AR
8521	30	30	30
SET101-2	2	2	2
02569	2	2	2
20344		1	
22761		2	
20383			1
22762			2


NOTES :

1. EARTH CATENARY WIRE TO MAX. 30 OHMS EARTH IF OVER 300 METRES FROM NEXT CATENARY EARTH.
2. SCREEN WIRES ARE JOINTED CONTINUOUS AT EACH STRAIGHT JOINT IN THIS CONSTRUCTION. DO NOT EARTH SCREENS AT THIS CONSTRUCTION.

11ABC/XS - 11kV ABC CROSSCHECK CONSTRUCTION



ORIGINAL ISSUE
A


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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11ABC/XS

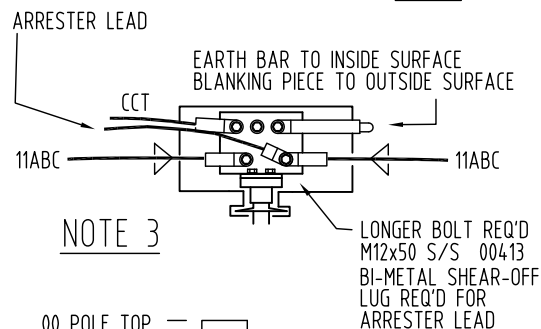
11kV ABC CROSSCHECK CONSTRUCTION

APP'D Roy English	TECH STDS	AUTOCAD
DATE 25-7-2012	4920-A4	A
REC'D	SECT 4	PAGE 104
CKD J. Tunney	SHEET 1 OF 1	
DWN D. Michell	FILE:	

CU LIST -

11ABCJ1

SET156-1	2
SET157-1	1
SET161-5	3
SET152-11	1
SET257-4	3
SET273-10	3
SET273-20	1
SET162-10	3
22792	1
14693	1
22847	3
22756 (coil)	0.2
10886	20
00413	3



00 POLE TOP —
150 X-ARM —

750 11ABC —

— 650 ROLLER HOOK
— 900 11ABC

KBS
TYPICAL ONLY
REFER WORKSPAN FOR
ACTUAL DESIGN SPACINGS

NOTES:

1. EARTH CATENARY WIRE TO 30 OHMS MAX.
EARTH AT REGULAR INTERVALS. (No more than 300 metres)
2. EACH CONTINUOUS SECTION OF SCREEN TO BE EARTHED
ONCE ONLY AT SOURCE END ONLY. REFER 4-100
3. ARRESTER LEAD MAY CONNECT TO JOINT PLATE AT ANY FASTENING HOLE
ON FRONT SURFACE THAT PROVIDES BEST FIT WHEN WILDLIFE
COVER IS CLOSED. ARRESTER LEAD MUST EXIT COVER VIA SAME OUTLET HOLE AS CCT.
ARRESTER LEAD MUST NEVER EXIT SAME OUTLET HOLE AS 11ABC.

SET273-10
ARRESTER TO BKT

22756
SCREEN E'WIRE
10886
LUG 25 SQMM

SET161-5
SYNTHETIC INS

SET257-4
ARRESTER BKT TO X-ARM

SET152-11
XARM BRACE TO XARM

SET157-1
XARM E'BOLT TO POLE

BOTTOM CIRCUIT OMITTED FOR CLARITY

22847
SHEAR-OFF LUG
FOR ARRESTER LEAD
(Note 3)

SET162-30
CCT CABLE TERMINATION
TO PLATE (NOT INCLUDED)

3 x OPEN WIRE
OR
3 x CCT

11ABC

SET101-2
ROLLER HOOK BOLT TO POLE
(NOT INCLUDED)

SET156-1
E'BOLT TO XARM
HV EARTH TO BUS
REFER SECT 7 PAGE 605

SET273-20
EARTH BUS TO XARM

14693
PG CLAMP

EARTH BAR FITS TO
INSIDE OF PLATE.
LUGS FIT TO OUTSIDE
OF PLATE.

EARTH BAR
(shown with wildlife
cover removed)

SET162-10
JOINTING INSULATOR
& PLATE TO X-ARM

NOTE 2

11ABC/T
11ABC CATENARY &
CABLE TERMINATION
TO PLATE (NOT INCLUDED)

11ABC

EARTHING NOT INCLUDED
HVE: Section 7 Page 605

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	EDIT
A	06-02-2013	C. LEE	P. RELF	K. DE MANSER	EARTHING NOTE 2



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OVERHEAD CONSTRUCTION MANUAL

11kV ABC CONSTRUCTION

11ABCJ1 CCT TO 11ABC

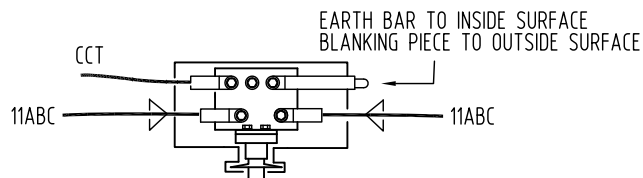
UP TO 3 WAY JOINTS WITH ARRESTERS
UPRIGHT JOINT ON X-ARM ARRANGEMENT

APP'D	Colin Lee	TECH STDS	AUTOCAD
DATE	23-11-2012	4920-A4	B
REC'D		SECT	PAGE
CKD	John Tunney	4	105
DWN	John Tunney	SHEET	1 OF 1
FILE:			

CU LIST -

11ABCJ2

SET51-1	1
SET152-11	1
SET257-4	3
SET162-10	3
22792	1
14693	2
SET273-20	1
22756 (coil)	0.2
10886	20
22950	3



- 00 POLE TOP
- 150 X-ARM
- 250 ROLLER HOOK
- 350 11ABC
- 450 ROLLER HOOK
- 550 11ABC

KBS TYPICAL ONLY
REFER WORKSPAN FOR
ACTUAL DESIGN SPACINGS

NOTES :

1. EARTH CATENARY WIRE TO 30 OHMS MAX.
EARTH AT REGULAR INTERVALS. (No more than 300 metres)
2. EACH CONTINUOUS SECTION OF SCREEN TO BE EARTHED
ONLY ONCE AT SOURCE END ONLY. REFER 4-100

22756
SCREEN E'WIRE
10886
LUG 25 SQMM

SET257-4
EARTH BAR TO X-ARM

SET152-11
XARM BRACE TO XARM

HV EARTH TO BUS
REFER SECT 7 PAGE 605

SET273-20
EARTH BUS TO XARM

14693
PG CLAMP

EARTH BAR FITS TO
INSIDE OF PLATE.
LUGS FIT TO OUTSIDE
OF PLATE.

22792
X-ARM

EARTH BAR
(shown with wildlife
cover removed)

OPTIONAL CCT CABLE TERMINATION
OR 11ABC TERMINATION
TO PLATE (NOT INCLUDED)
OTHERWISE USE BLANKING PIECE
22950 TO FILL SPARE OUTLET ON COVER

ROLLER HOOK BOLT TO POLE
(NOT INCLUDED)

SET162-10
JOINTING INSULATOR
& PLATE TO X-ARM

SET51-1
XARM BOLT TO POLE

11ABC

Note 2

11ABC/T
11ABC CATENARY &
CABLE TERMINATION
TO PLATE (NOT INCLUDED)

11ABC

EARTHING NOT INCLUDED
HVE: Section 7 Page 605



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OVERHEAD CONSTRUCTION MANUAL

11kv ABC CONSTRUCTION

11ABCJ2 11ABC TO CCT

UP TO 3 WAY JOINTS WITHOUT ARRESTERS
UPRIGHT JOINT ON X-ARM ARRANGEMENT

APP'D Colin Lee

DATE 23-11-2012

REC'D

CKD John Tunney

DWN John Tunney

AUTOCAD

4920-A4 B

SECT
4

PAGE
106

SHEET 1 OF 1

FILE:

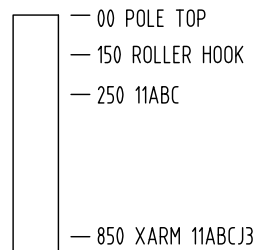
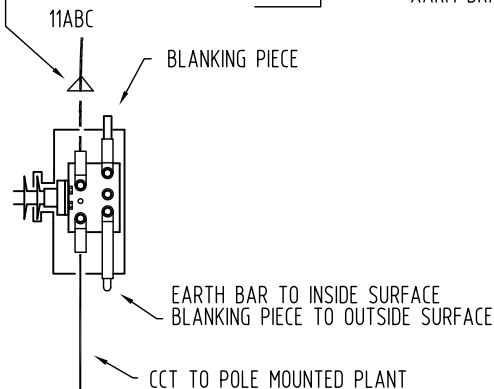
ORIGINAL ISSUE	DATE 06-02-2013	APP'D C. LEE	P. RELF	DRN K. DE MANSER	EDIT EARTHING NOTE 2
A	B				

CU LIST -

11ABCJ3

SET51-1	1
SET152-11	1
SET257-3	3
SET162-10	3
22818	1
14693	1
SET273-20	1
22756 (coil)	0.2
10886	20
22950	3

NOTE 3.



KBS TYPICAL ONLY
REFER WORKSPAN FOR
ACTUAL DESIGN SPACINGS

NOTES :

1. EARTH CATENARY WIRE TO 30 OHMS MAX.
2. EACH CONTINUOUS SECTION OF SCREEN TO BE EARTHED ONLY ONCE AT SOURCE END ONLY. REFER 4-100
3. INSTALL SHEDS POINTING UPWARDS

22756
SCREEN E'WIRE
10886
LUG 25 SQMM

SET152-11
XARM BRACE TO XARM

HV EARTH TO BUS
REFER SECT 7 PAGE 605

22818
X-ARM

SET273-20
EARTH BUS TO XARM

14693
PG CLAMP

EARTH BAR FITS TO
INSIDE OF PLATE.
LUGS FIT TO OUTSIDE
OF PLATE.

EARTH BAR
(shown with wildlife
cover removed)

11ABC/T
11ABC CATENARY &
CABLE TERMINATION
TO PLATE (NOT INCLUDED)

NOTE 3.

11ABC

22950
BLANKING PIECE

SET162-10
JOINTING INSULATOR
& PLATE TO X-ARM

EARTH BAR & BLANKING PIECE

SET162-30
CCT CABLE TERMINATION
(NOT INCLUDED)

CCT TO POLE MOUNTED PLANT

SET101-2
ROLLER HOOK BOLT TO POLE
(NOT INCLUDED)

SET257-3
EARTH BAR TO INS STUD

SET51-1
XARM BOLT TO POLE

EARTHING NOT INCLUDED
HVE: Section 7 Page 605



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OVERHEAD CONSTRUCTION MANUAL

11kv ABC CONSTRUCTION

11ABCJ3 11ABC TO CCT

UP TO 3 WAY JOINTS WITHOUT ARRESTERS

SIDE JOINT ON X-ARM ARRANGEMENT

APP'D Colin Lee

DATE 23-11-2012

REC'D

CKD John Tunney

DWN John Tunney

TECH STDS

AUTOCAD

4920-A4 B

SECT

PAGE

4

107

SHEET 1 OF 1

FILE:

ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	EDIT
A	06-02-2013	C. LEE	P. RELF	K. DE MANSER	EARTHING NOTE 2

11ABC35/0W
11ABC120/0W

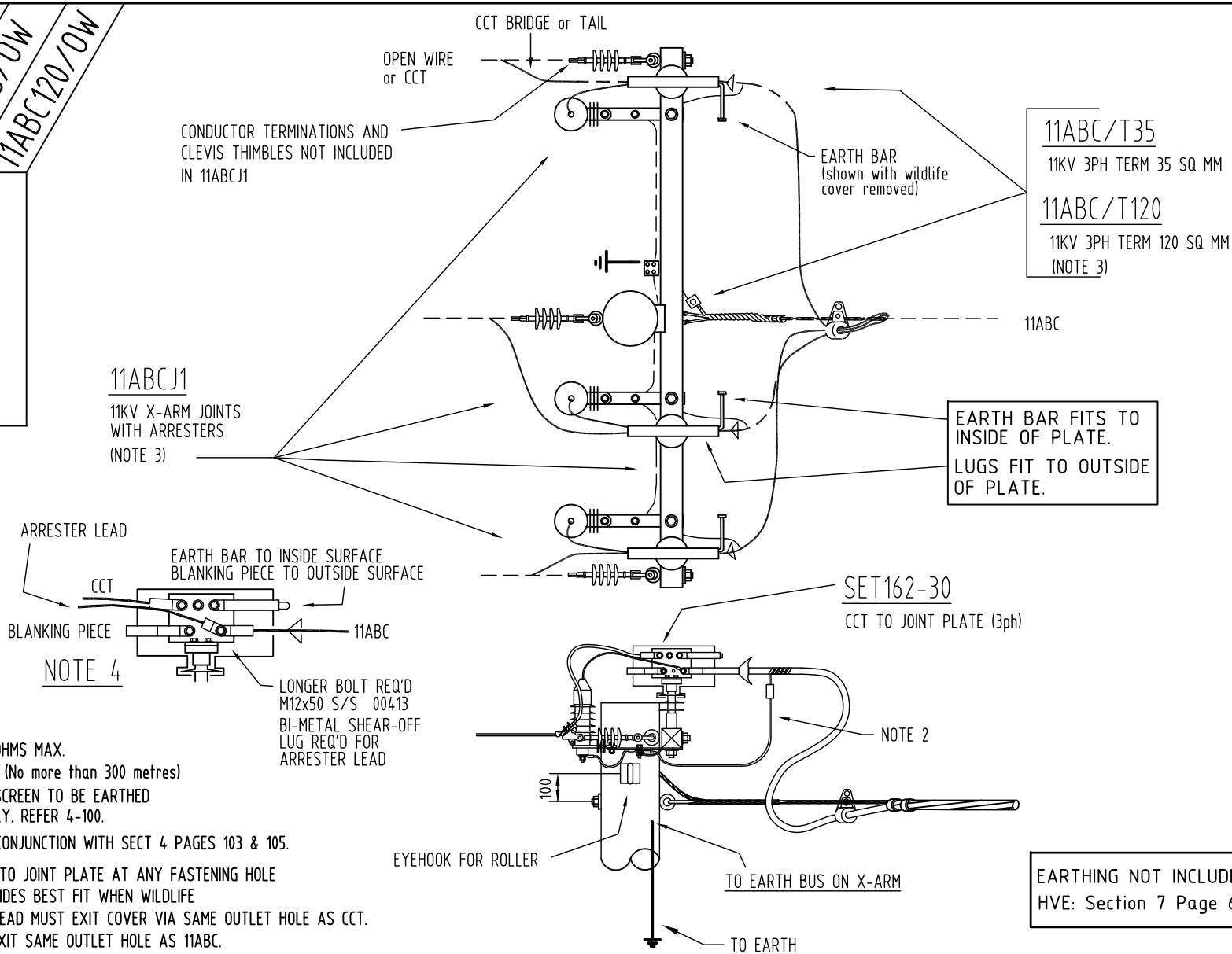
11ABCJ1	1	1
11ABC/T35	1	
11ABC/T120		1
SET162-30	1	1
22950 (extra)	3	3

- 00 POLE TOP
- 150 X-ARM
- 250 ROLLER HOOK
- 350 11ABC

KBS TYPICAL ONLY
REFER WORKSPLAN FOR
ACTUAL DESIGN SPACINGS

NOTES:

1. EARTH CATENARY WIRE TO 30 OHMS MAX.
EARTH AT REGULAR INTERVALS. (No more than 300 metres)
2. EACH CONTINUOUS SECTION OF SCREEN TO BE EARTHED
ONLY ONCE AT SOURCE END ONLY. REFER 4-100.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH SECT 4 PAGES 103 & 105.
4. ARRESTER LEAD MAY CONNECT TO JOINT PLATE AT ANY FASTENING HOLE
ON FRONT SURFACE THAT PROVIDES BEST FIT WHEN WILDLIFE
COVER IS CLOSED. ARRESTER LEAD MUST EXIT COVER VIA SAME OUTLET HOLE AS CCT.
ARRESTER LEAD MUST NEVER EXIT SAME OUTLET HOLE AS 11ABC.



A	ORIGINAL ISSUE	
H	DATE	06-02-2013
APPO	C. LEE	
KD	P. RELF	
JRN	K. DE MANSER	
UPDATE NOTE 2		



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11kV ABC CONSTRUCTION

11ABC/OW

11KV ABC TO OPEN WIRE CONSTRUCTION

APP'D Paul Rainbird	TECH STDS		AUTOCAD
DATE 31-05-1996	4920-A4		H
REC'D	SECT	PAGE	
	4	111	
CKD Greg Dowling	SHEET 1 OF 1		
DWN M. Welsh	FILE:		

CU LIST -

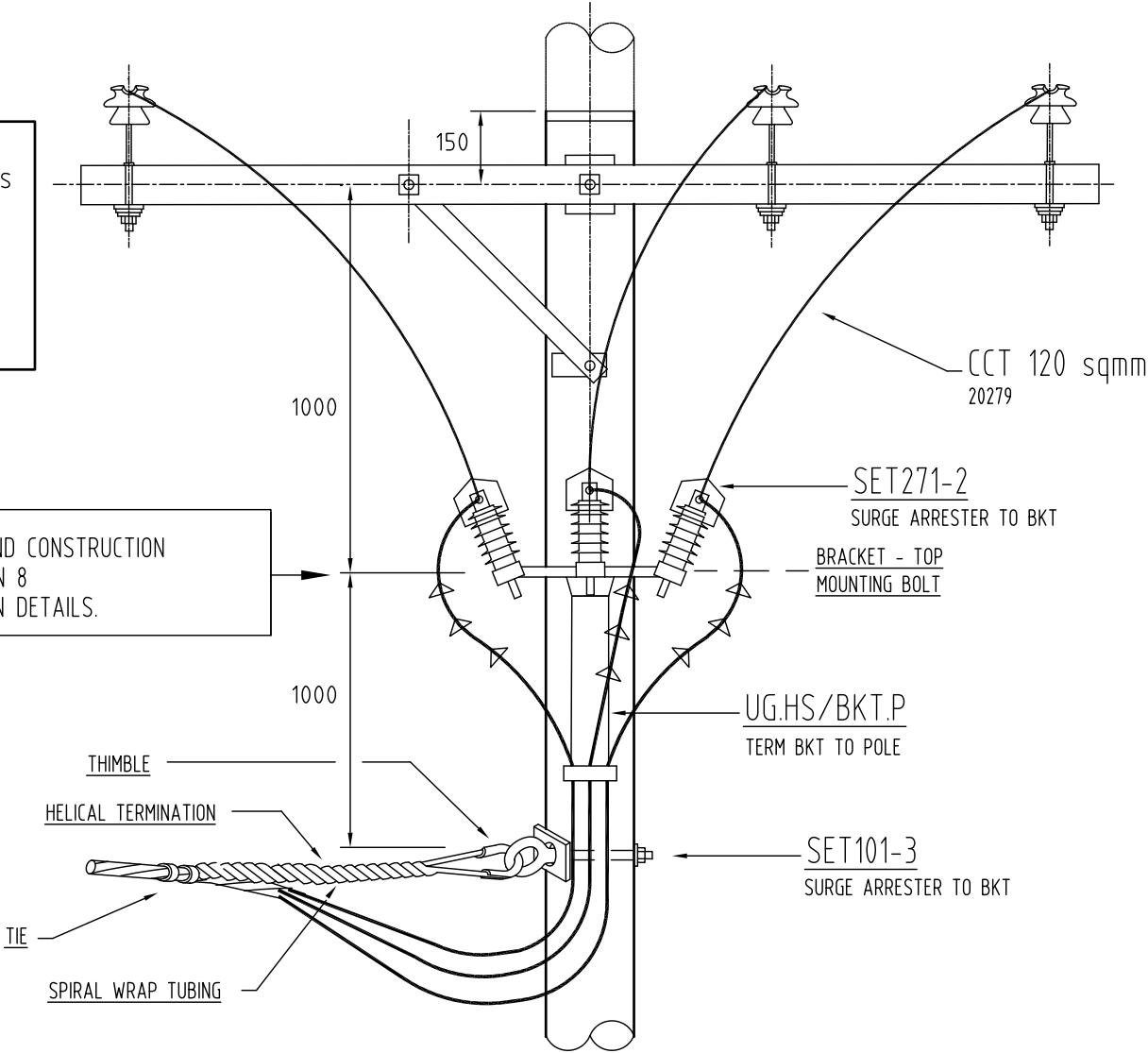
11ABC/TO

SET101-3	1
SET271-2	3
UG.HS/BKT.P	1
12775	1
13118	1
20279	6


NOTE:
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.

SEE UNDERGROUND CONSTRUCTION
MANUAL, SECTION 8
FOR TERMINATION DETAILS.

- NOTE :
1. EARTH CATENARY WIRE TO 30 ohm
EARTH AT REGULAR INTERVALS.
 2. EACH CONTINUOUS SECTION OF SCREEN
TO BE EARTHED ONCE ONLY AT SOURCE END ONLY. REFER 4-100



ORIGINAL ISSUE	DATE	06-02-2013	APP'D	C. LEE	P. RELF	DRN	K. DE MANSER	UPDATE NOTE 2
A	F							


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OVERHEAD CONSTRUCTION MANUAL

11kv CONSTRUCTION

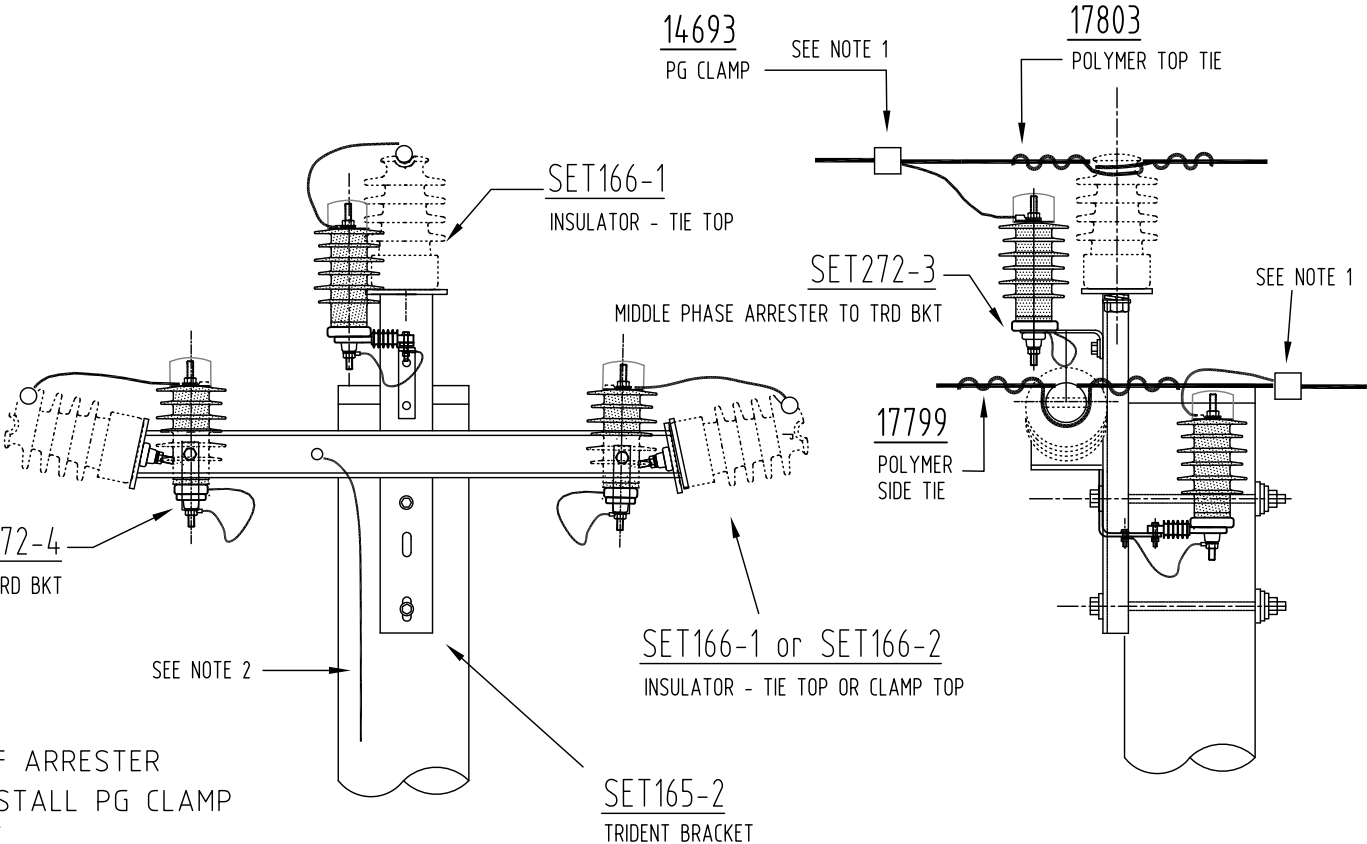
11ABC/TO

11kv ABC TEE OFF CONSTRUCTION (WOOD POLE)

APP'D Paul Rainbird	TECH STDS	AUTOCAD
DATE 31-05-96	4920-A4	F
REC'D John Tunney	SECT 4	PAGE 112
CKD G.Dowling	SHEET 1 OF 1	
DWN M.Welsh	FILE: > > > >	

CU LIST -

	11TD/NCCT	11TDA/NCCT	11TDNCCTLOK	11TDANCCTLOK
SET165-2	1	1	1	1
SET166-1	3	2	3	2
SET166-2	3	1	3	1
SET272-3			1	1
SET272-4			2	2
17803	1	1	1	1
17799	2	1	2	1
14693			3	3



NOTES:

1. REMOVE LUG AND STRIP LIVE END OF ARRESTER LEAD. STRIP CCT INSULATION AND INSTALL PG CLAMP TO CONNECT ARRESTER LEAD TO CCT. LEAVE ENOUGH BARE CCT CONDUCTOR FOR PORTABLE EARTH ATTACHMENT.
2. REFER SECT 4 PAGE 122 FOR ARRESTERS DOWNLEAD AND POLE EARTHING ARRANGEMENT

CU LIST -

CCTPETD
CCTPEVD
CCTPEVO

3215	AR	AR	AR
4926	24	24	24
6122	1	3	3
6162	1	1	1
7235	15m	15m	15m
11430	AR	AR	AR
11431	AR	AR	AR
06259	1	3	3
00412	1	3	3
01081	1	3	3
01053	1	3	3

TERMINAL LUG

06259

BOLT & NUT, M12 x 40

00412

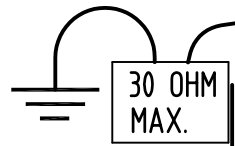
WASHER, M12, LOCK, SS

01081

WASHER, M12, RD., SS.

01053

DISCONNECTED



ADDITIONAL EARTHING

IF REQUIRED

(SECTION 8, PAGE 8-101)

(If more than four additional earthrods required, contact local ENERGEX Office)

07235

EARTHWIRE DOWNLEAD 19/1.78 Cu.
PVC INSULATED

06122

PG CONNECTOR

EARTHGUARD & NAILS

06162 EARTH GUARD

11430 NAIL 30mm Lg.

11431 NAIL 75mm Lg.

SADDLES & NAILS
(500mm INTERVALS)

04926

SADDLE

03215
STAPLESBUTT EARTH
(STRIP INSULATION)

TRIDENT ARRANGEMENT

VERTICAL DELTA AND
VERTICAL OFFSET
ARRANGEMENT FOR
EACH PHASE

2400

4 metres

WOOD
POLE

NOTES:

1. KEEP DOWNLEADS AS FAR AS POSSIBLE FROM OTHER POLE HARDWARE OR EQUIPMENT
2. TREAT DOWNLEAD AS HV EARTH IN SEPARATE EARTH AREAS.
3. IN CMEN AREAS, DOWNLEAD TO BE CONNECTED TO NEUTRAL AND POLE BUTT OR EARTH ELECTRODES.



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

CCTPETD, CCTPEVD, CCTPEVO

CCT POLE EARTH FOR TRIDENT,
VERTICAL DELTA, VERTICAL OFFSET

APP'D R. ENGLISH

DATE 1-6-09

REC'D

CKD JOHN TUNNEY

DWN JOHN TUNNEY

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 122

SHEET 1 OF 1

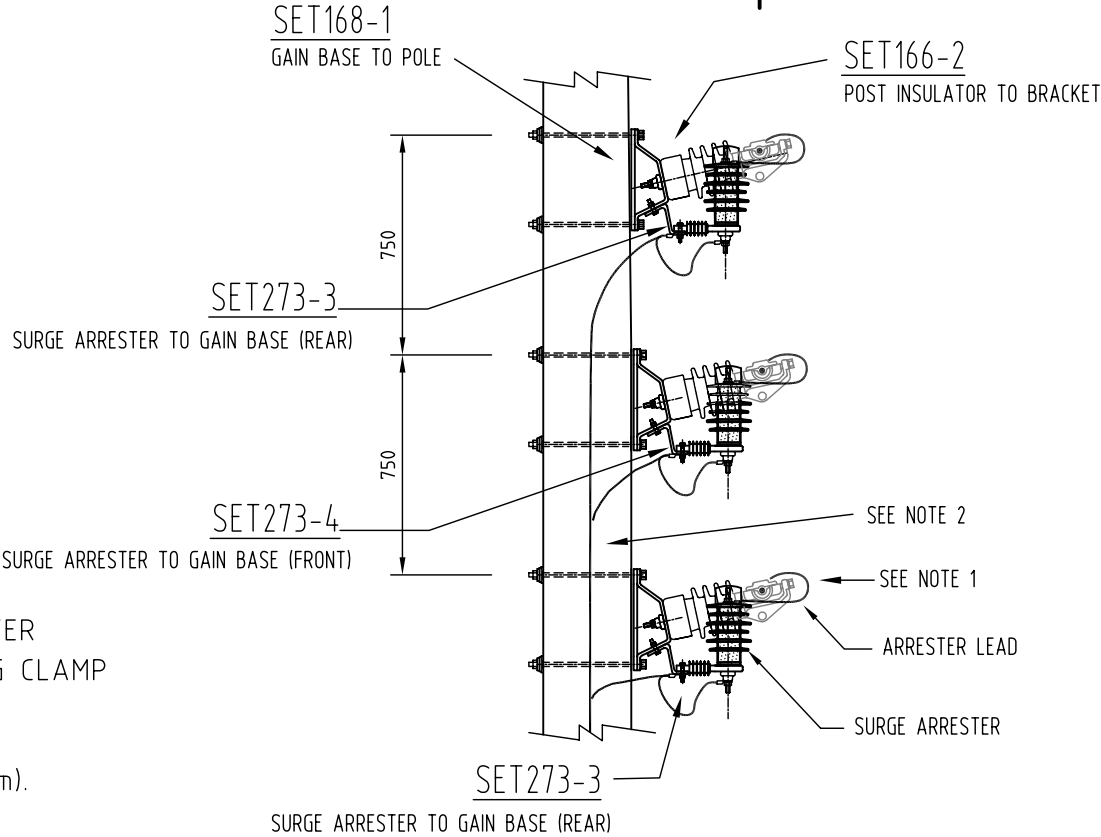
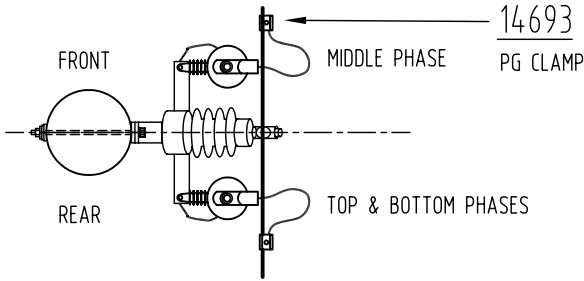
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CU LIST -


	11VOU/NCCT	11VOUNCCTLOK
SET168-1	3	3
SET166-2	3	3
SET273-3		2
SET273-4		1
14693		3

NOTES:

1. REMOVE LUG AND STRIP LIVE END OF ARRESTER LEAD. STRIP CCT INSULATION AND INSTALL PG CLAMP TO CONNECT ARRESTER LEAD TO CCT. LEAVE ENOUGH BARE CCT CONDUCTOR FOR PORTABLE EARTH ATTACHMENT (approx. 150mm).
2. REFER SECT 4 PAGE 122 FOR ARRESTERS DOWNLEAD AND POLE EARTHING ARRANGEMENT



ORIGINAL ISSUE	DATE	REVISION	REVISION	REVISION	REVISION
A	D	1-6-09	ENGLISH	J.TUNNEY	J.TUNNEY
APPD	CKD	DRN	IPC CONNECTOR REMOVED	NOTES AMENDED	


energeX
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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION
11VOU/NCCT, 11VOUNCCTLOK
11kV VERTICAL OFFSET CONSTRUCTION WITH & WITHOUT SURGE ARRESTERS (WP)

APP'D	R.Duglas	TECH STDS		AUTOCAD
DATE	18-97-01	4920-A4		D
REC'D	G.Gowling	SECT	PAGE	
CKD	T.Holden	4	123	
DWN	S.Bayley	SHEET 1 OF 1		
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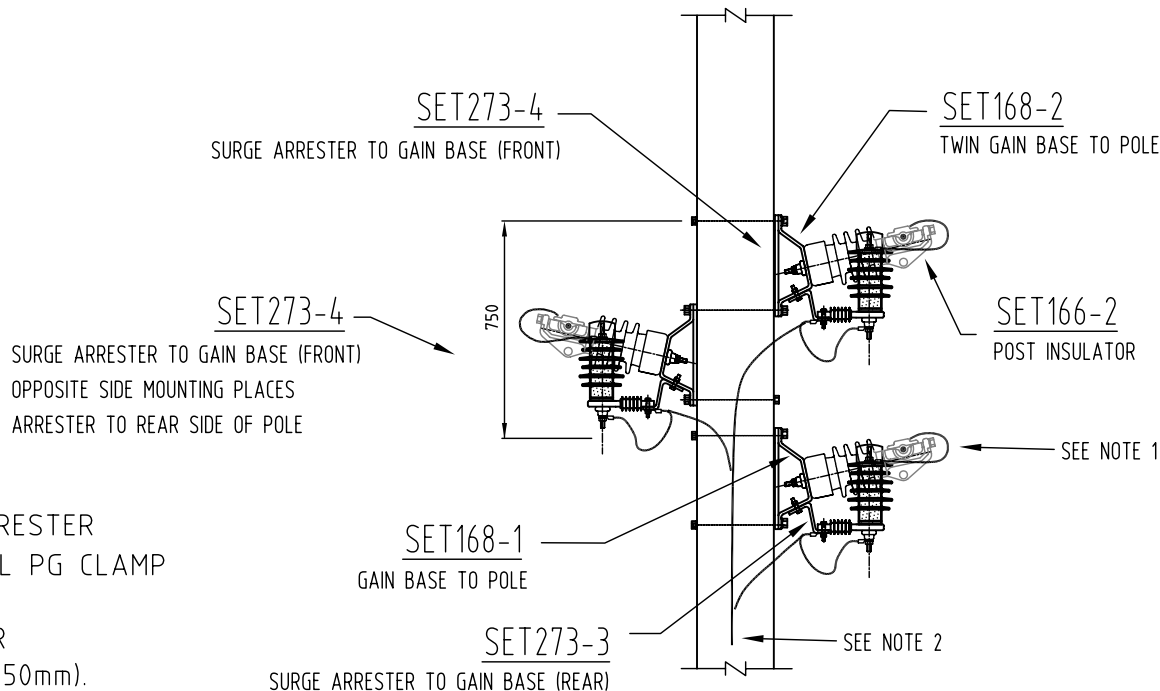
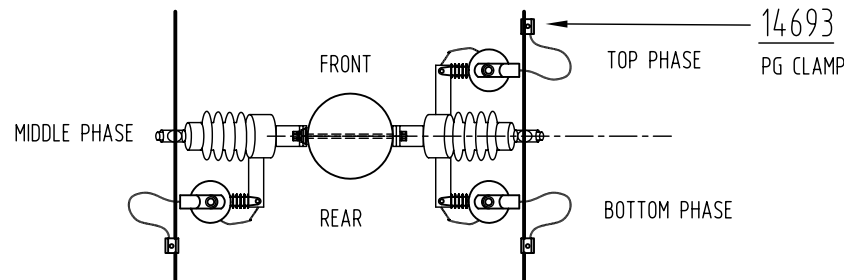
CU LIST -

11VDU/NCCT
11VDUNCCTLOK

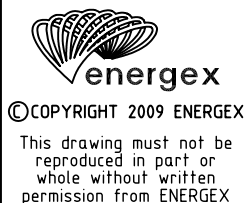
SET168-1	1	1
SET168-2	1	1
SET166-2		3
SET273-3		1
SET273-4		2
14693		3

NOTES:

1. REMOVE LUG AND STRIP LIVE END OF ARRESTER LEAD. STRIP CCT INSULATION AND INSTALL PG CLAMP TO CONNECT ARRESTER LEAD TO CCT. LEAVE ENOUGH BARE CCT CONDUCTOR FOR PORTABLE EARTH ATTACHMENT (approx. 150mm).
2. REFER SECT 4 PAGE 122 FOR ARRESTERS DOWNLEAD AND POLE EARTHING ARRANGEMENT



ORIGINAL ISSUE	DATE	1-6-09	APPD	RENGISH	CKD	J.TUNNEY	DRN	J.TUNNEY	IPC CONNECTOR REMOVED NOTES AMENDED
A	C								



OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION
11VDU/NCCT, 11VDUNCCTLOK

11kV VERTICAL DELTA CONSTRUCTION
WITH & WITHOUT SURGE ARRESTERS (WP)

APP'D	R.Douglas	TECH STDS	AUTOCAD
DATE	18-97-01	4920-A4	C
REC'D	G.Gowling	SECT	PAGE
CKD	T.Holden	4	124
DWN	S.Bayley	SHEET	1 OF 1
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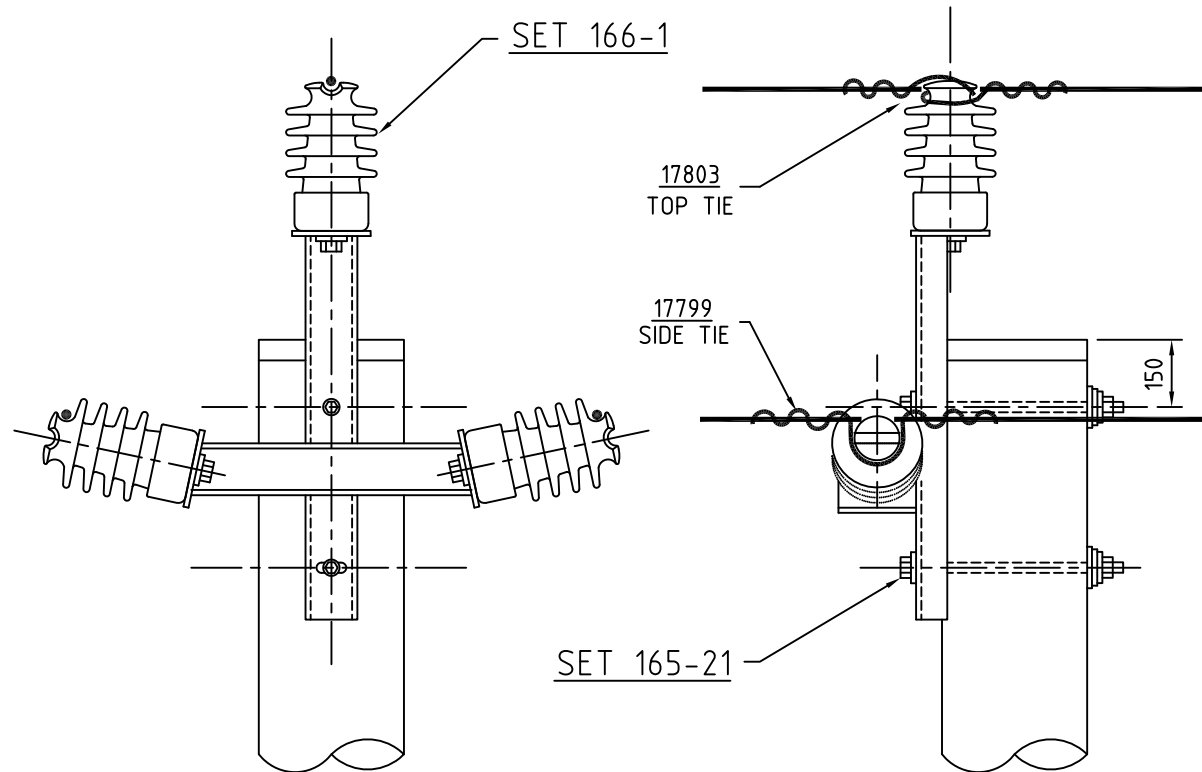
CU LIST -

11NTD/N/CCT

SET165-21	1
SET166-1	3
17803	1
17799	2

NOTE:

1. ONLY FOR USE WITH CCT
(COVERED CONDUCTOR THICK)
2. FOR LIGHTNING OVERVOLTAGE KIT INSTALLATION
REFER SECTION 4 - PAGE 131



ORIGINAL ISSUE

A



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11NTD/N/CCT

11kV NARROW TRIDENT STRAIGHT LINE
CONSTRUCTION CCT - (WOOD POLE)

APP'D Fabio Zaini

DATE 02/02/2018

REC'D

CKD Paul Relf

DWN Paul Relf

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 130

SHEET 1 OF 1

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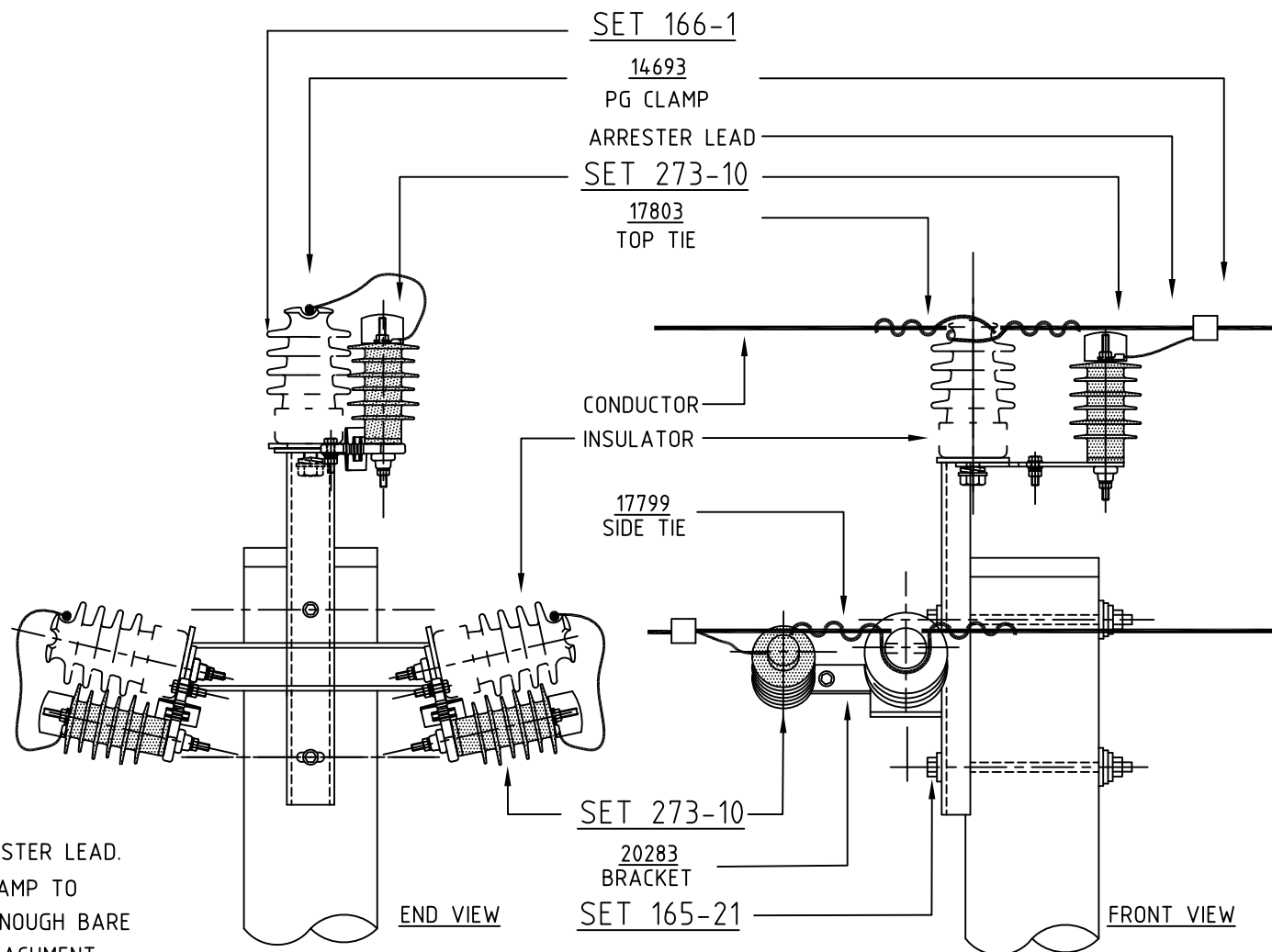
CU LIST -

11NTD/N/CCT
11NTDNCCTLOK

SET165-21	1	1
SET166-1	3	3
SET273-10		3
14693		3
17799	2	2
17803	1	1
20283		3

NOTE:

1. ONLY FOR USE WITH CCT
(COVERED CONDUCTOR THICK)
2. REMOVE LUG AND STRIP LIVE END OF ARRESTER LEAD.
STRIP CCT INSULATION AND INSTALL PG CLAMP TO
CONNECT ARRESTER LEAD TO CCT. LEAVE ENOUGH BARE
CCT CONDUCTOR FOR PORTABLE EARTH ATTACHMENT.



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11NTDNCCTLOK

11 kV NARROW TRIDENT STRAIGHT LINE
CONSTRUCTION CCT LOK - (WOOD POLE)

APP'D Fabio Zaini

DATE 02/02/2018

REC'D

CKD Paul Relf

DWN Paul Relf

TECH STDS AUTOCAD

4920-A4 A

SECT PAGE

4 131

SHEET 1 OF 1

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ORIGINAL ISSUE
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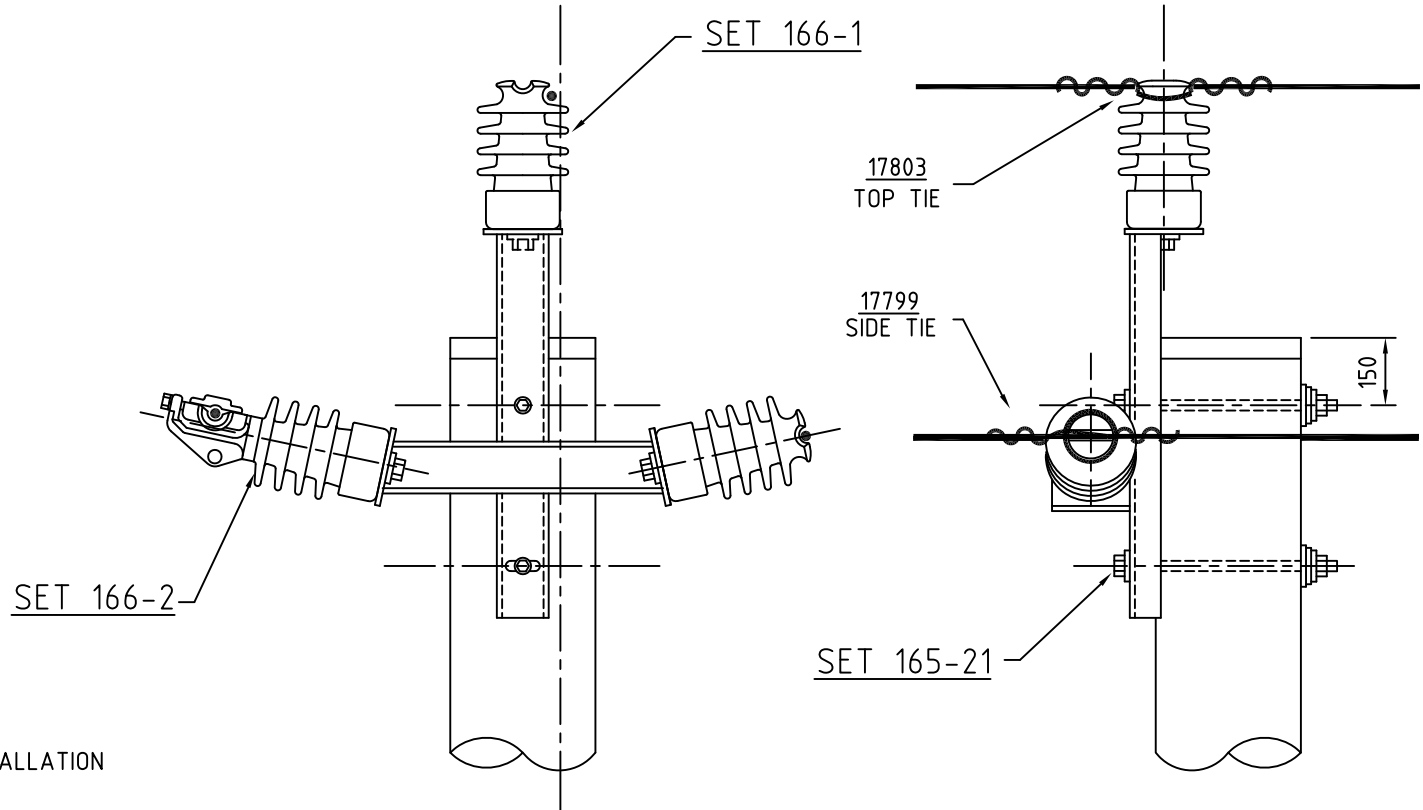
CU LIST -

11NTDA/N/CCT

SET165-21	1
SET166-1	2
SET166-2	1
17803	1
17799	1

NOTE:

- ONLY FOR USE WITH CCT
(COVERED CONDUCTOR THICK)
- FOR LIGHTNING OVERVOLTAGE KIT INSTALLATION
REFER SECTION 4 - PAGE 133



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11NTD/N/CCT

11kV NARROW TRIDENT ANGLE CONSTRUCTION
CCT - (WOOD POLE)

APP'D	Fabio Zaini	TECH STDS	AUTOCAD
DATE	02/02/2018	4920-A4	A
REC'D		SECT	PAGE
CKD	Paul Relf	4	132
DWN	Paul Relf	SHEET	1 OF 1
		FILE:	

ORIGINAL ISSUE

A

CU LIST -

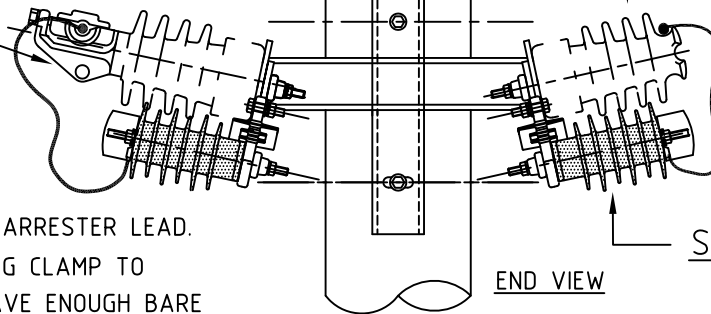
11NTDA/N/CCT
11NTDANCCTLO

SET165-21	1	1
SET166-1	2	2
SET166-2	1	1
SET273-10		3
14693		3
17799	1	1
17803	1	1
20283		3

NOTE:

- ONLY FOR USE WITH CCT
(COVERED CONDUCTOR THICK)
- REMOVE LUG AND STRIP LIVE END OF ARRESTER LEAD.
STRIP CCT INSULATION AND INSTALL PG CLAMP TO
CONNECT ARRESTER LEAD TO CCT. LEAVE ENOUGH BARE
CCT CONDUCTOR FOR PORTABLE EARTH ATTACHMENT.

SET 166-2



SET 166-1

14693

PG CLAMP

ARRESTER LEAD

SET 273-10

17803

TOP TIE

CONDUCTOR

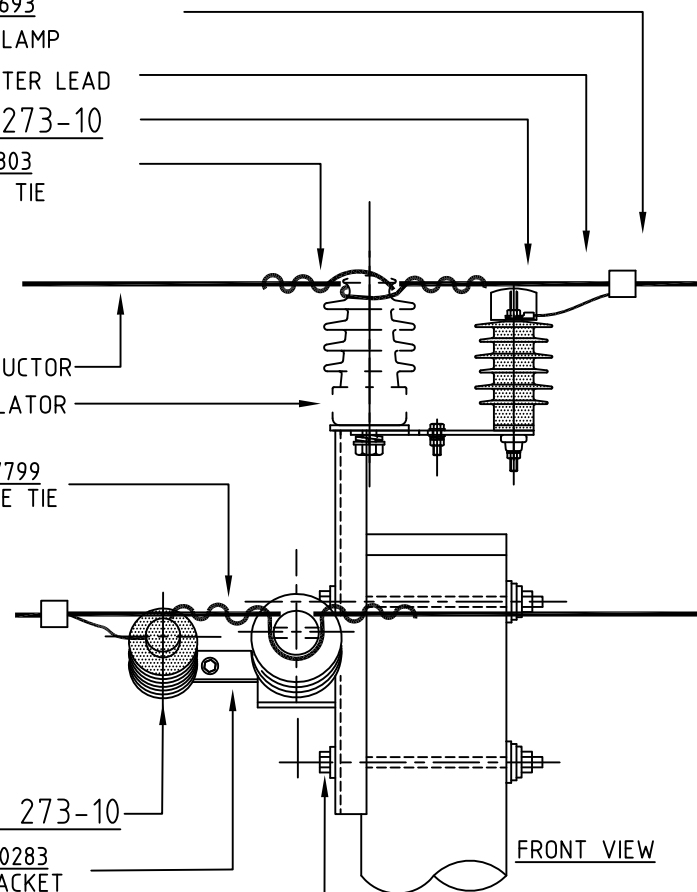
INSULATOR

17799
SIDE TIE

SET 273-10

20283
BRACKET

SET 165-21



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OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

11NTDANCCTLOK

11kV NARROW TRIDENT ANGLE
CONSTRUCTION CCT LOK - (WOOD POLE)

APP'D Fabio Zaini

DATE 02/02/2018

REC'D

CKD Paul Relf

DWN Paul Relf

TECH STDS AUTOCAD

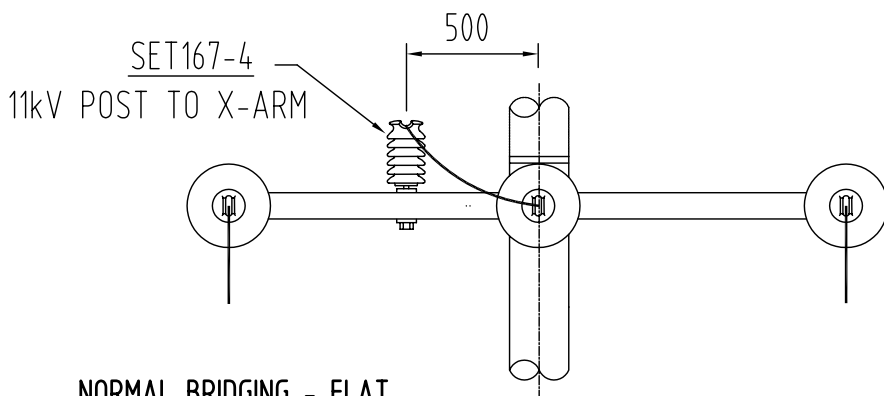
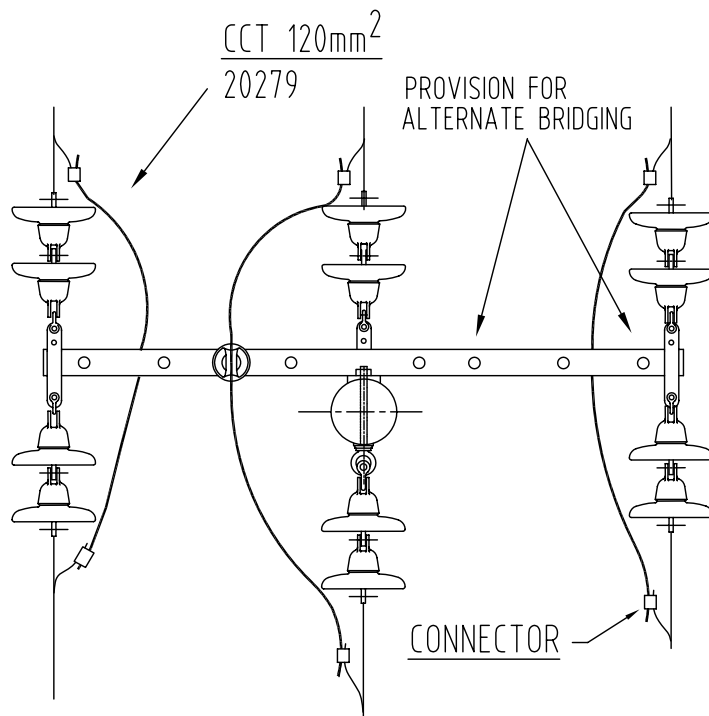
4920-A4 A

SECT PAGE

4 133

SHEET 1 OF 1

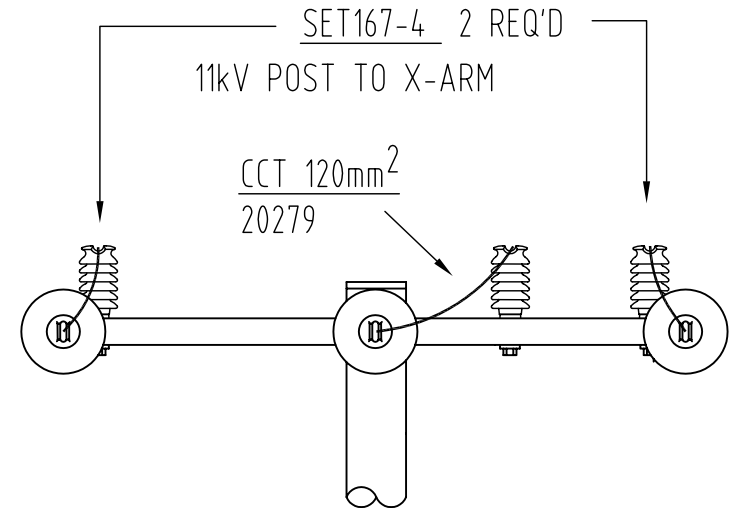
FILE:



NORMAL BRIDGING - FLAT

NOTE:


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.



USE THIS ARRANGEMENT AT SITES WITH DROPOUT FUSES BELOW THE X-ARM OR WHERE BRIDGING OUTER PHASES BELOW THE X-ARM IS UNSUITABLE

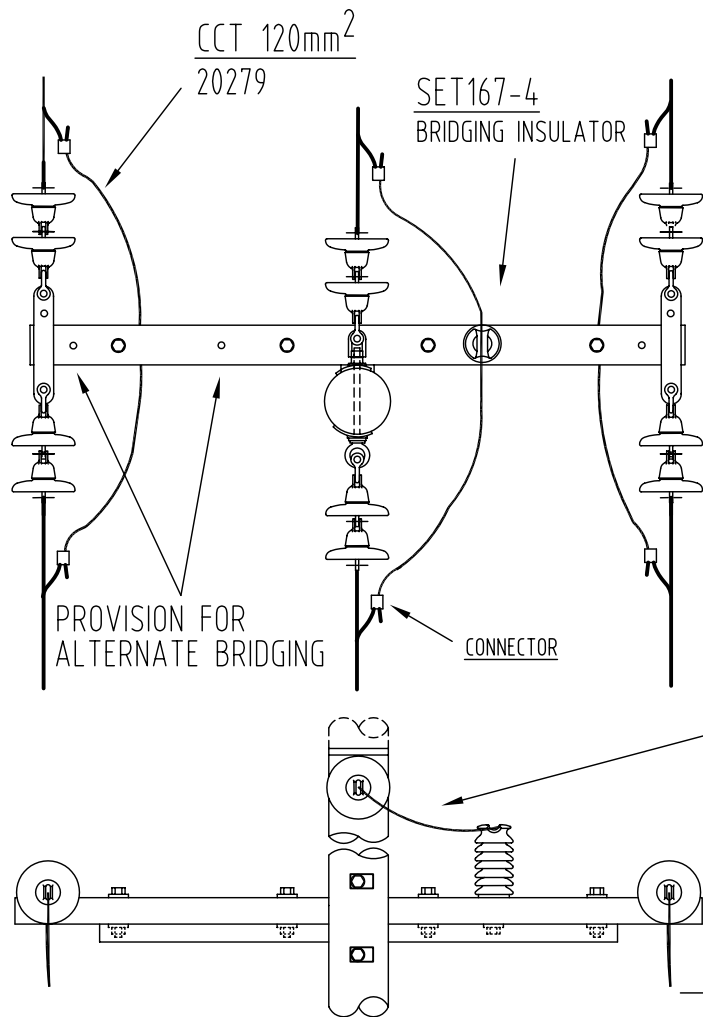
Example: PT Stations, UG Terminations

NORMAL BRIDGING - FLAT OVER XARM

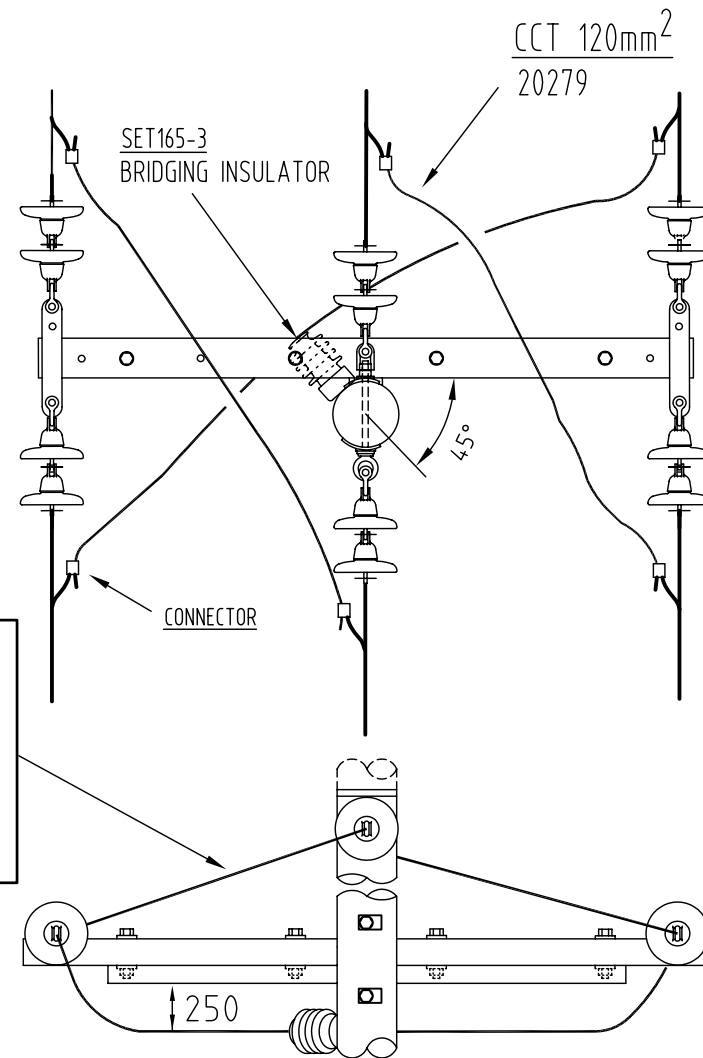
A	ORIGINAL ISSUE	DATE 23-7-09				 ©COPYRIGHT 2009 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL		APP'D	P.Rainbird	TECH STDS		AUTOCAD
	F	DATE	23-7-09	APPD	RENGISH				DATE	31-05-96	4920-A4		F
				CKD	J.TUNNEY				REC'D	J.Tunney	SECT	PAGE	
				DRN	J.TUNNEY				CKD	G.Dowling	4	201	
									DWN	M.Welsh	SHEET 1 OF 1		FILE: X X X X

Note added for flat bridging over x-arm

11kV CONSTRUCTION BRIDGING ARRANGEMENTS
NORMAL BRIDGING
FLAT



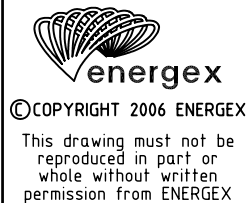
NORMAL BRIDGING - TRIANGULAR



TRANSPOSITION - TRIANGULAR

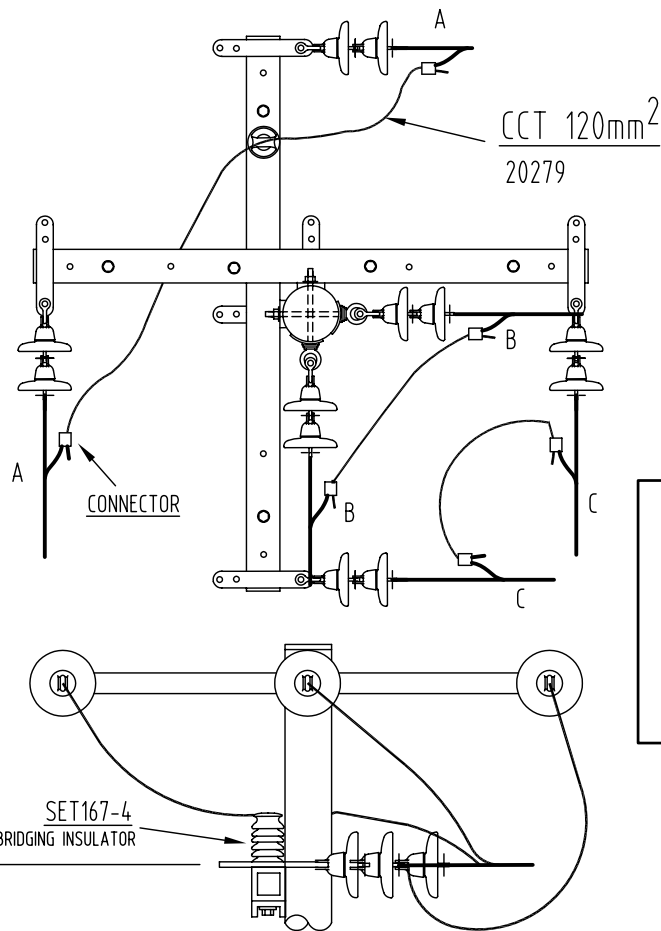
NOTE:
CCT BRIDGING IS SUITABLE FOR MAINS
UP TO 120 sq mm.
EQUIVALENT TO MOON & CHERRY.
WHERE LARGER BRIDGING
CONDUCTOR IS REQUIRED WILD LIFE
PROOFING MEASURES MUST BE
UNDERTAKEN.

ORIGINAL ISSUE	DATE	15/11/06	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWERA
CCT bridging note added	Stirrups removed							

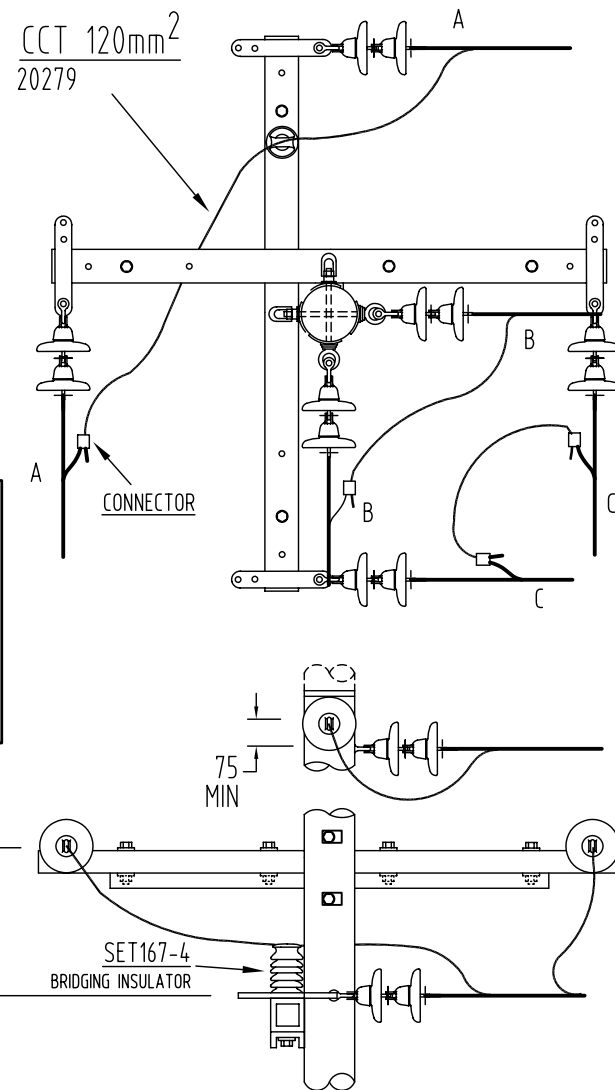


OVERHEAD CONSTRUCTION MANUAL
11kV CONSTRUCTION
BRIDGING ARRANGEMENTS
NORMAL, TRANSPOSITION (TRIANGULAR)

APP'D	P.Rainbird	TECH STDS	AUTOCAD
DATE	31-05-96	4920-A4	C
REC'D	J.Tunney	SECT	PAGE
CKD	G.Dowling	4	202
DWN	M.Welsh	SHEET	1 OF 1
FILE:	×	×	×



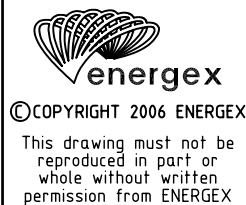
NOTE:
CCT BRIDGING IS SUITABLE FOR MAINS
UP TO 120 sq mm.
EQUIVALENT TO MOON & CHERRY.
WHERE LARGER BRIDGING
CONDUCTOR IS REQUIRED WILD LIFE
PROOFING MEASURES MUST BE
UNDERTAKEN.



CROSSCHECK - FLAT

CROSSCHECK - TRIANGULAR

ORIGINAL ISSUE	DATE	15/11/06	APPD	K.NUTTALL	CKD	J.TUNNEY	DRN	G.JAYAWEERA
C								
CCT bridging note added. Stirrups removed.								



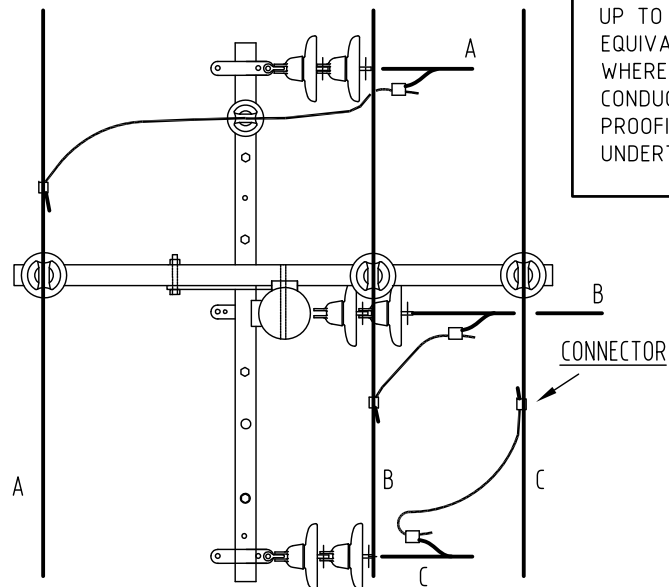
OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION

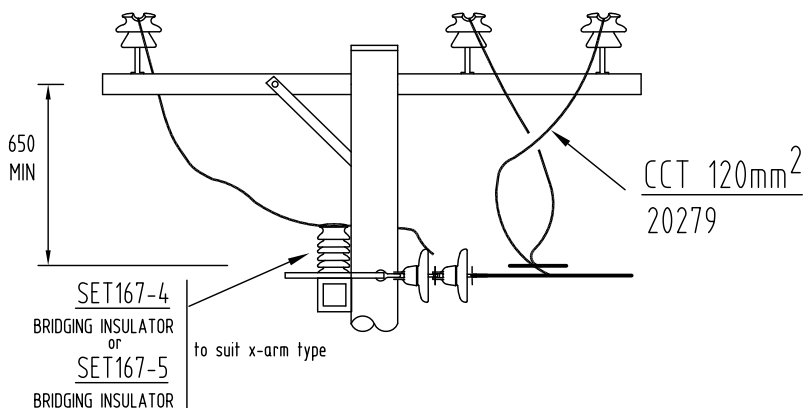
BRIDGING ARRANGEMENTS

CROSSCHECK - FLAT, TRIANGULAR

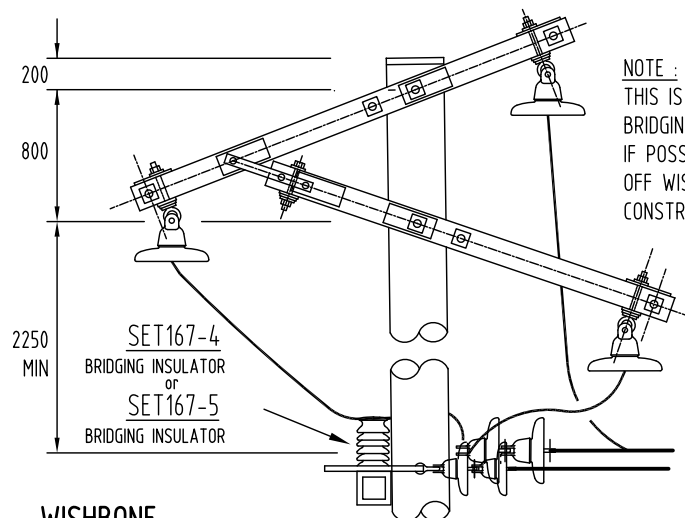
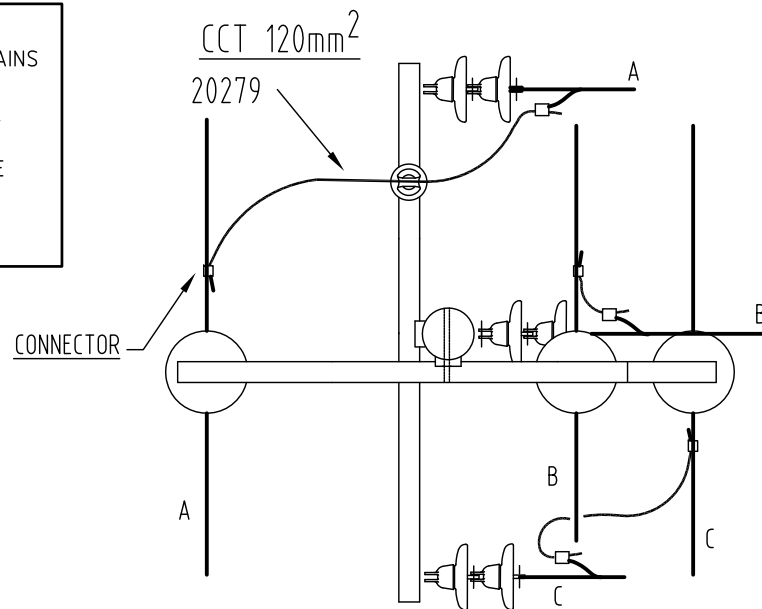
APP'D	P.Rainbird	TECH STDS		AUTOCAD
DATE	31-05-96	4920-A4		C
REC'D	J.Tunney	SECT	PAGE	
CKD	G.Dowling	4	203	
DWN	M.Welsh	SHEET 1 OF 1		
		FILE:	X	X



NOTE:
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.



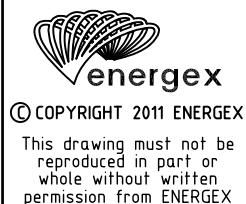
TEE OFF - FLAT



NOTE :
THIS IS A NON-PREFERRED BRIDGING ARRANGEMENT IF POSSIBLE AVOID TEEING OFF WISHBONE CONSTRUCTION.

TEE OFF - WISHBONE

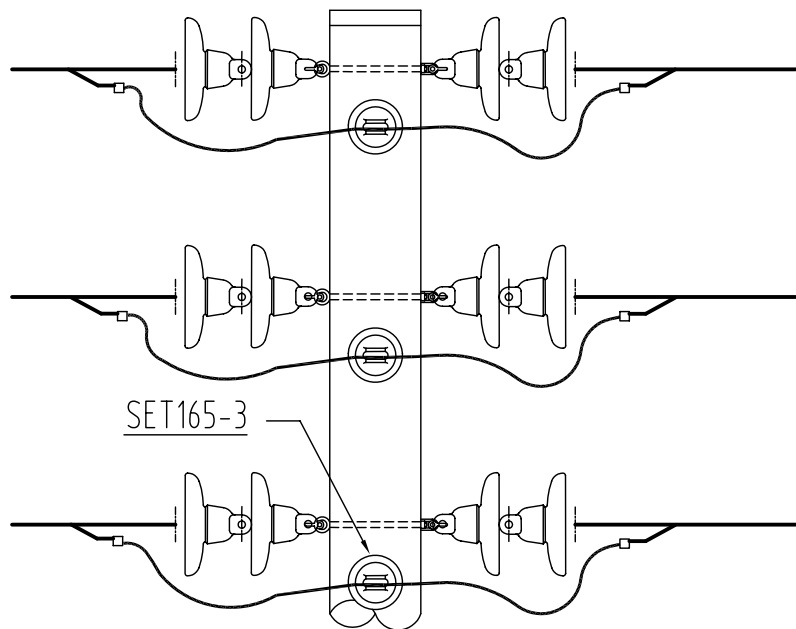
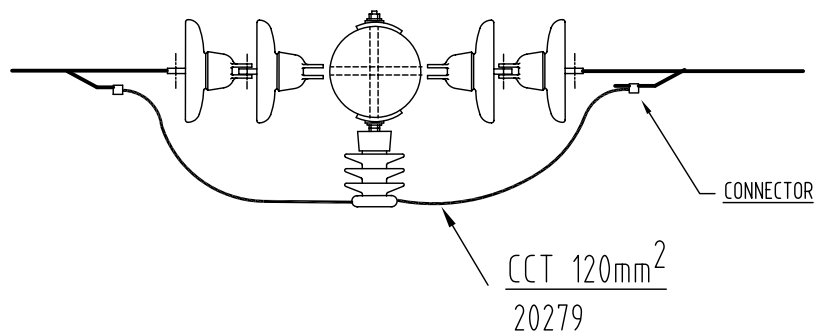
ORIGINAL ISSUE	DATE	APP'D	CKD	DRN	Tee Off to Flat kbs now 650, was 750.	Tee Off to W'bone kbs now 2250, was 2000
B	19-04-2011	ROY ENGLISH	J.TUNNEY	J. TUNNEY		



OVERHEAD CONSTRUCTION MANUAL

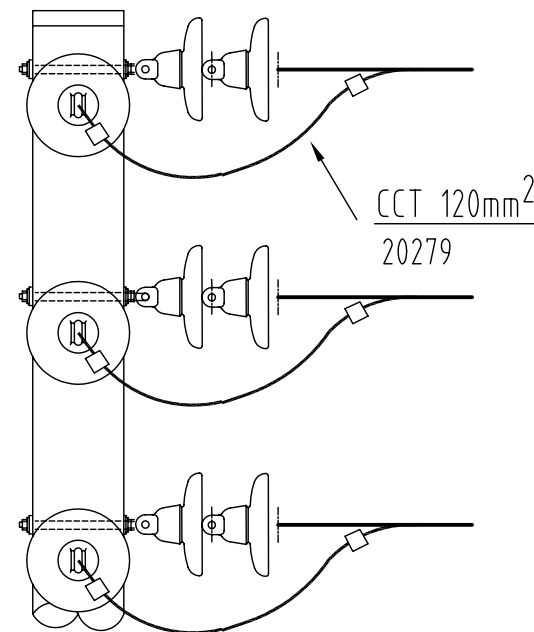
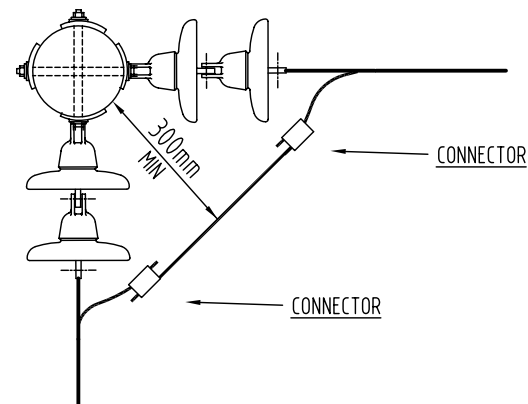
11kV CONSTRUCTION BRIDGING ARRANGEMENTS TEE OFF - FLAT, WISHBONE

APP'D	P.Rainbird	TECH STDS		AUTOCAD
DATE	31-05-96	4920-A4		D
REC'D	J.Tunney	SECT	PAGE	
CKD	G.Dowling	4	204	
DWN	M.Welsh	SHEET 1 OF 1		
		FILE:	X	X



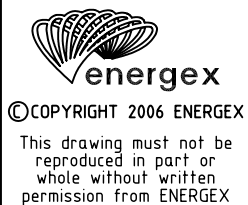
VERTICAL SHACKLE

NOTE:
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.



VERTICAL CROSSCHECK

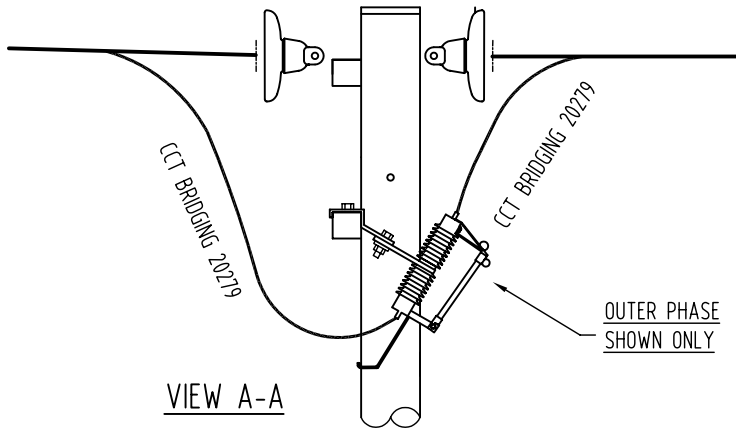
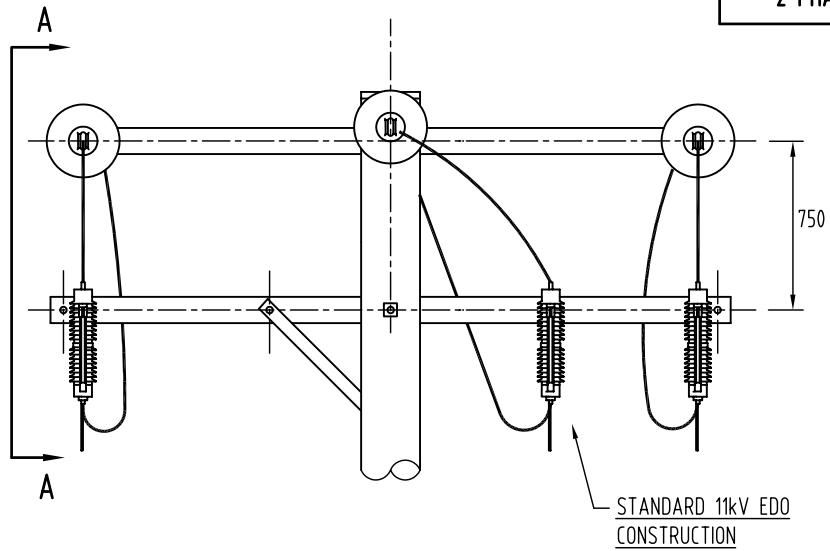
B	ORIGINAL ISSUE
C	DATE 15/11/06
APPD	K.NUTTALL
CKD	J.TUNNEY
DRN	G.JAYAWEERA
CCT bridging note added Stirrups removed	



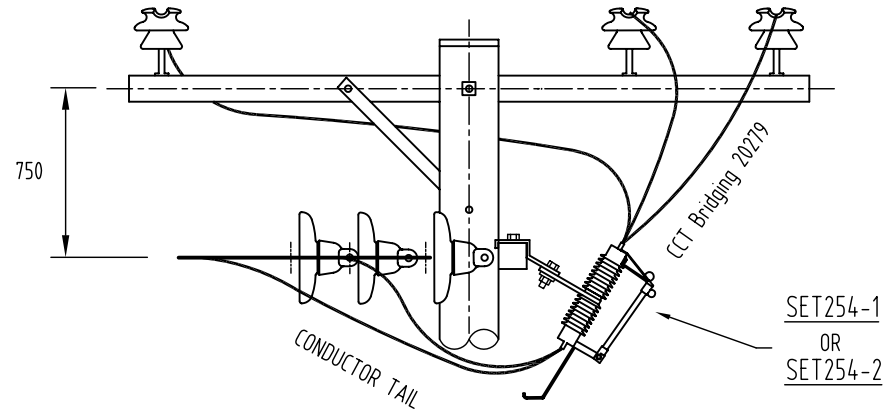
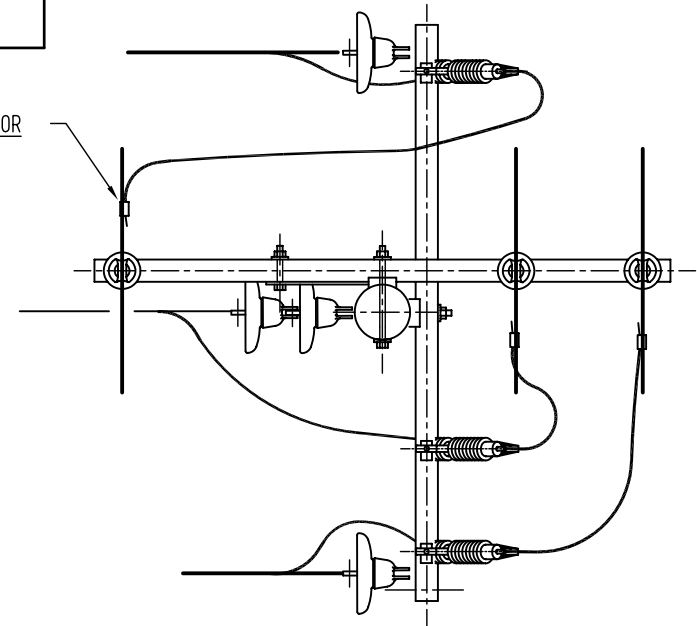
OVERHEAD CONSTRUCTION MANUAL
11kV CONSTRUCTION
BRIDGING ARRANGEMENTS
VERTICAL SHACKLE, VERTICAL CROSSCHECK

APP'D	P.Rainbird	TECH STDS	AUTOCAD
DATE	31-05-96	4920-A4	C
REC'D	J.Tunney	SECT	PAGE
CKD	G.Dowling	4	205
DWN	M.Welsh	SHEET	1 OF 1
FILE: X X X X			

OMIT CENTER PHASE FOR
2 PHASE CONSTRUCTION




CONNECTOR

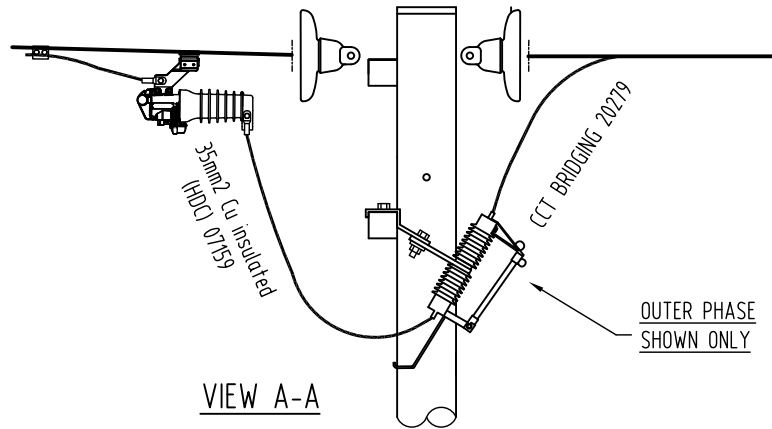
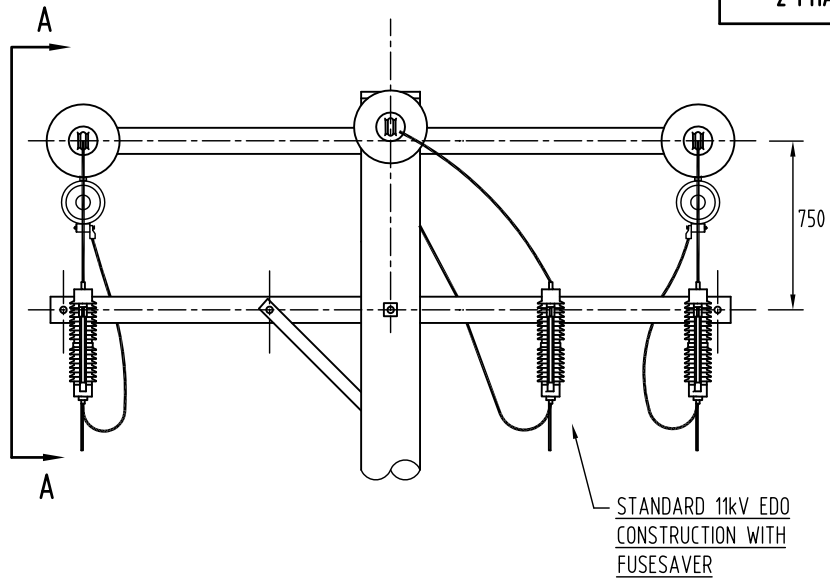


MASTER EDO's - STRAIGHT LINE

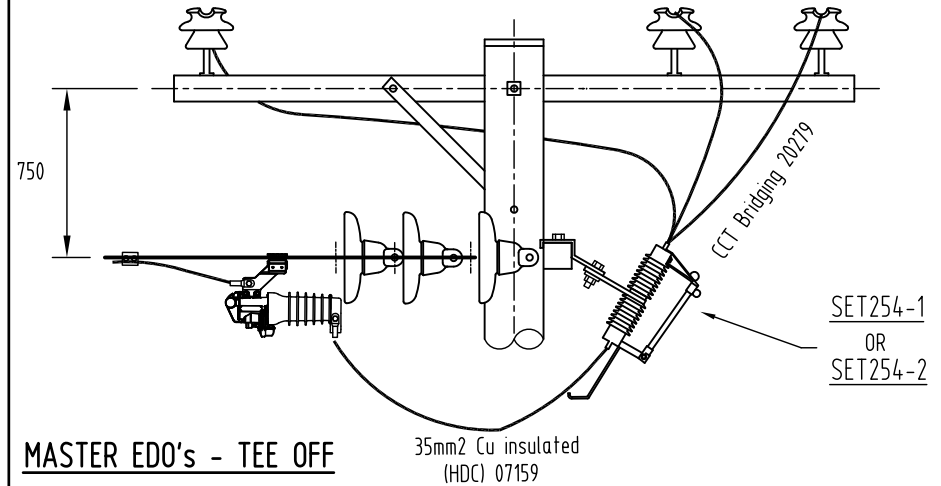
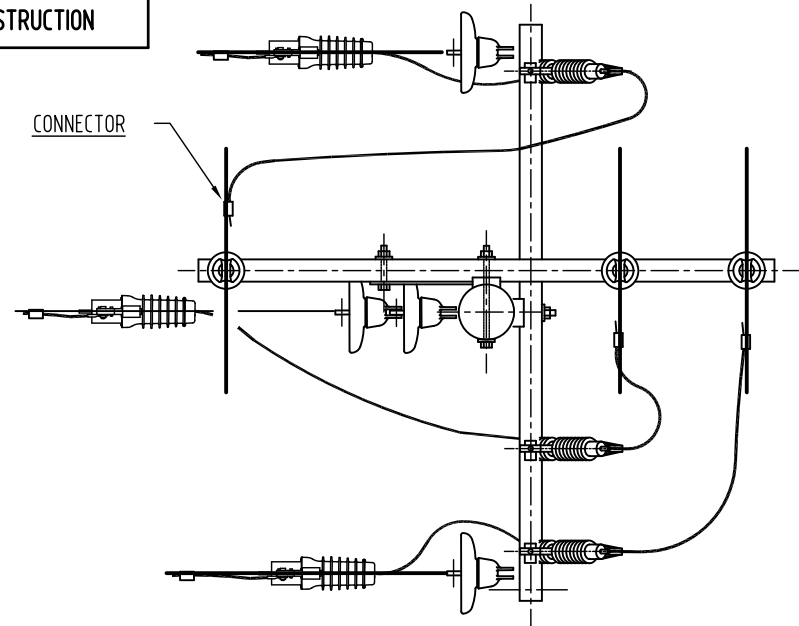
MASTER EDO's - TEE OFF

B	ORIGINAL ISSUE		CCT bridging added		 © COPYRIGHT 2010 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL 11kV CONSTRUCTION BRIDGING ARRANGEMENTS EDO'S	APP'D	P.Rainbird	TECH STDS		AUTOCAD
	E	DATE					30-6-2010	4920-A4		E	
	APPD	RENGISH					REC'D	J.Tunney	SECT	PAGE	
	CKD	J.TUNNEY					CKD	G.Dowling	4	206	
	DRN	J.TUNNEY					DWN	M.Welsh	SHEET 1 OF 1		
								FILE: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			

OMIT CENTER PHASE FOR
2 PHASE CONSTRUCTION



MASTER EDO's - STRAIGHT LINE



MASTER EDO's - TEE OFF



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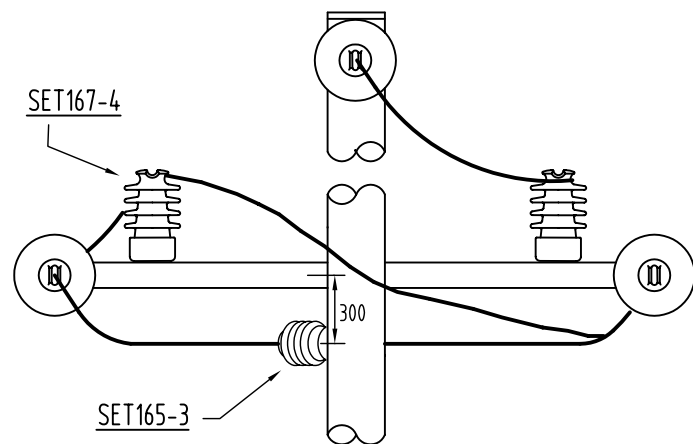
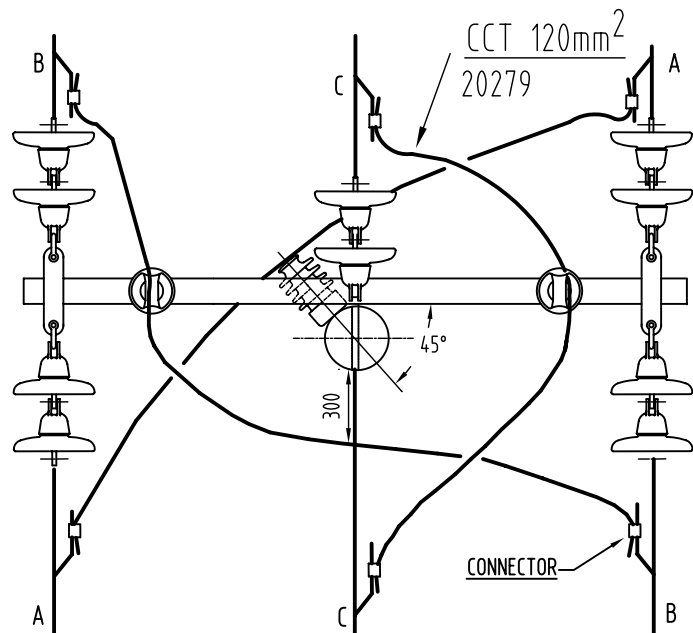
OVERHEAD CONSTRUCTION MANUAL

11kV CONSTRUCTION
BRIDGING ARRANGEMENTS
FUSE SAVER

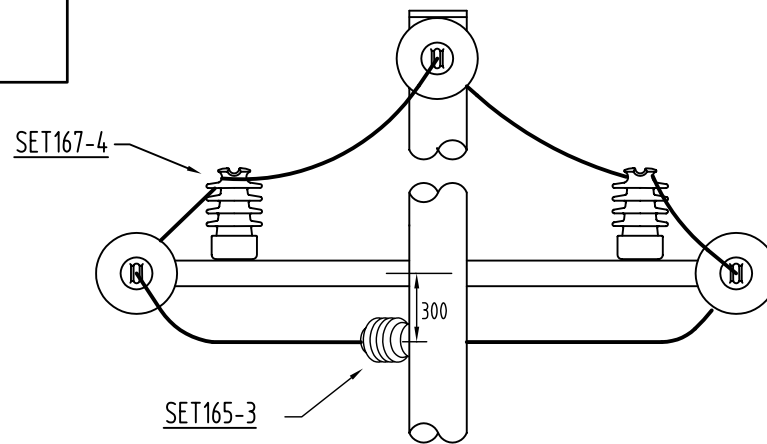
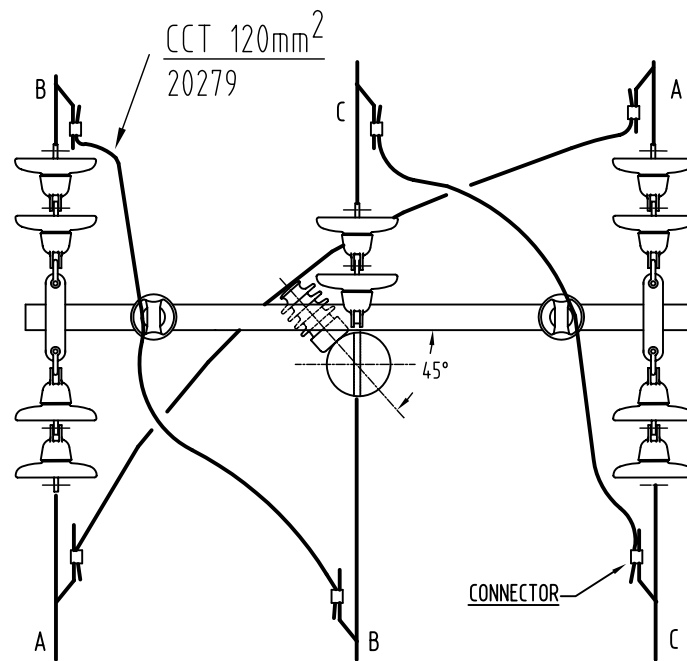
APP'D	C.LEE	TECH STDS	AUTOCAD
DATE	10/09/12	4920-A4	A
REC'D	A.ANAND	SECT	PAGE
CKD	A.ANAND	4	207
DWN	P.RELF	SHEET	1 OF 1
FILE: X X X X			

ORIGINAL ISSUE

A




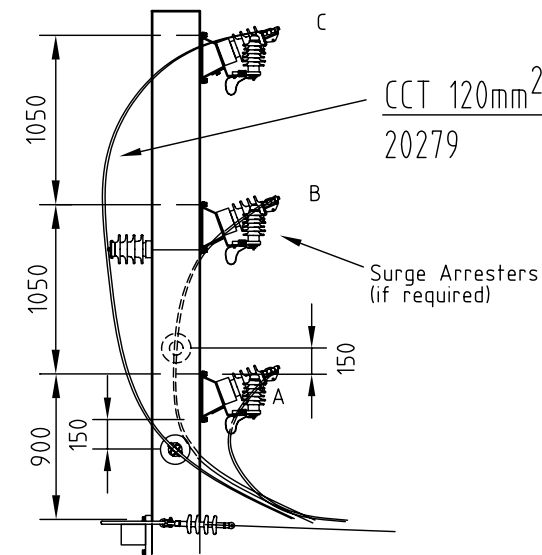
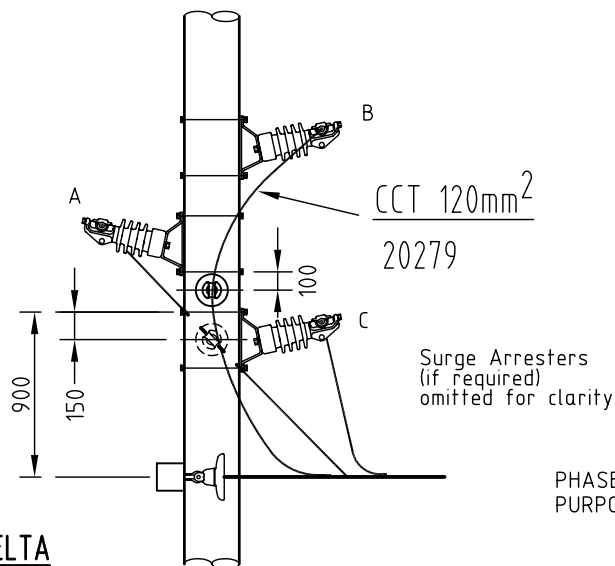
2 PHASE TRANSPOSITION - SHACKLE




3 PHASE TRANSPOSITION - SHACKLE

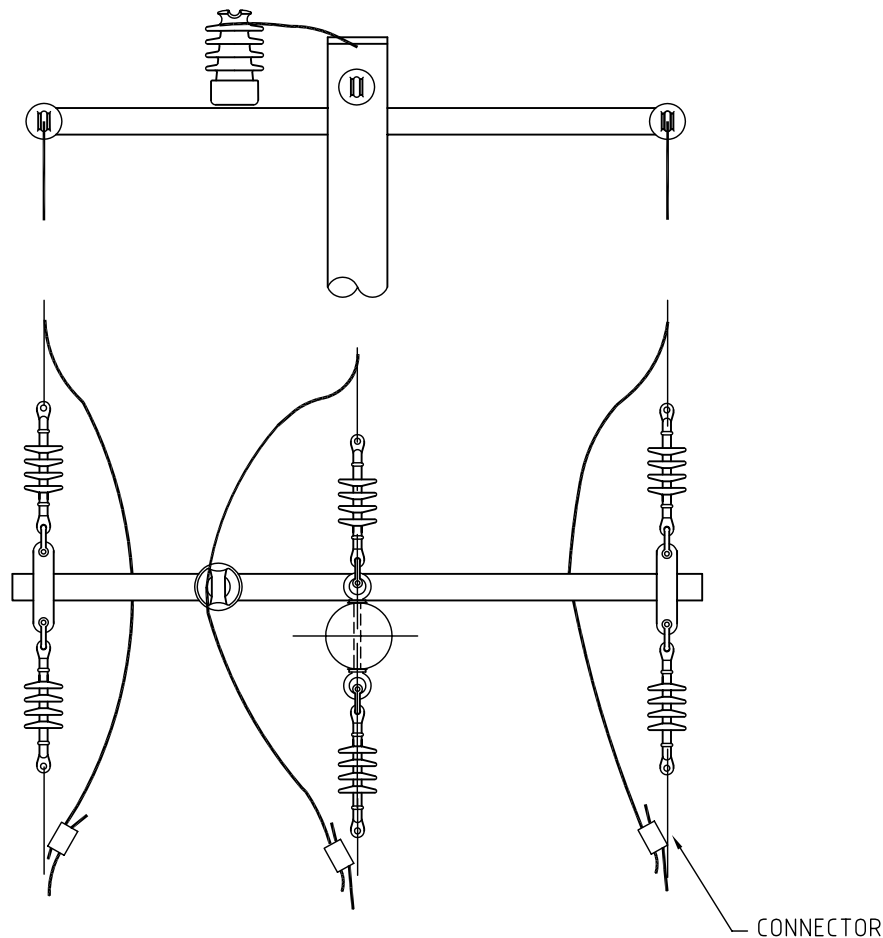
NOTE:
CCT BRIDGING IS SUITABLE FOR MAINS UP TO 120 sq mm. EQUIVALENT TO MOON & CHERRY. WHERE LARGER BRIDGING CONDUCTOR IS REQUIRED WILD LIFE PROOFING MEASURES MUST BE UNDERTAKEN.

B	ORIGINAL ISSUE		APPD K.NUTTALL	CKD J.TUNNEY	DRN G.JAYAWERA	CCT bridging note added Stirrups removed		 ©COPYRIGHT 2006 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL		APP'D	P.Rainbird	TECH STDS		AUTOCAD	
	D	DATE							15/11/06	DATE	31-05-96	4920-A4		D		
		REC'D							J.Tunney	SECT		PAGE				
		CKD							G.Dowling	4		208				
		DWN							M.Welsh	SHEET 1 OF 1		FILE: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				



TEEOFF - VERTICAL OFFSET

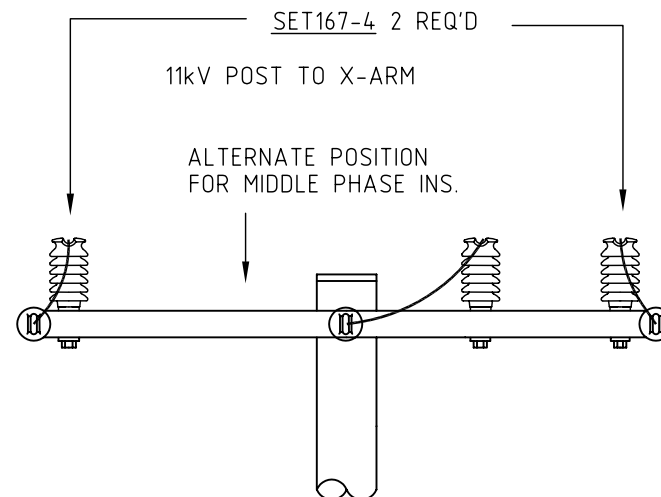
A	ORIGINAL ISSUE		C	DATE	1-7-09	APPD	R.English	CKD	J.TUNNEY	DRN	J.TUNNEY	VERTICAL OFFSET ADDED		<div></div> <div>©COPYRIGHT 2009 ENERGEX</div> <div>This drawing must not be reproduced in part or whole without written permission from ENERGEX</div>	OVERHEAD CONSTRUCTION MANUAL			APP'D	P.Rainbird	TECH STDS		AUTOCAD
	DATE			31-05-96	4920-A4		C															
	REC'D			J.Tunney	SECT		PAGE															
	CKD			G.Dowling	4		210															
	DWN			M.Welsh	SHEET 1 OF 1																	
																FILE: XX XX XX XX						



NORMAL BRIDGING – FLAT

NOTE:


1. BRIDGING TO CONSIST OF CCT.



USE THIS ARRANGEMENT AT SITES WITH
DROPOUT FUSES BELOW THE X-ARM OR WHERE
BRIDGING OUTER PHASES BELOW THE X-ARM
IS UNSUITABLE

Example: PT Stations, UG Terminations

NORMAL BRIDGING – FLAT OVER XARM

A	ORIGINAL ISSUE		B	DATE	23-7-09	APPD	RENGISH	CKD	J.TUNNEY	DRN	J.TUNNEY	Dwg added for flat bridging over x-arm		 © COPYRIGHT 2009 ENERGEX This drawing must not be reproduced in part or whole without written permission from ENERGEX	OVERHEAD CONSTRUCTION MANUAL				APP'D	R. Douglas	AS&S		AUTOCAD
				DATE	18-07-01		4920-A4				B												
				REC'D	G. Dowling		SECT		PAGE														
				CKD	T. Holden		4		211														
							SHEET		1 OF 1														
				DWN	S. Bayley		FILE:DWG_OH\4920a4\504\11W4-211.DWG																
															11kV CONSTRUCTIONS								
															BRIDGING ARRANGEMENTS								
															SHACKLE CCT to CCT								