

Project Name : Transnet Saldanha NMD
Upgrade - New Ystervark S/S

Project ID : 153272156

Job Name : Iscor 66 kV Breakers &
Protection Upgrade

Job ID : 153272156-00004

Final Design Package: Book 3

Prepared for
TRANSNET GROUP CAPITAL

Prepared by
Brian Homann

In association with
Lize-Mari Botha & Amanda Marais

2020-02-21

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Quality Information

Document Final Design Package: Iscor 66 kV Breakers & Protection Upgrade - Book 3

Ref Eskom Job Number: 153272156-00004 Date 2020-04-24

Prepared by Brian Homann Reviewed by Colin Pym


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ISSUED FOR USE

Revision History

Revision	Revision Date	Details	Authorized Practice Line Lead, Electrical, Africa 29 April 2020		
			Name/Position	Signature	Date
Rev 01	2020-04-24	Issued for Use	Colin Pym		

**Additional Signatories
for Transnet SOC Ltd**

Revision	Revision Date	Details	Authorized 		
			Name/Position	Signature	Date
Rev 01	2020-04-24	Issued for Use	Richard Shandu Senior Engineering Manager (Transnet Group Capital)		22/04/2020

Revision	Revision Date	Details	Authorized 		
			Name/Position	Signature	Date
Rev 01	2020-04-24	Issued for Use	Tonny Mhondiwa (Transnet Port Terminals)		22/04/2020


Revision	Revision Date	Details	Authorized 		
			Name/Position	Signature	Date
Rev 01	2020-04-24	Issued for Use	Jabulani Nkanyani (Transnet National Ports Authority)		22/04/2020

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1. Volume 3 Documentation Checklist

The Eskom standard Substation FDP template was used for the order creation of this document, with certain alterations made to the layout to suit the FDP application where applicable. The checklist below is the aforementioned template in order to confirm the information included, and those not included due to applicability.

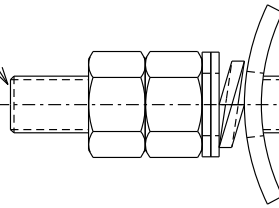
BOOK 3

Item	Description	Applicable and Included	Not Applicable
1.	PDE Drawings/Specifications: <i>Power Plant</i>	✓	
2.	PDE Drawings/Specifications: <i>Control Plant</i>	✓	
3.	PDE Drawings/Specifications: <i>HV Lines</i>		✓

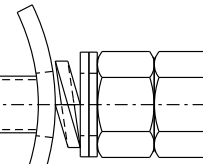
2. PDE Drawings/Specifications

2.1. Power Plant

MANUFACTURER
IDENTIFICATION
LOGO



MANUFACTURER
IDENTIFICATION
LOGO



CHAMFER
(SEE NOTE 2)

NOTE :


1. SKETCH NOT FOR MANUFACTURING PURPOSES.
2. THREAD TO BE CHAMFERED BOTH ENDS SEE SAP TECHNICAL DESCRIPTION FOR CHAMFER AMOUNT AND TO BE CUT AT RIGHT ANGLES.
3. FOR ACTUAL ASSEMBLY REFER TO ASSEMBLY DRAWINGS.
4. FOR ACTUAL ITEM REQUIREMENTS REFER TO D-DT-3015 SAP. No.

SAP MATERIAL No.:	0163868		
SHORT DESCRIPTION:	ROD,THD:DIA M6 ;M6-1.0-6G ;LG 500 MM		
TECH. DESCRIPTION:			
<p>ROD, THREADED: DIAMETER: M6; THREAD: M6-1.0-6G; MATERIAL: STL, ELECTRO PLTD; LENGTH: 500 MM; NO CHAMFER REQUIRED IF <6 MM, COMPLETE WITH TWO M6 FLAT SQUARE WASHERS (D-DT-3014) AND M6 FOUR HEX NUTS (D-DT-3173), PACKAGING: M6X500 RUNNING STUDS SUPPLIED UNASSEMBLED; 49 RODS TO BE WRAPPED TOGETHER, ONE ROD TO BE RUN THROUGH 100MM SQ WASHERS WITH ONE NUT EACH END TO SECURE WASHERS TO ROD, ONE PACKET WITH 398 NUTS SEALED, ALL TO BE BUNDLED TOGETHER, SECURED, THEN ALL PACKED IN A PLASTIC PACKAGING AND CLOSED; ESKOM DRAWING No. D-DT-3015 *</p>			
ITEM	:- ROD THREADED		
MATERIAL SPECIFICATION	:- GRADE SAE 1008 STEEL, GRADE 070M20 STEEL		
CORROSION SPECIFICATION	:- SANS 2081		
STANDARD SPECIFICATION	:- SANS 1700		
ESKOM SPECIFICATION	:-		
TEST & CERTIFICATION REQUIREMENTS	:- TYPE TEST ACCORDING TO SANS 1700 (THREAD PULL TEST ONLY)		
INSPECTION	Yes	No	ESKOM RELEASE NOTE Yes No
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS			
27	SANS 2081 METALLIC COATINGS FOR 0163868 M6 ROD ONLY	P.A.T.	J. BLAAUW B. MCLAREN 14.12.2018
26	0163868 PACKAGING FOR M6x500 THREADED ROD CHANGED AND 0163789, 0163782, 0163864 SHORT AND TECHNICAL DESCRIPTIONS CHANGED FROM STUD TO ROD	P.A.T.	B. HILL B. HILL 27.11.2015
25	EXTRA WASHERS, HEX NUTS AND BONDING CLIPS ADDED ON M20 THREADED RODS AND M20 SQ. WASHERS REMOVED	P.A.T.	B. HILL B. HILL 07.03.2014
REV	REVISION DESCRIPTION	BY	CHKD AUTH DATE REF. DWGS
AUTH:	S.A.CILLIERS	DATE:	MARCH 93
CHKD:		DATE:	
DRAWN:	R.V.R.	DATE:	14-09-92
		SCALE	NTS
		CAD REF:	SERIES 3000
		FILE No:	3015
		SAP No: 0163868	
		SET	SHEET
		6	1
		REV 27	

Unique Identifier:204-48887441

Revision 1

SPEC SHEET


SAP MATERIAL No.:	0163869							
SHORT DESCRIPTION:	ROD,THD:M12-1.75-6G;LG 350 MM							
TECH. DESCRIPTION:								
ROD, THREADED: THREAD: M12-1.75-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 350 MM GRADE: SAE1008, 070M20 CHAMFER 1.75 X 45 DEG , COMPLETE WITH TWO M12 FLAT SQUARE WASHERS (D-DT-3014) AND M12 FOUR HEXAGON NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *								
ITEM	:- ROD THREADED							
MATERIAL SPECIFICATION	:- GRADE SAE 1008 STEEL, GRADE 070M20 STEEL							
CORROSION SPECIFICATION	:- SANS 121							
STANDARD SPECIFICATION	:- SANS 1700							
ESKOM SPECIFICATION	:-							
TEST & CERTIFICATION REQUIREMENTS	:- TYPE TEST ACCORDING TO SANS 1700 (THREAD PULL TEST ONLY)							
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No	
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS								
27	SANS 2081 METALLIC COATINGS FOR 0163868 M6 ROD ONLY		P.A.T.	J. BLAAUW	B. MCLAREN	14.12.2018		
26	0163868 PACKAGING FOR M6x500 THREADED ROD CHANGED AND 0163789, 0163782, 0163864 SHORT AND TECHNICAL DESCRIPTIONS CHANGED FROM STUD TO ROD		P.A.T.	B. HILL	B. HILL	27.11.2015		
25	EXTRA WASHERS, HEX NUTS AND BONDING CLIPS ADDED ON M20 THREADED RODS AND M20 SQ. WASHERS REMOVED		P.A.T.	B. HILL	B. HILL	07.03.2014		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	S.A.CILLIERS	DATE:	MARCH 93	 D-DT-3015		SAP No:		
CHKD:		DATE:				0163869		
DRAWN:	R.V.R.	DATE:	14-09-92			SET	SHEET	REV
				3015	6	2	27	

SPEC SHEET


SAP MATERIAL No.:	0163789
SHORT DESCRIPTION:	ROD,THD:16 MM ;M16-2.0-6G MM ;200 MM
TECH. DESCRIPTION:	
ROD, THREADED: DIAMETER: 16 MM; THREAD: M16-2.0-6G MM; MATERIAL: STL; HOT DIPPED GALV; LENGTH: 200 MM; 070M20; CHAMFER 2 X 45 DEG. COMPLETE WITH TWO M16 FLAT SQUARE WASHER (D-DT-3014) AND FOUR M16 HEX NUTS (D-DT-3173), PACKING: NUTS AND WASHERS TO BE RUN ONTO ROD 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S) *	

SAP MATERIAL No.:	0163782
SHORT DESCRIPTION:	ROD,THD:16 MM ;M16-2.0-6G ;250 MM
TECH. DESCRIPTION:	
ROD, THREADED: DIAMETER: 16 MM; THREAD: M16-2.0-6G; MATERIAL: STL; HOT DIPPED GALV; LENGTH: 250 MM; 070M20; CHAMFER 2 X 45 DEG, COMPLETE WITH TWO FLAT M16 SQUARE WASHER, TWO M16 SPRING WASHERS (D-DT-3014) AND TWO M16 HEX NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO ROD 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S)	


SAP MATERIAL No.:	0163783
SHORT DESCRIPTION:	ROD,THD:M16-2.0-6G;LG 350 MM
TECH. DESCRIPTION:	
ROD, THREADED: THREAD: M16-2.0-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 350 MM GRADE: SAE1008, 070M20 CHAMPER 2 X 45 DEG, COMPLETE WITH TWO M16 FLAT SQUARE WASHER, TWO M16 SPRING WASHERS (D-DT-3014) AND M16 TWO HEX NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S)	

27	SANS 2081 METALLIC COATINGS FOR 0163868 M6 ROD ONLY	P.A.T.	J. BLAAUW	B. MCLAREN	14.12.2018			
26	0163868 PACKAGING FOR M6x500 THREADED ROD CHANGED AND 0163789, 0163782, 0163864 SHORT AND TECHNICAL DESCRIPTIONS CHANGED FROM STUD TO ROD	P.A.T.	B. HILL	B. HILL	27.11.2015			
25	EXTRA WASHERS, HEX NUTS AND BONDING CLIPS ADDED ON M20 THREADED RODS AND M20 SQ. WASHERS REMOVED	P.A.T.	B. HILL	B. HILL	07.03.2014			
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS		
AUTH:	S.A.CILLIERS	DATE:	MARCH 93	 Eskom D-DT-3015		SAP No:		
CHKD:		DATE:				0163789	0163783	
						0163782	SET	SHEET
DRAWN:	R.V.R.	DATE:	14-09-92	FILE No:	3015	6	3	27

SPEC SHEET

SAP MATERIAL No.:	0163864							
SHORT DESCRIPTION:	ROD,THD:20 MM ;M20-2.5-6G ;250 MM							
TECH. DESCRIPTION:	ROD, THREADED: DIAMETER: 20 MM; THREAD: M20-2.5-6G; MATERIAL: STL; HOT DIPPED GALV; LENGTH: 250 MM; CHAMPER 2.5 X 45 DEG, COMPLETE WITH TWO M20 CURVED WASHERS, FOUR M20 ROUND FLAT WASHERS, THREE M20 SPRING WASHERS (D-DT-3014), FOUR M20 HEX NUTS (D-DT-3173) AND ONE BONDING CLIP (D-DT-3033); PACKAGING: NUTS AND WASHERS TO BE RUN ONTO ROD 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *							
SAP MATERIAL No.:	0163790							
SHORT DESCRIPTION:	ROD,THD:M20-2.5-6G;LG 350 MM							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M20-2.5-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 350 MM GRADE: SAE1008, 070M20 CHAMPER 2.5 X 45 DEG, COMPLETE WITH TWO M20 CURVED WASHERS, FOUR M20 ROUND FLAT WASHERS, THREE M20 SPRING WASHERS (D-DT-3014), M20 FOUR HEX NUTS (D-DT-3173) AND ONE BONDING CLIP (D-DT-3033); PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S) *							
SAP MATERIAL No.:	0163862							
SHORT DESCRIPTION:	ROD,THD:M20-2.5-6G;LG 450 MM							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M20-2.5-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 450 MM GRADE: SAE1008, 070M20 CHAMPER 2.5 X 45 DEG, COMPLETE WITH TWO M20 CURVED WASHERS, FOUR M20 ROUND FLAT WASHERS, THREE M20 SPRING WASHERS (D-DT-3014), FOUR M20 HEX NUTS (D-DT-3173) AND ONE BONDING CLIP (D-DT-3033); PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *							
SAP MATERIAL No.:	0163865							
SHORT DESCRIPTION:	ROD,THD:M20-2.5-6G;LG 600 MM							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M20-2.5-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 600 MM GRADE: SAE1008, 070M20 CHAMPER 2.5 X 45 DEG, COMPLETE WITH FOUR M20 CURVED WASHERS, SIX M20 ROUND FLAT WASHERS, FIVE M20 SPRING WASHERS (D-DT-3014), SEVEN M20 HEX NUTS (D-DT-3173) AND ONE BONDING CLIP (D-DT-3033); PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *							
27	SANS 2081 METALLIC COATINGS FOR 0163868 M6 ROD ONLY			P.A.T.	J. BLAAUW	B. MCLAREN	14.12.2018	
26	0163868 PACKAGING FOR M6x500 THREADED ROD CHANGED AND 0163789, 0163782, 0163864 SHORT AND TECHNICAL DESCRIPTIONS CHANGED FROM STUD TO ROD			P.A.T.	B. HILL	B. HILL	27.11.2015	
25	EXTRA WASHERS, HEX NUTS AND BONDING CLIPS ADDED ON M20 THREADED RODS AND M20 SQ. WASHERS REMOVED			P.A.T.	B. HILL	B. HILL	07.03.2014	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	
AUTH:	S.A.CILLIERS	DATE:	MARCH 93	SCALE	 D-DT-3015	SAP No:		
CHKD:		DATE:		NTS		0163864	0163862	
DRAWN:	R.V.R.	DATE:	14-09-92	CAD REF:		0163790	0163865	
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				FILE No:				
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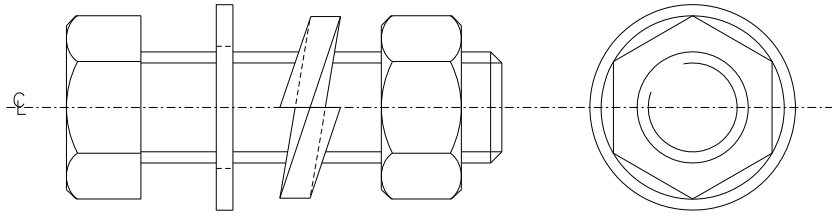
SPEC SHEET

SAP MATERIAL No.:	0182711							
SHORT DESCRIPTION:	ROD,THD:M20-2.5-6G;LG 750 MM							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M20-2.5-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 750 MM GRADE: SAE1008, 070M20 CHAMPER 2.5 X 45 DEG, COMPLETE WITH FOUR M20 CURVED WASHERS, SIX M20 ROUND FLAT WASHERS, FIVE M20 SPRING WASHERS (D-DT-3014), SEVEN M20 HEX NUTS (D-DT-3173) AND ONE BONDING CLIP (D-DT-3033); PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *							
SAP MATERIAL No.:	0220714							
SHORT DESCRIPTION:	ROD,THD:M20-2.5-6G;LG 1 M							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M20-2.5-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 1 M GRADE: SAE1008, 070M20 CHAMPER 2.5 X 45 DEG, COMPLETE WITH M20 FOUR CURVED WASHERS, SIX M20 ROUND FLAT WASHERS, FIVE M20 SPRING WASHERS (D-DT-3014), SEVEN M20 HEXAGON NUTS (D-DT-3173) AND ONE BONDING CLIP (D-DT-3033); PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *							
SAP MATERIAL No.:	0185178							
SHORT DESCRIPTION:	ROD,THD:M24-3-6G;LG 350 MM							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M24-3-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 350 MM GRADE: SAE1008, 070M20 CHAMPER 3 X 45 DEG, COMPLETE WITH M24 FOUR FLAT ROUND WASHERS (D-DT-3014) AND FOUR M24 HEXAGON NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *							
SAP MATERIAL No.:	0185179							
SHORT DESCRIPTION:	ROD,THD:M24-3-6G;LG 500 MM							
TECH. DESCRIPTION:	ROD, THREADED: THREAD: M24-3-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 500 MM GRADE: SAE1008, 070M20 CHAMPER 3 X 45 DEG, COMPLETE WITH FOUR M24 FLAT ROUND WASHERS (D-DT-3014) AND FOUR M24 HEX NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 *(S) *							
27	SANS 2081 METALLIC COATINGS FOR 0163868 M6 ROD ONLY			P.A.T.	J. BLAAUW	B. MCLAREN	14.12.2018	
26	0163868 PACKAGING FOR M6x500 THREADED ROD CHANGED AND 0163789, 0163782, 0163864 SHORT AND TECHNICAL DESCRIPTIONS CHANGED FROM STUD TO ROD			P.A.T.	B. HILL	B. HILL	27.11.2015	
25	EXTRA WASHERS, HEX NUTS AND BONDING CLIPS ADDED ON M20 THREADED RODS AND M20 SQ. WASHERS REMOVED			P.A.T.	B. HILL	B. HILL	07.03.2014	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	
AUTH:	S.A.CILLIERS	DATE:	MARCH 93	SCALE	 D-DT-3015	SAP No:		
CHKD:		DATE:		NTS		0182711	0185178	
DRAWN:	R.V.R.	DATE:	14-09-92	CAD REF:		0220714	0185179	
				SERIES 3000		SET	SHEET	REV
				FILE No:				
				3015		6	5	27


SPEC SHEET

SAP MATERIAL No.:	0216928
SHORT DESCRIPTION:	ROD,THD:M24-3-6G;LG 650 MM
TECH. DESCRIPTION:	
ROD, THREADED: THREAD: M24-3-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 650 MM GRADE: SAE1008, 070M20 CHAMPER 3 X 45 DEG, COMPLETE WITH FOUR M24 FLAT ROUND WASHERS (D-DT-3014) AND FOUR M24 HEXAGON NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S)	
SAP MATERIAL No.:	0216929
SHORT DESCRIPTION:	ROD,THD:M24-3-6G;LG 1.0 M
TECH. DESCRIPTION:	
ROD, THREADED: THREAD: M24-3-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 1.0 M GRADE: SAE1008, 070M20 CHAMPER 3 X 45 DEG, COMPLETE WITH FOUR M24 FLAT ROUND WASHERS (D-DT-3014) AND FOUR M24 HEX NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S)*	
SAP MATERIAL No.:	0214091
SHORT DESCRIPTION:	ROD,THD:M24-3-6G;LG 1.2 M
TECH. DESCRIPTION:	
ROD, THREADED: THREAD: M24-3-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 1.2 M GRADE: SAE1008, 070M20 CHAMPER 3 X 45 DEG, COMPLETE WITH FOUR M24 FLAT ROUND WASHERS (D-DT-3014) AND FOUR M24 HEX NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S)*	
SAP MATERIAL No.:	0219213
SHORT DESCRIPTION:	ROD,THD:M24-3-6G;LG 1.3 M
TECH. DESCRIPTION:	
ROD, THREADED: THREAD: M24-3-6G MATERIAL: STL HOT DIPPED GALV LENGTH: 1.3 M GRADE: SAE1008, 070M20 CHAMPER 3 X 45 DEG, COMPLETE WITH FOUR M24 FLAT ROUND WASHERS (D-DT-3014) AND FOUR M24 HEX NUTS (D-DT-3173), PACKAGING: NUTS AND WASHERS TO BE RUN ONTO 25 PCT EACH END, ESKOM DRAWING No. D-DT-3015 * (S)	


27	SANS 2081 METALLIC COATINGS FOR 0163868 M6 ROD ONLY	P.A.T.	J. BLAAUW	B. MCLAREN	14.12.2018		
26	0163868 PACKAGING FOR M6x500 THREADED ROD CHANGED AND 0163789, 0163782, 0163864 SHORT AND TECHNICAL DESCRIPTIONS CHANGED FROM STUD TO ROD	P.A.T.	B. HILL	B. HILL	27.11.2015		
25	EXTRA WASHERS, HEX NUTS AND BONDING CLIPS ADDED ON M20 THREADED RODS AND M20 SQ. WASHERS REMOVED	P.A.T.	B. HILL	B. HILL	07.03.2014		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	S.A.CILLIERS	DATE:	MARCH 93	 Eskom	SAP No:		
CHKD:		DATE:			0216928	0214091	
		DATE:			0216929	0219213	
DRAWN:	R.V.R.	DATE:	14-09-92	D-DT-3015	SET	SHEET	REV
					6	6	27




NOTE :
NOT FOR MANUFACTURING PURPOSES.

SAP MATERIAL No.:		0163640						
SHORT DESCRIPTION:		BOLT,ASSY:M12;HEX;GR 4.8;STL;1						
TECH. DESCRIPTION:		<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M12; THREAD: 1.75-6G; HEAD: HEX; MATERIAL: STL; GRADE: 4.8; NUT QUANTITY: 1; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULLTEST); BEFORE GALVANISING X 30 MM LONG, SUPPLIED COMPLETE WITH 1 X FLAT WASHER, 1 X SPRING WASHER (DDT 3014) AND 1 X HEXAGON NUT (DDT 3173) IN AN ASSEMBLED FORM; ESKOM DRAWING No. D-DT-3082 *</p>						
SAP MATERIAL No.:		0163642						
SHORT DESCRIPTION:		BOLT,ASSY:M12;HEX;GR 4.8;STL;1						
TECH. DESCRIPTION:		<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M12; THREAD: 1.75-6G; HEAD: HEX; MATERIAL: STL; GRADE: 4.8; NUT QUANTITY: 1; PROTECTIVE COATING: HOT DIP GALV; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULL TEST); BEFORE GALVANISING X 40 MM LONG, SUPPLIED COMPLETE WITH 1 X FLAT WASHER, 1 X SPRING WASHER (DDT 3014) AND 1 X HEXAGON NUT (DDT 3173) IN AN ASSEMBLED FORM, ESKOM DRAWING No. D-DT-3082 *</p>						
ITEM	:- SET SCREW,GALVANISED							
MATERIAL SPECIFICATION	:- SANS 1700							
CORROSION SPECIFICATION	:- SANS 121							
STANDARD SPECIFICATION	:- SANS 1700							
ESKOM SPECIFICATION	:-							
TEST & CERTIFICATION REQUIREMENTS	:- TYPE TEST ACCORDING TO SANS 1700 (THREAD PULL TEST)							
INSPECTION	Yes	No	ESKOM RELEASE NOTE		Yes	No		
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS								
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED AS PER PYLOG/SAP		P.A.T.	M.SHUTER	B.HILL	19.12.2011		
14	STEEL REMOVED FROM MATERIAL, SPECS, SAP NUMBER FOR M16x40 AND ESKOM LOGOS CHANGED		P.A.T.	S. MASHABA	B.BRANFIEL D	07.09.2010		
13	M16x40 SET SCREW STEEL GRADED CORRECTED		P.A.T.	S.MASHAB A	B.BRANFIEL D	03.12.09		
12	REFERENCE ADDED FOR NUTS AND WASHERS		N.M.	B. HILL	B. HILL	17.09.09		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	P. CROWDY	DATE:	17.07.1995	 D-DT-3082		SAP No:		
CHKD:	J. SWAN	DATE:	17.07.1995			0163640		
DRAWN:	P.A. VERMAAK	DATE:	19.04.1995			0163642		
						SET	SHEET	REV
						3	1	15


SPEC SHEET

SAP MATERIAL No.:	0163641							
SHORT DESCRIPTION:	BOLT,ASSY:M12;HEX;GR 4.8;STL							
TECH. DESCRIPTION:	<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M12; THREAD: 1.75-6G; HEAD: HEX; MATERIAL: STL; GRADE: 4.8; PROTECTIVE COATING: HOT DIP GALV; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULL TEST); BEFORE GALVANISING X 65 MM LONG, SUPPLIED COMPLETE WITH 1 X FLAT WASHER, 1 X SPRING WASHER (DDT 3014) AND 1 X HEXAGON NUT (DDT 3173) IN AN ASSEMBLED FORM, ESKOM DRAWING No. D-DT-3082 *</p>							
SAP MATERIAL No.:	0404337							
SHORT DESCRIPTION:	BOLT,ASSY:M16;LG 40 MM;HEX;GR 4.8;1							
TECH. DESCRIPTION:	<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M16; LENGTH: 40 MM; HEAD: HEX; MATERIAL: STL GALV HOT DIP; GRADE: 4.8; NUT QUANTITY: 1; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULL TEST); SUPPLIED COMPLETE WITH 1 X FLAT WASHER, DDT 3014, 1 X SPRING WASHER AND 1 X HEXAGON NUT, DDT 3173 IN AN ASSEMBLED FORM; 2-6 G BEFORE GALV; IN AN ASSEMBLED FORM; ESKOM DRAWING No. D-DT-3082 * S *</p>							
SAP MATERIAL No.:	0163638							
SHORT DESCRIPTION:	BOLT,ASSY:M16;HEX;GR 4.8;STL;THD 2-6G							
TECH. DESCRIPTION:	<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M16; THREAD: 2-6G; HEAD: HEX; MATERIAL: STL; GRADE: 4.8; PROTECTIVE COATING: HOT DIP GALV; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULL TEST); BEFORE GALVANISING X 65 MM LONG, SUPPLIED COMPLETE WITH 1 X FLAT WASHER (DDT 3014), 1 X SPRING WASHER AND 1 X HEXAGON NUT (DDT 3173) IN AN ASSEMBLED FORM, ESKOM DRAWING No. D-DT-3082 *</p>							
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED AS PER PYLOG/SAP	P.A.T.	M.SHUTER	B.HILL	19.12.20	11		
14	STEEL REMOVED FROM MATERIAL, SPECS, SAP NUMBER FOR M16x40 AND ESKOM LOGOS CHANGED	P.A.T.	S. MASHABA	B.BRANFIE LD	07.09.20	10		
13	M16x40 SET SCREW STEEL GRADED CORRECTED	P.A.T.	S.MASHAB A	B.BRANFIE LD	03.12.09			
12	REFERENCE ADDED FOR NUTS AND WASHERS	N.M.	B. HILL	B. HILL	17.09.09			
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS		
AUTH:	P. CROWDY	DATE:	17.07.1995	 D-DT-3082	SAP No:			
CHKD:	J. SWAN	DATE:	17.07.1995		0163641	0163638		
DRAWN:	P.A. VERMAAK	DATE:	19.04.1995		0404337	SET	SHEET	REV
					3	2	15	

SPEC SHEET

SAP MATERIAL No.:	0163639						
SHORT DESCRIPTION:	BOLT,ASSY:M20;HEX;GR 4.8;STL;THD 2.5-6G						
TECH. DESCRIPTION:	<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M20; THREAD: 2.5-6G; HEAD: HEX; MATERIAL: STL; GRADE: 4.8; NUT QUANTITY: 1; PROTECTIVE COATING: HOT DIP GALV; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULL TEST); BEFORE GALVANISING X 65 MM LONG, SUPPLIED COMPLETE WITH 1 X FLAT WASHER (DDT 3014), 1 X SPRING WASHER AND 1 X HEXAGON NUT (DDT 3173) IN AN ASSEMBLED FORM, ESKOM DRAWING No. D-DT-3082 *</p>						
SAP MATERIAL No.:	0222076						
SHORT DESCRIPTION:	BOLT,ASSY:M20;HEX;GR 4.8;STL;THD 2.5-6G						
TECH. DESCRIPTION:	<p>BOLT, ASSEMBLY: NOMINAL DIAMETER: M20; THREAD: 2.5-6G; HEAD: HEX; MATERIAL: STL; GRADE: 4.8; NUT QUANTITY: 1; PROTECTIVE COATING: HOT DIP GALV; SPECIFICATION: MATERIAL: SANS1700; CORROSION: SANS121; STANDARD: SANS1700; TEST & CERTIFICATION: TYPE TEST ACCORDING TO SANS1700(THREAD PULL TEST); BEFORE GALVANISING X 90MM LONG, SUPPLIED COMPLETE WITH 1 X FLAT WASHER (DDT 3014), 1 X SPRING WASHER AND 1 X HEXAGON NUT (DDT 3173) IN AN ASSEMBLED FORM, ESKOM DRAWING No. D-DT-3082 *</p>						
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED AS PER PYLOG/SAP	P.A.T.	M.SHUTER	B.HILL	19.12.20	11	
14	STEEL REMOVED FROM MATERIAL, SPECS, SAP NUMBER FOR M16x40 AND ESKOM LOGOS CHANGED	P.A.T.	S. MASHABA	B.BRANFIE LD	07.09.20	10	
13	M16x40 SET SCREW STEEL GRADED CORRECTED	P.A.T.	S.MASHAB A	B.BRANFIE LD	03.12.09		
12	REFERENCE ADDED FOR NUTS AND WASHERS	N.M.	B. HILL	B. HILL	17.09.09		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	P. CROWDY	DATE:	17.07.1995	 D-DT-3082	SAP No:		
CHKD:	J. SWAN	DATE:	17.07.1995		0163639		
DRAWN:	P.A. VERMAAK	DATE:	19.04.1995		0222076		
					SET	SHEET	REV
			3082		3	3	15

SPEC SHEET


SAP MATERIAL No.:	0403115							
SHORT DESCRIPTION:	COND,ACSR SQUIRREL 6.33D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 2.11mm DIA * ONE STEEL STRAND OF 2.11mm DIA.* CONDUCTOR 6.33mm DIA. * UNGREASED * CODE NAME SQUIRREL * RATED TENSILE STRENGTH 8.02kN * ESKOM DRAWING No. D-DT-3136 *							
SAP MATERIAL No.:	0403033							
SHORT DESCRIPTION:	COND,ACSR MAGPIE 6.35D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 3 ALUMINIUM STRANDS OF 2.118mm DIA * 4 STEEL STRANDS OF 2.118mm DIA.* CONDUCTOR 6.35mm DIA. * UNGREASED * CODE NAME MAGPIE * RATED TENSILE STRENGTH 18.573kN * ESKOM DRAWING No. D-DT-3136 *							
SAP MATERIAL No.:	0403027							
SHORT DESCRIPTION:	COND,ACSR FOX 8.37D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 2.79mm DIA * ONE STEEL STRAND OF 2.79mm DIA.* CONDUCTOR 8.37mm DIA. * UNGREASED * CODE NAME FOX * RATED TENSILE STRENGTH 13.1kN * ESKOM DRAWING No. D-DT-3136 *							
ITEM	:- CONDUCTOR, STRANDED							
MATERIAL SPECIFICATION	:- IEC 104, IEC 888, IEC 889							
CORROSION SPECIFICATION	:- IEC 61089, IEC 61394, SANS 121, ISO 1461							
STANDARD SPECIFICATION	:- SANS 182-2, 3 & 5, IEC 61089							
ESKOM SPECIFICATION	:- DSP 34-377							
TEST & CERTIFICATION REQUIREMENTS	:- TYPE TESTS AS PER IEC 61089, IEC 61394							
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No	
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS								
13	SAP 0014606, 0014443, 0014440, 0014442, 0014441 0014445, 0014697, 0014439, 0014657, 0014677, 0014675, 0014781, 0014752, 0171327, 0014678, 0014580, 0014446,0014447, 0014452 CORRECTED		P.A.T.	D. RAMJASS	D. RAMJASS	20.01.2017		
12	RAIL CONDUCTOR GREASED AND UNGREASED ADDED AND ESKOM SPEC CHANGED		P.A.T.	B. HILL	M. RAPAPA	07.12.2009		
11	FOX CONDUCTOR GREASED REINSTATED		P.A.T.	M. RAPAPA	M. RAPAPA	07.07.2009		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P.CROWDY	DATE:	17.07.1995	 D-DT- 3136		SAP No:		
CHKD:	J.SWAN	DATE:	17.07.1995			0403115	0403027	
DRAWN:	P.A.VERMAAK	DATE:	11.05.1995			SET	SHEET	REV
						8	1	13

SPEC SHEET

SAP MATERIAL No.:	0403031
SHORT DESCRIPTION:	COND,ACSR MINK 10.98D UNGRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 3.66mm DIA * ONE STEEL STRAND OF 3.66mm DIA. * CONDUCTOR 10.98mm DIA. * UNGREASED * CODE NAME MINK * RATED TENSILE 21.9kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0403029
SHORT DESCRIPTION:	COND,ACSR HARE 14.16D UNGRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 4.72mm DIA * ONE STEEL STRAND OF 4.72mm DIA. * CONDUCTOR 14.16mm DIA. * UNGREASED * CODE NAME HARE * RATED TENSILE STRENGTH 36kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0403037
SHORT DESCRIPTION:	COND,ACSR WOLF 18.13D UNGRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 30 ALUMINIUM STRANDS OF 2.59mm DIA * 7 STEEL STRAND OF 2.59mm DIA. * CONDUCTOR 18.13mm DIA. * UNGREASED * CODE NAME WOLF * RATED TENSILE 69.2kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0403130
SHORT DESCRIPTION:	COND,ACSR CHICADEE 18.87D UNGRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 18 ALUMINIUM STRANDS OF 3.77mm DIA * ONE STEEL STRAND OF 3.77mm DIA. * CONDUCTOR 18.87mm DIA. * UNGREASED * CODE NAME CHICADEE * RATED TENSILE STRENGTH 44.9kN * ESKOM DRAWING No. D-DT-3136 *	

13	SAP 0014606, 0014443, 0014440, 0014442, 0014441 0014445, 0014697, 0014439, 0014657, 0014677, 0014675, 0014781, 0014752, 0171327, 0014678, 0014580, 0014446,0014447, 0014452 CORRECTED	P.A.T.	D. RAMJASS	D. RAMJASS	20.01.2017			
12	RAIL CONDUCTOR GREASED AND UNGREASED ADDED AND ESKOM SPEC CHANGED	P.A.T.	B. HILL	M. RAPAPA	07.12.2009			
11	FOX CONDUCTOR GREASED REINSTATED	P.A.T.	M. RAPAPA	M. RAPAPA	07.07.2009			
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS		
AUTH:	P.CROWDY	DATE:	17.07.1995	Eskom D-DT-3136		SAP No:		
CHKD:	J.SWAN	DATE:	17.07.1995			0403031	0403037	
DRAWN:	P.A.VERMAAK	DATE:	11.05.1995			0403029	0403130	
				SCALE		SET	SHEET	REV
				NTS		8	2	13
				CAD REF:				
				SERIES 3000				
				FILE No:				
				3136				

SPEC SHEET

SAP MATERIAL No.:	0403025							
SHORT DESCRIPTION:	COND,ACSR BEAR 23.45D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 30 ALUMINIUM STRANDS OF 3.35mm DIA * 7 STEEL STRAND OF 3.35mm DIA. * CONDUCTOR 23.45mm DIA. * UNGREASED * CODE NAME BEAR * RATED TENSILE STRENGTH 112kN * ESKOM DRAWING No. D-DT-3136 *							
SAP MATERIAL No.:	0400662							
SHORT DESCRIPTION:	COND,ACSR KINGBIRD 23.90D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 18 ALUMINIUM STRANDS OF 4.78mm DIA * ONE STEEL STRAND OF 4.78mm DIA. * CONDUCTOR 23.90mm DIA. * UNGREASED * CODE NAME KINGBIRD * RATED TENSILE STRENGTH 71.32kN * ESKOM DRAWING No. D-DT-3136 *							
SAP MATERIAL No.:	0400669							
SHORT DESCRIPTION:	COND,ACSR TERN 27.00D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 45 ALUMINIUM STRANDS OF 3.38mm DIA * 7 STEEL STRAND OF 2.25mm DIA. * CONDUCTOR 27.00mm DIA. * UNGREASED * CODE NAME TERN * RATED TENSILE 98.7kN * ESKOM DRAWING No. D-DT-3136 *							
SAP MATERIAL No.:	0245988							
SHORT DESCRIPTION:	COND,ACSR RAIL 29.59D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 45 ALUMINIUM STRANDS OF 3.70mm DIA * 7 STEEL STRAND OF 2.47mm DIA. * CONDUCTOR 29.59mm DIA. * UNGREASED * CODE NAME RAIL * RATED TENSILE 117kN * ESKOM DRAWING No. D-DT-3136 *							
SAP MATERIAL No.:	0400667							
SHORT DESCRIPTION:	COND,ACSR BERS-FORT 35.58D UNGRS D3136							
TECH. DESCRIPTION:	ALUMINIUM CONDUCTOR STEEL REINFORCED * 48 ALUMINIUM STRANDS OF 4.27mm DIA * 7 STEEL STRAND OF 3.32mm DIA. * CONDUCTOR 35.58mm DIA. * UNGREASED * CODE NAME BERS-FORT * RATED TENSILE 177,65kN * ESKOM DRAWING No. D-DT-3136 *							
13	SAP 0014606, 0014443, 0014440, 0014442, 0014441 0014445, 0014697, 0014439, 0014657, 0014677, 0014675, 0014781, 0014752, 0171327, 0014678, 0014580, 0014446, 0014447, 0014452 CORRECTED		P.A.T.	D. RAMJASS	D. RAMJASS	20.01.2017		
12	RAIL CONDUCTOR GREASED AND UNGREASED ADDED AND ESKOM SPEC CHANGED		P.A.T.	B. HILL	M. RAPAPA	07.12.2009		
11	FOX CONDUCTOR GREASED REINSTATED		P.A.T.	M. RAPAPA	M. RAPAPA	07.07.2009		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P.CROWDY	DATE:	17.07.1995			SAP No:		
CHKD:	J.SWAN	DATE:	17.07.1995			0403025 0400662 0400669		0245988 0400667
DRAWN:	P.A.VERMAAK	DATE:	11.05.1995	D-DT-3136		SET	SHEET	REV
						3136	8	3

SPEC SHEET

SAP MATERIAL No.:	0171330
SHORT DESCRIPTION:	COND,ACSR FOX 8.37D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 2.79mm DIA * ONE STEEL STRAND OF 2.79mm DIA.* CONDUCTOR 8.378mm DIA. * GREASED * CODE NAME FOX * RATED TENSILE STRENGTH 13.1kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0171331
SHORT DESCRIPTION:	COND,ACSR MINK 10.98D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 3.66mm DIA * ONE STEEL STRAND OF 3.66mm DIA.* CONDUCTOR 10.98mm DIA. * GREASED * CODE NAME MINK * RATED TENSILE STRENGTH 21.9kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0171332
SHORT DESCRIPTION:	COND,ACSR HARE 14.16D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 6 ALUMINIUM STRANDS OF 4.72mm DIA * ONE STEEL STRAND OF 4.72mm DIA.* CONDUCTOR 14.16mm DIA. * GREASED * CODE NAME HARE * RATED TENSILE STRENGTH 36kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0403150
SHORT DESCRIPTION:	COND,ACSR WOLF 18.13D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 30 ALUMINIUM STRANDS OF 2.59mm DIA * 7 STEEL STRAND OF 2.59mm DIA.* CONDUCTOR 18.13mm DIA. * GREASED * CODE NAME WOLF * RATED TENSILE STRENGTH 69.2kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0171326
SHORT DESCRIPTION:	COND,ACSR CHICADEE 18.87D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 18 ALUMINIUM STRANDS OF 3.77mm DIA * ONE STEEL STRAND OF 3.77mm DIA.* CONDUCTOR 18.87mm DIA. * GREASED * CODE NAME CHICADEE * RATED TENSILE STRENGTH 44.9kN * ESKOM DRAWING No. D-DT-3136 *	

13	SAP 0014606, 0014443, 0014440, 0014442, 0014441 0014445, 0014697, 0014439, 0014657, 0014677, 0014675, 0014781, 0014752, 00171327, 0014678, 0014580, 0014446, 0014447, 0014452 CORRECTED	P.A.T.	D. RAMJASS	D. RAMJASS	20.01.2017		
12	RAIL CONDUCTOR GREASED AND UNGREASED ADDED AND ESKOM SPEC CHANGED	P.A.T.	B. HILL	M. RAPAPA	07.12.2009		
11	FOX CONDUCTOR GREASED REINSTATED	P.A.T.	M. RAPAPA	M. RAPAPA	07.07.2009		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P.CROWDY	DATE:	17.07.1995	Eskom		SAP No:	
CHKD:	J.SWAN	DATE:	17.07.1995			0171330	0403150
DRAWN:	P.A.VERMAAK	DATE:	11.05.1995	D-DT-3136		0171331	0171326
						0171332	
				SET	SHEET	REV	
				8	4	13	

SPEC SHEET

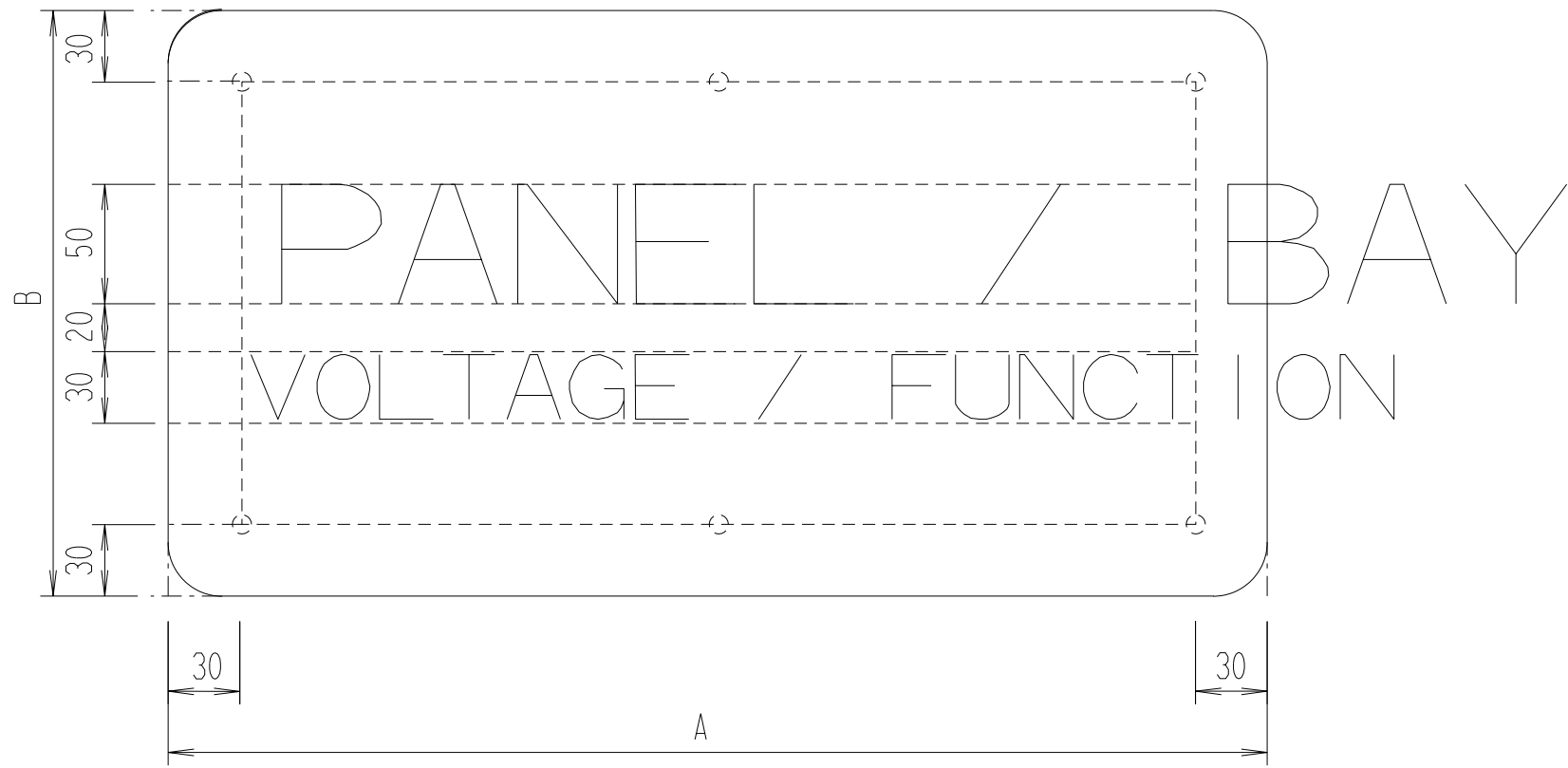
SAP MATERIAL No.:	0403055
SHORT DESCRIPTION:	COND,ACSR BEAR 23.45D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 30 ALUMINIUM STRANDS OF 3.35mm DIA * 7 STEEL STRAND OF 3.35mm DIA.* CONDUCTOR 23.45mm DIA. * GREASED * CODE NAME BEAR * RATED TENSILE STRENGTH 112kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0401188
SHORT DESCRIPTION:	COND,ACSR KINGBIRD 23.90D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 18 ALUMINIUM STRANDS OF 4.78mm DIA * ONE STEEL STRAND OF 4.78mm DIA.* CONDUCTOR 23.90mm DIA. * GREASED * CODE NAME KINGBIRD * RATED TENSILE STRENGTH 71.32kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0400671
SHORT DESCRIPTION:	COND,ACSR TERN 27.00D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 45 ALUMINIUM STRANDS OF 3.38mm DIA * 7 STEEL STRAND OF 2.25mm DIA.* CONDUCTOR 27.00mm DIA. * GREASED * CODE NAME TERN * RATED TENSILE STRENGTH 98.7kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0245989
SHORT DESCRIPTION:	COND,ACSR RAIL 29.59D GRS D3136
TECH. DESCRIPTION:	
ALUMINIUM CONDUCTOR STEEL REINFORCED * 45 ALUMINIUM STRANDS OF 3.70mm DIA * 7 STEEL STRAND OF 2.47mm DIA.* CONDUCTOR 29.59mm DIA. * GREASED * CODE NAME RAIL * RATED TENSILE 117kN * ESKOM DRAWING No. D-DT-3136 *	

13	SAP 0014606, 0014443, 0014440, 0014442, 0014441 0014445, 0014697, 0014439, 0014657, 0014677, 0014675, 0014781, 0014752, 0171327, 0014678, 0014580, 0014446,0014447, 0014452 CORRECTED	P.A.T.	D. RAMJASS	D. RAMJASS	20.01.2017			
12	RAIL CONDUCTOR GREASED AND UNGREASED ADDED AND ESKOM SPEC CHANGED	P.A.T.	B. HILL	M. RAPAPA	07.12.2009			
11	FOX CONDUCTOR GREASED REINSTATED	P.A.T.	M. RAPAPA	M. RAPAPA	07.07.2009			
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS		
AUTH:	P.CROWDY	DATE:	17.07.1995	 D-DT-3136		SAP No:		
CHKD:	J.SWAN	DATE:	17.07.1995			0403055	0400671	
DRAWN:	P.A.VERMAAK	DATE:	11.05.1995			0401188	0245989	
		SCALE	NTS			SET	SHEET	REV
		CAD REF:	SERIES 3000			8	5	13
		FILE No:	3136					

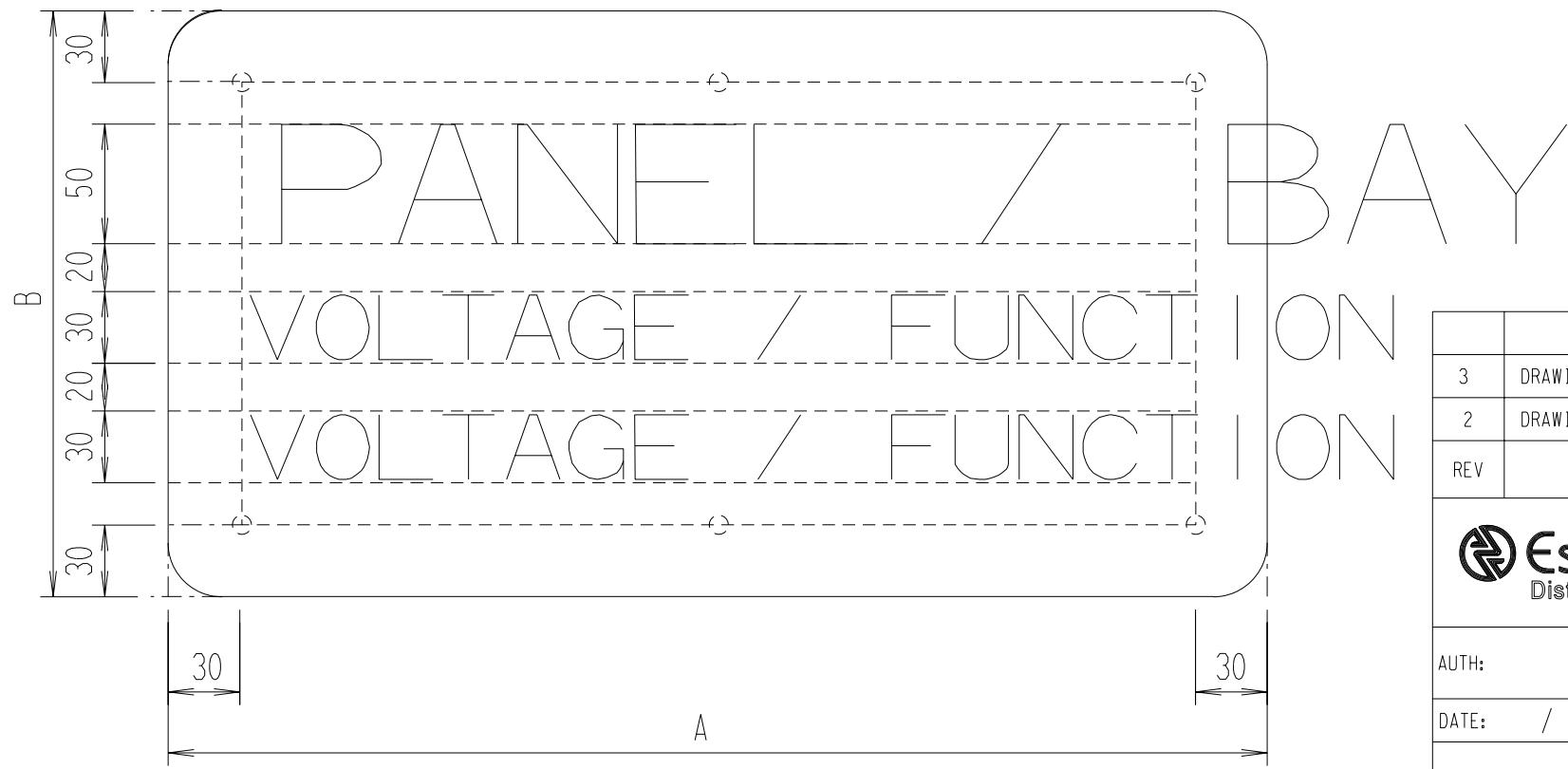
SPEC SHEET

SAP MATERIAL No.:	0174614
SHORT DESCRIPTION:	COND,AAAC ACACIA 6.24D GRS D3136
TECH. DESCRIPTION:	
ALL ALUMINIUM ALLOY CONDUCTOR * 7 STRANDS OF 2.08mm DIA * CONDUCTOR 6.24mm DIA. * GREASED * CODE NAME ACACIA * RATED TENSILE STRENGTH 6.69kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0174613
SHORT DESCRIPTION:	COND,AAAC 35 8.31D GRS D3136
TECH. DESCRIPTION:	
ALL ALUMINIUM ALLOY CONDUCTOR * 7 STRANDS OF 2.77mm DIA * CONDUCTOR 8.31mm DIA. * GREASED * CODE NAME 35 * RATED TENSILE STRENGTH 11.86kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0174612
SHORT DESCRIPTION:	COND,AAAC PINE 10.83D GRS D3136
TECH. DESCRIPTION:	
ALL ALUMINIUM ALLOY CONDUCTOR * 7 STRANDS OF 3.61mm DIA * CONDUCTOR 10.83mm DIA. * GREASED * CODE NAME PINE * RATED TENSILE STRENGTH 20.2kN * ESKOM DRAWING No. D-DT-3136 *	
SAP MATERIAL No.:	0403107
SHORT DESCRIPTION:	COND,AAAC OAK 13.95D GRS D3136
TECH. DESCRIPTION:	
ALL ALUMINIUM ALLOY CONDUCTOR * 7 STRANDS OF 4.65mm DIA * CONDUCTOR 13.95mm DIA. * GREASED * CODE NAME OAK * RATED TENSILE STRENGTH 33.33kN * ESKOM DRAWING No. D-DT-3136 *	

13	SAP 0014606, 0014443, 0014440, 0014442, 0014441 0014445, 0014697, 0014439, 0014657, 0014677, 0014675, 0014781, 0014752, 00171327, 0014678, 0014580, 0014446, 0014447, 0014452 CORRECTED	P.A.T.	D. RAMJASS	D. RAMJASS	20.01.2017		
12	RAIL CONDUCTOR GREASED AND UNGREASED ADDED AND ESKOM SPEC CHANGED	P.A.T.	B. HILL	M. RAPAPA	07.12.2009		
11	FOX CONDUCTOR GREASED REINSTATED	P.A.T.	M. RAPAPA	M. RAPAPA	07.07.2009		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P.CROWDY	DATE:	17.07.1995	Eskom D-DT-3136		SAP No:	
CHKD:	J.SWAN	DATE:	17.07.1995			0174614	0174612
DRAWN:	P.A.VERMAAK	DATE:	11.05.1995			0174613	0403107
				SET	SHEET	REV	
				8	6	13	



2 LINE TEXT LAYOUT ON LABEL (N.T.S)



3 LINE TEXT LAYOUT ON LABEL (N.T.S)

LIST OF LABELS AND SIZES

LABEL TYPE	A	B	
		VE, CD	FG
LABEL 2	1000	245	250
LABEL 3	600	245	250
LABEL 4	450	245	250
LABEL 5	180	150	150

VE - VITREOUS ENAMEL
 CD - CHROMADEK
 FG - FIBREGLASS

NOTES:

- LEGEND TEXT TO BE CENTRE JUSTIFIED.
- MARGIN OF 30mm FROM THE LABEL EDGE TO BE MAINTAINED.

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
3	DRAWING UPDATED. ORIGINAL SHEET 1 NOW SHEET 2	JJJ	JJJ	JJJ	09/03/2004	
2	DRAWING UPDATED	JJJ	JJJ		/ /	

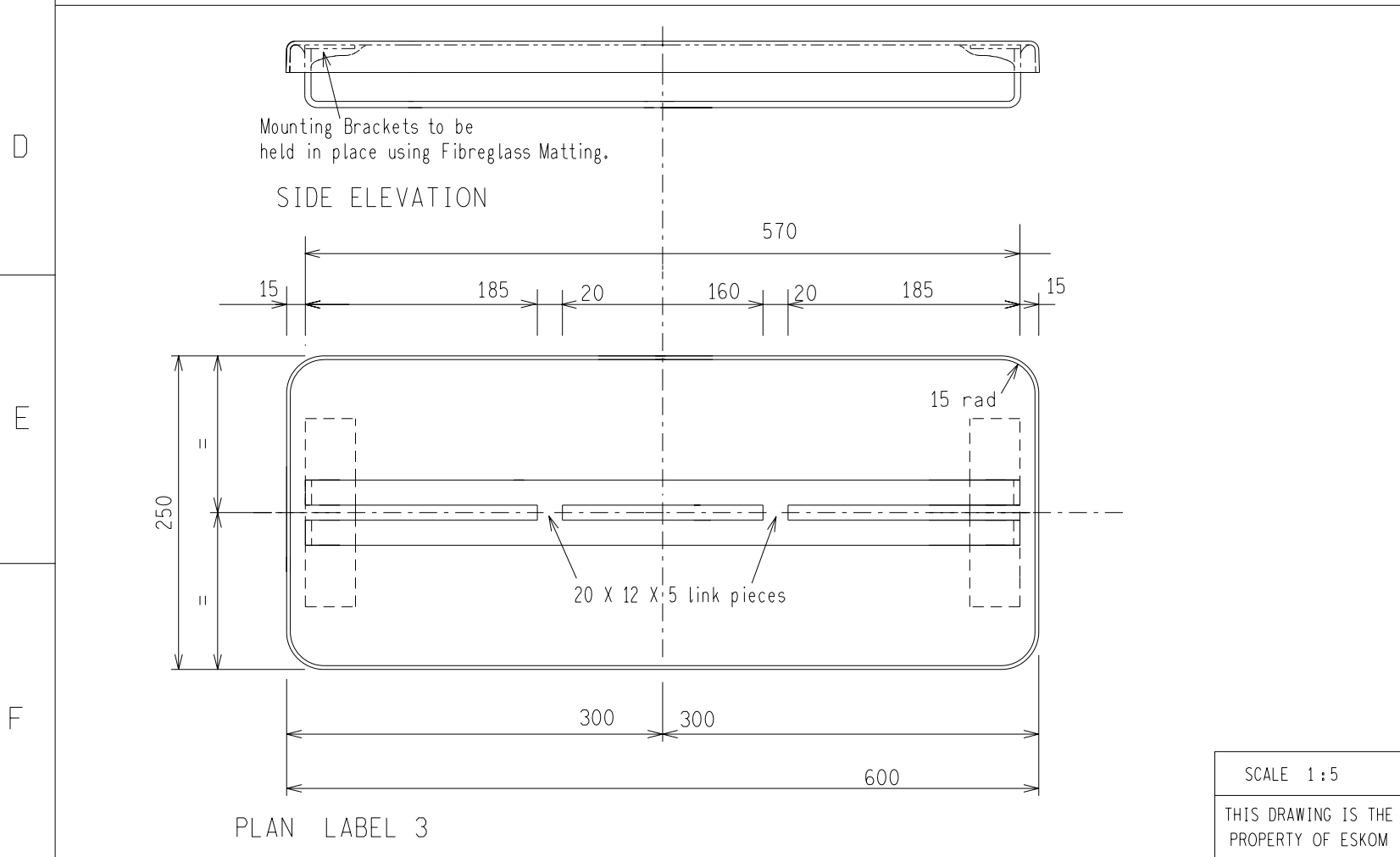
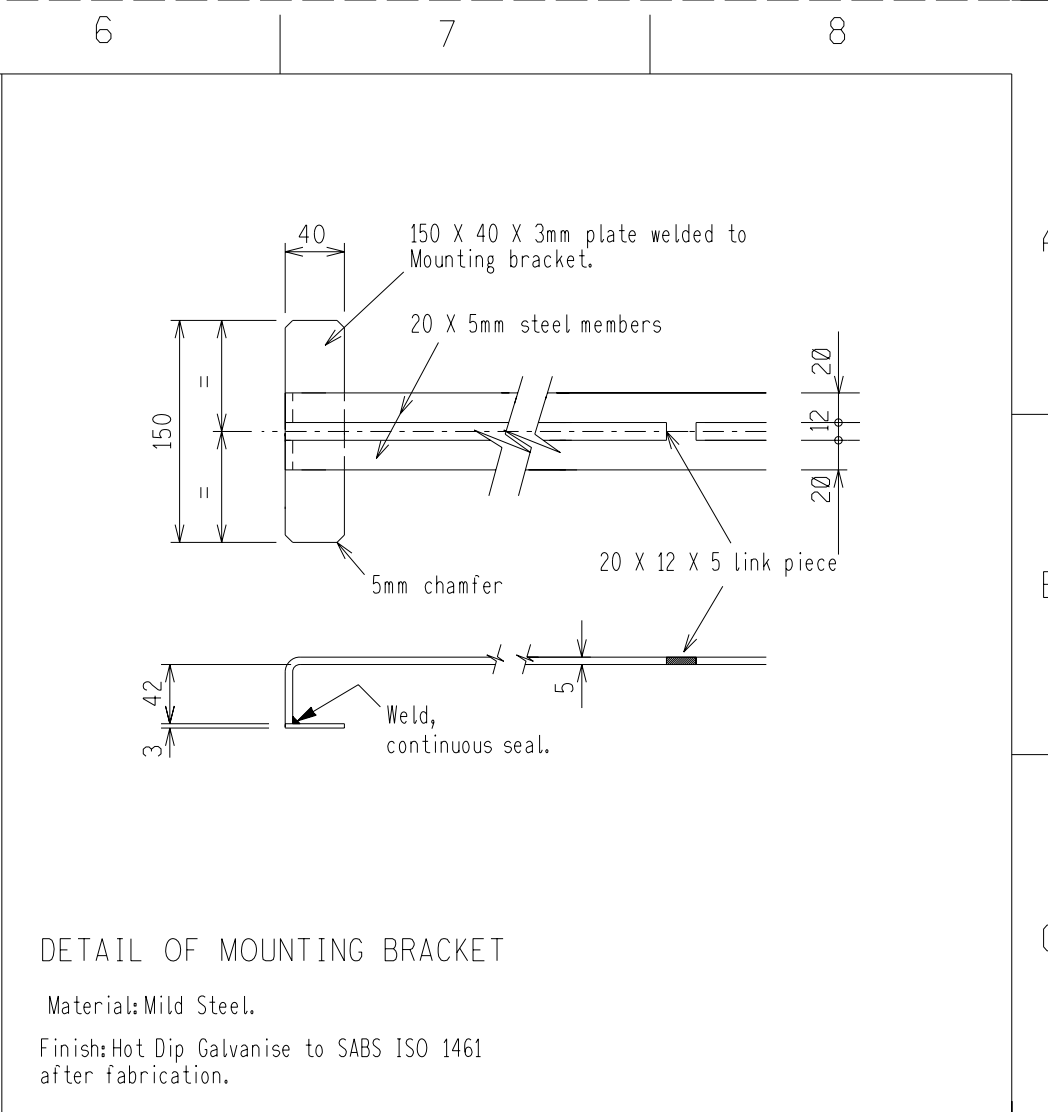
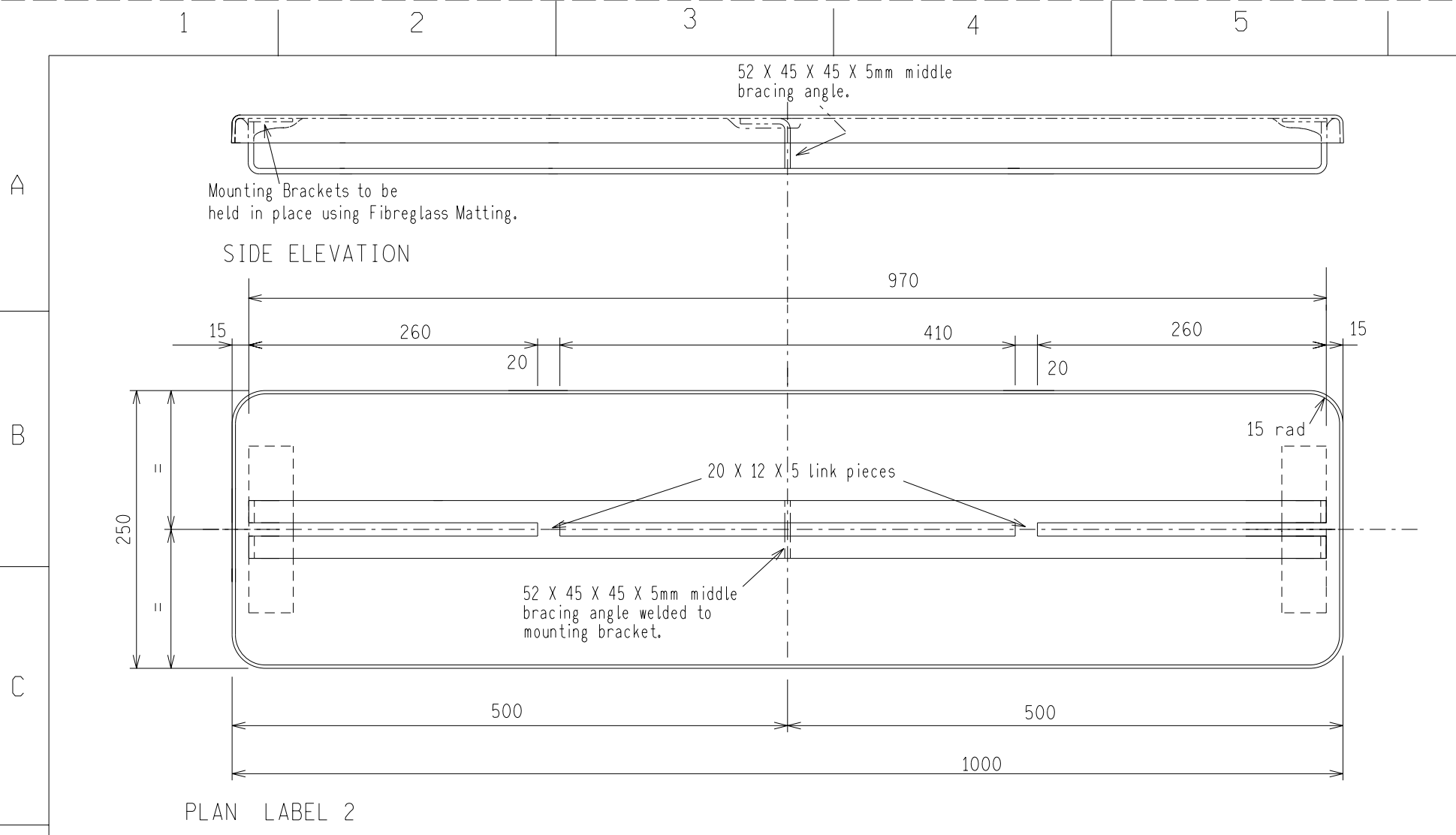


AUTH:
 DATE: / /
 CHKD:
 DATE: / /
 DRAWN: J LE ROUX
 DATE: 02/08/2000

ELECTRICAL EQUIPMENT LABELS
 SIZES AND LEGEND LAYOUT

D-DT-5047	SET	SHEET	REVISION
	5	2	3

NOT TO SCALE
 THIS DRAWING IS THE PROPERTY OF ESKOM



Notes:
Materials: Mild Steel & Orange Coloured Fibreglass.
Specs: Galvanising - SABS ISO 1461.
Welding: SABS 0162-1980.

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
3	MOUNTING BRACKET MODIFIED.	CG	JJJ	JJJ	30/05/2006	
2	NEW DRAWING SHEET ADDED. ORIGINAL SHEET 3 NOW SHEET 4.	JJJ	JJJ	JJJ	09/03/2004	

Eskom Distribution

AUTH:
DATE:
CHKD:
DATE:
DRAWN: C. GRAY
DATE: 30/03/2005

**ELECTRICAL EQUIPMENT LABELS
FIBREGLASS
MANUFACTURING DETAILS**

SET	SHEET	REVISION
0	4	3

SCALE 1:5
THIS DRAWING IS THE PROPERTY OF ESKOM

1 2 3 4 5 6 7 8 9 10 11 12

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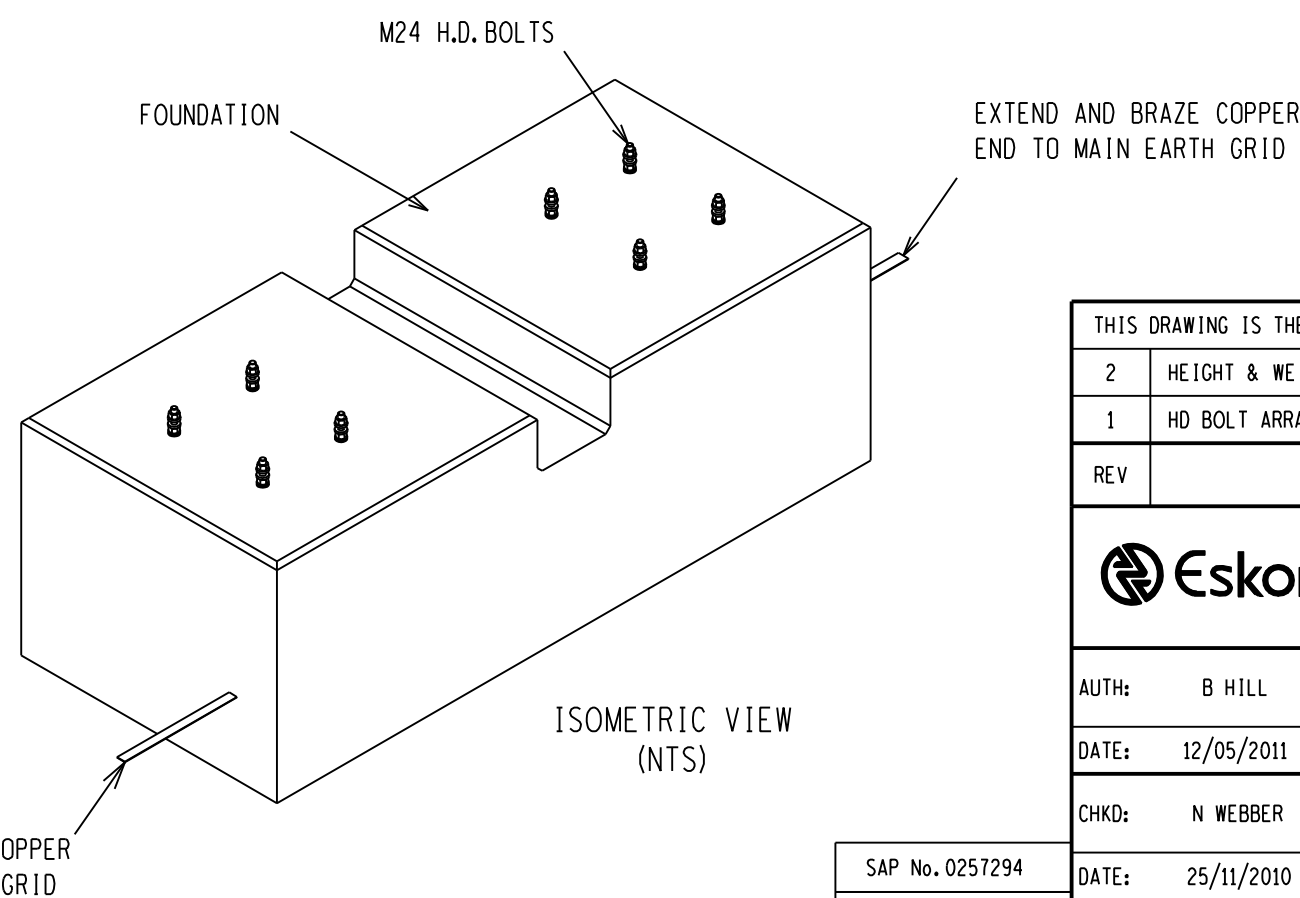
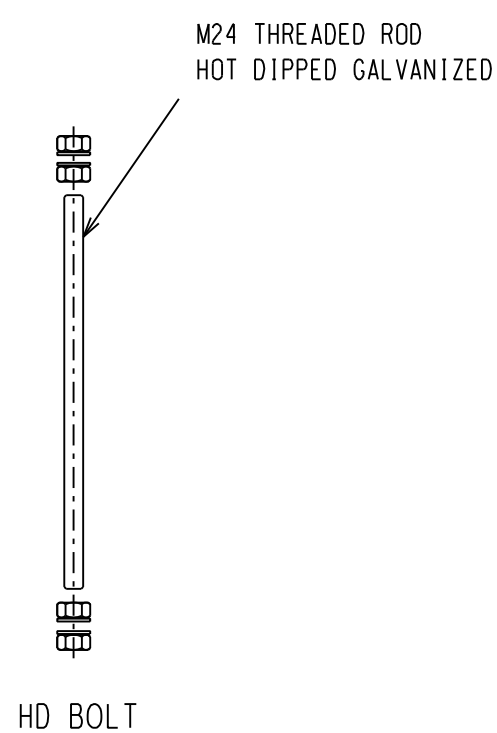
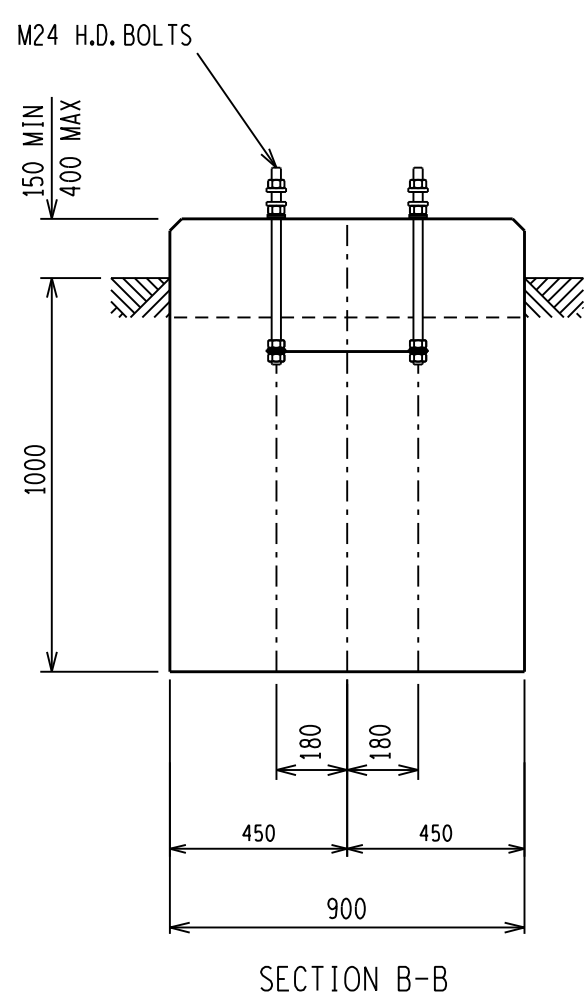
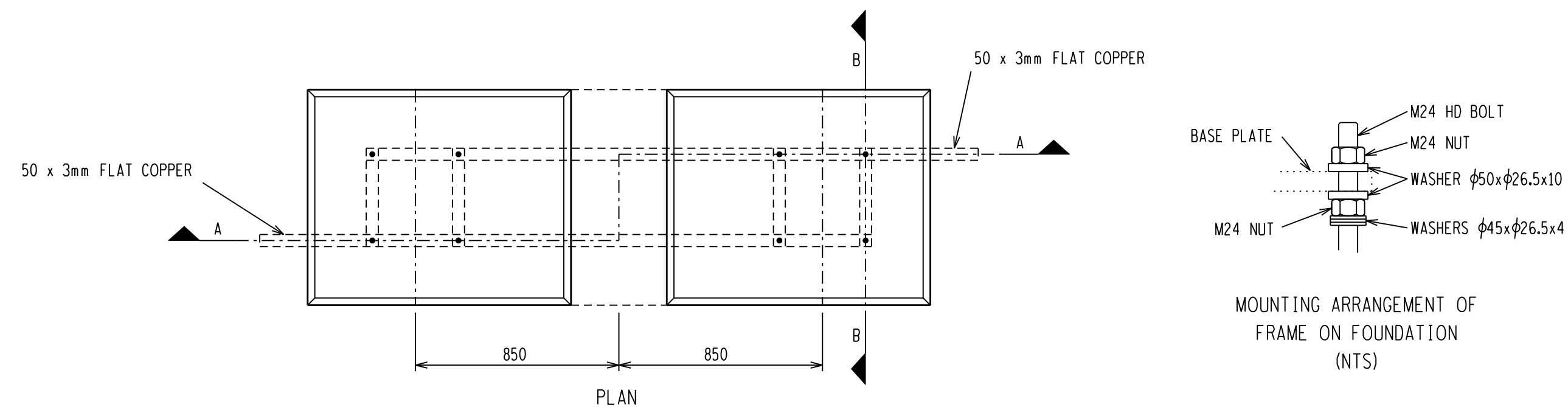
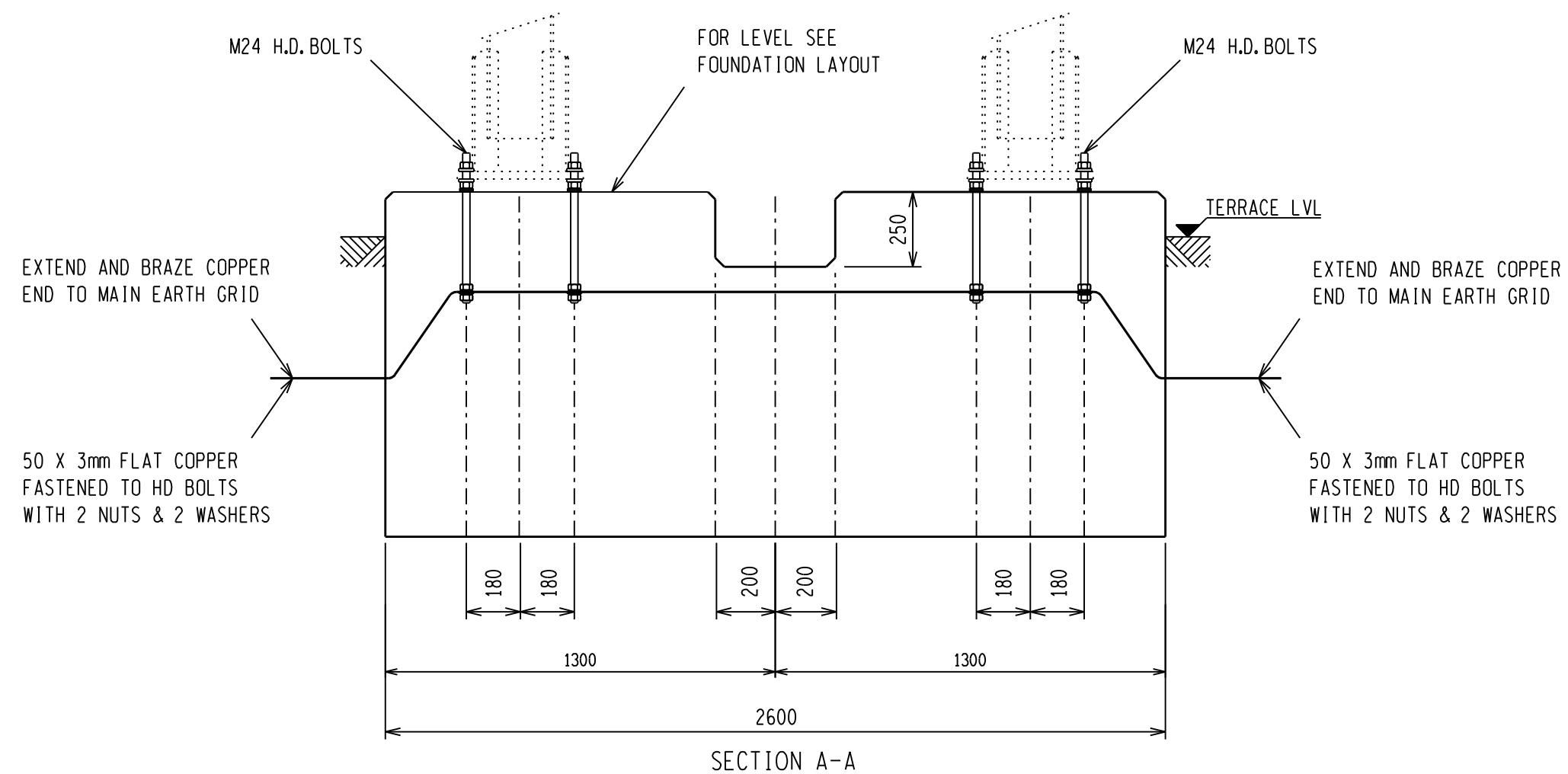
D

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NOTES:

- 1 CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
- 2 CONCRETE STRENGTH AT 28 DAYS = 25MPa.
- 3 CONCRETE STRENGTH FOR BLINDING LAYER AT 28 DAYS = 15MPa.
- 4 ALL TOP EDGES OF FOUNDATION TO HAVE 25-35mm CHAMFER.
- 5 FOR HEIGHT OF FOUNDATION SEE FOUNDATION LAYOUT.
- 6 COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% OF MOD. AASHTO.
- 7 DO NOT GROUT UNDER SUPPORT BASE PLATE.
- 8 OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATION TO EXTEND TO 100mm BELOW GROUND LEVEL.
- 9 ONLY STEEL SHUTTERING MAY BE USED.
- 10 ONLY STEEL TEMPLATE MAY BE USED FOR SETTING H.D. BOLTS.
- 11 BOLTS, NUTS & WASHERS TO BE IN ACCORDANCE WITH SANS 1700.
- 12 H.D. BOLTS AND NUTS TO PROTRUDE 130mm ABOVE FINISHED FOUNDATION LEVEL.
- 13 NON OXIDE PASTES MUST BE USED ON ALL EARTH CONNECTIONS TO H.D. BOLTS.
- 14 ALL EARTHING MUST CONFORM TO D-DT-5240.
- 15 FOR PRICING THE AVERAGE LENGTH OF 15m FLAT COPPER INCLUDE THE COPPER BETWEEN FOUNDATIONS AND MAIN EARTH GRID AND 2 X 3m TAILS. FLAT COPPER MUST HAVE A MINIMUM DEPTH OF 500mm.
- 16 NO CONCRETE TO BE POURED WHERE THE AIR TEMPERATURE WILL DROP BELOW 4 DEG CELSIUS IN 8 HOURS AFTER POURING OF CONCRETE UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIXES.
- 17 THIS FOUNDATION IS ONLY FOR SOIL TYPE 1 AND 2.

HD BOLT SCHEDULE								
BOLT SIZE mm	MILD STEEL GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	TOTAL MASS kg	TORQUE Nm
24	4.8	3	500	8	32	32	18.42	359-407

SCHEDULE OF QUANTITIES @ 150mm
EXCAVATION VOLUME = 2.34m ³
CONCRETE VOLUME = 2.55m ³
SHUTTERING AREA = 2.20m ²
50x3mm FLAT COPPER = 20.25kg

ITEM	HEIGHT (MAX)	WEIGHT (MAX)
TUBULAR SUPPORT	2.15m	242.39kg
EQUIPMENT	1.95m	663kg
BEARING CAPACITY		
FOUNDATION = 150kPa	SOIL TYPE 1 & 2	

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
2	HEIGHT & WEIGHT OF SUPPORT & EQUIPMENT ADDED	GJB	MDB	NMW	16/05/2013	
1	HD BOLT ARRANGEMENT ADDED	GJB	NMW	BPH	15/05/2012	

THIS DRAWING IS THE NEW OFFICIAL REVISION AND IT SUPERSEDES ALL OTHER PUBLISHED DRAWINGS						
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
2	HEIGHT & WEIGHT OF SUPPORT & EQUIPMENT ADDED	GJB	MDB	NMW	16/05/2013	
1	HD BOLT ARRANGEMENT ADDED	GJB	NMW	BPH	15/05/2012	

	<p>CIRCUIT BREAKER - 66kV TUBULAR SUPPORT FOUNDATION DETAILS - CABLE CUTOUT (SOIL TYPE 1 & 2)</p>		
	<p>AUTH: B HILL DATE: 12/05/2011 CHKD: N WEBBER</p>	<p>DATE: 25/11/2010 DRAWN: G BEETGE DATE: 25/11/2010</p>	<p>SET SHEET REVISION</p>
	<p>D-DT-5201</p>		<p>1B 2</p>

SAP No. 0257294
SCALE 1:20
THIS DRAWING IS THE PROPERTY OF Eskom

1 2 3 4 5 6 7 8 9 10 11 12 A2L

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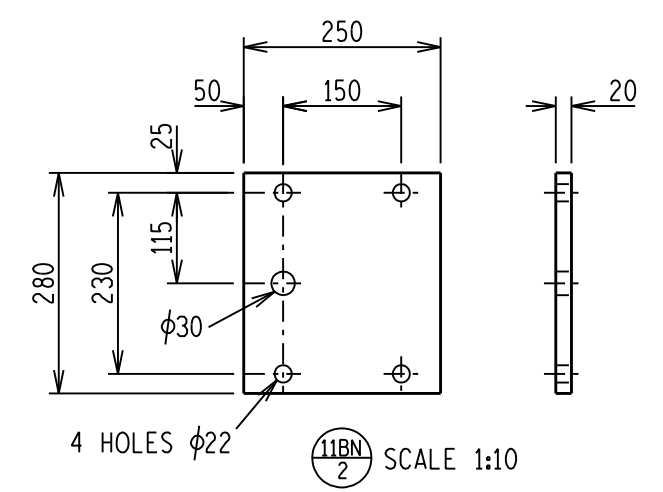
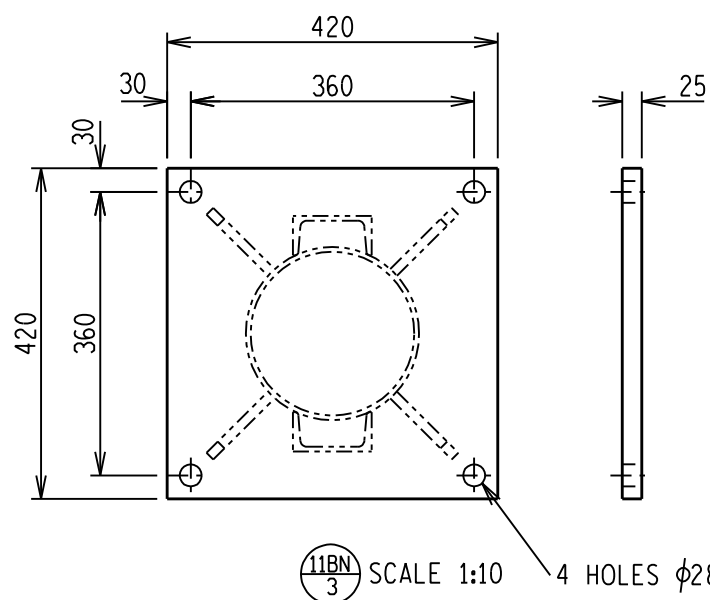
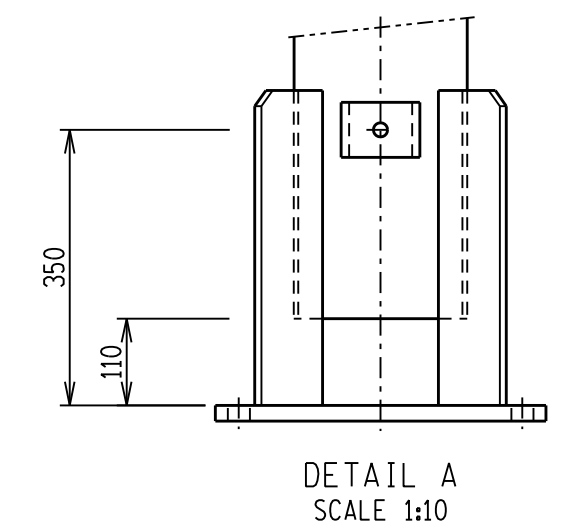
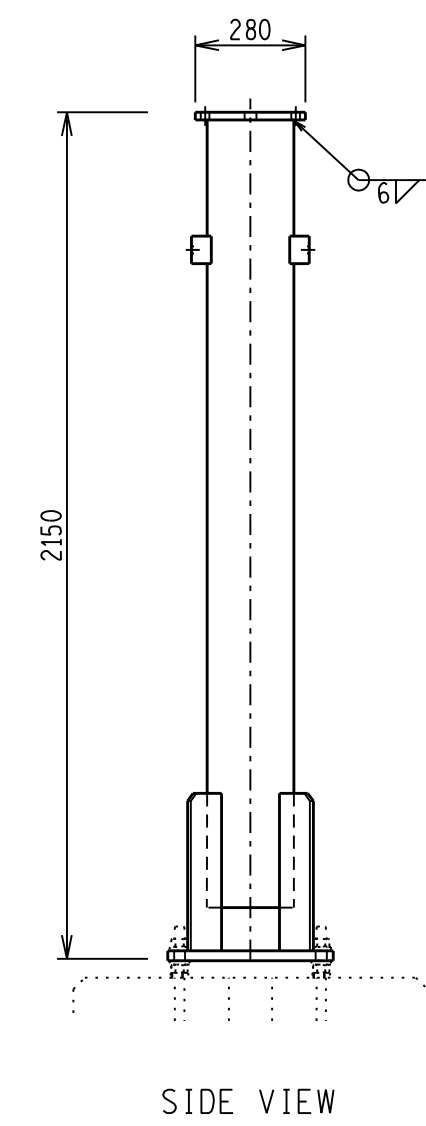
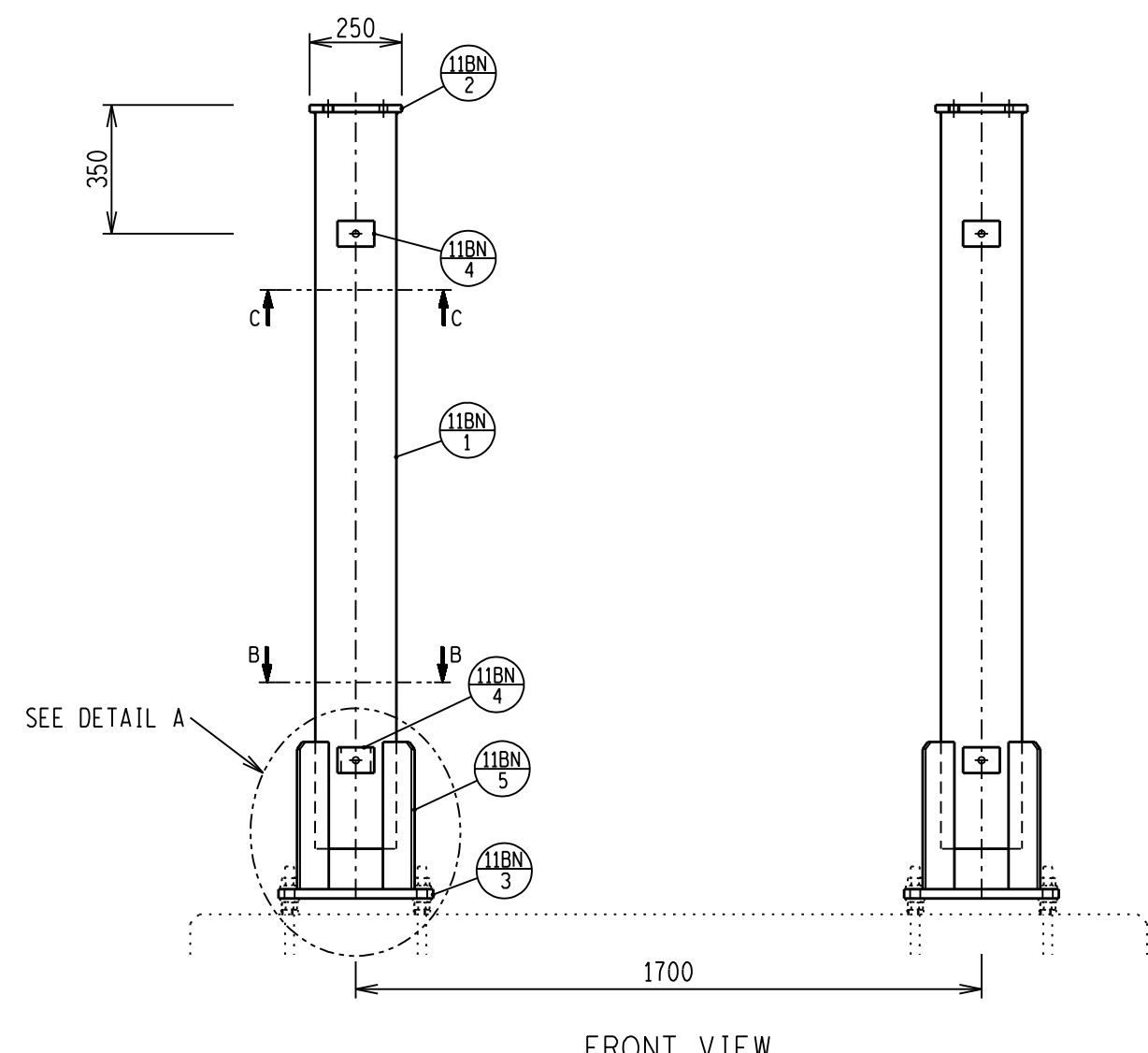
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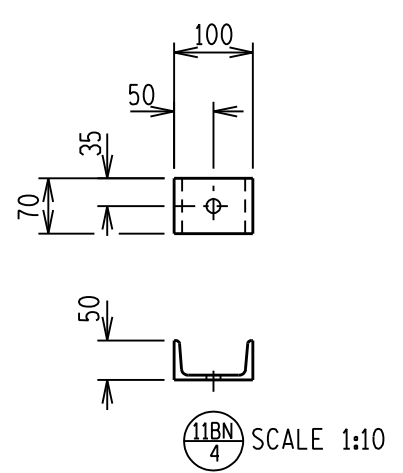
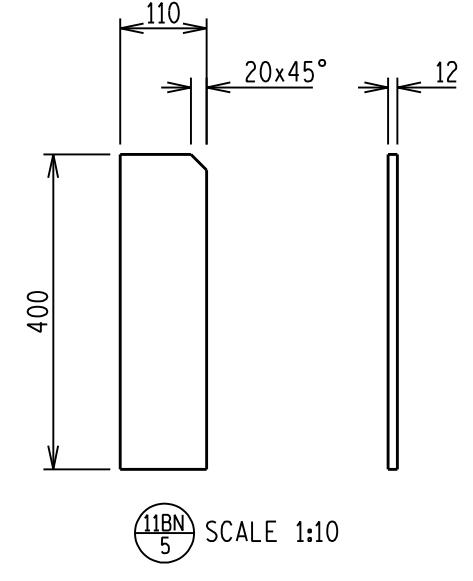
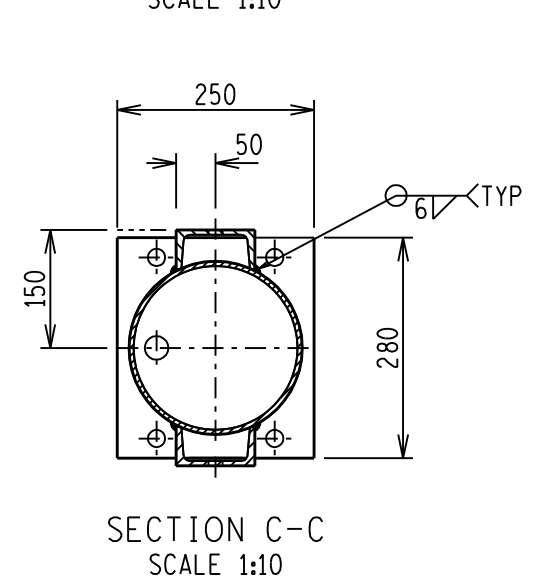
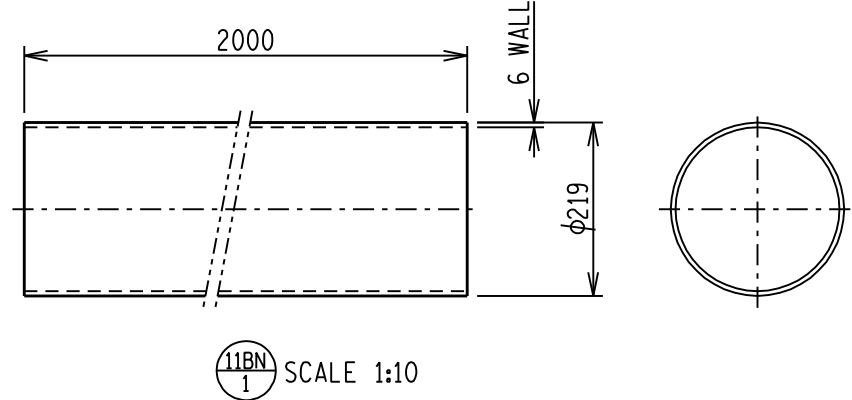
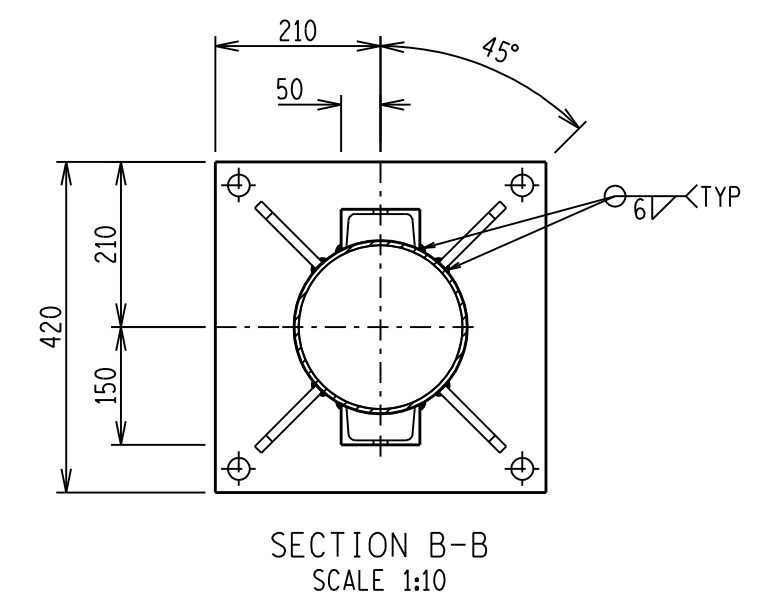
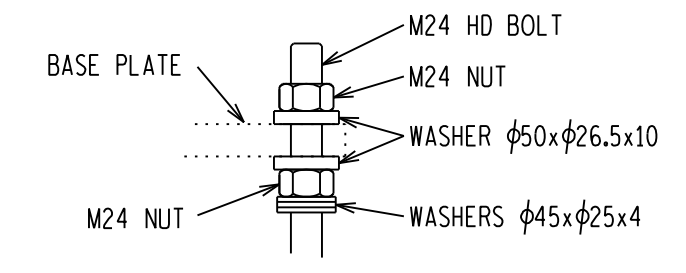
H



NOTES:

- 1 ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO 5.
- 2 ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162.
- 3 ALL STEEL TO BE GRADE S355JR/350WA (EXCEPT ANGLES $\leq 45\text{mm}$ TO BE MILD STEEL).
- 4 ALL WELDS TO BE SEALED WELDED.
- 5 STEELWORK TO BE HOT DIP GALVANIZED TO SANS 121.
- 6 STEELWORK TO BE CHECKED AND STRAIGHTENED AFTER GALVANIZING.
- 7 BOLTS, NUTS & WASHERS TO BE IN ACCORDANCE WITH SANS 1700.
- 8 ALL MARKINGS TO BE STAMPED ON TO STEELWORK AND SHALL BE CLEARLY LEGABLE AFTER GALVANIZING.
- 9 NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK.
- 10 NO SECTIONS TO BE BUTT WELDED.
- 11 ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLERANCE OF $\pm 1.5\text{mm}$.
- 12 ALL HOLES TO BE 18mm DIA UNLESS OTHERWISE STATED.

STEEL SCHEDULE AND MASS					
ITEM	QTY	DESCRIPTION	CUTTING LENGTH (mm)	TOTAL LENGTH (m)	TOTAL MASS (kg)
11BN 1	2	MS ROUND TUBE $\phi 219 \times 6$ WALL	2000	4.00	126.12
11BN 2	2	MILD STEEL PLATE 250 x 20	280	0.56	21.98
11BN 3	2	MILD STEEL PLATE 420 x 25	420	0.84	55.39
11BN 4	8	TF CHANNEL 100 x 50 x 11kg/m	70	0.56	5.94
11BN 5	8	MILD STEEL PLATE 110 x 12	400	3.20	32.96
TOTAL MASS =					242.39



DRG NO.	SHEET NO.	REFERENCE DRAWINGS
D-DT-5201	SHEET 1D	BRKR FND DETAILS SOIL TYPE 3-PAD
D-DT-5201	SHEET 1C	BRKR FND DETAILS SOIL TYPE 1&2-SEP FND
D-DT-5201	SHEET 1B	BRKR FND DETAILS SOIL TYPE 1&2-CUTOUT
D-DT-5201	SHEET 1A	BRKR FND DETAILS SOIL TYPE 1&2-PIPE

THIS DRAWING IS THE NEW OFFICIAL REVISION AND IT SUPERCEDES ALL OTHER PUBLISHED DRAWINGS						
0	FIRST ISSUE				/ /	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

AUTH: B HILL
DATE: 06/04/2004
CHKD: B HILL
DATE: 06/04/2004
DRAWN: J SCHOLTZ
DATE: 19/01/2000


CIRCUIT BREAKER - 66kV TUBULAR SUPPORT STEELWORK MANUFACTURING DETAILS

SAP No. 0528475
SCALE 1:20
THIS DRAWING IS THE PROPERTY OF ESKOM

D-DT-5201

SET	SHEET	REVISION
	2A	0

SUBSTATION EARTH MAT AND EARTH TAILS NOTES ::

1. THE MAIN EARTH GRID SHALL BE CONSTRUCTED FROM A 10mm DIAMETER BLACK ANNEALED COPPER (UNLESS OTHERWISE INDICATED), BURIED AT LEAST 1000mm BELOW FINISHED GROUND LEVEL. WHERE PASSING UNDER DEEPER FOUNDATIONS AND DRAINS, THE EARTH MAT IS TO BE LAID 150mm BELOW CONCRETE.
2. WHERE A CONCRETE BLINDING IS CAST UNDER BUILDING FOUNDATIONS THE EARTH MAT MESHES ARE TO BE INSTALLED ON TOP OF THE BLINDING AND UNDER THE CONCRETE FOOTING OF COLUMNS ETC.
3. WHERE THE EARTH MAT PASSES UNDER DRAINS WITH LESS THAN 1000mm OF COVER, IT IS TO BE BURIED AS DEEPLY AS POSSIBLE.
4. THE MAIN EARTH GRID SHALL BE 1000mm AWAY FROM THE FENCE INSIDE THE SUBSTATIONS AND EXTEND 1000mm AWAY FROM THE FENCE, OUTSIDE THE SUBSTATION.
5. ON FOUNDATION AND EARTHING DRAWINGS, ROD TRANSVERSE CROSSINGS SHALL BE INDICATED BY  AND THESE CROSSINGS SHALL BE JOINED AS PER NOTE 9.
6. EARTH TAILS SHALL BE CONSTRUCTED FROM A 50 x 3mm FLAT BLACK ANNEALED COPPER BOLTED TO HOLDING DOWN BOLTS (UNLESS OTHERWISE INDICATED).
7. WHERE EARTH TAILS CROSS THEY SHALL BE WELDED TOGETHER.
8. WHERE THE EARTH MAT IS NOT DIMENSIONED, IT IS TO BE PLACED AS CLOSE TO THE MAIN FOUNDATIONS AS POSSIBLE.
9. ALL JOINTS SHALL BE EXOTHERMICALLY WELDED OR OXY-ACETYLENE BRAZED USING A 3mm DIAMETER SILBRALLOY BRAZING RODS OR EQUIVALENT. NO FLUX IS REQUIRED.
10. ALL HOLDING DOWN BOLTS TO BE **M24 OR LARGER**.
11. THE NUMBER OF SUPPORT STEEL EARTHING CONNECTIONS, FOR THE INDICATED FAULT LEVELS, SHALL BE (UNLESS OTHERWISE INDICATED):


UNDER 25kA	TWO CONNECTIONS PER SUPPORT
25kA AND ABOVE	FOUR CONNECTIONS PER SUPPORT

NOTE: ALL SUPPORTS SHALL BE EARTHED AT LEAST TWICE.

12. SACRIFICIAL EARTH MAT ANODES SHALL BE INSTALLED FOR MILD TO SEVERE CORROSIVE SOIL CONDITIONS (< 100 OHM.M). THE APPLICATION OF THESE ANODES WILL BE DETERMINED BY THE RESULTS OF SOIL TESTS CARRIED OUT BY ESKOM OR AN APPOINTED REPRESENTATIVE. WHERE THE REQUIRED SACRIFICIAL ANODES ARE TO BE MANUFACTURED AND CONNECTED TO THE MAIN EARTH MAT, THIS SHALL BE DONE ACCORDING TO SHEET 11.
13. A ROOF EARTHING STRAP OF AT LEAST 50 x 3mm ANNEALED FLAT COPPER IS TO BE RUN ON THE OUTSIDE SURFACE OF THE BRICK BUILDING WALL OF THE ROOF AND JOINED TO METAL ROOF SHEETING WITH AT LEAST M8 BOLTS.
14. WHERE A CONNECTION IS MADE TO PAINTED STEELWORK, THE PAINT SHALL BE REMOVED OVER A MINIMAL AREA TO ALLOW FOR A GOOD CONTACT BETWEEN THE SURFACES. SURFACES SHALL BE COATED WITH A NON-OXIDE GREASE BEFORE BOLTING. AFTER BOLTING, ANY SCRAPED AREA NOT COVERED BY THE COPPER CONNECTION SHALL BE PAINTED USING THE ORIGINAL TYPE AND COLOUR OF PAINT.
15. WHERE A CONNECTION IS TO BE MADE TO GALVANISED STEELWORK, PRIOR TO BOLTING, THE SURFACE SHALL BE COATED WITH A NON-OXIDE GREASE OR AN ALTERNATIVE.
16. WHERE A FLAT COPPER STRAP RUNS ACROSS VERTICAL OR HORIZONTAL FLAT SURFACES OF CONCRETE PLINTH OR BRICK WALL, IT SHALL BE SECURED AS PER DETAIL A IN SHEET 12; AT ALL CORNERS, INTERSECTIONS AND AT NOT MORE THAN 1000mm SPACING.
17. FOR EARTH STRAP ARRANGEMENT IN CABLE TRENCHES SEE DETAIL B IN SHEET 12.
18. FOR PART OF THE EARTH MAT THAT RUNS ALONG CABLE RACKING, SEPARATE INSTRUCTIONS SHALL BE ISSUED.
19. WHERE FLAT COPPER EARTH STRAPS HAVE RUN ON TOP OF FINISHED FLOOR SURFACES, ACROSS WALKWAYS, THE STRAP SHALL BE SCREWED TO THE FLOOR AS PER DETAIL A IN SHEET 12.

REV	DESCRIPTION	BY	CHKD	DATE	PROJECT NO.
4	NOTE RE HOLDING DOWN BOLTS CORRECTED	P.A.T.J.	J.M.M.H.H.	28/02/2012	
3	NOTE RE HOLDING DOWN BOLTS TO BE GREATER THAN 100MM AND NOTES TO TAKE ACCOUNT OF THE JAIL AND CONCRETE TO 250MM AND ABOVE	P.A.T.J.	J.M.M.H.H.	14/02/2012	
2	NOTES CORRECTED AS PER RDS 24-1202	P.A.T.J.	J.M.M.H.H.	27/02/2012	
1	SHEET BE RE-NUMBERED FROM SHEET 0 TO SHEET 1.	D.A.	C.R.C.	13/02/2006	

THIS DRAWING IS THE NEW OFFICIAL REVISION AND IT SUPERSEDES ALL OTHER PUBLISHED DRAWINGS

 Author: C. CLARK DATE: 05/11/2004 Checkd: C. CLARK DATE: 05/11/2004 Drawn: V. VAN ZWILL DATE: 05/11/2004	EARTHING STANDARD GENERAL NOTES	SET: _____ SHEET: 22 REVISION: 1
--	------------------------------------	--

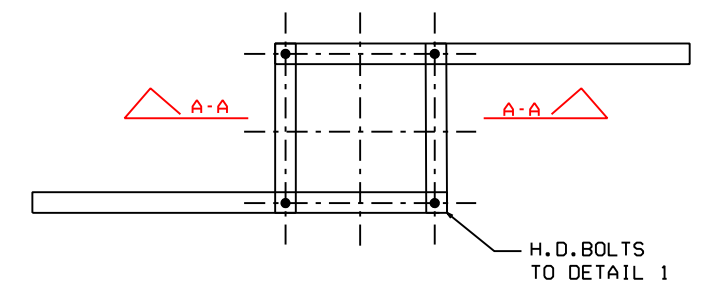
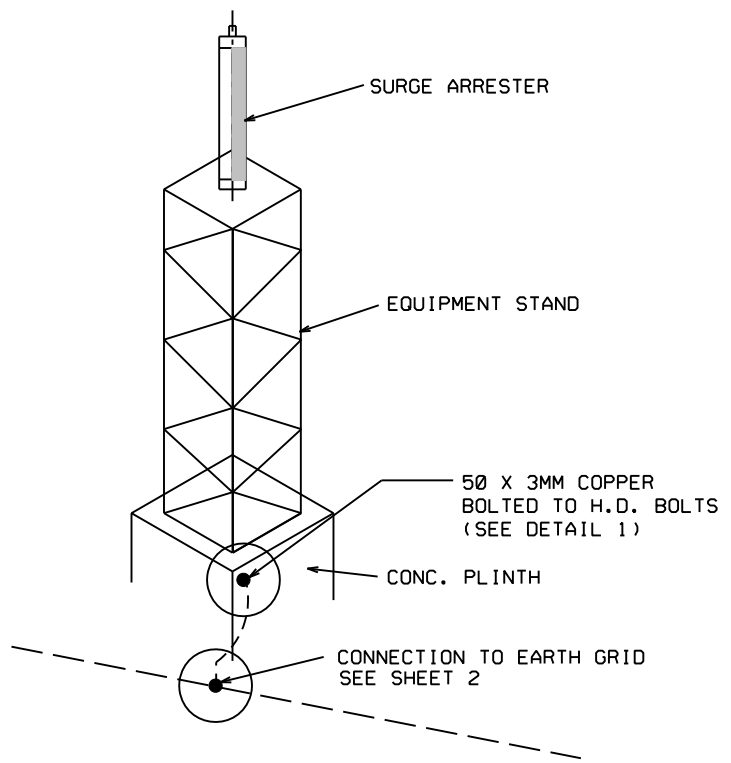
D-DT-5240

THIS DRAWING IS THE PROPERTY OF ESKOM

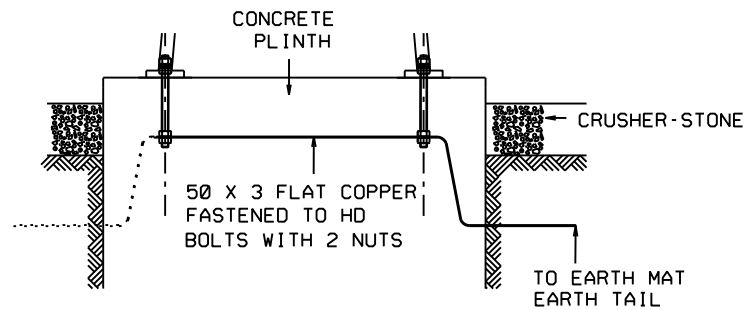
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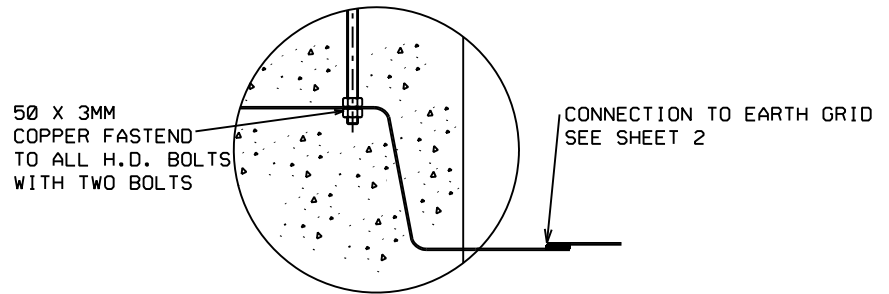
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DETAIL OF CONNECTION OF 50 X 3MM COPPER



DETAIL A-A



DETAIL 1

- NOTES:
1. STEELWORK TO BE USED FOR EARTH PATH.
 2. ALL BOLTED CONNECTIONS TO BE CLEANED AND FILLED WITH JOINTING COMPOUND. NO PAINT BARRIER ALLOWED.

THIS DRAWING IS THE NEW OFFICIAL REVISION AND IT SUPERCEDES ALL OTHER PUBLISHED DRAWINGS

2	SECTION THROUGH FOUNDATION ADDED SHOWING CONNECTIONS OF THE 50x3mm COPPER TO HOLDING DOWN BOLTS.	v v z	CBC	CBC	19/02/2007	
1	DESCRIPTION FOR CONNECTION TO EARTH MAT UPDATED SHEET RE-NUMBERED FROM SHEET 2 TO SHEET 6.	DJL	CBC	CBC	13/03/2006	
0	DRAWING NO. CHANGED FROM D-DT-5085	v v s	JFS	REV	21/05/2003	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

	<h2 style="margin: 0;">EARTHING STANDARD</h2> <h3 style="margin: 0;">TYPICAL ARRANGEMENT</h3>					
	AUTH: J.F.SCHOLTZ					
	DATE: 21/05/2003					
	CHKD: J.F.SCHOLTZ					
DATE: 21/05/2003		<h1 style="font-size: 2em; margin: 0;">D-DT-5240</h1>				
DRAWN: J.F.SCHOLTZ						
DATE: 09/12/2002						
		SET	SHEET	REVISION		
		21	6	2		

SAP NO.	DATE: 21/05/2003
SCALE :	
THIS DRAWING IS THE PROPERTY OF ESKOM	DATE: 09/12/2002

1 2 3 4 5 6 7 8 A3L

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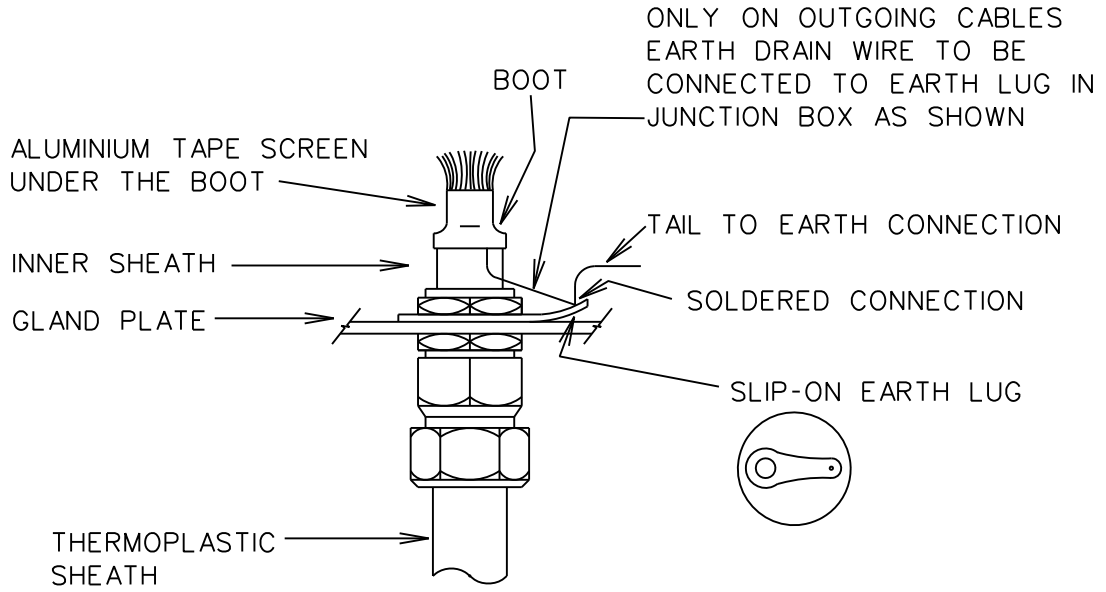
3

4

OUTGOING CABLES

A

A



B

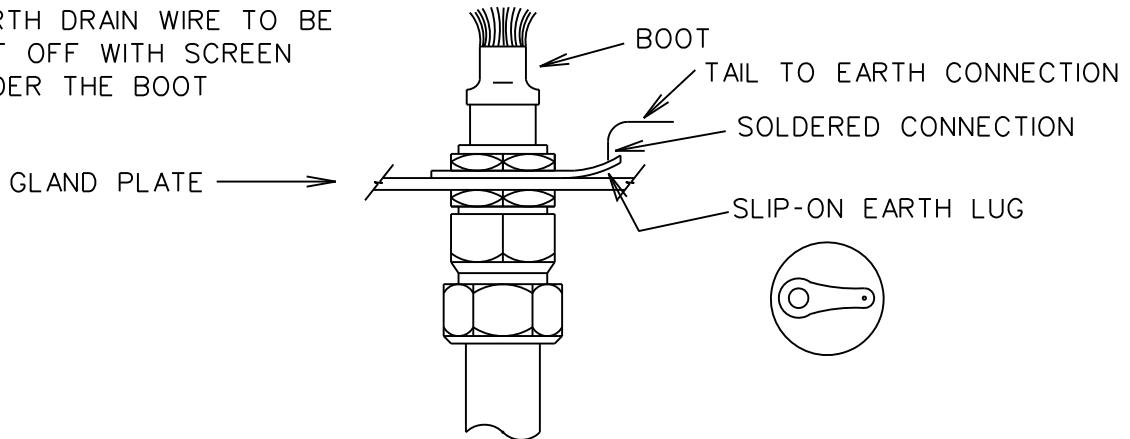
B

INCOMING CABLES

C

C

ONLY ON INCOMING CABLES
EARTH DRAIN WIRE TO BE
CUT OFF WITH SCREEN
UNDER THE BOOT



D

D

THIS DRAWING IS THE NEW OFFICIAL REVISION. IT SUPERCEDES ALL OTHER PUBLISHED DRAWINGS.

1	TITLE BLOCK UPDATED	VvZ	CBC	CBC	13/03/2006	
0	DRAWING NO. CHANGED FROM D-DT-5085	VvZ	JFS	JFS	21/05/2003	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

E

E



EARTHING STANDARD ARMOURED TELEPHONE & SCREENED CONTROL CABLES AT JUNCTION BOX

AUTH: J.F. SCHOLTZ

DATE: 21/05/2003

CHKD: J.F. SCHOLTZ

DATE: 21/05/2003

DRAWN: J.F. SCHOLTZ

DATE: 10/12/2002

D-DT-5240

SET	SHEET	REVISION
22	15	1

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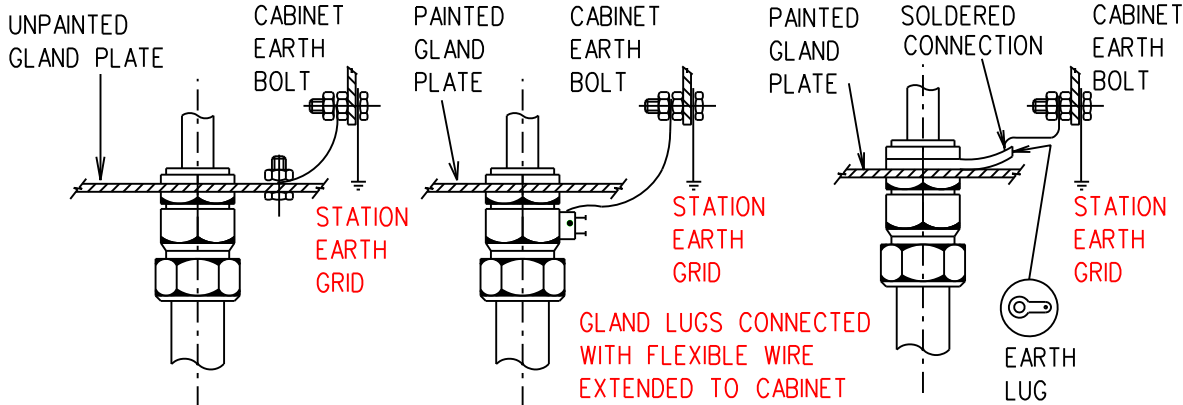
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ARMoured MULTICORE CONTROL AND TELEPHONE

A

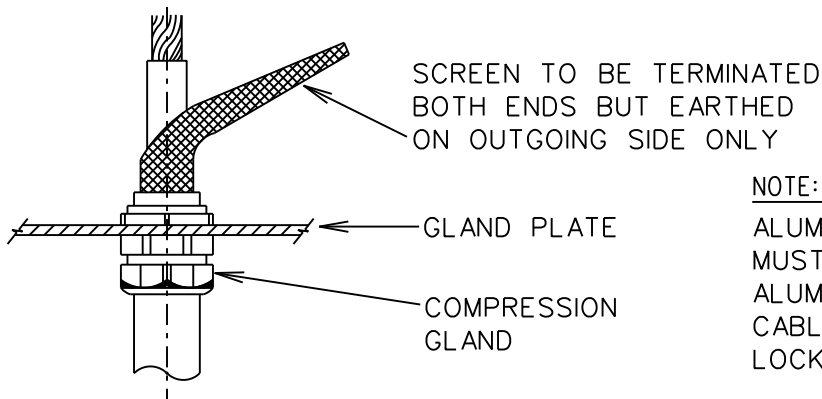


B

NOTE :
CABLE ARMOURING TO BE BONDED AT BOTH SIDES.

G.P.O. UNARMoured TYPE 'Z' CABLE

C



NOTE:
ALUMINIUM GLANDS MUST BE USED ON ALUMINIUM ARMoured CABLES (DOUBLE LOCK TYPE)

D

THIS DRAWING IS THE NEW OFFICIAL REVISION. IT SUPERCEDES ALL OTHER PUBLISHED DRAWINGS.

1	TITLE BLOCK UPDATED	VvZ	CBC	CBC	13/03/2006	
0	DRAWING NO. CHANGED FROM D-DT-5085	VvZ	JFS	JFS	21/05/2003	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

E



EARTHING STANDARD ARMoured MULTICORE CONTROL & TELEPHONE OR G.P.O. UNARMoured TYPE 'Z' CABLE

AUTH: J.F. SCHOLTZ

DATE: 21/05/2003

CHKD: J.F. SCHOLTZ

DATE: 21/05/2003

DRAWN: J.F. SCHOLTZ

DATE: 10/12/2002

D-DT-5240

SET	SHEET	REVISION
22	16	1

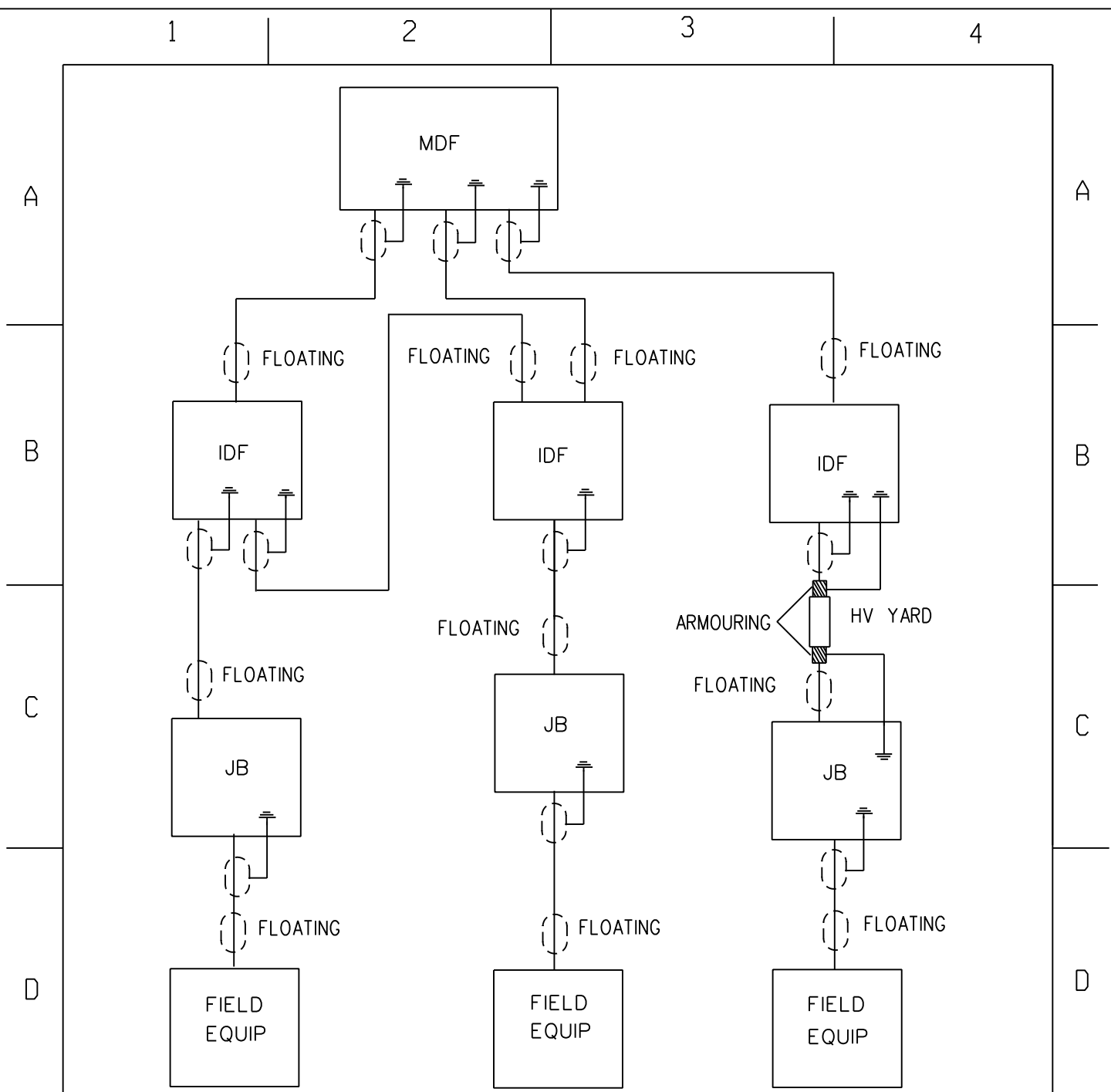
F

1

2

3

4 A4L



THIS DRAWING IS THE NEW OFFICIAL REVISION. IT SUPERCEDES ALL OTHER PUBLISHED DRAWINGS.

1	TITLE BLOCK UPDATED	VvZ	CBC	CBC	13/03/2006	
0	DRAWING NO. CHANGED FROM D-DT-5085	VvZ	JFS	JFS	21/05/2003	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

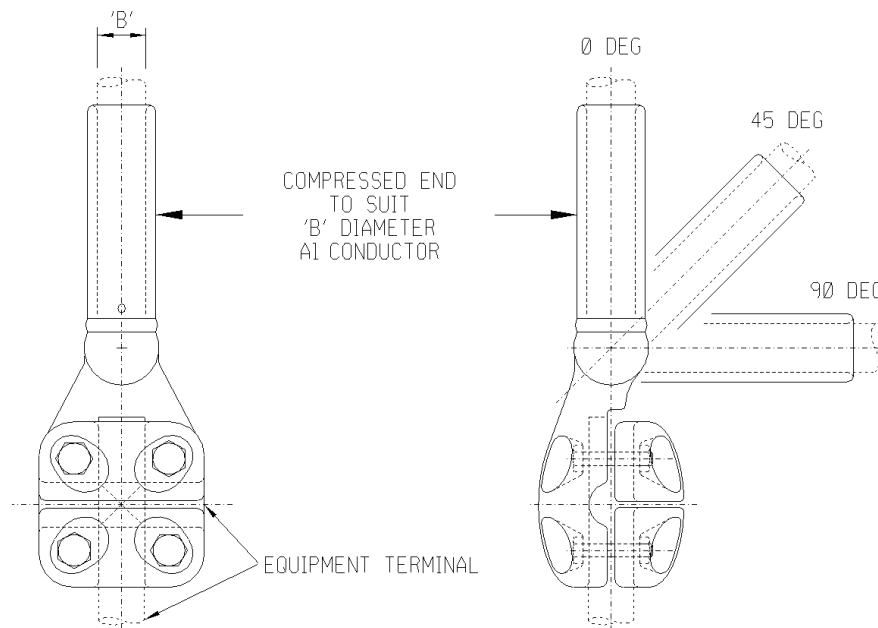


EARTHING STANDARD EARTHING OF TELEPHONE OR PROCESS CONTROL CABLES

AUTH: J.F. SCHOLTZ
DATE: 21/05/2003
CHKD: J.F. SCHOLTZ
DATE: 21/05/2003
DRAWN: J.F. SCHOLTZ
DATE: 10/12/2002

D-DT-5240

SET	SHEET	REVISION
22	17	1



NOTE: DRAWING NOT FOR MANUFACTURING PURPOSES

CODE	EQUIPMENT TERMINAL	DIA "B" (mm)	ANGLE OF OFFSET	90°C RATED CURRENT (A)	SAP NUMBER
EXC-A	26mm STEM	26.5	0 DEG	900	0401752
EXC-B	38mm STEM				0401766
EXC-C	38mm STEM	38.3	0 DEG	1,350	0005660
EXC-D			45 DEG		0401637
EXC-E			90 DEG		0005691
EXC-F	38mm STEM	26.5	45 DEG	900	0401639
EXC-G			90 DEG		0005692
EXC-H	38mm STEM	18.1	0 DEG	500	0401643
EXC-J	35mm STEM	26.5	0 DEG	900	0005686
EXC-K	35mm STEM	38.3	0 DEG	1,200	0005687
EXC-L	26mm STEM	26.5	45 DEG	900	0401641
EXC-M	26mm STEM	18.1	0 DEG	500	0401577
EXC-N	40mm STEM	26.5	0 DEG	900	0005182
EXC-P	60mm STEM	38.3	0 DEG	1,350	0005183
EXC-Q			45 DEG		0005184
EXC-R			90 DEG		0005185


ITEM		:- CLAMP, B/COMP EXC						
MATERIAL SPECIFICATION		:- GRADE LM6 ALUMINIUM TO BS1490						
CORROSION SPECIFICATION		:- N/A						
STANDARD SPECIFICATION		:- N/A						
ESKOM SPECIFICATION		:- 474-218						
TEST & CERTIFICATION REQUIREMENTS		:- 474-218						
INSPECTION		Yes	No	ESKOM RELEASE NOTE		Yes	No	
IDENTIFICATION:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS								
8	VARIOUS SAP NUMBERS, SPECS & TECH DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND EXC-G, H, J, K, M, N, P, Q, R ADDED			P.A.T.	L. RAUTENBACH	T.MARAIS	28.11.2013	
7	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T. NKAMBULE	V.SINGH	11.04.2011	
6	DIMENSIONS CORRECTED, SPECS AND CLAMP TYPES CHANGED			P.A.T.	T. NKAMBULE	V.SINGH	06.01.2011	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	
AUTH:	CRAIG CLARK	DATE:	10/98	SCALE		SAP No:		
CHKD:	C.B. CLARK	DATE:	10/98	NTS				
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF:				
				SERIES 6000				
				FILE No:				
				6006				
				 D-DT-6006		SET	SHEET	REV
						5	1	8

SPEC SHEET

SAP MATERIAL No.:	0401752							
SHORT DESCRIPTION:	CLAMP:EXC-A;BOLT/COMP; STEM 26 COND26.5							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 26 COND26.5; DIMENSIONS: STEM: 26MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-A; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:	0401766							
SHORT DESCRIPTION:	CLAMP:EXC-B;BOLT/COMP; STEM 38 COND26.5							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND26.5; DIMENSIONS: STEM: 38MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-B; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:	0005660							
SHORT DESCRIPTION:	CLAMP:EXC-C;BOLT/COMP; STEM 38 COND38.3							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND38.3; DIMENSIONS: STEM: 38MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1350AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-C; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:	0401637							
SHORT DESCRIPTION:	CLAMP:EXC-D;BOLT/COMP; STEM 38 COND38.3							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND38.3; DIMENSIONS: STEM: 38MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1350AMP; 45 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-D; ESKOM DRAWING No. D-DT-6006 *</p>							
8	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND EXC-G, H, J, K, M, N, P, Q, R ADDED		P.A.T.	L. RAUTENBACH	T.MARAIS	28.11.2013		
7	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974		P.A.T.	T. NKAMBULE	V.SINGH	11.04.2011		
6	DIMENSIONS CORRECTED, SPECS AND CLAMP TYPES CHANGED		P.A.T.	T. NKAMBULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE		
AUTH:	CRAIG CLARK	DATE:	10/98	 D-DT-6006		SAP No:		
CHKD:	C.B. CLARK	DATE:	10/98			0401752	0005660	
DRAWN:	J.F.SCHOLTZ	DATE:	10/98			0401766	0401637	
						SET	SHEET	REV
						5	2	8

SPEC SHEET

SAP MATERIAL No.:	0005691
SHORT DESCRIPTION:	CLAMP:EXC-E;BOLT/COMP; STEM 38 COND38.3
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND38.3; DIMENSIONS: STEM: 38MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1350AMP; 90 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-E; ESKOM DRAWING No. D-DT-6006 *</p>
SAP MATERIAL No.:	0401639
SHORT DESCRIPTION:	CLAMP:EXC-F;BOLT/COMP; STEM 38 COND26.5
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND26.5; DIMENSIONS: STEM: 38MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 45 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-F; ESKOM DRAWING No. D-DT-6006 *</p>
SAP MATERIAL No.:	0005692
SHORT DESCRIPTION:	CLAMP:EXC-G;BOLT/COMP; STEM 38 COND26.5
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND26.5; DIMENSIONS: STEM: 38MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 90 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-G; ESKOM DRAWING No. D-DT-6006 *</p>
SAP MATERIAL No.:	0401643
SHORT DESCRIPTION:	CLAMP:EXC-H;BOLT/COMP; STEM 38 COND18.1
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 38 COND18.1; DIMENSIONS: STEM: 38MM; CONDUCTOR: 18.1MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 500AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-H; ESKOM DRAWING No. D-DT-6006 *</p>

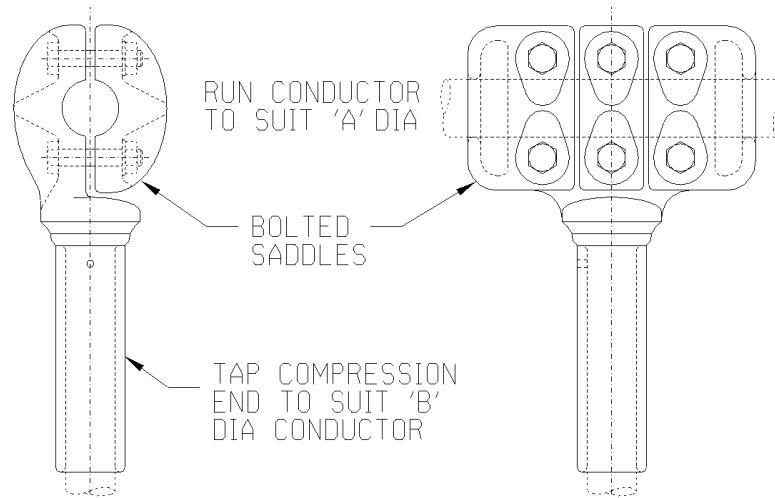
8	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND EXC-G, H, J, K, M, N, P, Q, R ADDED	P.A.T.	L. RAUTENBACH	T. MARAIS	28.11.2013		
7	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974	P.A.T.	T. NKAMBULE	V. SINGH	11.04.2011		
6	DIMENSIONS CORRECTED, SPECS AND CLAMP TYPES CHANGED	P.A.T.	T. NKAMBULE	V. SINGH	06.01.2011		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	CRAIG CLARK	DATE:	10/98	 D-DT-6006	SAP No:		
CHKD:	C.B. CLARK	DATE:	10/98		0005691	0005692	
DRAWN:	J.F.SCHOLTZ	DATE:	10/98		0401639	0401643	
					SET	SHEET	REV
					5	3	8

SPEC SHEET

SAP MATERIAL No.:		0005686							
SHORT DESCRIPTION:		CLAMP:EXC-J;BOLT/COMP; STEM 35 COND26.5							
TECH. DESCRIPTION:		<p>CLAMP: TYPE: BOLT/COMP; STEM 35 COND26.5; DIMENSIONS: STEM: 35MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 0 GEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-J; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:		0005687							
SHORT DESCRIPTION:		CLAMP:EXC-K;BOLT/COMP; STEM 35 COND38.3							
TECH. DESCRIPTION:		<p>CLAMP: TYPE: BOLT/COMP; STEM 35 COND38.3; DIMENSIONS: STEM: 35MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1200AMP; 0 GEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-K; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:		0401641							
SHORT DESCRIPTION:		CLAMP:EXC-L;BOLT/COMP; STEM 26 COND26.5							
TECH. DESCRIPTION:		<p>CLAMP: TYPE: BOLT/COMP; STEM 26 COND26.5; DIMENSIONS: STEM: 26MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 45 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-L; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:		0401577							
SHORT DESCRIPTION:		CLAMP:EXC-M;BOLT/COMP; STEM 26 COND18.1							
TECH. DESCRIPTION:		<p>CLAMP: TYPE: BOLT/COMP; STEM 26 COND18.1; DIMENSIONS: STEM: 26MM; CONDUCTOR: 18.1MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 500AMP; 0 GEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-M; ESKOM DRAWING No. D-DT-6006 *</p>							
8	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND EXC-G, H, J, K, M, N, P, Q, R ADDED			P.A.T.	L. RAUTENBACH	T.MARAIS	28.11.2013		
7	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T. NKAMBULE	V.SINGH	11.04.2011		
6	DIMENSIONS CORRECTED, SPECS AND CLAMP TYPES CHANGED			P.A.T.	T. NKAMBULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	CRAIG CLARK	DATE:	10/98	 D-DT-6006		SAP No:			
CHKD:	C.B. CLARK	DATE:	10/98			0005686	0401641		
DRAWN:	J.F.SCHOLTZ	DATE:	10/98			0005687	0401577	SET	SHEET
				SCALE NTS			5	4	8
				CAD REF: SERIES 6000					
				FILE No: 6006					


SPEC SHEET

SAP MATERIAL No.:	0005182							
SHORT DESCRIPTION:	CLAMP:EXC-N;BOLT/COMP; STEM 40 COND26.5							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 40 COND26.5; DIMENSIONS: STEM: 40MM; CONDUCTOR: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-N; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:	0005183							
SHORT DESCRIPTION:	CLAMP:EXC-P;BOLT/COMP; STEM 60 COND38.3							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 60 COND38.3; DIMENSIONS: STEM: 60MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1350AMP; 0 GEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-P; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:	0005184							
SHORT DESCRIPTION:	CLAMP:EXC-Q;BOLT/COMP; STEM 60 COND38.3							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 60 COND38.3; DIMENSIONS: STEM: 60MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1350AMP; 45 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-Q; ESKOM DRAWING No. D-DT-6006 *</p>							
SAP MATERIAL No.:	0005185							
SHORT DESCRIPTION:	CLAMP:EXC-R;BOLT/COMP; STEM 60 COND38.3							
TECH. DESCRIPTION:	<p>CLAMP: TYPE: BOLT/COMP; STEM 60 COND38.3; DIMENSIONS: STEM: 60MM; CONDUCTOR: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION CLAMP; RATED CURRENT 1350AMP; 90 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EXC-R; ESKOM DRAWING No. D-DT-6006 *</p>							
8	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND EXC-G, H, J, K, M, N, P, Q, R ADDED		P.A.T.	L. RAUTENBACH	T.MARAIS	28.11.2013		
7	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974		P.A.T.	T. NKAMBULE	V.SINGH	11.04.2011		
6	DIMENSIONS CORRECTED, SPECS AND CLAMP TYPES CHANGED		P.A.T.	T. NKAMBULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE		
AUTH:	CRAIG CLARK	DATE:	10/98	 D-DT-6006		SAP No:		
CHKD:	C.B. CLARK	DATE:	10/98			0005182	0005184	
DRAWN:	J.F.SCHOLTZ	DATE:	10/98			0005183	0005185	
						SET	SHEET	REV
						5	5	8



NOTE: DRAWING NOT FOR MANUFACTURING PURPOSES

CODE	DIA "A" (mm)	DIA "B" (mm)	ANGLE OF OFFSET	90°C RATED CURRENT (A)	SAP NUMBER
ETC-A	23.5	26.5	0 DEG	650	0401758
ETC-B	23.5	38.3	0 DEG	650	0401760
ETC-C	26.5	26.5	0 DEG	900	0401754
ETC-D	26.5	38.3	0 DEG	900	0401770
ETC-E	28.6	26.5	0 DEG	900	0005654
ETC-F	28.6	38.3	0 DEG	900	0401763
ETC-G	35.6	26.5	0 DEG	900	0005656
ETC-H	35.6	38.3	0 DEG	1,100	0401765
ETC-J	38.3	26.5	0 DEG	900	0401768
ETC-K	38.3	38.3	0 DEG	1,350	0401756
ETC-L	18.1	26.5	0 DEG	450	0401790
ETC-M	18.1	18.1	0 DEG	450	0401574
ETC-N	26.5	18.1	0 DEG	450	0401576
ETC-P	38.3	18.1	0 DEG	450	0005167
ETC-Q	38.3	16.0	0 DEG	450	0165527

ITEM		:- CLAMP, T/COMP 0DG ETC D6010								
MATERIAL SPECIFICATION		:- GRADE LM6 ALUMINIUM TO BS1490								
CORROSION SPECIFICATION		:- N/A								
STANDARD SPECIFICATION		:- N/A								
ESKOM SPECIFICATION		:- 474-218								
TEST & CERTIFICATION REQUIREMENTS		:- 474-218								
INSPECTION		Yes	No	ESKOM RELEASE NOTE		Yes	No			
IDENTIFICATION:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS										
10	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND ETC-E, F, G, H, L, M, N, P ADDED			D.R.	J.BLAUW	T. MARAIS	18.03.2014			
9	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAM BULE	V.SINGH	11.04.2011			
8	REF. TO 900A CLAMP REMOVED, SPECS AND TYPES CHANGED			P.A.T.	T.NKAM BULE	V.SINGH	06.01.2011			
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE			
AUTH:	PHIL CROWDY	DATE:	12/96	SCALE				SAP No:		
CHKD:	C.B. CLARK	DATE:	12/96	NTS						
				CAD REF:						
				SERIES 6000						
DRAWN:	J.F.SCHOLTZ	DATE:	10/96	FILE No:	D-DT-6010			SET	SHEET	REV
				6010				5	1	10


SPEC SHEET

SAP MATERIAL No.:	0401758
SHORT DESCRIPTION:	CLAMP:ETC-A;T/COMP; RUN 23.5 TAP 26.5
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 23.5 TAP 26.5; DIMENSIONS: RUN: 23.5MM; TAP: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 650AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-A; ESKOM DRAWING No. D-DT-6010</p>	

SAP MATERIAL No.:	0401760
SHORT DESCRIPTION:	CLAMP:ETC-B;T/COMP; RUN 23.5 TAP 38.3
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 23.5 TAP 38.3; DIMENSIONS: RUN: 23.5MM; TAP: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 650AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-B; ESKOM DRAWING No. D-DT-6010</p>	


SAP MATERIAL No.:	0401754
SHORT DESCRIPTION:	CLAMP:ETC-C;T/COMP; RUN 26.5 TAP 26.5
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 26.5 TAP 26.5; DIMENSIONS: RUN: 26.5MM; TAP: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-C; ESKOM DRAWING No. D-DT-6010</p>	

SAP MATERIAL No.:	0401770
SHORT DESCRIPTION:	CLAMP:ETC-D;T/COMP; RUN 26.5 TAP 38.3
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 26.5 TAP 38.3; DIMENSIONS: RUN: 26.5MM; TAP: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-D; ESKOM DRAWING No. D-DT-6010</p>	

10	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND ETC-E, F, G, H, L, M, N, P ADDED	D.R.	J.BLAUW	T. MARAIS	18.03.2014		
9	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974	P.A.T.	T.NKAM BULE	V.SINGH	11.04.2011		
8	REF. TO 900A CLAMP REMOVED, SPECS AND TYPES CHANGED	P.A.T.	T.NKAM BULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/96	 D-DT-6010	SAP No:		
CHKD:	C.B. CLARK	DATE:	12/96		0401758 0401760	0401754 0401770	
DRAWN:	J.F.SCHOLTZ	DATE:	10/96		5	2	10
					5	2	10

SPEC SHEET

SAP MATERIAL No.:	0005654
SHORT DESCRIPTION:	CLAMP:ETC-E;T/COMP; RUN 28.6 TAP 26.5
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 28.6 TAP 26.5; DIMENSIONS: RUN: 28.6MM; TAP: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-E; ESKOM DRAWING No. D-DT-6010</p>	
SAP MATERIAL No.:	0401763
SHORT DESCRIPTION:	CLAMP:ETC-F;T/COMP; RUN 28.6 TAP 38.3
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 28.6 TAP 38.3; DIMENSIONS: RUN: 28.6MM; TAP: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-F; ESKOM DRAWING No. D-DT-6010</p>	
SAP MATERIAL No.:	0005656
SHORT DESCRIPTION:	CLAMP:ETC-G;T/COMP; RUN 35.6 TAP 26.5
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 35.6 TAP 26.5; DIMENSIONS: RUN: 35.6MM; TAP: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-G; ESKOM DRAWING No. D-DT-6010</p>	
SAP MATERIAL No.:	0401765
SHORT DESCRIPTION:	CLAMP:ETC-H;T/COMP; RUN 35.6 TAP 38.3
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 35.6 TAP 38.3; DIMENSIONS: RUN: 35.6MM; TAP: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 1100AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-H; ESKOM DRAWING No. D-DT-6010</p>	

10	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND ETC-E, F, G, H, L, M, N, P ADDED	D.R.	J.BLAUW	T. MARAIS	18.03.2014		
9	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974	P.A.T.	T.NKAM BULE	V.SINGH	11.04.2011		
8	REF. TO 900A CLAMP REMOVED, SPECS AND TYPES CHANGED	P.A.T.	T.NKAM BULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/96	 D-DT-6010	SAP No:		
CHKD:	C.B. CLARK	DATE:	12/96		0005654 0401763	0005656 0401765	
DRAWN:	J.F.SCHOLTZ	DATE:	10/96		SET	SHEET	REV
					5	3	10


SPEC SHEET

SAP MATERIAL No.:	0401768
SHORT DESCRIPTION:	CLAMP:ETC-J;T/COMP; RUN 38.3 TAP 26.5
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 38.3 TAP 26.5; DIMENSIONS: RUN: 38.3MM; TAP: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 900AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-J; ESKOM DRAWING No. D-DT-6010</p>	


SAP MATERIAL No.:	0401756
SHORT DESCRIPTION:	CLAMP:ETC-K;T/COMP; RUN 38.3 TAP 38.3
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 38.3 TAP 38.3; DIMENSIONS: RUN: 38.3MM; TAP: 38.3MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 1350AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-K; ESKOM DRAWING No. D-DT-6010</p>	

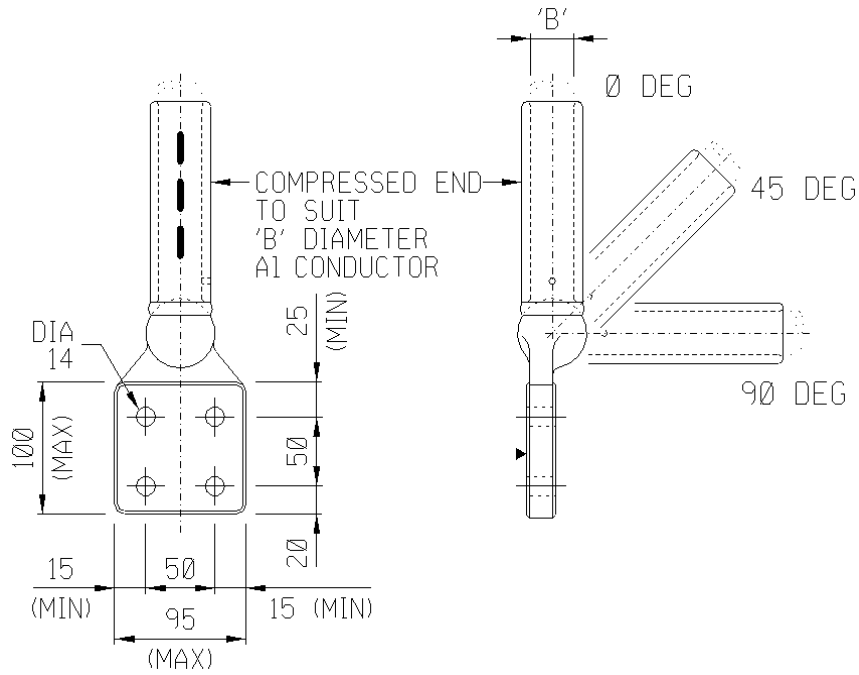
SAP MATERIAL No.:	0401790
SHORT DESCRIPTION:	CLAMP:ETC-L;T/COMP; RUN 18.1 TAP 26.5
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 18.1 TAP 26.5; DIMENSIONS: RUN: 18.1MM; TAP: 26.5MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 450AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-L; ESKOM DRAWING No. D-DT-6010</p>	

SAP MATERIAL No.:	0401574
SHORT DESCRIPTION:	CLAMP:ETC-M;T/COMP; RUN 18.1 TAP 18.1
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: T/COMP; RUN 18.1 TAP 18.1; DIMENSIONS: RUN: 18.1MM; TAP: 18.1MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 450AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-M; ESKOM DRAWING No. D-DT-6010</p>	

10	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND ETC-E, F, G, H, L, M, N, P ADDED	D.R.	J.BLAUW	T. MARAIS	18.03.2014		
9	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974	P.A.T.	T.NKAM BULE	V.SINGH	11.04.2011		
8	REF. TO 900A CLAMP REMOVED, SPECS AND TYPES CHANGED	P.A.T.	T.NKAM BULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/96	 D-DT-6010	SAP No:		
CHKD:	C.B. CLARK	DATE:	12/96		0401768	0401790	
DRAWN:	J.F.SCHOLTZ	DATE:	10/96		0401756	0401574	
					SET	SHEET	REV
					5	4	10

SPEC SHEET

SAP MATERIAL No.:	0401576								
SHORT DESCRIPTION:	CLAMP:ETC-N;T/COMP; RUN 26.5 TAP 18.1								
TECH. DESCRIPTION:									
<p>CLAMP: TYPE: T/COMP; RUN 26.5 TAP 18.1; DIMENSIONS: RUN: 26.5MM; TAP: 18.1MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 450AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-N; ESKOM DRAWING No. D-DT-6010</p>									
SAP MATERIAL No.:	0005167								
SHORT DESCRIPTION:	CLAMP:ETC-P;T/COMP; RUN 38.3 TAP 18.1								
TECH. DESCRIPTION:									
<p>CLAMP: TYPE: T/COMP; RUN 38.3 TAP 18.1; DIMENSIONS: RUN: 38.3MM; TAP: 18.1MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 450AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-P; ESKOM DRAWING No. D-DT-6010</p>									
SAP MATERIAL No.:	0165527								
SHORT DESCRIPTION:	CLAMP:ETC-Q;T/COMP; RUN 38.3 TAP 16								
TECH. DESCRIPTION:									
<p>CLAMP: TYPE: T/COMP; RUN 38.3 TAP 16; DIMENSIONS: RUN: 38.3MM; TAP: 16MM; MATERIAL: AL BS1490 GR LM6 CAST; BOLTED/COMPRESSION T CLAMP; RATED CURRENT 450AMP; 0 DEGREE OFFSET; NOTE: OPEN END OF THE FURRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: ETC-Q; ESKOM DRAWING No. D-DT-6010</p>									
10	VARIOUS SAP NUMBERS, SPECS. & TECH. DESCRIPTIONS CHANGED ACCORDING TO PILOG, AND ETC-E, F, G, H, L, M, N, P ADDED			D.R.	J.BLAUW	T. MARAIS	18.03.2014		
9	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAM BULE	V.SINGH	11.04.2011		
8	REF.TO 900A CLAMP REMOVED, SPECS AND TYPES CHANGED			P.A.T.	T.NKAM BULE	V.SINGH	06.01.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/96	SCALE NTS			SAP No:		
CHKD:	C.B. CLARK	DATE:	12/96	CAD REF: SERIES 6000			0401576 0005167	0165527	
DRAWN:	J.F.SCHOLTZ	DATE:	10/96	FILE No: 6010	D-DT-6010		SET 5	SHEET 5	REV 10




NOTE: DRAWING NOT FOR MANUFACTURING PURPOSES


CODE	EQUIPMENT TERMINAL	DIA "B"	ANGLE OF OFFSET	SAP NUMBER
EPC-A	4 X DIA 14	26.5	0 DEG	0401580
EPC-B	50X50		45 DEG	0400420
EPC-C	CENTRES		90 DEG	0560891
EPC-D	4 X DIA 14	38.3	0 DEG	0400422
EPC-E	50X50		45 DEG	0400425
EPC-F	CENTRES		90 DEG	0560892
EPC-Q	4 X DIA 14	16.3	0 DEG	0570035
EPC-R	50X50		45 DEG	0570036
EPC-S	CENTRES		90 DEG	0570037

ITEM	:- CLAMP, EPC COMP 4 HOLE PALM 50X50 HOLE CENTRES								
MATERIAL SPECIFICATION	:- GRADE LM6 ALUMINIUM TO BS1490								
CORROSION SPECIFICATION	:- N/A								
STANDARD SPECIFICATION	:- N/A								
ESKOM SPECIFICATION	:- 474-218								
TEST & CERTIFICATION REQUIREMENTS	:- 474-218								
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No		
IDENTIFICATION:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS									
8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED			P.A.T.	M. NABBIE	T.MARAIS	22.07.2013		
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED			P.A.T.	T. MARAIS		12.06.2013		
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE		
AUTH:	PHIL CROWDY	DATE:	12/98	SCALE	 D-DT-6018		SAP No:		
CHKD:	C.B. CLARK	DATE:	12/98	NTS			SET	SHEET	REV
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF: SERIES 6000 FILE No: 6018			9	1	8


SPEC SHEET

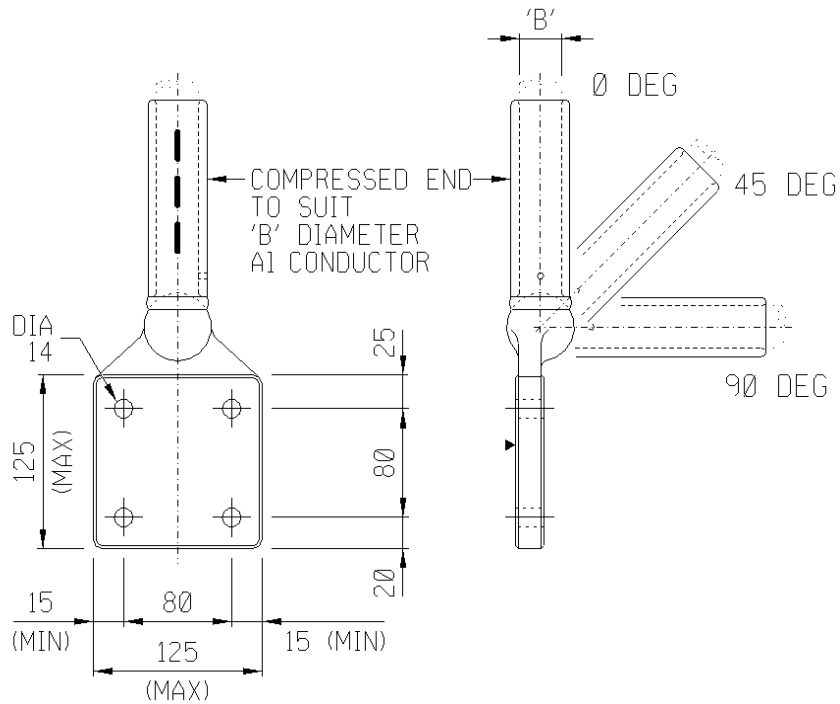
SAP MATERIAL No.:	0401580								
SHORT DESCRIPTION:	CLAMP:EPC-A;COMP/PALM ODG;26.5 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM ODG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 26.5 MM; RATED CURRENT 900 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-A; ESKOM DRAWING No. D-DT-6018 *</p>								
SAP MATERIAL No.:	0400420								
SHORT DESCRIPTION:	CLAMP:EPC-B;COMP/PALM 45DG;26.5 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 45DG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 26.5 MM; RATED CURRENT 900 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-B; ESKOM DRAWING No. D-DT-6018 *</p>								
SAP MATERIAL No.:	0560891								
SHORT DESCRIPTION:	CLAMP:EPC-C;COMP/PALM 90DG;26.5 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 90DG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 26.5 MM; RATED CURRENT 900 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-C; ESKOM DRAWING No. D-DT-6018 *</p>								
8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED			P.A.T.	M. NABBIE	T.MARAIS	22.07.2013		
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED			P.A.T.	T. MARAIS		12.06.2013		
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/98	SCALE	 D-DT-6018		SAP No:		
CHKD:	C.B. CLARK	DATE:	12/98	NTS			0401580	0560891	
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF:			0400420		
				SERIES 6000			SET	SHEET	
				FILE No:			9	2	
				6018				8	

SPEC SHEET

SAP MATERIAL No.:	0400422								
SHORT DESCRIPTION:	CLAMP:EPC-D;COMP/PALM ODG;38.3 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM ODG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-D; ESKOM DRAWING No. D-DT-6018 *</p>								
SAP MATERIAL No.:	0400425								
SHORT DESCRIPTION:	CLAMP:EPC-E;COMP/PALM 45DG;38.3 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 45DG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-E; ESKOM DRAWING No. D-DT-6018 *</p>								
SAP MATERIAL No.:	0560892								
SHORT DESCRIPTION:	CLAMP,STRAIN:EPC-F;38.3MM PALM 90DG								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 90DG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-F; ESKOM DRAWING No. D-DT-6018 *</p>								
8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED			P.A.T.	M. NABBIE	T.MARAIS	22.07.2013		
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED			P.A.T.	T. MARAIS		12.06.2013		
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/98	SCALE	 D-DT-6018		SAP No:		
CHKD:	C.B. CLARK	DATE:	12/98	NTS			0400422	0560892	
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF:			0400425		
				SERIES 6000			SET	SHEET	
				FILE No:			9	3	
				6018				8	

SPEC SHEET

SAP MATERIAL No.:	0570035								
SHORT DESCRIPTION:	CLAMP:EPC-Q;COMP/PALM ODG;16.3 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM ODG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 16.3 MM; RATED CURRENT 500 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-Q; ESKOM DRAWING No. D-DT-6018 *</p>								
SAP MATERIAL No.:	0570036								
SHORT DESCRIPTION:	CLAMP:EPC-R;COMP/PALM 45DG;16.3 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 45DG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 16.3 MM; RATED CURRENT 500 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-R; ESKOM DRAWING No. D-DT-6018 *</p>								
SAP MATERIAL No.:	0570037								
SHORT DESCRIPTION:	CLAMP:EPC-S;COMP/PALM 90DG;16.3 MM								
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 90DG; DIMENSIONS: 50MM X 50MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 16.3 MM; RATED CURRENT 500 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-S; ESKOM DRAWING No. D-DT-6018 *</p>								
8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED			P.A.T.	M. NABBIE	T.MARAIS	22.07.2013		
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED			P.A.T.	T. MARAIS		12.06.2013		
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/98	SCALE	 D-DT-6018		SAP No:		
CHKD:	C.B. CLARK	DATE:	12/98	NTS			0570035	0570037	
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF:			0570036	SET	SHEET
				SERIES 6000			9	4	8
				FILE No:					
				6018					



NOTE: DRAWING NOT FOR MANUFACTURING PURPOSES

CODE	EQUIPMENT TERMINAL	DIA "B"	ANGLE OF OFFSET	SAP NUMBER
EPC-G	4 X DIA 14	26.5	0 DEG	0570038
EPC-H	80X80		45 DEG	0570040
EPC-J	CENTRES		90 DEG	0570042
EPC-K	4 X DIA 14	38.3	0 DEG	0570039
EPC-L	80X80		45 DEG	0570041
EPC-M	CENTRES		90 DEG	0570043

ITEM	:- CLAMP, EPC COMP 4 HOLE PALM 80X80 HOLE CENTRES						
MATERIAL SPECIFICATION	:- GRADE LM6 ALUMINIUM TO BS1490						
CORROSION SPECIFICATION	:- N/A						
STANDARD SPECIFICATION	:- N/A						
ESKOM SPECIFICATION	:- DSP_34-1974						
TEST & CERTIFICATION REQUIREMENTS	:- DSP_34-1974						
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No
IDENTIFICATION:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS							
8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED			P.A.T.	M. NABBIE	T.MARAIS	22.07.2013
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED			P.A.T.	T. MARAIS		12.06.2013
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE
AUTH:	PHIL CROWDY	DATE:	12/98	SCALE	 D-DT-6018		
CHKD:	C.B. CLARK	DATE:	12/98	NTS			
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF:			
				SERIES 6000	SET	SHEET	REV
				FILE No:	9	5	8
				6018			

SPEC SHEET

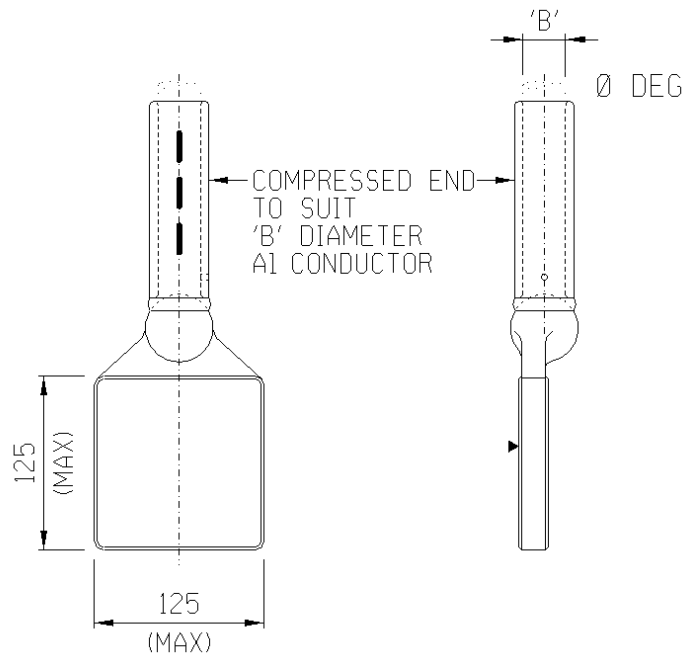
SAP MATERIAL No.:	0570038
SHORT DESCRIPTION:	CLAMP:EPC-G;COMP/PALM ODG;26.5 MM
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM ODG; DIMENSIONS: 80MM X 80MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 26.5 MM; RATED CURRENT 900 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-G; ESKOM DRAWING No. D-DT-6018 *</p>
SAP MATERIAL No.:	0570040
SHORT DESCRIPTION:	CLAMP:EPC-H;COMP/PALM 45DG;26.5 MM
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 45DG; DIMENSIONS: 80MM X 80MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 26.5 MM; RATED CURRENT 900 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-H; ESKOM DRAWING No. D-DT-6018 *</p>
SAP MATERIAL No.:	0570042
SHORT DESCRIPTION:	CLAMP:EPC-J;COMP/PALM 90DG;26.5 MM
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 90DG; DIMENSIONS: 80MM X 80MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 26.5 MM; RATED CURRENT 900 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-J; ESKOM DRAWING No. D-DT-6018 *</p>

8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED	P.A.T.	M. NABBIE	T.MARAIS	22.07.2013				
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED	P.A.T.	T. MARAIS		12.06.2013				
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974	P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011				
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS			
AUTH:	PHIL CROWDY	DATE:	12/98	 D-DT-6018		SAP No:			
CHKD:	C.B. CLARK	DATE:	12/98			0570038	0570042		
DRAWN:	J.F.SCHOLTZ	DATE:	10/98			0570040	SET	SHEET	REV
							9	6	8

SPEC SHEET

SAP MATERIAL No.:	0570039
SHORT DESCRIPTION:	CLAMP:EPC-K;COMP/PALM ODG;38.3 MM
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM ODG; DIMENSIONS: 80MM X 80MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-K; ESKOM DRAWING No. D-DT-6018 *</p>
SAP MATERIAL No.:	0570041
SHORT DESCRIPTION:	CLAMP:EPC-L;COMP/PALM 45DG;38.3 MM
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 45DG; DIMENSIONS: 80MM X 80MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-L; ESKOM DRAWING No. D-DT-6018 *</p>
SAP MATERIAL No.:	0570043
SHORT DESCRIPTION:	CLAMP:EPC-M;COMP/PALM 90DG;38.3 MM
TECH. DESCRIPTION:	<p>CLAMP: TYPE: COMP/PALM 90DG; DIMENSIONS: 80MM X 80MM FOUR HOLE PALM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM DRILLED WITH X4 14MM HOLES; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-M; ESKOM DRAWING No. D-DT-6018 *</p>

8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED	P.A.T.	M. NABBIE	T.MARAIS	22.07.2013		
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED	P.A.T.	T. MARAIS		12.06.2013		
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974	P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/98	 D-DT-6018		SAP No:	
CHKD:	C.B. CLARK	DATE:	12/98			0570039	0570043
DRAWN:	J.F.SCHOLTZ	DATE:	10/98			SET	SHEET
			SCALE NTS				
			CAD REF: SERIES 6000				
			FILE No: 6018				
					9	7	8




NOTE: DRAWING NOT FOR MANUFACTURING PURPOSES

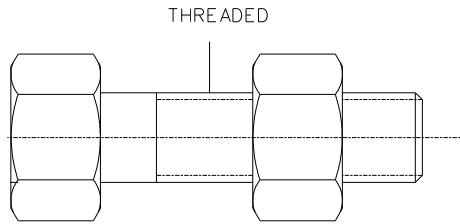
CODE	EQUIPMENT TERMINAL	DIA "B"	ANGLE OF OFFSET	SAP NUMBER
EPC-P	UNDRILLED	38.3	0 DEG	0400413


SAP MATERIAL No.:	0400413
SHORT DESCRIPTION:	CLAMP:EPC-P;COMP/PALM ODG;125MM X 125MM
TECH. DESCRIPTION:	
<p>CLAMP: TYPE: COMP/PALM ODG; DIMENSIONS: 125MM X 125MM; MATERIAL: AL BS1490 GR LM6 CAST; CONDUCTOR SIZE: 38.3 MM; RATED CURRENT 1350 AMP; PALM UNDRILLED; NOTE : OPEN END OF THE FERRULE OF EACH CLAMP SHALL BE PROPERLY SEALED/PLUGGED BY MEANS OF A MALE PVC PLUG TO PREVENT FOREIGN MATERIAL CONTAMINATION; REFERENCE NO: EPC-P; ESKOM DRAWING No. D-DT-6018 *</p>	

ITEM	:- CLAMP, EPC COMP 125MM X 125MM PALM UNDRILLED								
MATERIAL SPECIFICATION	:- GRADE LM6 ALUMINIUM TO BS1490								
CORROSION SPECIFICATION	:- N/A								
STANDARD SPECIFICATION	:- N/A								
ESKOM SPECIFICATION	:- DSP_34-1974								
TEST & CERTIFICATION REQUIREMENTS	:- DSP_34-1974								
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No		
IDENTIFICATION:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS									
8	ESKOM AND TEST SPECS CORRECTED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED			P.A.T.	M. NABBIE	T.MARAIS	22.07.2013		
7	VARIOUS SAP NUMBERS CHANGED AND EPC-C AND EPC-F TO EPC-S ADDED			P.A.T.	T. MARAIS		12.06.2013		
6	DRAWING SHOWN SAME AS SPECIFICATION DSP_34-1974			P.A.T.	T.NKAMBULE	V.SINGH	11.04.2011		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	12/98	SCALE	 D-DT-6018		SAP No:		
CHKD:	C.B. CLARK	DATE:	12/98	NTS			0400413		
DRAWN:	J.F.SCHOLTZ	DATE:	10/98	CAD REF:			SET	SHEET	REV
				SERIES 6000					
				FILE No:					
				6018					


SPEC SHEET

SAP MATERIAL No.:	0400772								
SHORT DESCRIPTION:	STRIP, CU FL 3.0x50mm ANNEALED D6045								
TECH. DESCRIPTION:									
FLAT COPPER STRIP * ANNEALED * 50mm x 3.0mm THICK * 45kg COILS * 138, 4kg/100m * ESKOM DRAWING No. D-DT-6045 *									
ITEM	:- STRIP, CU FL 3.0x50mm ANNEALED D6045								
MATERIAL SPECIFICATION	:- COPPER								
CORROSION SPECIFICATION	:- N/A								
STANDARD SPECIFICATION	:- N/A								
ESKOM SPECIFICATION	:- SABS 182 - 1968								
TEST & CERTIFICATION REQUIREMENTS	:- N/A								
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No		
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS									
3	SAP 0017204 CORRECTED		P.A.T.	D.RAMJASS	D.RAMJASS	26.01.2017			
2	LOGO IN TITLE BLOCK CHANGED AS PER CORPORATE IDENTITY.		VvZ	C.B.C.	C.CLARK	16/02/2004			
1	SFD & SPECS UPDATED		VvZ	C.B.C.	A.BEKKER	10/01			
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DRAWINGS		
AUTH:	PHIL CROWDY	DATE:	12/96	 D-DT-6045		SAP No:			
CHKD:	C.B. CLARK	DATE:	12/96			0400772		SET	SHEET
DRAWN:	J.F.SCHOLTZ	DATE:	10/96			1	1	REV	3
				SCALE					
				NTS					
				CAD REF:					
				SERIES 6000					
				FILE No:					
				6045					

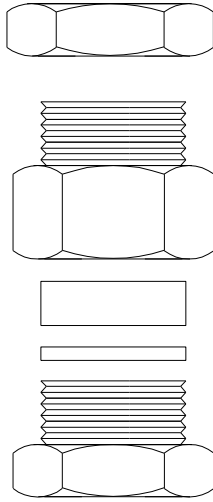


SAP MATERIAL No.:	0403385							
SHORT DESCRIPTION:	BOLT, HX GALV M10x50mm W/HX NUT D6097							
TECH. DESCRIPTION:	<p>HEXAGON HEAD BOLT AND NUT * GRADE 4.8 BOLT * HOT DIPPED GALVANISED * DIMENSIONS : M10 x 1.5-6g x 50mm LONG, SUPPLIED WITH ONE HEXAGON NUT RUN ONTO BOLT COARSE THREAD FREE FIT * ESKOM DRAWING No. D-DT-6097 *</p>							
SAP MATERIAL No.:	0163706							
SHORT DESCRIPTION:	BOLT, HX GALV M16x40mm W/HX NUT D6097							
TECH. DESCRIPTION:	<p>HEXAGON HEAD BOLT AND NUT * GRADE 4.8 BOLT * HOT DIPPED GALVANISED * DIMENSIONS : M16 x 2.0-6g x 40mm LONG, SUPPLIED WITH ONE HEXAGON NUT RUN ONTO BOLT COARSE THREAD FREE FIT * ESKOM DRAWING No. D-DT-6097 *</p>							
SAP MATERIAL No.:	0163715							
SHORT DESCRIPTION:	BOLT, HX GALV M16x45mm W/HX NUT D6097							
TECH. DESCRIPTION:	<p>HEXAGON HEAD BOLT AND NUT * GRADE 4.8 BOLT * HOT DIPPED GALVANISED * DIMENSIONS : M16 x 2.0-6g x 45mm LONG, SUPPLIED WITH ONE HEXAGON NUT RUN ONTO BOLT COARSE THREAD FREE FIT * ESKOM DRAWING No. D-DT-6097 *</p>							
SAP MATERIAL No.:	0163812							
SHORT DESCRIPTION:	BOLT, HX GALV M16x75mm W/HX NUT D6097							
TECH. DESCRIPTION:	<p>HEXAGON HEAD BOLT AND NUT * GRADE 4.8 BOLT * HOT DIPPED GALVANISED * DIMENSIONS : M16 x 2.0-6g x 75mm LONG, SUPPLIED WITH ONE HEXAGON NUT RUN ONTO BOLT COARSE THREAD FREE FIT * ESKOM DRAWING No. D-DT-6097 *</p>							
ITEM	:- BOLT AND NUT D6097							
MATERIAL SPECIFICATION	:- SANS 1700-5-1:2003 / ISO 898-1							
CORROSION SPECIFICATION	:- SANS 121 / ISO 1461							
STANDARD SPECIFICATION	:-							
ESKOM SPECIFICATION	:- N/A							
TEST & CERTIFICATION REQUIREMENTS	:- N/A							
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No	
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS								
4	SAP 0083590 CORRECTED		P.A.T.	D.RAMJASS	D.RAMJASS	25.01.2017		
3	THREAD DIA. AND CORROSION AND STD. SPEC CORRECTED		P.A.V.	B. HILL	B. HILL	22/06/2007		
2	LOGO IN TITLE BLOCK CHANGED AS PER CORPORATE IDENTITY		VvZ	C.B.C.	C.CLARK	16/02/2004		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	10/97	 D-DT-6097		SAP No:		
CHKD:	C.B. CLARK	DATE:	10/97			0403385	0163715	
DRAWN:	J.F.SCHOLTZ	DATE:	09/97			0163706	0163812	
						SET	SHEET	REV
						1	1	4

SPEC SHEET

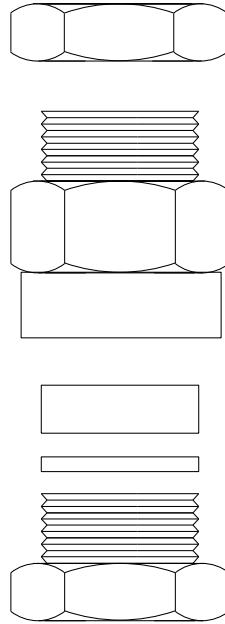
SAP MATERIAL No.:	0402730						
SHORT DESCRIPTION:	BKR,CIRC:GAS;1600 A;66 KV;3;20 KA						
TECH. DESCRIPTION:	<p style="color: red;">BREAKER, CIRCUIT: TYPE: GAS; POTENTIAL: 66 KV; POLE: 3; CURRENT: 1600 A; INTERRUPT CAPACITY: 20 KA; CREEPAGE: 20MM/KV; CONTROL VOLTAGE: 110VDC; ESKOM DRAWING No. D-DT-6251 *</p>						
SAP MATERIAL No.:	0170220						
SHORT DESCRIPTION:	BKR,CIRC:GAS;1600 A;66 KV;3;20 KA						
TECH. DESCRIPTION:	<p style="color: red;">BREAKER, CIRCUIT: TYPE: GAS; POTENTIAL: 66 KV; POLE: 3; CURRENT: 1600 A; INTERRUPT CAPACITY: 20 KA; CREEPAGE: 31MM/KV; CONTROL VOLTAGE: 110VDC; ESKOM DRAWING No. D-DT-6251 *</p>						
SAP MATERIAL No.:	0017543						
SHORT DESCRIPTION:	BKR,CIRC:GAS;2500 A;66 KV;3;25 KA						
TECH. DESCRIPTION:	<p style="color: red;">BREAKER, CIRCUIT: TYPE: GAS; POTENTIAL: 66 KV; POLE: 3; CURRENT: 2500 A; INTERRUPT CAPACITY: 25 KA; CREEPAGE: 20MM/KV; CONTROL VOLTAGE: 110VDC; ESKOM DRAWING No. D-DT-6251 *</p>						
SAP MATERIAL No.:	0170219						
SHORT DESCRIPTION:	BKR,CIRC:GAS;2500 A;66 KV;3;25 KA						
TECH. DESCRIPTION:	<p style="color: red;">BREAKER, CIRCUIT: TYPE: GAS; POTENTIAL: 66 KV; POLE: 3; CURRENT: 2500 A; INTERRUPT CAPACITY: 25 KA; CREEPAGE: 31MM/KV; CONTROL VOLTAGE: 110VDC; ESKOM DRAWING No. D-DT-6251 *</p>						
ITEM	:- BREAKER, CIRCUIT: TYPE: GAS; POTENTIAL: 66 KV;						
MATERIAL SPECIFICATION	:- N/A						
CORROSION SPECIFICATION	:- SANS 121						
STANDARD SPECIFICATION	:- SANS IEC 60694; SANS IEC 62271-100						
ESKOM SPECIFICATION	:- DSP_34-1685						
TEST & CERTIFICATION REQUIREMENTS	:- DSP_34-1685						
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS							
8	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG/SAP	P.A.T.	M.SHUTER	J. CEBEKHULU	30.07.2014		
7	ADDED CONTROL VOLTAGE, UPDATED SPEC REF	P.A.T.	J. J. JORDAAN		20/05/2009		
6	ESKOM SPEC SCSSCABC2 CHANGED TO DSP0007	VvZ	C.CLARK	C.CLARK	20/06/2006		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF DRAWINGS	
AUTH:	PHIL CROWDY	DATE:	02/98	 D-DT-6251		SAP No:	
CHKD:	C.B. CLARK	DATE:	02/98			0402730	0017543
DRAWN:	J.F.SCHOLTZ	DATE:	02/98	1	1	8	

2.2. Control Plant




NOTE :
SKETCH NOT FOR MANUFACTURING PURPOSES.

SAP MATERIAL No.:	0404480						
SHORT DESCRIPTION:	GLAND,CABLE:CABTYRE 16MM2 ;NO 1						
TECH. DESCRIPTION:	<p>GLAND, CABLE: TYPE: CABTYRE 16MM2; SIZE: NO 1; MATERIAL: PVC WHITE; CLASSIFICATION: WEATHER AND WATERPROOF; COMPRESSION GLAND; SUITABLE FOR 16 MM CABTYRE FLEX CABLE; 20MM KNOCKOUT; FITTED WITH NYLON BUSH, RETAINING WASHER AND COMPRESSION NUT; 32.5 MM LONG OVERALL; ESKOM DRAWING No. D-DT-3070 *</p>						
SAP MATERIAL No.:	0168370						
SHORT DESCRIPTION:	GLAND,CABLE:POLYAMIDE 10MM2 ;NO 1						
TECH. DESCRIPTION:	<p>GLAND, CABLE: TYPE: POLYAMIDE 10MM2; SIZE: NO 1; MATERIAL: POLYAMIDE; COMPRESSION GLAND; UV STABILISED; FOR UNARMoured CABLE; 20MM CONDUIT ENTRY; FOR 10MM2 CONCENTRIC CABLE CONDUCTOR; ESKOM DRAWING No. D-DT-3070 *</p>						
ITEM	:- CABLE GLAND NON METALLIC						
MATERIAL SPECIFICATION	:-						
CORROSION SPECIFICATION	:-						
STANDARD SPECIFICATION	:-						
ESKOM SPECIFICATION	:- 34-623						
TEST & CERTIFICATION REQUIREMENTS	:-						
INSPECTION	Yes	No	ESKOM RELEASE NOTE		Yes	No	
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS							
13	VARIOUS SAP NO. UPDATED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED TO PILOG		P.A.T.	J.MAUDU	J.MAUDU	13.01.2015	
12	ESKOM SPEC. 34-623 REMOVED FOR METALLIC GLANDS AND SANS 1213 REMOVED FOR NON METALLIC GLANDS		P.A.T.	B. MWAREHWA	B. MWAREHWA	18.05.2009	
11	ESKOM SPEC 34-623 ADDED		N.M.	J.MAUDU	J.MAUDU	15.05.2008	
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DWGS
AUTH:	P. CROWDY	DATE:	17.05.95		SAP No:		
CHKD:	J. SWAN	DATE:	17.05.95		0404480		
DRAWN:	P.A. VERMAAK	DATE:	30.03.95		0168370		
				D-DT-3070	SET	SHEET	REV
					6	1	13



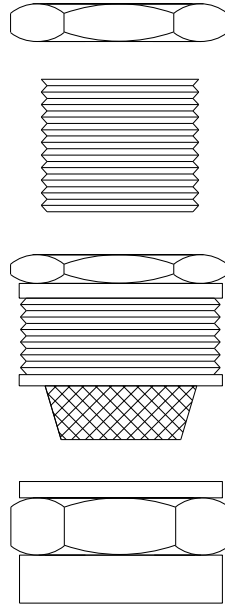
NOTE :
SKETCH NOT FOR MANUFACTURING PURPOSES.

SAP MATERIAL No.:	0404471							
SHORT DESCRIPTION:	GLAND,CABLE:COMPRESSION A2;NO 1							
TECH. DESCRIPTION:	<p>GLAND, CABLE: TYPE: COMPRESSION A2; SIZE: NO 1; MATERIAL: BRS CD PLTD; NIPPLE DIAMETER 20MM; CABLE DIAMETER: 11.0 TO 14.5MM; MOISTURE-PROOF; USED WITH ALL TYPES OF UNARMOURD CABLE; SUPPLIED WITH SHROUD; ESKOM DRAWING No. D-DT-3070 *</p>							
ITEM	:- CABLE GLAND COMPRESSION METALLIC							
MATERIAL SPECIFICATION	:-							
CORROSION SPECIFICATION	:-							
STANDARD SPECIFICATION	:- SANS 1213 (MATERIAL EXCEPTED)							
ESKOM SPECIFICATION	:-							
TEST & CERTIFICATION REQUIREMENTS	:-							
INSPECTION	Yes	No	ESKOM RELEASE NOTE		Yes	No		
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS								
13	VARIOUS SAP NO. UPDATED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED TO PILOG		P.A.T.	J.MAUDU	J.MAUDU	13.01.2015		
12	ESKOM SPEC. 34-623 REMOVED FOR METALLIC GLANDS AND SANS 1213 REMOVED FOR NON METALLIC GLANDS		P.A.T.	B. MWAREHWA	B. MWAREHWA	18.05.2009		
11	ESKOM SPEC 34-623 ADDED		N.M.	J.MAUDU	J.MAUDU	15.05.2008		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P. CROWDY	DATE:	17.05.95	 D-DT-3070		SAP No:		
CHKD:	J. SWAN	DATE:	17.05.95			0404471		
DRAWN:	P.A. VERMAAK	DATE:	30.03.95			SET	SHEET	REV
				3070		6	2	13


SPEC SHEET

SAP MATERIAL No.:	0404469
SHORT DESCRIPTION:	GLAND,CABLE:COMPRESSION A2;NO 2
TECH. DESCRIPTION:	
<p>GLAND, CABLE: TYPE: COMPRESSION A2; SIZE: NO 2; MATERIAL: BRS CD PLTD; CLASSIFICATION: MOISTUREPROOF; NIPPLE DIA. 25 MM; CABLE DIAMETER: 14.5 TO 20.5 MM; USED WITH ALL TYPES OF UNARMOURED CABLE; SUPPLIED WITH SHROUD; ESKOM DRAWING No. D-DT-3070 *</p>	
SAP MATERIAL No.:	0404468
SHORT DESCRIPTION:	GLAND,CABLE:COMPRESSION A2;NO 3
TECH. DESCRIPTION:	
<p>GLAND, CABLE: TYPE: COMPRESSION A2; SIZE: NO 3; MATERIAL: BRS CD PLTD; CLASSIFICATION: MOISTUREPROOF; NIPPLE DIAMETER: 32 MM; CABLE DIAMETER: 20.5 TO 26.5 MM; USED WITH ALL TYPES OF UNARMOURED CABLE; SUPPLIED WITH SHROUD; ESKOM DRAWING No. D-DT-3070 *</p>	
SAP MATERIAL No.:	0136924
SHORT DESCRIPTION:	GLAND,CABLE:COMPRESSION A2;NO 4
TECH. DESCRIPTION:	
<p>GLAND, CABLE: TYPE: COMPRESSION A2; SIZE: NO 4; MATERIAL: BRS CD PLTD; CLASSIFICATION: MOISTURE PROOF; CABLE DIAMETER: 26MM TO 34MM; USED WITH ALL TYPES OF UNARMOURED CABLE; SUPPLIED WITH SHROUD; ESKOM DRAWING No. D-DT-3070 *</p>	
SAP MATERIAL No.:	0404476
SHORT DESCRIPTION:	GLAND,CABLE:COMPRESSION A2;NO 5
TECH. DESCRIPTION:	
<p>GLAND, CABLE: TYPE: COMPRESSION A2; SIZE: NO 5; MATERIAL: BRS CD PLTD; CLASSIFICATION: MOISTUREPROOF; CABLE DIAMETER: 34.0 TO 43.0 MM; USED WITH ALL TYPES OF UNARMOURED CABLE; SUPPLIED WITH SHROUD; ESKOM DRAWING No. D-DT-3070 *</p>	

13	VARIOUS SAP NO. UPDATED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED TO PILOG	P.A.T.	J.MAUDU	J.MAUDU	13.01.2015		
12	ESKOM SPEC. 34-623 REMOVED FOR METALLIC GLANDS AND SANS 1213 REMOVED FOR NON METALLIC GLANDS	P.A.T.	B. MWAREHWA	B. MWAREHWA	18.05.2009		
11	ESKOM SPEC 34-623 ADDED	N.M.	J.MAUDU	J.MAUDU	15.05.2008		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P. CROWDY	DATE:	17.05.95	 D-DT-3070		SAP No:	
CHKD:	J. SWAN	DATE:	17.05.95			0404469	0136924
DRAWN:	P.A. VERMAAK	DATE:	30.03.95			0404468	0404476
				SET	SHEET	REV	
				6	3	13	



NOTE :
SKETCH NOT FOR MANUFACTURING PURPOSES.

SAP MATERIAL No.:		0168367					
SHORT DESCRIPTION:		GLAND,CABLE:ADJUSTABLE;NO 1;BRS CD PLTD					
TECH. DESCRIPTION:							
<p>GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 1; MATERIAL: BRS CD PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STL WIRE ARMoured CABLE; MUST BEAR THE SANS MARK (SANS 1213); FOR USE ON SUBSTATIONS; ESKOM DRAWING No. D-DT-3070 * S *</p>							
ITEM		:- CABLE GLAND ADJUSTABLE METALLIC					
MATERIAL SPECIFICATION		:-					
CORROSION SPECIFICATION		:-					
STANDARD SPECIFICATION		:- SANS 1213 (MATERIAL EXCEPTED)					
ESKOM SPECIFICATION		:-					
TEST & CERTIFICATION REQUIREMENTS :-							
INSPECTION		Yes	No	ESKOM RELEASE NOTE		Yes	No
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS							
13	VARIOUS SAP NO. UPDATED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED TO PILOG			P.A.T.	J.MAUDU	J.MAUDU	13.01.2015
12	ESKOM SPEC. 34-623 REMOVED FOR METALLIC GLANDS AND SANS 1213 REMOVED FOR NON METALLIC GLANDS			P.A.T.	B. MWAREHWA	B. MWAREHWA	18.05.2009
11	ESKOM SPEC 34-623 ADDED			N.M.	J.MAUDU	J.MAUDU	15.05.2008
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE
AUTH:	P. CROWDY	DATE:	17.05.95	SCALE		SAP No:	
CHKD:	J. SWAN	DATE:	17.05.95	NTS		0168367	
DRAWN:	P.A. VERMAAK	DATE:	30.03.95	CAD REF:		SET	SHEET
				SERIES 3000		6	4
				FILE No:		REV	
				3070		13	
				 D-DT-3070			


SPEC SHEET

SAP MATERIAL No.:	0168279							
SHORT DESCRIPTION:	GLAND,CABLE:ADJUSTABLE;NO 2;BRS NI PLTD							
TECH. DESCRIPTION:	<p>GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 2; MATERIAL: BRS NI PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STL WIRE ARMoured CABLE; INTENDED FOR 16 MM2, 2 CORE CABLE; MUST BEAR THE SANS MARK (SANS 1213); FOR SUBSTATION USE; ESKOM DRAWING No. D-DT-3070 * S *</p>							
SAP MATERIAL No.:	0168280							
SHORT DESCRIPTION:	GLAND,CABLE:ADJUSTABLE;NO 3;BRS NI PLTD							
TECH. DESCRIPTION:	<p>GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 3; MATERIAL: BRS NI PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STL WIRE ARMoured CABLE; INTENDED FOR 12 CORE 2.6 MM2, 4 CORE 16 MM2, 3 CORE 25MM2, 4 CORE 25MM2, 2 CORE 35MM2, 4 CORE 35MM2 CABLE; MUST BEAR THE SANS MARK (SANS 1213); FOR SUBSTATION USE; ESKOM DRAWING No. D-DT-3070 * S *</p>							
SAP MATERIAL No.:	0403461							
SHORT DESCRIPTION:	GLAND,CABLE:ADJUSTABLE;NO 4;BRS NI PLTD							
TECH. DESCRIPTION:	<p>GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 4; MATERIAL: BRS NI PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STEEL WIRE ARMoured CABLE; INTENDED FOR 70MM SQ. 3 CORE; MUST BEAR THE SANS MARK (SANS 1213); ESKOM DRAWING No. D-DT-3070 *</p>							
13	VARIOUS SAP NO. UPDATED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED TO PILOG			P.A.T.	J.MAUDU	J.MAUDU	13.01.2015	
12	ESKOM SPEC. 34-623 REMOVED FOR METALLIC GLANDS AND SANS 1213 REMOVED FOR NON METALLIC GLANDS			P.A.T.	B. MWAREHWA	B. MWAREHWA	18.05.2009	
11	ESKOM SPEC 34-623 ADDED			N.M.	J.MAUDU	J.MAUDU	15.05.2008	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	
AUTH:	P. CROWDY	DATE:	17.05.95			SAP No:		
CHKD:	J. SWAN	DATE:	17.05.95			0168279	0403461	
DRAWN:	P.A. VERMAAK	DATE:	30.03.95	D-DT-3070		SET	SHEET	REV
						0168280	6	5

SPEC SHEET

SAP MATERIAL No.:	0175859							
SHORT DESCRIPTION:	GLAND,CABLE:ADJUSTABLE;NO 5;BRS NI PLTD							
TECH. DESCRIPTION:	<p style="color: red;">GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 5; MATERIAL: BRS NI PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STL WIRE ARMoured CABLE; ESKOM DRAWING No. D-DT-3070 *</p>							
SAP MATERIAL No.:	0168368							
SHORT DESCRIPTION:	GLAND,CABLE:ADJUSTABLE;NO 6;BRS NI PLTD							
TECH. DESCRIPTION:	<p style="color: red;">GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 6; MATERIAL: BRS NI PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STL WIRE ARMoured CABLE * INTENDED FOR 150 MM2 4 CORE AND 185 MM2 4 CORE; MUST BEAR THE SANS MARK (SANS 1213); ESKOM DRAWING No. D-DT-3070 *</p>							
SAP MATERIAL No.:	0179962							
SHORT DESCRIPTION:	GLAND,CABLE:ADJUSTABLE;NO 7;BRS NI PLTD							
TECH. DESCRIPTION:	<p style="color: red;">GLAND, CABLE: TYPE: ADJUSTABLE; SIZE: NO 7; MATERIAL: BRS NI PLTD; SUPPLIED WITH SHROUD; USED WITH PVC INSULATED STL WIRE ARMoured CABLE; INTENDED FOR 240 MM2 4 CORE; MUST BEAR THE SANS MARK (1213), ESKOM DRAWING No. D-DT-3070 *</p>							
13	VARIOUS SAP NO. UPDATED AND SHORT AND TECHNICAL DESCRIPTIONS CHANGED TO PILOG			P.A.T.	J.MAUDU	J.MAUDU	13.01.2015	
12	ESKOM SPEC. 34-623 REMOVED FOR METALLIC GLANDS AND SANS 1213 REMOVED FOR NON METALLIC GLANDS			P.A.T.	B. MWAREHWA	B. MWAREHWA	18.05.2009	
11	ESKOM SPEC 34-623 ADDED			N.M.	J.MAUDU	J.MAUDU	15.05.2008	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	
AUTH:	P. CROWDY	DATE:	17.05.95	 Eskom		SAP No:		
CHKD:	J. SWAN	DATE:	17.05.95			0175859	0179962	
DRAWN:	P.A. VERMAAK	DATE:	30.03.95			0168368	SET	SHEET
				D-DT-3070		6	6	13
								3070

SPEC SHEET

SAP MATERIAL No.:	0403351							
SHORT DESCRIPTION:	CABLE,ELECT:BVV1TCV 1,0KV 1C;CU;240 MM2							
TECH. DESCRIPTION:	CABLE, ELECTRICAL: TYPE: BVV1TCV 1,0KV 1C; CONDUCTOR: CU; CONDUCTOR SIZE: 240 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: ALUMINIUM WIRE ARMoured; 1 CORE STRANDED COPPER CONDUCTOR; 300M DRUM, REFERENCE NO: BVV1TCV; ESKOM DRAWING No. D-DT-3128 *							
SAP MATERIAL No.:	0403113							
SHORT DESCRIPTION:	CABLE,ELECT:BVV1WCV 1,0KV 1C;CU;500 MM2							
TECH. DESCRIPTION:	CABLE, ELECTRICAL: TYPE: BVV1WCV 1,0KV 1C; CONDUCTOR: CU; CONDUCTOR SIZE: 500 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: ALUMINIUM WIRE ARMoured; 1 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM, REFERENCE NO: BVV1WCV; ESKOM DRAWING No. D-DT-3128 *							
ITEM	:- CABLE,1KV 1C, 2C,3C, 4C, 7C, 12C, 19C CU							
MATERIAL SPECIFICATION	:-							
CORROSION SPECIFICATION	:-							
STANDARD SPECIFICATION	:- SANS 1507, NRS 074-1							
ESKOM SPECIFICATION	:- ESP 32-1272							
TEST & CERTIFICATION REQUIREMENTS	:-							
INSPECTION	Yes	No	ESKOM RELEASE NOTE			Yes	No	
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS DRUM TO BE STAMPED/MARKED								
17	ESKOM SPECIFICATION UPDATED		P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015		
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMoured AND NRS 074-1 STD. SPEC ADDED		P.A.T.	J. MAUDU	J. MAUDU	12.05.2015		
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG		P.A.T.	M. SHUTER	J. MAUDU	16.05.2013		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P. CROWDY	DATE:	20.03.1998	 D-DT-3128		SAP No:		
CHKD:	D. PILLAY	DATE:	20.03.1998			0403351		
DRAWN:	P.A. VERMAAK	DATE:	09-04-96			0403113		
						SET	SHEET	REV
						7	1	17

SPEC SHEET

SAP MATERIAL No.:	0404122
SHORT DESCRIPTION:	CABLE,ELECT:BVX2ECV 1,0KV 2C;CU;4 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX2ECV 1,0KV 2C; CONDUCTOR: CU; CONDUCTOR SIZE: 4 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 2 CORE STRANDED COPPER CONDUCTOR; 500 M DRUM; REFERENCE NO: BVX2ECV; ESKOM DRAWING No. D-DT-3128 *	

SAP MATERIAL No.:	0014474
SHORT DESCRIPTION:	CABLE,ELECT:BVX2HCV 1,0KV 2C;CU;16 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX2HCV 1,0KV 2C; CONDUCTOR: CU; CONDUCTOR SIZE: 16 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 2 CORE STRANDED COPPER CONDUCTOR; 500M DRUM; REFERENCE NO: BVX2HCV; ESKOM DRAWING No. D-DT-3128 *	

SAP MATERIAL No.:	0403473
SHORT DESCRIPTION:	CABLE,ELECT:BVX2KCV 1,0KV 2C;CU;25 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX2KCV 1,0KV 2C; CONDUCTOR: CU; CONDUCTOR SIZE: 25 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 2 CORE STRANDED COPPER CONDUCTOR; 300M DRUM, REFERENCE NO: BVX2KCV; ESKOM DRAWING No. D-DT-3128 *	


SAP MATERIAL No.:	0404634
SHORT DESCRIPTION:	CABLE,ELECT:BVX2LCV 1,0KV 2C;CU;35 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX2LCV 1,0KV 2C; CONDUCTOR: CU; CONDUCTOR SIZE: 35 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 2 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM; REFERENCE NO: BVX2LCV; ESKOM DRAWING No. D-DT-3128 *	

17	ESKOM SPECIFICATION UPDATED	P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015	
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMoured AND NRS 074-1 STD. SPEC ADDED	P.A.T.	J. MAUDU	J. MAUDU	12.05.2015	
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG	P.A.T.	M. SHUTER	J. MAUDU	16.05.2013	

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS
AUTH:	P. CROWDY	DATE:	20.03.1998	 D-DT-3128	SAP No:	
CHKD:	D. PILLAY	DATE:	20.03.1998		0404122	0403473
DRAWN:	P.A. VERMAAK	DATE:	09-04-96		0014474	0404634
				SET	SHEET	REV
				7	2	17

SPEC SHEET


SAP MATERIAL No.:	0404103
SHORT DESCRIPTION:	CABLE,ELECT:BVX3HVC 1,0KV 3C;CU;16 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX3HVC 1,0KV 3C; CONDUCTOR: CU; CONDUCTOR SIZE: 16 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 3 CORE STRANDED COPPER CONDUCTOR; 300M DRUM, REFERENCE NO: BVX3HVC; ESKOM DRAWING No. D-DT-3128 *	
SAP MATERIAL No.:	0171198
SHORT DESCRIPTION:	CABLE,ELECT:BVX3KCV 1,0KV 3C;CU;25 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX3KCV 1,0KV 3C; CONDUCTOR: CU; CONDUCTOR SIZE: 25 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 3 CORE STRANDED COPPER CONDUCTOR; 300M DRUM; REFERENCE NO: BVX3KCV; ESKOM DRAWING No. D-DT-3128 *	
SAP MATERIAL No.:	0404489
SHORT DESCRIPTION:	CABLE,ELECT:BVX3LCV 1,0KV 3C;CU;35 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX3LCV 1,0KV 3C; CONDUCTOR: CU; CONDUCTOR SIZE: 35 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 3 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM; REFERENCE NO: BVX3LCV; ESKOM DRAWING No. D-DT-3128 *	
SAP MATERIAL No.:	0171333
SHORT DESCRIPTION:	CABLE,ELECT:BVX3NCV 1,0KV 3C;CU;70 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX3NCV 1,0KV 3C; CONDUCTOR: CU; CONDUCTOR SIZE: 70 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 3 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM, REFERENCE NO: BVX3NCV; ESKOM DRAWING No. D-DT-3128 *	

17	ESKOM SPECIFICATION UPDATED	P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015		
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMoured AND NRS 074-1 STD. SPEC ADDED	P.A.T.	J. MAUDU	J. MAUDU	12.05.2015		
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG	P.A.T.	M. SHUTER	J. MAUDU	16.05.2013		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P. CROWDY	DATE:	20.03.1998	 D-DT-3128		SAP No:	
CHKD:	D. PILLAY	DATE:	20.03.1998			0404103	0404489
DRAWN:	P.A. VERMAAK	DATE:	09-04-96			0171198	0171333
				SET	SHEET	REV	
				7	3	17	

SPEC SHEET

SAP MATERIAL No.:	0400646							
SHORT DESCRIPTION:	CABLE,ELECT:BVX4DCV 1,0KV 4C;CU;2.5 MM2							
TECH. DESCRIPTION:								
CABLE, ELECTRICAL: TYPE: BVX4DCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 2.5 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 500M DRUM; FOR SUBSTATION USE; REFERENCE NO: BVX4DCV; ESKOM DRAWING No. D-DT-3128 *								
SAP MATERIAL No.:	0404764							
SHORT DESCRIPTION:	CABLE,ELECT:BVX4ECV 1,0KV 4C;CU;4 MM2							
TECH. DESCRIPTION:								
CABLE, ELECTRICAL: TYPE: BVX4ECV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 4 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 500M DRUM; SUBSTATION USE; REFERENCE NO: BVX4ECV; ESKOM DRAWING No. D-DT-3128 *								
SAP MATERIAL No.:	0404766							
SHORT DESCRIPTION:	CABLE,ELECT:BVX4HCV 1,0KV 4C;CU;16 MM2							
TECH. DESCRIPTION:								
CABLE, ELECTRICAL: TYPE: BVX4HCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 16 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 500 METRE DRUM; SUBSTATION USE; REFERENCE NO: BVX4HCV; ESKOM DRAWING No. D-DT-3128 *								
SAP MATERIAL No.:	0404767							
SHORT DESCRIPTION:	CABLE,ELECT:BVX4KCV 1,0KV 4C;CU;25 MM2							
TECH. DESCRIPTION:								
CABLE, ELECTRICAL: TYPE: BVX4KCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 25 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM; REFERENCE NO: BVX4KCV; ESKOM DRAWING No. D-DT-3128 * S *								
17	ESKOM SPECIFICATION UPDATED			P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015	
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMoured AND NRS 074-1 STD. SPEC ADDED			P.A.T.	J. MAUDU	J. MAUDU	12.05.2015	
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG			P.A.T.	M. SHUTER	J. MAUDU	16.05.2013	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DWGS
AUTH:	P. CROWDY	DATE:	20.03.1998	SCALE		SAP No:		
				NTS		0400646 0404766		
CHKD:	D. PILLAY	DATE:	20.03.1998	CAD REF:		0404764 0404767		
				SERIES 3000		SET	SHEET	REV
DRAWN:	P.A. VERMAAK	DATE:	09-04-96	FILE No:		7	4	17
				3128				

SPEC SHEET


SAP MATERIAL No.:	0400639						
SHORT DESCRIPTION:	CABLE,ELECT:BVX4LCV 1,0KV 4C;CU;35 MM2						
TECH. DESCRIPTION:	CABLE, ELECTRICAL: TYPE: BVX4LCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 35 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300M DRUM; REFERENCE NO: BVX4LCV; ESKOM DRAWING No. D-DT-3128 *						
SAP MATERIAL No.:	0403353						
SHORT DESCRIPTION:	CABLE,ELECT:BVX4MCV 1,0KV 4C;CU;50 MM2						
TECH. DESCRIPTION:	CABLE, ELECTRICAL: TYPE: BVX4MCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 50 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM, REFERENCE NO: BVX4MCV; ESKOM DRAWING No. D-DT-3128 *						
SAP MATERIAL No.:	0400641						
SHORT DESCRIPTION:	CABLE,ELECT:BVX4NCV 1,0KV 4C;CU;70 MM2						
TECH. DESCRIPTION:	CABLE, ELECTRICAL: TYPE: BVX4NCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 70 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300M DRUM; REFERENCE NO: BVX4NCV; ESKOM DRAWING No. D-DT-3128 *						
SAP MATERIAL No.:	0403090						
SHORT DESCRIPTION:	CABLE,ELECT:BVX4QCV 1,0KV 4C;CU;120 MM2						
TECH. DESCRIPTION:	CABLE, ELECTRICAL: TYPE: BVX4QCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 120 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR: 300M DRUM, REFERENCE NO: BVX4QCV; ESKOM DRAWING No. D-DT-3128 *						
17	ESKOM SPECIFICATION UPDATED			P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMoured AND NRS 074-1 STD. SPEC ADDED			P.A.T.	J. MAUDU	J. MAUDU	12.05.2015
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG			P.A.T.	M. SHUTER	J. MAUDU	16.05.2013
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE
AUTH:	P. CROWDY	DATE:	20.03.1998	SCALE		SAP No:	
				NTS		0400639	
CHKD:	D. PILLAY	DATE:	20.03.1998	CAD REF:		0400641	
				SERIES 3000		0403090	
DRAWN:	P.A. VERMAAK	DATE:	09-04-96	FILE No:		SET	SHEET
				3128		7	5
				 D-DT-3128		REV	17

SPEC SHEET

SAP MATERIAL No.:	0404119
SHORT DESCRIPTION:	CABLE,ELECT:BVX4RCV 1,0KV 4C;CU;150 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX4RCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 150 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM; REFERENCE NO: BVX4RCV; ESKOM DRAWING No. D-DT-3128 *	

SAP MATERIAL No.:	0403094
SHORT DESCRIPTION:	CABLE,ELECT:BVX4SCV 1,0KV 4C;CU;185 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX4SCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 185 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM, REFERENCE NO: BVX4SCV; ESKOM DRAWING No. D-DT-3128 *	

SAP MATERIAL No.:	0171185
SHORT DESCRIPTION:	CABLE,ELECT:BVX4TCV 1,0KV 4C;CU;240 MM2
TECH. DESCRIPTION:	
CABLE, ELECTRICAL: TYPE: BVX4TCV 1,0KV 4C; CONDUCTOR: CU; CONDUCTOR SIZE: 240 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMoured; 4 CORE STRANDED COPPER CONDUCTOR; 300 M DRUM, REFERENCE NO: BVX4TCV; ESKOM DRAWING No. D-DT-3128 *	

17	ESKOM SPECIFICATION UPDATED	P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015	
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMoured AND NRS 074-1 STD. SPEC ADDED	P.A.T.	J. MAUDU	J. MAUDU	12.05.2015	
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG	P.A.T.	M. SHUTER	J. MAUDU	16.05.2013	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DWGS
AUTH:	P. CROWDY	DATE:	20.03.1998	 D-DT-3128	SAP No:	
CHKD:	D. PILLAY	DATE:	20.03.1998		0404119	0171185
DRAWN:	P.A. VERMAAK	DATE:	09-04-96		0403094	
					SET	SHEET
					7	6
						REV
						17

SPEC SHEET

SAP MATERIAL No.:	0404761								
SHORT DESCRIPTION:	CABLE,ELECT:BVX12DCV 1,0KV 12C;CU;PVC								
TECH. DESCRIPTION:									
CABLE, ELECTRICAL: TYPE: BVX12DCV 1,0KV 12C; CONDUCTOR: CU; CONDUCTOR SIZE: 2.5 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMOURED; 12 CORE STRANDED COPPER CONDUCTOR; 500M DRUM; SUBSTATION USE; REFERENCE NO: BVX12DCV; ESKOM DRAWING No. D-DT-3128 *									
SAP MATERIAL No.:	0404118								
SHORT DESCRIPTION:	CABLE,ELECT:BVX19DCV 1.0KV 19C;CU;PVC								
TECH. DESCRIPTION:									
CABLE, ELECTRICAL: TYPE: BVX19DCV 1.0KV 19C; CONDUCTOR: CU; CONDUCTOR SIZE: 2.5 MM2; CONDUCTOR INSULATION: PVC; COVERING: PVC OUTER SHEATH; RATING: 0.6/1 KVAC; ARMOR: STEEL WIRE ARMOURED; 19 CORE STRANDED COPPER CONDUCTOR; 500 M DRUM; SUBSTATION USE; REFERENCE NO: BVX19DCV; ESKOM DRAWING No. D-DT-3128 *									
17	ESKOM SPECIFICATION UPDATED			P.A.T.	Q. KHUMALO	T. DU PLESSIS	09.10.2015		
16	0403351 AND 0403113 CHANGED TO ALUMINIUM WIRE ARMOURED AND NRS 074-1 STD. SPEC ADDED			P.A.T.	J. MAUDU	J. MAUDU	12.05.2015		
15	SHORT AND TECHNICAL DESCRIPTIONS CHANGED ACCORDING TO PILOG			P.A.T.	M. SHUTER	J. MAUDU	16.05.2013		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DWGS	
AUTH:	P. CROWDY	DATE:	20.03.1998			SAP No:			
						0404761			
						0404118			
CHKD:	D. PILLAY	DATE:	20.03.1998	D-DT-3128		SET	SHEET	REV	
						7	7	17	
DRAWN:	P.A. VERMAAK	DATE:	09-04-96						

SPEC SHEET

SAP MATERIAL No.:	0248556
SHORT DESCRIPTION:	SCHEME, PROT 4FZ3920 110VDC 1A 3P D9051


TECH. DESCRIPTION:

4FZ3920 PRODUCTION UNIT SCHEME THREE-POLE FOR 110 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 THREE-POLE TRIPPING (FOR SINGLE MECHANISM CB's) *
 DISTANCE PROTECTION; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER
 FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *
 INCLUDING :-
 - 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE RELAY, SPA BUS FIBRE REA COMM *
 - 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
 - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
 - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
 - EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
 - MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007 *
 TO SPECIFY :-
 - 5 AMP CT CIRCUIT IF REQUIRED *
 EXCLUDES :-
 - DIFFERENTIAL FUNCTION ON RED670 RELAY OPTION *
 - SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
 - DISTURBANCE RECORDER EXTERNAL OPTION *
 - TELEPROTECTION AND COMMUNICATION INTERNAL CARD ON RED670 RELAY OPTION *
 - VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR OPTION *
 - BYPASS CT PRIMARY PLANT OPTION *
 - 110/48V DC CONVERTER FOR POWER LINE CARRIER INTERFACE *
 - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
 - INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTIONS *
 - AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
 - SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
 - TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTIONS *
 - CRATING FOR SCHEME TRANSPORT *
 - SWING FRAME PANEL *
 ESKOM DRAWING No. D-DT-9051 *

ITEM	:-	SCHEME, PROT 4FZ39x0/4FZD39x0
MATERIAL SPECIFICATION	:-	REFER TO ESKOM SPEC
CORROSION SPECIFICATION	:-	REFER TO ESKOM SPEC
STANDARD SPECIFICATION	:-	REFER TO ESKOM SPEC
ESKOM SPECIFICATION	:-	DSP 34-1288 REV0
TEST & CERTIFICATION REQUIREMENTS	:-	REFER TO ESKOM SPEC

INSPECTION	Yes	No	ESKOM RELEASE NOTE	Yes	No
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IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS


REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
0	First issue			A.C.	S.v.Z	A.C	Mar 2010		
AUTH:	A.M.A.Craib	DATE:	1 March 2010	 D-DT-9051		SAP No:			
CHKD:	S.J. van Zyl	DATE:	2 March 2010			0248556			
DRAWN:	A.M.A.Craib	DATE:	1 March 2010			SET	SHEET	REV	
							29	1	0

SPEC SHEET

SAP MATERIAL No.:	0248558
SHORT DESCRIPTION:	SCHEME, PROT 4FZD3920 110VDC 1A 3P D9051

TECH. DESCRIPTION:

4FZD3920 PRODUCTION UNIT SCHEME THREE-POLE FOR 110 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 THREE-POLE TRIPPING (FOR SINGLE MECHANISM CB's) *
 DISTANCE/DIFFERENTIAL PROTECTION; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *
 INCLUDING :-
 - 1x RED670 (VERSION 1.1) MAIN PROTECTION DIST/DIFF RELAY, SPA BUS FIBRE REA COMM *
 - 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
 - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
 - 1550nm 27Db OB INTERNAL TELEPROTECTION AND COMMUNICATION FIBRE CARD (LDCM1) *
 - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
 - EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
 - MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007 *
 TO SPECIFY :-
 - 5 AMP CT CIRCUIT IF REQUIRED *
 - AN ALTERNATIVE FIBRE TELEPROTECTION AND COMMUNICATION CARD IF REQUIRED *
 EXCLUDES :-
 - SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
 - DISTURBANCE RECORDER EXTERNAL OPTION *
 - VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR *
 - BYPASS CT PRIMARY PLANT OPTION *
 - 110/48V DC CONVERTOR FOR POWER LINE CARRIER INTERFACE *
 - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
 - INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTION *
 - AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
 - SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
 - TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTIONS *
 - CRATING FOR SCHEME TRANSPORT *
 - SWING FRAME PANEL *
 ESKOM DRAWING No. D-DT-9051 *

0	First issue	A.C.	S.v.Z	A.C	Mar 2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010		SAP No:		
CHKD:	S.J. van Zyl	DATE:	2 March 2010		0248558		
DRAWN:	A.M.A. Craib	DATE:	1 March 2010		SET	SHEET	REV
				D-DT-9051	29	3	0

SPEC SHEET

SAP MATERIAL No.:	0248559
SHORT DESCRIPTION:	SCHEME, PROT 4FZD3940 110VDC 1A 1P D9051

TECH. DESCRIPTION:

4FZD3940 PRODUCTION UNIT SCHEME SINGLE-POLE FOR 110 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 SINGLE-POLE TRIPPING (FOR TRIPLE MECHANISM CB's) *
 DISTANCE/DIFFERENTIAL PROTECTION ; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *
 INCLUDING :-

- 1x RED670 (VERSION 1.1) MAIN PROTECTION DIST/DIFF RELAY, SPA BUS FIBRE REA COMM *
- 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
- DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
- 1550nm 27Db OB INTERNAL TELEPROTECTION AND COMMUNICATION FIBRE CARD (LDCM1) *
- PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
- EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
- MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15008 *


TO SPECIFY :-

- 5 AMP CT CIRCUIT IF REQUIRED *
- AN ALTERNATIVE FIBRE TELEPROTECTION AND COMMUNICATION CARD IF REQUIRED *

EXCLUDES :-

- SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
- DISTURBANCE RECORDER EXTERNAL OPTION *
- VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR *
- BYPASS CT PRIMARY PLANT OPTION *
- 110/48V DC CONVERTOR FOR POWER LINE CARRIER INTERFACE *
- IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
- INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTION *
- AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
- SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
- TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTIONS *
- CRATING FOR SCHEME TRANSPORT *
- SWING FRAME PANEL *

ESKOM DRAWING No. D-DT-9051 *

0	First issue	A.C.	S.v.Z	A.C	Mar 2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010	 D-DT-9051	SAP No:		
CHKD:	S.J. van Zyl	DATE:	2 March 2010		0248559		
DRAWN:	A.M.A. Craib	DATE:	1 March 2010		SET	SHEET	REV
					29	4	0

SPEC SHEET

SAP MATERIAL No.:	0248560
SHORT DESCRIPTION:	SCHEME, PROT 4FZ3920 220VDC 1A 3P D9051

TECH. DESCRIPTION:

4FZ3920 PRODUCTION UNIT SCHEME THREE-POLE FOR 220 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 THREE-POLE TRIPPING (FOR SINGLE MECHANISM CB's) *
 DISTANCE PROTECTION ; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER
 FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *

INCLUDING :-

- 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE RELAY, SPA BUS FIBRE REA COMM *
- 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
- DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
- PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
- EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
- MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007 *


TO SPECIFY :-

- 5 AMP CT CIRCUIT IF REQUIRED *

EXCLUDES :-

- DIFFERENTIAL FUNCTION ON RED670 RELAY OPTION *
- SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
- DISTURBANCE RECORDER EXTERNAL OPTION *
- TELEPROTECTION AND COMMUNICATION INTERNAL CARD ON RED670 RELAY OPTION *
- VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR *
- BYPASS CT PRIMARY PLANT OPTION *
- 110/48V DC CONVERTOR FOR POWER LINE CARRIER INTERFACE *
- IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
- INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTION *
- AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
- SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
- TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTIONS *
- CRATING FOR SCHEME TRANSPORT *
- SWING FRAME PANEL *

ESKOM DRAWING No. D-DT-9051 *


0		First issue		A.C.	S.v.Z	A.C	Mar 2010		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE NTS		 D-DT-9051	SAP No:		
CHKD:	S.J. van Zyl	DATE:	2 March 2010	CAD REF:			0248560		
				SERIES 9000			SET	SHEET	REV
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:		29	5	0	
				9051					

SPEC SHEET

SAP MATERIAL No.:	0248561
SHORT DESCRIPTION:	SCHEME, PROT 4FZ3940 220VDC 1A 1P D9051

TECH. DESCRIPTION:

4FZ3940 PRODUCTION UNIT SCHEME SINGLE POLE FOR 220 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 SINGLE-POLE TRIPPING (FOR TRIPLE MECHANISM CB's) *
 DISTANCE PROTECTION; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER
 FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *
 INCLUDING :-
 - 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE RELAY, SPA BUS FIBRE REA COMM *
 - 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
 - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
 - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
 - EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
 - MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15008 *
 TO SPECIFY :-
 - 5 AMP CT CIRCUIT IF REQUIRED *
 EXCLUDES :-
 - DIFFERENTIAL FUNCTION ON RED670 RELAY OPTION *
 - SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
 - DISTURBANCE RECORDER EXTERNAL OPTION *
 - TELEPROTECTION AND COMMUNICATION INTERNAL CARD ON RED670 RELAY OPTION *
 - VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR *
 - BYPASS CT PRIMARY PLANT OPTION *
 - 110/48V DC CONVERTOR FOR POWER LINE CARRIER INTERFACE *
 - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
 - INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTION *
 - AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
 - SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
 - TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTIONS *
 - CRATING FOR SCHEME TRANSPORT *
 - SWING FRAME PANEL*
 ESKOM DRAWING No. D-DT-9051 *


0	First issue	A.C.	S.v.Z	A.C	Mar 2010			
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS		
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE	 D-DT-9051	SAP No:		
CHKD:	S.J. van Zyl	DATE:	2 March 2010	NTS		0248561		
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	CAD REF:		SET	SHEET	REV
				SERIES 9000		29	6	0
				FILE No:				
				9051				

SPEC SHEET

SAP MATERIAL No.:	0248562
SHORT DESCRIPTION:	SCHEME, PROT 4FZD3920 220VDC 1A 3P D9051

TECH. DESCRIPTION:

4FZD3920 PRODUCTION UNIT SCHEME THREE-POLE FOR 110 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 THREE-POLE TRIPPING (FOR SINGLE MECHANISM CB's) *
 DISTANCE/DIFFERENTIAL PROTECTION; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *
 INCLUDING :-
 - 1x RED670 (VERSION 1.1) MAIN PROTECTION DIST/DIFF RELAY, SPA BUS FIBRE REA COMM *
 - 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
 - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
 - 1550nm 27Db OB INTERNAL TELEPROTECTION AND COMMUNICATION FIBRE CARD (LDCM1) *
 - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
 - EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
 - MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007 *
 TO SPECIFY :-
 - 5 AMP CT CIRCUIT IF REQUIRED *
 - AN ALTERNATIVE FIBRE TELEPROTECTION AND COMMUNICATION CARD IF REQUIRED VIA SAP *
 EXCLUDES :-
 - SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
 - DISTURBANCE RECORDER EXTERNAL OPTION *
 - VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR *
 - BYPASS CT PRIMARY PLANT OPTION *
 - 110/48V DC CONVERTOR FOR POWER LINE CARRIER INTERFACE *
 - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
 - INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTION *
 - AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
 - SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
 - TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTION *
 - CRATING FOR SCHEME TRANSPORT *
 - SWING FRAME PANEL *
 ESKOM DRAWING No. D-DT-9051 *

0		First issue		A.C.	S.v.Z	A.C	Mar 2010		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE NTS		 D-DT-9051	SAP No:		
CHKD:	S.J. van Zyl	DATE:	2 March 2010	CAD REF:			0248562		
				SERIES 9000			SET	SHEET	REV
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:		29	7	0	
				9051					


SPEC SHEET

SAP MATERIAL No.:	0248563
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SHORT DESCRIPTION:	SCHEME, PROT 4FZD3940 220VDC 1A 1P D9051
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TECH. DESCRIPTION:

4FZD3940 PRODUCTION UNIT SCHEME SINGLE-POLE FOR 220 VOLT DC WITH 1AMP CT INPUTS *
 19INCH RACK; 23U ENCLOSURE AND 22U BACKPLATE *
 SINGLE-POLE TRIPPING (FOR TRIPLE MECHANISM CB's) *
 DISTANCE/DIFFERENTIAL PROTECTION; DIRECTIONAL OVERCURRENT AND EARTH FAULT PROTECTION; BREAKER FAIL; AUTO-RECLOSE; SYNCHRO-CHECK; MEASUREMENT CIRCUIT *
 INCLUDING :-
 - 1x RED670 (VERSION 1.1) MAIN PROTECTION DIST/DIFF RELAY, SPA BUS FIBRE REA COMM *
 - 1x REF615 DIRECTIONAL BACK-UP PROTECTION RELAY WITH O/C, E/F, FIBRE LC REA COMM *
 - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
 - 1550nm 27Db OB INTERNAL TELEPROTECTION AND COMMUNICATION FIBRE CARD (LDCM1) *
 - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM *
 - EXTERNAL TIME SYNCHRONISATION INPUT ON BACK-UP PROTECTION RELAY *
 - MATERIAL, SCHEME ASSEMBLY AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15008 *
 TO SPECIFY :-
 - 5 AMP CT CIRCUIT IF REQUIRED *
 - AN ALTERNATIVE FIBRE TELEPROTECTION AND COMMUNICATION CARD IF REQUIRED VIA SAP *
 EXCLUDES :-
 - SUPERVISORY HARDWIRED CONTROLS AND ALARMS OPTION *
 - DISTURBANCE RECORDER EXTERNAL OPTION *
 - VOLTAGE SELECTOR RELAYS FOR DOUBLE BUSBAR *
 - BYPASS CT PRIMARY PLANT OPTION *
 - 110/48V DC CONVERTOR FOR POWER LINE CARRIER INTERFACE *
 - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS OPTION *
 - INTERNAL/EXTERNAL TIME SYNCHRONISATION ON RED670 RELAY OPTION *
 - AMMETER AND VOLTMETER (0-5mA) INSTRUMENTS 48mm, 90deg. BLANK SCALE *
 - SPECIFICATION OF VALUES FOR PRE-CALIBRATION OF VOLT & AMP METERS *
 - TRANSDUCER THREE-PHASE OR SINGLE-PHASE OPTIONS *
 - CRATING FOR SCHEME TRANSPORT *
 - SWING FRAME PANEL *
 ESKOM DRAWING No. D-DT-9051 *

0	First issue	A.C.	S.v.Z	A.C	Mar 2010	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS
AUTH:	A.M.A. Craib	DATE:	1 March 2010		SAP No:	
CHKD:	S.J. van Zyl	DATE:	2 March 2010		0248563	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010		D-DT-9051	SET
					29	8
						REV
						0


SPEC SHEET

SAP MATERIAL No.:	0248571
SHORT DESCRIPTION:	X21 TELEPROTECTION OPTION, PROT D9051
TECH. DESCRIPTION:	
<p>X21 INTERNAL TELEPROTECTION AND COMMUNICATION CARD FOR ABB RED670 MAIN RELAY * (ORDERED AS THE MICROWAVE LINK OPTION TOGETHER WITH THE 4FZ3920/4FZ3940 SCHEMES) * INCLUDES :- - PLACEMENT OF CARD 1MRK002307-AA WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS PLUG POINT (D-15 MICRO) * EXCLUDES :- - X21 PORT PLUG ADAPTOR OPTION (D-15 MICRO TO D-15 ADAPTOR) * ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248572
SHORT DESCRIPTION:	FIBRE TELEPROT 1550nm OPTION, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 1550nm FOR ABB RED670 MAIN RELAY * 100km LINK SPECIFICATION WITH OPTICAL BUDGET 27dB, MODES HIGH/LOW POWER * (ORDERED AS A FIBRE LINK OPTION TOGETHER WITH THE 4FZ3920 OR 4FZ3940 SCHEMES) * INCLUDES :- - PLACEMENT OF CARD 1MRK002311-BA WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS FIBRE PLUG POINTS WITH SINGLE MODE FC CONNECTORS * SPECIFY :- - IF IN-LINE ATTENUATION IS REQUIRED * ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248573
SHORT DESCRIPTION:	FIBRE TELEPROT 1310nm OPTION, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 1310nm FOR ABB RED670 MAIN RELAY * 40km LINK SPECIFICATION WITH OPTICAL BUDGET 23dB, MODES HIGH/LOW POWER * (ORDERED AS A FIBRE LINK OPTION TOGETHER WITH THE 4FZ3920 OR 4FZ3940 SCHEMES) * (ORDERED AS A REPLACEMENT OF THE DEFAULT 1550nm CARD WITH THE 4FZD3920/40 SCHEMES) * (ORDERED AS A REPLACEMENT OF THE DEFAULT 1550nm CARD WITH THE RED670 DIST/DIFF RELAY) * INCLUDES :- - PLACEMENT OF CARD 1MRK002311-AA WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS FIBRE PLUG POINTS WITH SINGLE MODE FC CONNECTORS * SPECIFY :- - IF IN-LINE ATTENUATION IS REQUIRED * ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248574
SHORT DESCRIPTION:	ATTENUATOR IN-LINE FIBRE, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE ATTENUATORS FOR COMM. CARDS 1310nm AND 1550nm FOR ABB RED670 MAIN RELAY * (TO BE ORDERED ONLY IF EXCESSIVE DB POWER RECEIVED, CALCULATION TO BE PROVEN PRIOR TO ORDER DISPATCHED) * SPECIFY :- - THE OPTICAL BUDGET CALCULATION RESULTS ESKOM DRAWING No. D-DT-9051 *</p>	

0	First issue	A.C. BY	S.v.Z CHKD	A.C AUTH	Mar 2010	DATE	REF. DRAWINGS	
REV	REVISION DESCRIPTION							
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE		SAP No:		
CHKD:	S.J. van Zyl	DATE:	2 March 2010	NTS		0248571	0248574	
				CAD REF:		0248572		
				SERIES 9000	D-DT-9051	SET	SHEET	REV
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:		29	10	0
				9051				


SPEC SHEET

SAP MATERIAL No.:	0248575
SHORT DESCRIPTION:	FIBRE TELEPROT 3km OPTION, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 3km FOR ABB RED670 MAIN RELAY * 3km LINK SPECIFICATION SHORT RANGE * (ORDERED AS A FIBRE LINK OPTION TOGETHER WITH THE 4FZ3920 OR 4FZ3940 SCHEMES) * (ORDERED AS A REPLACEMENT OF THE DEFAULT 1550nm CARD WITH THE 4FZD3920/40 SCHEMES) * (ORDERED AS REPLACEMENT OF THE DEFAULT 1550nm CARD WITH THE RED670 DIST/DIFF RELAY) *</p> <p>INCLUDES :-</p> <ul style="list-style-type: none"> - PLACEMENT OF CARD 1MRK002122-AB WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS MULTIMODE FIBRE PLUG POINTS WITH MULTIMODE ST CONNECTORS * <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248576
SHORT DESCRIPTION:	X21 TELEPROTECTION RETROFIT, PROT D9051
TECH. DESCRIPTION:	
<p>X21 INTERNAL TELEPROTECTION AND COMMUNICATION CARD FOR ABB RED670 MAIN RELAY * (ORDERED AS A RETROFIT TO A RED670 RELAY WHICH HAD NO CARD BEFORE, Ex WORKS) *</p> <p>INCLUDES :-</p> <ul style="list-style-type: none"> - PLACEMENT OF CARD 1MRK002307-AA WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS PLUG POINT (D-15 MICRO) * <p>EXCLUDES :-</p> <ul style="list-style-type: none"> - X21 PORT PLUG ADAPTOR OPTION (D-15 MICRO TO D-15 ADAPTOR) <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248577
SHORT DESCRIPTION:	FIBRE TELEPT RETROFIT 1550nm, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 1550nm FOR ABB RED670 MAIN RELAY * 100km LINK SPECIFICATION WITH OPTICAL BUDGET 27dB, MODES HIGH/LOW POWER * (ORDERED AS A RETROFIT TO A RED670 RELAY WHICH HAD NO CARD BEFORE, Ex WORKS) *</p> <p>INCLUDES :-</p> <ul style="list-style-type: none"> - PLACEMENT OF CARD 1MRK002311-BA WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS FIBRE PLUG POINTS WITH SINGLE MODE FC CONNECTORS * <p>SPECIFY :-</p> <ul style="list-style-type: none"> - IF IN-LINE ATTENUATION IS REQUIRED * <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248992
SHORT DESCRIPTION:	PORT PLUG ADAPTOR X21OPTION,PROT D9051
TECH. DESCRIPTION:	
<p>X21 COMMUNICATION CARD PORT PLUG ADAPTOR D-15 MICRO (MALE) TO D-15 (FEMALE) *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>	

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REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE	 D-DT-9051		
CHKD:	S.J. van Zyl	DATE:	2 March 2010	NTS			
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	CAD REF:			
				SERIES 9000	SAP No:	0248992	
				FILE No:	0248575	0248576	
				9051	0248577	0248577	
					SET	SHEET	REV
					29	11	0


SPEC SHEET

SAP MATERIAL No.:	0248578
SHORT DESCRIPTION:	FIBRE TELEPT RETROFIT 1310nm, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 1310nm FOR ABB RED670 MAIN RELAY * 40km LINK SPECIFICATION WITH OPTICAL BUDGET 23dB, MODES HIGH/LOW POWER * (ORDERED AS A RETROFIT TO A RED670 RELAY WHICH HAD NO CARD BEFORE, Ex WORKS) * INCLUDES :</p> <ul style="list-style-type: none"> - PLACEMENT OF CARD 1MRK002311-AA WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS FIBRE PLUG POINTS WITH SINGLE MODE FC CONNECTORS * <p>SPECIFY :- - IF IN-LINE ATTENUATION IS REQUIRED * ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248579
SHORT DESCRIPTION:	FIBRE TELEPROT RETROFIT 3km, PROT D9051
TECH. DESCRIPTION:	
<p>FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 3km FOR ABB RED670 MAIN RELAY * 3km LINK SPECIFICATION SHORT RANGE * (ORDERED AS A RETROFIT TO A RED670 RELAY WHICH HAD NO CARD BEFORE, Ex WORKS) * INCLUDES :</p> <ul style="list-style-type: none"> - PLACEMENT OF CARD 1MRK002122-AB WITHIN RED670 RELAY * - INITIALISING OF INTERNAL COMMUNICATION CARD SLOT (LDCM1) * - REAR ACCESS MULTIMODE FIBRE PLUG POINTS WITH MULTIMODE ST CONNECTORS <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248580
SHORT DESCRIPTION:	EXT. TIME SYNCH INTERFACE OPTION D9051
TECH. DESCRIPTION:	
<p>TIME SYNCHRONISATION EXTERNAL IRIG-B002 INTERFACE MODULE FOR ABB RED670 MAIN RELAY * (ORDERED AS AN ALTERNATIVE OPTION TO THE INTERNAL TIME SYNCH GPS ON THE RED670) * (THIS OPTION MAY NOT BE ORDERED IF THE INTERNAL TIME SYNCH OPTION IS ORDERED) * BACK-UP RELAY HAS DEFAULT EXTERNAL IRIG-B INTERFACE * INCLUDES :</p> <ul style="list-style-type: none"> - PLACEMENT AND INITIALISING OF CARD 1MRK002305-AA WITHIN RED670 RELAY * - WIRING TO BACKPLATE * <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248581
SHORT DESCRIPTION:	INT. TIME SYNCH GPS OPTION, 20m D9051
TECH. DESCRIPTION:	
<p>TIME SYNCHRONISATION INTERNAL GPS MODULE 1MRK002282-AA FOR ABB RED670 MAIN RELAY * (ORDERED AS AN ALTERNATIVE OPTION TO THE EXTERNAL TIME SYNCH ON THE RED670) * (THIS OPTION MAY NOT BE ORDERED IF THE EXTERNAL TIME SYNCH OPTION IS ORDERED) * BACK-UP RELAY HAS DEFAULT EXTERNAL IRIG-B INTERFACE * INCLUDES :</p> <ul style="list-style-type: none"> - PLACEMENT AND INITIALISING OF CARD 1MRK002282-AA WITHIN RED670 RELAY * - EXTERNAL AERIAL AND MOUNTING BRACKET (1MRK001640-AA) * - IN-LINE LIGHTNING ARRESTOR * - CABLE OF LENGTH 20m (1MRK002245-AA) * <p>ESKOM DRAWING No. D-DT-9051 *</p>	

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REV	REVISION DESCRIPTION					BY	CHKD	AUTH	DATE		REF. DRAWINGS					
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE				SAP No: 0248578 0248579 0248580		0248581						
CHKD:	S.J. van Zyl	DATE:	2 March 2010	CAD REF:												
				SERIES 9000												
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:		D-DT-9051		SET	SHEET	REV						
				9051				29	12	0						


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SAP MATERIAL No.:	0248582
SHORT DESCRIPTION:	INT. TIME SYNCH GPS OPTION, 40m D9051
TECH. DESCRIPTION:	
<p>TIME SYNCHRONISATION INTERNAL GPS MODULE 1MRK002282-AA FOR ABB RED670 MAIN RELAY * (ORDERED AS AN ALTERNATIVE OPTION TO THE EXTERNAL TIME SYNCH ON THE RED670) * (THIS OPTION MAY NOT BE ORDERED IF THE EXTERNAL TIME SYNCH OPTION IS ORDERED) * BACK-UP RELAY HAS DEFAULT EXTERNAL IRIG-B INTERFACE *</p> <p>INCLUDES :</p> <ul style="list-style-type: none"> - PLACEMENT AND INITIALISING OF CARD 1MRK002282-AA WITHIN RED670 RELAY * - EXTERNAL AERIAL AND MOUNTING BRACKET (1MRK001640-AA) * - IN-LINE LIGHTNING ARRESTOR * - CABLE OF LENGTH 40m (1MRK002245-BA) * <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248583
SHORT DESCRIPTION:	IEC61850 SCADA OPTION, PROT D9051
TECH. DESCRIPTION:	
<p>ALTERNATIVE IED COMMUNICATION INTERFACE IEC61850 SCADA OPTION FOR 4FZ39x0/4FZD39x0 * REPLACES OFFICIAL ESKOM USED SCADA DNP3 PROTOCOL ON ABB RED670 AND REF615 RELAYS *</p> <p>INCLUDES :</p> <p>REAR GALVANIC COMMUNICATION PORT:- RJ45 CONNECTOR *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248584
SHORT DESCRIPTION:	DNP3 SCADA FIBRE OPTION, PROT D9051
TECH. DESCRIPTION:	
<p>ALTERNATIVE IED COMM. FIBRE INTERFACE DNP3 SCADA OPTION FOR 4FZ39x0/4FZD39x0* REPLACES THE DEFAULT GALVANIC DNP3 COMMUNICATION PORT WITH A FIBRE DNP3 PORT *</p> <p>INCLUDES :</p> <p>REAR FIBRE PORT FOR SCADA COMMUNICATION VIA DNP3 PROTOCOL *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>	

SAP MATERIAL No.:	0248585
SHORT DESCRIPTION:	IEC61850 REA AND TESTING, PROT D9051
TECH. DESCRIPTION:	
<p>IEC61850 REMOTE ENGINEERING ACCESS VIA ETHERNET AND LOCAL TESTING OPTION * (ALTERNATIVE TO THE DEFAULT SPABUS PLASTIC FIBRE REMOTE ENG. ACCESS (REA) ON RED670) * (ALT. TO THE DEFAULT ETHERNET MULTIMODE FIBRE LC REAR PORT REA ON REF615 RELAY) * MATERIAL AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007/8 *</p> <p>INCLUDES :</p> <ul style="list-style-type: none"> - REAR MOUNTED RUGGEDCOM RS900-HI 8 PORT SWITCH (6 GALVANIC/3 FIBRE PORTS) * - TWO ETHERNET RJ45 LINKS BETWEEN FRONT PANEL AND SWITCH * - IEC61850 REA FIBRE PORT ON RED670 RELAY WHICH REPLACES THE SPABUS REAR PORT * - IEC61850 REA GALVANIC PORT (RJ45) ON REF615 RELAY WHICH REPLACES THE FIBRE LC REAR PORT * - WIRING OF SWITCH TO SCHEME * <p>ESKOM DRAWING No. D-DT-9051 *</p>	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010	NTS				0248582	0248585	
				CAD REF:				0248583		
				SERIES 9000		D-DT-9051		SET	SHEET	REV
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:				29	13	0
				9051						


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SAP MATERIAL No.:	0248586
SHORT DESCRIPTION:	PSUPPLY TELEPROT 24-250/48VDC,PROT D9051
TECH. DESCRIPTION:	
DC/DC 24-250/48V CONVERTER REGULATED SUPPLY FOR EXTERNAL TELEPROTECTION * MATERIAL AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007/8 * CONVERTER ABB (1MRK 000 592-A) MAY BE USED FOR xFx39xx, xFZD39x0 SCHEMES * (REQUIRED IF NO 48V DC BATTERY BANK AVAILABLE AND USING EXTERNAL TELEPROTECTION) * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248587
SHORT DESCRIPTION:	THREE TERMINAL DIFF OPTION, PROT D9051
TECH. DESCRIPTION:	
THREE-TERMINAL DIFFERENTIAL PROTECTION OPTION FOR SCHEMES 3FZD3920/3FZD3940 * (MAY BE REQUIRED WHEN PROTECTING A THREE-TERMINAL CONFIGURATION WITH FIBRE LINKS) * INCLUDES : - AN ADDITIONAL FIBRE TELEPROTECTION AND COMMUNICATION CARD (LDCM2) * - PLACEMENT AND INITIALISING OF THE FIBRE CARD WITHIN THE RED670 RELAY * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248588
SHORT DESCRIPTION:	RELAY,VOLT SELECT BUS-BAR, PROT D9051
TECH. DESCRIPTION:	
BUSBAR VOLTAGE SELECTION RELAYS (RK 251 205-AN) FOR xFx39xx, xFZD39x0 SCHEMES * (REQUIRED FOR DOUBLE BUSBAR VT SELECTION) * INCLUDES : - 2x RXMVB 2 FOR 110V DC * SPECIFY : - 220V DC VERSION AVAILABLE IF REQUIRED – WHEN ORDERED WITH A SCHEME THE D.C. RATING SHALL BE MATCHED TO THE SCHEME RATING * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248589
SHORT DESCRIPTION:	SINGLE-PHASE CT&VT TRNSDCRS, PROT D9051
TECH. DESCRIPTION:	
SUPPLY OF SINGLE-PHASE CT AND VT TRANSducers OPTION * (AN ALTERNATIVE TO 3 PHASE TRANSducer FOR SUPPLY OF PANEL ANALOGUE METERS) * INCLUDES : - 2 x AC VOLTAGE CAMILLE BAUER SINEAX U 543 TRANSducers. ORDER: 137 142 * - WIRING OF TRANSducers INTO SCHEME CIRCUITS TO ESKOM MASTER DRAWINGS D-DT-15007/8 * ESKOM DRAWING No. D-DT-9051 *	

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REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010			SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248586	0248589	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			0248587		
				D-DT-9051		SET	SHEET	REV
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SAP MATERIAL No.:	0248590
SHORT DESCRIPTION:	THREE-PHASE TRNSDUCER OPTION, PROT D9051
TECH. DESCRIPTION:	
SUPPLY OF THREE-PHASE TRANSDUCER OPTION * (AN ALTERNATIVE TO SINGLE PHASE TRANSDUCERS FOR SUPPLY OF PANEL ANALOGUE METERS) * (REQUIRED IF METERING MEASUREMENT TRANSDUCER IS TO RESIDE IN FEEDER PANEL) * INCLUDES : - 1 x CAMILLE BAUER SINEAX CAM TRANSUCER, ORDER 158734 * - WIRING OF TRANSDUCER INTO SCHEME CIRCUITS TO ESKOM MASTER DRAWINGS D-DT-15007/8 * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248591
SHORT DESCRIPTION:	INSTALLATION OF ISSUED TRANSDUCER, D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * INSTALLATION OF FREE ISSUE TRANSDUCER ACCORDING TO ESKOM MASTER DRAWINGS D-DT-15007/8 INTO 4FZ39x0 AND 4FZD39x0 SCHEMES * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248593
SHORT DESCRIPTION:	V&I ANALOGUE METERS, TRANSDCER FED D9051
TECH. DESCRIPTION:	
EXTERNAL POWER CONTRACTORS CA/VA ANALOGUE AMMETER AND VOLTMETER (48x48mm) * (REQUIRED FOR EXTERNAL METERS OPTION OF SCHEMES 4FZ39x0 AND 4FZD39x0) * INCLUDES : - UNSCALED INSTRUMENT * - MOUNTING OF INSTRUMENT AND WIRING WITHIN THE SCHEME * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248595
SHORT DESCRIPTION:	CALIBRATION OF CURRENT METER 200/1 D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 200/1, 5mA = 200A, FULL SCALE DEFLECTION = 300A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

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REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS
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CHKD:	S.J. van Zyl	DATE:	3 March 2010		0248590	0248595
DRAWN:	A.M.A. Craib	DATE:	1 March 2010		CAD REF:	
					FILE No:	0248593
				SET	SHEET	REV
				29	15	0

SPEC SHEET

SAP MATERIAL No.:	0248602
SHORT DESCRIPTION:	CALIBRATION OF CURRENT METER 400/1 D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 400/1, 5mA = 400A, FULL SCALE DEFLECTION = 600A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248603
SHORT DESCRIPTION:	CALIBRATION OF CURRENT METER 600/1 D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 600/1, 5mA = 600A, FULL SCALE DEFLECTION = 900A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248604
SHORT DESCRIPTION:	CALIBRATION OF CURRENT METER 800/1 D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 800/1, 5mA = 800A, FULL SCALE DEFLECTION = 1200A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248605
SHORT DESCRIPTION:	CALIBRATION OF CURRENT METER 1200/1, D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 1200/1, 5mA = 1200A, FULL SCALE DEFLECTION = 1800A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

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				NTS		
CHKD:	S.J. van Zyl	DATE:	3 March 2010	CAD REF:	SAP No: 0248602 0248603 0248604	
				SERIES 9000		
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:	SET	SHEET
				9051	29	16
				D-DT-9051	REV	0


SPEC SHEET

SAP MATERIAL No.:	0248606
SHORT DESCRIPTION:	CALIBRATN OF CURRENT METER 1600/1, D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 1600/1, 5Ma = 1600A, FULL SCALE DEFLECTION = 2400A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248607
SHORT DESCRIPTION:	CALIBRATN OF CURRENT METER 2000/1, D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 2000/1, 5Ma = 2000A, FULL SCALE DEFLECTION = 3000A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248608
SHORT DESCRIPTION:	CALIBRATN OF CURRENT METER 2400/1, D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL CURRENT METER OPTION * CT RATIO 2400/1, 5Ma = 2400A, FULL SCALE DEFLECTION = 3600A * INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248609
SHORT DESCRIPTION:	CALIBRATION OF VOLTAGE METER 66kV D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL VOLTAGE METER OPTION * VT RATIO 110/66000, 5Ma = 66Kv, FULL SCALE DEFLECTION = 80Kv INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

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0	First issue				A.C.	S.v.Z	A.C	Mar 2010	
AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE	 D-DT-9051		SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010	CAD REF:			0248606	0248609	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	FILE No:			0248607	SET	SHEET
				9051			29	17	0

SPEC SHEET


SAP MATERIAL No.:	0248610
SHORT DESCRIPTION:	CALIBRATION OF VOLTAGE METER 88kV D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL VOLTAGE METER OPTION * VT RATIO 110/88000, 5mA = 88kV, FULL SCALE DEFLECTION = 106.7kV INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248611
SHORT DESCRIPTION:	CALIBRATION OF VOLTAGE METER 132kV D9051
TECH. DESCRIPTION:	
NON STOCK ITEM FOR COSTING PURPOSES * CALIBRATION AND MARKING OF THE ANALOGUE FRONT PANEL VOLTAGE METER OPTION * VT RATIO 110/132000, 5mA = 132kV, FULL SCALE DEFLECTION = 160kV INCLUDES : - CALIBRATION OF METER WHEN 4FZ39x0 OR 4FZD39x0 SCHEMES ORDERED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248612
SHORT DESCRIPTION:	BYPASS CT SHORTING OPTION, PROT D9051
TECH. DESCRIPTION:	
PRIMARY PLANT BYPASS, SECONDARY CT RELAY SHORTING OPTION FOR SCHEMES 4FZ39x0 AND 4FZD39x0 * INCLUDES : - 2 x ARTHECHE BJ8 FLIP-FLOP RELAYS * - SCHEME MATERIAL AND WIRING TO ESKOM MASTER DRAWINGS D-DT-15007/8 * RELAY AUXILIARY SUPPLY RATING CHOSEN TO MATCH SCHEME RATING * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248613
SHORT DESCRIPTION:	REGIONAL TRAINING, PROT D9051
TECH. DESCRIPTION:	
REGIONAL TRAINING OF GROUPS OF 15 CANDIDATES PER WEEK FOR SCHEMES 4FZ39x0/4FZD39x0 * INCLUDES : - MAXIMUM OF 15 CANDIDATES PER TRAINING SESSION * - TRAINING TO BE HELD WITHIN THE REGION * - DURATION PER TRAINING SESSION IS ONE WEEK * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248614
SHORT DESCRIPTION:	SOFTWARE CORPORATE LICENCE, PROT D9051
TECH. DESCRIPTION:	
CORPORATE LICENCE FOR IED SOFTWARE, PCM600 ESKOM DRAWING No. D-DT-9051 *	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010		SCALE	0248610	0248613
DRAWN:	A.M.A. Craib	DATE:	1 March 2010		NTS	0248611	0248614
				SERIES 9000	D-DT-9051		SET
				FILE No:	29	18	REV
				9051	0		

SPEC SHEET (SPARES)

SAP MATERIAL No.:	0248615
SHORT DESCRIPTION:	RED670 DIST 110VDC 1A, PROT D9051

TECH. DESCRIPTION:

MAIN PROTECTION RELAY 110V DC, 1AMP CT INPUTS, ABB RED670 DISTANCE RELAY *

INCLUDING :-

- 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE RELAY WITH 4 ZONES IMPEDANCE *
- SPA BUS FIBRE REMOTE ENGINEERING ACCESS COMMUNICATION PORT *
- DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
- PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM OUTPUT *

TO SPECIFY :-

- 5 AMP CT CIRCUIT IF REQUIRED *
- IEC61850 TESTING AND REMOTE ENGINEERING ACCESS PORT (REPLACEMENT OF SPA BUS PORT) *

EXCLUDES :-

- DIFFERENTIAL FUNCTION ON RED670 RELAY OPTION *
- SUPERVISORY CONTROLS & ALARMS DISCRETE CARD OPTION (FOR HARDWIRED SUPERVISORY) *
- DISTURBANCE RECORDER EXTERNAL DISCRETE CARD OPTION *
- TELEPROTECTION AND COMMUNICATION INTERNAL CARD OPTION *
- INTERNAL/EXTERNAL TIME SYNCHRONISATION RELAY OPTIONS *

ESKOM DRAWING No. D-DT-9051 *

SAP MATERIAL No.:	0248616
SHORT DESCRIPTION:	RED670 DIST/DIFF 110VDC 1A, PROT D9051

TECH. DESCRIPTION:

MAIN PROTECTION RELAY 110V DC, 1AMP CT INPUTS, ABB RED670 DISTANCE/DIFFERENTIAL RELAY *

INCLUDING :-

- 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE/DIFFERENTIAL RELAY *
- SPA BUS FIBRE REMOTE ENGINEERING ACCESS COMMUNICATION PORT *
- DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL *
- 1550nm 27Db OB INTERNAL TELEPROTECTION AND COMMUNICATION FIBRE CARD (LDCM1) *
- PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM OUTPUT *


TO SPECIFY :-

- 5 AMP CT CIRCUIT IF REQUIRED *
- AN ALTERNATIVE FIBRE TELEPROTECTION AND COMMUNICATION CARD IF REQUIRED – SEE SAP NUMBERS XXX OR XXX *
- IEC61850 TESTING AND REMOTE ENGINEERING ACCESS PORT (REPLACEMENT OF SPA BUS PORT) *

EXCLUDES :-

- SUPERVISORY CONTROLS & ALARMS DISCRETE CARD OPTION (FOR HARDWIRED SUPERVISORY) *
- DISTURBANCE RECORDER EXTERNAL DISCRETE CARD OPTION *
- INTERNAL/EXTERNAL TIME SYNCHRONISATION RELAY OPTIONS *


ESKOM DRAWING No. D-DT-9051 *

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AUTH:	A.M.A. Craib	DATE:	1 March 2010			SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248615 0248616		
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	D-DT-9051		SET	SHEET	REV
						9051	29	19

SPEC SHEET (SPARES)


SAP MATERIAL No.:	0248617
SHORT DESCRIPTION:	REF615 O/C&E/F 48-250VDC 1/5A PROT D9051
TECH. DESCRIPTION:	
BACK-UP PROTECTION RELAY, ABB REF615 DIRECTIONAL O/C AND E/F RELAY * INCLUDING :- - 1x REF615 RELAY, SETTABLE DC VOLTAGE RANGE 48-250V DC AND CT 1/5AMP INPUTS * - FIBRE LC REMOTE ENGINEERING ACCESS COMMUNICATION (REAR PORT) * - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION AND CONTROL * - I/O FOR SUPERVISORY HARDWIRED CONTROL AND INDICATION * TO SPECIFY :- - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS PORT (REPLACEMENT OF FIBRE LC REAR PORT) * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248618
SHORT DESCRIPTION:	RED670 DIST 220VDC 1A, PROT D9051
TECH. DESCRIPTION:	
MAIN PROTECTION RELAY 220V DC, 1AMP CT INPUTS, ABB RED670 DISTANCE RELAY * INCLUDING :- - 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE RELAY WITH 4 ZONES IMPEDANCE * - SPA BUS FIBRE REMOTE ENGINEERING ACCESS COMMUNICATION PORT * - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL * - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM OUTPUT * TO SPECIFY :- - 5 AMP CT CIRCUIT IF REQUIRED * - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS PORT (REPLACEMENT OF SPA BUS PORT) * * EXCLUDES :- - DIFFERENTIAL FUNCTION ON RED670 RELAY OPTION * - SUPERVISORY CONTROLS & ALARMS DISCRETE CARD OPTION (FOR HARDWIRED SUPERVISORY) * - DISTURBANCE RECORDER EXTERNAL DISCRETE CARD OPTION * - TELEPROTECTION AND COMMUNICATION INTERNAL CARD OPTION * - INTERNAL/EXTERNAL TIME SYNCHRONISATION RELAY OPTIONS * ESKOM DRAWING No. D-DT-9051 *	

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REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DRAWINGS	
AUTH:	A.M.A. Craib	DATE:	1 March 2010			SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248617	0248618	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			D-DT-9051		SET
						29	20	0

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SAP MATERIAL No.:	0248619
SHORT DESCRIPTION:	RED670 DIST/DIFF 220VDC 1A, PROT D9051
TECH. DESCRIPTION:	
MAIN PROTECTION RELAY 220V DC, 1AMP CT INPUTS, ABB RED670 DISTANCE/DIFFERENTIAL RELAY * INCLUDING :- - 1x RED670 (VERSION 1.1) MAIN PROTECTION DISTANCE/DIFFERENTIAL RELAY * - SPA BUS FIBRE REMOTE ENGINEERING ACCESS COMMUNICATION PORT * - DNP3 PROTOCOL ON RS-485 FOR SCADA INDICATION & CONTROL * - 1550nm 27Db OB INTERNAL TELEPROTECTION AND COMMUNICATION FIBRE CARD (LDCM1) * - PROTECTION NOT HEALTHY HARDWIRED SUPERVISORY ALARM OUTPUT * TO SPECIFY :- - 5 AMP CT CIRCUIT IF REQUIRED * - AN ALTERNATIVE FIBRE TELEPROTECTION AND COMMUNICATION CARD IF REQUIRED – SEE SAP NUMBERS XXX OR XXX * - IEC61850 TESTING AND REMOTE ENGINEERING ACCESS PORT (REPLACEMENT OF SPA BUS PORT) * EXCLUDES :- - SUPERVISORY CONTROLS & ALARMS DISCRETE CARD OPTION (FOR HARDWIRED SUPERVISORY) * - DISTURBANCE RECORDER EXTERNAL DISCRETE CARD OPTION * - INTERNAL/EXTERNAL TIME SYNCHRONISATION RELAY OPTIONS * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248620
SHORT DESCRIPTION:	X21 TELEPROTECTION CARD, PROT D9051
TECH. DESCRIPTION:	
X21 INTERNAL TELEPROTECTION AND COMM. CARD FOR ABB RED670 MAIN RELAY * INCLUDES :- - CONNECTOR TYPE: GALVANIC 15 PIN CONNECTORS (D-15 MICRO) * - CARD ABB 1MRK002307-AA * EXCLUDES :- - X21 PORT PLUG ADAPTOR (D-15 MICRO TO D-15 ADAPTOR) ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248621
SHORT DESCRIPTION:	X21 PORT PLUG ADAPTOR, PROT D9051
TECH. DESCRIPTION:	
X21 COMMUNICATION CARD PORT PLUG ADAPTOR D-15 MICRO (MALE) TO D-15 (FEMALE) * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248622
SHORT DESCRIPTION:	FIBRE TELEPROT CARD 1550NM, PROT D9051
TECH. DESCRIPTION:	
FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 1550nm FOR ABB RED670 MAIN RELAY * 100km SINGLE MODE LINK SPECIFICATION WITH OPTICAL BUDGET 27dB, MODES HIGH/LOW POWER * INCLUDES :- - CONNECTOR TYPE: SINGLE MODE FC CONNECTORS * - CARD ABB 1MRK002311-BA ESKOM DRAWING No. D-DT-9051 *	

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AUTH:	A.M.A. Craib	DATE:	1 March 2010	 D-DT-9051		SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248619	0248622	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			0248620	0248621	
						SET	SHEET	REV
						29	21	0

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SAP MATERIAL No.:	0248623
SHORT DESCRIPTION:	FIBRE TELEPROT CARD 1310NM, PROT D9051
TECH. DESCRIPTION:	
FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 1310nm FOR ABB RED670 MAIN RELAY * 40km SINGLE MODE LINK SPECIFICATION WITH OPTICAL BUDGET 23dB, MODES HIGH/LOW POWER * INCLUDES :- - CONNECTOR TYPE: SINGLE MODE FC CONNECTORS * - CARD ABB 1MRK002311-AA ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248624
SHORT DESCRIPTION:	FIBRE TELEPROT CARD 3KM, PROT D9051
TECH. DESCRIPTION:	
FIBRE INTERNAL TELEPROTECTION AND COMM. CARD 3km FOR ABB RED670 MAIN RELAY * 3km MULTIMODE LINK SPECIFICATION * INCLUDES :- - CONNECTOR TYPE: MULTIMODE ST CONNECTORS * - CARD ABB 1MRK002122-AB * ESKOM DRAWING No. D-DT-9051 *	


SAP MATERIAL No.:	0248625
SHORT DESCRIPTION:	IEC61850 ETHERNET SWITCH, PROT D9051
TECH. DESCRIPTION:	
IEC61850 REMOTE ENGINEERING ACCESS ETHERNET SWITCH * INCLUDES :- - RUGGEDCOM ETHERNET SWITCH TYPE: RS900-HI-D-MTMTMT * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248626
SHORT DESCRIPTION:	DNP3 SCADA RS485 CARD, PROT D9051
TECH. DESCRIPTION:	
DNP3 SCADA TELECOMMUNICATION CARD (RS485) FOR ABB RED670 MAIN RELAY * INCLUDES :- - CARD ABB 1MRK002309-AA * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248627
SHORT DESCRIPTION:	REA SPA PROTOCOL OPTICAL CARD, D9051
TECH. DESCRIPTION:	
REMOTE ENGINEERING ACCESS SPA PROTOCOL CARD (OPTICAL) FOR ABB RED670 MAIN RELAY * INCLUDES :- - CARD ABB 1MRK001608-AA * ESKOM DRAWING No. D-DT-9051 *	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248623	0248626
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	CAD REF:	0248624	0248627	
				SERIES 9000	0248625		
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SAP MATERIAL No.:	0248628									
SHORT DESCRIPTION:	REA IEC61850 PROTOCOL OPTICAL CARD,D9051									
TECH. DESCRIPTION:										
REMOTE ENGINEERING ACCESS IEC61850 PROTOCOL CARD (OPTICAL) FOR ABB RED670 MAIN RELAY *										
INCLUDES :-										
- CARD ABB 1MRK002266 *										
ESKOM DRAWING No. D-DT-9051 *										
SAP MATERIAL No.:	0248629									
SHORT DESCRIPTION:	BINARY I/O MODULE CARD, PROT D9051									
TECH. DESCRIPTION:										
BINARY 110V DC INPUT/OUTPUT MODULE CARD FOR ABB RED670 MAIN RELAY *										
INCLUDES :-										
- CARD ABB 1MRK000173-B *										
SPECIFY :-										
- ALTERNATIVE INPUT VOLTAGE: 220V DC = 'C' IF REQUIRED *										
ESKOM DRAWING No. D-DT-9051 *										
SAP MATERIAL No.:	0248630									
SHORT DESCRIPTION:	BINARY INPUT MODULE CARD, PROT D9051									
TECH. DESCRIPTION:										
BINARY 110V DC INPUT MODULE CARD FOR ABB RED670 MAIN RELAY *										
INCLUDES :-										
- CARD ABB 1MRK000508-B *										
SPECIFY :-										
- ALTERNATIVE INPUT VOLTAGES: 48V DC = 'A', OR 220V DC = 'C' IF REQUIRED *										
ESKOM DRAWING No. D-DT-9051 *										
SAP MATERIAL No.:	0248631									
SHORT DESCRIPTION:	BINARY OUTPUT MODULE CARD, PROT D9051									
TECH. DESCRIPTION:										
BINARY OUTPUT MODULE CARD FOR ABB RED670 MAIN RELAY *										
INCLUDES :-										
- CARD ABB 1MRK000614-AB *										
ESKOM DRAWING No. D-DT-9051 *										
SAP MATERIAL No.:	0248632									
SHORT DESCRIPTION:	POWER SUPPLY UNIT RED670, PROT D9051									
TECH. DESCRIPTION:										
POWER SUPPLY UNIT (90 – 250V DC) FOR ABB RED670 MAIN RELAY *										
INCLUDES :-										
- UNIT ABB 1MRK002239-BB										
ESKOM DRAWING No. D-DT-9051 *										
0	First issue				A.C.	S.v.Z	A.C	Mar 2010		
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AUTH:	A.M.A. Craib	DATE:	1 March 2010	SCALE				SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010	NTS				0248628	0248631	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	CAD REF:	0248629	0248632				
				SERIES 9000	0248630					
				FILE No:	SET	SHEET	REV			
				9051	D-DT-9051	29	23	0		

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SAP MATERIAL No.:	0248633
SHORT DESCRIPTION:	CURRENT/VOLTAGE MODULE RED670, D9051
TECH. DESCRIPTION: TRANSFORMER CURRENT AND VOLTAGE INPUT MODULE FOR ABB RED670 MAIN RELAY * CURRENT INPUT RATED 1A, VOLTAGE INPUT RATED 110V * INCLUDES :- - INPUT MODULE 6U + 6I * SPECIFY :- - 5A RATED CURRENT INPUT IF REQUIRED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248635
SHORT DESCRIPTION:	RELAY AUX ABB RXMB1, PROT D9051
TECH. DESCRIPTION: AUXILIARY RELAY ABB RXMB1 - 1MRK000803-110V DC FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - SPARE INDEPENDENT COIL AND CONTACTS (VARIANT B) * SPECIFY :- - ALTERNATIVE 220V DC VOLTAGE IF REQUIRED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248636
SHORT DESCRIPTION:	RELAY AUX ABB RXMA1, PROT D9051
TECH. DESCRIPTION: AUXILIARY RELAY ABB RXMA1 - RK211 073-AN (110V-125V) DC FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - BUILT IN SERIES RESISTOR * SPECIFY :- - ALTERNATIVE VOLTAGE 220V-250V DC = 'AS' IF REQUIRED * ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248637
SHORT DESCRIPTION:	RELAY AUX, SCHRACK, PROT D9051
TECH. DESCRIPTION: AUXILIARY RELAY SCHRACK TYPE MT321110 (110V DC) FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - MOUNTING BASE * SPECIFY :- - ALTERNATIVE VOLTAGES: 220V DC = 'MT321220', 48V DC = 'MT321048' IF REQUIRED * ESKOM DRAWING No. D-DT-9051 *	


SAP MATERIAL No.:	0248638
SHORT DESCRIPTION:	ANTI-PUMP TIMER RELAY, PROT D9051
TECH. DESCRIPTION: ANTI-PUMP TIMER RELAY ABB RXKL1 (110-220V DC) FOR HV BREAKERS WITHOUT ANTI-PUMP CIRCUITS * ESKOM DRAWING No. D-DT-9051 *	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010	NTS	0248633		0248637
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	CAD REF:	0248635		0248638
				SERIES 9000	0248636		
				FILE No:	SET	SHEET	REV
				9051	D-DT-9051		
					29	24	0



SPEC SHEET (SPARES)

SAP MATERIAL No.:	0248639
SHORT DESCRIPTION:	TRIP CCT SUPERVISION RELAY, PROT D9051
TECH. DESCRIPTION: TRIP CIRCUIT SUPERVISION RELAY TYPE BTCS110 (DUAL 110/220V DC) FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248640
SHORT DESCRIPTION:	SNUBBER CIRCUIT RCPM1, PROT D9051
TECH. DESCRIPTION: SNUBBER CIRCUIT RCPM1 FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248641
SHORT DESCRIPTION:	INDICATION LAMP 110V DC, PROT D9051
TECH. DESCRIPTION: INDICATION LAMP WITH LED CLUSTER AND HOLDER TYPE CL515, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - CLEAR LED CLUSTER RATED 110V DC * - COLOURED LAMP COVER * - MOUNTING BASE * SPECIFY :- - COLOURED LAMP COVER: GREEN = 'G', RED = 'R', AMBER = 'Y' * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248642
SHORT DESCRIPTION:	INDICATION LAMP 220V DC, PROT D9051
TECH. DESCRIPTION: INDICATION LAMP WITH LED CLUSTER AND HOLDER TYPE CL520, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - CLEAR LED CLUSTER RATED 220V DC * - COLOURED LAMP COVER * - MOUNTING BASE * SPECIFY :- - COLOURED LAMP COVER: GREEN = 'G', RED = 'R', AMBER = 'A' * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248643
SHORT DESCRIPTION:	INDICATION LAMP 240V AC, PROT D9051
TECH. DESCRIPTION: INDICATION LAMP WITH LED CLUSTER AND HOLDER TYPE CL523Y, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - CLEAR LED CLUSTER RATED 220V AC * - AMBER COLOURED LAMP COVER * - MOUNTING BASE * ESKOM DRAWING No. D-DT-9051 *	

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REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REF. DRAWINGS	
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CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248639	0248642	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			0248640	0248643	
				D-DT-9051		SET	SHEET	REV
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SAP MATERIAL No.:	0248644
SHORT DESCRIPTION:	PUSHBUTTON LAMP, PROT D9051
TECH. DESCRIPTION:	
PUSHBUTTON WITH INDICATION LED CLUSTER & HOLDER FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * TYPE MP3-11Y, MBH-101 *	
INCLUDES :-	
- CLEAR LED CLUSTER RATED 110V DC *	
- CONTACTS RATED 110V DC *	
- AMBER COLOURED LAMP COVER *	
- MOUNTING BASE *	
SPECIFY :-	
- ALTERNATIVE VOLTAGE OF 220V DC IF REQUIRED *	
ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248645
SHORT DESCRIPTION:	TEST PUSHBUTTON INC. COVER, PROT D9051
TECH. DESCRIPTION:	
TRIP TEST PUSHBUTTON (RED) WITH COVER FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * TYPE CP10-10R-10/YSF *	
INCLUDES :-	
- PROTECTIVE HINGED CLEAR COVER *	
ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248646
SHORT DESCRIPTION:	CIRCUIT BKR CONTROL SWITCH, PROT D9051
TECH. DESCRIPTION:	
CIRCUIT BREAKER CONTROL SWITCH, MAKE LOP CR-0604 FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :-	
- ENGRAVING *	
ESKOM DRAWING No. D-DT-9051 *	


SAP MATERIAL No.:	0248647
SHORT DESCRIPTION:	TEST NORMAL SWITCH, PROT D9051
TECH. DESCRIPTION:	
TEST NORMAL SWITCH (TNS), MAKE LOP CR-0867 FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :-	
- ENGRAVING *	
ESKOM DRAWING No. D-DT-9051 *	

SAP MATERIAL No.:	0248648
SHORT DESCRIPTION:	SUPERVISORY ISOLATOR SWITCH, PROT D9051
TECH. DESCRIPTION:	
SUPERVISORY ISOLATOR SWITCH (SIS), MAKE LOP CR-0316 FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :-	
- ENGRAVING *	
ESKOM DRAWING No. D-DT-9051 *	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248644	0248647	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			0248645	0248648	
				D-DT-9051		0248646		
						SET	SHEET	REV
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SAP MATERIAL No.:	0248649
SHORT DESCRIPTION:	TELEPROT. ISOLATOR SWITCH, PROT D9051
TECH. DESCRIPTION: TELEPROTECTION ISOLATOR SWITCH (TPIS), MAKE LOP CR-0866 FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - ENGRAVING * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248650
SHORT DESCRIPTION:	BREAKER FAIL ISOLATOR SWITCH, PROT D9051
TECH. DESCRIPTION: BREAKER FAIL ISOLATOR SWITCH (BFIS), MAKE LOP CR-0866A FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * INCLUDES :- - ENGRAVING * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248651
SHORT DESCRIPTION:	LAMP CHECK SWITCH, PROT D9051
TECH. DESCRIPTION: LAMP CHECK SWITCH WITH STATES 'OFF', 'ON' AND 'TEST' FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: KRAUSE AND NAIMER, TYPE: CA4 A321-621 * INCLUDES :- - ENGRAVING * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248652
SHORT DESCRIPTION:	DIODE, LAMP CHECK, PROT D9051
TECH. DESCRIPTION: LAMP CHECK DIODES FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB/WEIDMULLER, TYPE: PR56592018 * INCLUDES :- - 8 DIODES LAID ON A BACKING BOARD WITH CONNECTORS * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248653
SHORT DESCRIPTION:	DIODE, BLOCKING, PROT D9051
TECH. DESCRIPTION: BLOCKING DIODES FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB/WEIDMULLER, TYPE: PR56592018/4.PNH * INCLUDES :- - 4 DIODES HOUSED WITHIN A TERMINAL, DIN RAIL MOUNTED * ESKOM DRAWING No. D-DT-9051 *	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010	NTS		0248649	0248652	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010	CAD REF:		0248650	0248653	
				SERIES 9000		SET	SHEET	REV
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				9051				

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SAP MATERIAL No.:	0248654
SHORT DESCRIPTION:	DIODES, BLOCKING/CROSSTRIP, PROT D9051
TECH. DESCRIPTION:	
BLOCKING AND CROSSTRIP DIODES FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB/WEIDMULLER, TYPE: PR56512033.BA * INCLUDES :- - 2 DIODES HOUSED WITHIN A TERMINAL, DIN RAIL MOUNTED * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248655
SHORT DESCRIPTION:	VT, AUXILIARY INTERPOSING, PROT D9051
TECH. DESCRIPTION:	
AUXILIARY SINGLE-PHASE VOLTAGE TRANSFORMER FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * USED IN OPEN DELTA CONNECTION FOR BACK-UP EARTH-FAULT DIRECTIONALITY * RATIO: 1:1 *1 ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248656
SHORT DESCRIPTION:	MCB DOUBLE POLE, 1A RATED, PROT D9051
TECH. DESCRIPTION:	
MCB DOUBLE-POLE, DIN RAIL MOUNTED, 1 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB, TYPE: S202-C 1, RATING INCLUDES 110V AC, CONNECTION: SINGLE-PHASE * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248657
SHORT DESCRIPTION:	MCB TRIPLE POLE, 1A RATED, PROT D9051
TECH. DESCRIPTION:	
MCB TRIPLE-POLE, DIN RAIL MOUNTED, 1 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB, TYPE: S203-C 1, RATING INCLUDES 110V AC, CONNECTION: THREE-PHASE * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248658
SHORT DESCRIPTION:	MCB DOUBLE POLE, 2A RATED, PROT D9051
TECH. DESCRIPTION:	
MCB DOUBLE-POLE, DIN RAIL MOUNTED, 2 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB, TYPE: S202-C 2, RATING INCLUDES 110V AC, CONNECTION: SINGLE-PHASE * ESKOM DRAWING No. D-DT-9051 *	
SAP MATERIAL No.:	0248659
SHORT DESCRIPTION:	MCB TRIPLE POLE, 2A RATED, PROT D9051
TECH. DESCRIPTION:	
MCB TRIPLE-POLE, DIN RAIL MOUNTED, 2 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES * MAKE: ABB, TYPE: S203-C 2, RATING INCLUDES 110V AC, CONNECTION: THREE-PHASE * ESKOM DRAWING No. D-DT-9051 *	

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CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248654	0248657	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			0248655	0248658	
						0248656	0248659	
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						29	28	0

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SAP MATERIAL No.:	0248740
SHORT DESCRIPTION:	MCB DOUBLE POLE, 6A RATED, PROT D9051
TECH. DESCRIPTION:	<p>MCB DOUBLE-POLE, DIN RAIL MOUNTED, 6 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES *</p> <p>MAKE: ABB, TYPE: S282-UC B6, RATING INCLUDES 240V AC, CONNECTION: SINGLE-PHASE *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>
SAP MATERIAL No.:	0248741
SHORT DESCRIPTION:	MCB DOUBLE POLE, 10A RATED, PROT D9051
TECH. DESCRIPTION:	<p>MCB DOUBLE-POLE, DIN RAIL MOUNTED, 10 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES *</p> <p>MAKE: ABB, TYPE: S282-UC B10, RATING INCLUDES 240V AC AND 110/220V DC *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>
SAP MATERIAL No.:	0248742
SHORT DESCRIPTION:	MCB DOUBLE POLE, 16A RATED, PROT D9051
TECH. DESCRIPTION:	<p>MCB DOUBLE-POLE, DIN RAIL MOUNTED, 16 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES *</p> <p>MAKE: ABB, TYPE: S282-UC B16, RATING INCLUDES 110/220V DC *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>
SAP MATERIAL No.:	0248743
SHORT DESCRIPTION:	MCB DOUBLE POLE, 20A RATED, PROT D9051
TECH. DESCRIPTION:	<p>MCB DOUBLE-POLE, DIN RAIL MOUNTED, 20 AMPERES RATED, FOR 4FZ39X0 AND 4FZD39X0 SCHEMES *</p> <p>MAKE: ABB, TYPE: S282-UC B20, RATING INCLUDES 110/220V DC *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>
SAP MATERIAL No.:	0248744
SHORT DESCRIPTION:	AUX CONTACT MCB S28* SERIES, PROT D9051
TECH. DESCRIPTION:	<p>AUXILIARY CONTACT TYPE S2-H11 I FOR ABB MCBs TYPE S28*-UC FOR 4FZ39X0 AND 4FZD39X0 SCHEMES *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>
SAP MATERIAL No.:	0248745
SHORT DESCRIPTION:	AUX CONTACT MCB S20* SERIES, PROT D9051
TECH. DESCRIPTION:	<p>AUXILIARY CONTACT TYPE S2C-H6R FOR ABB MCBs TYPE S20* FOR 4FZ39X0 AND 4FZD39X0 SCHEMES *</p> <p>ESKOM DRAWING No. D-DT-9051 *</p>

0	First issue	A.C.	S.v.Z	A.C	Mar 2010			
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REF. DRAWINGS		
AUTH:	A.M.A. Craib	DATE:	1 March 2010			SAP No:		
CHKD:	S.J. van Zyl	DATE:	3 March 2010			0248740	0248743	
DRAWN:	A.M.A. Craib	DATE:	1 March 2010			0248741	0248744	
				D-DT-9051		0248742	0248745	
						SET	SHEET	REV
						29	29	0

2.3. HV Lines

Not Applicable

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