

NOTES

- RT = LOW VOLTAGE COMPARTMENT RELAY TERMINAL.
- CURRENT TRANSFORMERS ARE SPECIFIED TO IEC 60044-1.
- WIRE COLOURS TO BE AS INDICATED:
R = RED
W = WHITE
B = BLUE
G/Y = GREEN/YELLOW
- SWITCHGEAR SHALL BE SUPPLIED WITH CT CIRCUITS SHORTED AND EARTHED (E) AS INDICATED:
- CURRENT TRANSFORMER CIRCUITS SHALL BE EARTHED AT ONE POINT ONLY. WHERE CIRCUITS ARE USED, THE EARTHS ARE PROVIDED IN THE (OFF-BOARD) PROTECTION/METERING PANELS. THE EARTH(S) WITHIN THE LV COMPARTMENT SHALL BE DISCONNECTED IN THIS CASE.

SPECIFICATION OF MEASUREMENT CTs

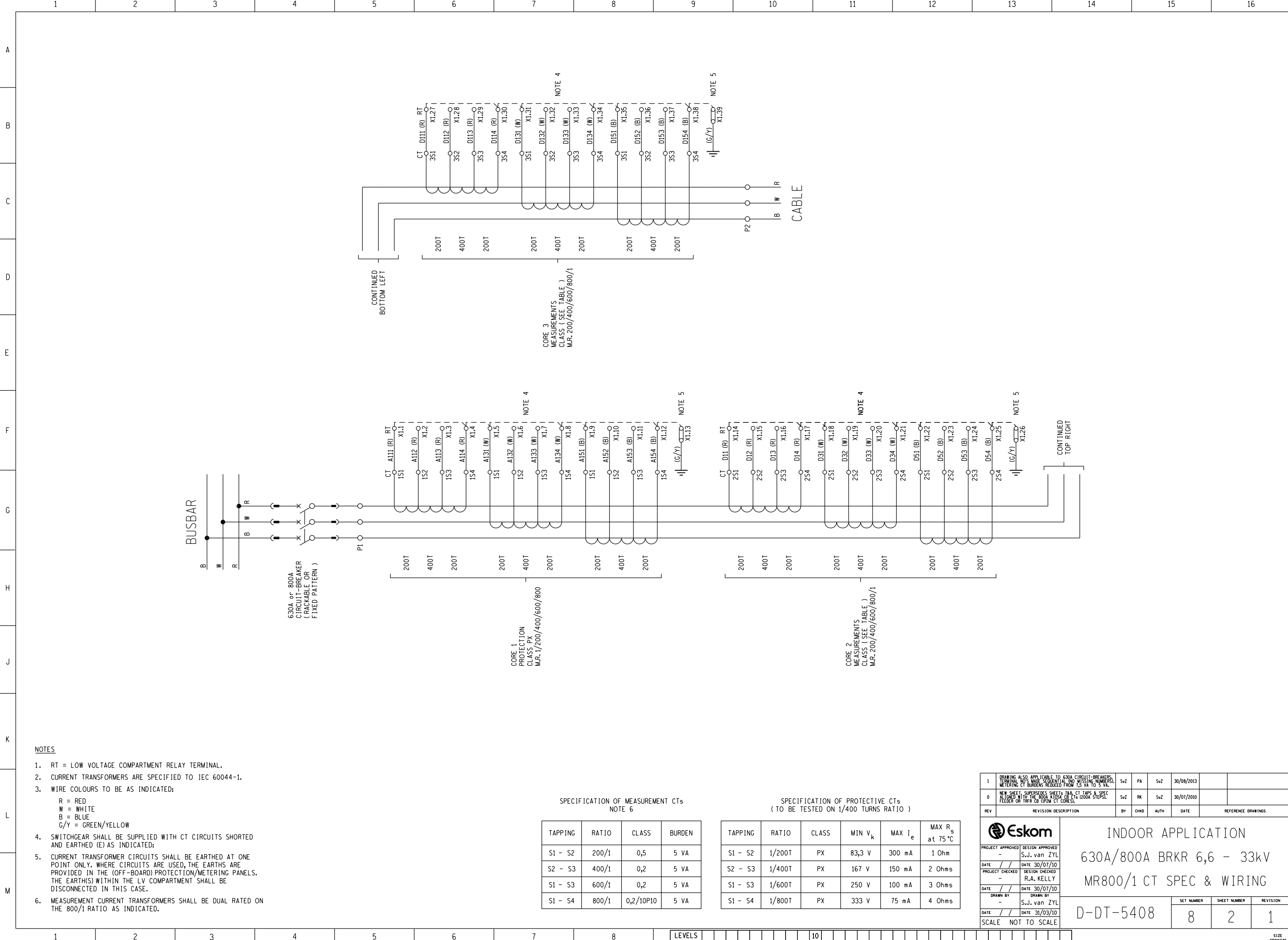
TAPPING	RATIO	CLASS	BURDEN
S1 - S2	50/1	0,5	5 VA
S2 - S3	100/1	0,2	5 VA
S1 - S3	150/1	0,2	5 VA
S1 - S4	200/1	0,2	5 VA

SPECIFICATION OF PROTECTIVE CTs
(TO BE TESTED ON 1/400 TURNS RATIO)

TAPPING	RATIO	CLASS	MIN V _k	MAX I _e	MAX R _s at 75 °C
S1 - S2	1/200T	PX	83,3 V	300 mA	1 Ohm
S2 - S3	1/400T	PX	167 V	150 mA	2 Ohms
S1 - S3	1/600T	PX	250 V	100 mA	3 Ohms
S1 - S4	1/800T	PX	333 V	75 mA	4 Ohms

1	DRAWING ALSO APPLICABLE TO 630A CIRCUIT-BREAKERS. TERMINAL NO'S MADE SEQUENTIAL (NO MISSING NUMBERS). METERING CT BURDENS REDUCED FROM 1,5 VA TO 5 VA.	SvZ	PA	SvZ	30/08/2013		
0	NEW SHEET.	SvZ	RK	SvZ	30/07/2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	
		INDOOR APPLICATION					
PROJECT APPROVED - DATE / /		DESIGN APPROVED S.J. van ZYL DATE 30/07/10					
PROJECT CHECKED - DATE / /		DESIGN CHECKED R.A. KELLY DATE 30/07/10					
DRAWN BY - DATE / /		DRAWN BY S.J. van ZYL DATE 31/03/10					
SCALE NOT TO SCALE		SET NUMBER 8		SHEET NUMBER 1		REVISION 1	

D-DT-5408



NOTES

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- MEASUREMENT CURRENT TRANSFORMERS SHALL BE DUAL RATED ON THE 800/1 RATIO AS INDICATED.

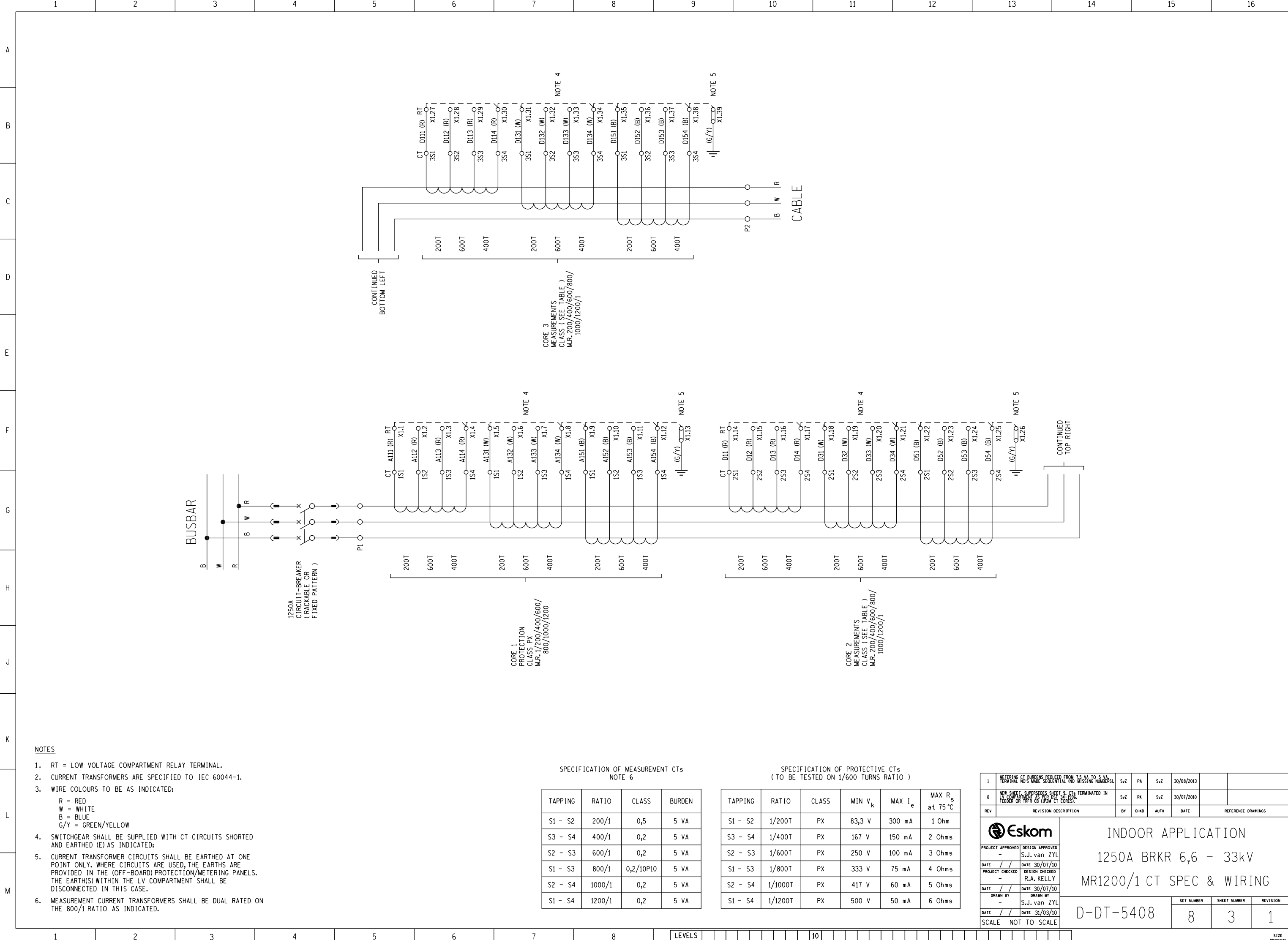
SPECIFICATION OF MEASUREMENT CTs
NOTE 6

TAPPING	RATIO	CLASS	BURDEN
S1 - S2	200/1	0,5	5 VA
S2 - S3	400/1	0,2	5 VA
S1 - S3	600/1	0,2	5 VA
S1 - S4	800/1	0,2/10P10	5 VA

SPECIFICATION OF PROTECTIVE CTs
(TO BE TESTED ON 1/400 TURNS RATIO)

TAPPING	RATIO	CLASS	MIN V _k	MAX I _e	MAX R _s at 75 °C
S1 - S2	1/200T	PX	83,3 V	300 mA	1 Ohm
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S1 - S3	1/600T	PX	250 V	100 mA	3 Ohms
S1 - S4	1/800T	PX	333 V	75 mA	4 Ohms

1	DRAWING ALSO APPLICABLE TO 630A CIRCUIT-BREAKERS. TERMINAL NO'S MADE SEQUENTIAL AND MISSING NUMBERS.	SvZ	PA	SvZ	30/08/2013		
0	NEW SHEET. SUPERSEDES SHEETS 78& CT TAPS & SPEC ALIGNED WITH THE 800A KIOSK CB CTS (200A STEPS). FEEDER OR TRFR CB (1P2M CT CORES).	SvZ	RK	SvZ	30/07/2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	
		INDOOR APPLICATION					
PROJECT APPROVED - S.J. van ZYL		630A/800A BRKR 6,6 - 33kV					
DATE / /		MR800/1 CT SPEC & WIRING					
PROJECT CHECKED - R.A. KELLY							
DATE / /							
DRAWN BY - S.J. van ZYL							
DATE / /							
SCALE NOT TO SCALE							
					SET NUMBER	SHEET NUMBER	REVISION
					8	2	1



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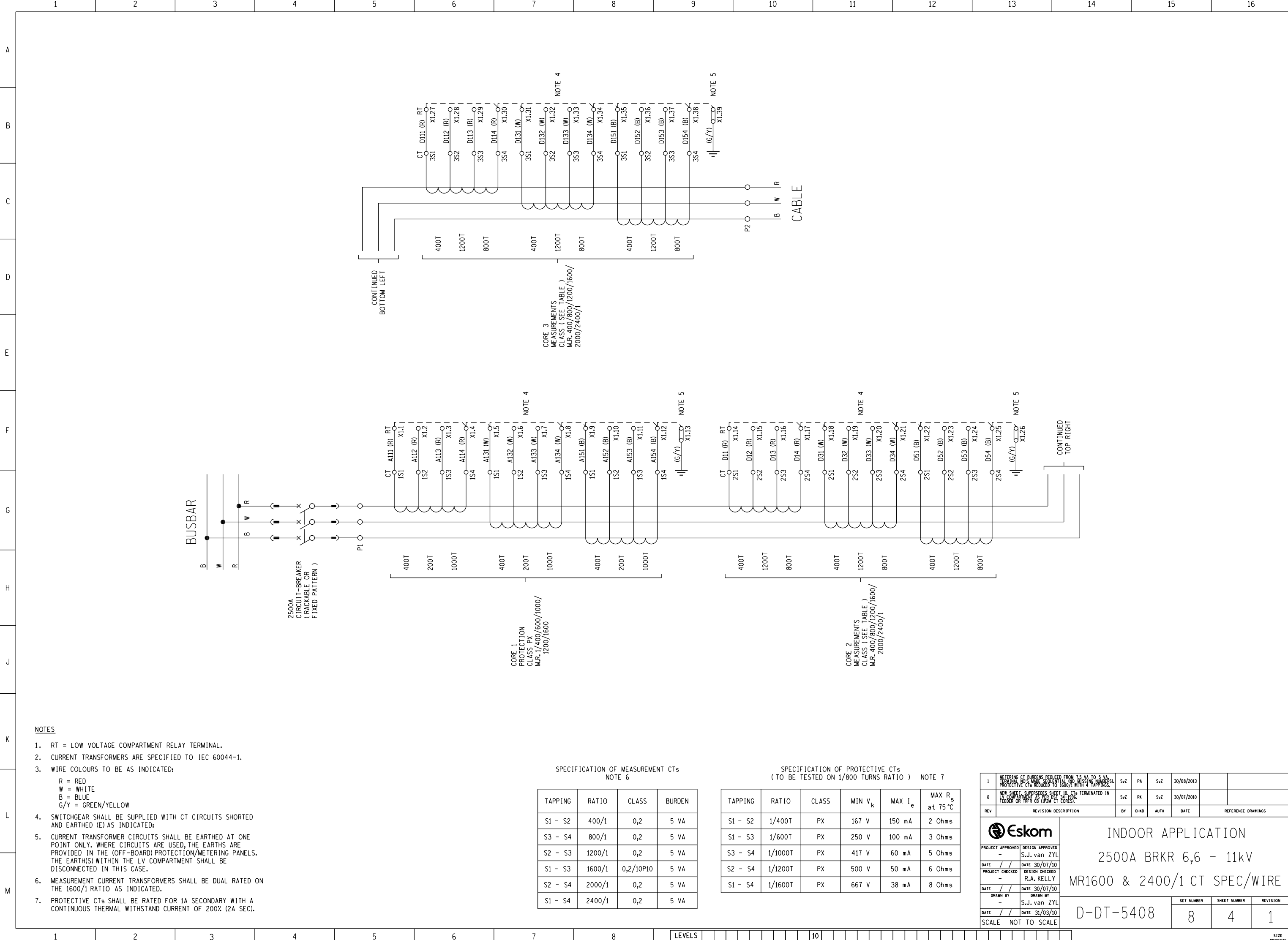
SPECIFICATION OF MEASUREMENT CTs
NOTE 6

TAPPING	RATIO	CLASS	BURDEN
S1 - S2	200/1	0,5	5 VA
S3 - S4	400/1	0,2	5 VA
S2 - S3	600/1	0,2	5 VA
S1 - S3	800/1	0,2/10P10	5 VA
S2 - S4	1000/1	0,2	5 VA
S1 - S4	1200/1	0,2	5 VA

SPECIFICATION OF PROTECTIVE CTs
(TO BE TESTED ON 1/600 TURNS RATIO)

TAPPING	RATIO	CLASS	MIN V _k	MAX I _e	MAX R _s at 75 °C
S1 - S2	1/200T	PX	83,3 V	300 mA	1 Ohm
S3 - S4	1/400T	PX	167 V	150 mA	2 Ohms
S2 - S3	1/600T	PX	250 V	100 mA	3 Ohms
S1 - S3	1/800T	PX	333 V	75 mA	4 Ohms
S2 - S4	1/1000T	PX	417 V	60 mA	5 Ohms
S1 - S4	1/1200T	PX	500 V	50 mA	6 Ohms

1	METERING CT BURDENS REDUCED FROM 7,5 VA TO 5 VA. TERMINAL NO'S MADE SEQUENTIAL (NO MISSING NUMBERS).	SVZ	PA	SVZ	30/08/2013		
0	NEW SHEET, SUPERSEDES SHEET 9. CTs TERMINATED IN LV COMPARTMENT AS PER DST 34-1996. FEEDER OR TRFR CB (1P2W CT CORES).	SVZ	RK	SVZ	30/07/2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	
		INDOOR APPLICATION 1250A BRKR 6,6 - 33kV MR1200/1 CT SPEC & WIRING					
PROJECT APPROVED - DATE / /		DESIGN APPROVED S.J. van ZYL DATE 30/07/10		D-DT-5408			
PROJECT CHECKED - DATE / /		DESIGN CHECKED R.A. KELLY DATE 31/03/10					
DRAWN BY - DATE / /		S.J. van ZYL					
SCALE NOT TO SCALE				SET NUMBER 8	SHEET NUMBER 3	REVISION 1	



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 - MEASUREMENT CURRENT TRANSFORMERS SHALL BE DUAL RATED ON THE 1600/1 RATIO AS INDICATED.
 - PROTECTIVE CTs SHALL BE RATED FOR 1A SECONDARY WITH A CONTINUOUS THERMAL WITHSTAND CURRENT OF 200% (2A SEC).

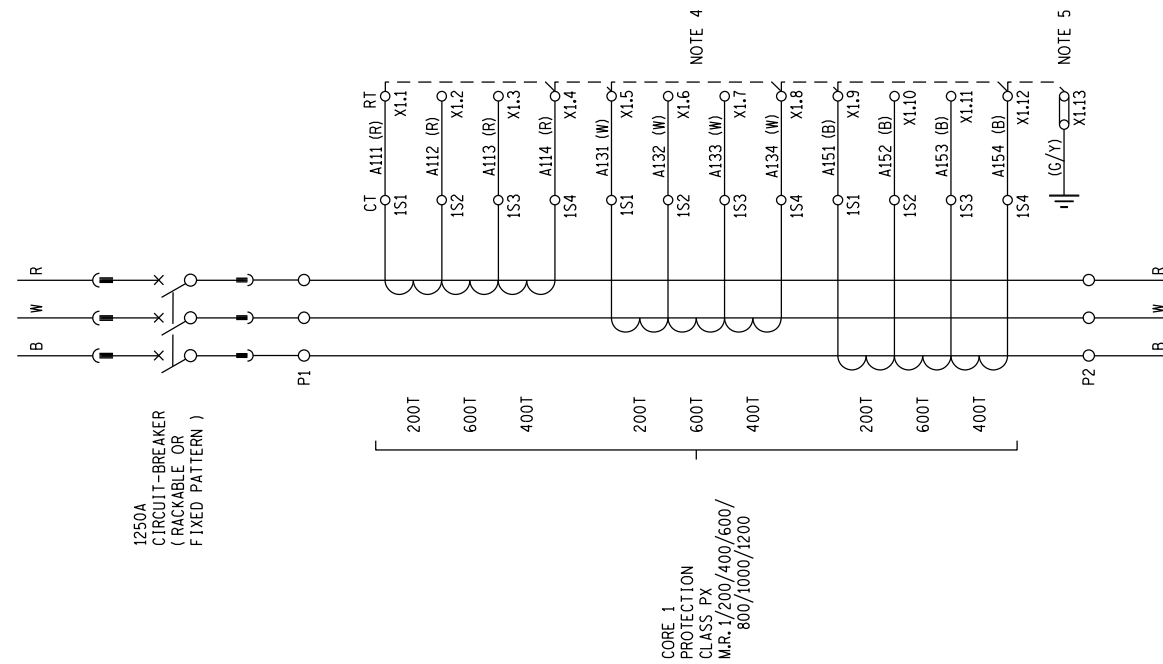
SPECIFICATION OF MEASUREMENT CTs
NOTE 6

TAPPING	RATIO	CLASS	BURDEN
S1 - S2	400/1	0,2	5 VA
S3 - S4	800/1	0,2	5 VA
S2 - S3	1200/1	0,2	5 VA
S1 - S3	1600/1	0,2/10P10	5 VA
S2 - S4	2000/1	0,2	5 VA
S1 - S4	2400/1	0,2	5 VA

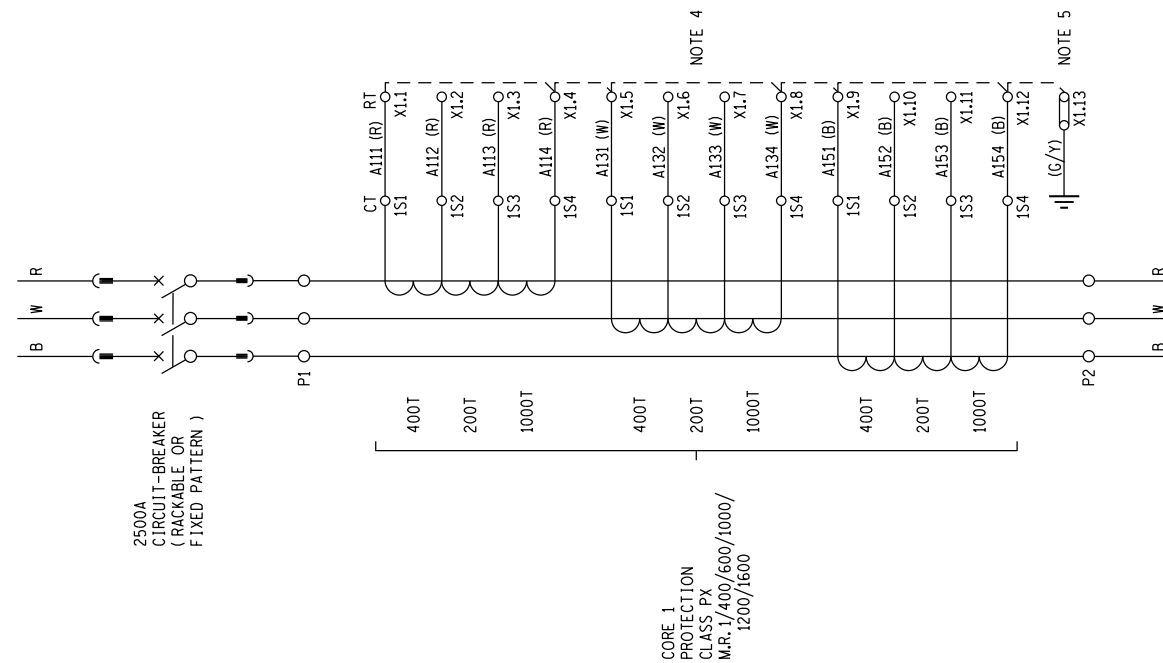
SPECIFICATION OF PROTECTIVE CTs
(TO BE TESTED ON 1/800 TURNS RATIO) NOTE 7

TAPPING	RATIO	CLASS	MIN V _k	MAX I _e	MAX R _s at 75 °C
S1 - S2	1/400T	PX	167 V	150 mA	2 Ohms
S1 - S3	1/600T	PX	250 V	100 mA	3 Ohms
S3 - S4	1/1000T	PX	417 V	60 mA	5 Ohms
S2 - S4	1/1200T	PX	500 V	50 mA	6 Ohms
S1 - S4	1/1600T	PX	667 V	38 mA	8 Ohms

1	METERING CT BURDENS REDUCED FROM 7.5 VA TO 5 VA. TERMINAL NO'S MARKED. SEQUENTIAL AND MISSING NUMBERS.	SV2	PA	SV2	30/08/2013		
0	NEW SHEET. SUPERSEDES SHEET 10. CTs TERMINATED IN LV COMPARTMENT AS PER DST 34-1996. FEEDER OR TRFR CB (1P2M CT CORES).	SV2	RK	SV2	30/07/2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	
		INDOOR APPLICATION					
PROJECT APPROVED - DATE / /		DESIGN APPROVED S.J. van ZYL DATE 30/07/10					
PROJECT CHECKED - DATE / /		DESIGN CHECKED R.A. KELLY DATE 30/07/10					
DRAWN BY - DATE / /		S.J. van ZYL DATE 31/03/10					
SCALE NOT TO SCALE		D-DT-5408		8	4	1	




TAPPING	RATIO	CLASS	MIN V_k	MAX I_e	MAX R_{cs} at 75 °C
S1 - S2	1/200T	PX	83,3 V	300 mA	1 Ohm
S3 - S4	1/400T	PX	167 V	150 mA	2 Ohms
S2 - S3	1/600T	PX	250 V	100 mA	3 Ohms
S1 - S3	1/800T	PX	333 V	75 mA	4 Ohms
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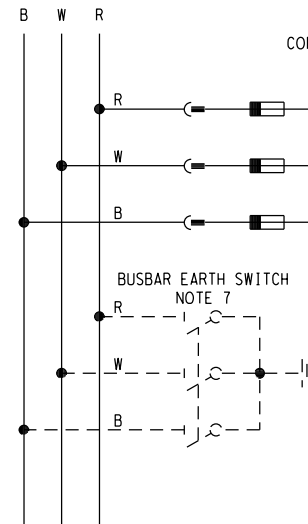
SPECIFICATION OF PROTECTIVE CTs (TO BE TESTED ON 1/800 TURNS RATIO)					NOTE 6
TAPPING	RATIO	CLASS	MIN V _k	MAX I _e	MAX R _s at 75 °C
S1 - S2	1/400T	PX	167 V	150 mA	2 Ohms
S1 - S3	1/600T	PX	250 V	100 mA	3 Ohms
S3 - S4	1/1000T	PX	417 V	60 mA	5 Ohms
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NOTES

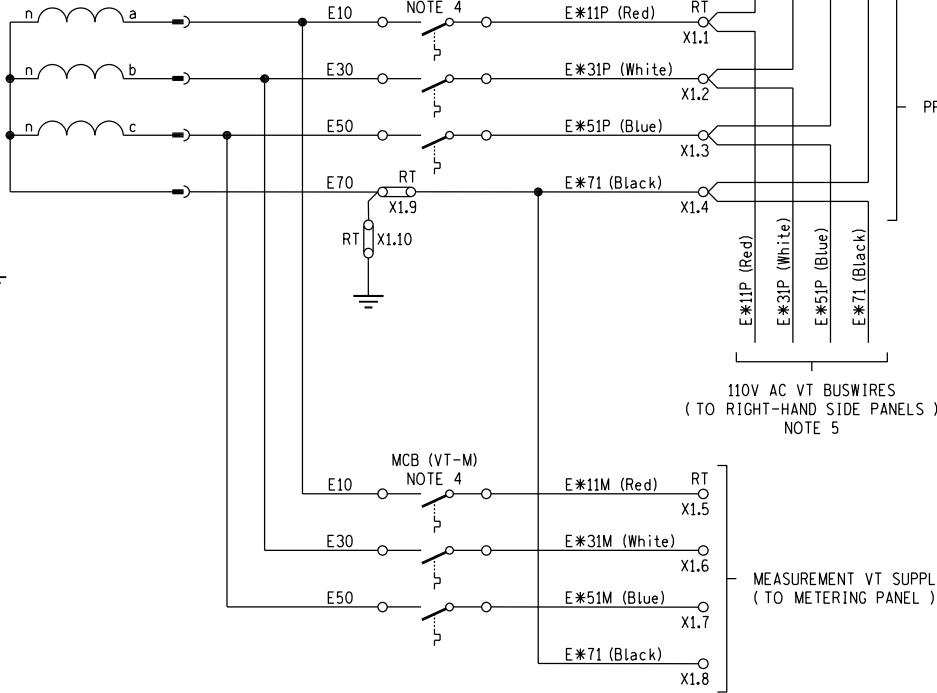
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6. PROTECTIVE CTs SHALL BE RATED FOR 1A SECONDARY WITH A CONTINUOUS THERMAL WITHSTAND CURRENT OF 200% (2A SEC).

1	SHEET ADDED. BUS SECTION CIRCUIT-BREAKERS TO BE FITTED WITH ONE SET OF CTs.		SvZ	PA	SvZ	30/08/2013		
0	-		SvZ	RK	SvZ	30/07/2010		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	
			<p style="text-align: center;">INDOOR APPLICATION</p> <p style="text-align: center;">1250A/2500A BUS SECTION BRKR</p> <p style="text-align: center;">CT SPEC & WIRING</p>					
PROJECT APPROVED -		DESIGN APPROVED S.J. van ZYL		<p style="text-align: center;">D-DT-5408</p>				
DATE // /		DATE 30/07/10						
PROJECT CHECKED -		DESIGN CHECKED R.A. KELLY						
DATE // /		DATE 30/07/10		<p style="text-align: center;">8</p>				
DRAWN BY -		DRAWN BY S.J. van ZYL						
DATE // /		DATE 31/03/10						
SCALE NOT TO SCALE				<p style="text-align: center;">5</p>				
				<p style="text-align: center;">1</p>				

BUSBAR



VT SPECIFIED TO IEC 60044-2:
RATIO: $\frac{(V_{nom}) \text{ kV}}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$
CLASS 3P/0,2 50VA
VOLTAGE FACTOR: 1,2 CONTINUOUS; 1,9 FOR 30s
CORE CONSTRUCTION: 5-LIMB OR THREE SEPARATE CORES

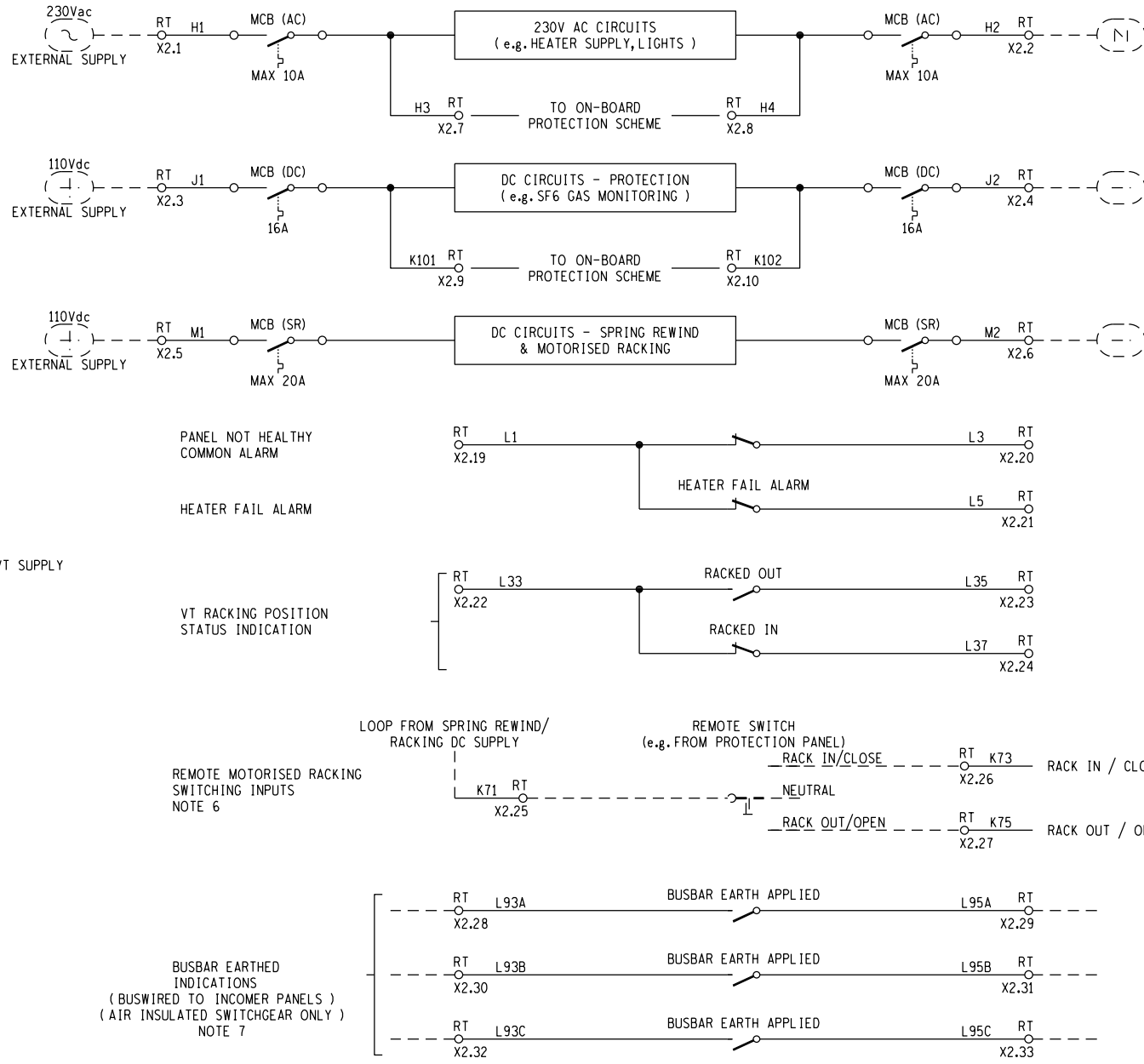


NOTES


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* = BUS SECTION NUMBER
(i.e 1 FOR BUS SECTION 1 VT WIRING, 2 FOR BUS SECTION 2 VT WIRING etc).
- CONTACT REFERENCE POSITIONS :-
VT RACKED IN (SERVICE POSITION)
EARTHS NOT APPLIED (SERVICE POSITION)
- THE SUPPLIER SHALL PROVIDE ALL TERMINALS INDICATED ON THIS SHEET IRRESPECTIVE OF WHETHER OR NOT THE SPECIFIC ALARM/FUNCTION IS APPLICABLE TO THE SPECIFIC SWITCHGEAR TYPE. ALTERNATIVE ALARMS/FUNCTIONS MAY NOT BE WIRED TO STANDARD TERMINALS DESIGNATED FOR ANOTHER ALARM/FUNCTION, BUT SHALL BE WIRED TO SPARE TERMINALS FROM X3.30 AND UPWARDS.
- SINGLE PHASE MCB RATINGS AS SPECIFIED BY SUPPLIER (MINIMUM 6A).
- THE PROTECTION VT CIRCUIT SHALL BE BUSWIRED TO ALL CIRCUIT-BREAKER PANELS ASSOCIATED WITH THE SAME BUSBAR SECTION.

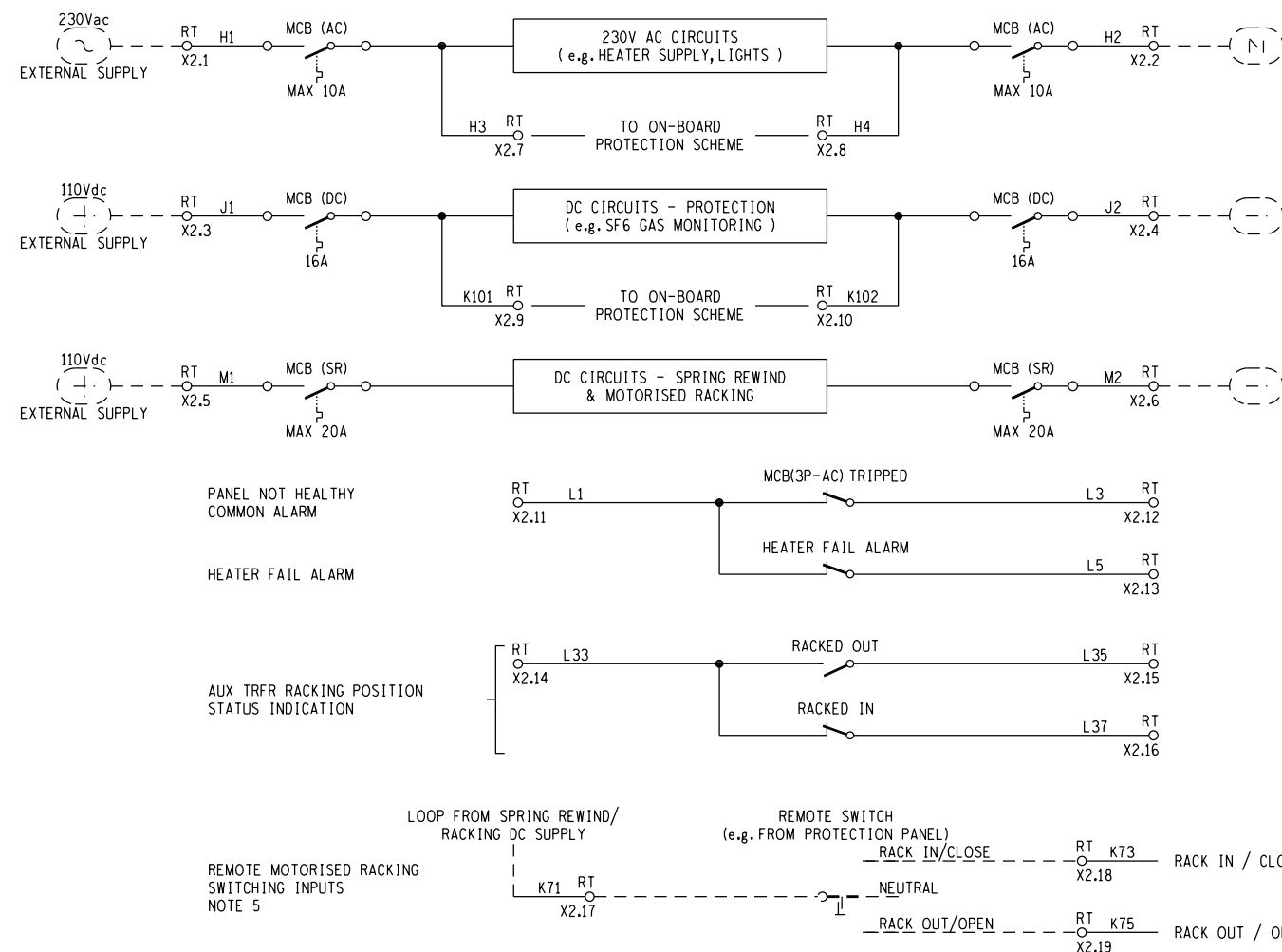
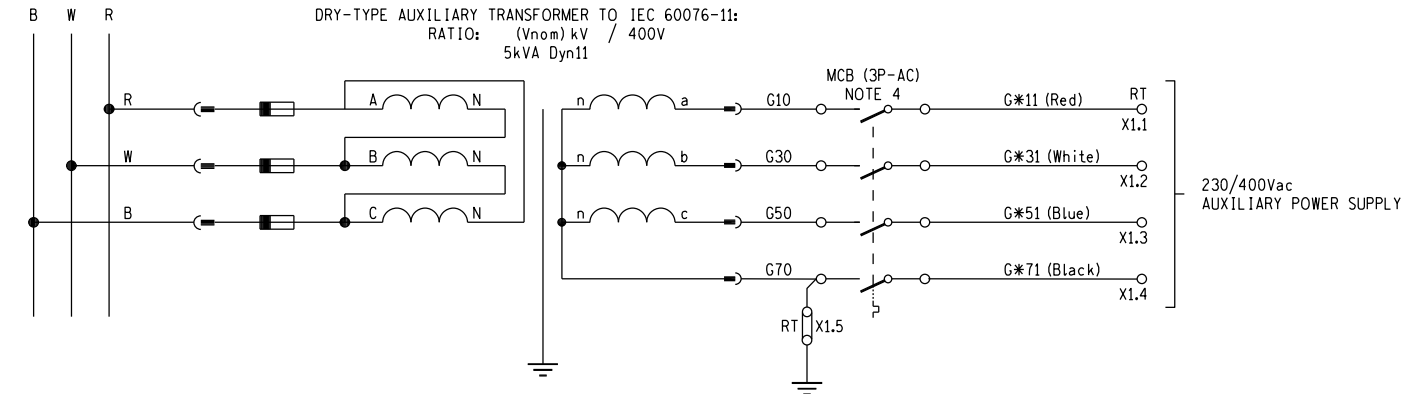
THE BUS SECTION CIRCUIT-BREAKER WILL INCLUDE VT SUPPLIES FORM EACH ADJACENT BUSBAR SECTION. EXTRA CARE MUST BE TAKEN NOT TO PARALLEL THE BUSWIRES OF DIFFERENT BUSBAR SECTIONS. FAILING THIS, THE VT SUPPLIES WILL BACK ENERGISE A DE-ENERGISED BUSBAR SECTION.

- REMOTE RACKING AND CLOSING OF THE VT/EARTH SWITCH VIA UMBILICAL CORD (i.e INTERFACES TO RECEPTILES) ARE TO BE ACCOMMODATED IN THE RESPECTIVE CIRCUIT DESIGNS.
- BUSBAR EARTHING IN AIR-INSULATED SWITCHGEAR IS DONE VIA THE VT PANEL.




BUSBAR EARTHED INDICATIONS
(BUSWIRED TO INCOMER PANELS)
(AIR INSULATED SWITCHGEAR ONLY)
NOTE 7

1	SECONDARY FUSES REPLACED BY SINGLE PHASE MCBs.	SvZ	PA	SvZ	30/08/2013		
0	NEW SHEET. SUPERSEDES SHEET 11. LINK ADDED ON SECONDARY EARTHING POINT. CONTROLS AND INDICATIONS ADDED.	SvZ	RK	SvZ	30/07/2010		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	
		INDOOR APPLICATION					
PROJECT APPROVED -		DESIGN APPROVED S.J. van ZYL					
DATE / /		DATE 30/07/10					
PROJECT CHECKED -		DESIGN CHECKED R.A. KELLY					
DATE / /		DATE 30/07/10					
DRAWN BY -		DRAWN BY S.J. van ZYL					
DATE / /		DATE 31/03/10					
SCALE NOT TO SCALE		D-DT-5408		SET NUMBER 8	SHEET NUMBER 6	REVISION 1	



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TRANSFORMER RACKED IN (SERVICE POSITION)
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IRRESPECTIVE OF WHETHER OR NOT THE SPECIFIC ALARM/FUNCTION IS
APPLICABLE TO THE SPECIFIC SWITCHGEAR TYPE. ALTERNATIVE
ALARMS/FUNCTIONS MAY NOT BE WIRED TO STANDARD TERMINALS DESIGNATED FOR
ANOTHER ALARM/FUNCTION, BUT SHALL BE WIRED TO SPARE TERMINALS FROM
X3.30 AND UPWARDS.
4. THREE POLE PLUS NEUTRAL MCB RATING AS SPECIFIED BY SUPPLIER (MINIMUM 6A)
5. REMOTE RACKING VIA UMBILICAL CORD (i.e INTERFACE TO RECEPTICLE)
TO BE ACCOMMODATED IN RACKING CIRCUIT DESIGN.

1	SHEET ADDED.		SvZ	PA	SvZ	30/08/2013		
0	-		SvZ	RK	SvZ	30/07/2010		
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	REFERENCE DRAWINGS	

		INDOOR APPLICATION 6,6-33kV VT PANEL AUX TRFR & WIRING DIAGRAM		
PROJECT APPROVED	DESIGN APPROVED			
-	S.J. van ZYL			
DATE // //	DATE 30/07/10			
PROJECT CHECKED	DESIGN CHECKED			
-	R.A. KELLY			
DATE // //	DATE 30/07/10	D-DT-5408		
DRAWN BY	DRAWN BY			
-	S.J. van ZYL			
DATE // //	DATE 31/03/10	SET NUMBER	SHEET NUMBER	REVISION
SCALE NOT TO SCALE		8	7	1

