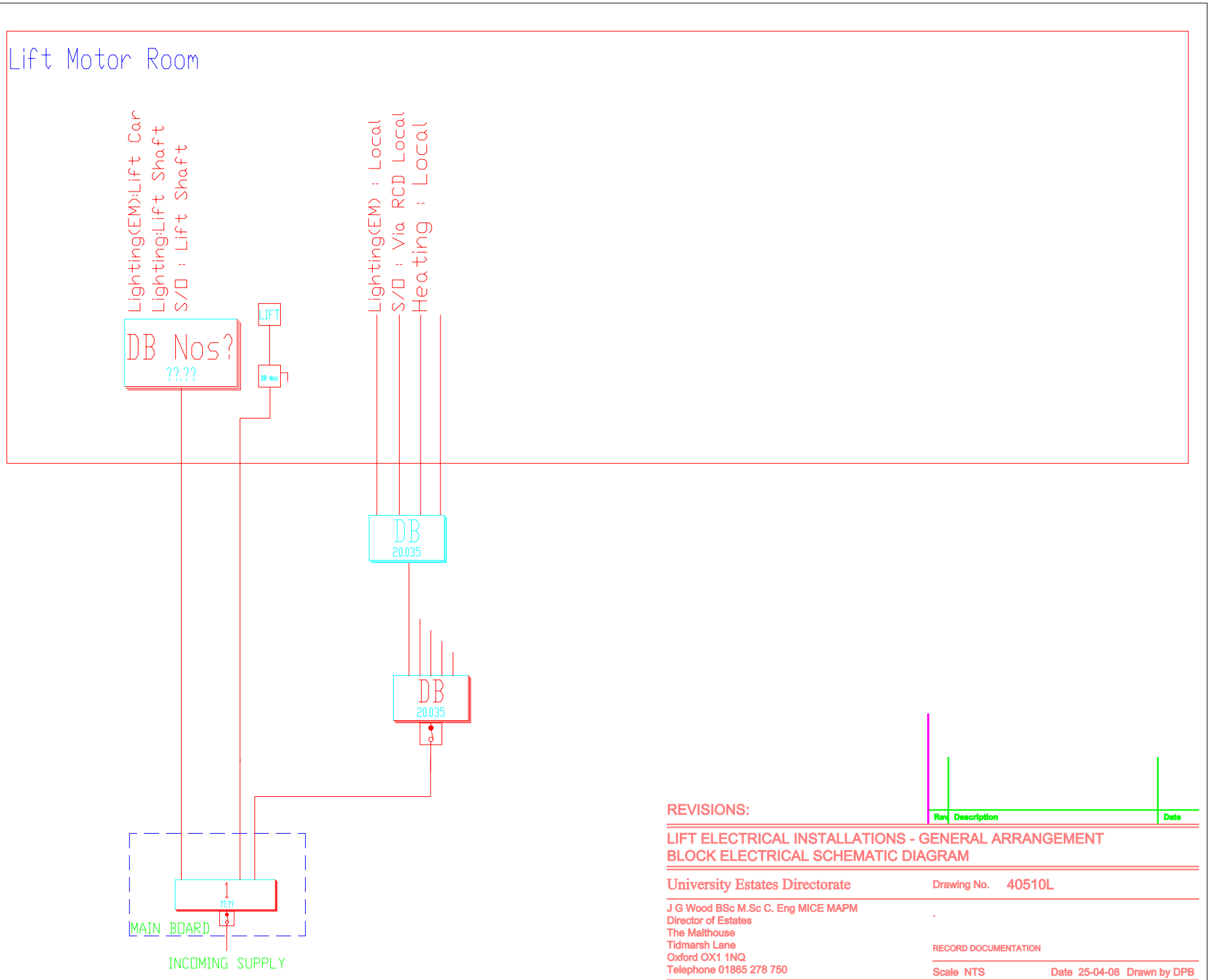

REVISIONS:

Rev	Description	Date

LIFT ELECTRICAL INSTALLATIONS - GENERAL ARRANGEMENT
BLOCK ELECTRICAL SCHEMATIC DIAGRAM

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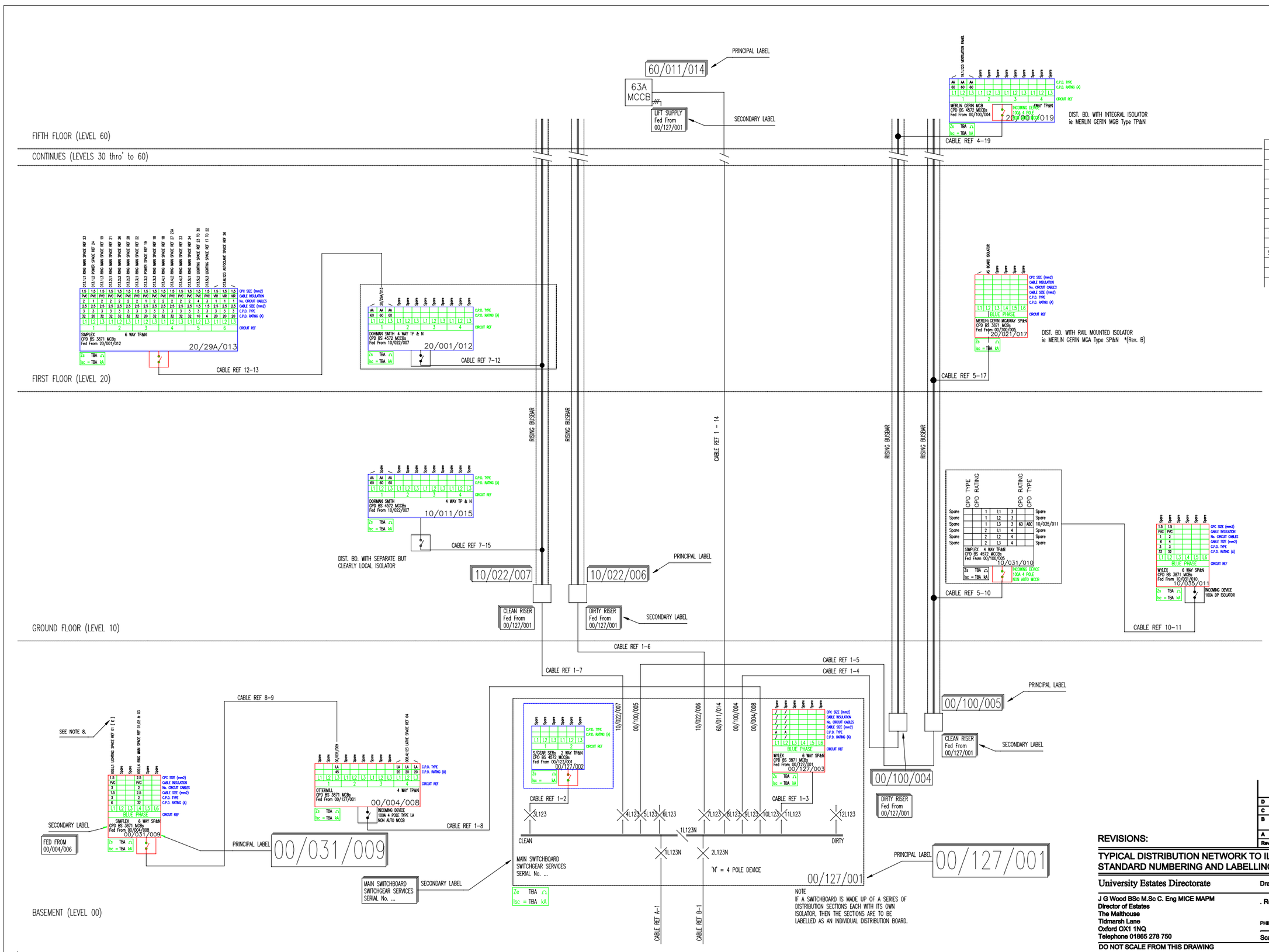
Drawing No. 40510L

.

RECORD DOCUMENTATION

Scale NTS Date 25-04-08 Drawn by DPB

DO NOT SCALE FROM THIS DRAWING



CIRCUIT .....
LOCATION / DIST. BOARD:–
SPACE .....
ROOM .....

SAMPLE OF CIRCUIT LABEL. TO BE AFFIXED TO ALL FINAL CIRCUIT ACCESSORIES eg. SWITCHES SOCKETS etc..

TO BE WRITTEN IN PERMANENT INK PEN CERAMIC FIBRE TIP eg STAEDTLER LUMOCOLOR 318 AV

SCHEDULE OF SUB–MAIN CABLES

REF	TYPE	SIZE	approx. LENGTH
A–1	XPLE/SWA/XPLE	4c 150sqmm Al	120M
B–1	XPLE/SWA/XPLE	4c 150sqmm Al	185M
1–2	XPLE/SWA/XPLE	4c 95sqmm Cu	12M
1–3	XPLE/SWA/XPLE	4c 95sqmm Cu	12M
1–4	XPLE/SWA/XPLE	4c 95sqmm Cu	37M
1–5	XPLE/SWA/XPLE	4c 95sqmm Cu	37M
1–6	XPLE/SWA/XPLE	4c 35sqmm Cu	39M
1–13	XPLE/SWA/XPLE	4c 16sqmm Cu	25M
3–8	PVC SINGLES	4 x 35sqmm Cu	0.5M
5–10	COPPER LINKS	4 x 6mm DIA. Cu	0.15M
8–9	PVC SINGLES	2 x 25sqmm Cu	18M
3–8	PVC SINGLES	4 x 35sqmm Cu	39M

EXAMPLE OF SUB–MAIN SCHEDULE

NOTES

1. THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE STANDARD LABELLING REQUIRED ON ALL CIRCUIT EQUIPMENT FROM THE MAIN SWITCHBOARD TO THE ACCESSORY ON A FINAL CIRCUIT.

2. THE PRINCIPAL IDENTITY MUST BE THE NUMERIC CODE AND IF, CONSIDERED NECESSARY BY THE DESIGNER THIS CAN BE REINFORCED BY A DESCRIPTIVE LABEL WHICH IS TO BE SUBORDINATE TO THE PRINCIPAL LABEL.

3. ALL DISTRIBUTION BOARDS ARE TO HAVE A THREE SECTION NUMERICAL IDENTITY A/B/C, A= THE FLOOR CODE(eg 20), B= THE SPACE REFERENCE WHERE THE BOARD IS LOCATED (eg 29A) AND C= THE UNIQUE NUMBER GIVEN ONLY TO THAT BOARD.

4. SPACE REFERENCES SHOWN HERE ARE EXAMPLES ONLY, ACTUAL SPACE REFERENCES MUST BE TAKEN FROM THE BUILDING LAYOUT DRAWINGS

5. UNLESS SHOWN OTHERWISE Isc RELATES TO THE PHASE TO PHASE SHORT CIRCUIT FAULT ON MULTI PHASE BOARDS AND THE PHASE TO NEUTRAL SHORT CIRCUIT CURRENT ON SINGLE PHASE BOARDS

6. ON RECORD DRAWINGS Isc AND Zs/Ze ARE SHOWN AS ACTUAL MEASURED VALUES.
ON DESIGN DRAWINGS Isc AND Zs/Ze VALUES SHOWN MUST INDICATE WHETHER THEY WERE MEASURED OR CALCULATED eg. Isc = 10.6kA (Calc.), Ze = 0.35w(Measured).

7. CPD TYPE ON MCCB BOARDS RELATES TO THE PARTICULAR MANUFACTURERS REFERENCE.

8. [E] DENOTES CIRCUIT CONNECTED TO ELECTRONIC OR SENSITIVE EQUIPMENT THAT MAY BE DAMAGED BY TESTING.

9. ALL CIRCUIT CONDUCTORS TO BE LABELLED WITH THEIR NUMERICAL CIRCUIT REFERENCE (e.g. 013.R) VIA AN APPROVED CABLE MARKER SYSTEM

SCHEDULE OF ABBREVIATIONS

CPC = CIRCUIT PROTECTIVE CONDUCTOR

CPD = CIRCUIT PROTECTIVE DEVICE

REVISIONS:

Rev	Description	Date
D	PHASE LETTERS R, Y & B CHANGED TO L1, L3 & L3	11.10.04
C	TITLE BLOCK REVISED	10.01.04
B	REVISED TO SHOW DIFFERENT TYPES OF DB ISOLATOR, NOTE 8 ADDED AND REV. NOTES ADDED TO DBs 17 & 19.	15.12.95
A	REVISED TO SHOW ENCLOSED UNITS WITHIN MAIN PANEL	14.11.95

TYPICAL DISTRIBUTION NETWORK TO ILLUSTRATE STANDARD NUMBERING AND LABELLING SYSTEM

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Drawing No. 400005

. Rev D Dated 23.05.2008

PHILOSOPHY DOCUMENTATION

Scale NTS Date 30-10-91 Drawn by DQA

DO NOT SCALE FROM THIS DRAWING

SUBSTATION INCOMING

SUBSTATION OUTGOING

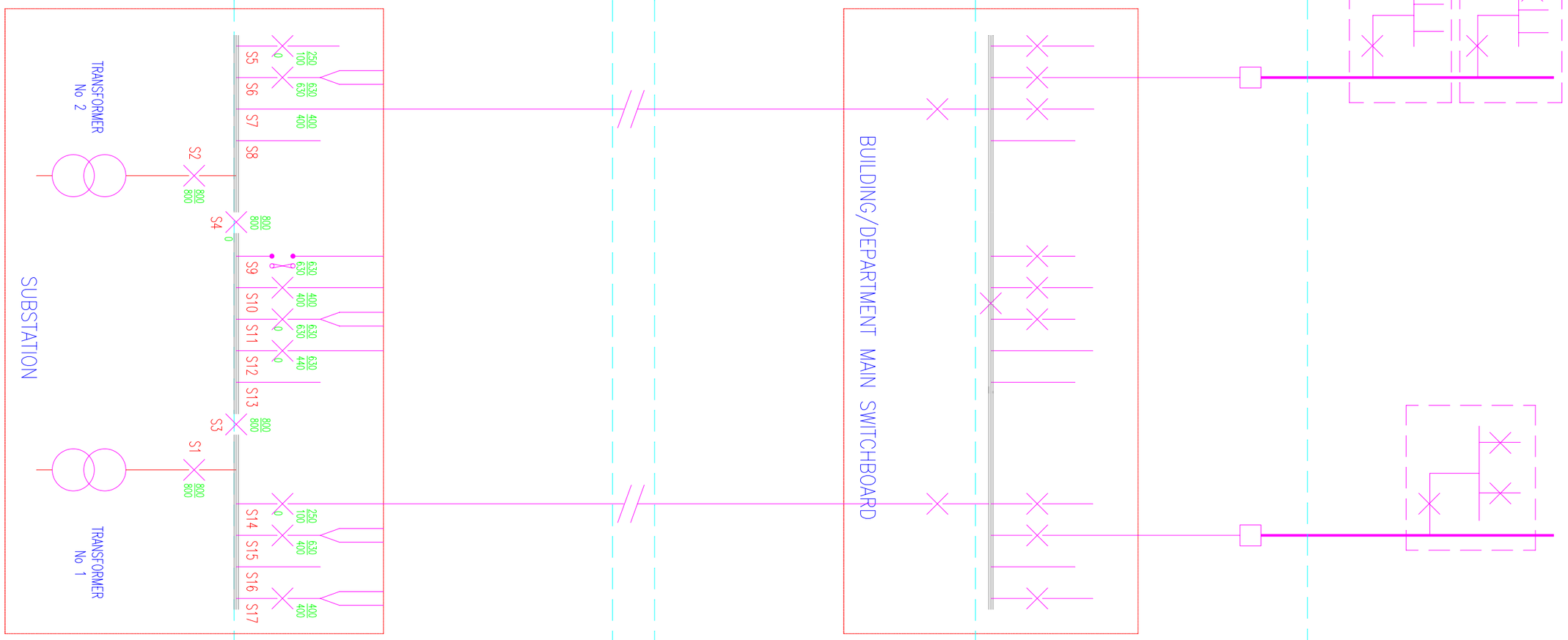
DEPARTMENT MAIN SWITCHBOARD INCOMING

DEPARTMENT MAIN SWITCHBOARD OUTGOING

DEPARTMENT DISTRIBUTION

IN ALL CASES CT BLOCK TO BE IN AN ENCLOSURE ACCESSIBLE DURING NORMAL OPERATION.

WHERE TWO INCOMERS ARE USED SUMMATION CT'S TO BE FITTED FOR METER CONNECTION



CT BLOCK TO BE FITTED AT REAR AS 400979 SHEET 2

INSTRUMENTS
ANALOGUE VOLTMETER WITH SELECTOR

METER TO BE 7550ION
TO READ:–
ALL PHASES + NEUTRAL CURRENT

FOR VARIABLE LOADS GREATER THAN 60A. CT ARRANGEMENT AS E400979 Sheet 3

INSTRUMENTS:–
ELECTRONIC DEVICE (6200ION)

METERS – NONE

CTs TO BE INSTALLED AS 400979 SHEET 2

INSTRUMENTS:–
ANALOGUE VOLTMETER AND SELECTOR

METER TO BE 7550ION
TO READ:–
ALL PHASES + EARTH LEAKAGE

FOR VARIABLE LOADS GREATER THAN 60A. CT ARRANGEMENT AS E400979 Sheet 3

INSTRUMENTS:–
ELECTRONIC DEVICE (6200ION)
plus Earth Leakage

METERS – NONE

SUB–DISTRIBUTION BOARDS ETC WITH VARIABLE LOADS > 60A CT ARRANGEMENT AS E400979 Sht 3

INSTRUMENTS:–
AS MAIN SWITCHBOARD OUTGOING

METERS:– NONE

Rev	Description	Date
B	Change METER Type	25.04.2006
A	RECORD ISSUE	10.01.2004

GENERAL ARRANGEMENT OF METERING/INSTRUMENTATION
UNIVERSITY BUILDINGS

University Estates Directorate

Date 10.01.2004

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Drawn by DPB (CAD)

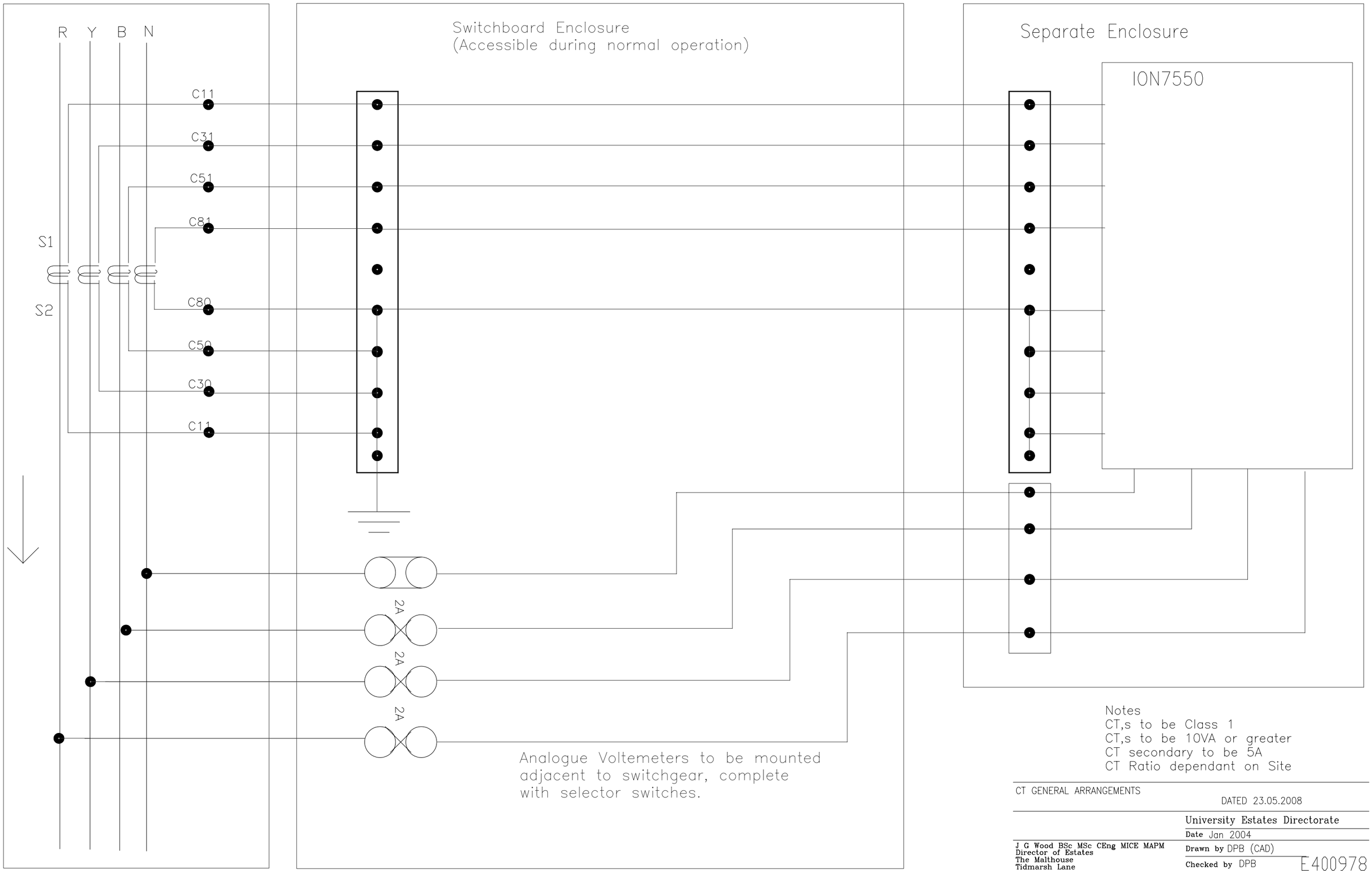
Checked by

Scale NTS

E400978

SHEET 1

Standard CT arrangement for all Substation and department switchboards (INCOMERS)



Notes
CT,s to be Class 1
CT,s to be 10VA or greater
CT secondary to be 5A
CT Ratio dependant on Site

CT GENERAL ARRANGEMENTS

DATED 23.05.2008

University Estates Directorate

Date Jan 2004

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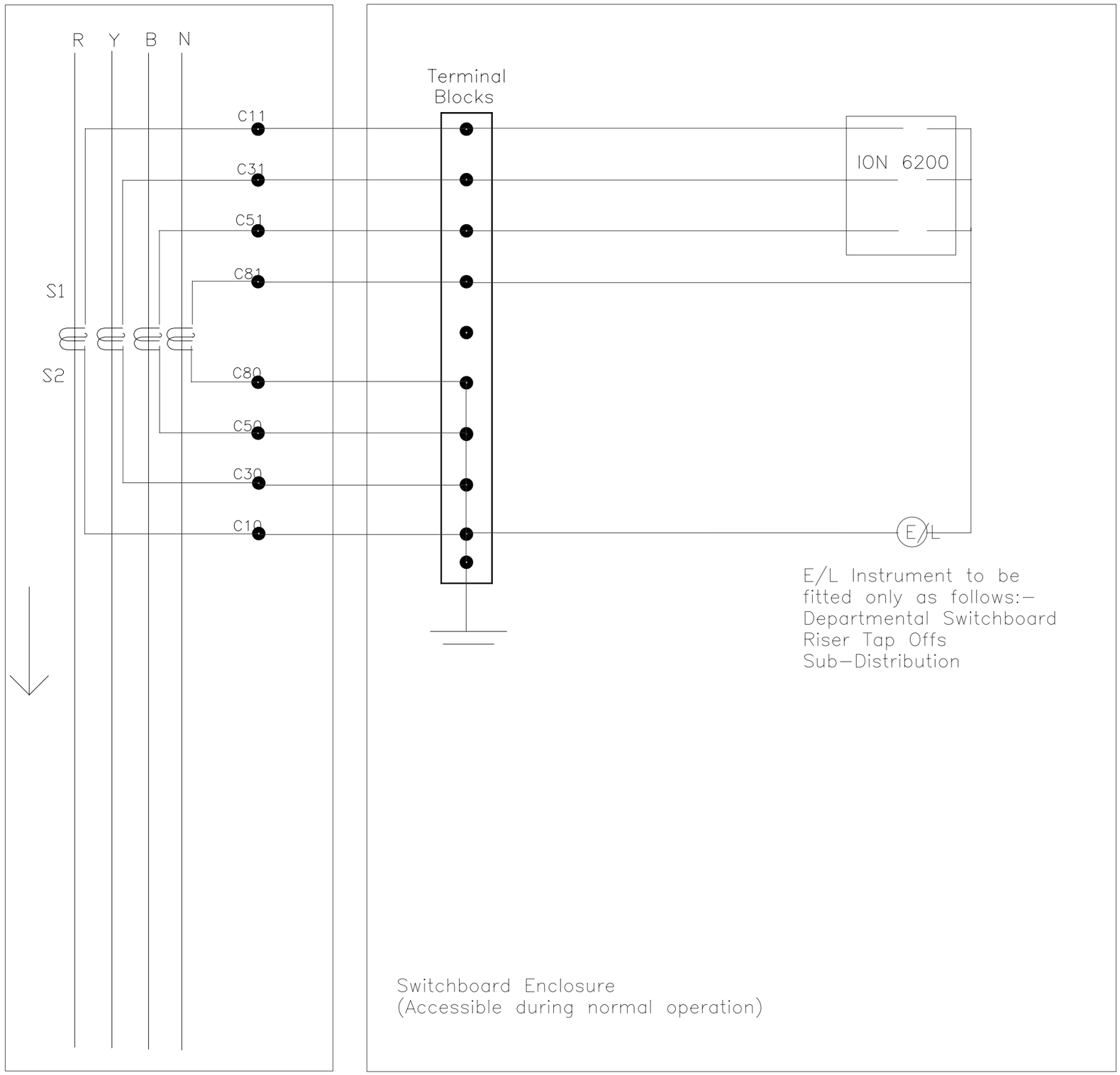
Drawn by DPB (CAD)

Checked by DPB

E400978

Scale NTS

Standard CT arrangement for all Substation and department switchboards (OUTGOING)



Notes
CT,s to be Class 1
CT,s to be 10VA or greater
CT secondary to be 5A
CT Ratio dependant on Site

CT GENERAL ARRANGEMENTS WITH METER/INSTRUMENT SHOWN

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University Estates Directorate

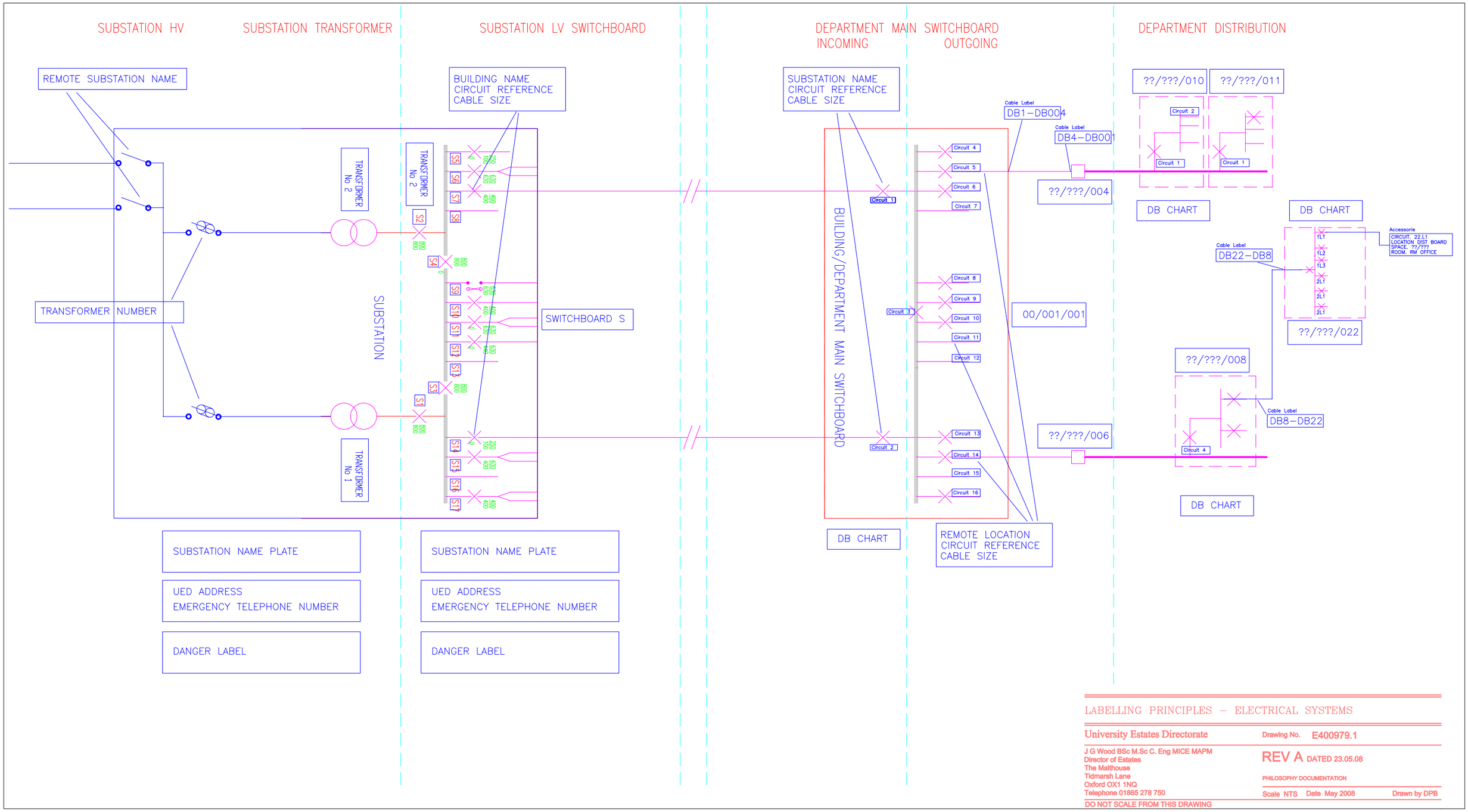
Date Apr 06

Drawn by DPB (CAD)

Checked by DPB

E400978

Scale NTS



LABELLING PRINCIPLES – ELECTRICAL SYSTEMS

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Drawing No. E400979.1

REV A DATED 23.05.08

PHILOSOPHY DOCUMENTATION

Scale NTS Date May 2008 Drawn by DPB

DO NOT SCALE FROM THIS DRAWING

GENERAL NOTES

1) SWITCHBOARD TO IP31
2) SWITCHBOARD INCOMER TO FORM 4 TYPE 6: OUTGOING TO FORM 4 TYPE 2
3) SPECIAL FINISH – COLOUR OXFORD BLUE
4) BUSBARS RATED TO INCOMING DEVICE – Min 50 kA FOR 1 SEC
5) MIMIC ON FRONT OF PANEL
6) FURSE SURGE PROTECTION DEVICE(IF REQUIRED)
   TYPE ESP415 M1 – WIRED FOR REMOTE INDICATION
7) ALL OUTGOING MCCB's WILL BE 4P PLUG IN MERLIN GERIN NS RANGE
8) ▲ DENOTES TRANSIT SPLITS (TO BE AGREED)
9) INOCMERS AND BUSBARS SHOWN FOR BOTTOM ENTRY

INCOMING CIRCUIT

1) 4 No CT's FOR REMOTE METERING FACILITY ONLY (ION7550)
2) CURRENT / VOLTAGE BLOCKS FOR REMOTE METERING
   TO BE POSITIONED FOR SAFE ACCESS
   SEE STANDARD WIRING DIAGRAM OXFORD 3
3) 1 No ANALOGUE VOLTMETER + SEL SW READING PH TO PH
   & PH TO NEUTRAL VOLTS (ADDITIONAL SEL SW TO INDICATE
   INCOMING VOLTS / BUSBAR VOLTS IF MORE THAN 1 INCOMER)
4) INCOMING MCCB TO BE MERLIN GERIN 4 POLE FIXED TYPE NS RANGE
5) INCOMING MCCB TO BE PADLOCKABLE ON / OFF
6) REMOVABLE FRAME ANGLE AT INCOMING CABLE ENTRY

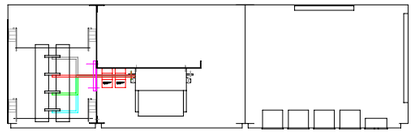
IBUS–SECTION

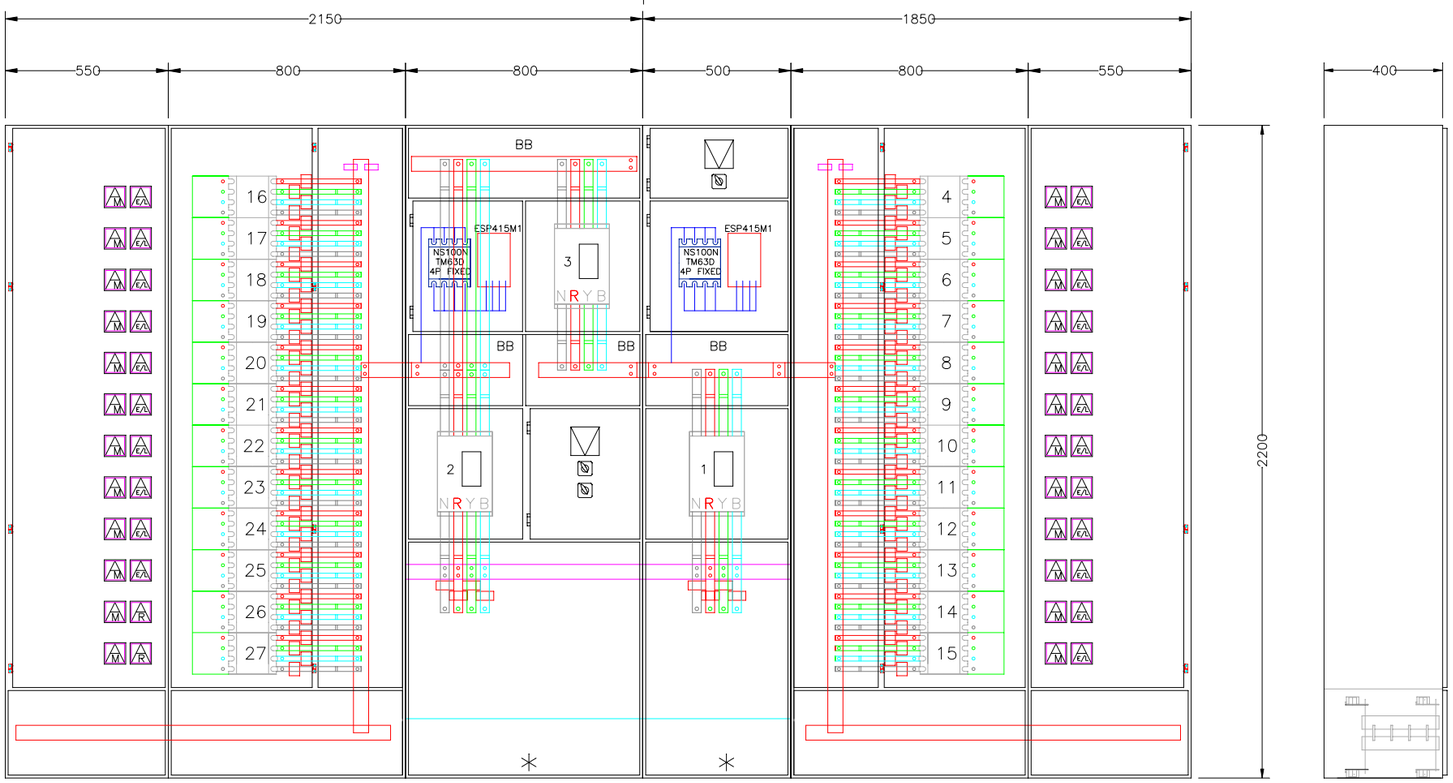
1) MCCB TO BE MERLIN GERIN 4 POLE FIXED TYPE NS RANGE

OUTGOING CIRCUITS

1) 4 No CT's – ION6200 METER + E/L AMMETER
   SEE STANDARD WIRING DIAGRAM OXFORD 4
   CT SHORTING BLOCKS TO BE POSITIONED FOR SAFE ACCESS
   NO REMOTE METERING BLOCKS ARE REQUIRED
   NO VOLTAGE REF REQUIRED
2) NO AUXILIARIES ARE FITTED
3) FOR ALL MCCB's UP TO 250A – ALL CT's WILL BE 250/5
4) FOR ALL MCCB's 400A TO 630A – ALL CT's WILL BE 600/5
5) ALL MCCB's ARE PADLOCKABLE ON / OFF
6) ALL FUTURE CIRCUITS EQUIPPED WITH PLUG IN BASE,
   ALL COPPER CONNS, CT's & WIRING BUT WITHOUT METERS

Single Incomer Section only
Allowance shall be made for Second Incomer





PANEL	1	2	3	4	5	6
WEIGHT	APP 100KG ▲	APP 300KG ▲	APP 200KG ▲	APP 125KG ▲	APP 300KG ▲	APP 100KG

TYPICAL BUILDING LV SWITCHBOARD (2 Incomers)

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Drawing No. E400987.2

REV A DATED 22.05.2008

PHILOSOPHY DOCUMENTATION

Scale NTS Date May 2008 Drawn by SWSL & DPB

DO NOT SCALE FROM THIS DRAWING

GENERAL NOTES

1) SWITCHBOARD TO IP31
2) SWITCHBOARD TO FORM 4 TYPE 6
3) SPECIAL FINISH – COLOUR OXFORD BLUE
4) BUSBARS RATED TO INCOMING DEVICE – 50 kA FOR 1 SEC
5) MIMIC ON FRONT OF PANEL
6) FURSE SURGE PROTECTION DEVICE(IF REQUIRED)
   TYPE ESP415 M1 – WIRED FOR REMOTE INDICATION
7) ALL OUTGOING MCCB's WILL BE PLUG IN TYPE N
7) ▲ DENOTES TRANSIT SPLITS

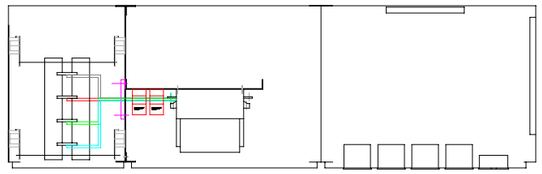
INCOMING CIRCUIT

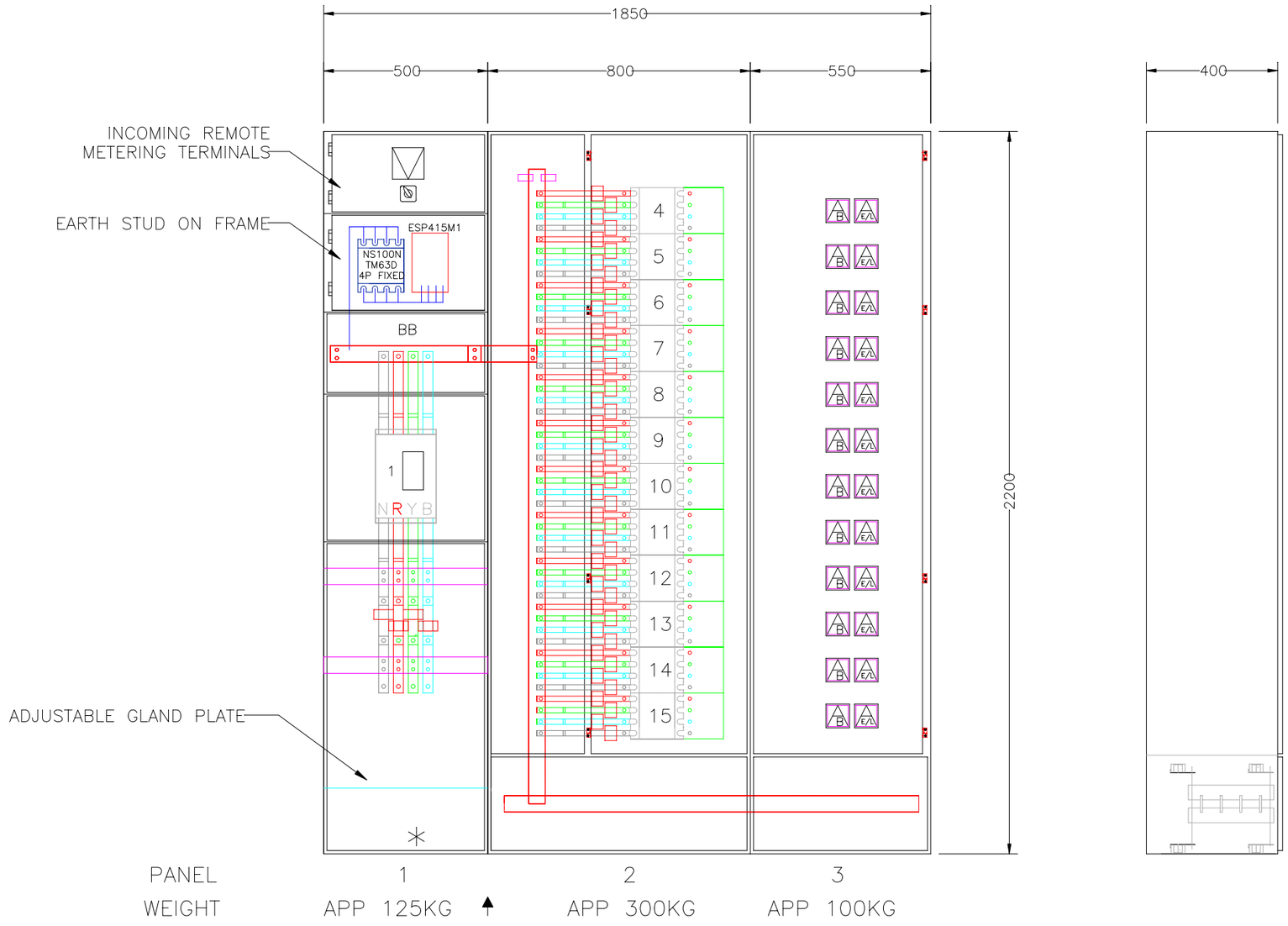
1) 4 No CT's FOR REMOTE METERING FACILITY ONLY
2) CURRENT / VOLTAGE BLOCKS FOR REMOTE METERING
   TO BE POSITIONED FOR SAFE ACCESS
   SEE STANDARD WIRING DIAGRAM OXFORD 3
3) 1 No ANALOGUE VOLTMETER + SEL SW READING PH TO PH
   & PH TO NEUTRAL VOLTS (ADDITIONAL SEL SW TO INDICATE
   INCOMING VOLTS / BUSBAR VOLTS IF MORE THAN 1 INCOMER)
4) INCOMING MCCB TO BE MERLIN GERIN 4 POLE FIXED TYPE N
5) INCOMING MCCB TO BE PADLOCKABLE ON / OFF
6) REMOVABLE FRAME ANGLE AT INCOMING CABLE ENTRY

OUTGOING CIRCUITS

1) 4 No CT's – 1 No POWER MEASUREMENT 6200ION + E/L AMMETER +

   SEE STANDARD WIRING DIAGRAM OXFORD 4
   CT SHORTING BLOCKS TO BE POSITIONED FOR SAFE ACCESS
   NO REMOTE METERING BLOCKS ARE REQUIRED
   NO VOLTAGE REF REQUIRED
2) NO AUXILIARIES ARE FITTED
3) FOR ALL MCCB's UP TO 250A – ALL CT's WILL BE 250/5
4) FOR ALL MCCB's 400A TO 630A – ALL CT's WILL BE 600/5
5) ALL MCCB's ARE PADLOCKABLE ON / OFF
6) ALL FUTURE CIRCUITS EQUIPPED WITH PLUG IN BASE,
   ALL COPPER CONNS, CT's & WIRING BUT WITHOUT METERS





TYPICAL BUILDING LV SWITCHBOARD (Single Incomer)

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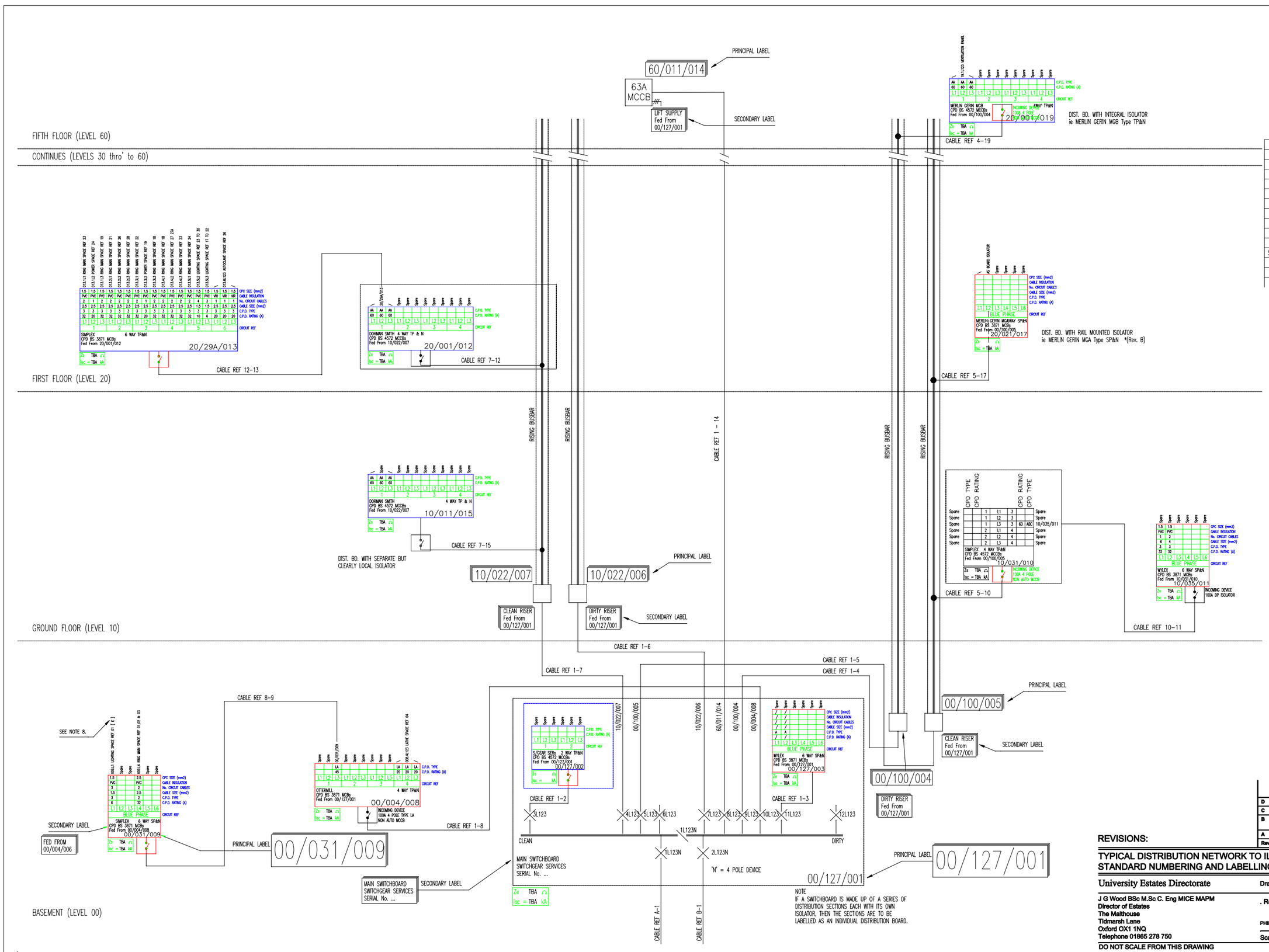
Drawing No. E400987.3

REV A DATED 23.05.08

PHILOSOPHY DOCUMENTATION

Scale NTS Drawn by Swithgear Services Ltd

DO NOT SCALE FROM THIS DRAWING



CIRCUIT .....
LOCATION / DIST. BOARD:–
SPACE .....
ROOM .....

SAMPLE OF CIRCUIT LABEL. TO BE AFFIXED TO ALL FINAL CIRCUIT ACCESSORIES eg. SWITCHES SOCKETS etc..

TO BE WRITTEN IN PERMANENT INK PEN CERAMIC FIBRE TIP eg STAEDTLER LUMOCOLOR 318 AV

SCHEDULE OF SUB–MAIN CABLES

REF	TYPE	SIZE	approx. LENGTH
A–1	XPLE/SWA/XPLE	4c 150sqmm Al	120M
B–1	XPLE/SWA/XPLE	4c 150sqmm Al	185M
1–2	XPLE/SWA/XPLE	4c 95sqmm Cu	12M
1–3	XPLE/SWA/XPLE	4c 95sqmm Cu	12M
1–4	XPLE/SWA/XPLE	4c 95sqmm Cu	37M
1–5	XPLE/SWA/XPLE	4c 95sqmm Cu	37M
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8–9	PVC SINGLES	2 x 25sqmm Cu	18M
3–8	PVC SINGLES	4 x 35sqmm Cu	39M

EXAMPLE OF SUB–MAIN SCHEDULE

NOTES

1. THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE STANDARD LABELLING REQUIRED ON ALL CIRCUIT EQUIPMENT FROM THE MAIN SWITCHBOARD TO THE ACCESSORY ON A FINAL CIRCUIT.

2. THE PRINCIPAL IDENTITY MUST BE THE NUMERIC CODE AND IF, CONSIDERED NECESSARY BY THE DESIGNER THIS CAN BE REINFORCED BY A DESCRIPTIVE LABEL WHICH IS TO BE SUBORDINATE TO THE PRINCIPAL LABEL.

3. ALL DISTRIBUTION BOARDS ARE TO HAVE A THREE SECTION NUMERICAL IDENTITY A/B/C, A= THE FLOOR CODE(eg 20), B= THE SPACE REFERENCE WHERE THE BOARD IS LOCATED (eg 29A) AND C= THE UNIQUE NUMBER GIVEN ONLY TO THAT BOARD.

4. SPACE REFERENCES SHOWN HERE ARE EXAMPLES ONLY, ACTUAL SPACE REFERENCES MUST BE TAKEN FROM THE BUILDING LAYOUT DRAWINGS

5. UNLESS SHOWN OTHERWISE Isc RELATES TO THE PHASE TO PHASE SHORT CIRCUIT FAULT ON MULTI PHASE BOARDS AND THE PHASE TO NEUTRAL SHORT CIRCUIT CURRENT ON SINGLE PHASE BOARDS

6. ON RECORD DRAWINGS Isc AND Zs/Ze ARE SHOWN AS ACTUAL MEASURED VALUES.
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7. CPD TYPE ON MCCB BOARDS RELATES TO THE PARTICULAR MANUFACTURERS REFERENCE.

8. [E] DENOTES CIRCUIT CONNECTED TO ELECTRONIC OR SENSITIVE EQUIPMENT THAT MAY BE DAMAGED BY TESTING.

9. ALL CIRCUIT CONDUCTORS TO BE LABELLED WITH THEIR NUMERICAL CIRCUIT REFERENCE (e.g. 013.R) VIA AN APPROVED CABLE MARKER SYSTEM

SCHEDULE OF ABBREVIATIONS

CPC = CIRCUIT PROTECTIVE CONDUCTOR

CPD = CIRCUIT PROTECTIVE DEVICE

REVISIONS:

Rev	Description	Date
D	PHASE LETTERS R, Y & B CHANGED TO L1, L3 & L3	11.10.04
C	TITLE BLOCK REVISED	10.01.04
B	REVISED TO SHOW DIFFERENT TYPES OF DB ISOLATOR, NOTE 8 ADDED AND REV. NOTES ADDED TO DBs 17 & 19.	15.12.95
A	REVISED TO SHOW ENCLOSED UNITS WITHIN MAIN PANEL	14.11.95

TYPICAL DISTRIBUTION NETWORK TO ILLUSTRATE STANDARD NUMBERING AND LABELLING SYSTEM

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Drawing No. 400005

. Rev D Dated 23.05.2008

PHILOSOPHY DOCUMENTATION

Scale NTS Date 30-10-91 Drawn by DQA

DO NOT SCALE FROM THIS DRAWING

SUBSTATION INCOMING

SUBSTATION OUTGOING

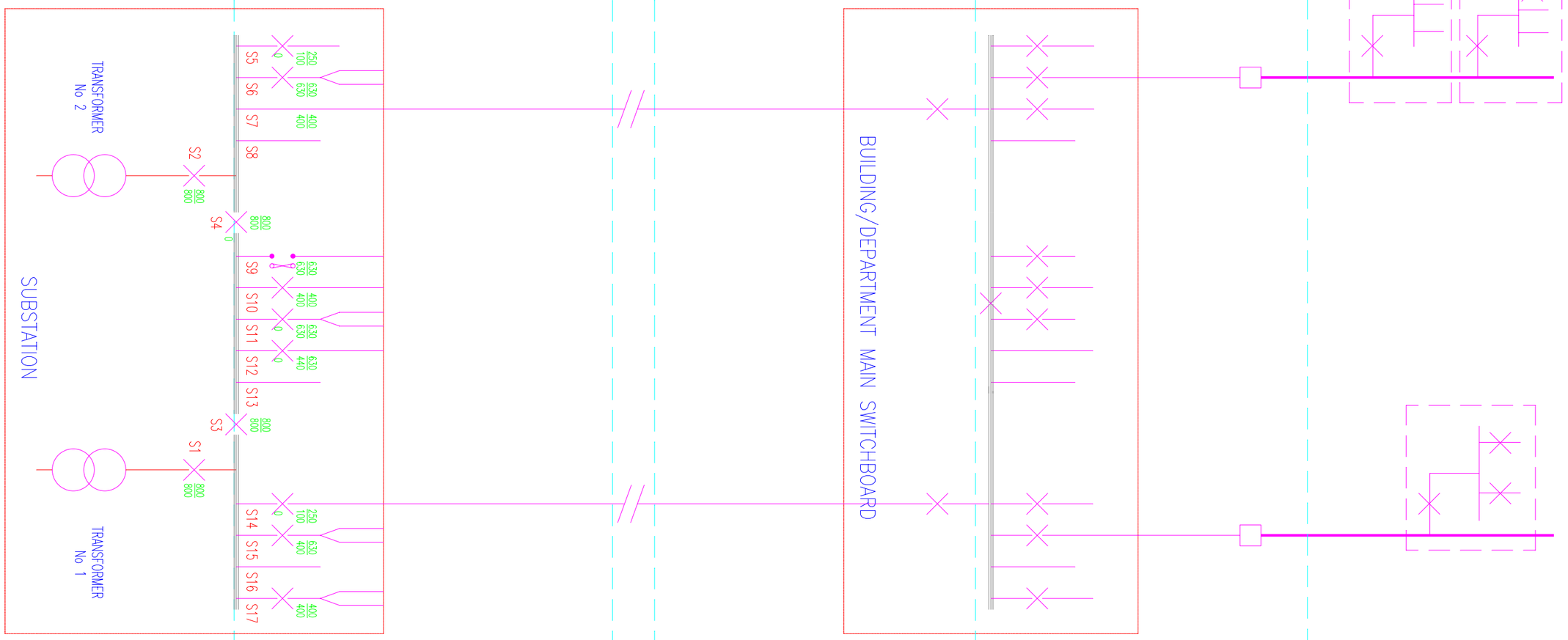
DEPARTMENT MAIN SWITCHBOARD INCOMING

DEPARTMENT MAIN SWITCHBOARD OUTGOING

DEPARTMENT DISTRIBUTION

IN ALL CASES CT BLOCK TO BE IN AN ENCLOSURE ACCESSIBLE DURING NORMAL OPERATION.

WHERE TWO INCOMERS ARE USED SUMMATION CT'S TO BE FITTED FOR METER CONNECTION



CT BLOCK TO BE FITTED AT REAR AS 400979 SHEET 2

INSTRUMENTS
ANALOGUE VOLTMETER WITH SELECTOR

METER TO BE 7550ION
TO READ:–
ALL PHASES + NEUTRAL CURRENT

FOR VARIABLE LOADS GREATER THAN 60A. CT ARRANGEMENT AS E400979 Sheet 3

INSTRUMENTS:–
ELECTRONIC DEVICE (6200ION)

METERS – NONE

CTs TO BE INSTALLED AS 400979 SHEET 2

INSTRUMENTS:–
ANALOGUE VOLTMETER AND SELECTOR

METER TO BE 7550ION
TO READ:–
ALL PHASES + EARTH LEAKAGE

FOR VARIABLE LOADS GREATER THAN 60A. CT ARRANGEMENT AS E400979 Sheet 3

INSTRUMENTS:–
ELECTRONIC DEVICE (6200ION)
plus Earth Leakage

METERS – NONE

SUB–DISTRIBUTION BOARDS ETC WITH VARIABLE LOADS > 60A CT ARRANGEMENT AS E400979 Sht 3

INSTRUMENTS:–
AS MAIN SWITCHBOARD OUTGOING

METERS:– NONE

Rev	Description	Date
B	Change METER Type	25.04.2006
A	RECORD ISSUE	10.01.2004

GENERAL ARRANGEMENT OF METERING/INSTRUMENTATION
UNIVERSITY BUILDINGS

University Estates Directorate

Date 10.01.2004

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Telephone 278750

Drawn by DPB (CAD)

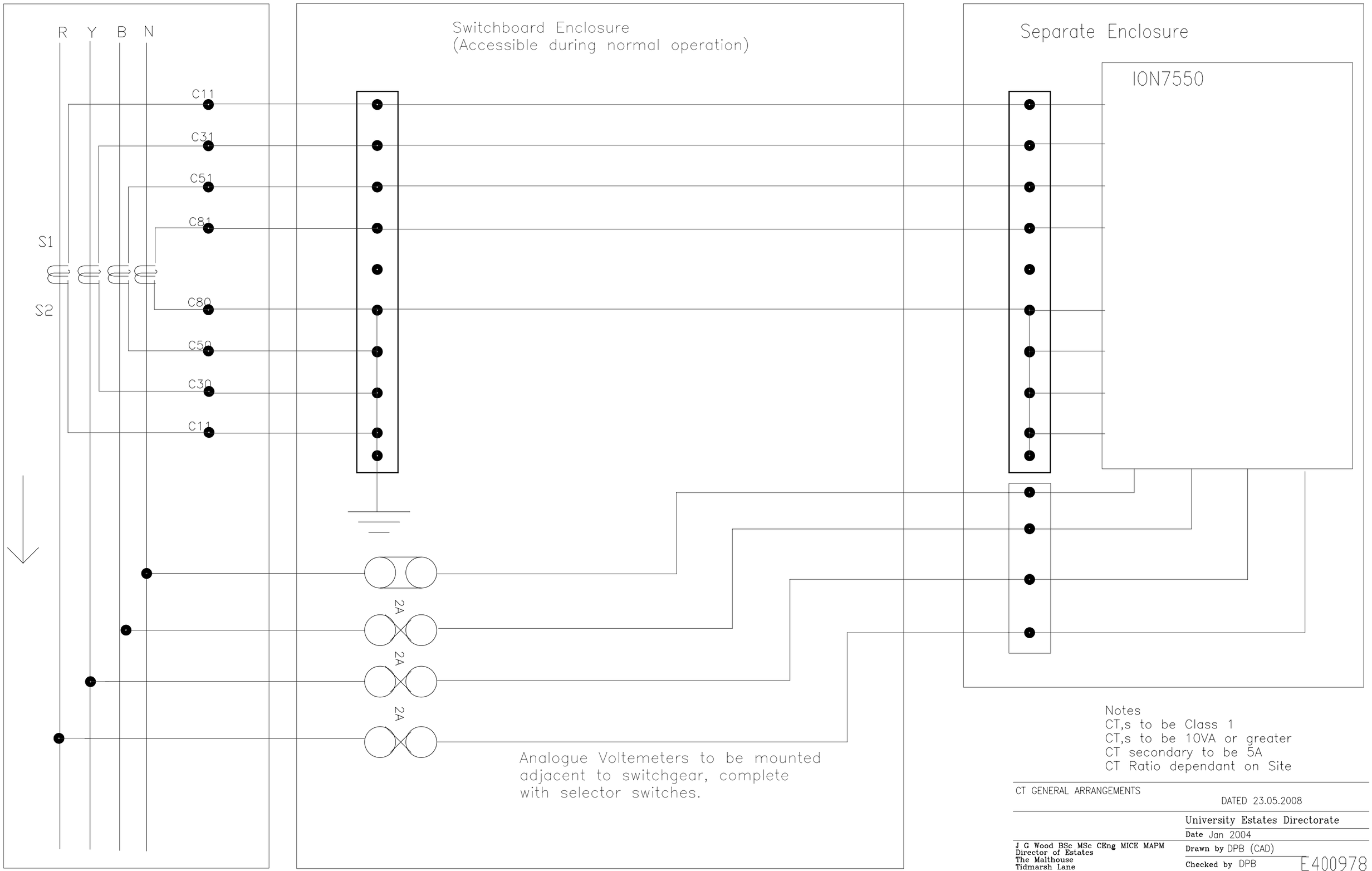
Checked by

Scale NTS

E400978

SHEET 1

Standard CT arrangement for all Substation and department switchboards (INCOMERS)



Notes
CT,s to be Class 1
CT,s to be 10VA or greater
CT secondary to be 5A
CT Ratio dependant on Site

CT GENERAL ARRANGEMENTS

DATED 23.05.2008

University Estates Directorate

Date Jan 2004

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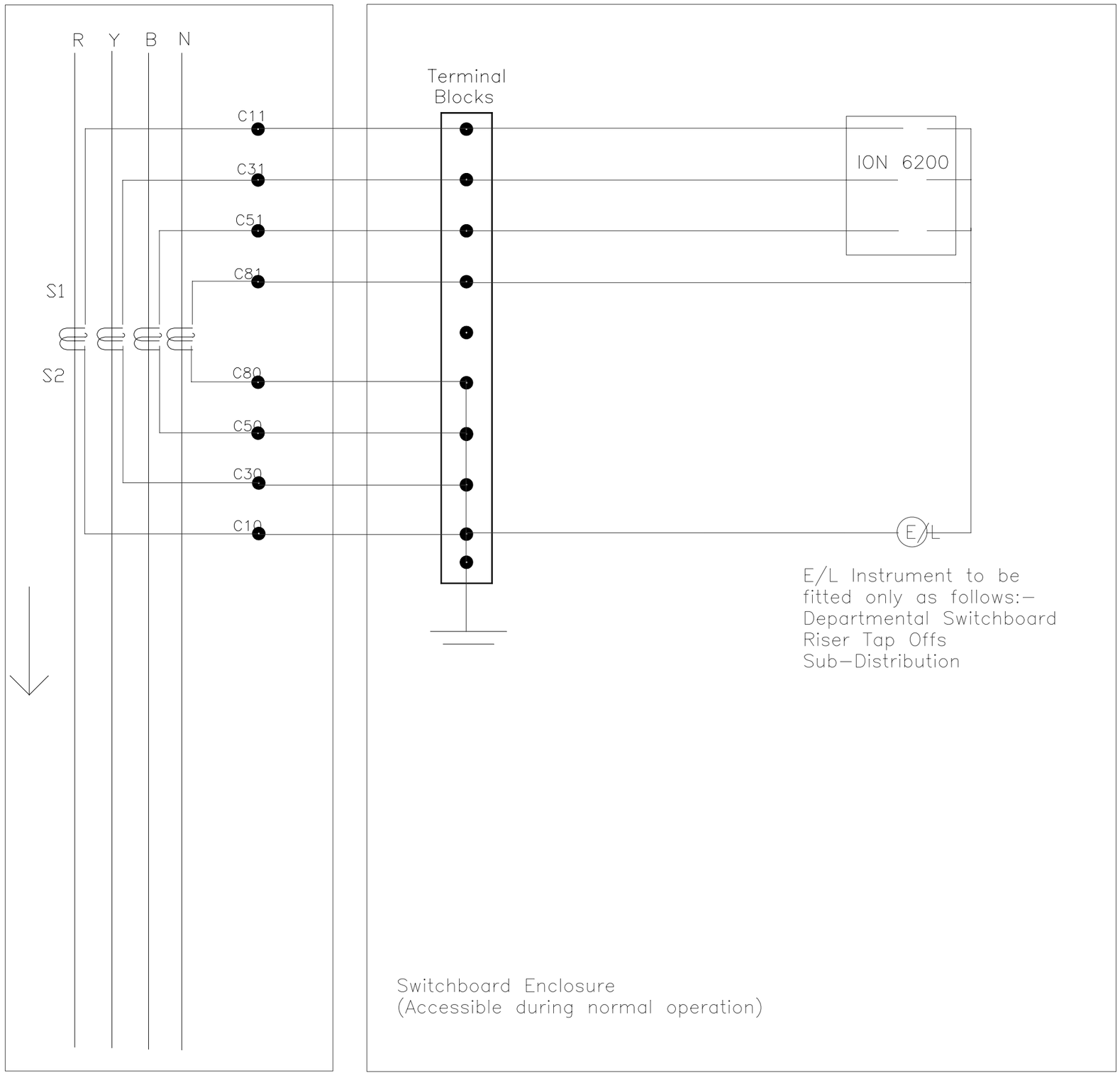
Drawn by DPB (CAD)

Checked by DPB

E400978

Scale NTS

Standard CT arrangement for all Substation and department switchboards (OUTGOING)



Notes
CT,s to be Class 1
CT,s to be 10VA or greater
CT secondary to be 5A
CT Ratio dependant on Site

CT GENERAL ARRANGEMENTS WITH METER/INSTRUMENT SHOWN

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University Estates Directorate

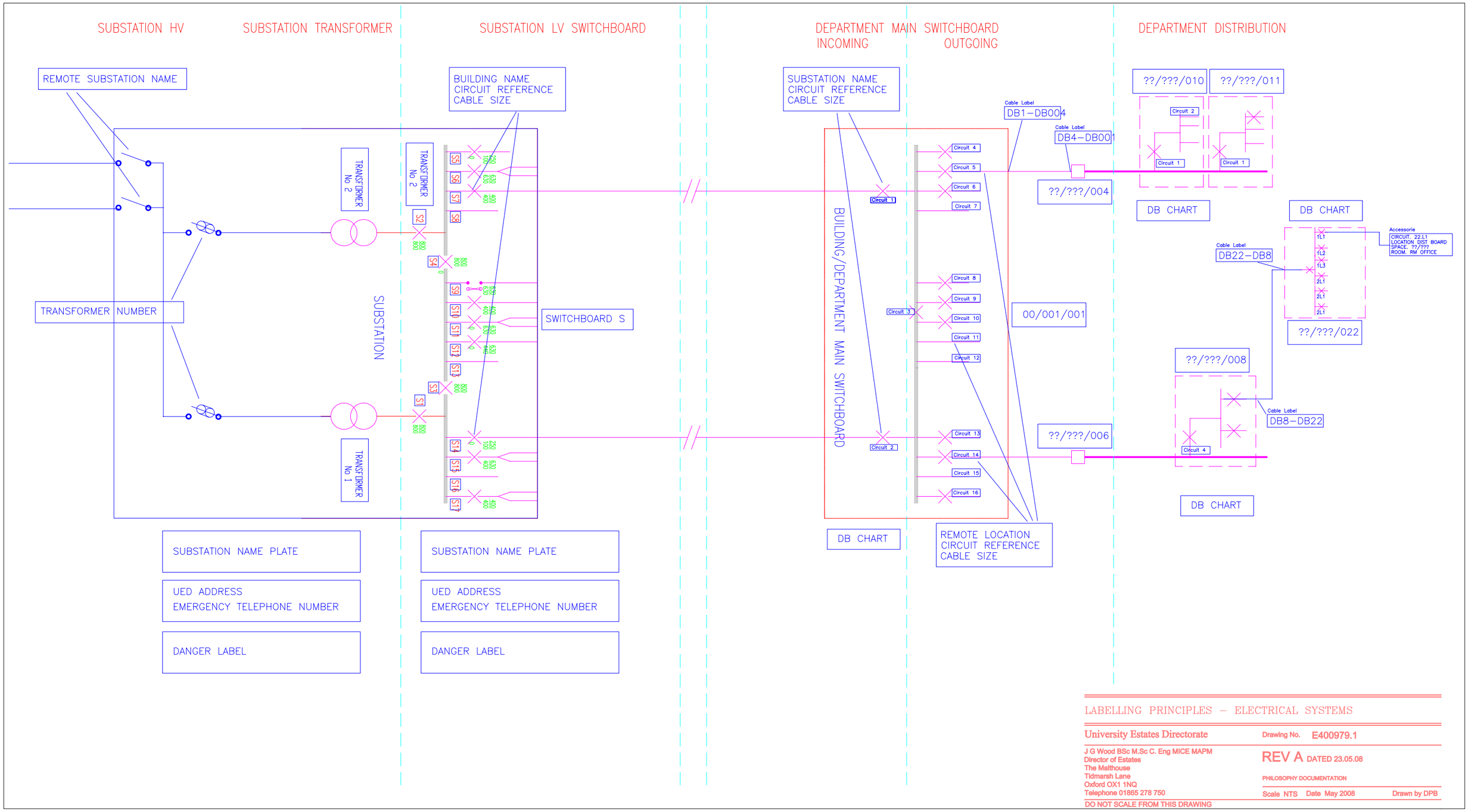
Date Apr 06

Drawn by DPB (CAD)

Checked by DPB

E400978

Scale NTS



LABELLING PRINCIPLES – ELECTRICAL SYSTEMS

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Telephone 01865 278 750

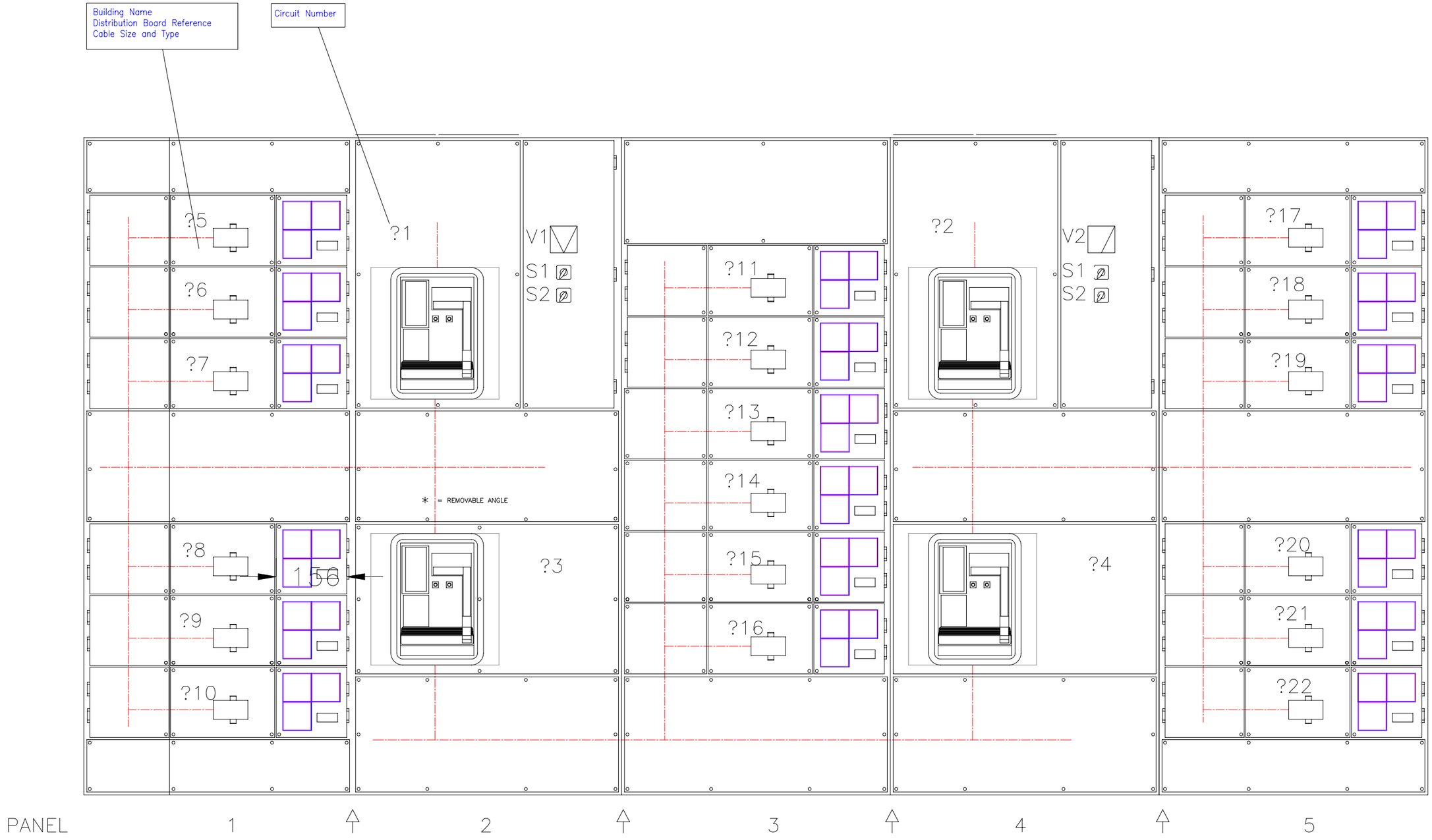
Drawing No. E400979.1

REV A DATED 23.05.08

PHILOSOPHY DOCUMENTATION

Scale NTS Date May 2008 Drawn by DPB

DO NOT SCALE FROM THIS DRAWING



TYPICAL SUBSTATION LV SWITCHBOARD LABELING PRINCIPLES

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Drawing No. E400979.2

REV A DATED 23.05.2008

RECORD DOCUMENTATION

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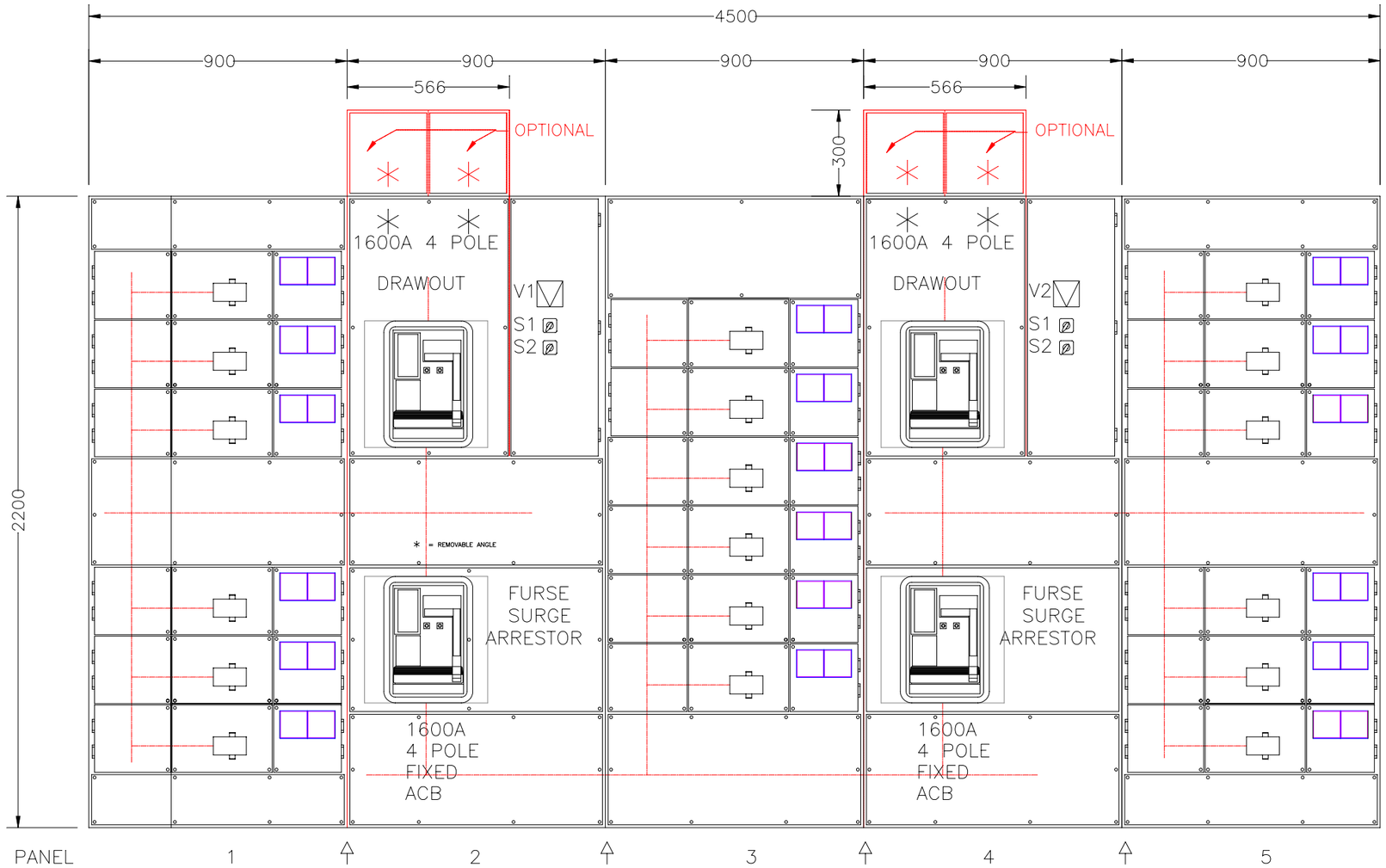

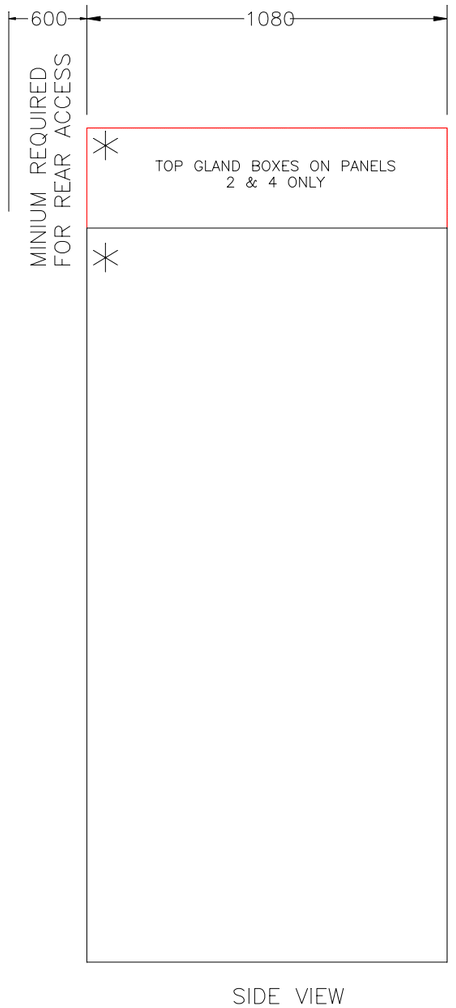

GENERAL NOTES

1) SWITCHBOARD TO IP43
2) SWITCHBOARD TO FORM 4 TYPE 6
3) SPECIAL FINISH – COLOUR OXFORD BLUE
4) ALL REAR DOORS TO BE REMOVABLE & PADLOCKABLE
5) BUSBARS TO BE MIN 1600A – MIN 65kA FOR 1 SEC
6) FURSE SURGE PROTECTION DEVICES ON BOTH INCOMERS (IF REQUIRED) TYPE ESP415 M1 – WIRED FOR REMOTE INDICATION
7) WHITE MIMIC DIAGRAM ON FRONT OF SWITCHBOARD

INCOMING CIRCUITS

1) 4 No CT's FOR REMOTE METERING FACILITY
   CURRENT / VOLTAGE TERMINAL BLOCKS FOR REMOTE METERING TO BE POSITIONED IN THE REAR OF THE SWITCHBOARD
2) 1 No ANALOGUE VOLTMETER + SEL SW READING PH TO PH & PH TO NEUT VOLTS SEPERATE SEL SW TO INDICATE INCOMING VOLTS / BUS BAR VOLTS
3) INCOMING A.C.B's G E POWER CONTROLS FITTED WITH M–PRO 30 / UNRESTRICTED EARTH FAULT, 230 VOLT SHUNT TRIP / CLOSING COIL FOR REMOTE TRIPPING AND CLOSING
4) 2 N/O & 2 N/C AUXILIARIES WIRED TO TERMINALS FOR REMOTE INDICATION

OUTGOING CIRCUITS

1) 4 No CT's – 1 Nos ION6200 METER + ANALOGUE EARTH LEAKAGE METER
   SEE OXFORD 2 STANDARD WIRING DIAGRAM – CT SHORTING BLOCKS IN FRONT INSTRUMENT COMPARTMENT
2) NO AUXILIARY CONTACTS FITTED UNLESS SPECIFIED
3) ALL FUTURE CIRCUITS EQUIPPED WITH PLUG IN BASE & ALL COPPER CONNS BUT WITHOUT CT's OR INSTRUMENTS
4) FOR ALL MCCB's UP TO 250A, ALL CT's WILL BE 250/5
   FOR ALL MCCB's FROM 400A UP TO 630A, ALL CT's WILL BE 600/5
5) ALL OUTGOING CIRCUITS TO BE PLUGGABLE 4 POLE MERLIN GERIN MCCB's NS RANGE

TYPICAL SUBSTATION LV SWITCHBOARD

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Drawing No. E400987.1

REV A DATED 23.05.2008

PHILOSOPHY DOCUMENTATION

Scale NTS Date May 2008 Drawn by DPB

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GENERAL NOTES

1) SWITCHBOARD TO IP31
2) SWITCHBOARD INCOMER TO FORM 4 TYPE 6: OUTGOING TO FORM 4 TYPE 2
3) SPECIAL FINISH – COLOUR OXFORD BLUE
4) BUSBARS RATED TO INCOMING DEVICE – Min 50 kA FOR 1 SEC
5) MIMIC ON FRONT OF PANEL
6) FURSE SURGE PROTECTION DEVICE(IF REQUIRED)
   TYPE ESP415 M1 – WIRED FOR REMOTE INDICATION
7) ALL OUTGOING MCCB's WILL BE 4P PLUG IN MERLIN GERIN NS RANGE
8) ▲ DENOTES TRANSIT SPLITS (TO BE AGREED)
9) INOCMERS AND BUSBARS SHOWN FOR BOTTOM ENTRY

INCOMING CIRCUIT

1) 4 No CT's FOR REMOTE METERING FACILITY ONLY (ION7550)
2) CURRENT / VOLTAGE BLOCKS FOR REMOTE METERING
   TO BE POSITIONED FOR SAFE ACCESS
   SEE STANDARD WIRING DIAGRAM OXFORD 3
3) 1 No ANALOGUE VOLTMETER + SEL SW READING PH TO PH
   & PH TO NEUTRAL VOLTS (ADDITIONAL SEL SW TO INDICATE
   INCOMING VOLTS / BUSBAR VOLTS IF MORE THAN 1 INCOMER)
4) INCOMING MCCB TO BE MERLIN GERIN 4 POLE FIXED TYPE NS RANGE
5) INCOMING MCCB TO BE PADLOCKABLE ON / OFF
6) REMOVABLE FRAME ANGLE AT INCOMING CABLE ENTRY

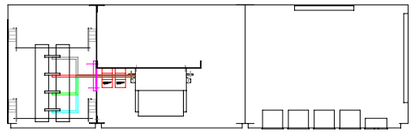
IBUS–SECTION

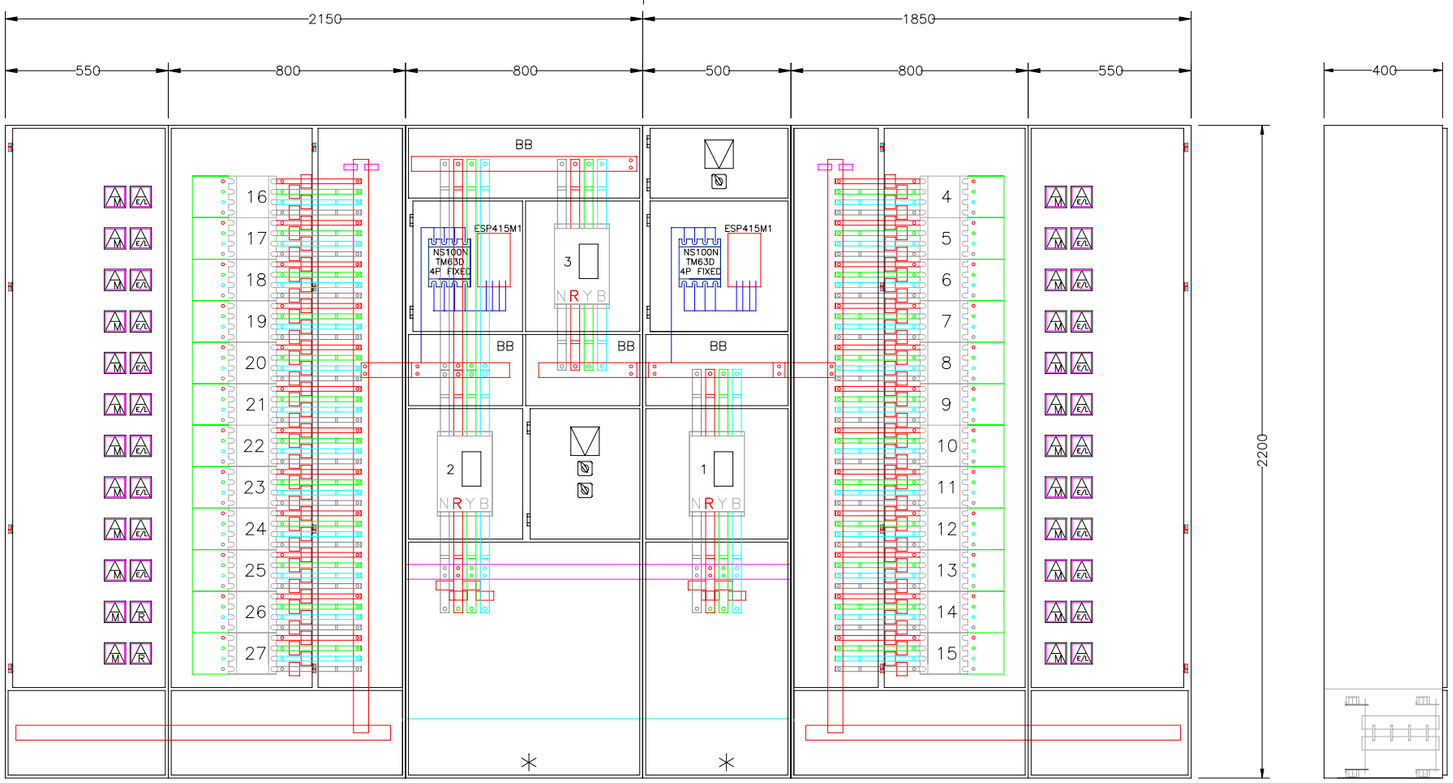
1) MCCB TO BE MERLIN GERIN 4 POLE FIXED TYPE NS RANGE

OUTGOING CIRCUITS

1) 4 No CT's – ION6200 METER + E/L AMMETER
   SEE STANDARD WIRING DIAGRAM OXFORD 4
   CT SHORTING BLOCKS TO BE POSITIONED FOR SAFE ACCESS
   NO REMOTE METERING BLOCKS ARE REQUIRED
   NO VOLTAGE REF REQUIRED
2) NO AUXILIARIES ARE FITTED
3) FOR ALL MCCB's UP TO 250A – ALL CT's WILL BE 250/5
4) FOR ALL MCCB's 400A TO 630A – ALL CT's WILL BE 600/5
5) ALL MCCB's ARE PADLOCKABLE ON / OFF
6) ALL FUTURE CIRCUITS EQUIPPED WITH PLUG IN BASE,
   ALL COPPER CONNS, CT's & WIRING BUT WITHOUT METERS

Single Incomer Section only
Allowance shall be made for Second Incomer





PANEL	1	2	3	4	5	6
WEIGHT	APP 100KG ▲	APP 300KG ▲	APP 200KG ▲	APP 125KG ▲	APP 300KG ▲	APP 100KG

TYPICAL BUILDING LV SWITCHBOARD (2 Incomers)

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Drawing No. E400987.2

REV A DATED 22.05.2008

PHILOSOPHY DOCUMENTATION

Scale NTS Date May 2008 Drawn by SWSL & DPB

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GENERAL NOTES

1) SWITCHBOARD TO IP31
2) SWITCHBOARD TO FORM 4 TYPE 6
3) SPECIAL FINISH – COLOUR OXFORD BLUE
4) BUSBARS RATED TO INCOMING DEVICE – 50 kA FOR 1 SEC
5) MIMIC ON FRONT OF PANEL
6) FURSE SURGE PROTECTION DEVICE(IF REQUIRED)
   TYPE ESP415 M1 – WIRED FOR REMOTE INDICATION
7) ALL OUTGOING MCCB's WILL BE PLUG IN TYPE N
7) ▲ DENOTES TRANSIT SPLITS

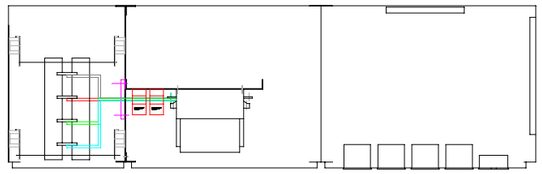
INCOMING CIRCUIT

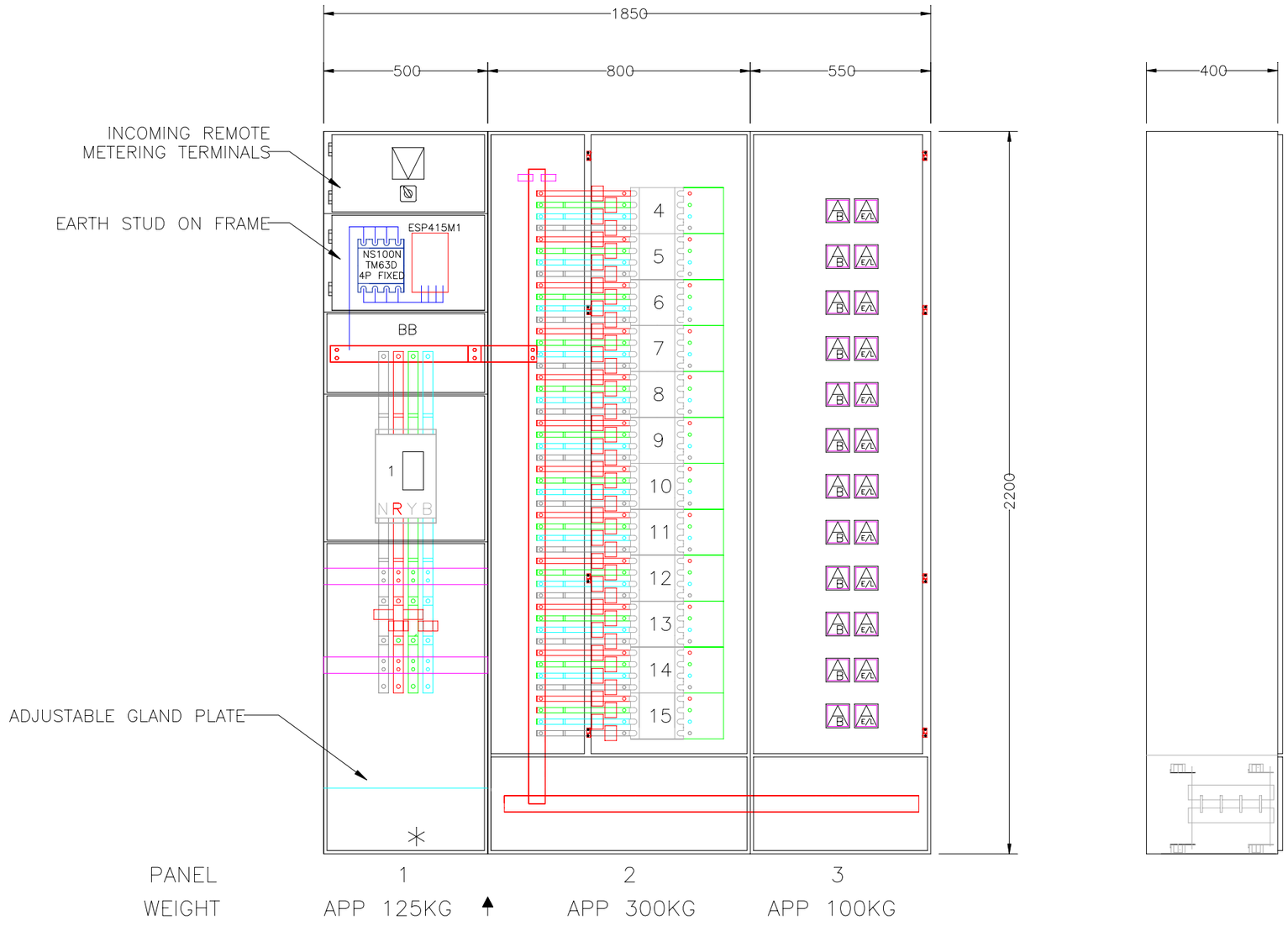
1) 4 No CT's FOR REMOTE METERING FACILITY ONLY
2) CURRENT / VOLTAGE BLOCKS FOR REMOTE METERING
   TO BE POSITIONED FOR SAFE ACCESS
   SEE STANDARD WIRING DIAGRAM OXFORD 3
3) 1 No ANALOGUE VOLTMETER + SEL SW READING PH TO PH
   & PH TO NEUTRAL VOLTS (ADDITIONAL SEL SW TO INDICATE
   INCOMING VOLTS / BUSBAR VOLTS IF MORE THAN 1 INCOMER)
4) INCOMING MCCB TO BE MERLIN GERIN 4 POLE FIXED TYPE N
5) INCOMING MCCB TO BE PADLOCKABLE ON / OFF
6) REMOVABLE FRAME ANGLE AT INCOMING CABLE ENTRY

OUTGOING CIRCUITS

1) 4 No CT's – 1 No POWER MEASUREMENT 6200ION + E/L AMMETER +

   SEE STANDARD WIRING DIAGRAM OXFORD 4
   CT SHORTING BLOCKS TO BE POSITIONED FOR SAFE ACCESS
   NO REMOTE METERING BLOCKS ARE REQUIRED
   NO VOLTAGE REF REQUIRED
2) NO AUXILIARIES ARE FITTED
3) FOR ALL MCCB's UP TO 250A – ALL CT's WILL BE 250/5
4) FOR ALL MCCB's 400A TO 630A – ALL CT's WILL BE 600/5
5) ALL MCCB's ARE PADLOCKABLE ON / OFF
6) ALL FUTURE CIRCUITS EQUIPPED WITH PLUG IN BASE,
   ALL COPPER CONNS, CT's & WIRING BUT WITHOUT METERS





TYPICAL BUILDING LV SWITCHBOARD (Single Incomer)

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Drawing No. E400987.3

REV A DATED 23.05.08

PHILOSOPHY DOCUMENTATION

Scale NTS Drawn by Swithgear Services Ltd

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