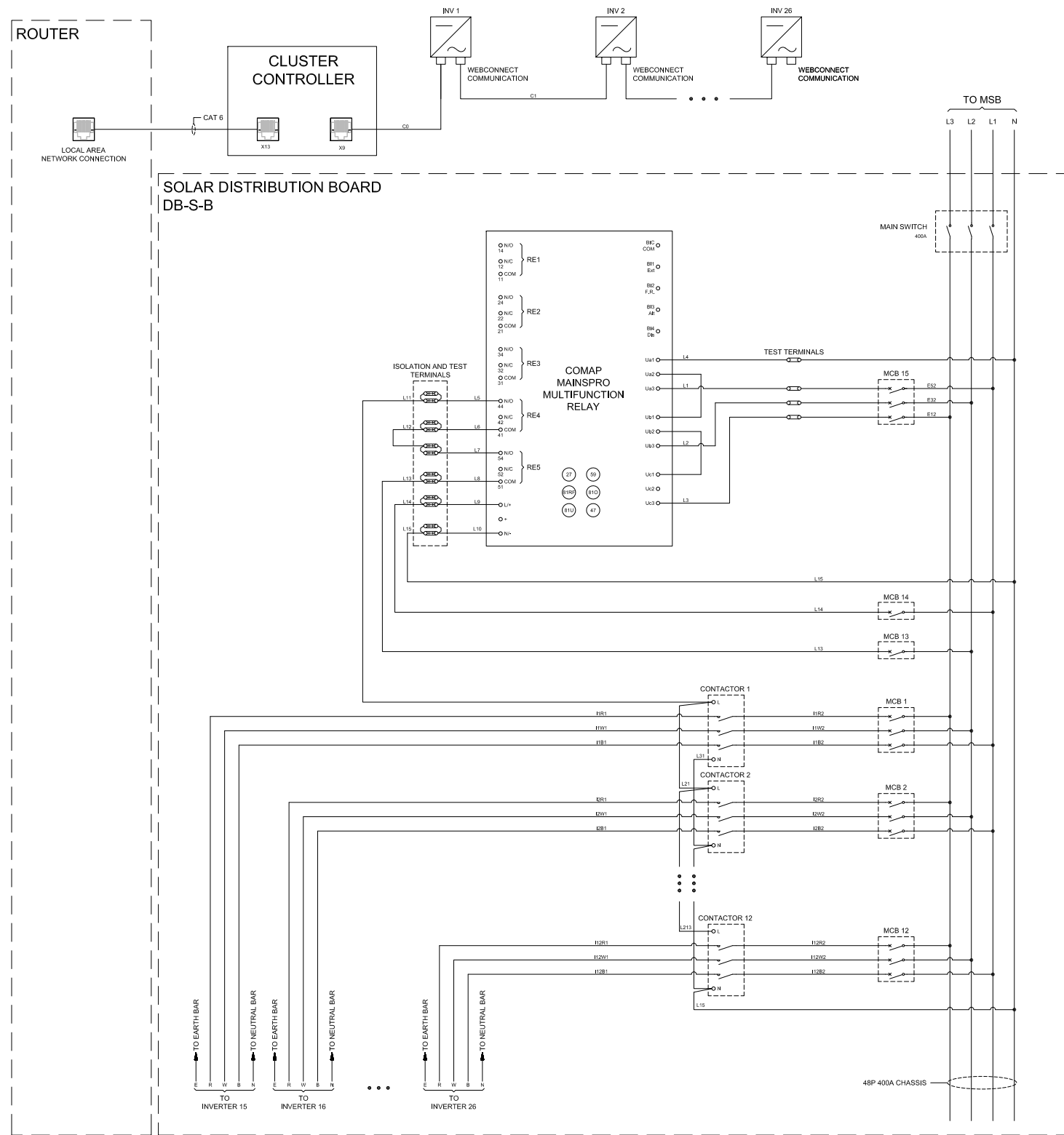


SOLAR DB COMPONENT SCHEDULE			
PART NR.	ID	MANUFACTURER	DESCRIPTION
1-8	MCB 1-8	GE	50A 3P MCB (INV 15-22 CONNECTION)
9	MCB 9	GE	32A 3P MCB (INV 23 CONNECTION)
10-11	MCB 10-11	GE	16A 3P MCB (INV 24-25 CONNECTION)
12	MCB 12	GE	10A 3P MCB (INV 26 CONNECTION)
13	MCB 13	GE	6A 1P MCB (CONTROL SUPPLY)
14	MCB 14	GE	6A 1P MCB (RELAY POWER SUPPLY)
15	MCB 15	GE	6A 3P MCB (RELAY VOLTAGE REFERENCE)
16	MAIN SWITCH	GE	250A 3P ISOLATOR
17-30	CONTACTOR 1-14	ELKO	63A 4P N/O CONTACTOR (INV 1-14 CONTROL)
31	MAINSPRO	ComAP	MAINSPRO MAINS DECOUPLING RELAY

MULTIFUNCTION RELAY TERMINAL SCHEDULE			
TERMINAL	FUNCTION	DEFAULT STATE	
RE 1	SPARE	/	
RE 2	SPARE	/	
RE 3	SPARE	/	
RE 4	!CommTrpPer	N/O	
RE 5	!InternFail	N/O	

CABLE SCHEDULE	
INVERTER 15-22 TO SOLAR DB	4C + E 10mm ² Cu
INVERTER 22-26 TO SOLAR DB	4C + E 6mm ² Cu
SOLAR DB TO MSB	4x1C 300mm ² Cu + E
AC CONTROL CIRCUITS	1.5mm ² COPPER



**SOLAR DISTRIBUTION BOARD
WIRING SCHEMATIC**
NTS

ITEM	SECONDARY PROTECTION FUNCTIONAL DESCRIPTION	VALUE	TIME DELAY
1	Under-voltage (UV) : (27P)	205 V	2 Sec
2	Over-voltage 1 (OV) : (59P)	257 V	2 Sec
3	Over-voltage 2 (OV) : (59P)	265 V	0.2 Sec
4	Under-frequency (UF) : (81U)	48.0 Hz	2 Sec
5	Over-frequency (OF) : (81O)	52.0 Hz	2 Sec
6	Rate of change of Frequency (ROCOF) : (81R)	1Hz/s	
7	Voltage Vector Shift (VVS) : (78)	8°	
8	Minimum Import	0.0 kW	2 Sec
9	Reconnection Time: 60 Sec following restoration of supply following a supply network outage		

ITEM	INVERTER PROTECTION FUNCTIONAL DESCRIPTION	VALUE	TIME DELAY
1	Under-voltage	205 V	2 Sec
2	Over-voltage 1	257 V	2 Sec
3	Over-voltage 2	265 V	0.2 Sec
4	Under-frequency	48 Hz	2 Sec
5	Over-frequency	52.0 Hz	2 Sec
6	Reconnect Time	60 Sec	

1. MAINSPRO DECOUPLING RELAY USES NORMALLY OPEN CONTACTS. WHEN A FAULT IS DETECTED A CIRCUIT IS BROKEN TO THE AC CONTROL CIRCUIT CAUSING IT TO TRIP THE CONTACTORS.
2. AUTO RECONNECT SETTING: 60 SECONDS AFTER FAULT IS CLEARED.
3. START TRIP ACTIVATED ON RELAY.

GENERAL NOTES:

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2. DO NOT SCALE FROM THE DRAWINGS.
3. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN MILLIMETERS UNLESS NOTED OTHERWISE.
4. EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED ON SITE.
5. MCB TO MATCH MAKE, MODEL AND FAULT CURRENT OF EXISTING CIRCUIT BREAKERS.

Rev	Description	Date	Checked	Authorised
C	PROTECTION SETTINGS UPDATED	29.06.17		
B	PROTECTION SETTINGS UPDATED	05.04.17		
A	CONCEPT DESIGN	10.02.17		

PROJECT: [REDACTED]

CLIENT: [REDACTED]

SOLGEN ENERGY PTY LTD

DRAWING TITLE:

DB-S-B WIRING AND PROTECTION SETTINGS

SCALE	DRAWN	CHECKED	AUTHORISED	SIZE
AS SHOWN	Date: 10.02.2017	Date: 10.02.2017	Date: 10.02.2017	A3
DRAWING No. D-EL-23965P3-204				Rev C

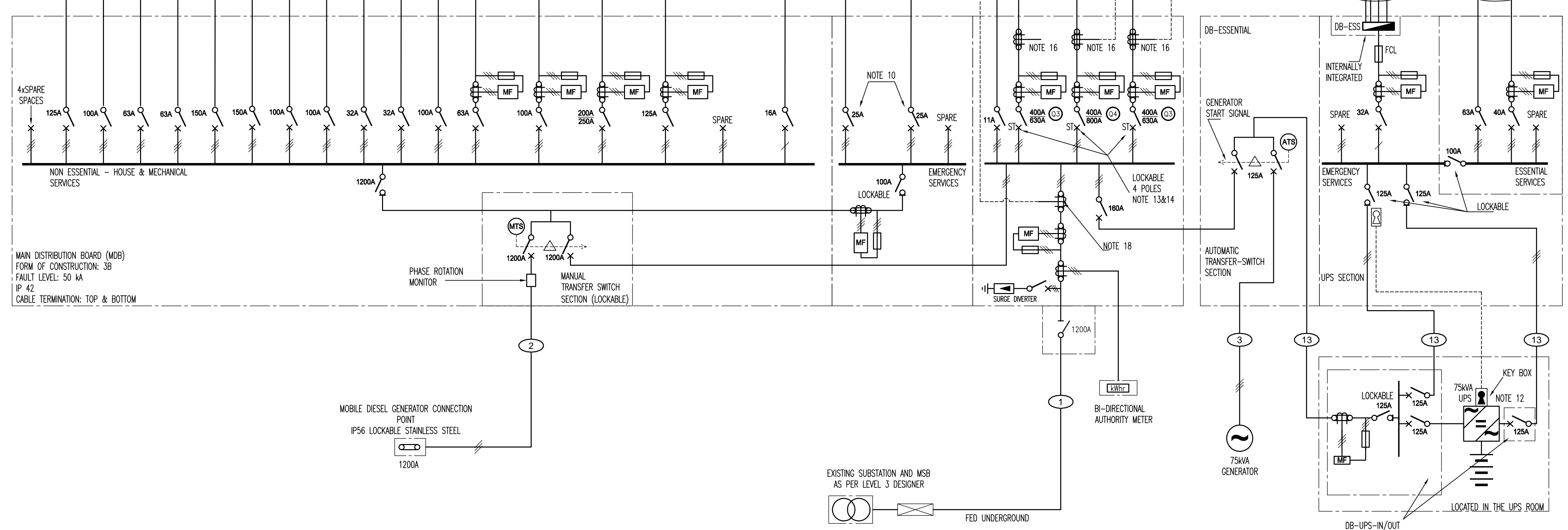
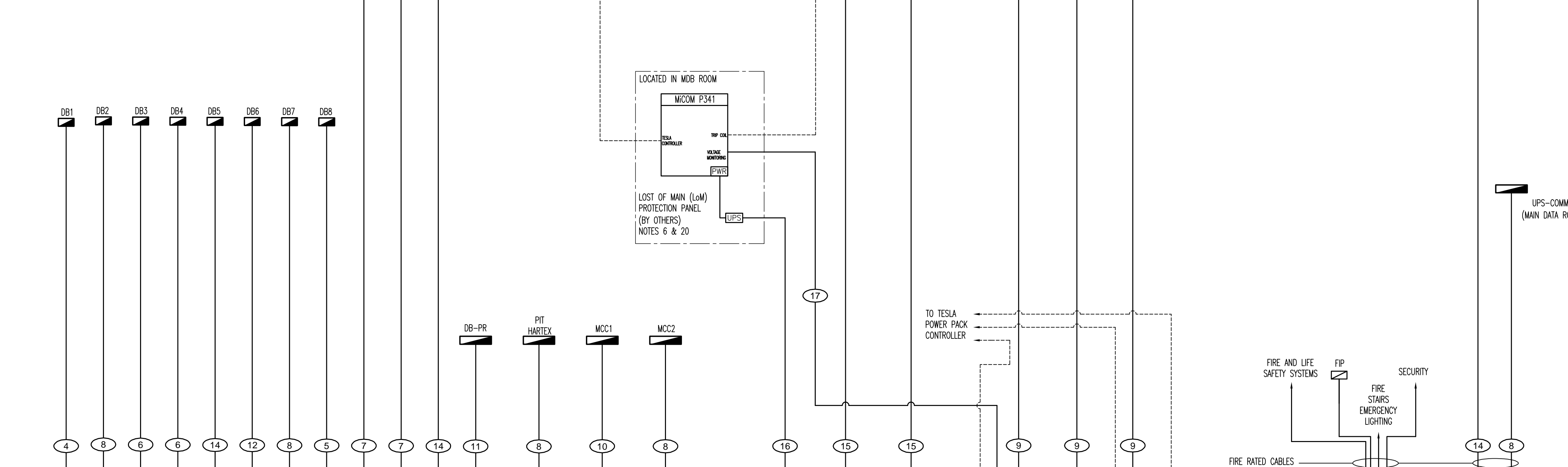
CABLE SCHEDULE

CABLE REFERENCE TYPE	TYPE & SIZE	COMMENTS
1	16x1C 300 mm2 + E FR	BASED ON EXISTING SUBSTATION LOCATION
2	12x1C 240 mm2 + E FR	FIRE RATED CABLE
3	4x1C 120 mm2 + E FR	FIRE RATED CABLE
4	1x4C 95 mm2 + E PVC/PVC	
5	1x4C 70 mm2 + E PVC/PVC	
6	1x4C 25 mm2 + E PVC/PVC	
7	1x4C 16 mm2 + E PVC/PVC	
8	1x4C 50 mm2 + E PVC/PVC	FIRE RATED CABLE FOR ESSENTIAL SERVICES
9	4x1C 300 mm2 + E PVC/PVC	
10	4x1C 150 mm2 + E PVC/PVC	
11	1x4C 35 mm2 + E PVC/PVC	
12	4x1C 120 mm2 + E PVC/PVC	
13	4x1C 25 mm2 + E FR	FIRE RATED CABLE
14	4x1C 95 mm2 + E PVC/PVC	FIRE RATED CABLE FOR ESSENTIAL SERVICES
15	4x1C 16 mm2 + E FR	FIRE RATED CABLE
16	1x2C 6 mm2 + E XLPE/PVC	TESLA POWERPACK CONTROLLER/LoM UPS
17	1x4C 6 mm2 + E XLPE/PVC	LoM CABINET

EQUIPMENT SCHEDULE

EQUIPMENT REFERENCE TYPE	DESCRIPTION
01	SCHNEIDER NSX630N MICROLOGIC 6.3A 4P C/W O/C & E/F, 24 VDC SHUNT TRIP 'ST', LONG TERMINAL SHROUDS & EXTENDED ROTARY HANDLE. (NOTE 11)
02	SCHNEIDER NSX100N TMD20 C/W LONG TERMINAL SHROUDS. (NOTE 11)
03	SCHNEIDER NSX630N MICROLOGIC 2.3 630A 4P - PART: LV432894, 24 VDC SHUNT TRIP 'ST' - PART: LV429390.
04	SCHNEIDER NS800N MICROLOGIC 2.0 800A 4P - PART: 33469, 24 VDC VOLTAGE RELEASE 'ST' - PART: 33659.

MEZZANINE LEVEL



GROUND LEVEL

- NOTES:**
- COORDINATE WITH THE MECHANICAL, LIFT AND HYDRAULIC SERVICES TO ESTABLISH THE FINAL POSITION & EXACT LOAD REQUIREMENTS AND PROVIDE POWER SUPPLY TO THEIR EQUIPMENT AS REQUIRED.
 - ALL CABLES TO HAVE COPPER CONDUCTORS.
 - PROVIDE ALL REQUIRED POWER SUPPLIES TO ITEMS OR EQUIPMENT REQUIRING SAME, EVEN IF NOT SPECIFICALLY SHOWN ON THESE DRAWINGS - EG SMOKE ALARMS.
 - ALL ESSENTIAL SYSTEMS, SUCH AS FIRE DETECTION/ OCCUPANT WARNING SYSTEM/SMOKE ALARMS/EMERGENCY LIGHTING AND EXIT SIGNS, TO BE COMPLETE WITH BATTERY BACK UP SUPPLIES AND FED WITH FIRE RATED CABLES AS REQUIRED IN THE RESPECTIVE AUSTRALIAN STANDARDS.
 - CONNECTION TO THE EQUIPMENT BY OTHERS. ALLOW FOR 3 ADDITIONAL METERS OF CABLE COILED IN THE FINAL POSITION.
 - REFER TO TRANSGRID DRAWING SC4000001 FOR LoM PROTECTION SCHEMATICS.
 - PROVIDE CIRCUIT BREAKER COORDINATION AND FAULT/LOAD DISCRIMINATION REPORT.
 - ALLOW PROVISION FOR INDICATED SPARE SPACES IN EACH SECTION OF THE MAIN SWITCH BOARD.
 - THE ELECTRICAL CONTRACTOR MUST CALCULATE ALL CABLE SIZES TO SUIT THE NEW INSTALLATION & LOADINGS. ALL CABLE SIZES SHALL BE CALCULATED IN ACCORDANCE WITH AS 3008.1 & DETAILS SUBMITTED TO WAHW FOR APPROVAL. ALLOW FOR 2% VOLTAGE DROP FOR FINAL SUB CIRCUITS AND 2.5% FOR SUBMAIN CABLES.
 - SIZED AS PER LIFT SPECIFICATION JOB NUMBER 3152674 DATED 01/07/2016.
 - REFER TO TESLA DRAWINGS E01 AND E02 FOR FURTHER DETAILS.
 - UPS TO BE COMPLETE WITH:
 - CASTELL KEY SYSTEM, IN ORDER THAT UPS IS PLACED IN FORCED STATIC BYPASS PRIOR MICE WRAP AROUND BYPASS BEING OPERATED.
 - BATTERIES TO PROVIDE 30 MINUTES BACK-UP POWER AT 75KVA.
 - BREAKER TO BE SUITABLE FOR REVERSE POWER APPLICATION WITH ELECTRONIC TRIP.
 - SHUNT TRIP 'ST' TO OPERATE AT 24 VOLTS DC.
 - METERING TO SUIT NS194 AUSGRID STANDARD REQUIREMENTS.
 - PROVIDE 630/5A (3 PHASES + NEUTRAL) CLASS 0.5S 15VA CTs.
 - NOT USED.
 - PROVIDE 1200/5A (3 PHASES + NEUTRAL) CLASS 0.5S 15VA CTs.
 - UNISE WITH BMCS SUBCONTRACTOR FOR METERING ADDITIONS REQUIRE TO ACHIEVE REQUIREMENTS IN THE 'BMCS POINTS SCHEDULE'.
 - ALL RELATED CONTROL CABLING BY OTHERS.

- LEGEND:**
- POWER CABLES
 - - - CONTROL CABLES

01/05/17	FOR AUSGRID APPROVAL
27/04/17	FOR AUSGRID APPROVAL
Rev	Date
Client	Description
Project	
Title	
SINGLE LINE DIAGRAM	
electrical services	
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Scale	NTS (A1)
Drawn	Engineer
File	S:\Projects\25545\CAD\Drawings\17.05.01 - SLD for Ausgrid Approval (Revised).dwg
Project No.	25545
Drawing No.	E0002
Revision	SC2