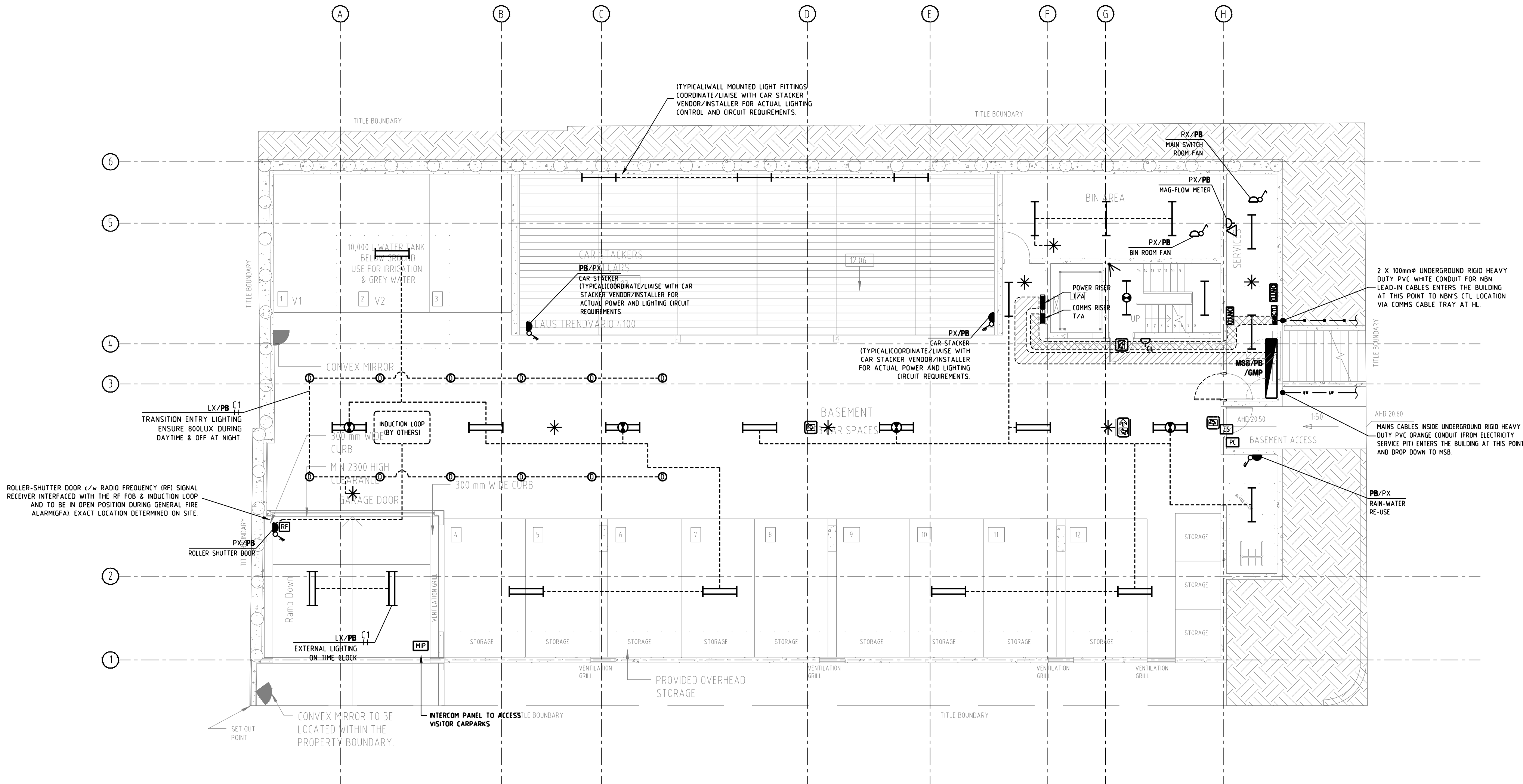
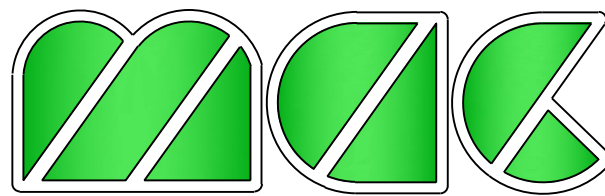


- NOTES:**
- MOTION DETECTORS OR OTHER CONTROL DEVICES SHALL NOT OPERATE CAR PARK LIGHTING FOR AN AREA OF MORE THAN 250m² FOR A SPACE OF NOT MORE THAN 2000m², OR 1000m² FOR A SPACE OF MORE THAN 2000m²
 - ELECTRICAL CONTRACTOR SHALL ENSURE THAT THE SUM OF THE LEAKAGE CURRENTS OF ELECTRICAL EQUIPMENT (SUCH AS LIGHTS AND SWITCHED SOCKET OUTLETS - FINAL SUB-CIRCUIT) ON THE LOAD SIDE OF AN RCD BE LESS THAN 50% OF THE RATED RESIDUAL CURRENT. RCD's NORMALLY OPERATE AT ANY VALUE OF RESIDUAL CURRENT IN EXCESS OF 50% OF IT'S RATED RESIDUAL CURRENT. ELECTRICAL CONTRACTOR SHALL ENSURE THAT THE LOADING OF THE FINAL SUB-CIRCUITS BE SUCH THAT THE LEAKAGE CURRENT DOES NOT EXCEED ONE-THIRD OF THE TRIPPING CURRENT



T1	TENDER ISSUE	MS	07 08 17
P1	PRELIMINARY ISSUE	TDO	18 05 17

issue	rev.	description	by	date
-------	------	-------------	----	------



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd.
ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES
CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied in whole or part or amended without the written consent of the consulting engineers

Contractors must verify all dimensions at the job before commencing any work or preparing shop drawings.

Contractors must locate all air registers pipework outlets, light fittings, power outlets, sprinkler heads, etc. from the Architects reflected ceiling plans and other detailed drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of \$125 payable by this subcontractor

project title
**1 VINE STREET
HEIDELBERG, VIC 3084**

service
ELECTRICAL SERVICES

**BASEMENT LEVEL
LIGHTING, POWER & COMMS
LAYOUT**
drawing title

scale 0 0.5 1 2 3 4m
1:1000

designed
ASG

checked
ASG

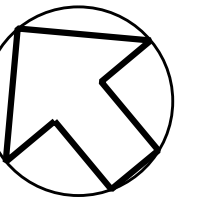
drawn

date
MAY 2017

job
number 1939

issue
T1

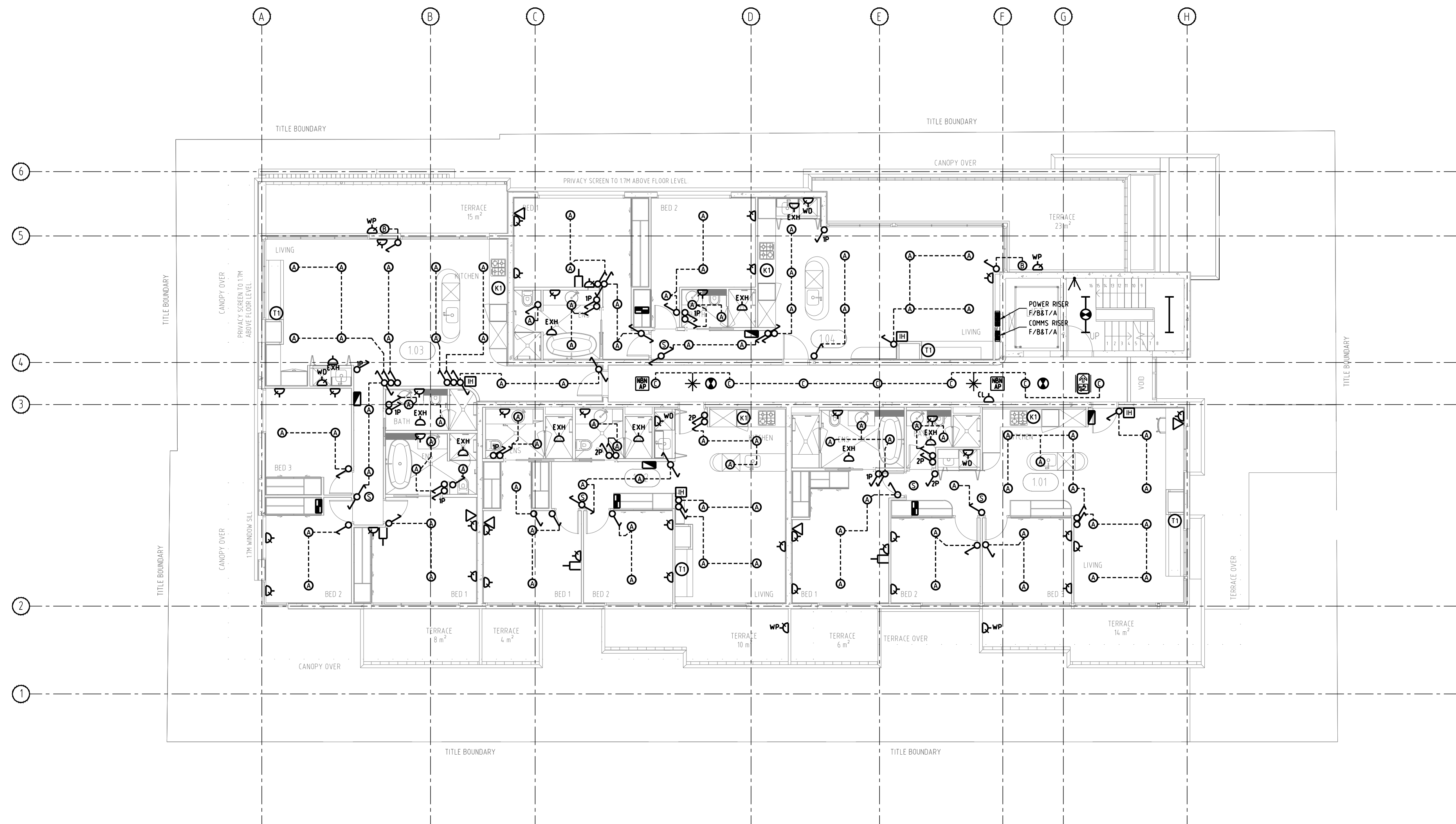
drawing
2 of 9



drawing
number

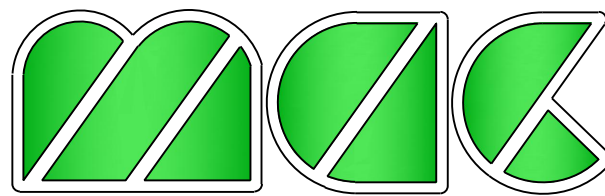
E2





T1	TENDER ISSUE	MS	07 08 17
P1	PRELIMINARY ISSUE	TDO	18 05 17

issue rev. description by date



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd.
ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES
CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied
in whole or part or amended without the written consent
of the consulting engineers

Contractors must verify all dimensions at the job before
commencing any work or preparing shop drawings.

Contractors must locate all air registers pipework outlets,
light fittings, power outlets, sprinkler heads, etc. from the
Architects reflected ceiling plans and other detailed
drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of
\$125 payable by this subcontractor

project title
**1 VINE STREET
HEIDELBERG, VIC 3084**

service
ELECTRICAL SERVICES

**FIRST FLOOR
LIGHTING, POWER & COMMS
LAYOUT**
drawing title

scale 0 0.5 1 2 3 4m
1:1000 A1

designed
ASG

checked
ASG

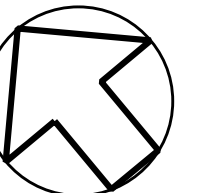
drawn

date
MAY 2017

job
number 1939

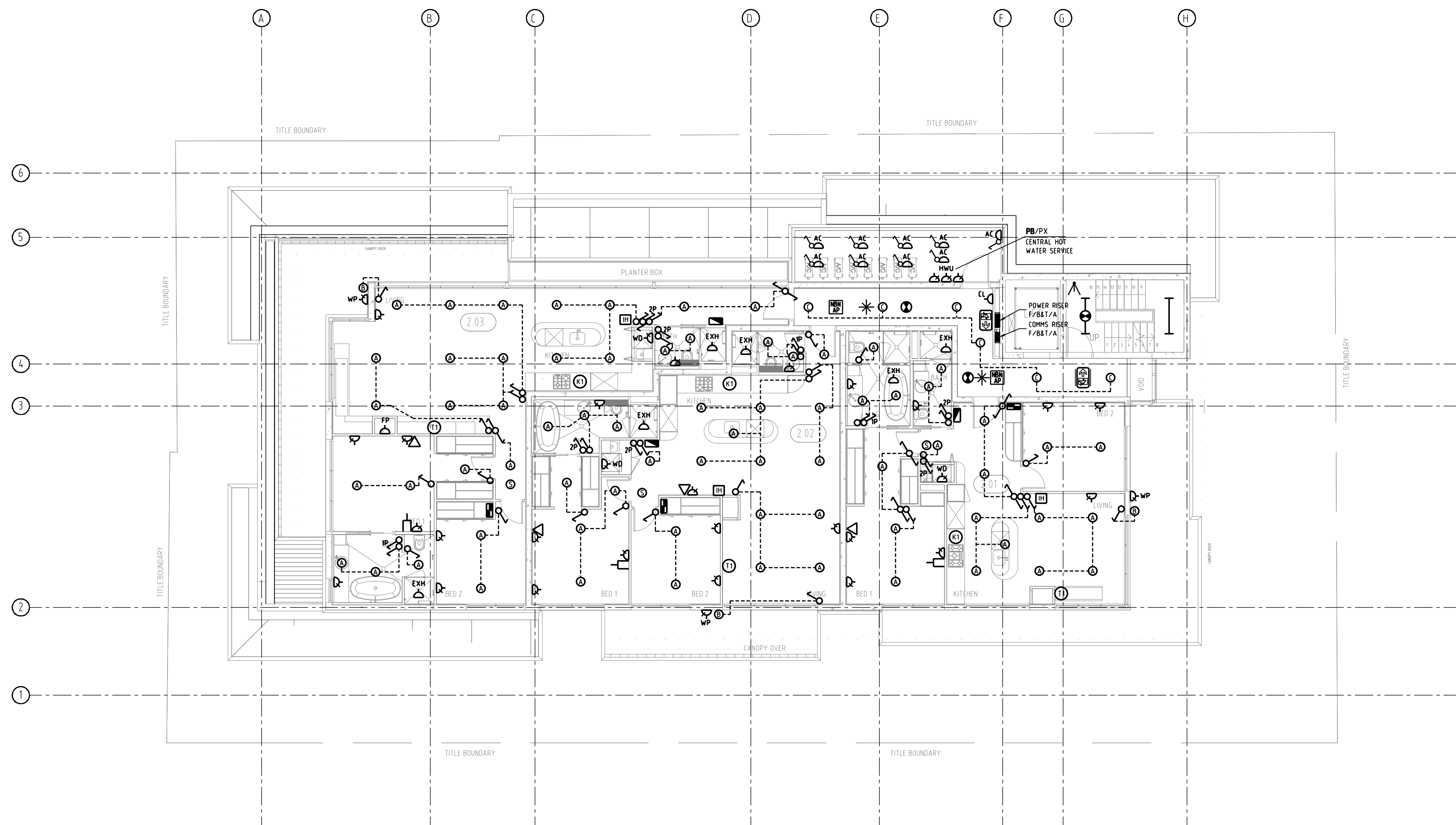
issue
T1

drawing
4 of 9

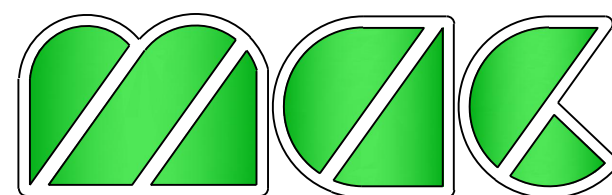


drawing
number

E4



T1	TENDER ISSUE	MS	07 08 17
P1	PRELIMINARY ISSUE	TDO	18 05 17
issue	rev.	description	by date



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd.
ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES
CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied in whole or part or amended without the written consent of the consulting engineers

Contractors must verify all dimensions at the job before commencing any work or preparing shop drawings.

Contractors must locate all air registers pipework outlets, light fittings, power outlets, sprinkler heads, etc. from the Architects reflected ceiling plans and other detailed drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of \$125 payable by this subcontractor

project title
**1 VINE STREET
HEIDELBERG, VIC 3084**

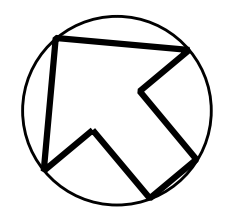
service
ELECTRICAL SERVICES

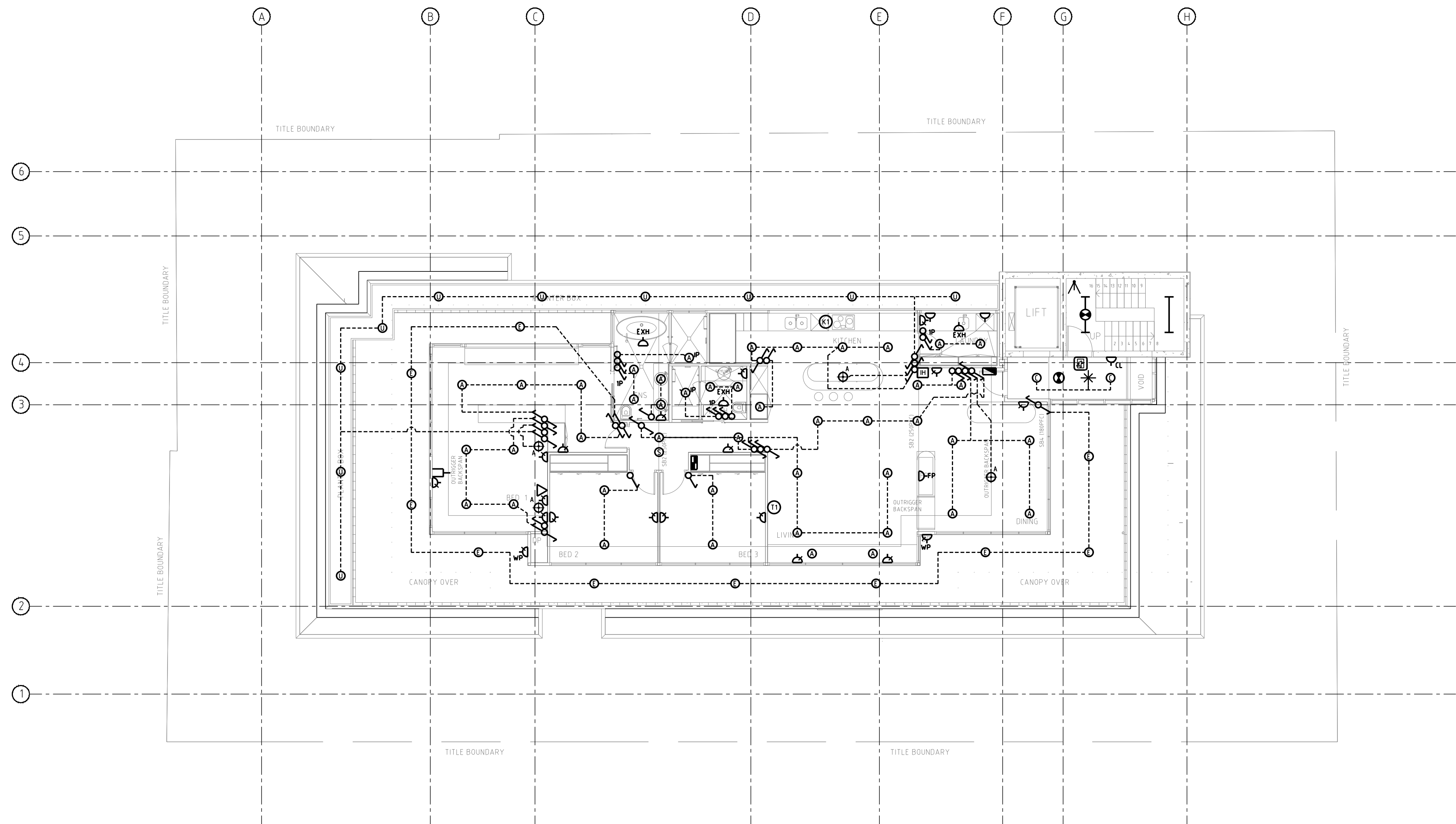
**SECOND FLOOR
LIGHTING, POWER & COMMS
LAYOUT**
drawing title

scale 0 1 2 3 4m
1:1000

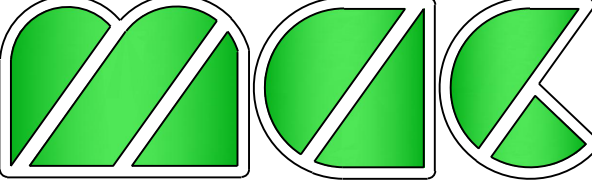
designed ASG	checked ASG
drawn	date MAY 2017

job number 1939	drawing number
issue T1	E5
drawing 5 of 9	






T1	TENDER ISSUE	MS	07.08.17
P1	PRELIMINARY ISSUE	TDO	18.05.17
issue	rev.	description	by date



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd.
ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES
CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied in whole or part or amended without the written consent of the consulting engineers.

Contractors must verify all dimensions at the job before commencing any work or preparing shop drawings.

Contractors must locate all air registers pipework outlets, light fittings, power outlets, sprinkler heads, etc. from the Architects reflected ceiling plans and other detailed drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of \$125 payable by this subcontractor

project title

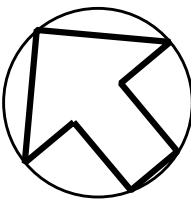
**1 VINE STREET
HEIDELBERG, VIC 3084**

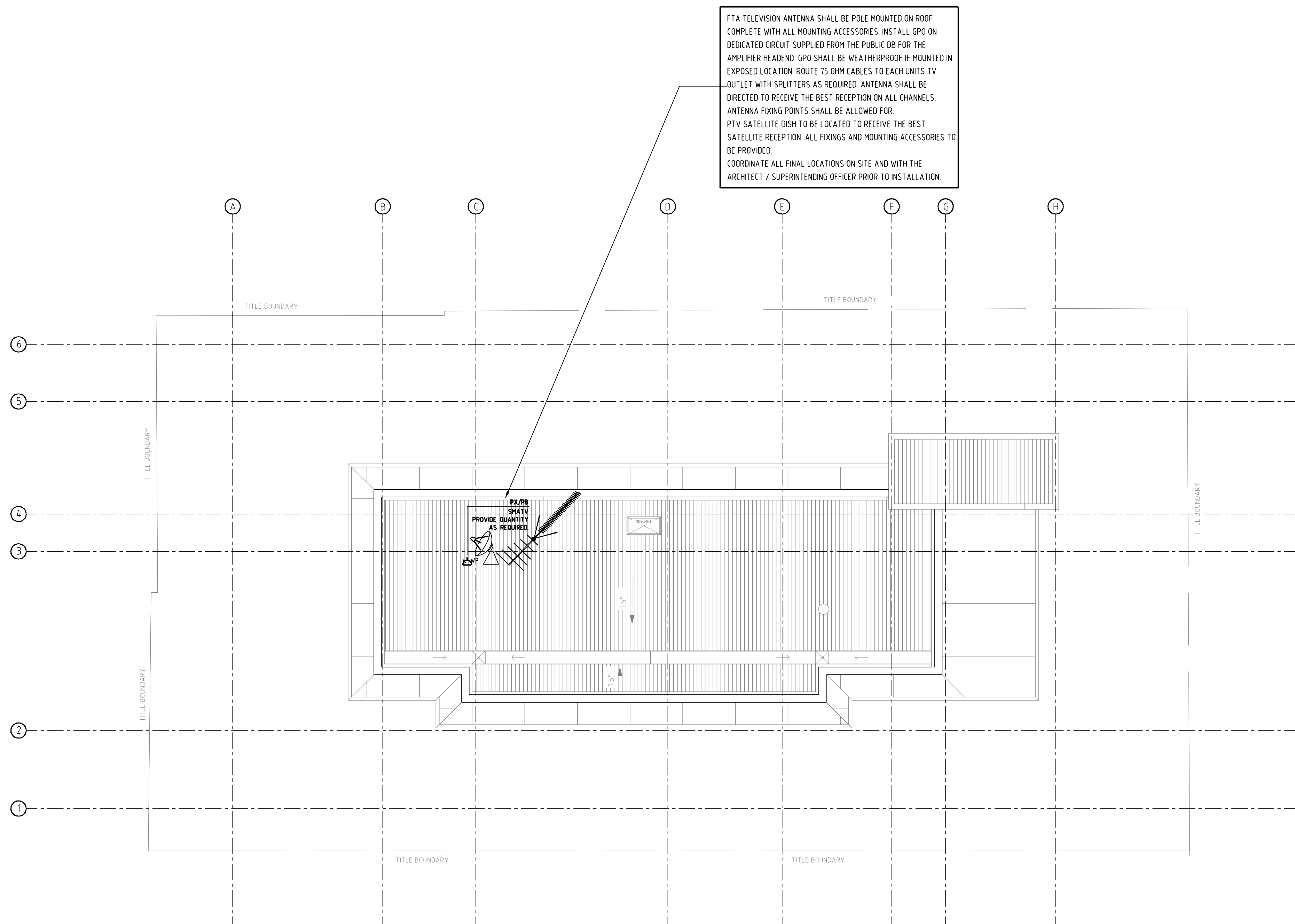
service

ELECTRICAL SERVICES

**THIRD FLOOR
LIGHTING, POWER & COMMS
LAYOUT**

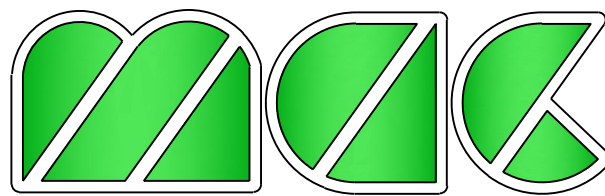
drawing title

scale	0 1 2 3 4m	
1:100		
designed	checked	
ASG	ASG	
drawn	date	
	MAY 2017	
job number	1939	drawing number
issue	T1	
drawing		
	6 of 9	E6



T1	TENDER ISSUE	MS	07/08/17
P1	PRELIMINARY ISSUE	TDO	18/05/17

issue rev. description by date



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd.
ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES
CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied in whole or part or amended without the written consent of the consulting engineers

Contractors must verify all dimensions at the job before commencing any work or preparing shop drawings.

Contractors must locate all air registers pipework outlets, light fittings, power outlets, sprinkler heads, etc. from the Architects reflected ceiling plans and other detailed drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of \$125 payable by this subcontractor

project title
**1 VINE STREET
HEIDELBERG, VIC 3084**

service
ELECTRICAL SERVICES

**ROOF PLAN
LIGHTING, POWER & COMMS
LAYOUT**
drawing title

scale 1:1000 0 1 2 3 4m

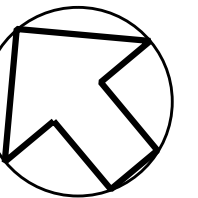
designed ASG checked ASG

drawn date MAY 2017

job number 1939

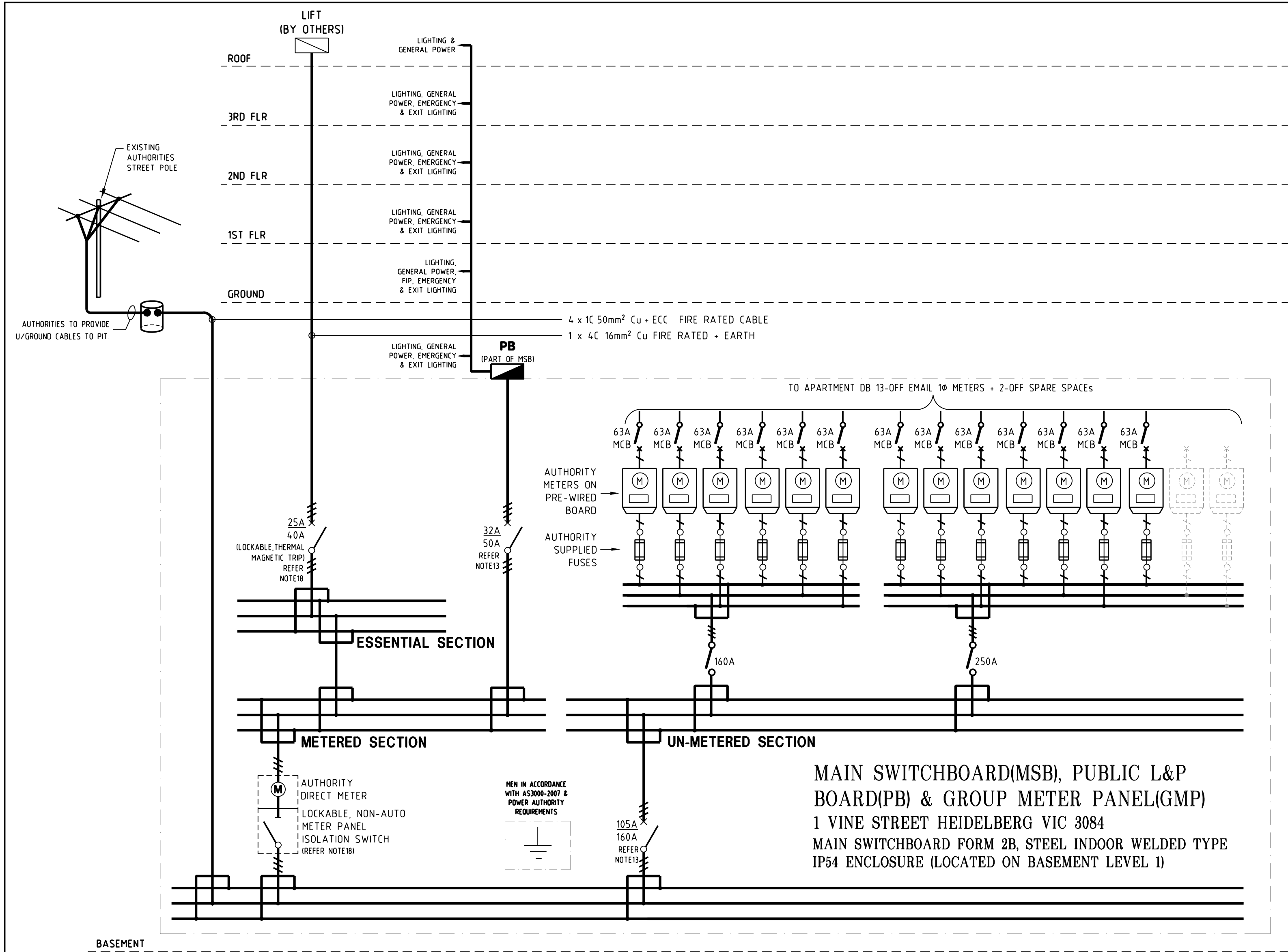
issue T1

drawing 7 of 9



drawing number

E7



SINGLE LINE DIAGRAM NOTES

- ELECTRICAL CONTRACTOR TO CONFIRM A/C / OTHER POWER SUPPLIES & PROVIDE CIRCUIT BREAKERS AS REQUIRED FOR CONNECTION BY THE OTHER SERVICES CONTRACTOR
- ALL CIRCUIT BREAKERS (MCB & MCCB) SHALL HAVE ELECTRONIC TRIP UNIT AND ADJUSTABLE SETTINGS WHERE INDICATED ALL MCB AND MCCB SHALL COMPLY WITH AS/NZS 60898.2004, AS/NZS 60947.2 AND AS/NZS 3000.2007
- SUBMIT ALL SWITCHBOARD SHOP DRAWINGS INCLUDING SCHEMATIC DIAGRAM AND DISCRIMINATION STUDIES FOR APPROVAL PRIOR TO CONSTRUCTION
- COORDINATE WITH SUPPLY AUTHORITIES FOR MAXIMUM PROSPECTIVE FAULT CURRENT BEFORE COMMENCING MANUFACTURE OF SWITCHBOARDS
- ALL MINIATURE CIRCUIT BREAKERS FOR MOTOR SUPPLIES SHALL BE C/W D-TYPE CURVE
- PROVIDE TYPE S RCDs AND TIME DELAYED IN ORDER TO DISCRIMINATE WITH RCDs AT THE FINAL DISTRIBUTION BOARD FOR HIGH CURRENT APPLICATIONS PROVIDE MCCB WITH SENSITIVE EARTH FAULT (E/F) RELAY AS AN ALTERNATIVE
- PROVIDE CIRCUIT BREAKERS AS REQUIRED ON ALL NEW SWITCHBOARDS PLUS 25% APPROPRIATELY RATED SPARE
- CIRCUITS VIA CONTACTORS MOUNTED ON SWITCHBOARD FOR CONTROL OF EXTERNAL LIGHTING ALL GENERAL PURPOSE OUTLETS AND LIGHTING CIRCUIT UP TO 20 AMP TO BE PROTECTED VIA COMBINED SINGLE POLE RCD MCB
- LIGHTING CONTROL SYSTEM CIRCUITS VIA CONTACTORS, RELAYS ETC SHALL BE MOUNTED WITHIN THE SWITCHBOARD IN A DEDICATED DIN RAIL SECTION FOR CONTROL OF ALL LIGHTING
- SWITCHBOARD-MOUNTED 30mA RCDs SHALL BE PROVIDED TO ALL GENERAL POWER OUTLETS & LIGHTING CIRCUITS, EXCEPT FOR POWER OUTLETS WHICH SHALL BE LABELLED 'NOT SAFETY SWITCH PROTECTED' OR FOR CIRCUITS OF PERMANENTLY CONNECTED APPLIANCES SUCH AS ELECTRIC OVENS, HOT WATER UNITS, A/C UNITS AND SMOKE ALARMS
- ONE RCD SHALL PROTECT NO MORE THAN 3 CIRCUITS
- ALL MAIN SWITCHBOARDS (MSB) SHALL REQUIRE AN APPROVAL FROM A LICENSED ELECTRICAL INSPECTOR (LEI) AND SUPPLY AUTHORITY COMPLIANCE OFFICE PRIOR TO MANUFACTURING CONSTRUCTION OF MSB SHALL BE IN ACCORDANCE WITH CURRENT AS3000, RELEVANT SERVICE INSTALLATION RULES AND ELECTRICITY SAFETY (INSTALLATION) RULES. TYPICAL
- ADJUSTABLE CIRCUIT BREAKERS ELECTRICAL CONTRACTOR TO COORDINATE TRIP SETTINGS OF CIRCUIT BREAKERS ON SITE SO ALLOCATED MAXIMUM DEMAND IS CONTROLLED AND NOT EXCEED THE SUPPLY CAPACITY IN CONFORMANCE TO THE POWER AUTHORITIES CONTRACT AGREEMENT TYPICAL
- CONTRACTOR TO ALLOW FOR PRESCRIBED AND NON-PRESCRIBED ELECTRICAL INSPECTION PROVIDE DISCRIMINATION OF PROTECTIVE DEVICES IN ACCORDANCE TO AS3000 SECTION 2

MCCBs SHALL BE OF THE SAME MANUFACTURE THROUGHOUT THE INSTALLATION AND DESIGNED TO OPERATE AT THE PROSPECTIVE FAULT LEVELS SHOWN ON THE DRAWING AND/OR SPECIFICATION CIRCUIT BREAKERS SHALL BE OF THE CURRENT LIMITING DESIGN FITTED WITH THERMAL MAGNETIC AND/OR ELECTRONIC TRIP MECHANISMS

THE CIRCUIT BREAKERS SHALL BE CHOSEN TO PROVIDE SELECTIVITY AT THE PROSPECTIVE FAULT LEVELS SPECIFIED WITHIN THE INSTALLATION. CASCADE PROTECTION OF CIRCUIT BREAKERS SHALL BE ACCEPTABLE WHERE IT MEETS THE SELECTIVITY REQUIREMENTS MCCBs SHALL PROVIDE POSITIVE CONTACT INDICATION VIA THE TOGGLE MECHANISMS ALL THREE POSITIONS ON, OFF AND TRIP SHALL BE CLEARLY AND RELIABLY INDICATED ON THE MCCB FASCIA THE NEUTRAL (N) SWITCHING POLE SHALL BE AN EARLY-MAKE-LATE-BREAK DESIGN, SUCH THAT ABNORMAL TRANSIENT VOLTAGES CANNOT OCCUR BETWEEN PHASE AND NEUTRAL LINES DURING OPENING AND CLOSING OPERATIONS

ENSURE ADEQUATE SUPPORT IS PROVIDED FOR ALL WALL MOUNTED SWITCHBOARDS, DISTRIBUTION BOARDS, METER PANELS ETC

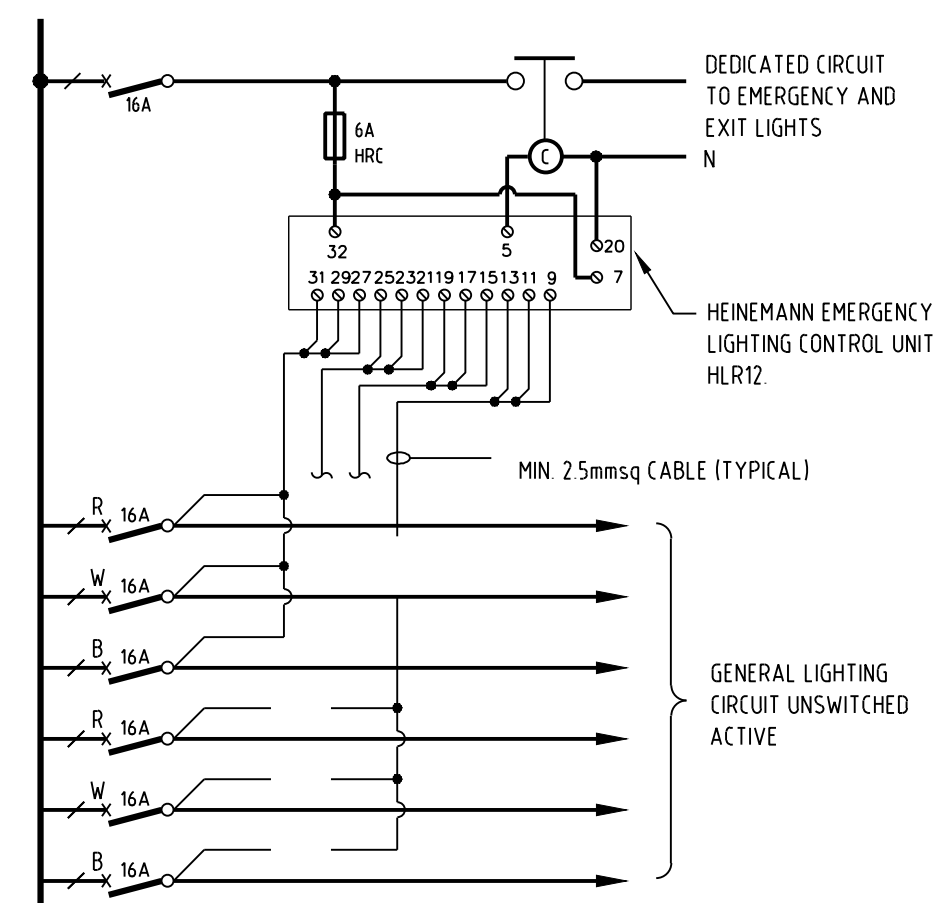
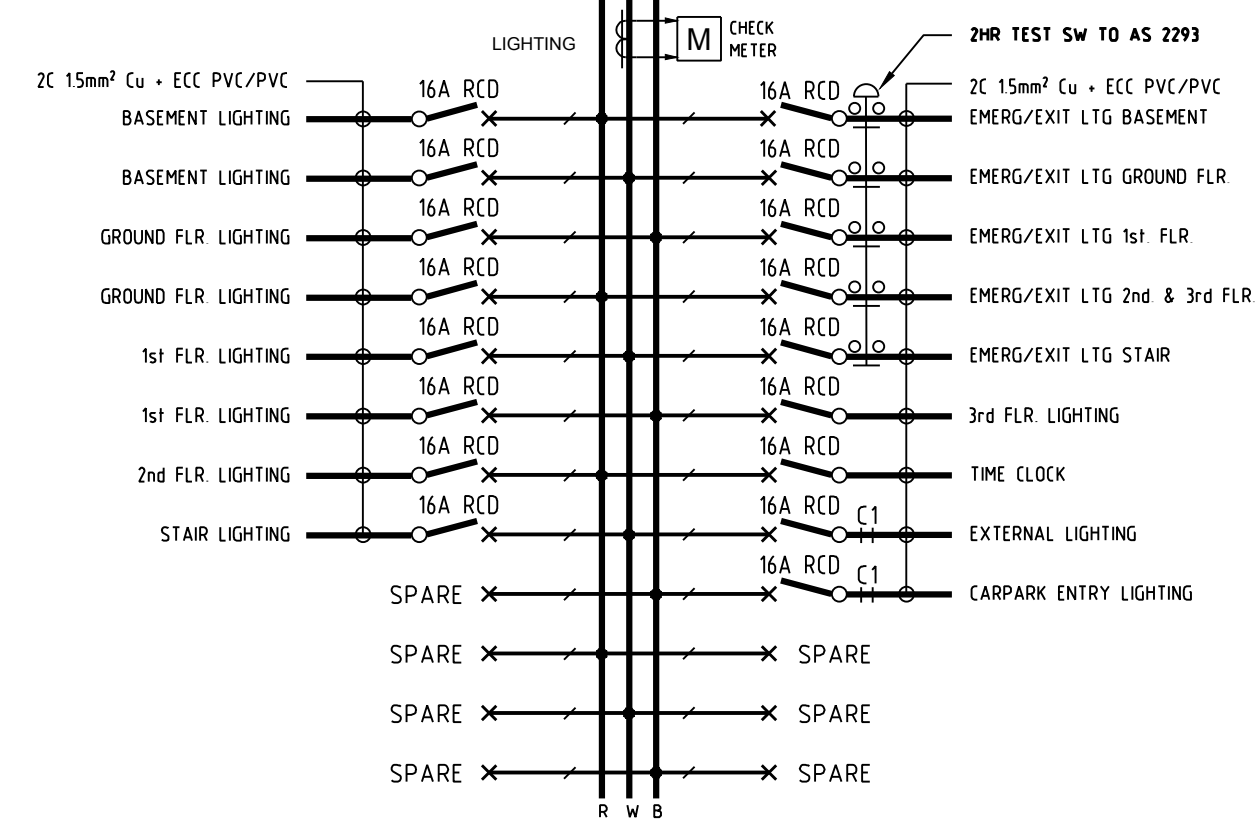
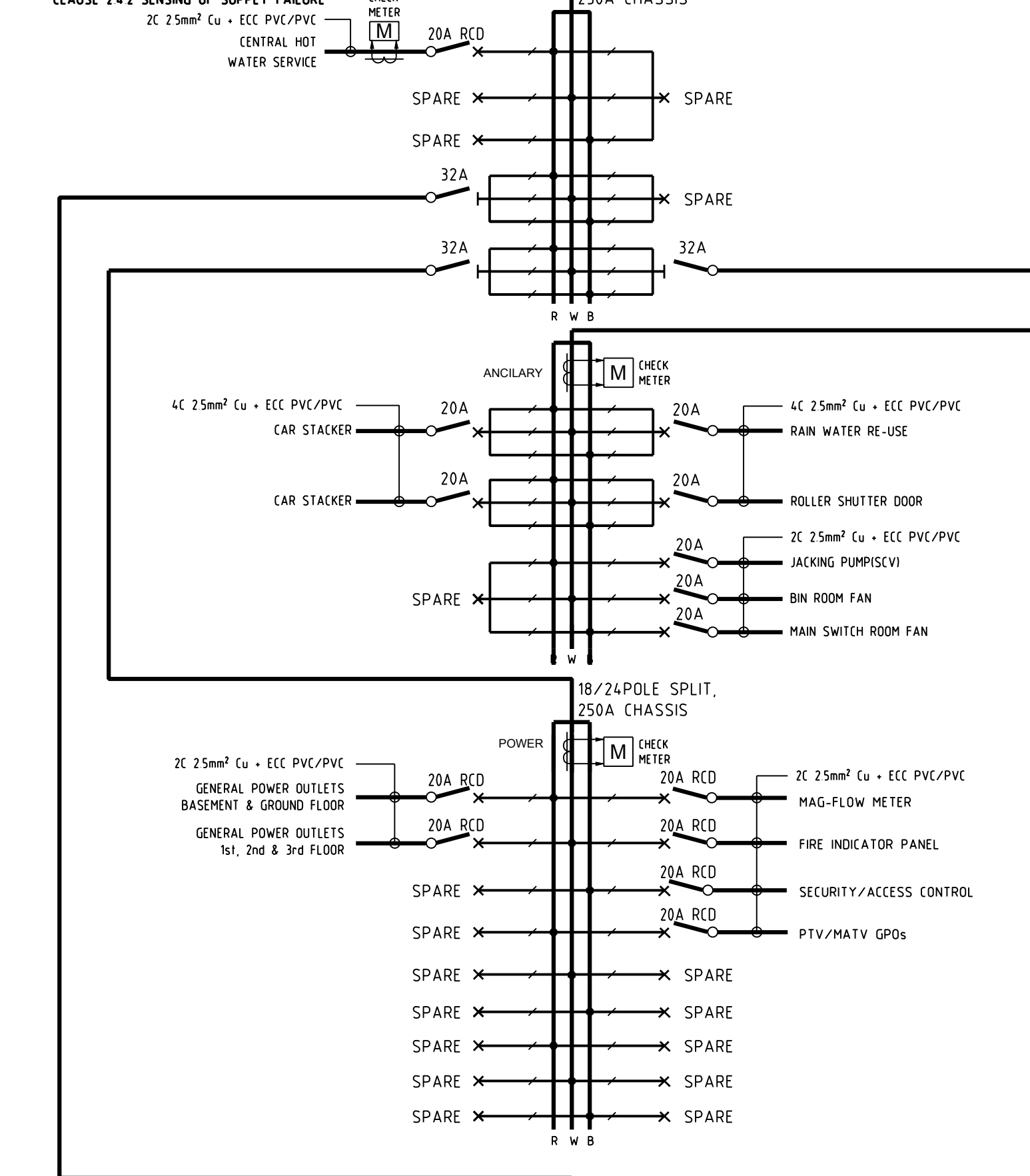
CIRCUIT BREAKERS / SWITCHES TO BE LOCKABLE IN 'ON' & 'OFF' POSITION LABELLED 'ESSENTIAL SERVICES', IN EVENT OF FIRE, DO NOT TURN OFF' & 'TO BE OPERATED BY AUTHORISED PERSONNEL ONLY'

PB (PUBLIC BOARD)

84POLE (PART OF MSB)

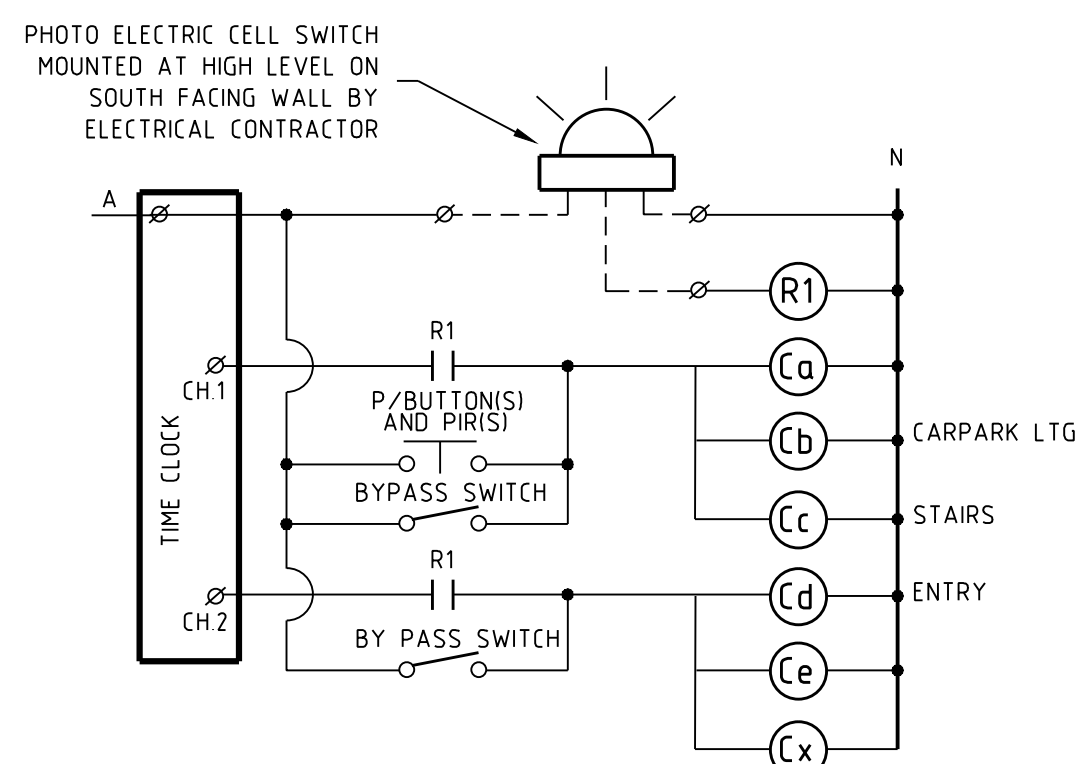
PANEL BOARD ENERGY METER SHALL BE AS FOLLOWS:

- 250A, 2nos. 18/24SPLIT CHASSIS LOAD CENTER
- IP42 C/W CL001 KEY LOCK SURFACE MOUNTED AND SMOKE SEALED
- A MINIMUM OF 24nos. LIGHT POLES, 18nos. POWER POLES, AND 24nos. ANCILLARY POLES SEPARATE LIGHT, POWER, AND ANCILLARY METERS kWh AND kvarh, RS485 COMMUNICATION OR PULSE OUTPUT
- PROVIDE RCD AS REQUIRED AS PER AS3000-2007
- PROVIDE CONTACTORS AND RELAYS TO DIN RAIL SECTION FOR LIGHTING CONTROL AS REQUIRED
- FINAL SUBCIRCUITS ARRANGEMENT TO BE DETERMINED ON SITE
- SCHEMATICS SHOWN INDICATIVE ONLY
- ALL LIGHTING CIRCUITS TO BE INSTALLED IN ACCORDANCE TO AS2393.1 CLAUSE 24.2 SENSING OF SUPPLY FAILURE



EMERGENCY LIGHTING CIRCUIT

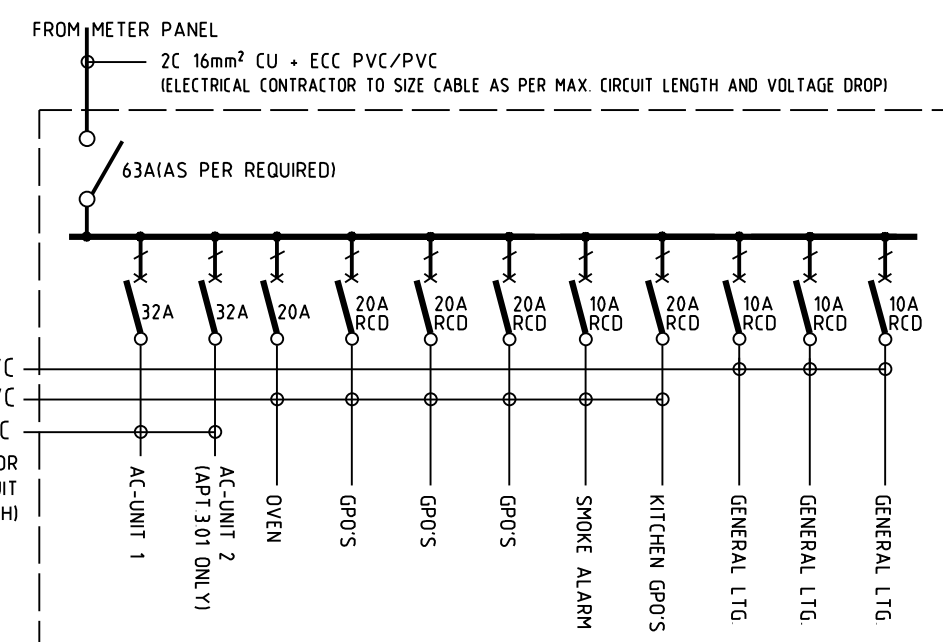
NOT TO SCALE



TYPICAL TIME CLOCK CONTROL DIAGRAM

SUPPLY AND INSTALL CONTACTORS AS REQUIRED

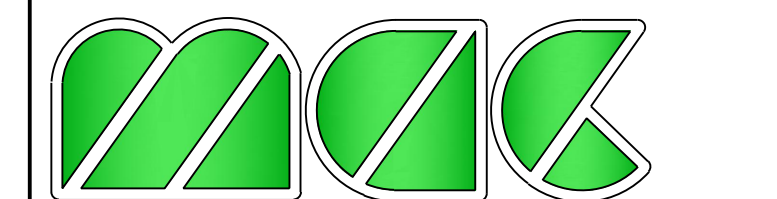
2 CHANNEL 24 HOUR 365DAY YEAR 2000 DIGITAL, PROGRAMMABLE TYPE



TYPICAL APARTMENT 1-phase DB

FINAL SUB-CIRCUITS ARRANGEMENT TO BE DETERMINED ON SITE SCHEMATIC SHOWN INDICATIVE ONLY

T1	TENDER ISSUE	MS	07 08 17
P1	PRELIMINARY ISSUE	TDO	18 05 17
issue	rev.	description	by date



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd.
ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES
CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied in whole or part or amended without the written consent of the consulting engineers

Contractors must verify all dimensions at the job before commencing any work or preparing shop drawings.

Contractors must locate all air registers pipework outlets, light fittings, power outlets, sprinkler heads, etc. from the Architects reflected ceiling plans and other detailed drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of \$125 payable by this subcontractor

project title
**1 VINE STREET
HEIDELBERG, VIC 3084**

service
ELECTRICAL SERVICES

SCHEMATICS
DETAIL LAYOUT SHEET
1 of 2
drawing title

scale	designed MS	checked ASG	drawing number E8
drawn --	date MAY 2017		
job number 1939	issue T1		
drawing 8 of 9			

SECURITY/ACCESS CONTROL SYSTEM

THE INTEGRATED SECURITY/ACCESS CONTROL SYSTEM SHALL BE INTEGRITY BY INNER RANGE. THE INSTALLATION COMPANY MUST HAVE AT LEAST ONE ACCREDITED INTEGRITY TECHNICIAN RESPONSIBLE FOR THE INSTALLATION, COMMISSIONING AND CUSTOMER TRAINING. ACCESS CONTROL TO NOMINATED LOCATIONS SHALL BE PROVIDED USING INTEGRITY INTELLIGENT TWO DOOR CONTROLLERS (I2M) CONNECTED VIA THE INTEGRITY ENCRYPTED LAN TO THE MAIN CONTROL PANEL. THE MAIN CONTROL PANEL AND DOOR CONTROLLERS SHALL BE HOUSED IN LARGE ENCLOSURES WITH RELEVANT GEAR PLATES. EACH INTEGRITY POWERED CONTROLLER SHALL HAVE A DEDICATED 16VAC 40VA TRANSFORMER AND 7 DAY STANDBY BATTERY. ALL ENCLOSURES SHALL CONTAIN TAMPER SWITCHES WHICH ARE TO BE PROGRAMMED FOR 24HR ACTIVATION. PROXIMITY CARD READERS SHALL BE HD IC CLASS READERS. UNIT OWNER ACCESS TO THE CAR PARK SHALL BE MADE USING PROKEY WIEGAND DATA TRANSMITTERS (no FOR CAR STACKER'S SLIDING DOOR DOOR) WITH INTEGRATED HD IC CLASS PROXIMITY TAG (PART NUMBER CSD-PROKEY2-I-C). THE PROKEY RECEIVER SHALL BE CSD-PROKEY-RXW AND IS RATED ENCLOSURE AND BE MOUNTED IN A LOCATION WHICH PROVIDES MAXIMUM RE RANGE TO DRIVERS BEFORE THEY ENTER THE CAR PARK. THE INTEGRATED HD IC CLASS PROXIMITY TAG SHALL ALLOW TENANTS ENTRY INTO ALL OTHER ACCESS CONTROLLED DOORS USING HD IC CLASS PROXIMITY CARD READERS.

ALLOW FOR 2 X CSD-PROKEY2-I-C INTEGRATED TRANSMITTERS PER 1 & 2 BEDROOMS APARTMENTS, 3 X CSD-PROKEY2-I-C INTEGRATED TRANSMITTERS PER 2 + STUDY & 3 BEDROOMS APARTMENTS AND 15 FOR BODY CORPORATE.

ELECTROMECHANICAL DOOR LOCKING SHALL BE PERFORMED USING PADDE ES9000 PRE-LOAD ELECTRIC DOOR STRIKES. ELECTROMECHANICAL LOCKING SHALL BE PERFORMED USING PADDE 28-HR MONITORED MAG LOCKS. ALL MAG LOCK DOORS SHALL ALSO BE FITTED WITH AN INTERNAL EGRESS BUTTON AND DOOR REQUEST TO RELEASE BUTTON.

THE SECURITY SOFTWARE MANAGEMENT SUITE SHALL BE A WINDOWS BASED, CLIENT/SERVER APPLICATION PROVIDING A POWERFUL, INTUITIVE INTERFACE TO THE SECURITY HARDWARE AND COMMUNICATING WITH SYSTEM CONTROLLERS OVER ETHERNET. ANY AND ALL WORKSTATION LICENSES SHALL BE CONCURRENT AND NOT LOCKED TO SPECIFIC WORKSTATIONS OR PCs.

THE WINNING INSTALLATION COMPANY MUST HAVE AT LEAST ONE ACCREDITED TECHNICIAN RESPONSIBLE FOR THE INSTALLATION, COMMISSIONING AND CUSTOMER TRAINING.

THE INSTALLER IS TO PROVIDE A MINIMUM OF TWO BY FOUR HOUR SESSIONS FOR CUSTOMER TRAINING ON ALL ASPECTS OF THE SYSTEM, BOTH HARDWARE AND SOFTWARE. THIS SHALL INCLUDE MONITORING AND CONTROL USING GRAPHICS MAPS, REPORT GENERATION, ADDING, DELETING AND REPLACEMENT OF CARDS FOR USERS AND THE DESIGN AND IMPLEMENTATION OF PHOTO ID CARD DESIGNS INCLUDING CUSTOM FIELDS. TRAINING SCHEDULES TO BE ARRANGED AT MUTUALLY SUITABLE TIMES.

THE SECURITY INSTALLER SHALL LIAISE WITH THE FIRE SYSTEM INTEGRATOR TO RECEIVE A RELAY OUTPUT FROM THE FIRE ALARM SYSTEM AND CONNECT TO AN INPUT ON THE SECURITY SYSTEM SO THAT IN THE EVENT OF A FIRE ALARM ACTIVATION, NOMINATED DOORS SHALL AUTOMATICALLY UNLOCK. THE UNLOCK COMMAND SHALL STAY IN FORCE UNTIL THE FIRE ALARM IS RESET.

GENERAL NOTES:

1. ALLOW TO PROVIDE NBN COMMUNICATIONS' PATHWAYS USING OPTIONS (AS PER NBN BUILDING DESIGN GUIDE) AS APPROPRIATE. CABLING FROM THE LIVING UNIT TO THE TELECOMMUNICATIONS RISER/CUPBOARD REQUIRES A MINIMUM OF A P23mm INSIDE DIAMETER RIGID WHITE COMMUNICATION CONDUIT WITH A DRAW STRING FROM THE TELECOMMUNICATIONS RISER OR CLOSET LOCATION TO EACH NTD LOCATION WITHIN A PREMISE. NO SECTION OF CONDUIT SHALL BE LONGER THAN 50 METRES BETWEEN PULL/DRAW POINTS AND CONTAIN THE EQUIVALENT OF NO MORE THAN THREE 90° 300MM RADIUS BENDS, CONDUITS CAN BE SURFACE MOUNTED IN COMMON AREAS OR CAST 'IN SLAB'.

VOICE CABLE SYSTEM

1. ALL TELEPHONE WIRING TO BE AUSTEL REQUIREMENTS AND CARRIED OUT BY LICENSED TRADESMAN.
2. REFER FLOOR PLAN DRAWINGS FOR LOCATIONS OF OUTLETS.
3. ALLOW TO JUMPER ALL CONNECTIONS, TEST LINES, TERMINATE AND COMPLETE WIRING RECORDS.
4. REFER SPECIFICATIONS FOR FURTHER DETAILS.

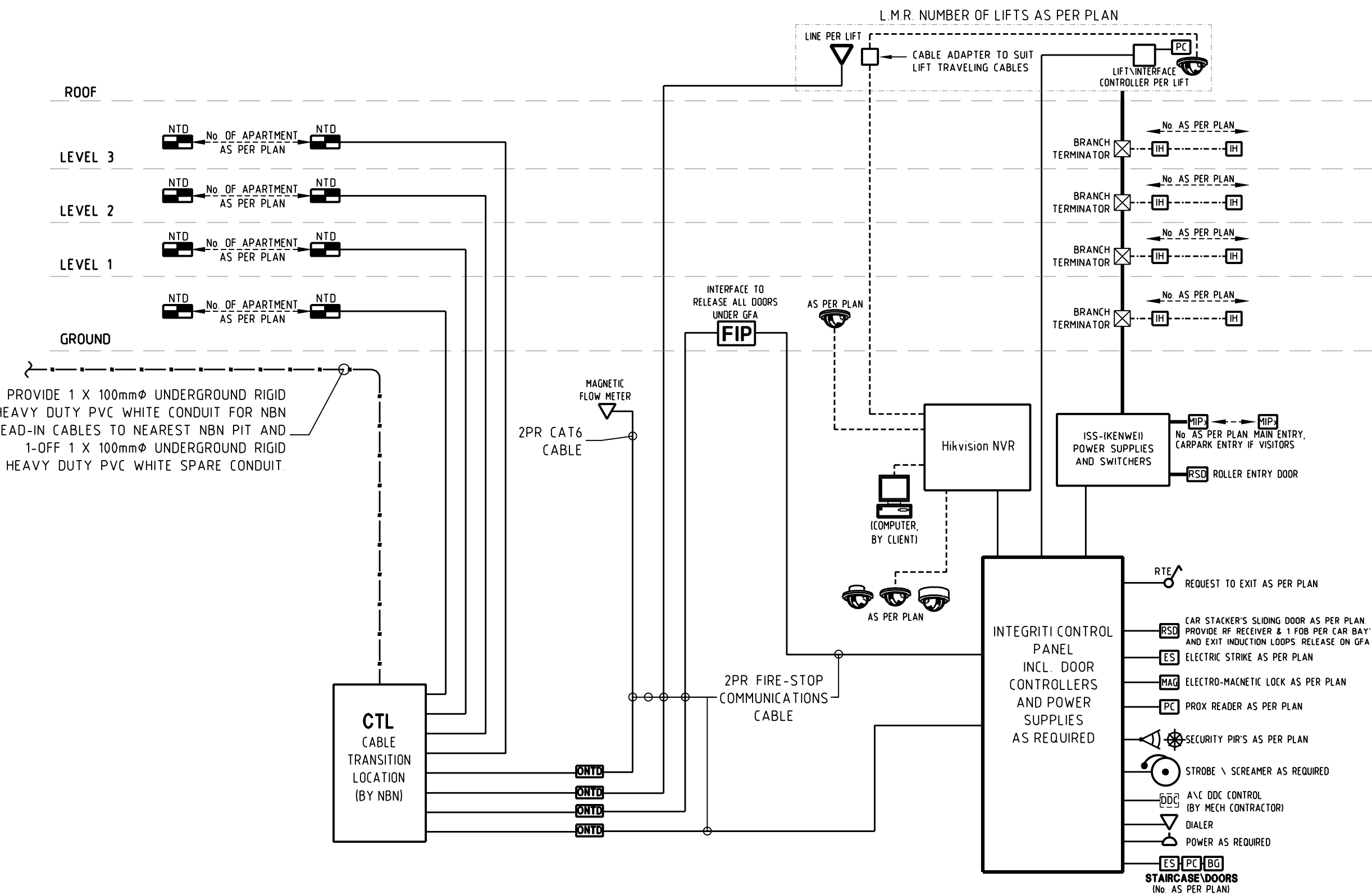
INTERCOM SYSTEM

THE INTERCOM SYSTEM SHALL BE A HS IKENWEI COLOUR VIDEO/AUDIO SYSTEM UTILISING A 4-WIRE BUS. MAIN ENTRANCE PANELS SHALL BE HS IKENWEI WITH DIGITAL CALL AND LCD SCREEN. INTERNAL PER APARTMENT ROOM STATIONS SHALL BE HS IKENWEI 7" SCREENS KW-570A SERIES. PROVIDE NECESSARY ACCESSORIES SUCH AS POWER SUPPLIES, ELECTRIC STRIKES, CABLE ETC FOR INSTALLATION AND COMMISSIONING OF THE SYSTEM.

APARTMENT ROOM STATIONS SHALL BE INTERFACED WITH THE SECURITY SYSTEM TO PROVIDE VISITORS ACCESS TO LIFT AND CAR PARK ROLLER-SHUTTER DOOR.

SUPPLIER DETAILS

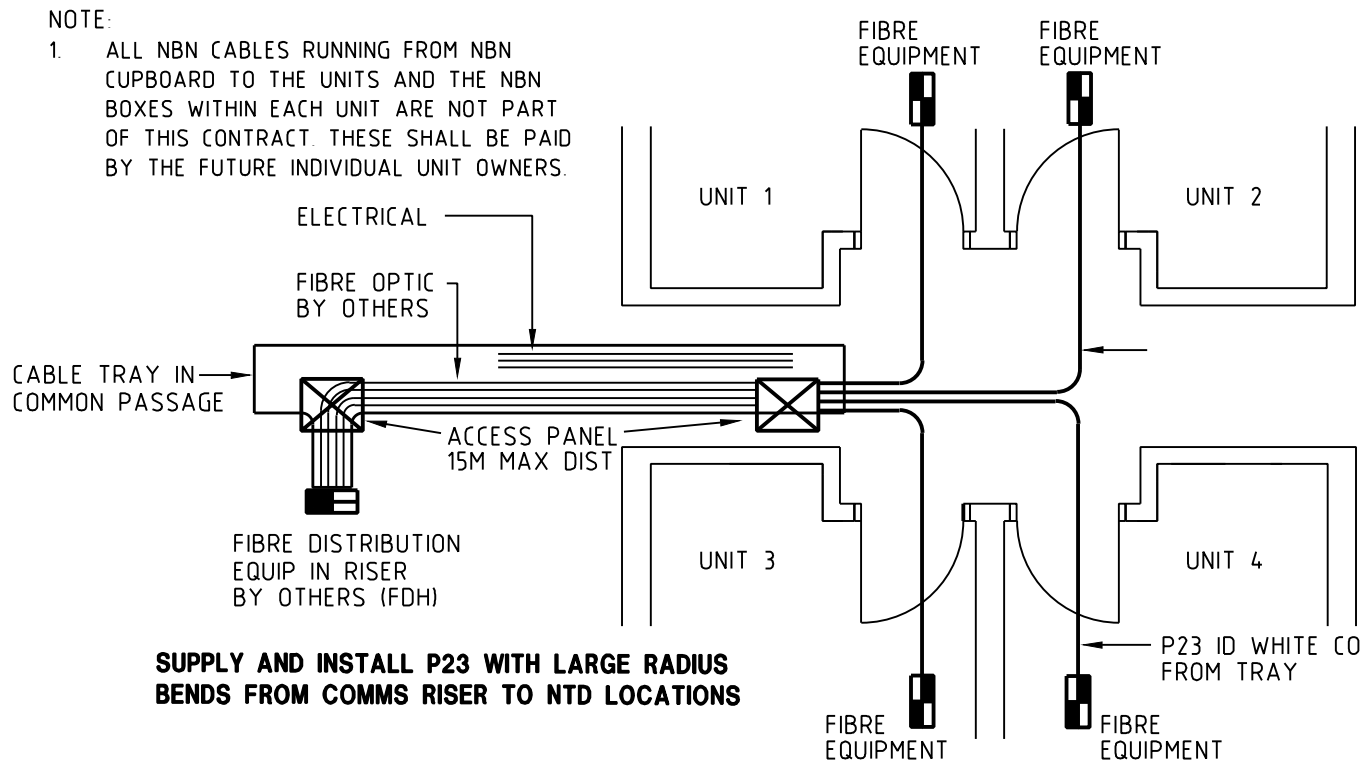
CENTRAL SECURITY DISTRIBUTION PL UNIT 6, 35 DUNLOP ROAD, MULGRAVE 3170 CONTACT: ETWELL PAUSIGERE 0438 303 413



BASEMENT 1

THE SCHEMATICS AND DIAGRAMS SHOWN IN THIS DRAWING ARE INDICATIVE OF THE PROPOSED SYSTEMS ARRANGEMENT. THE DIAGRAMS HEREIN ONLY PROVIDE AN OVERVIEW OF THE INTENT OF THE FUNCTIONALITY REQUIRED. THE CONTRACTOR SHALL NOTE THAT FIELD OUTLETS AND/OR DEVICES ON THE POWER AND LIGHTING LAYOUTS ARE NOT NECESSARILY REPLICATED ON THIS DRAWING. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS COMPLETE WITH DETAILED INFORMATION OF ALL COMPONENTS OF THE SECURITY/MATV/INTERCOM SYSTEM.

NOTE:
1. ALL NBN CABLES RUNNING FROM NBN CUPBOARD TO THE UNITS AND THE NBN BOXES WITHIN EACH UNIT ARE NOT PART OF THIS CONTRACT. THESE SHALL BE PAID BY THE FUTURE INDIVIDUAL UNIT OWNERS.



SUPPLY AND INSTALL P23 WITH LARGE RADIUS BENDS FROM COMMS RISER TO NTD LOCATIONS

FIBRE RETICULATION

1. PROVIDE CABLE TRAY BETWEEN ACCESS PANELS TO RETICULATE FIBRE. MAINTAIN SEGREGATION OF 100mm SPACING BETWEEN FIBRE & ELECTRICAL CABLES.
2. ACCESS PANELS MUST BE PROVIDED AT ANY CHANGE OF DIRECTION OF CABLE TRAY, CABLE TRAY TO CONDUIT TRANSITION OR NO MORE THAN 15M APART.
3. PROVIDE P23 ID WHITE CONDUIT & FIXINGS FROM CABLE TRAY TO APARTMENT ENCLOSURE WITH NO MORE THAN THREE 90 DEG 300mm RADIUS BENDS AND NOT MORE THAN 50M.
4. CO-ORDINATE INSTALLATION WITH FIBRE INSTALLER (WITH NBN Co) AND SUBMIT SHOP DRAWINGS IN CAD FORMAT FOR APPROVAL PRIOR TO COMMENCING WORKS.
5. FDH TO HAVE 300mm CLEAR SPACE EITHER SIDE IF LOCATED CUPBOARD.
6. N.T.S. INDICATIVE ONLY.
7. INSTALL TO LATEST NBN STANDARDS.

S.M.A.T.V. SPECIFICATIONS

CONTACT IKUSI AUST NZ P/L FOR DETAILS ON (03) 9720 8000 OR DESIGN@SIKUSI.COM

EQUIPMENT USED SHALL BE MANUFACTURED BY IKUSI OR APPROVED EQUIVALENT EQUIPMENT FOR THIS PROJECT.

A SITE TEST IS RECOMMENDED TO VERIFY QUALITY AND STRENGTH OF FREE TO AIR DIGITAL TV SIGNAL WHERE THE QUALITY OF THE DIGITAL SIGNAL IS POOR, DUE TO BLACK SPOT AREA, THEN THE DIGITAL CHANNEL PROCESSORS SHALL BE REPLACED BY DIGITAL CHANNEL REGENERATORS TO MAINTAIN DIGITAL TV SERVICES.

THE HEADEND SHALL BE CAPABLE OF DISTRIBUTING ALL CURRENT DIGITAL TV CHANNELS VIA DIGITAL CHANNEL.

DIGITAL TRANSMODULATORS SHALL ALSO BE INSTALLED, WHERE REQUIRED, TO PROVIDE THE MAIN PRIMARY CHANNELS SOURCED FROM THE DIGITAL STREAM FOR DISTRIBUTION. FM MODULE SHALL BE INCLUDED TO COVER THE FM BAND FROM 88 TO 108 MHz. SYSTEM SHALL INCORPORATE AN ACTIVE COMBINER TO MAINTAIN HIGH CHANNEL ISOLATION.

FINAL DRIVE SHALL UTILIZE MATCHING LAUNCH AMPLIFIER. TV FORWARD PATH WILL BE 45 TO 694 MHz WITH NO SIGNAL TO EXCEED 100 dBuV.

THE HEADEND SHALL INCLUDE FOXTEL APPROVED QUAD OUTPUT LNB, SATELLITE DISH AND MOUNT. SATELLITE IF AMPLIFICATION MODULES SHALL BE PROVIDED TO DISTRIBUTE SATELLITE SIGNAL. ALL EQUIPMENT REQUIRED FOR DISTRIBUTING THE FOXTEL SATELLITE SIGNAL MUST BE FOXTEL APPROVED.

MINIMUM ANALOGUE TV LEVEL AT WALL PLATE SHALL NOT BE LESS THAN 42 dBuV AND NOT EXCEED A MAXIMUM OF 75 dBuV. MINIMUM DIGITAL TV POWER AT WALL PLATE SHALL NOT BE LESS THAN 50 dBuV AND NOT EXCEED A MAXIMUM OF 45 dBuV AT THE OUTLET. SATELLITE PAY TV SIGNAL LEVEL SHALL COMPLY WITH CURRENT FOXTEL SPECIFICATIONS.

ALL ACTIVE AND PASSIVE EQUIPMENT SHALL BE F TYPE. ALL F TYPE CONNECTORS MUST BE COMPRESSION TYPE AND PAY TV / FOXTEL APPROVED.

FOXTEL REQUIRES ALL SYSTEM AND WALL PLATES PERFORMANCE

S.M.A.T.V. SCHEMATIC

TESTING TO BE CARRIED OUT AND READINGS WITHIN A SYSTEM COMPLYING TO BELOW

BROADCAST TYPE	WALL PLATE LEVEL (dBuV)
DVB-T COFDM 64 QAM	56 (MIN) 77 (MAX)
DVB-S QPSK	58 (MIN) 70 (MAX)

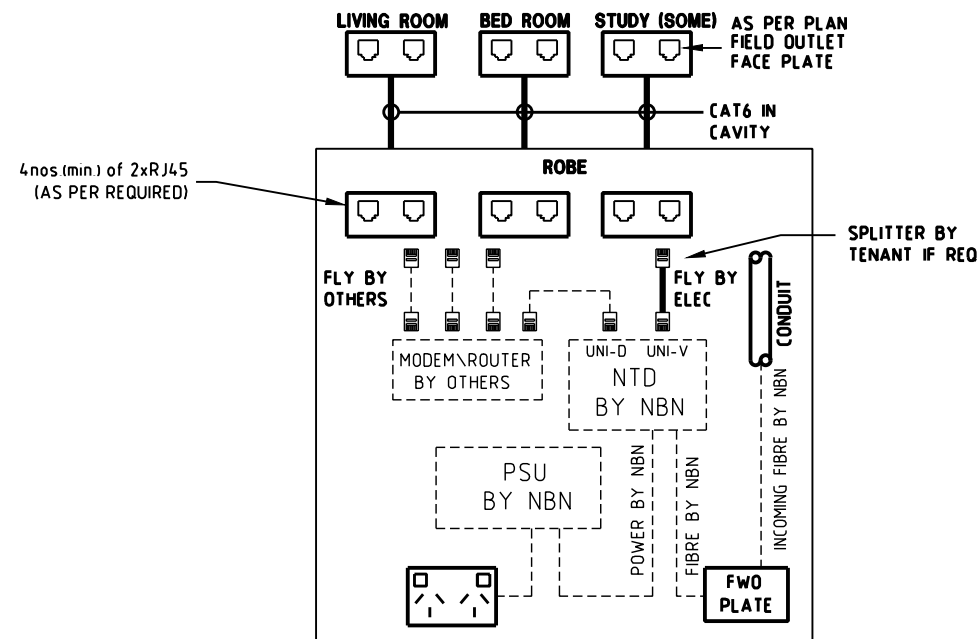
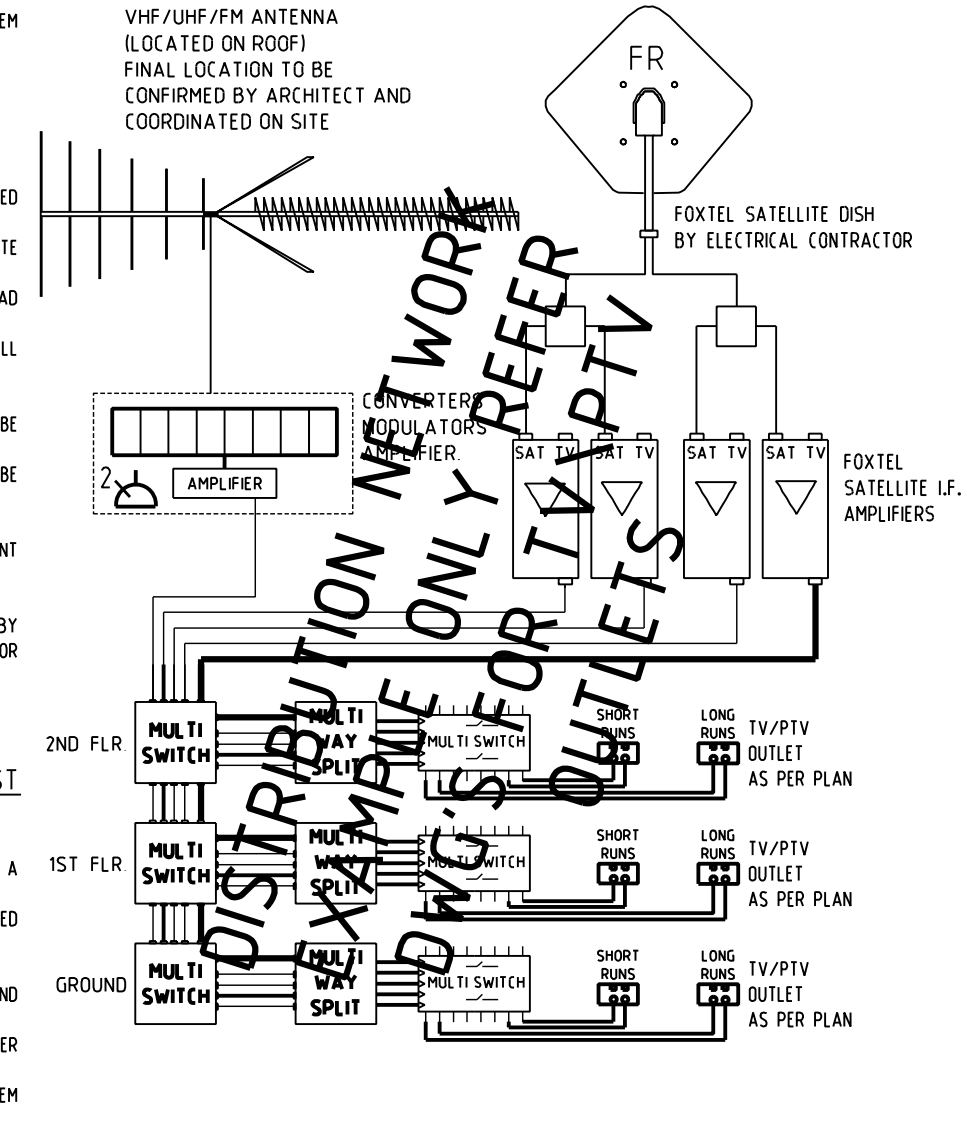
ALL CABLE SHALL BE QUAD SHIELDED PAY TV / FOXTEL APPROVED COAX. HORIZONTAL CABLE RUNS FROM MULTI-SWITCHES TO WALL PLATE SHALL USE RG6 QUAD SHIELDED COAX FOR RUNS UP TO 40 METRES. RUNS EXCEEDING 40 METRES SHALL USE RIGID QUAD SHIELDED COAX. TWO CABLES FROM MULTI-SWITCH TO EACH PRIMARY PAY TV WALL PLATE SHALL BE PROVIDED. A PHONE POINT IS ALSO REQUIRED AT EACH WALL PLATE. PROVISION FOR A DATA POINT AT EACH WALL PLATE SHALL BE ALLOWED FOR ALL AMPLIFIERS, MULTI-SWITCHES AND PASSIVE DEVICES MUST BE EARTHED IN COMPLIANCE WITH AS/NZS 1567:2007 REQUIREMENTS. REFERENCE MUST BE MADE TO FOXTEL MANUALS FOR RELEVANT SPECIFIC EARTHING REQUIREMENTS AND OTHER REQUIREMENTS.

COMMISSIONING OF THE HEADEND EQUIPMENT SHOULD BE PERFORMED BY TRAINED PERSONAL FAMILIAR WITH THE IKUSI RANGE OF EQUIPMENT OR APPROVED EQUIVALENT.

PLEASE CONTACT IKUSI FOR PREFERRED INSTALLERS

INSTALLATION MUST CONFORM TO LATEST FOXTEL SPECIFICATIONS

BEFORE INSTALLATION BEGINS, THE INSTALLER IS TO LODGE A CONCEPTUAL SATELLITE REQUEST FORM WITH FOXTEL AND SUBMIT A SCHEMATIC DRAWING OF PROPOSED INSTALLATION. ON ACCEPTANCE OF THIS INFORMATION, INSTALLATION CAN COMMENCE. A FULLY FUNCTIONING SYSTEM IS TO BE INSTALLED AND APPROPRIATE SCOPE OF WORKS FORM SUBMITTED TO FOXTEL INCORPORATING ALL LOG READINGS OF SIGNAL LEVELS, BER AND MER AS REQUIRED BY FOXTEL. ANY FAULTS DETECTED BY FOXTEL MUST BE RECTIFIED AND SYSTEM MUST BE FULLY APPROVED BY FOXTEL.

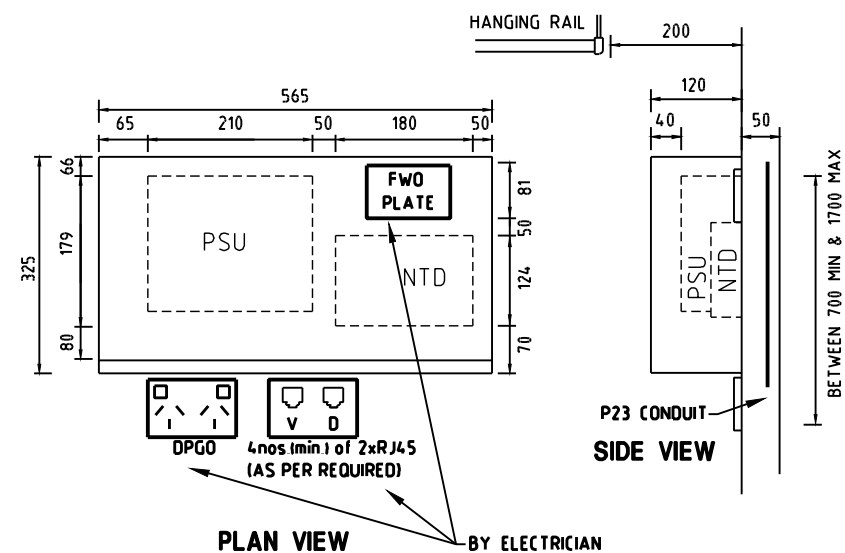


DATACOMMS BLOCK CABLING

1. ITEMS PROVIDED BY NBN SHOWN DASHED
2. PROVIDE CONDUIT PATHWAY, FWO WITH DRAW WIRE, DGPO, RJ45 OUTLET PATCH PANEL (SIZE TO SUIT) FLY LEADS BETWEEN EQUIPMENT, ENCLOSURE, AND RUN OUTS TO PHONE AND DATA POINTS AS PER PLAN
3. CO-ORDINATE WITH JOINERY & BUILDER FOR & SUPPORTS AND SPACE
4. TO COMPLY WITH LATEST NBN REQUIREMENTS
5. END USER TO PROVIDE MODEM/ROUTER NEAR NTD

HANGING RAIL CUT SHORT

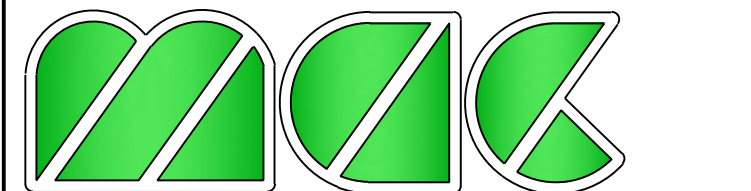
1. CONFIRM CONSENT FROM NBN FOR HANGING RAIL CUT SHORT OPTION PRIOR TO INSTALL
2. PROVIDE DGPO, 4nos OF 2XRJ45 (VOICE & DATA WIRED BACK TO FIELD BLANK PLATE (FWO) C/W DRAW WIRE AND CONDUIT IN CAVITY. SPACED TO LATEST NBN REQUIREMENTS
3. CO-ORDINATE WITH JOINERY & BUILDER FOR HANGING RAIL TO BE CUT SHORT TO SUIT & SUPPORT IN WALL FOR EQUIPMENT TO BE MOUNTED
4. NBN TEMPLATE SPACE TO BE 325mm X 565mm OR 656mm X 325mm
5. ITEMS PROVIDED BY NBN SHOWN DASHED



T1 TENDER ISSUE MS 07/08/17

P1 PRELIMINARY ISSUE TDO 18/05/17

issue rev. description by date



MacCORMACK ASSOCIATES CONSULTANTS Pty. Ltd. ABN 79 978 772 380

MECHANICAL, ELECTRICAL, HYDRAULIC AND FIRE SERVICES CONSULTING ENGINEERS AND PROJECT MANAGERS

1st Floor, 276 High St, Kew 3101
Telephone: (03) 9853 5311
Fax: (03) 9853 0535
E-Mail: info@maccormack.com.au
Web: maccormack.com.au



This drawing is strictly copyright and shall not be copied in whole or part or amended without the written consent of the consulting engineers.

Contractors must verify all dimensions at the job before commencing any work or preparing shop drawings.

Contractors must locate all air registers, pipework outlets, light fittings, power outlets, sprinkler heads, etc. from the Architects reflected ceiling plans and other detailed drawings.

Do not scale. All dimensions to be checked on site.

This drawing is available in electronic format at a cost of \$125 payable by this subcontractor

project title

1 VINE STREET
HEIDELBERG, VIC 3084

service

ELECTRICAL SERVICES

SCHEMATICS
DETAIL LAYOUT SHEET

2 of 2
drawing title

scale

designed MS	checked ASG
drawn --	date MAY 2017

job number 1939

issue T1

drawing 9 of 9

drawing number
E9