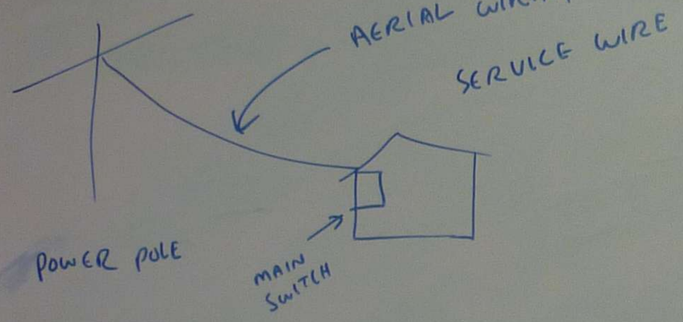
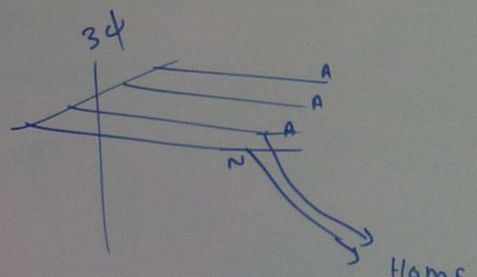
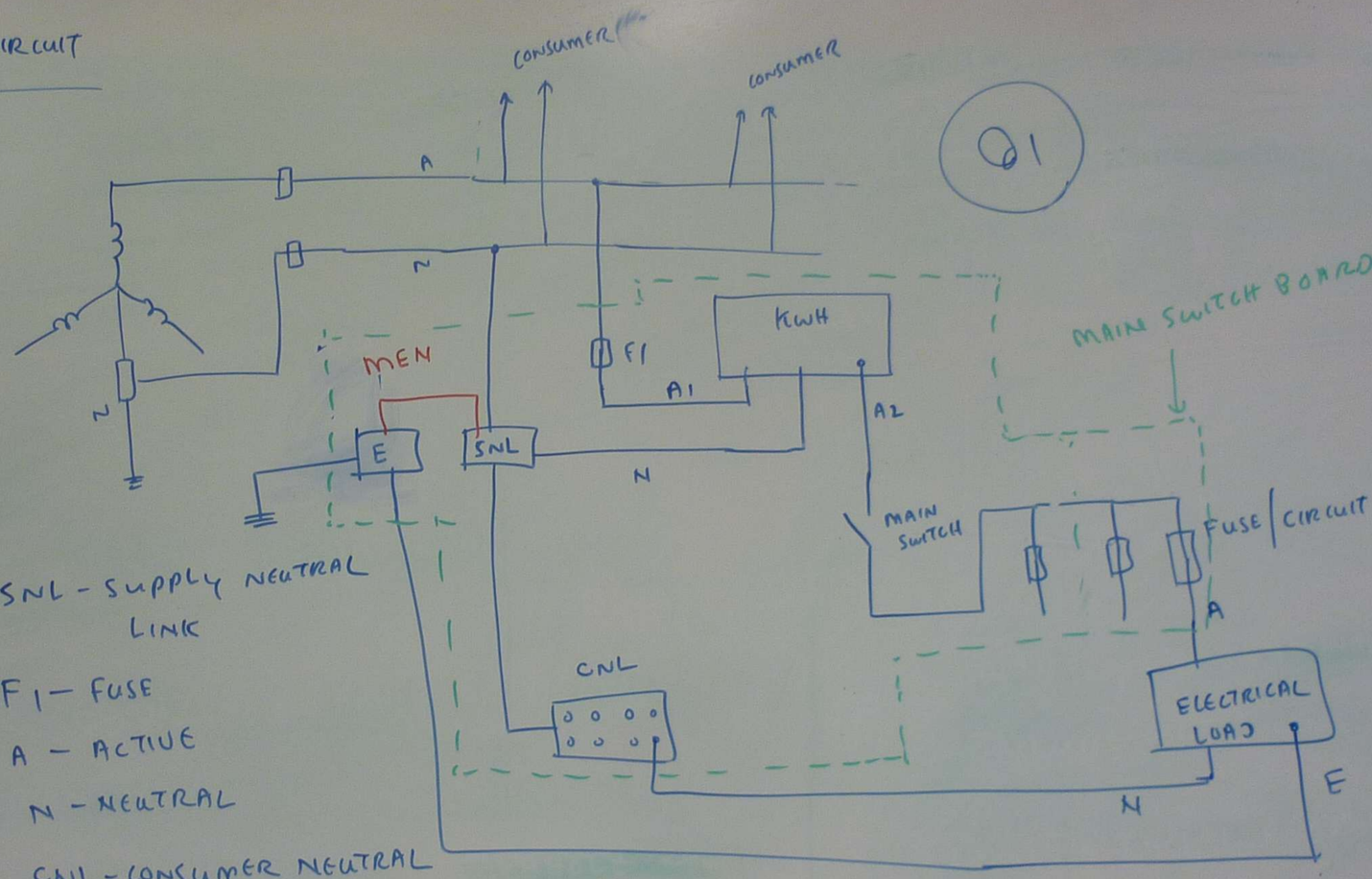
MAIN SWITCH WIRING CIRCUIT







Q1

SNL - SUPPLY NEUTRAL LINK

F1 - FUSE

A - ACTIVE

N - NEUTRAL

CNL - CONSUMER NEUTRAL LINK

E - EARTH

MEN - MAIN EARTH NEUTRAL LINK

KWH - KILO WATT HOUR METER

MAIN SWITCH BOARD → LOAD

↑ WIRING SYSTEM

CABLING – UN ENCLOSED IN CEILING SPACE
– INSIDE PLASTERED BOARD LINED WALL AND PARTITION
– INSIDE SKIRTING, TRUNKING AND FLOOR DUCT

AS 3000 — 3.1.2 CLAUSE

I IN AN ENCLOSURE
– ON A SURFACE
– PARTLY SURROUNDED BY THERMAL INSULATION
– FULLY SURROUNDED BY THERMAL INSULATION
– UNDER GROUND

III SUPPORTED BY CANTENARY

IV SUPPORTED BY INSULATORS

T BREAKERS

(2)

3.2 Types of wiring system

I UNENCLOSED
- ON A SURFACE
- ON A SURFACE PARTIALLY SURROUNDED BY THERMAL INSULATION
- FULLY SURROUNDED BY THERMAL INSULATION
- BURIED DIRECT INTO GROUND

TABLE 3.1

CABLE TYPES & APPLICATIONS IN WIRING SYSTEM.

(3)

IN AN ENCLOSURE

- ON A SURFACE
- PARTLY SURROUNDED BY THERMAL INSULATION
- FULLY SURROUNDED BY THERMAL INSULATION
- UNDER GROUND

SUPPORTED BY CANTENARY

SUPPORTED BY INSULATORS

TABLE 3.1

CABLE TYPES & APPLICATIONS IN WIRING SYSTEM.

(3)

MAIN SWITCH BOARD LOCATION

THE MAIN SWITCH BOARD SHALL NOT BE LOCATED NOT MORE THAN ONE FLOOR ABOVE.

SWITCH BOARD WIRING

SWITCH BOARD WIRING SHALL BE DESIGNED TO WITHSTAND ANY THERMAL, MAGNETIC EFFECT ON CONDUCTOR

- BARE CONDUCTORS SHALL BE RUN AT THE BACK OF INSULATING PANEL
- UNSHEATHED CABLES SHALL ONLY BE USED WITH INSULATED PANEL

{ 3.3.2.6 IMPACT , 3.3.2.7 VIBRATION
3.3.2.8 MECHANICAL STRESSES

(4)

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3.3.2.6 IMPACT, 3.3.2.7 VIBRATION
3.3.2.8 MECHANICAL STRESSES

Q4

CURRENT CARRYING CAPACITY

EVERY CONDUCTOR SHALL HAVE A CURRENT CARRYING CAPACITY IN ACCORDANCE WITH AS/NZS 3008.1

- OPERATION TEMPERATURE TABLE 3.2
  LIMITING TEMPERATURE

MINIMUM CABLE SIZE 4 mm^2

CONDUCTOR SIZE TABLE 3.3

VOLTAGE DROP ← CABLE SIZE

AS 3.6.2 - NOT MORE THAN $\pm 5\%$ of NOMINAL SUPPLY VOLTAGE

SELECT THE CABLE APPROPRIATE TO MAXIMUM DEMAND of LOAD

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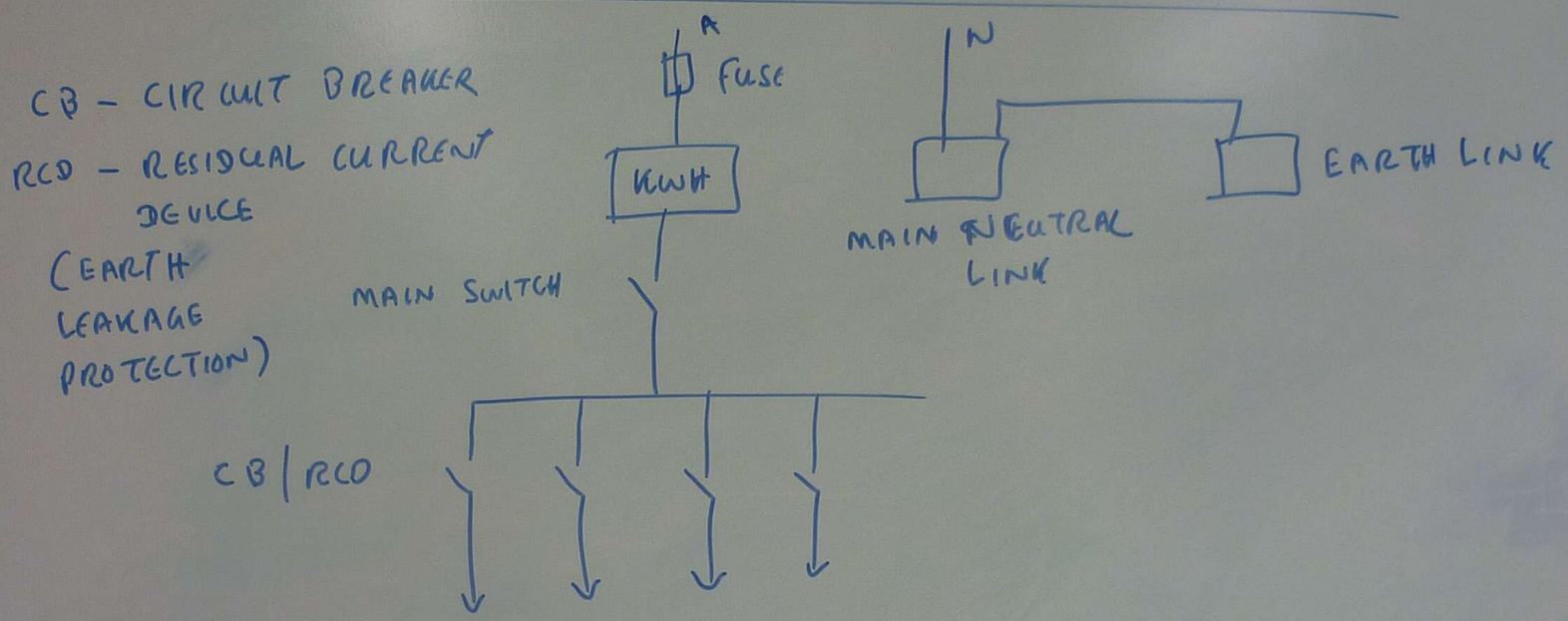
TUTORIAL

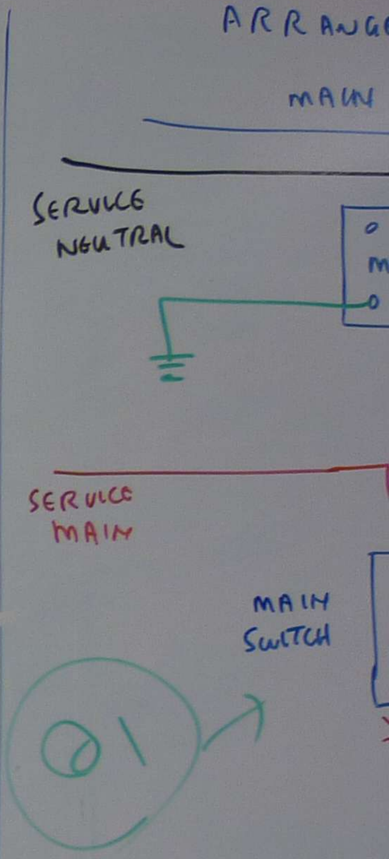
1. SKETCH THE ELECTRICAL CONNECTION DIAGRAM OF MAIN ELECTRICAL CIRCUIT BOARD
2. DESCRIBE TYPES of WIRING SYSTEMS
3. EXPLAIN THE RULES RELATED TO FOLLOWING ASPECTS
   (a) IMPACT (b) VIBRATION (c) MECHANICAL STRESS
4. WHAT IS REQUIREMENTS FOR CABLE IN THE ASPECTS OF
   (a) CURRENT CARRYING CAPACITY (b) CABLE SIZE (c) VOLTAGE DROP

TYPICAL ARRANGEMENT OF SWITCH BOARD

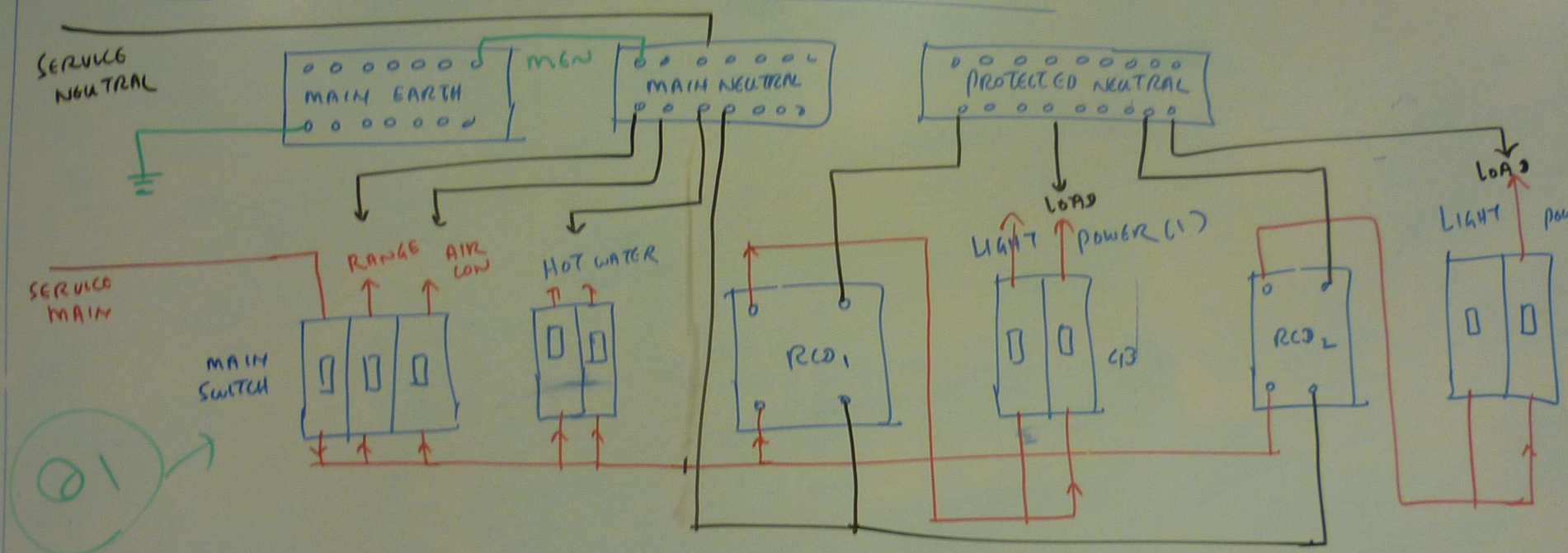
CB – CIRCUIT BREAKER

RCD – RESIDUAL CURRENT DEVICE (EARTH LEAKAGE PROTECTION)



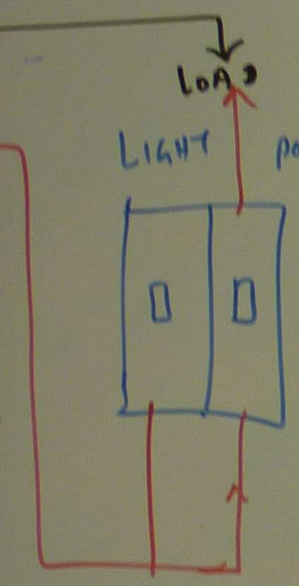


ARRANGEMENT of EARTH BAR NEUTRAL LINK | RCD ON MAIN SWITCH BOARD



TUTORIAL

Q1 S



Q2

CONDUIT / CABLE CAN RUN AT

(1) CAVITY WALL
(2) FLOOR JOIST
(3) CEILING

CABLE LAY OUT / SWITCHING DIAGRAM TO BE DRAWN BEFORE INSTALLATION

Q2

WHARE AR

ELECTRICA

TUTORIAL

Q1 SKETCH THE ARRANGEMENT OF THE FOLLOWING SWITCH BOARD EQUIPMENTS

(a) MAIN SWITCH (b) RANGE / AIRCON SUPPLY
(c) TWO RCD (d) LIGHT POWER
(e) MAIN EARTH (f) MAIN NEUTRAL
(g) PROTECTED NEUTRAL

4.

LE CAN RUN AT

ALL

ST

OUT / SWITCHING

TO BE DRAWN

ALLATION

REMENT OF THE FOLLOWING

MENTS

b) RANGE / AIRCON SUPPLY

d) LIGHT POWER

(f) MAIN NEUTRAL

NEUTRAL

Q2

WHARE ARE THE PLACES SUITABLE FOR

ELECTRICAL CABLES TO RUN ?

Q4

CURRENT

EVERY CON

CAPACITY

- OPERATION

MINIMUM C

CONDUCTOR

VOLTAGE D

AS 3.6.2 -

SELECT THE C

DEMAND OF