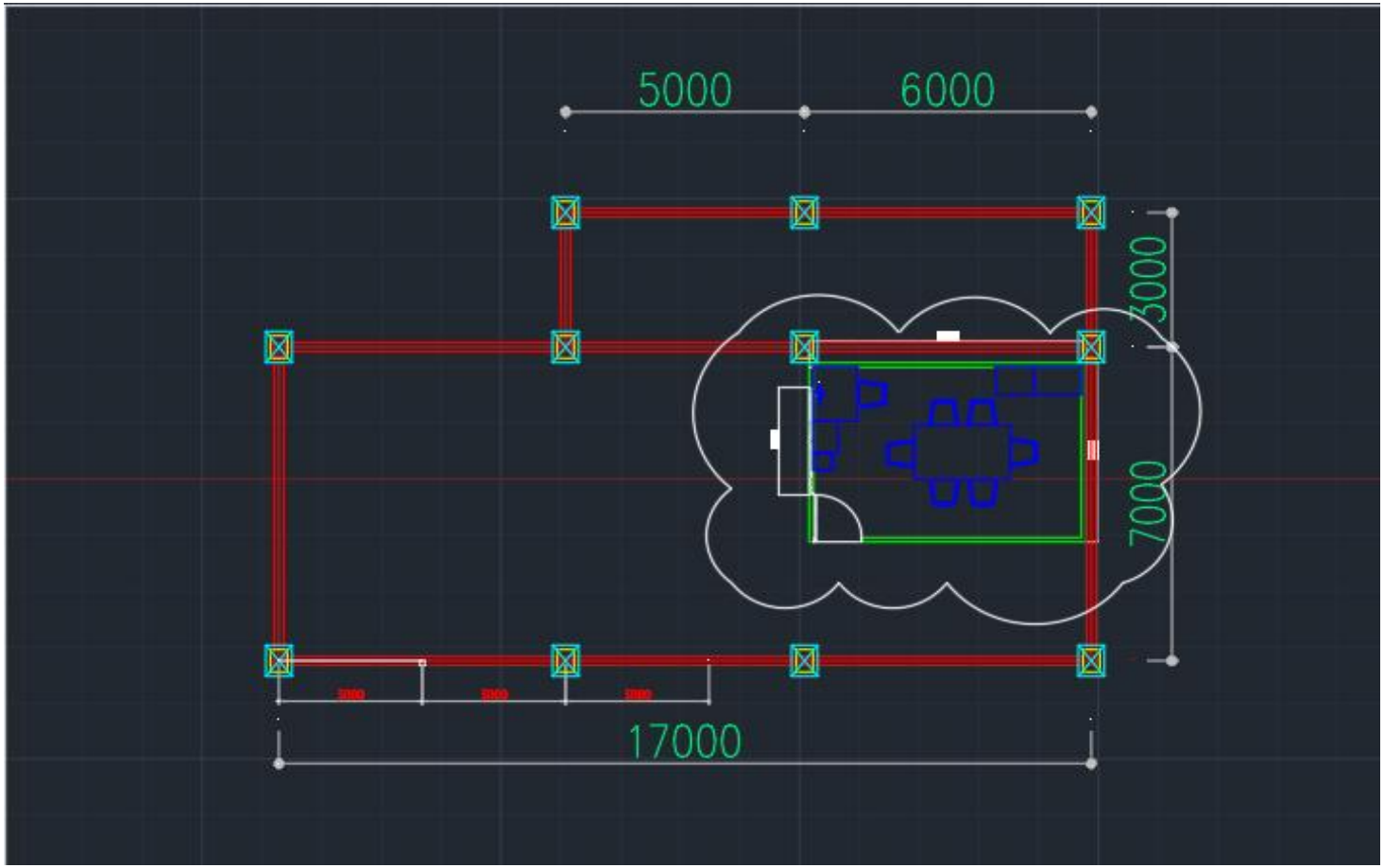
TML CCL Sadang

OFFICE WORKSHOP MECHANIC

LIGHTING & INSTALLATION ANALYSIS

Sadang, 04 February 2025

A. Design Area



B. Calculation of Lighting Point

$$N = \frac{E \; x \; L \; x \; W}{Ø \; x \; LLF \; x \; CU \; x \; n}$$

$$N = \frac{200 \; x \; 5.8 \; x \; 4}{1800 \; x \; 0.8 \; x \; 65\% \; x \; 2}$$

$$N = \frac{4640}{1872}$$

N = 2.4 = 3

Based on this calculation, we need approximately 3 light points in the area.

N : Number of lamps
E : Illuminance level (in lux) = Standar (100-200)
L : Length of the area (in meters) = 5.8 Meter
W : Width of the area (in meters) = 4 Meter
LLF : Light Loss Factor (0,7 – 0,8)
CU : Coefficient of Utilization (50 – 65%)
n : Number of lamp units (correction factor) = 1
Ø : Luminous flux (in lumens) = 1800 Lumen (Philips Ecofit T8 18 Watt)

C. Spesifications of Lamp

Brand	Philips
Model	Ecofit T8 18 Watt
Input Voltage	220-240V ~ 50-60Hz
Rated Power	18W
Power Factor	0.95
CCT	6500K
Length	1200mm
Fitting	G13
Lumen	1800

D. Calculation Current of Additional Lighting Load

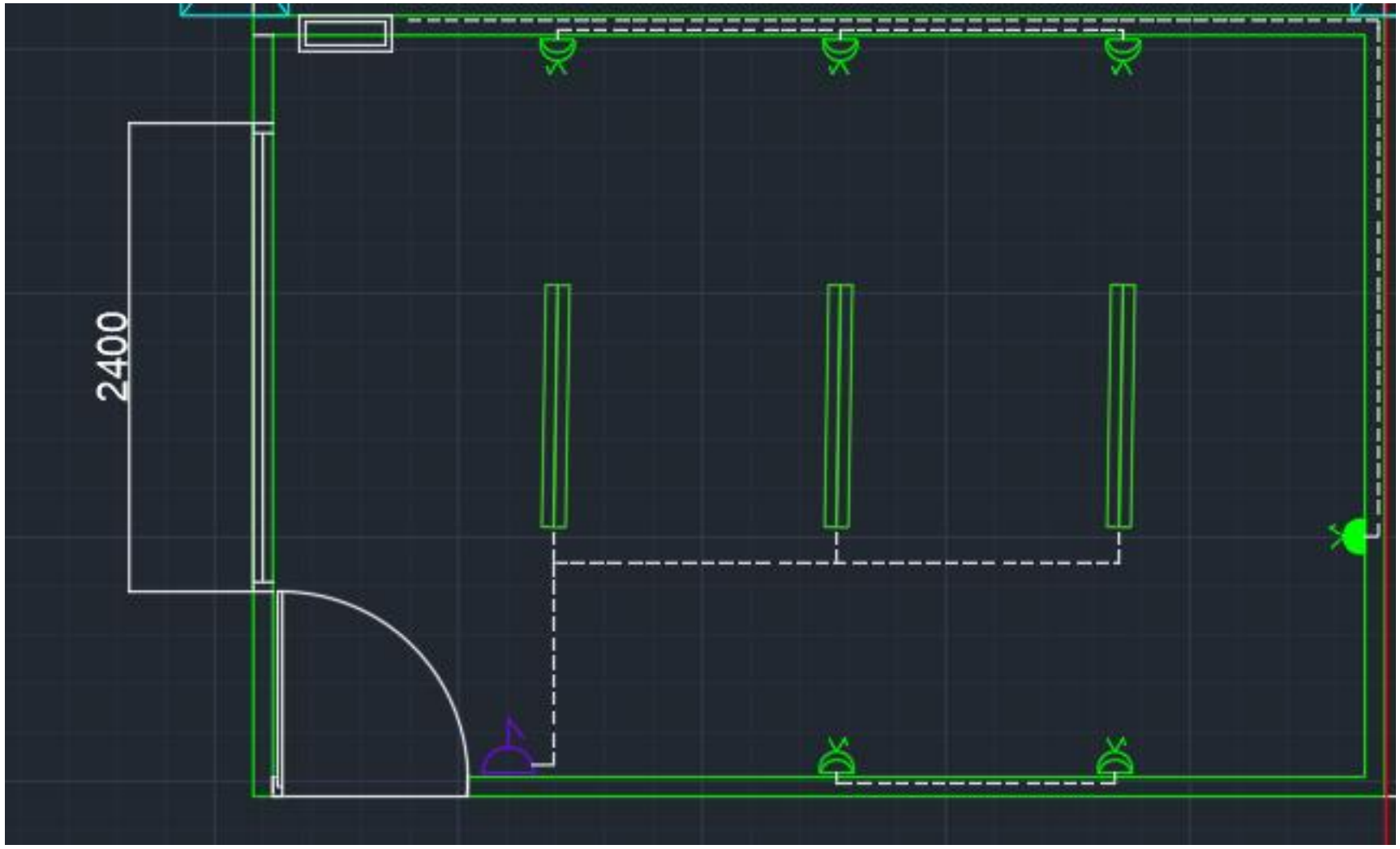
Note : The lamp to be used is Philips Ecofit T8 18 Watt

$$I = \frac{18x6}{220}$$

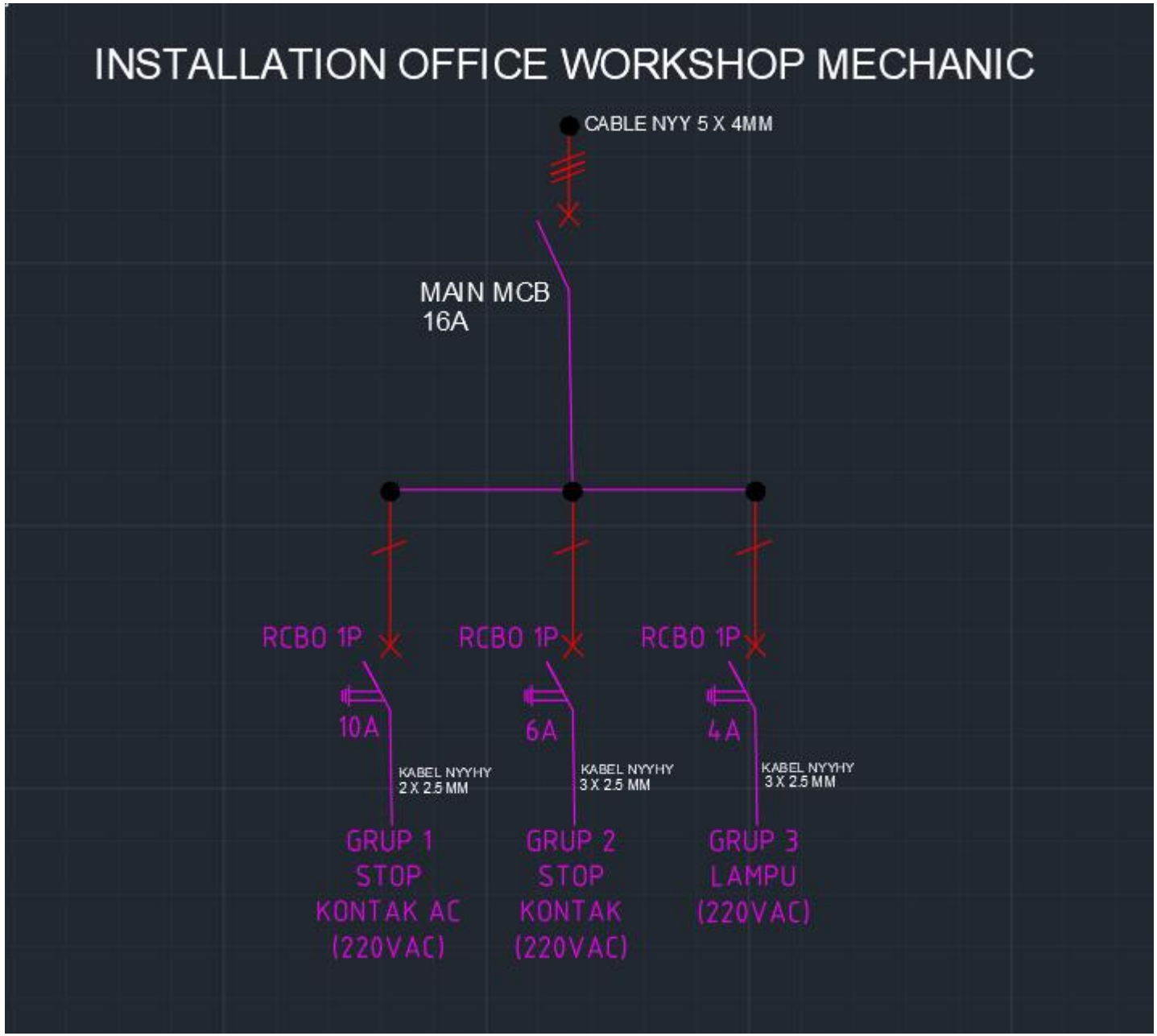
I = 0.49 A

Based on this calculation, the total load current of the lamps to be installed will be 0.49 Amperes.

E. Wiring Diagram Installations



F. Single Line DIagram



G. Summary

1. Power for additional Installations in the Office Mechanic follows the Panel Distribution Workshop Mechanic.
2. Currently the existing Main Breaker for the Panel Distribution Mechanic an actual current of Phasa R 21.8A , Phasa S 22.6A and Phasa R 27.2A.
3. The main MCB used for this new installation is 16 Ampere.

H. Attachment

1. Actual Ampere (Existing Main Breaker Panel Distribution Workshop Mechanic)