AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

Department: Computer Science and Engineering

Faculty of Engineering

BAE 2101: COMPUTER AIDED DESIGN AND DRAFTING

Fall 2020-21

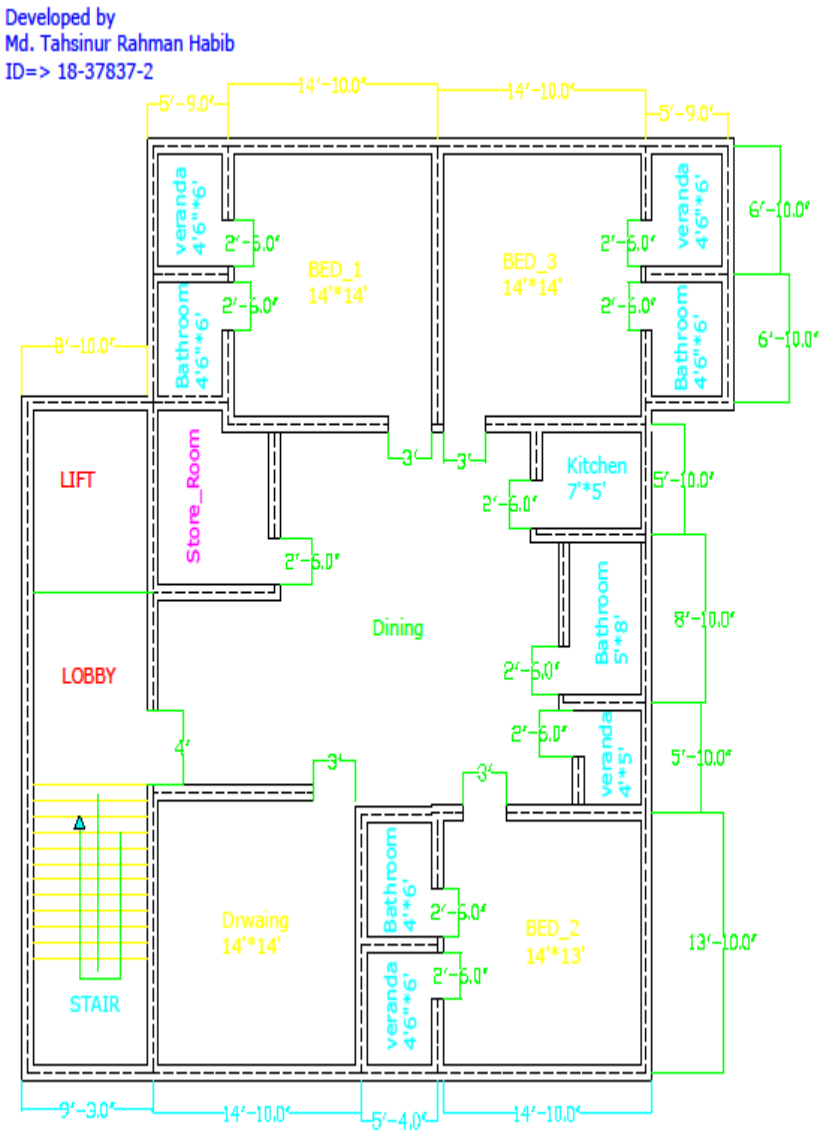
Section – G

Group: 4

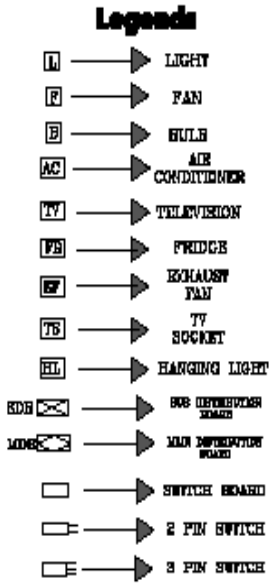
OBE Assignment

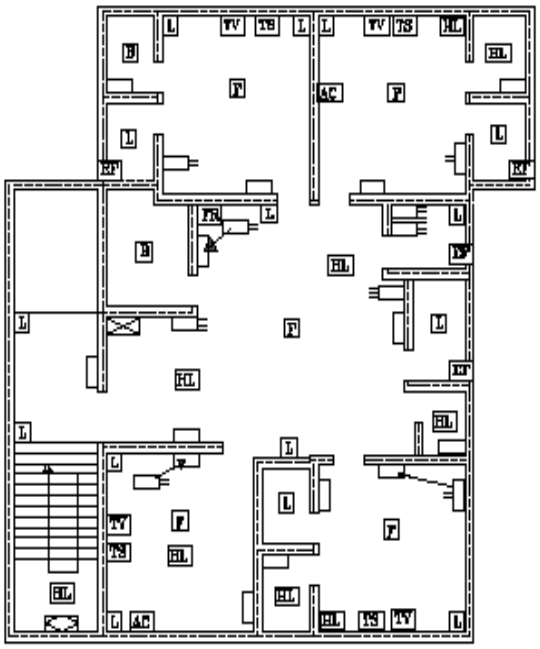
Student Name	Student ID
SHIL, DIPONKOR CHANDRA	18-37790-2
HABIB, MD. TAHSINUR RAHMAN	18-37837-2
KHAN, SAIF	18-38076-2
SAKIB, MD. SAJID AL	18-38085-2
HRIDOY, MD. REZVI KHALID	18-38472-2

1. **Draw the Civil Plan of the flat along with stair, lift and lobby (Space: 8', which is excluded from the flat size). [*Hints: Brick to interior/exterior Offset distance = 5'', Stair Offset distance = 10''].**



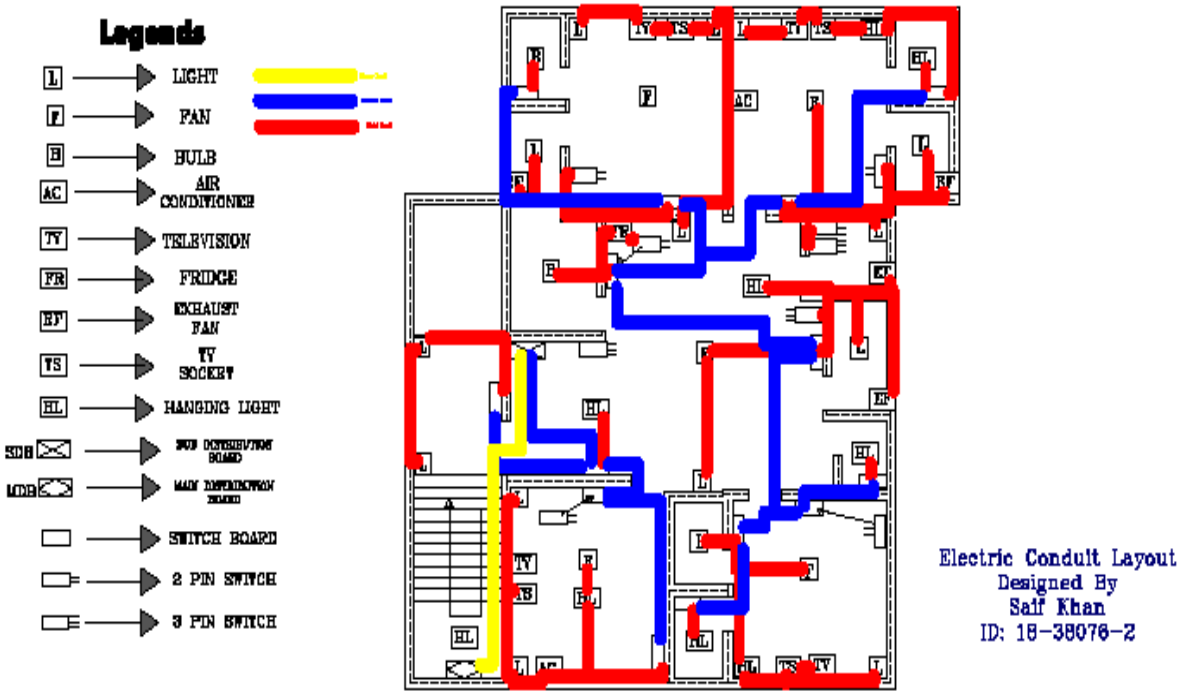
2. Draw the proper Electric Fittings (applying BNBC)





Designed By: SHIL, DIPONKOR CHANDRA
ID: 18-37780-2

3. **Draw the electric conduit layout (Wiring – applying BNBC) where Red, Blue & Yellow color represents light load, medium load & heavy load respectively**.



4. **Calculate the load for Unit B only. Also Calculate the load for each floor and load for the building considering all the flat types are same and same types of load.**

Here total component:

Component	Quantity
Light	15
Fan	5
Bulb	2
Air Conditionar	2
TV	4
Fridge	1
Exhaust Fan	4
Tv socket	4
Hangiing Light	9

Loads per component:-

Component	Watt
Light	40
Fan	70
Bulb	40
Air Conditionar	2000
TV	400
Fridge	1000
Exhaust Fan	90
Tv socket	200
Hangiing Light	70

So Total Loads:

Component	**Watt**
Light	15*40=600
Fan	5*70=350
Bulb	2*40=80
Air Conditionar	2*2000=4000
TV	4*400=1600
Fridge	1*1000=1000
Exhaust Fan	4*90=360
Tv socket	4*200= 800
Hangiing Light	9*70=630
Total	**9420 watt**

The building has 3 units. Each unit considered 9420 watt. So total load for each floor is (9420*3) = 28260 watt.

And it is 5 storied building. It has 5 floor. So total for whole building is (28260*5) = 141,300 watt.

5. **Calculate the capacity of the Generator based on the load calculation. Draw a separate Generator room and show the connection with distribution board**.

From (iv) we got the total load of a 5 storied building which is 141,300 watt.

Now,

141,300 watt = 141.3 kilowatt
Let's assume power factor of the building, cosφ = 0.8
We know,

$$\text{Generator capacity} = \frac{\text{Load}}{Power\ Factor}$$
$$= \frac{141.3}{0.8} \text{ kva}$$
$$= 176.625 \text{ kva}$$

We need 176.625 kva generator for the 5 storied building. And the minimum area required for the generator room is approximately $40m^2$.