

EEE 314

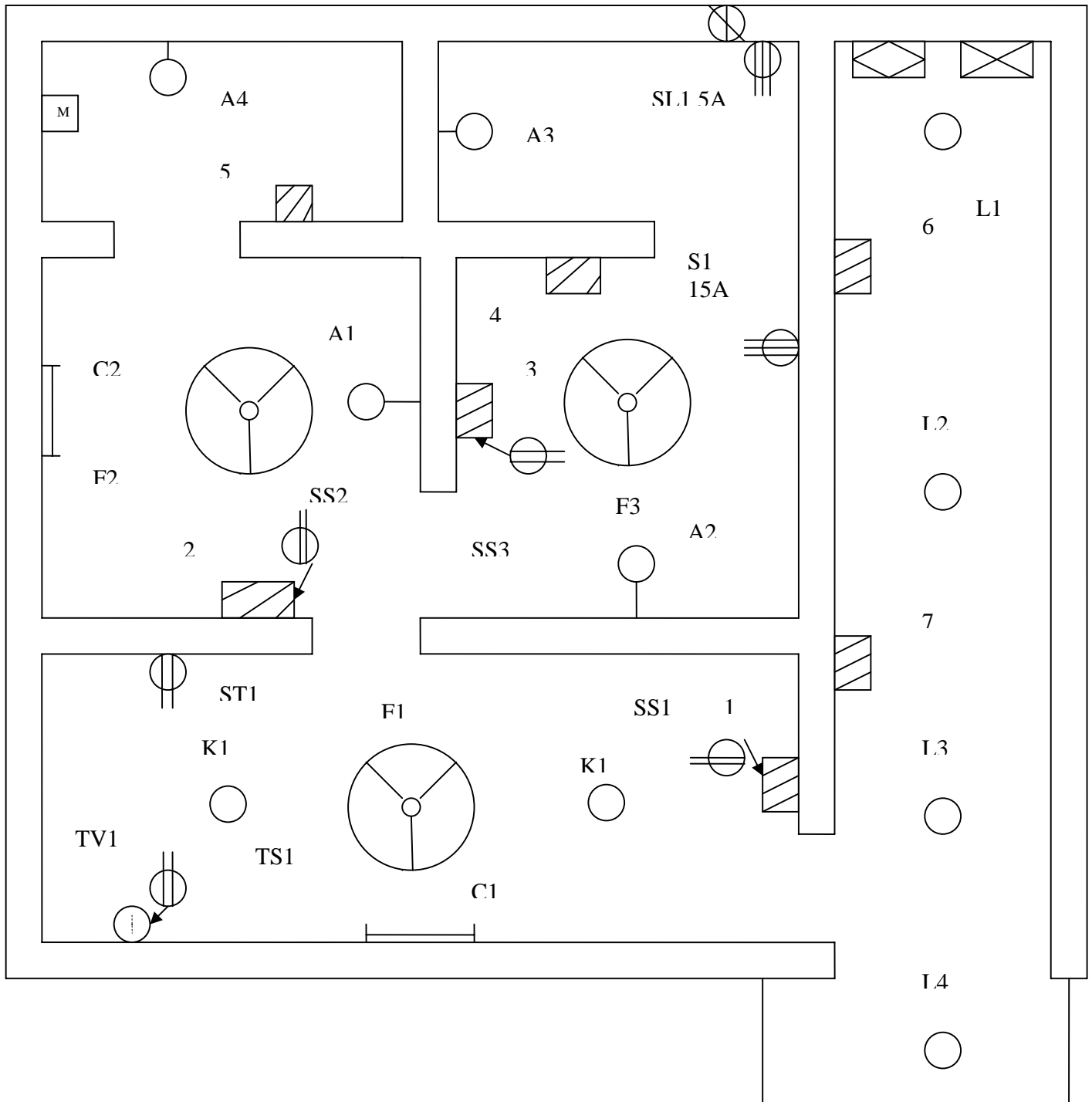
Electrical Services Design

Conduit Layout Lecture 3

**Prepared by: Md. Itrat Bin
Shams (Sanin)**

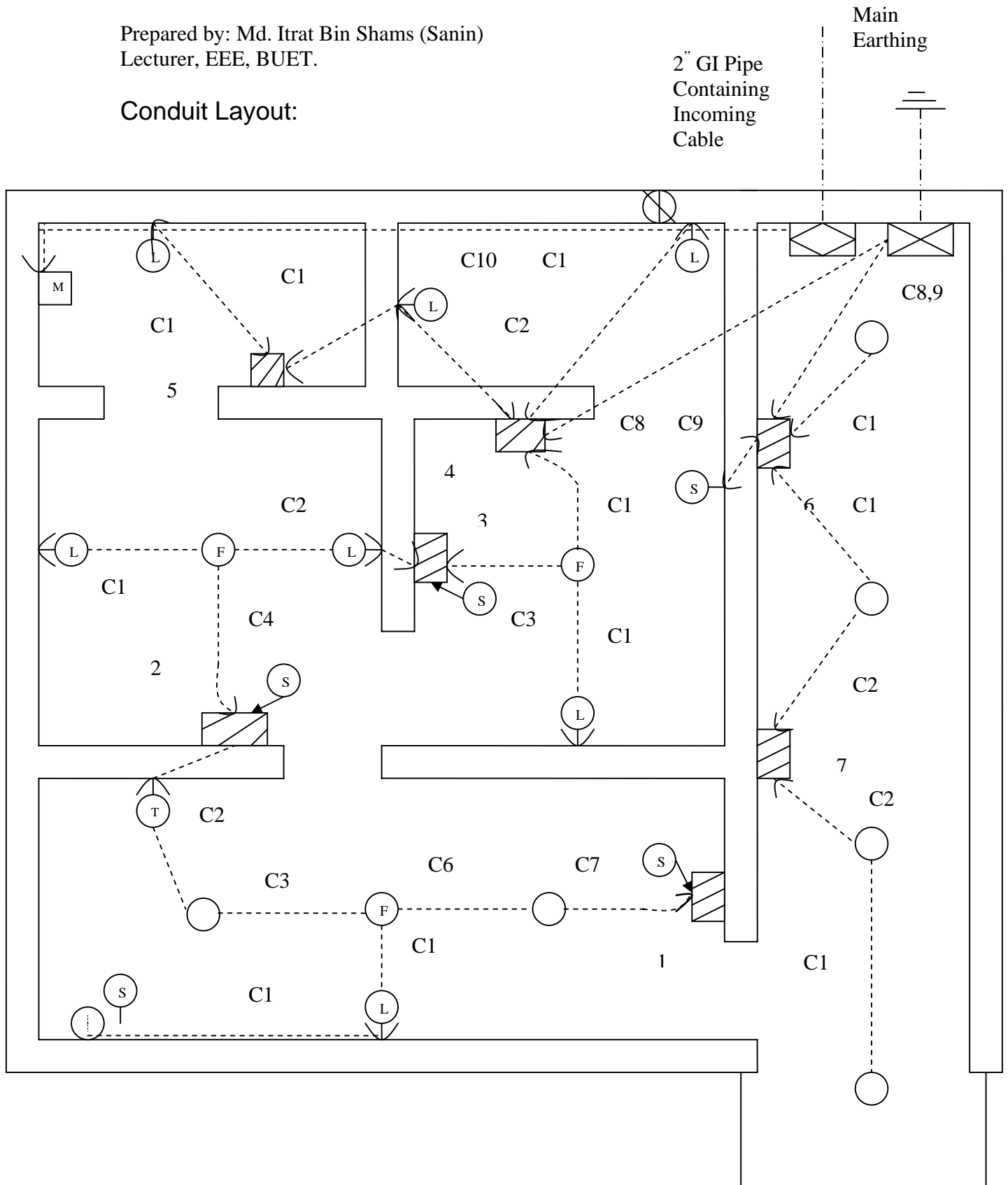
Prepared by: Md. Itrat Bin Shams (Sanin)
Lecturer, EEE, BUET.

Example 1:
Fittings and Fixture Layout:



Prepared by: Md. Itrat Bin Shams (Sanin)
Lecturer, EEE, BUET.

Conduit Layout:

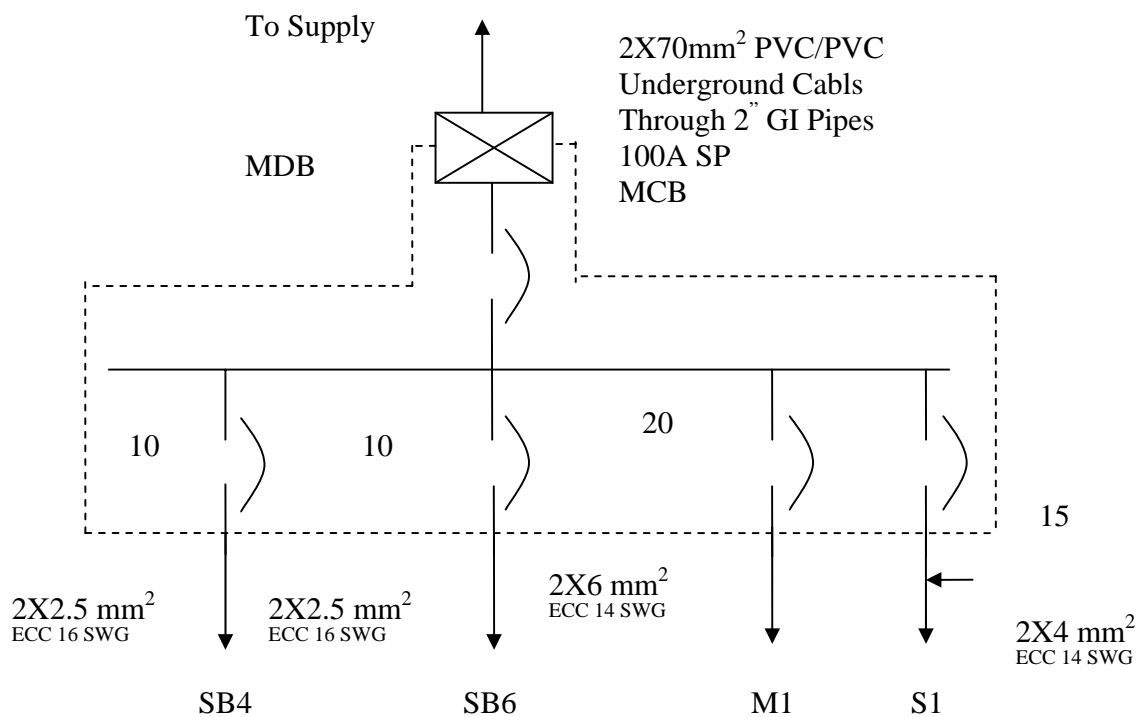


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Lecturer, EEE, BUET.

Switch-Board Connection Diagram:

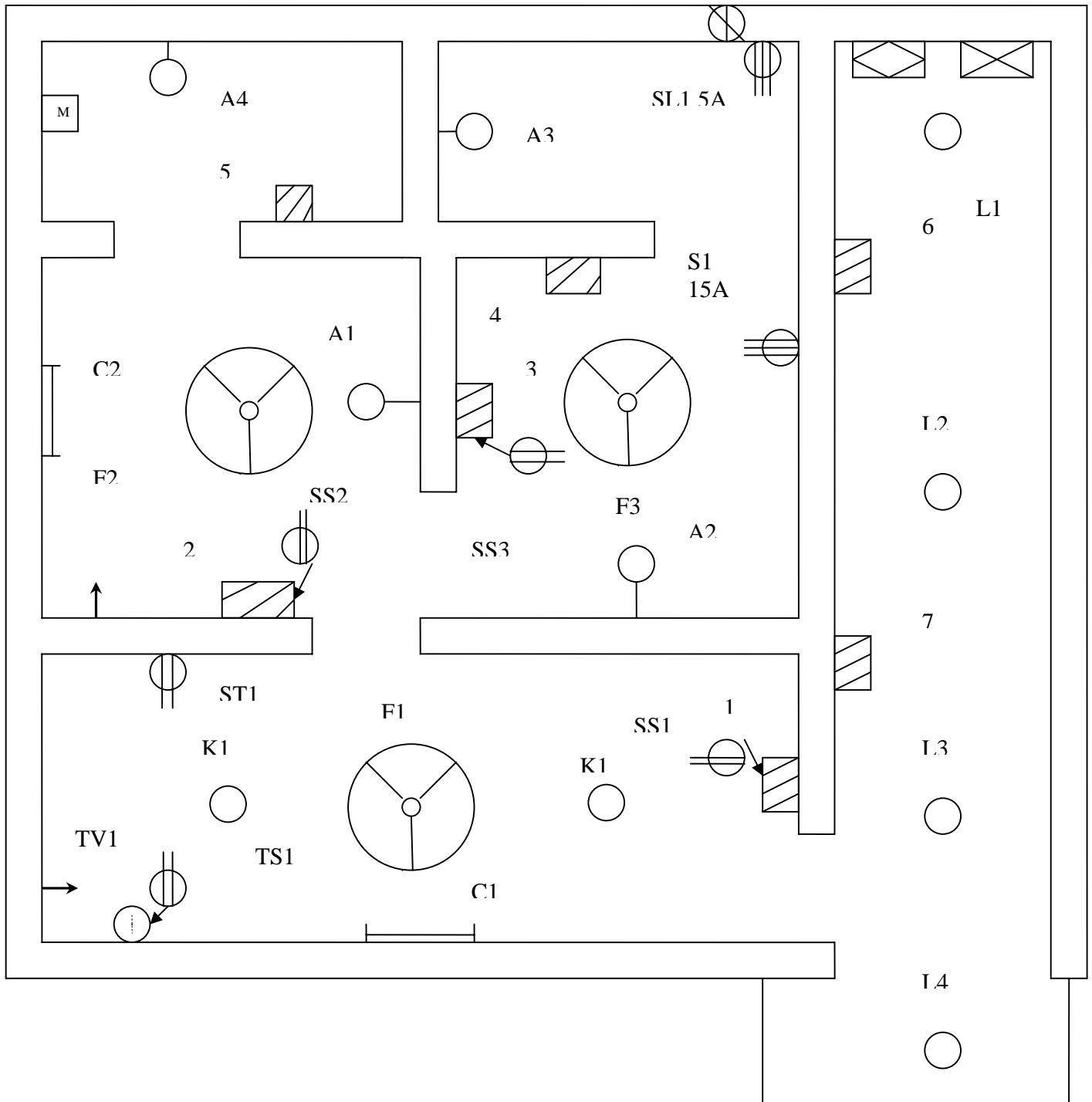
Switch-board connection is same as given in last lecture.

Distribution Board Connection Diagram:

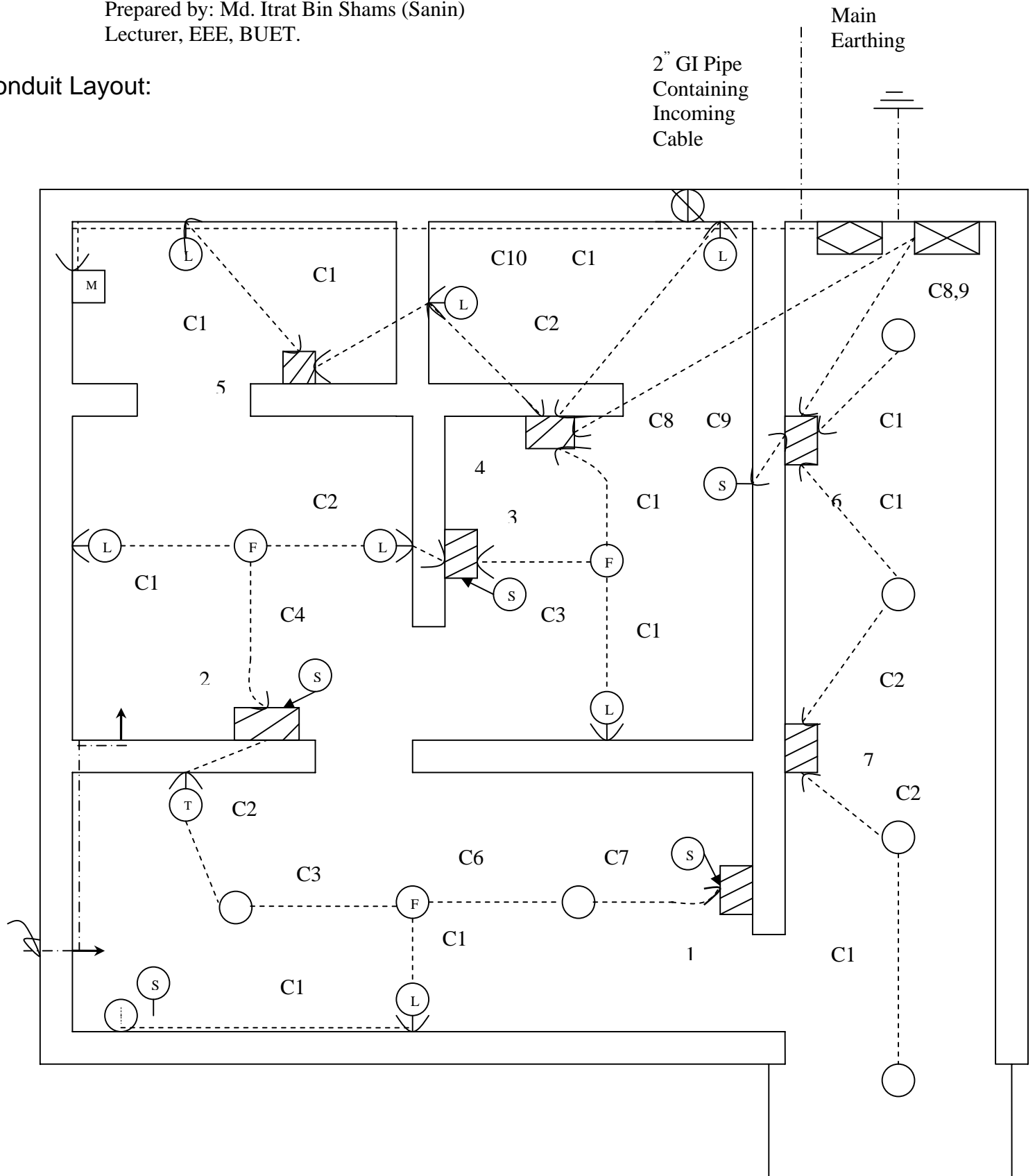


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Example 2:
Fittings and Fixture Diagram:

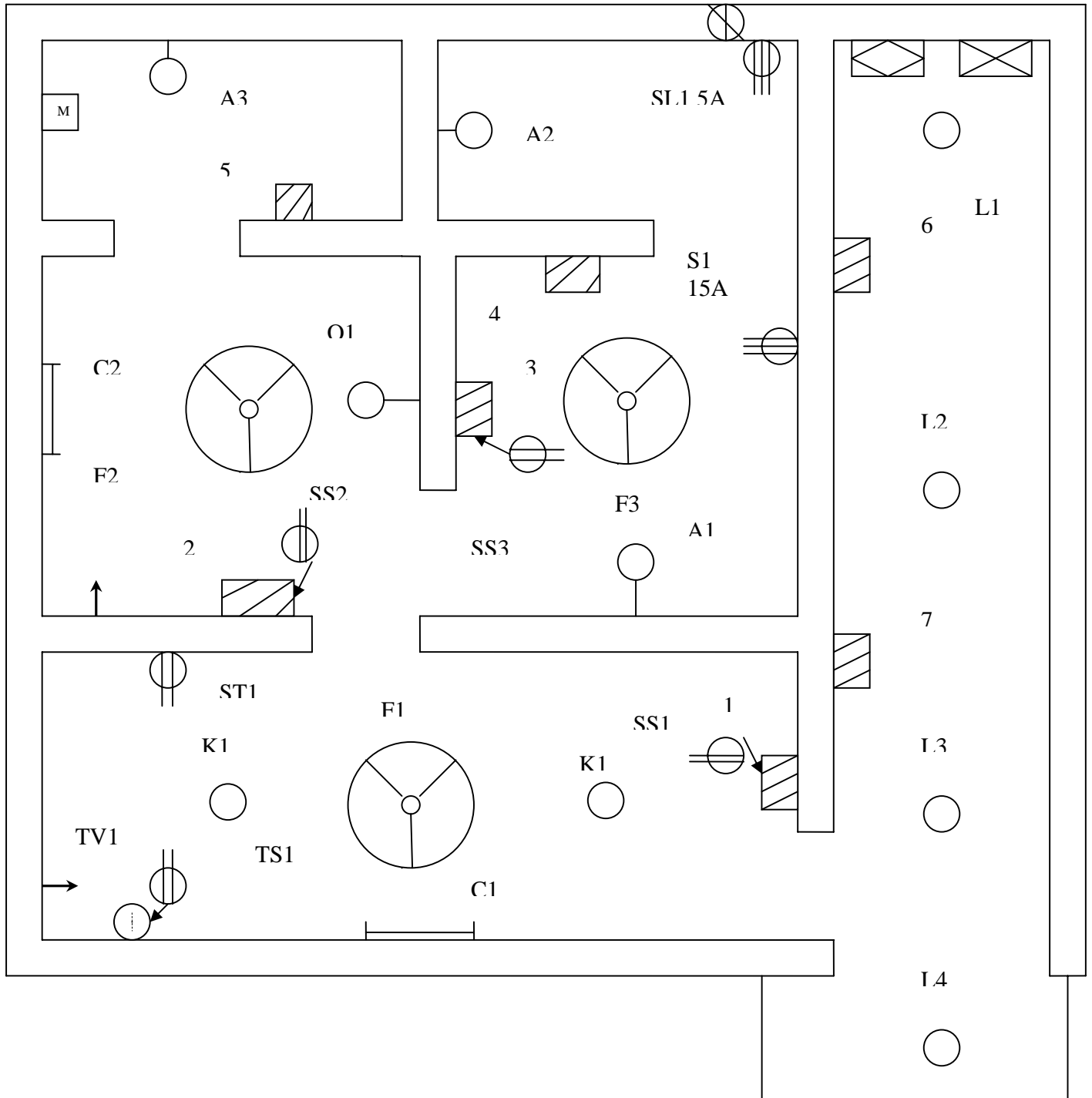


Conduit Layout:



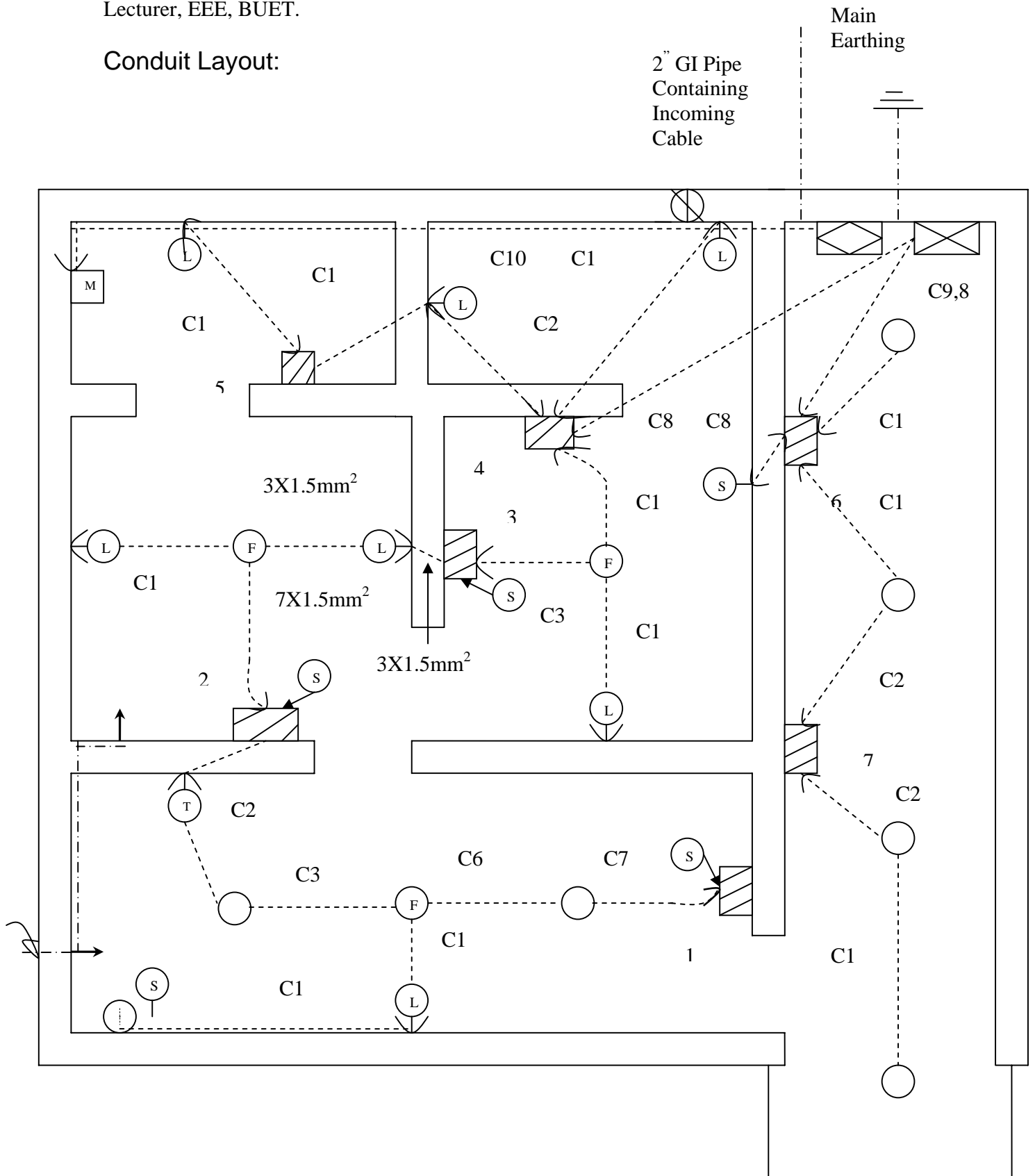
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Example 3:
Fittings and Fixture Diagram:

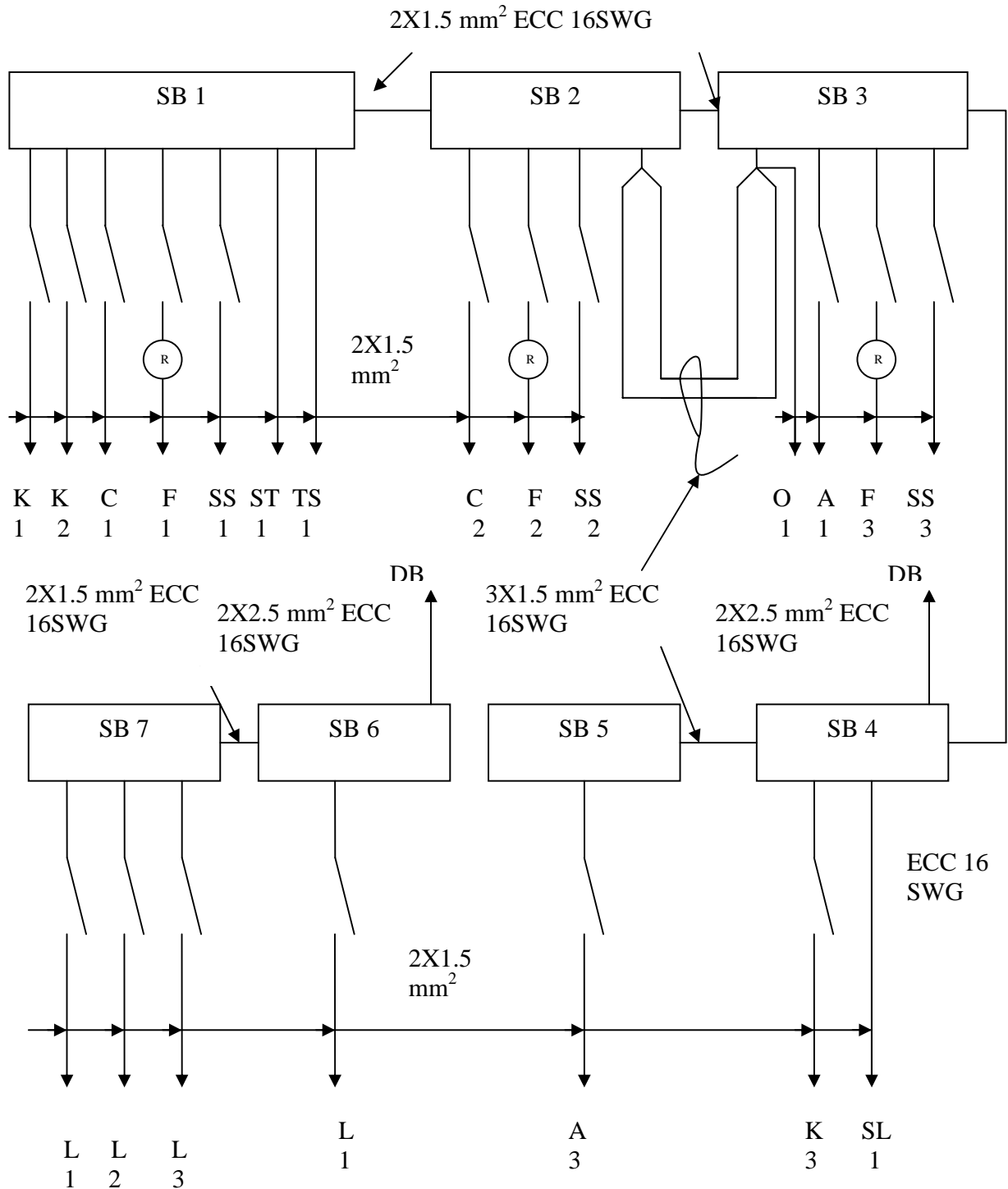


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Conduit Layout:

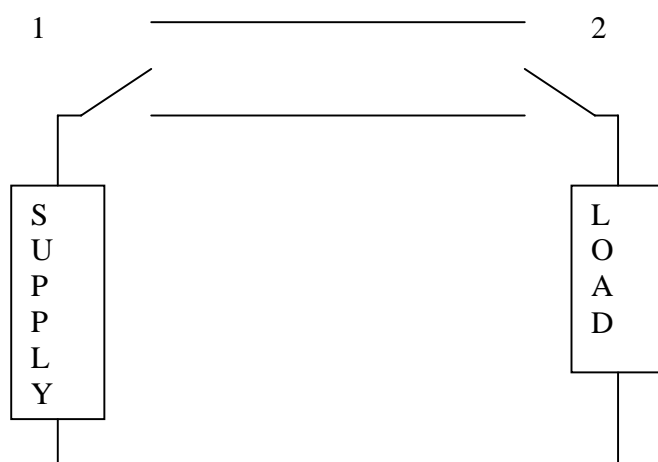


Switch-Board Connection Diagram:



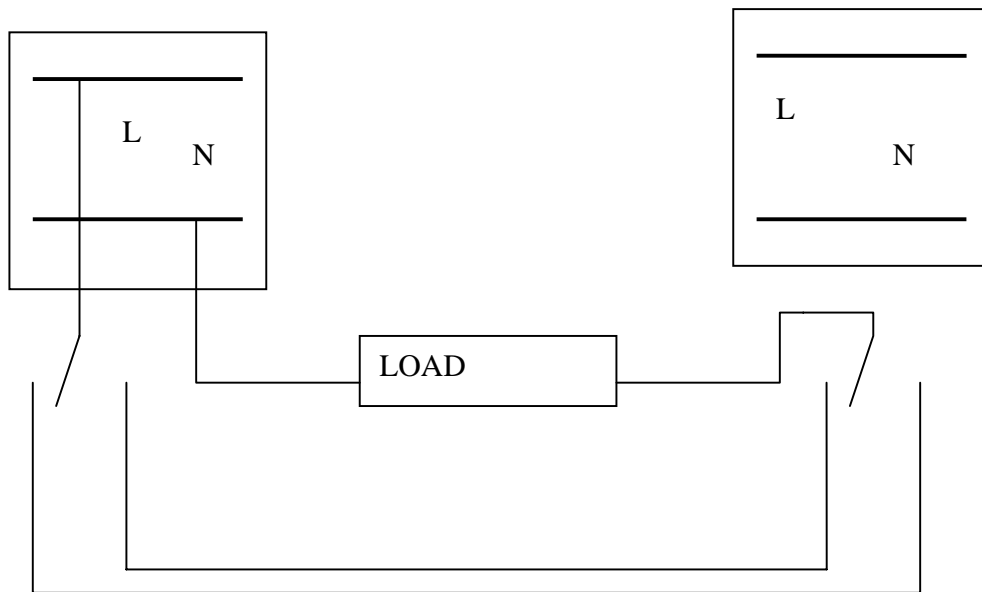
Some points related to this lecture:

- Miniature circuit breakers are used to supply power to high current rated equipments. It is rated 20A and direct connection to the distribution board is necessary for it.
- Telephone grommets are connected via PVC pipes for internal connection inside home.
- Two way switch: Two way switches are special type of switching condition where an appliance is driven by two switches from two different locations (two different switch-boards). There are two ways to use a two way switch. First one is to connect two switches in parallel as shown in figure 1. Second method is to use SPDT (Single Pole Double Through) switches. This is shown in figure 2. In first procedure it is customary that a pair of wire has to be drawn from each switch board to the appliance. But in the second one three wires are drawn. The reason is explained below.



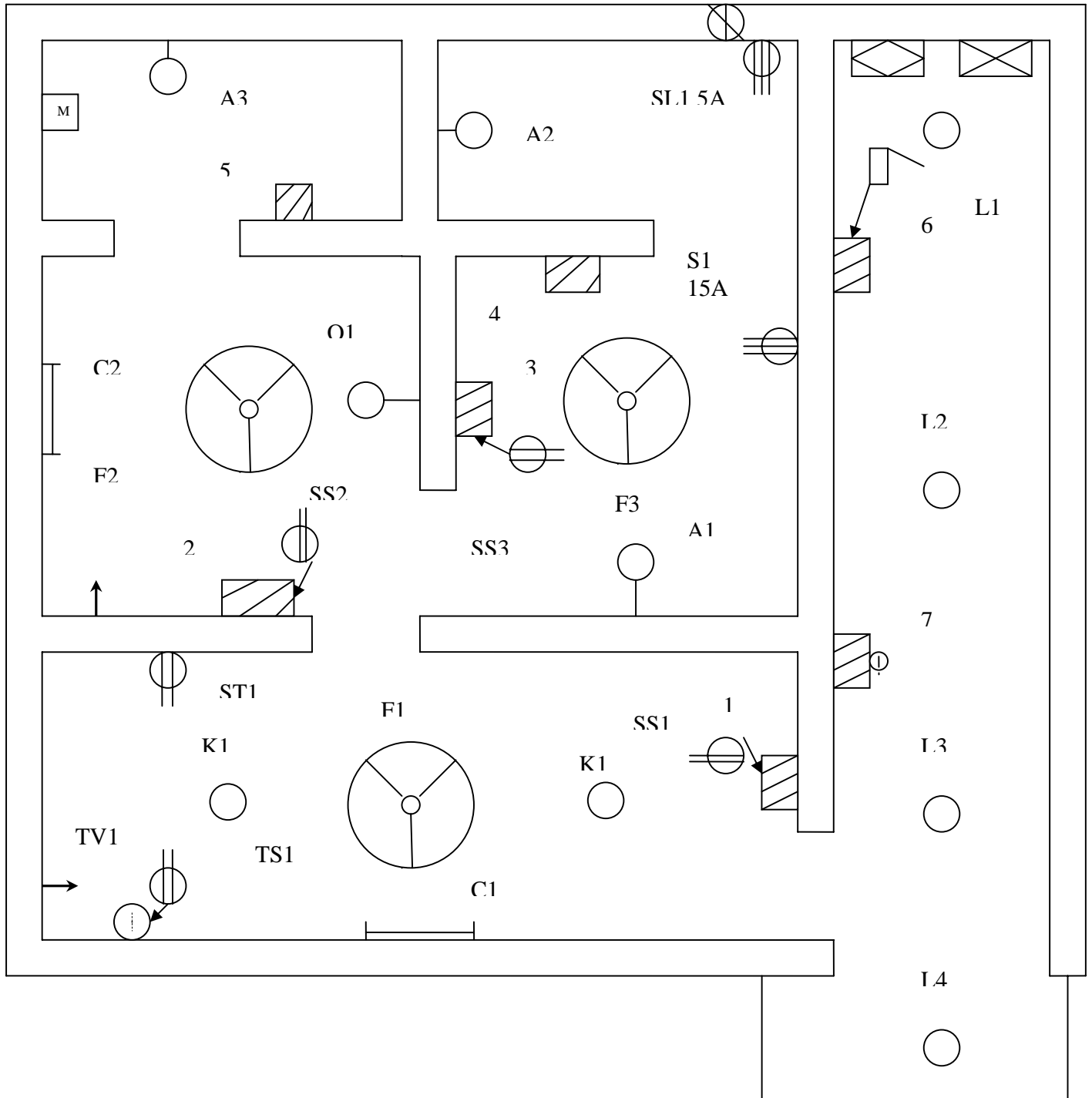
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There are two bus type wires in a switchboard. They are live and neutral wires. Wires are connected between them. It is shown in following figure. It is evident that why three wires are needed. If we want to connect two switching schemes simultaneously then we have to place $7 \times 1.5 \text{ mm}^2$ with $9 \times 1.5 \text{ mm}^2$ and $3 \times 1.5 \text{ mm}^2$ with $5 \times 1.5 \text{ mm}^2$.



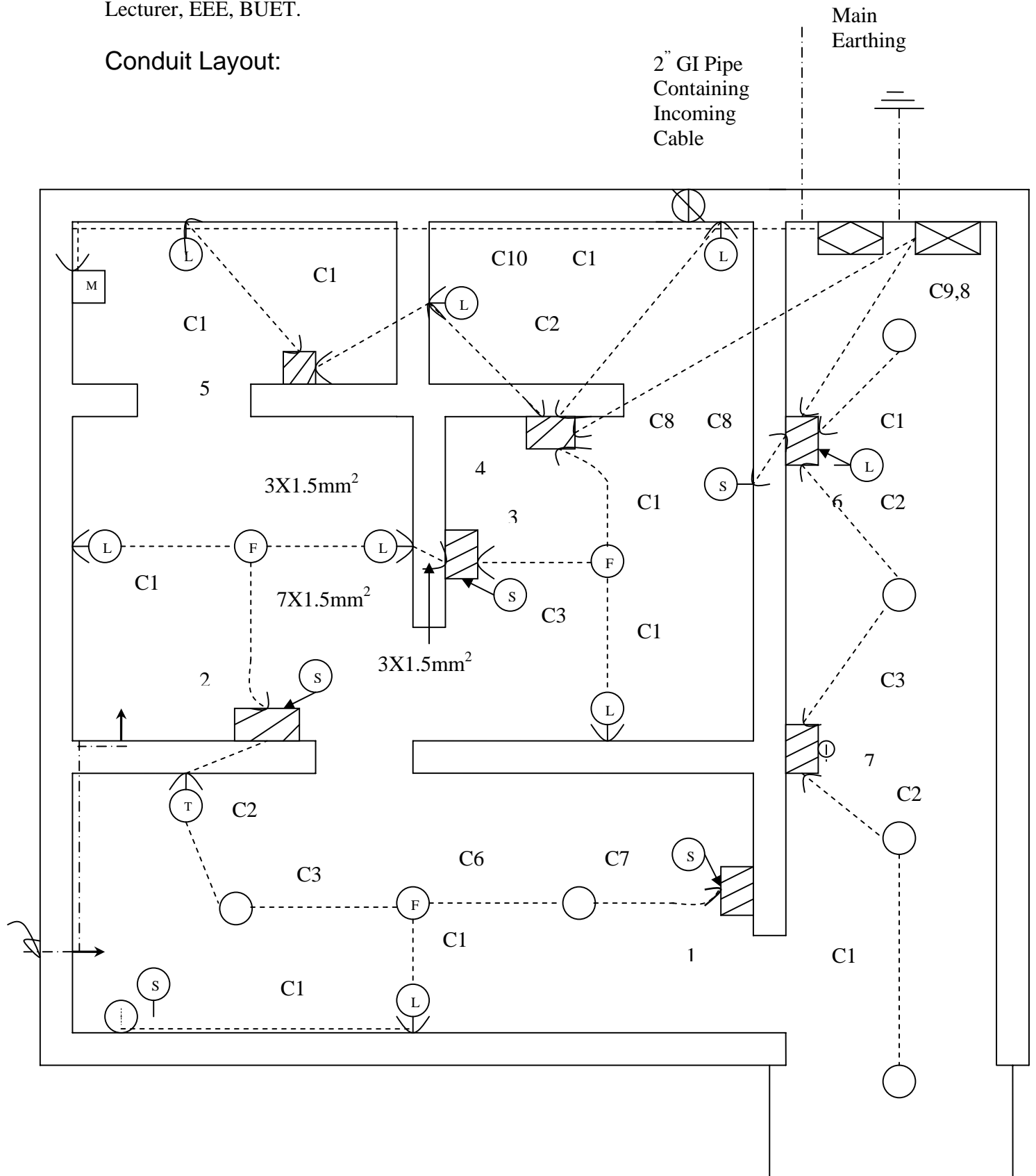
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Example 4:
Fittings and Fixture Diagram:

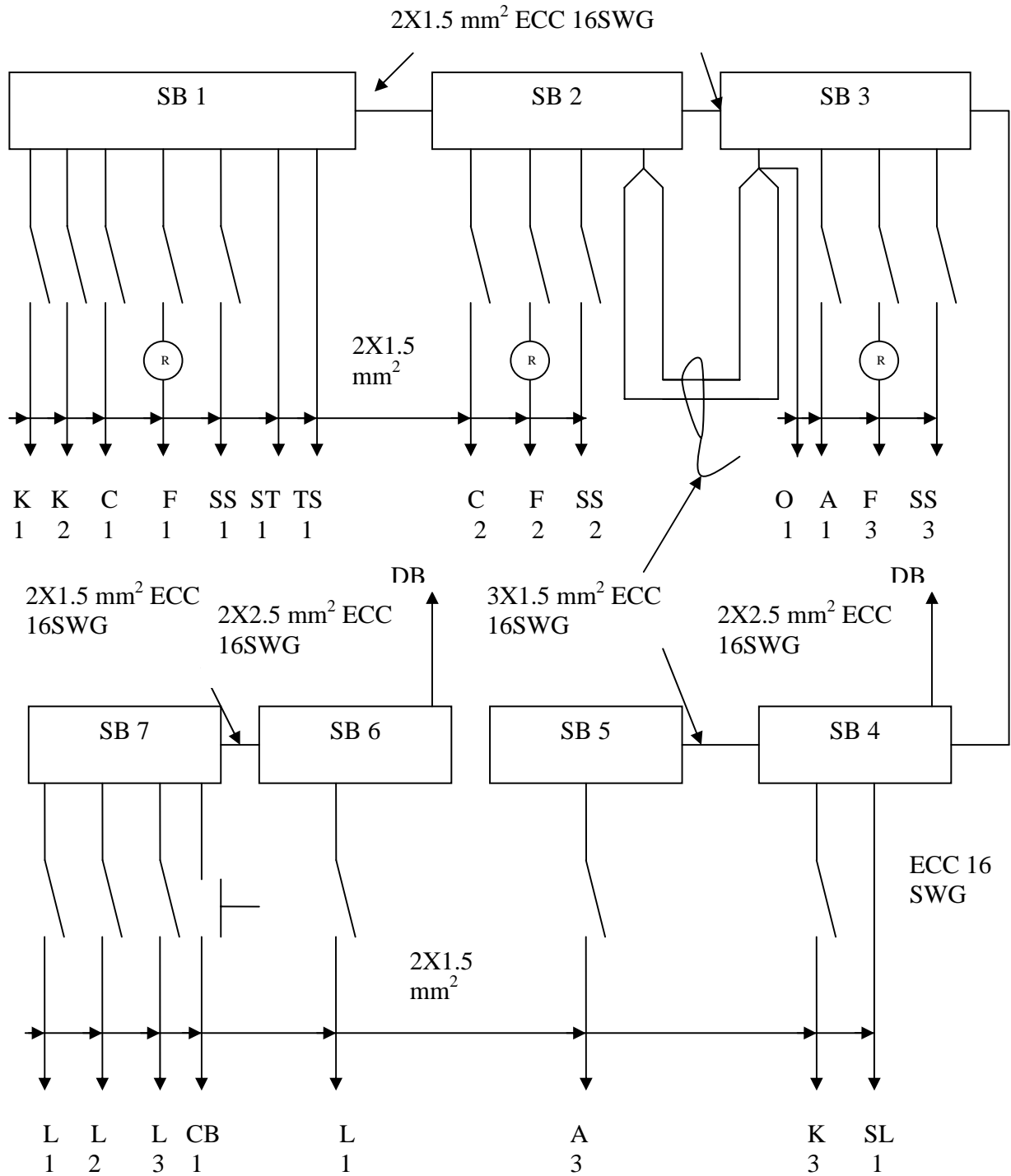


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Conduit Layout:



Switch-Board Connection Diagram:



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Assignment:

Draw complete conduit layout, switch-board connection diagram, distribution connection diagram for the given drawing. Assume O1 as a two way switch driven appliance where switch-boards 7 and 8 are used to drive it.