AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)

Faculty of Engineering

BAE 2101: Computer Aided Design and Drafting

1.0 Title	

Design a civil plan with electrical fitting & fixture according to BNBC using AutoCAD

2.0 Objectives

In this experiment, students will design the **civil plan of a conference room** in AutoCAD with Electrical Fittings according to Bangladesh National Building Code.

3.0 Experiment to Solve

The experiment should be designed by the students following below mentioned requirements:

1.	Draw a **Civil Plan** of **civil plan of a conference room of** total 8000 SFT (approx.) using AutoCAD Software.	[P1]	**20 points**
2.	Draw the **Fittings** for the civil plan consist of necessary electrical fittings applying BNBC.	[P4] [P5]	**10 points**

4.0 Lab Project Submission

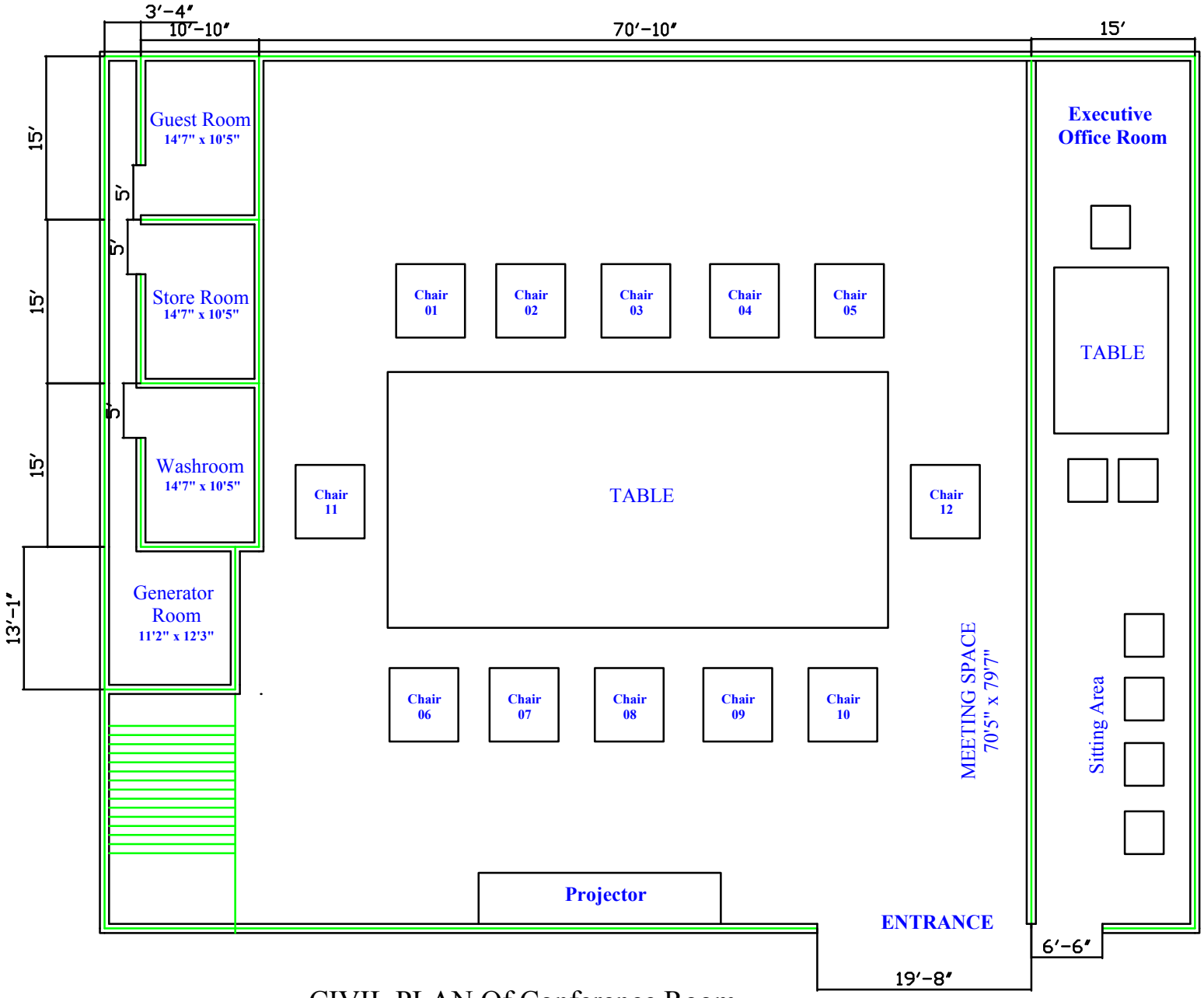
. **Course Name:**	COMPUTER AIDED DESIGN & DRAFTING	**Course Code:**	BAE 2101
Semester:	Spring 2024-2025	**Section:**	R
Faculty:		**OEL/Project**	1
Assessment:	**OEL (CO2 & CO3), POI: P.e.1.C6**		
Submission Deadline:	**29th May 2025 (Thursday)**		

Category	**Unsatisfactory (1-5)**	**Below Average (6-10)**	**Good (11-15)**	**Excellent (16-20)**	**Secured Marks**
Civil Plan	The civil plan is either copied or very poor with major errors.	The civil plan is below average or incomplete with major errors.	The civil plan is drawn partially as per requirement with minor errors	The civil plan is unique and drawn as per requirements with proper dimensions	
Comments				**Total Marks:**	

Category	Unsatisfactory (0-3)	Below Average (5)	Good (7)	Excellent (8-10)	Secured Marks
Electric Fittings	The fittings are incomplete or copied	The fittings are drawn or placed inappropriately without maintaining BNBC	The fittings are drawn and placed appropriately with partially complying to BNBC	The fittings are placed appropriately and maintaining BNBC	
Comments				**Total Marks:**	

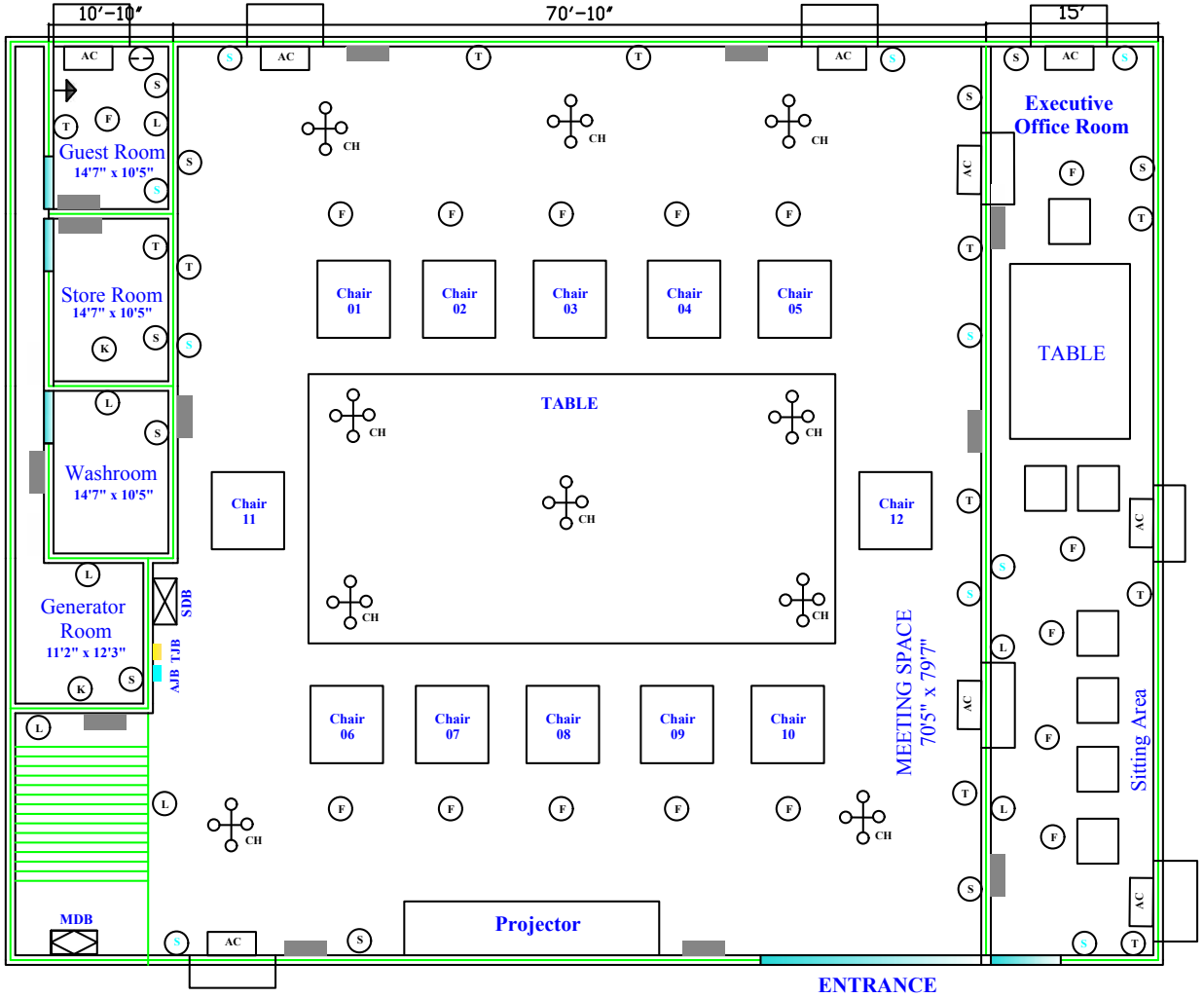
SL #	ID	Student Name	Department	Marks
03	22-46356-1	JALAL UDDIN	CSE	
04	22-46386-1	KAZI ABDULLAH JARIF	CSE	
32	23-53771-3	MD SADIKUR ISLAM	EEE	
24	23-50823-1	MD. EFAT AL KHALID SHAHADOUT	CSE	

CAD OEL Spring 2024-25
Serial no: 03, 04, 24, 32
Dept: CSE, EEE
Sec: R



CIVIL PLAN Of Conference Room

CAD OEL Spring 2024-25
Serial no: 03, 04, 24, 32
Dept: CSE, EEE
Sec: R



Electric Fittings and Fixture Layout

Legend	
Components & Short Form	Symbol
Fan->(F)	
Light->(L)	
Tube Light->(T)	
One Kind of Light->(K)	
Television->(TV)	
Telephone->(TE)	
Motor->(M)	
Hanging Light->(CH)	
Multiple Light->(ML)	
Circuit Breaker->(CB)	
Switch Board->(SB)	
Switch Board Socket->(SS)	
Two Pin Socket->(SS)	
Skirting Level Socket->(SL)	
TV Socket->(TS)	
3 Pin Socket->(15_N)	
Telephone Junction Board->(TJB)	
Antenna Junction Board->(AJB)	
Main Distribution Board->(MDB)	
Sub Distribution Board->(SDB)	
Exhaust Fan->(EF)	

CAD OEL Spring 2024-25
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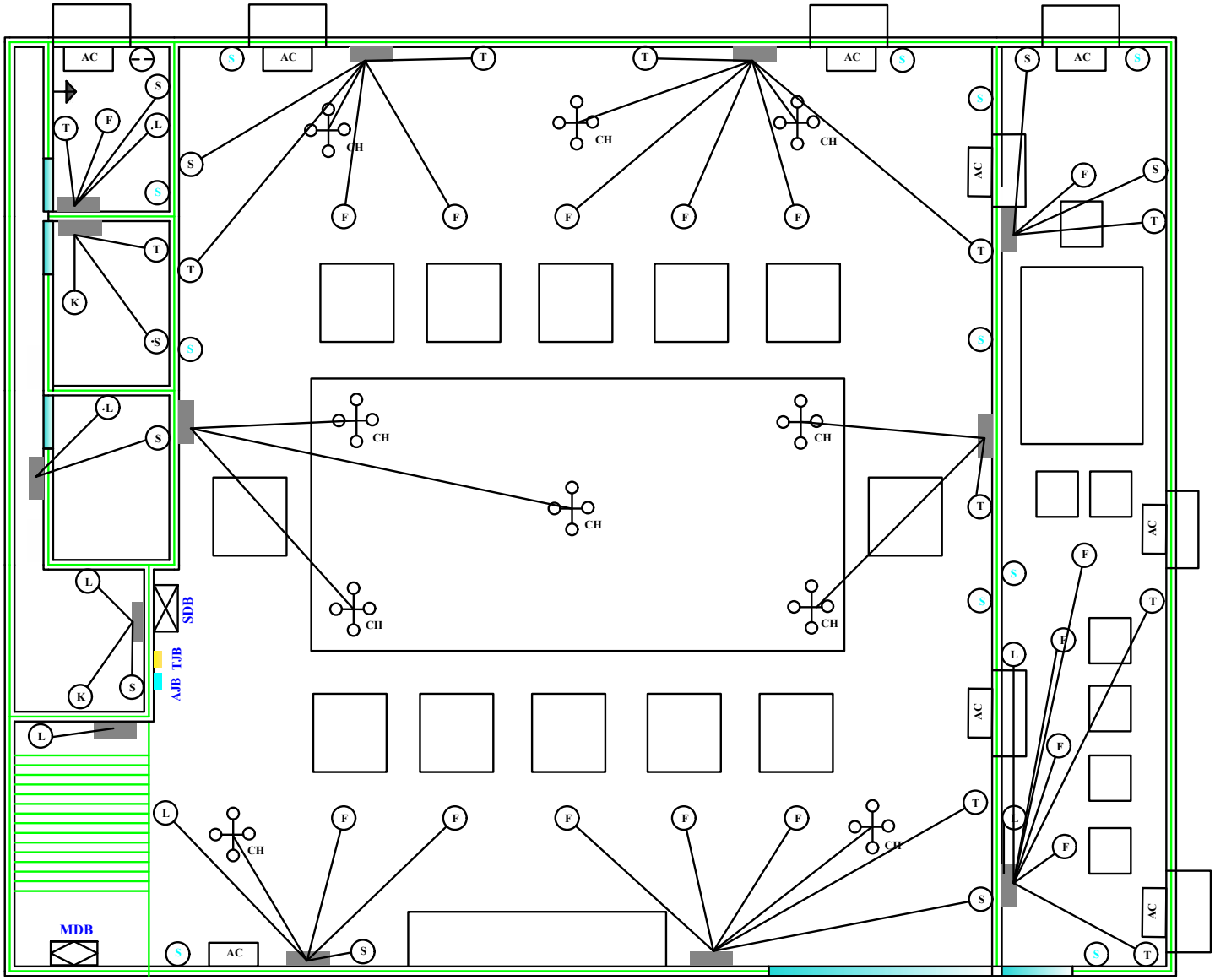
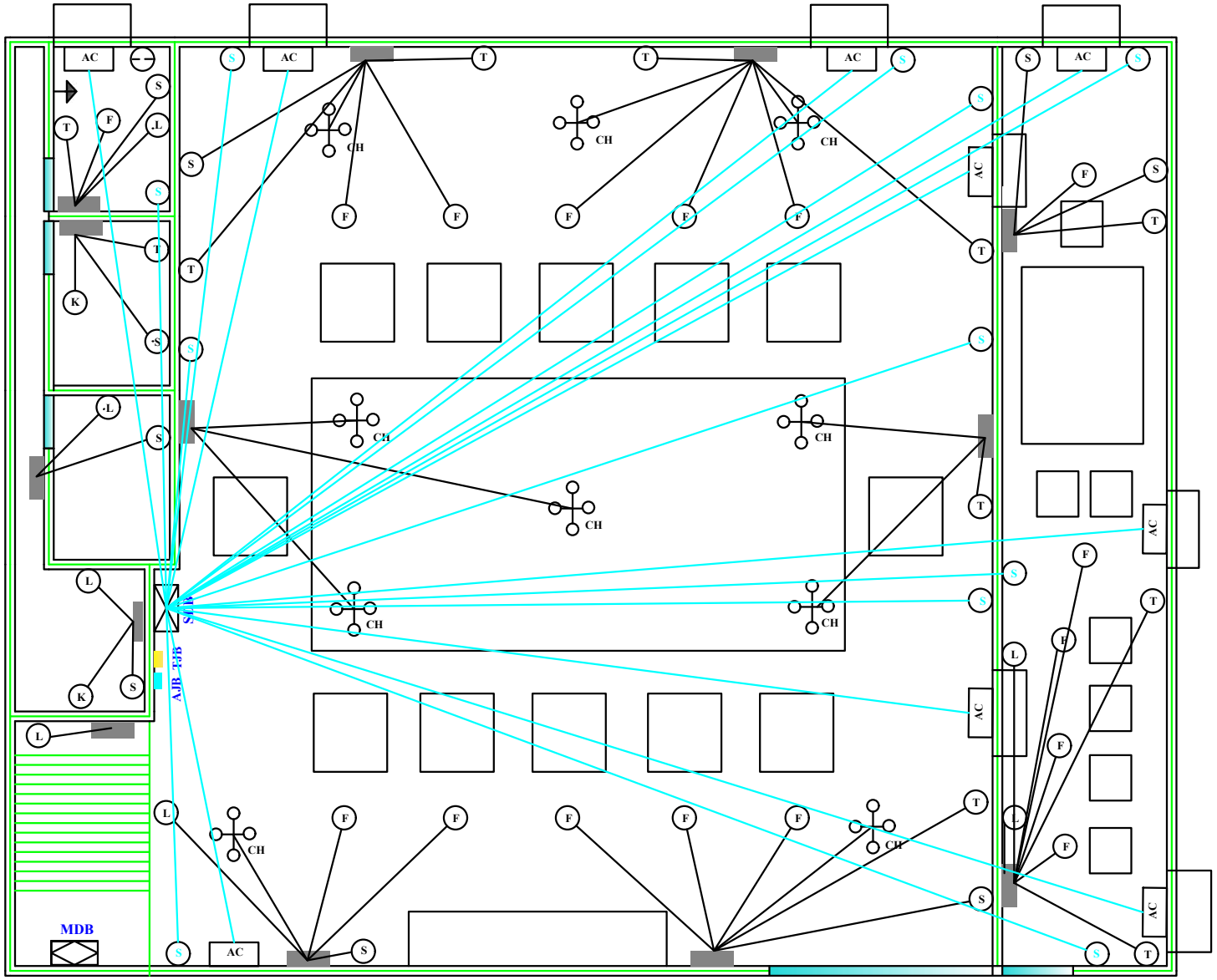


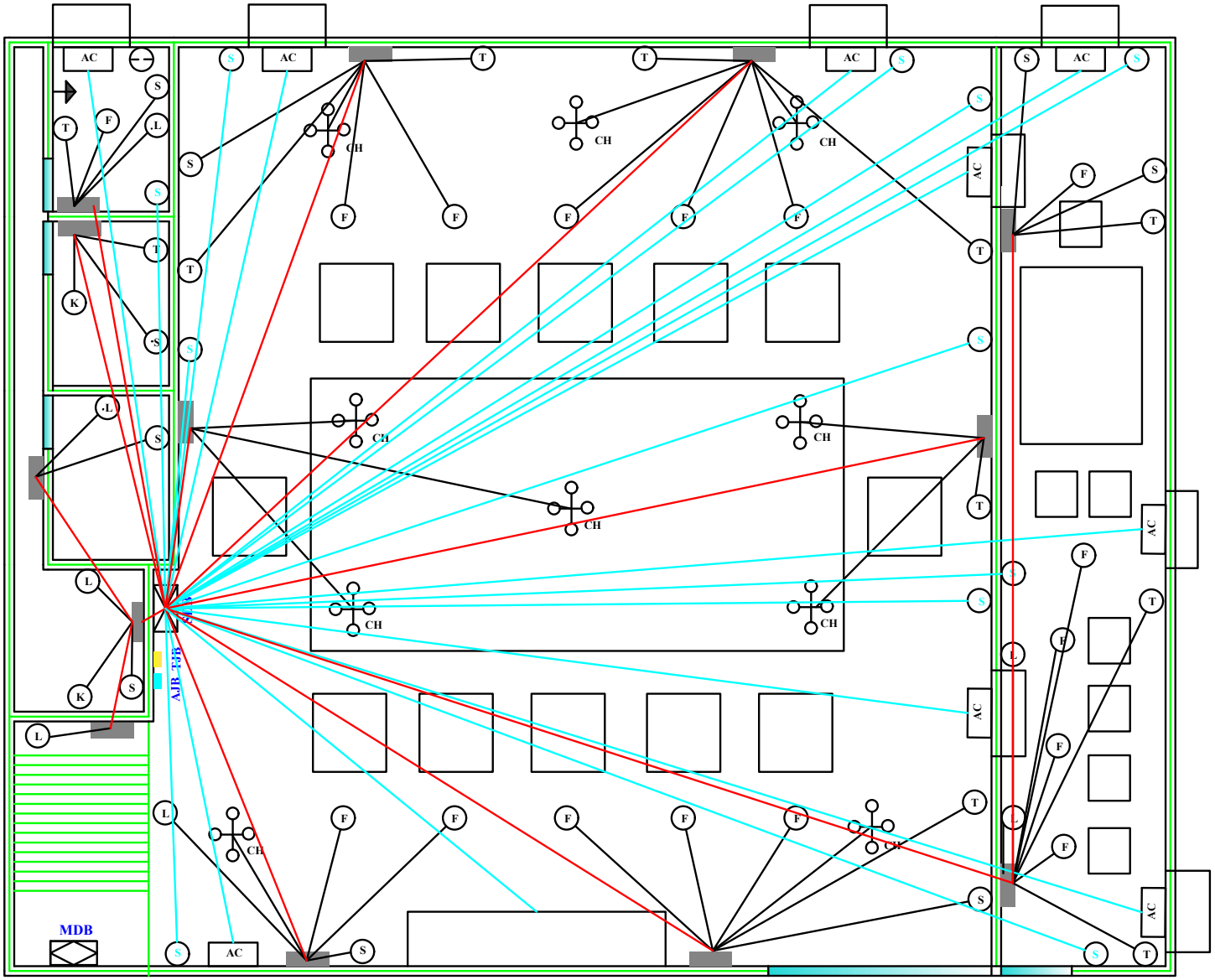
Conduit Layout - Layer - 1
Room Light Load Wiring

CAD OEL Spring 2024-25
Serial no: 03, 04, 24, 32
Dept: CSE, EEE
Sec: R



Conduit Layout - Layer - 2
Heavy Load Wiring

CAD OEL Spring 2024-25
Serial no: 03, 04, 24, 32
Dept: CSE, EEE
Sec: R



Conduit Layout - Layer - 3
SB Grouping & SDB-SB Wiring

CAD OEL Spring 2024-25
Serial no: 03, 04, 24, 32
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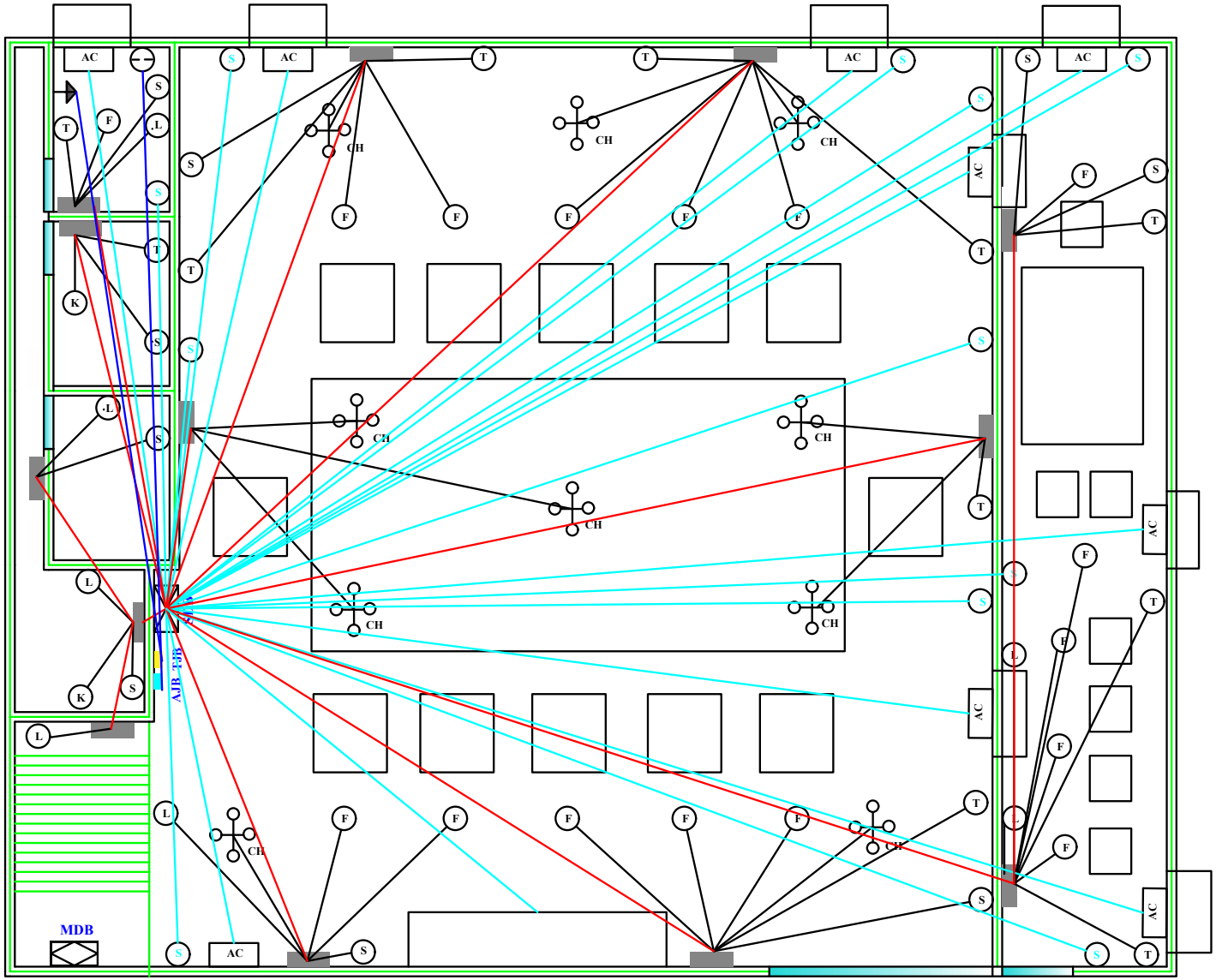
Sec: R



Conduit Layout - Layer - 4
Cable TV, Telephone & Calling Bell Wiring

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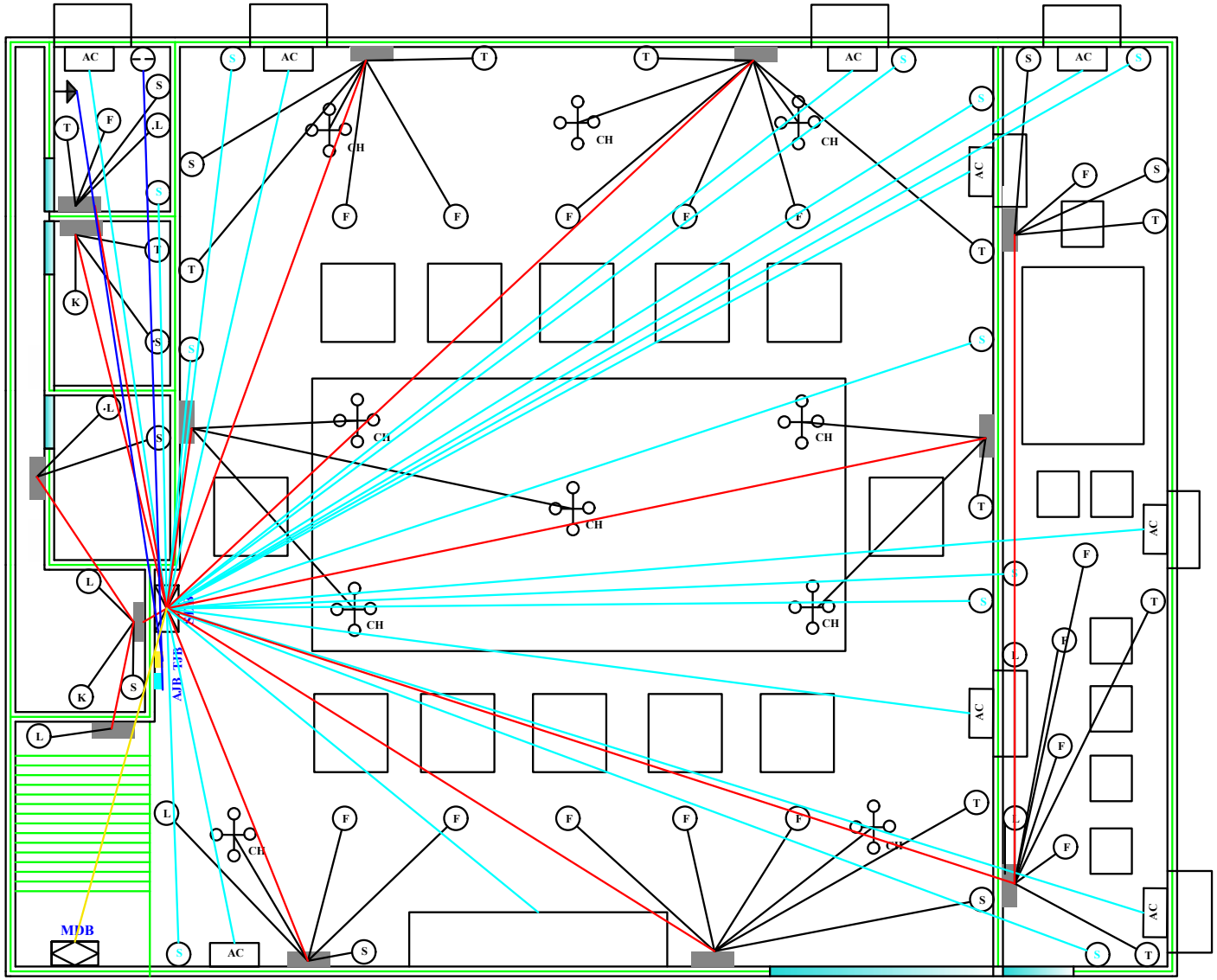
Sec: R



Conduit Layout - Layer - 5
MDB-SDB Connection

Power Rating Calculation:

Sl. No.	Appliance/Device	Quantity	Power per Unit (Watt)	Total Power (Watt)
1	Normal Light	18	100	1800
2	Hanging Light	10	40	400
3	Ceiling Fan	16	70	1120
4	1-Pin Socket (5A)	9	200	1800
5	3-Pin Socket (15A)	11	1000	11000
6	Air Conditioner (AC)	9	1200	10800
7	Television	1	200	200
8	Telephone	1	5	5
	Total			27125 W / 27.12 kW

Total Power Requirement:

- **Total Load** = 1,800 + 400 + 1,120 + 1,800 + 11,000 + 10,800 + 200 + 5
- **Total** = 27,125 Watts = 27.13 kW

Generator Recommendation:

- Nearest Generator Size Required: **48 kW**

Generator Room Requirement (as per Bangladesh National Building Code):

- **Minimum Area**: 24 square meters for the generator room (for a conference room setup).