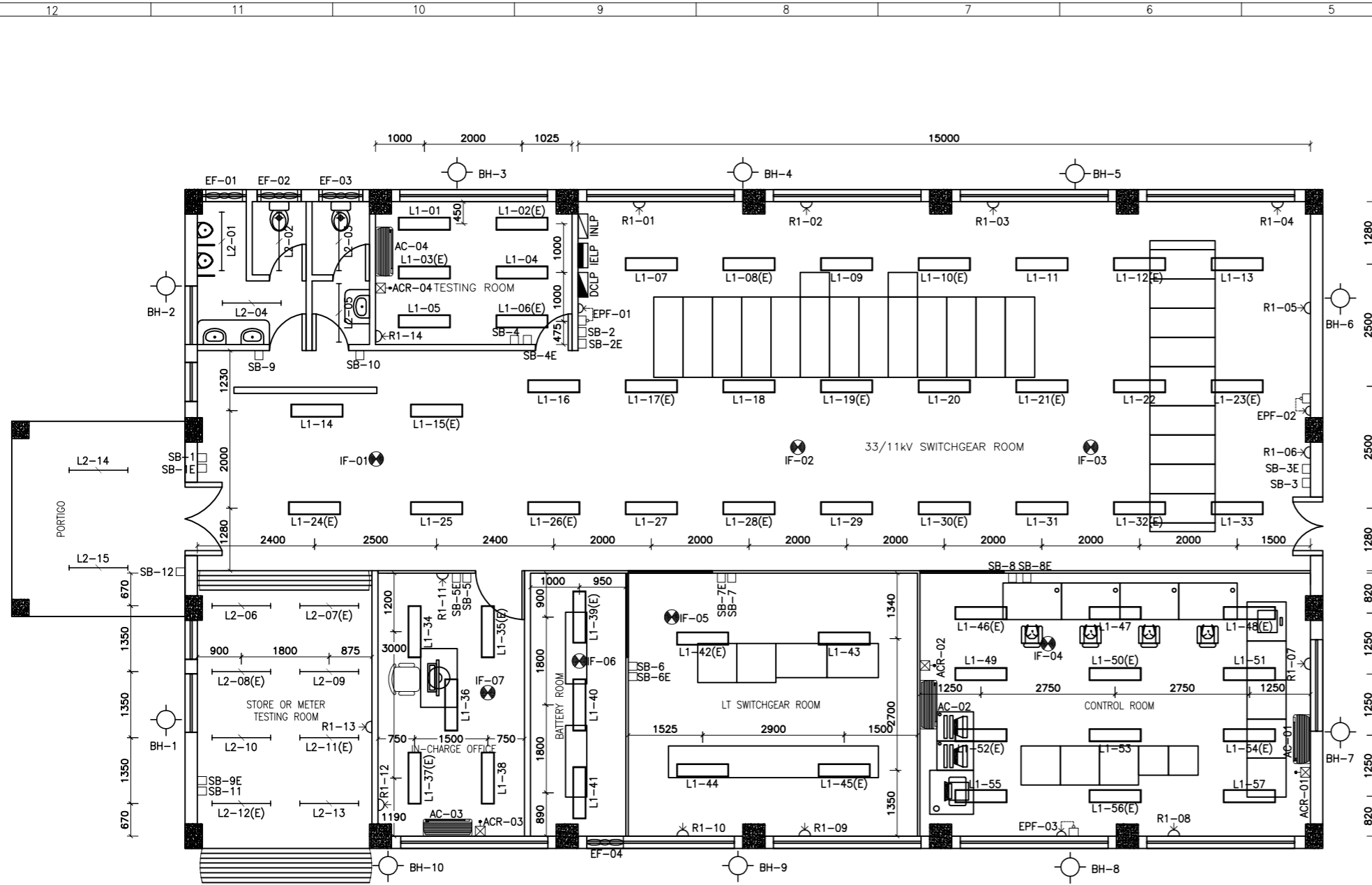


ELECTRICAL DRAWING

66/33kV SUBSTATION
CONTROL ROOM BUILDING
JAMTSHOLING, SIPS00
BHUTAN POWER CORPORATION LIMITED



GROUND FLOOR - PLAN

BILL OF QUANTITIES:-

S.NO	SYMBOL	DESCRIPTION	QTY (NOS)
1	L-1	APPROVED BRAND 34W CW 4X1 LUMINARIES WITH HIGH EFFICIENCY & LOW POWER CONSUMPTION (RECESS MOUNTED).	57
2	L-2	APPROVED BRAND 18W CW SURFACE MOUNTED LED LUMINARIES WITH HIGH EFFICIENCY AND LOW POWER CONSUMPTION.	15
3	EF	EXHAUST FAN (100W)	4
4	IF	1X100W INCANDESCENT LAMP FOR RECESSED DOWNLIGHTER (110V DC).	7
5	R1	5/15A 1ø 3 PIN SOCKET	14
7	BH	BULKHEAD FITTING WITH 15W CFL LAMP.	10
8	SB	MODULAR SWITCH BOX	
		1-5A SWITCH (SB-5E,6E,7E)	3
		2-5A SWITCHES (SB-1,6,1E,3E,4E,9E)	6
		3-5A SWITCHES (SB-10,12,2E,8E)	4
		4-5A SWITCHES (SB-9)	1
		1-5A SWITCHES AND 2-5/15A 240V RECEPTACLE (SB-7)	1
		2-5A SWITCHES AND 1-5/15A 240V RECEPTACLE (SB-4,11)	2
		2-5A SWITCHES AND 2-5/15A 240V RECEPTACLE (SB-5)	1
		3-5A SWITCHES AND 3-5/15A 240V RECEPTACLE (SB-2,3,8)	3
9	INLP	415V AC NORMAL LIGHTING PANEL WITH INCOMER 63A, TPN, MCB WITH 300mA RCCB AND 18Nos. 16A, SP, MCB OUTGOING.	1
10	IELP	415V AC EMERGENCY LIGHTING PANEL WITH INCOMER 63A, TPN, MCB WITH 300mA RCCB AND 18Nos. 16A, SP, MCB OUTGOING.	1
11	DCLP	110V DC EMERGENCY LIGHTING PANEL WITH ONE 32A DP CONTACTOR BACKED UP BY INCOMER OF 32A,DP,MCB & 6Nos 16A DP MCB, OUTGOING.	1
12	EPF	1x11W CFL LAMP EMERGENCY LIGHT WITH BATTERY OPERATED PORTABLE FIXTURES WITH BUILT IN BATTERY & CHARGER SUITABLE FOR 6 Hrs.	3
13	AC	2 TON AIR CONDITIONER (SPLIT TYPE)	4
14	ACR	32A 3PIN 240V INDOOR SOCKET WITH 32A SPN 9KA MCB	4

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
- FOR WIRING OF LUMINARIES, 1.1KV PVC INSULATED 2.5Sqmm Cu. WIRE SHALL BE USED CONFORMING TO IS-694.
- FOR WIRING OF 5/15A 240V RECEPTACLE, 1.1KV PVC INSULATED 4Sqmm Cu. WIRE SHALL BE USED.
- WIRING SHALL BE GENERALLY CARRIED OUT IN CONCEALED CONDUIT OF 20mmDIA.SURFACE CONDUIT IS APPLICABLE IN CASE WHERE FALSE CEILING IS AVAILABLE.
- AC & DC CIRCUIT SHALL NOT RUN THROUGH THE SAME CONDUIT.
- FOR EARTHING OF LUMINAIRES AND RECEPTACLES, 16SWG GI WIRE SHALL BE USED.
- THE WIRES SHALL BE COLOUR CODED AS FOLLOWS. RED FOR R-ph, YELLOW FOR Y-ph, BLUE FOR B-PH BLACK FOR NEUTRAL, WHITE FOR DC (+Ve) & GREY FOR DC (-Ve).
- AC SUPPLY FOR 32A 3PIN 240V INDOOR SOCKET WITH 32A SPN 9KA MCB WILL BE FED DIRECTLY FROM ACDB.

OWNER	BHUTAN POWER CORPORATION LTD TRANSMISSION CONSTRUCTION DEPARTMENT		
TITLE	CONSTRUCTION OF 66/33kV SUBSTATION AT JAMTSHOLING, SIPS00		
DRAWN	NAVIN GURUNG	DATE	FEBRUARY 2021
CHECKED		SCALE	1:75
APPROVED		SHEET No: 01 OF 01	
REV. No.	DESCRIPTION	CHECKED	APPROVED
DRG. No:	CONTROL ROOM BUILDING/LIGHTING LAYOUT	REV:	0

415V AC SUPPLY FROM ACDB
(LOC: CONTROL ROOM)

415V AC INDOOR NORMAL LIGHTING PANEL-(INLP)
(LOC: GROUND FLOOR)

INLP
(LOC: GROUND FLOOR)

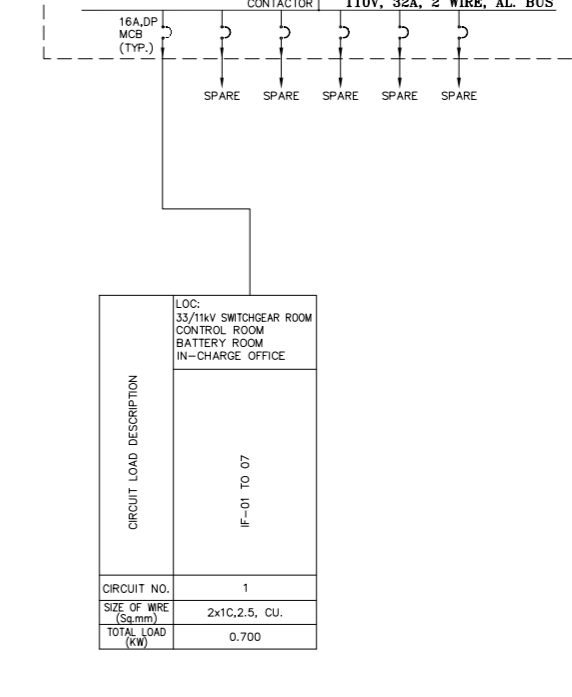
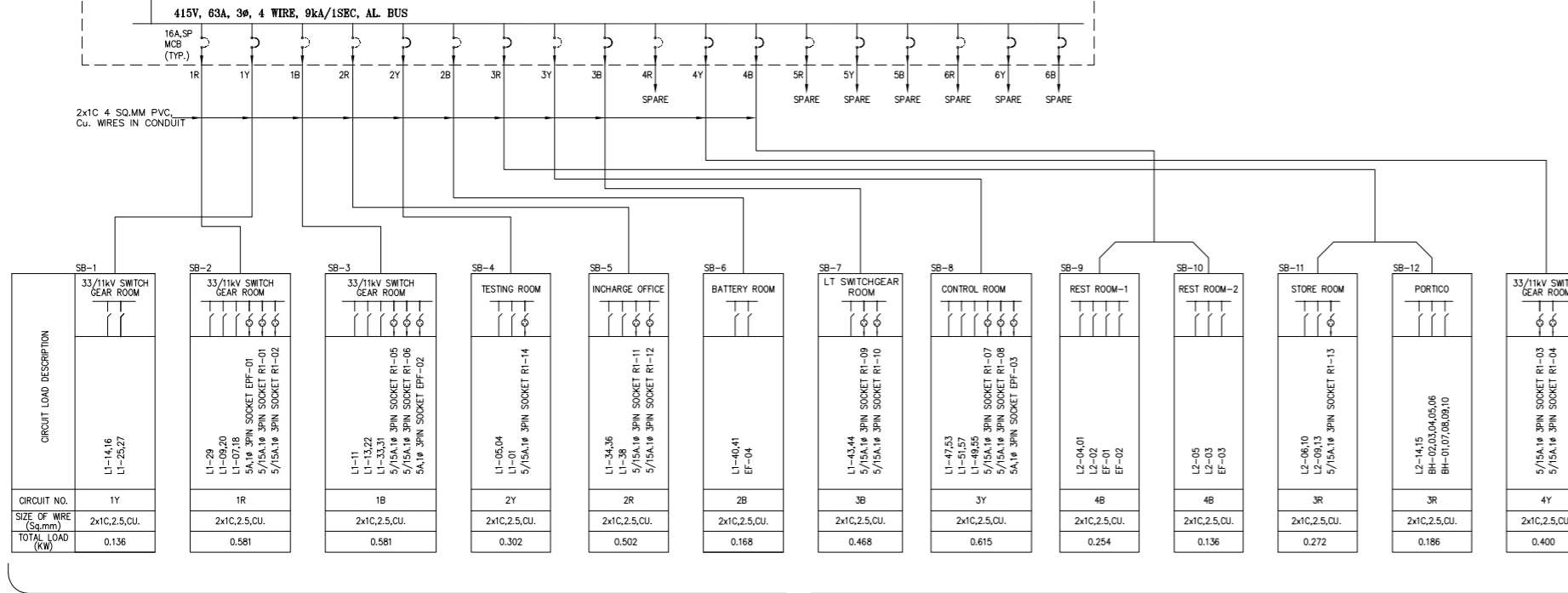
CONNECTED LOAD :	4.601kW
'R' - PHASE :	1.541kW
'Y' - PHASE :	1.453kW
'B' - PHASE :	1.607kW

110V DC SUPPLY FROM 110V DCDB
(LOC: CONTROL ROOM)

EMERGENCY DC LIGHTING PANEL
(LOC: GROUND FLOOR)

DCLP
(LOC: GROUND FLOOR)

CONNECTED LOAD :	0.700kW
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GROUND FLOOR

415V AC SUPPLY FROM ACDB
(LOC: CONTROL ROOM)

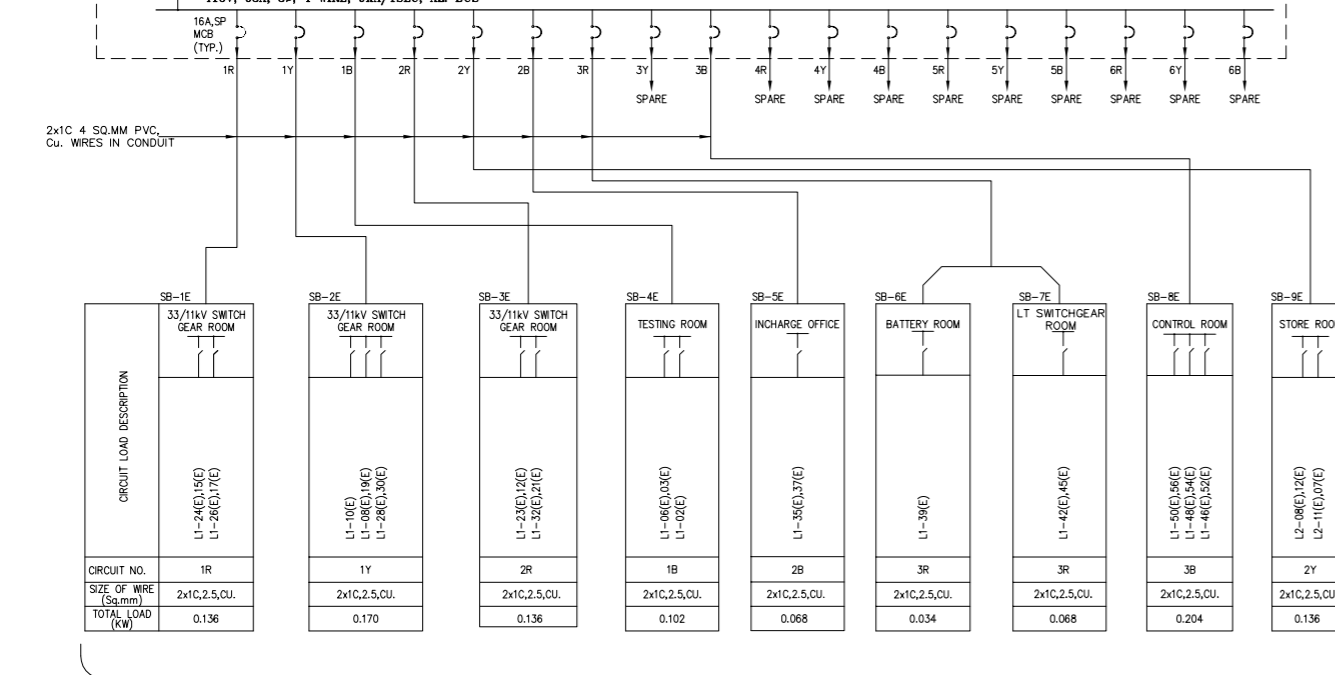
415V AC INDOOR EMERGENCY LIGHTING PANEL-(IELP)
(LOC: GROUND FLOOR)

IELP
(LOC: GROUND FLOOR)

CONNECTED LOAD :	1.054kW
'R' - PHASE :	0.374kW
'Y' - PHASE :	0.306kW
'B' - PHASE :	0.374kW

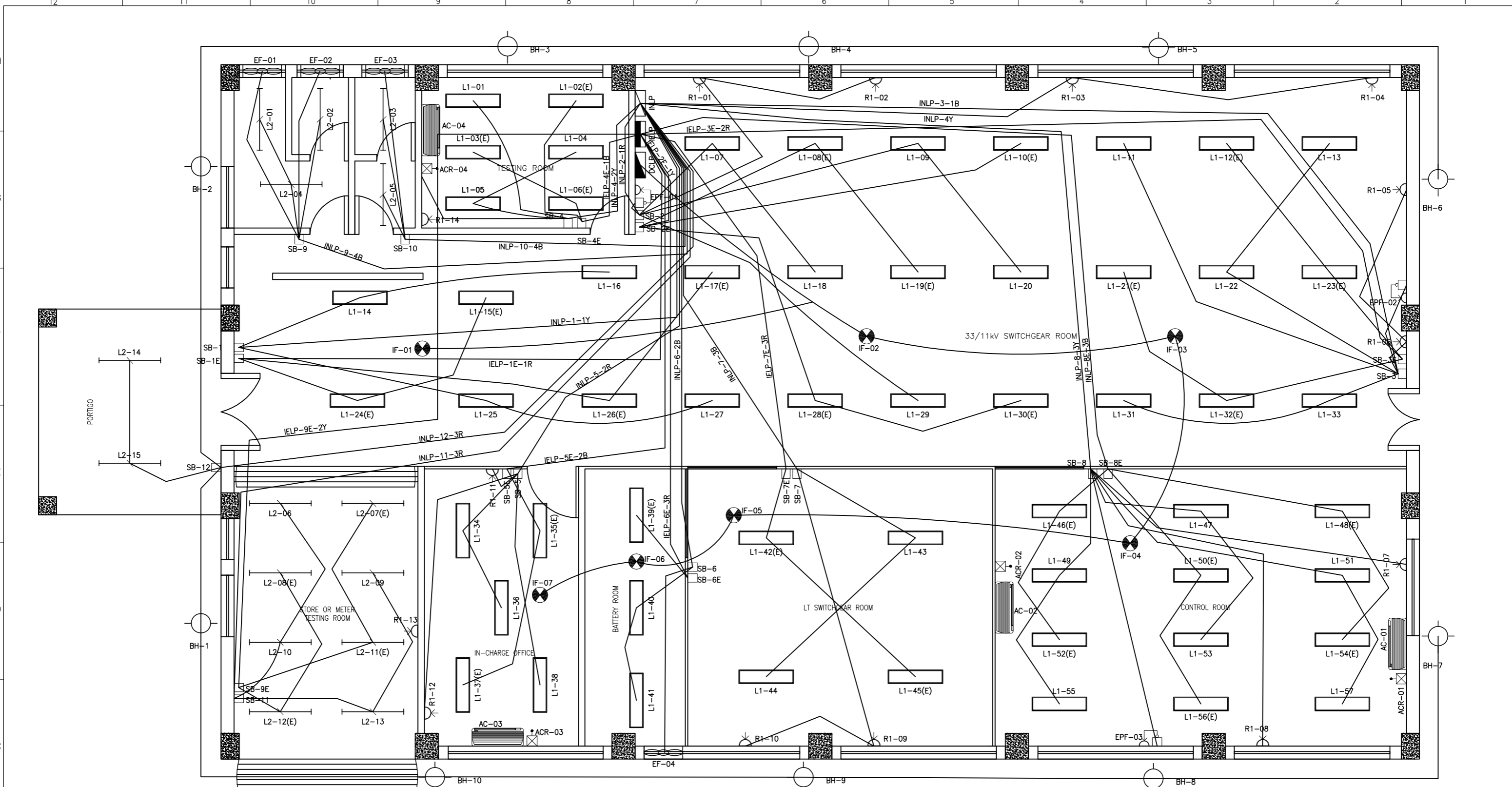
REFERENCE DRGS :-

1. LIGHTING LAYOUT FOR CONTROL ROOM BUILDING
2. SLD FOR AC DISTRIBUTION BOARD



GROUND FLOOR

OWNER	BHUTAN POWER CORPORATION LTD TRANSMISSION CONSTRUCTION DEPARTMENT		
PROJECT	CONSTRUCTION OF 66/33 kV SUBSTATION AT JAMTSOLING, SIPS00		
DRAWN	NAVIN GURUNG	DATE	FEBRUARY 2021
CHECKED		SCALE	1:80
APPROVED		SHEET No.	01 OF 01
DRG. No.	CONTROL ROOM BUILDING / LIGHTNING SCHEME		REV: 0

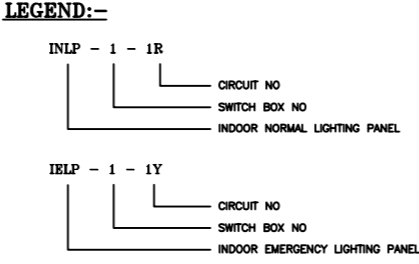


GROUND FLOOR - PLAN

- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 2. FOR WIRING OF LUMINAIRES, 1.1kV PVC INSULATED 2.5sqmm Cu. WIRE SHALL BE USED.
 3. FOR WIRING OF 15A, 10, 240V RECEPTACLE, 1.1kV PVC INSULATED 4sqmm Cu. WIRE SHALL BE USED.
 4. WIRING SHALL BE GENERALLY CARRIED OUT IN CONCEALED CONDUIT OF 20mm DIA. SURFACE CONDUIT IS APPLICABLE IN CASE WHERE FALSE CEILING IS APPLICABLE
 5. AC & DC CIRCUIT SHALL NOT RUN THROUGH THE SAME CONDUIT.
 6. FOR EARTHING OF LUMINAIRES AND RECEPTACLES, 16SWG GI WIRE SHALL BE USED.
 7. THE WIRES SHALL BE COLOUR CODED AS FOLLOWS. RED FOR R-ph, YELLOW FOR Y-ph, BLUE FOR B-PH BLACK FOR NEUTRAL, WHITE FOR DC (+Ve) & GREY FOR DC (-Ve).
 8. SEPARATE NEUTRAL WIRE SHALL BE PROVIDED FOR EACH CIRCUIT. INSTALLATION SHALL BE SUCH THAT THERE IS NO BREAK IN NEUTRAL FROM SWITCH TO LIGHTING FIXTURE.
 9. ENTIRE CONDUIT SYSTEM SHALL BE PROPERLY EMBEDDED AND SHALL BE CONTINUOUS THROUGHOUT.
 10. LIGHTING FIXTURES SHALL NOT BE SUSPENDED DIRECTLY FROM JUNCTION BOXES.
 11. WIRING/CABLE SHALL BE SPLICED ONLY AT JUNCTION BOXES.
 12. MAXIMUM NUMBER OF WIRES IN EACH PVC CONDUIT,

WIRE SIZE	CONDUIT SIZE	
	20mm	25mm
2.5Sq.mm	5	8

- REFERENCE DRAWING:-**
1. LIGHTING LAYOUT FOR CONTROL ROOM BUILDING- SPIL/BPCL/PARO/DRG.E/021
 2. LIGHTING SCHEME FOR CONTROL ROOM BUILDING- SPIL/BPCL/PARO/DRG.E/024



REV. No.	DESCRIPTION	CHECKED	APPROVED	DATE

OWNER	BHUTAN POWER CORPORATION LTD TRANSMISSION CONSTRUCTION DEPARTMENT		
PROJECT	CONSTRUCTION OF 66/33 kV SUBSTATION AT JAMTSHOLING, SPS00		
DRAWN	NAVIN GURUNG	DATE	FEBRUARY 2021
CHECKED		SCALE	1:50
APPROVED		SHEET No: 01 OF 01	
DRG. No:	CONTROL ROOM BUILDING CONDUIT LAYOUT		REV: 0