

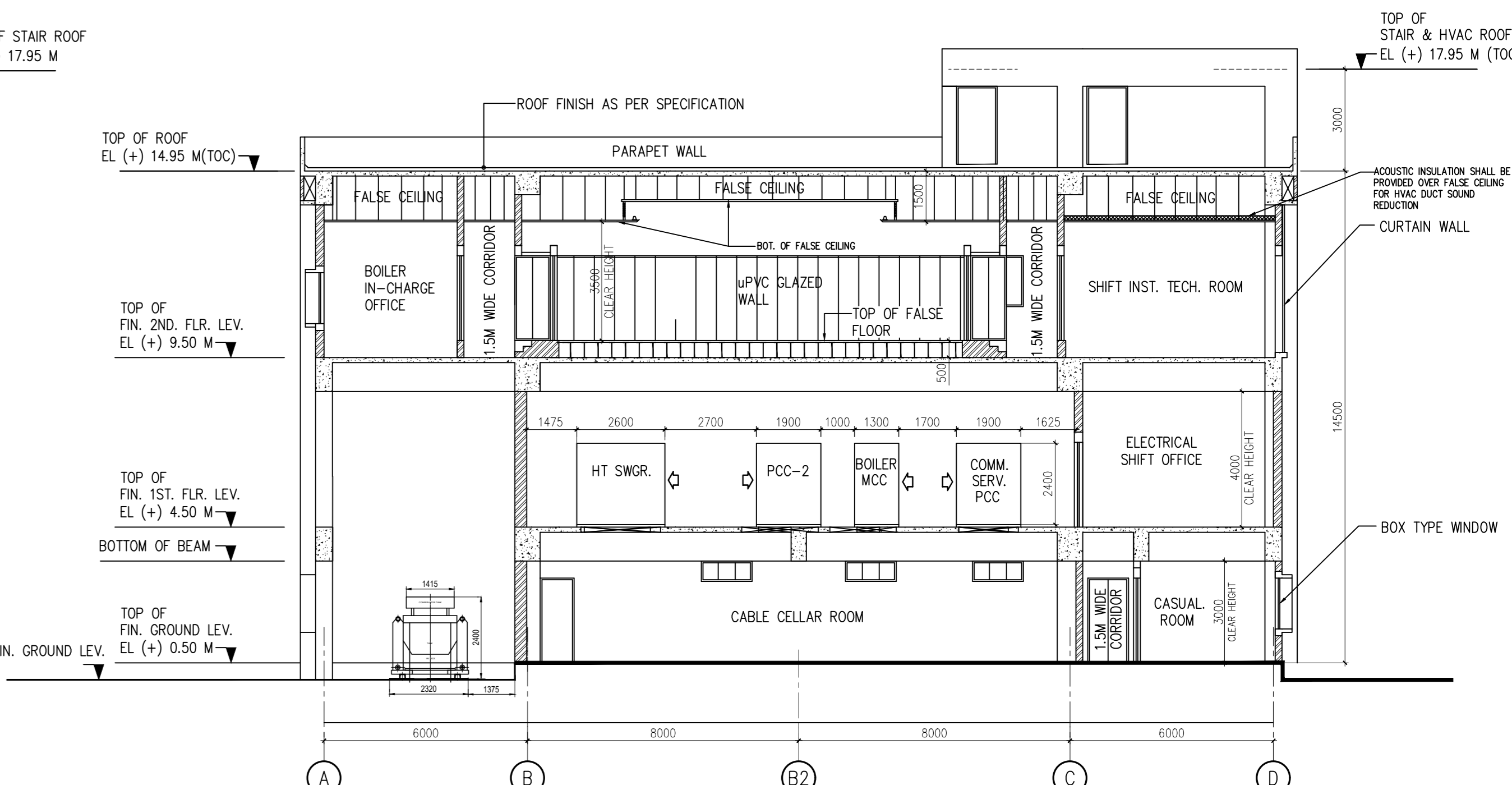
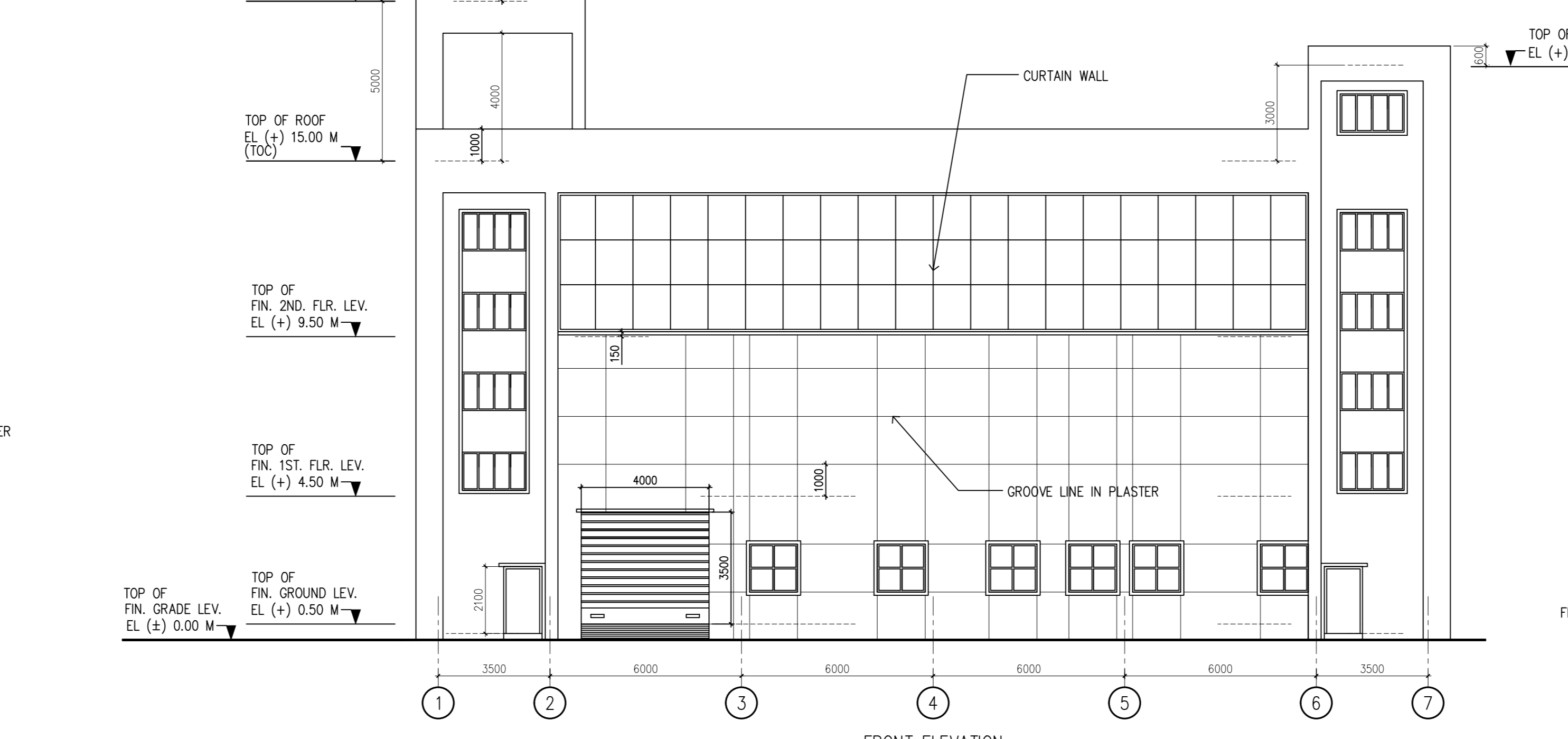
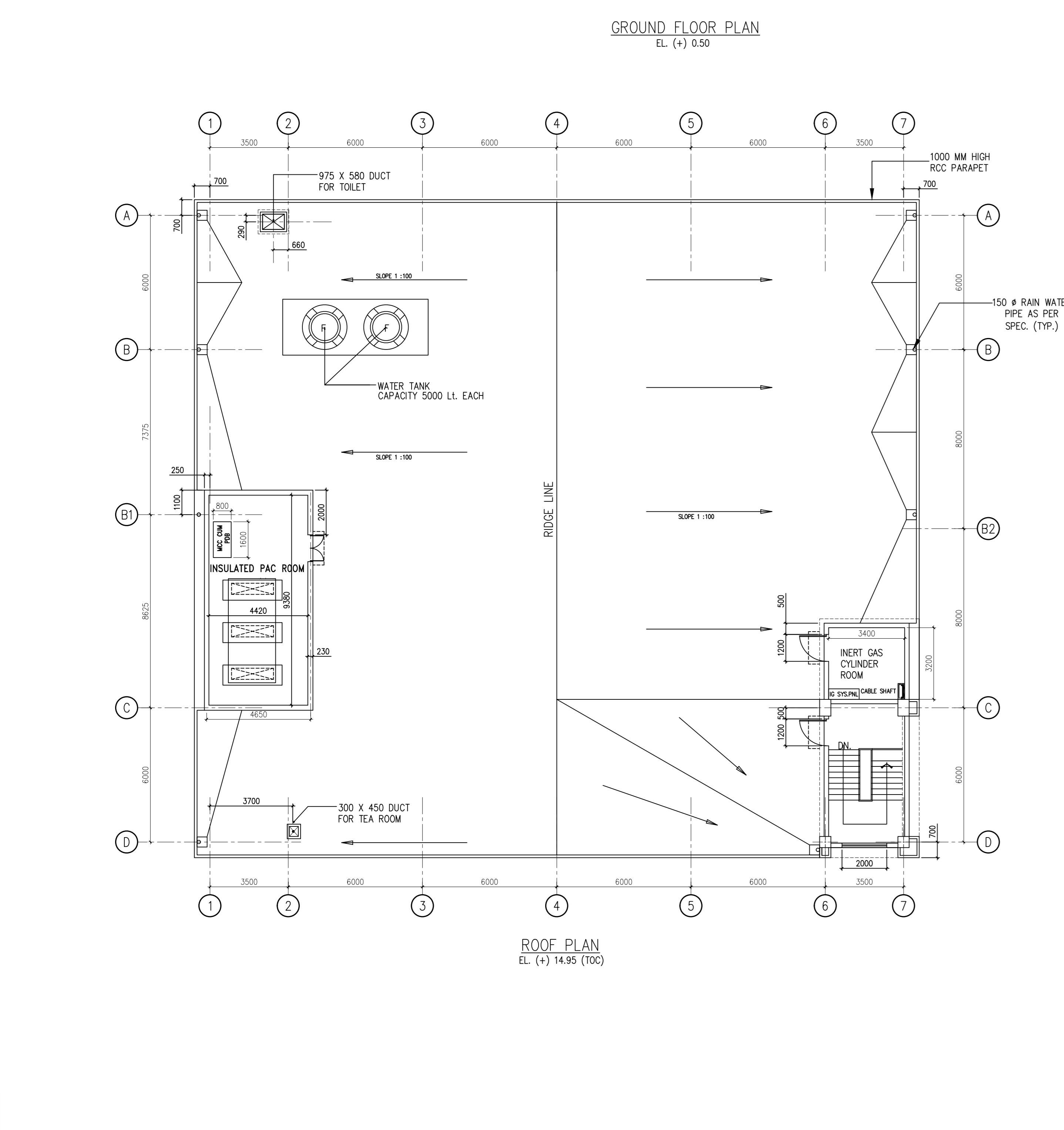
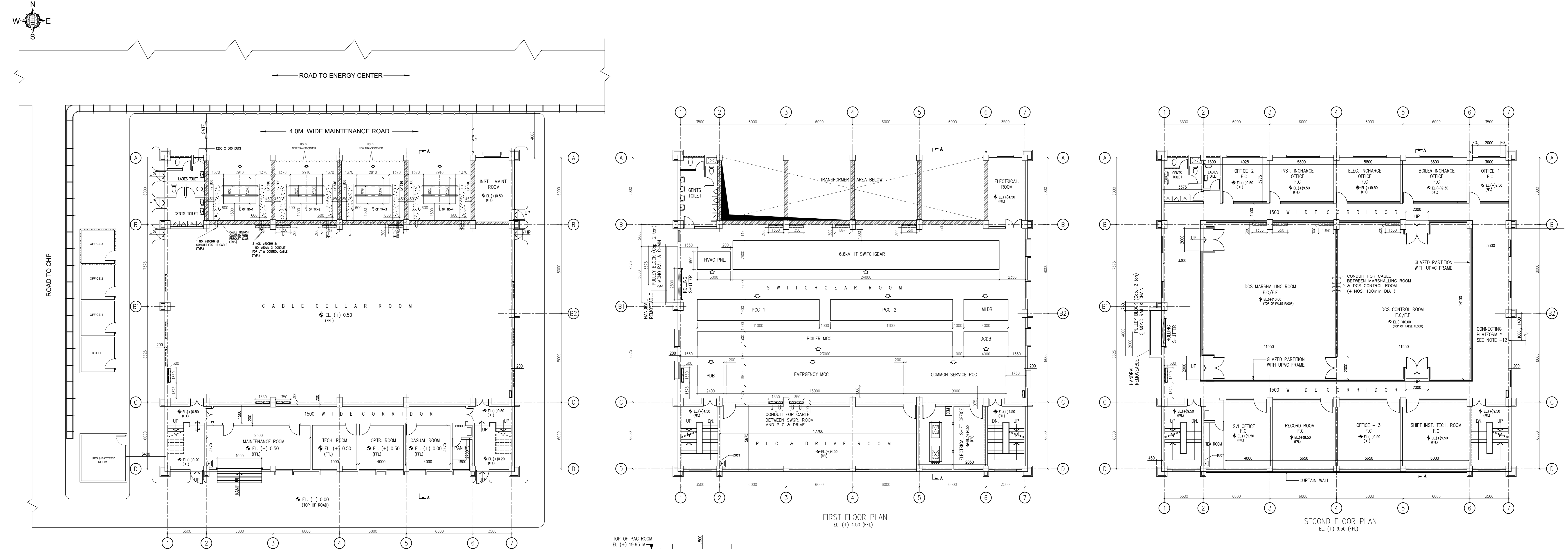
# ELECTRICAL DRAWING LIST

SL. NO.	DRAWING TITLE	DRAWING NUMBER	SHEET	REVISION
1.	CONTROL ROOM BUILDING LAYOUT	18A08-DWG-E-0401	1	0
2.	CABLE TRAY LAYOUT DRAWING OF CONTROL ROOM BUILDING	18A08-DWG-E-0402	1	0
3.	CONTROL ROOM BUILDING EARTHING LAYOUT	18A08-DWG-E-0403	1	0
4.	ILLUMINATION LAYOUT DRAWING OF CONTROL ROOM BUILDING	18A08-DWG-E-0801	5	1
5.	CONDUIT LAYOUT DRAWING OF CONTROL ROOM BUILDING	18A08-DWG-E-0701	5	0
6.	CONTROL ROOM BUILDING LIGHTNING PROTECTION LAYOUT	18A08-DWG-E-1001	1	0
7.	METERING AND PROTECTION DRAWING FOR 6.6KV SWITCHGEAR FEEDERS (TYPICAL)	18A08-DWG-E-0105	1	0
8.	METERING AND PROTECTION DRAWING FOR 415V PCC/MCC FEEDERS (TYPICAL)	18A08-DWG-E-0106	1	0
9.	BLOCK LOGIC DIAGRAM OF 6600V HT FEEDER WITH PLC/DCS CONTROL	18A08-DWG-E-1201	1	0
10.	BLOCK LOGIC DIAGRAM OF 415V LT FEEDER WITH PLC/DCS CONTROL	18A08-DWG-E-1202	1	0

FILE LOCATION: D:\DWG\POWER\_JOB FILES\18A08\_IFFCO Boiler Control Room\15\_Drawing List\Drawing List.dwg  
PLOT DATE: 12/16/2019 4:11:05 PM

APPROV.	MECH.	INST.	ELEC.	STRL.	ARCH.	NATURE OF REVISION & DESCRIPTION	CHECKED	DRAWN	REV.	DATE	RELEASE STATUS	DATE	SIGNATURE
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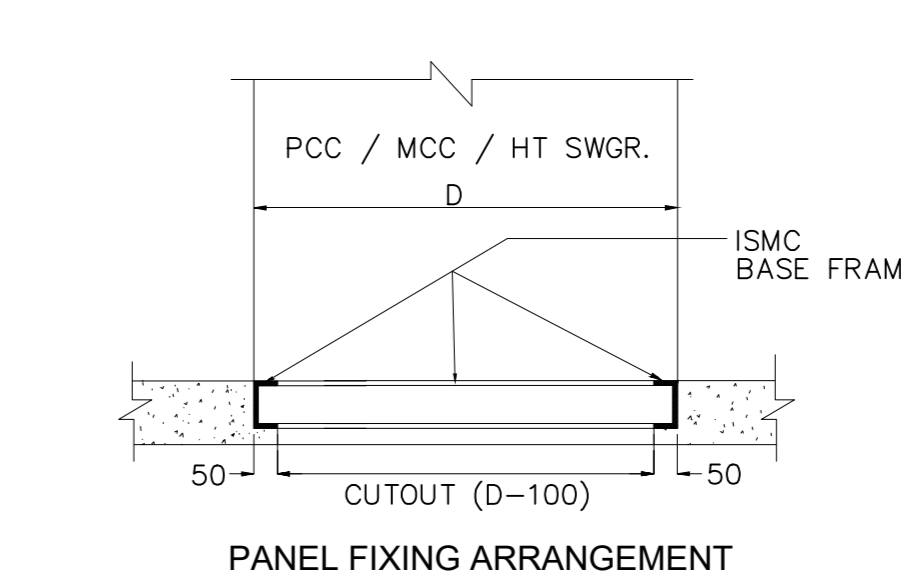
	OWNER: IFFCO PARADEEP
PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM
TITLE:	LIST OF DETAIL ENGINEERING DRAWINGS
	DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI
PREPARED: BG	JOB NO.: 18A08
CHECKED: RD	SCALE: 1:1
APPROVED: DS	DATE: 16.12.2019
DWG. NO.: 18A08-DWG-E-0000	REV 1 1 SHEET OF 1



- NOTES:**
1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
  2. THE PANEL DIMENSIONS IN THIS DRAWING ARE TENTATIVE. FINAL DIMENSION WILL BE AS PER APPROVED VENDOR DRAWING.
  3. DCS CONTROL ROOM, INST. CONTROL ROOM, PLC & DRIVE ROOM WILL BE AIR-CONDITIONED AREA WITH FALSE CEILING & FALSE FLOORING. ALL OFFICES SHALL BE PROVIDED WITH FALSE CEILING ONLY.
  4. DOORS & WINDOWS ETC. ARE INDICATIVE ONLY. DETAILS WILL BE SHOWN ON ARCHITECTURE DRAWING.
  5. PROPELLER TYPE EXHAUST FAN WILL BE PROVIDED AT TOILET FOR EXHAUST VENTILATION SYSTEM.
  6. DRY TYPE PRESSURIZED VENTILATION SYSTEM THROUGH AXIAL FAN WITH HOPE FILTER WILL BE PROVIDED FOR SWITCHGEAR ROOM & SPREADER ROOM.
  7. FIRE DETECTION & PROTECTION SYSTEM SHALL BE INDICATED LATER AFTER FINALIZATION OF THE LAYOUT.
  8. VENTILATION FANS AND SPLIT AC SHALL BE INDICATED IN SEPARATE DRAWING.
  9. DCS & INST. CONTROL ROOM SHALL HAVE INERT GAS FIRE SUPPRESSION SYSTEM.
  10. 150NB DIAMETER FIRE WATER HYDRANT HEADER SHALL BE LAID AT THE PERIPHERY OF THE BUILDING. A RISER SHALL BE PROVIDED INSIDE THE BUILDING STAIR CASE.
  11. ROADS & DRAINS SHALL BE FINALIZED LATER ON.
  12. \* IFFCO TO FINALIZE THE CO-ORDINATE OF CONNECTING PLATFORM.
  13. DIMENSIONS OF THE CHILLER UNITS MAY CHANGE LATER ON.

**DIMENSION OF EQUIPMENT:**

SL. NO.	DESCRIPTION	TENTATIVE DIMENSION (LxW) mm
1.	4 NOS. POWER TRANSFORMER	-
2.	6.6kV BOILER HT SWITCHGEAR	24000x2600
3.	415V PCC-1	11000x1900
4.	415V PCC-2	11000x1900
5.	415V COMMON SERV. PCC	9000x1900
6.	415V BOILER MCC	23000x1300
7.	415V EMER. MCC	16000x1900
8.	DCDB	4000x1300
9.	MLDB	4000x1900
10.	PDB	2400x1900
11.	HVAC PANEL	3000x1600



**ISSUED FOR CONSTRUCTION**

OWNER: IFFCO PARADEEP

PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM

TITLE: CONTROL BUILDING ROOM LAYOUT

DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS

KOLKATA • MUMBAI • CHENNAI • NEW DELHI

PREPARED BY: RD  
 CHECKED BY: RD  
 APPROVED BY: RD

JOB NO.: 18A08  
 SCALE: 1:125  
 DATE: 26.11.2018

REV 0

DWG. NO. 18A08-DWG-E-040

1 SHEET OF 1

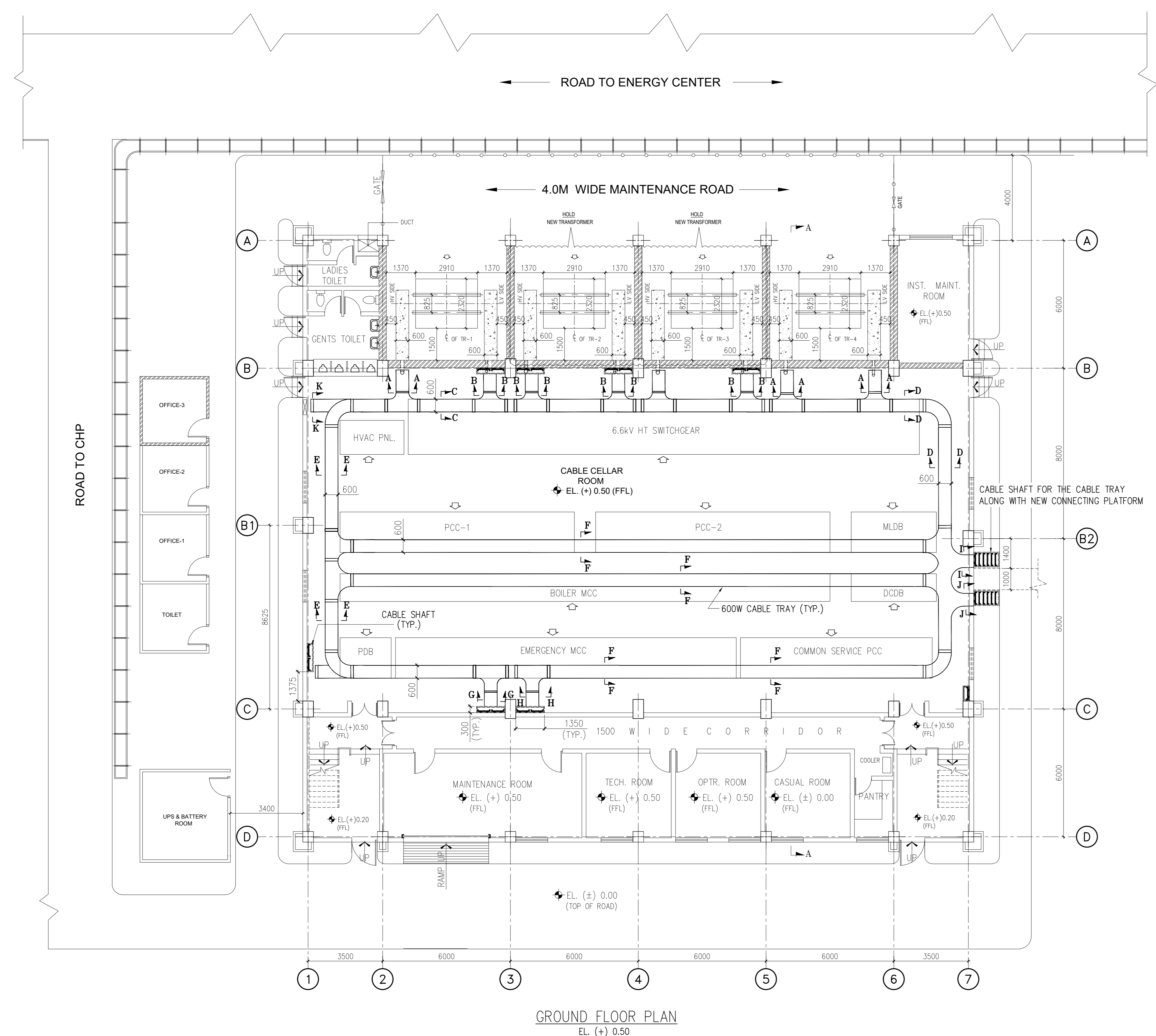
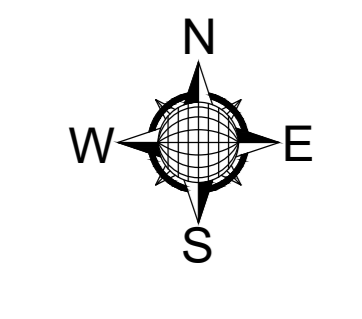
NO.	DATE	REVISION	BY	DATE	REVISION	BY

ISSUED FOR CONSTRUCTION

NATURE OF REVISION & DESCRIPTION

CHECKED DRAWN REV. DATE

FILE LOCATION: E:\LOCAL\_DRIVE\JOB FILES\18A08\_DWG\_040\Boiler Control Room\3. Control Room Layout\18A08-DWG-E-040\_Control Building Layout.dwg  
 PLOT DATE: 12/12/2018 11:51:11 AM  
 No. [1808 x 847]



GROUND FLOOR PLAN  
EL (+) 0.50

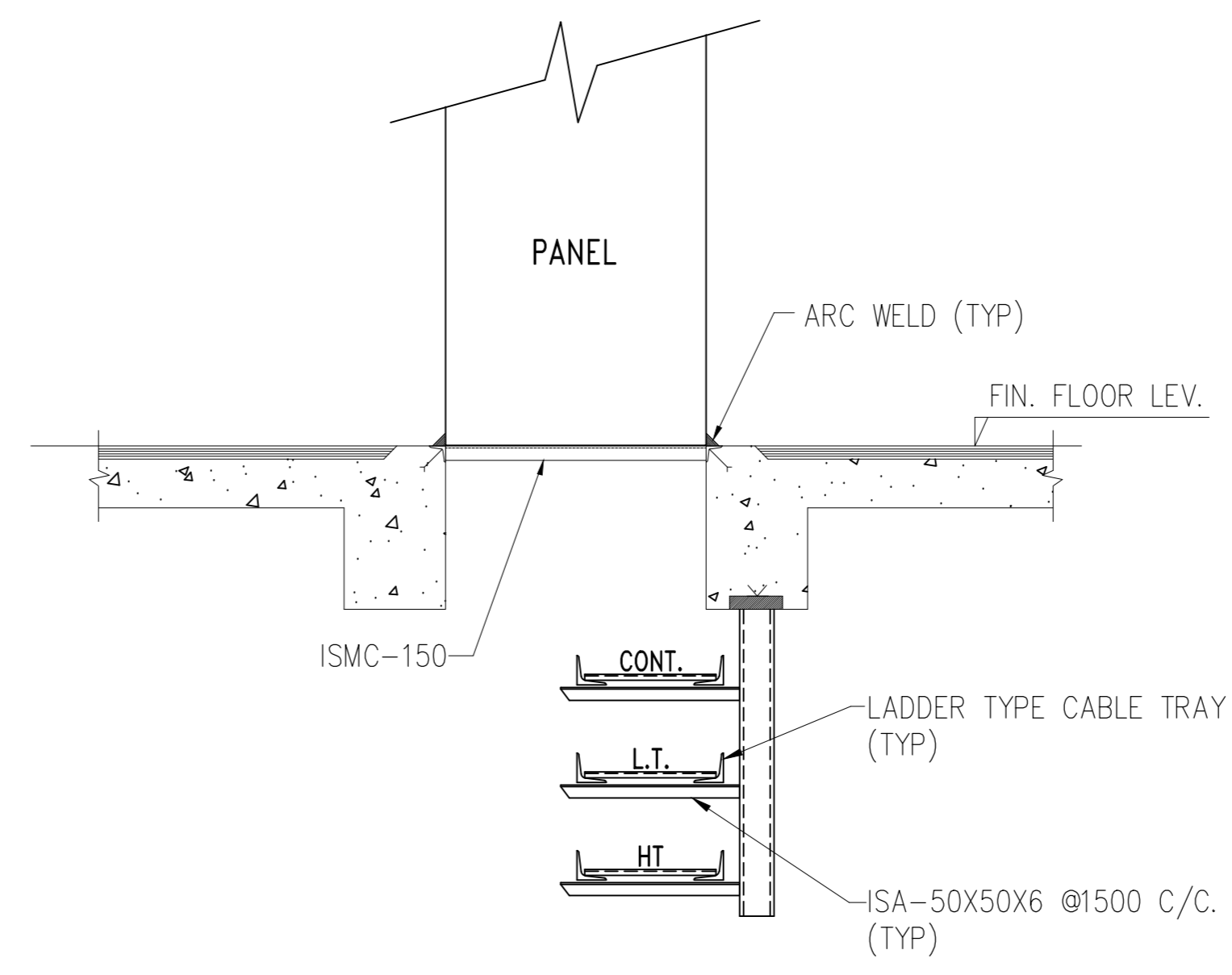
- NOTES :-**
- ALL DIMENSIONS ARE IN mm & ALL LEVELS ARE IN METERS UNLESS OTHERWISE MENTIONED.
  - CABLES ON THE CABLE TRAYS SHALL BE DRESSED PROPERLY.
  - CABLE TRAY ROUTE MAY BE MODIFIED TO SUIT AT SITE CONDITIONS.
  - CABLES LAID ON TRAYS & RISERS SHALL BE NEATLY DRESSED & CLAMPED WITH SELF LOCKING TYPE FIRE RESISTANT NYLON TIES AT AN INTERVAL OF 750mm FOR HORIZONTAL & VERTICAL RUNS, IN CASE OF BOTH POWER, CONTROL & INSTRUMENTATION CABLES.
  - CABLE TRAYS SHALL BE SUPPORTED AT A SPACING NOT EXCEEDING 1.25M. HORIZONTALLY AND 1.0M. VERTICALLY.
  - ALL SUPPORT STRUCTURE SHALL BE FIXED BY WELDING.
  - MOUNTING HEIGHT OF LPBS, JB, WELDING RECEPTACLES, LP ETC. SHALL BE 1200MM ABOVE FFL.
  - CABLE TRAY SHALL BE ARRANGED IN THE FOLLOWING SEQUENCE FROM TOP TO BOTTOM, AS APPLICABLE  
- IT SIGNAL  
- CT CONTROL  
- LT POWER  
- HT POWER
  - SPACING BETWEEN TWO VERTICAL TRAYS SHALL BE 250mm.
  - WHERE EVER INSERT PLATES ARE NOT AVAILABLE WITH BEAM/COLUMN SUITABLE INSERT PLATES SHALL BE PROVIDED USING ANCHOR FASTNERS.
  - GENERALLY ALL LT POWER CABLE TRAY, HT POWER CABLE TRAY & CONTROL CABLE TRAY SHALL BE LADDER TYPE TRAY & INSTRUMENT CABLE TRAY SHALL BE PERFORATED TYPE.
  - FOR CABLE CROSSING THROUGH BRICK/RCC WALL SUITABLE SIZES GI CONDUIT SHALL BE PROVIDED.
  - B.O.T INDICATES BOTTOM OF CABLE TRAY.
  - FOR FIXING OF CABLE TRAY SUITABLE SUPPORT SHALL BE DONE AS PER SITE CONDITION.
  - SUFFICIENT SPACING NOT LESS THAN 250mm SHALL BE PROVIDED BETWEEN TWO VERTICAL TRAYS & MAINTAINED TO PERMIT ADEQUATE ACCESS, FOR INSTALLING & MAINTAINING THE CABLES.
  - CABLE TRAY/CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS & GROUNDED.

**BILL OF QUANTITY**

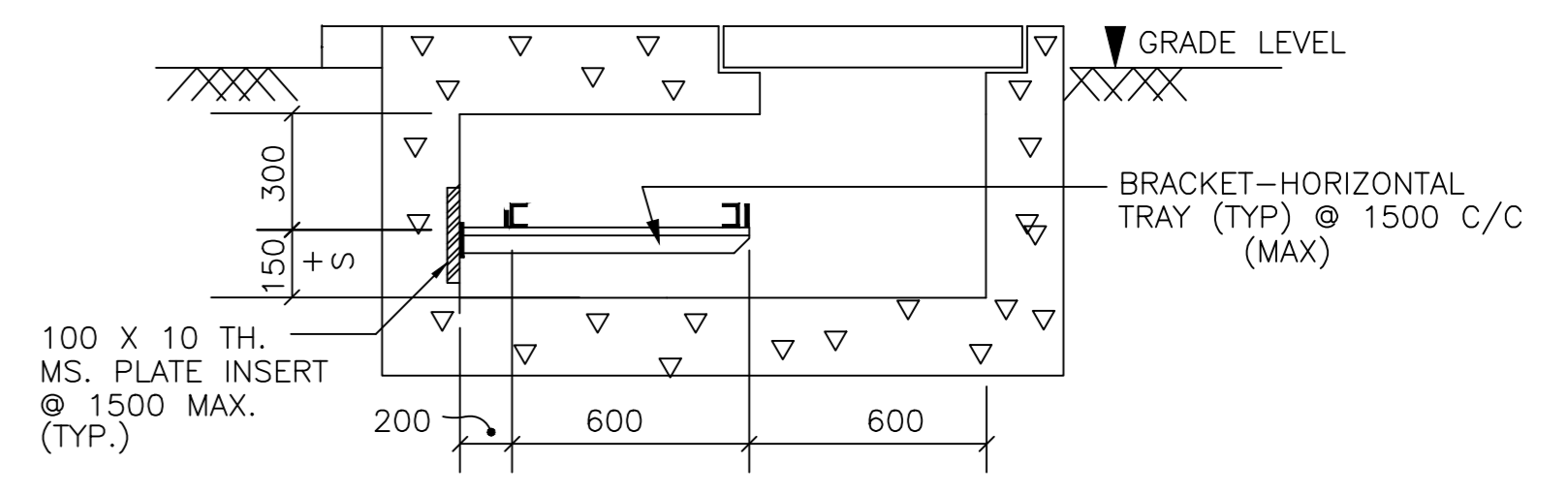
SL. No.	DESCRIPTION.	QUANTITY
1.	600W LADDER TYPE CABLE TRAY	1000 M
2.	600W PERFORATED CABLE TRAY	250 M
3.	MS PLATE INSERT 200X200, 10THK.	AS REQUIRED
4.	ISMC 100	AS REQUIRED
5.	BRACKET ISA 50X50X6	AS REQUIRED

**REFERENCE DWG. :-**

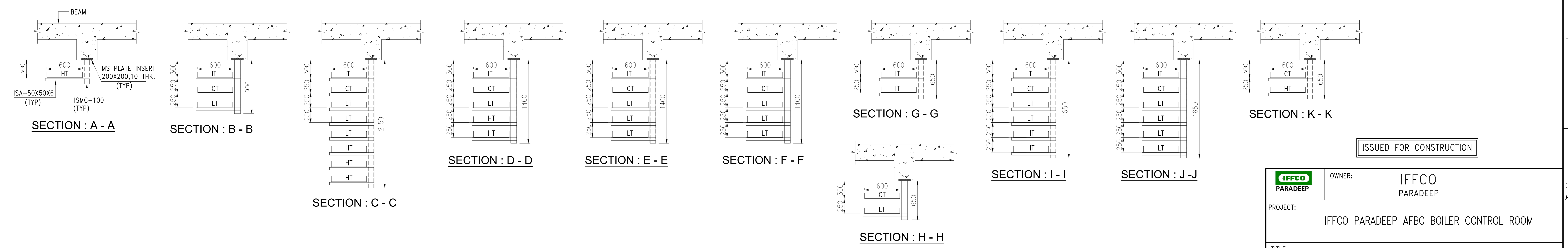
- CONTROL BUILDING ROOM LAYOUT : 18A08-DWG-E-0401



TYPICAL CABLE TRAY  
MOUNTING ARRANGEMENT  
(BEAM MOUNTED)



TYPICAL CABLE TRENCH SECTION  
FOR TRANSFORMER ROOM

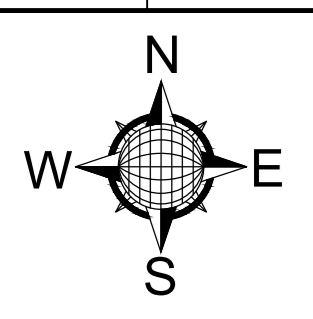


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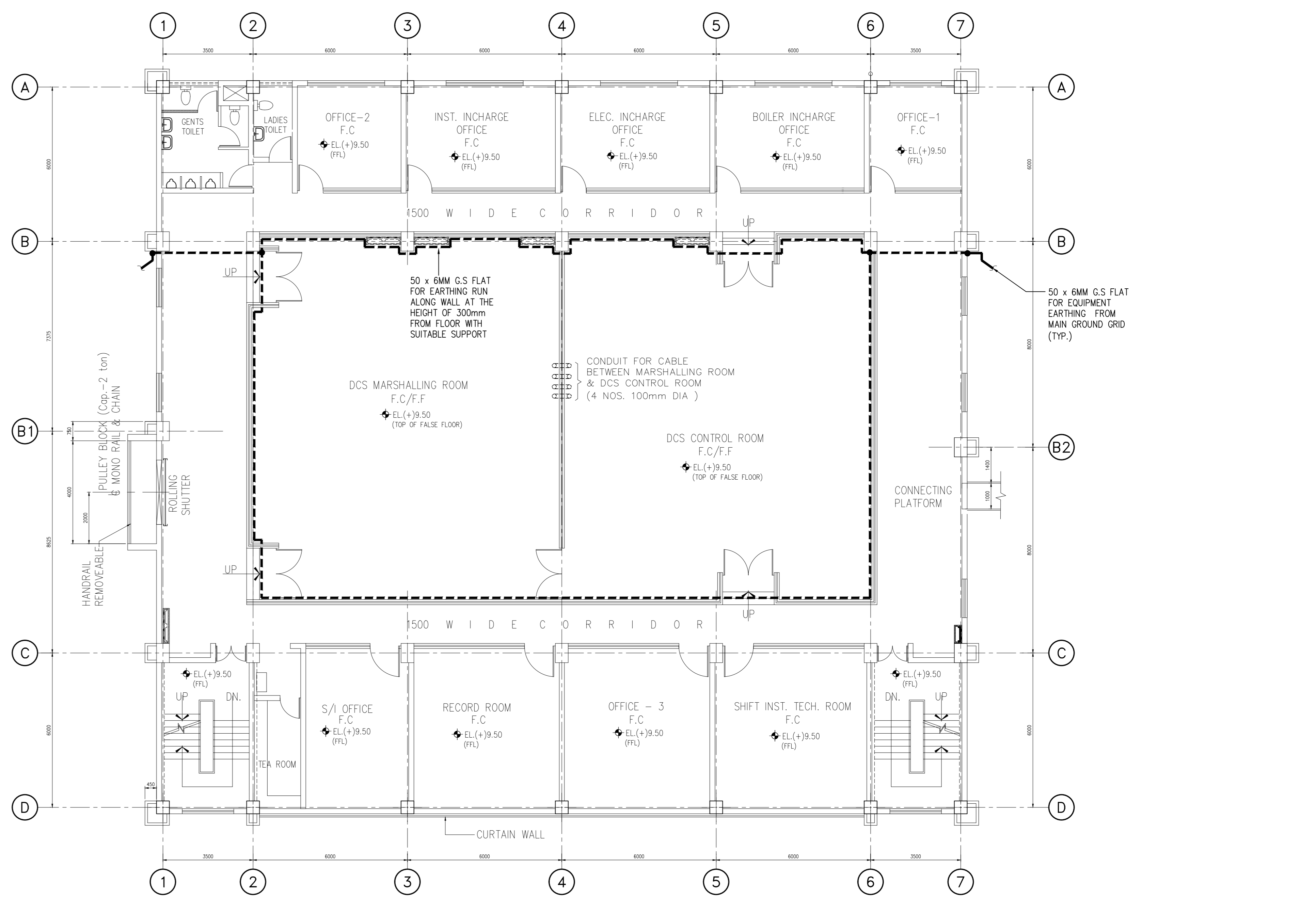
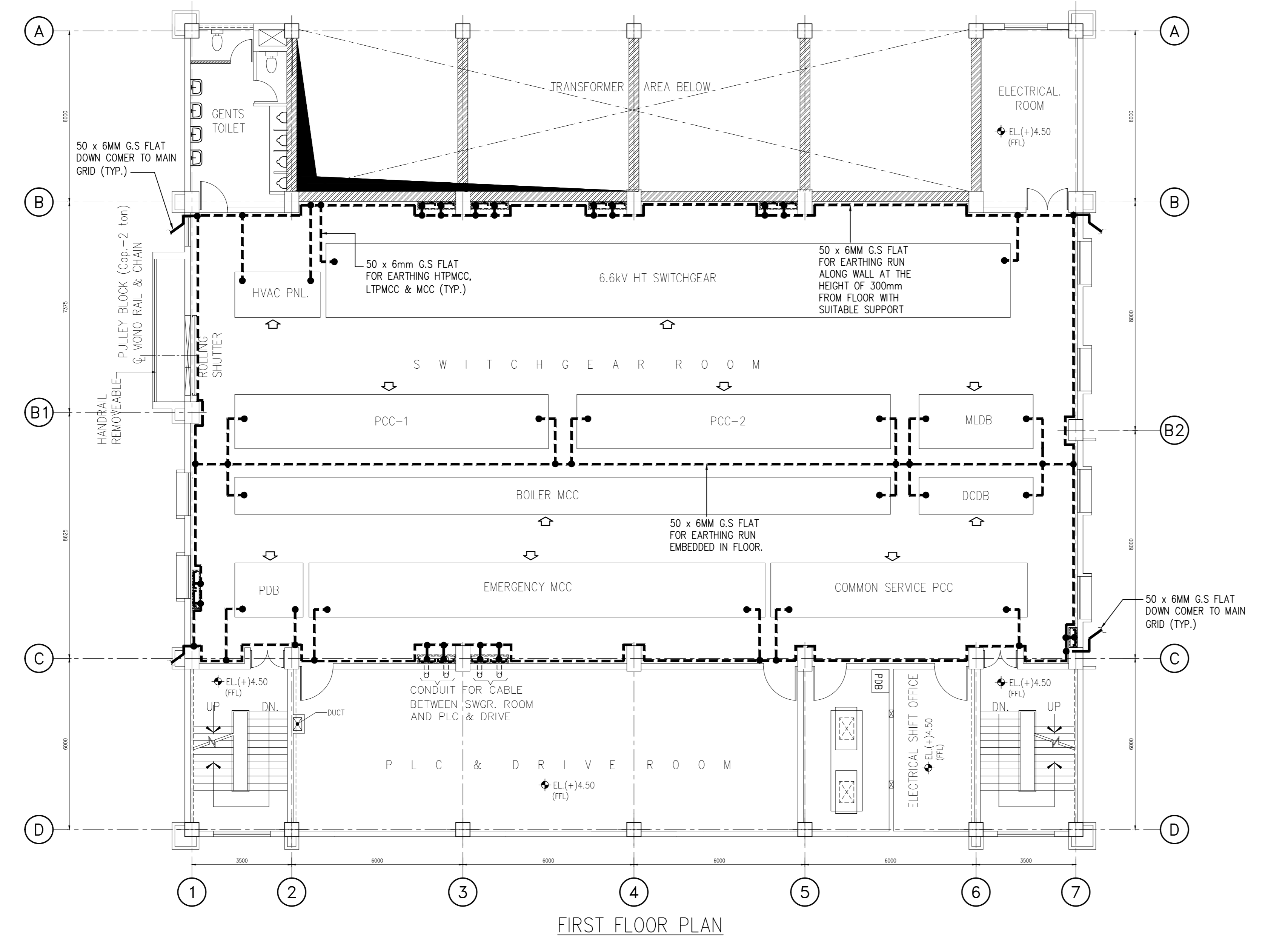
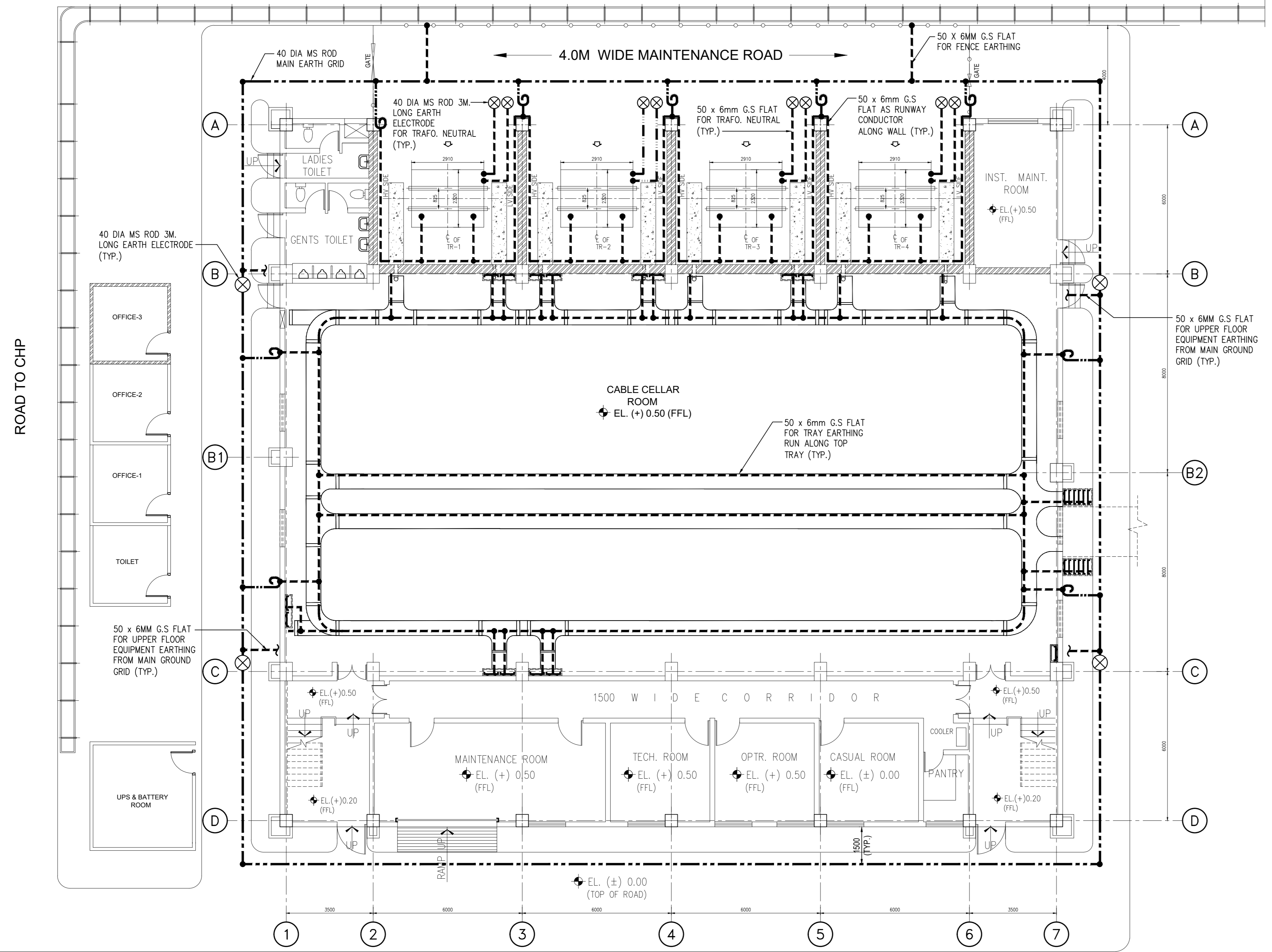
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											FOR CONSTRUCTION	11.09.19	RD
											ARCHITECTURAL		
											CIVIL & STRUCTURAL		
											ELECTRICAL		
											INSTRUMENTATION		
											MECHANICAL		

<b>IFFCO PARADEEP</b>	OWNER:	<b>IFFCO PARADEEP</b>
PROJECT:	<b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>	
TITLE:	<b>CABLE TRAY LAYOUT CONTROL ROOM BUILDING</b>	
<b>DEVELOPMENT CONSULTANTS PVT LTD.</b> CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI		
PREPARED	BG	JOB NO. 18A08
CHECKED	RD	SCALE 1:150
APPROVED	DS	DATE 13.12.2018
DWG. NO.	18A08-DWG-E-0402	

FILE LOCATION: D:\DCPL\POWER\JOB FILES\18A08-IFCO Boiler Control Room\8. Cable Tray Layout\18A08-DWG-E-0402\_Control Building Cable Tray Layout\_R01.dwg  
PLOT DATE: 9/11/2019 12:28:42 PM  
A1 [841 x 594]



ROAD TO ENERGY CENTER



BOM FOR EARTHING SYSTEM

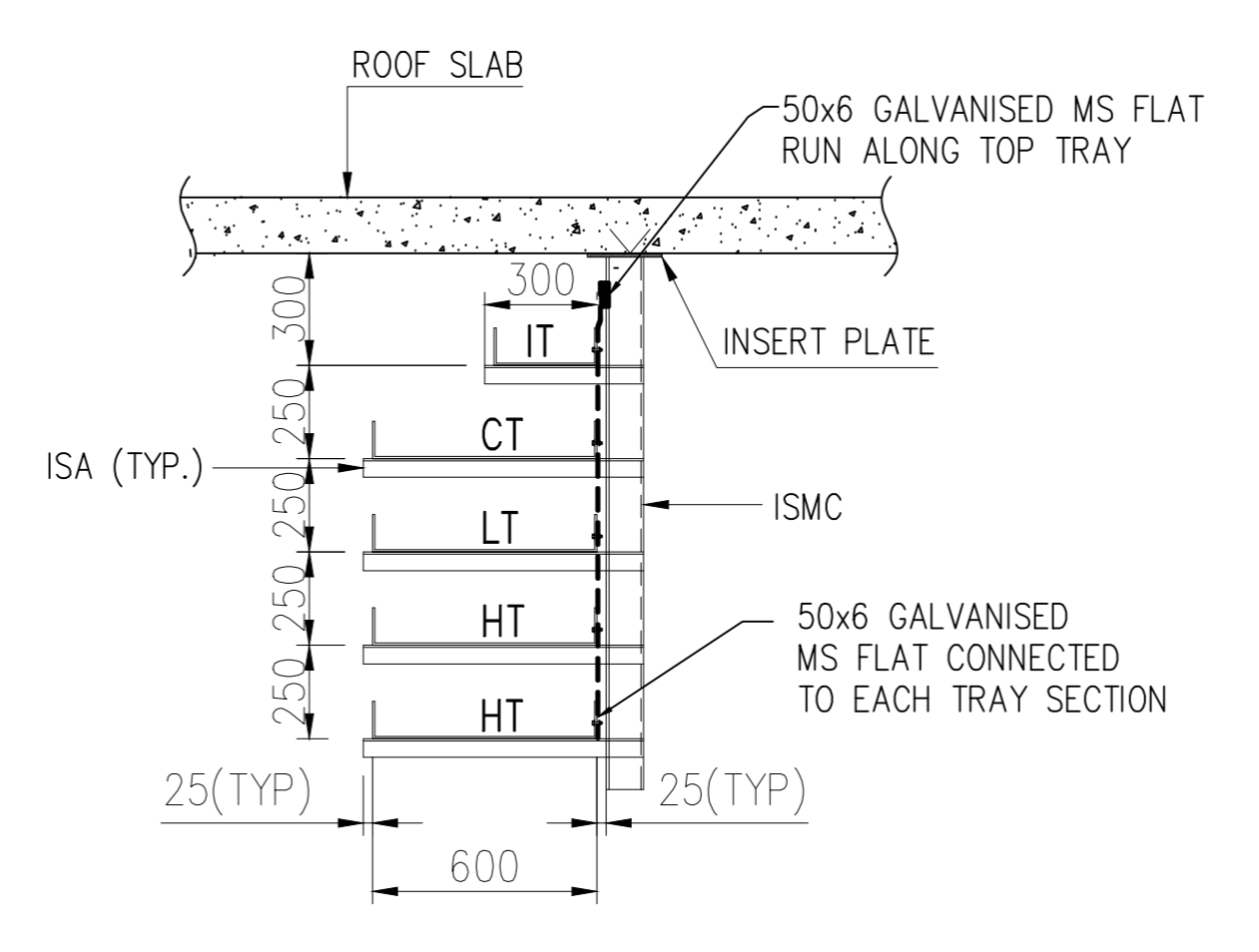
SL. NO.	EQUIPMENT	CONDUCTOR SIZE & MATERIAL	SYMBOL	QTY.(APRX.)
1.	H.V SWITCHGEAR, PMCC, MCC, STRUCTURES, CABLE TRAY, ELECTRICAL PANEL, ELDB, OTHER OUT DOOR EQUIPMENT ETC.	50X6 G.S FLAT	- - - - -	1000 MTRS.
2.	MAIN GROUND GRID CONDUCTOR	40# M.S ROD	- - - - -	150 MTRS.
3.	UP/DOWN RISER (PIG TAIL)	40# M.S ROD	- - - - -	9 NOS.
4.	EARTH ELECTRODE(3M LONG) 1 END POINTED	40# M.S ROD	⊗	12 NOS
5.	JUNCTION BOX, POWER RECEPTACLE, MISC. SMALL POWER DEVICE, LPBS	8 SWG G.I WIRE	-	-
6.	ELECTRONICS EARTHING	1C-16 SQ. MM CU. CABLE	-	-
7.	ELECTRONICS EARTHING INDIVIDUAL PANEL	1C-2.5 SQ. MM CU. CABLE	-	-
8.	MOTOR RATED ABOVE 110KW	50X6 G.S FLAT	-	-
9.	MOTOR RATED ABOVE 30KW UPTO 110KW	50X6 G.S FLAT	-	-
10.	MOTOR RATED ABOVE 5KW UPTO 30KW	25X3 G.S FLAT	-	-
11.	MOTOR RATED UPTO 5KW	8 SWG G.I WIRE	-	-

NOTES :

- ALL DIMENSIONS ARE IN MM.
- THE GROUNDING INSTALLATION WORK SHALL CONFORM TO THE REQUIREMENT OF THE INDIAN ELECTRICITY RULES & CODE OF PRACTICES FOR EARTHING (IS:3043) AS AMENDED UP-TO DATE.
- EARTHING CONNECTION SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT WHETHER INDICATED OR NOT.
- EARTHING CONDUCTOR ROUTING SHOWN IS INDICATIVE ONLY ACTUAL ROUTING SHALL BE AS PER SITE CONDITIONS.
- A CONTINUOUS GALVANISED M.S FLAT GROUND CONDUCTOR SHALL BE INSTALLED ALONG THE CABLE RACEWAY AND SECURELY ATTACHED TO EACH TRAY SECTION, FORMING A SOLIDLY GROUNDED TRAY SYSTEM.
- FOR CABLE TRAY EARTHING 1 NO 50 X 6 G.S FLAT SHALL RUN ALONG CABLE TRAY.
- RISERS OF 50X6MM G.S FLAT CONNECTING TO EARTH MAT SHALL BE LAID UP TO A HEIGHT OF 300 MM ABOVE THE GROUND LEVEL.
- EARTH ELECTRODE SHALL BE 40 MM DIA, 3000 MM LONG MS ROD DRIVEN IN TO THE GROUND AND CONNECTED TO THE EARTH MAT CONDUCTOR.
- MISCELLANEOUS DEVICES SUCH AS LPS, MARSHALLING BOXES OF TRANSFORMER, CABLE END BOXES ETC. SHALL BE EFFECTIVELY GROUNDED WHETHER SPECIFICALLY SHOWN OR NOT.
- ALL ELECTRICAL EQUIPMENT, STRUCTURES, FENCE, ETC SHALL BE CONNECTED TO THE GROUNDING SYSTEM BY GROUNDING CONDUCTORS. THE CONNECTION SHALL BE BOLTED TYPE WITH G.I. BOLT & NUT.
- THE PROJECTED PORTION OF RISER/PIGTAIL ABOVE GROUND SHALL BE COATED WITH TWO COATS OF BITUMEN PAINTS (ANTI-CORROSION PAINTS).
- EMBEDDED EARTHING CONDUCTOR IN CONCRETE FLOOR OF THE BUILDING SHALL NOT HAVE ANY DIRECT CONTACT WITH THE REINFORCEMENT RODS.
- EQUIPMENT GROUND CONNECTIONS, AFTER BEING CHECKED AND TASTED BY THE ENGINEER, SHALL BE COATED WITH ANTI-CORROSION PAINT.
- A G.I WIRE SHALL BE RUN ALONG THE METALLIC CONDUIT AND SHALL BE SECURELY TIED WITH THE SAME AT AN INTERNAL 300MM. GROUNDING CONNECTION OR WIRE JUMPERS SHALL BE INSTALLED WHERE FLEXIBLE CONDUIT IS USED TO CONNECT RIGID CONDUIT TO EQUIPMENT.
- QTY. SHALL BE SHOWN IN ILLUMINATION LAYOUT DRG.

REF. DWG. NOS.

- CONTROL BUILDING ROOM LAYOUT : 18A08-DWG-E-0401



ISSUED FOR CONSTRUCTION

OWNER: IFFCO PARADEEP  
PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM  
TITLE: CONTROL ROOM BUILDING EARTHING LAYOUT

DEVELOPMENT CONSULTANTS PVT LTD.  
CONSULTING ENGINEERS  
KOLKATA - MUMBAI - CHENNAI - NEW DELHI

PREPARED: RD  
CHECKED: RD  
APPROVED: DS

JOB NO.: 18A08  
SCALE: 1:100  
DATE: 11.09.2019

DWG. NO. 18A08-DWG-E-0403

REV 0

REV	DATE	BY	DESCRIPTION
01	11.09.2019	RD	ISSUED FOR CONSTRUCTION

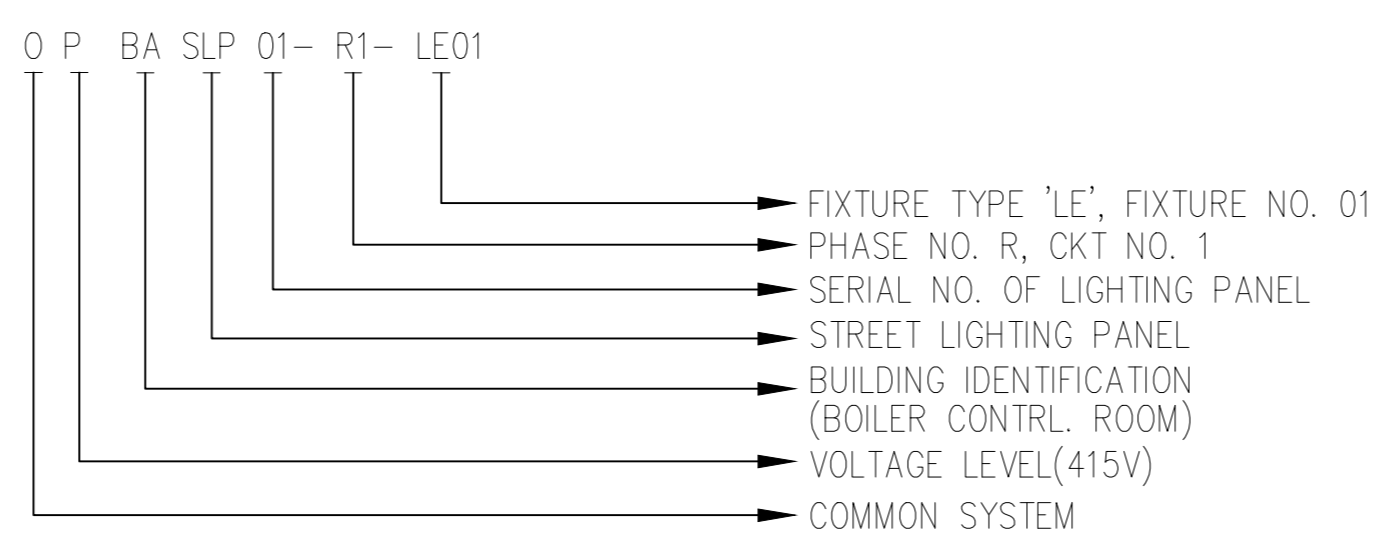
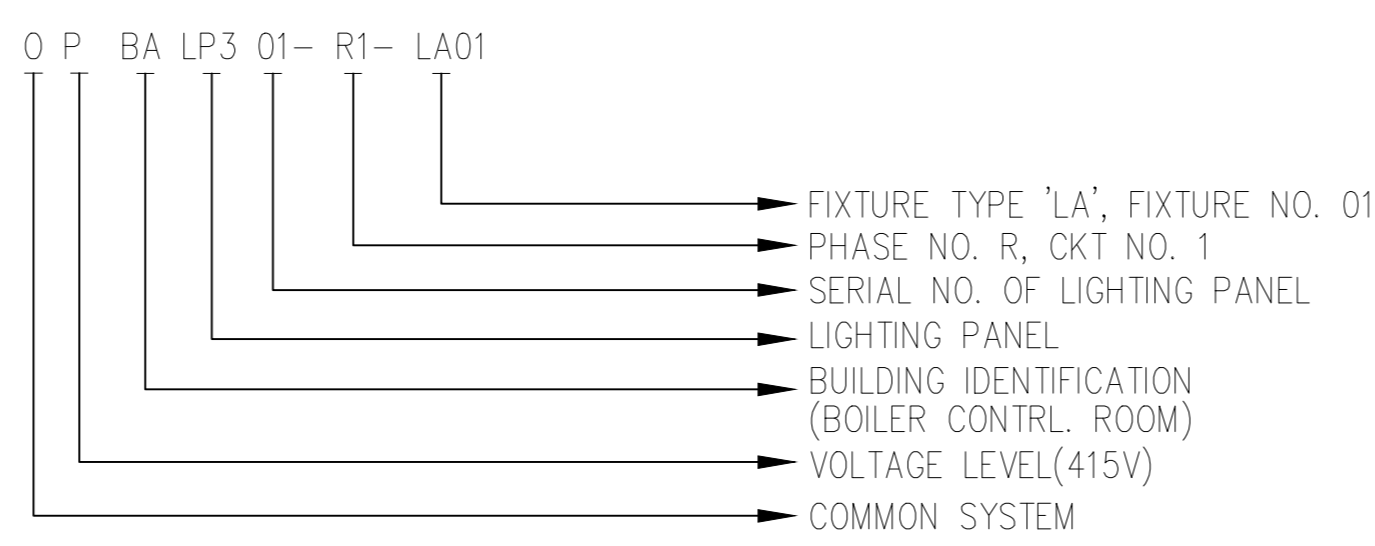
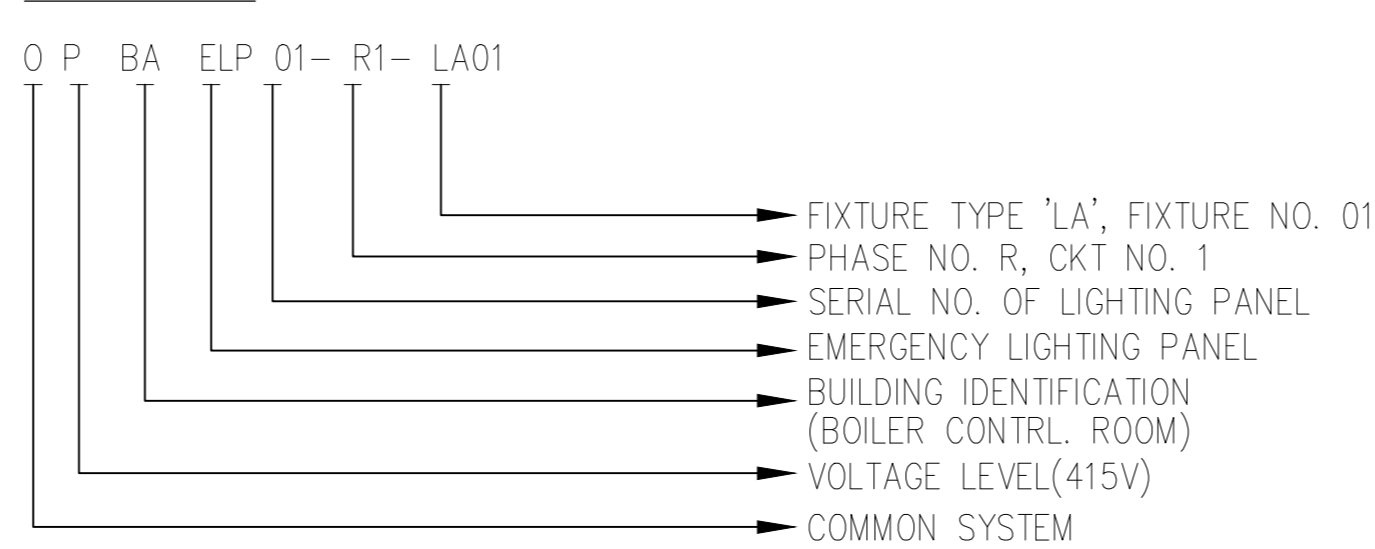
NOTES:

- ALL DIMENSIONS ARE IN MM.& LEVELS ARE IN METRES UNLESS OTHERWISE NOTED.
- DIMENSIONS & LOCATION OF VARIOUS LIGHTING FIXTURES AND EQUIPMENTS SHOWN HERE ARE TENTATIVE ONLY. THE SAME SHALL BE FINALIZED AS PER SITE REQUIREMENT.
- PENDENT MOUNTED FIXTURE SHALL BE MOUNTED CLEARING VENTILATION DUCT (IF ANY).
- EACH LIGHT FITTINGS/RECEPTACLES/SWITCH BOARDS SHALL BE PROVIDED WITH A JUNCTION BOX WHERE CABLE/WIRE CAN BE TERMINATE/BRANCHING.
- SEPARATE NEUTRAL WIRE SHALL BE PROVIDED FOR EACH CIRCUIT. WIRING THROUGHOUT THE INSTALLATION SHALL BE SUCH THAT THERE IS NO BREAK IN THE NEUTRAL WIRE IN THE FORM OF SWITCH OR FUSE.
- INSTALLATION WORK FOR ILLUMINATION SHALL BE CARRIED OUT IN COMPLIANCE WITH THE NOTES MENTIONED HEREWITH, GOOD ENGINEERING PRACTICE AND ALSO MANUFACTURER'S INSTRUCTIONS/MANUAL/RECOMMENDATION.
- NORMAL/ EMERGENCY/ DC SYSTEM WIRING SHALL RUN IN SEPARATE CONDUIT.
- NO. OF FIXTURES AND MOUNTING ARE TENTATIVE SUBJECT TO VERIFICATION TO SUIT AT SITE.
- ALL INSTALLATION MATERIAL LIKE CONDUITS, CABLE, WIRES, JUNCTION BOXES ETC. IN ADEQUATE QUANTITY SHALL BE PROVIDED FOR COMPLETE INSTALLATION AND TROUBLE FREE OPERATION OF THE SYSTEM.
- IN CASE OF LIGHTING FIXTURES/INSERT PLATES FOULING WITH BEAM/OTHER EQUIPMENTS, CARE SHALL BE TAKEN TO SUIT AT SITE CONDITION IN CONSULTATION WITH SITE ENGINEERS.
- LIGHTING PANEL SHALL BE INSTALLED AT AN ELEVATION OF 1.8M AND SWITCH BOARDS & RECEPTACLES AT AN ELEVATION OF 1.5M FROM FFL. COMPUTER SOCKETS SHALL BE INSTALLED AT AN ELEVATION OF 0.3M.
- SEPARATE 14 SWG GI WIRE TO BE PROVIDED FOR GROUNDING OF ALL JBS, RECEPTACLES, FIXTURES ETC. IN OUT DOOR OF CONTROL ROOM BUILDING. HOWEVER FOR CONCEALED CONDUIT SYSTEM 1x1.5 SQ. MM WIRES TO BE CONSIDERED ALONG WITH THE CONDUIT FOR FIXTURE EARTHING.
- FOR FIXING ARRANGEMENT OF LIGHTING FIXTURES REFER RELEVANT SECTION OF MANUFACTURER'S CATALOGS/MANUALS.
- FIXTURE SHALL BE SUITABLE FOR 20mm DIA. CONDUIT ENTRY & 16 SWG G.I EARTH WIRE CONNECTION.
- LIGHTING CABLE SHALL BE HEAVY DUTY, 1100 VOLT GRADE, MULTICORE STRANDED COPPER CONDUCTOR, XLPE INSULATED, EXTRUDED PVC INNER SHEATH, SINGLE ROUND G.I. WIRE ARMOURED AND OVERALL PVC SHEATHED WITH FRLSH CONFORMING TO IS 1554.
- LIGHTING WIRES SHALL BE 1100 VOLT GRADE, PVC INSULATED, STRANDED CONDUCTOR AND COLOUR CODED AS BELOW :  
RED FOR R-PHASE BLACK FOR NEUTRAL  
YELLOW FOR Y-PHASE WHITE FOR +VE D.C.  
BLUE FOR B-PHASE GREY FOR -VE D.C.
- CONDUITS SHALL BE RIGID STEEL, HOT-DIP GALVANIZED. THICKNESS OF CONDUITS UP TO AND INCLUDING 25 MM DIA SHALL BE OF 16 SWG AND CONDUITS ABOVE 25 MM SHALL BE OF 14 SWG. MINIMUM SIZE OF CONDUITS SHALL BE 20 MM.
- JUNCTION BOXES SHALL BE OF 16 SWG SHEET STEEL HOT-DIP GALVANISED, DUST AND DAMP PROOF, GENERALLY CONFORMING TO IP-55.
- ALL LIGHTING PANELS, JUNCTION BOXES, RECEPTACLE, FIXTURES, CONDUIT ETC SHALL BE GROUNDED IN COMPLIANCE WITH THE PROVISION OF I.E. RULES  
LP - 2 NOS 35X6MM G.I FLATS  
SLP - 2 NOS 50X6MM G.I FLATS  
JB, RECEPTACLE, FIXTURES ETC. - 16 SWG GI WIRES.
- a) LIGHTING PANEL LP3 : 415V AC INDOOR LIGHTING PANEL WITH 415V, 3PH, 4W, BUS & ONE 63A TP & N SWITCH/MCCB AS INCOMER AND 12 NOS. 20A, 240V, 1 POLE MCBS AS OUTGOING FEEDER.  
b) SLP : 415V AC INDOOR LIGHTING PANEL WITH 415V, 63A, 3PH, 4W, BUS & ONE 100A TP & N SWITCH/MCCB AS INCOMER, 18 NOS. 20A, 240V, 1 POLE MCBS AS OUTGOING FEEDER.  
THE LIGHTING PANEL SHALL BE PROVIDED WITH 63A CONTACTOR, FREQUENCY COMPENSATED TIMER SWITCH, PHOTO CELL SWITCH PUSH BUTTONS FOR AUTOMATIC CONTROL OF STREET/AREA LIGHTING WITH PROVISION FOR MANUAL OVERRIDE.
- FOR POWER SUPPLY DETAILS FOR "RAC" (RECEPTACLE FOR AC) REFER HAVC DRAWING NO : DWG NO. 18A08-003-VA-001 & DWG NO. 18A08-003-VA-002.

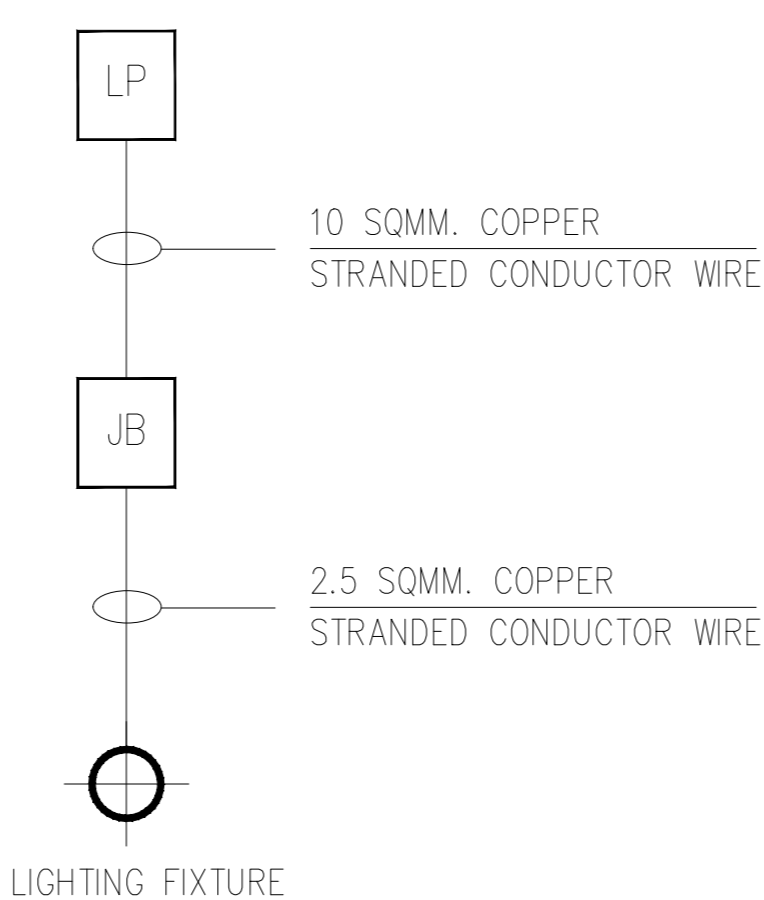
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- CONTROL BUILDING ROOM LAYOUT : 18A08-DWG-E-0401

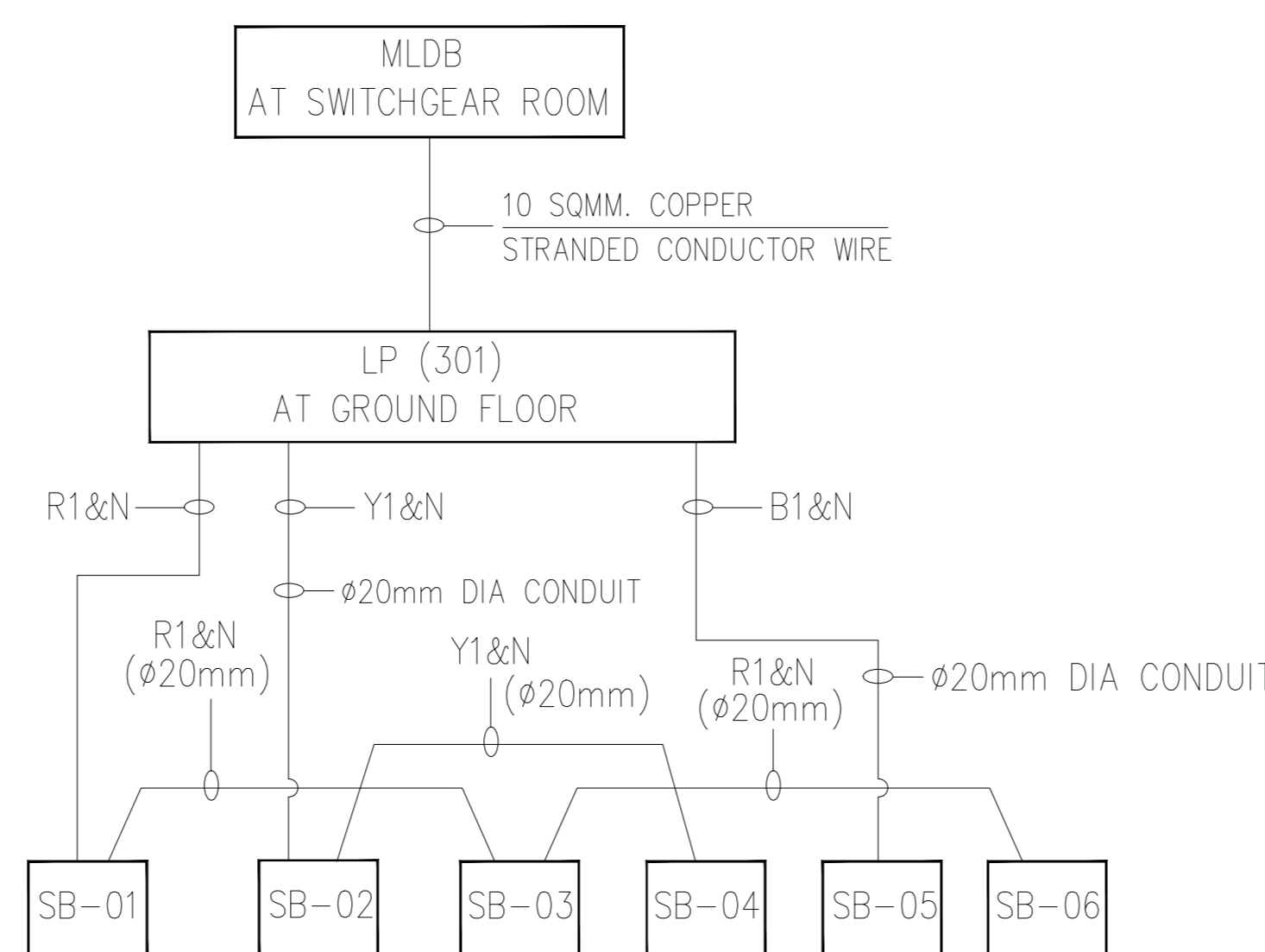
LEGEND :



TYPICAL WIRING OF LP, JB & LIGHTING FIXTURE :



TYPICAL WIRING DIAGRAM UPTO SWITCH BOARD :



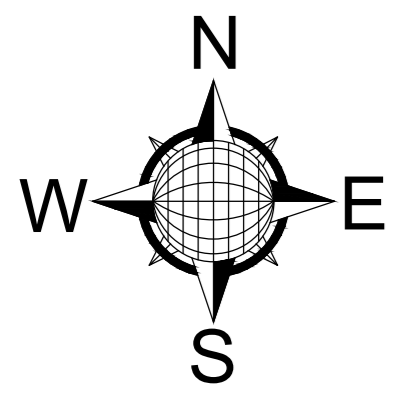
SCHEDULE OF ITEMS:

SL. No.	SYMBOL	TYPE	DESCRIPTION	WATTAGE	MOUNTING TYPE	QUANTITY
1.	[Symbol]	DA	PHILIPS MAKE, MODEL SM270C LED 30S	35W.	PENDENT	141
2.	[Symbol]	HA	PHILIPS MAKE, MODEL RC480B LED30S/865 W60L60 PSU (WINGLINE 2X2) MIRRORRED /6500 (1.000)	45W.	RECESSED	35
3.	[Symbol]	LC	PHILIPS MAKE, MODEL BY300P LED 27S NW PSU S1 PC (1.000)	25W.	SUSPENDED	46
4.	[Symbol]	LA	PHILIPS MAKE, MODEL DN296B LED12S-6500 PSU WH DIFFUSED /6500K (1.000)	15W.	RECESSED	26
5.	[Symbol]	FA	PHILIPS MAKE, BN308C LED40S-6500 L120 PSU WH DIFFUSED /6500 (1.000)	40W.	SURFACE	76
6.	[Symbol]	MA	PHILIPS MAKE, MODEL SM260C LED12S-6500 PSU WH (1.000)	12W.	SURFACE	2
7.	[Symbol]	LE	PHILIPS MAKE, MODEL BRP 410 LED 66 NR PC S1 NR /5700 (1.000)	70W.	SURFACE	12
8.	[Symbol]	M3	PORTABLE EMERGENCY LIGHT SET COMPLETE WITH 2X6W CFL LAMPS, TEST SWITCH, 6V STORAGE BATTERY (RECHARGEABLE), 2 HRS BACKUP COMPLETE WITH AUTOMATIC CHARGER & ALL OTHER ACCESSORIES.			14
9.	[Symbol]	FAN	1200MM SWEEP CEILING FAN	85W.		19
10.	[Symbol]	RA	6A, 240V, 2 POLE, 3 PIN WITH THIRD PIN EARTHED RECEPTACLE WITH SWITCH.			38
11.	[Symbol]	RA1	2 NOS 6A, 240V DOMESTIC SWITCH & SOCKET.			24
12.	[Symbol]	RAC	16/20A, 240V, 1-PH RECEPTACLE WITH SWITCH FOR AC.			22
13.	[Symbol]	RC	63A, 415V, 3-PH, 4 PIN RECEPTACLE WITH SWITCH SUITABLE FOR LOOP-IN/LOOP-OUT CONNECTION (FED FROM 415V PMCC AT ASH WATER RECYCLING PUMP HOUSE BY 1-3.5/C-35 Sq.mm AL., PVC, FRLS CABLE)			12
14.	[Symbol]	SB	SWITCHBOARD WITH 3-6A SWITCH & 1-6A RECEPTACLE WITH SWITCH. SWITCHBOARD WITH 3-6A SWITCH & REGULATOR (SB NO. 06, 14,15,16,20,22,24,26,28,30,32,34,36,37,38,39,40.)			42
15.	[Symbol]	OPBALP3	NORMAL AC 12 WAY LIGHTING PANEL			3
16.	[Symbol]	OPBASLP	AC 6 WAY LIGHTING PANEL FOR STREET LIGHTING			1
17.			25mm DIA G.I. CONDUIT			A LOT
18.			20mm DIA G.I. CONDUIT			A LOT
19.			TWO-WAY JUNCTION BOX			A LOT
20.			THREE-WAY JUNCTION BOX			A LOT
21.			FOUR-WAY JUNCTION BOX			A LOT
22.			90° BEND FOR 25MM DIA. CONDUIT			A LOT
23.			2.5 SQMM. WIRE			A LOT
24.			10 SQMM. RED WIRE			A LOT
			10 SQMM. YELLOW WIRE			A LOT
			10 SQMM. BLUE WIRE			A LOT
			10 SQMM. WHITE WIRE			A LOT

ISSUED FOR CONSTRUCTION

<b>IFFCO PARADEEP</b>	OWNER:	<b>IFFCO PARADEEP</b>
PROJECT: <b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>		
TITLE: <b>ILLUMINATION LAYOUT OF CONTROL ROOM BUILDING</b>		
<b>DEVELOPMENT CONSULTANTS PVT LTD.</b> CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI		
PREPARED	BG	JOB NO. 18A08
CHECKED	RD	SCALE 1:100
APPROVED	DS	DATE 11.12.2018
DWG. NO. 18A08-DWG-E-0801		REV 1

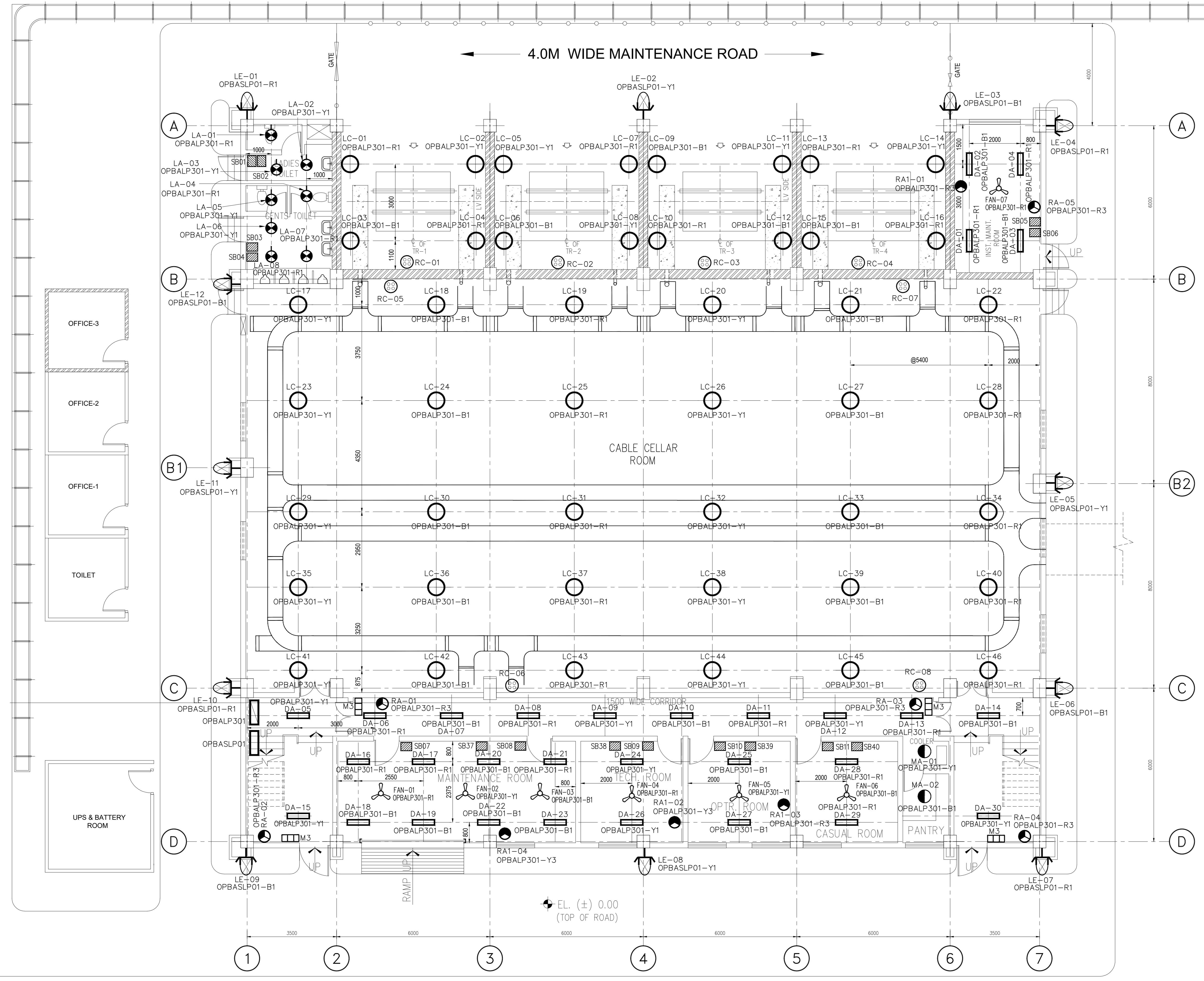
APPROV.	MECH.	INST.	ELEC.	STR.	ARCH.	NATURE OF REVISION & DESCRIPTION	CHECKED	DRAWN	REV.	DATE	RELEASE STATUS	DATE	SIGNATURE
						REVISED AS PER CLIENT'S COMMENTS	RD	BG	1	18.11.2019	FOR TENDER ONLY		
						ISSUED FOR CONSTRUCTION	RD	BG	0	31.10.2019	FOR CONSTRUCTION	11.09.2019	RD
											ARCHITECTURAL		
											CIVIL & STRUCTURAL		
											ELECTRICAL		
											INSTRUMENTATION		
											MECHANICAL		



ROAD TO ENERGY CENTER

4.0M WIDE MAINTENANCE ROAD

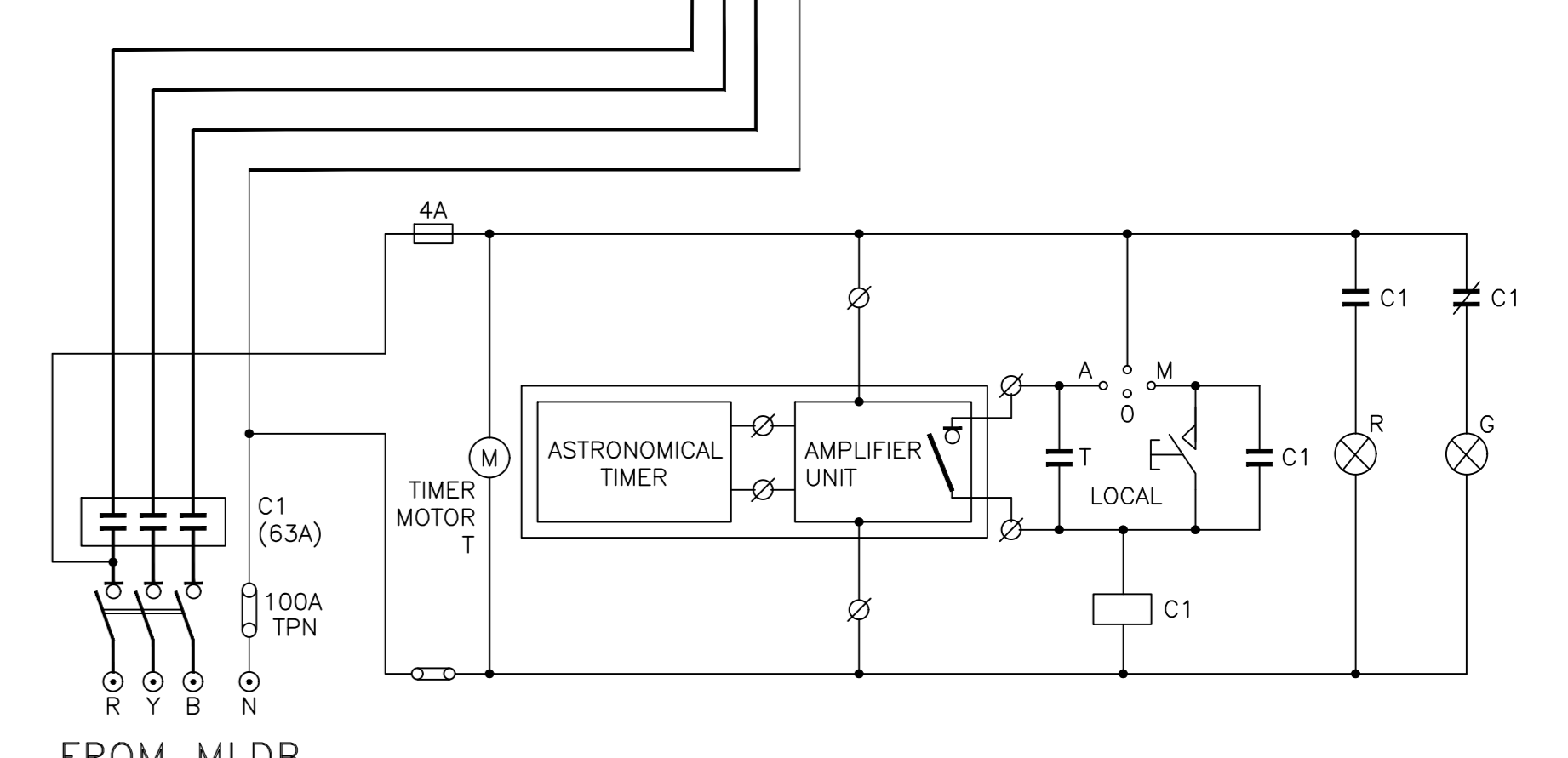
ROAD TO CHP



GROUND FLOOR PLAN  
EL. (+) 0.50

OPBASLP01  
(LOC. : FIRST FLOOR, BOILER CONTROL ROOM)

LOCATION	NO. & TYPE OF FIXTURE	LOAD (W)	CKT NO.	20A, DP MCB (TYP)	R	Y	B	N	CKT LOAD NO. (W)	NO. & TYPE OF FIXTURE	LOCATION
OUTDOOR	LE-01,04,07,10.	280	R1	X	X	X	X	X	R2	140	SPARE
OUTDOOR	LE-02,05,08,11.	280	Y1	X	X	X	X	X	Y2	140	SPARE
OUTDOOR	LE-03,06,09,12.	280	B1	X	X	X	X	X	B2	140	SPARE

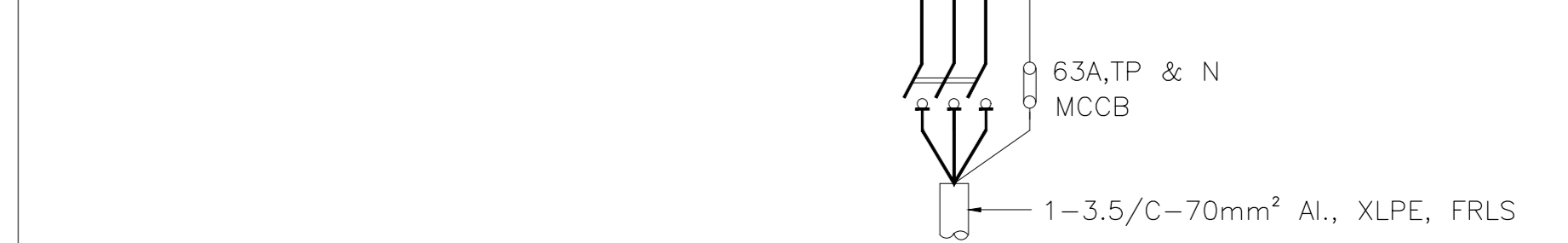


FROM MLDB  
(LOC. : SWITCHGEAR ROOM, FIRST FLOOR)

R-PHASE = 280W  
Y-PHASE = 280W  
B-PHASE = 280W  
TOTAL = 840W

OPBALP301  
(LOC. : GROUND FLOOR, BOILER CONTROL ROOM)

LOCATION	NO. & TYPE OF FIXTURE	LOAD/CKT (W)	CKT NO.	20A, DP MCB (TYP)	R	Y	B	N	CKT LOAD NO. (W)	NO. & TYPE OF FIXTURE	LOCATION
TOILET, TRANSFORMER ROOM, CABLE CELLAR ROOM, TECH ROOM & CASUAL ROOM, OUTDOOR OPET. ROOM, CORRIDOR	LA-01,04,08,21 LC-04,13,19,28,37,46, 01,10,25,34,43,07,16, 22,31,40. DA-01,04,11,25,08,21, 17,29,06,13,16,28,13 FAN-01,04,07	1170	R1	X	X	X	X	X	R2	-	SPARE
TOILET, TRANSFORMER ROOM, CABLE CELLAR ROOM, TECH ROOM & CORRIDOR, WATER COOLER, OUTDOOR, MAINT. ROOM, OPET. ROOM.	LA-02,03,05,06 LC-05,14,20,29,38,08, 23,32,41,02,11,17,26, 35,44. DA-05,09,15,12,26,24, 30, MA-01. FAN-02,05	875	Y1	X	X	X	X	Y2	-	SPARE	
TOILET, TRANSFORMER ROOM, CABLE CELLAR ROOM, TECH ROOM & CORRIDOR, WATER COOLER, OUTDOOR	LC-06,15,21,30,39,09, 24,33,42,03,12,18,27, 36,45. DA-03,07,19,02,10,23, 14,27,18,20,22 MA-02. FAN-03,06	945	B1	X	X	X	X	B2	-	SPARE	
MAINT. ROOM, TECH. ROOM, OPET. ROOM, INST. MAINT. ROOM & CASUAL ROOM, STAIR & CORRIDOR.	RA-01,02,03,04,05. RA1-01,03.	-	R3	X	X	X	X	R4	-	SPARE	
MAINT. ROOM, TECH. ROOM, OPET. ROOM	RA1-02,04.	-	Y3	X	X	X	X	Y4	-	SPARE	
SPARE		-	B3	X	X	X	X	B4	-	SPARE	

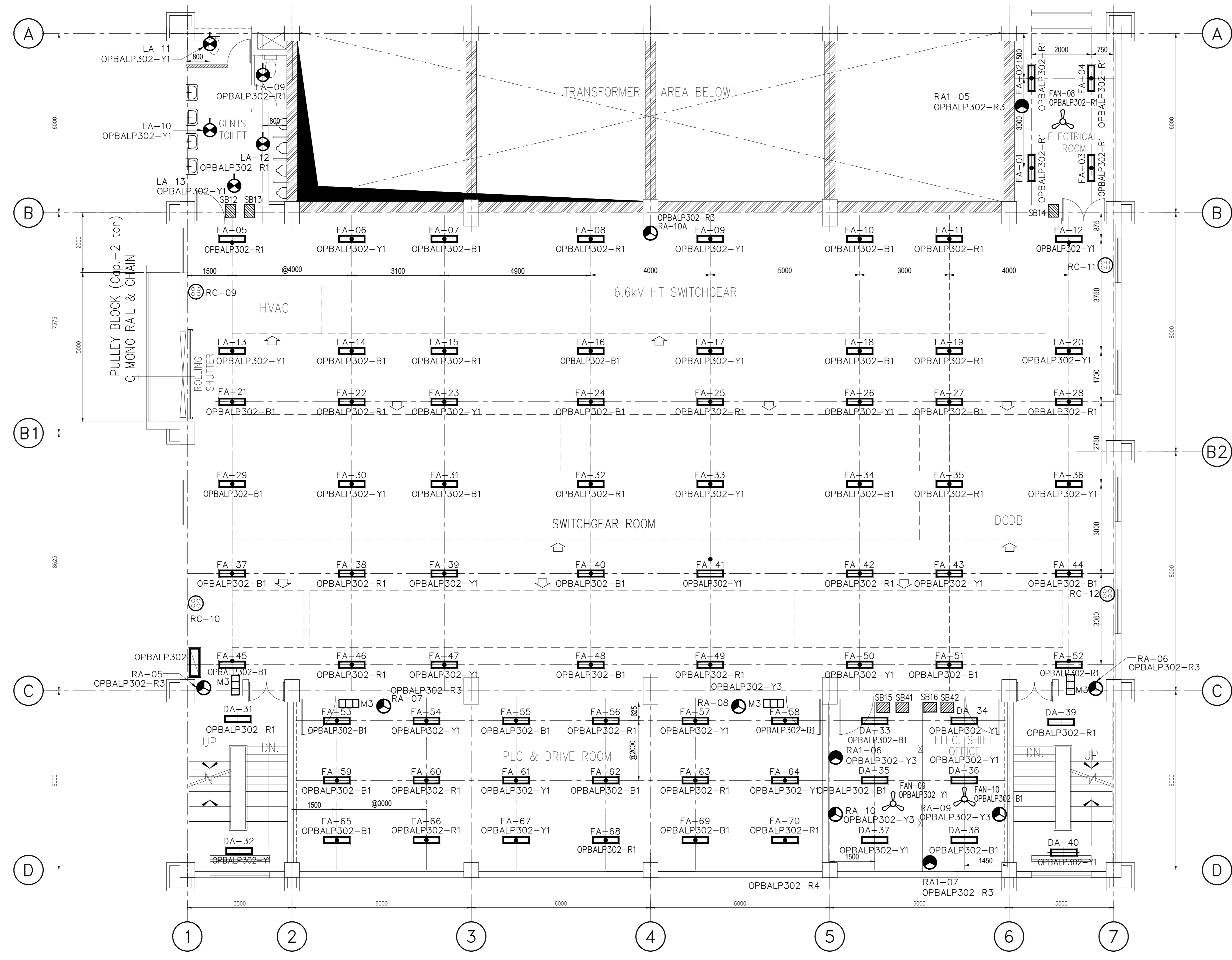
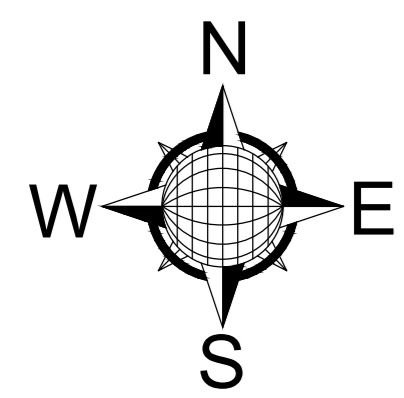


FROM MLDB  
(LOC. : SWITCHGEAR ROOM, FIRST FLOOR)

R-PHASE = 1170W  
Y-PHASE = 875W  
B-PHASE = 945W  
TOTAL = 2990W

ISSUED FOR CONSTRUCTION

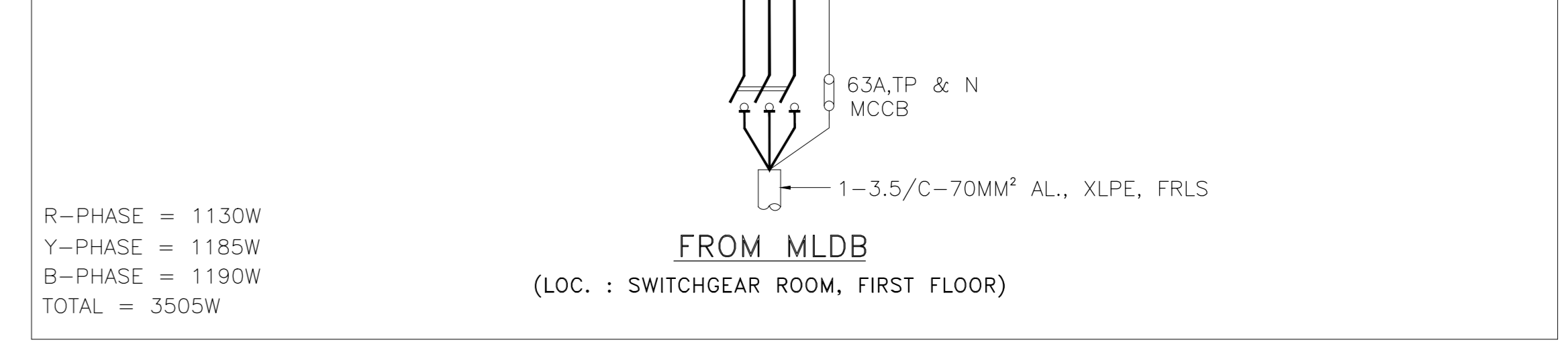
<b>IFFCO PARADEEP</b>	OWNER:	<b>IFFCO PARADEEP</b>
PROJECT:	<b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>	
TITLE:	<b>ILLUMINATION LAYOUT OF CONTROL ROOM BUILDING</b>	
<b>DEVELOPMENT CONSULTANTS PVT LTD.</b> CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI		
PREPARED	BG	JOB NO. 18A08
CHECKED	RD	SCALE 1:100
APPROVED	DS	DATE 11.12.2018
DWG. NO.	18A08-DWG-E-0801	
REVISED AS PER CLIENT'S COMMENTS		18.11.2019
ISSUED FOR CONSTRUCTION		31.10.2019
MECH.	INST.	ELEC.
STR.	ARCH.	
NATURE OF REVISION & DESCRIPTION		
CHECKED	DRAWN	REV.
DATE		



FIRST FLOOR PLAN  
EL. (+) 4.50 (FFL)

**OPBALP302**  
(LOC. : FIRST FLOOR, BOILER CONTROL ROOM)

LOCATION	NO. & TYPE OF FIXTURE	LOAD CKT (W)	20ALDP MCB (TYP)	R Y B N	CKT/LOAD NO. (W)	NO. & TYPE OF FIXTURE	LOCATION
GENTS TOILET, SWGR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE	LA-09,12, DA-31,39, FA-01,04,11,19,25,32, 38,46,60,66,08,15,22, 28,35,42,49,56,63,70, 03,05,52,68, FAN-08.	1130	R1	X	R2	-	SPARE
GENTS TOILET, SWGR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE	LA-10,11,13, DA-32,37,34,36,40, FA-06,13,20,26,33, 39,47,54,61,67,12 09,17,23,30,41, 36,43,50,57,64, FAN-09.	1185	Y1	X	Y2	-	SPARE
GENTS TOILET, SWGR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE	DA-33,38,35, FA-07,14,21,27,34, 40,48,55,62,69,16, 02,10,18,24,29,31,58, 57,44,45,51,53,59,65, FAN-10.	1190	B1	X	B2	-	SPARE
SWITCHGEAR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE.	RA-05,06,07, RA1-05,07.	-	R3	X	R4	-	SPARE
SWITCHGEAR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE.	RA-08,09,10 RA1-06.	-	Y3	X	Y4	-	SPARE
	SPARE	-	B3	X	B4	-	SPARE

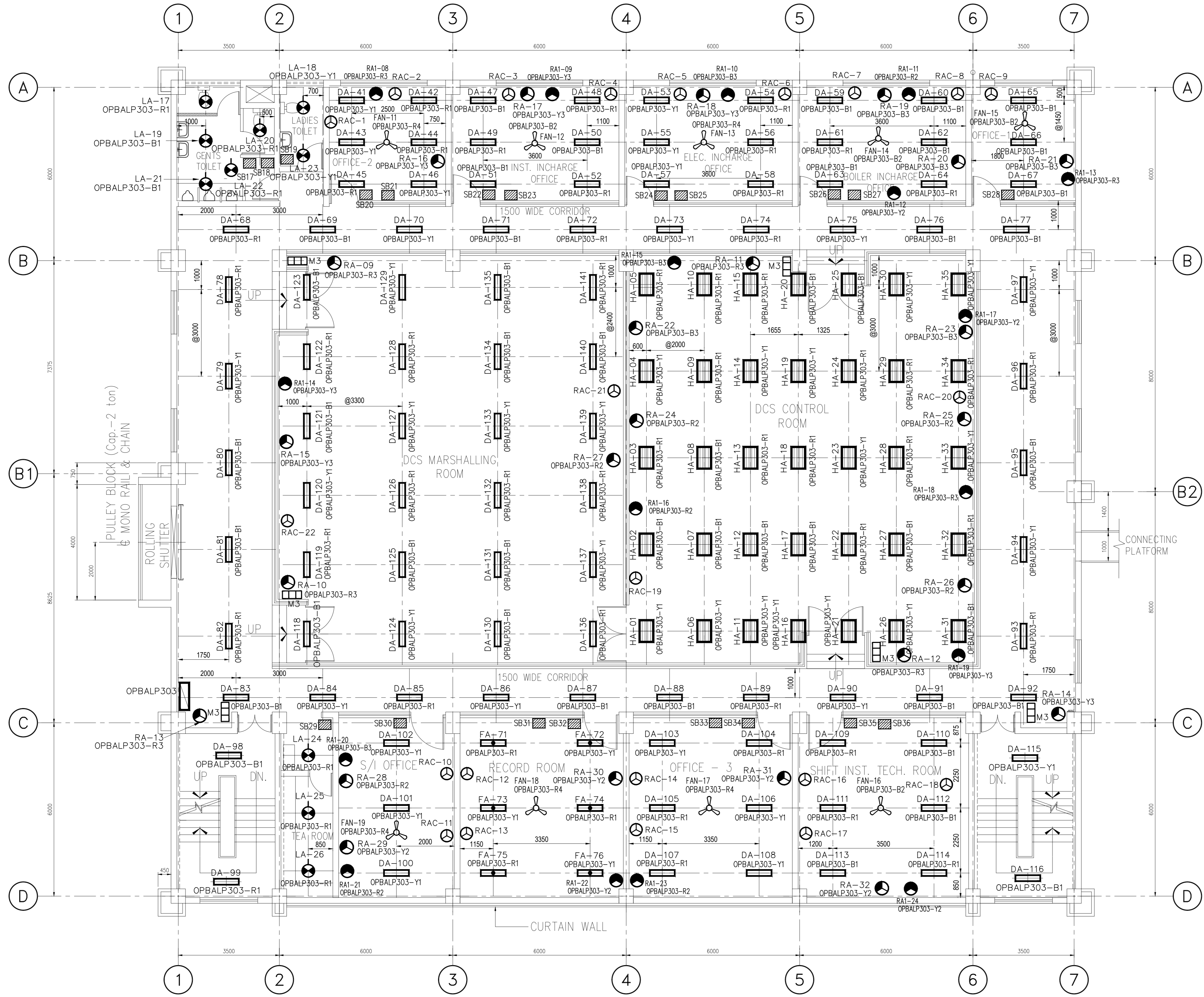
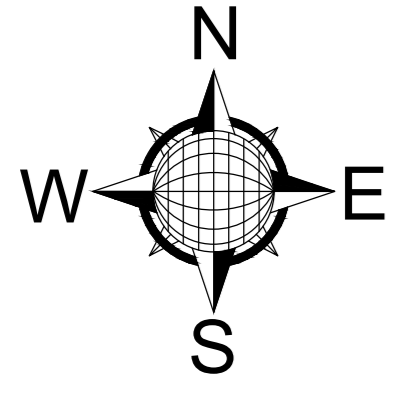


ISSUED FOR CONSTRUCTION

<b>IFFCO PARADEEP</b>	OWNER: IFFCO PARADEEP
PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM
TITLE:	ILLUMINATION LAYOUT OF CONTROL ROOM BUILDING
<b>DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS</b> KOLKATA • MUMBAI • CHENNAI • NEW DELHI	JOB NO. 18A08 SCALE 1:100 DATE 11.12.2018
PREPARED BG CHECKED RD APPROVED DS	REV 1
DWG. NO. 18A08-DWG-E-0801	3 SHEET OF 5

REVISED	REVISION	DATE	SIGNATURE
PRELIMINARY			
FOR TENDER ONLY			
FOR CONSTRUCTION		11.09.2019	RD
ARCHITECTURAL			
CIVIL & STRUCTURAL			
ELECTRICAL			
INSTRUMENTATION			
MECHANICAL			

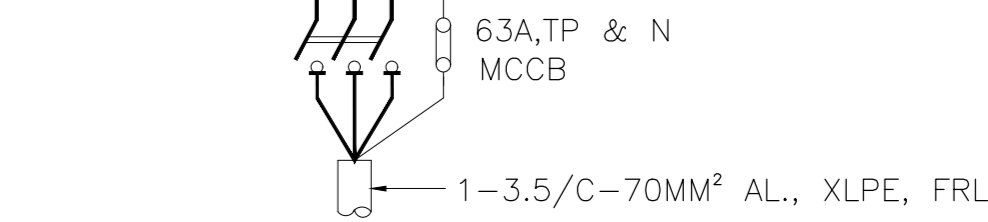
MECH.	INST.	ELEC.	STRL.	ARCH.	CHECKED	DRAWN	REV.	DATE



SECOND FLOOR PLAN  
EL. (+) 9.50 (FFL)

OPBALP303  
(LOC. : SECOND FLOOR, BOILER CONTROL ROOM)

LOCATION	NO. & TYPE OF FIXTURE	LOAD/CKT (W)	20A DP (TYP)	R	Y	B	N	CKT LOAD NO. (W)	NO. & TYPE OF FIXTURE	LOCATION
TOILET, OFFICE-2, INST. INCHARGE RM, ELEC. INCHARGE OFFICE, BOILER INCHARGE OFFICE, OFFICE-1, OFFICE-3 CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM, RECORD ROOM S/I OFFICE, SHIFT INST. TECH. RM.	LA-17,20,22,24,26 DA-44,54,64,74,85,96,107,119, 128,138,46,56,66,76,89,111,122, 42,52,61,72,82,93,100,105,104 114,126,136,49,56,45,99,109, FA-71,74,75 HA-03,13,22,32,10,18,29,09,28	1790	R1	X	X	X	X	R2	RA-24,25,26,27,28, RA1-11,16,21,23.	S/I OFFICE, DCS MARSHALLING ROOM, DCS CONTROL ROOM
TOILET, OFFICE-2, INST. INCHARGE RM, ELEC. INCHARGE OFFICE, BOILER INCHARGE OFFICE, OFFICE-1, STAIR, CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM, S/I OFFICE.	LA-18,23,25 DA-41,46,55,65,75,97,86,108, 120,129,139,70,79,90,57,103, 124,133,43,53,73,84,94,102, 101,106,115,127,137, FA-73,76,72	1765	Y1	X	X	X	X	Y2	RA-29,33,31,32, RA1-12,17,22,24.	S/I OFFICE, RECORD ROOM, OFFICE-3, SHIFT INST. TECH. ROOM
TOILET, OFFICE-2, INST. INCHARGE RM, ELEC. INCHARGE OFFICE, BOILER INCHARGE OFFICE, OFFICE-1, OFFICE-3 CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM, RECORD ROOM	LA-19,21, DA-47,66,77,88,98,110,121, 130,140,50,60,71,81,91,59, 113,125,135,62,112,51,63,67, 69,76,92,95,116,80,83,87, 118,123,131,134 HA-02,12,20,31,08,17,27, 07,25.	1760	B1	X	X	X	X	B2	FAN-12,14,15,16	INST. INCHARGE RM, BOILER INCHARGE OFFICE, OFFICE-1, SHIFT INST TECH. ROOM
CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM	RA-09,10,11,12,13, RA1-08,13,18,	-	R3	X	X	X	X	R4	FAN-11,13,17,18,19	ELEC. INCHARGE RM, OFFICE-2, S/I OFFICE.
INST. INCHARGE RM, ELEC. INCHARGE OFFICE, OFFICE-2, DCS MARSHALLING ROOM,	RA-14,15,16,17,18 RA1-09,14,19,	-	Y3	X	X	X	X	Y4	-	SPARE
BOILER INCHARGE OFFICE, OFFICE-1, DCS CONTROL ROOM	RA-19,20,21,22,23, RA1-10,15,20,	-	B3	X	X	X	X	B4	-	SPARE



FROM MLDB  
(LOC. : SWITCHGEAR ROOM, FIRST FLOOR)

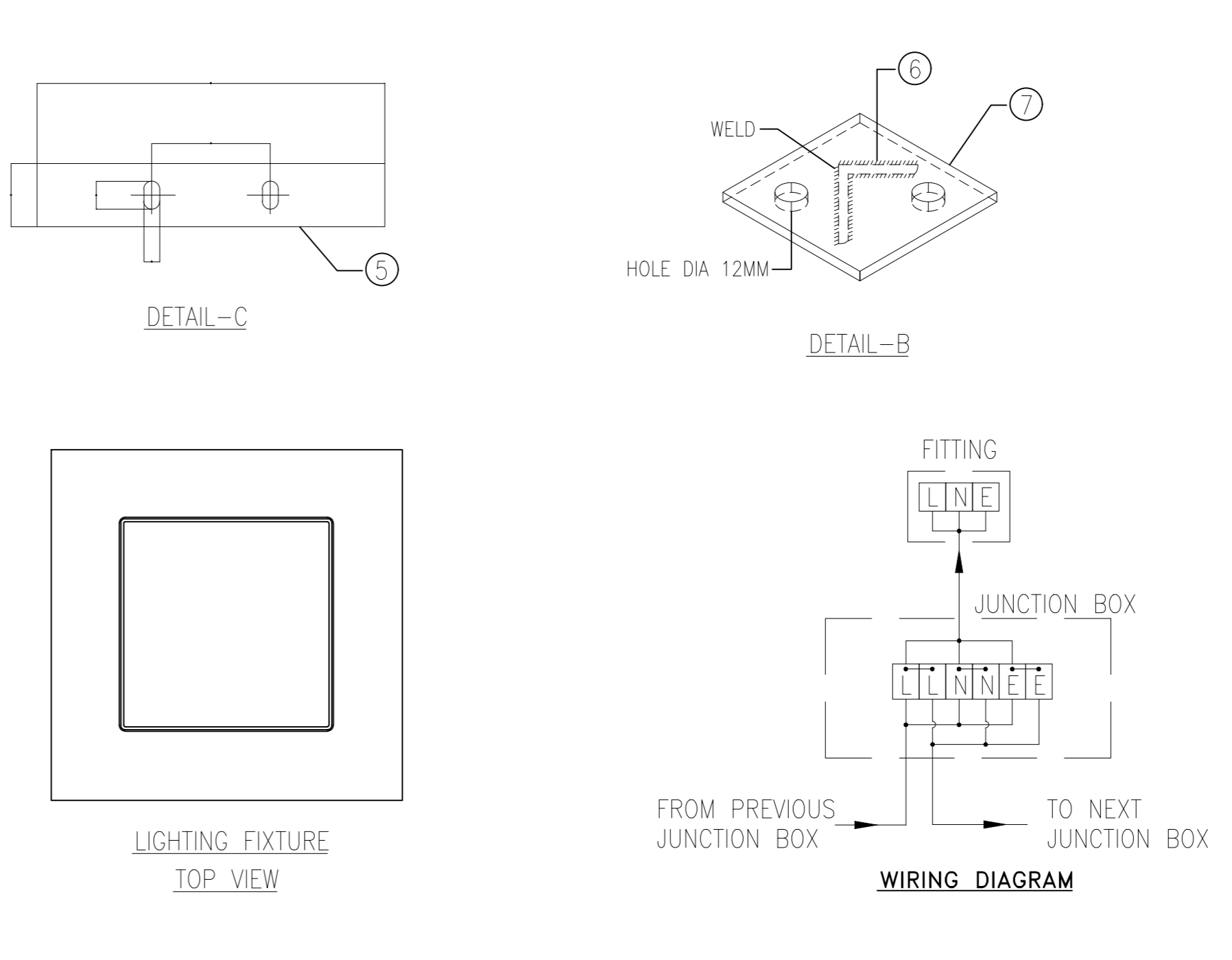
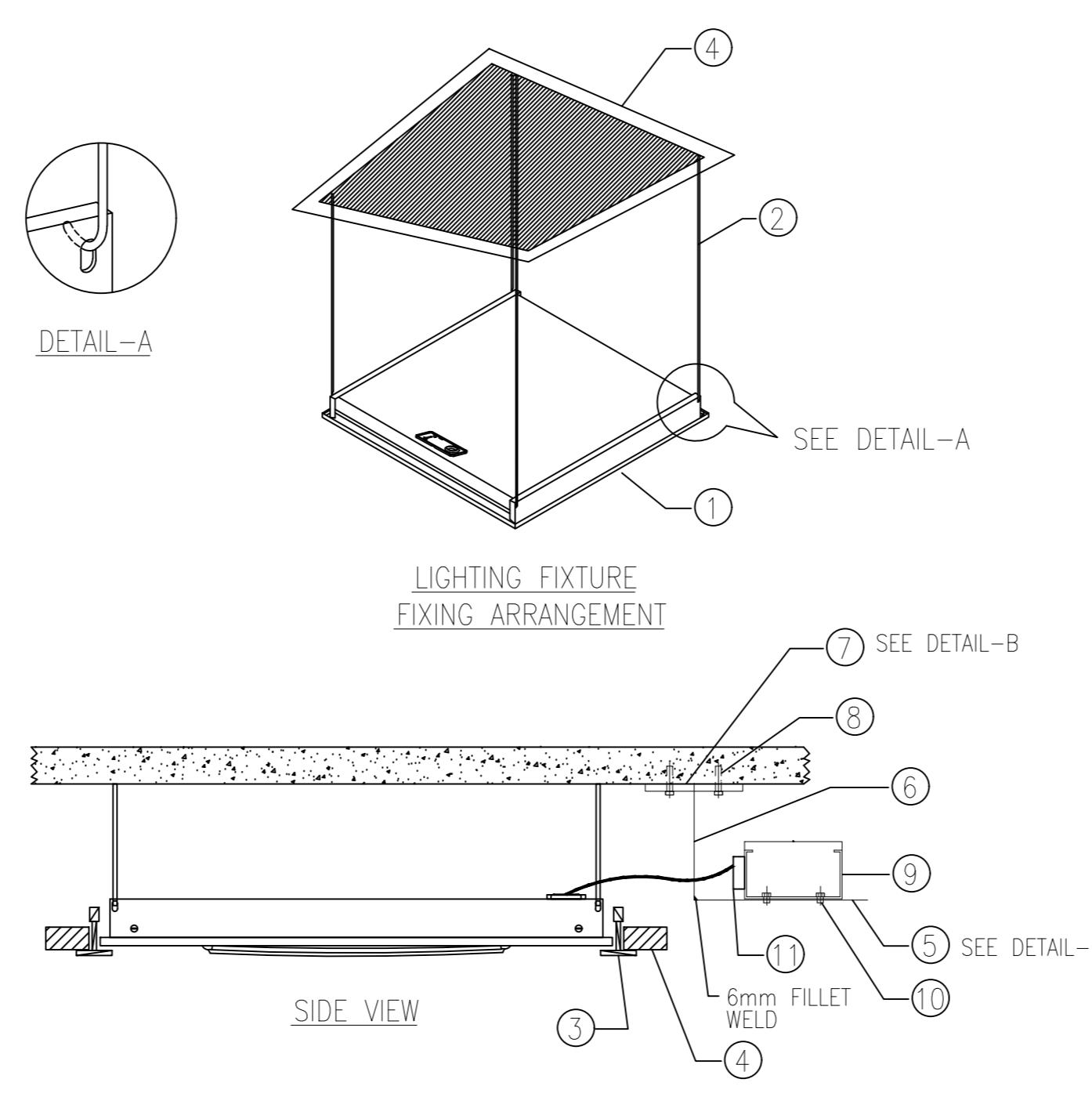
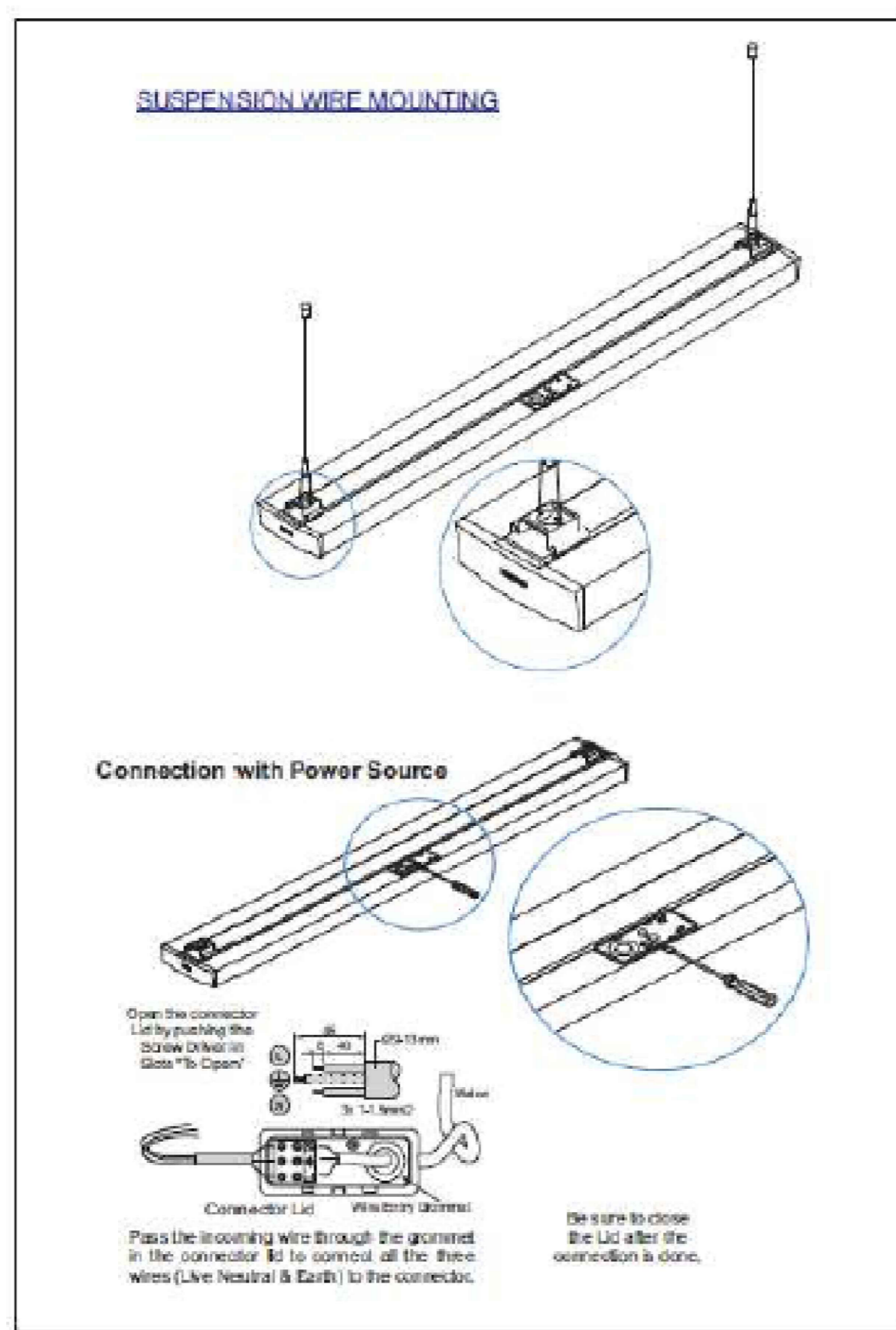
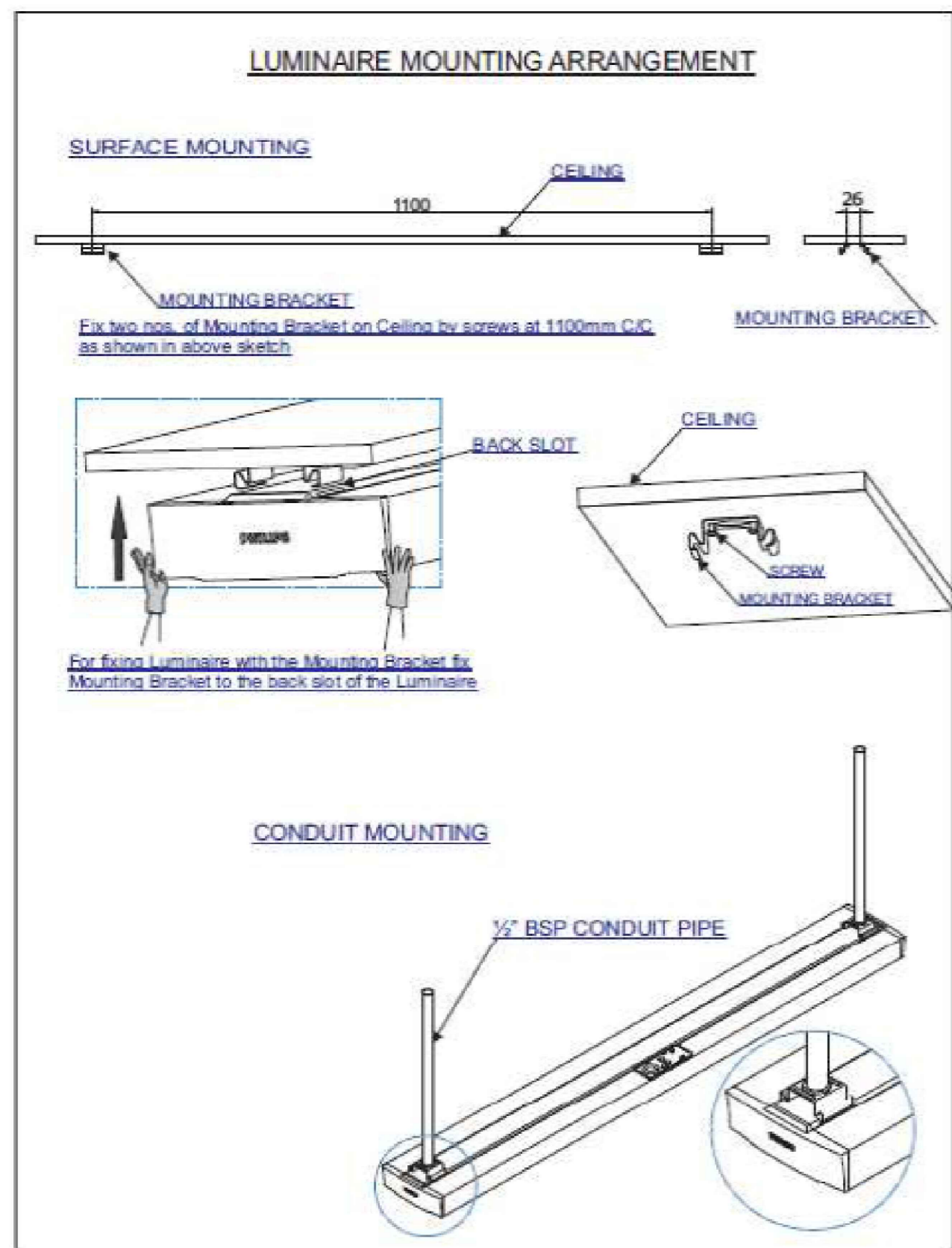
R-PHASE = 2215W  
Y-PHASE = 1765W  
B-PHASE = 2100W  
TOTAL = 6080W

ISSUED FOR CONSTRUCTION

<b>IFFCO</b> PARADEEP	OWNER:	IFFCO PARADEEP
PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM	
TITLE:	ILLUMINATION LAYOUT OF CONTROL ROOM BUILDING	
<b>DEVELOPMENT CONSULTANTS PVT LTD.</b> CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI		
PREPARED	BG	JOB NO. 18A08
CHECKED	RD	SCALE 1:100
APPROVED	DS	DATE 11.12.2018
DWG. NO.	18A08-DWG-E-0801	
		REV 1
		4 SHEET OF 5

REVISION	DATE	SIGNATURE	RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY					
FOR TENDER ONLY					
FOR CONSTRUCTION	11.09.2019	RD			
ARCHITECTURAL					
CIVIL & STRUCTURAL					
ELECTRICAL					
INSTRUMENTATION					
MECHANICAL					

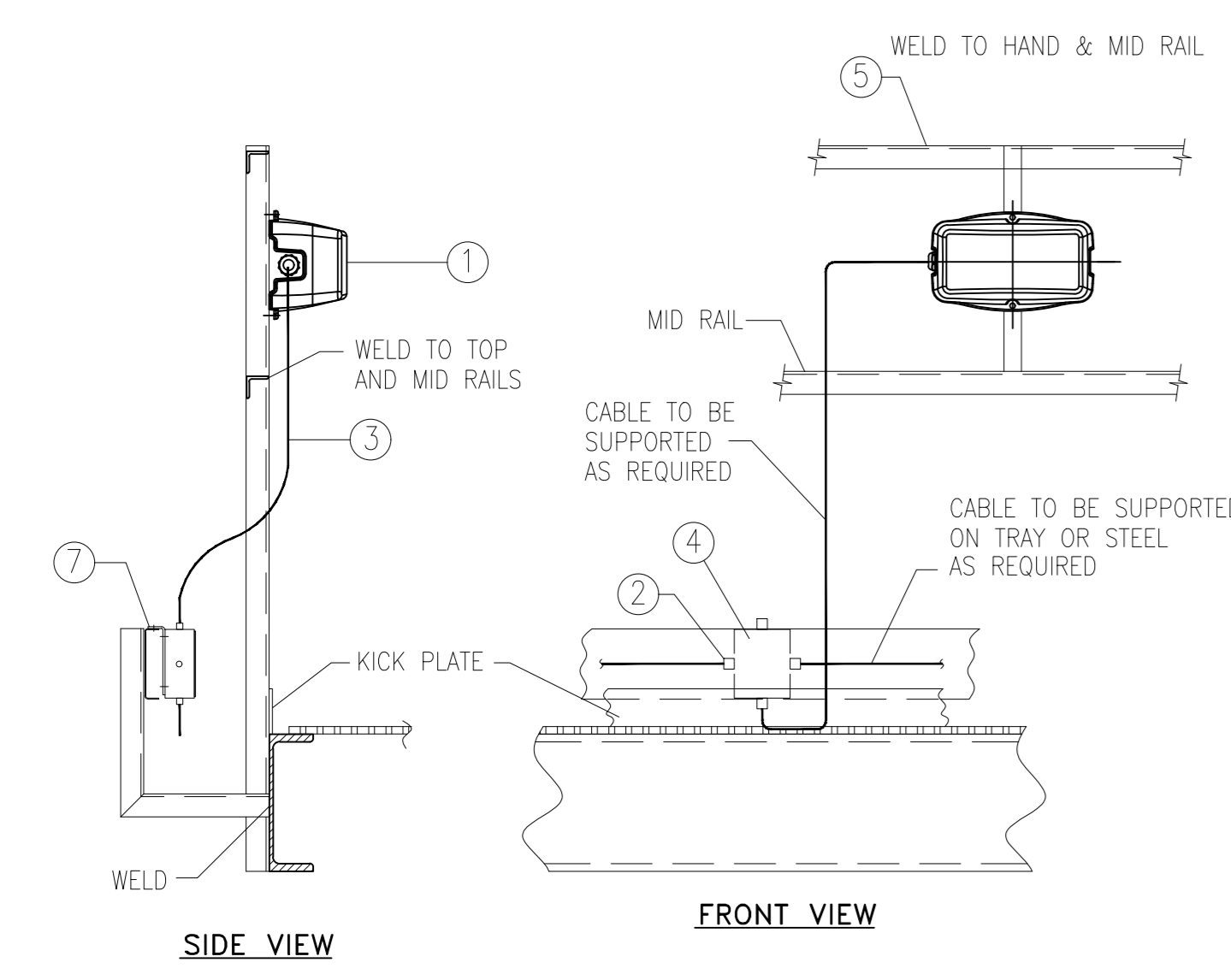




ITEM NO.	DESCRIPTION
1	RECESSED MOUNTED LUMINAIRE-CIECUS RC 365B LED22 4000 PSU OD WH OR EQUIVALENT
2	CHAIN
3	T- SECTION OF THE CEILING STRUCTURE
4	FALSE CEILING
5	40x6x220mm LONG MILD STEEL FLAT, GALVANISED
6	50x50x6mm THK. MILD STEEL ANGLE, GALVANISED
7	100x100x6mm THK. MILD STEEL PLATE, GALVANISED
8	S10M RED HEAD ANCHOR AND BOLTS
9	CABLE TRAY - 100mm WIDE MILD STEEL, GALVANISED
10	M6x25mm LONG MILD STEEL PAN HEAD SCREW COMPLETE WITH NUT & WASHER
11	JUNCTION BOX

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS (mm)
  2. ALL NUTS, BOLTS, WASHERS SHALL BE GALVANIZED OR ZINC PASSIVATED
  3. ALL SHARP EDGES AND BURRS SHALL BE REMOVED
  4. AFTER DRILLING, THE CHANNEL IS TO BE PREPARED, PRIMED AND PAINTED.

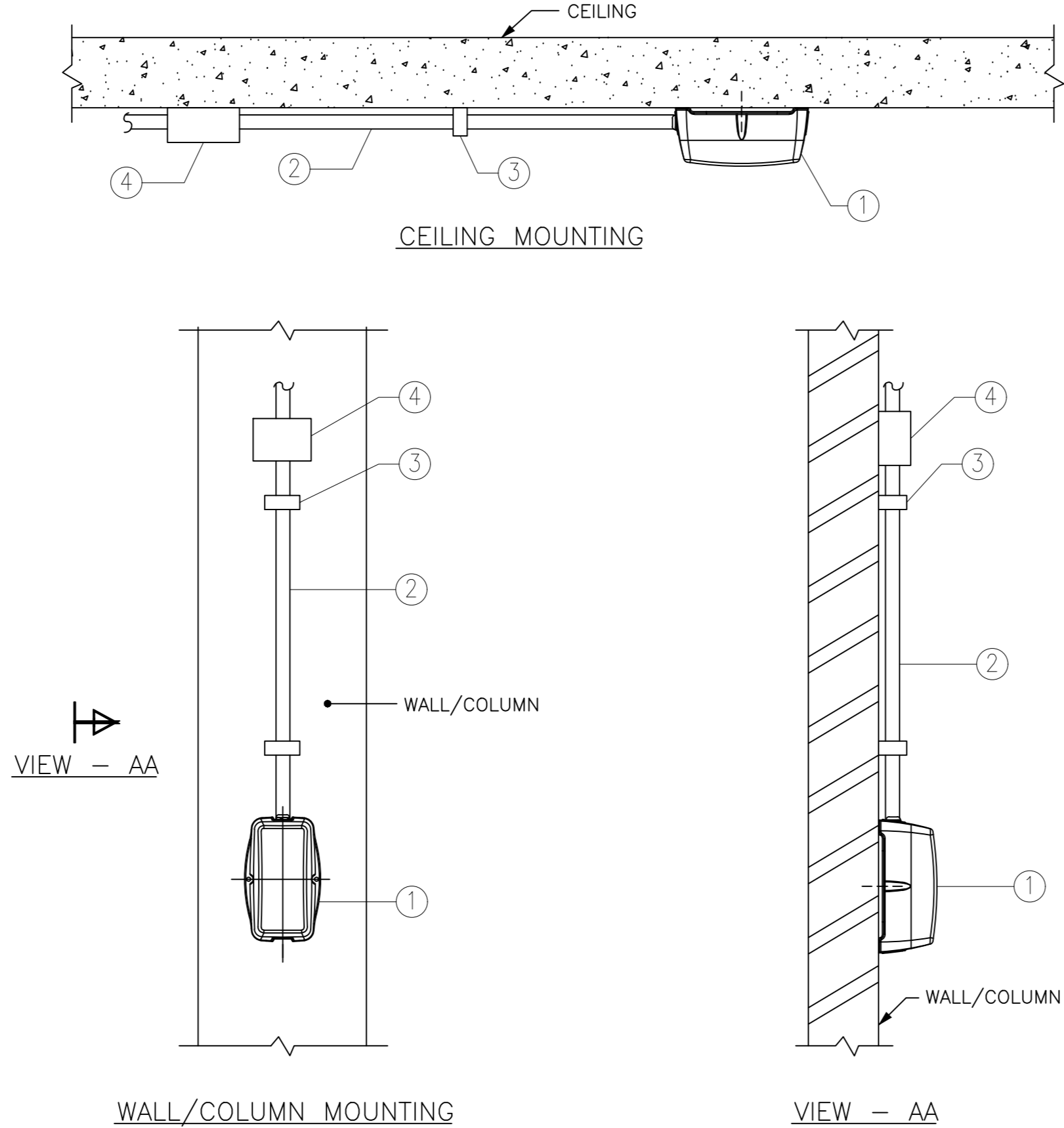
ELECTRICAL INSTALLATION OF PENDENT MOUNTED LUMINAIRE ("DA" TYPE)



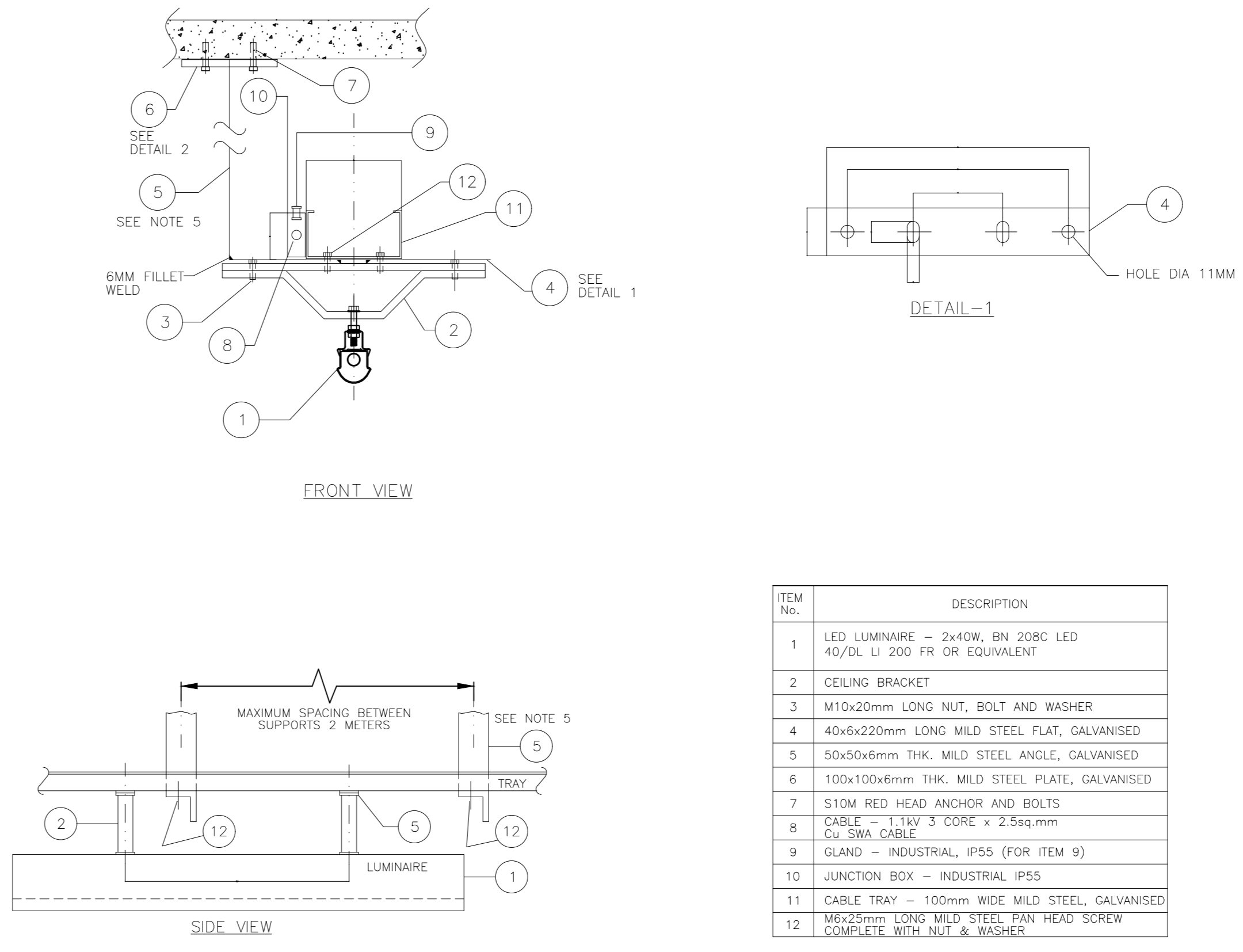
ITEM NO.	DESCRIPTION
1	LED LUMINAIRE-W2020W LED65 CW PSU SI PC OR EQUIVALENT.
2	CABLE GLAND FOR ITEM 3
3	30x2.5mm <sup>2</sup> XLPE, SWA CABLE
4	JUNCTION BOX
5	50x6mm MILD STEEL FLAT BAR
6	M6x25mm Lg. MILD STEEL BOLT PLATED C/W NUT AND WASHER
7	3mm THK. MILD STEEL PLATE

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS (mm)
  2. ALL NUTS, BOLTS, WASHERS SHALL BE GALVANIZED OR ZINC PASSIVATED
  3. ALL SHARP EDGES AND BURRS SHALL BE REMOVED
  4. AFTER DRILLING, THE CHANNEL IS TO BE PREPARED, PRIMED AND PAINTED.

ELECTRICAL INSTALLATION OF SUSPENDED MOUNTED LUMINAIRE ("LA" TYPE)



ITEM NO.	DESCRIPTION
1	LED LUMINAIRE-W2020W LED65 CW PSU SI PC OR EQUIVALENT.
2	20R CONDUIT
3	SADDLE
4	JUNCTION BOX



ITEM No.	DESCRIPTION
1	LED LUMINAIRE - 2x40W, 60 208C LED 40/74 LI 200 FR SR EQUIVALENT
2	CEILING BRACKET
3	M10x20mm LONG NUT, BOLT AND WASHER
4	40x6x220mm LONG MILD STEEL FLAT, GALVANISED
5	50x50x6mm THK. MILD STEEL ANGLE, GALVANISED
6	100x100x6mm THK. MILD STEEL PLATE, GALVANISED
7	S10M RED HEAD ANCHOR AND BOLTS
8	CABLE - 110V 3 CORE X 2.5sqmm CH SWA CABLE
9	GLAND - INDUSTRIAL, IP65 (FOR ITEM 8)
10	JUNCTION BOX - INDUSTRIAL, IP65
11	CABLE TRAY - 100mm WIDE MILD STEEL, GALVANISED
12	M6x25mm LONG MILD STEEL PAN HEAD SCREW COMPLETE WITH NUT & WASHER

- NOTES :-**
1. ALL DIMENSIONS ARE IN MILLIMETERS (mm).
  2. ALL NUTS, BOLTS, WASHERS SHALL BE GALVANISED OR ZINC PLATED.
  3. ALL SHARP EDGES AND BURRS SHALL BE REMOVED.
  4. ALL DAMAGE TO GALVANISED FINISHES SHALL BE MADE GOOD WITH ZINC RICH PAINT.
  5. THE LENGTH OF SUPPORT SHALL BE ADJUSTED TO MAINTAIN THE REQUIRED ELEVATION MARKED IN LIGHTING LAYOUT.
  6. THE LOCATION AND SIZE OF JUNCTION BOX IS INDICATIVE ONLY. FIELD ENGINEER MAY LOCATE AS PER SITE CONDITION.

ISSUED FOR CONSTRUCTION

**IFFCO PARADEEP** OWNER: **IFFCO PARADEEP**

PROJECT: **IFFCO PARADEEP AFBC BOILER CONTROL ROOM**

TITLE: **ILLUMINATION LAYOUT OF CONTROL ROOM BUILDING**

**DEVELOPMENT CONSULTANTS PVT LTD.**  
 CONSULTING ENGINEERS  
 KOLKATA • MUMBAI • CHENNAI • NEW DELHI

PREPARED: BG  
 CHECKED: RD  
 APPROVED: DS

JOB NO. 18A08  
 SCALE 1:100  
 DATE 11.12.2018

DWG. NO. 18A08-DWG-E-0801

REV 1  
 5 SHEET OF 5

APPROV.	MECH.	INST.	ELEC.	STRL.	ARCH.	NATURE OF REVISION & DESCRIPTION	CHECKED	DRAWN	REV.	DATE	RELEASE STATUS	DATE	SIGNATURE
						REVISED AS PER CLIENT'S COMMENTS	RD	BG	1	18.11.2019	FOR TENDER ONLY		
						ISSUED FOR CONSTRUCTION	RD	BG	0	11.09.2019	FOR CONSTRUCTION	11.09.2019	RD

FILE LOCATION: C:\DCPL\_POWER\JOB FILES\18A08-IFCO Boiler Control Room\12\_Lighting Layout\18A08-DWG-E-0801\_Control Building Lighting Layout\_R1\_IFC.dwg  
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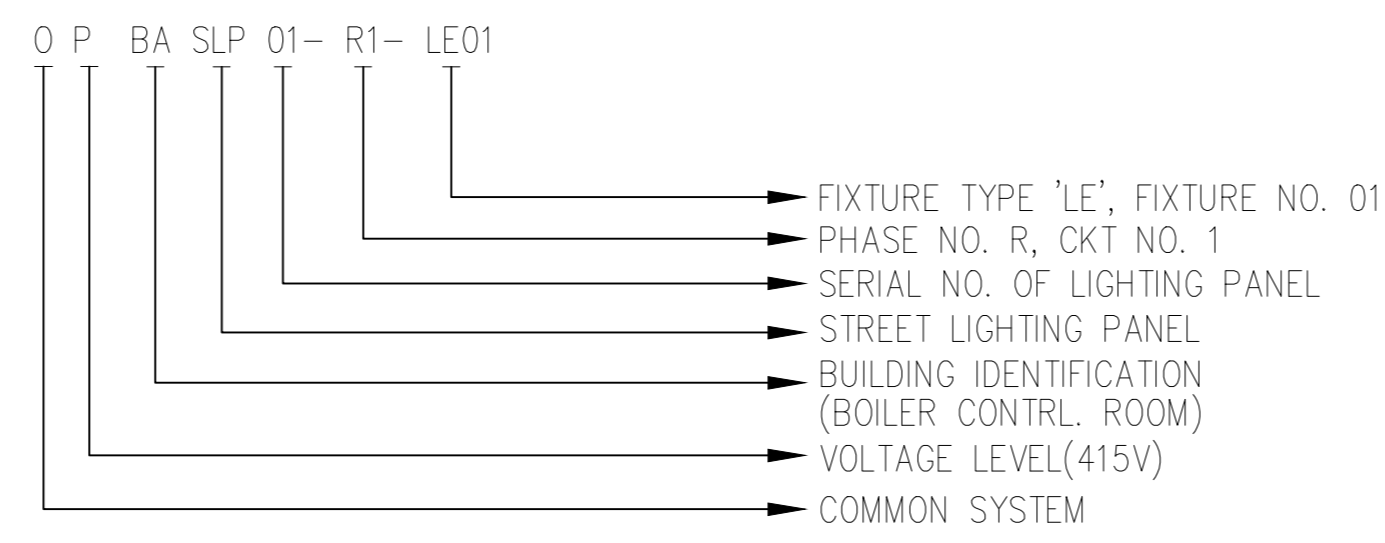
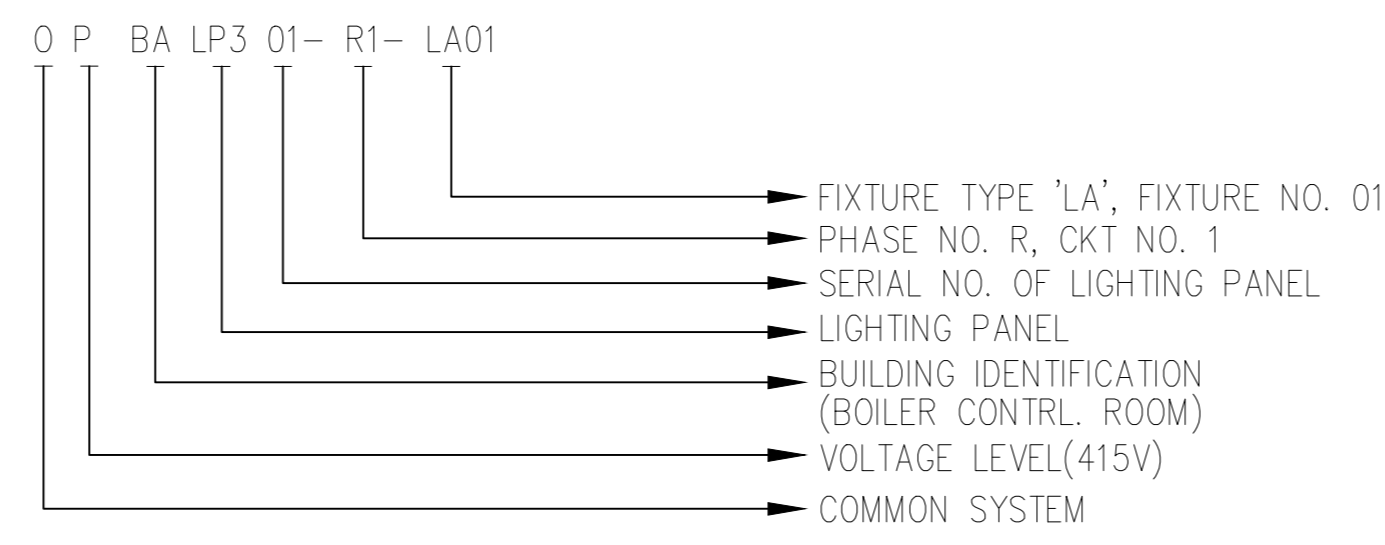
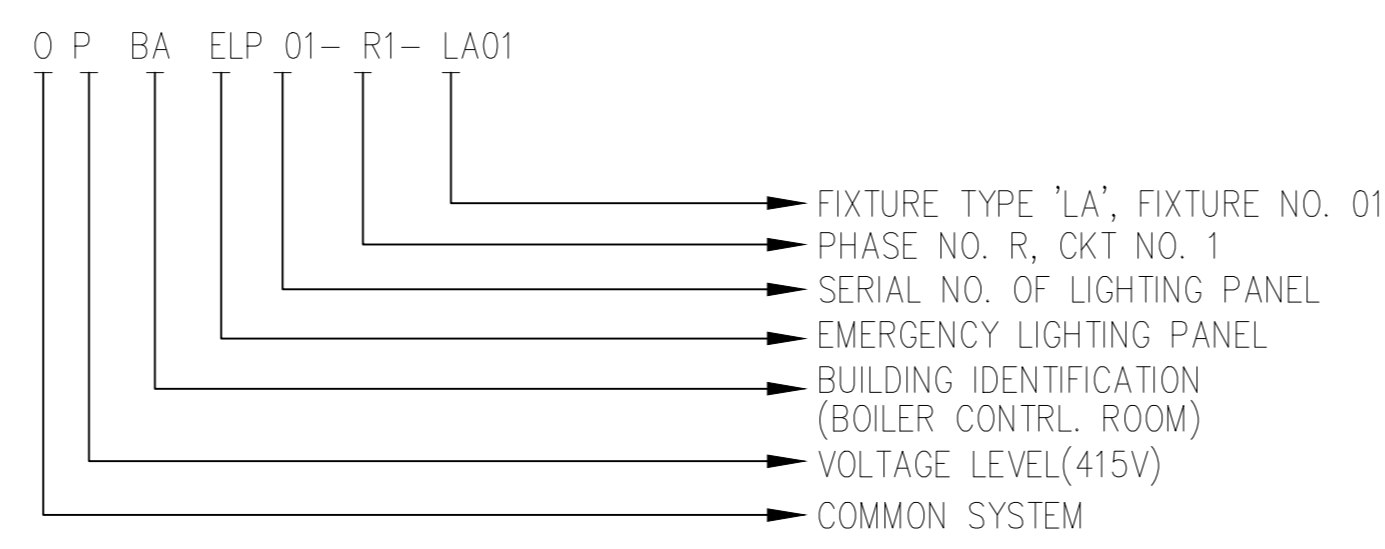
**NOTES:**

- ALL DIMENSIONS ARE IN MM.& LEVELS ARE IN METRES UNLESS OTHERWISE NOTED.
- DIMENSIONS & LOCATION OF VARIOUS LIGHTING FIXTURES AND EQUIPMENTS SHOWN HERE ARE TENTATIVE ONLY. THE SAME SHALL BE FINALIZED AS PER SITE REQUIREMENT.
- PENDENT MOUNTED FIXTURE SHALL BE MOUNTED CLEARING VENTILATION DUCT (IF ANY).
- EACH LIGHT FITTINGS/RECEPTACLES/SWITCH BOARDS SHALL BE PROVIDED WITH A JUNCTION BOX WHERE CABLE/WIRE CAN BE TERMINATE/BRANCHING.
- SEPARATE NEUTRAL WIRE SHALL BE PROVIDED FOR EACH CIRCUIT. WIRING THROUGHOUT THE INSTALLATION SHALL BE SUCH THAT THERE IS NO BREAK IN THE NEUTRAL WIRE IN THE FORM OF SWITCH OR FUSE.
- INSTALLATION WORK FOR ILLUMINATION SHALL BE CARRIED OUT IN COMPLIANCE WITH THE NOTES MENTIONED HEREWITH, GOOD ENGINEERING PRACTICE AND ALSO MANUFACTURER'S INSTRUCTIONS/MANUAL/RECOMMENDATION.
- NORMAL/ EMERGENCY/ DC SYSTEM WIRING SHALL RUN IN SEPARATE CONDUIT.
- NO. OF FIXTURES AND MOUNTING ARE TENTATIVE SUBJECT TO VERIFICATION TO SUIT AT SITE.
- ALL INSTALLATION MATERIAL LIKE CONDUITS, CABLE, WIRES, JUNCTION BOXES ETC. IN ADEQUATE QUANTITY SHALL BE PROVIDED FOR COMPLETE INSTALLATION AND TROUBLE FREE OPERATION OF THE SYSTEM.
- IN CASE OF LIGHTING FIXTURES/INSERT PLATES FOULING WITH BEAM/OTHER EQUIPMENTS, CARE SHALL BE TAKEN TO SUIT AT SITE CONDITION IN CONSULTATION WITH SITE ENGINEERS.
- LIGHTING PANEL SHALL BE INSTALLED AT AN ELEVATION OF 1.8M AND SWITCH BOARDS & RECEPTACLES AT AN ELEVATION OF 1.5M FROM FFL. COMPUTER SOCKETS SHALL BE INSTALLED AT AN ELEVATION OF 0.3M.
- SEPARATE 14 SWG GI WIRE TO BE PROVIDED FOR GROUNDING OF ALL JBS, RECEPTACLES, FIXTURES ETC. IN OUT DOOR OF CONTROL ROOM BUILDING. HOWEVER FOR CONCEALED CONDUIT SYSTEM 1x1.5 SQ. MM WIRES TO BE CONSIDERED ALONG WITH THE CONDUIT FOR FIXTURE EARTHING.
- FOR FIXING ARRANGEMENT OF LIGHTING FIXTURES REFER RELEVANT SECTION OF MANUFACTURER'S CATALOGS/MANUALS.
- FIXTURE SHALL BE SUITABLE FOR 20mm DIA. CONDUIT ENTRY & 16 SWG G.I EARTH WIRE CONNECTION.
- LIGHTING CABLE SHALL BE HEAVY DUTY, 1100 VOLT GRADE, MULTICORE STRANDED COPPER CONDUCTOR, XLPE INSULATED, EXTRUDED PVC INNER SHEATH, SINGLE ROUND G.I. WIRE ARMOURED AND OVERALL PVC SHEATHED WITH FRLSH CONFORMING TO IS 1554.
- LIGHTING WIRES SHALL BE 1100 VOLT GRADE, PVC INSULATED, STRANDED CONDUCTOR AND COLOUR CODED AS BELOW :  
 RED FOR R-PHASE BLACK FOR NEUTRAL  
 YELLOW FOR Y-PHASE WHITE FOR +VE D.C.  
 BLUE FOR B-PHASE GREY FOR -VE D.C.
- CONDUITS SHALL BE RIGID STEEL, HOT-DIP GALVANIZED. THICKNESS OF CONDUITS UP TO AND INCLUDING 25 MM DIA SHALL BE OF 16 SWG AND CONDUITS ABOVE 25 MM SHALL BE OF 14 SWG. MINIMUM SIZE OF CONDUITS SHALL BE 20 MM.
- JUNCTION BOXES SHALL BE OF 16 SWG SHEET STEEL HOT-DIP GALVANISED, DUST AND DAMP PROOF, GENERALLY CONFORMING TO IP-55.
- ALL LIGHTING PANELS, JUNCTION BOXES, RECEPTACLE, FIXTURES, CONDUIT ETC SHALL BE GROUNDED IN COMPLIANCE WITH THE PROVISION OF I.E. RULES  
 LP - 2 NOS 35X6MM G.I FLATS  
 SLP - 2 NOS 50X6MM G.I FLATS  
 JB, RECEPTACLE, FIXTURES ETC. - 16 SWG GI WIRES.
- a) LIGHTING PANEL LP3 : 415V AC INDOOR LIGHTING PANEL WITH 415V, 3PH, 4W, BUS & ONE 63A TP & N SWITCH/MCCB AS INCOMER AND 12 NOS. 20A, 240V, 1 POLE MCBS AS OUTGOING FEEDER.  
 b) SLP : 415V AC INDOOR LIGHTING PANEL WITH 415V, 63A, 3PH, 4W, BUS & ONE 100A TP & N SWITCH/MCCB AS INCOMER, 18 NOS. 20A, 240V, 1 POLE MCBS AS OUTGOING FEEDER.  
 THE LIGHTING PANEL SHALL BE PROVIDED WITH 63A CONTACTOR, FREQUENCY COMPENSATED TIMER SWITCH, PHOTO CELL SWITCH PUSH BUTTONS FOR AUTOMATIC CONTROL OF STREET/AREA LIGHTING WITH PROVISION FOR MANUAL OVERRIDE.
- FOR POWER SUPPLY DETAILS FOR "RAC" (RECEPTACLE FOR AC) REFER HAVC DRAWING NO : DWG NO. 18A08-003-VA-001 & DWG NO. 18A08-003-VA-002.

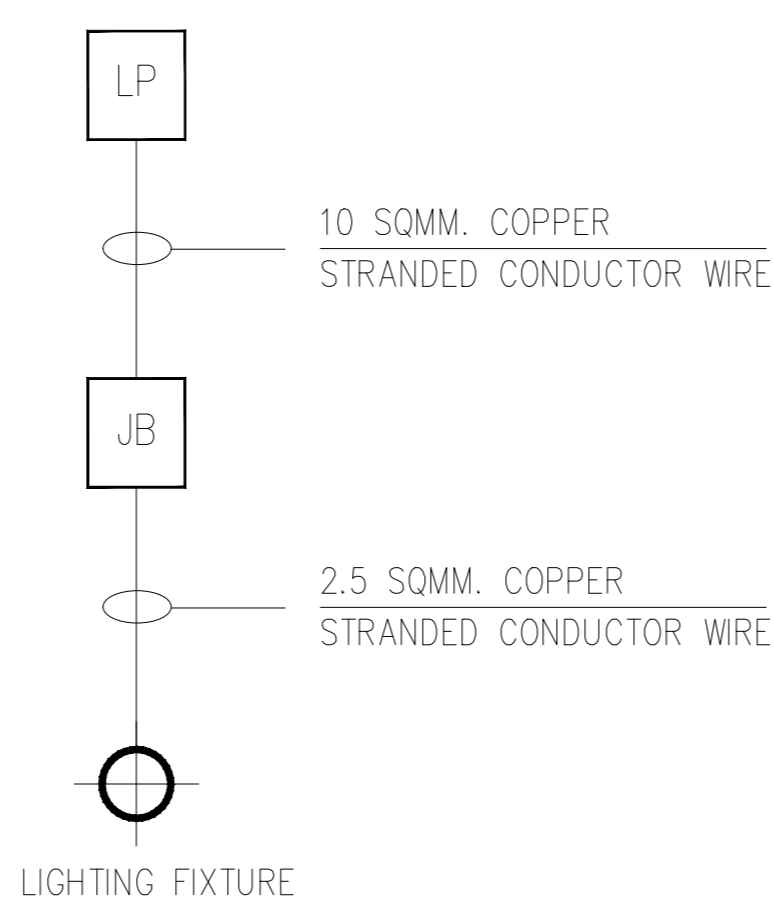
**REF. DWGS :**

- CONTROL BUILDING ROOM LAYOUT : 18A08-DWG-E-0401

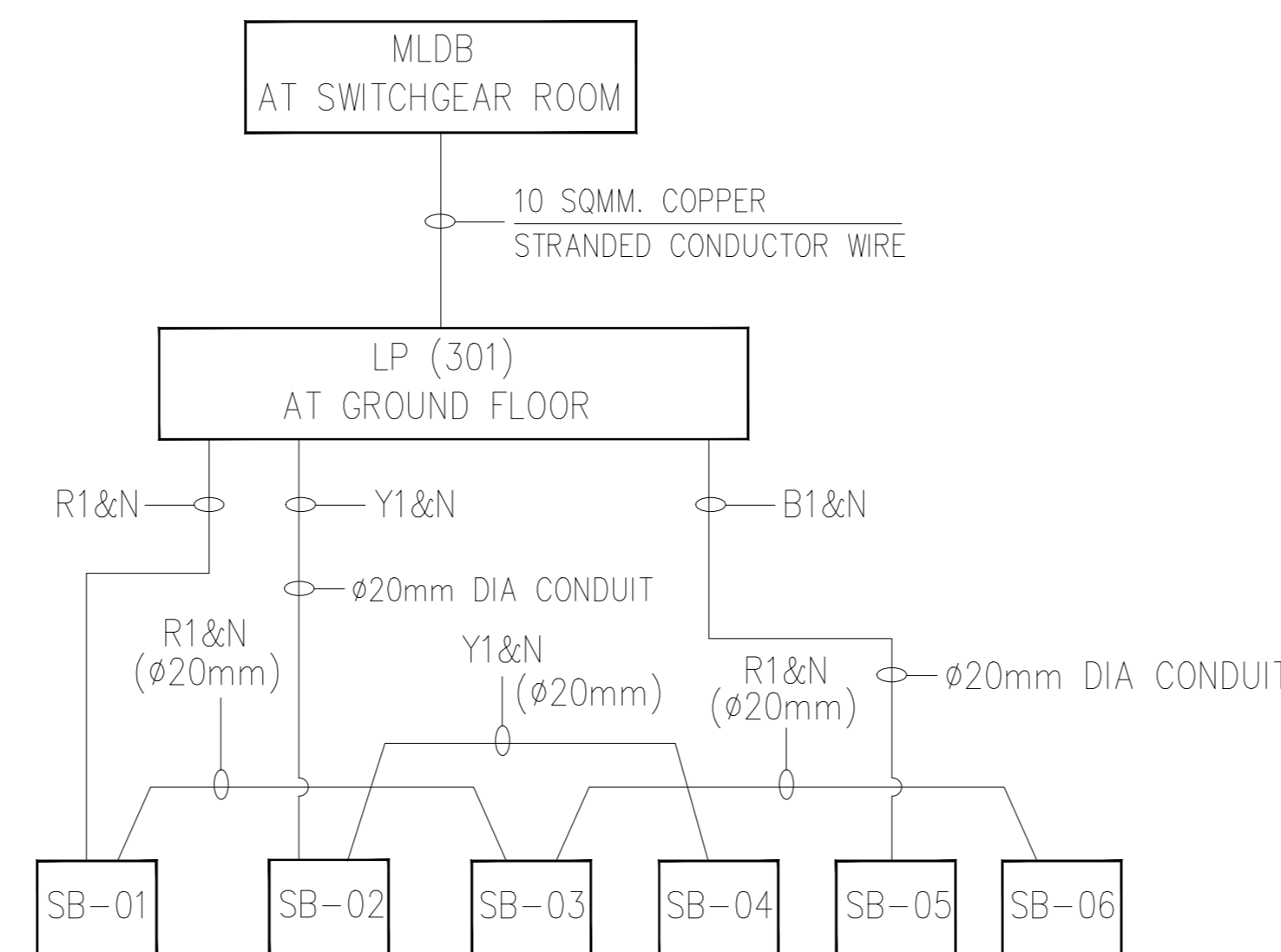
**LEGEND :**



**TYPICAL WIRING OF LP, JB & LIGHTING FIXTURE :**



**TYPICAL WIRING DIAGRAM UPTO SWITCH BOARD :**



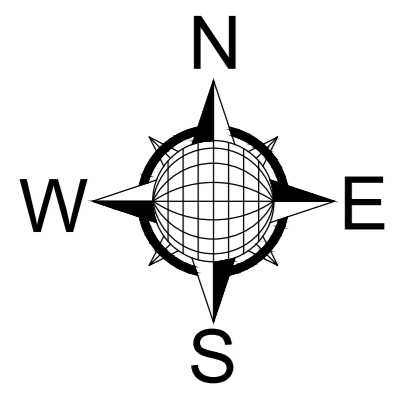
**SCHEDULE OF ITEMS:**

SL. No.	SYMBOL	TYPE	DESCRIPTION	WATTAGE	MOUNTING TYPE	QUANTITY
1.	[Symbol]	DA	PHILIPS MAKE, MODEL SM270C LED 30S	35W.	PENDENT	141
2.	[Symbol]	HA	PHILIPS MAKE, MODEL RC480B LED30S/865 W60L60 PSU (WINGLINE 2X2) MIRRORRED /6500 (1.000)	45W.	RECESSED	35
3.	[Symbol]	LC	PHILIPS MAKE, MODEL BY300P LED 27S NW PSU S1 PC (1.000)	25W.	SUSPENDED	46
4.	[Symbol]	LA	PHILIPS MAKE, MODEL DN296B LED12S-6500 PSU WH DIFFUSED /6500K (1.000)	15W.	RECESSED	26
5.	[Symbol]	FA	PHILIPS MAKE, BN308C LED40S-6500 L120 PSU WH DIFFUSED /6500 (1.000)	40W.	SURFACE	76
6.	[Symbol]	MA	PHILIPS MAKE, MODEL SM260C LED12S-6500 PSU WH (1.000)	12W.	SURFACE	2
7.	[Symbol]	LE	PHILIPS MAKE, MODEL BRP 410 LED 66 NR PC S1 NR /5700 (1.000)	70W.	SURFACE	12
8.	[Symbol]	M3	PORTABLE EMERGENCY LIGHT SET COMPLETE WITH 2X6W CFL LAMPS, TEST SWITCH, 6V STORAGE BATTERY (RECHARGEABLE), 2 HRS BACKUP COMPLETE WITH AUTOMATIC CHARGER & ALL OTHER ACCESSORIES.			14
9.	[Symbol]	FAN	1200MM SWEEP CEILING FAN	85W.		19
10.	[Symbol]	RA	6A, 240V, 2 POLE, 3 PIN WITH THIRD PIN EARTHED RECEPTACLE WITH SWITCH.			38
11.	[Symbol]	RA1	2 NOS 6A, 240V DOMESTIC SWITCH & SOCKET.			24
12.	[Symbol]	RAC	16/20A, 240V, 1-PH RECEPTACLE WITH SWITCH & MCB FOR AC			22
13.	[Symbol]	RC	63A, 415V, 3-PH, 4 PIN RECEPTACLE WITH SWITCH SUITABLE FOR LOOP-IN/LOOP-OUT CONNECTION (FED FROM 415V PMCC AT ASH WATER RECYCLING PUMP HOUSE BY 1-3.5/C-35 Sq.mm AL., PVC, FRLS CABLE) AND RCBO			12
14.	[Symbol]	SB	SWITCHBOARD WITH 3-6A SWITCH & 2-6A DOMESTIC RECEPTACLE WITH SWITCH AND MCB. SWITCHBOARD WITH 3-6A SWITCH & REGULATOR AND MCB (SB NO. 06, 14,15,16,20,22,24,26,28,30,32,34,36,37,38,39,40.)			42
15.	[Symbol]	OPBALP3	NORMAL AC 12 WAY LIGHTING PANEL			3
16.	[Symbol]	OPBASLP	AC 6 WAY LIGHTING PANEL FOR STREET LIGHTING			1
17.	[Symbol]		25mm DIA PVC CONDUIT			500 M.
18.	[Symbol]		20mm DIA PVC CONDUIT			3000 M.
	[Symbol]		20mm DIA PVC CONDUIT(REDF PHASE)			
	[Symbol]		20mm DIA PVC CONDUIT(YELLOW PHASE)			
	[Symbol]		20mm DIA PVC CONDUIT(BLUE PHASE)			
19.	[Symbol]		TWO-WAY JUNCTION BOX			A LOT
20.	[Symbol]		THREE-WAY JUNCTION BOX			A LOT
21.	[Symbol]		FOUR-WAY JUNCTION BOX			A LOT
22.	[Symbol]		90° BEND FOR 25MM DIA. CONDUIT			A LOT
23.	[Symbol]		2.5 SQMM. WIRE			A LOT
24.	[Symbol]		10 SQMM. RED WIRE			A LOT
	[Symbol]		10 SQMM. YELLOW WIRE			A LOT
	[Symbol]		10 SQMM. BLUE WIRE			A LOT
	[Symbol]		10 SQMM. WHITE WIRE			A LOT

ISSUED FOR CONSTRUCTION

<b>IFFCO</b> PARADEEP	OWNER: <b>IFFCO</b> PARADEEP
PROJECT: <b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>	
TITLE: CONDUIT LAYOUT OF CONTROL ROOM BUILDING	
<b>DEVELOPMENT CONSULTANTS PVT LTD.</b> CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI	
PREPARED NG CHECKED RD APPROVED DS	JOB NO. 18A08 SCALE 1:100 DATE 21.11.2019
DWG. NO. 18A08-DWG-E-0701	
1 SHEET OF 5	

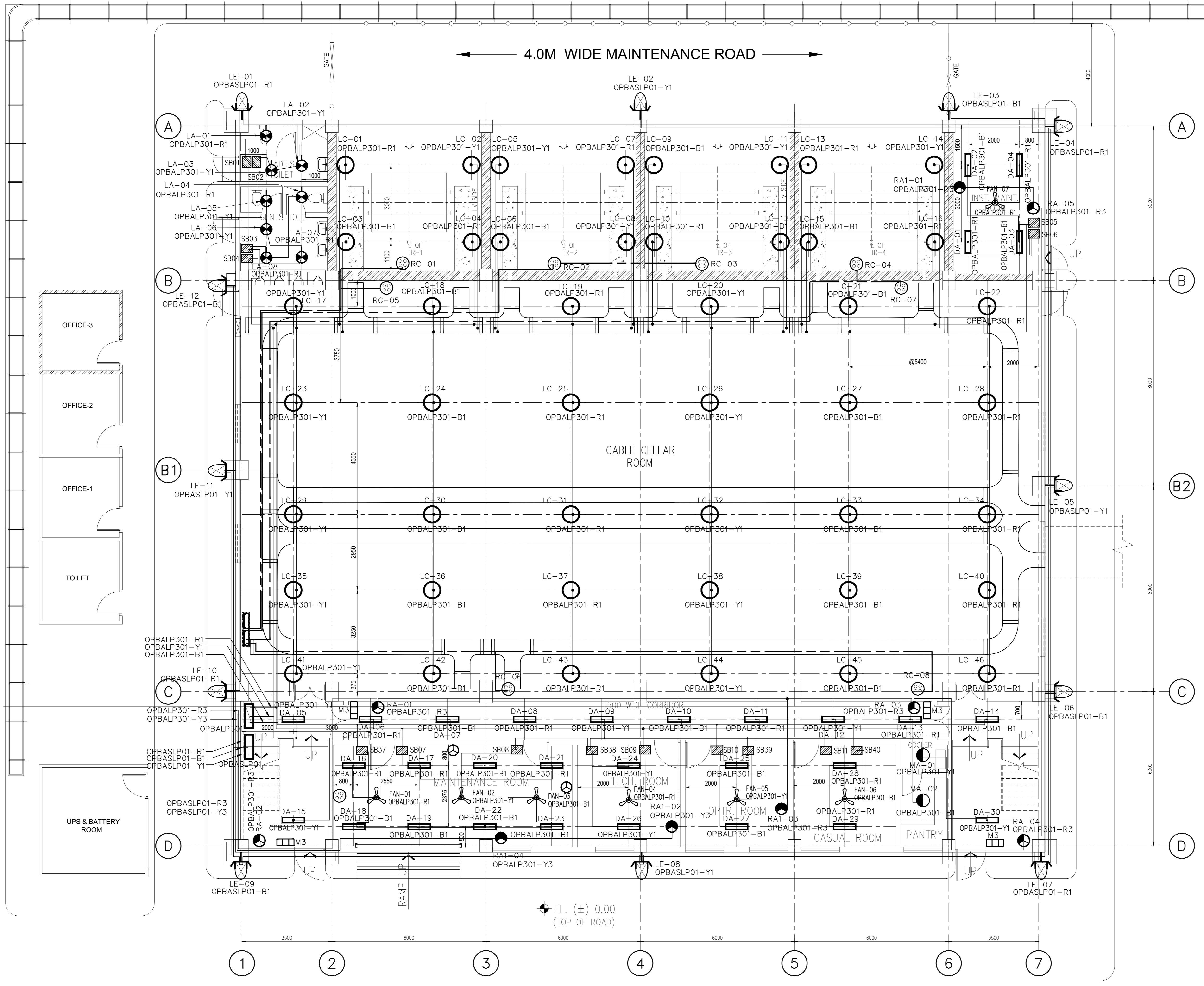
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										FOR TENDER ONLY		
										FOR CONSTRUCTION	29.11.2019	RD
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										CIVIL & STRUCTURAL		
										ELECTRICAL		
										INSTRUMENTATION		
										MECHANICAL		



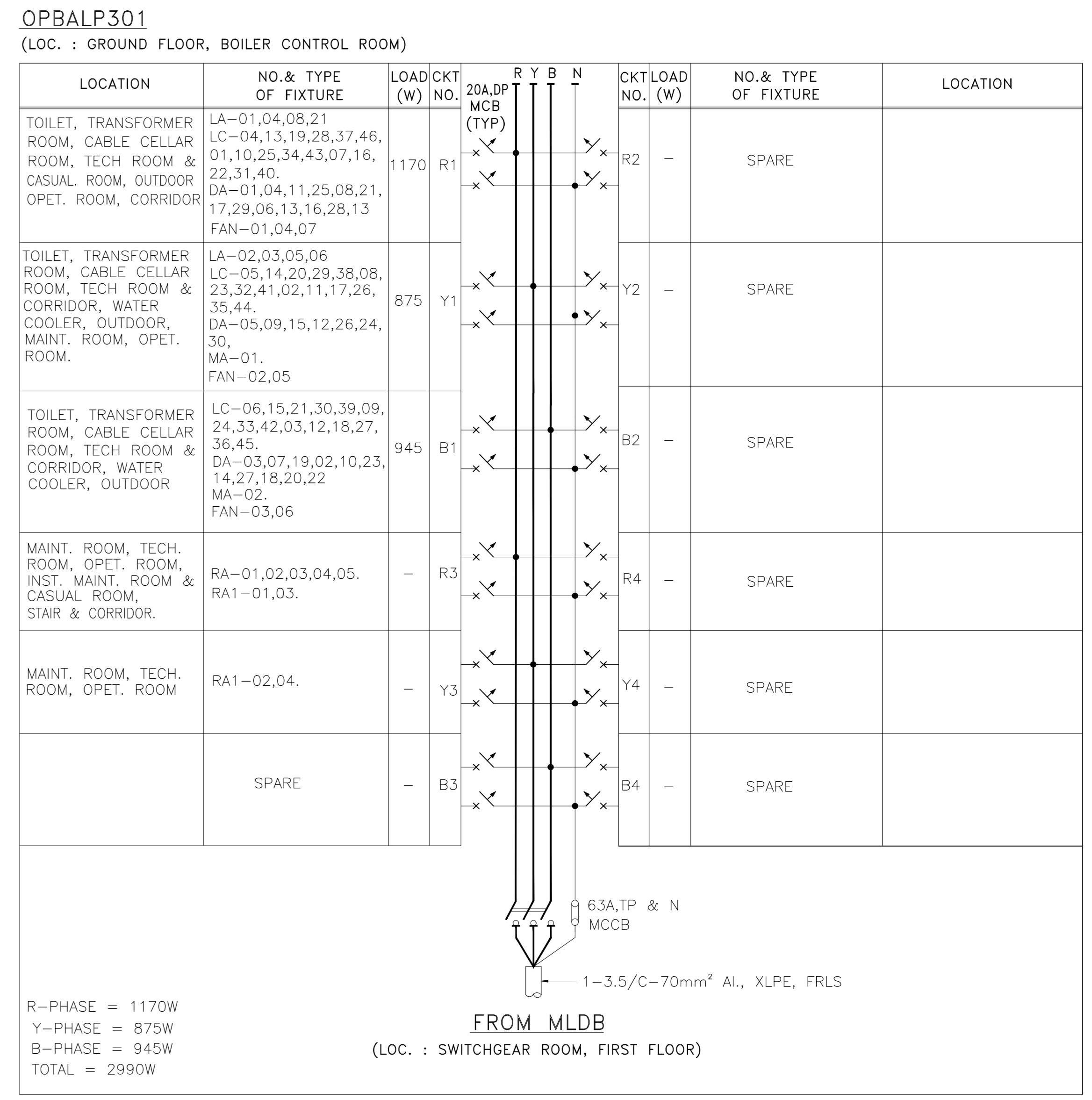
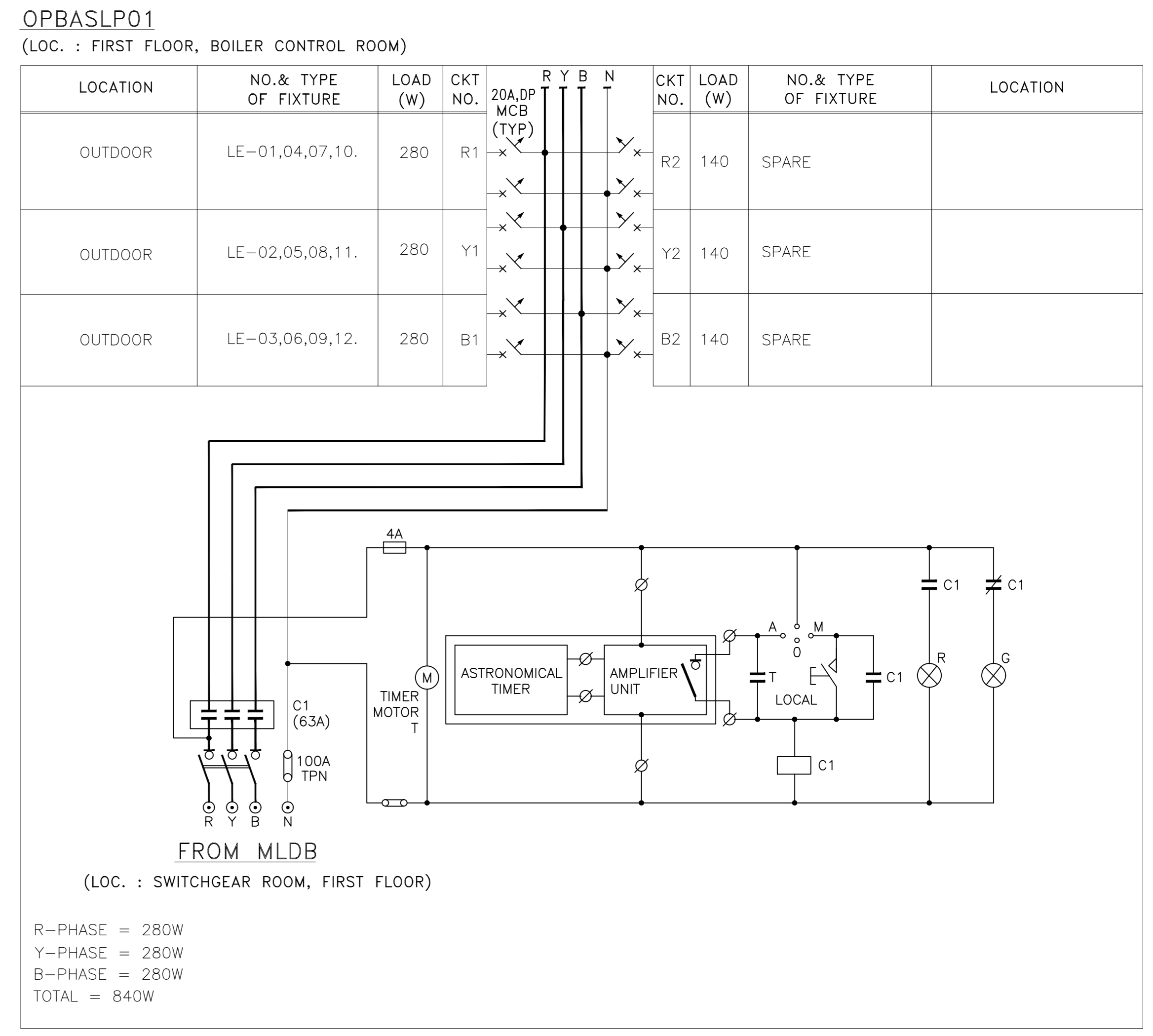
ROAD TO ENERGY CENTER

4.0M WIDE MAINTENANCE ROAD

ROAD TO CHP



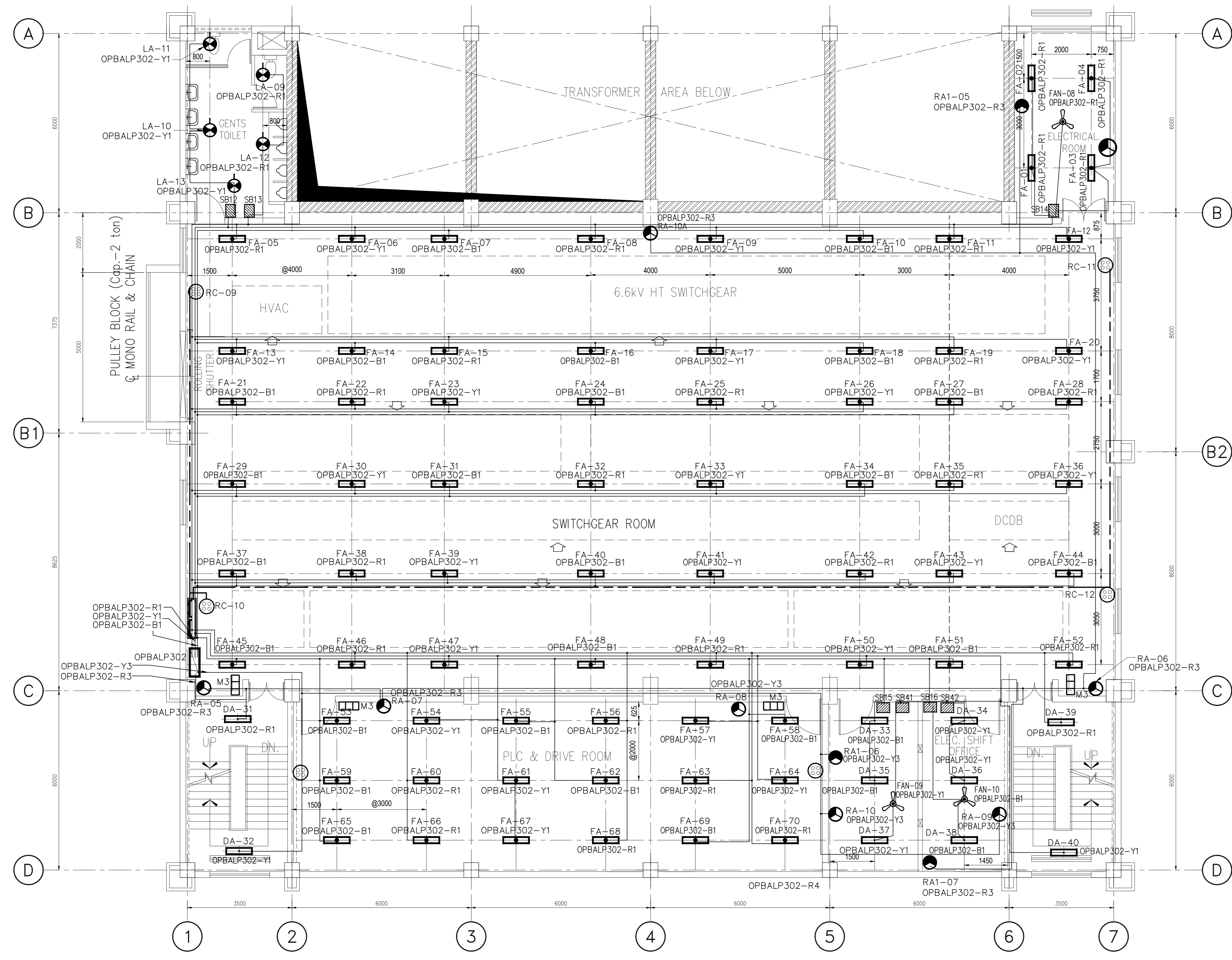
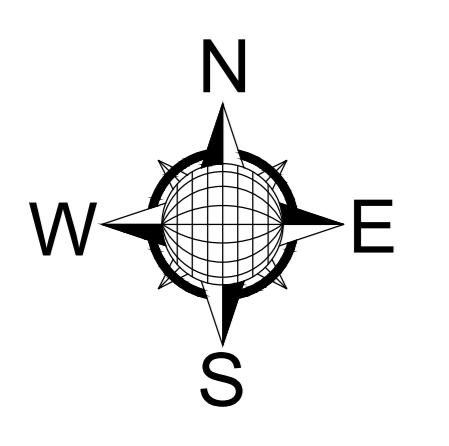
GROUND FLOOR PLAN  
EL. (+) 0.50



ISSUED FOR CONSTRUCTION

<b>IFFCO PARADEEP</b>	OWNER:	<b>IFFCO PARADEEP</b>
PROJECT:	<b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>	
TITLE:	<b>CONDUIT LAYOUT OF CONTROL ROOM BUILDING</b>	
<b>DEVELOPMENT CONSULTANTS PVT LTD.</b> CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI		
PREPARED	NG	JOB NO. 18A08
CHECKED	RD	SCALE 1:100
APPROVED	DS	DATE 21.11.2019
DWG. NO.	18A08-DWG-E-0701	
		REV 0
		2 SHEET OF 5

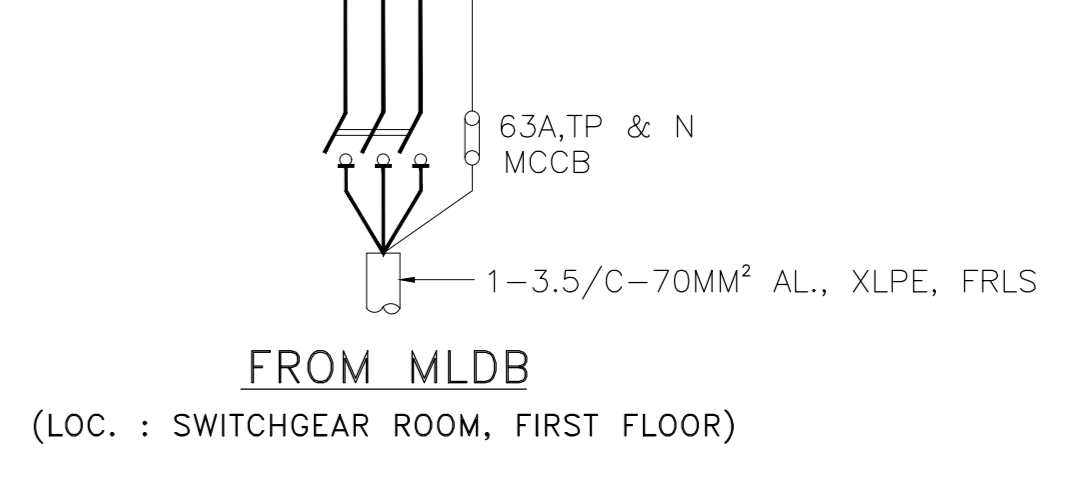
REVISION	NO.	DATE	DESCRIPTION	CHECKED	DRAWN	REV.	DATE
05	RD	29.11.2019	ISSUED FOR CONSTRUCTION	RD	NG	0	29.11.2019
MECH. INST. ELEC. STRL. ARCH. NATURE OF REVISION & DESCRIPTION							



FIRST FLOOR PLAN  
EL. (+) 4.50 (FFL)

**OPBALP302**  
(LOC. : FIRST FLOOR, BOILER CONTROL ROOM)

LOCATION	NO. & TYPE OF FIXTURE	LOAD (W)	CKT NO.	20A DP MCB (TYP)	R	Y	B	N	CKT/LOAD NO. (W)	NO. & TYPE OF FIXTURE	LOCATION
GENTS TOILET, SWGR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE	LA-09,12, DA-31,39, FA-01,04,11,19,25,32,38,46,60,66,08,15,22,28,35,42,49,56,63,70,03,05,52,68, FAN-08.	1130	R1	X	X	X	X	X	R2	-	SPARE
GENTS TOILET, SWGR ROOM, ELECTRICAL SHIFT OFFICE	LA-10,11,13, DA-32,37,34,36,40, FA-06,13,20,26,33,39,47,54,61,67,12,09,17,23,30,41,36,43,50,57,64, FAN-09.	1185	Y1	X	X	X	X	X	Y2	-	SPARE
GENTS TOILET, SWGR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE	DA-33,38,35, FA-07,14,21,27,34,40,48,55,62,69,16,02,10,18,24,29,31,58,57,44,45,51,53,59,65, FAN-10.	1190	B1	X	X	X	X	X	B2	-	SPARE
SWITCHGEAR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE.	RA-05,06,07,10A RA1-05,07.	-	R3	X	X	X	X	X	R4	-	SPARE
SWITCHGEAR ROOM, PLC & DRIVE ROOM, ELECTRICAL SHIFT OFFICE.	RA-08,09,10 RA1-06.	-	Y3	X	X	X	X	X	Y4	-	SPARE
	SPARE	-	B3	X	X	X	X	X	B4	-	SPARE



R-PHASE = 1230W  
Y-PHASE = 1185W  
B-PHASE = 1190W  
TOTAL = 3605W

FILE LOCATION: D:\DCPL POWER\JOB FILES\18A08-DWG-E-0701\_Rev-0\_Consult Layout.dwg  
PLOT DATE: 12/18/2019 4:23:35 PM

ISSUED FOR CONSTRUCTION

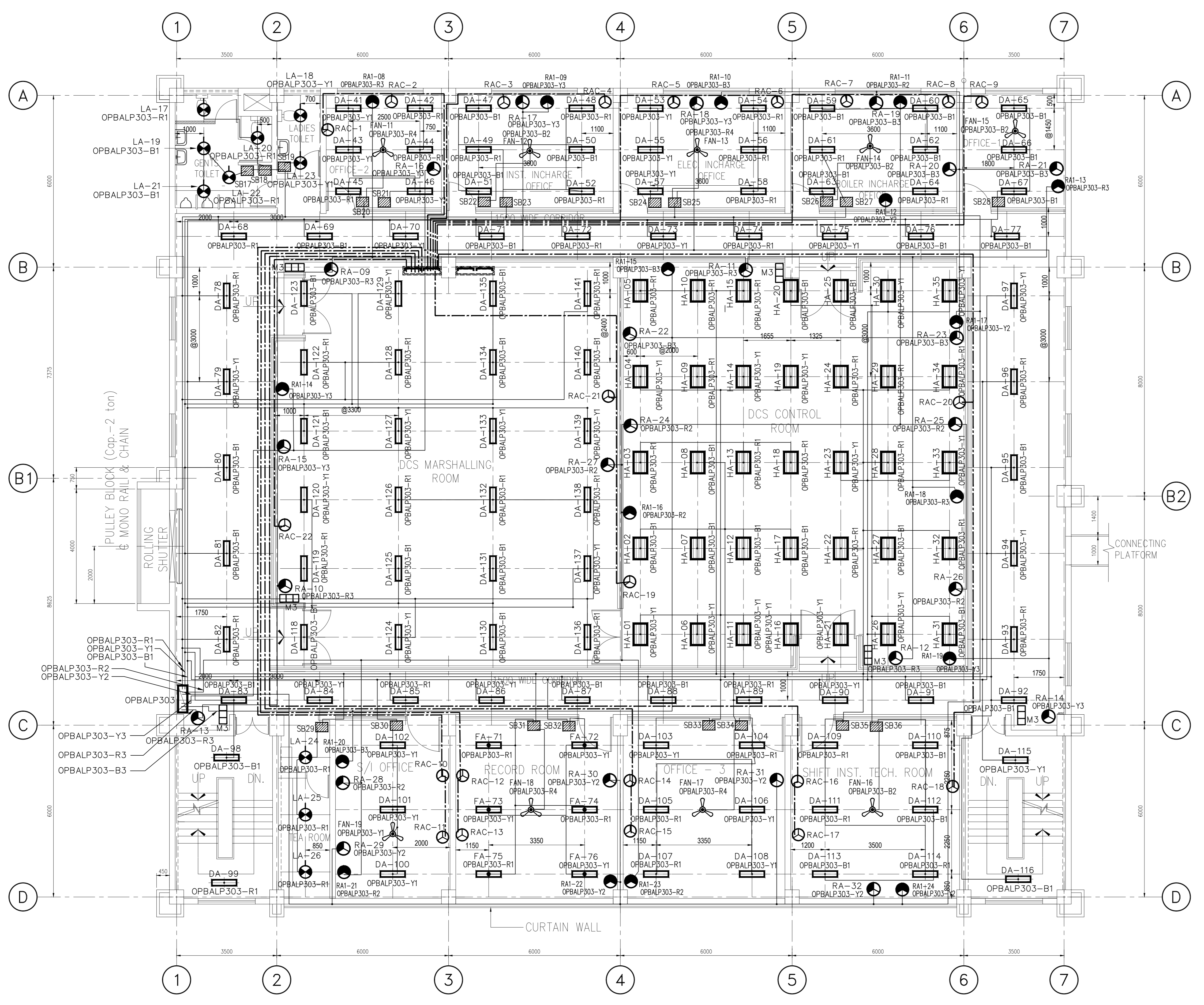
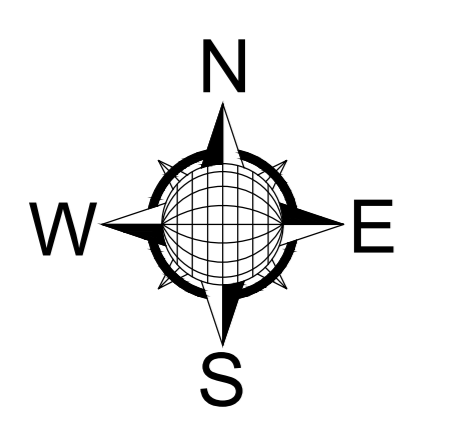
<b>IFFCO</b> PARADEEP	OWNER:	IFFCO PARADEEP
PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM	
TITLE:	CONDUIT LAYOUT OF CONTROL ROOM BUILDING	

**DEVELOPMENT CONSULTANTS PVT LTD.**  
CONSULTING ENGINEERS  
KOLKATA • MUMBAI • CHENNAI • NEW DELHI

PREPARED	NG	JOB NO.	18A08
CHECKED	RD	SCALE	1:100
APPROVED	DS	DATE	21.11.2019
DWG. NO.	18A08-DWG-E-0701		

REVISED	RELEASE STATUS	DATE	SIGNATURE
	PRELIMINARY		
	FOR TENDER ONLY		
	FOR CONSTRUCTION	29.11.2019	RD
	ARCHITECTURAL		
	CIVIL & STRUCTURAL		
	ELECTRICAL		
	INSTRUMENTATION		
	MECHANICAL		

APPROV.	MECH.	INST.	ELEC.	STRL.	ARCH.	NATURE OF REVISION & DESCRIPTION	CHECKED	DRAWN	REV.	DATE
DS						ISSUED FOR CONSTRUCTION	RD	NG	0	29.11.2019



SECOND FLOOR PLAN  
EL. (+) 9.50 (FFL)

OPBALP303  
(LOC. : SECOND FLOOR, BOILER CONTROL ROOM)

LOCATION	NO. & TYPE OF FIXTURE	LOAD/CKT (W)	20A DP (TYP)	R	Y	B	N	CKT LOAD NO. (W)	NO. & TYPE OF FIXTURE	LOCATION
TOILET, OFFICE-2, INST. INCHARGE RM, ELEC. INCHARGE OFFICE, BOILER INCHARGE OFFICE, OFFICE-1, OFFICE-3, CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM, RECORD ROOM, S/I OFFICE, SHIFT INST. TECH. RM.	LA-17,20,22,24,26 DA-44,54,64,74,85,96,107,119, 128,138,46,56,66,76,89,111,122, 42,52,61,72,82,93,100,105,104, 114,126,136,49,56,45,99,109, FA-71,74,75 HA-03,13,22,32,10,18,29,09,28	1790	R1	X	X	X	X	R2	RA-24,25,26,27,28, RA1-11,16,21,23.	S/I OFFICE, DCS MARSHALLING ROOM, DCS CONTROL ROOM
TOILET, OFFICE-2, INST. INCHARGE RM, ELEC. INCHARGE OFFICE, BOILER INCHARGE OFFICE, OFFICE-1, STAIR, CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM, S/I OFFICE.	LA-18,23,25 DA-41,46,55,65,75,97,86,108, 120,129,139,70,79,90,57,103, 124,133,43,53,73,84,94,102, 101,106,115,127,137, FA-73,76,72	1765	Y1	X	X	X	X	Y2	RA-29,30,31,32, RA1-12,17,22,24.	S/I OFFICE, RECORD ROOM, OFFICE-3, SHIFT INST. TECH. ROOM
TOILET, OFFICE-2, INST. INCHARGE RM, ELEC. INCHARGE OFFICE, BOILER INCHARGE OFFICE, OFFICE-1, OFFICE-3, CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM, RECORD ROOM.	LA-19,21, DA-47,66,77,88,98,110,121, 130,140,50,60,71,81,91,59, 113,125,135,62,112,51,63,67, 69,79,92,95,116,80,83,87, 118,123,131,134 HA-02,12,20,31,08,17,27, 07,25.	1760	B1	X	X	X	X	B2	FAN-12,14,15,16	INST. INCHARGE RM, BOILER INCHARGE OFFICE, OFFICE-1, SHIFT INST TECH. ROOM
CORRIDOR, DCS MARSHALLING ROOM, DCS CONTROL ROOM	RA-09,10,11,12,13, RA1-08,13,18,	-	R3	X	X	X	X	R4	FAN-11,13,17,18,19	ELEC. INCHARGE RM, OFFICE-2, S/I OFFICE.
INST. INCHARGE RM, ELEC. INCHARGE OFFICE, OFFICE-2, DCS MARSHALLING ROOM,	RA-14,15,16,17,18 RA1-09,14,19,	-	Y3	X	X	X	X	Y4	-	SPARE
BOILER INCHARGE OFFICE, OFFICE-1, DCS CONTROL ROOM	RA-19,20,21,22,23, RA1-10,15,20,	-	B3	X	X	X	X	B4	-	SPARE

FROM MLDB  
(LOC. : SWITCHGEAR ROOM, FIRST FLOOR)

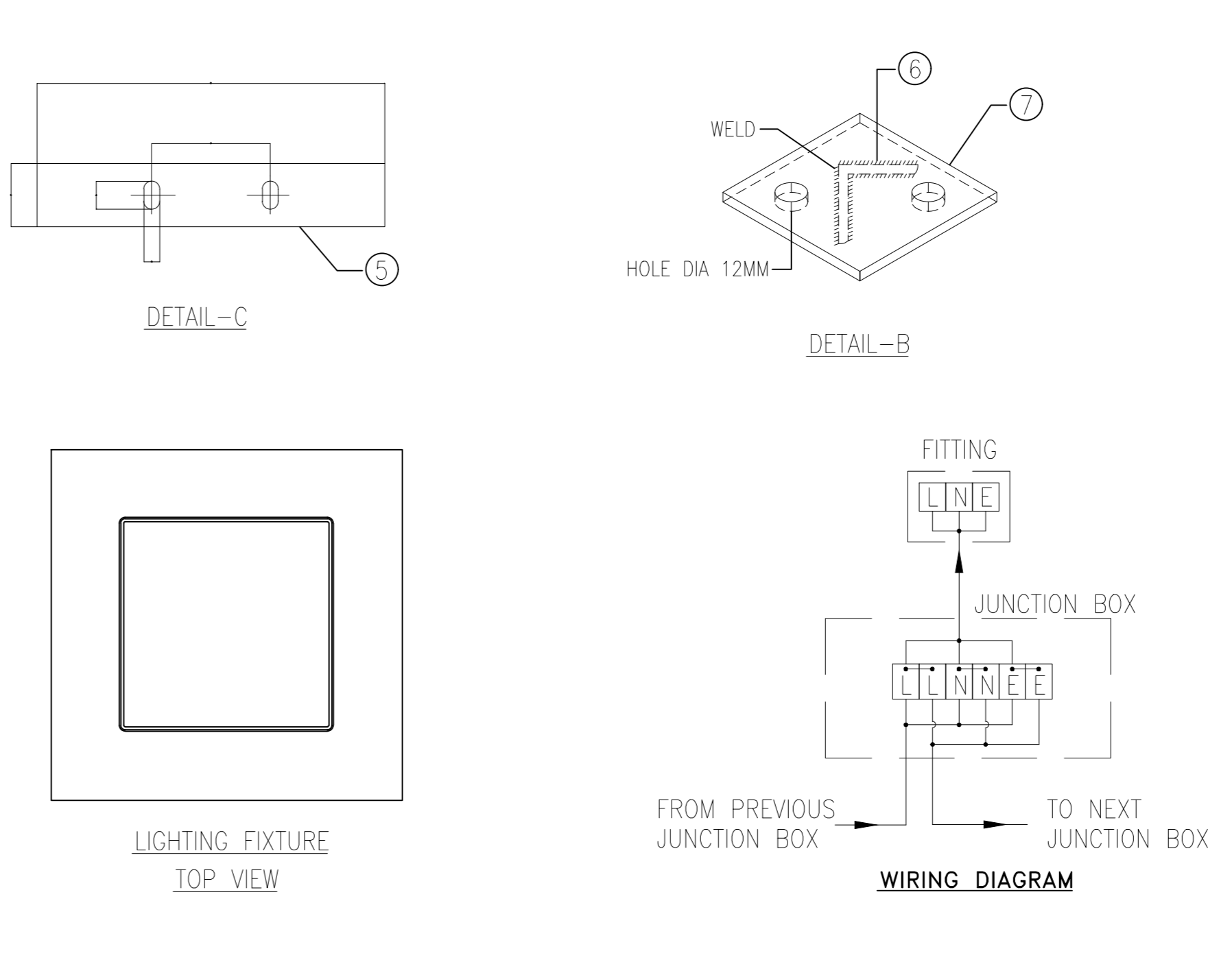
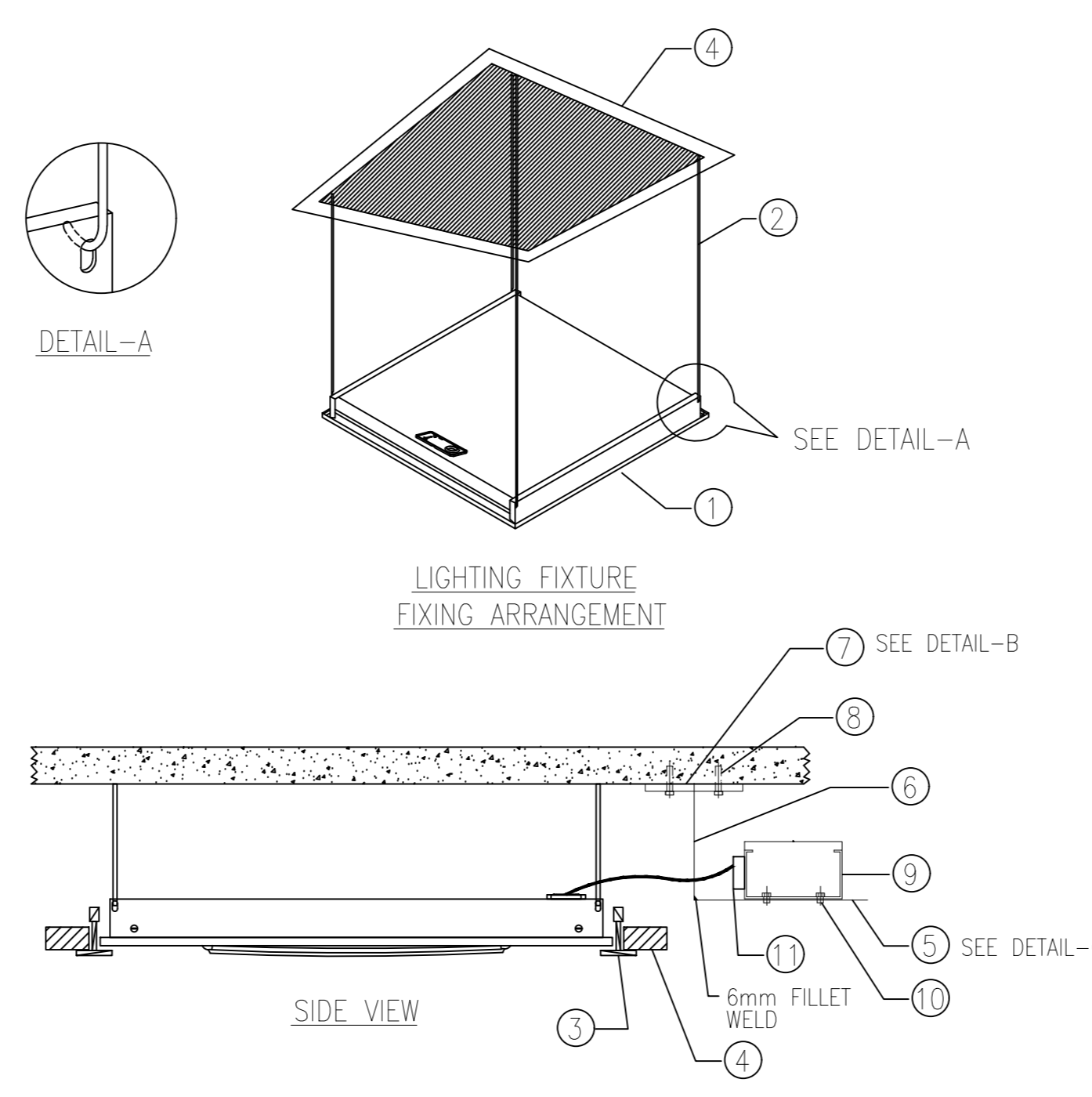
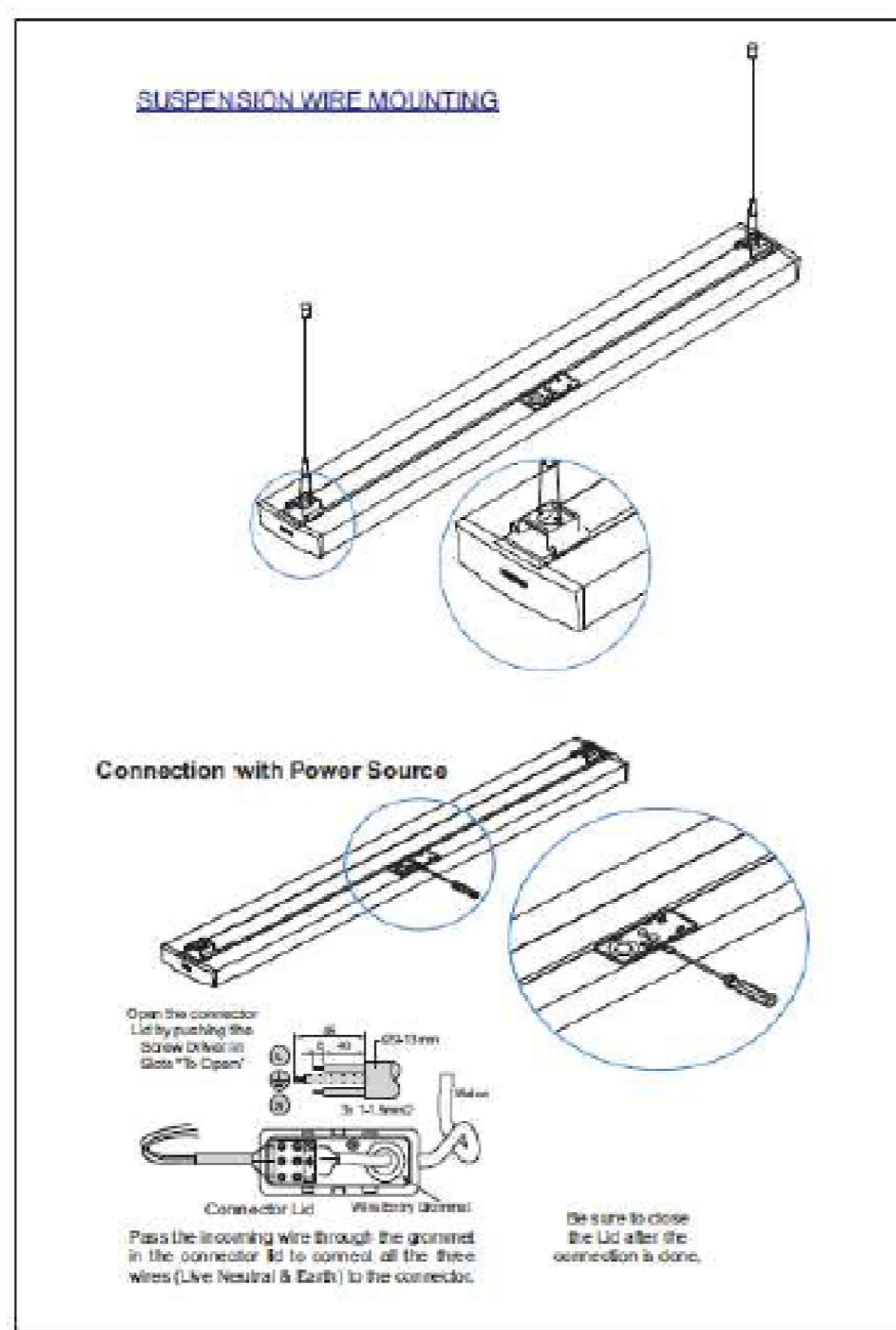
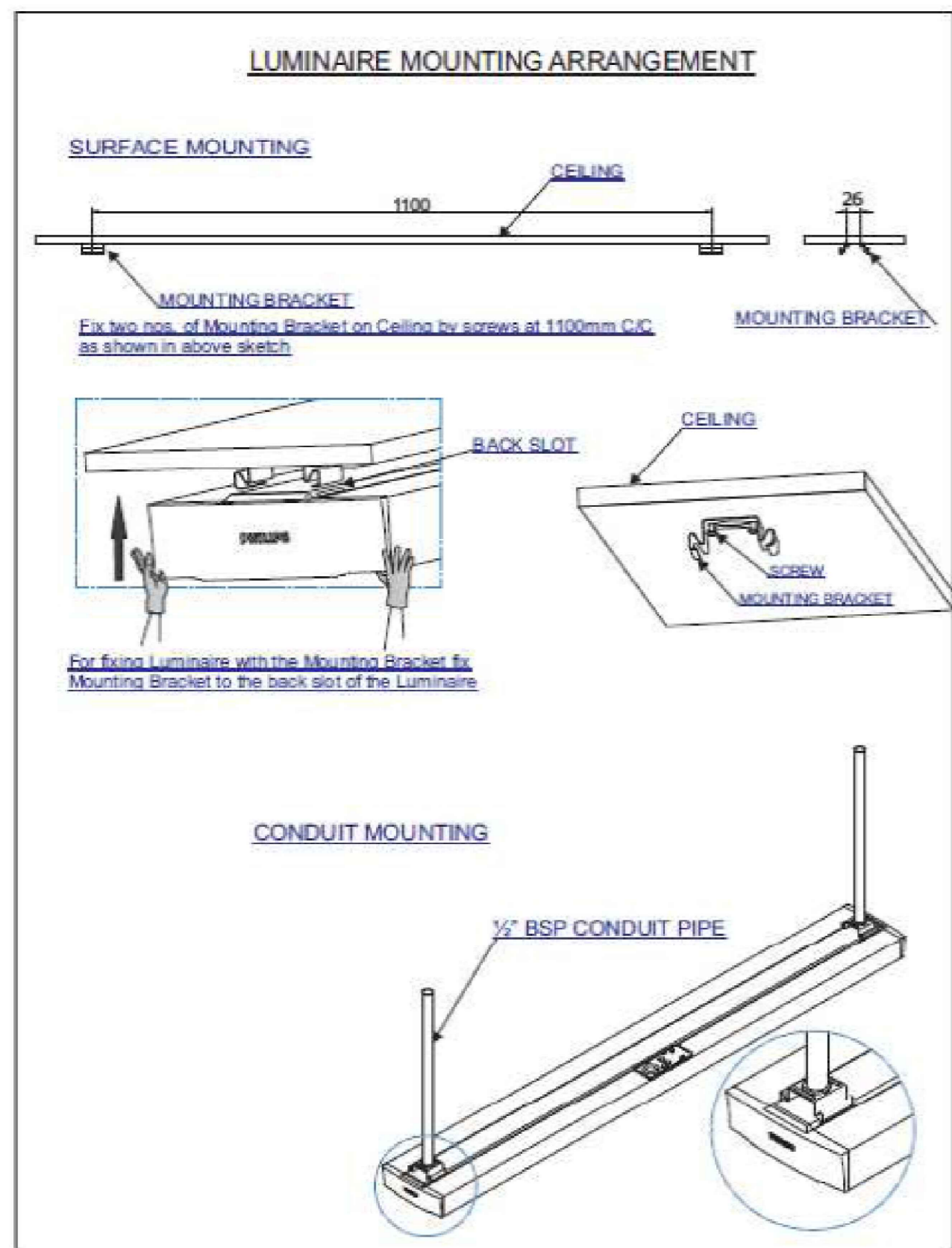
R-PHASE = 2215W  
Y-PHASE = 1765W  
B-PHASE = 2100W  
TOTAL = 6080W

ISSUED FOR CONSTRUCTION

	OWNER:	IFFCO PARADEEP
	PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM
TITLE:	CONDUIT LAYOUT OF CONTROL ROOM BUILDING	
	DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI	
	PREPARED	NG
	CHECKED	RD
	APPROVED	DS
DWG. NO.	18A08-DWG-E-0701	
JOB NO.	18A08	
SCALE	1:100	
DATE	21.11.2019	
REV 0		
4	SHEET	5
	OF	

REVISION	DATE	SIGNATURE	RELEASE STATUS
PRELIMINARY			
FOR TENDER ONLY			
FOR CONSTRUCTION	29.11.2019	RD	
ARCHITECTURAL			
CIVIL & STRUCTURAL			
ELECTRICAL			
INSTRUMENTATION			
MECHANICAL			

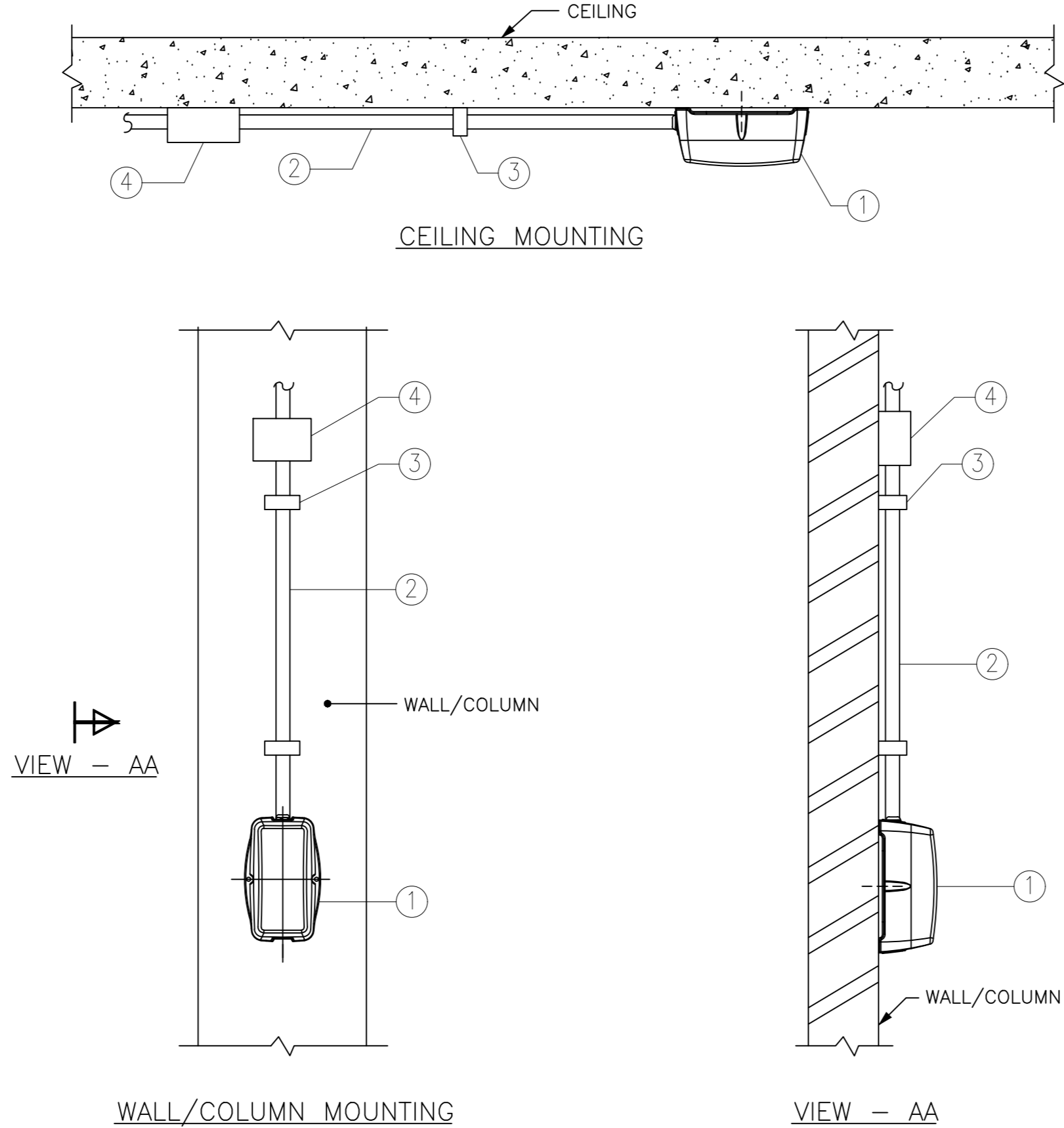
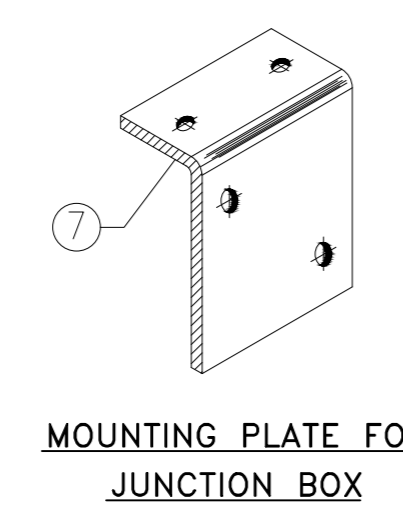
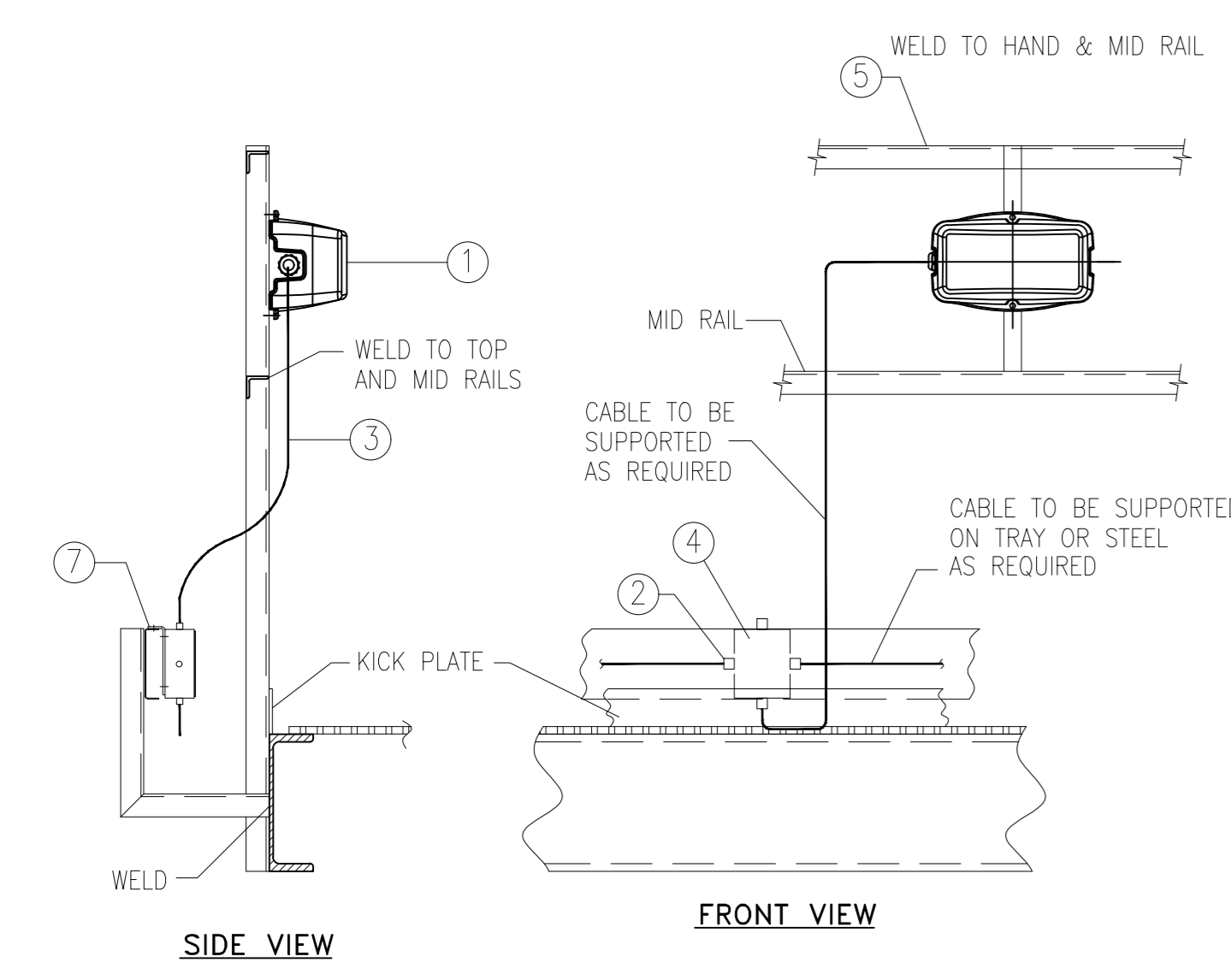
APPROV.	MECH.	INST.	ELEC.	STRL.	ARCH.	ISSUED FOR CONSTRUCTION	CHECKED	DRAWN	REV.	DATE



ITEM NO.	DESCRIPTION
1	RECESSED MOUNTED LUMINAIRE-CIECUS RC 365B LED22 4000 PSU OD WH OR EQUIVALENT
2	CHAIN
3	T- SECTION OF THE CEILING STRUCTURE
4	FALSE CEILING
5	40x6x220mm LONG MILD STEEL FLAT, GALVANISED
6	50x50x6mm THK. MILD STEEL ANGLE, GALVANISED
7	100x100x6mm THK. MILD STEEL PLATE, GALVANISED
8	STOW RED HEAD ANCHOR AND BOLTS
9	CABLE TRAY - 100mm WIDE MILD STEEL, GALVANISED
10	M6x25mm LONG MILD STEEL PAN HEAD SCREW COMPLETE WITH NUT & WASHER
11	JUNCTION BOX

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS (mm)
  2. ALL NUTS, BOLTS, WASHERS SHALL BE GALVANIZED OR ZINC PASSIVATED
  3. ALL SHARP EDGES AND BURRS SHALL BE REMOVED
  4. AFTER DRILLING, THE CHANNEL IS TO BE PREPARED, PRIMED AND PAINTED.

**ELECTRICAL INSTALLATION OF PENDENT MOUNTED LUMINAIRE ("DA" TYPE)**

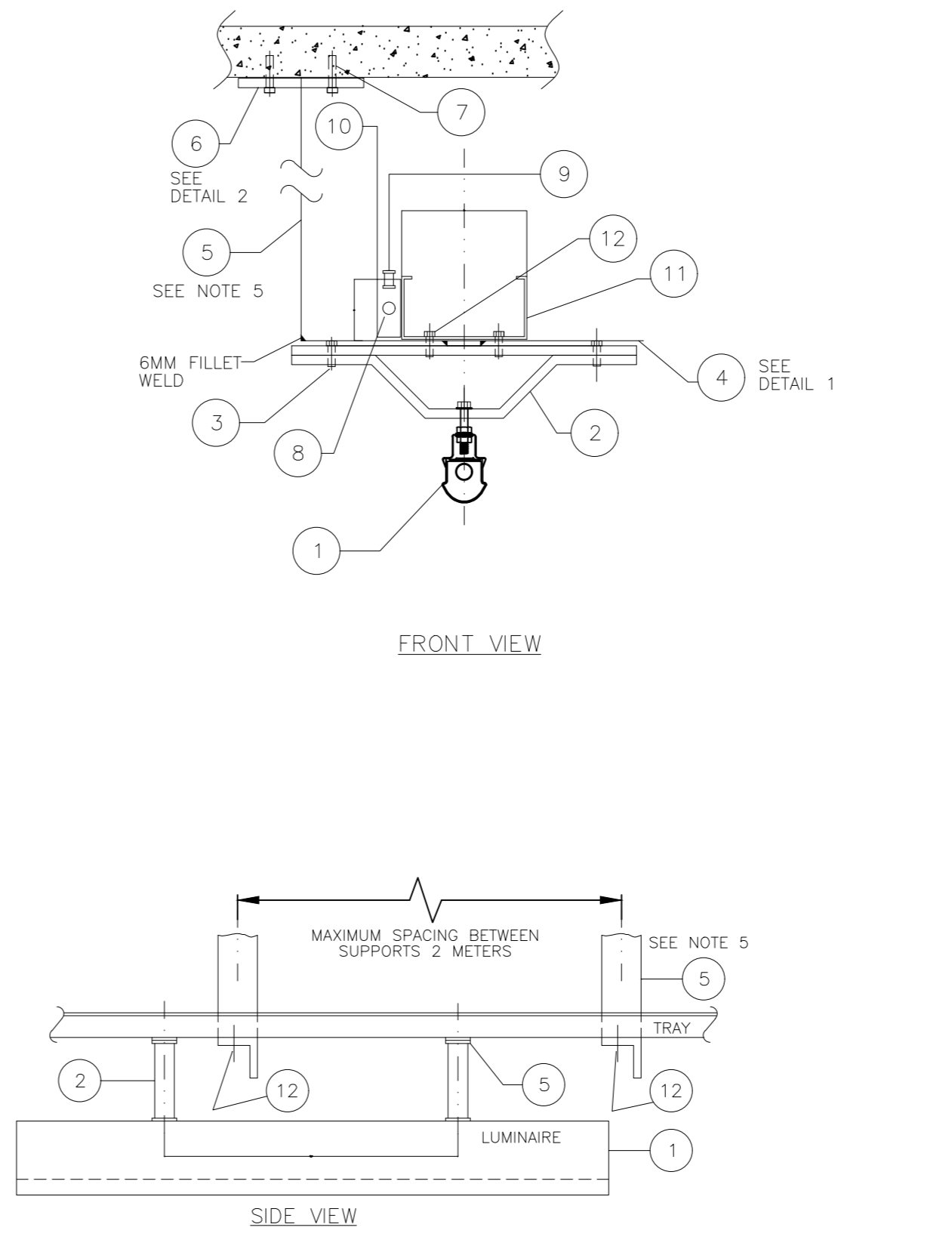


ITEM NO.	DESCRIPTION
1	LED LUMINAIRE-W2020W LED65 CW PSU SI PC OR EQUIVALENT.
2	CABLE GLAND FOR ITEM 3
3	30x2.5mm <sup>2</sup> XLPE, SWA CABLE
4	JUNCTION BOX
5	50x6mm MILD STEEL FLAT BAR
6	M6x25mm Lg. MILD STEEL BOLT PLATED C/W NUT AND WASHER
7	3mm THK. MILD STEEL PLATE

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS (mm)
  2. ALL NUTS, BOLTS, WASHERS SHALL BE GALVANIZED OR ZINC PASSIVATED
  3. ALL SHARP EDGES AND BURRS SHALL BE REMOVED
  4. AFTER DRILLING, THE CHANNEL IS TO BE PREPARED, PRIMED AND PAINTED.

**ELECTRICAL INSTALLATION OF SUSPENDED MOUNTED LUMINAIRE ("LA" TYPE)**

ITEM NO.	DESCRIPTION
1	LED LUMINAIRE-W2020W LED65 CW PSU SI PC OR EQUIVALENT.
2	20R CONDUIT
3	SADDLE
4	JUNCTION BOX



ITEM No.	DESCRIPTION
1	LED LUMINAIRE - 2x40W, 8V 208C LED 40/74 LI 200 FR SR EQUIVALENT
2	CEILING BRACKET
3	M10x20mm LONG NUT, BOLT AND WASHER
4	40x6x220mm LONG MILD STEEL FLAT, GALVANISED
5	50x50x6mm THK. MILD STEEL ANGLE, GALVANISED
6	100x100x6mm THK. MILD STEEL PLATE, GALVANISED
7	STOW RED HEAD ANCHOR AND BOLTS
8	CABLE - 1107 3 CORE X 2.5sqmm CH SWA CABLE
9	GLAND - INDUSTRIAL, IP65 (FOR ITEM 8)
10	JUNCTION BOX - INDUSTRIAL, IP65
11	CABLE TRAY - 100mm WIDE MILD STEEL, GALVANISED
12	M6x25mm LONG MILD STEEL PAN HEAD SCREW COMPLETE WITH NUT & WASHER

- NOTES :-**
1. ALL DIMENSIONS ARE IN MILLIMETERS (mm).
  2. ALL NUTS, BOLTS, WASHERS SHALL BE GALVANISED OR ZINC PLATED.
  3. ALL SHARP EDGES AND BURRS SHALL BE REMOVED.
  4. ALL DAMAGE TO GALVANISED FINISHES SHALL BE MADE GOOD WITH ZINC RICH PAINT.
  5. THE LENGTH OF SUPPORT SHALL BE ADJUSTED TO MAINTAIN THE REQUIRED ELEVATION MARKED IN LIGHTING LAYOUT.
  6. THE LOCATION AND SIZE OF JUNCTION BOX IS INDICATIVE ONLY. FIELD ENGINEER MAY LOCATE AS PER SITE CONDITION.

**ELECTRICAL INSTALLATION OF SURFACE MOUNTED LUMINAIRE ("FA" TYPE)**

ISSUED FOR CONSTRUCTION

**IFFCO PARADEEP** OWNER: **IFFCO PARADEEP**

PROJECT: **IFFCO PARADEEP AFBC BOILER CONTROL ROOM**

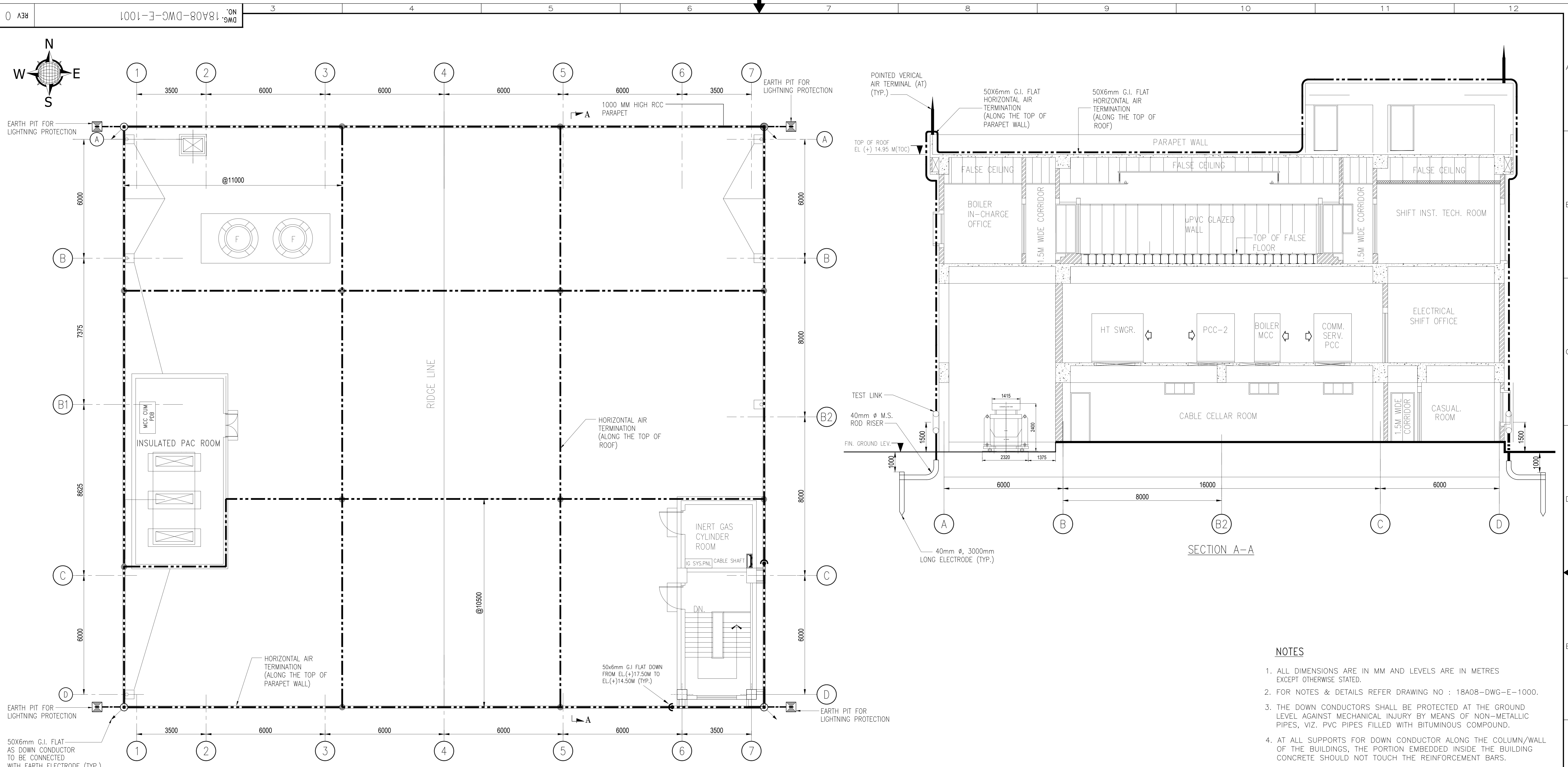
TITLE: **CONDUIT LAYOUT OF CONTROL ROOM BUILDING**

**DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS**  
 KOLKATA • MUMBAI • CHENNAI • NEW DELHI

APPROV.	MECH.	INST.	ELEC.	STR.	ARCH.	CHECKED	DRAWN	REV.	DATE	RELEASE STATUS	DATE	SIGNATURE
										PRELIMINARY		
										FOR TENDER ONLY		
										FOR CONSTRUCTION	29.11.2019	RD
										ARCHITECTURAL		
										CIVIL & STRUCTURAL		
										ELECTRICAL		
										INSTRUMENTATION		
										MECHANICAL		

PREPARED	NG	JOB NO.	18A08
CHECKED	RD	SCALE	1:100
APPROVED	DS	DATE	21.11.2019
DWG. NO.	18A08-DWG-E-0701		

FILE LOCATION: D:\DCPL POWER\JOB FILES\18A08-IFCO Boiler Control Room\33\_Consult Layout\18A08-DWG-E-0701\_Ber-0\_Consult Layout.dwg  
 PLOT DATE: 12/10/2019 4:31:15 PM



ROOF PLAN  
EL. (+) 14.95 (TOC)

SECTION A-A

NOTES

- ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES EXCEPT OTHERWISE STATED.
- FOR NOTES & DETAILS REFER DRAWING NO : 18A08-DWG-E-1000.
- THE DOWN CONDUCTORS SHALL BE PROTECTED AT THE GROUND LEVEL AGAINST MECHANICAL INJURY BY MEANS OF NON-METALLIC PIPES, VIZ. PVC PIPES FILLED WITH BITUMINOUS COMPOUND.
- AT ALL SUPPORTS FOR DOWN CONDUCTOR ALONG THE COLUMN/WALL OF THE BUILDINGS, THE PORTION EMBEDDED INSIDE THE BUILDING CONCRETE SHOULD NOT TOUCH THE REINFORCEMENT BARS.
- THE DOWN CONDUCTOR SHALL BE LAID STRAIGHT AND SHARP BENDS SHALL BE AVOIDED AS FAR AS PRACTICABLE, THESE SHALL BE CLEARED ON OUTSIDE OF THE BUILDING WALL AND COLUMN/STRUCTURE AT ABOUT 1000 mm INTERVALS.
- THE PROJECTED PORTION OF RISER ABOVE GROUND SHALL BE COATED WITH TWO (2) COATS OF BITUMEN PAINTS (ANTI-CORROSION PAINTS) WITH A MINIMUM THICKNESS OF 1 mm AFTER CONNECTION.

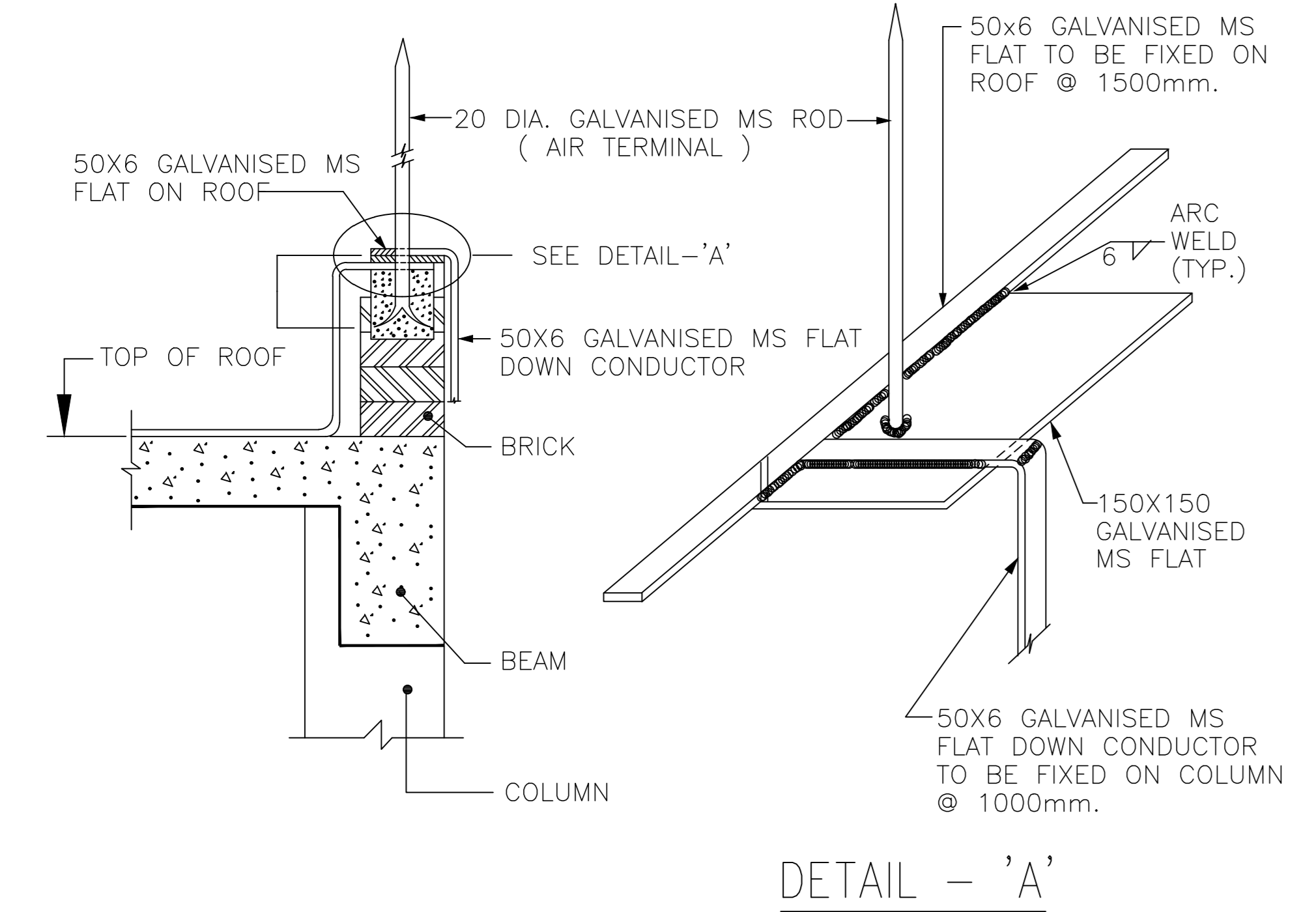
REF. DWG. NOS.

- CONTROL BUILDING ROOM LAYOUT : DWG NO. : 18A08-DWG-E-0401

ISSUED FOR CONSTRUCTION

BILL OF QUANTITY

SL. NO.	DESCRIPTION	LEGEND	QTY. (APPROX)
1.	50X6mm G.S. FLAT AS HORIZONTAL CONDUCTOR.	-----	320.0M
2.	50X6mm G.S. FLAT AS DOWN CONDUCTOR.	-----	90.0M
3.	20mm DIA G.S ROD AS VERTICAL AIR TERMINAL	●----->	4 NOS.
4.	40MM DIA., 3000MM LONG M.S. EARTH ELECTRODE	----->	04 NOS.
5.	TEST LINK	○-----○	04 NOS.



DETAIL - 'A'
























FIXING DETAILS OF AIR TERMINAL ROD  
ON BUILDING ROOF

APPROV.	MECH.	INST.	ELEC.	STRL.	ARCH.	NATURE OF REVISION & DESCRIPTION	CHECKED	DRAWN	REV.	DATE	RELEASE STATUS	DATE	SIGNATURE
											PRELIMINARY		
											FOR TENDER ONLY		
											FOR CONSTRUCTION	11.09.19	RD
											ARCHITECTURAL		
											CIVIL & STRUCTURAL		
											ELECTRICAL		
											INSTRUMENTATION		
											MECHANICAL		


















	OWNER:	IFFCO PARADEEP
	PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM
TITLE:	LIGHTNING PROTECTION LAYOUT CONTROL ROOM BUILDING	
	DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI	
	PREPARED	BG
	CHECKED	RD
	APPROVED	DS
DWG. NO.	18A08-DWG-E-1001	
JOB NO.	18A08	
SCALE	1:100	
DATE	11.12.2018	
REV 0		
1 SHEET		OF 1

FILE LOCATION: D:\DPL\POWER\_JOB FILES\18A08\_IFFCO Boiler Control Room\7. Lightning Protection Layout\18A08-DWG-E-1001\_Control Building Lightning Protection Layout\_Rev-0.FC.dwg  
PLOT DATE: 9/11/2019 12:28:09 PM

**DEVICE LEGEND :-**

	H.T. CIRCUIT BREAKER
	HRC FUSE
	NEUTRAL LINK
	RESISTOR
	INDICATION LAMP
	CURRENT TRANSFORMER
	CORE BALANCE CURRENT TRANSFORMER
	VOLTAGE TRANSFORMER
	AMMETER
	VOLTMETER
	WATT METER
	AMMETER SELECTOR SWITCH
	VOLTMETER SELECTOR SWITCH
	MULTIFUNCTION METER
	CURRENT TRANSDUCER (DUAL OUTPUT)
	KILOWATT TRANSDUCER
	VOLTAGE TRANSDUCER (DUAL OUTPUT)
	MOTOR
	CONTACT NORMALLY OPEN
	CONTACT NORMALLY CLOSED
	DRAWOUT CONNECTION
	TWO WINDING TRANSFORMER
	DEFINITE TIME O/C RELAY FOR EARTH FAULT



**RELAY LEGEND :-**

	ON DELAY TIMER
	UNDER VOLTAGE RELAY
	ANNUNCIATOR RELAY
	INSTANTANEOUS O/C. RELAY
	INVERSE TIME O/C. RELAY
	INVERSE TIME E/F. RELAY
	INSTANTANEOUS E/F. RELAY
	TRIP CKT. SUPERVISION RELAY
	ANTI PUMPING RELAY
	DIFFERENTIAL PROTECTION RELAY
	LOCKOUT RELAY
	DC SUPPLY SUPERVISION RELAY
	TRIP ANNUNCIATION
	CHK. SYN. RELAY
	AUXILIARY RELAY FOR 'Y'
	LOCKED ROTOR PROTECTION RELAY
	FUSE FAILURE RELAY




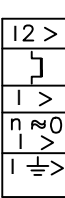












**NOTES :-**

1. IN SINGLE LINE DIAGRAM, THE NUMBER AGAINST C.T., V.T., METERS, RELAY ETC. INDICATES THE QUANTITY TO BE SUPPLIED.
2. ACCURACY CLASS OF THE CURRENT TRANSFORMERS SHALL BE :
  - a) CLASS 5P20 FOR RELAYING.
  - b) CLASS 0.5 FOR METERING.
  - c) CLASS PS FOR DIFFERENTIAL RELAYING.
3. ALL CURRENT TRANSFORMER SECONDARY SHALL BE RATED FOR 1A.

ISSUED FOR CONSTRUCTION



					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		 DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS		
					 IFFCO PARADEEP		JOB NO. 18A08      SCALE : NTS		
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM			DWG. NO. 18A08-DWG-E-0105	REV. 0
APPVD.	REVWD.	CHKD.	REV.	DATE				SHT. 01 OF 07	0



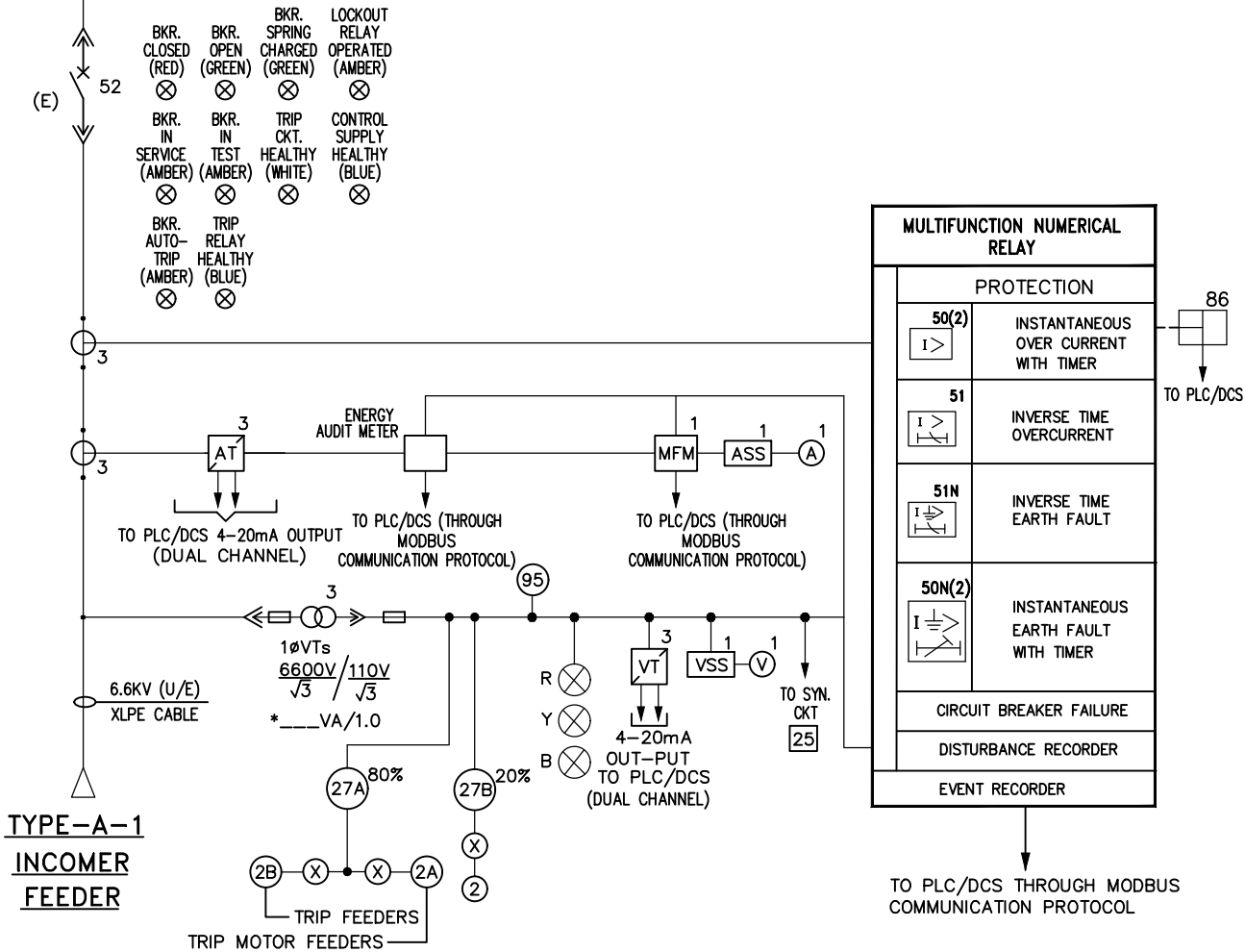
DEVICE NO.	DESCRIPTION	ADJUSTABLE RANGE (MIN.REQD.)
 51	INVERSE TIME O/C RELAY FOR PHASE FAULT, 1-POLE	50-200%
 51N	INVERSE TIME O/C RELAY FOR EARTH FAULT, 1-POLE	50-200%
 2	TIME DELAY RELAY (DELAY ON PICK UP)	1-10 SEC.
 99	MOTOR PROTECTION RELAY :- <ul style="list-style-type: none"> <li>● THERMAL OVER LOAD</li> <li>● PHASE FAULT</li> <li>● UNBALANCE (NEG. SEQ.)</li> <li>● LOCKED ROTOR</li> <li>● EARTH FAULT</li> </ul>	<ul style="list-style-type: none"> <li>● 70-130%</li> <li>● 600-1200%</li> <li>● 30-630%</li> <li>● 150-600%</li> <li>● 50-800mS</li> </ul>
 86	LOCKOUT RELAY, HAND RESET	-
 27A	INSTANTANEOUS U/V. RELAY, HIGH DROP OFF TO PICK UP RATIO (FREQUENCY COMPENSATED)	40-80%
 27B	INSTANTANEOUS U/V. RELAY, HIGH DROP OFF TO PICK UP RATIO (FREQUENCY COMPENSATED)	20-40%
 50 51	INVERSE TIME O/C RELAY WITH HIGH SET INSTANTANEOUS UNITS FOR PHASE FAULT	500-2000% 50-200%
 50N	INSTANTANEOUS O/C RELAY FOR EARTH FAULT	10-40%
 X	AUX. RELAY, SELF RESET.	-
 62	TIME DELAY RELAY, DELAY 'ON DROPOUT'	0.1-1 SEC
 25	CHK. SYN. RELAY	
 50LR	LOCKED ROTOR PROTECTION	150-600% 2.5-25 sec CONT. ADJUSTABLE
 94	ANTI-PUMPING RELAY	-
 74	TRIP CIRCUIT SUPERVISION RELAY	-
 50G	DEFINITE TIME O/C RELAY FOR EARTH FAULT	10-40% 0.1-1 sec

TYPE OF RELAY FOR HT SWITCHGEAR	
TYPE OF FEEDER	6.6KV SWGR
INCOMER	MICOM P127 OR EQUIVALENT
BUS COUPLER	MICOM P127 OR EQUIVALENT
MOTOR FEEDER	MICOM P220 OR EQUIVALENT
TRANSFORMER FEEDER	MICOM P123 OR EQUIVALENT
OUTGOING FEEDER	MICOM P123 OR EQUIVALENT

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		 DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					 IFFCO PARADEEP		JOB NO. 18A08      SCALE : NTS	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		DWG. NO. 18A08-DWG-E-0105 SHT. 02 OF 07	
APPVD.	REVWD.	CHKD.	REV.	DATE			REV. 0	

**6600V BUS**




**TYPE-A-1  
INCOMER  
FEEDER**

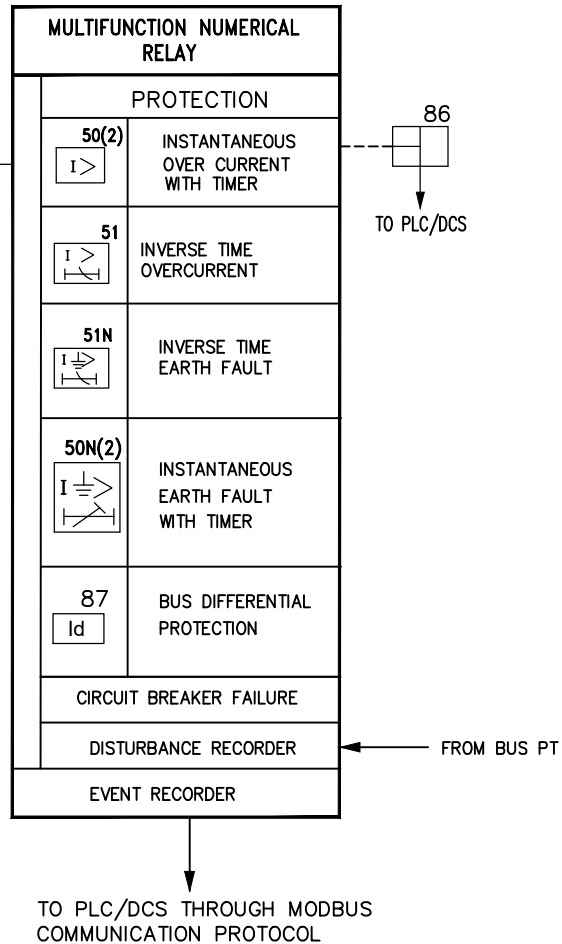
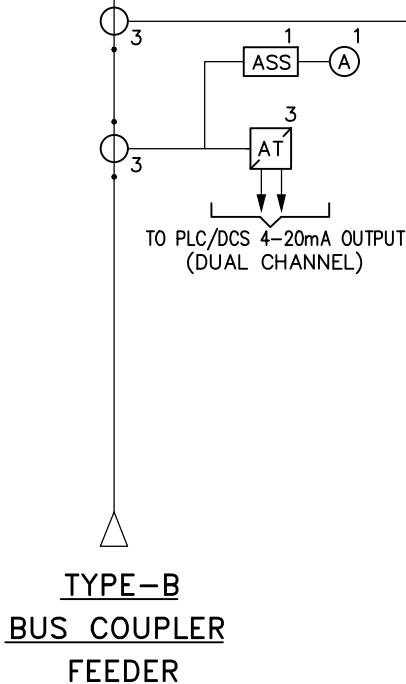
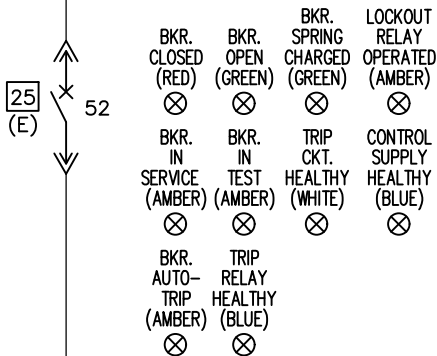
**NOTES:-**

- 1... EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY DRAW-OUT TYPE BREAKER CONTACT MULTIPLICATION RELAY (52X), DC SUPPLY SUPERVISION RELAY (80).
- 2... FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 3... CIRCUIT BREAKER FAILURE PROTECTION SHALL BE PROVIDED IN EACH TYPE OF INCOMER.
- 4... VT FUSE FAILURE PROTECTION (95) SHALL BE PROVIDED. THIS WILL DETECT BOTH PRIMARY & SECONDARY FUSE FAIL CONDITION.
- 5... VOLTAGE TRANSFORMER VA BURDEN SHALL BE ADEQUATE. ACCURACY CLASS OF VOLTAGE TRANSFORMER SHALL BE 1.0

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					 IFFCO PARADEEP		JOB NO. 18A08      SCALE : NTS	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM			DWG. NO. 18A08-DWG-E-0105 SHT. 03 OF 07
APPVD.	REVWD.	CHKD.	REV.	DATE				REV. 0

**6600V BUS**



**NOTES:-**

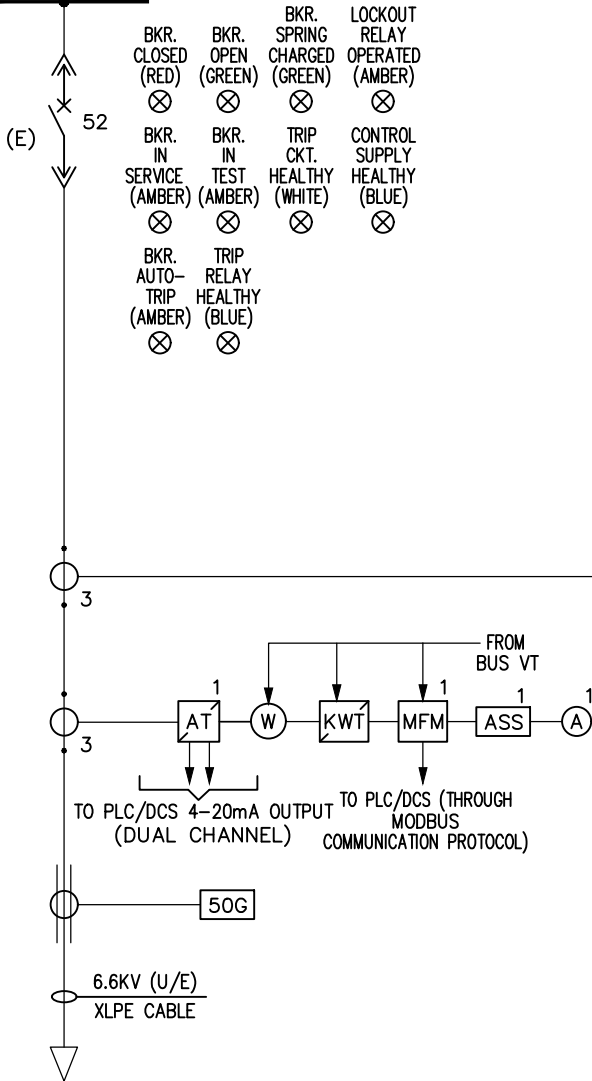
- 1... EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY DRAW-OUT TYPE BREAKER CONTACT MULTIPLICATION RELAY (52X), DC SUPPLY SUPERVISION RELAY (80).
- 2... FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 3... CIRCUIT BREAKER FAILURE PROTECTION SHALL BE PROVIDED IN EACH TYPE OF INCOMER.
- 4... CHECK SYNC. RELAY (25) SHALL BE PROVIDED IN BUS-COUPLER.

**ISSUED FOR CONSTRUCTION**

					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					IFFCO PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0105 SHT. 04 OF 07	
							REV. 0	

A4\_DD (9-96) [210x297]

**6600V BUS**



BKR. CLOSED (RED)	BKR. OPEN (GREEN)	BKR. SPRING CHARGED (GREEN)	LOCKOUT RELAY OPERATED (AMBER)
BKR. IN SERVICE (AMBER)	BKR. IN TEST (AMBER)	TRIP CKT. HEALTHY (WHITE)	CONTROL SUPPLY HEALTHY (BLUE)
BKR. AUTO-TRIP (AMBER)	TRIP RELAY HEALTHY (BLUE)		

MULTIFUNCTION NUMERICAL RELAY	
PROTECTION	
49	THERMAL OVERLOAD
50LR	LOCKED ROTOR PROTECTION
46	CURRENT UNBALANCE (-ve SEQ.) SINGLE PHASING
50(2)	INSTANTANEOUS OVER CURRENT WITH TIMER
50N(2)	INSTANTANEOUS EARTH FAULT WITH TIMER
51	INVERSE TIME OVERCURRENT
51N	INVERSE TIME EARTH FAULT
66	STARTS PER HOUR
CIRCUIT BREAKER FAILURE	
DISTURBANCE RECORDER	

← FROM RESPECTIVE SECTION OF BUS PT

↓ TO PLC/DCS THROUGH MODBUS COMMUNICATION PROTOCOL

**TYPE-C MOTOR FEEDER**

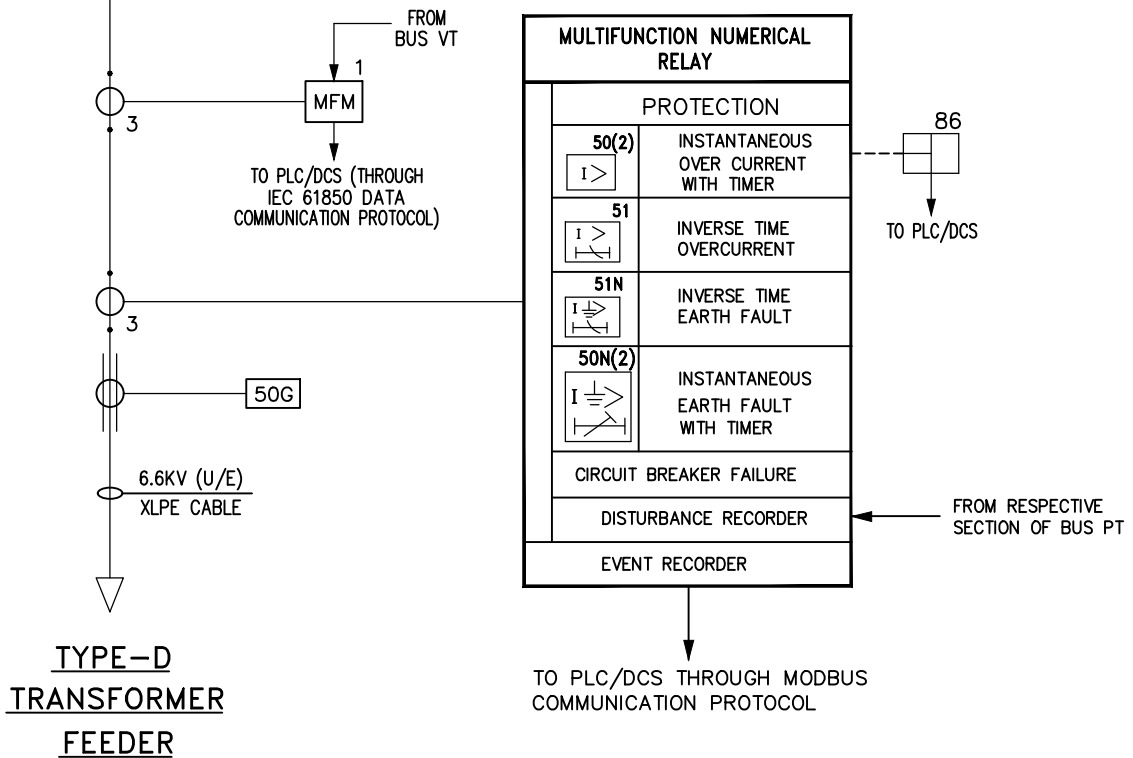
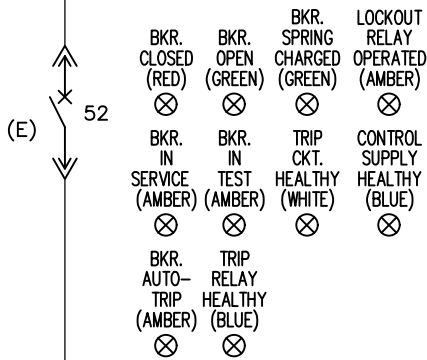
**NOTES:-**

- 1... EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY DRAW-OUT TYPE BREAKER CONTACT MULTIPLICATION RELAY (52X), DC SUPPLY SUPERVISION RELAY (80).
- 2... FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 3... ZERO SEQUENCE CT SHALL BE PROVIDED FOR MOTOR FEEDERS HAVING PHASE CT RATIO LESS THAN 50/1A.
- 4... DIFFERENTIAL (87) PROTECTION SHALL BE PROVIDED FOR MOTOR ABOVE 1000KW RATING ONLY. HOWEVER THERE IS NO HT MOTOR ABOVE 1000KW IN THIS PROJECT.
- 5... TEMPERATURE DETECTOR (PT100) SHALL BE PROVIDED IN HT MOTOR FOR MEASURING WINDING TEMPERATURE & BEARING TEMPERATURE, WHICH SHALL MONITORED BY PLC/DCS. VIBRATION SENSOR SHALL BE PROVIDED IN HT MOTOR FOR VIBRATION MONITORING.

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					IFFCO PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0105	
							SHT. 05 OF 07	
							REV. 0	

6600V BUS



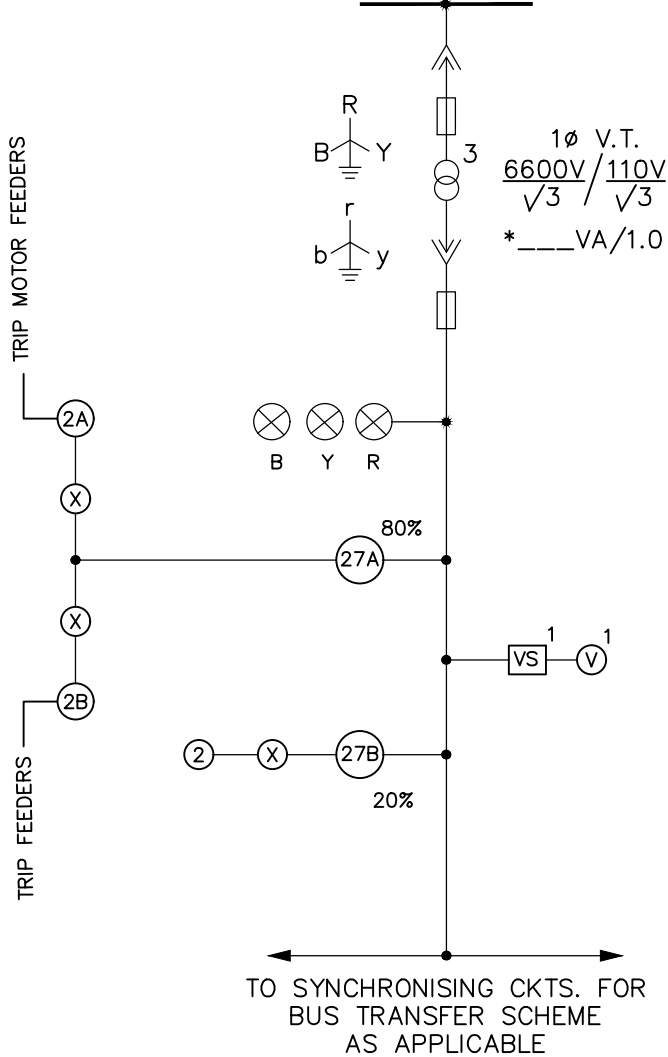
**NOTES:-**

- 1... EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY DRAW-OUT TYPE BREAKER CONTACT MULTIPLICATION RELAY (52X), DC SUPPLY SUPERVISION RELAY (80).
- 2... FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 3... DIFFERENTIAL PROTECTION SHALL BE PROVIDED FOR TRANSFORMER ONLY OF RATING 5 MVA AND ABOVE.

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					IFFCO PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0105 SHT. 06 OF 07	
							REV. 0	

**6600V BUS**

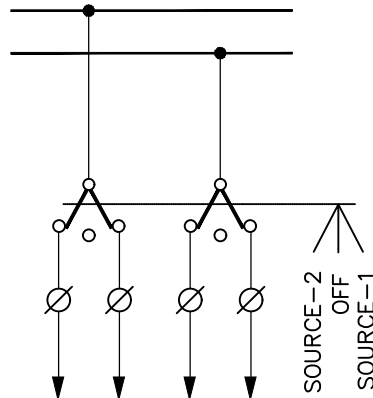


**NOTES:-**

- 1... FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 2... VOLTAGE TRANSFORMER VA BURDEN SHALL BE ADEQUATE. ACCURACY CLASS OF VOLTAGE TRANSFORMER SHALL BE 1.0


**TYPE-E  
BUS V.T. PANEL**

**DC. SUPPLY BUS  
110V, 2W**



**DC SUPPLY SELECTION**

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 6.6 KV HT SWITCHGEAR		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					 <b>IFFCO</b> PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0105	
							SHT. 07 OF 07	
							REV. 0	

## DEVICE LEGEND :-

	ELECTRICALLY OPERATED AIR CIRCUIT BREAKER
	HRC FUSE
	NEUTRAL LINK
	RESISTOR
	INDICATION LAMP
	CURRENT TRANSFORMER
	CORE BALANCE CURRENT TRANSFORMER
	VOLTAGE TRANSFORMER
	AMMETER
	VOLTMETER
	AMMETER SELECTOR SWITCH
	VOLTMETER SELECTOR SWITCH
	MULTIFUNCTION METER
	CURRENT TRANSDUCER (DUAL OUTPUT)
	VOLTAGE TRANSDUCER (DUAL OUTPUT)
	MOTOR
	CONTACT NORMALLY OPEN
	CONTACT NORMALLY CLOSED
	DRAWOUT CONNECTION
	TWO WINDING TRANSFORMER
	WATTHOUR METER
	CONTACTOR
	THERMAL OVERLOAD RELAY WITH BUILT IN SINGLE PHASING PREVENTER
	BUS DUCT

## NOTES :-




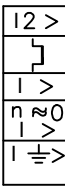












- IN SINGLE LINE DIAGRAM, THE NUMBER AGAINST C.T., V.T., METERS, RELAY ETC. INDICATES THE QUANTITY TO BE SUPPLIED.
- ACCURACY CLASS OF THE CURRENT TRANSFORMERS SHALL BE :
  - CLASS 5P20 FOR RELAYING.
  - CLASS 0.5 FOR INCOMER METERING & CLASS 1.0 FOR OUT GOING FEEDERS.
  - CLASS PS FOR DIFFERENTIAL RELAYING.
- ALL CURRENT TRANSFORMER SECONDARY SHALL BE RATED FOR 1A.

## RELAY LEGEND :-

	ON DELAY TIMER
	UNDER VOLTAGE RELAY
	ANNUNCIATOR RELAY
	INSTANTANEOUS O/C. RELAY
	INVERSE TIME O/C. RELAY
	INVERSE TIME E/F. RELAY
	INSTANTANEOUS E/F. RELAY
	TRIP CKT. SUPERVISION RELAY
	ANTI PUMPING RELAY
	DIFFERENTIAL PROTECTION RELAY
	LOCKOUT RELAY
	DC SUPPLY SUPERVISION RELAY
	TRIP ANNUNCIATION
	CHK. SYN. RELAY
	AUXILIARY RELAY FOR 'Y'
	LOCKED ROTOR PROTECTION RELAY
	VT FUSE FAILURE
	SWITCH
	DRAW-OUT TYPE MCCB
	FSU (FUSE SWITCH UNIT)

ISSUED FOR CONSTRUCTION



					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					IFFCO PARADEEP		JOB NO. 18A08 SCALE : NTS	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM			DWG. NO. 18A08-DWG-E-0106
APPVD.	REVWD.	CHKD.	REV.	DATE				REV. 0
								SHT. 01 OF 9

DEVICE NO.	DESCRIPTION	ADJUSTABLE RANGE (MIN.REQD.)
 51	INVERSE TIME O/C RELAY FOR PHASE FAULT, 1-POLE	50-200%
 51N	INVERSE TIME O/C RELAY FOR EARTH FAULT, 1-POLE	50-200%
 2	TIME DELAY RELAY (DELAY ON PICK UP)	1-10 SEC.
 99	MOTOR PROTECTION RELAY :- <ul style="list-style-type: none"> <li>● THERMAL OVER LOAD</li> <li>● PHASE FAULT</li> <li>● UNBALANCE (NEG. SEQ.)</li> <li>● LOCKED ROTOR</li> <li>● EARTH FAULT</li> </ul>	<ul style="list-style-type: none"> <li>● 70-130%</li> <li>● 600-1200%</li> <li>● 30-630%</li> <li>● 150-600%</li> <li>● 50-800mS</li> </ul>
 86	LOCKOUT RELAY, HAND RESET	-
 27A	INSTANTANEOUS U/V. RELAY, HIGH DROP OFF TO PICK UP RATIO (FREQUENCY COMPENSATED)	40-80%
 27B	INSTANTANEOUS U/V. RELAY, HIGH DROP OFF TO PICK UP RATIO (FREQUENCY COMPENSATED)	20-40%
 50 51	INVERSE TIME O/C RELAY WITH HIGH SET INSTANTANEOUS UNITS FOR PHASE FAULT	500-2000% 50-200%
 50N	INSTANTANEOUS O/C RELAY FOR EARTH FAULT	10-40%
 X	AUX. RELAY, SELF RESET.	-
 62	TIME DELAY RELAY, DELAY 'ON DROPOUT'	0.1-1 SEC
 25	CHK. SYN. RELAY	
 50LR	LOCKED ROTOR PROTECTION	150-600% 2.5-25 sec CONT. ADJUSTABLE
 94	ANTI-PUMPING RELAY	-
 74	TRIP CIRCUIT SUPERVISION RELAY	-
 50G	DEFINITE TIME O/C RELAY FOR EARTH FAULT	10-40% 0.1-1 sec

**TYPE OF RELAY FOR LT SWITCHGEAR**

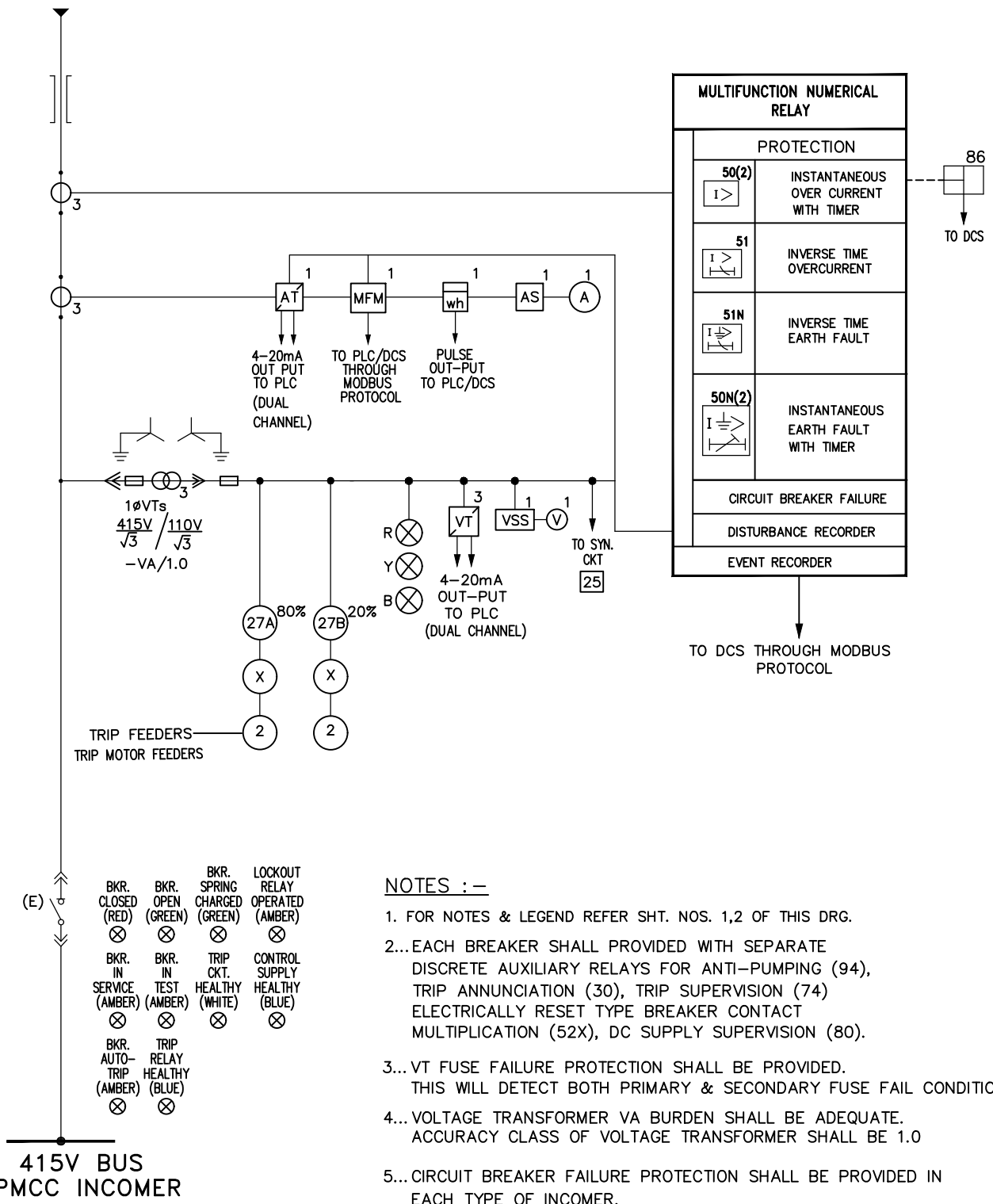
TYPE OF FEEDER	415V MCC	415V PCC
INCOMER	MICOM P127 OR EQUIVALENT	MICOM P123 OR EQUIVALENT
BUS COUPLER	MICOM P127 OR EQUIVALENT	MICOM P123 OR EQUIVALENT
MOTOR FEEDER	MICOM P211C OR EQUIVALENT	MICOM P211C OR EQUIVALENT
TRANSFORMER FEEDER	-	MICOM P123 OR EQUIVALENT
OUTGOING FEEDER	-	MICOM P123 OR EQUIVALENT

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		 DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS		
					 IFFCO PARADEEP		JOB NO. 18A08		SCALE : NTS
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		DWG. NO. 18A08-DWG-E-0106		REV.
APPVD.	REVWD.	CHKD.	REV.	DATE			SHT. 02 OF 09		0



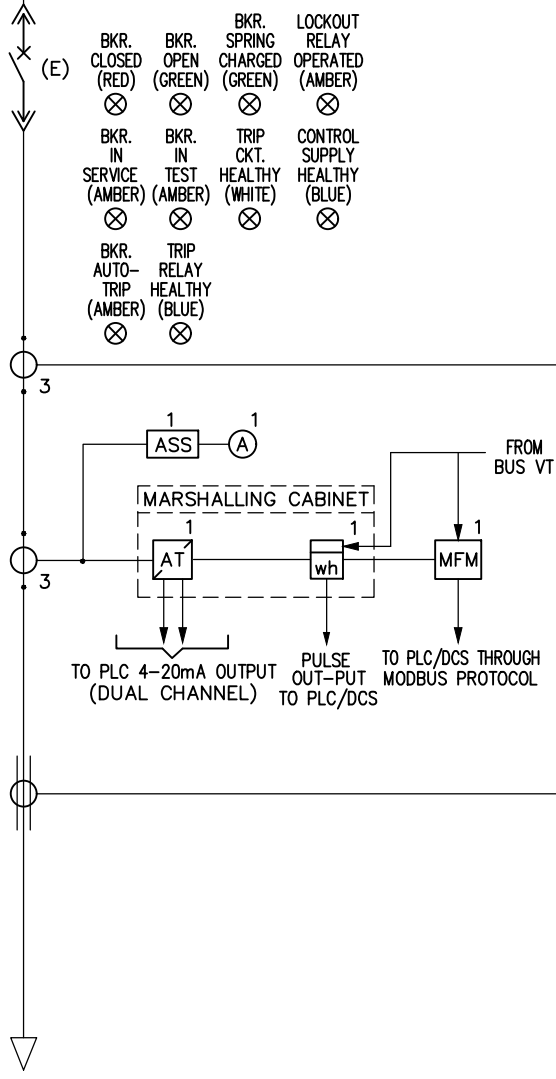
FROM 6.6KV/.433KV  
TRANSFORMER



ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					IFFCO PARADEEP		JOB NO. 18A08	
					IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
DS	RD	AK	0	11.09.19			DWG. NO. 18A08-DWG-E-0106	
APPVD.	REVVD.	CHKD.	REV.	DATE			SHT. 03 OF 09	
							REV. 0	

**415V BUS**



**MICRO PROCESSOR BASED NUMERICAL MOTOR PROTECTION RELAY**

PROTECTION		
49	THERMAL OVERLOAD	86 TO PLC/DCS
50LR	LOCKED ROTOR PROTECTION	
46	CURRENT UNBALANCE (-ve SEQ.) SINGLE PHASING	
50(2)	INSTANTANEOUS OVER CURRENT WITH TIMER	
50N(2)	INSTANTANEOUS EARTH FAULT WITH TIMER	
51	INVERSE TIME OVERCURRENT	
51N	INVERSE TIME EARTH FAULT	
66	STARTS PER HOUR	
CIRCUIT BREAKER FAILURE		
DISTURBANCE RECORDER		← FROM RESPECTIVE SECTION OF BUS PT
EVENT RECORDER		

TO PLC/DCS THROUGH MODBUS PROTOCOL

**MOTOR FEEDER**

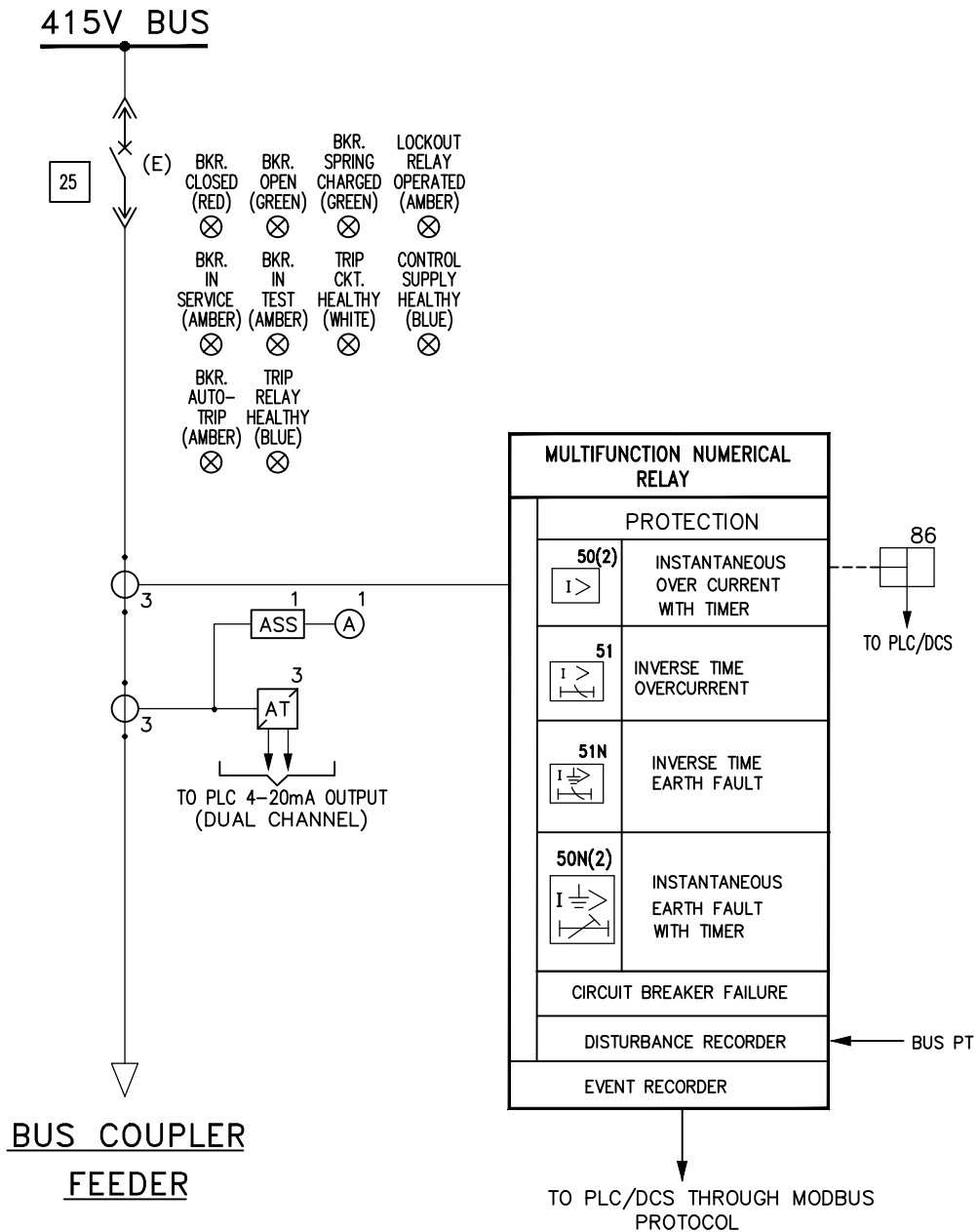
(ACB OPERATED MOTOR FEEDER)  
(132KW-160KW)

**NOTE:-**

- FOR NOTES & LEGEND REFER SHT. NOS. 1,2 & 3 OF THIS DRG.
- EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY RESET TYPE BREAKER CONTACT MULTIPLICATION (52X), DC SUPPLY SUPERVISION (80).
- ALL DI/DO, AI/AO'S WILL COME TO MARSHALLING CABINET FROM WHERE FINAL SIGNALS WILL GOES TO PLC/DCS

**ISSUED FOR CONSTRUCTION**

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					<b>IFFCO</b> PARADEEP		JOB NO. 18A08	
					<b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>		SCALE : NTS	
DS	RD	AK	0	11.09.19	DWG. NO. 18A08-DWG-E-0106			REV.
APPVD.	REVWD.	CHKD.	REV.	DATE	SHT. 04 OF 09			0





**NOTES:-**

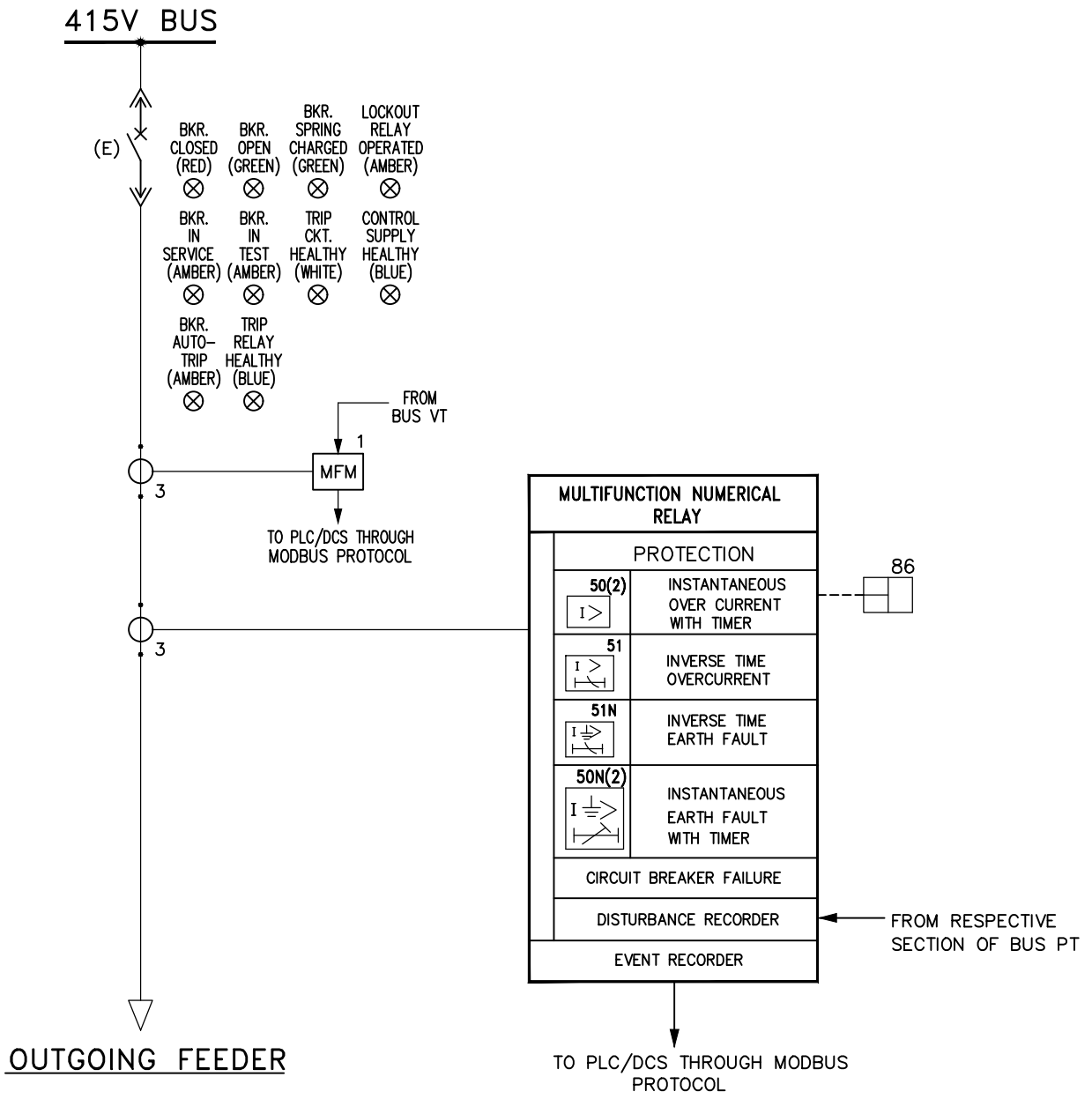
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2...EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY RESET TYPE BREAKER CONTACT MULTIPLICATION (52X), DC SUPPLY SUPERVISION (80).

**ISSUED FOR CONSTRUCTION**

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		 DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					 <b>IFFCO</b> PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0106	
							SHT. 05 OF 09	
							REV. 0	

A4\_DD (9-96) [210x297]



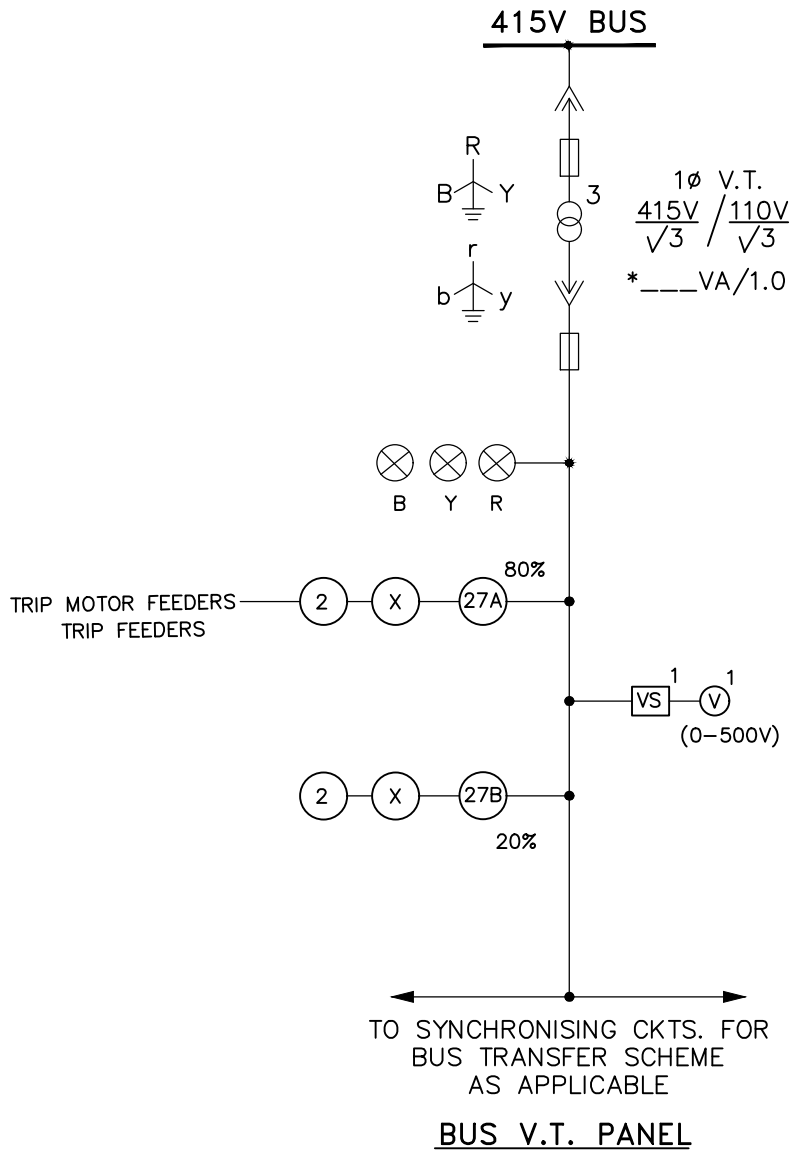
**NOTE:-**

1...FOR LEGEND REFER SHT.-1 OF THIS DRAWING.

2...EACH BREAKER SHALL PROVIDED WITH SEPARATE DISCRETE AUXILIARY RELAYS FOR ANTI-PUMPING (94), TRIP ANNUNCIATION (30), TRIP SUPERVISION (74) ELECTRICALLY RESET TYPE BREAKER CONTACT MULTIPLICATION (52X), DC SUPPLY SUPERVISION (80).

**ISSUED FOR CONSTRUCTION**

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					IFFCO PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0106	
							SHT. 06 OF 09	
							REV. 0	

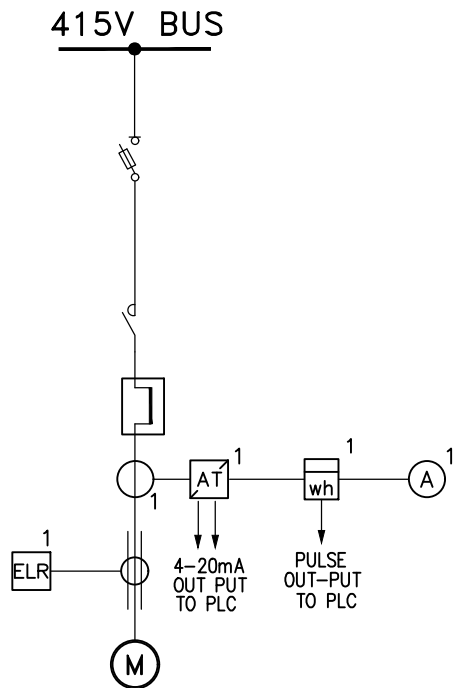


**NOTE:-**

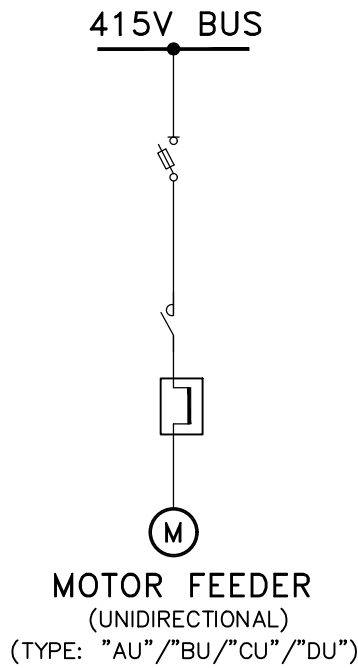
- 1...FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 2... VOLTAGE TRANSFORMER VA BURDEN SHALL BE ADEQUATE. ACCURACY CLASS OF VT SHALL BE I.O.
- 3... VT FUSE FAILURE PROTECTION SHALL BE PROVIDED.

ISSUED FOR CONSTRUCTION

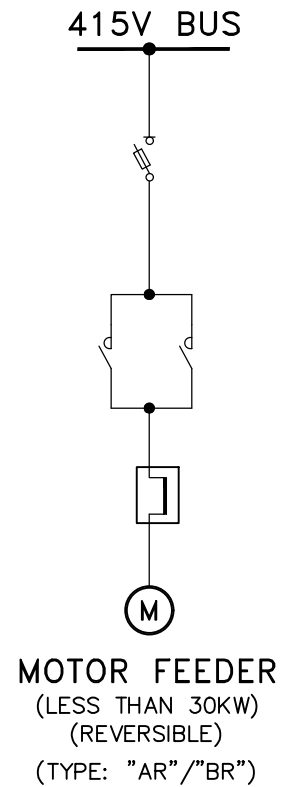
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					<b>IFFCO PARADEEP</b>	JOB NO. 18A08      SCALE : NTS	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		DWG. NO. 18A08-DWG-E-0106 SHT. 07 OF 09
APPVD.	REVWD.	CHKD.	REV.	DATE			REV. 0



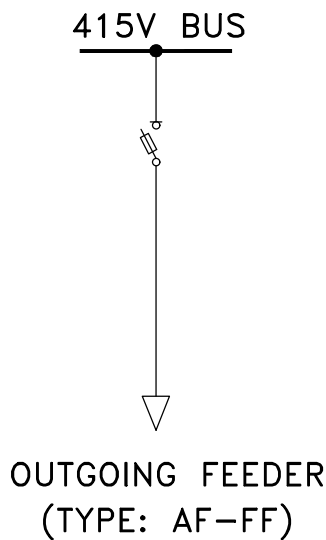
**MOTOR FEEDER**  
(UNIDIRECTIONAL)  
(TYPE: "EU"/"FU")



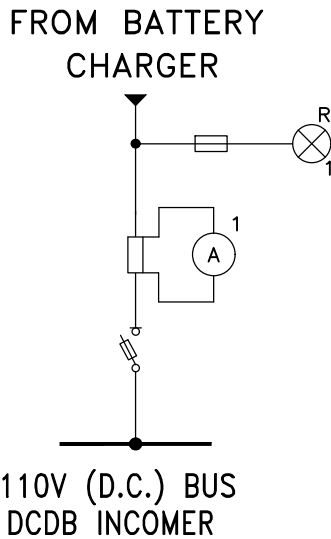
**MOTOR FEEDER**  
(UNIDIRECTIONAL)  
(TYPE: "AU"/"BU"/"CU"/"DU")



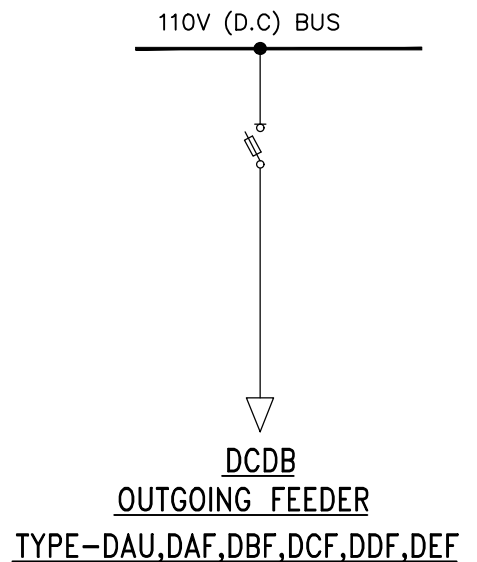
**MOTOR FEEDER**  
(LESS THAN 30KW)  
(REVERSIBLE)  
(TYPE: "AR"/"BR")



**OUTGOING FEEDER**  
(TYPE: AF-FF)



**110V (D.C.) BUS**  
DCDB INCOMER




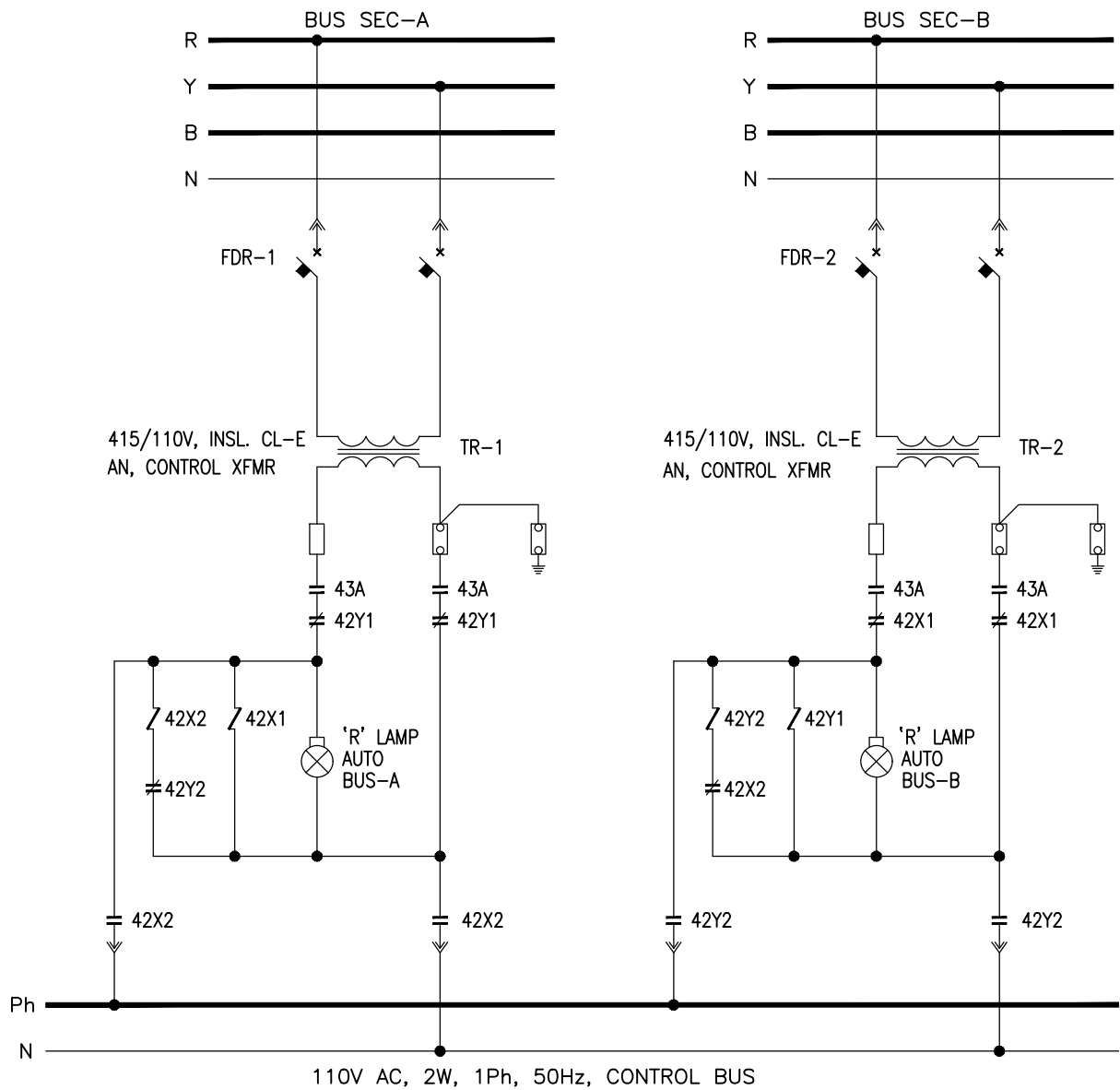
**DCDB**  
**OUTGOING FEEDER**  
TYPE-DAU,DAF,DBF,DCF,DDF,DEF

**NOTE:-**

- 1...FOR LEGEND REFER SHT.-1 OF THIS DRAWING.
- 2... MOTOR FEEDER 30 KW UP TO 110 KW SHALL BE PROVIDED WITH 3 Ph. ELECTRONIC ENERGY METER WITH PULSE OUTPUT.

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC		DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					 <b>IFFCO</b> PARADEEP		JOB NO. 18A08	
DS	RD	AK	0	11.09.19	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		SCALE : NTS	
APPVD.	REVWD.	CHKD.	REV.	DATE			DWG. NO. 18A08-DWG-E-0106	
							SHT. 08 OF 09	
							REV. 0	



### CONTROL SUPPLY CHANGE-OVER SCHEME

**LEGEND:-**

43A = SELECTOR SWITCH

**NOTE:-**

- 1... CONTROL TRANSFORMER SHALL BE POWERED FROM LINE SIDE OF INCOMING CIRCUIT BREAKER.
- 2... 415V/110V, 1PH, 50HZ. ADEQUATELY RATED CONTROL TRANSFORMER SHALL BE PROVIDED. BOTH SHALL BE CONNECTED TO SAME PHASE.
- 3... 'CONTROL SUPPLY ON' RED LAMP SHALL BE LOCATED IN EACH INCOMER CUBICLE.

ISSUED FOR CONSTRUCTION

					TYPICAL PROTECTION & METERING SLD OF 415V MCC/PMCC	DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS	
					<b>IFFCO PARADEEP</b>	JOB NO. 18A08      SCALE : NTS	
DS	RD	AK	0	11.09.19	<b>IFFCO PARADEEP AFBC BOILER CONTROL ROOM</b>		
APPVD.	REVWD.	CHKD.	REV.	DATE	DWG. NO. 18A08-DWG-E-0106 SHT. 09 OF 09		REV. 0

# BLOCK LOGIC DIAGRAM 6.6kV HT FEEDERS WITH DCS/PLC CONTROL

ISSUED FOR CONSTRUCTION

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
							DS	ISSUED FOR CONSTRUCTION	0	11.09.2019	BG	RD

	RELEASE STATUS	DATE	SIGNATURE
REVIEWED	PRELIMINARY		
	TENDER PURPOSE ONLY		
	FOR APPROVAL		
	✓ FOR CONSTRUCTION	11.09.2019	RD

OWNER: IFFCO PARADEEP UNIT				
PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM				
TITLE: BLOCK LOGIC DIAGRAM 6.6kV HT FEEDER WITH DCS/PLC CONTROL				
DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI				
PREPARED	AK	JOB NO.	18A08	
CHECKED	RD	SCALE	SCALE	
APPROVED	DS	DATE	05.11.2018	
DWG. NO. 18A08-DWG-E-1201			REV 0	SHEET COVER

DWG. NO. 18A08-DWG-E-1201  
REV 0

FILE LOCATION: D:\DCPL\_POWER\_JOB FILES\18A08\_IFFCO Boiler Control Room\4. Block Logic Diagram\HT Feeders\18A08-DWG-E-1201-Cover.dwg  
PLOT DATE: 11-Sep-19 3:24 PM

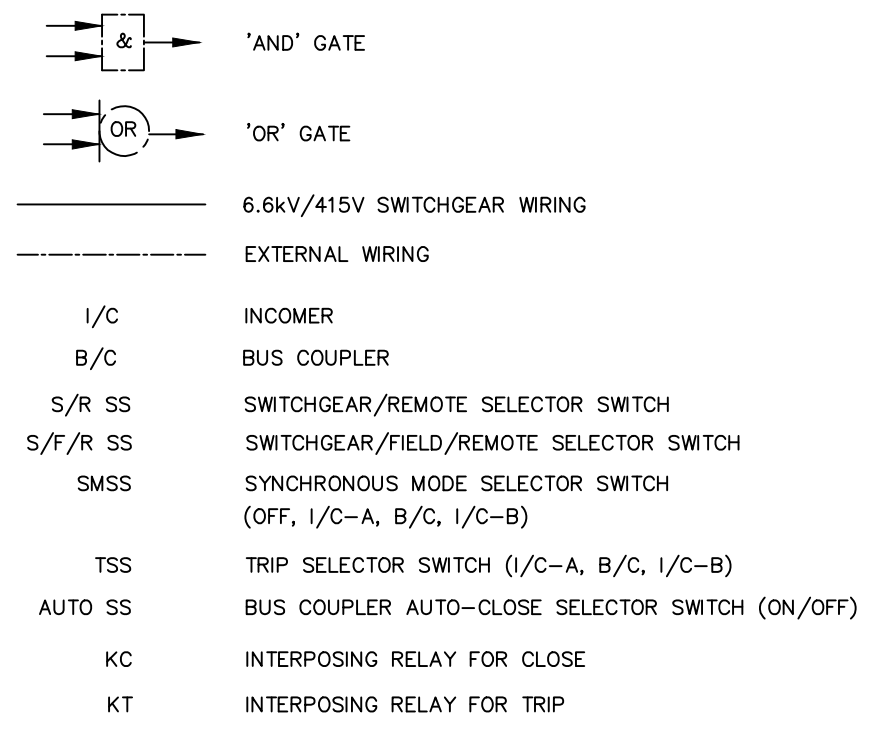
A3 [420x297]



**NOTES :**

- THE LOGIC DIAGRAM DEPICTS THE CLOSING & TRIPPING OF CIRCUIT BREAKERS OF HT & LT SWITCH BOARDS. UNLESS OTHERWISE INDICATED, ALL COMPONENTS REQUIRE TO MEET THE FUNCTIONAL REQUIREMENTS AS PER THE LOGIC DIAGRAMS ARE LOCATED IN RESPECTIVE SWITCHGEAR. SMSS, TSS, AUTO SS ARE ALSO LOCATED AT RESPECTIVE SWITCHGEAR BUS COUPLER PANEL.
- BASIC LOGIC / INTERLOCKING FOR CLOSING & TRIPPING OF CIRCUIT BREAKER FROM REMOTE i.e. PLC/DCS & IN AFBC BOILER CONTROL ROOM ARE SHOWN HERE. VARIOUS CONDITION UNDER WHICH CLOSING AND TRIPPING IS ENVISAGED FROM REMOTE ARE BRIEFLY MENTIONED BELOW :
  - INCOMER BREAKER AT 6.6KV SWGR & 415V PCC
    - MANUAL DEAD BUS CLOSING FROM REMOTE WITH SYNCHRONIZATION BYPASS.
    - MANUAL PLANED TRIPPING FROM REMOTE (WITH/WITHOUT SYNCHRONIZATION).
    - MANUAL PLANNED CLOSING WITH SYNCHRONIZATION.
  - INCOMER BREAKER AT 415V PCC
    - MANUAL DEAD BUS CLOSING FROM REMOTE WITH SYNCHRONIZATION BYPASS.
    - MANUAL PLANED TRIPPING FROM REMOTE (WITH/WITHOUT SYNCHRONIZATION).
    - MANUAL PLANNED CLOSING WITH SYNCHRONIZATION.
  - BUS COUPLER FOR 6.6KV SWGR & 415V PCC
    - MANUAL DEAD BUS CLOSING FROM REMOTE WITH SYNCHRONIZATION BYPASS.
    - MANUAL PLANED TRIPPING FROM REMOTE (WITH/WITHOUT SYNCHRONIZATION).
    - MANUAL PLANNED CLOSING WITH SYNCHRONIZATION.
  - OUTGOING FEEDER TO TRANSFORMER
    - MANUAL CLOSING FROM REMOTE.
    - MANUAL TRIPPING FROM REMOTE.
  - OUTGOING FEEDER TO MOTOR
    - MANUAL CLOSING FROM REMOTE.
    - MANUAL TRIPPING FROM REMOTE.
    - EMERGENCY TRIPPING FROM LPBS (IRRESPECTIVE OF ANY POSITION).
- PLANNED CHANGEOVER WITH SYNCHRONIZING CHECK FACILITY BETWEEN INCOMERS AND BUS COUPLER IS ENVISAGED FOR 6.6kV & 415V SYSTEM. SYNCHROCHECK (25) RELAY IS LOCATED IN THE RESPECTIVE BUS COUPLER PANEL FOR THE SAME.
- FEEDER CONTROL DETAILS ARE SHOWN IN SHEET 2.
- LOCATION OF (SWITCHGEAR / REMOTE) SELECTOR SWITCH, (SWITCHGEAR/FIELD/ REMOTE) SELECTOR SWITCH AND INTERPOSING RELAYS (KC & KT) WILL BE IN SWITCHGEAR.

**LEGENDS :**



**REFERENCE DRAWING :**

- ELECTRICAL SINGLE LINE DIAGRAM FOR AUX. POWER DISTRIBUTION (DRG. NO. 18A08-DWG-E-0001)

ISSUED FOR CONSTRUCTION

		OWNER: IFFCO PARADEEP UNIT	
PROJECT:		IFFCO PARADEEP AFBC BOILER CONTROL ROOM	
TITLE:		BLOCK LOGIC DIAGRAM 6.6KV HT FEEDER WITH DCS/PLC CONTROL	
		DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI	
PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018
DWG. NO. 18A08-DWG-E-1201		REV 0	
		1 SHEET OF 6	

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
							DS	ISSUED FOR CONSTRUCTION	0	11.09.2019	BG	RD
REVIEWED												

RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

REVIEWED



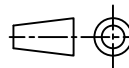
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 PLOT DATE: 11-Sep-19 3:25 PM

SL. NO.	SWITCHGEAR / FEEDER	OPERATION FROM		LPBS	
		PLC/DCS (MAIN CONTROL)	SWGR. (TEST CONTROL)	START	STOP
1.	6.6kV SWGR & 415V PCC & 415V MCC				
1A.	INCOMER FEEDER	✓	✓	✗	✗
1B.	BUS COUPLER	✓	✓	✗	✗
1C.	O/G TRANSFORMER FEEDER	✓	✓	✗	✗
1D.	O/G MOTOR FEEDER	✓	✓	✓	✓
1E.	O/G LINE FEEDER	✓	✓	✗	✗

TYPICAL FEEDER CONTROL DETAILS

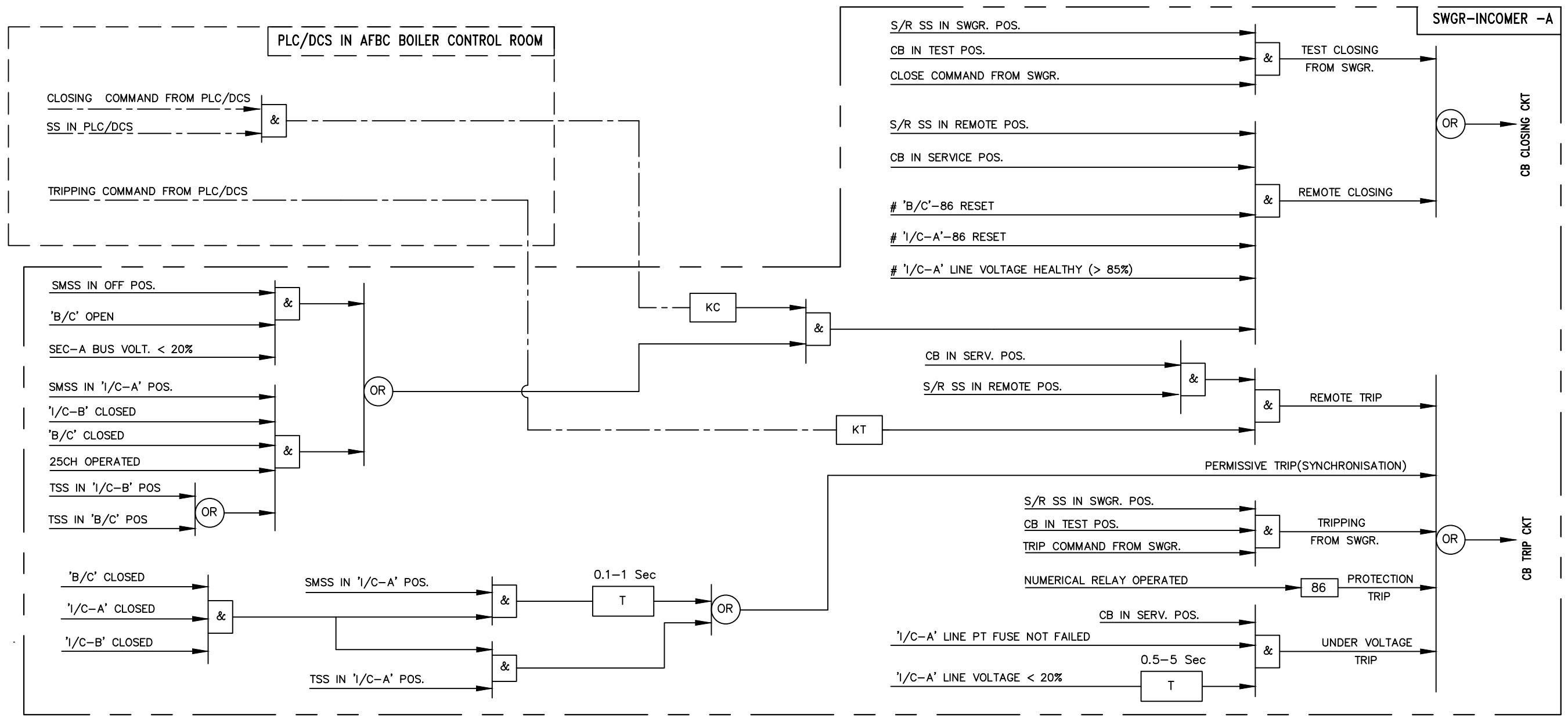
ISSUED FOR CONSTRUCTION

										 OWNER: IFFCO PARADEEP UNIT																					
										PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM																					
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										 DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI																					
PROCESS		MECH		C&S		ARCH		ELEC		INST		OTHERS		APPVD		DS		ISSUED FOR CONSTRUCTION		0		11.09.2019		BG		RD					
REVIEWED										FOR APPROVAL		FOR CONSTRUCTION		11.09.2019		RD		PREPARED		AK		JOB NO.		18A08							
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 PLOT DATE: 11-Sep-19 3:25 PM



LOGIC DIAGRAM FOR 'I/C-A' TO 6.6 KV SWITCHBOARD

ISSUED FOR CONSTRUCTION

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
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RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

**IFFCO PARADEEP** OWNER: IFFCO PARADEEP UNIT

PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM

TITLE: BLOCK LOGIC DIAGRAM 6.6KV HT FEEDER WITH DCS/PLC CONTROL

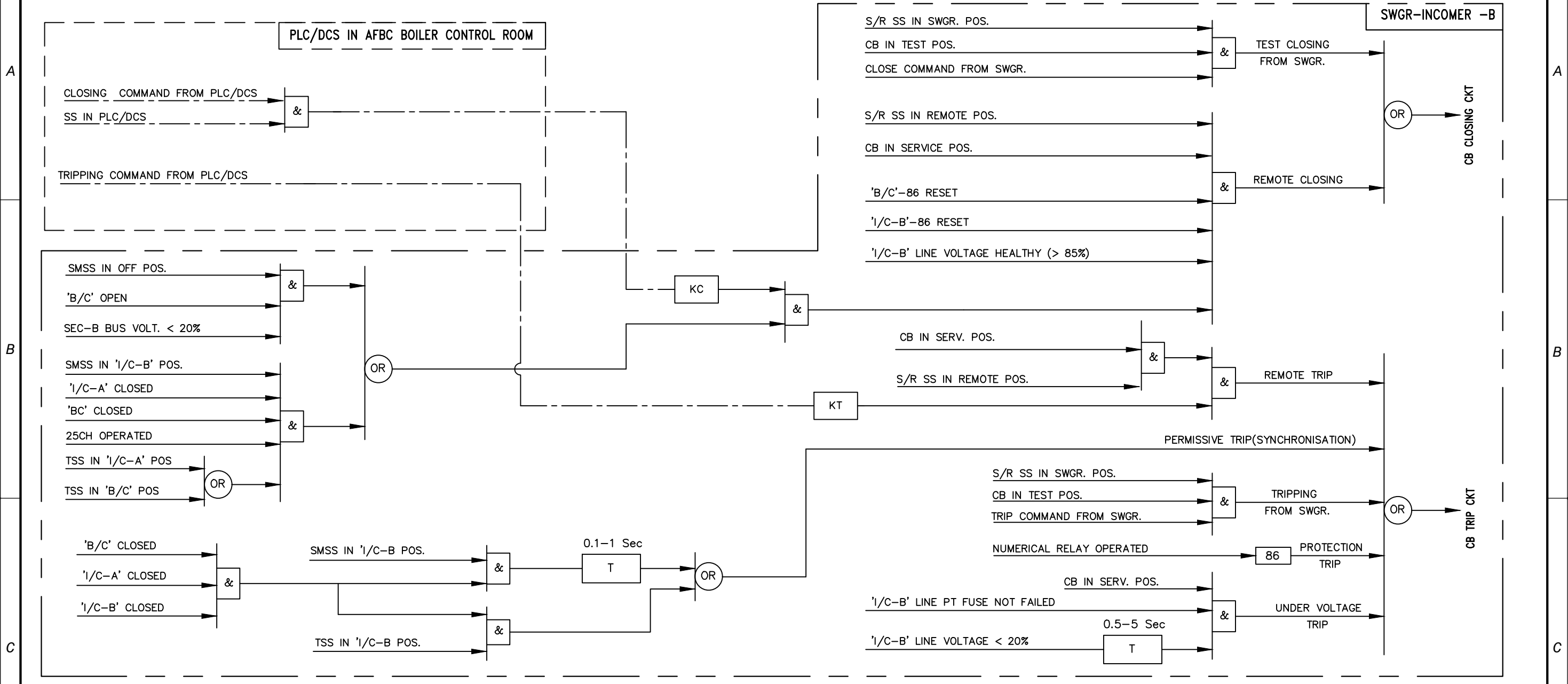
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 CONSULTING ENGINEERS  
 KOLKATA • MUMBAI • CHENNAI • NEW DELHI

PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018

DWG. NO. 18A08-DWG-E-1201

REV 0

3 SHEET OF 6



LOGIC DIAGRAM FOR 'I/C-B' TO 6.6 KV SWITCHBOARD

ISSUED FOR CONSTRUCTION

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
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RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

**IFFCO** PARADEEP OWNER: IFFCO PARADEEP UNIT

PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM

TITLE: BLOCK LOGIC DIAGRAM 6.6KV HT FEEDER WITH DCS/PLC CONTROL

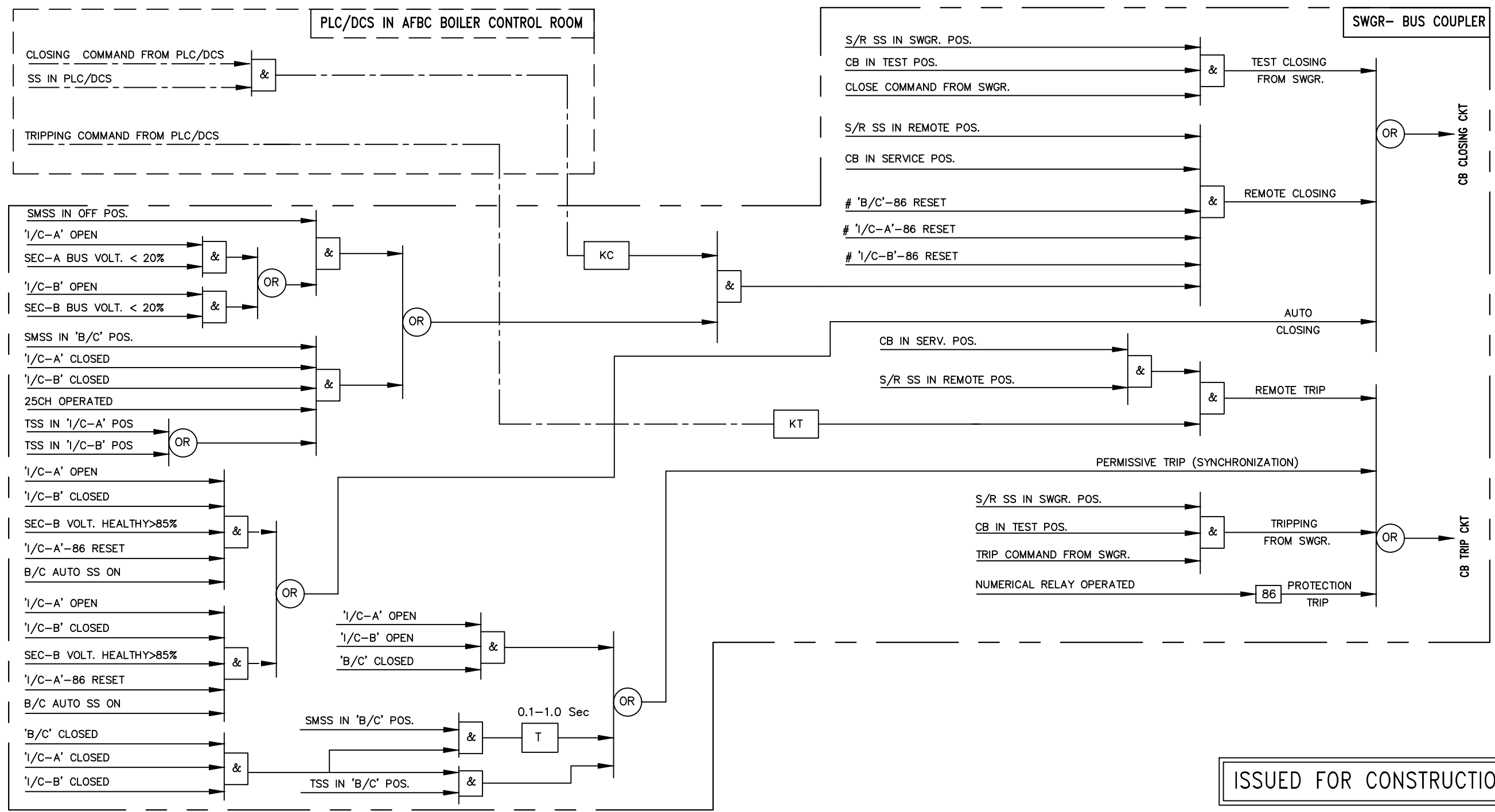
**DEVELOPMENT CONSULTANTS PVT LTD.**  
 CONSULTING ENGINEERS  
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PREPARED	AK	JOB NO.	18A08
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DWG. NO. 18A08-DWG-E-1201


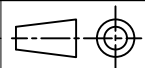
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 PLOT DATE: 11-Sep-19 3:24 PM  
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LOGIC DIAGRAM FOR 'B/C' TO 6.6 KV SWITCHBOARD

<b>IFFCO</b> PARADEEP		OWNER: IFFCO PARADEEP UNIT	
PROJECT:		IFFCO PARADEEP AFBC BOILER CONTROL ROOM	
TITLE:		BLOCK LOGIC DIAGRAM 6.6KV HT FEEDER WITH DCS/PLC CONTROL	
		DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI	
PREPARED	AK	JOB NO.	18A08
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APPROVED	DS	DATE	05.11.2018
DWG. NO. 18A08-DWG-E-1201		 REV 0 5 SHEET OF 6	

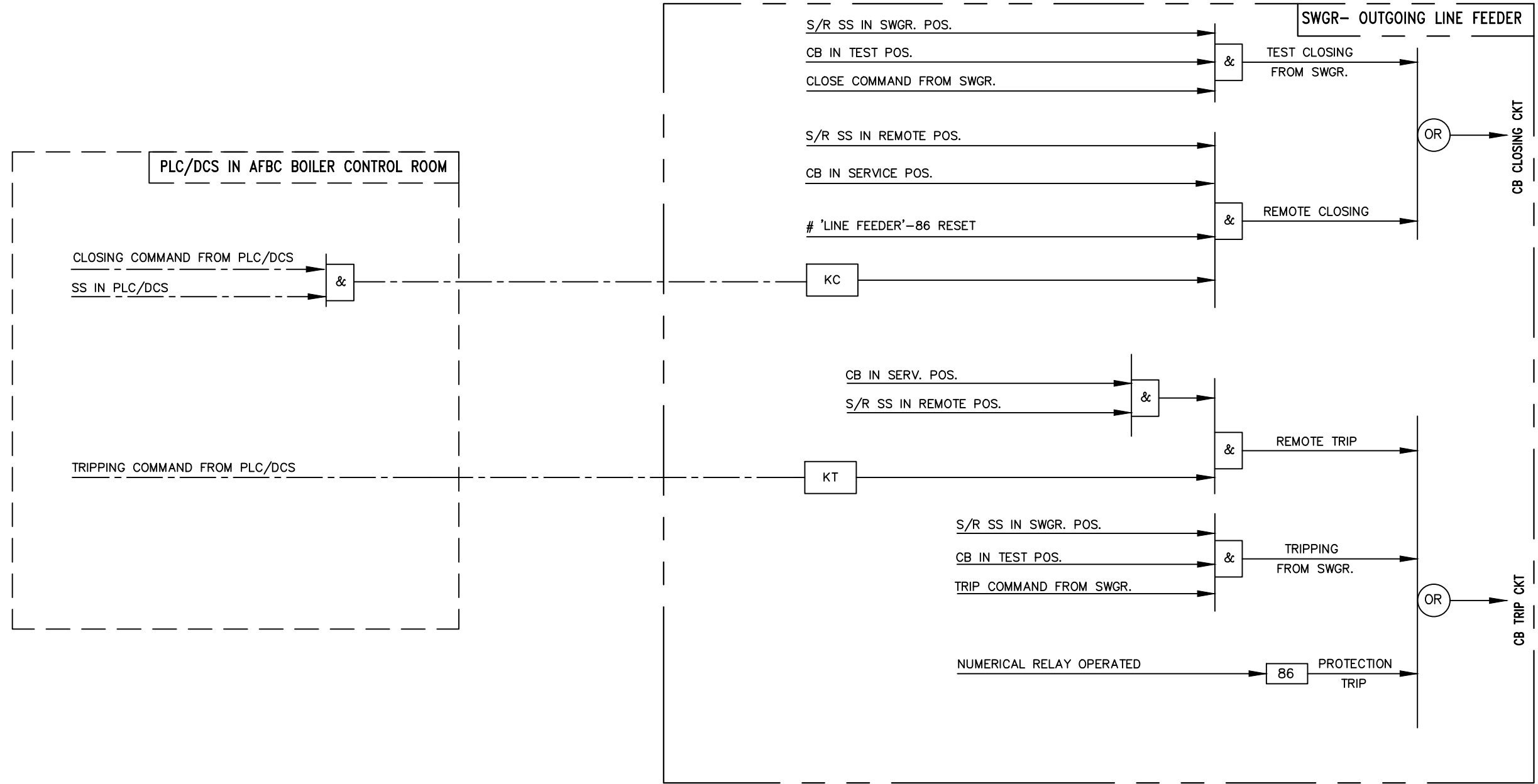
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REVIEWED	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
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APPVD					

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 PLOT DATE: 11-Sep-19 3:25 PM



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LOGIC DIAGRAM FOR OUTGOING LINE FEEDER FROM 6.6 KV SWITCHBOARD

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
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RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
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✓ FOR CONSTRUCTION	11.09.2019	RD



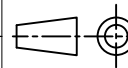
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PROJECT:	IFFCO PARADEEP AFBC BOILER CONTROL ROOM		
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	DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI		
PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018
DWG. NO.	18A08-DWG-E-1201		
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# BLOCK LOGIC DIAGRAM 415V LT FEEDERS WITH DCS/PLC CONTROL

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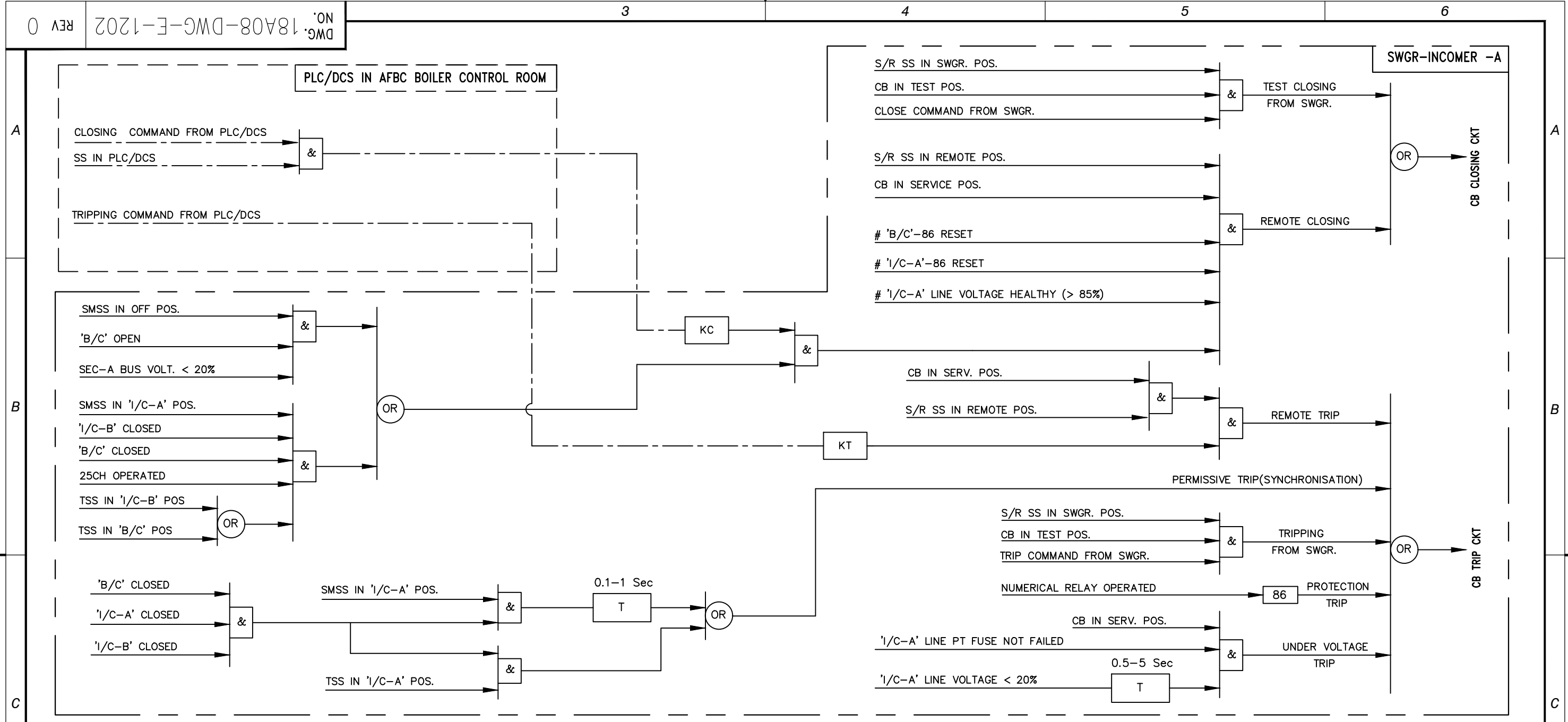
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RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

 OWNER: IFFCO PARADEEP UNIT				
PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM				
TITLE: BLOCK LOGIC DIAGRAM 415V LT FEEDER WITH DCS/PLC CONTROL				
 DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI				
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PLOT DATE: 11-Sep-19 3:27 PM

REV 0 DWG. NO. 18A08-DWG-E-1202



LOGIC DIAGRAM FOR 'I/C-A' TO 415V PCC

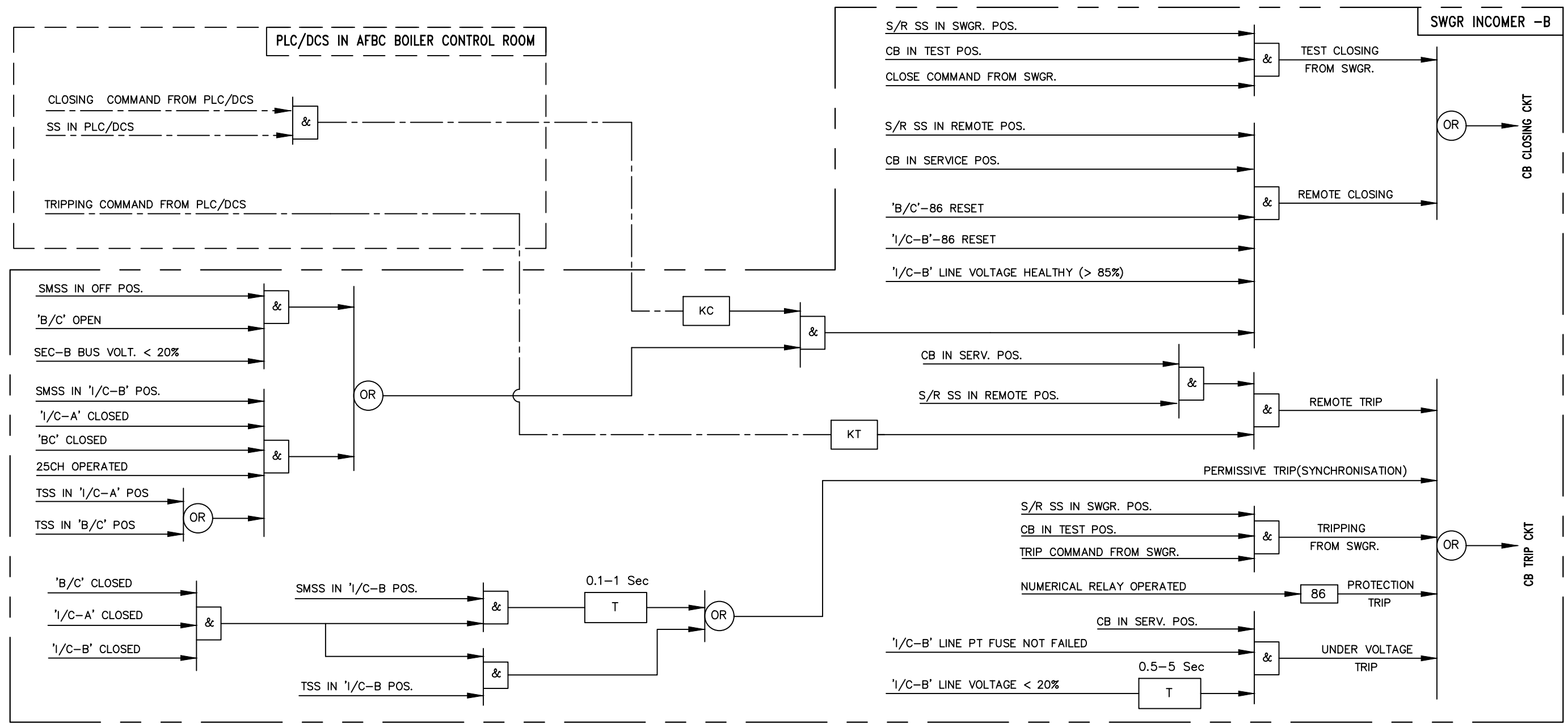
ISSUED FOR CONSTRUCTION

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RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

		<b>OWNER:</b> IFFCO PARADEEP UNIT	
<b>PROJECT:</b> IFFCO PARADEEP AFBC BOILER CONTROL ROOM			
<b>TITLE:</b> BLOCK LOGIC DIAGRAM 415V LT FEEDER WITH DCS/PLC CONTROL			
DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI			
<b>PREPARED</b> AK <b>CHECKED</b> RD <b>APPROVED</b> DS	<b>JOB NO.</b> 18A08 <b>SCALE</b> SCALE <b>DATE</b> 05.11.2018		
<b>DWG. NO.</b> 18A08-DWG-E-1202		<b>REV 0</b> 1 SHEET OF 6	





LOGIC DIAGRAM FOR 'I/C-B' TO 415V PCC

ISSUED FOR CONSTRUCTION

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
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RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

**IFFCO** PARADEEP OWNER: IFFCO PARADEEP UNIT

PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM

TITLE: BLOCK LOGIC DIAGRAM 415V LT FEEDER WITH DCS/PLC CONTROL

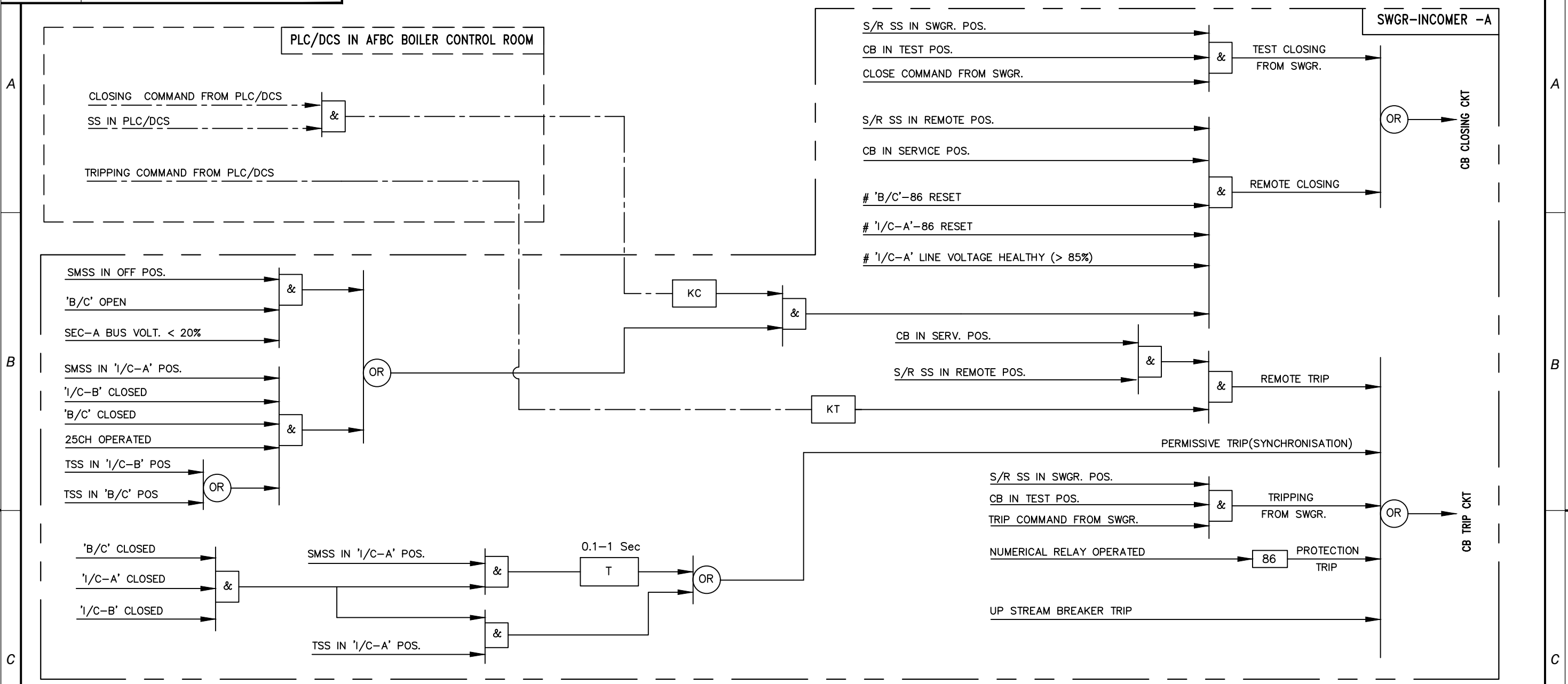
**DEVELOPMENT CONSULTANTS PVT LTD.**  
 CONSULTING ENGINEERS  
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PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018

DWG. NO. 18A08-DWG-E-1202

REV 0  
2 SHEET OF 6

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LOGIC DIAGRAM FOR 'I/C-A' TO 415V MCC

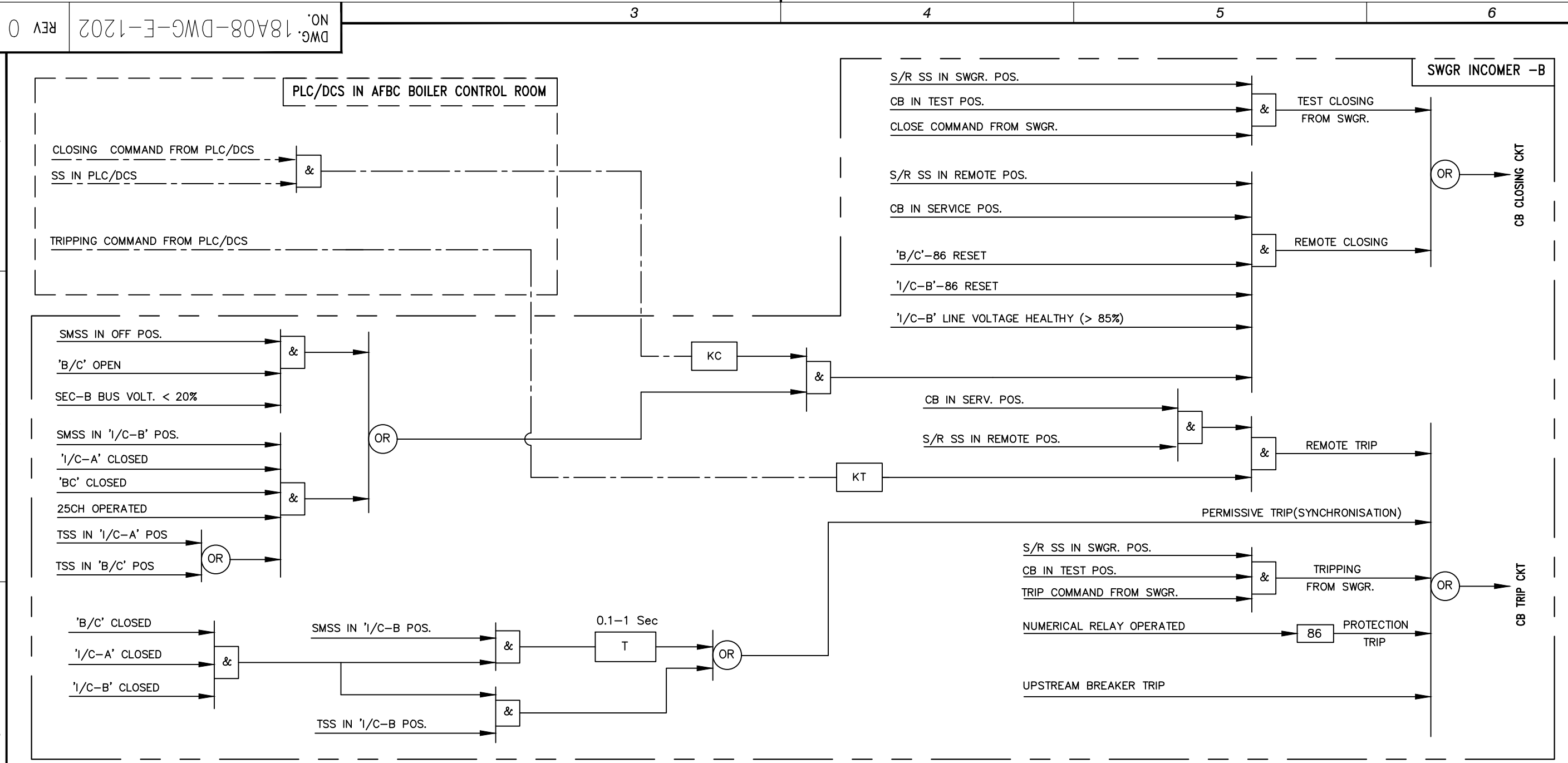
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		DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA • MUMBAI • CHENNAI • NEW DELHI	
PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018
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RELEASE STATUS	DATE	SIGNATURE
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FOR CONSTRUCTION	11.09.2019	RD

PROCESSED	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
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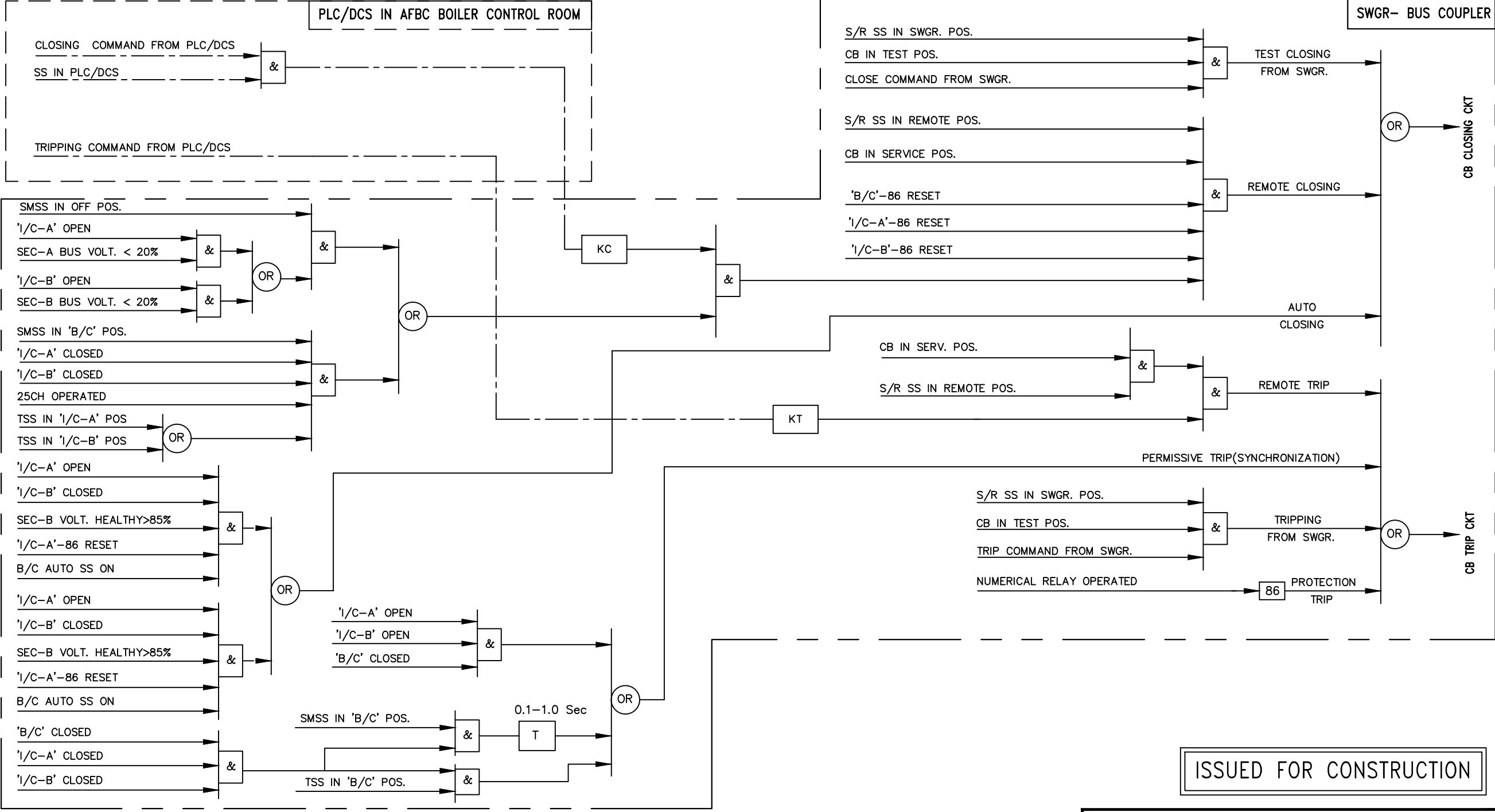
LOGIC DIAGRAM FOR 'I/C-B' TO 415V MCC

ISSUED FOR CONSTRUCTION

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<b>IFFCO</b>	<b>PARADEEP</b>	<b>OWNER:</b>	IFFCO PARADEEP UNIT																																																																																						
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REVIEWED	PROCESS	MECHANICAL	CIVIL & STRUCTURAL	ARCHITECTURAL	INSTRUMENTATION	ELECTRICAL	OTHERS	DS	ISSUED FOR CONSTRUCTION	0	11.09.2019	BG	RD																																																																												
								APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD																																																																												

FILE LOCATION: D:\DCPL\_POWER\_JOB FILES\18A08\_IFFCO Boiler Control Room\4. Block Logic Diagram\LT Feeders\18A08-DWG-E-1202-SHT5.dwg  
PLOT DATE: 11-Sep-19 3:26 PM

REV 0 DWG. NO. 18A08-DWG-E-1202



LOGIC DIAGRAM FOR 'B/C' TO 415V PCC & MCC

REVIEWED	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
	DS	ISSUED FOR CONSTRUCTION	0	11.09.2019	BG	RD

RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

**IFFCO PARADEEP** OWNER: IFFCO PARADEEP UNIT

PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM

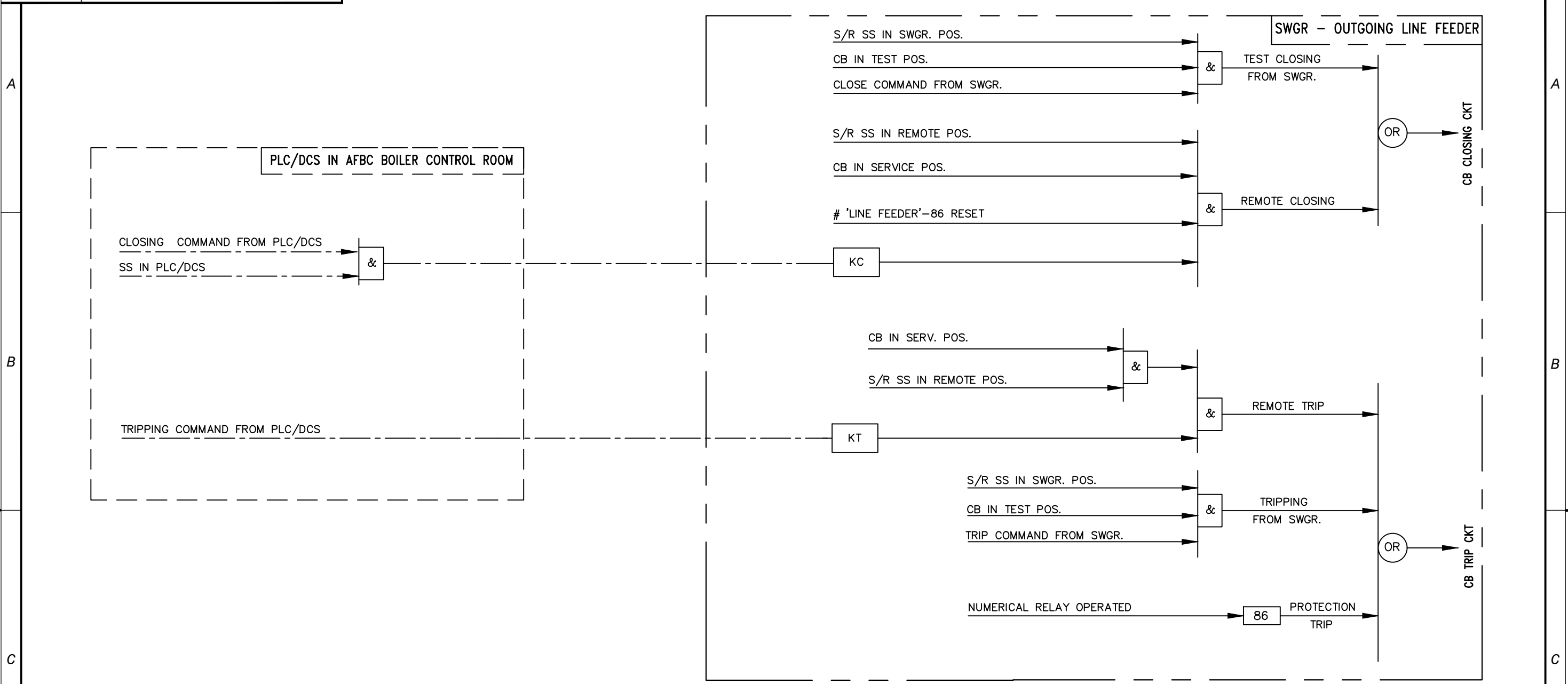
TITLE: BLOCK LOGIC DIAGRAM 415V LT FEEDER WITH DCS/PLC CONTROL

**DEVELOPMENT CONSULTANTS PVT LTD.**  
CONSULTING ENGINEERS  
KOLKATA • MUMBAI • CHENNAI • NEW DELHI

PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018

DWG. NO. 18A08-DWG-E-1202

REV 0  
5 SHEET OF 6



LOGIC DIAGRAM FOR OUTGOING LT LINE FEEDER FROM 415V PCC

PROCESS	MECH	C&S	ARCH	ELEC	INST	OTHERS	APPVD	NATURE OF REVISION & DESCRIPTION	REV	DATE	PREPD	CHKD
							DS	ISSUED FOR CONSTRUCTION	0	11.09.2019	BG	RD

RELEASE STATUS	DATE	SIGNATURE
PRELIMINARY		
TENDER PURPOSE ONLY		
FOR APPROVAL		
✓ FOR CONSTRUCTION	11.09.2019	RD

**IFFCO PARADEEP** OWNER: IFFCO PARADEEP UNIT

PROJECT: IFFCO PARADEEP AFBC BOILER CONTROL ROOM

TITLE: BLOCK LOGIC DIAGRAM 415V LT FEEDER WITH DCS/PLC CONTROL

**DEVELOPMENT CONSULTANTS PVT LTD.**  
 CONSULTING ENGINEERS  
 KOLKATA • MUMBAI • CHENNAI • NEW DELHI

PREPARED	AK	JOB NO.	18A08
CHECKED	RD	SCALE	SCALE
APPROVED	DS	DATE	05.11.2018

DWG. NO. 18A08-DWG-E-1202

REV 0  
6 SHEET OF 6

D

D

A

A

B

B

C

C