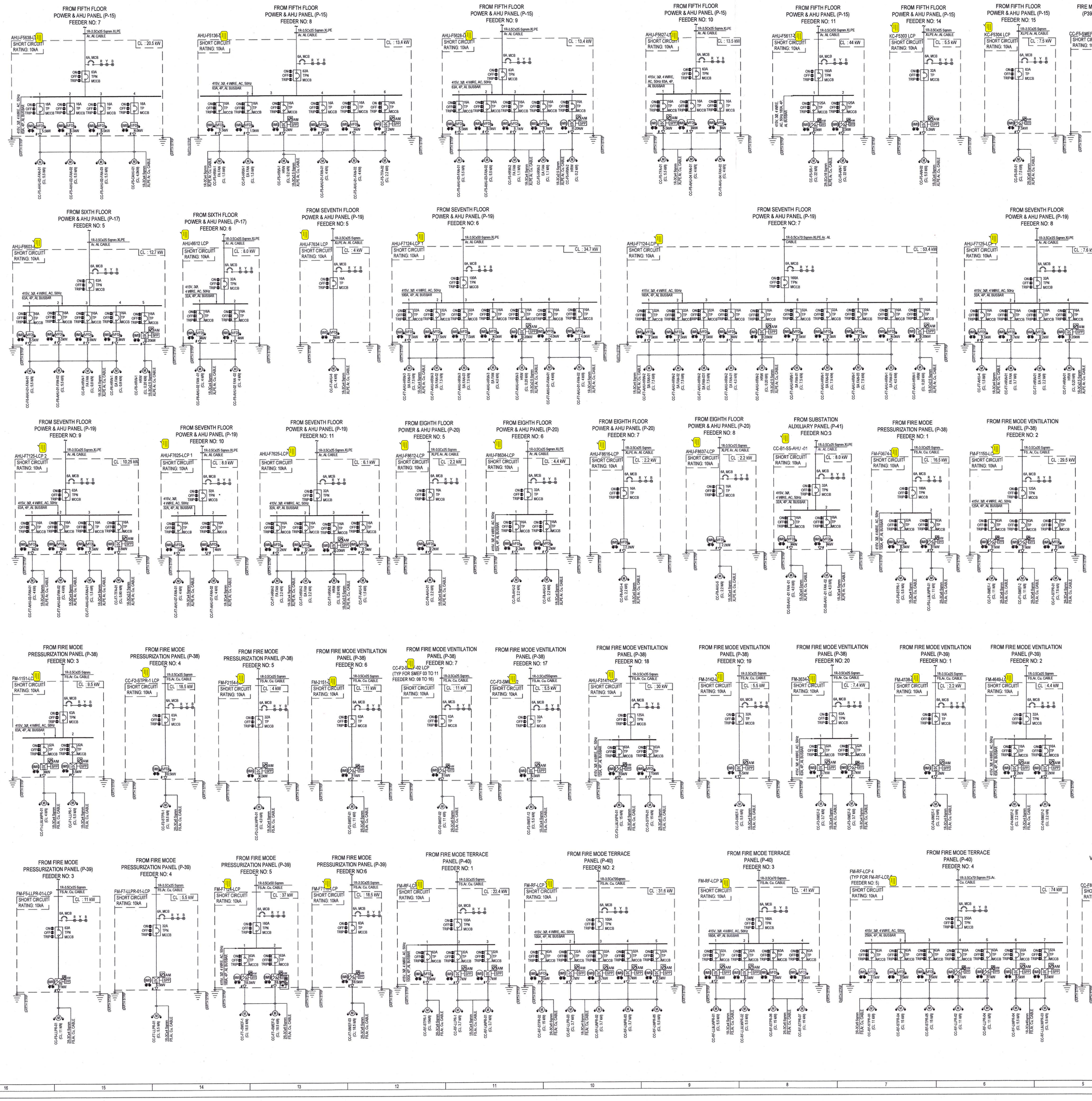

SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3		AIR CIRCUIT BREAKER - ELECTRICAL DRAW OUT TYPE
4		CURRENT TRANSFORMER (DUAL RATIO)
5		ISOLATOR
6		LED INDICATION LAMP
7	VSS	VOLTMETER SELECTOR SWITCH
8	ASS	AMMETER SELECTOR SWITCH
9	ECM	ELECTRONIC ENERGY METER WITH RS485 COMMUNICATION PORT
10	LCP	LOCAL CONTROL PANEL
11	V	DIGITAL TYPE VOLTMETER
12	A	DIGITAL TYPE AMMETER
13		CAPACITOR PANEL
14		GROUNDING
15	E/L	ELECTRICAL INTERLOCK
16	HPFCR	HYBRID POWER FACTOR CORRECTION RELAY
17	BMS	BUILDING MANAGEMENT SYSTEM
18	M	MOTOR / PUMP
19		POWER CONTACTOR
20		LIGHTING DISTRIBUTION BOARD (LDB)
21		EMERGENCY LIGHTING DISTRIBUTION BOARD (ELDB)
22		POWER DISTRIBUTION BOARD (PDB)
23		UPS DISTRIBUTION BOARD (UDB)
24		UNINTERRUPTIBLE POWER SUPPLY
25	TP	TRIP CIRCUIT SUPERVISION RELAY
26	REF	RESTRICTED EARTH FAULT RELAY
27	SEF	SENSITIVE EARTH FAULT RELAY
28	MFM	MULTIFUNCTION METER WITH RS485 COMMUNICATION PORT
29		STAR DELTA STARTER
30		DIRECT ON LINE STARTER
31		AUTO/MANUAL SELECTOR SWITCH
32	DPP	SINGLE PHASE PREVENTOR
33	VFD	VARIABLE FREQUENCY DRIVE

BMS MONITOR/COMMAND STATUS

BMS	NONC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS
BMS M	NONC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS VOLTAGE PRESENSE
BMS	NONC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS ON/OFF COMMAND A/M SWITCH
#	ONE SET POTENTIAL FREE CONTACTS TO BE PROVIDED FOR EACH AHU / FIRE MODE VENTILATION FAN IN LCP / PANEL

INDICATION LAMP DETAILS

INDICATION LAMP	COLOUR
ON	GREEN
OFF	RED
TRIP	AMBER

ABBREVIATIONS

4P-FOUR POLE
TPN-TRIPLE POLE & NEUTRAL
TP-TRIPLE POLE
DP-DOUBLE POLE

ELECTRONIC ENERGY METER (RS485)

1	CURRENT
2	VOLTAGE
3	REAL POWER
4	REACTIVE POWER
5	APPARENT POWER
6	POWER FACTOR
7	FREQUENCY

MULTIFUNCTION METER (RS485)

1	CURRENT
2	VOLTAGE
3	REAL POWER
4	REACTIVE POWER
5	APPARENT POWER
6	POWER FACTOR
7	FREQUENCY
8	CUMULATIVE MD

ALL LCP'S SHALL BE PROVIDED WITH THE BELOW CONFIGURATION

CABLE ENTRY DETAILS
ENTRY : TOP
EXIT : TOP
INGRESS PROTECTION (IP)
IP: 42
PHASING CONFIGURATION
3Ø, TP - R,Y,B
SHORT CIRCUIT RUPTURING CAPACITY
10kA/sec

REFERENCE DRAWINGS

DRAWING NO	DRAWING TITLE
O17303-E-SP-07-1L-0241	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-1/5
O17303-E-SP-07-1L-0242	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-2/5
O17303-E-SP-07-1L-0243	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-3/5
O17303-E-SP-07-1L-0226	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-4/5
O17303-E-SP-07-SC-0244	CONVENTION CENTRE-EARTHING SCHEMATIC
O17303-E-SP-07-DC-0302	CONVENTION CENTRE-SHORT CIRCUIT CALCULATION
O17303-E-SP-07-DC-0321	CONVENTION CENTRE-OVERALL LT CABLE SHEDULE
O17303-E-SP-07-DC-0430	CONVENTION CENTRE-LOAD SHEET
O17303-E-SP-07-DC-0431	CONVENTION CENTRE-HPFC CALCULATION

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACB's SHALL BE OF 50ekA/sec

ALL MCCB'S WITH RATINGS UPTO AND INCLUDING 200A SHALL BE EQUIPPED WITH THERMAL MAGNETIC RELEASE.

ALL MCCB'S WITH RATINGS 250A AND ABOVE SHALL HAVE MICROPROCESSOR BASED RELEASE WITH ADJUSTABLE LONG TIME AND ADJUSTABLE SHORT TIME PROTECTION

NOTES

1. MAIN PCC PANEL SHOULD FULFIL THE REQUIREMENTS OF RELEVANT SPECIFICATIONS.
2. CONTROL CIRCUIT VOLTAGE SHALL BE 240V AC UNLESS SPECIFIED.
3. ALL EQUIPMENTS & PANELS ARE DOUBLE EARTHED WITH ADEQUATE SIZE OF G.I. STRIPS (BODY EARTHING)
4. ALL CABLES ARE ARMOURED CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH FEEDER IDENTIFICATION.
6. THIS SLD SHOULD BE READ IN CONJUNCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
7. ALL BUSDUCTTRBING MAINS SHALL BE OF SANDWICH CONSTRUCTION IT SHALL BE POSSIBLE TO MOUNT THE BUSBAR SYSTEM IN ANY ORIENTATION WITHOUT AFFECTING THE CURRENT RATING.
8. EARTHING SHALL BE CARRIED OUT AS PER IS:3043 / 2016.
9. HPFC CT AND CONTROLLER SHALL BE PROVIDED TO CONTROL / SENSING THE CAPACITOR BANK UNDER EACH BUS SECTION ONLY IN MAIN LT PANEL. THESE DETAILS ARE SUBJECT TO CHANGE DURING DETAIL ENGINEERING BASED ON VENDOR DETAILS
10. CIRCUIT BREAKER FOR MOTOR FEEDER IS DESIGNED BASED ON TYPE 2 COORDINATION CHART, THE FINAL RATING SHALL BE DECIDED BASED ON SELECTED VENDOR COORDINATION CHART.
11. STAR DELTA STARTER IS PROVIDED FOR FAN/MOTOR RATING AND ABOVE, LESS THAN 7.5KW MOTOR RATING IS PROVIDED WITH DOL STARTER
12. 2RUNS OF SC CABLE TO BE PROVIDED FROM BOTH STARTER TO PUMP AND SINGLE RUN TO BE PROVIDED FOR DOL STARTER TO PUMP.
13. ALL LT FEEDERS SHALL BE PROVIDED WITH TP BREAKER & BUSBARS SHALL BE PROVIDED.
14. ALL LT PANELS SHALL HAVE ALL OUTGOING ON, OFF & TRIP LED INDICATION LAMPS SHALL BE PROVIDED.
15. THE BUS BARS SHALL BE OF SUFFICIENT CROSS SECTION SO THAT A CURRENT DENSITY OF 1.6A/SQ.MM IS NOT EXCEEDED AT NOMINAL CURRENT RATING FOR ALUMINIUM BUS BARS, 1.8A/SQ.MM FOR COPPER BUS BARS.
16. MCCB'S SHOULD BE SUITABLE FOR 85%HEB RATINGS.
17. 2 NOS 39 X 3 MM COPPER STRIP FOR LT PANEL UP TO 400 AMP AND 2X 5 X MM COPPER STRIP FOR LT PANEL OF HIGHER CAPACITY SHALL BE PROVIDED INSIDE THE PANELS.
18. ALL INCOMING AND OUTGOING AIR CIRCUIT BREAKERS (ACB) SHALL BE OF ELECTRICALLY OPERATED DRAWOUT TYPE (EDO) ENCASED IN METAL CLAD HOUSINGS.
19. CABLE LENGTHS SHALL BE AS PER ACTUAL SITE MEASUREMENT.
20. IN THE ACB ALL INCOMER AND OUTGOING FEEDERS SHALL BE PROVIDED WITH VARIABLE MICROPROCESSOR BASED RELEASES FOR OVERLOAD(L), SHORT CIRCUIT(S), INSTANTANEOUS(I) AND EARTH FAULT PROTECTION.
21. ALL THE STARTERS SHALL BE PROVIDED WITH CONTROL SUPPLY & RELAYS.
22. DUAL RATIO RANGE MENTIONED IN THE SLD ARE INDICATIVE, IT SHALL BE AS PER THE FINALIZED CT MANUFACTURES AS PER PANEL SUPPLIER.
23. UPS/ EMERGENCY LIGHTING ELV UPS UNDER NORMAL CONDITION , BOTH UPS SHALL SHARE THE LOADS AND IN CASE ONE UPS FAILS OTHER UPS SHALL FEED THE COMPLETE LOAD WITHOUT INTERRUPTION.
25. ALL ACB'S SHALL BE PROVIDED WITH SPRING CHARGE SPRING CHARGE & BREAKER CONTROL SWITCH (BCS).
26. FURTHER DISTRIBUTION FOR DATA CENTER SHALL BE AS PER VENDOR REQUIREMENT.

REVISION HISTORY-1

BREAKERS, LOADS , CABLES ARE UPDATED AS PER OTHER SERVICES APPROVED TDS.

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Department of Industrial Policy and Promotion Ministry of Commerce & Industry Government of India

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Room No 343 A, 3rd Floor Hotel Ashok, Diplomatic Enclave, 50A Chankyapuri, New Delhi - 110021

Employer's Engineer
Programme Management Consultant (PMC)
AECOM

Preliminary Engineering Architecture Consultants (PEAC)
idom
Av. Del Monasterio de El Escorial, 4, 28049 Madrid, Spain
CPKUKREJA ARCHITECTS
No.D-1, Ashirwad Building, Green Park, New Delhi, Delhi 110016, India

L&T Construction
Buildings & Factories
Mount Poonamallee Road, Manapakkam, P.B.No.979, Chennai - 600 089

Design Consultant
Engineering Design and Research Center (EDRC)
L&T Construction - Buildings & Factories

Architectural Consultant
ARCOP
Arcop Associates Pvt. Ltd.
A-15, Pamposa Enclave , G.K.-I
New Delhi, Delhi 110048, India

Structural Proof Consultant
Indian Institute of Technology (IIT) Madras
Sardar Patel Rd, Opposite to C. L.R.I, Adyar, Chennai, Tamil Nadu 600036

MEP Proof Consultant
egis
Egis India Consulting Engineers Pvt. Ltd.
Plot No. 66, Sector 32, Institutional Area, Opp.: Jenuity Solutions, Gurugram, Haryana 122001

ICT Proof Consultant
ICR IT Consulting
Bldg. No.471, 3rd Floor, Narayana Arcade, Subbannachetty Road, Kethalapura Circle, Basavanagudi, Bengaluru - 560004

Certification
EPC Contractor
Design Consultant
Architectural Consultant
Proof Consultant
Structural
MEP
ICT
PEAC
Issued by:
Employer / Employer's Engineer
Drawing Prepared by contractor and issued as part of preliminary approval jurisdiction has been delivered to :
Signed By, behalf of PEAC
Date

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R1	REVISED AS PER REVISION HEIGHTS & BREAKER AS GFC	21.07.25	BDS/AVC	DS/TVS	RJ	RAA

Revisions

ARCHITECTURE			IPS		
STRUCTURAL			PIPING		
ELECTRICAL			FIRE		
BMS/SYSTEM			GB		
HVAC			GEOTECH		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction Buildings & Factories
JOB No : O17203
Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA
Drawing Status
GOOD FOR CONSTRUCTION (GFC)
GOOD FOR CONSTRUCTION
Drawing No
Rev. No
E | 07 | 0327 | R1
Title :
CONVENTION CENTRE
MASTER SINGLE LINE DIAGRAM-5/5
EDRC DWG No : O17203-E-SP-07-1L-0327
Scale : NTS
Sheet Size A0

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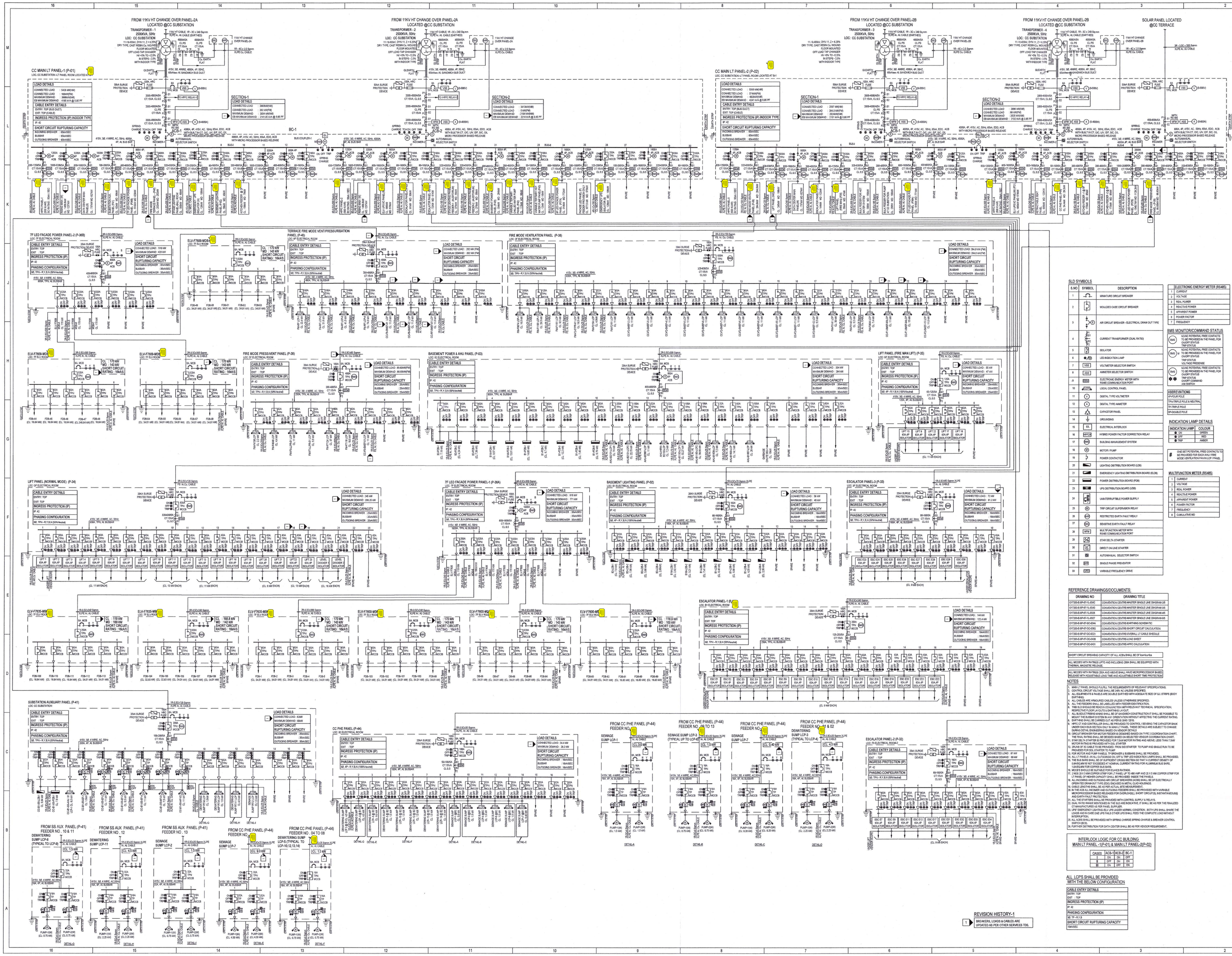

SLD SYMBOLS

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1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3		AIR CIRCUIT BREAKER - ELECTRICAL DRAW OUT TYPE
4		CURRENT TRANSFORMER (DUAL RATIO)
5		ISOLATOR
6		LED INDICATION LAMP
7	V3S	VOLTMETER SELECTOR SWITCH
8	A3S	AMMETER SELECTOR SWITCH
9		ELECTRONIC ENERGY METER WITH RS485 COMMUNICATION PORT
10		LOCAL CONTROL PANEL
11	V	DIGITAL TYPE VOLTMETER
12	A	DIGITAL TYPE AMMETER
13		CAPACITOR PANEL
14		GROUNDING
15	EIL	ELECTRICAL INTERLOCK
16	HPFCR	HYBRID POWER FACTOR CORRECTION RELAY
17		BUILDING MANAGEMENT SYSTEM
18	M	MOTOR / PUMP
19		POWER CONTACTOR
20		LIGHTING DISTRIBUTION BOARD (LDB)
21		EMERGENCY LIGHTING DISTRIBUTION BOARD (ELDB)
22		POWER DISTRIBUTION BOARD (PDB)
23		UPS DISTRIBUTION BOARD (UDB)
24		UNINTERRUPTIBLE POWER SUPPLY
25	50	TRIP CIRCUIT SUPERVISION RELAY
26	64	RESTRICTED EARTH FAULT RELAY
27	50	SENSITIVE EARTH FAULT RELAY
28	MFM	MULTIFUNCTION METER WITH RS485 COMMUNICATION PORT
29		STAR DELTA STARTER
30		DIRECT ON LINE STARTER
31		AUTO/MANUAL SELECTOR SWITCH
32		SINGLE PHASE PREVENTOR
33		VARIABLE FREQUENCY DRIVE

ELECTRONIC ENERGY METER (RS485)

1	CURRENT
2	VOLTAGE
3	REAL POWER
4	REACTIVE POWER
5	APPARENT POWER
6	POWER FACTOR
7	FREQUENCY

RMS MONITOR/COMMAND STATUS

RMS	HIGHLY POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS
RMS	HIGHLY POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS
	TRIP STATUS
	VOLTAGE PRESSENSE
RMS	HIGHLY POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS
	TRIP STATUS
	ON/OFF COMMAND
	AIR SWITCH

ABBREVIATIONS

4P-FOUR POLE	
TP+N-TRIPLE POLE & NEUTRAL	
TP-TRIPLE POLE	
DP-DOUBLE POLE	

INDICATION LAMP DETAILS

INDICATION LAMP	COLOUR
ON	GREEN
OFF	RED
TRIP	AMBER

ONE SET POTENTIAL FREE CONTACTS TO BE PROVIDED FOR EACH AHU / FIRE MODE VENTILATION FAN IN LCP / PANEL

MULTIFUNCTION METER (RS485)

1	CURRENT
2	VOLTAGE
3	REAL POWER
4	REACTIVE POWER
5	APPARENT POWER
6	POWER FACTOR
7	FREQUENCY
8	CUMULATIVE MD

REFERENCE DRAWINGS/DOCUMENTS:

DRAWING NO	DRAWING TITLE
077253-E-SP-ST-FL-0342	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-0/5
077253-E-SP-ST-FL-0343	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-1/5
077253-E-SP-ST-FL-0328	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-4/5
077253-E-SP-ST-FL-0327	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-5/5
077253-E-SP-ST-DC-0040	CONVENTION CENTRE-DESIGN PHILOSOPHY REPORT
077253-E-SP-EL-DC-0282	CONVENTION CENTRE-SHORT CIRCUIT CALCULATION
077253-E-SP-EL-DC-0221	CONVENTION CENTRE-OVERALL LT CABLE SHEDULE
077253-E-SP-EL-DC-0408	CONVENTION CENTRE-LOAD SHEET
077253-E-SP-EL-DC-0431	CONVENTION CENTRE-HPFC CALCULATION

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACBs SHALL BE OF 50kA/1sec/4s

ALL MCCB'S WITH RATINGS UPTO AND INCLUDING 250A SHALL BE EQUIPPED WITH THERMAL MAGNETIC RELEASE.

ALL MCCB'S WITH RATINGS 250A AND ABOVE SHALL HAVE MICROPROCESSOR BASED RELEASE WITH ADJUSTABLE LONG TIME AND ADJUSTABLE SHORT TIME PROTECTION.

NOTES

1. MAIN LT PANEL SHOULD FULFILL THE REQUIREMENTS OF RELEVANT SPECIFICATIONS.
2. CONTROL CIRCUIT VOLTAGE SHALL BE 240V AC UNLESS SPECIFIED.
3. ALL EQUIPMENTS & PANELS ARE DOUBLE EARTHED WITH ADEQUATE SIZE OF G.I. STRIPS (BODY EARTHING).
4. ALL CABLES ARE ARMOURED CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH FEEDER DESTINATION.
6. THIS SLD SHOULD BE READ IN CONJUCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
7. ALL BUSDUCT/RISING MAINS SHALL BE OF SHADBOH CONSTRUCTION IT SHALL BE POSSIBLE TO TAP OFF FROM ANY POINT OF THE BUSDUCT WITHOUT AFFECTING THE CURRENT RATING.
8. EARTHING SHALL BE CARRIED OUT AS PER IS 3043-1987.
9. HPFC CT AND CONTROLLER SHALL BE PROVIDED TO CONTROL / BOOSTING THE CAPACITOR BANK UNDER EACH BUS SECTION ONLY IN MAIN LT PANEL. THESE DETAILS ARE SUBJECT TO CHANGE DURING DETAIL ENGINEERING BASED ON VENDOR DETAILS
10. CIRCUIT BREAKER FOR MOTOR FEEDER IS DESIGNED BASED ON TYPE 1 COORDINATION CHART, THE FINAL RATING SHALL BE DECIDED BASED ON SELECTED VENDOR COORDINATION CHART.
11. DOL STARTER FOR MOTOR SHALL BE PROVIDED FOR MOTOR RATING AND ABOVE. (LESS THAN 7.5kW MOTOR RATING IS PROVIDED WITH DOL STARTER)
12. DRUNE OF DC CABLE TO BE PROVIDED FROM SS STARTER TO PUMP AND SINGLE RUN TO BE PROVIDED FOR DOL STARTER TO PUMP.
13. FOR MOTOR AND PUMP PANELS, TP BREAKER & BUSBARS SHALL BE PROVIDED.
14. THE BUS BARS SHALL BE PROVIDED WITH 10% & TRIPLE NEUTRAL AMPS SHALL BE PROVIDED.
15. THE BUS BARS SHALL BE OF ADEQUATE CURRENT CROSS SECTION SO THAT A CURRENT DENSITY OF 0.8A/SQMM IS NOT EXCEEDED AT NORMAL CURRENT RATED FOR ALUMINIUM BUS BARS, 1.2A/SQMM FOR COPPER BUS BARS.
16. MCCB'S SHOULD BE SUITABLE FOR ICU=ICS RATINGS.
17. 2 NOS 2.5 X 50M COPPER STRIP FOR LT PANEL UP TO 3200A AMPS AND 2X 5 X 50M COPPER STRIP FOR LT PANEL OF HIGHER CAPACITY SHALL BE PROVIDED INSIDE THE PANELS.
18. ALL MOTORS SHALL BE PROVIDED WITH THERMAL OVERLOAD RELAYS AND ELECTRICALLY OPERATED DRAWOUT TYPE (EDO) ENCASED IN METAL CLAD HOUSINGS.
19. CABLE LENGTHS SHALL BE AS PER ACTUAL SITE MEASUREMENTS.
20. IN THE ACB ALL POWER AND LOCKING FEEDERS SHALL BE PROVIDED WITH MICROPROCESSOR BASED RELEASES FOR OVERLOAD(L), SHORT CIRCUIT(S), INSTANTANEOUS(I) AND EARTH FAULT(G) PROTECTION.
21. ALL THE SYSTEMS SHALL BE PROVIDED WITH CONTROL SUPPLY & RELAYS.
22. ALL THE VOLTAGE MONITORING OF THE BUS ARE CONTINUOUS. IT SHALL BE AS PER THE FINALIZED CT MANUFACTURERS AS PER PANEL SUPPLIER.
23. UPS/ EMERGENCY LIGHTING /ELV/ UPS UNDER NORMAL CONDITION , BOTH UPS SHALL SHARE THE LOADS AND IN CASE ONE UPS FAILS THE OTHER UPS SHALL TAKE THE COMPLETE LOAD WITHOUT INTERRUPTION.
24. ALL MCCBS SHALL BE PROVIDED WITH SPRING CHARGE SPRING CHARGE & BREAKER CONTROL SWITCH BCS.
25. FURTHER DISTRIBUTION FOR DATA CENTER SHALL BE AS PER VENDOR REQUIREMENT.

INTERLOCK LOGIC FOR CC BUILDING MAIN LT PANEL -1(P-01) & MAIN LT PANEL-2(P-02)

CASES	ACB-1	ACB-2	BC-1
I	ON	ON	OFF
II	OFF	ON	ON
III	ON	OFF	ON

ALL LCPS SHALL BE PROVIDED WITH THE BELOW CONFIGURATION

CABLE ENTRY DETAILS
ENTRY: TOP
EXIT : TOP
INGRESS PROTECTION (IP)
IP 42
PHASING CONFIGURATION
3Ø, TPN + R.Y.B.N (50Hz/4wire)
SHORT CIRCUIT RUPTURING CAPACITY
16kA/SEC

REVISION HISTORY-1

1	BREAKERS, LOADS & CABLES ARE UPDATED AS PER OTHER SERVICES TDS.

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Room No.341 & 3rd floor Hotel Ashok, Diplomatic Enclave, 50B Chankyapuri, New Delhi - 110023

Employer's Engineer
Programme Management Consultant (PMC)
AECOM

Preliminary Engineering Architecture Consultants (PEAC)
idom
Av. Del Monasterio de El Escorial, 4, 28049 Madrid, Spain
CPKUKREJA ARCHITECTS
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Design Consultant
Engineering Design and Research Center (EDRC)
L&T Construction - Buildings & Factories

Architectural Consultant
ARCOP
Arcop Associates Pvt. Ltd.
A-13, Pamposh Enclave, GLI
New Delhi, Delhi 110048, India

Structural Proof Consultant
Indian Institute of Technology (IIT) Madras
Sardar Patel Rd, Opposite to C, L.R.I, Adyar, Chennai, Tamil Nadu 600036

MEP Proof Consultant
egis
Egis India Consulting Engineers Pvt. Ltd.
Plot No. 4A, Sector 32, Institutional Area, Opp: Tenafly Solutions, Gurugram, Haryana 122001

ICT Proof Consultant
CKR
CKR IT Consulting
SKS No.437, 3rd Floor, Narayana Arcade, Subbanamachetty Road, Vettilakkappa Circle, Basavanagudi, Bangalore - 560004

Certification
EPC Contractor
Design Consultant
Architectural Consultant
Proof Consultant
Structural | MEP | ICT
PEAC
Remarks (If any): Prepared by contractor are allowed only for preliminary aspects and parameters have been adhered to
Issued by: Employer / Employer's Engineer
Signed on behalf of PEAC
Date: 29/11/2021

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R1	REVISED AS PER REVISION HISTORY-1 & ISSUED AS GFC	31.07.2021	MAY	SUJYO	RJ	KVA

Revisions

ARCHITECTURE			PPS		
STRUCTURAL			FP&D		
ELECTRICAL			PHE		
ELV SYSTEM			CIE		
HVAC			GSD/ECDL		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction
Buildings & Factories
JOB No : 017203
Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA
Drawing status
GOOD FOR CONSTRUCTION (GFC)
Drawing No

			Rev_No
E	07	0341	R1

Title :
CONVENTION CENTRE
MASTER SINGLE LINE DIAGRAM-1/5

EDRC DWG No : O17203-E-SP-07-1L-0341
Scale : NTS
Sheet Size A0

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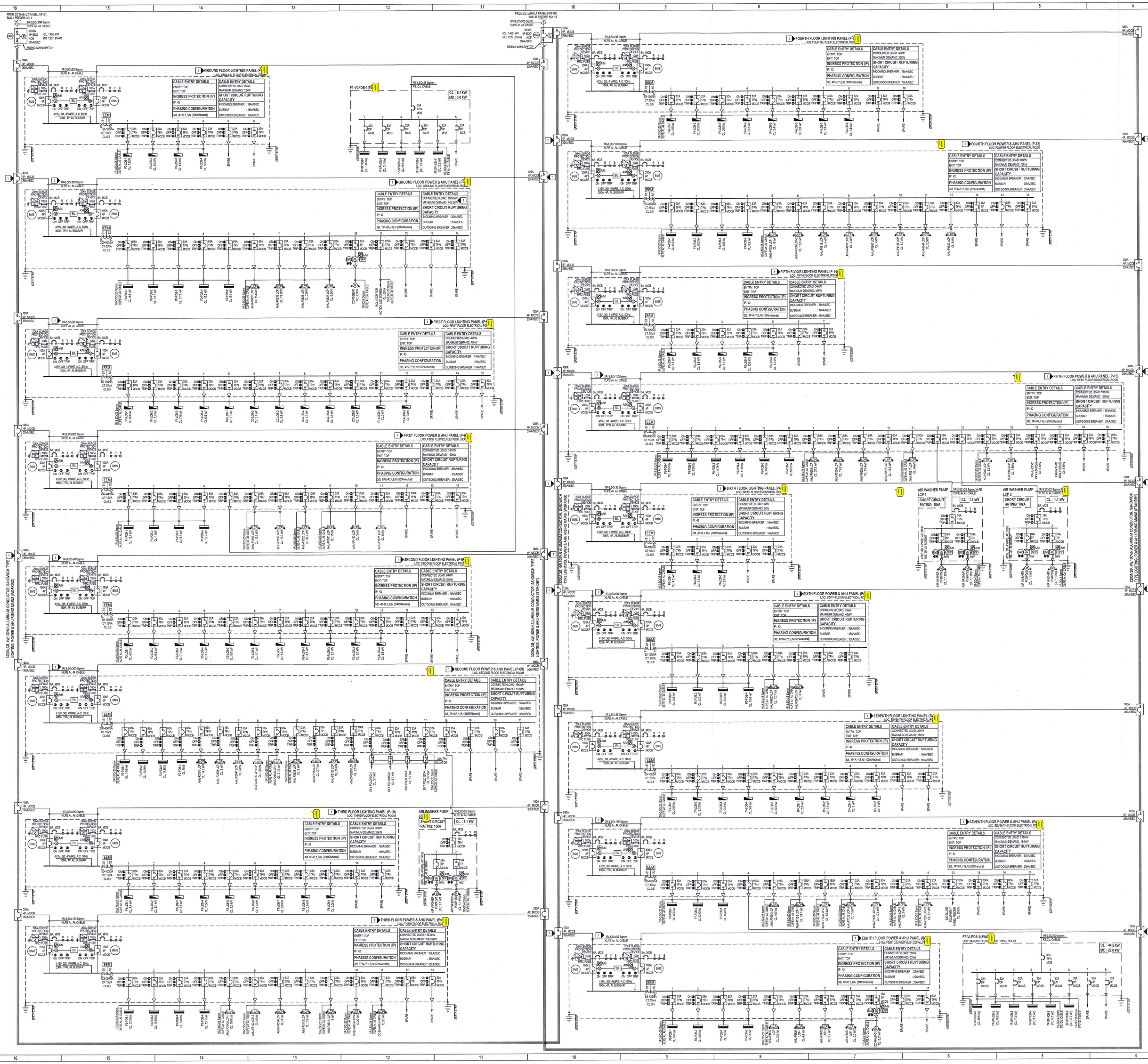

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S.NO	SYMBOL	DESCRIPTION
1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3		AIR CIRCUIT BREAKER - ELECTRICAL DRAW-OUT TYPE
4		CURRENT TRANSFORMER (DUAL RATIO)
5		ISOLATOR
6		LED INDICATION LAMP
7	VSS	VOLTMETER SELECTOR SWITCH
8	ASS	AMMETER SELECTOR SWITCH
9	EEM	ELECTRONIC ENERGY METER WITH RS485 COMMUNICATION PORT
10	LCP/PLC	LOCAL CONTROL PANEL
11	V	DIGITAL TYPE VOLTMETER
12	A	DIGITAL TYPE AMMETER
13		CAPACITOR PANEL
14		GROUNDING
15	E/L	ELECTRICAL INTERLOCK
16	APFC/R	HYBRID POWER FACTOR CORRECTION RELAY
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23		UPS DISTRIBUTION BOARD (UDB)
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30		DIRECT ON LINE STARTER
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32	12FP	SINGLE PHASE PREVENTOR
33	VFD	VARIABLE FREQUENCY DRIVE

BMS MONITOR/COMMAND STATUS

BMS	NONC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS
BMS #	NONC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS VOLTAGE PRESENSE
BMS	NONC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS ON/OFF COMMAND AMF SWITCH

ONE SET POTENTIAL FREE CONTACTS TO BE PROVIDED FOR EACH AHU / FFE MODE VENTILATION FAN IN LCP / PANEL

ELECTRONIC ENERGY METER (RS485)

1	CURRENT
2	VOLTAGE
3	REAL POWER
4	REACTIVE POWER
5	APPARENT POWER
6	POWER FACTOR
7	FREQUENCY

MULTIFUNCTION METER (RS485)

1	CURRENT
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7	FREQUENCY
8	CUMULATIVE MD

ABBREVIATIONS

4P-4POLE POLE	
TPN-TRIPLE POLE & NEUTRAL	
TP-TRIPLE POLE	
DP-DOUBLE POLE	

INDICATION LAMP DETAILS

INDICATION LAMP	COLOUR
ON	GREEN
OFF	RED
TRIP	AMBER

REFERENCE DRAWINGS

DRAWING NO	DRAWING TITLE
O17203-E-SP-07-1L-0341	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-1/5
O17203-E-SP-07-1L-0343	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-3/5
O17203-E-SP-07-1L-0326	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-4/5
O17203-E-SP-07-1L-0327	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-5/5
O17203-E-SP-07-GC-0344	CONVENTION CENTRE-EARTHING SCHEMATIC
O17203-E-SP-07-DC-0382	CONVENTION CENTRE-SHORT CIRCUIT CALCULATION
O17203-E-SP-07-DC-0321	CONVENTION CENTRE-OVERALL LT CABLE SHEDULE
O17203-E-SP-07-DC-0430	CONVENTION CENTRE-LOAD SHEET
O17203-E-SP-07-DC-451	CONVENTION CENTRE-HPFC CALCULATION

NOTES

1. MAIN LT PANEL SHOULD FULFIL THE REQUIREMENTS OF RELEVANT SPECIFICATIONS.
2. CONTROL CIRCUIT VOLTAGE SHALL BE 240V AC UNLESS SPECIFIED.
3. ALL EQUIPMENTS & PANELS ARE DOUBLE EARTHED WITH ADEQUATE SIZE OF G.I. STRIPS (BODY EARTHING).
4. ALL CABLES ARE ARMOURED CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH FEEDER IDENTIFICATION.
6. THIS S/LD SHOULD BE READ IN CONJUNCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
7. ALL BUSDUCT/RISING MAINS SHALL BE OF SANDWICH CONSTRUCTION IT SHALL BE POSSIBLE TO MOUNT THE BUSBAR SYSTEM IN ANY ORIENTATION WITHOUT AFFECTING THE CURRENT RATING.
8. EARTHING SHALL BE CARRIED OUT AS PER IS 3043 / 2013.
9. HPFC CT AND CONTROLLER SHALL BE PROVIDED TO CONTROL / SENSING THE CAPACITOR BANK UNDER EACH BUS SECTION ONLY IN MAIN LT PANEL. THESE DETAILS ARE SUBJECT TO CHANGE DURING DETAIL ENGINEERING BASED ON VENDOR DETAILS
10. CIRCUIT BREAKER FOR MOTOR FEEDER IS DESIGNED BASED ON TYPE 2 COORDINATION CHART, THE FINAL RATING SHALL BE DECIDED BASED ON SELECTED VENDOR COORDINATION CHART.
11. STAR DELTA STARTER IS PROVIDED FOR 7.5KW MOTOR RATING AND ABOVE. LESS THAN 7.5kW MOTOR RATING IS PROVIDED WITH DOL STARTER.
12. 2RUNS OF 3C CABLE TO BE PROVIDED FROM BSI STARTER TO PUMP AND SINGLE RUN TO BE PROVIDED FOR DOL STARTER TO PUMP
13. FOR MOTOR AND PUMP PANELS, TP BREAKER & BUSBARS SHALL BE PROVIDED.
14. ALL LT PANELS - IN ALL OUTGOINGS ON, OFF & TRIP LED INDICATION LAMPS SHALL BE PROVIDED.
15. THE BUS BARS SHALL BE OF SUFFICIENT CROSS SECTION SO THAT A CURRENT DENSITY OF 0.8A/SQ.MM IS NOT EXCEEDED AT NOMINAL CURRENT RATING FOR ALUMINUM BUS BARS, 1.0A/SQ.MM FOR COPPER BUS BARS.
16. MCCBS SHOULD BE SUITABLE FOR ICU=ICS RATINGS.
17. 2 NOS 25 X 5 MM COPPER STRIP FOR LT PANEL UPTO 400 AMP AND 25 X 5 MM COPPER STRIP FOR LT PANEL OF HIGHER CAPACITY SHALL BE PROVIDED INSIDE THE PANELS.
18. ALL INCOMING AND OUTGOING ACB CIRCUIT BREAKERS (ACBS) SHALL BE OF ELECTRICALLY OPERATED DRAWOUT TYPE (EDO) ENCASED IN METAL CLAD HOUSINGS.
19. CABLE LENGTHS SHALL BE AS PER ACTUAL SITE MEASUREMENT.
20. IN THE ACB ALL INCOMER AND OUTGOING FEEDERS SHALL BE PROVIDED WITH VARIABLE MICROPROCESSOR BASED RELEASES FOR OVERLOAD(L), SHORT CIRCUIT(S), INSTANTANEOUS(I) AND EARTH FAULT PROTECTION.
21. ALL ACBS SHALL BE DRAWOUT TYPE PROVIDED WITH CONTROL SUPPLY & RELAYS.
22. ALL THE RATINGS MENTIONED IN THE S/LD ARE INDICATIVE, IT SHALL BE AS PER THE FINALIZED CT MANUFACTURES AS PER PANEL SUPPLIER.
23. UPS' EMERGENCY LIGHTING ELU UPS UNDER NORMAL CONDITION , BOTH UPS SHALL SHARE THE LOADS AND IN CASE ONE UPS FAILS OTHER UPS SHALL FEED THE COMPLETE LOAD WITHOUT INTERUPTION.
24. ALL ACBS SHALL BE PROVIDED WITH SPRING CHARGE SPRING CHARGE & BREAKER CONTROL SWITCH (BCS).
26. FURTHER DISTRIBUTION FOR DATA CENTER SHALL BE AS PER VENDOR REQUIREMENT.

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACB'S SHALL BE OF low+kuA+ks

ALL MCCB'S WITH RATINGS UPTO AND INCLUDING 250A SHALL BE EQUIPPED WITH THERMAL MAGNETIC RELEASE.

ALL MCCB'S WITH RATINGS 250A AND ABOVE SHALL HAVE MICROPROCESSOR BASED RELEASE WITH ADJUSTABLE LONG TIME AND ADJUSTABLE SHORT TIME PROTECTION

ALL LCP'S SHALL BE PROVIDED WITH THE BELOW CONFIGURATION

CABLE ENTRY DETAILS
ENTRY: TOP
EXIT : TOP
INGRESS PROTECTION (IP)
IP: 42
PHASING CONFIGURATION
3Ø, TP+N, Y, 0.9
SHORT CIRCUIT RUPTURING CAPACITY
10kA RMS

REVISION HISTORY	
R1	REVISED AS PER REVISION HISTORY& & ISSUED AS GFC
REV	DESCRIPTION

DATE	DSGN	DRWN	CHKD	A/PD
31.07.20	SB/S/NVT	TDS	KJ	R.A.A

Revisions

ARCHITECTURE			TPS		
STRUCTURAL			FPNG		
ELECTRICAL			PHE		
ELV SYSTEM			GE		
HVAC			GEOTECH.		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

BRIDGES, LOADS & CABLES ARE UPDATED AS PER OTHER SERVICES TDS

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Department of Industrial Policy and Promotion Ministry of Commerce & Industry Government of India

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L&T Construction - Buildings & Factories

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Indian Institute of Technology (IIT) Madras — Sardar Patel Rd, Opposite to C. L.R.I, Adyar, Chennai, Tamil Nadu 600036

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Egis India Consulting Engineers Pvt. Ltd. — Plot No. 44, Sector 32, Institutional Area, Opp. Emaar Solitaire, Gurugram, Haryana 122001

ICT Proof Consultant
CKR Consulting — 886, No.401, 3rd Floor, Narayana Arcade, Subbaramachetty Road, Ventilation Circle, Basavanagudi, Bengaluru - 560004

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Architectural Consultant	
Proof Consultant	
Structural	MEP / ICT
PEAC	

Approved GFC drawing Prepared by contractor and checked all preliminary aspects and parameters have been adhered to :

Issued by:
Employer / Employer's Engineer

EPC Contractor
L&T Construction — Buildings & Factories

JOB No : O17203

Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA

Drawing Status
GOOD FOR CONSTRUCTION (GFC)

Drawing No		Rev. No
E	07 / 0342	R1

Title :
CONVENTION CENTRE
MASTER SINGLE LINE DIAGRAM-2/5

EDRC DWG No :	Scale :	Sheet Size
O17203-E-SP-07-1L-0342	NTS	A0

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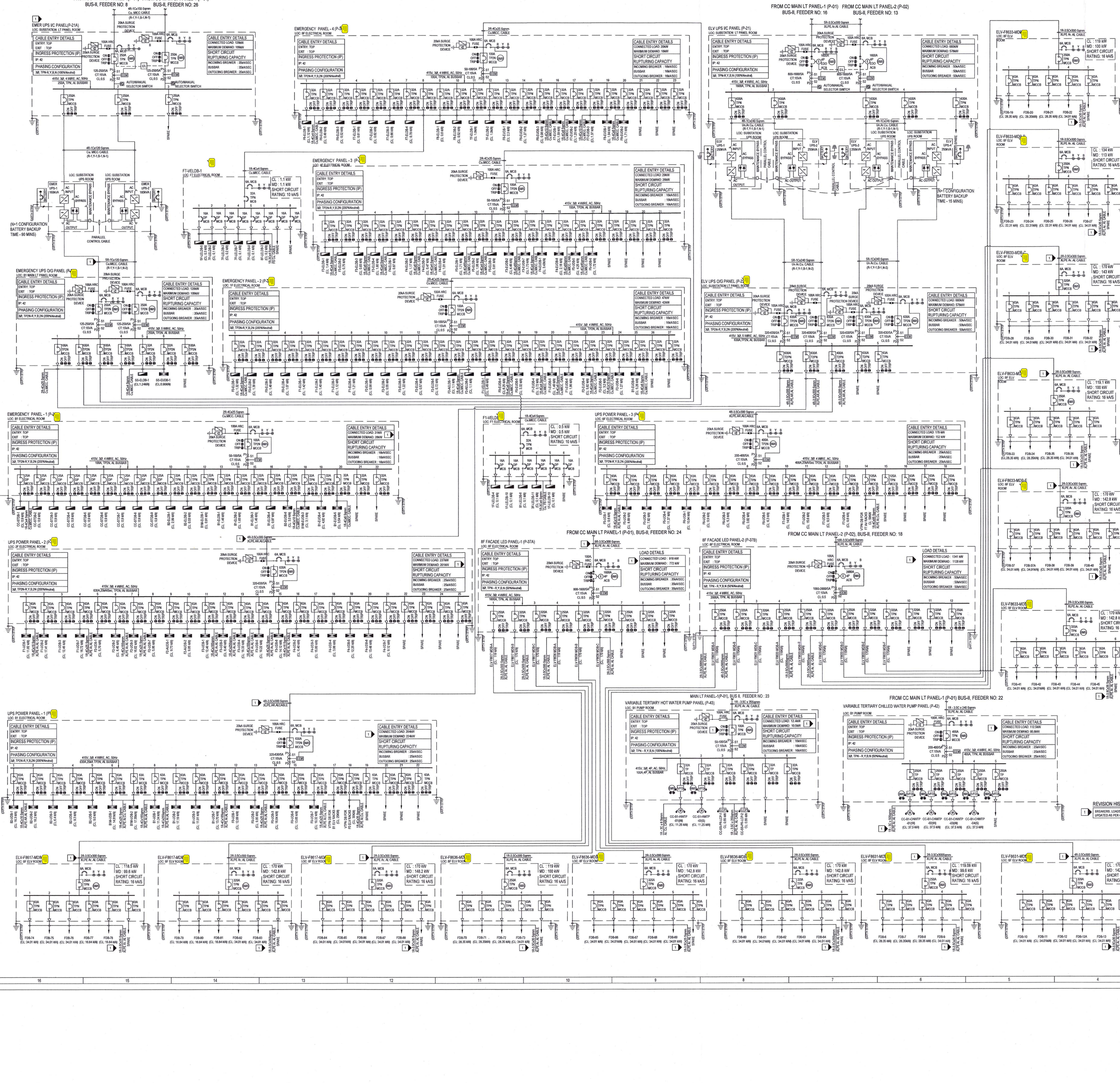

SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3		AIR CIRCUIT BREAKER -ELECTRICAL DRAW OUT TYPE
4		CURRENT TRANSFORMER (DUAL RATIO)
5		ISOLATOR
6		LED INDICATION LAMP
7		VOLTMETER SELECTOR SWITCH
8		AMMETER SELECTOR SWITCH
9		ELECTRONIC ENERGY METER WITH RS485 COMMUNICATION PORT
10		LOCAL CONTROL PANEL
11		DIGITAL TYPE VOLTMETER
12		DIGITAL TYPE AMMETER
13		CAPACITOR PANEL
14		GROUNDING
15		ELECTRICAL INTERLOCK
16		HYBRID POWER FACTOR CORRECTION RELAY
17		BUILDING MANAGEMENT SYSTEM
18		MOTOR / PUMP
19		POWER CONTACTOR
20		LIGHTING DISTRIBUTION BOARD (LDB)
21		EMERGENCY LIGHTING DISTRIBUTION BOARD (ELDB)
22		POWER DISTRIBUTION BOARD (PDB)
23		UPS DISTRIBUTION BOARD (UDB)
24		UNINTERRUPTIBLE POWER SUPPLY
25		TRIP CIRCUIT SUPERVISION RELAY
26		RESTRICTED EARTH FAULT RELAY
27		SENSITIVE EARTH FAULT RELAY
28		MULTIFUNCTION METER WITH RS485 COMMUNICATION PORT
29		STAR-DELTA STARTER
30		DIRECT ON LINE STARTER
31		AUTOMANUAL SELECTOR SWITCH
32		SINGLE PHASE PREVENTOR
33		VARIABLE FREQUENCY DRIVE
34		AIR CIRCUIT BREAKER -MECHANICAL DRAW OUT TYPE

BMS MONITOR/COMMAND STATUS

BMS	NONO POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS
BMS M	NONO POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS VOLTAGE PRESENSE
BMS	NONO POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF COMMAND AIR SWITCH
#	ONE SET POTENTIAL FREE CONTACTS TO BE PROVIDED FOR EACH AHU / FIRE MODE VENTILATION FAN IN UCP / PANEL

ELECTRONIC ENERGY METER (RS485)	
1	CURRENT
2	VOLTAGE
3	REAL POWER
4	REACTIVE POWER
5	APPARENT POWER
6	POWER FACTOR
7	FREQUENCY

INDICATION LAMPS COLOUR CODE
ON - RED
OFF - GREEN
TRIP - AMBER

ABBREVIATIONS
4P-FOUR POLE
TPN-TRIPLE POLE & NEUTRAL
TP-TRIPLE POLE
DP-DOUBLE POLE

NOTES

1. MAIN LT PANEL SHOULD FULFILL THE REQUIREMENTS OF RELEVANT SPECIFICATIONS.
2. CONTROL CIRCUIT VOLTAGE SHALL BE 240V AC UNLESS SPECIFIED.
3. ALL EQUIPMENTS & PANELS ARE DOUBLE EARTHED WITH ADEQUATE SIZE OF G.I. STRIPS (BODY EARTHING)
4. ALL CABLES ARE ARMOURED CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH FEEDER IDENTIFICATION.
6. THIS S.L.D SHOULD BE READ IN CONJUNCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
7. ALL BUSDUCTRISING MAINS SHALL BE OF SANDWICH CONSTRUCTION IT SHALL BE POSSIBLE TO MOUNT THE BUSBAR SYSTEM IN ANY ORIENTATION WITHOUT AFFECTING THE CURRENT RATING. EARTHING SHALL BE CARRIED OUT AS PER IS 3043 / 2015.
8. HPFC CT AND CONTROLLER SHALL BE PROVIDED TO CONTROL / SENSING THE CAPACITOR BANK UNDER EACH BUS SECTION ONLY IN MAIN LT PANEL. THESE DETAILS ARE SUBJECT TO CHANGE DURING DETAIL ENGINEERING BASED ON VENDOR DETAILS
9. CIRCUIT BREAKER FOR MOTOR FEEDER IS DESIGNED BASED ON TYPE 2 COORDINATION CHART. THE FINAL RATING SHALL BE DECIDED BASED ON SELECTED VENDOR COORDINATION CHART.
10. STAR DELTA STARTER IS PROVIDED FOR 7.5kW MOTOR RATING AND ABOVE, LESS THAN 7.5kW MOTOR RATING IS PROVIDED WITH DOL STARTER.
11. 2RUNS OF 3C CABLE SHALL BE LAID FROM D/G STARTER TO PUMP AND SINGLE RUN TO BE PROVIDED FOR CONTROL CABLE FROM PUMP.
12. FOUR VERTICAL SPARE PANELS, 1F SPACED & BUSBARS SHALL BE PROVIDED.
14. ALL LT PANELS - IN ALL OUTGOINGS ON, OFF & TRIP LED INDICATION LAMPS SHALL BE PROVIDED.
15. THE BUS BARS SHALL BE OF SUFFICIENT CROSS SECTION SO THAT A CURRENT DENSITY OF 0.8A/SQ.MM IS NOT EXCEEDED AT NOMINAL CURRENT RATING FOR ALUMINIUM BUS BARS, 1.2A/SQ.MM FOR COPPER BUS BARS.
16. MCCB'S SHOULD BE SUITABLE FOR ICU=ICS RATINGS.
17. 2 NOS 30 X 3 MM COPPER STRIP FOR LT PANEL UP TO 400 AMP AND 25 X MM COPPER STRIP FOR LT PANEL OF HIGHER CAPACITY SHALL BE PROVIDED INSIDE THE PANELS.
18. ALL INCOMING AND OUTGOING AIR CIRCUIT BREAKERS (ACB) SHALL BE OF ELECTRICALLY OPERATED DRAWOUT TYPE (EDO) ENCASED IN METAL CLAD HOUSINGS.
19. CABLE LENGTHS SHALL BE AS PER ACTUAL SITE MEASUREMENT.
20. IN THE ACB ALL INCOMER AND OUTGOING FEEDERS SHALL BE PROVIDED WITH VARIABLE MICROPROCESSOR BASED RELEASES FOR OVERLOAD(ALL SHORT CIRCUITED), INSTANTANEOUS) AND EARTH FAULT PROTECTION.
21. ALL THE STARTERS SHALL BE PROVIDED WITH CONTROL SUPPLY & RELAYS.
22. DUAL RATIO RANGE MENTIONED IN THE SLD ARE INDICATIVE, IT SHALL BE AS PER THE FINALIZED CT MANUFACTURES AS PER PANEL SUPPLIER.
23. UPS' EMERGENCY/ ELV UPS UNDER NORMAL CONDITION , BOTH UPS SHALL SHARE THE LOADS AND IN CASE ONE UPS FAILS OTHER UPS SHALL FEED THE COMPLETE LOAD WITHOUT INTERRUPTION.
24. ALL ACB'S SHALL BE PROVIDED WITH SPRING CHARGE SPRING CHARGE & BREAKER CONTROL SWITCH (BCS).
25. FURTHER DISTRIBUTION FOR DATA CENTER SHALL BE AS PER VENDOR REQUIREMENT.

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACB's SHALL BE OF low=burkes

ALL MCCB'S WITH RATINGS UPTO AND INCLUDING 200A SHALL BE EQUIPPED WITH THERMAL MAGNETIC RELEASE.

ALL MCCB'S WITH RATINGS 250A AND ABOVE SHALL HAVE MICROPROCESSOR BASED RELEASE WITH ADJUSTABLE LONG TIME AND ADJUSTABLE SHORT TIME PROTECTION.

REFERENCE DRAWINGS/DOCUMENTS:

DRAWING NO	DRAWING TITLE
O17203-E-SP-07-11-0341	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-1/5
O17203-E-SP-07-11-0342	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-2/5
O17203-E-SP-07-11-0326	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-4/5
O17203-E-SP-07-11-0327	CONVENTION CENTRE-MASTER SINGLE LINE DIAGRAM-5/5
O17203-E-SP-07-EC-0344	CONVENTION CENTRE-EARTHING SCHEMATIC
O17203-E-SP-07-DC-0092	CONVENTION CENTRE-SHORT CIRCUIT CALCULATION
O17203-E-SP-07-DC-0021	CONVENTION CENTRE-OVERALL LT CABLE SHEDULE
O17203-E-SP-07-DC-0400	CONVENTION CENTRE-LOAD SHEET

ALL LCP'S SHALL BE PROVIDED WITH THE BELOW CONFIGURATION

CABLE ENTRY DETAILS
ENTRY: TOP
EXIT : TOP
INGRESS PROTECTION (IP)
IP: 42
PHASING CONFIGURATION
3ϕ, TP-N-Y, 415V
SHORT CIRCUIT RUPTURING CAPACITY
10kA/SEC

REVISION HISTORY-1
BREAKERS, LOADS & CABLES ARE UPDATED AS PER OTHER SERVICES TO6

R1	REVISED AS PER REVISION HISTORY-1 & ISSUED AS GFC	31.07.25	RBR/SJ/MG	RS	RT	RAA
REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD

Revisions

ARCHITECTURE			PPS		
STRUCTURAL			PIPING		
ELECTRICAL			FIRE		
ELV SYSTEM			GE		
HVAC			GEOTECH		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction
Buildings & Factories

JOB No : O17203

Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA

Drawing Status
GOOD FOR CONSTRUCTION (GFC)

Drawing No

E	07	0343	R1

Title :
CONVENTION CENTRE
MASTER SINGLE LINE DIAGRAM-3/5

EDRC DWG No :
O17203-E-SP-07-11-0343

Scale :	Sheet Size
NTS	A0

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ICT Proof Consultant
CKR IT Consulting
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Certification

EPC Contractor

Design Consultant

Architectural Consultant

Proof Consultant
Structural | MEP | ICT

Reviewed, GFC drawing Prepared by contractor is approved, shall be of preliminary aspects and parameters have been adhered to :

Issued by:
Employer / Employer's Engineer
Date: 29/10/25

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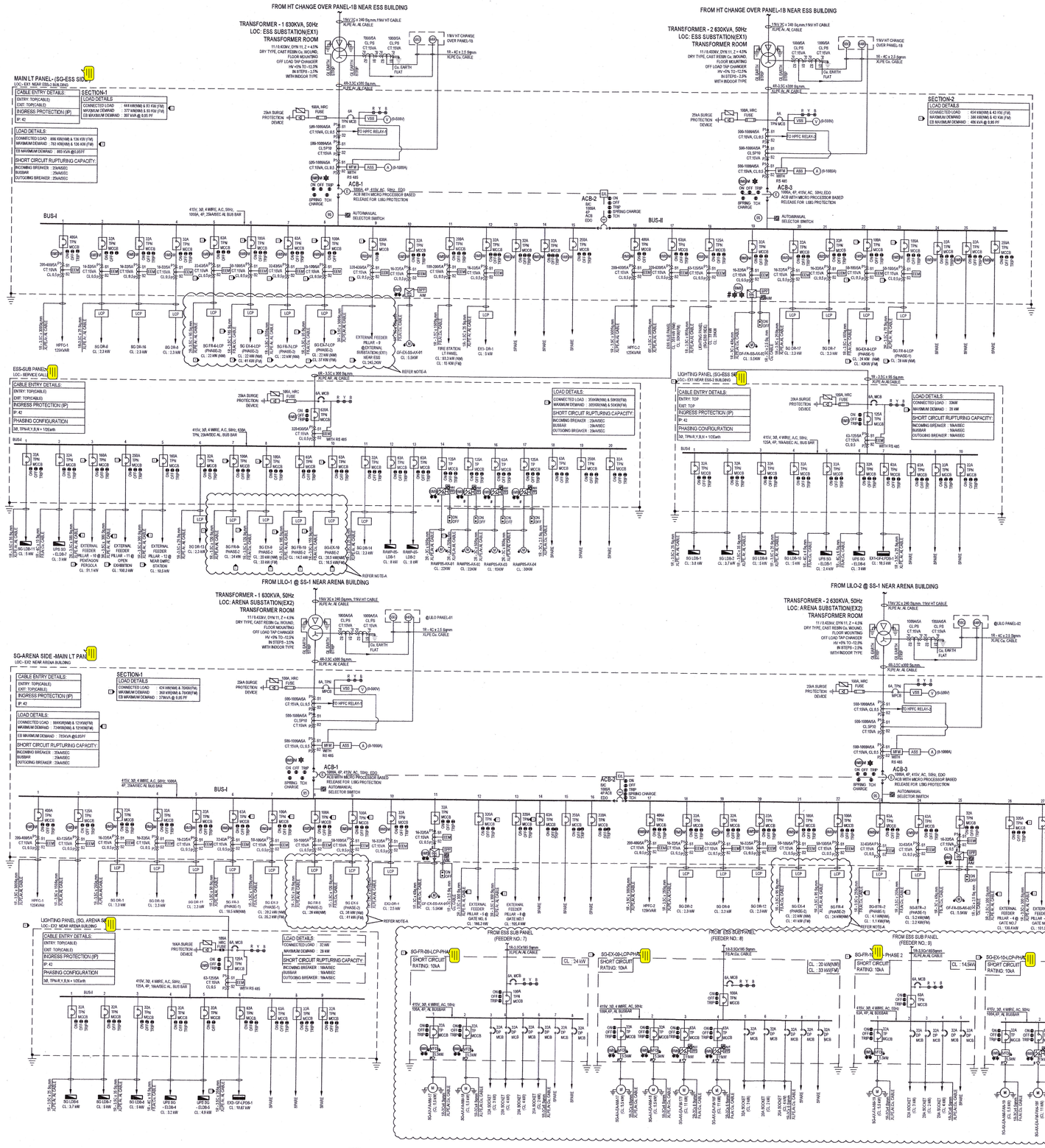
FROM HT CHANGE OVER PANEL-1B NEAR ESS BUILDING
TRANSFORMER - 1 6300KVA, 50Hz
LOC: ESS SUBSTATION(ES1)
TRANSFORMER ROOM
MAIN LT PANEL-1 (SG-ESS SS)
BUS-I
BUS-II
ACB-1
ACB-2
ACB-3
ESS-SUB PANEL-1
LIGHTING PANEL (SG-ESS SS)
FROM LILO-1 @ ES-1 NEAR ARENA BUILDING
TRANSFORMER - 1 6300KVA, 50Hz
LOC: ARENA SUBSTATION(EX2)
TRANSFORMER ROOM
SQ-ARENA SIDE -MAIN LT PANEL
LIGHTING PANEL (SG -ARENA SIDE)
FROM HT CHANGE OVER PANEL-1B NEAR ESS BUILDING
TRANSFORMER - 2 6300KVA, 50Hz
LOC: ESS SUBSTATION(EX1)
TRANSFORMER ROOM
SECTION-1
SECTION-2
SUPPLY FROM EH-3 MAIN LT PANEL
MAIN LT PANEL (SG - EH) SS
FROM SG-ESS-MAIN LT PANEL (FEEDER NO: 5)
FROM SG-ESS-MAIN LT PANEL (FEEDER NO: 6)
SG-FR-01-LCP-PNL
SG-EX-01-LCP-PNL
SG-FR-02-LCP-PNL
SG-EX-02-LCP-PNL
SG-FR-06-LCP-PNL
SG-EX-06-LCP-PNL
SG-FR-07-LCP-PNL
SG-EX-07-LCP-PNL
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SG-EX-06-LCP-PNL
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SG-BTR-3-LCP-PNL
SG-BTR-4-LCP-PNL
SG-BTR-5-LCP-PNL
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SG-BTR-26-LCP-PNL
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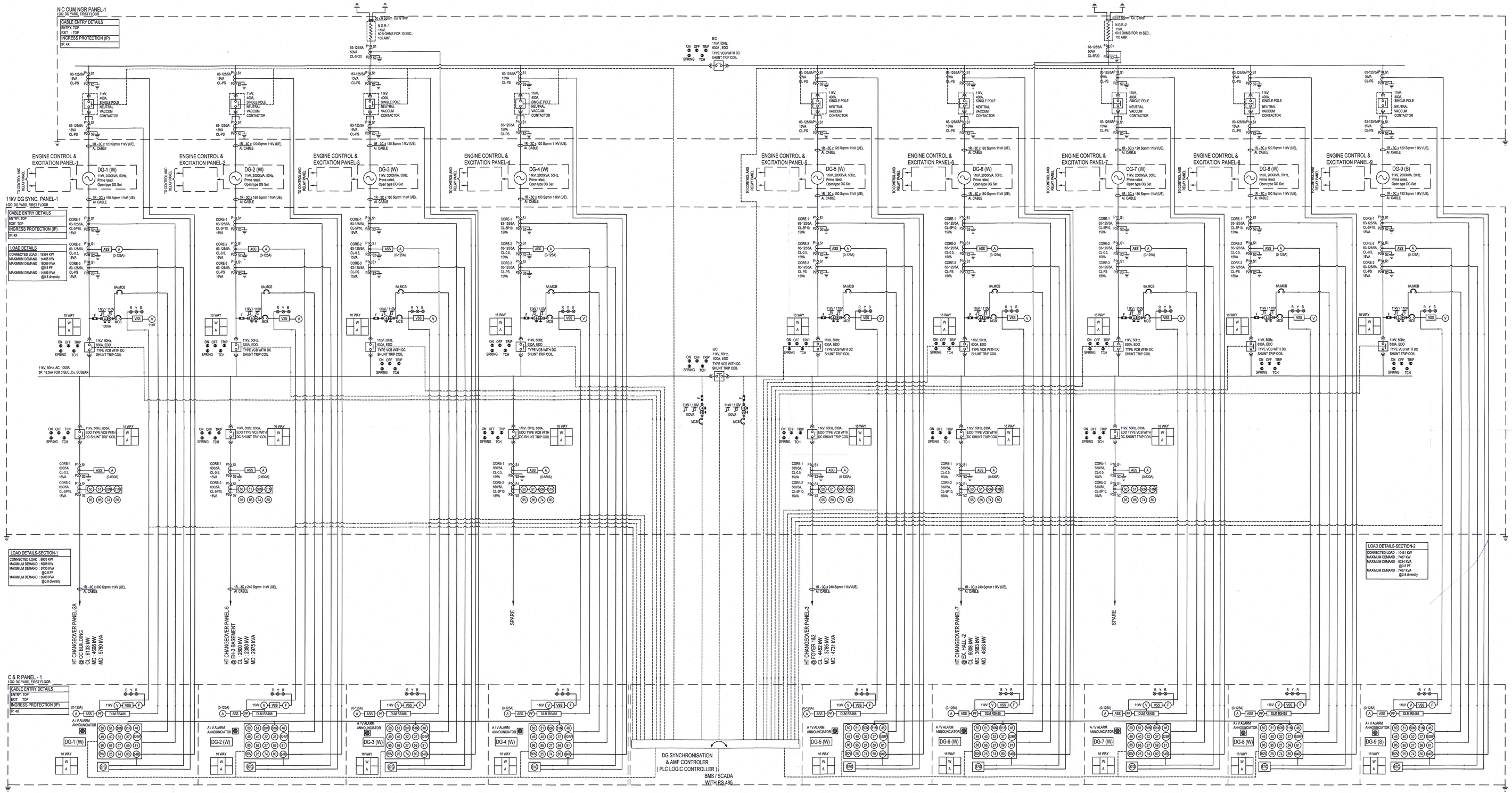
SG-BTR-28-LCP-PNL
SG-BTR-29-LCP-PNL
SG-BTR-30-LCP-PNL
SG-BTR-31-LCP-PNL
SG-BTR-32-LCP-PNL
SG-BTR-33-LCP-PNL
SG-BTR-34-LCP-PNL
SG-BTR-35-LCP-PNL
SG-BTR-36-LCP-PNL
SG-BTR-37-LCP-PNL
SG-BTR-38-LCP-PNL
SG-BTR-39-LCP-PNL
SG-BTR-40-LCP-PNL



SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
1	25	CHECK SYNCHRONISE RELAY
2	27	UNDER VOLTAGE RELAY
3	32	DIRECTIONAL POWER RELAY
4	37	UNDER POWER RELAY (REVERSE POWER RELAY)
5	40	FIELD FAILURE RELAY
6	46	NEGATIVE PHASE SEQUENCE RELAY
7	49	MACHINE THERMAL RELAY
8	50	INSTANTANEOUS OVER CURRENT RELAY
9	50N	INSTANTANEOUS EARTH FAULT RELAY
10	51	IDMT OVER CURRENT RELAY
11	51N	IDMT EARTH FAULT RELAY
12	50BF	BREAKER FAILURE PROTECTION
13	59	OVER VOLTAGE RELAY
14	59N	VOLTAGE BALANCE RELAY
15	64R	RESTRICTED EARTH FAULT RELAY
16	74	ALARM RELAY
17	86	DC HEALTHY RELAY

SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
18	81	FREQUENCY RELAY
19	86	LOCK-OUT RELAY
20	87G	GENERATOR DIFFERENTIAL RELAY
21	95	TRIP CIRCUIT SUPERVISION RELAY
22		A / V ALARM ANNUNCIATOR
23		STAR POINT
24		MINIATURE CIRCUIT BREAKER
25		CURRENT TRANSFORMER
26		DRAWOUT POTENTIAL TRANSFORMER
27		INDICATION LAMP (OFF/TRIP/SPRING/TCH)
28	V6S	VOLTMETER SELECTOR SWITCH
29	A3S	AMMETER SELECTOR SWITCH
30	V	DIGITAL VOLTMETER
31	A	DIGITAL AMMETER
32		VACUUM CIRCUIT BREAKER
33		GROUNDING
34	DCM RS485	DIGITAL LOAD MANAGER WITH RS485 PORT
35	16 WAY W A	16 WAY WINDOW ANNUNCIATOR

GENERAL DG OPERATING NOTES

1. NORMALLY BUS COUPLER IS OPEN AND ALL DG'S ARE IN CLOSED CONDITION, WHEN GRID POWER IS AVAILABLE.
2. IN THE EVENT OF GRID SUPPLY FAILURE, THE DG SETS WILL BE SEQUENTIALLY STARTED TO CATER THE DEMAND LOAD.
3. LOAD BALANCING ON THE TWO BUS SECTION OF 11kV DG SYNC. PANEL WILL BE ACCOMPLISHED & SUPERVISED DEPENDING ON LOAD CONDITION (WITH BMS ASSISTANCE).
4. CLOSING OF THE NEUTRAL VACUUM CONTACTOR SHALL BE DONE AUTOMATICALLY BASED ON FOLLOWING LOGICAL CONDITION.
   * WHEN DG IS IN ISLAND MODE.
   * WHEN DG IS THE FIRST TO BE PUT INTO SERVICE CONSIDERING TWO OR MORE DG SETS INTENDED FOR PARALLEL OPERATION.
5. DG SETS SHALL BE CAPABLE OF CONTINUES PARALLEL OPERATION.
6. A COMMON AUDIO / VISUAL ALARM ANNUNCIATOR WITH HOOTER SHALL BE PROVIDED IN THE CONTROL & RELAY PANEL.
7. 110V AUXILIARY DC SUPPLY SHALL BE PROVIDED.
8. THE DETAILS OF THE SYNCHRONISING / LOAD SHARING/OPERATING PHILOSOPHY) SHALL BE DETERMINED & FINALIZED BY DG VENDOR DURING DETAIL ENGINEERING.
9. VENDOR HAS TO DEVELOP PROPER LOGIC FOR NGR OPERATION.
10. THERE WILL BE A COMPLETE NETWORK OF DIGITAL / ANALOGUE SIGNALS BETWEEN DG BREAKER PANEL, NGR PANEL, DG CONTROL AND RELAY PANEL FOR SYNCHRONIZATION.
11. THE DETAILS AND THE INTERFACING OF THE DG MOUNTED CONTROL PANEL SHALL BE SUBMITTED DURING DETAIL ENGINEERING STAGE UPON THE FINALIZED DG VENDOR.
12. CONTROL CABLES FROM ENGINE TO C&R PANEL, HT PANEL WILL BE AS PER OEM RECOMMENDATION.
13. DC AUXILIARY POWER SUPPLY FROM THE BATTERY CHARGER WILL BE PROVIDED IN THE PANEL CONTROL WIRING DIAGRAM

NOTES

1. EARTHING SHALL BE CARRIED OUT AS PER IS: 3043-1987.
2. NEUTRAL EARTHING SHALL BE OF ADEQUATE SIZE OF CU. FLAT/ STRIP AND BODY EARTHING SHALL BE OF ADEQUATE SIZE OF GI. FLAT/ STRIP.
3. NO OTHER SERVICE PIPE LINE WATER MAINS/ TELEPHONE LINES, INTERCOM LINES, GAS PIPES OR, ANY OTHER SERVICES LINES SHALL BE LAID IN THE ELECTRICAL CONDUITS.
4. FOLLOWING CLEARANCE SHALL BE MAINTAINED DURING THE ERECTION OF PANELS
   A) IF TWO SWITCH BOARD OF THE PANEL SHALL BE MINIMUM 1000mm
   B) IF TWO SWITCH BOARDS ARE ERECTED BACK TO BACK FACING EACH OTHER THE CLEARANCE BETWEEN THEM SHOULD NOT BE LESS THAN 2000mm
   C) IF TWO SWITCH BOARDS ARE ERECTED BACK TO BACK, THE CLEARANCE OF NOT LESS THAN 1000mm SHOULD BE MAINTAINED BETWEEN THEM
   D) IF TWO SWITCH BOARDS ARE ERECTED ADJACENT TO EACH OTHER IN THE SAME LINE, THE CLEARANCE BETWEEN THE TWO SWITCH BOARDS SHOULD BE EITHER LESS THEN 200mm MORE THAN 750mm.
   E) REAR CLEARANCE SHALL BE MINIMUM 750mm IF THERE ARE REAR ENTRY OF CABLES OR REAR DOORS OR THERE IS NECESSITY TO WORK BEHIND
   F) REAR CLEARANCE SHALL BE LESS THAN 200mm IF THERE IS NO SUCH ITEM AND NECESSITY TO WORK BEHIND
   G) IN CASE OF CIRCUIT BREAKER, IF ERECTED INDEPENDENTLY MAY HAVE TO BE ERECTED WITH A CLEARANCE OF NOT LESS THAN 1000mm ON THE FRONT SIDE AND CLEARANCE OF NOT LESS THAN 750mm ON OTHER SIDES.
   H) SPACING BETWEEN HT GEARS / SWITCH BOARDS AND M V SWITCH BOARDS LOCATED IN THE SAME ENCLOSURE / ROOM SHOULD BE ATLEAST TWO METERS.
   I) IF DOUBLE FRONTED SWITCH BOARDS / MCC PANELS ARE ERECTED A SPACE OF NOT LESS THEN 1000mm SHOULD BE PROVIDED FOR BOTH THE FRONT SIDES.
   J) SIDE CLEARANCE : IF THE REAR CLEARANCE IS 750mm AND ABOVE SIDE SPACINGS OF ATLEAST 750mm SHOULD ALSO BE PROVIDED ON BOTH SIDES OF THE BOARD.
   K) WHERE THE REAR CLEARANCE IS 750mm OR MORE, A PASSAGE WAY CLEAR TO THE HEIGHT OF 1900mm SHOULD ALSO BE PROVIDED.
4. ALL CABLES ARE ARMOURED ALUMINIUM CONDUCTOR CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH PROPER FEEDER IDENTIFICATION.
7. INDOOR PANELS SHALL BE OF IP - 4X CATEGORY.
8. FOR EARTH FLAT SIZES PLEASE REFER RESPECTIVE EARTHING SCHEMATIC.

ANNUNCIATION

S.NO	TYPE OF ANNUNCIATION
1.	INSTANTANEOUS OVER CURRENT RELAY ACTIVATED
2.	INSTANTANEOUS EARTH FAULT RELAY ACTIVATED
3.	IDMT OVER CURRENT RELAY ACTIVATED
4.	IDMT EARTH FAULT RELAY ACTIVATED
5.	DISTANCE PROTECTION RELAY ACTIVATED
6.	UNDER VOLTAGE RELAY ACTIVATED
7.	OVER VOLTAGE RELAY ACTIVATED
8.	TRIP CIRCUIT SUPERVISION RELAY ACTIVATED
9.	MASTER TRIP RELAY(ELECTRICAL FAULT) ACTIVATED
10.	MASTER TRIP RELAY(MECHANICAL FAULT) ACTIVATED
11.	DC HEALTHY RELAY ACTIVATED
12.	AUTOMATIC RECLOSER ACTIVATED

ALL CURRENT OPERATING RELAY IN THE HT PANEL SHALL BE OF NUMERICAL TYPE RELAY WITH RS485 PORT.
NUMERICAL RELAYS MDS-9X AND COMMUNICATION PORT :-
1. NON DIRECTIONAL, COMBINED INSTANTANEOUS & TIMP OC AND EARTH FAULT RELAY WITH 2 OC & E/F RELAY WITH HIGH SET AND 2 NOS. HAND RESET CONTACT PER UNIT PER POLE.
2. RESTRICTED EARTH FAULT RELAY
3. MASTER TRIP RELAY (LOCKOUT RELAY)
4. ANTIPUMPING RELAY
5. TRIP CIRCUIT SUPERVISION RELAY
6. DC HEALTHY RELAY
7. AUXILLARY RELAY
8. UNDER VOLTAGE AND OVER VOLTAGE RELAY
9. ALARM RELAY

Owner / Employer

India International Convention & Exhibition Centre Limited
Room No. 452A, Ministry of Commerce & Industry, DIPP, Udyog Bhawan, New Delhi - 110011, India

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Knowledge Partner

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AECOM

Preliminary Engineering Architecture Consultants (PEAC)

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L&T Construction
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Engineering Design and Research Center (EDRC)
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egis
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Certification

EPC Contractor
Design Consultant
Architectural Consultant
Proof Consultant
Structural
MEP
ICT
PEAC

Reviewed GFC drawings received by Contractor and have been adhered to :
07/08/2019
Issued by: on behalf of PEAC
Date:

Employer / Employer's Engineer

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R0	ISSUED FOR CONSTRUCTION	05.08.19	SBTS	TVS / TSE	MK	RAA

Revisions

ARCHITECTURE			FPS		
STRUCTURAL			PIPING		
ELECTRICAL			FHE		
ELV SYSTEM			GIS		
HVAC			GEOTECH.		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction Buildings & Factories

JOB No : O17203

Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA

Drawing Status
GOOD FOR CONSTRUCTION
GOOD FOR CONSTRUCTION (GFC)

Drawing No: E | 00 | 0063 | R0

Rev. No

Title :
BUILDING NAME
HT DG MSLD 1/2

EDRC DWG No : O17203 - E - SP - 00 - 1L - 0063
Scale : As Indicated
Sheet Size : A0

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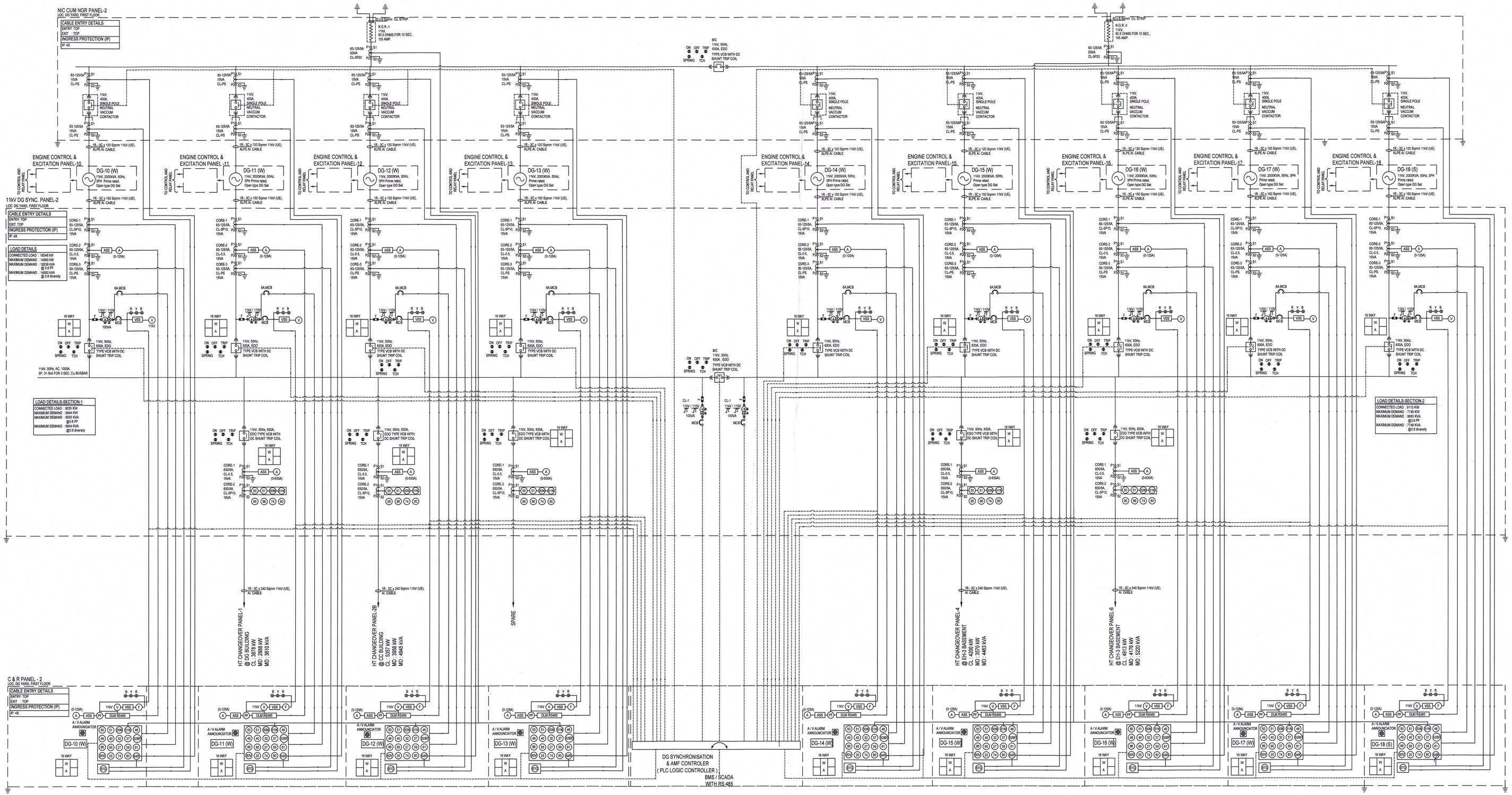

SLD SYMBOLS

S.NO	DESCRIPTION
1	CHECK SYNCHRONISE RELAY
2	UNDER VOLTAGE RELAY
3	DIRECTIONAL POWER RELAY
4	UNDER POWER RELAY (REVERSE POWER RELAY)
5	FIELD FAILURE RELAY
6	NEGATIVE PHASE SEQUENCE RELAY
7	MACHINE THERMAL RELAY
8	INSTANTANEOUS OVER CURRENT RELAY
9	INSTANTANEOUS EARTH FAULT RELAY
10	IDMT OVER CURRENT RELAY
11	IDMT EARTH FAULT RELAY
12	BREAKER FAILURE PROTECTION
13	OVER VOLTAGE RELAY
14	VOLTAGE BALANCE RELAY
15	RESTRICTED EARTH FAULT RELAY
16	ALARM RELAY
17	DC HEALTHY RELAY

SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
18	81	FREQUENCY RELAY
19	86	LOCK-OUT RELAY
20	87G	GENERATOR DIFFERENTIAL RELAY
21	95	TRIP CIRCUIT SUPERVISION RELAY
22		A / V ALARM ANNUNCIATOR
23		STAR POINT
24		MINIATURE CIRCUIT BREAKER
25		CURRENT TRANSFORMER
26		DRAWOUT POTENTIAL TRANSFORMER
27		INDICATION LAMP (OFF/TRIP/SPRING/TCH)
28	VSS	VOLTMETER SELECTOR SWITCH
29	ASS	AMMETER SELECTOR SWITCH
30	V	DIGITAL VOLTMETER
31	A	DIGITAL AMMETER
32		VACUUM CIRCUIT BREAKER
33		GROUNDING
34	DLM RS485	DIGITAL LOAD MANAGER WITH RS485 PORT
35	16 WAY W V A	16 WAY WINDOW ANNUNCIATOR

GENERAL DG OPERATING NOTES

1. NORMALLY BUS COUPLER IS OPEN AND ALL DG'S ARE IN CLOSED CONDITION, WHEN GRID POWER IS AVAILABLE.
2. IN THE EVENT OF GRID SUPPLY FAILURE, THE DG SETS WILL BE SEQUENTIALLY STARTED TO CATER THE DEMAND LOAD.
3. LOAD BALANCING ON THE TWO BUS SECTION OF 11kV DG SYNC. PANEL WILL BE MANUALLY DECIDED & SUPERVISED DEPENDING ON LOAD CONDITION (WITH BMS ASSISTANCE).
4. CLOSING OF NEUTRAL VACUUM CONTACTOR SHALL BE DONE AUTOMATICALLY BASED ON FOLLOWING LOGICAL CONDITION:
   * WHEN DG IS IN ISLAND MODE
   * WHEN DG IS THE FIRST TO BE PUT INTO SERVICE CONSIDERING TWO OR MORE DG SETS INTENDED FOR PARALLEL OPERATION
5. DG SETS SHALL BE CAPABLE OF CONTINUES PARALLEL OPERATION.
6. A COMMON AUDIO / VISUAL ALARM ANNUNCIATOR WITH HOOTER SHALL BE PROVIDED IN THE CONTROL & RELAY PANEL.
7. 110V AUXILIARY DC SUPPLY SHALL BE PROVIDED.
8. THE DETAILED DG SEQUENCE OF OPERATION (OPERATING PHILOSOPHY) SHALL BE DETERMINED & FINALIZED BY DG VENDOR DURING DETAIL ENGINEERING.
9. VENDOR HAS TO DEVELOP PROPER LOGIC FOR NGR OPERATOR.
10. THE DG SETS SHALL BE INTERFACED WITH PLC BASED DG SYNC. SIGNALS BETWEEN DG BREAKER PANEL, NGR PANEL, DG CONTROL AND RELAY PANEL FOR SYNCHRONIZATION.
11. THE DETAILS AND THE INTERFACING OF THE DG MOUNTED CONTROL PANEL SHALL BE SUBMITTED DURING DETAIL ENGINEERING STAGE UPON THE FINALIZED DG VENDOR.
12. CONTROL CABLES FROM ENGINE TO C&R PANEL, HT PANEL WILL BE AS PERDBM RECOMMENDATION.
13. DC AUXILIARY POWER SUPPLY FROM THE BATTERY CHARGER WILL BE PROVIDED IN THE PANEL CONTROL WIRING DIAGRAM

NOTES

1. EARTHING SHALL BE CARRIED OUT AS PER IS: 3043-1987.
2. NEUTRAL EARTHING SHALL BE OF ADEQUATE SIZE OF Cu FLAT/ STRIP AND BODY EARTHING SHALL BE OF ADEQUATE SIZE OF GI FLAT/ STRIP.
3. NO OTHER SERVICE PIPE LINE WATER MAINS TELEPHONE LINES, INTERCOM LINES, GAS PIPES OR ANY OTHER SERVICES LINES SHALL BE LAID IN THE ELECTRICAL CONDUITS.
4. FOLLOWING CLEARANCE SHALL BE MAINTAINED DURING THE ERECTION OF PANELS
   A) FRONT CLEARANCE OF THE PANEL SHALL BE MINIMUM 1000mm
   B) IF TWO SWITCH BOARDS ARE ERRECTED FACING EACH OTHER THE CLEARANCE BETWEEN THE TWO SHALL NOT BE LESS THAN 2100mm
   C) IF THE SWITCH BOARDS ARE ERRECTED BACK TO BACK, THE CLEARANCE OF NOT LESS THAN 1000mm SHOULD BE MAINTAINED BETWEEN THEM
   D) IF TWO SWITCH BOARDS ARE ERECTED ADJACENT TO EACH OTHER IN THE SAME LINE, THE CLEARANCE BETWEEN THE TWO SWITCH BOARDS SHOULD BE EITHER LESS THEN 200mm MORE THAN 750mm.
   E) REAR CLEARANCE SHALL BE MINIMUM 750mm IF THERE ARE REAR ENTRY OF CABLES OR REAR DOORS OR THERE IS NECESSITY TO WORK BEHIND.
   F) REAR CLEARANCE SHALL BE LESS THAN 200mm IF THERE IS NO SUCH ITEM AND NECESSITY DESCRIBED ABOVE.
   G) H.V OR M.V CIRCUIT BREAKER, IF ERECTED INDEPENDENTLY MAY HAVE TO BE ERECTED WITH A CLEARANCE OF NOT LESS THAN 1000mm ON THE FRONT SIDE AND CLEARANCE OF NOT LESS THAN 750mm ON OTHER SIDES.
   H) LOW VOLTAGE SWITCH BOARDS : SWITCH BOARDS AND M.V SWITCH BOARDS LOCATED IN THE SAME ENCLOSURE / ROOM SHOULD BE ATLEAST TWO METERS.
   I) IF DOUBLE FRONTED SWITCH BOARDS / MCC PANELS ARE ERECTED A SPACE OF NOT LESS THEN 1000mm SHOULD BE PROVIDED FOR BOTH THE FRONT SIDES.
   J) SIDE CLEARANCE : IF THE REAR CLEARANCE IS 750mm AND ABOVE SIDE SPACINGS OF ATLEAST 750mm SHOULD ALSO BE PROVIDED ON BOTH SIDES OF THE BOARD.
   K) WHERE THE REAR CLEARANCE IS 750mm OR MORE, A PASSAGE WAY CLEAR TO THE HEIGHT OF 1800mm SHOULD ALSO BE PROVIDED.
4. ALL CABLES ARE ARMOURED ALUMINUM CONDUCTOR CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH PROPER FEEDER IDENTIFICATION.
7. INDOOR PANELS SHALL BE OF IP - 4X CATEGORY.
8. FOR EARTH FLAT SIZES PLEASE REFER RESPECTIVE EARTHING SCHEMATIC.

ANNUNCIATION

S.NO	TYPE OF ANNUNCIATION
1.	INSTANTANEOUS OVER CURRENT RELAY ACTIVATED
2.	INSTANTANEOUS EARTH FAULT RELAY ACTIVATED
3.	IDMT OVER CURRENT RELAY ACTIVATED
4.	IDMT EARTH FAULT RELAY ACTIVATED
5.	DISTANCE PROTECTION RELAY ACTIVATED
6.	UNDER VOLTAGE RELAY ACTIVATED
7.	OVER VOLTAGE RELAY ACTIVATED
8.	TRIP CIRCUIT SUPERVISION RELAY ACTIVATED
9.	MASTER TRIP RELAY(ELECTRICAL FAULT) ACTIVATED
10.	MASTER TRIP RELAY(MECHANICAL FAULT) ACTIVATED
11.	DC HEALTHY RELAY ACTIVATED
12.	AUTOMATIC RECLOSER ACTIVATED

ALL CURRENT OPERATING RELAY IN THE HT PANEL SHALL BE OF NUMERICAL TYPE RELAY (WITH RS485 PORT)

NUMERICAL RELAYS WITH IEC 61 850 COMMUNICATION PORT :

1. NON DIRECTIONAL COMBINED INSTANTANEOUS & IDMT O/C AND EARTH FAULT RELAY WITH 2 O/C & E/F RELAY WITH HIGH SET AND 2 NOS. HAND RESET POTENTIAL FREE CONTACTS PER PHASE.
2. RESTRICTED EARTH FAULT RELAY.
3. MASTER TRIP RELAY (LOCKOUT RELAY)
4. ANTIPUMPING RELAY
5. TRIP CIRCUIT SUPERVISION RELAY
6. DC HEALTHY RELAY
7. AUXILLARY RELAY
8. UNDER VOLTAGE AND OVER VOLTAGE RELAY
9. ALARM RELAY

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	Department of Industrial Policy and Promotion Ministry of Commerce & Industry Government of India
Knowledge Partner	Delhi Mumbai Industrial Corridor Development Corporation, Room No 341 B, 3rd Floor Hotel Ashok, Diplomatic Enclave, 308 Chankyapuri, New Delhi - 110021
Employer's Representative	
Employer Engineer	
Programme Management Consultant (PMC)	AECOM
Preliminary Engineering Architecture Consultants (PEAC)	idom, Av. Del Monasterio de El Escorial, 4, 28049 Madrid, Spain; CPKUKREJA ARCHITECTS, No.D-1, Ashirwad building, Green Park, New Delhi, Delhi 110016, India
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EPC Contractor's Representatives	
Design Consultant	Engineering Design and Research Center (EDRC) L&T Construction - Buildings & Factories
Architectural Consultant	ARCOP, Arcop Associates Pvt. Ltd., A-15, Pampose Enclave, G.C.-I, New Delhi, Delhi 110048, India
Structural Proof Consultant	Indian Institute of Technology (IIT) Madras, Sardar Patel Rd, Opposite to C. L.R.I, Adyar, Chennai, Tamil Nadu 600036
MEP Proof Consultant	egis, Egis India Consulting Engineers Pvt. Ltd., Plot No. 66, Sector 32, Institutional Area, Opp: Jenofa Solitons, Gurugram, Haryana 122001
ICT Proof Consultant	CKR, CKR Consulting Engineers Pvt. Ltd., #47/1, 3rd Floor, Narayana Arcade, Subbaramachetty Road, Nettakappa Circle, Basavanagudi, Bengaluru - 560004

Certification

EPC Contractor

Design Consultant — Reviewed GFC drawings prepared by Contractor and ensured that all mandatory requirements have been adhered to.

Architectural Consultant

Proof Consultant — Structural | MEP | ICT

PEAC — Signed on behalf of PEAC — Date: 07/09/2019

Issued by: Employer / Employer's Engineer

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R0	ISSUED FOR CONSTRUCTION	05.09.19	SRS	TVS / TSE	MK	KAA

Revisions

ARCHITECTURE			FPS			
STRUCTURAL			PIPING			
ELECTRICAL			FHE			
ELV SYSTEM			GIS			
HVAC			GEOTECH			
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE	

EPC Contractor: L&T Construction, Buildings & Factories

JOB No : O17203

Project Name: DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE, SECTOR 25, DWARKA, NEW DELHI, INDIA

Drawing Status: GOOD FOR CONSTRUCTION (GFC)

Drawing No			Rev. No
E	00	0064	R0

Title : **BUILDING NAME**
HT DG MSLD 2/2

EDRC DWG No : O17203 - E - SP - 00 - 1L - 0064 | Scale : As Indicated | Sheet Size : A0

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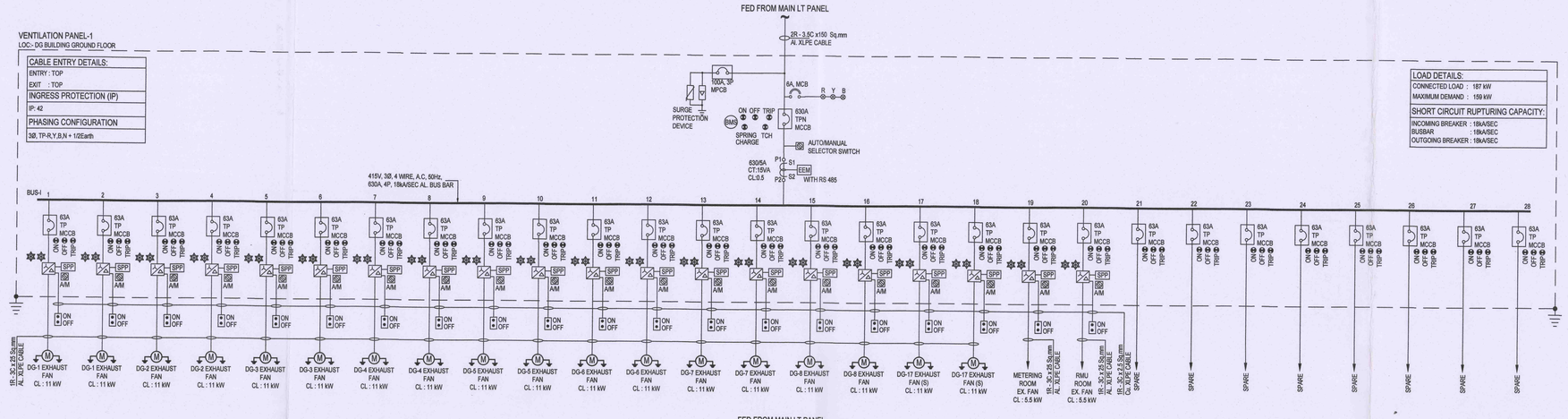

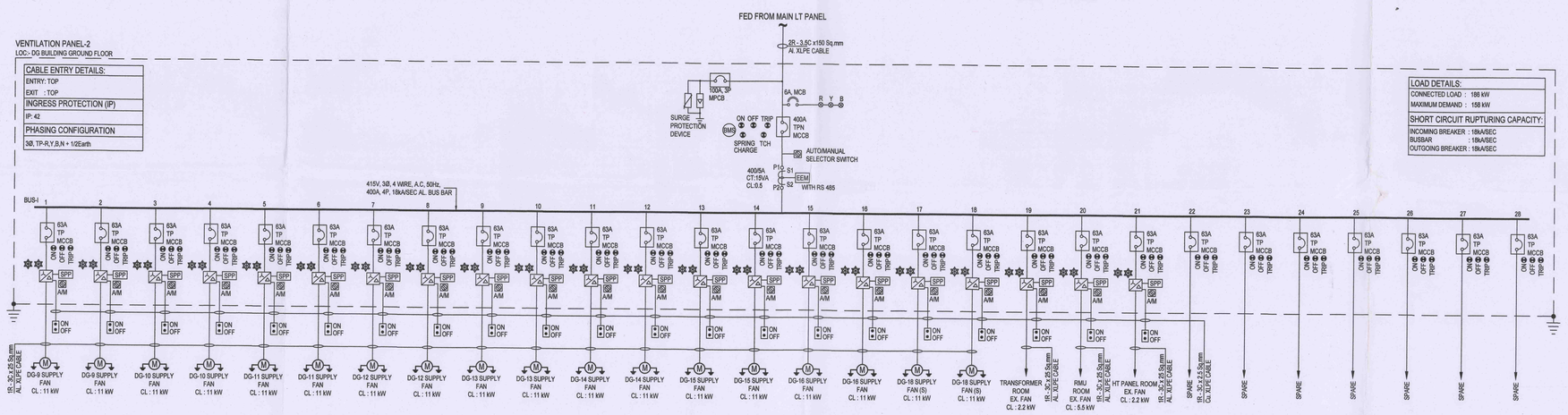

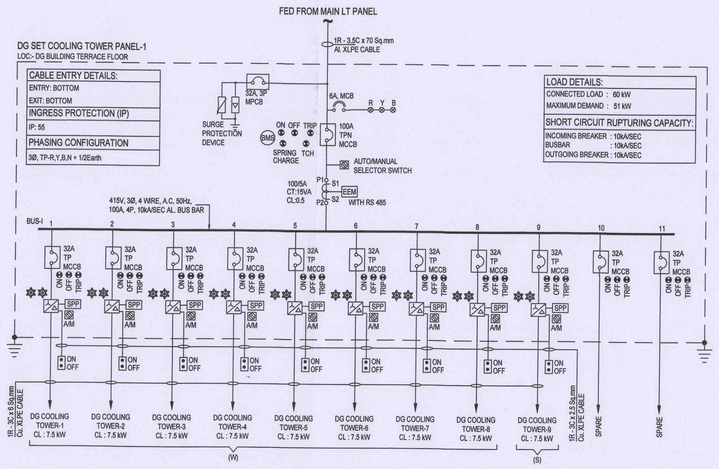

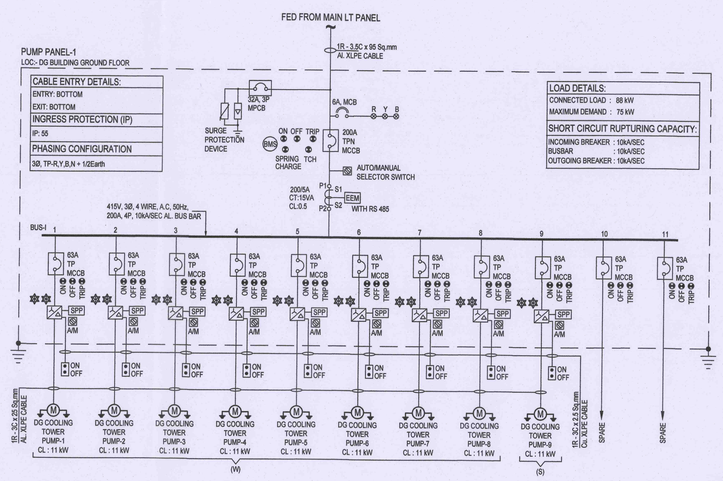

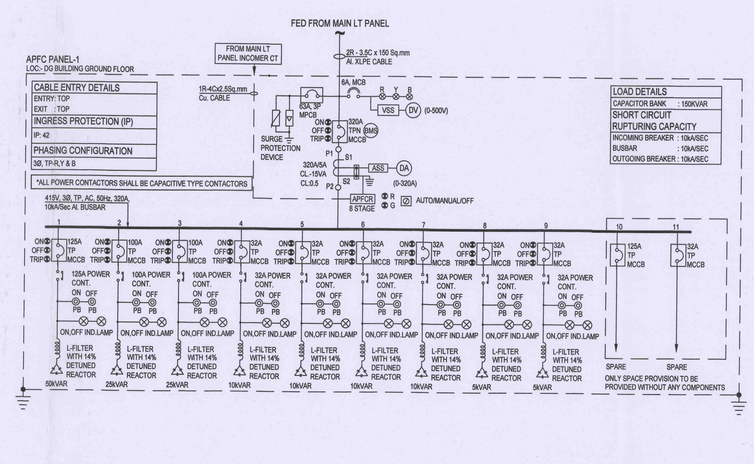

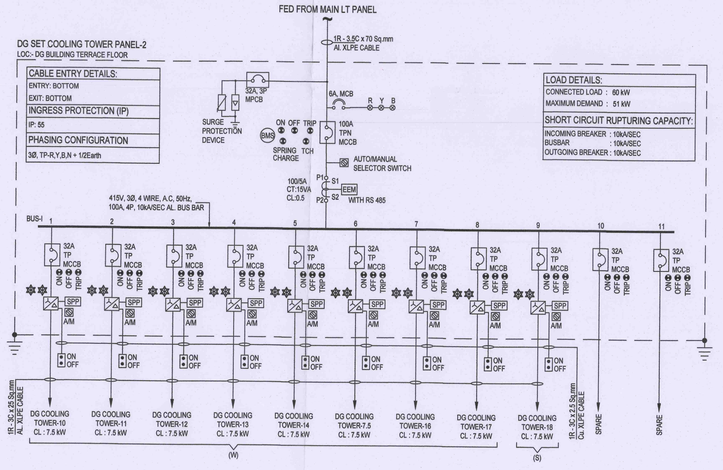

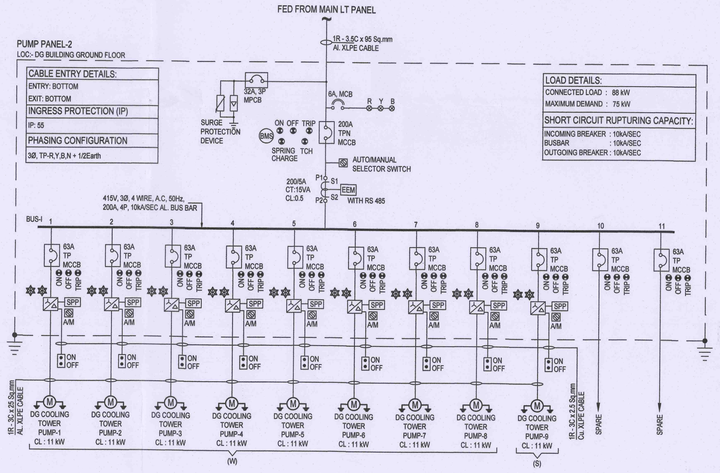

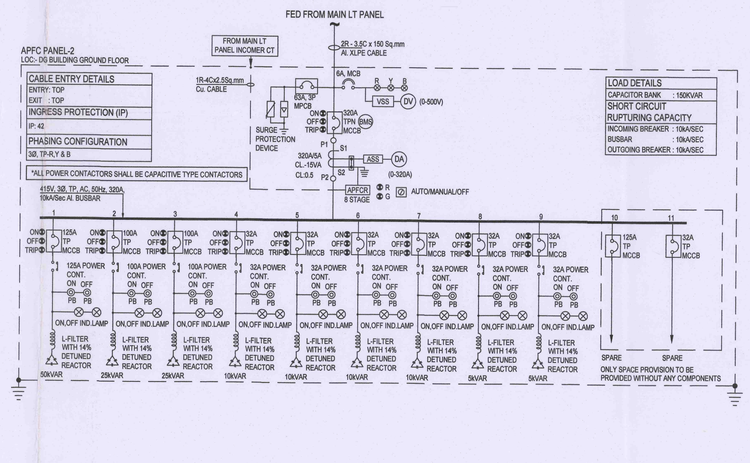

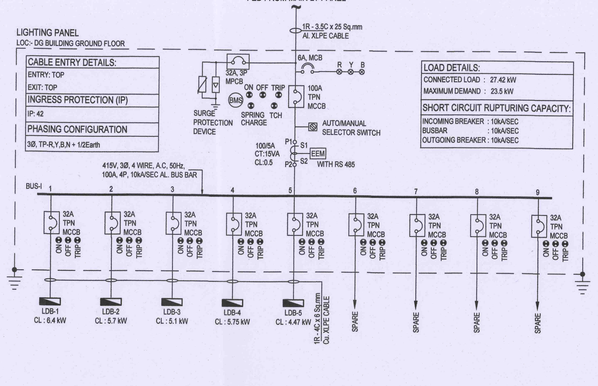

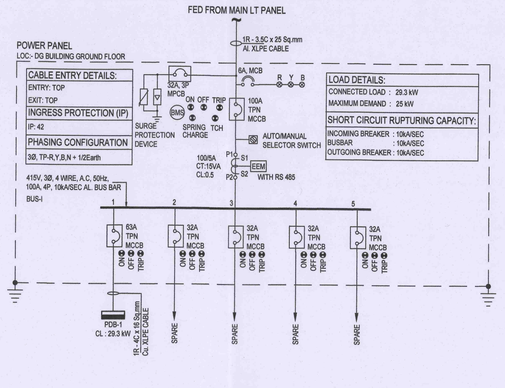

SLD SYMBOLS

LEGEND DETAILS

S.NO	SYMBOL	DESCRIPTION
1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3		AIR CIRCUIT BREAKER - EDO
4		CURRENT TRANSFORMER
5		INDICATION LAMP
6	VSS	VOLTMETER SELECTOR SWITCH
7	ASS	AMMETER SELECTOR SWITCH
8	EEM	ENERGY METER WITH RS 485
9	MFM	MULTIFUNCTION METER
10		VOLTMETER
11		AMMETER
12		LIGHTING DISTRIBUTION BOARD (LDB)
13		EMERGENCY LIGHTING DISTRIBUTION BOARD (ELDB)
14		POWER DISTRIBUTION BOARD (PDB)
15		UPS POWER DISTRIBUTION BOARD (UDB)
16		GROUNDING
17	EIL	ELECTRICAL INTERLOCK
18		UN-INTERRUPTED POWER SUPPLY
19	APFCR	AUTOMATIC POWER FACTOR CORRECTION RELAY
20	AM	AUTOMANUAL SELECTOR SWITCH
21	BMS	BUILDING MANAGEMENT SYSTEM
22	ERF	RESTRICTED EARTH FAULT RELAY
23	VFD	VARIABLE FREQUENCY DRIVE
24	ON OFF	EMERGENCY ON/OFF PUSH BUTTON
25	SPP	SINGLE PHASE PROTECTION RELAY
26	M	MOTOR / PUMP
27		POWER CONTACTOR
28		SURGE PROTECTION DEVICE

NOTE

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACBs SHALL BE OF 50kA for 1sec/3sec

NOTES

1. MAIN PCC PANEL SHOULD FULFILL THE REQUIREMENTS OF CEIG/RELEVANT SPECIFICATIONS.
2. CONTROL CIRCUIT VOLTAGE SHALL BE 240V AC UNLESS SPECIFIED.
3. ALL EQUIPMENTS & PANELS ARE DOUBLE EARTHED WITH ADEQUATE SIZE OF G.I. STRIPS (BODY EARTHING)
4. ALL CABLES ARE ARMOURED CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH FEEDER IDENTIFICATION.
6. THIS SLD SHOULD BE READ IN CONJUNCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
7. ALL BUSDUCTRISING MAINS SHALL BE OF SANDWICH CONSTRUCTION IT SHALL BE POSSIBLE TO MOUNT THE BUSBAR SYSTEM IN ANY ORIENTATION WITHOUT AFFECTING THE CURRENT RATING.
8. EARTHING SHALL BE CARRIED OUT AS PER IS 3043 / 1987.
9. COMMON APFC CT AND CONTROLLER SHALL BE PROVIDED TO CONTROL / SENSING FOR BOTH THE CAPACITOR BANK UNDER EACH BUS SECTION ONLY IN MAIN LT PANEL.
10. ALL CABLES ARE MULTICORE XLPE AL/CU ARMOURED CABLE UNLESS OTHERWISE SPECIFIED
11. THESE DETAILS ARE SUBJECT TO CHANGE DURING DETAIL ENGINEERING BASED ON VENDOR DETAILS
12. CIRCUIT BREAKER FOR MOTOR FEEDER IS DESIGNED BASED ON TYPE 2 COORDINATION CHART. THE FINAL RATING SHALL BE DECIDED BASED ON SELECTED VENDOR COORDINATION CHART
13. STAR DELTA STARTER IS PROVIDED FOR 7.5kW MOTOR RATING AND ABOVE. LESS THAN 7.5kW MOTOR RATING IS PROVIDED WITH DOL STARTER
14. 2RUNS OF CABLE TO BE PROVIDED FROM SD STARTER TO PUMP AND SINGLE RUN TO BE PROVIDED FOR DOL STARTER TO PUMP.
15. FOR MOTOR AND PUMP PANELS, TP BREAKER & BUSBARS SHALL BE PROVIDED. FOR CONTROL SUPPLY AND INDICATION LAMPS, CONTROL TRANSFORMER SHALL BE PROVIDED IN THE PANEL

INTERLOCK LOGIC FOR MAIN LT @ DG BUILDING OVERALL PANEL ON/OFF LOGIC

I/C-1	I/C-2	BUS COUPLER
ON	ON	OFF
ON	OFF	ON
OFF	ON	ON

BMS MONITOR/COMMAND STATUS

BMS	NO/NC FOR ON/OFF STATUS NO/NC FOR TRIP STATUS
ERF	NO/NC FOR ON/OFF STATUS NO/NC FOR TRIP STATUS NO/NC FOR ON/OFF COMMAND NO/NC FOR AM SWITCH

BMS MONITOR/COMMAND STATUS

RMU/M	NO/NC FOR ON/OFF STATUS NO/NC FOR TRIP STATUS VOLTAGE PRESENSE

REFERENCE DRAWINGS / DOCUMENTS : (LATEST REVISION)

DRAWING NAME	DRAWING NUMBER
ELECTRICAL	
O17203-E-SP-30-1L-0003	DG YARD LT MASTER SINGLE LINE DIAGRAM (SHEET 1 OF 2)

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Department of Industrial Policy and Promotion Ministry of Commerce & Industry Government of India

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AECOM

Preliminary Engineering Architecture Consultants (PEAC)
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CPK&R Architects — No.D-1, Ashirvad Building, Green Park, New Delhi, Delhi 110016, India

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Design Consultant
Engineering Design and Research Center (EDRC)
L&T Construction - Buildings & Factories

Architectural Consultant
ARCOP — Arcop Associates Pvt. Ltd. A-13, Pompose Enclave , G.F., I New Delhi, Delhi 110048, India

Structural Proof Consultant
Indian Institute of Technology (IIT) Madras
Sardar Patel Rd, Opposite to C. L.R.I, Adyar, Chennai, Tamil Nadu 600036

MEP Proof Consultant
egis — Egis India Consulting Engineers Pvt. Ltd. Plot No. 68, Sector 32, Institutional Area, Opp. Jaypee Sports Complex, Gurugram, Haryana 122001

ICT Proof Consultant
CKR IT Consulting
No1, No.477-1, 3rd Floor, Manyata Arcade, Subbaramachetty Road, Nehrukoppa Circle, Basavanagudi, Bengaluru - 560004

Certification

EPC Contractor	
Design Consultant	
Architectural Consultant	
Proof Consultant	
Structural	MEP / ICT
PEAC	
Issued by:	Signed on behalf of PEAC
Employer / Employer's Engineer	Date

Reviewed GFC drawing prepared by Contractor and comments on major architectural aspects and parameters have been actioned by us

NO	RELEASED AS GOOD FOR CONSTRUCTION		21.02.19	THE	GANA	MK	RAA
REV	DESCRIPTION		DATE	DSGN	DRWN	CHKD	APPD

Revisions

ARCHITECTURE			FPS		
STRUCTURAL			PIPING		
ELECTRICAL			FHE		
ELV SYSTEM			GIS		
HVAC			GEOTECH		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction — Buildings & Factories

JOB No : O17203

Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA

Drawing Status
GOOD FOR CONSTRUCTION (GFC)

Drawing No: E 30 0003 — Rev. No: R0

Title :
DG YARD LT
MASTER SINGLE LINE DIAGRAM
(SHEET 2 OF 2)

EDRC DWG No : O17203-E-SP-30-1L-0003 — Scale : NTS — Sheet Size : A0

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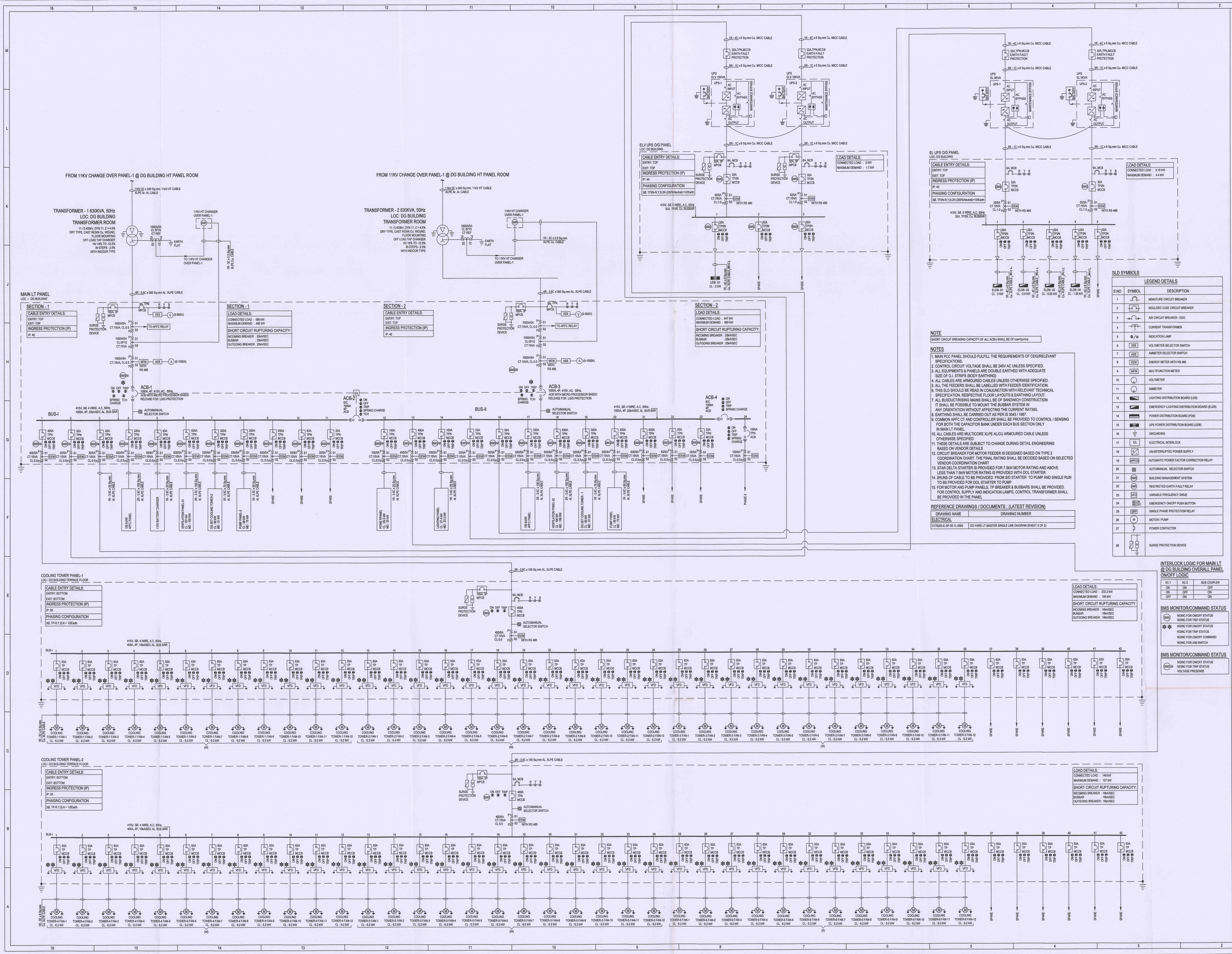

NOTE

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACB's SHALL BE OF Icw=Ics=Ics

NOTES

1. MAIN PCC PANEL SHOULD FULFILL THE REQUIREMENTS OF CEIG/RELEVANT SPECIFICATIONS.
2. CONTROL CIRCUIT VOLTAGE SHALL BE 240V AC UNLESS SPECIFIED.
3. ALL EQUIPMENTS & PANELS ARE DOUBLE EARTHED WITH ADEQUATE SIZE OF G.I. STRIPS (BODY EARTHING)
4. ALL CABLES ARE ARMOURED CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH FEEDER IDENTIFICATION.
6. THIS SLD SHOULD BE READ IN CONJUNCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
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REFERENCE DRAWINGS / DOCUMENTS : (LATEST REVISION)

DRAWING NAME	DRAWING NUMBER
ELECTRICAL	
O170203-E-SP-30-1L-0003	DG YARD LT MASTER SINGLE LINE DIAGRAM (SHEET 2 OF 2)

SLD SYMBOLS

LEGEND DETAILS

S.NO	SYMBOL	DESCRIPTION
1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3		AIR CIRCUIT BREAKER - EDO
4		CURRENT TRANSFORMER
5	R/G	INDICATION LAMP
6	VSS	VOLTMETER SELECTOR SWITCH
7	ASS	AMMETER SELECTOR SWITCH
8	EEM	ENERGY METER WITH RS 485
9	MFM	MULTIFUNCTION METER
10	V	VOLTMETER
11	A	AMMETER
12		LIGHTING DISTRIBUTION BOARD (LDB)
13		EMERGENCY LIGHTING DISTRIBUTION BOARD (ELDB)
14		POWER DISTRIBUTION BOARD (PDB)
15		UPS POWER DISTRIBUTION BOARD (UDB)
16		GROUNDING
17	EIL	ELECTRICAL INTERLOCK
18		UN-INTERRUPTED POWER SUPPLY
19	APFCR	AUTOMATIC POWER FACTOR CORRECTION RELAY
20		AUTOMANUAL SELECTOR SWITCH
21	BMS	BUILDING MANAGEMENT SYSTEM
22	SMS	RESTRICTED EARTH FAULT RELAY
23	VFD	VARIABLE FREQUENCY DRIVE
24	ON OFF	EMERGENCY ON/OFF PUSH BUTTON
25	SPP	SINGLE PHASE PROTECTION RELAY
26	M	MOTOR / PUMP
27		POWER CONTACTOR
28		SURGE PROTECTION DEVICE

INTERLOCK LOGIC FOR MAIN LT @ DG BUILDING OVERALL PANEL ON/OFF LOGIC

IC-1	IC-2	BUS COUPLER
ON	ON	OFF
ON	OFF	ON
OFF	ON	ON

BMS MONITOR/COMMAND STATUS

BMS	NO/NC FOR ON/OFF STATUS NO/NC FOR TRIP STATUS
	NO/NC FOR ON/OFF STATUS NO/NC FOR TRIP STATUS NO/NC FOR ON/OFF COMMAND NO/NC FOR A/M SWITCH

BMS MONITOR/COMMAND STATUS

SMS/M	NO/NC FOR ON/OFF STATUS NO/NC FOR TRIP STATUS VOLTAGE PRESENSE

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Department of Industrial Policy and Promotion Ministry of Commerce & Industry Government of India

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AECOM

Preliminary Engineering Architecture Consultants (PEAC)
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DPUKUREJA ARCHITECTS — No.D-1, Abhinandan Building, Green Park, New Delhi, Delhi 110016, India

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Design Consultant
Engineering Design and Research Center (EDRC)
L&T Construction - Buildings & Factories

Architectural Consultant
ARCOP — Arcop Associates Pvt. Ltd. A-15, Panscae Enclave , GX-1, New Delhi, Delhi 110046, India

Structural Proof Consultant
Indian Institute of Technology (IIT) Madras — Sardar Patel Rd, opposite to C. L.R.I, Adyar, Chennai, Tamil Nadu 600036

MEP Proof Consultant
egis — Egis India Consulting Engineers Pvt. Ltd. Plot No. 66, Sector 32, Institutional Area, Opp: Zenefa Solutions, Gurugram, Haryana 122001

ICT Proof Consultant
CKR IT Consulting — Bld. No.477/1, 3rd Floor, Narasanna Arcade, Subbaramachetty Road, Nettakappa Circle, Basavanagudi, Bengaluru - 560004

Certification

EPC Contractor

Design Consultant

Architectural Consultant

Proof Consultant

Structural — MADRAS INSTITUTE OF TECHNOLOGY — ICT

PEAC

Reviewed. DPC drawing prepared by Contractor and ensured that all preliminary aspects and parameters have been achered to :

2/01/2019

Issued by: Signature of PEAC — Date:

Employer / Employer's Engineer

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R0	REISSED AS GOOD FOR CONSTRUCTION	21.02.19	THK	GANA	ME	RAA

Revisions

ARCHITECTURE		PIPING	
STRUCTURAL		FIRE	
ELECTRICAL		GIS	
ELV SYSTEM		GEOTECH.	
HVAC			
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction — Buildings & Factories

JOB No : O17203

Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA

Drawing Status
NOT FOR CONSTRUCTION
GOOD FOR CONSTRUCTION (GFC)

Drawing No			Rev. No
E	30	0064	R0

Title :
DG YARD LT
MASTER SINGLE LINE DIAGRAM
(SHEET 1 OF 2)

EDRC DWG No : O17203-E-SP-30-1L-0064

Scale : NTS — Sheet Size : A0

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