SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
1		MINIATURE CIRCUIT BREAKER
2		MOULDED CASE CIRCUIT BREAKER
3	E	AIR CIRCUIT BREAKER - ELECTRICAL DRAW OUT TYPE
4	CT S1 S2 P1 P2	CURRENT TRANSFORMER (DUAL RATIO)
5		ISOLATION TRANSFORMER
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	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 UPS DISTRIBUTION BOARD (EUDB)
22		POWER DISTRIBUTION BOARD (PDB)
23		UPS DISTRIBUTION BOARD (UDB)
24		UNINTERRUPTIBLE POWER SUPPLY
25	SR	TRIP CIRCUIT SUPERVISION RELAY
26	SGR	SENSITIVE EARTH FAULT RELAY
27	MFM	MULTIFUNCTION METER WITH RS485 COMMUNICATION PORT
28	VFD	VARIABLE FREQUENCY DRIVE
29		CABLE SIZES SHALL BE AS PER CABLE SCHEDULE
30	DOL	DIRECT ON LINE STARTER
31		AUTOMANUAL SELECTOR SWITCH
32	SPP	SINGLE PHASE PROTECTION RELAY

BMS MONITOR/COMMAND STATUS

BMS	NO/NC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS
BMS M	NO/NC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS VOLTAGE PRESENSE
BMS	NO/NC POTENTIAL FREE CONTACTS TO BE PROVIDED IN THE PANEL FOR ON/OFF STATUS TRIP STATUS ON/OFF COMMAND AIR SWITCH

INTERLOCK LOGIC FOR EH-1 MAIN LT PANEL

	ACB-1	ACB-2	ACB-3
CASE-I	ON	ON	OFF
CASE-II	OFF	ON	ON
CASE-III	ON	OFF	ON

ONE/SET POTENTIAL FREE CONTACTS TO BE PROVIDED FOR THE BMS MOBE VENTILATION FAN ON/OFF PANEL

INDICATION LAMP DETAILS

INDICATION LAMP	COLOUR
ON	GREEN
OFF	RED
TRIP	AMBER

ALL THE 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

ELECTRONIC ENERGYMETER (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

ABBREVIATIONS

4P - FOUR POLE
TPN - TRIPLE POLE & NEUTRAL
TP - TRIPLE POLE
DP - DOUBLE POLE
TCH - TRIP CIRCUIT HEALTHY

NOTES

1. MAIN PCC 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 SLD SHOULD BE READ IN CONJUNCTION WITH RELEVANT TECHNICAL SPECIFICATION, RESPECTIVE FLOOR LAYOUTS & EARTHING LAYOUT.
7. ALL BUSSUCTRIBING 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 7.5KW/MOTOR RATING AND ABOVE. LESS THAN 7.5KW MOTOR RATING IS PROVIDED WITH DOL STARTER.
12. 2KUNS OF 3C CABLE TO BE PROVIDED FROM SUD STARTER TO PUMP AND SINGLE RUN TO BE PROVIDED FOR DOL STARTER TO PUMP.
13. DOL STAR DELTA CONTACT RATING SHALL BE PROVIDED AS PER THE TYPE 2 COORDINATION CHART.
14. FOR MOTOR AND PUMP PANELS, TP BREAKER & BUSBARS SHALL BE PROVIDED.
15. ALL LT PANELS - IN ALL OUTGOINGS ON OFF & TRIP LED INDICATION LAMPS SHALL BE PROVIDED.
16. THE BUS BARS SHALL BE OF SUFFICIENT CROSS SECTION SO THAT A CURRENT DENSITY OF 0.9A/SQ.MM IS NOT EXCEEDED AT NOMINAL CURRENT RATING FOR ALUMINIUM BUS BARS, 1.0A/SQ.MM FOR COPPER BUS BARS.
17. MCCBS SHOULD BE SUITABLE FOR IC/ICS RATINGS.
18. 2 NOS 20 X 3 MM COPPER STRIP FOR LT PANEL UP TO 400 AMP AND 25 X 5 MM COPPER STRIP FOR LT PANEL OF HIGHER CAPACITY SHALL BE PROVIDED INSIDE THE PANELS.
19. ALL INCOMING AIR CIRCUIT BREAKERS (ACBS) SHALL BE OF ELECTRICALLY OPERATED DRAW -OUT TYPE (EDO) ENCASED IN METAL CLAD HOUSINGS AND OUTGOING SHALL BE MDO TYPE.
20. CABLE LENGTHS SHALL BE AS PER ACTUAL SITE MEASUREMENT.
21. IN THE ACB ALL INCOMER AND OUTGOING FEEDERS SHALL BE PROVIDED WITH VARIABLE MICROPROCESSOR BASED RELEASES FOR OVERLOADS), SHORT CIRCUIT(S), INSTANTANEOUS(I) AND EARTH FAULT PROTECTION.
22. ALL THE STARTERS SHALL BE PROVIDED WITH CONTACTORS & RELAYS.
23. DUAL RATIO RANGE MENTIONED IN THE SLD ARE INDICATIVE, IT SHALL BE AS PER THE FINALIZED CT MANUFACTURES AS PER PANEL SUPPLIER.
24. 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. REFER EQUIPMENT & CABLE TRAY LAYOUT FOR LCP LOCATIONS.
26. REFER CABLE SCHEDULE FOR LCP INCOMING & OUTGOING FEEDERS.

HYBRID POWER FACTOR CONTROLLER PANELS AND ITS SCHEME SHALL BE SUBMITTED ALONG WITH THE VENDOR TECHNICAL SUBMITTALS AS IT WILL VARY BASED ON VENDORS. WE HEREBY CONFIRM THAT WE HAVE SELECTED AND INDICATED THE MAXIMUM HPFC RATING THAT WOULD BE REQUIRED FOR 2000 KVA TRANSFORMER, BREAKERS AND CABLES INDICATED IN THE SLD ARE SUFFICIENT FOR THE HPFC PANEL

SHORT CIRCUIT BREAKING CAPACITY OF ALL ACB's SHALL BE OF 65kA/50kA

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

1. EH-1- SUB STATION -EARTHING SCHEMATIC DRAWING, REFER DWG. NO. O17203-E-SP-30-EG-0204
2. EH-1- SUB STATION - LOAD ESTIMATION REFER DOCUMENT NO. 017203-E-SP-30-DC-0209
3. EH-1- SUB STATION - HPFC CALCULATION REFER DOCUMENT NO. O17203-E-SP-30-DC-0218
4. EH-1- SUB STATION - UPS CALCULATION REFER DOCUMENT NO. O17203-E-SP-30-DC-0231
5. EH-1- SUB STATION - CABLE SCHEDULE REFER DOCUMENT NO. O17203-E-SP-30-DC-0214
6. EH-1- SUB STATION - SC CALCULATION REFER DOCUMENT NO. O17203-E-SP-30-DC-0216

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R0	ISSUED AS GOOD FOR CONSTRUCTION	8.11.23	MG	TVS	MK	RAA

Revisions

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

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L&T Construction
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Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
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Drawing Status
GOOD FOR CONSTRUCTION (GFC)

Drawing No			Rev. No
E	30	0227	R0

Title :
EXHIBITION HALL-I
MASTER SINGLE LINE DIAGRAM -3/3

EDRC DWG No : O17203-E-SP-30-1L-0227
Scale : NTS
Sheet size : A0

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Knowledge Partner
Delhi Mumbai Industrial Corridor Development Corporation
Room No. 345 B, 3rd Floor Rail Ashok, Diplomatic Enclave, 508 Chanakyapuri, New Delhi - 110021

Employer's Representative
Employer's Engineer
Programme Management Consultant (PMC)
AECOM

Preliminary Engineering Architecture Consultants (PEAC)
idom
Av. Del Manzanillo de El Escorial, 4, 28047 Madrid, Spain
CPKUKREJA ARCHITECTS
No.D-1, Ashirwad Building, Green Park, New Delhi, Delhi 110016, India

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

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-13, Panipose 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: Zenotte Solutions, Gurugram, Haryana 122001

ICT Proof Consultant
CKR II Consulting
No. No.411, 3rd Floor, Narayana Arcade, Subbaramachetty Road, Nettlallappa Circle, Basavanagudi, Bengaluru - 560004

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