

## HT/LT SLD LEGENDS

S.NO.	SYMBOL	DESCRIPTION
01		ELECTRICAL OPERATOR/TRANSFER AIR CIRCUIT BREAKER
02		MANUAL OPERATED/TRANSFER AIR CIRCUIT BREAKER
03		MOULDED CASE CIRCUIT BREAKER
04		MINIATURE CIRCUIT BREAKER
05		MOTOR PROTECTION CIRCUIT BREAKER
06		CONTACTOR
07		MOTORIZED VACUUM CIRCUIT BREAKER
08		SF-6 INSULATED MANUAL VACUUM CIRCUIT BREAKER
09		SF-6 LOAD BREAK SWITCH
10		AUTOMATIC TRANSFER SWITCH (ATS)
11		AUTO-MANUAL SELECT SWITCH
12		HT CONTROL FUSE
13		HT POTENTIAL TRANSFORMER FOR METERING
14		HV CONTROL TRANSFORMER
15		DIRECT ON LINE STARTER
16		STAR DELTA STARTER
17		SPT STARTER
18		VARIABLE FREQUENCY DRIVE
19		STAGE STARTER WITH STAGE PHASING C/W OVER LOAD RELAY IN BUILT
20		OVERLOAD RELAY
21		SINGLE PHASING RELAY
22		SINGLE PHASING C/W OVER LOAD RELAY IN BUILT
23		DIGITAL VOLTMETER-AMMETER
24		DIGITAL VOLTMETER-AMMETER-FREQUENCY METER
25		DIGITAL VOLTMETER + AMMETER + FREQUENCY METER COMMUNICABLE TYPE
26		DUAL SOURCE LOAD MANAGER COMMUNICABLE TYPE
27		INTELLIGENT TYPE AUTOMATIC POWER FACTOR CORRECTION RELAY WITH IN-BUILT POWER FACTOR METER - COMMUNICABLE TYPE
28		DIGITAL MULTI-FUNCTION METER
29		DIGITAL MULTI-FUNCTION METER-DUAL SOURCE WITH BUSBAR STOP - COMMUNICABLE TYPE
30		DIGITAL MULTI-FUNCTION METER-DUAL SOURCE WITH BUSBAR STOP - COMMUNICABLE TYPE
31		KWH METER (ENERGY METER)

## LEGENDS

S.NO.	SYMBOL	DESCRIPTION
32		DIGITAL VOLT HOUR METER COMMUNICABLE TYPE
33		DUAL SOURCE SUBMETER HOUR METER COMMUNICABLE TYPE
34		DUAL SOURCE SUBMETER HOUR METER 1/2 PORTION METER - COMMUNICABLE
35		DUAL SOURCE SUBMETER HOUR METER THREE CUT-OFF METER - COMMUNICABLE
36		DIGITAL AMMETER
37		DIGITAL VOLT METER
38		AMMETER SELECTOR SWITCH
39		VOLT METER SELECTOR SWITCH MAX DEMAND INDICATOR - COMMUNICABLE TYPE
40		DIGITAL MULTI-FUNCTION METER
41		SHUNT TRIP COIL
42		SURGE SUPPRESSOR
43		DIGITAL FREQUENCY METER
44		RELEASOR METER
45		IN-BUILT CURRENT DISPLAY WITH ACS
46		DIGITAL POWER FACTOR METER
47		IN-BUILT MICRO PROCESSOR BASED OVER CURRENT, EARTH FAULT & SHORT CIRCUIT RELEASE
48		ANTI PUMPING RELAY
49		TRP CIRCUIT SUPERVISION RELAY
50		WINDING TEMP. TEMP. & BUCHHOLZ RELAY (TRANSFORMER AUX. RELAY)
51		OVER VOLTAGE & UNDER VOLTAGE RELAY
52		MASTER TRIP RELAY
53		OVER CURRENT, EARTH CURRENT & SHORT CIRCUIT (EMC) RELAY
54		PHASE REVERSAL RELAY
55		VOLTAGE SENSING RELAY
56		AG-SET CONTROLLER WITH IN-SET
57		PROGRAMMABLE LOAD CONTROLLER
58		DIFFERENTIAL PROTECTION RELAY
59		EARTH FAULT RELAY
60		STAND BY EARTH FAULT RELAY
61		RESTRICTED EARTH FAULT RELAY

## LEGENDS

S.NO.	SYMBOL	DESCRIPTION
62		BATTERY CHARGER 45V AC/24V DC
63		R/W/2 WINDINGS ANNUNCIATOR
64		EMERGENCY STOP PUSH BUTTON
65		CLASS SPT CURRENT TRANSFORMERS FOR STAND BY EARTH FAULT RELAY
66		CLASS I CURRENT TRANSFORMERS FOR METERING
67		GENERATOR SET ALTERNATOR
68		4/800V WINDUP STOP DOWN TRANSFORMER
69		PE-FUSED REACTOR
70		R, Y, B - PHASE INDICATION LAMPS
71		ON, OFF, TRIP - INDICATION LAMPS
72		ON, OFF, TRIP - INDICATION LAMPS
73		ON, OFF, TRIP - INDICATION LAMPS
74		MOTOR
75		CAPACITOR BANK
76		EARTHING

## LEGENDS :-

S.NO.	SYMBOL	DESCRIPTION
01		THREE POLE MOTOR PROTECTION CIRCUIT BREAKER WITH THERMAL MAGNETIC RELEASE
02		THREE POLE MOTOR PROTECTION CIRCUIT BREAKER WITH MAGNETIC RELEASE
03		THREE POLE MOULDED CASE CIRCUIT BREAKER-MOTOR DUTY WITH FIXED RELEASE
04		THREE POLE MOULDED CASE CIRCUIT BREAKER-MOTOR DUTY WITH MICRO PROCESSOR BASED RELEASE
05		THREE POLE MOULDED CASE CIRCUIT BREAKER WITH FIXED THERMAL MAGNETIC RELEASE
06		THREE POLE MOULDED CASE CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC RELEASE
07		FOUR POLE MOULDED CASE CIRCUIT BREAKER WITH FIXED THERMAL MAGNETIC RELEASE
08		FOUR POLE MOULDED CASE CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC RELEASE
09		3 POLE MOULDED CASE CIRCUIT BREAKER WITH FIXED THERMAL & MAGNETIC RELEASES & EARTH FAULT MODULE
10		3 POLE MOULDED CASE CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL, MAGNETIC & EARTH FAULT RELEASES
11		4 POLE MOULDED CASE CIRCUIT BREAKER WITH FIXED THERMAL & MAGNETIC RELEASES & EARTH FAULT MODULE
12		4 POLE MOULDED CASE CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL, MAGNETIC & EARTH FAULT RELEASES
13		FOUR POLE, MOTORIZED MOULDED CASE CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC & EARTH FAULT RELEASE
14		THREE POLE, MANUAL AIR CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC & EARTH FAULT RELEASE (MDO)
15		THREE POLE, MOTORIZED AIR CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC & EARTH FAULT RELEASE (EDO)
16		FOUR POLE, MANUAL AIR CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC & EARTH FAULT RELEASE (MDO)
17		FOUR POLE, MOTORIZED AIR CIRCUIT BREAKER WITH MICRO PROCESSOR BASED THERMAL MAGNETIC & EARTH FAULT RELEASE (EDO)

## IMPORTANT NOTES FOR ELECTRICAL PANELS, SWITCHGEAR & MOTOR CONTROL CENTRES

- ALL PANELS / DISTRIBUTION BOARDS EXCEPT FEEDER PILLERS, WALL MOUNT PANELS AND OUT DOOR PANELS SHALL BE AS PER IEC: 65439 TESTED (TOTAL ASSEMBLY). IT SHALL MEAN BLOCKSET WITH SCHNIDER SWITCHGEAR, R2K WITH ABB SWITCHGEAR, C-PAN WITH SIEMENS SWITCHGEAR AND TIA / TERA FOR L&T SWITCHGEAR IF SPECIFIED.
- SWITCHGEAR OF ONLY ONE MAKE / MANUFACTURER TO BE USED.
- TYPE-2 CO-ORDINATION TO BE FOLLOWED.
- ICS = ICU + 100N FOR THE MCCBS, MPCBS & ACBS
- MOTORIZED (EDO) ACBS SHALL HAVE CLOSING COIL, SHUNT TRIP COIL & UNDER VOLTAGE RELEASE.
- MANUAL (MDO) ACBS SHALL HAVE SHUNT TRIP COIL.
- ACBS UPTO 4000A SHALL BE SINGLE FRAME TYPE.
- ALL ACBS OF ALL RATINGS, MANUAL & MOTORIZED SHALL BE OF DRAW OUT TYPE.
- MCCBS WITH FIXED THERMAL & MAGNETIC RELEASES, WHEREVER CALLED FOR, CAN ALSO BE WITH ADJUSTABLE THERMAL & FIXED MAGNETIC, IF THIS COMES AS A STANDARD FEATURE OF THE PRODUCT.
- MCCBS UPTO 250A SHALL BE WITH FIXED RELEASES & ABOVE 250A SHALL BE WITH MICRO PROCESSOR BASED RELEASES.
- MOTOR DUTY MPCBS & MCCBS TO BE SELECTED AS PER SWITCHGEAR MANUFACTURER'S RECOMMENDATION / CHARTS.
- IN CASE OF ANY DISCREPANCY BETWEEN SPECIFICATIONS, BOQ & DRAWING (SLD), THE BEST OF THE THREE TO BE CONSIDERED OR CLARIFICATION TO BE SOUGHT FROM THE CONSULTANT / CLIENT / PMC.
- TEMPERATURE DERATION OF SWITCHGEAR TO BE TAKEN INTO ACCOUNT WHILE SELECTING IT EVEN IF IT IS NOT ACCOUNTED FOR IN THE BOQ / DRAWING (SLD).
- MOTOR DUTY MCCBS ARE AVAILABLE IN 50KA FAULT WITHSTAND CAPACITY, EVEN IF IT IS SPECIFIED OTHERWISE IN BOQ / DRAWING (SLD).
- MPCBS LESS THAN 30KA FAULT WITHSTAND RATINGS NOT TO BE USED, EVEN IF IT HAS BEEN SPECIFIED OTHERWISE.
- STANDARD RANGE OF MCCBS IS: 16A, 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A, 225A, 250A, 320A, 400A, 500A, 630A
- STANDARD FAULT WITHSTAND RATINGS OF MCCBS ARE: 16KA, 25KA, 32KA, 40KA, 50KA, 63KA/70KA, 100KA
- STANDARD MPCBS FAULT WITHSTAND RATINGS ARE: 25KA, 36KA, 50KA, 100KA, 150KA
- MPCBS UPTO 63A SHALL BE THERMAL MAGNETIC TYPE WITH ADJUSTABLE O/L TRIP SETTING AND ABOVE 63A SHALL BE WITH MICROPROCESSOR BASED RELEASE.
- ALL MCCBS & MPCBS SHALL BE WITH DIRECT / EXTENDED ROTARY HANDLES.
- ARRANGEMENT OF PAD LOCKING & FOOL PROOF LOTO (LOCKOUT & TAG OUT) TO BE AVAILABLE WITH ALL MCCBS & MPCBS FOR MAINTENANCE, SERVICING, REPAIRS AND INSPECTION FOR SAFETY REASONS ON MOTORS / EQUIPMENT. ALSO, DOOR INTERLOCK DEFEAT FUNCTION SHOULD NOT BE PROVIDED.
- CLIENT MAINTENANCE TEAM TO UTILIZE LOTO FEATURE BEFORE INITIATING ANY REPAIR / MAINTENANCE ON ALL ELECTRICAL EQUIPMENT / PUMPS / MOTORS / FANS / BLOWERS ETC.
- ATS
- For Main LT Panel, Fire Emergency Panel & DG Set Aux. Panel:
  - ATS shall be ASCO Make Series 7000 or above / 1200Amps and Series 300 below 1200Amps or equivalent.
  - Main LT Panel & Fire Emergency Panel shall have 4P ATS.
  - DG Set Aux. Panel shall have 3P ATS.
  - ATS with controller, controller will AMF Function.
  - ATS with 100% overlapping neutral.
  - ATS Solenoid operated, RS485 Communication.
  - Utilization category: AC 33A.
  - Same phase angle transition & in phase monitoring.
  - BS54 for 0.3 sec (fault withstand)
- For Lift Panel & UPS Input Panel:
  - ATS shall be ASCO Make Series 300 or equivalent
  - 4P ATS
  - ATS with 100% overlapping neutral.
  - ATS Solenoid operated.
  - BS54 for 0.3 sec (fault withstand)
  - SWITCHGEAR SELECTION SHOULD ACHIEVE DISCRIMINATION EVEN IF IT IS NOT SHOWN IN BOQ / DRAWING (SLD).
  - BURDEN CALCULATIONS FOR CTS, PT'S AND CONTROL TRANSFORMERS TO BE SUBMITTED ALONG WITH SHOP DRAWINGS.
  - INCORPORATE SWITCHGEAR, BUS BARS, SUPPORTS AND OUTGOING SWITCHGEAR SHALL BE OF SAME FAULT LEVEL WITHSTAND CAPACITY AS MENTIONED FOR THE PANEL.
  - SUGGESTED 'TYPE' SELECTION FOR CAPACITOR APPLICATION WITH DETUNED FILTERS: 50KVAR 16A TP MCCB (TH + MG) - F
  - 10KVAR 25A TP MCCB (TH + MG) - F
  - 15KVAR 40A TP MCCB (TH + MG) - F
  - 20KVAR 50A TP MCCB (TH + MG) - F
  - 25KVAR 63A TP MCCB (TH + MG) - F
  - 50KVAR 125A TP MCCB (TH + MG) - F
  - CAPACITORS SHALL BE HEAVY DUTY MPP CONSTRUCTION.
  - 7% & 8% DETUNED REACTORS SHALL BE COPPER WOUND, CLASS H INSULATION.
  - DEDICATED COPPER EARTHING LINK OF SUITABLE SIZE ON INSULATED SUPPORTS FOR: ALL UPS DE'S, PDU'S, UPS OUTPUT PANELS & FLOOR UPS PANELS/ SOB - UPS PANELS WILL HAVE A DEDICATED COPPER EARTH LINK OF ADEQUATE SIZE SUPPORTED ON INSULATED SUPPORTS FOR 900 PHV EARTHING (SOULATED GROUND).
  - THE GROUNDING EARTH LINK SHALL ALSO BE PROVIDED IN ADDITION TO DEDICATED EARTH BUS.
  - MOTOR FEEDERS
  - A. MOTOR FEEDERS WITH STARTERS:-
    - Upto 10 HP / 7.5 KW Motor
      - 3P MPCB - TH + MG (Thermal Magnetic Release with adjustable O/L trip class).
      - MPCB's upto 63A shall be Thermal-Magnetic type with adjustable O/L trip setting and above 63A shall be with Microprocessor based release.
      - DD.
    - From 12.5 HP / 9.3 KW to 40 HP / 30 KW Motors
      - 3P MPCB - TH + MG (Thermal Magnetic Release with adjustable O/L trip class).
      - MPCB's upto 63A shall be Thermal-Magnetic type with adjustable O/L trip setting and above 63A shall be with Microprocessor based release.
      - Star Delta
    - From 50 HP / 37 KW to 150 HP / 110 KW Motors
      - 3P MPCB - M (F) (Motor Duty - Fixed Release)
      - VFD
      - MPCB's upto 63A shall be Thermal-Magnetic type with adjustable O/L trip setting and above 63A shall be with Microprocessor based release.
      - Star Delta
      - External Electronic O/L Relay with SPP
  - B. MOTOR FEEDERS WITH VFD:-
    - Upto 40 HP / 30 KW Motor
      - 3P MPCB - MG (Magnetic Release)
      - MPCB's upto 63A shall be Magnetic release and above 63A shall be with Microprocessor based release.
      - VFD
    - From 50 HP / 37 KW to 150 HP / 110 KW Motors
      - 3P MPCB - M (F) (Motor Duty - Fixed Release)
      - VFD
      - MPCB's upto 63A shall be Magnetic release and above 63A shall be with Microprocessor based release.
      - Star Delta
      - External Electronic O/L Relay with SPP
  - C. MOTOR FEEDERS WITH SOFT STARTERS
    - Upto 40 HP / 30 KW Motor
      - 3P MPCB - MG (Magnetic Release)
      - MPCB's upto 63A shall be Magnetic release and above 63A shall be with Microprocessor based release.
      - Soft Starter with Inhibit Bypass Contactor
    - From 50 HP / 37 KW to 150 HP / 110 KW Motor
      - 3P MPCB - M (F) (Motor Duty - Fixed Release)
      - Soft Starter with Inhibit Bypass Contactor
    - Above 150 HP / 110 KW Motor
      - 3P MPCB - M (LP) (Motor Duty - Micro Processor Base Release)
      - Soft Starter with Inhibit Bypass Contactor
  - JET FAN 2 STAGE STARTER
    - 3P MPCB - MG (Magnetic Release)
    - 2 Stage Starter
    - Overload Relay & SPP

- NOTES**
- All dimensions are to be read and not to be scaled.
  - Contractor must verify all dimensions as per site before commencement of any work.
  - Contractor must notify Architect and/or Project Manager of all discrepancies in the drawing.
  - All door and window openings to be verified as per schedule
  - All revisions to be co-ordinated with structures and other services.
  - PM/ Contractor must take approval layout from Architect before start layout
  - Architectural drawings are to be co-relate with structural, Electro mechanical & Plumbing drawings.
  - Architects is not responsible for the coordinate during site layout.

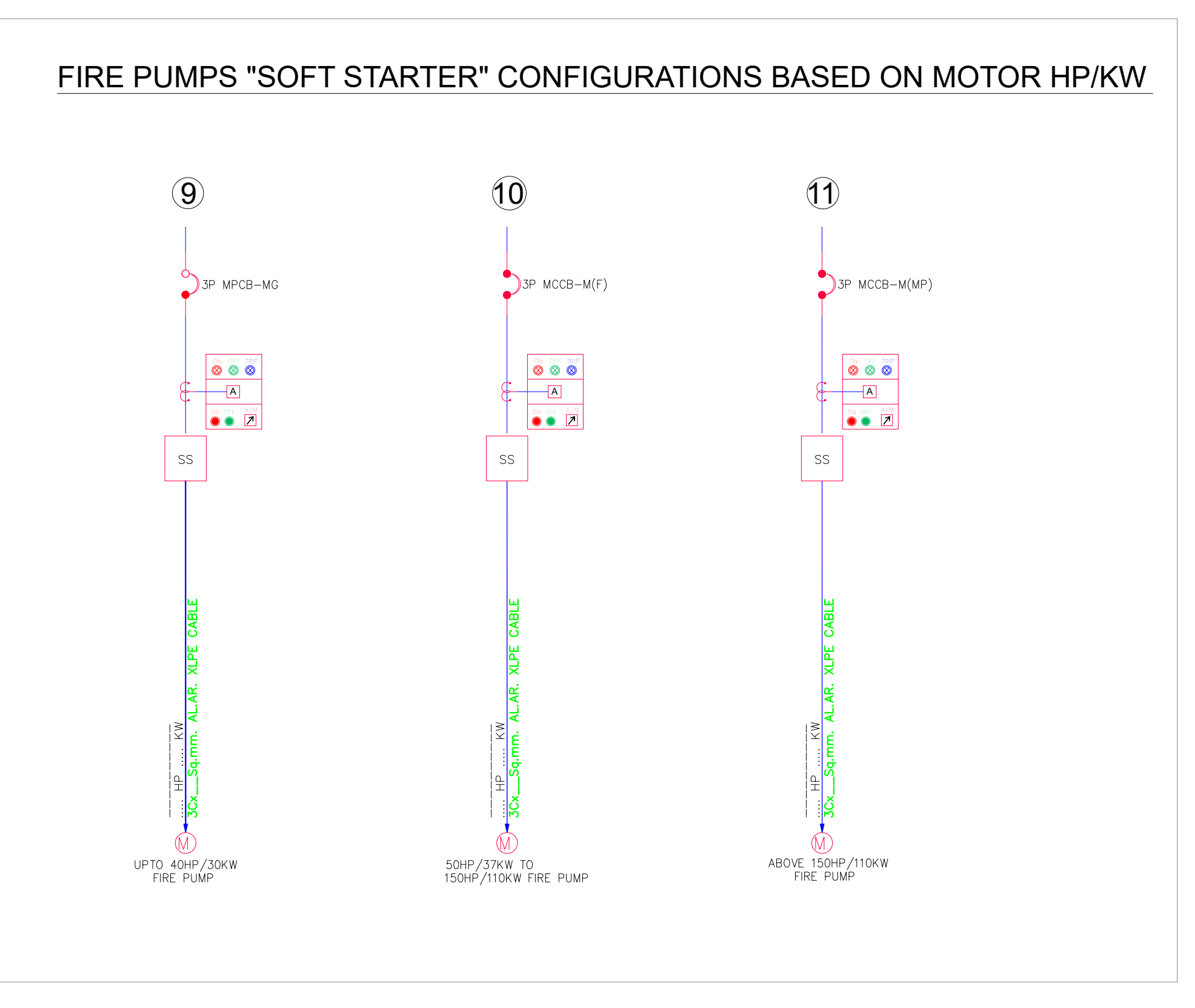
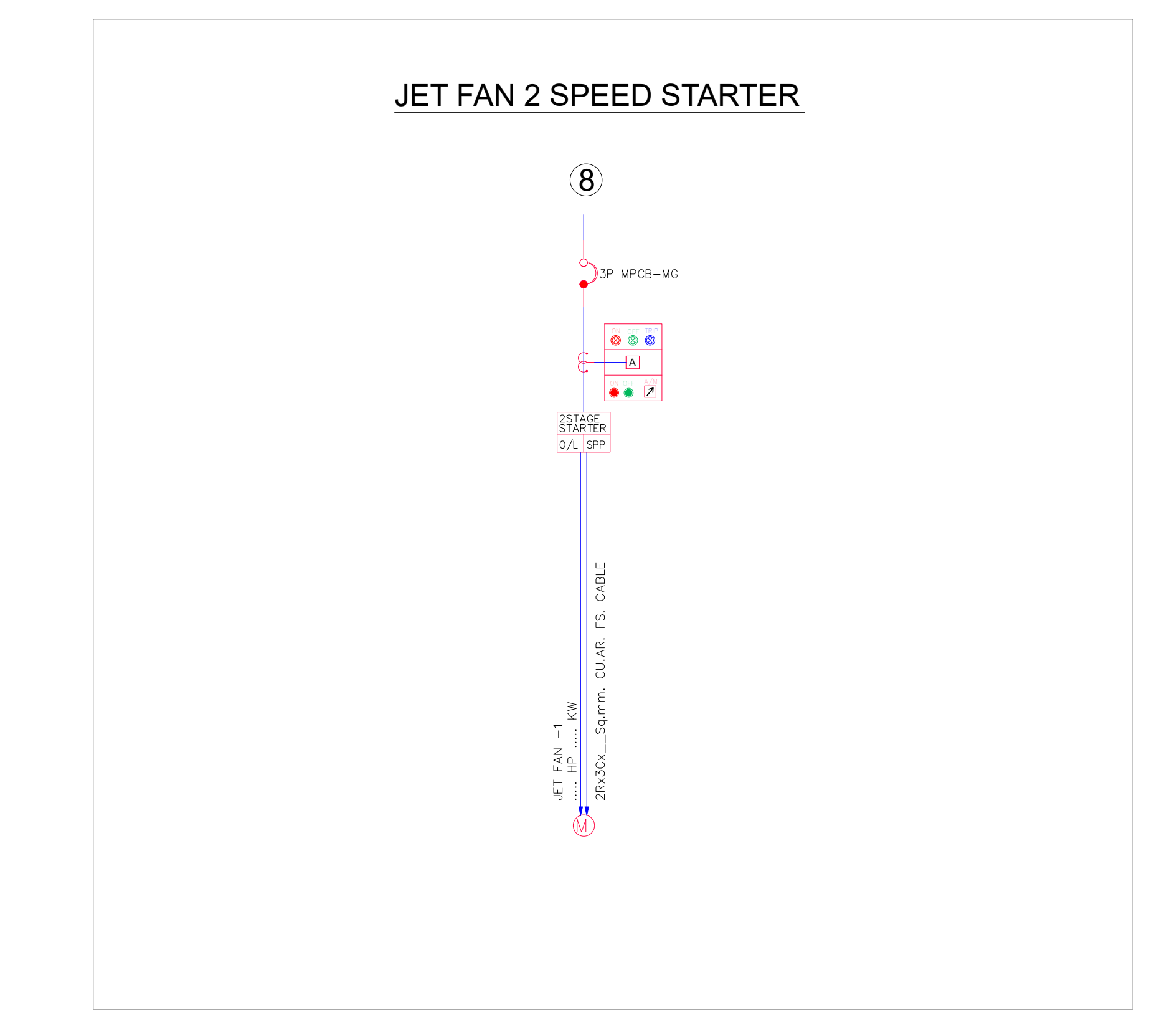
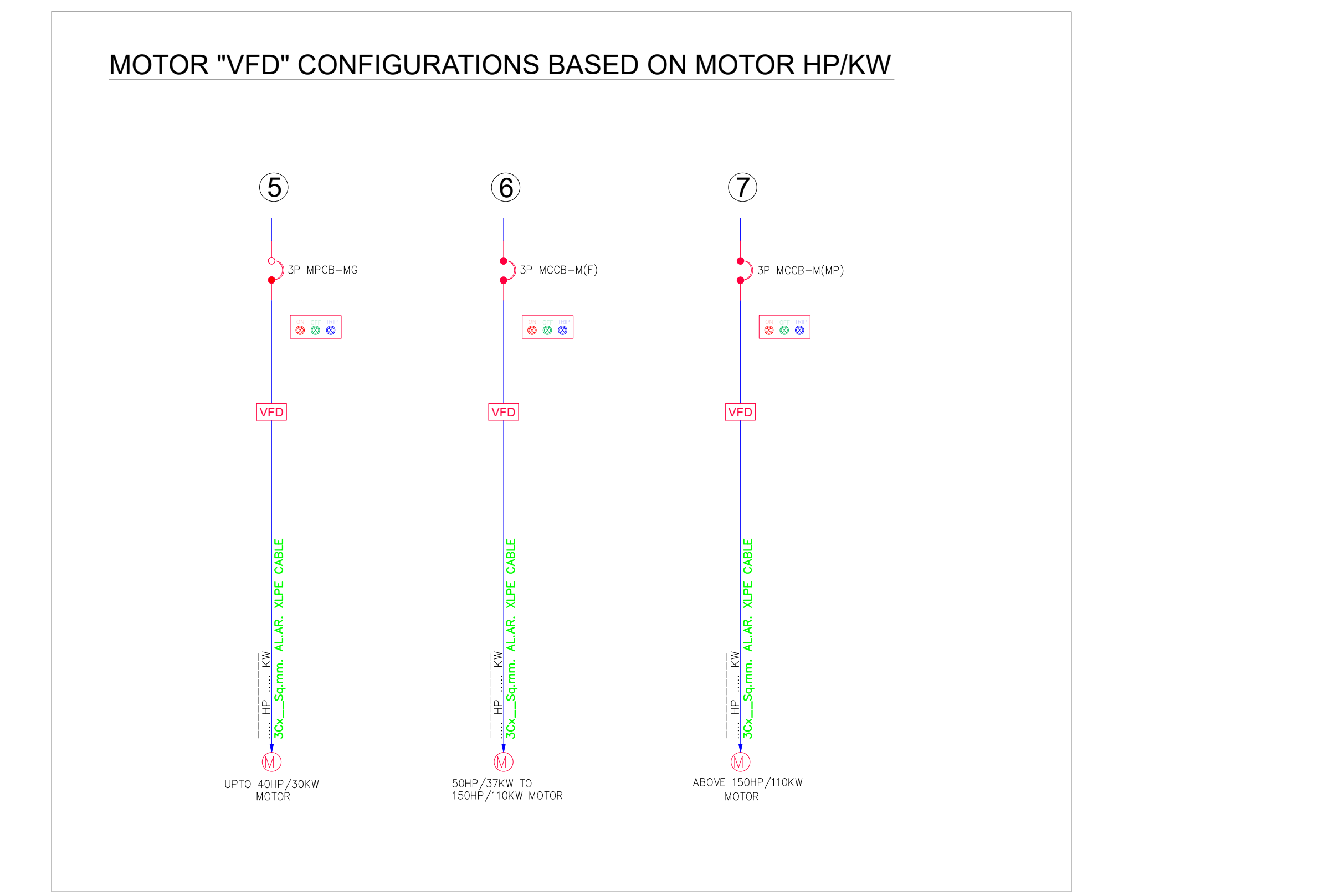
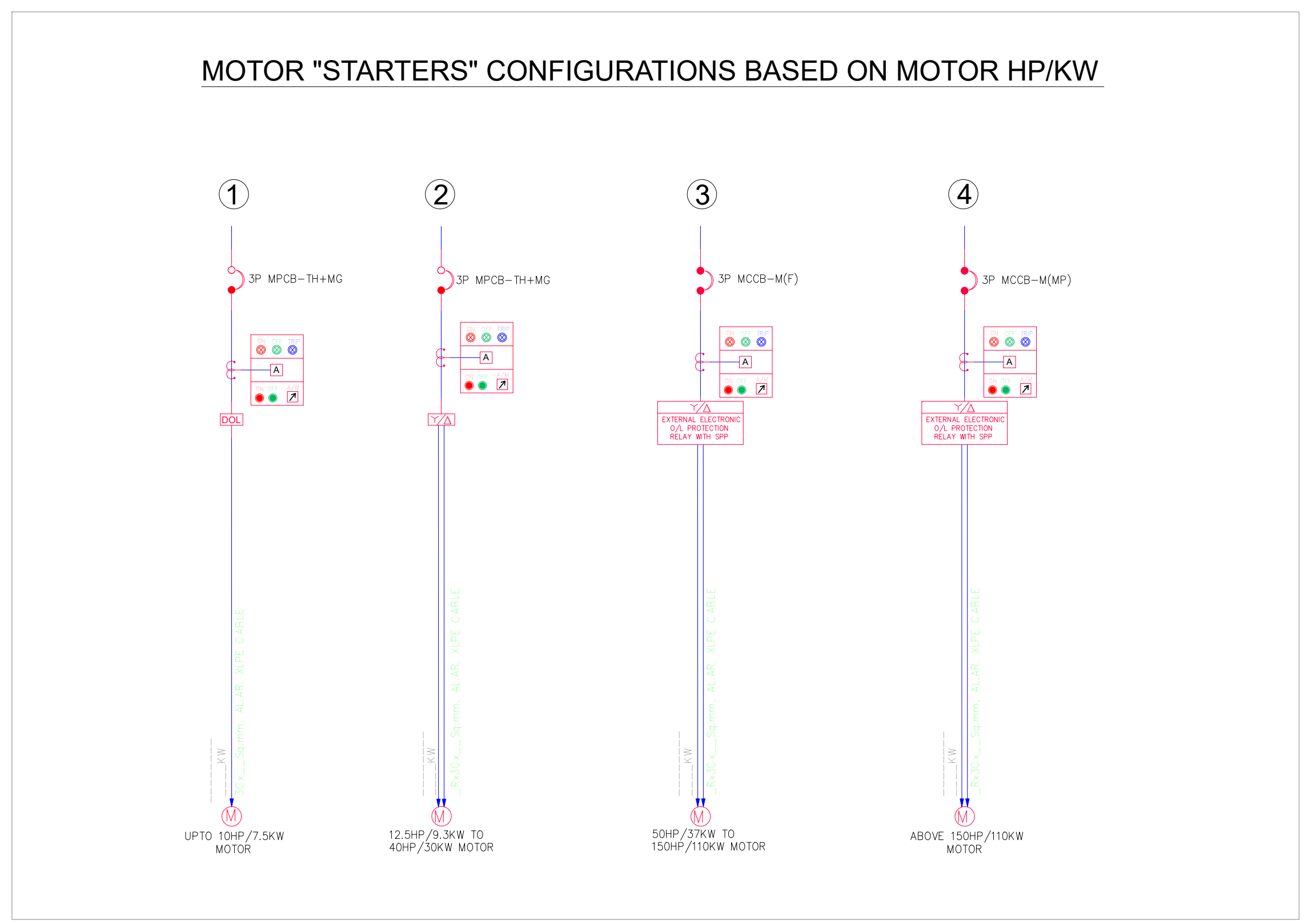
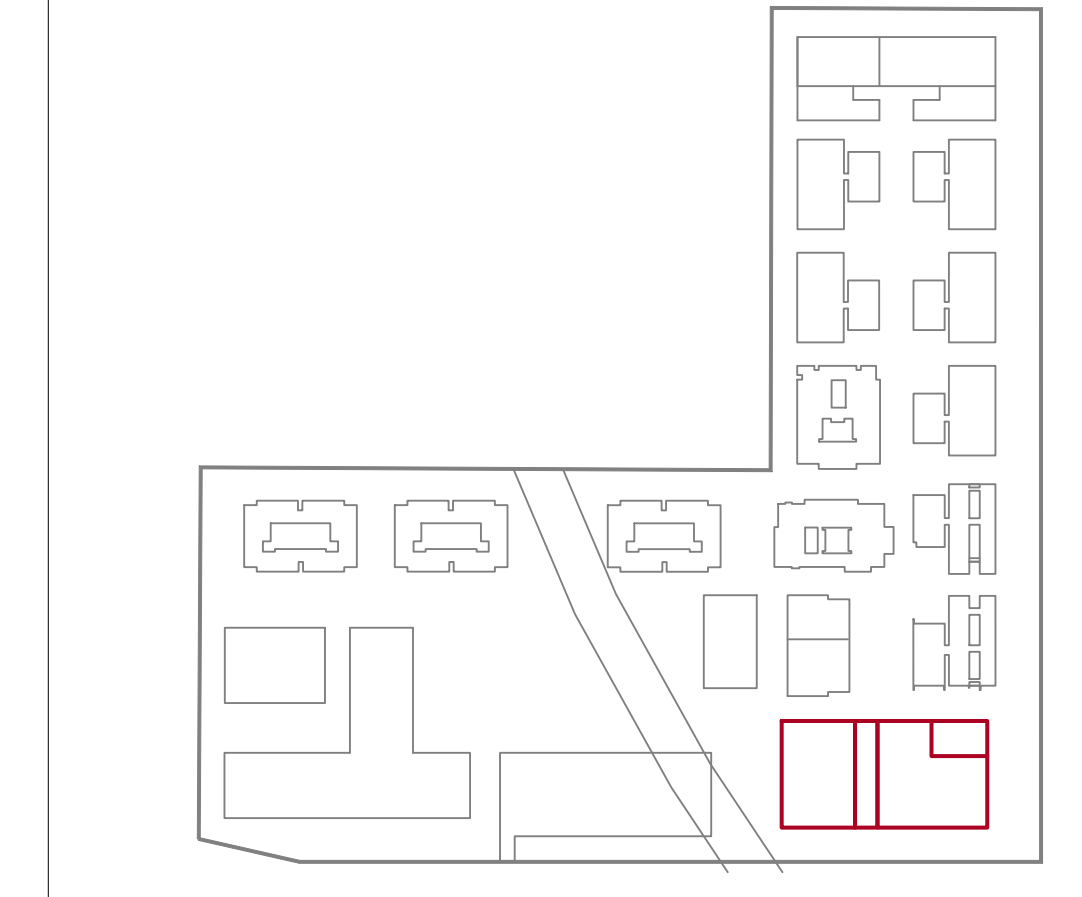
## revision

RO	date	type
	04/10/23	GFC

## issue

issue	date	type
-------	------	------

## Key Plan



## Galgotia University

Architecture Arcop Associates Pvt. Ltd.  
 Plot No 36-B Sector 32,  
 Gurgaon Haryana 122001 India,  
 Ph.: 91-11-26471350  
 Fax: 6238035  
 email: info@arcop.co.in

Structure BMSF Design Consultant pvt .Ltd.  
 G-3-A, Bhowani Kunj,  
 Behind D-2 Vasant Kunj, New Delhi India  
 TEL: 9818404291, 91 11 41771821  
 FAX: 91 11 4104163  
 E Mail: bmsf\_sohini@gmail.com

MEP SUNIL NAYYAR CONSULTANTS PVT.LTD  
 206,206A,305A,305B SECOND & THIRD  
 FLOOR TIME CENTRE GOLF COURSE  
 ROAD, SECTOR 54,GURGAON 122002,  
 HARYANA,INDIA  
 TEL: 911244803800

Landscape

Clients:  
**GALGOTIA UNIVERSITY**  
 Plot No. 2 Yamuna Expy, Sector 17A,  
 Greater Noida, Uttar Pradesh 203201  
 INDIA

Project Title  
**GALGOTIA UNIVERSITY ENG. ADMIN**

Drawing Title  
**ELECTRICAL SLD LEGEND**

Document release Type  
**GFC**

DRAWING NO.	North
<b>AWD-GU-AB-SLD-06</b>	
REVISION NO.	SCALE
<b>RO</b>	<b>NTS</b>

DRAWN DATE  
 SG 12.10.23  
 CHECKED  
 VY