1.0 OBJECTIVE

This procedure provides details for the installation of LV Sub-Switch Board (SSB), MCC Panel, VSD Panels and Distribution Boards (DB).

2.0 SCOPE

Method of installation is in accordance to the latest IEC, IEE, MS and local authority standards.

3.0 TOOLS AND EQUIPMENTS

Electrical Drill, Electrical Grinder, Screw drivers, Hand Drill, Hammer Drill, Sledge Hammer, Masonry Chisel, Pliers, Water Level, Measurement Tape, Spanner, Hammer, Ladder, Fork Lift, Pallet Jack

4.0 HANDLING AND STORAGE

4.1 PRE-DELIVERY AND STORAGE PREPARATION.

a. Prepare delivery schedule and check site conditions as well as storage capacity.
b. Prior to delivery of equipment to site, make all necessary co-ordination with the main contractor as regards to access for the save transportation of equipment to the designated location.
c. Coordinate with site workers responsible for the installation.

4.2 INCOMING STORAGE AT SITE.

a. Check model and type of equipment against delivery order.
b. Check any damage during transportation.
c. If there is any evidence of damage, an internal inspection shall be made together with supplier's representative. A report shall be submitted to the PMC and client's representative.on completion of such an inspection.
d. Route identification and marking work shall not be started until coordinates with other mechanical services.
e. Minor deviation from the approved construction drawing and M&E drawing would be determined on site with the consent of PMC and client's representative.

4.3 UNLOADING

a) For a big and heavy board such as floor standing SSBs, the boards are unloaded from the truck/lorry by using lifting arms or other suitable lifting equipment. The heavy equipment is unloaded onto timber plank c/w 2" diameter rollers. The equipment will then be pushed slowly to the required locations i.e. electrical rooms, risers and dedicated stores.

b) Small DBs are unloaded manually and moved either to a temporary store or to its dedicated mounting locations.

4.4 STORAGE

All equipment shall be stored indoor in dry condition and shall be covered with plastic or canvas.

5.0 WORK METHODLOGY

5.1. Floor Standing Electrical Panel

a) For floor standing elect. Panels located on cable trench, C-channel bar shall be laid across prior to the installation of the boards.

b) Locate the board as per drawing into the allocated position and mark the location of anchor bolts.

c) Push aside the board and drill the hole at the marked location.

d) Mount the anchor bolts in the holes.

e) Lift slightly and locate the board to the position of the anchor bolts.

f) Once all the bolts are securely placed, fasten and tighten the board into position with nuts securely tightened to the bolts.

g) Once completed, proceed with the installation of cables and other works to the board.

h) Repair all damages to walls and floor.

5.2 Wall Mounted Panels/DBs

i) Locate the board as per drawing into the allocated position and mark the location of anchor bolts.

ii) Push aside the board and drill the hole at the marked location.

iii) Mount the anchor bolts in the holes.

iv) Lift slightly and locate the board to the position of the anchor bolts.

v) Once all the bolts are securely placed, fasten and tighten the board into position with nuts securely tightened to the bolts.

vi) Once completed, proceed with the installation of cables and other works to the board.

5.3 Installation of Sub-mains and Sub-Circuit Cables through the boards

i) Sub main cables from tap off unit will enter the Distribution Board through pre-cut holes. These pre-cut holes will be protected with PVC insulation materials to prevent damages to the sub main cables.

ii) Sub circuit cables from ladder, trunking or Conduit will enter the board using pre-cut openings. A piece of metal trunking will cover entire cable entry side of the distribution board. All other metal trunking carrying the sub circuit wiring from the load side will join to this piece of metal trunking.

5.4 Cable Terminations

i) Sub main cables shall be terminated at the circuit breakers by using cable lugs. Colored PVC sleeves label these cable lugs.

ii) Sub circuits are inserted with cable markers together with the circuit numberings before terminating into the circuit breakers.

5.5 Touch Up and repair works

Damaged paint at the surface of the board will be touched up with epoxy-powdered paint, or as recommended by the supplier, of the same color.
Repair all damages to walls and floor.

5.6 Labeling

i) Each electrical board will have a nameplate as indicated in the approved drawing.
ii) A PVC tag will be used to differentiate the different type of cables or circuits.

6.0 TESTING AND INSPECTION.

All testing and inspections will be documented with request for inspection form, test reports and inspection documents as indicated in the approved inspection and test plan.

The inspection at site shall be conducted in two stages.

6.1 Receiving Inspection

The receiving inspection is carried out to assure conformance to specification. Rejection or acceptance of delivered equipment shall be by the discretion of the Project Engineer with verification by client's representative. Result will be captured in request for inspection form and Material Receiving Inspection Report.

6.2 In-process and Final Inspection

The in-process inspection shall be carried out to assure conformance of the installation works as indicated in project specifications. Rejection or acceptance of installation will be captured in request for inspection form, verified by client's representative.

7.0 HEALTH, SAFETY, SECURITY AND ENVIRONMENT

- All installation works will be carried-out in accordance with Project Safety & Environmental Plan, client's Safety Procedures and statutory regulations.
- All necessary personal protective equipment will be provided and worn.
- All the tools and equipments used at site must be compliance to safety requirement.
- The site of all work activities will be kept in clean and tidy manner.
- Safety personnel will closely supervise and checked the safety of the construction area. Safety measure will be intensified when the risk is higher during period of work.

.

8.0 LIST OF APPENDICES

- Inspection Checklists
- Electrical Test Reports
- Request for inspection Form
- Material Receiving Inspection Report

9.0 REFERENCES

- MS ISO 9001: 2015
- Contract specification
- Inspection & Test Plan

10.0 LIST OF ATTACHMENTS

Attachment	Description	Remarks
1	Work Sequence	

Attachment 1

WORK SEQUENCE