



**Standard Metering Arrangement for Electric Vehicle
(EV) Charging Facilities
for
Car Parks of New and Existing
Building Developments**

CLP POWER HONG KONG LIMITED

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**Standard Metering Arrangement of
Electric Vehicle (EV) Charging Facilities for Car Parks of
New and Existing Building Developments**

1. Scope

The Guideline is intended to provide general technical references for standard metering arrangement to enable a developer / customer / contractor in the design of electrical installation for Electric Vehicle (EV) Charging Facilities to comply with CLP requirements only. It is the responsibility of the designer to ensure that the design complies in all respect with Electricity Ordinance (1990) and other statutory requirements.

The Guideline should be read in conjunction with CLP's Supply Rules, CLP's "Guide to Supply and Metering Arrangement on Customer's Internal Distribution System", "Code of Practice for the Electricity (Wiring) Regulations", "Technical Guidelines on Charging Facilities for Electric Vehicles (EV) Charging-enabling for Car Parks of New Building Developments" and "Design Guidelines for Electric Vehicle Charging-enabling Infrastructure under the EV-charging at home Subsidy Scheme" published by the Electrical and Mechanical Services Department (EMSD) and Environmental Protection Department (EPD).

2. General Requirements

- 2.1 EV Charging Facilities shall mean (a) fixed electrical installations on the customer side including, but not limited to, switchboards, distribution boards, cabling, conduits and trunkings, and charging sockets / fixed electric chargers.
- 2.2 EV Charging Facilities shall be supplied and metered appropriately as per CLP's requirements.
- 2.3 Adequate space shall be reserved to accommodate the meters and associated metering equipment and current transformers (if any) in switch room / meter room (including cable duct & closet). The position and spacing of meters shall allow easy and convenient access for meter reading and maintenance. The meter position shall be readily accessible from communal area at all times with reference to the CLP's "Guide to Supply and Metering Arrangement on Customer's Internal Distribution System".
- 2.4 Power supply for smart meter collectors shall be provided and installed at no cost to CLP. (Detailed arrangement refers to Detail "A" and Detail "B")
- 2.5 Metering arrangement for EV Charging Facilities shall comply with the requirements stated in "[Guide to Supply and Metering Arrangement on](#)

[Customer's Internal Distribution System](http://www.clp.com.hk)" which is available at CLP website (www.clp.com.hk).

3. Metering Arrangement for New Building Developments

- 3.1 A single metering arrangement shall be adopted for a group of visitor's parking spaces with EV Charging Facilities (Fig. 1).
- 3.2 Individual metering shall be adopted for each private parking space with EV Charging Facilities owned by individual customer (Fig. 1 and Detail "A" – Meter Room Option).
- 3.3 EV Charging Facilities Supply Zone Layout, EV Charging Facilities Numbering and Location Drawing and LV Schematic Diagram for the power supply arrangement to EV Charging Facilities shall be posted inside the meter room. Proper label should be provided for each meter to indicate its connection to the respective EV Charging Facilities shown on the numbering and location drawing (Fig. 2).

4. Metering Arrangement for Existing Building Developments

- 4.1 A single metering arrangement shall be adopted for a group of visitor's parking spaces with EV Charging Facilities (Fig. 3, Zone A).
- 4.2 Individual metering shall be adopted for each private parking space with EV Charging Facilities owned by individual customer (Fig. 3, Zone B to X).
- 4.3 For the sake of safety and ease of future operation and maintenance, all meters for EV charging facilities should be housed inside a meter room as far as practicable (Fig. 3 and Detail "A" – Meter Room Option).
- 4.4 To provide flexibility for private parking space owned by individual customer, if there are unresolved site constraints such that the existing meter room(s) is/are unable to house the new additional meters for EV charging facilities, separate wall-mounted Meter Cubicle Option can be adopted, subject to the following conditions with prior agreement from CLP:
 - 4.4.1 A separate wall-mounted Meter Cubicle shall be installed at a suitable location with prior approval from CLP within Carpark (Fig. 3 and Detail "B" - Separate Wall-mounted Meter Cubicle Option).
 - 4.4.2 EV Charging Facilities Supply Zone Layout (Fig. 4) shall be posted outside the Meter Cubicle.

- 4.4.3 EV Charging Facilities Numbering and Location Drawing and LV Schematic Diagram for the power supply arrangement to EV Charging Facilities should be posted outside the Meter Cubicle. Durable label should be provided for each meter to indicate its connection to the respective EV Charging Facilities shown on the numbering and location drawing (Fig. 2).
- 4.4.4 Safety poles with contrast colour marking (e.g. yellow/black) shall be erected with a minimum of 1,000 mm clearance in front of the Meter Cubicle to provide clear demarcation for the working area (Detail “B”- Separate Wall-mounted Meter Cubicle Option). Location of safety poles should be coordinated with meter cubicle so that the safety poles would not lead obstacle to working personnel for access.

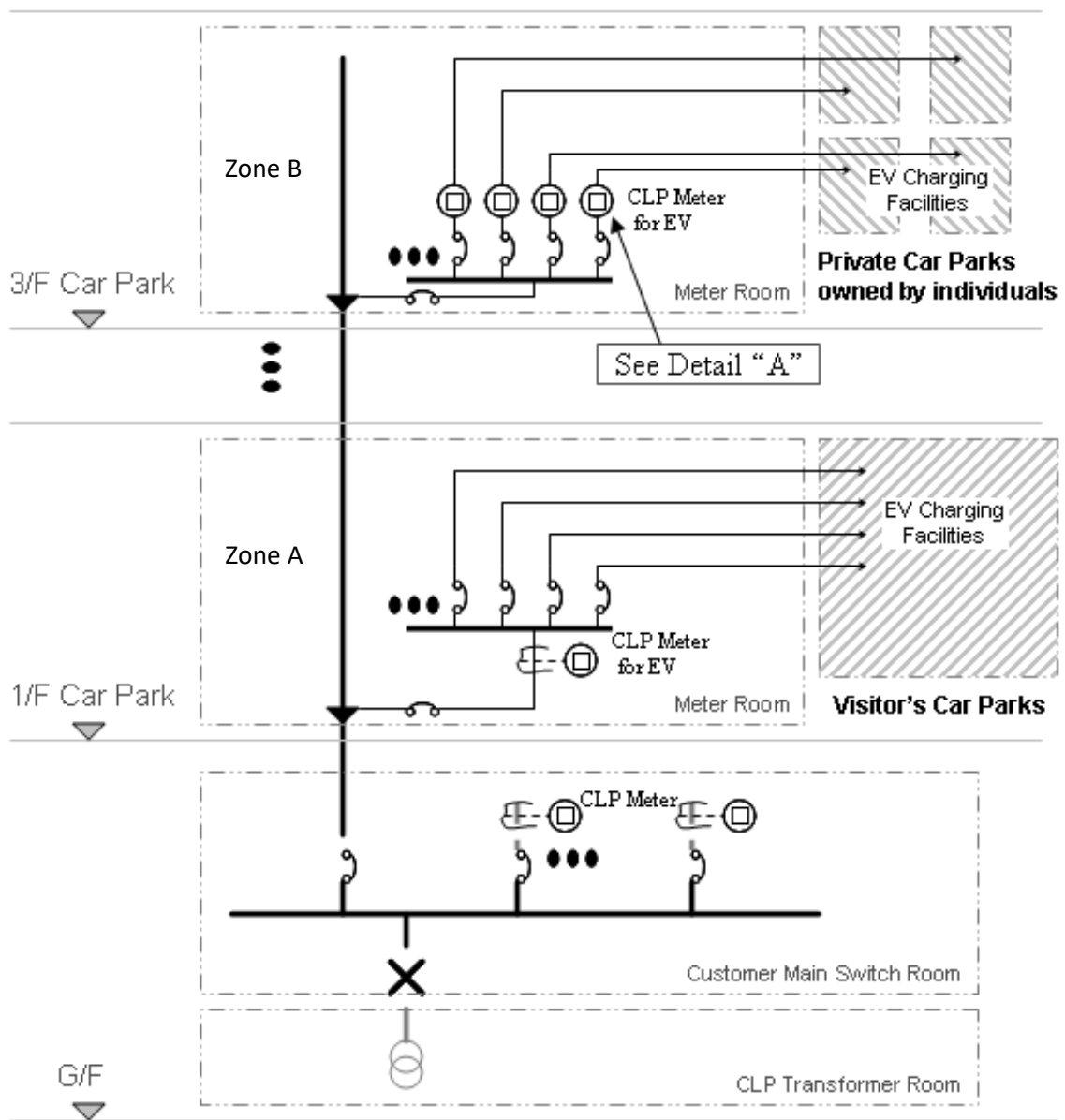
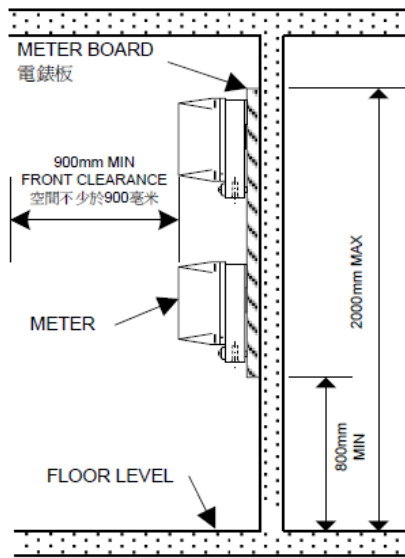
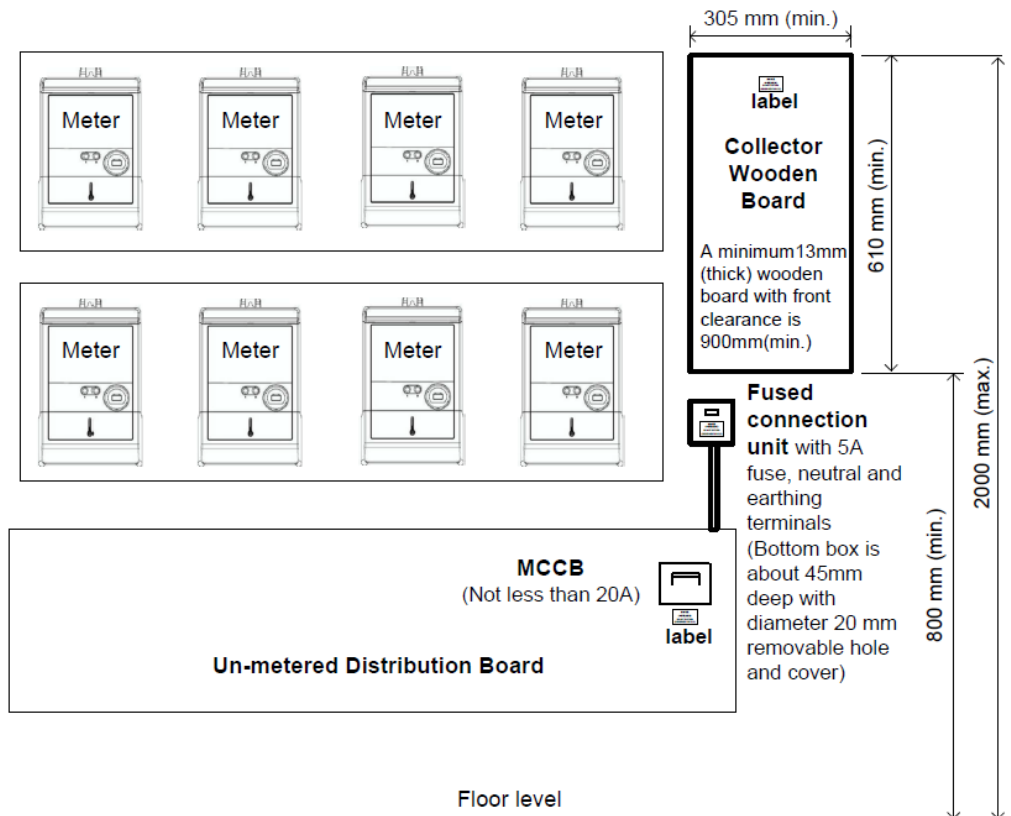
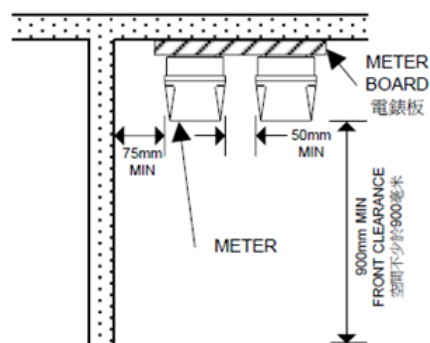


Fig. 1 – New Building Development



ELEVATION



PLAN

Facilities Locations & Wooden Board Requirements

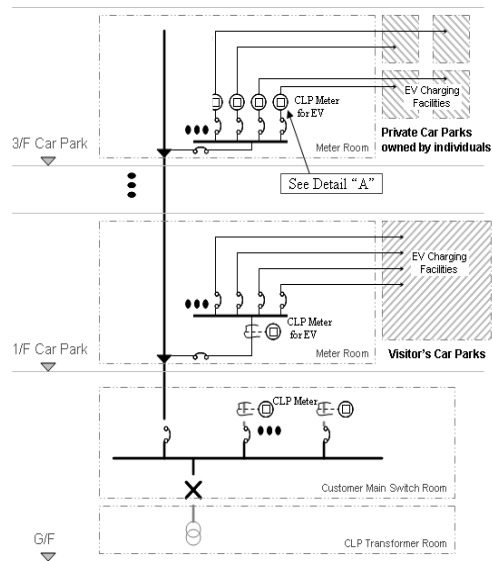
A minimum 610mm(H) x 305mm(W) x 13mm(thick) wooden board, with front clearance of minimum 900mm, shall be provided for mounting CLP collector(s) in the **meter room(s)**.

Beside of collector wooden board, a single phase fused connection unit for CLP collector shall be provided (fuse rated at 5A, unless otherwise specified). The circuit should be protected by a dedicated double poles MCB if applicable of rating not less than 20A tapped off from un-metered distribution board in the same room/cubicle. Suitable neutral and earthing terminals should be provided in fused connection unit for CLP collector. The tapped off power supply location should be submitted to CLP Power for consent prior to the installation.

Detail "A" – Meter Room Option



EV Charging Facilities Numbering and Location Drawing



LV Schematic Diagram



A1

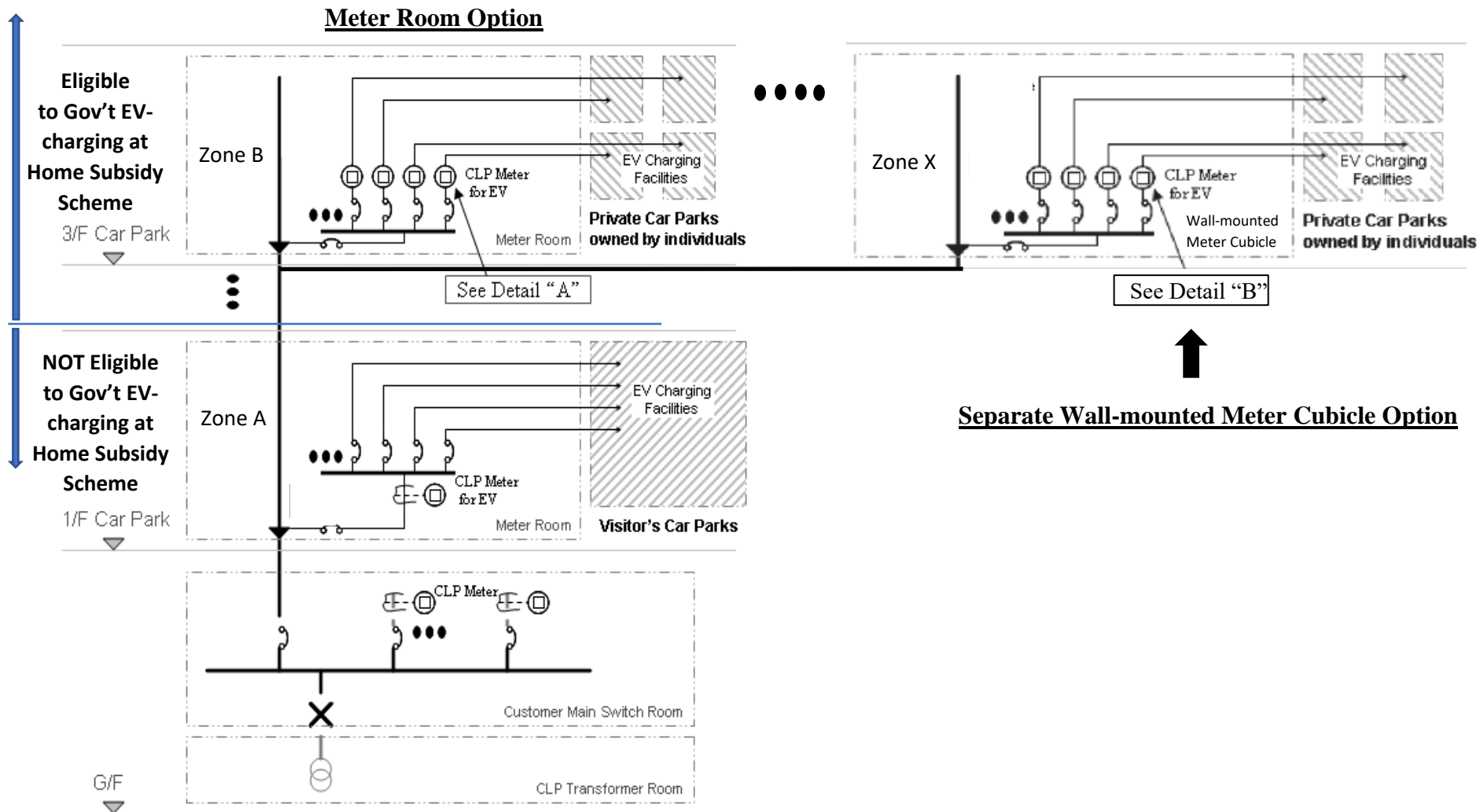
A6

A9

A18

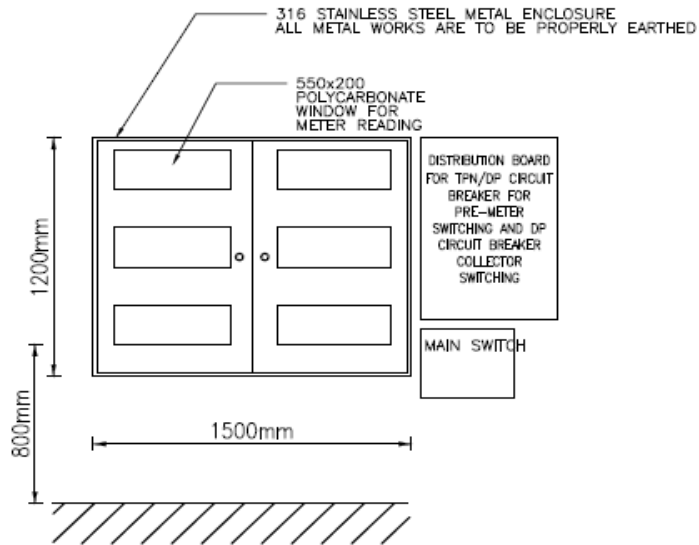
Proper Label with Indication of its Connection to Each EV Charging Facilities shown on the above Numbering & Location Drawing

Fig. 2 – Drawing, Diagram and Label

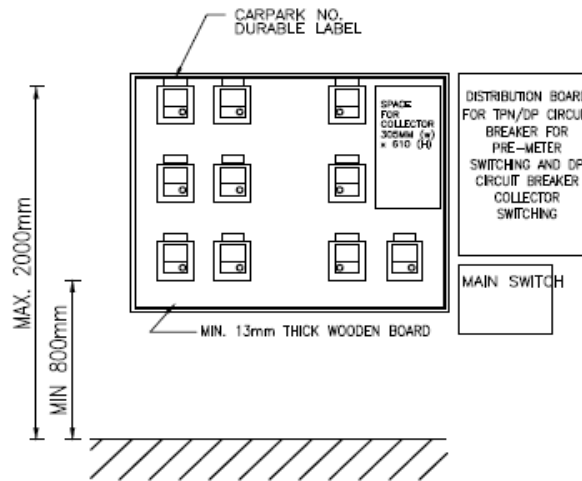


Separate Wall-mounted Meter Cubicle Option

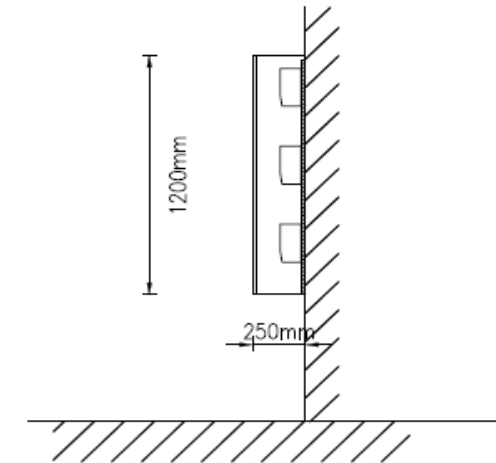
Fig. 3 – Existing Building Development



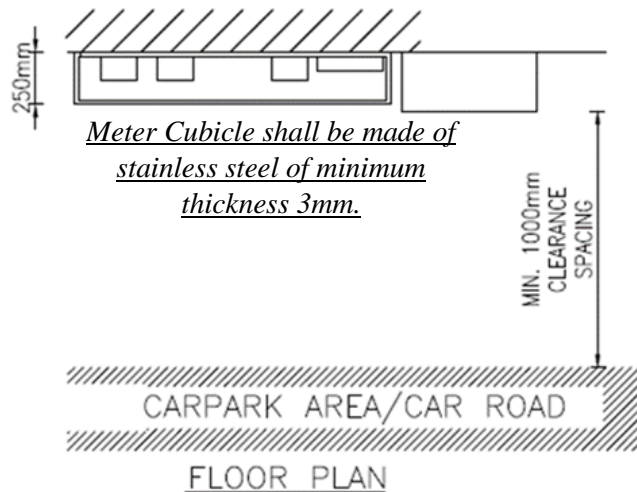
FRONT VIEW



INSIDE



SIDE VIEW



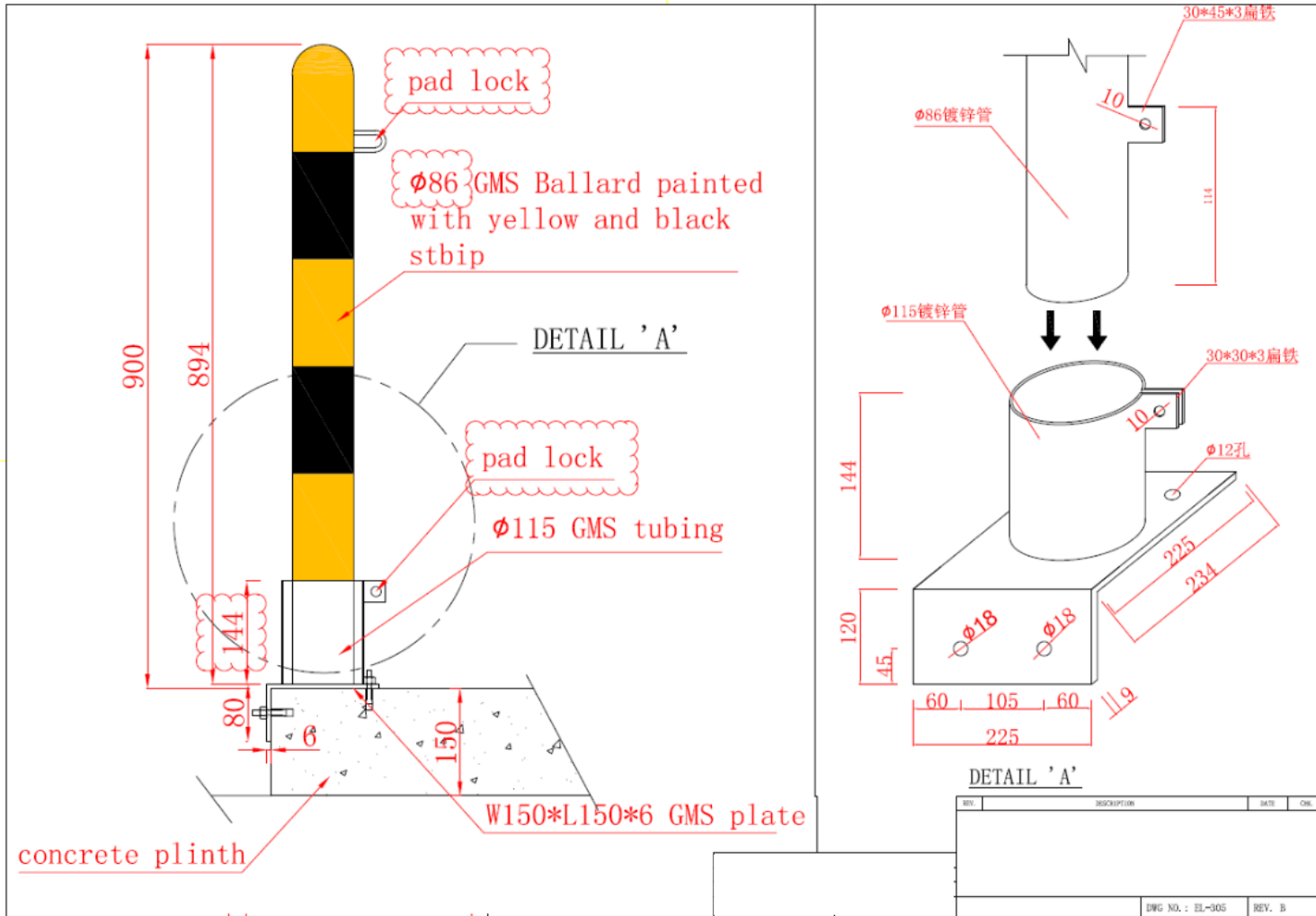
Meter Cubicle shall be made of stainless steel of minimum thickness 3mm.

Facilities Locations & Wooden Board Requirements

A minimum 610mm(H) x 305mm(W) x 13mm(thick) wooden board, with front clearance of minimum 900mm, shall be provided for mounting CLP collector(s) in the **meter cubicle(s)**.

Beside of collector wooden board, a single phase fused connection unit for CLP collector shall be provided (fuse rated at 5A, unless otherwise specified). The circuit should be protected by a dedicated double poles MCB if applicable of rating not less than 20A tapped off from un-metered distribution board in the same room/cubicle. Suitable neutral and earthing terminals should be provided in fused connection unit for CLP collector. The tapped off power supply location should be submitted to CLP Power for consent prior to the installation.

Detail "B" – Separate Wall-mounted Meter Cubicle Option



Detail "B" – Separate Wall-mounted Meter Cubicle Option

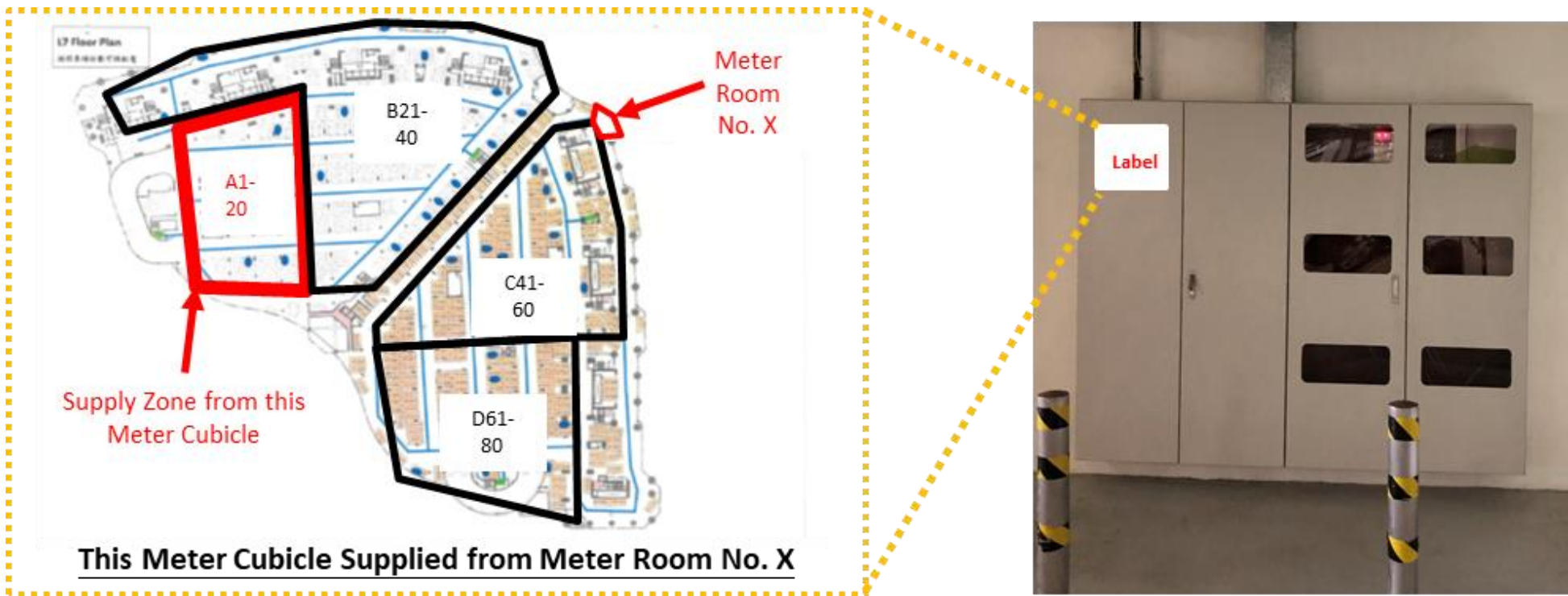


Fig. 4 – EV Charging Facilities Supply Zone Layout