


Water & Civil Division

Water AMI (Advanced Metering Infrastructure) Project

GUIDELINES FOR DOMESTIC WATER METER INSTALLATION IN METER ROOM FOR BUILDINGS

TABLE OF CONTENTS

1.	WATER METER ROOM STANDARD	PAGE-2
2.	METER INSTALLATION AND ASSOCIATED PLUMBING WORKS STANDARD	PAGE-3
3.	M-BUS CABLE CONTAINMENT INSTALLATION STANDARD	PAGE-4
4.	M-BUS CABLE INSTALLATION STANDARD	PAGE-5
5.	TYPICAL PICTURE REFERENCES	PAGE-7
6.	TYPICAL M-BUS CABLE SCHEMATIC DRAWING	PAGE-9

	Dubai Electricity & Water Authority		
	GUIDELINES FOR DOMESTIC WATER METER INSTALLATION IN METER ROOM FOR BUILDINGS	Rev-5	02.01.2026

GUIDELINES FOR DOMESTIC WATER METER INSTALLATION IN METER ROOM

All domestic water meters in high-rise residential and commercial buildings shall be installed in groups within dedicated water meter rooms, in accordance with Standard Drawing PEW-STD-AMI-003.Rev5. These rooms shall be exclusively reserved for water meter installations to prevent interference from other services. No other utility or service installations are permitted inside the water meter room. Water meters shall not be installed in basements, pump rooms, or underground chambers.

1) WATER METER ROOM STANDARD:

- a) In high-rise buildings, a water meter room shall be provided on each floor, adjacent to the electricity meter room, and a separate room shall be provided for retail units where applicable.
- b) The size and shape of the water meter room shall be based on the number of meters to be installed. The minimum internal dimension shall be 1500 mm length x 1500 mm depth x 3000 mm height to accommodate up to 8 meters, and the room size shall be increased proportionally to maintain clear spacing and accessibility if more than 8 meters are required.
- c) The door of the room shall be at least 800 mm wide and 2000 mm high, fitted with a handle, and shall open outward.
- d) Meters shall be installed in a single layer with sufficient clearance for installation, maintenance, and reading, and multiple layers or varying elevations shall not be permitted.
- e) The meter room shall be located within common areas to allow safe and uninterrupted access.
- f) Adequate drainage shall be provided in the meter room to discharge water flushed during installation or maintenance.
- g) The flooring shall be smooth, rigid, even, free of obstructions, and non-slippery.
- h) The floor level of the meter room shall be at least 100 mm below the level of adjacent passageways or floors to prevent water from entering other areas, and where this is not feasible, an additional threshold or barrier of 100 mm shall be provided at the entrance.
- i) The meter room shall have adequate ventilation, and a proper false ceiling shall be provided to prevent materials from falling from the roof and to cover any service ducts or pipelines passing through the room.
- j) Lighting with IP65-rated switches shall be provided to ensure proper illumination.
- k) A waterproof 13A power socket shall be installed inside the meter room.
- l) All electrical fittings shall be waterproof, and a minimum clearance of 2 m shall be maintained from other electrical services.
- m) A permanent notice in Arabic and English shall be displayed inside the room stating: "Landlord/Customer is not allowed to install any other devices in the water meter room or modify meter connections, pipes, or fittings without written approval from DEWA."
- n) The name plate "DEWA Water Meter Room" shall be affixed on the door in both Arabic and English, and the meters shall remain accessible to DEWA staff at all times.

Detailed shop drawings, including elevation plans and door dimensions, shall be submitted to DEWA for approval prior to commencement of work.

2) **METER INSTALLATION AND ASSOCIATED PLUMBING WORKS STANDARD:**

- a) All plumbing works shall comply with applicable local codes, ordinances, laws and regulations, as well as the requirements of BS EN 12056-2:2000 and BS 8000 Parts 13, 14 and 15. Piping shall be rigidly fixed to walls with suitable brackets, arranged so as not to obstruct entrances or passageways, and the meter with its associated pipework shall conform to the dimensions specified in Typical Installation Drawing PEW-STD-AMI-003.Rev5.
- b) Fittings at the meter position shall allow easy installation and removal of meters without disturbing other pipes, and maintenance requirements shall always be considered during installation.
- c) Pipes, valves, PRVs, NRVs and fittings shall be of high-quality, heavy-duty, non-toxic and non-corrosive material approved by DEWA, and shall be installed in easily accessible positions for future maintenance.
- d) The pipe size installed downstream of a 1/2" meter shall range from 1/2" up to a maximum of 1", and for a 1" meter shall range from 1" up to a maximum of 2", in full compliance with approved installation standards.
- e) Consumers shall provide a water storage tank equivalent to 24 hours of demand for residential premises and 48 hours of demand for labour accommodation and other high-consumption premises.
- f) Pipework at the meter position shall be securely fixed to support the weight of the meter and withstand torsion, bending and tension during installation or removal. Ensure that all riser openings are thoroughly sealed with fire sealant.
- g) Isolation valves shall be installed upstream and downstream of the meter, with a stopcock prior to the meter for disconnection, and an additional isolation valve on the main branch in the meter room to prevent flooding during pipe breakage.
- h) A main isolation valve shall be installed for every group of five meters to allow sectional isolation without affecting other groups.
- i) The gravity and booster line riser shall have a minimum internal diameter of 80 mm, and each branch header or manifold shall have a minimum internal diameter of 50 mm. In cases where a single main header is taken from the riser and further divided into two or three branches, the main header pipe shall maintain a minimum internal diameter of 80 mm up to the last branch tee connection. The PRV and gate valves installed on this header shall also be of 80 mm size.
- j) Valves shall remain fully open during meter operation, and flow shall not be controlled by adjusting inlet or outlet valves.
- k) A clearance of 24-27 cm shall be maintained between gate valves to allow installation of the meter and stopcock, and a threaded joint or union shall be provided after the meter for length adjustment.
- l) Meters shall be installed at a height of 1200 mm from the finished floor level, with a clearance of 200 mm between the back plate of the meter and the wall, and all meters shall be arranged in a single horizontal layer.
- m) Single header supply lines of suitable size shall be provided for each meter room, and multiple or parallel headers shall not be permitted.

- n) A minimum clearance of 200 mm shall be provided around each water meter to allow easy installation, reading, servicing and removal.
- o) Water meters and their associated fittings shall not form part of the electrical earthing system.
- p) Water pumps shall not be installed upstream or downstream of the meter, and sudden flow or pressure variations shall be avoided.
- q) Maximum pressure at the meter inlet shall not exceed 2 bar, and a PRV with pressure gauge shall be installed at least one metre before the meter to achieve the required pressure.
- r) Meters shall be accessible for reading without the use of mirrors, ladders or other aids.
- s) Meters shall be installed in accordance with the directional arrows on the meter body, with the register positioned for easy reading.
- t) The meter room shall provide sufficient headroom for technicians to stand upright and safely remove or reinstall meters.
- u) Installation instructions provided with the meter shall be strictly followed.
- v) As-built drawings showing all pipelines to and from the meter, customer connections, and PVC conduits to the LV room shall be prepared and submitted to DEWA.
- w) Engraved identification plates showing account and flat numbers shall be affixed to the wall immediately adjacent to the meter, not on the meter itself.
- x) DEWA shall be responsible for the supply and installation of meters for new connections, either directly or through approved contractors, while customers and developers shall be responsible for ancillary fittings and downstream pipework in accordance with DEWA specifications.

3) M-BUS CABLE CONTAINMENT INSTALLATION STANDARD:

- a) A 25 mm exposed PVC conduit shall be installed vertically between water meter rooms from the top floor to the lowest floor for interconnecting communication cables of smart water meters, with PVC junction boxes at 20 m intervals and at every corner, fitted with pulling springs for easy cable access.
- b) In each water meter room, a 50 x 50 mm PVC trunk of adequate length shall be installed horizontally on the wall surface directly behind the meter back plate, utilizing the 165 mm clearance provided. The trunk shall be a single continuous piece without bends or cut sections, securely fixed and properly aligned at 1600 mm above finished floor level, and fitted with end caps on both sides.
- c) The PVC trunk shall be fitted with PG-7 glands equal to the number of water meters in the room.
- d) The trunk and cover shall be of flexible, high-quality material conforming to BS 4607, with a removable side and rectangular cross-section.
- e) All conduits, trunks, glands and accessories shall conform to BS 4607, be resistant to corrosion, and suitable for the expected ambient conditions.
- f) All surfaces of the conduit, trunk and junction boxes shall be smooth, free from projections or indentations, and fitted with bushes or finished ends to prevent cable damage and sealed against water ingress.

- g) Vertical conduits shall be clamped at 1 m intervals and horizontal conduits shall be clamped at 0.5 m intervals, with proper couplings or adaptors at junction box connections.
- h) Junction boxes inside each water meter room shall be IP65-rated PVC, surface-mounted at 1800 mm above finished floor level, and positioned at least 500 mm away from the nearest water meter. Dimensions shall be 150 x 150 x 100 mm for up to 10 meters and 230 x 150 x 100 mm for up to 25 meters. For U- or L-shaped meter arrangements, an additional junction box shall be installed on each wall plane to ensure proper cable termination and access.
- i) The PVC trunk shall be connected to junction boxes through 25 mm PVC conduits with soft bends and proper mounting, with one conduit provided for up to 10 water meters and two conduits for up to 25 water meters.
- j) A 25 mm GI conduit shall be installed between the ground floor water meter room and the LV room (or the nearest water meter room), with junction boxes at 20 m intervals and corners, using GI couplings.
- k) An IP56 GI junction box of 150 x 150 x 100 mm shall be installed inside the LV room at 1400 mm above finished floor level, with space reserved nearby for communication racks and devices.
- l) All cable containment works shall be fully completed and inspected, verified, and approved by DEWA prior to the commencement of M-Bus cable installation.

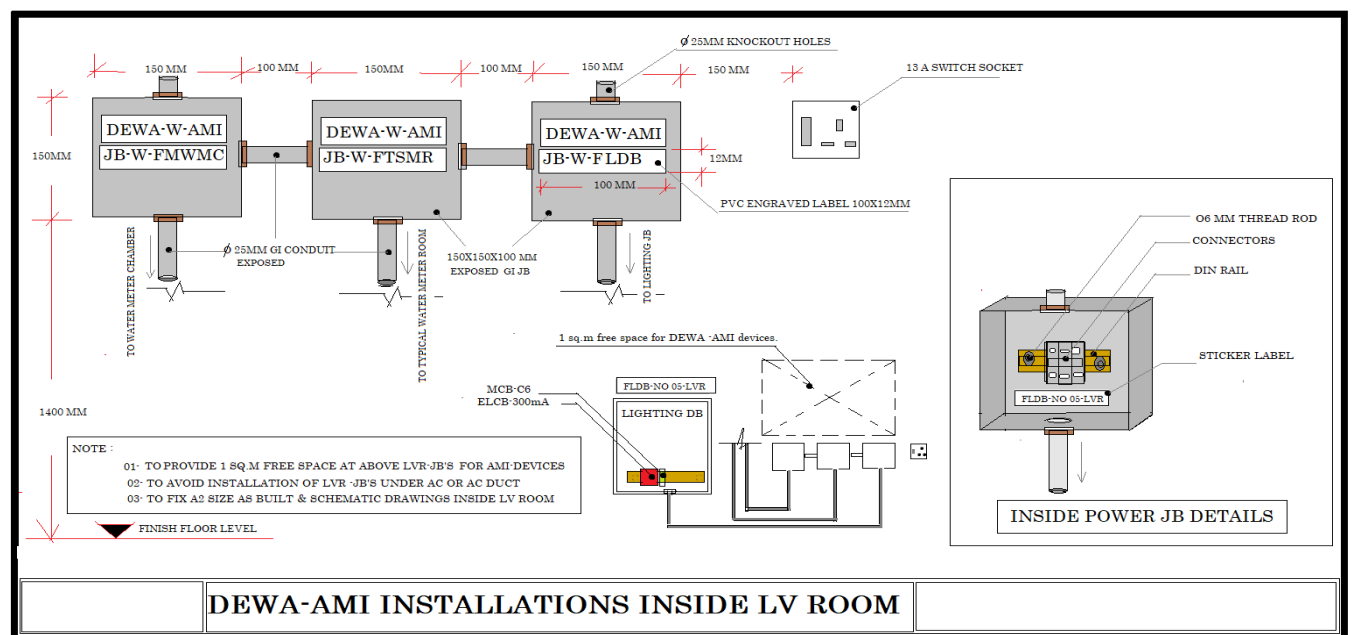
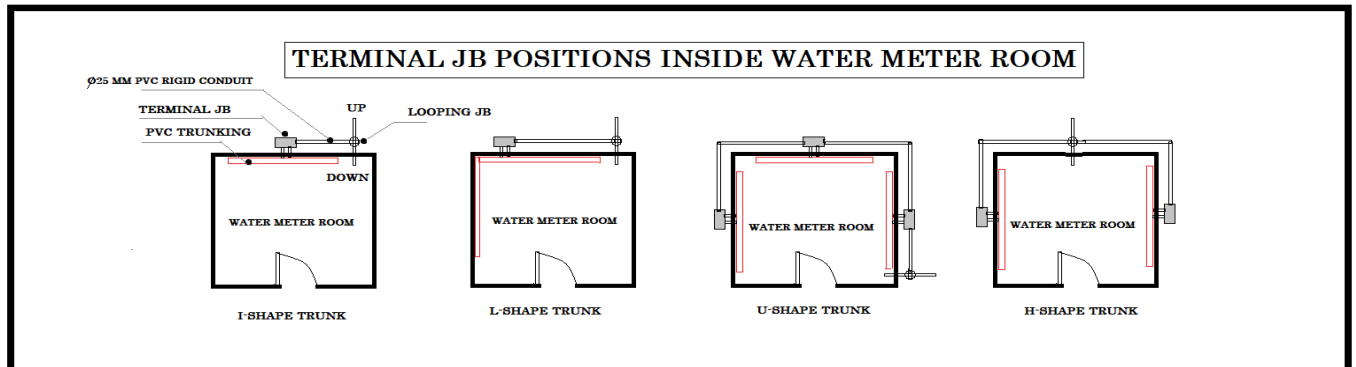
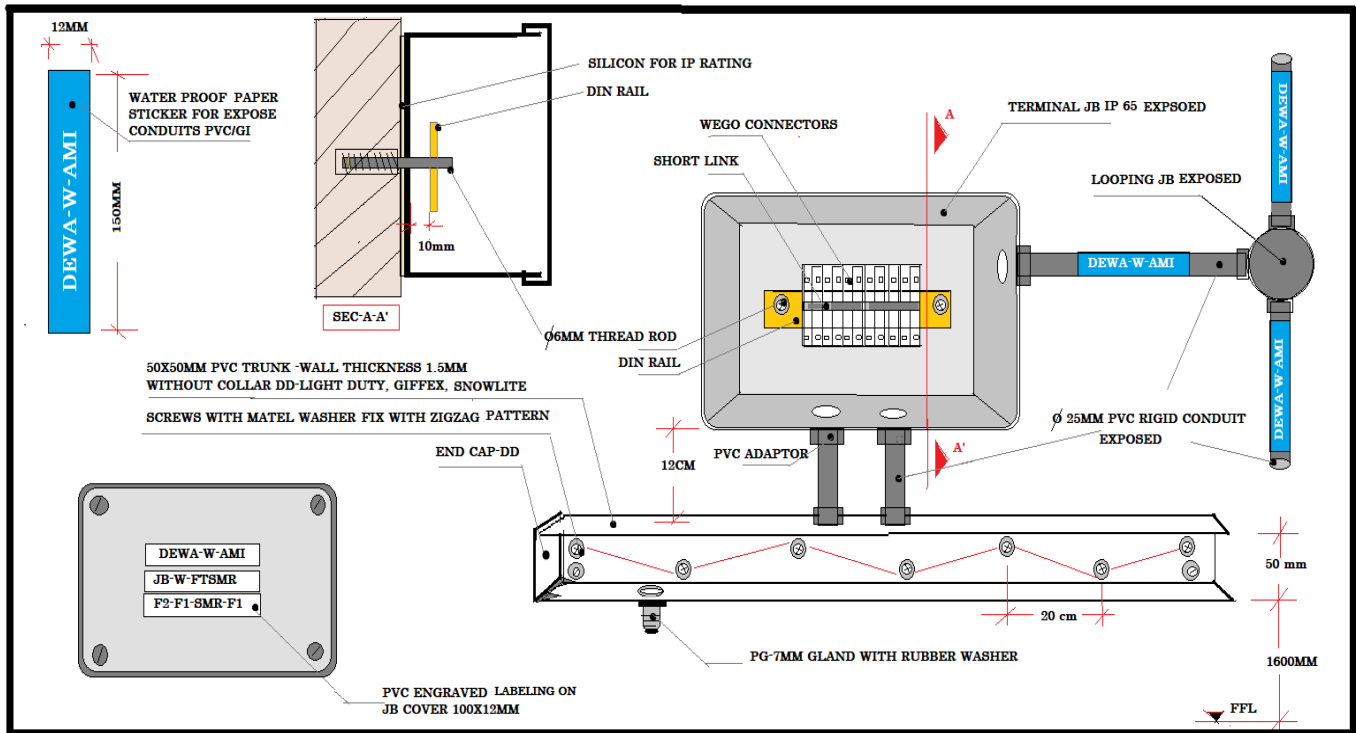
4) **M-BUS CABLE INSTALLATION STANDARD:**

- a) M-Bus communication cables shall be routed along water pipelines using nylon cable ties to reach the PVC trunk. Refer Pictures, Section-5.
- b) Each cable shall pass into the PVC trunk through PG-7 glands, labelled with PVC ferrule sleeves showing shop or flat numbers, and neatly tied inside the trunk. For example, ferrule sleeves shall be marked as S-XX for Shop No. XX and F-XX for Flat No. XX, and all cables within the PVC trunk shall be neatly routed, uniformly dressed, and securely fastened with cable ties along the entire length of the trunk. Refer Pictures, Section-6.
- c) M-Bus cables shall be extended from the trunk to adjacent junction boxes for termination with clear and accurate labeling. Where additional length is required, DEWA-approved M-Bus communication cables shall be joined using suitable splicing connectors within the PVC trunk. Care shall be taken to maintain correct polarity and wire color during splicing, and the brand of all M-Bus cables and splicing connectors shall be approved by the DEWA Engineer prior to installation. Refer Pictures, Section-E.
- d) The trunk shall be properly closed and glands securely fixed to ensure waterproofing, with cable labelling consistent inside and outside.
- e) An adequate number of terminal connectors, end plates, and DIN rail stoppers shall be installed within the PVC junction box to provide paired connections for dual polarity. All cables inside the junction boxes, including those connected to the terminals, shall be neatly routed and secured to ensure that all ferrule labels remain clearly visible. Refer Pictures, Section-5.
- f) Positive (red) wires shall be terminated to one side of the terminal pair and negative (black) wires to the other, each labelled with ferrules for identification. Refer Pictures, Section-5.
- g) Each pair of terminals within the junction box shall be short-linked using terminal short links to form a star connection, following the reference shown in Sample Pictures, Section-5, with the white-colored strip positioned in the center of the terminals.

- h) Junction boxes in all meter rooms shall be looped together with M-Bus cables through conduits to form a local communication network.
- i) The total length of a loop cable between junction boxes shall not exceed 800 meters. Each loop cable shall be clearly labeled using appropriately sized PVC ferrule sleeves. For example, the cable from the junction box on the second floor to the junction box in the first-floor water meter room shall be labeled as JB WMR F2 – JB WMR F1.
- j) For multiple loops, water meters shall be grouped into sets of 245, 120, 55 or 25 (+/-5), with each loop containing one such group. For example, if the total number of meters is 245–250, all meters shall be included in a single loop. If the total is 300 meters, the first loop shall contain 245–250 meters and the second loop 50–55 meters. Similarly, if there are 490 meters, they shall be divided into two groups of 245 meters each, with each group forming a separate loop.
- k) Junction boxes shall be securely closed to maintain their waterproofing integrity and shall be labeled with engraved PVC tags. For example, the junction box on Floor No. AA shall be labeled as JB WMR FAA, and the junction box on the ground floor as JB WMR FG. These labels shall be affixed below the existing DEWA WAMI label on the junction box and conduits.
- l) Communication cables between junction boxes and to the LV room shall be labelled at both ends with origin and destination details.
- m) In buildings with multiple loops, all loop cables shall be routed together in parallel through the containment system up to the LV room junction box and clearly labeled. For example, the cable from the junction box on Floor No. AA water meter room to the junction box in the LV room on Basement Floor-1 shall be labeled as JB WMR FAA – JB LVR B1 using appropriately sized ferrule sleeves. Each loop cable extended to the LV room shall include a minimum of 10 meters of extra length, neatly coiled for future extension. These cables may be installed along the LV room wall where sufficient space is available for DEWA communication devices, as illustrated in Picture Reference.
- n) Continuity and insulation resistance tests shall be performed on each loop cable with results documented before termination.
- o) All materials including M-Bus cables, connectors and terminals shall be approved by DEWA prior to installation, with preferred cable specification 2x18AWG screened polypropylene FRNC/LSZH and Terminal Blocks/ Splicing connectors: Wago or similar standard subject to DEWA approval.
- p) A single-phase 230V AC supply with 3CX2.5 sq.mm power cable shall be provided inside a GI junction box of 150 x 150 x 100 mm adjacent to the M-Bus loop, supplied from a lighting/small power DB through a 300 mA ELCB and C6 MCB, and labelled “DEWA WAMI” with the feeding source , as illustrated in Picture Reference #5, Section-5.
- q) As-built schematic drawings showing cable routes, terminations and physical locations shall be prepared and submitted for acceptance, in line with the sample provided.
- r) As-built containment drawings including exact GIS coordinates of cable routes from main chamber to boundary wall, risers and sub-meters shall be prepared for DEWA GIS update.
- s) A copy of the final as-built drawing shall be framed and installed inside the LV room.

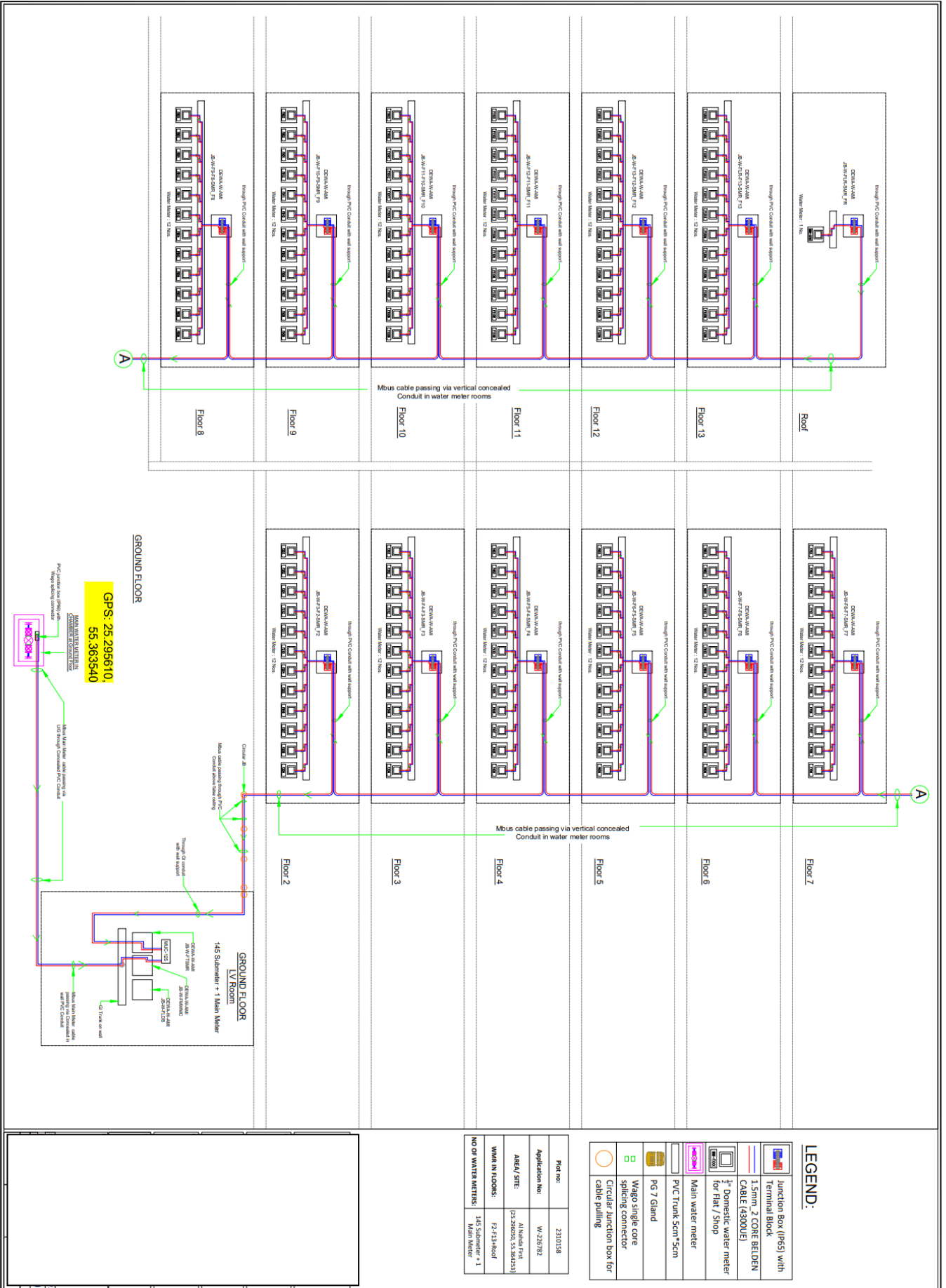
All requirements of this specification shall be strictly complied with by developers and contractors prior to submission of new connection applications.

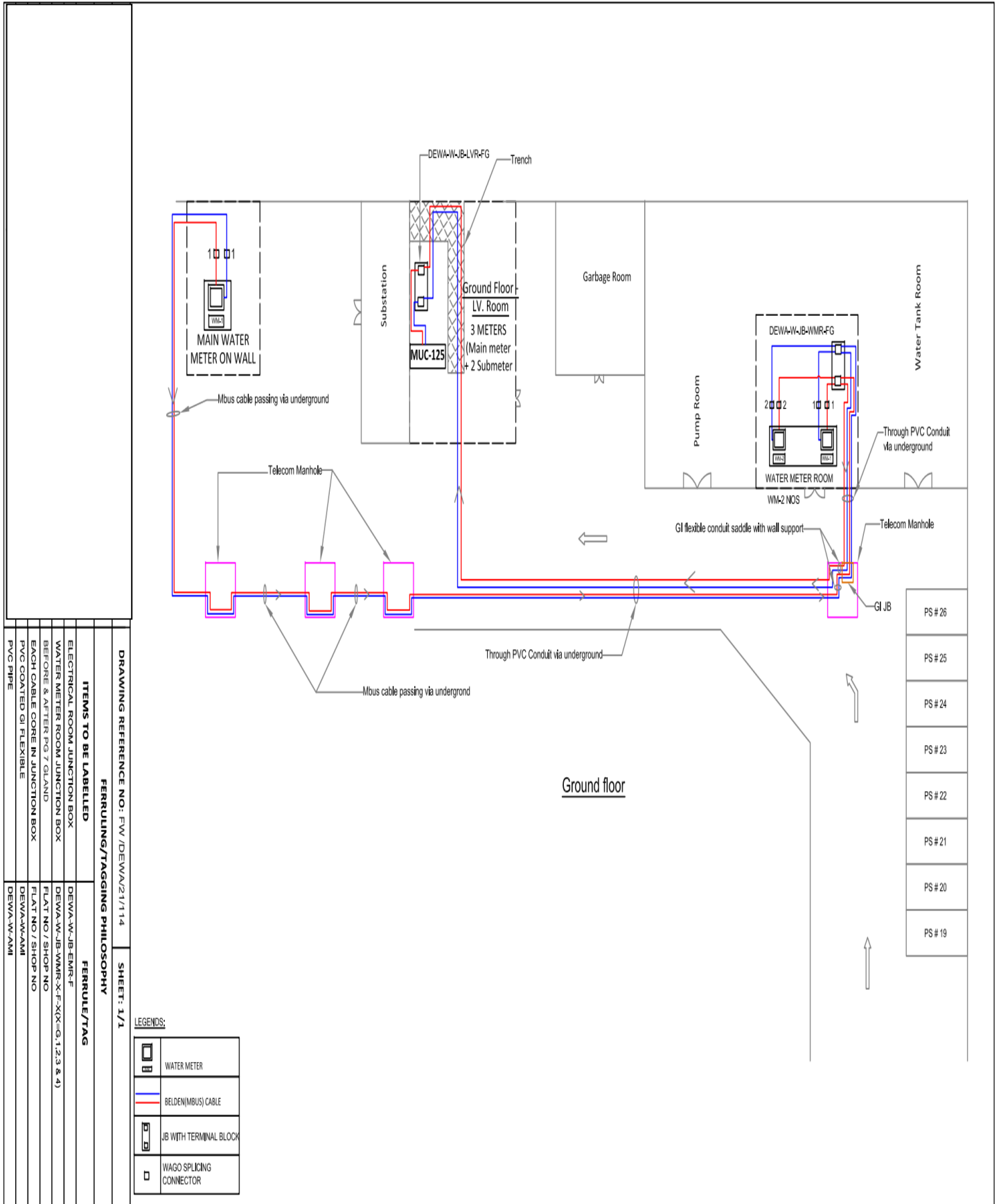
5) TYPICAL DRAWING/PICTURE REFERENCES:





6) TYPICAL M-BUS CABLE SCHEMATIC





DRAWING REFERENCE NO: FW/DEWA/21/114		SHEET: 1/1	
FERRULING/TAGGING PHILOSOPHY			
ITEMS TO BE LABELLED		FERRULE/TAG	
ELECTRICAL ROOM JUNCTION BOX	DEWA-W-JB-EMR-F		
WATER METER ROOM JUNCTION BOX	DEWA-W-JB-WMR-X-F-X-X-G-1,2,3 & 4)		
BEFORE & AFTER PG / GLAND	FLAT NO / SHOP NO		
EACH CABLE CORE IN JUNCTION BOX	FLAT NO / SHOP NO		
PVC COATED GI FLEXIBLE	DEWA-W-AMI		
PVC PIPE	DEWA-W-AMI		

LEGENDS:

	WATER METER
	BELDEN(MBUS) CABLE
	JB WITH TERMINAL BLOCK
	WAGO SPLICING CONNECTOR

Reference Drawing: PEW-STD-AMI 003.Rev5